Roman and Early Saxon Settlement along the Marham Resilience Scheme, Middleton, Norfolk

Archaeological Excavation Report

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Roman and Early Saxon Settlement along the Marham Resilience Scheme, Middleton, Norfolk

Archaeological Excavation

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Summary

Oxford Archaeology East undertook archaeological monitoring and excavation along the Marham Resilience Scheme Pipeline route in Middleton, Norfolk (TF 67266 17390 to TF 67111 16227) between 29th May and 30th June 2017.

The National Mapping Programme (NMP) had previously identified several cropmarks of potential interest along the route of the pipeline. To explore these features the monitoring part of the project focussed on two areas, one towards the southern end of the pipeline (0m-550m) and the other at the northern end (850m-1440m) where, prior to excavation, an undated ditch had been identified (NHER 3395). The excavation area (550m-850m) was also known to pass through a series of undated crop-marks (NHER 27991). The excavation succeeded in recording enclosure ditches, pits, structures and post-holes dating from the Late Neolithic to Early Bronze Age, Roman, Early Saxon and post-medieval.

A single pit, located towards the southern part of the excavation area, yielded a small quantity of Late Neolithic to Early Bronze Age pottery. Residual prehistoric worked flint was also recovered from features across the site.

Roman activity on site was represented by a sub-square enclosure thought to date to the first half of the Roman period, which was subsequently replaced by a much larger rectangular enclosure. In addition, a collapsed wall (with attached plaster) and a small number of pits were identified. An assemblage of 205 sherds (3277g) of Roman pottery was recovered which includes a waster sherd, indicating production may have been taking place nearby.

Early Saxon activity on site can be securely dated between the late 5th to late 6th centuries. Two sunken featured buildings (SFBs) of different design were found, one with two posts – the other with only one. Both buildings produced numerous finds including pottery, worked and butchered animal bone, burnt clay and metal working debris. Accurate plotting of the finds revealed that, in both buildings, the north-west quadrant contained evidence for textile production which included loomweights, bone combs, a pin beater and spindle whorl. The numerous finds contained within the backfill of the largest SFB (168) suggest that once this building fell from active use it was filled with rubbish. A number of contemporary pits were identified across the site, some of which may have been associated with SFB construction and use. It is possible these pits were excavated for sand extraction and latterly used as rubbish pits. Saxon pottery totalling 227 sherds (3202g) was recovered. Some of this ceramic material was retrieved from the uppermost fills of the Roman enclosure ditches which suggests this feature may have remained visible in the landscape and was re-used in the Early Saxon period. The potential, therefore, for continuity at this site between the Roman to the Early Saxon periods is high.

A single ditch tentatively dated to the post-medieval period was recorded in the northern part of the site during monitoring.

1 Introduction

1.1 Location and scope of work

1.1.1 An archaeological excavation was conducted along a pipeline route that ran from Middleton Reservoir to Middleton Towers just to the east of Middleton, Norfolk (Fig. 1).

1.1.2 This archaeological excavation was undertaken in accordance with a Brief issued by James Albone of Norfolk Heritage Environment (NHE; Planning Application WAT-05865-MIDDWR), supplemented by a Specification prepared by OA East.

1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012). The results will enable decisions to be made by NHE, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.

1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology and topography

1.2.1 The development site lies on a variety of geology including Leziate Member, Carstone Formation, Mintlyn Member and Kimmeridge Clay Formation with overlying superficial deposits comprising clay, silt, sand and gravels, Nar Valley Formation and Lowestoft Formation (British Geological Survey 2014, (http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html).

1.2.2 At the southern end of the pipeline, closest to Middleton (TF 67111 16227) the site lay at approximately 38m OD, it then sloped downwards to the northern end of the pipeline nearest to Towers End (TF 67266 17390) where the site sat at 7m OD.

1.2.3 A watercourse runs near to the northern end of the proposed pipeline, pierrepoint drain is also located approximately 1.5km to the west. The River Nar is 2km south of the southern end of the pipeline route.

1.2.4 The proposed pipeline route largely covers land currently under arable cultivation.

1.3 Archaeological and historical background

1.3.1 The following information has been drawn from Written Scheme of Investigation (Blackbourn 2017), the Norfolk Heritage Explorer (NHER) and NMP data (Fig. 2).

Prehistoric

1.3.2 Close to the southern end of the pipeline worked flint has been recovered dating to the Mesolithic and Neolithic. Evidence for Bronze Age activity also exists in the form of pits (NHER 37638).

1.3.3 At the southern end of the proposed pipeline route excavations have revealed evidence for Iron Age settlement including a Mid to Late Iron Age enclosure and a broad swathe of Later Iron Age pits (NHER 37638). A highly significant metalwork assemblage was recovered comprising 40 brooches and other iron finds alongside pottery and amber beads.

1.3.4 Fieldwalking took place at this site and a number of prehistoric finds were recovered including burnt and struck flint comprising blades, flakes, arrowheads, cores, microliths etc. Bronze Age pottery was also recovered.

1.3.5 A series of cropmarks identified as a rectilinear enclosure are located within the proposed excavation area (NHER 27991, see also 30862). This enclosure has a south-east entrance and a possible trackway runs along the eastern side before opening out into a second enclosure, annexes and ditches are also present. These cropmarks are currently undated but are thought to be Iron Age or Roman in date. Further cropmarks of a similar date are located to the west (NHER 50855).

Roman

1.3.6 Although the above mentioned cropmarks could be of a Roman date no other Roman features have been identified within the immediate vicinity of the pipeline route, however, a small number of Roman finds have been recovered.

1.3.7 At the northern end of the pipeline a Roman pudding-stone quern was recovered (NHER 12190). A single Roman coin has been found 450m west of the pipeline route (NHER 17309). A small number of Roman finds were uncovered from an area to the south-west of the pipeline including pottery, metal working debris, a brooch and an intaglio (NHER 37638).

1.3.8 Roman iron working has been recorded slightly further afield at Ashwicken (NHER 3382), which included evidence for furnaces alongside pits and ditches dating to the 2nd century AD. An extensive site at East Winch yielded a timber framed aisled building as well as a small masonry structure thought to be a bath house and other features (Lally *et al* 2008). Evidence for pottery production was also recorded at East Winch (Peachey 2010; forthcoming).

Saxon and Medieval

1.3.9 A single inhumation of a male was uncovered 1km south-west of the pipeline route along with an unidentified piece of iron (NHER 3392), the remains have been dated to the Saxon period.

1.3.10 Evidence for a motte-and-bailey castle has been uncovered 900m west, in the village of Middleton (NHER 3394) with Saxon activity lying underneath the bailey. Saxon pottery and a medieval seal have been recovered from this site.

1.3.11 An excavation took place in Middleton approximately 1km to the west of the pipeline route revealing medieval occupation and property boundaries (NHER 17368). Pottery and a coin of Henry II was recovered during this excavation.

1.3.12 In the village of Fair Green 1km to the west of the pipeline evidence for roads, enclosures and a former green can be seen in the form of cropmarks and earthworks (NHER 16287). Saxon pottery has been recovered from this site although some of these earthworks are thought to be post-medieval in date.

1.3.13 The medieval manorial site of Scales Hall Manor lies 150m west of the pipeline route (NHER 3395). Earthworks associated with this manor show the presence of a moat, fish ponds, dovecotes and medieval tofts. Medieval pottery has also been recovered from this site.

1.3.14 Middleton Towers gatehouse was built in 1455 for Lord Scales (NHER 3393), it was later restored in 1864. to the west of this lies a set of parallel cropmarks and earthworks defining a tracway or boundary of probable medieval date (NHER 31199).

Post-medieval

1.3.15 St Mary's church in Middleton is largely dated to the 19th century, however, there are a number of 13th-century and 16th-century features still remaining (NHER 3419).

1.3.16 Approximately 400m south west of the southern end of the pipe line lies the site of two post-medieval windmills that are marked on Fadens map of 1797 (NHER 14992).

1.3.17 A number of post-medieval buildings are recorded in Middleton including Middleton Hall (NHER 3420), The Old Lodge (NHER 44663) and The Crown Public House (NHER 44659).

1.3.18 Further post-medieval buildings have been recorded in Towers End including Tower Cottage (NHER 41179), Engine House (NHER 17310) and Tower Farmhouse (NHER 41101).

Undated

1.3.19 Although many of the cropmarks in the area have been assigned a date, some remain undated. A series of cropmarks are recorded 850m north-east of the northern part of the pipeline route (NHER 50834). These cropmarks are undated and represent a field system and field boundaries which is crossed by a parish boundary.

1.3.20 An undated cropmark of a linear ditch (NHER 50839) lies to the south-east of the pipeline route and to the west lies further cropmarks of undated ditches (NHER 50841).

1.4 Acknowledgements

1.4.1 The author would like to thank Jo Everitt on behalf of Anglian Water for funding the work, special thanks to Ashley Jordon of Barhale for his help on site. The Project was monitored by James Albone and managed by Richard Mortimer. Work on site was conducted by the author with the assistance of Tom Collie, Eben Cooper, Lexi Dawson, Dan Firth, Paddy Lambert, Neal Mason and Ryan Neal. Survey was conducted by Dave Brown.

2 Aims and Methodology

2.1 Aims

2.1.1 The WSI only set out general aims for this excavation due to no previous work having taken place along the pipeline route.

2.1.2 The main aims of this excavation were:

- To mitigate the impact of the development on the surviving archaeological remains. The development would have severely impacted upon these remains and as a result a full excavation was required, targeting the areas of archaeological interest highlighted by the previous phases of evaluation.
- To preserve the archaeological evidence contained within the excavation area by record and to attempt a reconstruction of the history and use of the site.

2.2 Regional and Site specific Research Aims

2.2.1 A number of regional and site specific aims were identified once the fieldwork was completed. These were developed with reference to regional and local research agendas (Medlycott 2011 and Brown and Glazebrook 2000).

Roman

2.2.2 *Rural Landscapes and Settlements*

- NMP surveys in Norfolk have identified extensive Roman field systems and enclosures (Medlycott 2011: 33).
- A wide range of Roman rural sites have been excavated, from field systems to villas. Excavation results, coupled with the information provided by the NMP surveys, geophysical surveys, fieldwalking and metal-detection, have shed considerable light on the range of farm types present, their dating, location and building forms. There is still need for a collation phase, on a regional basis. Specific site types, such as water-mills and iron-working sites, require further study, and there still appears to be a bias towards the larger and more affluent rural sites (Medlycott 2011: 47).
- What forms do the farms take, and is the planned farmstead widespread across the region? What forms of buildings are present and how far can functions be attributed to them? Are there chronological, regional and/or landscape variations in settlement location, density or type? (Medlycott 2011: 47).

2.2.3 Roman to Saxon transition

- There is increasing evidence from excavations for sites which span the transition period between the Romans and Saxons. These need to be synthesised on a regional basis, since at present it is not known whether the general trend is for continued occupation or for shifting settlements or for deliberate destruction (Medlycott 2011: 48).

Saxon

2.2.4 Rural Landscapes and Settlements

- Most settlement sites located or excavated are deserted and there are virtually no data for the origins and development of our existing settlements, other than the major historic towns (Brown and Glazebrook 2000: 23).
- What forms do the farms take, what range of building-types are present and how far can functions be attributed to them (Medlycott 2011: 58).
- Are there regional or landscape-related variations in settlement location, density or type (Medlycott 2011: 58).
- It is assumed that settlements at this period were small, self-sufficient communities mostly located on light soils and in the river valleys (Taylor 1983, 116-117), but there is little systematically recorded evidence for this (Brown and Glazebrook 2000: 23).

2.2.5 Agrarian Economy

- Only one Early Anglo-Saxon site (West Stow) has produced substantial and informative assemblages of crop remains, though small quantities of materials have come from others. Further work on the presence/absence of spelt as a probable indicator of continuity of arable production from the late Roman period is needed (Brown and Glazebrook 2000: 25).

2.2.6 Agricultural Production

- Large published bone assemblages from rural sites of these periods are rare indeed. For the Early Anglo-Saxon period, West Stow has provided a very large and informative assemblage, and later material came from North Elmham (Brown and Glazebrook 2000: 25).

2.3 Methodology

2.3.1 The methodology used followed that outlined in the Brief and detailed in the Written Scheme of Investigation (Blackbourn 2017). Within the areas of archaeological monitoring (0m to 550m and 850m to 1440m) topsoil was stripped within a 10m wide corridor along the route of the pipeline. Within the excavation area topsoil and subsoil (where present) were stripped within a 10m to 15m wide corridor along the route of the pipeline.

2.3.2 Machine excavation was carried out by a 360 type excavator using a 2m wide flat bladed ditching bucket under constant supervision of a suitably qualified and experienced archaeologist.

2.3.3 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

2.3.4 All archaeological features and deposits were recorded using OA East *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.

2.3.5 Environmental sampling was undertaken on a variety of feature types, including ditches, pits, post-holes from both Roman and Saxon features across the site. An extensive sampling strategy was not used within the Sunken Featured Buildings due to their infill being mainly sand with poor organic preservation.

2.3.6 Soil conditions varied across the site. Where the natural geology comprised clay the area was prone to flooding. Where the natural geology comprised sand features were prone to being covered by wind blown sand. Features were marked by a flag immediately after exposure by machine so that no features were lost. The weather was variable across the four weeks on site.

3 Results

3.1 Introduction

3.1.1 The work on site was split into two areas of archaeological monitoring and one area of excavation. The areas of archaeological monitoring only yielded a single ditch which was tentatively dated to the post-medieval period. Features identified within the excavation area have been dated to four distinct phases of activity: Late Neolithic to Early Bronze Age, Roman, Early Saxon and post-medieval (Fig. 4). Features have been attributed to a phase based on stratigraphic and topographic relationships, also the date of the finds they contained. NMP data has also aided in establishing relationships between some of the ditches. The majority of the features on site could be dated to either the Roman or Early Saxon phases of activity.

3.1.2 The following section describes the results of the fieldwork by method of investigation and then where appropriate by phase. Cut features, such as ditches or pits, are shown in **bold** in the text. Finds and environmental remains are noted in the descriptions where relevant and summarised at the end of the this section.

3.2 Archaeological monitoring

3.2.1 The areas at the northern and southern end of the pipeline route were monitored throughout the topsoil strip. At the northern end the area measured 590m long and 10m wide and the topsoil (100) consisted of a mid grey brown sandy silt. This area lay just to the east of a series of cropmarks mapped by the NMP. Only one ditch was uncovered in this area (Fig. 3). Ditch **283** had a north-east to south-west alignment and measured 1.9m wide and 0.54m deep with steep sides and a concave base (Plate 1). This ditch contained two fills, the basal fill (282) measured 0.24m thick and consisted of a light blue grey sand. Overlying this was fill 281 which measured 0.3m thick and consisted of a mid grey brown silty sand. This ditch has been attributed to a post-medieval date based on its location and presence as a cropmark.

3.2.2 At the southern end the area of monitoring measured 550m by 10m and the topsoil (100) consisted of a mid brown grey clayey silt. No archaeological features were observed in this area.

3.3 Phase 1 – Late Neolithic to Early Bronze Age (3000-1600 BC)

3.3.1 Only a single pit was dated to this phase (Fig. 4). Pit **114** was located at the southern end of the excavation area although only partially identified along the western edge. This pit measured 1.2m wide and 0.45m deep with steep sides and a concave base (Plate 2). This pit contained two fills, its basal fill (115) consisted of a mid brown grey silty sand that measured 0.07m thick. Overlying this was fill 116 which measured 0.38m thick and consisted of a dark grey black silty sand that contained 5 sherds (29g) of Late Neolithic to Early Bronze Age pottery.

3.4 Phase 2 – Roman (1st to 4th Century)

3.4.1 The area of excavation was located within an area of clear cropmarks (NHER 27991) in which an enclosure had been identified although of an unknown date. Upon excavation these ditches were identified and dated to the Roman period. Features dating to this phase comprised two enclosures, three ditches, eight pits, a spread and remnants of a collapsed flint wall (Fig. 5).

Enclosure 135

3.4.2 Two of the ditches identified within the excavation area have been attributed to enclosure **135** representing the northern and southern extents of the enclosure which appeared sub-square in plan from the NMP data (NHER 27991). The southern side of the enclosure is seen terminating within the excavation area and represents the opening to the enclosure. Two slots were excavated into this section of ditch (**135** and **198**), here the ditch had an east south-east to west north-west alignment and measured 2.8m wide and 0.74m deep with steep sides and a concave base (Plate 3; Fig. 10A, Section 12). This ditch contained two fills, the basal fill (136=199) measured between 0.1m and 0.16m thick and consisted of a mid yellow silty sand that contained a two pieces of flint comprising a narrow flake and chip, also sparse charcoal. Overlying this was fill 137 (=200) which measured between 0.42m and 0.5m thick and consisted of a mid brown grey silty sand that contained 18 sherds (343g) of pottery dating to the 1st century AD and a single sherd (3g) of intrusive Early Saxon pottery. A single flint flake was also recovered from this fill.

3.4.3 The ditch representing the northern extent of this enclosure had two slots excavated into it with ditch **212** seemingly splitting into two small ditches, **175** and **178** all with an east south-east to west north-west alignment. Ditch **212** measured 3.5m wide and 1.15m deep with steep sides and a concave base (Fig.10a, Section 37). This ditch contained three fills, the basal fill (215) measured 0.3m thick and consisted of a light yellow orange silty sand that contained a single (27g) intrusive sherd of Early Saxon pottery and occasional barley grains. Overlying this was fill 214 which measured 0.5m thick and consisted of a mid orange brown silty sand that contained 17 sherds (261g) of Roman pottery, with four sherds (46g) of intrusive Early Saxon pottery alongside 1006g of animal bone. The uppermost fill (213) measured 0.36m thick and consisted of a dark grey brown silty sand that contained 17 sherds (302g) of pottery dating to the 2nd and 3rd centuries AD alongside 9 sherds (168g) of intrusive Early Saxon pottery, 57 fragments (264g) of fired clay and 4020g of animal bone. A single wheat and barley grain was also recovered from this fill.

3.4.4 To the west this ditch split into two ditches (Plate 4). Ditch **175** contained two fills, with the basal fill (176) measuring 0.39m thick and consisting of a mid orange brown silty sand that contained 511g of animal bone. Overlying this was fill 177 which measured 0.2m thick and consisted of a mid grey brown silty sand that contained seven sherds (75g) Late Iron Age to Early Roman and six sherds (53g) of Early Saxon pottery and 392g of animal bone. Two worked flints, including a blade fragment most likely of a Mesolithic or Early Neolithic date, was also recovered. An environmental sample was taken which contained a single barley grain and evidence for black-bindweed. This was cut by ditch **178** on the same alignment which measured 1.3m wide and 0.3m wide with sloped sides and a concave base. This ditch contained two fills, the basal fill (179) measured 0.06m thick and consisted of a mid orange brown silty sand that contained four sherds (63g) of Roman pottery and 458g of animal bone. Overlying this was fill 180 which measured 0.24m thick and consisted of a mid grey brown silty sand that contained 10 sherds (199g) of Late Iron Age to Early Roman pottery as well as a single sherds (6g) of Early Saxon pottery, a large flint flake and 586g of animal bone.

Enclosure 131

3.4.5 Enclosure 135 was replaced by a much larger enclosure, seemingly rectangular in plan. This second enclosure consisted of three large ditches with an east south-east to west south-west alignment. The southern extent of this enclosure is represented by ditch **131** (=**204**) which measured between 2.4m and 2.5m wide and 0.65m to 0.71m deep with

steep sides and a concave base (Plate 5; Fig. 10A, Section 35). To the east this ditch contained a single fill (132) which consisted of a mid grey brown silty sand that contained 192g of animal bone and two flint flakes. To the west this ditch (**204**) contained three fills, the basal fill (205) measured 0.18m thick and consisted of a light orange sand which was devoid of preserved plant remains, overlying this was fill (206) which measured 0.06m thick and consisted of a light grey silty sand. The uppermost fill (207) measured 0.48m thick and consisted of a mid grey silty sand that contained two sherds (48g) of Roman pottery and 398g animal bone.

3.4.6 Approximately 25m to the north was ditch **144** (=**208**) which measured between 2.48m and 2.86m wide and 0.98m to 1.22m deep with steep sides and a concave base (Fig. 10a, Section 16). To the east this ditch (**208**) contained a single fill (209) which consisted of a mid brown grey sand that contained single oat and wheat grains. To the west the ditch (**144**) contained two fills, the basal fill (145) measured 0.84m thick and consisted of a mid orange brown silty sand that contained 16 sherds (256g) of pottery dating to the 2nd to 4th centuries AD and a single intrusive sherd (8g) of intrusive Early Saxon pottery, and 673g of animal bone. Overlying this was fill (146) which measured 0.4m thick and consisted of a mid grey brown silty sand that contained 10 sherds (81g) of Roman pottery and nine sherds (26g) of Early Saxon pottery and 770g of animal bone.

3.4.7 The northern extent of this enclosure was located 71.5m north of ditch **144**. This ditch **156** (=**242**) measured between 3.4m and 3.6m wide and 1.45m deep with very steep sides and a concave base (Plate 6; Fig. 10a, Section 18). To the west this ditch contained two fills, the basal fill (157) measured 0.5m thick and consisted of a light orange brown silty sand that contained 32 sherds (713g) of pottery dating to the 2nd to 4th centuries AD and two sherds (18g) of Early Saxon pottery, 1040g of animal bone, two iron nails (SF 128) and three pieces of residual worked flint including flakes of a probable Late Mesolithic or Early Neolithic date. A single spelt grain was also recovered from this fill. Overlying this was fill (158) which measured 0.6m thick and consisted of a dark brown grey sandy silt that contained 11 sherds (140g) of pottery dating to the 2nd to 4th centuries AD and two sherds (21g) of Early Saxon pottery, 360g of animal bone and 251g of slag. Unidentifiable grains and a large quantity of charcoal was also recovered from this fill.

3.4.8 To the east this ditch (**242**) contained three fills, the basal fill (246) measured 0.45m thick and consisted of a dark orange brown silty sand that contained eight sherds (242g) of Late Iron Age to Roman pottery, 10g of animal bone and 314g of metal working debris. Overlying this was fill 245 which measured 0.5m thick and consisted of a light orange brown silty sand that contained nine sherds (143g) of Roman pottery and two sherds (17g) of Early Saxon pottery and 3820g of animal bone and 136g of metal working debris. The upper most fill (243) of this ditch not only filled this ditch but also a pit/ditch to the south (**240**) and most likely accumulated during the Early Saxon phase of activity due to the large amount of Early Saxon pottery retrieved. It measured 0.5m thick and consisted of a dark grey brown silty sand and contained 4360g of metal working debris, 11 sherds (238g) of Roman pottery and ten sherds (188g) of Early Saxon pottery. All three fills of this ditch contained charcoal.

Ditches

3.4.9 Two ditches (**103** and **110**) within the southern area of excavation had an east to west alignment (Fig. 10a, Section 1). Ditch **110** measured 0.9m wide and 0.2m deep with gently sloped sides and a concave base. Its single fill (111) consisted of a mid grey brown sandy clay silt. This was cut by ditch **103** which measured 1.7m wide and 1.04m

deep with very steep sides and a concave base. This ditch contained a number of fills, its basal fill (104) measured 0.14m thick and consisted of amid brown grey clayey silt that contained 170g of animal bone. Overlying this was fill 105 which measured 0.2m thick and consisted of a deliberate dump of pale grey clay. Fill 106 measured 0.1m thick and consisted of a dark grey sandy silt, overlying this was fill 107 which measured 0.22m thick and consisted of a mid yellow brown sandy silt that contained 26g of animal bone and a single flint flake. Fill 108 measured 0.2m thick and consisted of a dark grey sandy silt, the uppermost fill (109) measured 0.3m thick and consisted of a mid grey brown sandy clayey silt that contained a single sherd (10g) of intrusive Early Saxon pottery.

3.4.10 At the northern end of the excavation area was ditch **226** which had an east to west alignment and measured 1.14m wide and 0.18m deep with gently sloped sides and a concave base. Its single fill (227) consisted of a dark grey silty sand that contained 49g of slag and 1g of animal bone. This fill was also sampled for environmental evidence and was found to contain occasional wheat and barley.

Structure 193 and associated spreads

3.4.11 The collapsed remnants of a flint wall (**193**) was uncovered in the north-east part of the excavation area, this part of the site also had a spread of material most likely associated with the use of the structure which appeared to fill a naturally occurring hollow area in the north-east part of the excavation area and beyond (Fig. 6).

3.4.12 A spread (297) measuring 0.14m thick and consisting of a light brown sandy silt was identified underlying the collapsed structure, this layer continued to the south for approximately 5.5m. Overlying this was spread 192 (=173=218=292) this layer measured 0.4m thick and consisted of a mid brown grey sand silt and its extent measured approximately 31m long and 3.2m wide from the eastern edge of excavation. This layer contained five sherds (141g) of Roman pottery and a single sherd (2g) of Early Saxon pottery, 32g of animal bone, 95g of metal working debris and an iron knife blade (SF 118).

3.4.13 A number of finds were recovered whilst cleaning wall **193**, these included four sherds (74g) of Roman pottery and three sherds (56g) of Early Saxon pottery, 180g of animal bone, 254g of metal working debris and three pieces (24g) of fired clay.

3.4.14 Wall **193** comprised roughly shaped pieces of flint ranging from 100mm by 80mm and 50mm thick to 200mm by 150mm and 50mm thick. No construction cut was identified for this wall within the excavation area. This wall appears to have been demolished or gone out of use whilst spread 192 was accumulating, seemingly within an area which sat within a slight hollow. Overlying this collapsed wall was a thin (0.05m) layer (196) of dark brown grey clayey silt which may have been the decayed remains of a bonding material for the wall plaster (SF 12) still attached to the inside of the wall. A total of 237 fragments (weighing 1207g) of wall plaster was recovered, also sparse charcoal.

Pits

3.4.15 A small number of pits within the excavation area have been attributed to the Roman phase of activity (Fig. 5). Any undated pits have been attributed to the later phase of the Early Saxon period, although it is feasible that some of these may have been Roman in date.

3.4.16 At the southern end of the excavation area, north of ditch **103** was pit **117** which measured 1.23m wide and 0.18m deep with gently sloped sides and a concave base. Its single fill (118) consisted of a mid grey brown sandy silt.

3.4.17 Immediately south-west of ditch terminus **135** was pit **290** which measured 1.8m wide and 0.56m deep with sloped sides and a concave base. Its single fill (291) consisted of a mid orange brown clayey sand and contained a single sherd (5g) of Early Roman pottery.

3.4.18 Within the central part of the excavation were a number of pits, dated to either the Roman or Early Saxon periods. Pit **230** measured 0.9m wide and 0.37m deep with sloped sides and a concave base. Its single fill (231) consisted of a mid brown grey sand contained two sherds (18g) of Roman pottery, 91g of animal bone, 100g of slag including some fragments of smithing hearth base and 12g of oyster shell. Charcoal was also recovered from an environmental sample of this fill. This was cut by Early Saxon pit **228**.

3.4.19 To the north (5m) was pit **261** which measured 0.8m wide and 0.49m deep with steep sides and a flat base. This pit contained three fills, its basal fill (262) measured 0.15m thick and consisted of a mid brown orange sand. Overlying this was fill 263 which measured 0.13m thick and consisted of a mid brown sand that contained 3 sherds (28g) of pottery dated to the 2nd to 4th centuries AD. The uppermost fill (264) measured 0.33m thick and consisted of a dark grey sand that contained two sherds (60g) of pottery dating to the 2nd to 4th centuries AD, 10g of animal bone and 3g of oyster shell. This fill also contained unidentifiable grains and abundant modern fat hen seeds.

3.4.20 Pit **277** was located immediately to the north and measured 1.15m wide and 0.54m wide with steep sides and a concave base (Plate 7; Fig. 10b, Section 52). This pit contained three fills, the basal fill (278) measured 0.2m thick and consisted of a mid orange brown sand. Overlying this was fill 279 which measured 0.43m thick and consisted of a mid brown grey sand that contained three sherds (27g) of pottery dating to the 2nd to 3rd centuries AD and 6g of oyster shell. The uppermost fill (280) measured 0.2m thick and consisted of a light yellow sand.

3.4.21 Pit **184** measured 1.3m wide and 0.33m wide with sloped sides and a concave base, its single fill (185) consisted of mid grey brown silty sand which contained 12 sherds (23g) of pottery dating to the 1st to 2nd century AD and 170g of animal bone.

3.4.22 Pit **240** was located immediately south of ditch **242**. This pit measured 1.4m wide and 0.51m deep with sloped sides and a concave base. Its single fill (241) consisted of a mid grey brown silty sand that contained six sherds (164g) of Late Iron Age to Early Roman pottery, 181g of animal bone 1256g of metal working debris.

3.4.23 At the northern end of the excavation area was pit **275** which truncated post-hole **273**. this pit measured 0.7m wide and 0.18m deep with sloped sides and a concave base. Its single fill (276) consisted of a light grey brown sandy clay that contained 10g of animal bone.

Post-holes

3.4.24 Only two possible post-holes were identified on the site dating to the Roman period. At the southern end of the excavation area truncating pit **117** was post-hole **121** which measured 0.3m wide and 0.14m deep with steep sides and a concave base. Its single fill (122) consisted of a dark grey silty sand.

3.4.25 At the northern end of the excavation was post-hole **273** which measured 0.22m wide and 0.2m deep with vertical sides and a concave base. Its single fill (274) consisted of a dark orange brown sandy clay that was cut by pit **275**.

3.5 Phase 3 - Early Saxon (Late 5th to 6th Century)

3.5.1 A number of isolated features including two Sunken Features Buildings (SFBs), thirty-one pits and three ditches were identified dating to the Early Saxon period which represent a partial settlement (Fig. 7). The NMP data which had identified the Roman enclosures did not identify features thought to be of a Saxon date, however, cropmarks in the area do vaguely identify the two SFBs.

Sunken Featured Building 147

3.5.2 SFB **147** was sub-rectangular in plan and measured 3.8m long, 2.8m wide and 0.24m deep with gently sloped sides and a flat base (Fig. 8). Two opposing post-holes (**186** and **194**) were identified within the SFB at the eastern and western ends measuring 0.22m and 0.32m wide and 0.3m deep with vertical sides and a flattish base. The single fills of these post-holes (187 and 195) consisted of a dark grey silty sand that contained two sherds (69g) of Early Saxon pottery.

3.5.3 The single fill of the SFB was excavated in four quadrants (148, 174, 188 and 189) and the finds recovered within the basal 10cm of the fill were plotted. The north-east quadrant (189) contained four sherds of Early Saxon pottery (SF 39-42) and two fragments of fired clay (SF 37-38). Only a single piece of fired clay (SF 9) was recorded in the south-east quadrant (174). South-west quadrant (188) yielded a sherd of Early Saxon pottery (SF 14) and a fragment of iron key (SF 15) which was positioned vertically in the ground. The north-west quadrant (148) proved the most fruitful with three fragments of animal bone (SF 3, 5 and 6), a sherd of Early Saxon pottery (SF 7), a possible lamp fragment (SF 4) and a fragment of fired clay (SF 2) and loomweight (SF 1). Residual Roman pottery (2g), 26g of metal working debris, fragments of fired and unfired clay, a near complete double pointed pin beater (SF 126) and a piece of copper alloy wire (SF 134) were also recovered from these fills and not plotted.

3.5.4 Environmental samples were taken from three of the four quadrants, the north-east quadrant (189: Sample 11) contained a single hulled wheat grain, the south-east quadrant (174: Sample 7) contained sparse charcoal and the south-west quadrant (188: Sample 9) contained a single barley grain.

Sunken Featured Building 168

3.5.5 SFB **168** was sub-rectangular in plan and measured 4.2m long, 3.4m wide and 0.7m deep with near vertical sides and a concave base (Fig. 9). A single central post-hole (**271**) was identified within this SFB measuring 0.3m wide and 0.2m deep with steep sides and a concave base. Its single fill (272) consisted of a mid grey brown silty sand. This SFB was excavated in quadrants and contained three fills, the basal fill (183, 201, 221, 250) measured 0.1m thick and consisted of a light orange brown silty sand. All finds recovered from these fills were plotted.

3.5.6 In the north-east quadrant (201) a substantial number of finds were plotted within the basal 10cm including, 18 fragments of animal bone (SF 44-49, 51-54, 56-58, 60, 62-65) which included a fragment of bone comb (SF 65), five sherds of pottery including a sherd of Roman pottery which had been reworked into a spindle whorl (SF 61), a fragment of slag (SF 55) and two fragments of unfired clay (125 and 130).This fill was sampled (13, 14, & 15) and contained a moderate amount of charcoal. In the south-east quadrant (221) 32 fragments of bone were recorded (SF 66-74, 76, 79, 81-100), one of which (SF 99) was a modified fragment of rib, three sherds of Early Saxon pottery (SF 77, 78 and 80), two fragments of unfired clay (SF 132 and 133) and a fragment of fired clay (SF 131) were also recorded. A single metal find was plotted within the south-east quadrant, a thin piece of copper alloy (SF 117).

3.5.7 The south-west quadrant (183) showed a decline in basal finds with only 14 fragments of bone (SF 16-19, 21-22, 26, 29, 31-36), including a fragment of comb (SF 35), three sherds of Early Saxon pottery (SF 20, 23, 30), two fragments of unfired clay (SF 24, 28), a fragment of fired clay (SF 27) and oyster shell (SF 25). The north-west quadrant (250) yielded 15 fragments of animal bone (SF 101-108 and 110-116), including a modified rib (SF 105), five fragments of unfired clay (SF 119, 121-124), including a loomweight fragment (SF 121), a single fragment of fired clay (SF 120) and a sherd of pottery (SF 109).

3.5.8 Other finds were recovered from the basal fills which were not plotted including a fragment of bone comb (SF 129), a bone needle or pin (SF 10), a piece of copper alloy (SF 135) and an iron pin (SF 11). Including those finds plotted the basal fill yielded 23 sherds (227g) of Early Saxon pottery, 544g of slag (including SF 24, 28, 55) and 105 fragments (1340g) of unfired and fired clay.

3.5.9 Overlying this was fill 197 (=202, 222, 251) which measured 0.29m thick and consisted of a mid grey orange brown sandy silt that contained four sherds (51g) of Roman pottery, six sherds (65g) of Early Saxon pottery, animal bone, 14 fragments (225g) of unfired and fired clay, 40g of lava stone and 403g of slag. This fill (202 = NE quad) also contained a mix of cereals and seeds.

3.5.10 The uppermost fill (169, 203, 223, 252) measured 0.48m thick and consisted of a dark grey brown sandy silt that represented the SFBs re-use for rubbish disposal. This fill contained nine sherds (66g) of Roman pottery and 21 sherds (285g) of Early Saxon pottery, animal bone, 98g of lava stone, 29 fragments (786g) of fired and unfired clay, metal, 443g of slag and 15g of oyster shell. Part of a copper alloy S -shaped chain (SF 136) and an unidentified iron object (SF 8) was recovered from this fill. This fill (203=NE quad) also contained a mix of cereal, seeds and flax.

Pits

3.5.11 The majority of features dated to the Early Saxon phase were pits (Fig. 7), a small number of the pits are thought to associate directly to the SFBs and their activities. Early Saxon pottery was recovered from a large proportion of these pits, however some of the pits have been attributed to the Early Saxon phase that do not contain any datable finds and therefore the latest possible date is assumed.

Pits associated with Sunken Featured Buildings

3.5.12 Directly west of SFB **147** was pit **133** which measured 1.58m wide and 0.36m deep with steep sides and a concave base, its single fill (134) consisted of a dark grey brown silty sand that contained six sherds (176g) of Early Saxon pottery and 193g of animal bone.

3.5.13 To the east of SFB **168** were two pits, the most northerly was pit **181** which measured 1.4m wide and 0.35m deep with steep sides and a flat base (Fig. 10b, Section 25,). Its single fill (182) consisted of a mid grey brown silty sand that contained two sherds (2g) of Early Saxon pottery and 734g of animal bone. An environmental sample from this fill yielded small quantities of charcoal. Directly south was pit **170** which measured 1.72m wide and 0.5m deep with sloped sides and a concave base (Plate 8; Fig. 10b, Section 22). This pit contained two fills, its basal fill (171) measuring 0.18m thick and consisted of a light grey brown silty sand that contained two sherds (45g) of Early Saxon pottery and 319g of animal bone. The uppermost fill (172) measured 0.32m thick and consisted of a mid grey brown silty sand that contained 12 sherds (119g) of Early Saxon pottery and 1465g of animal bone.

Pit group 140

3.5.14 A total of 10 pits were identified in a cluster within an area measuring 21m by 7m (Plate 9; Fig. 10b, Section 41). Pit **294** was the most southerly within this group, it measured 0.76m wide and 0.32m deep with sloped sides and a concave base. Its single fill (293) consisted of a dark grey brown silty sand. Immediately to the north was pit **296** which measured 0.5m wide and 0.22m deep with gently sloped sides and a concave base. Its single fill (295) consisted of a dark grey brown silty sand.

3.5.15 Pit **140** was located at the eastern edge of the group measuring 0.67m wide and 0.24m deep with sloped sides and a concave base. Its single fill (141) consisted of a dark grey sandy silt. To the west was pit **219** which measured 1.32m wide and 0.34m deep with steep sides and a concave base. Its single fill (220) consisted of a mid yellow brown sand.

3.5.16 Pit **224** measured 0.5m wide and 0.24m deep with moderately sloping sides and a concave base, its single fill (225) consisted of a mid brown grey sand that contained a single fragment of fish bone. An environmental sample of this fill yielded a single unidentifiable grain. North of this was pit **238** which measured 0.44m wide and 0.22m deep with sloped sides and a concave base. Its single fill (239) consisted of a mid brown grey sand that contained a single barley grain.

3.5.17 To the west was pit **236** which measured 0.48m wide and 0.33m deep with steep sides and a concave base, its single fill (237) consisted of a mid grey yellow brown silty sand that contained 18g of animal bone. An environmental sample from this fill yielded occasional wheat and barley. This pit was truncated by pit **234** which measured 0.45m wide and 0.25m deep with steep sides and a concave base. Its single fill (235) consisted of a mid brown grey sand. Pit **232** measured 0.4m wide and 0.21m deep with sloped sides and a concave base, its single fill (233) consisted of a mid brown sand.

3.5.18 At the western end of the group was pit **228** which 0.47m wide and 0.28m deep with gently sloped sides and a concave base which truncated earlier Roman pit **230**. Its single fill (229) consisted of a mid brown grey sand.

Other pits

3.5.19 A number of other pits were identified across the excavation area that were attributed to the Early Saxon phase of activity. Towards the southern end of the site were four fairly large pits. Pit **127** measured 2m wide and 0.4m deep with near vertical sides and a flat base (Plate 10; Fig.10a, Section 8). Its single fill (128) consisted of a dark grey brown silty sand that contained a single sherd (1g) of Roman pottery, 13 sherds (161g) of Early Saxon pottery and 116g of animal bone. The environmental sample from this fill yielded occasional wheat, barley and oat grains as well as a single Brome seed. To the east was pit **129** which measured 2.25m wide and 0.74m deep with sloped sides and a concave base (Plate 11; Fig. 10a, Section 9). Its single fill (130) consisted of a dark grey silty sand that contained a single sherd (4g) of residual Roman pottery and 33 sherds (466g) of Early Saxon pottery, 1200g of animal bone and 38g of metal working debris. The environmental sample from this fill yielded occasional wheat, barley and oat grains as well as a single Brome seed.

3.5.20 Along the western edge of excavation was pit **247** which measured 2.5m wide and 0.51m deep with vertical sides and a flat base. This pit contained two fills, the basal fill (248) measured 0.09m thick and consisted of a mid yellow orange sand. Overlying this was fill 249 which measured 0.44m thick and consisted of a dark grey silty sand that contained two sherds (45g) of Early Saxon pottery, 1040g of animal bone, a fragment

(15g) of fired clay, four pieces of worked flint and 32g of slag. An environmental sampled taken from this fill yielded only charcoal.

3.5.21 Approximately 6.5m to the north-east was pit **149** which measured 2.8m wide and 0.58m deep with steep sides and a concave base (Plate 12). This pit contained two fills, its basal fill (167) consisted of a mid grey clay which measured up to 0.24m thick and represented a puddling of clay within the base of the pit. Overlying this was a disuse fill (150) measuring 0.5m thick and consisted of a dark brown silty sand that contained three sherds (16g) of residual Roman pottery and 17 sherds (207g) of Early Saxon pottery, 1411g of animal bone and 19g of slag. An environmental sample taken from this fill yielded charcoal.

3.5.22 To the north-east of pit group 140 were a number of smaller sparsely occurring pits. Pit **142** measured 0.49m wide and 0.24m deep with gently sloped sides and a concave base, its single fill (143) consisted of a dark grey sandy silt. To the north-west was pit **270** which measured 0.77m wide and 0.19m deep with steep sides and a concave base. Its single fill (269) consisted of a dark grey silty sand. Along the eastern edge of the excavation was pit **268** which measured 0.9m wide and 0.24m deep with gently sloped sides and a concave base. Its single fill (267) consisted of a mid brown grey silty sand that contained 47g of animal bone.

3.5.23 Directly north was pit **256** which measured 0.8m wide and 0.22m deep with gently sloped sides and a concave base. Its single fill (255) consisted of a mid brown grey silty sand that contained 3g of animal bone. Pit **254** measured 1.46m wide and 0.22m deep with gently sloped sides and a concave base. Its single fill (253) consisted of a dark grey sandy silt and contained 8g of animal bone.

3.5.24 To the west was pit **154** which measured 1.4m wide and 0.2m deep with moderately sloping sides and a concave base. Its single fill (155) consisted of a dark grey brown sandy silt that contained three sherds (21g) of pottery and 96g of animal bone.

3.5.25 To the north-west of SFB **168** was pit **265** which measured 0.83m wide and 0.14m deep with gently sloped sides and a concave base. Its single fill (266) consisted of a light grey brown silty sand. To the north was pit **165** which measured 1.7m wide and 0.18m deep with gently sloped sides an irregular base. Its single fill (166) consisted of a light orange brown silty sand that contained a single sherd (12g) of residual Roman pottery and a single sherd (2g) of Early Saxon pottery and 91g of animal bone. Immediately east was pit **190** which measured 1.8m wide and 0.37m deep with sloped sides and a concave base. Its single fill (191) consisted of a mid grey brown silty sand that contained a single sherd (4g) of residual Roman pottery and three sherds (7g) of Early Saxon pottery, 24 fragments (547g) of possible render material and 390g of animal bone. This fill was environmentally sampled and yielded two barley grains.

3.5.26 Pit **210** truncated ditch **216** of the same date and measured 0.6m wide and 0.4m deep with steep sides and a concave base. Its single fill (211) consisted of a light grey brown silty sand.

3.5.27 At the northern end of the excavation area was pit **159** which measured 0.82m wide and 0.2m deep with gently sloping sides and an irregular base. This pit contained two fills, its basal fill (161) measured 0.1m thick and consisted of a light grey silty sand, overlying this was fill 160 which measured 0.1m thick and consisted of a mid green brown silty sand. Immediately north was pit **162** which measured 1.06m wide and 0.28m deep with irregular sides and a concave base. This pit contained two fills, its basal fill (164) measured 0.12m thick and consisted of a light orange brown silty clay.

This was overlain by fill 163 which measured 0.16m thick and consisted of a dark brown silty clay that contained two sherds (62g) of pottery.

3.5.28 Pit **257** measured 0.34m wide and 0.14m deep with steep sides and a concave base, its single fill (258) consisted of a mid grey brown sandy clay. This was truncated by pit **259** which measured 0.96m wide and 0.15m deep with sloped sides and a flat base. Its single fill (260) consisted of a light grey brown silty clay that contained a single sherd (5g) of Roman pottery and two sherds (13g) of Early Saxon pottery and 10g of animal bone.

Ditches

3.5.29 A small number of ditches have been attributed to an Early Saxon phase, the uppermost fills of those ditches identified as enclosures dating to the Roman phase of activity were most likely backfilled during the Early Saxon period due to the increased quantity of Early Saxon pottery within the fills, although this is most likely for rubbish disposal rather than using them as ditches.

3.5.30 Ditch **152** was located to the north of pit group 140 and measured 0.8m wide and 0.14m deep with sloped sides and a concave base. Its single fill (153) consisted of a mid grey brown silty sand. Immediately north was a possible ditch terminus (**288**) which measured 0.9m wide and 0.24m deep with sloped sides and a concave base, its single fill (289) consisted of a mid yellow brown sand that contained a single sherd (66g) of Early Saxon pottery and 1.8kg of animal bone.

3.5.31 Ditch **216** was seen truncating the southern edge of Roman ditch **212** with a north-west to south-east alignment and measured 1.5m wide and 0.45m deep with sloped sides and a concave base (Fig. 10a, Section 37). Its single fill (217) consisted of a mid yellow brown silty sand that contained two fragments (52g) of residual Roman pottery and 10 sherds (209g) of Early Saxon pottery, 740g of animal bone, 676g of burnt flint and seven fragments (613g) of stone. This was cut by small pit **210** and also partially overlain by 213. An environmental sample was taken from this fill which yielded a single hulled wheat grain and small legume.

3.6 Phase 4 – Post-medieval (1500-1750 AD)

3.6.1 Three furrows were identified dating to this phase of activity in the southern part of the excavation area (Fig. 4). Two were excavated, the most northerly was furrow **112** which measured 1m wide and 0.24m deep with sloped sides and a flat base. Its single fill (113) consisted of a mid orange brown silty sand. Immediately south was furrow **119** which measured 0.7m wide and 0.14m deep with gently sloped sides and a concave base. Its single fill (120) consisted of a dark brown grey sandy silt.

3.7 Natural Features

3.7.1 A single natural feature was identified on site, tree throw **138** measured 0.58m wide and 0.16m deep with irregular sides and base. Its single fill (139) consisted of a dark grey silty sand that contained a single fragment (24g) of fired clay.

3.8 Finds Summary

3.8.1 A substantial assemblage of finds was recovered from features from all phases across the site. Both iron and copper alloy objects were recovered from Roman and Saxon features, a knife blade was recovered from layer 192 associated with wall **193**. The SFBs contained iron objects as well as copper alloy objects which formed part of portable dress accessories. A total of 8.33kg (182) pieces of metal working debris were recovered from both Roman and Saxon features, although the slag itself is Roman in

date. No evidence for structures relating to iron working was found on site but the assemblage comprised fragments of slag cake.

3.8.2 Worked flint was recovered residually within features, a total of 16 fragments were recovered, including flakes and blades thought to be of a Mesolithic or Neolithic date. A total of 676g of burnt flint was recovered from ditch **216**. Fragments of lava quern thought to be Roman in date were recovered from the fills of SFB **168**.

3.8.3 Five sherds (29g) of Late Neolithic to Early Bronze Age pottery was recovered from pit **114**. Iron Age pottery was also recovered from features across the site however in all cases this was alongside substantial quantities of Roman pottery and therefore considered residual. The Roman pottery assemblage comprised 205 sherds (3277g) dating to throughout the Roman period The assemblage comprised jars and dishes typical of coarseware assemblages of the area, with decorative motifs including burnishing, grooves and rustication. A single waster was also recovered indicative of nearby pottery production. Saxon pottery was also abundant at the site with 227 sherds (3203g) being recovered from a range of features including the SFBs. The majority of the pottery dated to the 6th and 7th centuries however some earlier 5th-century sherds were recorded, the majority of the pottery came from pits and some decorated pieces were present.

3.8.4 A very small amount (six fragments, 91g) of ceramic building material was recovered from the disuse fills of SFB **168** and pit **259**, these fragments can not be dated. A small quantity (237 fragments, 1207g) of Roman wall plaster was recovered from wall **193**. Both fired and unfired clay was abundant on site and recovered largely from Saxon features. The most noteworthy being that of two Early Saxon loomweights (SF 1 and SF 121) recovered from the base of SFBs **147** and **168** respectively, and suggestive of a loom being present and weaving taking place.

3.8.5 A number of worked bone fragments (SF 65, 129, 35, 127, 10, 126, 105, 99) were recovered from both SFB **147** and SFB **168**, this included four fragments of bone comb, with a near complete comb being recovered from SFB **168** which dated to Late 5th to Early 6th century and appeared to be unfinished. A single bone pin or needle was also recovered as well as a pin beater and two pieces of modified rib bones.

3.9 Environmental Summary

3.9.1 A total of 32 samples were taken from features across the site, 14 of these from the Roman phase and 18 from the Early Saxon phase. Roman features yielded very little preserved remains with only two weed seeds in ditches **156** and **175**. The Saxon features yielded better results especially SFB **168** which contained evidence of wheat, barley, rye and oats, all of which are typical of the period.

3.9.2 The largest assemblage of finds from the site was animal bone (40.7kg), with cattle dominating the assemblage followed by sheep/goat. The assemblage identifies that pigs and cattle were being slaughtered for meat during the Roman phase whilst sheep/goat were being used for secondary products. During the Saxon phase, adult sheep were being used for secondary products whereas young cattle were exploited for meat. A small amount of horse bone was recovered from site as was dog.

3.9.3 A small assemblage of oyster shell (47g) was recovered from both Roman and Saxon features.

4 Discussion and Conclusions

4.1 Introduction

4.1.1 The two areas of archaeological monitoring towards the northern and southern ends of the pipeline route yielded very little, with only a single ditch being observed towards the northern end. The ditch being of a probable post-medieval date had previously been identified via the NMP data (NHER 3395). The excavation area within the central part of the pipeline, however, yielded remains dating from the prehistoric period with a peak of activity in the Roman and the Early Saxon periods. This part of the pipeline route sits upon an area of high ground at roughly 22m OD before dropping to 11m OD just to the north, an aspect which was clearly utilised during the Roman and Early Saxon periods. A number of other sites have been identified in the area making use of the higher ground, including a vast Iron Age settlement (NHER 37638) to the south-east and extensive Roman settlement (NHER 37413) on the edge of East Winch.

4.1.2 Only a single feature was identified dating to the prehistoric period, this is most likely due to the small area excavated but also the potential for extensive truncation from the later features on site. The Roman and Early Saxon phases of activity are clearly distinguishable in terms of feature types, bar a small number of pits which either contained no finds or both a mix of Roman and Saxon pottery and have been attributed to the later phase of activity where phasing was not obvious. The Roman phase largely comprised enclosure ditches, pits and the remnants of a potential structure. The Early Saxon phase in comparison comprised SFBs and pits. The presence of a Roman and Early Saxon phase of occupation at the site allows for discussions as to whether the settlement was abandoned or whether inhabitance continued throughout the Roman to Saxon transition.

4.2 Prehistoric

4.2.1 A single pit was dated to the prehistoric period on site, which yielded Late Neolithic to Early Bronze Age pottery, although this was heavily abraded it is the only pottery of this date recovered from a feature on site. Worked flints of a similar date were recovered residually from Roman and Early Saxon features possibly due to the truncation of prehistoric features which have now been lost.

4.2.2 Residually occurring flints of a similar date were recovered from features of an Iron Age date to the south-east (NHER 37638), here an extensive Iron Age settlement was recorded with a large metalwork assemblage as well as amber and vast quantities of pottery. Further evidence for this landscape being used from the Late Neolithic period through to the Iron Age was identified 1.5km south-east at Blackborough End where a ring ditch, Beaker pits and cremations were uncovered dating from the Late Neolithic to Bronze Age periods (Gilmour 2017), alongside ditches and pits dating to the Iron Age. The difference with this site is that it was not in use between the Iron Age and post-medieval periods leading to less truncation of features on site.

4.3 Roman

4.3.1 Cropmarks recorded by the NMP (NHER 27991) were known to run across the excavation area and prior to excavation were identified as potentially having an Iron Age or Roman date. Within Norfolk a wide range of Roman rural sites have been excavated. Excavation results, coupled with the information provided by the NMP surveys, geophysical surveys, fieldwalking and metal-detection, have shed considerable light on the range of farm types present, their dating, location and building

forms. Medlycott (2011: 47) notes, however, that there is still need for a collation phase, on a regional basis and specific site types, such as iron-working sites, require further study. The site at Middleton is situated in an area which has yielded evidence for farms, pottery production and metal working during the Roman period.

4.3.2 The cropmarks recorded via NMP (NHER 27991) largely represented two enclosures. Enclosure **135** is sub-square in plan with its entranceway at the south-west side of the enclosure, measuring approximately 65m by 75m. It's most likely that this enclosure was then later replaced by much larger Enclosure **131** which is rectangular in plan and more complex with internal divisions within the main enclosure which measures 285m by 110m.

Settlement type and activities

Enclosures

4.3.3 The limited nature of pipeline excavation makes interpretation of the archaeology, in particular settlement type and use, problematic although some conclusions can be drawn. The sub-square enclosure (**135**) is thought to represent an earlier phase of occupation at the site, the fills of this ditch did contain pottery dating to throughout the Roman period however two of the slots excavated within this enclosure yielded only pottery dating to the 1st century AD (12 sherds, weighing 268g). Although a very small assemblage no other excavated slots into ditches on site yielded only Early Roman pottery and therefore perhaps evidence for this enclosure having dated to the 1st century AD. Sub-square enclosures have been noted in this part of Norfolk, for example at Snettisham where a single square enclosure was noted measuring roughly 34m by 28m (NHER 26626) and was identified alongside rectilinear enclosures. Another possible square enclosure has been identified at Watlington using geophysical techniques (NHER 39458) and is thought to be contemporary with the vast Roman settlement at the site.

4.3.4 Rectilinear Enclosure **131** is more complex as it incorporates the earlier square enclosure at its western end, with a possible extension to the south and east. The pottery recovered from the lower fills of the ditches associated with this enclosure have a broad date of 2nd to 4th centuries. While the uppermost fills of these ditches still contained Roman finds, such as a large dump of Roman metal working debris (MWD: 5061g) in ditch **242** (=**156**), Early Saxon material was also found. Early Saxon pottery was recovered from these fills (12 sherds, 208g) and charcoal from fill 243 yielded a radiocarbon date of 426AD. These ditches clearly went out of use at the end of the Roman period, although the presence of charcoal and MWD alongside Early Saxon pottery signifies that occupation was still present nearby for this material to become incorporated into the backfilling of the ditches. Could it then be feasible that the Early Saxon phase of activity started soon after that of the Roman period ended. Whether this be the same group of people under new influences from the continent or actual Saxon people themselves is impossible to ascertain.

4.3.5 The Roman pottery assemblage recovered from features on site attributed to the Roman phase is very typical of the area, with the majority of the assemblage comprising utilitarian reduced coarseware jars and dishes and finewares being scarce with only small quantities of Samian, Nene Valley and Colchester wares being present. Notable was a single waster sherd, as pottery production is well recorded in the area at Blackborough End (Gurney 1990), East Winch (Peachey 2010;forthcoming) and Watlington (Lyons 2011). Although there was no evidence for structures relating to pottery production identified during the excavation, it is possible that this could have

been an activity taking place at the settlement. The animal bone assemblage identified that cattle and pig were being exploited for their meat whereas sheep/goat were being used for secondary products, typical of the Roman period.

4.3.6 Another activity taking place within the vicinity was metal working, a large quantity of MWD was recovered from ditch **242** but was also identified within other features across the site although no structures directly related to iron working were identified. Iron working dating to the Roman period has been recorded to the north at Ashwicken (NHER 3382), which included evidence for furnaces alongside pits and ditches dating to the 2nd century AD. It is probable that the naturally occurring iron stone was being exploited and iron working would have taken place at this site as it does at other Roman sites in the vicinity.

Structures

4.3.7 The partial remains of a flint wall (193) thought to be of a Roman date was identified towards the northern end of the excavation area, although no construction cut or associated features such as post-holes or beam slots were identified in relation to it. This lack of structural features suggests that this wall may have collapsed outwards from its original position into the area of excavation, an interpretation supported by the presence of wall plaster (SF 12) facing upwards. It is thought that this structure would have been timber framed and the walls packed with flint stones and covered in a layer of wall plaster. There was no evidence for the wall plaster having been painted and the flint pieces were not substantial enough to have been used as wall foundations.

4.3.8 The remains of wall 193 were found within a hollowed area which measured approximately 26m by 4m. This area had filled with two deposits thought to have accumulated due to natural silting perhaps associated with occupation or the use of this structure. This layer contained a number of finds dated to the Roman period (5 sherds Roman pottery, 1 sherd Saxon pottery, 32g of animal bone, 95g of MWD and an iron knife blade). It is uncertain what the structure was used for and whether it was contemporary with either or both of the enclosures present to the south. The Roman site at East Winch yielded a timber framed aisled building as well as a small masonry structure thought to be a bath house (Lally *et al* 2008). The structure present at Middleton was most likely of modest status with a lack of painted wall plaster and other substantial ceramic building material being recovered from the site. Unfortunately the area in which this structure would have sat can not be seen via the NMP data.

4.3.9 It can be said with certainty that there was a settlement here during the Roman period, with a possible square enclosed settlement as early as the 1st century AD but with a peak most likely from the 2nd to 4th centuries in the form of the rectangular enclosure and associated structure. The NMP survey conducted had identified these Roman enclosures, the date of which was confirmed upon excavation. The NMP data in this case has aided in the interpretation and understanding the extent of these enclosures which with such a small area of excavation would have proved difficult otherwise.

4.3.10 Although the cropmark data allows an insight to how the main bulk of the settlement looked, small features are not identified. Pits were excavated on site which have yielded pottery, animal bone and MWD which allow some discussion of the potential activities taking place at this settlement. These being possible pottery production, iron working and animals being exploited for their meat products as well as secondary products, possibly related to craft.

Roman to Saxon transition

4.3.11 There is increasing evidence from excavations for sites which span the transition period between the Romans and Saxons. These need to be synthesised on a regional basis, since at present it is not known whether the general trend is for continued occupation or for shifting settlements or for deliberate destruction (Medlycott 2011:48).

4.3.12 A degree of re-use of the Roman enclosures during the Early Saxon period can be suggested based on the presence of the SFBs seemingly located within it, however no attempt was made to re-cut these ditches during the Saxon period. It is common for Roman artefacts to be re-used in the Saxon period, evidence of this can be seen at Middleton, for example Roman pottery reworked into a spindle whorl which came from SFB **168**. The large quantity of Roman slag recovered alongside Saxon pottery suggest that these two artefact types were being deposited at the same time, had the Roman inhabitants taken on a new pottery style or were the Saxon people re-using Roman slag.

4.3.13 The presence of Saxon pottery alongside charcoal which has been radiocarbon dated to 315 to 426AD within the uppermost fills of enclosure ditch **131** suggests that if there was a period of abandonment at the site it may have been fairly short lived. The majority of the Saxon features have been dated to as early as the Late 5th century.

4.4 Early Saxon Settlement

4.4.1 A small amount of Saxon activity has been recorded in the village of Middleton and the surrounding areas, with the motte-and-bailey (NHER 3394) recorded as having Saxon remains beneath it, as well as Saxon pottery being recovered in the area and the presence of an inhumation burial (NHER 3392). The excavation revealed part of an Early Saxon settlement, located on an area of high ground, which potentially utilised earlier Roman features and artefacts. This Early Saxon settlement comprised two SFBs, although further SFBs are suggested by cropmarks, alongside associated pits (see Fig. 12).

Settlement Patterns

4.4.2 The Early Saxon occupation of East Anglia mainly comprised small rural settlements which occur on the lighter soils of the gravel and sand terraces adjacent to the regions river systems. These settlements probably represent single farmsteads or groupings of households within dispersed settlements with more nucleated settlements comprising multiple farmsteads or larger groupings of buildings (Cowie & Blackmore 2008: 136-7).

4.4.3 Two models have been proposed to explain the settlement pattern during the Saxon period in the east of England: that either settlements were inherently mobile with farmsteads and hamlets moving over the landscape; or that settlements were permanent with a stable focus and including areas within the settlement for specific activities (Cowie & Blackmore 2008: 136-7). With only a small area of the Saxon settlement at Middleton undergoing excavation it is difficult to say with certainty which pattern this site would have fitted into.

4.4.4 The only structures identified at this site came in the form of SFBs, more of which can be seen in the surrounding area as cropmarks (Fig. 12). SFBs are the most common structure associated with the Early Saxon period in Britain (West 1985: 116-7). Although these structures are both sub-rectangular in plan the positioning of the associated post-holes and the structures size varied. Both SFB **147** and **168** conform to types of SFB seen at other sites across East Anglia such as those from West Stow (West 1985), with SFB **147** conforming to a two post type and SFB **168** a one post type.

Sunken Featured Buildings

4.4.5 The remains of these SFBs probably represented a below ground cellar space that was covered by a suspended wooden plank flooring at ground level. Varying arrangements of posts were either sunk into the ground or supported on joists at ground level to support the roof structure. The roof structure may have been thatched and the wall line, which lay outside the limit of the SFB pit, was constructed using wattle and daub (West 1985: 121). The two SFBs varied considerably in depth with SFB **147** measuring a mere 0.24m deep, whereas SFB **168** measured 0.70m. The basal finds from both SFBs were plotted as these finds are thought to represent the gradual accumulation of deposits falling through the floorboards whilst the SFB is in use.

4.4.6 SFBs are usually associated with craft production, most commonly textile production, due to the finds related to the weaving industry which are often recovered from the basal fill. The north-west quadrants of both SFBs yielded a single loomweight, SF 1 from SFB **147** comprised six fragments of refitting unfired loomweight SF 121 from SFB **168** produced a fired loomweight. Loomweights are commonly recovered from the north-west quadrant as this is believed to be where a loom would have been positioned within the SFB, possibly with a gap in the floorboards below for the loomweight to drop low enough for weaving to take place in a comfortable standing position (Mortimer pers. comm.). Another suggestion is that loomweights were in fact stored beneath the floorboards making use of the damp and constant environments provided by the sub-floor space (Tipper 2004; 169). Other fragments of fired and unfired clay were recovered from these SFBs, in a variety of fabrics, which may suggest the loomweights were made *in-situ*. The SFBs also yielded other evidence for weaving taking place.

4.4.7 A double ended pin beater (SF 126) was recovered from Sample 7 taken from the south-east quadrant of SFB **147**. This is the only form of pin-beater known from the early Anglo-Saxon period and it is thought to have been used with the warp-weighted loom both to pick out individual strands and to beat down weft threads (Riddler 1996, 136; Walton Rogers 1997, 1755). From SFB **168**, the north-east quadrant (201) produced two bone combs fragments, one of which is an unfinished double sided composite comb of late 5th to Early 6th century date (SF 65) as well as a fragment of comb and teeth showing ware indicative of heavy use (SF 129) and a spindle-whorl (SF 61) formed from a piece of re-worked Roman pottery. A further comb fragment (SF 35) was recovered from the south-west quadrant (183) as well as a bone needle or pin (SF 10). Pig fibula needles are often regarded as sewing implements for the repair of textiles, but they should be seen as objects used in the weaving process, as well as having other functions, as noted by Ulbricht (1984, 54). In effect, they were implements used on the warp-weighted loom, alongside pin-beaters. A modified rib bone (SF 99) was recovered from the south-east quadrant (221), intended as raw material for bone working, in the production of bone casket mounts in particular.

4.4.8 Although the finds recovered from the basal fill of SFB **168** in particular is suggestive of this SFB being heavily used for weaving and textile production, it may also suggest that bone and clay products were being produced with the presence of abundant raw materials recovered from the basal fill. The environmental samples taken from the basal fills of the two SFBs on site yielded no preserved remains, as is often the case.

4.4.9 Only a single fill was recorded in SFB **147**, however SFB **168** had a further two fills, both thought to represent the disuse of the feature. These fills yielded substantial amounts of pottery and bone (See Appendices). Environmental samples from these fills also indicated the presence of midden material that would have been mixed in origin and subject to decomposition prior to being deposited in the void of the dismantled

SFB. The range of cereals recovered from this feature are typical of the Saxon period in that barley and rye predominate. Flax/linseed was also popular at this time for both the oil-producing seeds and the use of the fibrous stems to produce linen (Appendix C.1). This evidence supports the view that the (post-basal) fills of SFBs entirely post-date the use of the building (Tipper 2004).

4.4.10 The disuse fills of SFB **168** also contained 34 pieces (855g) of daub, thought to represent the destruction of the structure itself or maybe also other nearby SFBs. Notably, render material was also recovered from pit **190** located 13m to the north and pit **247** which was only some 20m south-west of SFB **147**.

4.4.11 Animal bone was recovered from throughout both SFBs, representing 30% of the bone recovered from the Early Saxon phase. Animal bone was relatively common within the basal fills of both SFBs and may have been present as a potential raw material for the production of weaving tools. Further animal bone was recovered from the disuse fills of SFB **168** which followed the general trend of using adult sheep for their secondary products and young cattle for their meat (Appendix C.2), however there was also a presence of young sheep/goat and pig. Large published bone assemblages from rural sites of these periods are rare for the Early Anglo-Saxon period (Brown and Glazebrook 2000: 25).

4.4.12 Although the pottery assemblage recovered from these features largely dates to the 6th century, the presence of some late 5th century sherds suggest that Early Saxon occupation of the site started as early as the late 5th century and appears to have ceased by the 7th century. It is not entirely clear whether this site was abandoned between the end of the Roman settlement and the introduction of the Early Saxon settlement. Enclosure **131** had already started to silt up at the end of the Roman period, with the uppermost fills yielding Saxon pottery, signifying they would still have been visible on the landscape.

Pits

4.4.13 A total of thirty-one pits were identified and attributed to the Early Saxon phase of the site. These pits varied considerably in size and shape and of specific interest are those identified closest to the SFBs.

4.4.14 The excavation of SFBs and pits at Bloodmoor Hill identified a pattern between the two features, with pits often located within a metre of the SFB and towards the northern side, with very few towards the southern side supporting the argument of doors being located to the south (Lucy *et al* 2009; 124). In the case of Middleton, pits thought to be associated with the SFBs were noted on the eastern and western sides. Those pits thought to directly associate with the SFBs (**133**, **170** and **181**) yielded small quantities of Early Saxon pottery alongside a larger assemblage of animal bone. In the case of pit **133** and **181** only a single fill was noted with no evidence for slumping suggestive of the pits being in-filled over a relatively short period of time. The third pit (**170**) contained two fills and showed signs of erosion more suggestive of a longer life span and perhaps therefore a different use. The assemblages of bone recovered from these pits may relate directly to the activities taking place within the SFBs, with weaving having a wide use of worked bone objects and therefore producing animal bone waste.

4.4.15 The lack of uniformity among pits may suggest that the pits were not themselves important but perhaps the extraction of material was. The natural geology at Middleton consisted of sand which has a number of uses including that of flux, used for metalworking (Hey 2004; 129), added to clay as temper in pottery, or used in building maintenance (Lucy *et al* 2009; 128).

Industry

4.4.16 Metalworking during the Early Saxon period on site can not be ruled out, three fragments of slag were recovered from the basal fills of the north-east (201) and south-west quadrant (183) of SFB **168**. Notably MWD was also recovered from the disuse fills at the site as well as the uppermost fills of the large Roman enclosure ditches. A small quantity of metal finds were also recovered from the basal fill of SFB **168**, comprising two thin strips of copper alloy (SF 117, 135), and an iron pin (SF 11). A piece of copper alloy wire (SF 134) and an iron key was also recovered from the south-west quadrant of SFB **147**. It has been suggested that in addition to the well known weaving activities which took place within Early Saxon SFBs, metal working was also an activity that took place. The link to pits dug into the natural sand for use for metal working further aids in supporting this idea however the majority of the slag recovered from site is thought to be more of a Roman date.

4.5 Significance

4.5.1 The small excavation at Middleton aided in establishing a definite Roman date to cropmarks previously mapped by the NMP and identifying possible phasing within this, with a smaller sub square enclosure dating to the first half of the Roman period which was then replaced by a much larger more complex rectilinear enclosure. Previously unknown Early Saxon settlement has also been identified at the site comprising SFBs and pits, with evidence for typical weaving technologies including fired clay loomweights and worked bone tools. Cropmark data which has also been used to identify the earlier Roman enclosures may show further SFBs in the area which all seem to sit within the Roman enclosure.

4.5.2 This part of Norfolk has undergone a number of archaeological excavations which is building a picture of how this landscape was used from prehistory to the modern day. Substantial Iron Age and Roman sites have been identified within the immediate vicinity, utilising natural resources for metal working and pottery production and utilising the areas of high ground.

4.5.3 Evidence for both Late Roman and Early Saxon settlement at the same site leads to questions about continuation between the two periods. The presence of Early Saxon pottery within the uppermost fills of the Roman enclosure ditches suggest that there was some level of abandonment of the site prior to the Early Saxon arrival. However the presence of diagnostically Roman slag, a carbon date of 426 AD from a fragment of charcoal and Early Saxon pottery recovered from the same ditch fill creates a lot of questions about continuation and re-use between these two phases. Whether there was a direct continuation of people can not be said for sure but the Early Saxon inhabitants of this settlement re-used Roman objects and used the Roman enclosures to their advantage with both the SFBs being located within the confines of the ditch.

5 PUBLICATION

5.1 Publication

5.1.1 It is proposed that the results of the project should be published in *Norfolk Archaeology Journal.* The article would be authored by Kathryn Blackbourn and Richard Mortimer and would primarily focus on the Roman and Saxon phases of activity at the site. The publication would range from 8 to 12 pages and include figures and plates.

Appendix A. Trench Descriptions and Context Inventory

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
100	-		layer	topsoil	-	-	0.3	-	
101	-		layer	subsoil	-	-	0.3	-	
102	-		layer	natural	-	-	-	-	
103	**103**		cut	ditch	boundary	1.7	1.04	2	
104	**103**		fill	ditch	disuse	0.32	0.14	2	
105	**103**		fill	ditch	clay dump	0.48	0.2	2	
106	**103**		fill	ditch	disuse	0.56	0.1	2	
107	**103**		fill	ditch	disuse	1.24	0.22	2	
108	**103**		fill	ditch	disuse	1.1	0.2	2	
109	**103**		fill	ditch	disuse	1.7	0.3	2	
110	**110**		cut	ditch	boundary	0.9	0.2	2	
111	**110**		fill	ditch	disuse	0.9	0.2	2	
112	**112**		cut	furrow	agriculture	1	0.24	4	
113	**112**		fill	furrow	disuse	1	0.24	4	
114	**114**		cut	pit	unknown	1.2	0.45	1	
115	**114**		fill	pit	slumping	0.2	0.07	1	
116	**114**		fill	pit	disuse	0.9	0.38	1	
117	**117**		cut	pit	unknown	1.23	0.18	2	
118	**117**		fill	pit	disuse	1.23	0.18	2	
119	**119**		cut	furrow	agriculture	0.7	0.14	4	
120	**119**		fill	furrow	disuse	0.7	0.14	4	
121	**121**		cut	post hole	structural	0.3	0.14	2	
122	**121**		fill	post hole	disuse	0.3	0.14	2	
127	**127**		cut	pit	unknown	2	0.4	3	
128	**127**		fill	pit	disuse	2	0.4	3	
129	**129**		cut	pit	unknown	2.25	0.74	3	
130	**129**		fill	pit	disuse	2.25	0.74	3	
131	**131**	**204**	cut	ditch	boundary	2.5	0.65	2	131
132	**131**		fill	ditch	disuse	2.5	0.65	2	131
133	**133**		cut	pit	storage?	1.58	0.36	3	
134	**133**		fill	pit	disuse	1.58	0.36	3	
135	**135**	**198**	cut	ditch	enclosure	2	0.66	2	135
136	**135**		fill	ditch	disuse primary	1.24	0.16	2	135
137	**135**		fill	ditch	disuse	2	0.42	3	135
138	**138**		cut	tree throw	natural	0.58	0.16	-	

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
139	**138**		fill	tree throw	natural silting	0.58	0.16	-	
140	**140**		cut	pit	unknown	0.67	0.24	3	140
141	**140**		fill	pit	disuse	0.67	0.24	3	140
142	**142**		cut	pit	unknown	0.49	0.24	3	140
143	**142**		fill	pit	disuse	0.49	0.24	3	140
144	**144**	**208**	cut	ditch	enclosure	2.48	1.22	2	131
145	**144**		fill	ditch	natural silting	2.48	0.84	2	131
146	**144**		fill	ditch	disuse	2.48	0.4	3	131
147	**147**		cut	sunken featured building	structural	2.8	0.24	3	
148	**147**	174, 188, 189	fill	sunken featured building	disuse	2.8	0.24	3	
149	**149**		cut	pit	unknown	2.8	0.58	3	
150	**149**		fill	pit	disuse	2.8	0.58	3	
152	**152**		cut	ditch	enclosure	0.8	0.14	3	
153	**152**		fill	ditch	disuse	0.8	0.14	3	
154	**154**		cut	pit	unknown	1.4	0.2	3	140
155	**154**		fill	pit	disuse	1.4	0.2	3	140
156	**156**	**242**	cut	ditch	enclosure	3.4	1.1	2	131
157	**156**		fill	ditch	disuse	3.4	0.5	2	131
158	**156**		fill	ditch	waste disposal?	2.7	0.6	3	131
159	**159**		cut	pit	unknown	0.82	0.2	3	
160	**159**		fill	pit	disuse	0.78	0.1	3	
161	**159**		fill	pit	disuse	0.82	0.2	3	
162	**162**		cut	pit	unknown	1.06	0.28	3	
163	**162**		fill	pit	upper fill	1.06	0.16	3	
164	**162**		fill	pit	disuse lower fill	0.84	0.24	3	
165	**165**		cut	pit	unknown	1.7	0.18	3	
166	**165**		fill	pit	natural silting	1.7	0.18	3	
167	**149**		fill	pit	puddled clay	1.3	0.3	3	
168	**168**		cut	sunken featured building	structural	3.4	0.7	3	
169	**168**	203, 223 252	fill	sunken feature building	disuse	1.8	0.48	3	

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
170	**170**		cut	pit	unknown	172	0.5	3	
171	**170**		fill	pit	primary silting	1.5	0.18	3	
172	**170**		fill	pit	midden layer?	1.5	0.32	3	
173	**-**	192,218, 292	layer	spread	occupation	3.3	0.17	2	
174	**147**	148, 188, 189	fill	sunken featured building	disuse	2.8	0.24	3	
175	**175**		cut	ditch	enclosure	1.8	0.48	2	135
176	**175**		fill	ditch	basal fill	1.8	0.39	2	135
177	**175**		fill	ditch	upper fill disuse	1.8	0.2	2	135
178	**178**		cut	ditch	enclosure	1.3	0.3	2	
179	**178**		fill	ditch	lower fill disuse	1.3	0.06	2	
180	**178**		fill	ditch	upper fill disuse	1.3	0.24	2	
181	**181**		cut	pit	unknown	1.4	0.35	3	
182	**181**		fill	pit	disuse	1.4	0.35	3	
183	**168**	201,221, 250	fill	sunken feature building	lower fill	1.14	0.1	3	
184	**184**		cut	pit	unknown	1.3	0.33	2	
185	**184**		fill	pit	disuse	1.3	0.33	2	
186	**186**		cut	post hole	structural	0.22	0.3	3	
187	**186**		fill	post hole	disuse	0.22	0.3	3	
188	**147**	148,174, 189	fill	sunken featured building	disuse	2.8	0.24	3	
189	**147**		fill	sunken featured building	disuse	2.8	0.24	3	
190	**190**		cut	pit	domestic use/middening pit	1.8	0.37	3	
191	**190**		fill	pit	use	1.8	0.37	3	
192	**0**	173,218, 292	layer	spread	occupation	3.3	0.4	2	
193	**0**		masonry	wall - demolition	structure	0.95	0.15	2	193
194	**194**		cut	post hole	structural	0.32	0.3	3	

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
195	**194**		fill	post hole	disuse	0.32	0.3	3	
196			layer	bonding	structural	0.95	0.05	2	193
197	**168**	202,222, 251	fill	sunken featured building	disuse	0.55	0.29	3	
198	**198**	135	cut	ditch	enclosure	2.8	0.74	2	135
199	**198**		fill	ditch	lower fill	2.7	0.1	2	135
200	**198**		fill	ditch	disuse upper fill	2.8	0.5	2	
201	**168**	183, 221, 250	fill	sunken feature buildibng	disuse basal fill	0.74	0.1	3	
202	**168**	197. 222. 251	fill	sunken feature building	rubbish disposal	1.14	0.38	3	
203	**168**	169, 223, 252	fill	sunken feature building	rubbish disposal	1.6	0.53	3	
204	**204**	**131**	cut	ditch	boundary	2.4	0.71	2	131
205	**204**		fill	ditch	disuse basal fill	0.9	0.18	2	131
206	**204**		fill	ditch	disuse second fill	2.4	0.06	2	131
207	**204**		fill	ditch	disuse upper fill	1.7	0.48	2	131
208	**208**	**144**	cut	ditch	enclosure	2.86	0.98	2	131
209	**208**		fill	ditch	disuse	2.86	0.98	2	131
210	**210**		cut	pit	unknown	0.6	0.4	3	
211	**210**		fill	pit	disuse	0.5	0.44	3	
212	**212**		cut	ditch	enclosure	3.5	1.15	2	135
213	**212**		fill	ditch	disuse final fill	3.5	0.36	3	135
214	**212**		fill	ditch	disuse secondary fill	3.1	0.5	2	135
215	**212**		fill	ditch	disuse, lower fill	1.24	0.3	2	135
216	**216**		cut	ditch	boundary	1.5	0.45	3	
217	**216**		fill	ditch	disuse	1.5	0.45	3	
218	**-**	173,192, 292	layer	spread	occupation	3.3	0.4	2	
219	**219**		cut	pit	unknown	1.32	0.34	3	140
220	**219**		fill	pit	disuse	1.32	0.34	3	140

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
221	**168**	182,201, 250	fill	sunken feature building	disuse	0.74	0.1	3	
222	**168**	197,202, 251	fill	sunken feature building	rubbish disposal	1.14	0.38	3	
223	**168**	169,203, 252,	fill	sunken featured building	rubbish disposal	1.6	0.53	3	
224	**224**		cut	pit	unknown	0.5	0.24	3	140
225	**224**		fill	pit	disuse	0.5	0.24	3	140
226	**226**		cut	ditch	boundary	1.14	0.18	2	
227	**226**		fill	ditch	disuse	1.14	0.18	2	
228	**228**		cut	pit	unknown	0.47	0.28	3	140
229	**228**		fill	pit	disuse	0.47	0.28	3	140
230	**230**		cut	pit	unknown	0.9	0.37	2	
231	**230**		fill	pit	disuse	0.9	0.37	2	
232	**232**		cut	pit	unknown	0.4	0.21	3	140
233	**232**		fill	pit	disuse	0.4	0.21	3	140
234	**234**		cut	pit	unknown	0.45	0.25	3	140
235	**234**		fill	pit	disuse	0.45	0.25	3	140
236	**236**		cut	pit	unknown	0.48	0.33	3	140
237	**236**		fill	pit	disuse	0.48	0.33	3	140
238	**238**		cut	pit	unknown	0.44	0.22	3	140
239	**238**		fill	pit	disuse	0.44	0.22	3	140
240	**240**		cut	ditch	enclosure	1.4	0.51	2	
241	**240**		fill	ditch	disuse	1.4	0.51	2	
242	**242**	**156**	cut	ditch	enclosure	3.6	1.45	2	131
243	**242**		fill	ditch	disuse upper fill	3.6	0.5	3	131
245	**242**		fill	ditch	disuse	3.2	0.5	2	131
246	**242**		fill	ditch	disuse, silting	2	0.45	2	131
247	**247**		cut	pit	unknown	2.5	0.51	3	
248	**247**		fill	pit	disuse lower fill	2.5	0.09	3	
249	**247**		fill	pit	disuse upper fill	2.5	0.44	3	
250	**168**	182,201, 221	fill	sunken featured building	disuse	0.74	0.1	3	

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
251	**168**	197,222, 202	fill	sunken feature building	rubbish disposal	1.14	0.38	3	
252	**168**	169,203, 223	fill	sunken feature building	rubbish disposal	1.6	0.53	3	
253	**254**		fill	pit	disuse primary fill	1.46	0.22	3	140
254	**254**		cut	pit	unknown	1.46	0.22	3	140
255	**256**		fill	pit	disuse	0.8	0.22	3	140
256	**256**		cut	pit	unknown	0.8	0.22	3	140
257	**257**		cut	post hole	structural	0.34	0.14	3	
258	**257**		fill	post hole	disuse	0.34	0.15	3	
259	**259**		cut	pit	unknown	0.96	0.15	3	
260	**259**		fill	pit	disuse	0.96	0.15	3	
261	**261**		cut	pit	unknown	0.8	0.49	2	
262	**261**		fill	pit	disuse	0.17	0.15	2	
263	**261**		fill	pit	disuse	0.38	0.13	2	
264	**261**		fill	pit	disuse	0.37	0.33	2	
265	**265**		cut	pit	unknown	0.83	0.14	3	
266	**265**		fill	pit	disuse	0.83	0.14	3	
267	**268**		fill	pit	disuse	0.9	0.24	3	140
268	**268**		cut	pit	unknown	0.9	0.24	3	140
269	**270**		fill	pit	disuse	0.77	0.19	3	140
270	**270**		cut	pit	unknown	0.77	0.19	3	140
271	**271**		cut	post hole	structural	0.3	0.2	3	
272	**271**		fill	post hole	disuse	0.3	0.2	3	
273	**273**		cut	post hole	structural	0.22	0.2	2	
274	**273**		fill	post hole	disuse	0.22	0.2	2	
275	**275**		cut	pit	unknown	0.7	0.18	2	
276	**275**		fill	pit	disuse	0.7	0.18	2	
277	**277**		cut	pit	unknown	1.15	0.54	2	
278	**277**		fill	pit	disuse primary fill	0.51	0.2	2	
279	**277**		fill	pit	disuse	0.8	0.43	2	
280	**277**		fill	pit	disuse	0.39	0.2	2	
281	**283**		fill	ditch	disuse secondary fill	1.9	0.3	4	
282	**283**		fill	ditch	disuse primary fill	1.26	0.24	4	

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase	Group
283	**283**		cut	ditch	boundary/enclosure	1.9	0.54	4	
288	**288**		cut	ditch	boundary	0.9	0.24	3	
289	**288**		fill	ditch	disuse	0.9	0.24	3	
290	**290**		cut	pit	unknown	1.8	0.56	2	
291	**290**		fill	pit	disuse	1.8	0.56	2	
292	**-**	173,192, 218	layer	spread	occupation	3.3	0.4	2	
293	**294**		fill	pit	disuse	0.76	0.32	3	140
294	**294**		cut	pit	unknown	0.76	0.32	3	140
295	**296**		fill	pit	disuse	0.5	0.22	3	140
296	**296**		cut	pit	unknown	0.5	0.22	3	140
297	**-**		layer	spread	occupation	-	0.14	2	

Appendix B. Finds Reports

B.1 Metal Work

By Denis Sami

Introduction and methodology

B.1.1 Four very small fragments of copper alloy (CuA) artefacts dating to the Early Anglo-Saxon period were collected from archaeological features. Three of the fragments were recovered from the fills of SFB **168**, SF 117 (fill 221), SF 135 (fill 201, sample 15) and SF 136 (fill 203, sample 13). The final fragment, SF134 was recovered from fill 188 (sample 9) of SFB **147**. The artefacts, despite their very small size can be identified as part of portable dress accessories, but a more precise identification is difficult.

B.1.2 Five iron artefacts were also collected from archaeological features. SF 8, 11, 15, come from SFB fills, while SF 118, 128 were documented in layers.

B.1.3 The CuA artefacts present signs of oxidation that in SF 136 is particularly bad. Iron artefacts are heavily encrusted and in general in poor condition.

B.1.4 Finds have been catalogued by SF number and measured (L = length; W = width; T = thickness).

Statement of potential

B.1.5 The artefacts are in poor condition and of limited importance. However, in the given context considering the scarcity of finds, these objects represent an insight into the everyday life of the people settling at this site. The CuA fragment of S-shaped chain is the most notable artefact in the assemblage. A very close comparison is documented at the cemetery of Buckland, Dover (Evison 1987, Grave 157, p: 250, 332 no: 6c). SF 117, 134 and 135 can be only broadly interpreted as part of dress accessories or box garnishments.

B.1.6 Nails such as SF 128 belong to Manning 1989 type 1a that is a very common shape used in Roman, but also in post Roman periods in building constructions. SF 11, 15 and 118 are connected to the activity performed in the space of the SFBs, while SF 8 remains unidentified. All the iron artefacts present mineralised wood in the incrustation, possibly suggesting a close contact with wooden floor of planks at the time of their disposal.

Retention, dispersal and display

B.1.7 The artefacts need to be retained and stored. For publication SFs 15, 118 136 need to be drawn and photographed.

Catalogue

Copper Alloy artefacts

B.1.8 SF 117, (221), SFB **168** incomplete. A regular, long, narrow and very thin strip of metal possibly a box or dress garnish. L: 49 mm; W: 5.5 mm; T: 0.5 mm.

B.1.9 SF 134, (188), <9>, SFB **147**, incomplete. A very short thin wire with circular section (diam: 1 mm). L: 10 mm.

B.1.10 SF 135, (201), <15>, SFB **168** incomplete. An unidentified artefact consisting in a fragment of a very thin possible strip of metal. L: 8 mm; T: 0.4 mm.

B.1.11 SF 136, (203), <13>, SFB **168**, incomplete. Part of a small S-shaped chain made of a thin wire with circular section (diam.: 1.7 mm). Total L: 14 mm; W: 3.2 mm.

Iron artefacts

B.1.12 SF 8 (169), SFB **168**, incomplete, fragmented. A heavily encrusted unidentified artefact showing traces of mineralized wood. It has a bended stem possibly with circular section ending in a sharp angle were the stem is flattered. L: 47.7 mm; Stem sec. W: 4.7 mm.

B.1.13 SF 11, (183), SFB **168**, incomplete. Possibly a pin with long tapered stem and circular section. L: 84.8 mm; W: 10 mm.

B.1.14 SF15, (188), SFB **147**, incomplete. Part of a long key with straight stem and quadrangular section. The end where the suspension hook was, is truncated. At the opposite end, before truncation, the stem forms a quite regular 90°angle. L: 156 mm; stem section W: 8 X 10 mm.

B.1.15 SF 118, (192), incomplete. Tapered knife tang with rectangular section (L: 24 mm) stepping into the back and gradually splaying into blade. L: 47 mm; W: 14.8 mm.

B.1.16 SF 128, (157), ditch **156**, incomplete. Hand forged nails with tapered stem and square section. One nail has a slightly doomed circular head. Nail 1, L: 52.6 mm; Stem T: 4.5; Head W: 16. 8 mm. Nail 2, L: 53 mm; stem W: 6 mm. They may be Roman, as well as early Anglo-Saxon (Manning 1989: type 1a).

B.2 Metal Working Debris

By Simon Timberlake

Introduction

B.2.1 A total of 8.33 kg (182 pieces) of metal working debris (MWD) from iron production was examined from this excavation. Most of this would appear to relate to *iron smelting*. The assemblage consisted of broken-up slag cake, with no substantial examples of adhering hearth or slag pit (fired or else vitrified) clay lining. Some examples of small smithing hearth base(s) were also identified (up to 469g), although none of these could easily be differentiated from the thin edges of slag cake. In addition were some 399g (5 pieces) of fairly high-grade iron ore.

Methodology

B.2.2 The slag was looked at using an illuminated x10 magnifying lens. A dropper bottle containing dilute hydrochloric acid was used to confirm the presence or absence of carbonate. A magnet was used to approximately determine the presence of free iron or wustite according to a simple magnetic scale (0-4).

Catalogue and description of slag

B.2.3 Altogether 167 pieces of broken-up plano-convex *slag cake*, some with the impression of slag runnel upon the top or underside of the cake were identified. The survival of some of the rims of molten slag suggests that these could have been examples of tap slag run into shallow slag pits (130-150mm diameter and 30-40mm deep). At least one example suggested a re-lining of this pit *above* the level of the already solidified previous slag cake. Up to six possible fragments of smithing hearth base (SHB) were also identified, but these could not with any certainty be distinguished from the cindery, oxidised rims of the slag cakes. However, in just one or two cases the fracture point of the slag with the tuyere end was recognisable. The iron ore was high-grade hematite/

goethite, which was certainly non-local. The latter should not be confused with an example of local iron pan (context 150 (a)).

B.2.4 **Slag cake description**: Dense sub-crystalline vesicular slag cake with viscous runnel on top and underside. The upper layer(s) of the slag cake had flat to slightly convex smooth to wrinkly surface(s), some of them with large gas vesicles just beneath (3mm – 35mm diameter) with smaller vesicles at the base of this layer at c.20mm depth, close to the contact with a lower columnar crystalline layer (fayalitic) with a prismatic structure at 90º to the convex base. The crystalline layer was more pronounced just above the uneven vesicular surface of the base – moulded by the clay lining. The weak magnetism of the slag cake suggests a very low wustite/ free iron content, but instead the significant presence of iron silicates (fayalite) which impart it with a massive-crystalline texture and a sub-metallic lustre.

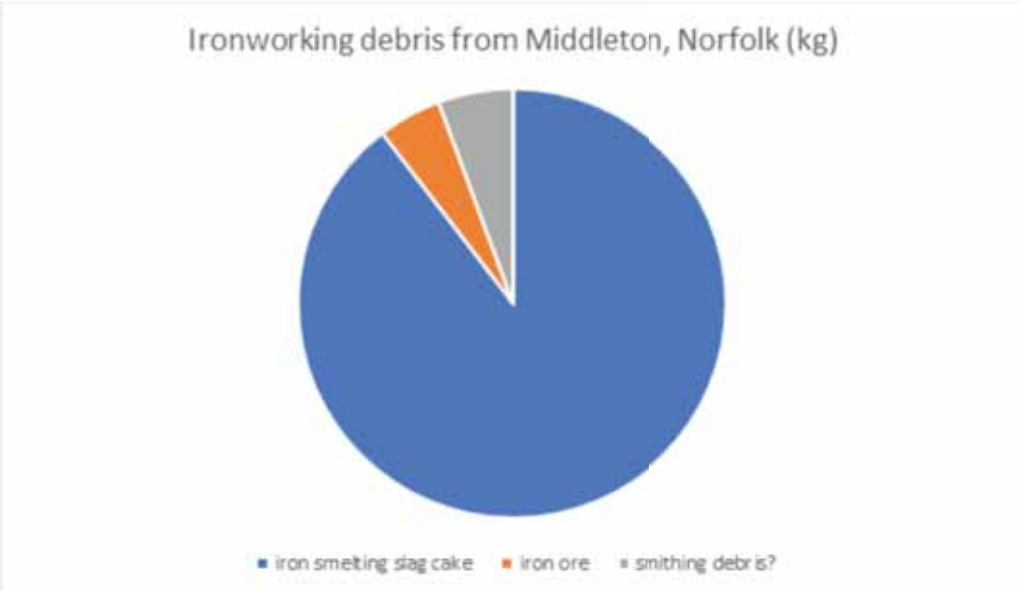
Context	SF	Weight (g)	Fragment Count	Dimension (mm)	MWD type	Magnet scale (0-4)	Internal furnace diameter (mm)	NOTES
Phase 2								
173		95	1	70	SC/ SR	0		30-40mm deep
193		254	2	40 - 90	SC	0	130	depth 30+ mm
227		49	2	35-50	SC	0		
231a		22	1	30	SC			
231b		78	1	60x50x20	SHB?	0	105	edge of
241a		786	1	130x80x18-40	SM / SC	0	130-150	30-40mm thick
241b		207	1	70x55x40	SM/ SC	0	130-150	30-40 mm thick
241c		263	3		ORE	0 – 1-2		goethite/ hematite
243a		2058	73	10 - 70	SM/ SC	0 - 2	110- 130	broken-up slag cake 30-35 mm deep
243b		33	1	32x30x22	SHB?	2	80-90	small frag from edge of SHB?
243c		136	2	30 - 65	ORE	0		goethite/ hematite
243d		2133	24	20 - 110	SM/ SC/ SR/ HL	0	150+	from x2 diff slag cakes: x1 of 55mm deep with re-lining clay on top + tap runnel (10-20mm) on underside
245a		70	4	20 - 45	SC	0		
245b		66	2	40 - 50	SHB/ SC?	0		
246		314	4	15 - 75	SC	0	100+	40 mm deep
Total		***6564***	***122***					
Phase 3								
130		38	2	30-45	SC	0-1		
150		19	1	30	SC	0		
158		251	3	40-50	SC	0-1		30mm deep
169		291	19	10-70	SC	0-3		mostly small frags

Context	SF	Weight (g)	Fragment Count	Dimension (mm)	MWD type	Magnet scale (0-4)	Internal furnace diameter (mm)	NOTES
								– incl runnel
183		490	18	20-50	SC/ SR	0-2	>150	depth 30-40 with slag runnel (10-15mm) lying on top of cake
183	28	16	1	30	SC	0		edge of slag cake
183	24	27	1	30	SC	0		edge of slag cake
189		26	1	35	SHB?/ HL	1-2		with fired clay lining
197		10	1	32	SR	0		loose piece of runnel (10-12 mm diam)
201	55	11	2	15-30	SC	0		edge of slag cake
202		266	1	80x60x25	SHB?	0	140	tuyere scar attachment
223		138	4	30-40	SC/ SR/ HL	0-1		depth 30+mm, some with flint inclusions
249		32	1	30	SC	0		
251		137	4	18-50	SC	0		
252		14	1	23	SC	0		
Total		***1766***	***60***					
Totals		**8330**	**182**					

Table 1: A catalogue of the iron slag.

The scale of magnetisation indicates the presence/absence of iron or wustite within the slag (0-4).

Key: HL = hearth/pit lining; SC = slag cake; SF = Small Find, SR = slag runnel; SSL = slag smithing lump; SHB = smithing hearth base; SM = smelting slag; ORE = iron ore(?)



Graph 1: Pie Chart showing proportion of iron working debris types

Discussion

B.2.5 The recovery of these broken-up shallow (30-50mm thick) plano-convex slag cakes with traces of viscous slag runnel upon their (vesicular) upper surfaces suggests the use of a technique of near-furnace slag-tapping into a series of shallow slag pits located in front of the tap hole of a moderately small hand-blown shaft furnace. Perhaps the best parallel(s) to this which can be suggested are the 2nd century AD Romano-British iron smelting furnace(s) excavated at Ashwicken (NHER 3382) and Scole (NHER 1008) in Norfolk (Tylecote 1967). The example from Scole was better in that the shaft of the furnace was well preserved (0.4m high) and it retained the stoke hole and raking trough through which the slag was tapped into two small depressions designed for the slag to seep into and solidify into slag cakes.

B.2.6 There was a clear difference between this and the earlier native Iron Age iron smelting shaft furnaces in which the slag pit was located underneath, down into which the slag seeped, without ever being tapped. Such furnaces have been described by Halkon from the Lincolnshire Wolds (Halkon & Millet 1999), by Dungworth from Trevelgue Head, Cornwall (Dungworth *forthcoming*), and have also been encountered at Bradley Fen, Cambridgeshire (Knight & Brudenell *forthcoming*), and most recently by OA East during work undertaken at Alconbury Airfield (STUALP16).

B.2.7 The importance of this material will largely depend upon the integrity and survival of the furnace features, in particular the slag pits themselves and possibly the furnace bases. If none of have survived (or been encountered during excavation) then the importance of this highly fragmented debris is proportionately less. Nevertheless, this is still an important record for iron smelting in Norfolk, and apparently also for the use of a moderately-rich iron ore, which doesn't at first sight appear to be local.

B.2.8 If this is evidence for Romano-British iron smelting in Norfolk, then it could be a significant new record to accompany those sites which are already known about (such as Ashwicken, Scole, Ingoldsthorpe, Middleton, Weybourne and Runton.

Recommended disposal

B.2.9 No further work is required on this material, and apart from retaining a small sample (e.g. (241) a+b), it may all be disposed of.

B.3 Flint

By Lawrence Billington

Introduction and quantification

B.3.1 A total of 16 worked flints were recovered from the excavations, together with 676g (23 fragments) of unworked burnt flint. The worked flint derives exclusively from the fills of cut features belonging to Phases 2 and 3 (Roman and Early Saxon), where it was found in low densities (the 16 worked pieces deriving from eight individual contexts). The unworked burnt flint was recovered from a single context, a ditch fill phased to the Early Saxon period and, unlike the worked flint, this material is probably broadly contemporary with the feature from which it derived rather than representing residual material.

B.3.2 The assemblage has been fully recorded, with individual worked pieces being classified according to a standard typo/technological scheme with additional recording of selected non-metric attributes (details of which are retained in the archive). The flint assemblage is quantified by type and context in Table 2.

Context	Cut	Type	Phase	Chip	Irregular waste	Flake	Narrow flake	Blade	Total worked flint	Unworked burnt flint
107	**103**	Ditch	2			1			1	
132	**131**	Ditch	2			2			2	
137	**135**	Ditch	2			1			1	
157	**156**	Ditch	2		1	1	1		3	
177	**175**	Ditch	2			1		1	2	
180	**178**	Ditch	2			1			1	
199	**198**	Ditch	2	1			1		2	
217	**216**	Ditch	3							23 (676g)
249	**247**	Pit	3	3		1			4	
Totals				**4**	**1**	**8**	**2**	**1**	**16**	**23 (676g)**

Table 2: Quantification of the flint assemblage

Raw Materials and condition

B.3.3 The struck flint is somewhat varied in condition, but damage, varying from minor rounding of edges to severe edge damage, is very common. This kind of damage is entirely consistent with the recovery of the flints as residual finds from later cut features, which were probably originally deposited as part of surface scatters which have been disturbed by subsequent activity. A small proportion of the flints displays cortication ('patination'), varying form a light blue sheen to a heavy opaque off-white.

B.3.4 The worked flint is made up of a good quality fine-grained, translucent flint. Surviving cortical surfaces suggest that most of the flint is derived from relatively small rounded or sub-rounded gravel pebbles/cobbles typical of material available from fluvial gravels, which may have been available relatively locally. One exception to this general pattern is a large flake from 180 (fill of ditch **178**) made of very dark flint with a thick and relatively unweathered cortex, which may derive from a source closely associated with the parent chalk (discussed below).

Characterisation

B.3.5 The worked flint consists entirely of unretouched removals, with a complete absence of retouched pieces or cores. There is one fine and relatively robust blade fragment from 177 (fill of ditch **175**) which is likely to date to the Mesolithic or Early Neolithic and a large and heavily recorticated narrow flake from 157 (fill of ditch **156**) is likely to be of similarly early date.

B.3.6 The remainder of the assemblage consists of flake based material. This includes the large flake from 180, referred to above, which has a finely faceted striking platform of the kind associated with the use of levallois-like core technologies during the later Neolithic (Ballin 2011a and b). As noted above this piece is made on flint perhaps derived from deposits closely associated with the parent chalk, the nearest outcrops of which are some 10km to the east of the site. Also probably of Neolithic date is a flake from 157 (fill of ditch **156**) which, with fine multidirectional scars on its dorsal surface

and a slightly curved longitudinal section, is probably a product of a later Neolithic levallois-like/centripetal core, or is a thinning flake removed during the production of a large bifacially flaked tool such as an axehead.

B.3.7 Aside from these two distinctive pieces the remainder of the flake based material are relatively undiagnostic and consist of expediently produced flakes removed from simple cores with unprepared striking platforms. Much of this material is likely to date to the Late Neolithic or Early Bronze Age, although it is possible that some later (Middle/Late Bronze Age, or even Iron Age) flint work is represented.

B.3.8 The entire assemblage of unworked burnt flint was derived from 217 (fill of ditch **216**). The assemblage consists of 23 thermally fractured and heat crazed fragments which, based on the more complete pieces, derive from medium sized rounded gravel cobbles perhaps up to 100mm in diameter, which probably represent pieces deliberately selected for heating as 'pot boilers' or for some other domestic use. Although deliberately burnt flint is often associated with prehistoric activity, there is good evidence for the use of heated flint as part of domestic/settlement type activity at Early Saxon sites elsewhere in Norfolk (e.g. Garrow et al 2006, 184-186; Andrews 1995, 22), and it seems likely that this material is broadly contemporary with the feature from which it derives.

Discussion

B.3.9 The small worked flint assemblage from the site is of limited interpretative potential, but does provide some evidence for activity from at least the Early Neolithic, probably through into the Early Bronze Age. As such it is, in broad terms, analogous to the somewhat larger multi-period flint assemblages from nearby sites such as East Winch (Bishop 2010) and Blackborough End (Billington 2017) which appear to reflect fairly widespread (but at present poorly characterised) activity from the Mesolithic to the Early Bronze Age on the Cretaceous sands of West Norfolk.

B.4 Stone

By Carole Fletcher and Simon Timberlake

Introduction and methodology

B.4.1 A small assemblage of stone artefacts and unworked stone was recovered from the area of excavation. The functional category used is defined by Crummy in 1983 and 1988: category 4 household items and furniture. The artefacts are fragments of lava quern, some burnt and weathered (non-diagnostic) fragments from (presumably) one or more rotary lava querns/hand mills, probably of Roman date; the unworked stones are burnt sandstones.

B.4.2 All the stone has been weighed and counted and is recorded in Table 3. The lava is fragmented and somewhat friable and the burnt stone is fractured. The stone and archive are curated by OA East until formal deposition or de-selection.

Assemblage

B.4.3 Category 4: Household utensils: Abraded undiagnostic fragments of lava (quern) were recovered from three contexts that formed part of the fill of Sunken Featured Building (SFB) **168**, Phase 3, which also produced Early Saxon pottery (Appendix B.6), The fragments from contexts 169 and 223 likely represent two or more rotary querns.

Further fragments were recovered from context 202 and described by Timberlake as broken up finely-crystalline vesicular basalt lava quern and thought to be of Roman date. Lava querns from the Mayen-Niedermendig area of the Eifel Hills region of Germany were imported into Britain (as blanks) from the Late Iron Age onwards. In the later medieval period, the use of querns was restricted, as the tolls charged for the use of the manorial mill were an important source of income (Watts 2002, 40).

B.4.4 Ditch **216** produced a fragment from a fine-grained micaceous sandstone pebble or cobble and six pieces of burnt iron-rich sandstone, probably from the Dersingham Formation (BGS 2017), which outcrops to the east of King's Lynn. All of the stone appears unworked but has been burnt. The ditch is placed stratigraphically in Phase 2 (Roman).

Discussion

B.4.5 The stone from ditch **216** may have been brought to the site, however, the reason for this or its subsequent burning is unclear at this point. The lava quern fragments recovered from SFB **168**, which probably broke up due to its very extensive use/wear, are, however, likely to have originate in a domestic setting, strongly linked to agriculture. Although recovered from an SFB, the quern fragments may be Roman. Timberlake indicates that 'weathered and finely broken-up quern such as this is commonly found at both Roman and Early Anglo-Saxon sites in Eastern England. In the latter case, the destroyed quern often turns out to be Roman in origin, but is subsequently dispersed across rubbish-filled features'. The undiagnostic quern fragments recovered from the SFB cannot be closely dated in themselves, although the presence of Roman features across the site may support the assumption that the fragments are from Roman rotary querns.

Phase	Context	Cut	Category and description	Number of fragments	Weight (Kg)	Date
3	169	**168**	Vesicular basalt lava, somewhat friable (Mayen area, Timberlake pers comm). Sub-rectangular fragments with no diagnostic features. Largest fragment is 27x24x22mm, down to 5mm fragments and dust.	23	0.077	? Romano-British
	202		Finely crystalline vesicular basalt lava quern. The fragments possess no diagnostic grinding or tooled surfaces upon them. All of them are small (between 8-30mm in diameter), and it may be that the depth of wear of the stone was such that it may have been a minimum of 30mm thick.	6	0.040	
	223		Vesicular basalt lava, somewhat friable (Mayen-Niedermendig area) Sub-rectangular fragments, no diagnostic features. Largest 26x25x17mm, 9x7x5mm	5	0.021	
2	217	**216**	Sub-triangular fine-grained micaceous sandstone pebble unworked, burnt and fractured	1	0.118	Undatable
			Irregular, friable lumps of burnt, fine-grained iron-rich sandstone, well-sorted but variable grain size and apparent bedding.Dersingham Formation	2	0.301	Undatable
			Irregular, friable lumps of burnt, very fine-	3	0.072	Undatable

Phase	Context	Cut	Category and description	Number of fragments	Weight (Kg)	Date
			grained iron-rich sandstone, well-sorted. Dersingham Formation			
			Irregular, slightly rounded fragment of burnt, very fine-grained sandstone with rare mica. Bedding planes visible, feels oddly light, probably due to low iron content. Dersingham Formation	1	0.122	Undatable
Total				**41**	**0.751**	

Table 3: Stone by context

B.5 Roman Pottery

By Alice Lyons

Introduction and methodology

B.5.1 A total of 242 sherds, weighing 3906g were recovered (4.13 EVE), representing a minimum of 107 individual vessels. This is a multi-period assemblage which includes prehistoric, Iron Age and Roman pottery (Table 4), the Anglo Saxon pottery is discussed separately (Sue Anderson within this report). The pottery survives in a fragmentary and moderately abraded condition with an average sherd weight of *c*. 16g.

Ceramic Era	Sherd Count	Weight (g)	Weight (%)
Prehistoric (LNEO-EBA)	5	29	0.74
Iron Age (IA)	32	600	15.36
Romano-British (RB)	205	3277	83.90
Total	**242**	**3906**	**100.00**

Table 4:Pottery Quantified by ceramic era

Methodology

B.5.2 The pottery was analysed following the national guidelines (Barclay *et al* 2016). The total assemblage was studied and a full catalogue was prepared (Table 7). The sherds were examined using a hand lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Vessel forms (jar, bowl) were recorded and vessel types cross-referenced and compared to other examples. The sherds were counted and weighed to the nearest whole gram and recorded by context. Decoration, residues and abrasion were also noted. OA East curates the pottery and archive.

Acknowledgments

B.5.3 Thanks to Sarah Percival (freelance specialist) for her help with prehistoric pottery identification, also to Michael de Bootman for his knowledge of recent magnetometer survey in Marham.

The prehistoric pottery

B.5.4 The earliest pottery recovered from the site is a small amount of fragmentary and severely abraded Late Neolithic to early Bronze Age (3000-2000BC) handmade sandy oxidised Grooved ware vessel fragments from a single pot (5 sherds, weighing 29g). This material was found within the fill (116) of pit **114** and is distinctive as it is decorated

with an incised herringbone motif consistent with other material found within the region (Healy 1988, fig.80, p206).

The Iron Age pottery

B.5.5 A small amount (22 sherds, weighing 600g) of Iron Age (2BC-AD50) pottery was also found within five ditch cuts (**175**, **178**, **198**, **240**, **242**). The majority of this material comprised undiagnostic handmade jar/bowl sherds some of which are decorated with a deep incised or scored design (Gurney 1986, 25-28).

The Roman pottery

B.5.6 A total of 205 sherds, weighing 3277g of Roman pottery was recovered (a minimum of 95 individual vessels). The pottery is fragmentary but in fairly good condition with an average sherd weight of 16g. Some surface residues such as soot and lime-scale survive. The Roman assemblage was mostly found, within ditches, almost always with Early Saxon pottery - possibly due to the Roman ditches being re-worked in the Early Saxon era. There is a very small amount of diagnostic late Roman pottery (comprising Shelly wares and Oxfordshire red slipped ware mortaria) to suggest some activity may have continued seamlessly into the Early Saxon period.

Feature	Sherd Count	Weight (g)
Ditch	148	2722
Pit	32	203
Sunken Featured Building (SFB)	16	136
Spread	5	142
Wall - demolition	4	74
Total	**205**	**3277**

Table 5: The Roman pottery by feature

B.5.7 The majority of the Roman pottery comprises the distinctive utilitarian dark grey/black (reduced) coarse ware jar, storage jar and dish fragments typical of west Norfolk coarseware use and production during the mid-Roman era (Darling 2002; Lyons 2004) (Table 6). Decoration is minimal, but where present comprises burnishing, grooving and rustication. One fragment has been re-purposed as a spindle whorl.

Fabric Family	Vessel form	Sherd Count	Weight (g)
Nar Valley sandy reduced ware (SGW)	Cordoned jar, globular jar, dish, bowl, storage jar, lid, spindle whorl	169	2786
Nene Valley oxidised ware (NVOW)	Wall-sided mortaria	1	112
Samian (SAM) (Tyers 1996, 105-116)	Cup (Dr33), dish, mortaria	7	105
Sandy oxidised ware (SOW)	Flagon, jar/bowl, mortaria	17	89
Colchester oxidised ware (COL OW)	Mortaria	1	71

Fabric Family	Vessel form	Sherd Count	Weight (g)
(Tyers 1996, 119-120)			
Nene Valley colour coat (NVCC) (Tyers 1996, 173-175)	Dish, jar	4	69
Oxfordshire red slipped ware (OXREDCC) (Tyers 1996, 175-178)	High bead mortaria	2	22
Shelly ware (STW) (Tyers 1996, 192-193)	Globular jar	3	20
Colchester colour coat (COL CC) (Tyers 1996, 167-168)	Beaker	1	3
Total		**205**	**3277**

Table 6: Roman pottery by fabric family

B.5.8 The Nar Valley, or West Norfolk, pottery industry is known to have had several active centres which reached maximum production between the late 2nd and late 3rd centuries AD, possibly stimulated by the growth of the Saxon Shore fort at Brancaster (Hinchliffe & Sparey Green 1985). Indeed, nearby coarse ware pottery is known to have been made both at Blackborough End (Gurney 1990) and East Winch (Peachey 2010; Peachey forthcoming), also at Watlington c. 7km to the south-west (Lyons 2011). In addition, common surface pottery finds and numerous kilns have been tentatively identified by magnetometer survey (HER 18255; Michael de Bootman pers. comm.) at Marham, c. 5km to the south south-east. While specialist mortaria production was taking place at Pentney only 4km to the south-east (de Bootman 1983). The presence of a single waster within the assemblage also confirms that pottery production was taking place in the vicinity.

B.5.9 Within the assemblage fine wares are scarce, although there are small amounts of imported central Gaulish samian, also colour coated vessels from the Nene Valley and Colchester. Mortaria (specialist mixing bowls; Tyers 1996 117-135) made in the Nene and Nar Valleys are also present as well as perhaps a Colchester example, also a later Roman Oxfordshire red ware type. No amphora was found, but this is not unusual in rural Norfolk assemblages.

Summary

B.5.10 This is a small but well recorded multi period group of pottery, typical of the area, reflecting the presence of man since prehistoric times and the Roman exploitation of West Norfolk which included large-scale pottery manufacture. The pottery has survived in a fragmentary condition where much of the group has been disturbed by later activity

and could therefore be considered residual. This material, however, adds to the growing corpus of data for West Norfolk which is actively being researched and for which several publications are imminent (Peachey forthcoming; de Bootman in prep).

Context	Cut	Feature Type	Fabric	Vessel	Sherd Count	Weight (g)	Pot date
116	**114**	pit	SOW	BEAKER	5	29	3000-2000BC
128	**127**	pit	SOW	FLAG	1	1	MC1-C3(RESIDUAL)
130	**129**	pit	SGW	JAR/BOWL	1	4	MC1-C4(RESIDUAL)
137	**135**	ditch	SGW	SJAR	2	170	E/MC1
137	**135**	ditch	SGW	WJAR	3	23	MC1
145	**144**	ditch	SGW	DISH	6	117	MC2-C3
145	**144**	ditch	SGW	JAR	4	26	MC2-C4
145	**144**	ditch	SGW	JAR	4	49	C2-C4
145	**144**	ditch	SAM	DISH	2	64	C2
146	**144**	ditch	SGW	JAR	1	7	LC1-C4
146	**144**	ditch	SGW	JAR	6	42	C2-C4
146	**144**	ditch	SGW	JAR	3	32	MC2-C4
148	**147**	SFB	SGW	JAR	1	2	C2(RESIDUAL)
150	**149**	pit	SGW	DISH	1	11	C3-C4
150	**149**	pit	SGW	JAR	1	2	MC1-C4
150	**149**	pit	SGW	JAR	1	2	C2-C4
157	**156**	ditch	SGW	JAR/SJAR	26	590	C2-C4
157	**156**	ditch	SGW	DISH	1	12	C3-C4
157	**156**	ditch	SGW	JAR	1	14	C2-C3
157	**156**	ditch	SGW	JAR	1	26	C2-C4
157	**156**	ditch	SGW	JAR	1	18	C2-C4
157	**156**	ditch	SGW	JAR	1	40	MC2-C4
157	**156**	ditch	SGW	JAR	1	13	C2-C4
158	**156**	ditch	NVCC	JAR	1	5	C4
158	**156**	ditch	NVCC	DISH	1	15	C3-C4
158	**156**	ditch	OXRED CC	MORT	2	22	C4
158	**156**	ditch	SOW	MORT	2	3	MC2-C4
158	**156**	ditch	SGW	SJAR	1	29	C2-C3
158	**156**	ditch	SGW	DISH	2	22	MC2-C3
158	**156**	ditch	SGW	JAR	2	44	C2-C4
166	**165**	pit	SGW	JAR	1	12	C2-C4
166	**165**	pit	SGW	JAR	1	1	?ESAX
169	**168**	SFB	STW	JAR	1	3	C1
169	**168**	SFB	SAM	DISH	1	4	C2
169	**168**	SFB	SGW	JAR	1	10	C2-C3
169	**168**	SFB	SGW	JAR	2	4	C2-C4
169	**168**	SFB	SGW	JAR	1	5	C2-C3
173	**0**	spread	SGW	JAR	1	109	LC1-C2(
173	**0**	spread	SGW	JAR	4	33	LC1-C3

Context	Cut	Feature Type	Fabric	Vessel	Sherd Count	Weight (g)	Pot date
177	**175**	ditch	BSRW	JAR	4	24	E/MC1
177	**175**	ditch	SGW	JAR	3	51	1BC-ADEC1
179	**178**	ditch	SGW	JAR/BEAK	1	25	M/LC1-E/MC2
179	**178**	ditch	SGW	JAR	3	38	C2-C4
180	**178**	ditch	SGW	JAR	9	193	C1BC-ADE/MC1
180	**178**	ditch	SGW	JAR/BOWL	1	6	LIA/ESAX?
183	**168**	SFB	SGW	JAR/BOWL	1	5	LC1-C4
185	**184**	pit	SGW	WJAR	1	13	MC1
185	**184**	pit	SOW	JAR/BOWL	11	10	C1-EC2
191	**190**	pit	SGW	JAR	1	4	MC1-C4
193	**0**	wall - demolition	NVCC	DISH	1	39	C3-C4
193	**0**	wall - demolition	SGW	DISH	1	9	MC2-C3
193	**0**	wall - demolition	SGW	JAR/SJAR	2	26	C2-C4
197	**168**	SFB	SGW	JAR/BOWL	1	7	C2-C4
200	**198**	ditch	BSRW	WJAR	12	119	(E)/MC1
200	**198**	ditch	SGW	BEAK	1	31	(E)/MC1
201	**168**	SFB	SGW	SPINDLE WHORL	1	12	RE-USED RB (SF61)
207	**204**	ditch	BSRW	JAR	1	4	MC1-E/MC2
207	**204**	ditch	SGW	MORT	1	44	MC2-C4
213	**212**	ditch	SAM	CUP	2	32	AD150-180
213	**212**	ditch	COL CC	BEAK	1	3	E/MC2
213	**212**	ditch	COL OW	MORT	1	71	E/MC2
213	**212**	ditch	SGW	JAR	7	123	E/MC2
213	**212**	ditch	SGW	JAR	1	15	C2-C3
213	**212**	ditch	SGW	JAR	3	36	C2-C3
213	**212**	ditch	BSRW	JAR	2	24	E/MC2
214	**212**	ditch	SGW	JAR	9	87	C2-C3
214	**212**	ditch	SGW	JAR	1	7	C2
214	**212**	ditch	SGW	LID	1	3	MC1-C3
214	**212**	ditch	SGW	SJAR	1	36	C2-C3
214	**212**	ditch	SGW	JAR	1	10	C2-C3
214	**212**	ditch	SGW	BOWL	1	14	C2
214	**212**	ditch	SGW	JAR	2	73	MC2-C4
214	**212**	ditch	SGW	JAR	1	31	MC2-C4
217	**216**	ditch	SGW	JAR	1	34	LC1-C2
217	**216**	ditch	SGW	JAR	1	18	MC1-C4
222	**168**	SFB	SOW	MORT	1	9	C2-C4
223	**168**	SFB	SGW	JAR	1	8	C2-C4
223	**168**	SFB	SGW	JAR	1	7	MC1-MC2
231	**230**	pit	SGW	JAR	1	15	MC1-C2
231	**230**	pit	SGW	JAR	1	3	C2-C3
241	**240**	ditch	SGW	JAR	1	10	MC1-EC2

Context	Cut	Feature Type	Fabric	Vessel	Sherd Count	Weight (g)	Pot date
241	**240**	ditch	SOW	JAR	1	59	C2-C1BC
241	**240**	ditch	SGW	JAR	3	91	C1BC
241	**240**	ditch	SOW	FLAG	1	4	MC1-C3
243	**242**	ditch	NVOW	MORT	1	112	C3-C4
243	**242**	ditch	NVCC	DISH	1	10	C3-C4
243	**242**	ditch	STW	JAR	2	17	MC3-C4
243	**242**	ditch	SGW	JAR	1	24	MC2-C4
243	**242**	ditch	SGW	JAR/SJAR	4	65	MC2-C4
243	**242**	ditch	SGW	JAR	2	10	MC1-C4
245	**242**	ditch	SOW	MORT	1	62	MC1-C4
245	**242**	ditch	SGW	JAR	7	74	MC2-C4
245	**242**	ditch	SGW	JAR	1	7	MC2-C4
246	**242**	ditch	SGW	JAR	2	18	M/LC1
246	**242**	ditch	SOW	JAR	1	30	C2-C1BC
246	**242**	ditch	SGW	JAR	1	20	E/MC1
246	**242**	ditch	SGW	SJAR	4	174	C2-C3
251	**168**	SFB	SGW	DISH	1	25	MC2-C4
251	**168**	SFB	SGW	JAR	1	10	MC2-C4
252	**168**	SFB	SGW	JAR	1	25	MC1-E/MC2
260	**259**	pit	SGW	JAR	1	5	MC1-C4
263	**261**	pit	SAM	CUP	1	4	C2
263	**261**	pit	SGW	JAR/BOWL	2	24	MC2-C4
264	**261**	pit	SGW	JAR	2	60	MC2-C4
279	**277**	pit	SGW	JAR/BOWL	2	26	C2-C3
279	**277**	pit	SAM	CUP	1	1	C2
291	**290**	pit	SGW	JAR/BOWL	1	5	ERB OR ESAX

Table 7: Catalogue of Prehistoric and Roman pottery

B.6 Early Saxon Pottery

By Sue Anderson

Introduction and methodology

B.6.1 Early Anglo-Saxon pottery (227 sherds, 3202g) was collected from 48 contexts during the excavation (Table 12).

B.6.2 For this assemblage, as with others in East Anglia, it has sometimes been difficult to determine whether the handmade sandy wares were certainly of this period, or whether they might be Iron Age. The presence of some handmade and coarse Roman sherds in this group has added to the problem of dating the assemblage and it is possible that some sherds have been wrongly assigned. This is particularly true of the sherds found with high proportions of Roman material in the features assigned to Phase 2 (see below).

Methodology

B.6.3 Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were

observed in more than one context. A full quantification by fabric, context and feature is available in archive. Early Saxon fabric groups have been characterised by major inclusions. Form terminology and dating for Early Saxon pottery follows Myres (1977) and Hamerow (1993). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format, and the results were input directly onto an MS Access table.

Early Anglo-Saxon Wares

Fabrics

B.6.4 Table 8 shows the distribution of Early Anglo-Saxon pottery by fabric. Fabrics are grouped on major inclusions (other than sand, except where sand is the only inclusion). However, it should be noted that, as with all handmade pottery, fabrics were extremely variable even within single vessels and categorisation was often difficult. Background scatters of calcareous material, unburnt flint, grog, white mica and other less common inclusions, such as felspar and ferrous pieces, were present in many of the fabrics. All Anglo-Saxon wares were handmade, and colours varied throughout from black through grey, buff and brown to red, often within single vessels.

B.6.5 Many sites in East Anglia and the Midlands have produced similar fabric groups, although they occur in different proportions. In general, quartz-tempered and granitic types tend to be the most common fabric groups at sites in East Anglia, although in the later Early Anglo-Saxon period these appear to have been replaced to some extent by grass-tempered pottery. Organic-tempering is thought to be a late Early Saxon development in Essex (Hamerow 1993, 31) and Suffolk (K. Wade, pers. comm.), and this is also likely to be true of Norfolk.

B.6.6 At this site, quartz and organic tempered fabrics were the most common, based on MNV, with granitic fabrics making up the third largest group. All other fabric types produced less than ten sherds each.

Description	Fabric	No	Wt/g	eve	MNV
Organic tempered					
Heavily grass tempered with few other inclusions	ESO1	8	166	0.08	4
Grass tempered but containing a much greater proportion of sand than ESO1	ESO2	69	728	0.84	40
Quartz tempered					
Coarse quartz tempering; moderate to abundant large grains of sub-rounded quartz in a finer sandy matrix	ESCQ	5	140	0.08	5
Medium sand tempering with few other inclusions, sand grains generally well-sorted	ESMS	14	114	0.06	12
Fine sand tempering with few other inclusions, some white mica	ESFS	68	887	0.76	56

Description	Fabric	No	Wt/g	eve	MNV
Fine abundant quartz	ESFQ	3	131		3
Very fine sand and abundant white mica	ESSM	1	58		1
Grog tempered					
Grog and sand tempering. Grog usually red, but may be grey	ESGS	1	10		1
Calcareous tempered					
Sparse to moderate fine shell and sand tempering, shell generally leached out	ESSS	4	47		2
Coarse shell tempering with few other inclusions	ESCS	4	6		1
Sparse, rounded chalk in a fine to medium sandy matrix, sometimes leached	ESSC	2	17		2
Shell and organic tempering	ESSO	6	61	0.05	4
Granitic tempered					
'Charnwood Forest' type, containing granitic tempering (dark mica, feldspar)	ESCF	15	202		14
Mixed calcareous and granitic inclusions	ESCM	9	160		5
Organic tempering in association with granitic inclusions	ESOM	13	424	0.07	8
Miscellaneous					
Ferrous oxide	ESFE	3	48	0.05	3
Unidentified handmade	UNHM	2	3		1
Total Early Saxon		*227*	*3202*	*1.99*	*162*

Table 8: Early Anglo-Saxon pottery by fabric group

Vessel types, forms and function

B.6.7 The estimated vessel equivalent of 1.99 is based on 24 measurable rims, but a further three rims were too small for measurement. Measurements of handmade vessels are always approximate unless a large proportion of the rim is present. For this reason, the minimum number of vessels (MNV), based on sherd families, was estimated for each context, producing a total MNV of 162 vessels.

B.6.8 Rim and base types were classified following Hamerow (1993, fig. 26). This produced a total of six vessels with flaring rims, twelve vessels with vertical ('upright') rims, six with

everted rims, and two with beaded rims. Seven vessels had flat-rounded bases, four had rounded or saggy bases, three were flat-angled, two were footstand types and two could only be classified as 'flat' as the angle was lost.

B.6.9 No vessels were complete, but some full or near-full profiles were present, and it was sometimes possible to suggest the vessel type on the basis of rim or base form, where enough of the body was present (Table 9). Ten vessels were identified as bowls, one as a?lamp, one as a small 'thumbpot', and thirteen as jars.

Form detail	jar	jar?	bowl	bowl?	lamp?	thumbpot	uncertain
carinated							1
concave neck	2						
sloping neck	1						
high shouldered	1						
sub-bicon or shouldered							1
slightly shouldered	1						
upright neck	1						
flaring-sided			1				
globular	2		2	1		1	
globular?			1	1			2
wide-mouthed globular	1						
hemispherical?			2				
baggy?	1						1
unknown	2	1		2	1		

Table 9: Identifiable forms/shapes of Early Anglo-Saxon vessels (MNV).

B.6.10 Based on MNV, 64 of the 162 vessels in the group had rough surfaces which did not appear to have been smoothed or burnished, although in some cases this may have been due to use-wear or post-depositional abrasion. Three vessels showed signs of grass-wiping. Three vessels were rusticated: one had fine-combed rustication, one had Schlickung slip with granitic inclusions, and one had a cream slip with fine sand inclusions. Fifteen had some form of decoration, as shown in Table 10. The majority of decorated vessels were in sandy fabrics, but this is probably simply a result of the high proportion of sandy fabrics in the assemblage.

Decoration	MNV
cordon just below neck	1
pointed solid boss or lug	1
groove?	1
incised horizontal lines	4
wide incised horizontal and curving lines	1
incised horizontal lines and stamps	2
chevron and dot stabs?	1
stamped simple chevrons	1
triangular stabs	1

Table 10: Decoration on Early Anglo-Saxon pottery.

B.6.11 Whilst many pots showed signs of wear, sooting and/or burnt food residues, there was no evidence that any of the vessels had been used anything other than domestic purposes.

Illustrated vessels (Fig. 13)

1. ESO2 body sherd. Wide incised horizontal line and curving lines. Oxidised externally. Phase 2, ditch fill 215.

2. ESFS wide-mouthed globular jar. Everted rim, 180mm diameter, 17% complete. Smoothed internally and externally. Phase 3, ditch fill 243

3. ESOM sub-biconical or shouldered vessel. Flat-angled base. Smoothed internally and externally, sooted internally with some internal wear at the base. Phase 3, layer 189 in SFB **147**, including SFs 39, 41–42.

4. ESOM globular bowl. Flaring rim, 140mm diameter, 7% complete. Pointed solid boss or lug. Smoothed internally and externally. Phase 3, pit fill 134.

5. ESCQ thumbpot. Flaring rim, rounded base. Phase 3, layer 148 in SFB **147**.

6. ESOM body sherd. Bands of incised horizontal lines and segmented ring stamps. Smoothed internally and externally. Phase 3, pit fill 134.

Distribution

B.6.12 Twenty-two sherds were recovered from a spread, ditch fills and a wall demolition deposit which were assigned to Phase 2. The remainder of the assemblage came from twelve pits, four ditches and two SFBs assigned to Phase 3.

B.6.13 The largest groups from individual features were found in ditch **131** (25 sherds), ditch **135** (20 sherds), pit **129** (33 sherds) and SFB **168** (50 sherds). SFB **147** contained only 16 sherds, and there were 17 sherds from pit **149**. Other features contained 12 sherds or fewer.

Phase 2 – Roman

B.6.14 Twenty-two sherds were recovered from Roman features. In some cases it is possible that the sherds are of Iron Age or early Roman date, but others are more certainly Early Anglo-Saxon and probably intrusive in this phase. The majority were from fills of ditch group **131** and ditch **135**, which both contained a final fill which has been assigned to Phase 3 (see below).

Spread 173: One small sherd of ESCF, thin-walled with very coarse granite inclusions, was found. 6th c., intrusive?

Ditch **103**: One body sherd of ESGS with a cordon just below the neck was recovered. It is possible that the sherd is a Roman ware.

Ditch **178**: A single sherd of ESFS was recovered and is likely to be intrusive.

Ditch group **131**: Segments **144**, **156** and **242** of these ditches contained five sherds of handmade Early Anglo-Saxon pottery (3 ESMS - or possibly IA?, 1 ESO2 and 1 ESFS), alongside much larger groups of Roman wares.

Ditch **135**: Eleven sherds of Early Anglo-Saxon pottery were recovered from Phase 2 fills of segments **175** and **212**, comprising 5 ESFS including an everted jar rim, 5 ESO2 including a jar rim, a ?globular bowl (Fig. 12) and a decorated body sherd, and 1 ESMS carinated body sherd (which could be IA).

Wall **193**: One sherd each of ESFE, ESSC and ESFS were recovered from the demolition of this wall. Large fragments of Roman pottery were also recovered.

Phase 3 – Early-Anglo-Saxon

B.6.15 Two SFBs contained relatively small quantities of pottery, with only 16 sherds in one and 50 in the other. Only SFB **168** appears to have had more than one fill (although both have more than one context due to quadrant excavation), but the remains of SFB **147** were very shallow and presumably truncated.

B.6.16 Three pits were found close to the SFBs and could be related to them, but these also contained only small quantities of pottery and no cross-links were identified between them and the SFB fills. Ten other pits assigned to this period also contained small to medium groups of pottery, and these may be related to buildings located beyond the limits of the excavation.

*SFB **147***

B.6.17 Sixteen sherds of eleven vessels were recovered from four quadrants and both post-hole fills, with no cross-links noted between them. However several sherds recovered as small finds within quadrants 148 and 189 were from two vessels, a lamp (SF 4 and unnumbered) in the former and a sub-biconical or shouldered vessel (SF 39, 41, 42; Fig. 12) in the latter. A decorated thumbpot was also found (Fig. 12) Although the quantity of sherds is small, it is noteworthy that the majority of sherds (and other finds) were recovered from the northern half of the pit, perhaps suggesting that the midden used to backfill it was located to this side. Unlike the rest of the assemblage, granitic and organic wares were the most frequent in this group, and the presence of a large ESO1 sherd in one of the post-holes also appears to suggest a relatively late date for the use and/or backfilling of this feature. Adjacent pit **133** contained a further six sherds, again dominated by organic/granitic wares, perhaps suggesting contemporaneity.

Quad 148 (NW): Two sherds of an ESO2 ?lamp with flaring rim (SF 4), an ESCQ thumbpot (Fig. 12) and two sherds of an ESCF vessel (SF 7) were found. One Roman greyware sherd was also recovered.

Quad 174 (SE): Three sherds were recovered: ESO2, ESCF base, ESSO.

Quad 188 (SW): An ESO2 body sherd (SF 14) was found.

Quad 189 (NE): Four body and base sherds of an ESOM sub-biconical vessel (SF 39, 41, 42 and unnumbered; Fig. 12) and one body sherd of ESSO (SF 40) were recovered.

PH **186**: One small sherd of ESFS (or IA?) was collected.

PH **194**: A large fragment of an ESO1 ?globular vessel was found.

*SFB **168***

B.6.18 Fifty sherds of 26 Early Anglo-Saxon vessels were recovered, and there were also 16 sherds of Roman wares. Organic-tempered wares were the most frequent fabric group, followed by sandy wares, and there were a few fragments of granitic and shelly wares. This SFB contained three fill layers. The upper contained 21 sherds, the middle fill contained six sherds, and the lower fill contained 23 sherds. In the lowest fill, the majority of sherds were located in the southern half of the feature, whilst in the upper fill the largest group was in the NW quadrant, but overall each quadrant contained similar quantities (10–14 sherds). Average sherd weights increased from top to bottom, with the upper layer sherds being 9.8g on average, the middle 10.8g and the lower 13.6g.

B.6.19 Fabrics were distributed between the layers as shown in Table 4. Cross links were identified, mainly between sherds in the lowest fill in three quadrants, but some of these vessels were also found in the middle and upper layers in the SE quadrant. Seventeen sherds in the lower fill and one in the middle belonged to a single ESO2 globular jar (Fig. 12), and there were three sherds of an ESO1 globular jar in the lower and upper fills. Other identifiable vessels comprised an ESO2 ?bowl with a ?beaded rim, an ESFS jar with an everted rim, and an ESO2 ?baggy jar with an upright tapered rim. Two rounded and one flat-rounded bases were found. No sherds in this group were decorated.

Fabric	Basal	Middle	Upper
ESFS	1	3	5
ESMS	1		
ESCF			1
ESOM		1	
ESO1	1		2
ESO2	3	1	6
ESSS			1

Table 11: Pottery fabrics in SFB **168** (MNV)

B.6.20 Basal layer: twenty-three sherds were recovered from this layer (183/201/221/250), of which 17 were from an ESO2 globular jar with vertical rim, two were from an ESO1 globular jar with vertical rim and rounded base. Other sherds comprised 1 ESFS, 1 ESMS and 2 ESO2 including a ?beaded ?bowl rim.

B.6.21 Middle layer: six sherds, all from different vessels (3 ESFS, 2 ESO2, 1 ESOM) were recovered from197/202/222/251, but one was from an ESO2 vessel also found in the basal layer.

B.6.22 Upper layer: fills 169/203/223/252 contained 21 sherds of 16 different vessels, one of which was also found in the basal layer. The sherds comprised: 8 ESO2 including a ? baggy jar with an upright tapered rim, 5 ESFS including an everted jar rim, 5 ESO1 and 2 ESSS.

Other contexts

B.6.23 Early Anglo-Saxon sherds were found in twelve pits and four ditches. There were no particular concentrations, with the pits being dispersed over a wide area. The largest group was recovered from pit **129** (33 sherds), adjacent pit **127** contained 13 sherds, and there were 17 sherds in pit **149**. Three pits were associated with the SFBs: pit **133** adjacent to SFB **147** contained only six sherds, and pits pits **170** and **190** near SFB **168** contained only 16 sherds between them. Segments of ditches **131**, **135** and **216** each produced between 10–20 sherds.

B.6.24 Pit **127**: thirteen sherds (2 ESMS, 10 ESFS including a jar rim, and 1 ESSC) were recovered from fill 128, along with a small abraded sherd of Roman SOW(fine). c. 5th-7th century in date.

B.6.25 Pit **129**: adjacent to pit **127**, this pit contained 31 sherds of Early Anglo-Saxon (EAS) pottery, two unidentified handmade, and one of Roman greyware in fill 130. EAS sherds comprised 10 ESO2, 7 ESFS including a jar with an upright neck and a flaring-sided bowl, 6 ESCF including a sherd with incised decoration, 3 ESOM including a sherd with *Schlickung*, 2 ESFE including a ?globular bowl rim, 1 ESCM and 2 ESFQ including one with fine-combed rustication. 6th c. with some residual material?

B.6.26 Pit **133**: Adjacent to SFB **147**, this pit contained six sherds of EAS in fill 134: 2 ESO2, 1 ESCQ and 2 ESOM including a bossed globular bowl with flaring rim (Fig. 12) and a body sherd with incised line and stamp decoration (Fig. 12). 6th century?

B.6.27 Pit **149**:Fill 150 of this large feature contained 17 sherds of EAS: 6 ESO2, 1 ESFS, 2 ESCF and 8 ESCM. No rims or decorated sherds were present, but there were three flat-rounded bases. Three sherds of Roman greywares were also found. 6th century?

B.6.28 Pit **154** (G140): Three sherds of two bowls in ESFS and ESMS were recovered from fill 155. 5th-7th centuries.

B.6.29 Pit **162**: A small body sherd of ESFS with triangular stab decoration, and a large footstand base fragment of ESSM were found in fill 163. Both sherds could potentially be of late Iron Age date, however. 5th-7th c. or LIA?

B.6.30 Pit **165**: One small sherd of ESO2 and two fragments of Roman greyware were found. 6th century?

B.6.31 Pit **170**: Adjacent to SFB **168**, this pit contained 14 sherds in fills 171 and 172. There were four ESO2 including a globular ?bowl, 5 ESFS, 2 ESSS with possible incised decoration, 1 ESMS with incised horizontal line, and 2 ESSO. 6th century?

B.6.32 Pit **181**: Two small sherds of ESO2 and ESFS were recovered, the latter being linked to two ESFS sherds in pit 190. 6th c.?

B.6.33 Pit **190**: Adjacent to pit **170**, this pit contained only 2 small sherds of ESFS (also in pit 180) and 1 ESO2. One small Roman greyware sherd was also found. 6th century.

B.6.34 Pit **247**: Two sherds of ESFS were recovered from fill 249. 5th-7th century?

B.6.35 Pit **259**: Fill 260 contained 1 ESFS and 1 ESCF body sherds, together with one Roman greyware fragment. 6th century?

B.6.36 Ditch **131**: Three upper fills (146, 158, 243) produced 20 sherds of EAS and 32 sherds of Roman pottery. The EAS sherds comprised 8 ESFS including two jars (one with concave neck, one wide-mouthed globular (Fig. 12)), 2 ESMS, 4 ESCS of a ? hemispherical bowl, 2 ESSO of a ?jar rim, 1 ESO2 and 3 ESOM. 6th century?

B.6.37 Ditch **135**: One sherd of ESCQ was recovered from fill 137, which also contained 5 Roman greyware sherds. Nine EAS sherds were found in fill 213: 2 ESO2 including a flaring rim of uncertain form, 5 ESFS including a high-shouldered jar with a flaring rim (Fig. 12), 1 ESCF and 1 ESMS with grooved decoration. Seventeen Roman sherds were also recovered from fill 213. 5th/6th century?

B.6.38 Ditch **216**:Ten sherds were recovered from fill 217: 2 ESO2, 2 ESCQ including a globular bowl, 5 ESFS including a slightly shouldered jar, and 1 ESMS. Two sherds of Roman greyware jars were also recovered, presumably redeposited from Phase 2 ditch 135. 6th century?

B.6.39 Ditch **288**:A large body sherd from a ?globular vessel in ESFQ was found in fill 289. 6th century?

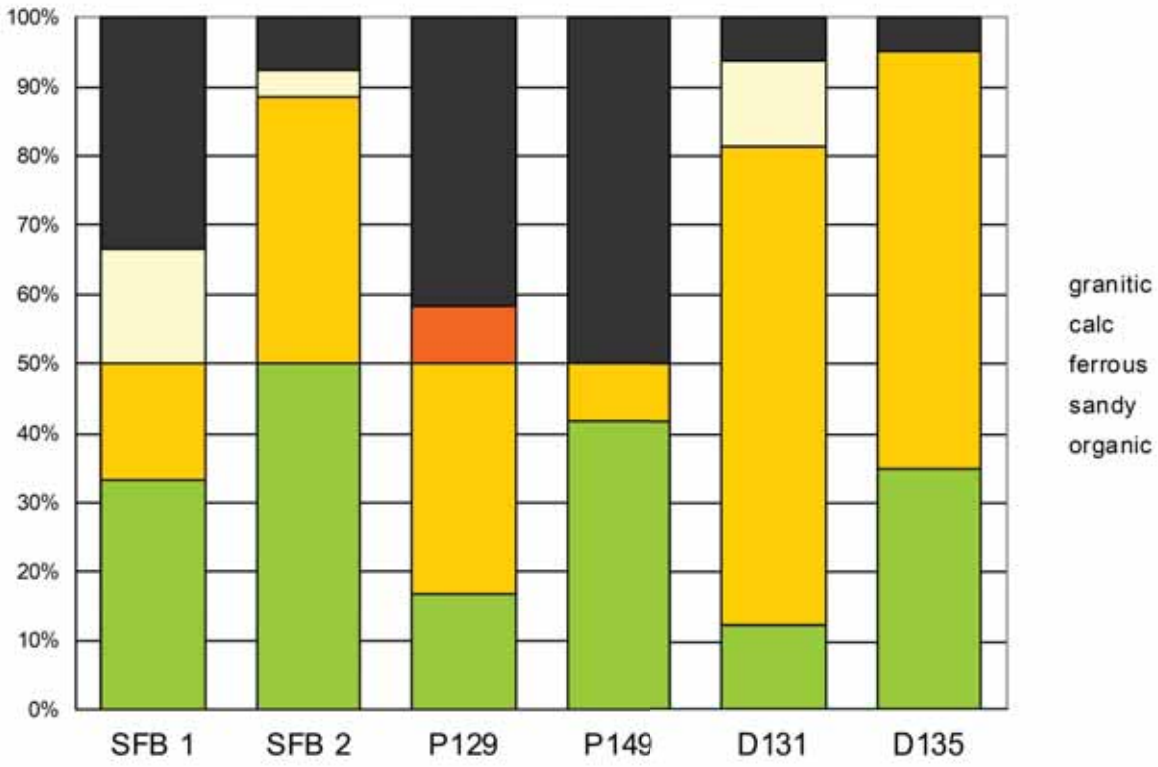
Discussion

B.6.40 This assemblage shows elements which place it broadly within the 6th to early 7th centuries, such as the predominance of globular forms and the high proportion of sandy and sandy-organic wares. Only one carinated vessel was identified, but some shouldered and or biconical vessels were present and a few sherds had rustication including *Schlickung*, which may indicate a small 5th-century component to the assemblage. Decorated pottery is suggested to belong to the early part of the 6th

century at Bloodmoor Hill (Tipper 2009, 209), and some of the decorated vessels from Middleton appear to be relatively early based on the dating evidence for Spong Hill (Hills and Lucy 2013), but most are represented by single sherds and their full decorative schemes are not reconstructable. Later wares, in this assemblage represented only by fully organic tempered fabrics, were present but fairly rare.

B.6.41 This assemblage was distributed across several pits, ditches and the fills of two SFB pits. The largest group by feature type was recovered from the pits, but this was still only a total of 98 sherds spread across twelve such features, one of which contained almost a third of this quantity. There were 66 sherds from the two SFBs, 59 from ditches, and four from other contexts. As has been suggested elsewhere, it is likely that pits were not used as the primary method of rubbish disposal in this period, with middens in use on a daily basis, and that this material became incorporated into the open SFB pits once the superstructures of these buildings had been removed.

B.6.42 Graph 2 shows the distribution of the major fabric groups in the SFBs and the pits and ditches with the largest quantities of pottery.



Graph 2: Distribution of fabric groups in the SFBs and other features (MNV)

B.6.43 Overall, the data from this site show different patterns of fabric distribution between the feature types. The two larger pits in Graph 2, for example, have significantly greater quantities of granitic-tempered pottery than the ditches and SFB **168**, with SFB **147** having a similar proportion to the pits. Most of the other pits did not contain granitic pottery and calcareous wares were also rare, with the majority containing sand and sandy-organic-tempered wares, but none of the pits or ditches contained ESO1. This late ware was only found in SFB **168** lower and upper fills, and a post-hole of SFB **147**. The ditches appear to contain more sandy wares than other fabrics, although both had some organic and granitic wares and their infilling may have taken place slowly during the lifespan of the Early Anglo-Saxon settlement, rather than deliberately in one event.

Where it is possible to date individual features, it appears that most of the pits belonged to the 6th century, but the backfills of the SFBs were slightly later (mid 6th/early 7th c.?) with some residual 5th-century material present in all features.

B.6.44 Decoration occurred rarely, as is typical of 6th- and 7th-century settlement sites. Four sherds with decoration came from Phase 2 features, with most of the rest (9 sherds) coming from Phase 3 pits. Only one decorated sherd was found in the SFBs, the small thumbpot from SFB **147**.

B.6.45 Comparison of fabric proportions with other assemblages from Norfolk suggests that Middleton has a much higher proportion of fine sandy wares than most of the other sites, although a very similar pattern in terms of both sparse organic and fine sandy fabrics is seen in the assemblage from Foundry Field, Burnham Market (Anderson 2016a) and a small group from Whissonsett (Anderson 2016b). Similar high proportions of fine sandy fabric were present in the Morningthorpe cremation cemetery group (1987), and a small group from Crimplesham Quarry (Anderson 2012a), although at the latter, fine micaceous wares were more frequent than plain fine sandy wares. Other sites have high proportions of sandy wares, but generally using coarser sand inclusions, for example at Spong Hill inhumation cemetery group (Brisbane 1984) and at Foulsham (Anderson 2012b). Sparse organic wares were the most frequent type at Tittleshall, both in the small cemetery group and the larger settlement assemblage (Anderson 2013). A similar proportion of granitic wares was found at Burnham and Heacham, with higher proportions in assemblages from East Bilney (Anderson 2008b), Crimplesham and Spong Hill inhumation group (*op. cit.*). Only small quantities of granitic-tempered pottery were found at Tittleshall, Foulsham, Fulmodeston (Anderson 2015) and Wimbotsham (Anderson 2008a). This distribution does not suggest any particular clustering of fabrics by area and the differences and similarities are probably more related to the timespan of each assemblage. It does, however, suggest that Middleton fits into the broad pattern for Norfolk, with a high proportion of sand-tempered fabrics and few calcareous and granitic wares. This applies whether or not some of the sandy wares were actually of prehistoric date, as the quantities (if any) are almost certainly quite small.

Context	Cut	Feature Type	Fabric	Form	No of sherds	Weight (g)
109	**103**	Ditch	ESGS		1	10
128	**127**	Pit	ESFS		9	115
			ESFS	jar	1	8
			ESMS		2	20
			ESSC		1	8
130	**129**	Pit	ESCF		6	81
			ESCM		1	34
			ESFE		1	8
			ESFE	bowl?	1	6
			ESFQ		2	65
			ESFS		5	108
			ESFS	bowl	1	14
			ESFS	jar	1	6
			ESO2		10	56
			ESOM		3	89
			UNHM		2	3
134	**133**	Pit	ESCQ		1	49

Context	Cut	Feature Type	Fabric	Form	No of sherds	Weight (g)
			ESFS		1	23
			ESO2		2	28
			ESOM		1	22
			ESOM	bowl	1	54
137	**135**	Ditch	ESCQ		1	3
145	**144**	Ditch	ESMS		1	8
146			ESCS	bowl	4	6
			ESFS		1	2
			ESMS		1	2
			ESSO	jar?	2	8
148	**147**	SFB	ESCF		2	7
148			ESCQ	thumbpot	1	24
148			ESO2		1	1
148			ESO2	lamp?	1	2
150	**149**	Pit	ESCF		2	10
			ESCM		8	126
			ESFS		1	2
			ESO2		6	69
155	**154**	Pit	ESFS	bowl?	1	8
			ESMS	bowl	2	13
157	**156**	Ditch	ESMS		2	18
158			ESMS		1	9
			ESO2		1	12
163	**162**	Pit	ESFS		1	4
			ESSM		1	58
166	**165**	Pit	ESO2		1	2
169	**168**	SFB	ESFS	jar	1	1
			ESO2		2	24
171	**170**	Pit	ESFS		1	18
			ESO2	bowl?	1	27
172			ESFS		4	30
			ESMS		1	10
			ESO2		3	24
			ESSO		2	26
			ESSS		2	29
173	**-**	Layer	ESCF		1	2
174	**147**	SFB	ESCF		1	20
			ESO2		1	22
			ESSO		1	17
177	**175**	Ditch	ESFS		1	1
			ESMS		1	10
			ESO2		2	12
			ESO2	bowl	1	19
			ESO2	jar	1	11
180	**178**	Ditch	ESFS		1	6
182	**181**	Pit	ESFS		1	1

Context	Cut	Feature Type	Fabric	Form	No of sherds	Weight (g)
			ESO2		1	1
183	**168**	SFB	ESO1		1	14
			ESO2		1	15
			ESO2	bowl?	1	9
			ESO2	jar	7	68
187	**186**	Post-hole	ESFS		1	4
188	**147**	SFB	ESO2		1	14
189			ESOM		4	203
			ESSO		1	10
191	**190**	Pit	ESFS		2	2
			ESO2		1	5
193	**-**	Wall	ESFE		1	34
193			ESFS		1	13
193			ESSC		1	9
195	**194**	Post-hole	ESO1		1	65
197	**168**	SFB	ESFS		1	3
201			ESFS		1	20
			ESMS		1	7
			ESO1	jar	1	15
202			ESFS		2	13
203			ESFS		1	4
			ESO1		3	29
			ESO2		1	34
213	**212**	Ditch	ESCF		1	69
			ESFS		4	30
			ESFS	jar	1	33
			ESMS		1	8
			ESO2		1	22
			ESO2	?	1	6
214			ESFS		2	24
			ESFS	jar	2	22
215			ESO2		1	27
217	**216**	Ditch	ESCQ		1	43
			ESCQ	bowl	1	21
			ESFS		4	98
			ESFS	jar	1	13
			ESMS		1	9
			ESO2		2	25
221	**168**	SFB	ESO2		3	43
			ESO2	jar	6	24
222			ESO2		2	31
223			ESCF		1	9
			ESFS		1	14
			ESO1		1	37
243	**242**	Ditch	ESFS		3	37
			ESFS	jar	1	81

Context	Cut	Feature Type	Fabric	Form	No of sherds	Weight (g)
			ESFS	jar	3	32
			ESOM		3	38
245			ESFS		1	7
			ESO2		1	10
249	**247**	Pit	ESFS		2	45
250	**168**	SFB	ESO2		1	12
251			ESOM		1	18
252			ESFS		2	36
			ESO1		1	6
			ESO2		2	35
			ESO2	jar	3	38
			ESSS		2	18
260	**259**	Pit	ESCF		1	4
			ESFS		1	9
289	**288**	Ditch	ESFQ		1	66

Table 12: Catalogue of Early Saxon pottery

B.7 Ceramic Building Material

By Ted Levermore

B.7.1 Six fragments (91g) of heavily abraded ceramic building material (CBM) was recovered during excavation; three from disuse fills in SFB **168** and three from pit **259**. Due to the abrasion and the fragmentary nature of these fragments very little could be said about them. They have likely been subjected to agricultural processes and represent little more than background noise in the more recent human landscape.

B.8 Fired and Unfired Clay

By Ted Levermore

Introduction

B.8.1 Archaeological work produced a small assemblage of fired and unfired clay in a variety of forms (295 fragments, 4001g). The most significant portion of this assemblage comprises two Saxon loomweights and an assemblage of clay render and daub collected from SFB contexts. The fabrics do not differ greatly, where the most difference was encountered was the level to which the clay was fired. Indeed, much of the clay was likely air-dried or only lightly baked. This report will provide a quantified characterization of the assemblage.

Methodology

B.8.2 The assemblage was quantified by context, fabric and form and counted and weighed to the nearest whole gram. Fabrics were examined using a x20 hand lens and were described by main inclusions present. The quantified data and fabric descriptions are presented on an Excel spreadsheet held with the site archive. A catalogue of the clay assessed can be found in Table 13.

Assemblage

Fabrics

B.8.3 The clay assemblage was assigned to eight fabrics that can be assigned to two broad groups; a friable grey-brown silt clay with common quartz and occasional calcareous and flinty inclusions (F1, F1a, F1b, F1c and F2) and a light brown to buff silty-marl with common quartz and calcareous chunks, occasional mica and clay pellets and rare rounded stone and flint inclusions (F3, F3a and F4). Variation in the quantity and size of the inclusions resulted in the eight fabrics. However, the limited clay paste preparation apparent suggests the difference recorded is probably just an indicator of natural variation in the clay used. Where the clay has been used for objects or structural material (fired and unfired) the fabrics show (very) minimal preparation; i.e. better sorting of inclusions and organic material (chaff?) added to some recipes. Nevertheless, the significance of the differing fabrics, besides the main groups, is of little consequence. The clay was probably locally sourced and most of the inclusions are likely naturally occurring rather than added as temper. The fact that the natural geology is predominantly sand may account for the high quantity of quartz and mica, for example.

Loomweights

B.8.4 Two near-complete loomweights and a small collection of possible loomweight fragments were found in SFB contexts. SFB **147**, context 148, produced six refitting fragments of an unfired 'intermediate' weight (Fig. 14, SF 1 (226g)), made in the friable grey-brown quartz clay. Intermediate weights are identifiable when the thickness of the clay loop does not exceed the width of the central aperture (Hurst 1959), in this case around 35-40mm for both. Due to its low fired or unfired state it has not survived well and as such little can be said about how it was made. SFB **168**, context 250, produced a fired loomweight (Fig. 14, SF 121 (294g)), in the silty-marl clay with few inclusions. It has a flattened base, a domed upper portion and a neatly rounded ovoid shape. The central aperture was probably made as a perforation through the domed clay disc. The fabric was soft and in some places friable suggesting it was only lightly fired. It is an example of a 'bun-shaped' weight where the central aperture is smaller than the thickness of the clay loop (*ibid*.) – 25mm and 40mm. Needless to say, such classifications can be misleading as they suggest divisions where there is considerable variation. However, these two weights are distinct from each other and fill the criteria for their types.

B.8.5 Several probable weight fragments were also collected, however, in their post-excavation state it was very difficult to be certain about their original form. Nevertheless, the remaining portion of SF 121 (5 fragments, 315g) is made up what appears to be fragments of clay loops. They are rounded with roughly semi-circular sections and made in the friable grey-brown quartz clay. These fragments appear to represent at least two objects and, when compared to SF1, it is very possible they too are fragments of unfired loomweights. A rounded fragment of fired clay (12g) that matched the fabric, firing and style of the bun-shaped weight was also collected from SFB **168**, context 183. Tree throw **138** produced a fragment of high fired clay (24g). It has a roughly semi-circular section, where the flat edge may have been the wall of the central aperture, it has a flattened based and an abraded rounded outer edge. It may be a loomweight segment, however its fabric and firing are not mirrored in the other examples.

B.8.6 Both of the complete weights were recovered from the basal fills in the north-west portion of their respective SFBs. It should also be noted that almost all of the clay

recorded was found in the northern part of the SFBs. There is little evidence of use remaining on either weight, and it is very unlikely that sf.1 would have been used in its unfired state. The surviving fragments of the friable unfired clay had little to no resistance to handling, and would not be appropriate for the kind of stresses a loom would subject them to (Mårtensson *et al*, 2009*)*. Though common, the debate about why unfired weights are found is as yet unresolved (see Crummy 2010; Riddler and Trazaska-Nartowski forthcoming). As there are only two complete weights in this assemblage it is not possible for a more detailed discussion here. This class of object are difficult to date precisely. It has been suggested that shape may relate to date or that the shape:weight ratio is significant. This technology would have been made locally, on an *ad hoc* basis and with little investment (Petty 2014). Further, there have, so far, been few attempts to study the distribution of these objects nationally and so there are few date series available. Intermediate loomweights have been found in 6th-century contexts at Mucking and Brandon Road, Thetford (Hamerow 1993; Crummy 2010) with uncommon use into the 8th century (Walton Rogers 2007). Bun-shaped weights are normally seen as a Middle Saxon technology, although it has been suggested that they emerge in Lundenwic by the early 8th century (Goffin 2003, 218).

Render and Daub

B.8.7 The other diagnostic portion of the clay assemblage was the structure material, namely fragments of daub and render. This groups (76 fragments, 1490g) was collected from contexts across the site, including the disuse contexts of SFB **168**. Generally, this portion of the assemblage was characterised by being made in a uniform fabric (a porous version of the silty-marl fabric, likely from organic tempering) and with a flattened shape and wiped surfaces. The daub was bulky and contained the wattle impressions whereas the render was more uniform in thickness, 20 to 25mm, with one wiped pinkish-white surface and an irregular reverse. This latter group is very similar, although a little coarser, to the wall plaster recovered on site. It was probably applied as a coating to a structure as opposed to the daub which could have been used structurally or as a coating. Pit **190**, produced the majority of the render material (24 pieces, 547g), with pit **247** generating a single thinner, 15mm, fragment (15g). The probable daub came almost entirely from the disuse contexts of SFB **168** (34 pieces, 855g). The structures this material derives from are unknown however it is likely that the daub, at least, came from SFB **168** itself. The render is fairly unabraded, although fragmentary, and so it probably did not travel far to be deposited.

Miscellaneous Clay

B.8.8 This portion of the assemblage comprised undiagnostic clay and *ad hoc* objects (202 fragments, 1640g). Most of this material was very friable, amorphous and completely uninformative. SF 120, SFB **168**, was the best example of an *ad hoc* clay object. It is a clam-shaped piece of hand-squeezed clay, probably formed between clasped palms. It likely served no purpose aside from the momentary enjoyment of its maker. The undiagnostic clay is problematic as it likely comprises both manufactured but heavily abraded objects and naturally formed fragments that are indistinguishable. To further muddy the water, most of the material shared similarities in fabric with the unfired loomweight or the daub suggesting some of it could have derived from similar. However, it is not clear how much. Clay excavated within the SFBs was assigned small find numbers for locational purposes however it became clear in post-excavation that much of the clay was not hand formed. For example, sf.38 was nothing more than clayey material formed in a void made by insects in the natural.

Conclusions

B.8.9 This assemblage of fired and unfired clay provides evidence for investment into the structures relating to the SFBs and for domestic weaving activity within them. The weights, though minimal in number, can be tentatively placed within the early to middle Saxon periods (SFB **147** slightly earlier than SFB **168**). Due to the small number and limited range of clay objects it is not possible to make many further conclusions about this assemblage. It is interesting to note that the clay recorded within the SFBs was concentrated in the northern portions of these features and that both of the near-complete loomweights were recovered in the north-western corner.

Statement of Potential

B.8.10 Due to the small number and limited range of clay objects it is not possible to draw many conclusions about this assemblage. Though small in number the unfired weights and probable weight fragments are valuable evidence for any project looking at Saxon warp weight traditions.

Recommendations for Further Work

B.8.11 The unfired and fired loomweights, and probable unfired weight fragments, should be photographed and illustrated. Working shots were taken for the loomweights and are with this report and catalogue in the site archive.

Retention, Dispersal and Display

B.8.12 All amorphous and undiagnostic fragments should be considered for discard.

B.8.13

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
138	139	-	Tree Throw	s	fs	Possible weight	-	Fragment of high fired clay/or CBM. Possible fragment from a ring loomweight. It has a roughly semi-circular section where the flat edge is the remains of the central perforation, it has a flattened based and an abraded poss. rounded outer edge (Loomweight segment?)	F3a	Fired	1	24
147	148	1	SFB	s	object	Weight	Loomweight	Six refitting fragments [B72 used] of a ring of clay. Probably an unfired 'intermediate' loomweight. Ovoid perforation/internal aperture Grey-Brown. Very friable. Few surviving surfaces; worm casts aplenty. Slightly flattened with an ovoid section. Upper surfaces are darkened, lower surfaces and internal fabric are lighter in colour. Around 75% complete. Approx. measurements taken.	F1	Unfired/ Lbaked	6	226
147	148	2	SFB	a	?object	-	-	Amorphous fragments of unfired/lightly fired clay. Form unclear.	F1	Unfired/ Lbaked	15	54
147		-		s	?object	-	-	Fragments of unfired/lightly fired clay. Fragments refit to form part of a? disc of clay. Very friable. Unclear form.	F1	Unfired/ Lbaked	4	131
147	174	9	SFB	a	?object	-	-	Amorphous fragments of unfired/lightly	F1?	Unfired/	9	55

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
								fired clay. Site photos suggest that this object was much larger, but photos are unclear as to what it is.		Lbaked		
147	189	37	SFB	a	-	-	-	Frags of a sandy-clayey material, poss.? F1 like the unfired weight but just amorphous. Probably from the same clay "object" as SF38	F1?	Unfired/ Lbaked	12	48
147	189	-		s?	fs?	-	-	Fragments in a buff coloured and porous clay material. Possible remnant flattened surface, but very unclear	F3a	Lbaked	2	32
147	189	38	SFB	a	-	-	-	Fragments of a sandy-clayey material formed by filling an insect hollow and creating a negative cast. Similar material to F1 but no inclusions. A clayey infill of a void in the natural.	F1?	Unfired/ Lbaked	13	230
168	183	27	SFB	a	-	-	-	Amorphous fragments of unfired/lightly fired clay.	F1	Unfired/ Lbaked	6	60
168	250	119	SFB	a	-	Object?	-	Lightly Fired. Largest fragment has a worm cast "perforation"	F1b	Unfired/ Lbaked	8	47
168	250	120	SFB	s	fs/hf	Ad hoc	-	A clam-shaped piece of hand-squeezed clay, probably formed between clasped palms. It is a rounded and fan shaped lump of clay with a thin clay trim around the	F4	Unfired/	1	67

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
								edges. As the hand squeezes it the clay has thinned out to the edges		Lbaked		
168	250	121	SFB	s	object	?weight	?Loomweight	Two refitting fragment of a clay object; possibly fragments of a clay ring/loomweight. Friable and abraded, form very unclear. May be part of same object as other F1a fragments	F1a	Unfired/ Lbaked	2	107
168	250	121	SFB	s	object	?weight	?Loomweight	Two refitting fragments of a clay ring/loomweight, with surviving internal perforation/diameter. Very friable; lightly baked/low fired or unfired?	F1a	Unfired/ Lbaked	2	111
168	250	121	SFB	s	object	?weight	?Loomweight	Fragment of a clay object; possibly part of a clay ring/loomweight. Remnant internal perforation/diameter. Probably lightly baked, clay holds together.	F1b	Lbaked	1	97
168	250	121	SFB	s	object	Weight	Loomweight	Refitting fragments of a Saxon 'bun' loomweight [B72 Glue used]. Lightly baked/low fired. Grey-brown; even colouration. Surfaces are smoothed (one side more so than the other), breaks are smooth. Slightly dome upper and lower faces; flattened peaks. Around 75% complete. Approx. measurements taken.	F2	Lbaked/ Lfired	4	294
168	250	122	SFB	a	-	-	-	Unfired/lightly fired fragments of clay, probably related to the diagnostic objects	F1	Lbaked/	15	40

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
								found in (250)		Lfired		
168	250	123	SFB	a	-	-	-	Fragments of unfired/lightly fired calc./marl clay. No form. Friable and soapy.	F3	Unfired/ Lbaked	14	144
168	250	124	SFB	s	fs	Object?	-	Unfired Clay/Lightly Fired chalky clay	F3	Unfired/ Lbaked	15	51
168	201	125	SFB	a	-	-	-	(blank)	F1?	-	4	10
168	201	130	SFB	a	-	Object?	-	Unfired/Lightly Fired Clay blob	F1	-	15	80
168	221	131	SFB	a	-	Object?	-	Unfired/Lightly Fired Clay blobs	F1b	Unfired/ Lbaked	8	75
168	221	132	SFB	a	-	-	-	Unfired/Lightly Fired Clay blobs	F1?	Unfired/ Lbaked	3	21
168	221	133	SFB	a	-	-	-	Unfired/Lightly Fired Clay blob	F1	Unfired/ Lbaked	1	22
168	169	-	SFB	s	fs	?Structure	?daub	Fragments of fired/baked marly clay - two	F3	Fired	5	90

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
								have wiped flattened surfaces				
168	183	-	SFB	a	-	?Structure	?daub	Amorphous fragment of marly clay, part of the daub assemblage?	F3a	Fired	1	17
168	183	-	SFB	s	rs/hf	?weight	?Loomweight	Possible fragment of the outer face of a Saxon loomweight	F2	Fired	1	12
168	183	-	SFB	s	rs/hf	-	-	Lightly Fired. Largest fragment is semi-circular in plan cylindrical; possibly hand squeezed. No clear form.	F3	Unfired/ Lbaked	4	85
168	197	-	SFB	a	-	-	-	Related to structural fragments in this context	F3	Unfired/ Lbaked	6	62
168	197	-		s	fs/rs/hf	?object	-	Three fragments of fired clay with rounded or flattened surfaces – organic impressiony/mottled surfaces. Largest could be outer face of loomweight	F3	Unfired/ Lbaked	3	102
168	202	-	SFB	a	-	?Structure	?daub	Amorphous fragments of marly clay, part of the daub assemblage?	F3	Fired	4	49
168	202	-		s	fs	?Structure	?daub	-	F3	Fired	1	12
168	203	-	SFB	s	fs/w	Structure	Daub	Fragments of baked clay with a wiped surface and an irregular reverse. The largest piece has a very clear wattle impression within the body parallel to the	F3a	Baked/Fired	8	332

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
								face - 40mm diameter. Organic impressions show it was prob worked wood wattle.				
168	223	-	SFB	s	fs	?Structure	?hearth/?daub	Large fragments of baked/fired clay, mostly amorphous but with remnant flatted surfaces. No clear refits. Part of a structure?	F3a	Baked/Fired	15	355
168	252	-	SFB	a	-	-	-	Amorphous fragment of marly clay, part of the daub assemblage?	F3a	Baked/Fired	1	9
190	191	-	Pit	s	fs	?Structure	?Render	Fragments of clay with a wiped and smoothed surface with a rough/irregular reverse. 20-25mm thick on average. Marly matrix; Pinkish-White in colour. Very likely a render surface for a wall. No wattle impressions. Reverse surface contains many medium to coarse rounded impressions - render applied to a clay surface?	F4	Baked/Fired	24	547
212	213	-	Ditch	a	-	-	-	Fragment related to flattened ones from context - daub?	F3/4	Baked/Fired	40	191
212	213	-	Ditch	s	fs	?Structure	?daub	Fragments of baked clay with flattened surfaces	F1c	Baked/Fired	15	58
212	213	-	Ditch	a					F3/4	Baked/Fired	2	15
247	249	-	Pit	s	fs	?Structure	?render/?daub	Fragment with a wiped surface and an irregular reverse, render or daub?	F4	Fired	1	15

Cut	Context	SF #	Feature	Frag type	Structural type	Object Class	Object Form	Notes	Fabric	Firing	Count	Weight (g)
-	193	-	Wall	a	-	-	-	Amorphous fragment of marly clay, part of the daub assemblage?	F3	Baked/Fired	3	24
										Total	**295**	**4001**

Table 13: Fired/Unfired Clay Catalogue (Key: a=amorphous, s=structural, fs=flattened surface, hf= hand-forming, w=wattle impression)

B.9 Wall Plaster

By Alice Lyons

Introduction and Conclusion

B.9.1 A total of 237 fragments of coarse wall plaster (SF 12), weighing 1207g (of which 17 fragments weighing 414g was retained for analysis) was recovered from an in-situ deposit (196) above a collapsed Roman wall (**193**) of flint construction.

B.9.2 The material consists of a thin coarse layer (averaging 8mm thick) of pale plaster with is tempered with frequent inclusion of pale orange grog (up to 8mm across), which has been wiped smooth on the upper or external surface. The surface has not been skimmed and no paint or other forms of decoration is visible. Undecorated coarse plaster of this type would suggest the collapsed building was not richly decorated and may have been utilitarian in character.

B.10 Worked Bone

By Ian Riddler

Combs

B.10.1 An incomplete double-sided composite comb (SF 65) includes three tooth segments and two end segments, and would originally have extended to around 140mm in length. Traces of five iron rivets remain and one of the tooth segments is now missing. The most remarkable characteristic of the comb, however, is the fact that it is unfinished. The teeth have been cut on one side of the comb but not on the other side, with the exception of a few teeth on one end segment. It is not clear why the comb was discarded when it was so close to completion. It is the only unfinished comb of this type to have been discovered to date and it shows how the comb was fastened together and the teeth were cut and shaped on one side before being cut on the other side. Intriguingly, there are very few saw marks cut into the connecting plate where the teeth have been finished, even though the presence of these marks is a notable characteristic of this comb type. It is possible that these marks may have been added after all the teeth had been cut, which means that they were very much more decorative than functional.

B.10.2 The comb type is the most common to be found in East Anglia during the early Anglo-Saxon period. The earliest examples can be seen at Spong Hill and West Stow, in contexts of the late 5th to early 6th century (Riddler and Trzaska-Nartowski 2013, 139-40). The majority of examples belong to the late 6th to 7th century but some of the characteristics of this comb suggest that it belongs with the early group, rather than these later combs. It is clear from West Stow in particular that the early forms of this comb type were produced to lengths of 135-150mm with five iron rivets and with broad, cylindrical connecting plates of 14-16mm in width. Later combs, and particularly those of 7th-century date, are more elongated in appearance and usually have slender connecting plates, of 11-13mm in width. Some of the characteristics of the early group persist into the later series, notably with SFB 2 at West Stow, where a comb with all of the characteristics of the early group (West 1985, fig 33.8) occurs alongside a comb of a different design (West 1985, fig 33.7) within an assemblage probably deposited *c.*

625-700. Both combs are of similar widths but the connecting plates of the later comb are narrower and the rivets are more widely spaced. These later combs are riveted in a conventional Anglo-Saxon way, with tooth segments secured on one edge and end segments through their centres. Earlier combs, in contrast, were fastened together in a variety of ways. This particular comb has the central tooth segments fastened on both edges and the outer segments on one edge. From the outset, this comb type was produced with relatively coarse teeth, varying from three to seven per centimetre. With the later combs the tooth values become more regular and standardised, and are based around either three and four teeth per centimetre, or four and five teeth per centimetre. There is more variability with the earlier combs and this example, intended to have three teeth per centimetre on both sides, fits best with that group. All of this suggests, therefore, that this is a comb of late 5th to early 6th-century date.

B.10.3 The likelihood that this is a relatively early comb of the type is strengthened by the presence in the same context of a tooth segment from a single-sided composite comb (SF 129). The segment is fragmentary and survives in poor condition, the wear on its teeth indicating that the comb had been heavily used before it was discarded. The connecting plate space, although incomplete, rises well above the teeth, indicating that this segment either comes from a triangular comb or (less likely) a single-sided composite with semi-circular connecting plates. Both comb types are present at Spong Hill, occurring in graves largely of 5th-century date (Riddler and Trzaska-Nartowski 2013, 108-18 and 125-9). Both comb types are seen also at West Stow and in a few cases, notably with SFBs 12 and 45, they were found in the same backfill as fragments of double-sided composite combs (West 1985, fig 61 and 154). Neither triangular nor semi-circular combs extended far into the 6th century and their presence alongside a double-sided composite comb with cylindrical connecting plates is indicative of a date in the late 5th to early 6th century. A third comb from the same context, a single-sided composite, is represented by another tooth segment (SF 35), which has a neatly rounded upper edge, set above two closely-spaced rivet holes. The upper edge is angled away from the baseline across the segment, indicating that it derives either from a winged comb, or possibly from a crested single-sided composite comb, much like a near-complete example from West Stow SFB 43 (West 1985, fig 147.5). The latter type of comb would, once again, fit the proposed dating for this deposit well. A fragment of an antler end segment (SF 127) from a double-sided composite comb came from a layer (202) above the lowest deposits in SFB **168**. Too little survives to be able to identify it to type, unfortunately.

*SF 65 – Fill 201 (SFB **168**)*

B.10.4 Fragmentary unfinished antler double-sided composite comb, consisting of parts of two undecorated connecting plates, fastened to two end segments and three tooth segments by four iron rivets (Fig. 15). The teeth have been cut along one side of the comb, but have only been sawn and completed at the ends along the other side, and the comb was discarded before it was finished. The connecting plates are cylindrical in form and only extended a short distance across each end segment. The two central tooth segments are fastened by iron rivets on both edges, whilst the other surviving segment was secured on just one edge; the end segments have rivets passing through their centres. There are three teeth per centimetre on each side of the comb.

*SF 129 – Fill 201 (SFB **168**)*

B.10.5 Fragment of an antler tooth segment from a single-sided composite comb, probably of triangular form. Three complete teeth survive, tapering lightly to blunt ends with traces

of some wear on both sides in the form of lateral lines along their length. Traces of one iron rivet survive.

*SF 35 – Fill 183 (SFB **168**)*

B.10.6 Incomplete antler tooth segment from a single-sided composite comb, with three of the five teeth surviving. Teeth are relatively short and taper slightly to blunt ends with traces of considerable wear on one side, which has shortened two of them. Back edge of segment is rounded and comb was originally crested. Two closely-spaced rivet holes remain with traces of iron staining on the segment edge suggesting that a third rivet hole lay nearby.

*SF 127 – Fill 202 (SFB **168**)*

B.10.7 Fragmentary antler end segment from a double-sided composite comb, consisting of part of the middle section with a complete rivet hole, showing iron staining on one side. No complete teeth remain; the stubs indicate that there were 3 teeth per centimetre on one side and 5 per centimetre on the other.

Needle or Pin

B.10.8 The shaft of a bone needle or pin (SF 10), cut from a pig fibula, is lightly curved and tapers to a blunt point. The object is more likely to derive from a needle than a pin, but it has fractured below the head, which makes its identification difficult. Pig fibula needles are abundant in early Anglo-Saxon contexts, whilst dress pins are comparatively rare before the 7th century and were mostly made from bones other than the pig fibula, or from antler. Pig fibula needles are often regarded as sewing implements for the repair of textiles, but they should be seen as objects used in the weaving process, as well as having other functions, as noted by Ulbricht (1984, 54). In effect, they were implements used on the warp-weighted loom, alongside pin-beaters.

*SF 10 – Fill 183 (SFB **168**)*

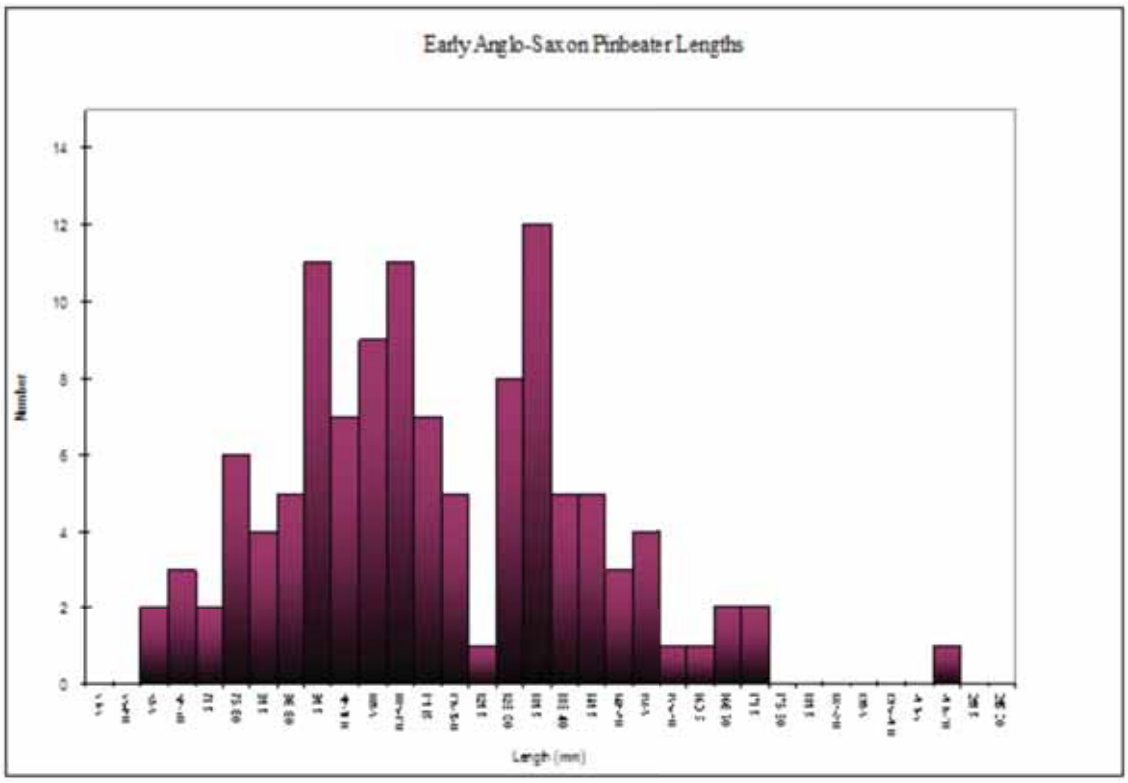
B.10.9 Fragmentary bone needle or pin, cut from a pig fibula, the shaft oval in section and lightly curved, tapering towards the point, which has fractured away. The head is also missing. Highly polished.

Pin-beater

B.10.10 A near-complete pin-beater (SF 126), from the lowest fill of SFB 147, has a heavily abraded surface and is made of antler or bone. It is double pointed and is essentially cylindrical in form and oval in section, tapering to pointed terminals at either end. The double pointed type is the only form of pin-beater known from the early Anglo-Saxon period and it is thought to have been used with the warp-weighted loom both to pick out individual strands and to beat down weft threads (Riddler 1996, 136; Walton Rogers 1997, 1755). Almost seventy examples are known from East Anglian settlements of this period, making them one of the most common antler or bone implements, alongside combs and needles (Riddler and Trzaska-Nartowski 2011, fig 7.5a). Double pointed pin-beaters have previously been separated into two groups, simply on the basis of their lengths (Riddler 1996, 136), and the same basic division still prevails, and probably relates to the use of these objects in pairs or larger numbers at the loom. Spindle whorls may also have been kept in sets (Walton Rogers 2007, 26). The precise lengths for the two groups of double pointed pin-beaters should now be revised slightly, the shorter group now extending from 60mm to 120mm and the longer group from 125mm to 175mm.

*SF 126 – Fill 174 (SFB **147**)*

B.10.11 Near complete antler or bone double pointed pin-beater, surviving in degraded condition with most of the polished upper surface now missing. Oval in section and tapering to rounded terminals at either end.



Graph 3: Early Anglo-Saxon Double Pointed Pin-beater Lengths

Modified Rib Bones

B.10.12 Two lightly-modified rib bones were found within the sequence of backfills of SFB **168**. The larger, cattle-sized piece (SF 105) has been neatly cut by knife at either end and is polished from use. It probably served as a burnisher, an object type that occurs in late prehistoric contexts and has been linked to pottery production (Britnell 2000, 255; Riddler 2011, 235). Early Anglo-Saxon examples, including a burnisher from Pennyland (Riddler 1993, 117 and fig 60.62), are likely to have served a similar purpose. The smaller piece of rib bone (SF 99) is neatly cut at one end but shows no further modification. It is small and short and may have been intended as raw material for bone working, in the production of bone casket mounts in particular.

*SF 105 – Fill 250 (SFB **168**)*

B.10.13 Segment of a cattle-sized rib bone, neatly cut laterally by knife at either end and lightly rounded and worn across one of the ends. Polished on both sides.

*SF 99 – Fill 221 (SFB **168**)*

B.10.14 Section of cattle-sized rib bone, cut and snapped laterally by knife at either end, with further knife marks on both sides. Otherwise unmodified.

Appendix C. Environmental Reports

C.1 Environmental samples

By Rachel Fosberry

Introduction

C.1.1 Thirty-two bulk samples were taken from features within the excavated areas along the length of the Marham Resilience Scheme, Middleton, Norfolk in order to assess the quality of preservation of plant remains and their potential to contribute to the research aims of the project.

C.1.2 Two periods of settlement were identified and samples were taken from Roman pits and ditches and Early Saxon SFBs and pits.

Methodology

C.1.3 For an Initial assessment two buckets (approximately 20L) were processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. Subsequently, the remaining volume of the samples from the Saxon SFBs were processed. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Tables 1 and 2. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

C.1.4 For the purpose of this assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-10, ### =11-25 specimens

Items that cannot be easily quantified such as charcoal has been scored for abundance:

+ = rare, ++ = moderate, +++ = abundant

Results

C.1.5 Preservation of plant remains is by carbonisation and is generally poor with very few remains recovered and heavy root contamination. The burrowing snail, *Cecilioides acicula* is present in most of the samples and also represents modern intrusion. No other molluscs have been preserved.

C.1.6 Hammerscale in the form of flakes and spheroids is present in small amounts in the samples from Roman deposits but was noticeably less frequent in the samples from Saxon deposits.

C.1.7 The results are discussed by phase:

Phase 2: Roman

C.1.8 Fourteen samples were taken from disuse fills of ditches and pits. Charred cereal grains have been identified as barley (*Hordeum vulgare*) and wheat (*Triticum* sp.), probably spelt wheat (*T. spelta*) but the grains are present in low densities and probably represent discarded burnt grain that has accumulated in negative features on the site. Only two weed seeds are preserved; a spike-rush (*Eleocharis pallustris*) in ditch **156** and a black-bindweed (*Fallopia convolvulus*) seed in ditch **175**.

Feature no.	Context no.	Sample no.	Feature type	% context sampled	Related numbers	Volume processed (l)	Flot volume (ml)	Cereals	Weed seeds	Charcoal <2mm	Charcoal > 2mm	Flot comments
156	157	3	Ditch	<10		10	5	#	#	++	++	Single spelt grain
175	177	5	Ditch	<10		16	20	#	#	+++	++	Single barley grain
193	196	10	Structure	100		5	5	0	0	+	+	Sparse charcoal only
198	199	12	Ditch	<20		17	30	0	0	+	+	Sparse charcoal only
204	205	18	Ditch	30		9	20	0	0	0	0	No preservation
208	209	19	Ditch	100		16	10	#	0	++	+	Single oat and wheat grains
212	214	22	Ditch	<10	21,23	16	10	0	0	++	++	Charcoal only
212	215	23	Ditch	<10	21,22	16	5	##	0	+	+	Occasional barley
226	227	28	Ditch	<10		6	2	##	0	++	++	Occasional wheat and barley
230	231	29	Pit	50		9	10	0	0	+	+	Sparse charcoal only
242	245	34	Ditch	>5		18	40	0	0	+++	+++	Charcoal only
242	246	35	Ditch	>5		15	10	0	0	++	++	Charcoal only
261	264	42	Pit	50		14	90	#	0	++	+	2 indet grain, abundant modern fat hen seeds

Table 14: Samples from Roman deposits

Phase 3. Early Saxon

C.1.9 Samples were taken from two SFBs; SFB **147** produced a total of three charred grains identified as wheat and barley. SFB **168** was more productive with a moderate assemblage of wheat and barley grains in addition to rye (*Secale cereale*) and oats

(*Avena* sp.). Two chaff fragments of rye rachis are also present. The charred seed assemblage includes two linseed/flax (*Linum usitatissimum*) seeds, black bindweed, ribwort plantain (*Plantago lanceolata*), mallow (*Malva* sp.), dock (*Rumex* sp.), clover (*Trifolium* sp.) and orache (*Atriplex* cf. *patula*). Charcoal was frequent and includes preserved roundwood stems. All of the charred remains were recovered from the upper fills of the north-east quadrant (fills 202 and 203), which had been used for rubbish disposal. The lower fill of this quadrant did not contain any preserved remains.

C.1.10 The remaining samples contain only occasional charred remains although fill 158 of ditch **156** produced a charcoal rich deposit indicative of the burning of wood.

Feature no.	Context no.	Sample no.	Feature type	% sampled context	Related numbers	Volume processed (l)	Flot volume (ml)	Cereals	Chaff	Legumes	Weed seeds	Charcoal <2mm	Charcoal 2mm v	Flot comments
127	128	1	Pit	>20		16	5	##	0	0	#	+	+	Occasional wheat, barley and oats. Single brome seed
129	130	2	Pit	>20		16	5	##	0	0	0	++	++	Occasional wheat, barley and oats. Single brome seed
147	174	7	SFB	<20		34	15	0	0	0	0	+	+	Sparse charcoal only
147	188	9	SFB	<20		38	20	0	0	0	0	++	++	Single barley grain
147	189	11	SFB	<20		32	10	#	0	0	0	++	++	Single hulled wheat grain
149	150	43	Pit	<20		14	40	0	0	0	0	+++	+++	Charcoal only
156	158	4	Ditch	<10		11	120	#	0	0	0	+++	+++	2 indet grain, charcoal rich
168	203	13	SFB	<10		35	100	##	#	0	#	+++	+++	Mixed cereals, flax, seeds

Feature no.	Context no.	Sample no.	Feature type	% context sampled	Related numbers	Volume processed (l)	Flot volume (ml)	Cereals	Chaff	Legumes	Weed seeds	Charcoal <2mm	Charcoal 2mm v	Flot comments
168	202	14	SFB	<10		35	30	##	0	0	#	++	+	Mixed cereals and seeds
168	201	15	SFB	<10		16	10	0	0	0	0	+++	++	Moderate charcoal
181	182	6	Pit	<10		6	25	0	0	0	0	++	++	Charcoal only
190	191	8	Pit	<10		16	30	#	0	0	#	++	++	2 barley grains
212	213	21	Ditch	<10	22, 23	18	130	#	0	0	0	++	++	Single wheat and barley grain
216	217	20	Ditch	<10		17	10	#	0	#	0	+++	+++	Single hulled wheat grain, small legume
224	225	24	Pit	50		8	1	#	0	0	0	+	+	Single indet grain
236	237	30	Pit	50		8	10	#	0	0	0	++	++	Occasional wheat and barley
238	239	31	Pit	50		5	10	#	0	#	0	+++	++	Single barley grain
242	243	33	Ditch	>5		19	120	0	0	0	0	+++	+++	Charcoal only
247	249	32	Pit	10		16	15	0	0	0	0	+++	+	Charcoal only

Table 15: Samples from Early Saxon deposits

Discussion

C.1.11 The sandy soils of this site are not conducive to the preservation of plant remains by any means other than carbonisation. The density and diversity of the carbonised remains is low with the only significant assemblage recovered from SFB **168**. Samples were only taken from one quadrant of this feature so it is not possible to determine spatial distribution of charred remains but it is likely that the disuse fills represent midden material that would have been mixed in origin and subject to decomposition prior to being deposited in the void of the dismantled SFB. The range of cereals recovered from this feature are typical of the Saxon period in that barley and rye

predominate. Flax/linseed was also popular at this time for both the oil-producing seeds and the use of the fibrous stems to produce linen.

C.1.12 The plant remains recovered from the Roman period of activity on this site are not indicative of deliberate deposition and preclude further interpretation.

C.1.13 Charcoal fragments from SFB **168** and ditch **156** are suitable for species identification. The plant remains have been fully examined and no further work is recommended.

C.2 Faunal Remains

By Hayley Foster

Introduction

C.2.1 This report details the analysis of the animal bone recovered from Marham Resilience Scheme, Middleton, Norfolk. The assemblage was of a medium size (40.7 kg) and the number of recordable fragments totalled 685 from hand-collection and 15 fragments from environmental samples. Animal bone was recovered from pits, ditches, a post-hole and two sunken-featured buildings. The species represented includes cattle (*Bos taurus*), sheep/goat (*Ovis/Capra*), sheep (*Ovis aries*) horse (*Equus caballus*), pig (*Sus scrofa*), dog (*Canis familiaris*), mole (*Talpa europea*), roe deer (*Capreolus capreolus*), domestic fowl (*Gallus gallus*) and domestic goose (*Anser anser*). Environmental samples additionally include frog (*Rana temporaria)*, mouse (*Mus musculus*) and a fish from the Gadidae family. Faunal material was divided into two phases, Roman and Early Saxon for the purposes of analysis

Methodology

C.2.2 The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which was modified from Albarella and Davis (1996). This involves analysing and recording bones from the assemblage but omitting those fragments that are considered 'low grade' and not worthy of being counted. In order for an element to be recorded 50% of the diagnostic zone on a bone must be present. This method narrows down the assemblage so that fragmented elements are not counted multiple times. MNI (minimum number of individuals) was calculated for all species present. MNI estimates the smallest number of animals that could be represented by the elements recovered.

Identification

C.2.3 Identification of the faunal remains was carried out at Oxford Archaeology East. References to Hillson (1992), Schmid (1972), von den Driesch (1976) and Cohen & Serjeantson (1996) were used where needed for identification purposes. Attempts to distinguish between sheep and goat were carried out based on morphological characteristics and metric data following Boessneck (1969, 339-341) and Prummel and Frisch (1986, 569-570).

Ageing

C.2.4 Two methods of ageing were implemented when analysing the mammalian bone remains. These methods include observing dental eruption and wear and epiphyseal fusion. When analysing tooth wear of sheep/goat, tooth wear stages by Payne (1973 and 1987) were implemented. Tooth wear stages by Grant (1982) were implemented when assessing wear for cattle and pig. Higham (1967) mandibular wear stages (MWS) were assigned to loose mandibular M3s and mandibles with the innermost tooth still

present. Fusion was recorded according to Silver (1970) for horse and dog, and Schmid (1972) for cattle, sheep and pig.

Taphonomy

C.2.5 Gnawing marks made by carnivores and rodents were noted where applicable. For all identified bones and non-countable bone, butchery marks were recorded. Butchery marks were described as chop, cut or saw marks. Burning on bones was simply recorded as either blackened, calcined or singed.

Metrics

C.2.6 Measurements were taken according to the specifications of von den Driesch (1976), Payne and Bull (1988) and Davis (1992). Estimated shoulder heights were calculated following Fock (1966) for cattle, Kiesewalter (1888) for horse, Teichert (1969) for sheep all as quoted in von den Driesch and Boessneck (1974).

Result of Analysis

C.2.7 Material from securely dated contexts were divided into two phases, with the Early Saxon phase sub-divided to observe material coming solely from the sunken-featured buildings. The majority of the assemblage is derived from the Early Saxon phase.

Roman Phase

C.2.8 The Roman phase was dominated by cattle remains making up 70.7% of the total recordable fragments recovered. The higher percentage of cattle during the Roman period is typical, yet the dominance of cattle in this phase was particularly high. The distribution of skeletal elements for cattle suggests that all stages of carcass processing and consumption are represented here, and the few sheep/goat bones present are also consistent with this interpretation, contrary for pig where only one element is not cranial.

Element	Cattle	Sheep/Goat	Pig	Horse	Bird	Dog	Total
Cranium	5					2	**7**
Loose teeth	9		2				**11**
Loose lower incisor			1				**1**
Loose lower canine						2	**2**
Loose lower premolar	8		1				**9**
Loose lower M1/2	11	2					**13**
Loose lower M3	2						**2**
Mandible	13		3			1	**17**
Atlas	1			1			**2**
Axis	1						**1**
Scapula	2			1			**3**
Humerus	3						**3**
Radius	2	2	1	1			**6**
Ulna	1						**1**
Metacarpal	3			1			**4**
Pelvis	1	4					**5**

Element	Cattle	Sheep/Goat	Pig	Horse	Bird	Dog	Total
Femur	7	1		1			**9**
Tibia	2	2		1			**5**
Calcaneum	2			1			**3**
Metatarsal	1				2		**3**
Metapodial	4						**4**
Scafocuboid	2						**2**
Phalanx 1	1						**1**
Phalanx 2	1			1			**2**
NISP	82	11	8	8	2	5	**116**
%NISP	70.7	9.5	6.9	6.9	1.7	4.3	
MNI	6	2	2	1	1	1	**13**
%MNI	46.2	15.4	15.4	7.7	7.7	7.7	

Table 16: Number of identifiable specimens (NISP) by element and species for Roman phase.

C.2.9 The ageing data for the Roman phase is limited, though certain trends are likely. The ageing data indicates that cattle were slaughtered around 2-3 years of age according to the dental wear and epiphyseal fusion. There is no presence of very young or old cattle in this phase. No dental wear data could be obtained for sheep/goat from the Roman phase, however the fusion data indicates that all elements had fused epiphyses, suggesting most animals were older than 3.5 years at death. At Romano-British sites cattle were used for dairying, traction and they were commonly slaughtered for meat around four to eight years of age (Maltby, 2016). This does not correspond with the ageing data collected from this site, in that cattle were slaughtered before reaching that age. The sample size overall is small which should be taken in to account, however, the trend is suggesting cattle were slaughtered for meat slightly earlier. During the Roman period sheep were often slaughtered for meat, when reaching a good carcase weight, at the end of their immaturity, around 18-36 months, and those sheep that were adults were exploited for wool production (Maltby, 2016). As there is such a small amount of data from this phase no solid husbandry interpretations can be drawn. There were no unfused epiphyses for sheep/goat, suggesting a lack of young animals present perhaps implying a heavier reliance on secondary products opposed to meat.

C.2.10 Pig would have been slaughtered once reaching an optimum weight as they do not produce secondary products. The lone piece of dental wear data indicates a pig was slaughtered at 16-17 months of age.

C.2.11 Dog and horse are minor domestic species in this phase only represented by a small amount of fragments, each with an MNI of one. Bird remains consisted of two identified species, domestic fowl and domestic goose.

Early Saxon Phase

C.2.12 The Early Saxon phase contained the largest amount of animal remains. As in the Roman phase, cattle dominated the assemblage. The main domestic mammals, cattle, sheep/goat and pigs, account for most (96%) of the recordable bone in the Early Saxon assemblage. Where sheep/goat bones could be speciated, only sheep were identified. The distribution of skeletal elements for cattle, sheep/goat and pig suggests that all stages of carcass processing and consumption are represented here, as there are a

wide range of elements present including cranial and foot elements. The large number of cattle first phalanges is unusual as they are usually not as well preserved, however the amount recovered may be down to good hand-collection during excavation.

C.2.13 There is a presence of minor domestic species including horse and dog, but also a few wild species with a fragment of roe deer antler and a mole ulna present. The roe deer antler was a naturally shed antler with no indications of butchery present.

C.2.14 The age of cattle at time of death has a wide range in this phase according to tooth wear and epiphyseal fusion. Cattle ranged from 6-7 month up till over 50 months at death. Most unfused elements are in the late fusion stage, indicating the presence of animals less than 42-48 months of age at death. The small presence of young cattle suggests that settlement breeding was likely taking place and cattle likely slaughtered for meat around 4 years of age.

C.2.15 Sheep/goat have a presence of young animals less than 6-8 months but also adult and very old animals. With all age groups represented it suggests onsite breeding was taking place, meat exploitation was occurring but also animals are kept longer for their secondary products such as milk and wool.

C.2.16 Pig were slaughtered at less than 2 years of age, which would be when pigs would reach their optimum weight for slaughter. Pigs would not be kept beyond this age as they were used solely for meat and lard. Horse remains were likely mainly adult animals as they had fused epiphyses, except a horse unfused proximal tibia, which shows an animal less than 3.5 years of age at death.

Element	Cattle	Sheep/Goat	Pig	Horse	Bird	Roe Deer	Mole	Dog	Total
Antler						1			**1**
Horncore	9	1							**10**
Cranium	8	2	2						**12**
Loose teeth	37	14	5	1					**57**
Loose lower incisor	5	2	11						**18**
Loose lower canine			4						**4**
Loose lower premolar	9	13							**22**
Loose lower M1/2	18	27	2	2					**49**
Loose lower M3	2	14	2						**18**
Mandible	24	27	9						**60**
Atlas	4	4	1						**9**
Axis		1	1						**2**
Coracoid					1				**1**
Scapula	17	8	1						**26**
Humerus	12	2	4		3				**21**
Radius	16	15	3					1	**35**

Element	Cattle	Sheep/Goat	Pig	Horse	Bird	Roe Deer	Mole	Dog	Total
Ulna	3	1	2				1	1	**8**
Metacarpal	16	14	3	1					**34**
Pelvis	21	7	1	2					**31**
Femur	11	9	1						**21**
Tibia	14	11	3	1	1				**30**
Astragalus	6	4							**10**
Calcaneum	5	1	1						**7**
Metatarsal	11	10	1	1					**23**
Metapodial	8	2							**10**
Scafocuboid	4								**4**
Phalanx 1	21	7	1	3					**32**
Phalanx 2	3	1							**4**
Phalanx 3	6		1	3					**10**
NISP	290	197	59	14	5	1	1	2	**569**
%NISP	51.0	34.6	10.4	2.5	0.9	0.2	0.2	0.4	
MNI	12	7	5	1	2	1	1	1	**30**
%MNI	40.0	23.3	16.7	3.3	6.7	3.3	3.3	3.3	

Table 17: Number of identifiable specimens (NISP) by element and species for Early Saxon phase.

Sunken-Featured Buildings

C.2.17 The material from the Early Saxon phase is subdivided for this section as two sunken-featured buildings were identified and contained faunal remains. The remains that came from SFB **147** containing two contexts with recordable remains (148 and 174) whereas SFB **168** contains 12 contexts (169, 183, 197, 201, 202, 203, 221, 222, 223, 250, 251 and 252) with recordable remains. The material from the SFBs represent 30% of the bone from the Early Saxon phase.

C.2.18 Some of the mammal bone from the sunken-featured buildings show signs of weathering (context 174) and gnawing (contexts 223 and 252) indicating it is likely that some of the remains were exposed to the elements or gnawed by carnivores and not buried straight away.

C.2.19 Body part representation indicates that again most elements are present within the SFBs. Domestic species are the most common species represented with mole as the only fragment from a wild animal as the bird remains belong to domestic fowl and domestic goose. Overall the material from the two SFBs is a small sample size and besides the species and body part representations no further solid interpretations can be provided.

C.2.20 The faunal remains from the sunken-featured buildings mostly follow the ageing of the other Early Saxon material. There is interestingly a presence of young cattle, 8-13 months; young sheep/goat 3-10 months; and young pig, 2-4 months. The other

fragments that could be assigned age of death, followed the patterns of the other Early Saxon material. Certain fragments, appear to be specifically placed within the SFBs as lone fragments of bone, however there was no noticeable trend in fragment type or species type. There is evidence of probable worked bone from the SFBs that was extracted from the assemblage for further investigation by a specialist.

Element	Cattle	Sheep/Goat	Pig	Horse	Bird	Mole	Total
Horncore	2	1					**3**
Cranium	5						**5**
Loose teeth	21	4	1				**26**
Loose lower incisor	5	2	1				**8**
Loose lower premolar	4	1					**5**
Loose lower M1/2	9	5	1				**15**
Loose lower M3	1	3	1				**5**
Mandible	14	3	2				**19**
Atlas		2					**2**
Axis	2	1	1				**4**
Coracoid					1		**1**
Scapula	11	3	1				**15**
Humerus	5	2	3		3		**13**
Radius	10	7					**17**
Ulna	1	1	2			1	**5**
Metacarpal	8	5		1			**14**
Pelvis	7	4					**11**
Femur	5	4	1				**10**
Tibia	2	4	2	1	1		**10**
Astragalus	1	3					**4**
Calcaneum		1					**1**
Metatarsal	1	2	1				**4**
Metapodial	3	2					**5**
Scafocuboid	1						**1**
Phalanx 1	13	6	1				**20**
Phalanx 2	2	1					**3**
Phalanx 3	2						**2**
NISP	135	67	18	2	5	1	**228**
%NISP	59.2	29.4	7.9	0.9	2.2	0.4	
MNI	6	4	2	1	2	1	**16**
%MNI	37.5	25.0	1.3	6.3	12.5	6.3	

Table 18: Number of identifiable specimens (NISP) by element and species for the Early Saxon phase from the SFBs

Remains from Environmental Samples

C.2.21 There was a small amount of faunal material recovered from environmental samples (740g), 16 fragments of identifiable material. The remains recovered consisted of cattle, sheep/goat, pig, mouse, frog, and a fish from the Gadidae family. Most of the fragments from the samples belong to the Early Saxon period, with one frog vertebra and the cattle cranium coming from Roman contexts. The remains from the domestic species were generally large pieces of bone, but the recovery techniques allowed for a small presence of fish, mouse and frog to additionally be recovered.

Element	Cattle	Sheep/Goat	Pig	Mouse	Frog	Fish	Total
Cranium	1						**1**
Loose teeth	3						**3**
Loose lower incisor			1				**1**
Atlas					1		**1**
Caudal vertebra						1	**1**
Cervical vertebra					1		**1**
Scapula	1		1				**2**
Radius	1						**1**
Ulna			1				**1**
Metacarpal	1						**1**
Femur		1		1			**2**
Phalanx 2	1						**1**
NISP	8	1	3	1	2	1	**16**
%NISP	50.0	6.3	18.8	6.3	12.5	6.3	
MNI	1	1	1	1	1	1	**6**
%MNI	16.7	16.7	16.7	16.7	16.7	16.7	

Table 19: Number of identifiable specimens (NISP) by element and species for faunal remains from environmental samples

Taphonomy

C.2.22 As an assemblage the bone surface condition is relatively good and fragmentation moderate. Carnivore gnawing is present on 1.5% of the recordable fragments of the whole assemblage, mainly on cattle remains. Gnawing is mostly seen on distal shafts or epiphyses of long bones. Two fragments from context 213 and two fragments from 252 exhibit excessive gnawing by dogs. Several contexts contained bone that was highly weathered (145, 146, 158, and 174). These bones were in poor condition and exhibit signs of cracking and a rough and fibrous surface. Both gnawing and weathering are indications that remains were not immediately buried.

C.2.23 Burning is evident on less than 1% of the recordable fragments, with cattle and pig elements showing evidence of been singed, blackened and calcined. There are many more unidentifiable tiny fragments that also exhibit signs of burning.

C.2.24 Butchery marks are present on 1.2% of recordable fragments. Butchery is seen in the form of heavy chop marks representing dismemberment and fine cut marks for skinning and filleting. Butchery of the mandible of cattle were the most common form of butchery present. Fine cut marks on the body of the mandible below the tooth row and heavy chop marks on the ascending ramus and the mandibular hinge were observed. This type of evidence is typical of removal of the mandible from the rest of the skull, which is often associated with the removal of the tongue and the sharp knife marks on the body of the mandible are evidence of skinning.

Pathology

C.2.25 A horse first phalanx from context 213 (Early Saxon phase) saw evidence of excessive bone growth, on the medial side. The aetiology appears to be an infection, likely osteomyelitis, as there is a cloaca on the posterior side, which would have formed for the infection to drain. There were no articulating bones recovered, therefore the extent of the infections could not be identified. The aetiology is unknown, however could be related to injury.

C.2.26 A sheep/goat mandible from context 202 (SFB **168**) shows evidence of a dental abscess where the fourth premolar would have been located. No teeth were present in the mandible for this specific fragment. The abscess is represented by a bulge in the lower tooth row. The abscess has smooth sides and no signs of cloacae. Dental abscesses are caused when micro-organisms accumulate in the pulp cavity, which causes inflammation and pus collection (Roberts and Manchester 2005, 70). The formation of the abscess itself is initiated by the pulp exposure (Baker and Brothwell 1980, 154).

C.2.27 A cattle femur from context 245 (Roman phase) exhibits signs of slight eburnation on the femoral head, which is a sign of excessive wear on the joint which creates a shiny slightly polished surface, common in draught cattle (Bartosiewicz et al. 1997).

Stature

C.2.28 Biometry was carried out on all bones where measurements were possible to obtain using Boessneck (1969, 339-341) and Prummel and Frisch (1986, 569-570). Estimated shoulder heights could be calculated for complete long bones for several specimens where greatest lengths could be measured.

C.2.29 Estimated shoulder height could only be calculated for elements from the Early Saxon phase of occupation as there were no complete bones from the Roman phase, therefore changes in stature over time was not possible to assess. However, the metrical data is within the ranges comparable with the limited amount of data from other Early Saxon sites from the Animal Bone Metrical Archive Project (ABMAP).

Species	Context	Element	Greatest Length (mm)	Estimated Shoulder Height (cm)	Phase
Cattle	249	Metacarpal	196.0	120.0	Early Saxon
Cattle	213	Metacarpal	172.0	105.4	Early Saxon
Cattle	252	Humerus	261.0	124.5	Early Saxon (SFB)
Sheep/Goat	289	Metacarpal	114.5	56.0	Early Saxon

Species	Context	Element	Greatest Length (mm)	Estimated Shoulder Height (cm)	Phase
Sheep/Goat	183	Radius	157.0	63.1	Early Saxon (SFB)
Sheep/Goat	250	Calcaneum	58.6	63.2	Early Saxon (SFB)
Sheep/Goat	252	Metatarsal	124.3	56.4	Early Saxon (SFB)
Horse	213	Metacarpal	184	117.9	Early Saxon
Horse	213	Metatarsal	236	130.5	Early Saxon
Horse	223	Metacarpal	219	140.4	Early Saxon (SFB)

Table 20: Estimated shoulder heights of domestic species.

Sexing

C.2.30 There were 8 pig canines that could be identified to sex based on morphology. There are 5 that are identified as male and 3 that are identified as female. The small sample size does not allow for interpretations to be made regarding pig breeding and husbandry strategies Cattle metacarpals were sexed based on measurements of their distal breadth using McCormick (1997). From the limited amount of sexing data, the sex of cattle would appear to be relatively even across the assemblage, therefore not showing a distinct bias toward dairying or meat use.

Context	Phase	Bd (mm)	Sex
180	Roman	53.5	Female
249	Early Saxon	60.38	Male
213	Early Saxon	50.63	Female
241	Roman	51.5	Female
252	Early Saxon (SFB168)	65	Male
252	Early Saxon (SFB168)	53.8	Female
223	Early Saxon (SFB168)	54	Female
130	Early Saxon	61.16	Male

Table 21: Sexing of cattle metacarpals using breadth of distal (Bd)

Discussion

C.2.31 The analysis of the faunal remains from Middleton, provided some interesting insights into the human-animal relationship during the Roman and Early Saxon periods. Domestic animals were the basis of the food economy with cattle heavily dominating the assemblage, followed by sheep/goat. Cattle were numerically predominant over sheep in both phase groups, with beef contributing far more to the diet of the residents than lamb or mutton in both periods.

C.2.32 This data suggests that during the Roman period people were favouring a husbandry pattern that focused on a mixed economy, where pig and cattle were mainly slaughtered

for meat and sheep/goat were more likely to have been exploited for their secondary products. The presence of immature cattle and sheep/goat remains raises the possibility of milk exploitation and breeding close by to the settlement for both species. During the Early Saxon period sheep/goat consisted of more adults used for their secondary products whereas cattle were mainly younger indicating people were favouring them for exploitation of their meat, and likely for some minimal use for milking.

C.2.33 Horses were only minimally represented in both phases. The main roles of horses were for transportation and agricultural work. The presence of osteomyelitis in a horse first phalanx is likely an indication that the horse was kept even if suffering from partial lameness of the leg.

C.2.34 The small presence of dog in both phases is not uncommon on sites in the region. Dogs are usually present in small number at most sites during this period and only in larger numbers within burials.

C.2.35 Pig husbandry was an activity of some economic importance at the site, making up over 10% of the NISP in the Early Saxon phase, which would be an additional source of food after cattle and sheep/goat. Wild animals play a very minor role and likely no role in terms of food production.

C.2.36 Sunken-featured buildings are typically Early Saxon in England and have been recorded containing animal bone in many parts of the region. Examples include West Stow in Suffolk (Crabtree, 1989) and Kings Meadow Lane in Northamptonshire (Albarella & Johnstone, 2000). The settlements vary as West Stow contained thousands of animal bone fragments from numerous huts.

C.2.37 From the zooarchaeological evidence as a whole it would be logical to propose that animals were reared, slaughtered and dismembered locally.

Statement of Potential

C.2.38 The preservation of the bone overall was good, though weathering was observed in several contexts, particularly in the sunken-featured buildings. Fragmentation was moderate. The amount of material and the securely dated contexts make for a sound faunal assemblage.

Retention and Further Study

C.2.39 The assemblage is worthy of full retention as it contains a meaningful amount of bone (over 40 kg) and provides strong insight into dietary and husbandry practices in Norfolk during both the Roman and Early Saxon periods. The examples of pathology would be worthy pieces for display or further study as extensive pathology on zooarchaeological remains is often minimal.

C.3 Shell

By Carole Fletcher

Introduction and methodology

C.3.1 A total of 0.047kg of shell was collected by hand during the excavation. The shells recovered are all edible examples of oyster *Ostrea edulis*, from estuarine, shallow coastal waters and intertidal zones (Winder 2011). The shell is relatively poorly preserved and, although it does not appear to have been deliberately broken or crushed, the shells are flaking and none are complete. The shells were weighed and recorded by species, the minimum number of individuals was not recorded due to the

small size of the assemblage, although right and left valves are noted where this could be determined.

Assemblage

C.3.2 The earliest material recovered was from three Roman pits, **230**, **261** and **277** (Phase 2). In each case the shell is in relatively poor condition and are mostly fragments from single shells. The presence of oyster shell on Roman sites and in Roman features is not uncommon, however, the low numbers recovered do not indicate that they were a common food source on this particular site. All of the shells could relate to a small number of meals, the remnants of which were deposited in a midden and later became incorporated into the pits. No conclusions can be drawn from the presence of these few shells, other than to indicate a probable, although not frequent, food source. The site's location, close to estuarine and shallow coastal waters beyond (modern) Kings Lynn and the river Great Ouse, would suggest that oysters should have been more common.

C.3.3 Two partial oyster shells were recovered from sunken featured building (SFB) **168**. As with the Roman material, the shell is in relatively poor condition and may have become incorporated into the feature after it fell out of use. Oysters are relatively common on Saxon sites with access to the coast, either directly or via nearby rivers. As with the Roman material, the proximity of the site to the estuarine and shallow coastal waters beyond (modern) Kings Lynn and the river Great Ouse, would suggest that oysters should have been more common.

Conclusion

C.3.4 The shells recovered represent general discarded food waste and, although not closely datable in themselves, may be dated by their association with pottery or other material also recovered from the features. The following catalogue acts as a full record and the shell may be deselected prior to archival deposition.

Phase	Context	Cut	Species	Common Name	Habitat	Min. No. of Shells	Description	Weight (kg)
3	183	**168**	*Ostrea edulis*	Oyster	Estuarine and shallow coastal water	1	SF 25: Partial shell ?left valve, thick walled, slightly iridescent, powdery where surface loss has occurred.	0.011
3	223	**168**	*Ostrea edulis*	Oyster	Estuarine and shallow coastal water	1	Partial left valve, much of outer surface has been lost and the resultant surface is powdery. Surviving width 44 x length 55mm	0.015
2	231	**230**	*Ostrea edulis*	Oyster	Estuarine and shallow coastal water	1	Near-complete left valve, poor surface condition, some surface loss has occurred and the shell is powdery. Surviving width 43 x length 48mm	0.012
2	264	**261**	*Ostrea edulis*	Oyster	Estuarine and shallow coastal	1	Eight fragments from one or more shells, all fragments are in poor condition and powdery	0.003

Phase	Context	Cut	Species	Common Name	Habitat	Min. No. of Shells	Description	Weight (kg)
					water			
2	279	**277**	*Ostrea edulis*	Oyster	Estuarine and shallow coastal water	1	Partial left valve, in relatively good condition, however, powdery where surface loss has occurred. Surviving width 35 x length 32mm	0.006
Total						**5**		**0.047**

Table 22: Shell by context

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Appendix E. OASIS Report Form

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-309492		
Project Name	Roman and Early Saxon Settlement along the Marham Resilience Scheme, Middleton		
Project Dates (fieldwork) Start	29-05-2017	Finish	30-06-2017
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	ENF142220	Planning App. No.	WAT-05865-MIDDWR
HER No.	ENF142220	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Water Act 1989 and subsequent code of practice

Please select all techniques used:

☐ Field Observation (periodic visits)	☐ Part Excavation	☐ Salvage Record
☐ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☐ Recorded Observation	☐ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☒ Open-Area Excavation	☐ Salvage Excavation	☒ Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
pit	Bronze Age -2.5k to -700	pot	Bronze Age -2.5k to -700
pit	Roman 43 to 410	pot	Roman 43 to 410
pit	Early Medieval 410 to 1066	pot	Early Medieval 410 to 1066

Project Location

County	Norfolk	Site Address (including postcode if possible)	
District	West Norfolk & Kings Lynn	Station Road Middleton Norfolk	
Parish	Middleton		
HER	Norfolk		
Study Area	14400sqm	National Grid Reference	TF 67266 17390 - TF 6711

Project Originators

Organisation	OA EAST
Project Brief Originator	James Albone
Project Design Originator	Kathryn Blackbourn
Project Manager	Richard Mortimer
Supervisor	Kathryn Blackbourn

Project Archives

Physical Archive	Digital Archive	Paper Archive
NMAS	OAE	NMAS
ENF142220	XNFMRS17	ENF142220

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☒	☒
Ceramics	☒	☒	☒
Environmental	☒	☒	☒
Glass	☐	☐	☐
Human Bones	☐	☐	☐
Industrial	☒	☒	☒
Leather	☐	☐	☐
Metal	☒	☒	☒
Stratigraphic		☒	☒
Survey		☒	☒
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☒	☒	☒
Worked Stone/Lithic	☒	☒	☒
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☒ GIS	☒ Context Sheet
☐ Geophysics	☐ Correspondence
☒ Images	☐ Diary
☒ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☒ Spreadsheets	☒ Map
☒ Survey	☒ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☒ Photos
	☒ Plans
	☒ Report
	☒ Sections
	☒ Survey

Notes:

TF 67266 17390 - TF 67111 16227

Ditch - Roman
wall - Roman
spread - Roman
SFB - Early Saxon
ditch - Early Saxon

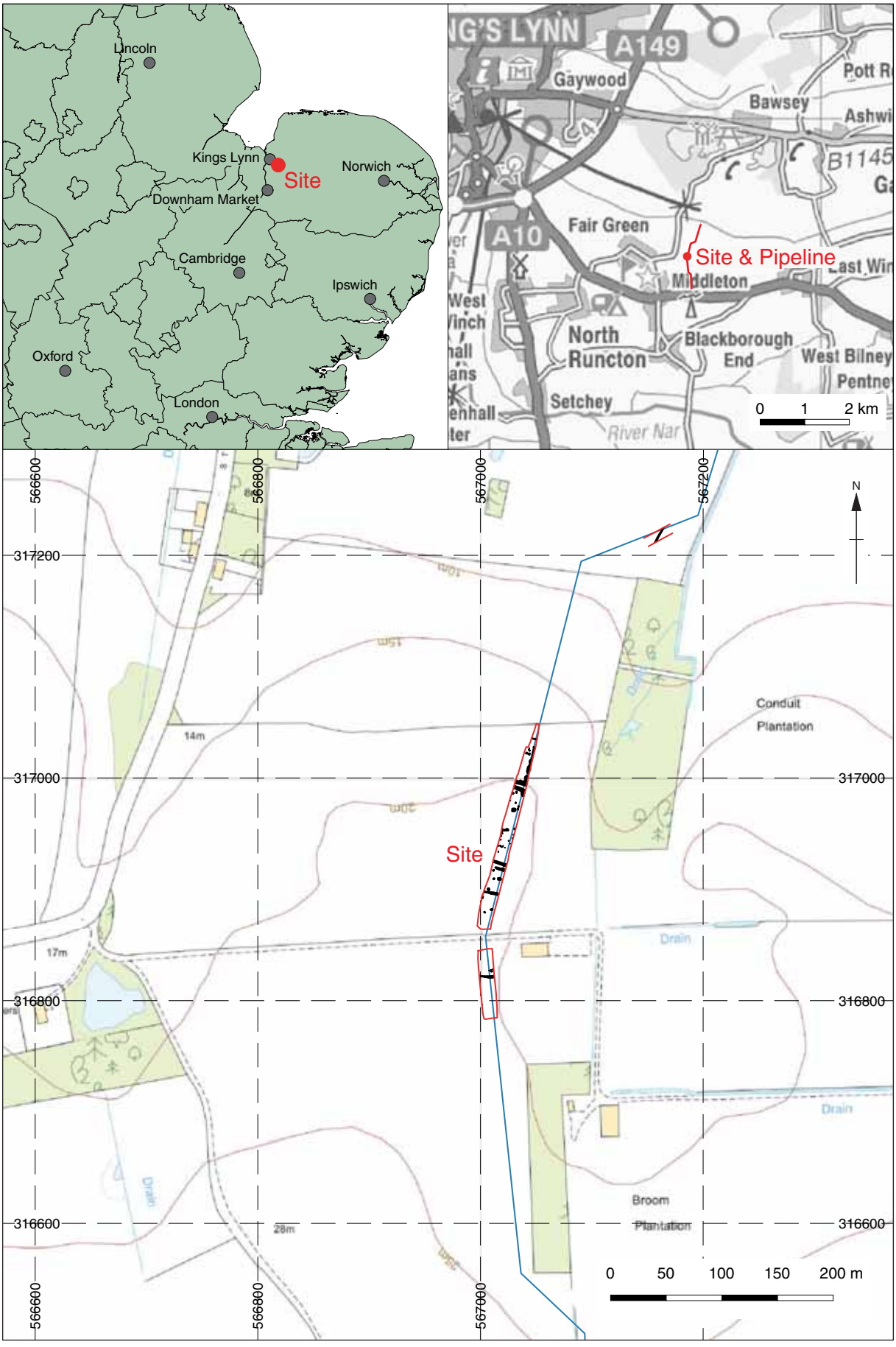


Figure 1: Site location showing archaeological excavation (red) and route of pipeline (blue). Scale 1:5000

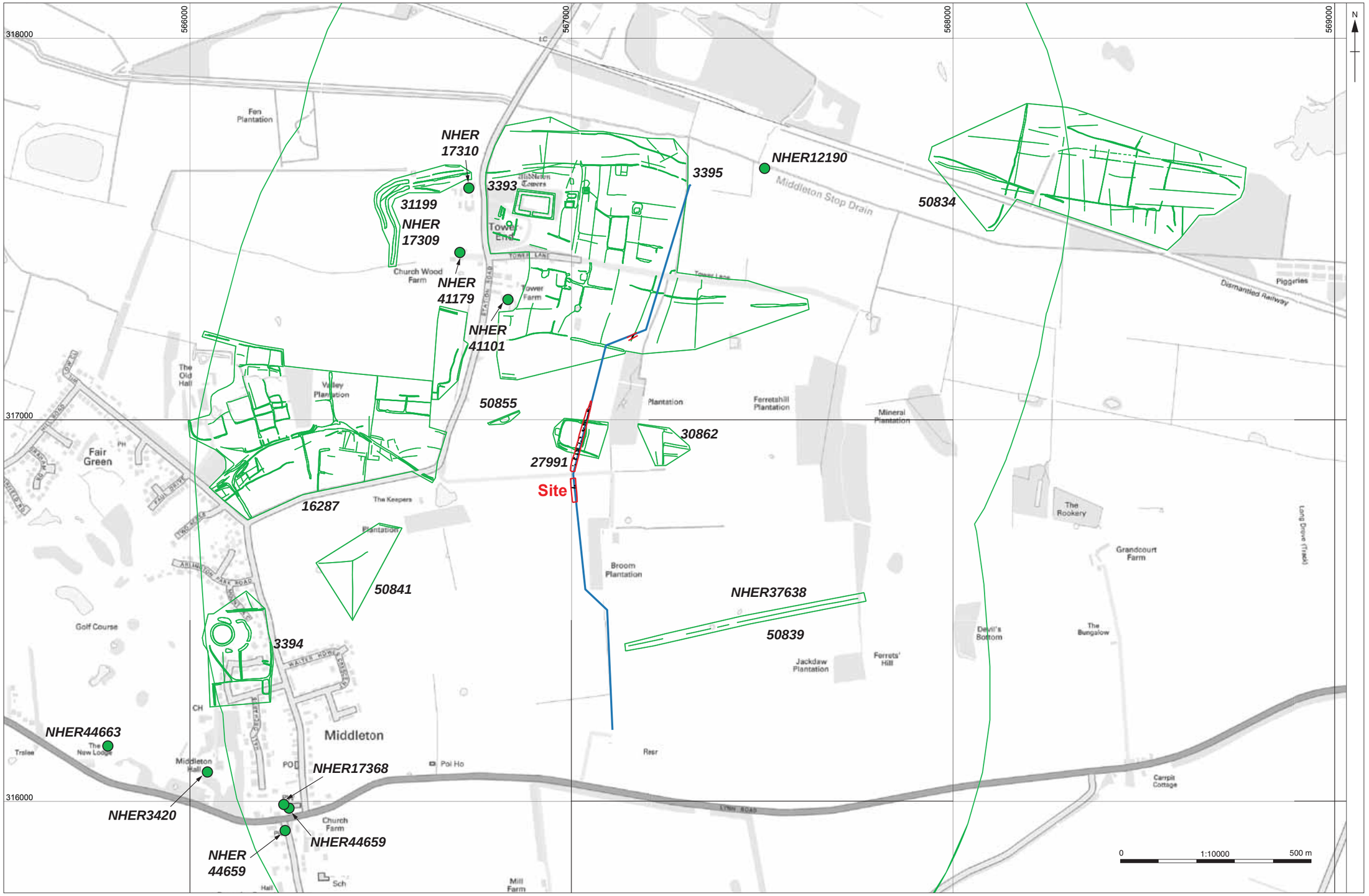


Figure 2: Map showing NHER data (green). Scale 1:10000

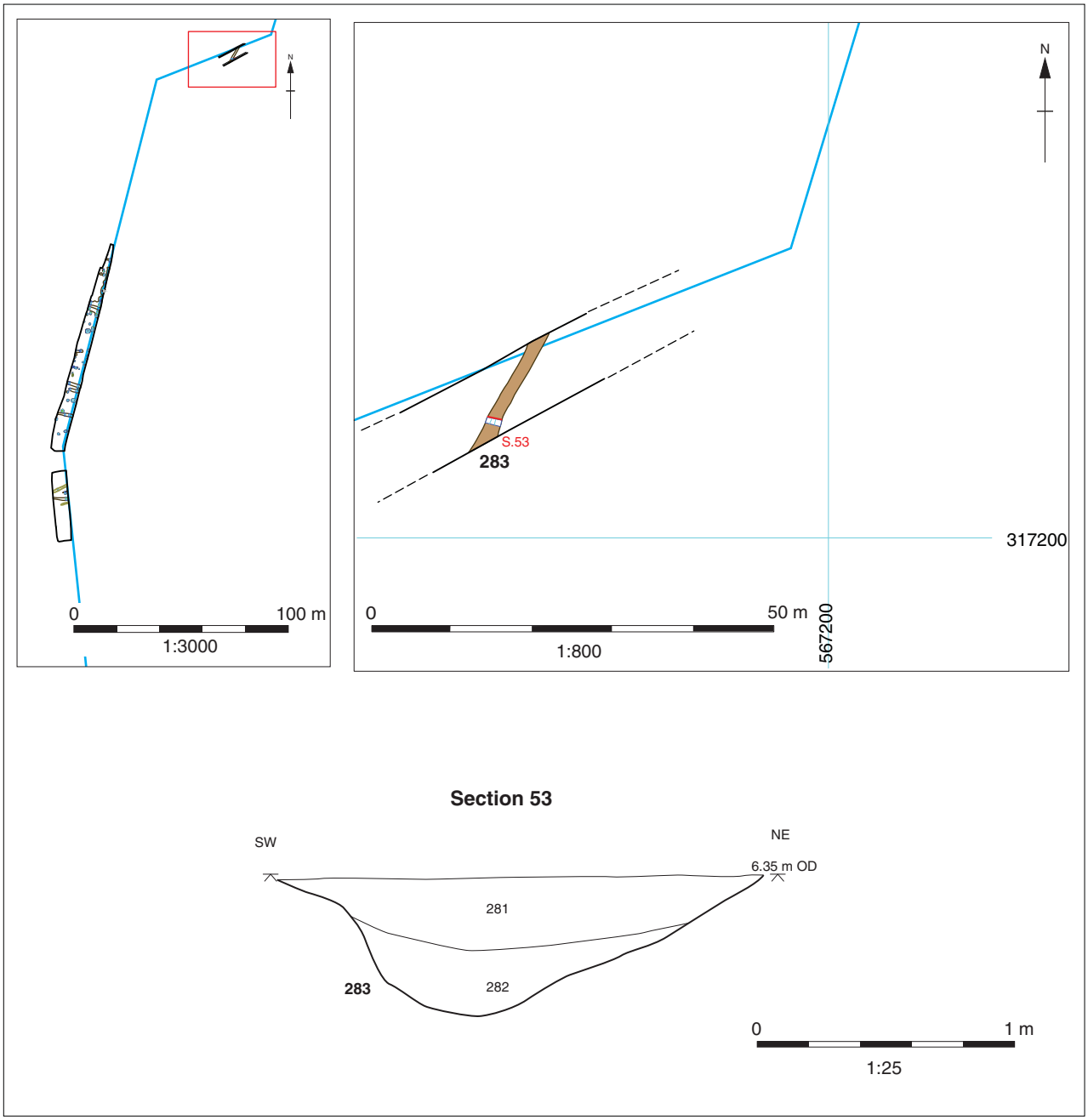


Figure 3: Archaeological Monitoring

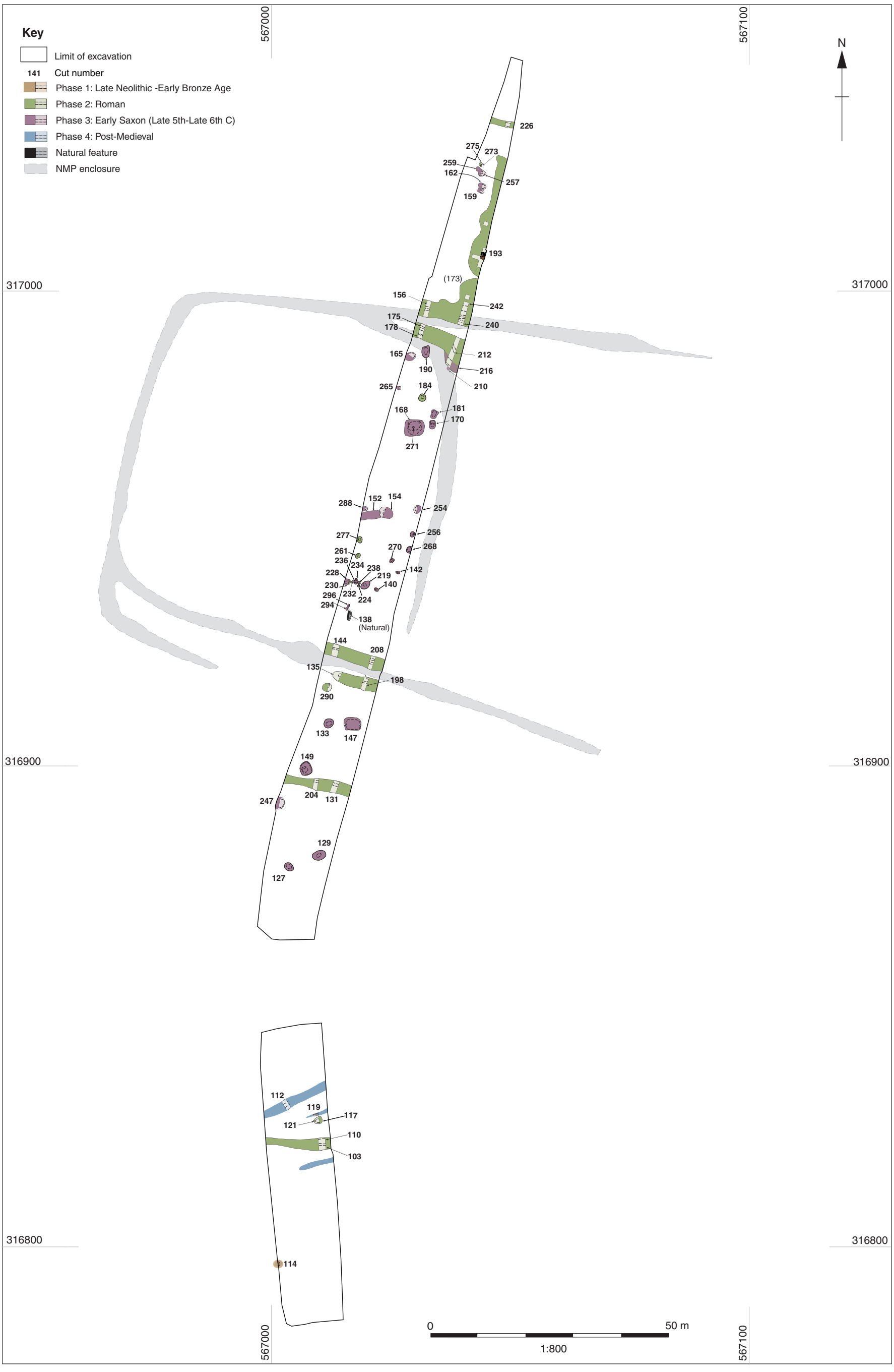
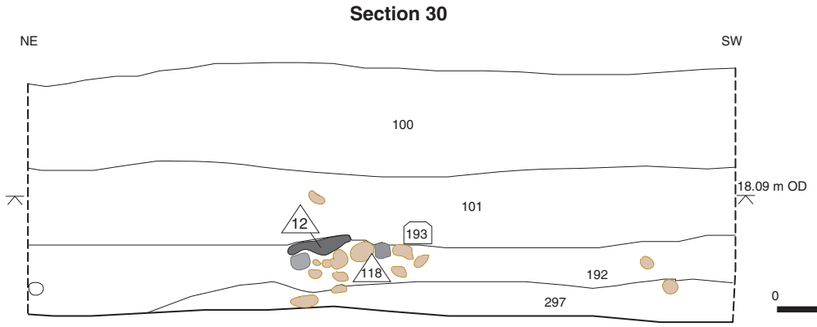


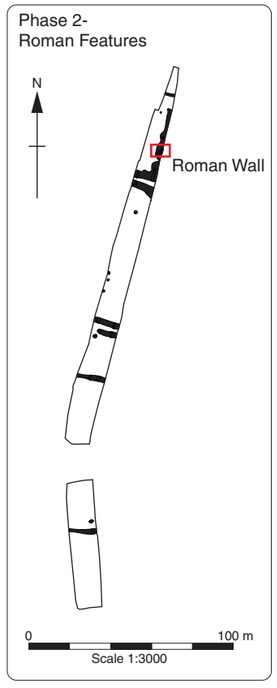
Figure 4: All Phase Plan

Figure 5: Roman Phase Plan

Collapsed Roman wall (193) with Plaster (SF12)

Collapsed Roman wall (193) without Plaster





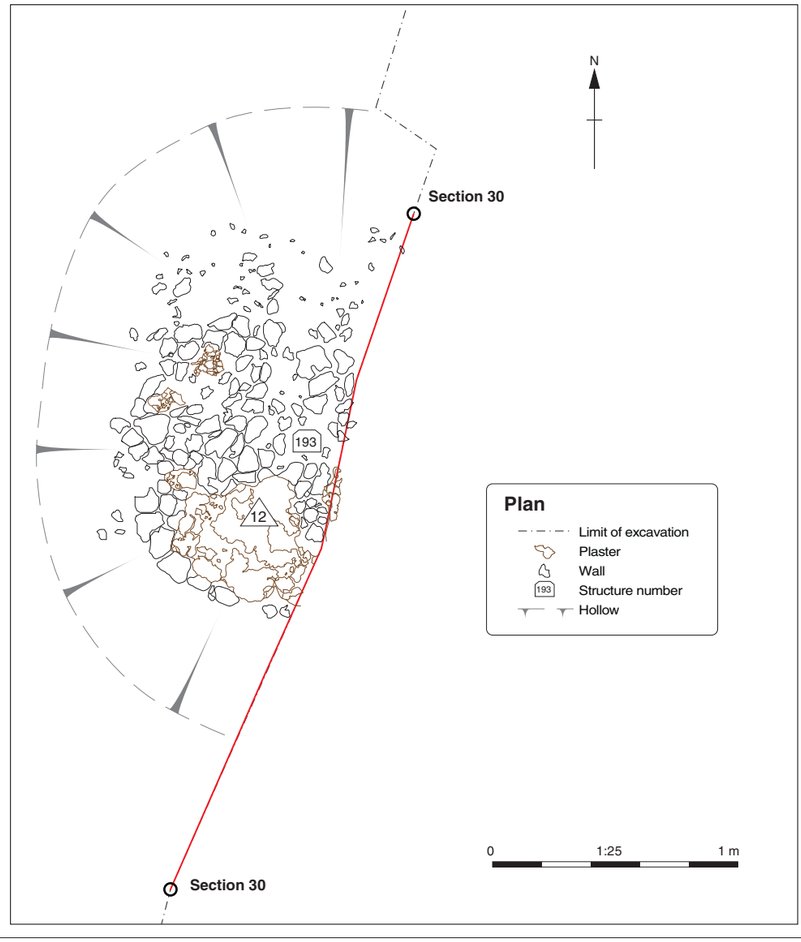
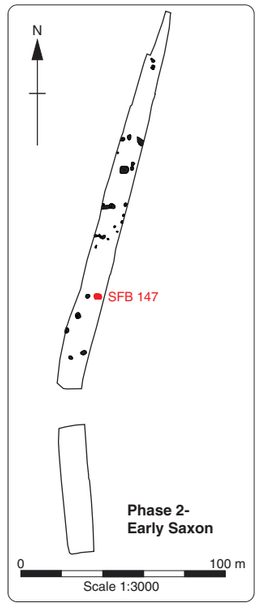
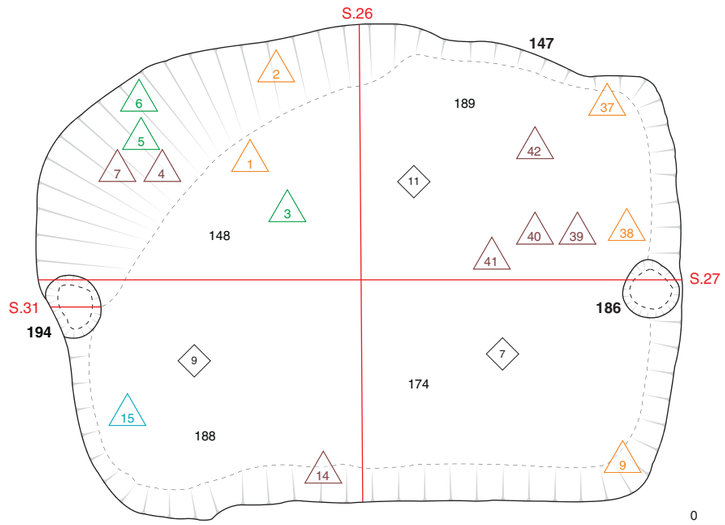


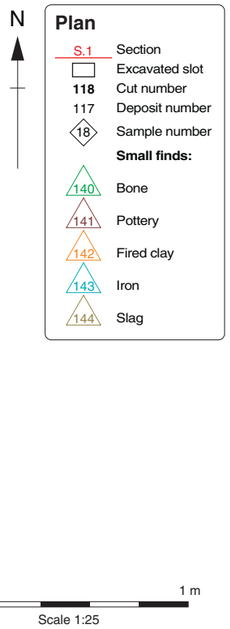
Figure 6: Detailed Plan of Collapsed Wall 193 (Phase 2) and associated section

Figure 7: Early Saxon Phase Plan

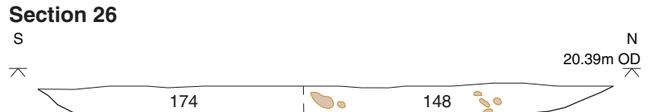


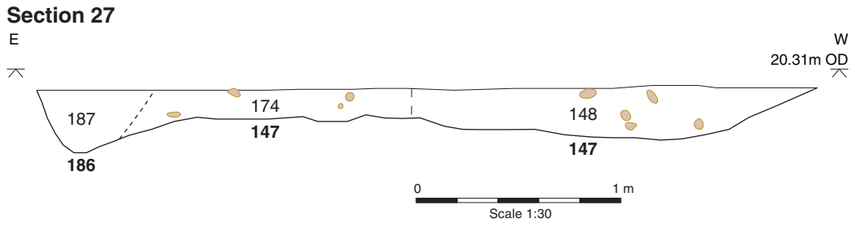
SFB 147

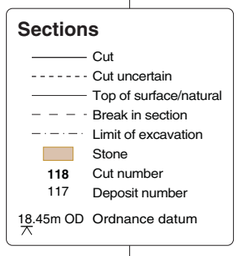




Phase 3 SFB 147, looking east







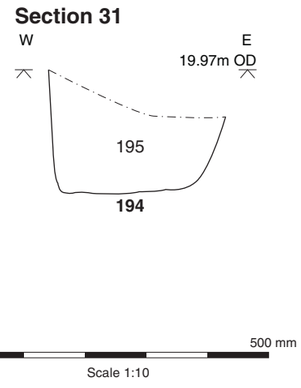
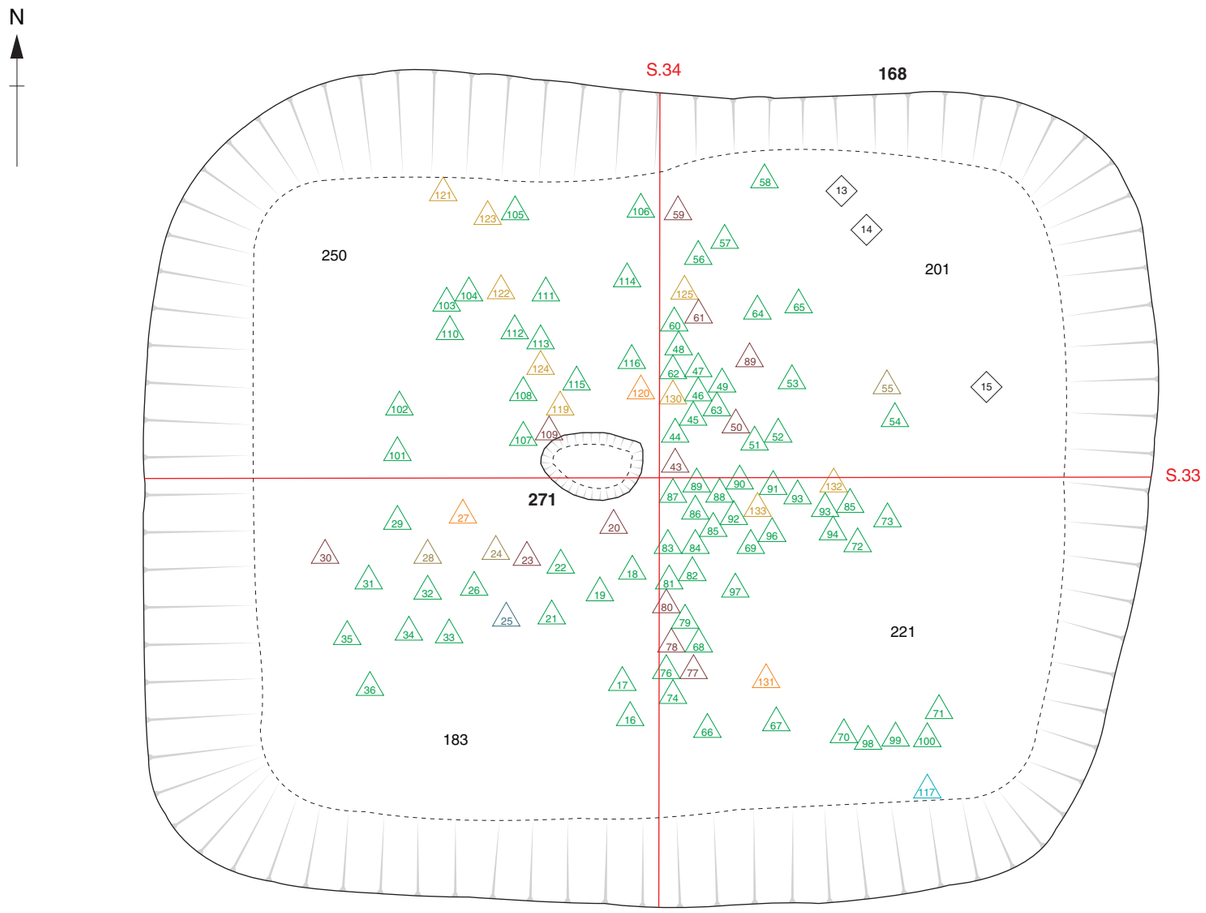


Figure 8: Detailed plan of SFB 147 (Phase 3) and associated sections

SFB 168



Phase 3 SFB 168, looking east

Plan

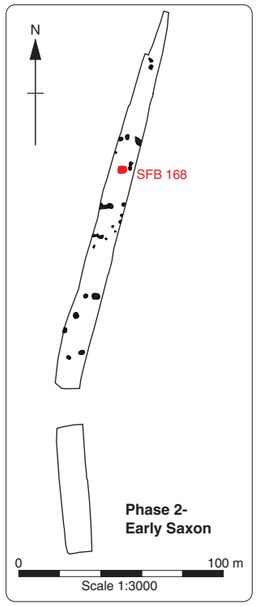
- S.1 Section
- Excavated slot
- **118** Cut number
- 117 Deposit number
- 18 Sample number

Small finds:

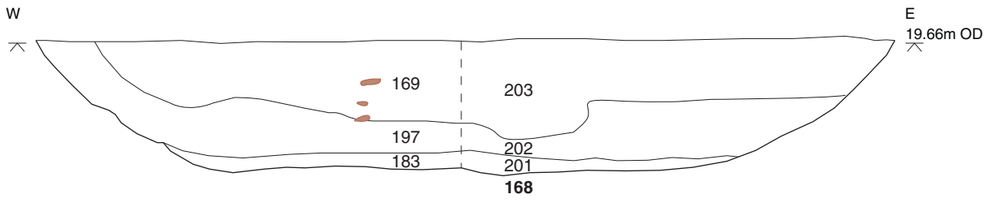
- 140 Bone
- 141 Pottery
- 142 Fired clay
- 143 Unfired clay
- 144 Iron/Copper alloy
- 145 Slag
- 146 Shell

Sections

- Cut
- Top of surface/natural
- Break in section
- Pottery
- **118** Cut number
- 117 Deposit number
- 18.45m OD Ordnance datum



Section 33



Section 34

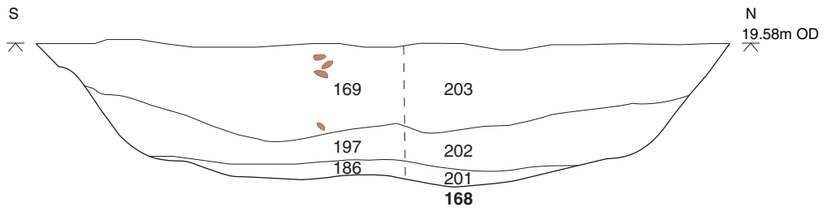


Figure 9: Detailed plan of SFB 168 (Phase 3) and associated sections

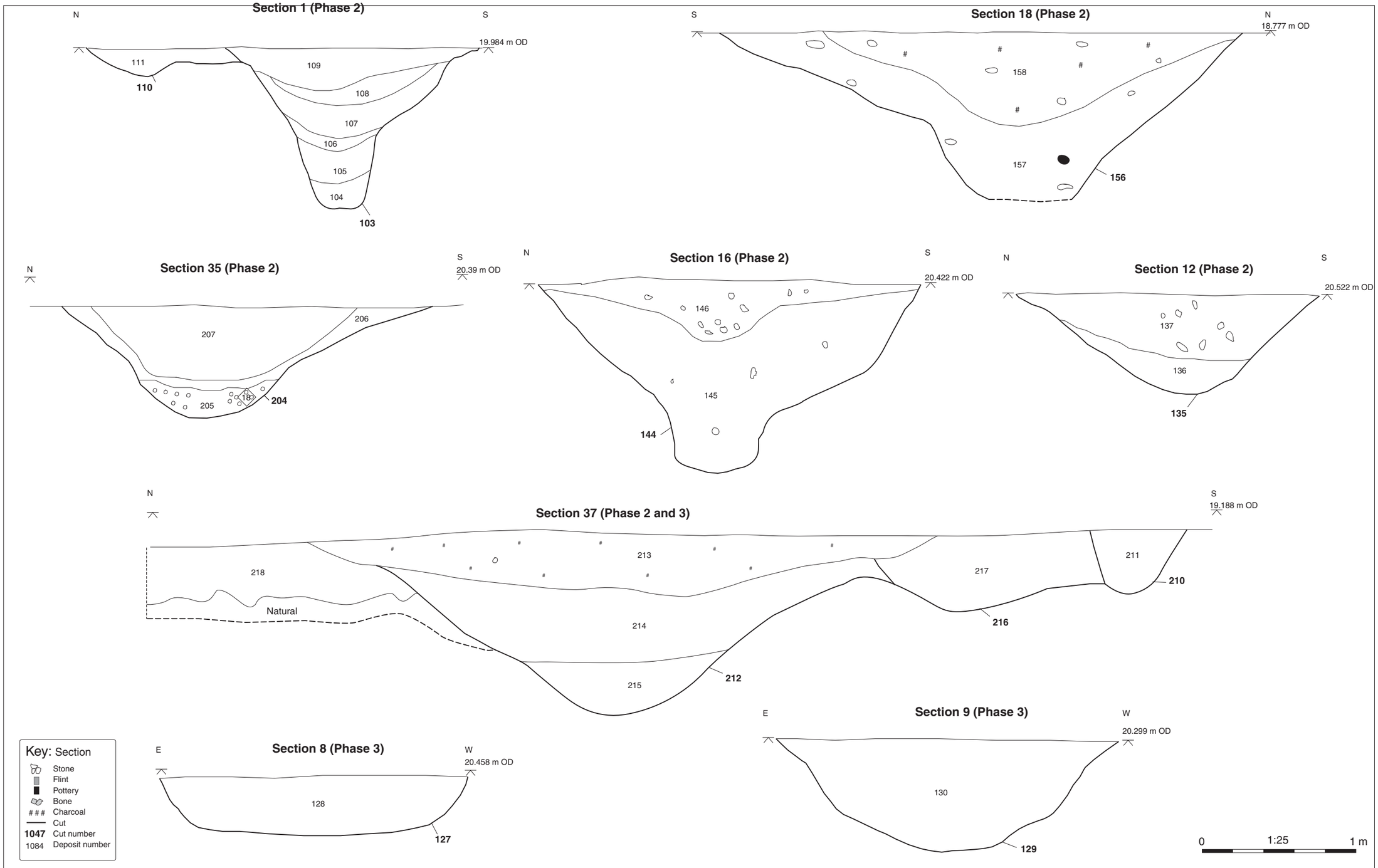


Figure 10a: Selected Sections (Phase 2 and 3)

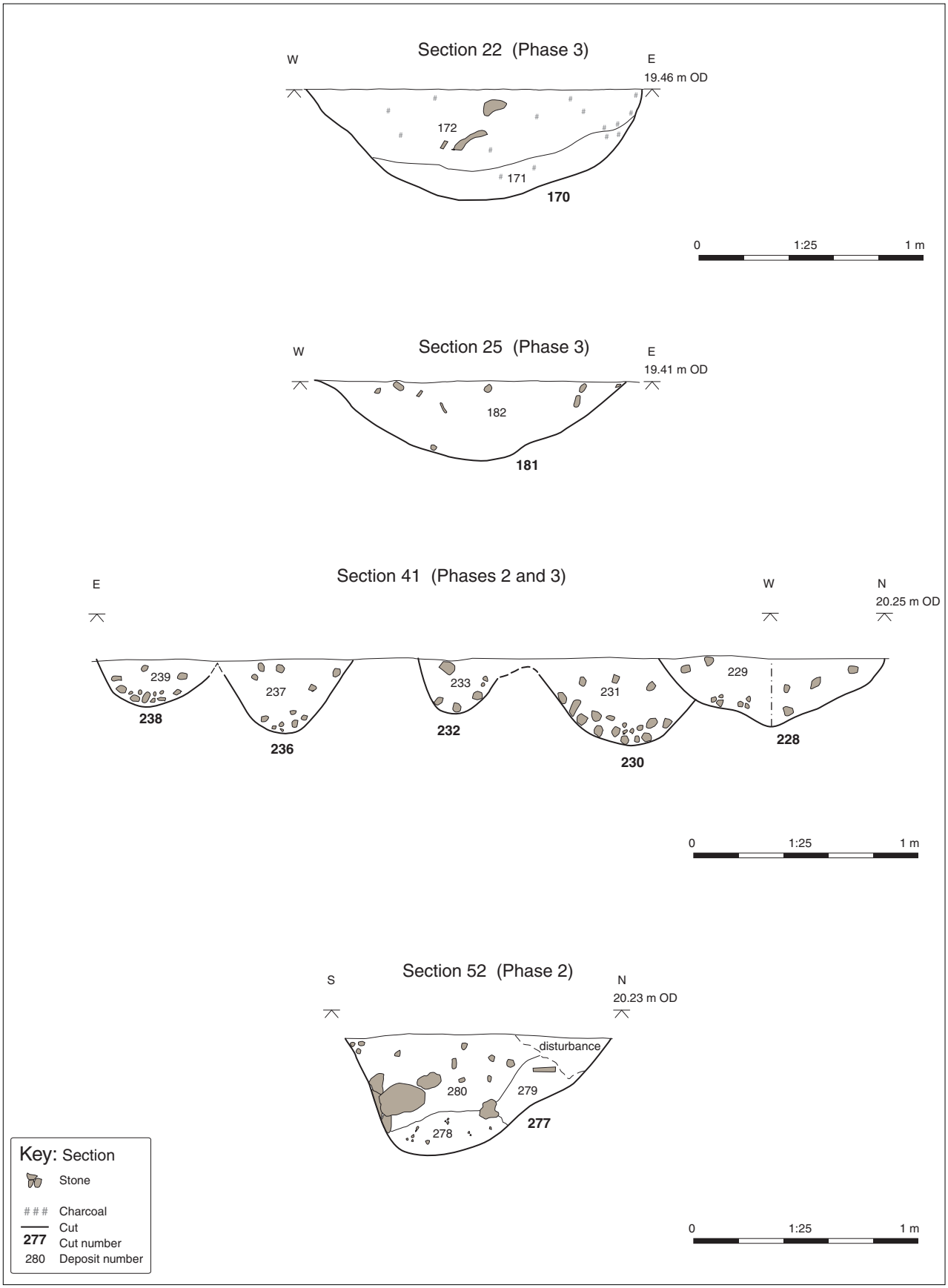


Figure 10b: Selected Sections (Phase 2 and 3)

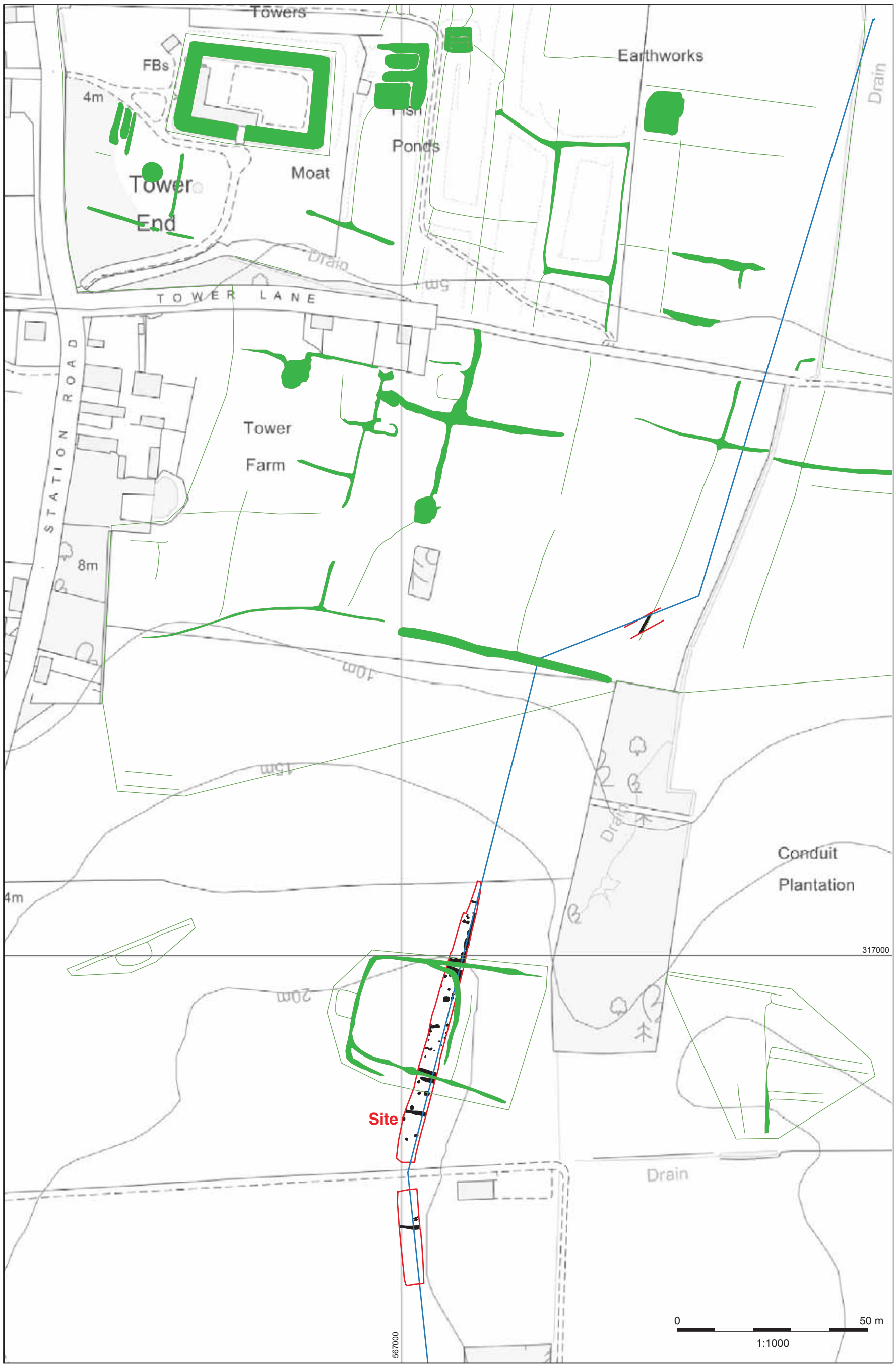


Figure 11: Plan showing the Excavation area and nearby cropmarks (NMP data) in green. Scale 1:1000

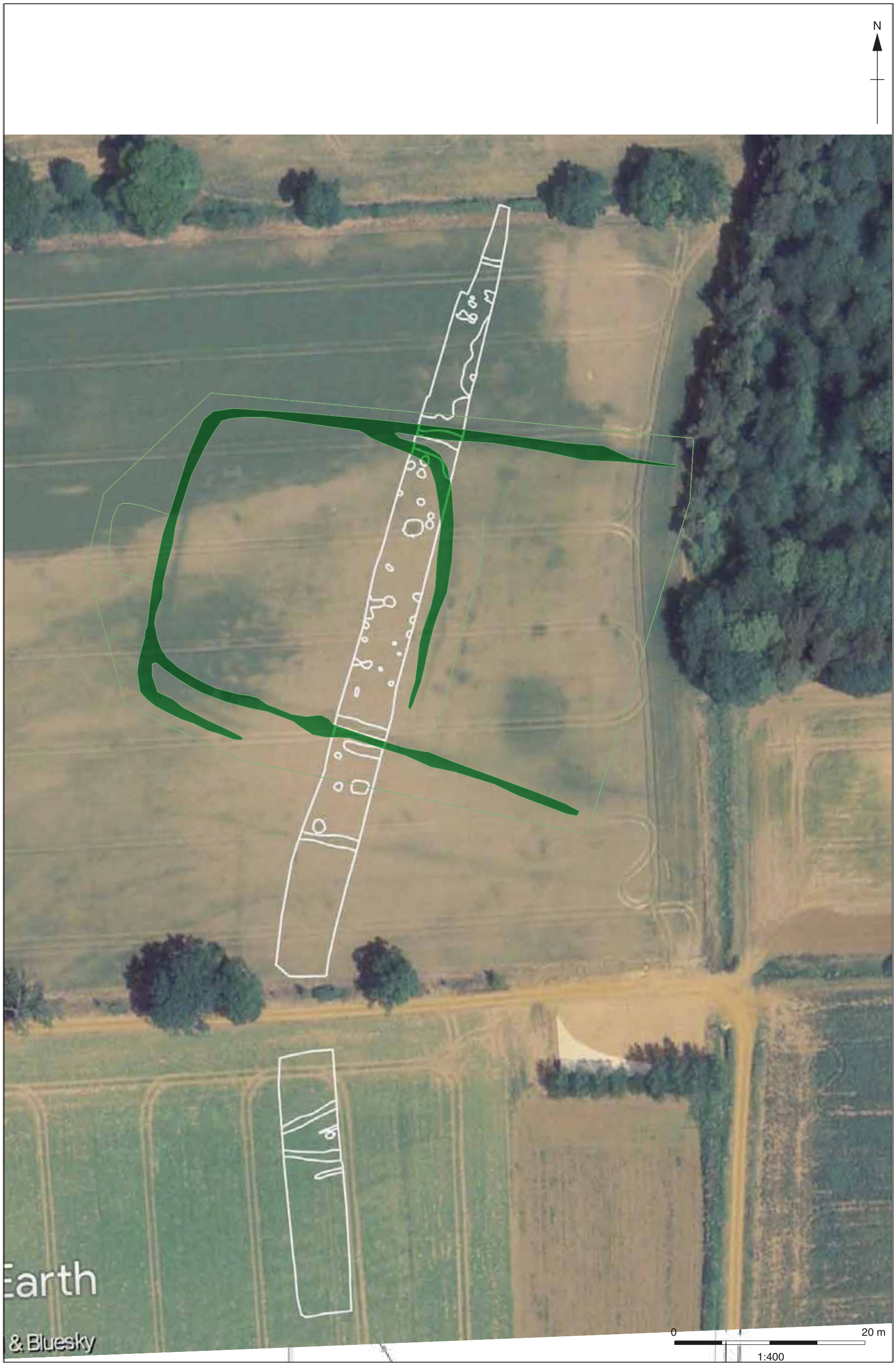


Figure 12: Cropmarks from Google Earth

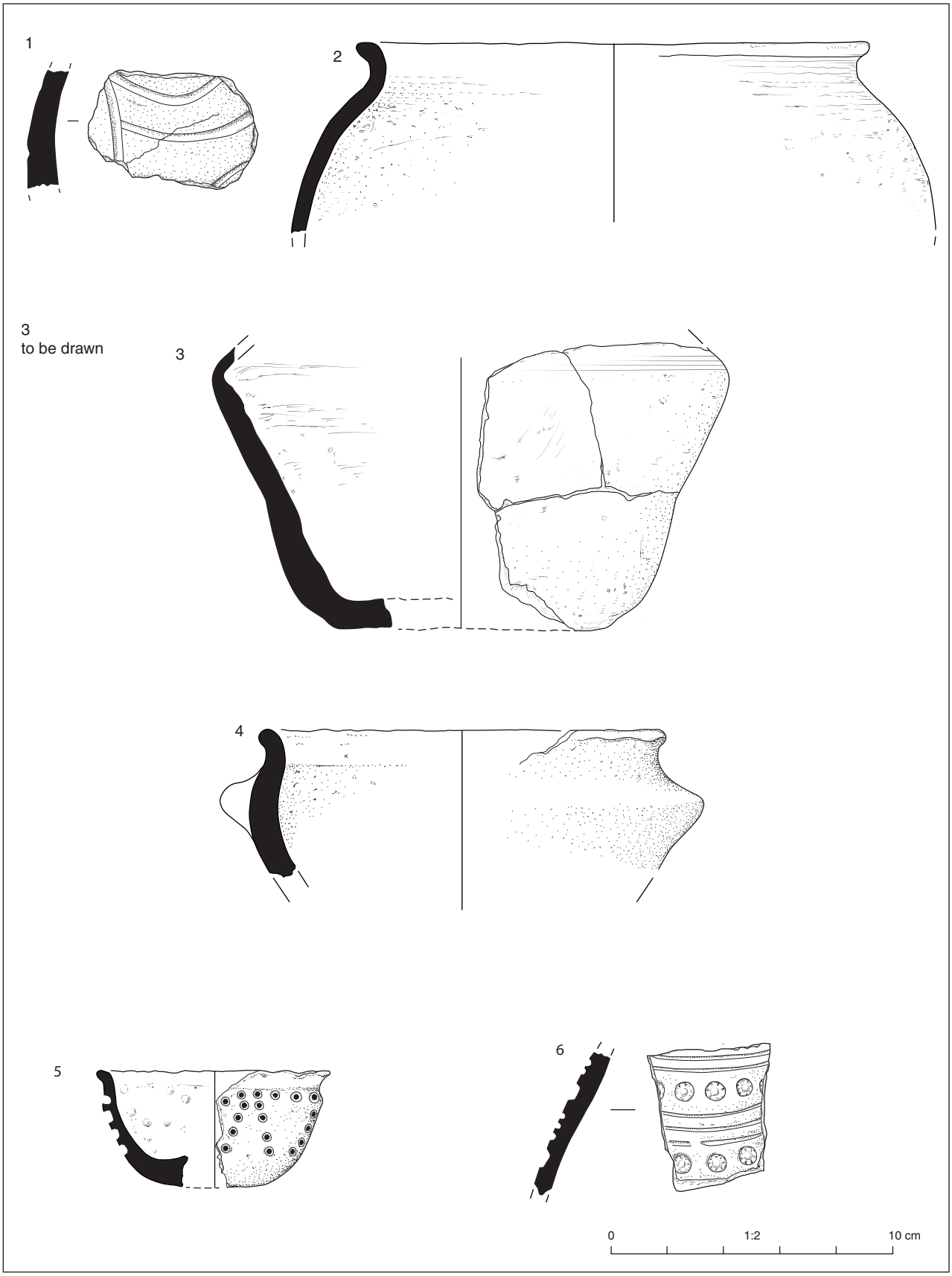


Figure 13: Saxon pottery Scale 1:2

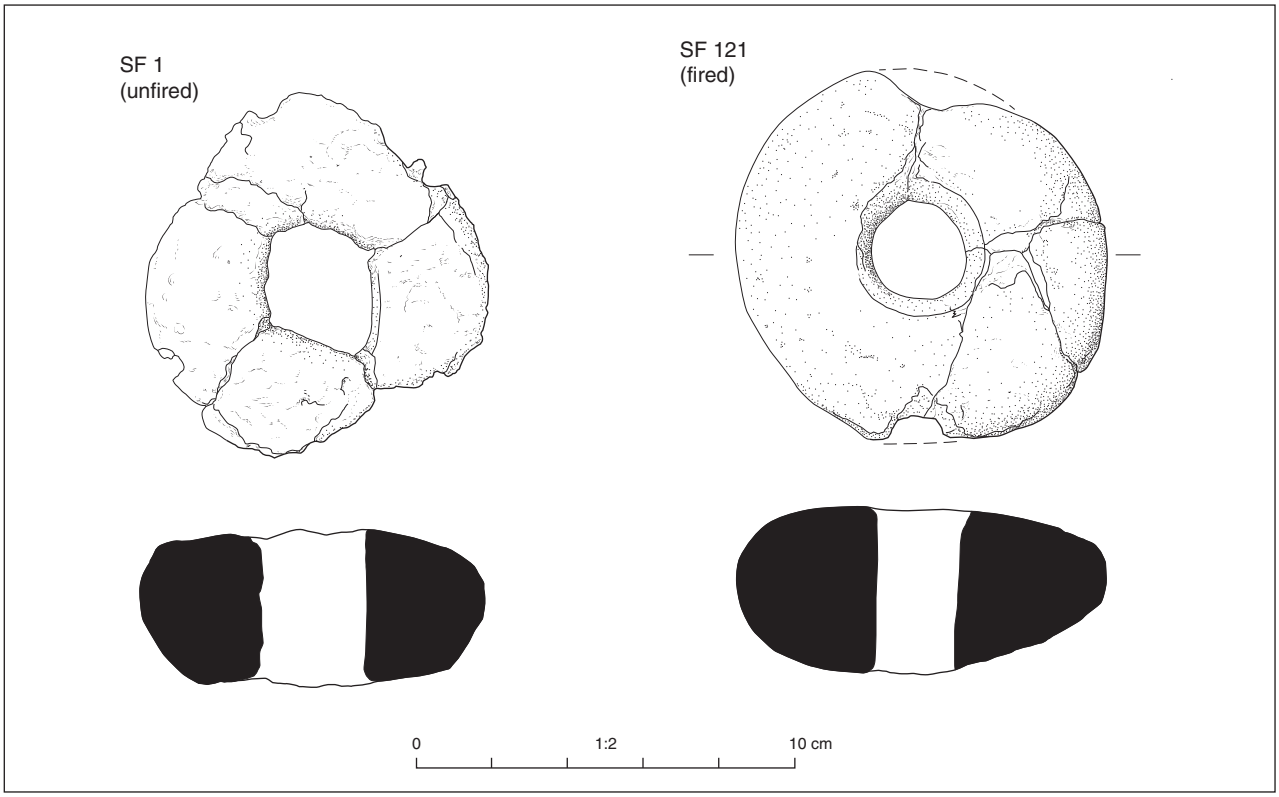


Fig 14: Loomweights (SF1 and SF121). Scale 1:2

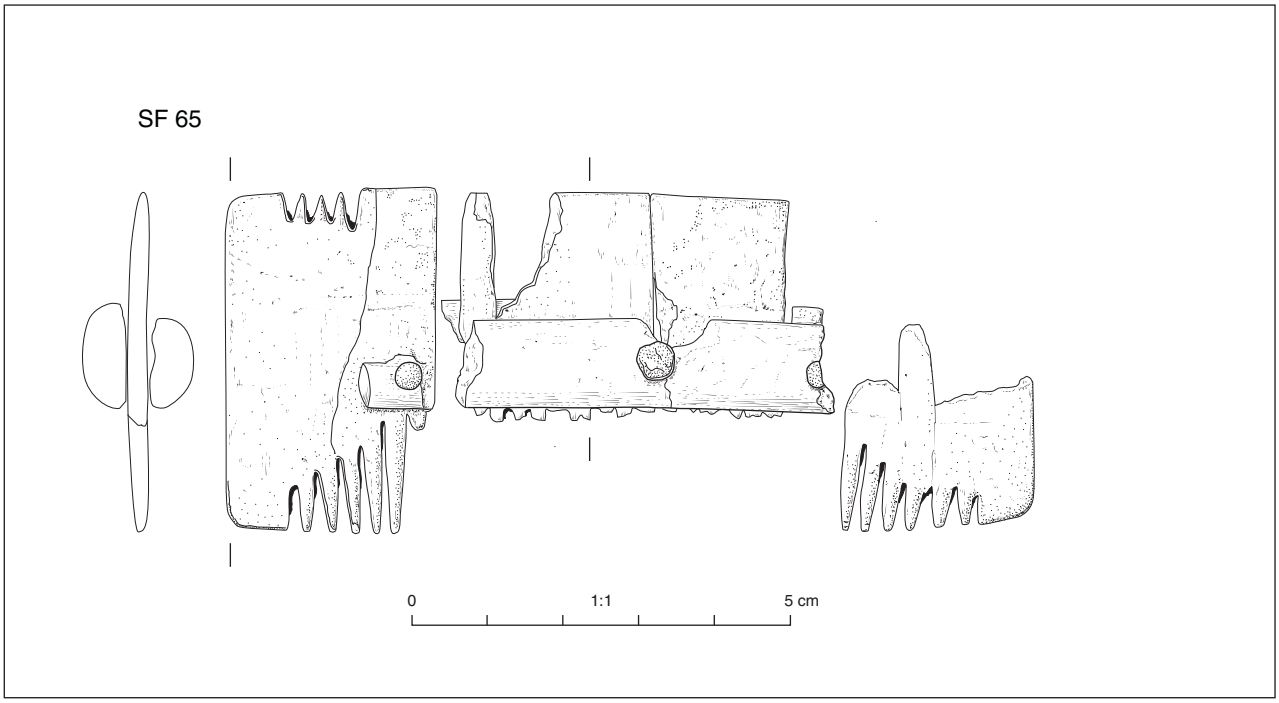


Fig 15: Bone comb. Scale 1:1

Plate 1: Ditch **283** (Phase 4), looking north-east

Plate 2: Pit **114** (Phase 1), looking west

Plate 3: Ditch **198**, Enclosure 135 (Phase 2), looking east

Plate 4: Ditches **175** and **178**, Enclosure 135 (Phase 2), looking east

Plate 5: Ditch **204**, Enclosure 131 (Phase 2), looking east

Plate 6: Ditch **156**, Enclosure 131 (Phase 2), looking west

Plate 7: Pit **277** (Phase 2), looking west

Plate 8: Pit **170** (Phase 3), looking west

Plate 9: Pit group **140** (Phase 3), looking south-west

Plate 10: Pit **127** (Phase 3), looking south

Plate 11: Pit **129** (Phase 3), looking north-west

Plate 12: Pit **149** (Phase 3), looking north

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