Excavation Report

Early Saxon cremation, a Medieval Settlement and post-medieval boundary ditches along the Poringland to Whitlingham pipeline, Norfolk

Excavation Report

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Early Saxon cremation, a Medieval Settlement and post-medieval boundary ditches along the Poringland to Whitlingham pipeline, Norfolk

Archaeological Excavation

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Summary

Oxford Archaeology East undertook an archaeological excavation from the 10th of January to 16th February 2017 along the Poringland to Whitlingham pipeline (TG 2855 0183 to TG 27500612). A total of six sites were identified across the scheme, four sites for archaeological monitoring (Site 1, 3, 4 and 6), one site for trial trench evaluation (Site 2) and an area of strip, map and sample (Site 5).

The sites that underwent archaeological monitoring yielded little results with only Site 6 comprising three ditches on an east to west alignment two of which aligned with post-medieval (Phase 5) boundaries. The trial trench evaluation comprised 5 trenches measuring between 30m and 50m in length. Trench 3 yielded a single ditch with a north-east to south-west alignment, thought to be of a post-medieval date (Phase 5).

Site 5, the strip, map and sample area, yielded a number of features comprising a cremation burial pit, ditches, a hollow way, pits, post-holes, gullys and two flint spreads. Phase 1 (Early Saxon) comprised a single cremation burial, the cremated remains sat within a vessel of Early Saxon date and a fragment of bone yielded a carbon date of late 5th to early 7th century. The remainder of the features within this area have been assigned to three phases of medieval activity. The first phase (Phase 2: 10th to 11th century) comprises only a single pit although pottery dating to this phase has been recovered from a number of features on site in small quantities. The majority of the features have been assigned to Phase 3 (11th to 14th century). Within this phase a possible post-built structure, a hollow way and a flint surface were identified in the northern part of the excavation, suggestive of the medieval settlement identified to the west via NMP data (NHER 52447) extending further east than the cropmarks suggest. The southern excavation area largely yielded ditches, representing field boundaries, alongside a flint surface thought to be of agricultural use. This flint surface yielded the largest assemblage of pottery (221g) from all the features on site.

The final phase (Phase 4: 14th to 15th century) comprised a spread overlying a flint surface and three ditches all of which contained large quantities of pottery of a 14th to 15th century date. This appears to mark a period abandonment or clearance prior to the site being emparked at some point in the 17th century where it became Kirby Bedon Deer Park (NHER 52456).

1. Introduction

1.1 Location and scope of work

1.1.1 Archaeological investigations took place at six sites along the Poringland to Whitlingham pipeline, Norfolk (Fig. 1). Archaeological monitoring was undertaken at four of the sites (Site 1, 3, 4 and 6). A trial trench evaluation was undertaken at Site 2 and an excavation took place at Site 5.

1.1.2 These archaeological works were undertaken in accordance with a Brief issued by James Albone of the Norfolk Historic Environment Team (NHET), 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 NHET, 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 c. 7.7km route of the proposed Rising Main crosses the parishes of Poringland, Alpington, Framingham Earl, Framingham Pigot and Kirby Bedon. The pipe line runs north from the Poringland water recycling centre off Dove Lane, crossing agricultural land. It then passes under Burgate Lane towards Yelverton Road, with the path subsequently crossing Gull Lane, Chapel Lane and Fox Lane, before skirting alongside Swallow Lane. At this point the pipeline turns slightly north-west and crosses Kirby Road, before heading north along the access track to the Whitlingham water recycling centre. The pipeline then turns north-west again on a curving path that crosses agricultural land south of the recycling centre.

1.2.2 The Superficial geology of the route comprises Lowestoft Formation deposits of chalky till with pockets of outwash sands and gravels, silts and clays. Head deposits are also found around Gull Lane, in proximity to The Beck stream, a tributary of the River Yare. The solid geology comprises sands and gravels of the Crag Group. Details of the geology and topography of each of the archaeological investigation sites is given below.

Site no.	Superficial geology	Solid geology	Topography and landuse
1	Chalky till with pockets of outwash sands and gravels, silts and clays (Lowestoft Formation)	Sand and gravels (Crag Group)	Broadly flat, 41-43m OD. Arable.
2	Chalky Till (Diamicton of the Lowestoft Formation)	Sand and gravels (Crag Group)	Sloping down gentle to the north, 42-47m OD. Arable.
3	Chalky Till (Diamicton of the Lowestoft Formation)	Sand and gravels (Crag Group)	Sloping down gentle to the north, 34-42m OD. Arable.
4	Chalky Till (Diamicton of the Lowestoft Formation)	Sand and gravels (Crag Group)	Flat, 30m OD. Arable
5	Chalky Till (Diamicton of the Lowestoft Formation)	Sand and gravels (Crag Group)	Sloping down gentle to the north, 36-42m OD. Arable
6	Chalky Till (Diamicton of the Lowestoft Formation)	Sand and gravels (Crag Group)	Broadly flat, 33-34m OD. Arable.

1.3 Archaeological and historical background

1.3.1 The following section provides a brief description of the known heritage assets within the vicinity of each investigation site, using data from the Norfolk Historic Environment Record (NHER) and the Written Scheme of Investigation (Brudenell 2016). The complete route of the pipeline has also been subject to a magnetometer survey by Cranfield University (Masters 2016), and the relevant results are included below.

Site 1: Land East of Burgate Lane (Chainage 1000m – 1200m)

1.3.2 The area surrounding Site 1 is rich in cropmarks. To the north-west there are extensive, dispersed multi-period cropmarks (NHER 52534), consisting of fragmentary ditches, enclosures, field boundaries and trackways, likely to represent several phases of activity from at least the Roman period onwards. Cropmarks of a road or trackway and a number of boundaries, potentially all of late medieval to post medieval date, have also been recorded to the north-east of the site, south and east of Yelverton Hall (NHER 9921). It is possible that the track originally led towards St Mary's Church (NHER 12903) to the south. To the north of the site a prehistoric burnt mound was recorded in 1955 (NHER 9883).

1.3.3 Historic mapping shows that the pattern of field divisions surrounding Site 1 have changed little from the Enclosure and Tithe maps of the late 18th and 19th century. One east-west field division that crosses the site was removed after 1951, but otherwise the early 19th century pattern of boundaries has been largely retained. The geophysical survey of this section of the route revealed three linear anomalies likely to be ditches on a north-south and east-west alignment. These are not associated with boundaries on the historic maps. Traces of ridge and furrow cultivation also registered to the south of the site (Masters 2016).

Sites 2 and 3: Land North of Framingham Earl Road and Land East of Gull Lane (Chainage 2300m – 2800m)

1.3.4 Finds recovered from metal detecting in the fields by Site 2 suggest the presence of a possible Early Saxon cremation cemetery (NHER 31192), with Early Saxon brooches a wrist clasp and other Saxon metalwork finds previously recovered. The area surrounding both sites is also rich in cropmarks. Site 3 is within an area where cropmarks of a rectilinear ditched enclosure measuring c. 50m by 95m has been recorded (NHER 52436). The date of the enclosure is unknown, though it appears to underlie the post-medieval field layout depicted on the 1805 Framingham Earl Tithe map.

1.3.5 Linear cropmarks of field boundaries have also been recorded to the north and north-east of Sites 2 and 3 (NHER 52437; 52439). These may date to the medieval or Roman period, with finds dating to the Roman period and Early and Late Saxon periods having been found within the general vicinity (NHER 31192; 37492; 37656 and 30897).

1.3.6 The present field divisions on Sites 2 and 3 are not depicted on the 19th century Tithe map, but are shown in a similar configuration on the 1887 Ordnance Survey (OS) six inch first edition map of the area.

Site 4: Land West of The Grove Barns (Chainage 3950m)

1.3.7 This site lies immediately opposite the cropmarks of a possible Neolithic mortuary enclosure or long barrow (NHER 52458), with a further cropmark of a similar monument with a Bronze Age round barrow seemingly constructed on top and/or within the interior, visible on aerial photographs to the south (NHER 52441). Cropmarks of linear ditches, possible enclosures and field boundaries have been identified to the south, east and north-east of the site (NHER 52441; 39562; 52443).

1.3.8 To the north of the site, fieldwalking in advance of the Yelverton to East Carleton gas pipeline recovered prehistoric flints, Roman, Middle Saxon, medieval and post medieval pottery, glass, brick and tile, smelting slag, butchered animal bone, and a Roman copper alloy knife handle (NHER 28993; 28994).

1.3.9 Historic mapping shows that the pattern of field divisions surrounding Site 4 have changed little between early 19th century and mid 20th century. Although the basic configuration of the boundaries are retained in the present landscape, many east-west and north-south aligned divisions were removed around 'The thicket' (north-east of the site) in the second half of the 20th century.

Site 5: Land west of Sallow Lane (Chainage 4400m – 4800m)

1.3.10 Site 5 cuts across the former medieval to post-medieval deer park (NHER 52456) surrounding the old Kirby Hall (located to the north – NHER 9682). It also crosses the eastern side of earthworks belonging to a former medieval settlement within the grounds of the deer park (NHER 52447) which overlie earlier, probably Roman cropmarks (NHER 52448). These consist of an area of possible banked and ditched enclosures, some of which may have been stock enclosures, house or building platforms and field boundaries. The location of these features within the medieval park suggest the settlement was cleared with its creation.

1.3.11 Further to the west were earthworks of a medieval or post-medieval road to Kirby Old Hall which run through Kirby Park (NHER 52444). Cropmarks of a multiple ditch boundary that formed the park pale and boundary are also present in this area (NHER 52446). Evidence for medieval ridge and furrow has also been identified in this area (NHER 52445). To the east of Swallow Lane are a series of cropmarks thought to represent possible Roman field boundaries (NHER 52443).

1.3.12 Fieldwalking across the site in 2012 recovered multi-period finds including Roman, Late Saxon and medieval to post-medieval pottery sherds, Roman tile fragments, medieval/post-medieval brick and roof tile fragments, animal bone, shell, slag and burnt flint (NHER 58379, 28996). Similar multi-period finds were recovered from fieldwalking in advance of the Yelverton to East Carleton gas pipeline to the south (NHER 28993; 28994 – see Site 4 above).

1.3.13 Cropmarks of linear boundaries and possible field divisions have also been recorded to the north and south-east of the site (NHER 52117; 58377). As with Site 4, the pattern of surrounding field boundaries in the area has changed little between the early 19th century and mid 20th century.

1.3.14 Manor House Farm (NHER 11824) is located to the east of the site and is thought to have 19th century origins, although a barn in this area is known to have been built in 1693. A large circular pit (NHER 52056) can be seen to the north of the site in the form of an earthwork which is thought to date to World War II.

Site 6: Land North of Kirby Road (Chainage 5950m – 6100m)

1.3.15 The area on and immediately around Site 6 was extensively fieldwalked in 2011-2012 (NHER 58371; 58372; 58374). Roman and medieval to post-medieval pottery sherds were recovered from the field that Site 6 falls within (NHER 58371). Whilst to the east in the field on the opposite side of the track, further medieval to post-medieval pottery sherds and other finds were recovered (NHER 58374). Fieldwalking in the field to the south-west yielded more Roman and medieval to post-medieval pottery sherds; medieval and medieval/post-medieval brick fragments and other finds (NHER 58372).

1.3.16 Cropmarks of linear features likely to be field divisions have also been recorded in the area to the east and south of the site (NHER 52053; 52055), whilst the field to the south-west was used for anti-aircarft guns in the Second World War (NHER 34190). These were arranged in an arc around a command post building, whilst Nissen-type huts were located within the wooded area south of the site.

1.3.17 Historic mapping shows that the pattern of field divisions surrounding Site 6 have changed little between the early 19th century and mid 20th century.

1.4 Acknowledgements

1.4.1 The author would like to thank the client Anglian Water for commissioning the work and for their help on site. Thanks also to James Albone of the Norfolk Historic Environment Team for monitoring the work and Matt Brudenell for managing the Project. The site work was conducted by Ashley Pooley with the assistance of Dave Browne, Lindsey Kemp and Neus Esparsa Nogues.

2. Aims and Methodology

2.1 Aims

2.1.1 The original aims of the project were set out in the Brief and Written Scheme of Investigation (Albone 2016; Brudenell 2016).

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.

2.1.3 The aims and objectives of the excavation were developed with reference to Regional and Local Research Agendas (Medlycott 2011).

2.2 Site Specific Research Objectives

2.2.1 Each of the six sites had their own specific aims and are tabulated below.

Site no.	Site name (given by OA East)	Specific aims/questions
1	Land East of Burgate Lane	Can the fieldwork shed light on the date of cropmarks in the surrounding area?
2	Land north of Framingham Earl Road	To establish the presence, extent and date of any archaeological remains in particular the presence or absence of the Saxon cemetery (NHER 31192).
3	Land East of Gull Lane	Can the fieldwork shed light on the form, date and function of the ditched cropmark enclosure (NHER 52436)?
4	Land West of The Grove Barns	Is there any evidence of Neolithic activity associated with the possible mortuary enclosure/long barrow cropmark adjacent to the site (NHER 52458)?
5	Land west of Sallow Lane	Can the fieldwork shed further light on the date and duration of the medieval settlement known within this area of the former deer park (NHER 52447)?
6	Land North of Kirby Road	Can the fieldwork provide a context for the Roman, medieval and post-medieval finds recovered from the field through fieldwalking (NHER 58371)?

2.3 Methodology

2.3.1 The methodology used followed that outlined in the Brief (Albone 2016) and detailed in the Written Scheme of Investigation (Brudenell 2016).

2.3.2 Each site had a slightly different approach as detailed below

2.3.3 Site 1 – A 200m long topsoil strip took place prior to a single pipe trench being excavated from chainage 1000m to 1200m.

2.3.4 Site 2 - A total of five trenches were excavated along the pipeline route between chainage 2300m and 2600m, measuring between 30m and 50m long and 2m wide. All archaeological features observed were excavated and recorded.

2.3.5 Site 3 – A 200m topsoil strip took place prior to a pipe tench being excavated from chainage 2600m to 2800m.

2.3.6 Site 4 – An area was stripped at chainage 3950m and a drill pit was excavated measuring 2m by 2m and 1.4m deep.

2.3.7 Site 5 – Two main areas were stripped between chainage 4400m and 4800m to a width of 9m by machine. This 9m wide area was machined in two halves, equalling approximately 4.5m wide. This was to enable an area to store subsoil but lead to features being partially visible at any one time. All archaeological features in the first 4.5m wide strip were excavated and recorded prior to being backfilled to enable the remaining 4.5m wide strip to be excavated.

2.3.8 Site 6 – A 150m topsoil strip took place prior to a pipe trench being excavated from chainage 5950m to 6100m.

2.3.9 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.

2.3.10 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.

2.3.11 All archaeological features and deposits were recorded using OA East's *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.

2.3.12 No Archaeology was observed at Sites 1, 3 and 4. A single ditch was observed during the trial trenching at Site 2, three ditches were identified at Site 6 and an array of features were identified at Site 5. A total of 11 samples were taken from a range of features with potential for preserved remains at Site 5.

2.3.13 Site conditions were poor with snow, heavy rain and saturated ground proving problematic during machine excavation and hand excavation of features at Site 5. Features at Site 6 were only identified once the pipe trench was excavated.

3. Results

3.1 Introduction

3.1.1 A total of six sites were identified for investigation along the pipeline route from Poringland to Whitlingham (Fig. 2).

3.1.2 Four of the sites (1, 3, 4 and 6) were assessed as of low archaeological potential and were subjected to monitoring accordingly. Three ditches were found at Site 6, no other archaeological remains were found.

3.1.3 At Site 2, a Trial Trench Evaluation took place with a total of five trenches being excavated. A single ditch was found and no further mitigation was required.

3.1.4 Site 5 was subject to strip, map and sample and was excavated in two 4.5m wide halves to allow for the storage of subsoil. This site revealed 21 ditches including a large hollow-way, six pits, eight gullys, two flint surfaces and a cremation burial. Four phases of activity were identified, the earliest of which dated to the 5th to 7th century AD and comprised a single cremation burial. The second phase of activity dated to the 10th to 11th century AD that comprised a pit, a gully and a handful of residual pottery sherds. The 11th to 14th century phase comprised ditches, pits, gullys and flint surfaces. The latest phase of activity dates from the 14th to 15th century and consists of a spread of material overlying an earlier flint surface and a ditch. A small number of features are unphased, however they are most likely of a medieval or post-medieval date.

3.1.5 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 Section.

3.2 Archaeological Monitoring – Sites 1, 3, 4 and 6 (Fig. 2)

3.2.1 Site 1 was located at the southern end of the route, to the east of Poringland. A 200m long area was stripped by machine from chainage 1000m to 1200m measuring 8m wide. Topsoil consisting of a mid brown grey silty clay, measuring approximately 0.3m deep, was removed prior to a pipe trench being excavated along the western edge of the stripped area. No archaeological features were observed.

3.2.2 Site 3 was located to the north-east of Poringland and an area measuring 200m long was stripped between chainage 1600m and 2800m measuring 8m wide (Plate 1). Topsoil consisting of a dark brown grey silty clay, measuring 0.32m deep, was removed by machine prior to a pipe trench being excavated on the western side of the stripped area. No archaeological features were observed.

3.2.3 Directly north of the A146 was Site 4 where a drill pit was excavated at chainage 3960m. This drill pit measured approximately 2m by 2m and 1.4m deep. Natural consisted of a yellowy orange sandy clay overlain by a subsoil consisting of a mid brown clayey silt measuring 0.2m deep. Overlying this was a topsoil consisting of a mid brown grey clayey silt that measured 0.3m deep.

3.2.4 Site 6 was located to the west of Kirby Bedon and a 150m long area was stripped between chainage 5950m to 6100m measuring 8m wide (Plate 2 Section 601, Fig. 3). Three ditches between 70m and 80m apart and with an east to west orientation were identified. These were all overlain by a mid grey brown silty clay topsoil (6000) measuring 0.3m deep. At the southern end of the strip was ditch **6003** which measured

0.65m wide and 0.46m deep with steep sides and a concave base. Its single fill (6004) consisted of a mid brown silty clay and contained CBM (not recovered). Approximately 70m to the north was ditch **6005** which measured 1.32m wide and 0.9m deep with vertical sides and a concave base. Its single fill (6006) consisted of a mid brown silty clay that contained no finds. Approximately 80m north was ditch **6007** which measured 0.95m wide and 0.63m deep with steep sides and a concave base. Its single fill (6008) consisted of a mid brown silty clay. All three ditches are most likely post-medieval or modern in date as they all cut the subsoil (6001) that consisted of a mid brown clayey silt measuring between 0.1m and 0.3m deep.

3.3 Trial Trench Evaluation – Site 2

3.3.1 A total of five trenches were excavated at Site 2 located to the north-east of Poringland (Fig. 4). Trenches 1 to 4 measured 50m long and 2m wide with a north-east to south-west alignment. Trench 5 measured 50m long and 2m wide with a north north-east to south south-west alignment. All trenches bar Trench 3 (Plate 3) were devoid of archaeology and consisted of a mid brown clayey silt subsoil (2001) measuring between 0.1m and 0.3m deep, overlain by a mid to dark brown grey silty clay topsoil (2000) that measured 0.3m deep.

3.3.2 Trench 3 contained ditch **2003** which had a north-east to south-west alignment and measured at least 1.2m wide and 1.1m deep with a steep stepped north-west side and a concave base (Plate 4, Section 200 Fig. 4). This ditch contained four fills. Fill 2004 represents an area of slump on the north-west side of the ditch and consists of a light yellow clay that measured 0.1m thick. Overlying this was 2005 that measured 0.4m thick and consisted of a dark grey silty clay. Fill 2006 measured 0.6m thick and consisted of a mid brown silty clay and the uppermost fill (2007) measured 0.14m thick and consisted of a dark brown grey silty clay. No finds were recovered from this ditch.

3.4 Strip Map and Sample – Site 5

3.4.1 Site 5 was located to the south of Kirby Bedon and comprised an area measuring 400m long and 9m wide between chainage 4400m and 4800m (Fig. 5). The excavation was split into two areas, the northern area had a north-west to south-east alignment and measured 140m long (Figs 6 and 7). The southern area had a north north-west to south south-east alignment and measured 260m long (Fig. 8). Some features remain unphased but are most likely of a medieval date. The majority of the features date from the 11th to the 14th century AD and comprised ditches, pits, gullys and two flint surfaces. Phasing has been assigned as follows:

- Phase 1: 5th to 7th century
- *Phase 2: 10th to 11th century AD*
- *Phase 3: 11th to 14th century AD*
- *Phase 3.1: 11th to 12th century*
- *Phase 3.2: 11th to 13th century*
- *Phase 3.3:12th to 14th century*
- *Phase 4: 14th to 15th century AD*

3.4.2 Subsoil (5002) consisted of a mid brown silty clay that measured 0.2m deep overlain by a topsoil (5003) that consisted of a dark brown grey silty clay that measured 0.3m deep. A total of 20g of animal bone was recovered from the subsoil.

Phase 1: 5th to 7th century

3.4.3 Phase 1 comprised a single cremation burial pit (**5082**, Fig. 7) located along the southern limits of the northern area of excavation to the south-west of hollow way **5013**. The pit was circular in plan and measured 0.25m wide and 0.1m deep. It contained the remnants of a cremation vessel (SF 7) dated to the Early Saxon period. This contained a single fill (5081) that consisted of a light green grey silty clay that contained 295g of burnt human bone. No charcoal was recovered from this cremation suggesting that the bone had been carefully removed from the pyre before deposition within the cremation vessel. A single piece of long bone was subject to radiocarbon dating and yielded a date of 498AD to 616AD (95% probability; SUERC-73737; 1516±33 BP).

Phase 2: 10th to 11th century AD

3.4.4 Two features have been ascribed to this phase, although a small handful of other features across the site do contain small amounts of residual pottery dating to the 10th to 11th century.

3.4.5 Pit **5083** was located directly south-west of hollow way **5013** within the northern area of the excavation (Fig. 7). This sub-rectangular pit measured 0.56m wide and 0.28m deep with sloped sides and a nearly flat base (Plate 5, Section 15 Fig. 10a). Its single fill (5084) consisted of a dark brown grey silty clay that contained 24 sherds (332g) of Thetford ware pottery dating to the 10th to 11th century AD.

3.4.6 Gully **5076** has been assigned to this phased based on stratigraphic relationships. It had a north to south alignment and measured 0.3m wide and 0.14m deep with a U-shaped profile. Its single fill (5075) consisted of a dark reddish grey that contained 16g of 10th to 14th century pottery. This was truncated by post-hole **5071**.

Phase 3: 11th to 14th century AD

3.4.7 The majority of the features date to the 11th to 14th century. Ditches were the most common and range in size and orientation. Pits and gullys were also present alongside two structures and two flint surfaces (Figs 7 and 8). Where possible stratigraphic relationships have been used to assign a subphase.

Phase 3.1: 11th to 12th century

Structure 1 (Fig. 7)

3.4.8 A number of post-holes were identified to the south-west of ditch **5013**. These post-holes are thought to have formed part of a post-built structure. Four of the post-holes (**5061**, **5063**, **5065** and **5067**, Section 19 Fig. 10) were aligned roughly north-west to south-east and ranged in size from 0.3m to 0.8m wide and 0.1m to 0.2m deep. Each of the post-holes contained a single fill (5060, 5062, 5064 and 5066) that consisted of a light brown or dark grey brown silty clay. A single sherd (1g) of Thetford ware and 1g of animal bone was recovered from fill 5064 (**5065**) and two sherds (8g) of pottery dating from the 11th to 14th century was recovered from fill 5066 (**5067**).

3.4.9 Post-hole **5071** which measured 0.6m wide and 0.35m deep with steep sides and a concave base may represent a fifth post-hole that is part of this structure. Its single fill (5070) consisted of a mid grey brown silty clay that contained a single sherd of Early Saxon pottery and four sherds of Late Saxon pottery.

Southern excavation area (Fig. 8)

3.4.10 The majority of the features in the southern part of Site 5 are ditches representing field boundaries which can clearly be grouped based on two alignments, east to west and

north-east to south-west. Some phasing of these ditches and other features in this area could be distinguished based on the pottery.

Structure 2 (Fig. 8)

3.4.11 In the southern area of Site 5 were three gullies and a post-hole near to and potentially truncated by flint filled feature **5055**. These features appear to represent a structure. Gully **5085** had a north to south alignment and measured 0.6m wide and 0.12m deep with sloped sides and a concave base (Section 16, Fig. 10). Its single fill (5086) consisted of a dark brown silty clay and contained 12g of 11th to 12th century pottery. Directly west was gully **5091** and **5093** which formed an L-shape at the north-west corner of flint filled feature **5055**. These gullies measured between 0.5m and 0.65m wide and 0.07m and 0.18m deep with a bowl shaped profile. Both contained a single fill (5092 and 5094) that consisted of a mid to dark grey brown silty clay and fill 5092 contained 18g of pottery dating to the 10th to 12th century. Gully **5093** was truncated by post-hole **5095** which measured 0.7m wide and 0.25m deep with steep sides and a concave base. Its single fill (5096) consisted of a dark brown silty clay that contained large packing stones and 27g of pottery dating to the 11th to 14th century.

Flint surface 1 (Fig. 8)

3.4.12 A sub-circular flint surface (**5055**) was observed in the southern part of the excavation area directly west of ditch **5056**. This feature measured 3.6m wide and 0.2m deep with an irregular base (Plate 6, Section 14 Figure 10a). Its single fill (5054) consisted of a dark brown clayey silt and contained 75% large flint nodules alongside 1% chalk and CBM. This fill contained 221g of pottery dating from the 10th to 14th century, a fragment of CBM, 81g of animal bone and 3g of oyster shell

East to West ditches (Fig. 8)

3.4.13 At the north of the area was ditch **5122** which had an east to west alignment and measured 0.9m wide and 0.3m deep with gently sloping sides and a flatish base. This ditch contained a single fill (5121) that consisted of a mid brown silty clay that contained 6g of pottery dated to the 11th to 12th century AD.

3.4.14 Two parallel ditches were observed 18m south of this with an east to west alignment. Both the northern ditch (**5124**) and southern ditch (**5126**) measured 0.9m wide and 0.3m deep with gently sloping sides and a flatish base (Section 32, Figure 10b). Their single fills (5123 and 5125) consisted of a mid to dark yellow brown silty clay and a single sherd of 11th to 12th century pottery was recovered from fill 5125. Ditch **5126** was truncated by ditch **5124**.

3.4.15 Another set of parallel ditches were excavated 6m to the south with an east to west alignment (Plate 7). The northern ditch (**5120**) measured 0.9m wide and 0.2m deep with gently sloping sides and a concave base (Section 34, Figure 10b). Its single fill (5119) consisted of a mid grey brown clayey silt that contained a single sherd of pottery dating to the 11th to 12th century and a fragment of fired clay. This ditch was truncated by the southern ditch (**5118**) that measured 1.35m wide and 0.6m deep with sloping sides and a concave base. This ditch contained two fills, the basal fill (5117) measured 0.25m thick and consisted of a dark reddish brown clayey silt that contained a single sherd of 11th to 12th century pottery, two fragments of fired clay and 12g of cattle bone. Overlying this was fill 5116 which measured 0.35m thick and consisted of a light red brown and light brown grey mottled clayey silt that contained 35g of pottery dating to the 11th to 14th century, three fragments of fired clay and 6g of animal bone.

North-east to south-west ditches

3.4.16 At the southern end of the excavation area was ditch **5131** (Fig. 5) that had a north-east to south-west alignment and measured 6.3m wide and 0.85m deep with steep sides and a concave base (Plate 8). This ditch contained two fills, the basal fill (5130) measured 0.85m thick. The uppermost fill (5129) measured 0.18m thick and contained a single sherd of Late Saxon pottery and 3 fragments (61g) of ceramic building material.

3.4.17 Ditch **5134** (Fig. 8) measured 0.58m wide and 0.05m deep with gently sloping sides and a flat base. Its single fill (5135) consisted of a light grey yellow sandy clay that contained a single sherd of 11th century pottery and a fragment of fired clay.

Other features

3.4.18 Pit **5128** (Fig. 8) measured 0.5m wide and 0.04m deep. Its single fill (5127) consisted of a mid red sandy clay that appeared to represent in-situ burning and contained a single sherd of pottery dating to the 11th to 12th century and 12g of oyster shell.

Phase 3.2: 11th to 13th century

Northern Excavation area (Fig. 7)

3.4.19 Pit **5069** cut post-hole **5071** and measured 0.6m wide and 0.4m deep with steep sides and a concave base. Its single fill 5068 consisted of a dark grey brown silty clay and contained three fragments of fired clay.

3.4.20 Gully **5073** had a north-west to south-east alignment and curved at its north-west end to have a north-east to south-west alignment. This gully truncated gully **5076** and measured 0.47m wide and 0.14m deep with a bowl shaped profile. Its single fill (5072) consisted of a mid brown silty clay that contained 28g of 10th to 14th century pottery and charred cereal grains.

3.4.21 Two post-holes or pits were identified directly north of curvilinear gully **5073**. Post-hole **5080** measured 0.7m wide and 0.2m deep with steep sides and a concave base, its single fill (5079) consisted of a light grey brown silty clay that contained 64g of pottery dating to the 11th to 14th century. This fill was cut by post-hole **5078** which measured 0.5m wide and 0.2m deep with a U-shaped profile. Its single fill (5077) consisted of a light grey brown silty clay.

3.4.22 In the northern part of the excavation were two large ditches that had a roughly north-east to south-west alignment. These ditches have been assigned to this phase based on the same alignment as ditches observed in the southern excavation area. Ditch **5099** (most likely same as **5103**) measured 3.6m wide and 0.6m wide with steep sides and a flat base (Section 28, Figure 10a). Its single fill (5100 and 5104) consisted of a dark grey brown clayey silt. This ditch was truncated by ditch **5101** that measured 1.2m wide and 0.7m deep with steep sides and a near v-shaped base. Its single fill (5102) consisted of a mid grey brown clayey silt.

Southern excavation area (Fig. 8)

3.4.23 At the northern end of the southern area was pit **5115** which measured 1.6m wide and 0.6m deep with steep sides and a flat base. This pit contained two fills and was truncated by ditch **5112** (Section 30, Figure 10a). Its basal fill (5114) measured 0.4m thick and consisted of a light brown sandy clay. Overlying this was fill 5113 that measured 0.5m thick and consisted of a light brown silty clay that contained 109g of pottery dating from the 10th to 14th century, 14 fragments of fired clay and 78g of

animal bone. Six fragments of quern stone (SF 5016) were also recovered. This fill also contained evidence for sparse grains and legumes.

North-east to south-west ditches (Fig. 8)

3.4.24 Ditch **5112** was located 9m to the south and truncated pit **5115**, it had a north-east to south-west alignment and measured 1m wide and 0.3m deep with steep sides and a concave base (Plate 9). This ditch contained three fills, the basal fill (5111) measured 0.3m thick and consisted of a light brown silty clay. Overlying this was 5110 that measured 0.05m thick and consisted of a mid red silty clay that contained sparse grain and legume fragments and the uppermost fill (5109) measured 0.12m thick and consisted of a light brown silty clay.

3.4.25 Ditch **5056** had a north-east to south-west alignment and measured 1.12m wide and 0.1m deep with gradually sloping sides and a concave base. Its single fill (5057) consisted of a dark brown silty clay and contained two sherds of pottery dating from the 10th to 14th century and 25g of cattle bone.

Ditch (**5132**) measured 0.7m wide and 0.07m deep with gently sloping sides and a flat base. Its single fill (5133) consisted of a light grey yellow sandy clay that contained no finds.

Phase 3.3:12th to 14th century

Northern Excavation area (Fig. 7)

Large Ditches

3.4.26 A large ditch like feature was partially identified along the northern limits of the northern excavation area. One (or multiple features) were identified as having a north-west to south-east alignment. A further series of shallower ditches with a north-east to south-west alignment was also identified which curved round to the east. A definite stratigraphic sequence for these ditches could not be established through this excavation however it was clear that these features converged. Based on the both features truncating earlier gully **5073** this series of features were believed to date to the later end of Phase 3.

3.4.27 Ditch **5013** (=**5030**) was a large ditch that had a north-west to south-east alignment that measured at least 4.1m wide and measured up to 0.85m deep (Plate 10, Section 3 Figure 10a). The fills of this ditch appear to vary, at the north-west end the ditch (**5030**) was recorded as having three fills (5027, 5028 and 5029, Section 8, Fig. 10), the basal fill (5029) measured 0.65m thick and consisted of a mid grey green clayey silt, overlying this was fill 5028 that measured 0.4m thick and consisted of a light grey green clayey silt. The uppermost fill (5027) measured 0.3m thick and consisted of a dark green grey clayey silt. To the south-east the ditch (**5013**) was recorded as having two fills (5014, 5015), the basal (5014) fill measured 0.3m thick and consisted of a mid yellow grey sandy clay. Overlying this was fill 5015 that measured 0.5m thick and consisted of a mid brown grey silty clay that contained 19g of pottery dated to the 10th to 14th century, a fragment of fired clay and 15g of animal bone.

3.4.28 This was truncated by ditch **5035** (=**5043**) along its northern edge and was also aligned north-west to south-east alignment. This ditch was only partially identified and measured at least 1.4m wide and 0.75m deep with a steep south-west side and a concave base. This ditch contained two fills, the basal fill (5033) consisted of a light brown grey silty clay, overlying this was fill 5032 (also known as 5044) which consisted of a dark brown silty clay that contained 30g of pottery dated to the 11th to 14th century, a fragment of CBM and an iron staple (SF 5006).

3.4.29 The ditches on this north-west to south-east alignment terminate or change direction at a point at where they converge with a series of smaller intercutting ditches. Four smaller ditches have been identified with a north-east to south-west alignment (**5018**, **5037**, **5042**, **5047**) and curved to the east to have a north-west to south-east alignment.

3.4.30 Ditch **5018** was identified at the eastern end of this series of ditches and is potentially the earliest in the sequence. It measured 2.24m wide and 0.32m deep with sloped sides and a concave base. Its single fill (5019) consisted of a dark green brown silty clay that contained a sherd of Late Saxon pottery and two fragments of lava quern.

3.4.31 Ditch **5042** had a north-east to south-west alignment and curved round to the east. This ditch measured 0.9m wide and 0.3m deep, the sides and base of this ditch were uncertain. It's single fill (5041, also known as 5040) consisted of a light brown silty clay that contained 24g of pottery including some Late Saxon in date. Animal bone (94g), a single iron nail (SF 5005) and four fragments of quern stone were also recovered from this fill. This ditch appeared to be truncated by ditch **5037** which had a north-east to south-west alignment and curved to the east. It measured 1.1m wide and 0.4m deep with steep sides and a flatish base and its single fill (5036) consisted of a mid green grey brown silty clay.

3.4.32 Ditch **5047** had a north-east to south-west alignment and measured 1.8m wide and 0.65m deep with unknown sides and base. The single fill of this ditch (5048) consisted of a mid green grey silty clay that contained 41g of medieval pottery.

Flint surface 2

3.4.33 A flint surface (**5088** = **5090**) was identified underlying spread 5087 to the south of ditch **5018**. Two test pits were excavated through this later spread to reveal two areas of flint surface. It is uncertain from this small area excavated whether the two flint spreads seen are part of the same surface, their distance from one another would suggest they were however the composition of the two surfaces varies. The most easterly (5088) measured 0.8m wide and comprised small irregular flint pieces that appeared to have a slightly north to south alignment. A single sherd of pottery dating to the 12th to 14th century and three fragments of quern stone (SF 5008, 5009, 5010) were recovered from this surface. The western test pit revealed flint surface **5090** that measured 1.6m wide and consisted of large irregular flint nodules that were badly truncated.

Other features

3.4.34 Pit **5016** truncated ditch **5013** and measured 0.75m wide and 0.2m deep with sloped sides and a concave base. Its single fill (5017) consisted of a mid yellow grey silty clay that contained three sherds (3g) of residual pottery dating to the 10th to 11th century.

3.4.35 Gully **5004** was located 19m to the south-east and had a north to south alignment. Its measured 0.62m wide and 0.2m deep with steep sides and a concave base. Its single fill (5005) consisted of a mid grey silty clay that contained no finds.

Southern excavation area (Fig. 8)

East to West ditch

3.4.36 Ditch **5139** had an east to west alignment and measured 4.5m wide and 0.94m deep with steep sides and a concave base. This ditch contained three fills, the basal fill (5138) measured 0.36m thick and consisted of a brown reddish grey silty clay that contained five sherds (49g) of 12th to 14th century pottery and a single sherd (6g) of Thetford ware, 38g of animal bone and 90g of oyster shell. Overlying this was fill 5137 which measured 0.8m thick and consisted of a dark green grey clayey silt that

contained 79g of pottery dated to the 12th to 14th century, 8g of animal bone and 9g of oyster shell. The uppermost fill (5136) measured 0.5m thick and consisted of a dark grey clayey silt that contained a single sherd (15g) of 13th to 14th century pottery, nine fragments of CBM, 51g of cattle bone and a sherd of 19th century glass that was probably intrusive.

Phase 4: 14th to 15th century AD (Fig. 7)

3.4.37 Ditch **5006** (**5106**) was located to the east of ditch **5004** and had a roughly north to south alignment and measured 1.82m wide and 0.8m deep with steep sides and a concave base (Section 2, Figure 10a). This ditch contained two fills, the basal fill (5007 also known as 5105) measured 0.12m thick and consisted of a dark grey clay that contained 598g of pottery dated to the 10th to 16th century, two fragments of fired clay and 42g of animal bone. Overlying this was fill 5008 that measured 0.68m thick and consisted of a dark brown grey clayey silt that contained 110g of pottery dated to the 10th to 16th century and 24g of animal bone. Two small patches (5010 and 5011) of mid grey to mid yellow brown clay were observed either as a fill of a layer, both measured 0.16m deep and only 5011 contained 6g of medieval pottery, two fragments of CBM and 7g of large mammal bone. An incomplete post-medieval dagger scabbard (SF 5001) and 7g of oyster shell was also recovered from this fill.

3.4.38 Directly to the south was a spread (**5087** = **5089**) that measured 5.5m wide and 0.15m deep and consisted of a mid brown grey clayey silt that contained 833g of medieval pottery, 178g of animal bone, three iron nails (SF 5011, 5012) and seven fragments of quern stone (SF 5013). This spread overlay flint surface 5088 and 5090 and may have occurred from human activity.

3.4.39 A small spread (**5140**) was partially observed overlying ditch **5043** measuring 1.4m wide and 0.1m deep it consisted of a yellow clay that contained no finds.

Unphased (Fig. 6)

3.4.40 Only a small number of features remain unphased. A pit and two post-holes were uncovered to the east of ditch **5006**. Pit **5024** was only partially visible along the northern limits of excavation and measured 0.65m wide and 0.36m deep with gently sloping sides and a concave base. This pit contained two fills, the basal fill (5026) measured 0.26m thick and consisted of a dark brown silt that was overlain by fill 5025 that measured 0.1m thick and consisted of a mid red clay and contained 15 fragments of fired clay. This fill also contained a single charred barley grain.

3.4.41 Post-hole **5020** was circular in plan and measured 0.31m wide and 0.1m deep with steep sides and a concave base (Section 5, Figure 10b). Its single fill (5021) consisted of a mid brown silty clay. Post-hole **5022** measured 0.18m wide and 0.07m deep and its single fill (5023) consisted of a mid brown silty clay.

3.5 Finds Summary

3.5.1 Two Copper Alloy objects were recovered, these comprised part of a dagger chape (Plate 11) and a fragment of chafing dish (Plate 12). Four iron nails and a possible staple were also uncovered.

3.5.2 The Cremation vessel (SF 7) from cremation **5082** comprised 264 pottery fragments, weighing 490g dated to the Early Saxon period. The remainder of the pottery assemblage totalled 368 sherds (2850g) collected from 39 contexts. This pottery dated from the 10th to 16th century although the bulk of material dates to the 11th to 14th century. The majority of the 13th to 14th century pottery was recovered from the upper fills of ditches suggesting that the ditches were in use in the early medieval period.

3.5.3 A total of 27 pieces of stone (9.4kg) were recovered from a number of medieval features across the site. Many of these pieces were burnt fragments of lava quern with a potentially Saxon origin (Plate 13). A single Whetstone (Plate 14) was also recovered from fill 5105 (**5106**). Two pieces of glass were recovered from two features however one was not closely datable and the other intrusive.

3.5.4 Only 16 fragments of CBM and 46 fragments of fired clay were all recovered from features on site 5. The CBM assemblage comprised a possible fragment of Roman roof tile and post-medieval roof tile and brick. The fired clay assemblage comprised largely undatebale amorphous fragments. Two of the fragments may have been of a prehistoric date.

3.6 Environmental Summary

3.6.1 A single cremation pit (**5082**) was identified and contained a fragmentary cremation vessel (SF 7) within which was fill 5081 that contained 295g of burnt bone thought to represent a single adult. No charcoal was recovered from this cremation suggesting that the bone was carefully removed from the pyre prior to deposition. A single piece of long bone was sent for carbon dating and yielded a date of 498 to 616AD (95% probability; SUERC-73737; 1516±33 BP).

3.6.2 A small assemblage (21 fragments, 688g) of faunal remains was recovered and mainly consisted of cattle and large mammal with evidence for butchery from features dated to Phase 3 (11th to 14th century). Seventeen fragments of oyster shell was also recovered from several medieval contexts across the site.

3.6.3 Eleven samples were taken from features at Site 5 and the preservation of plant remains was poor. Fill 5110 from ditch **5112** contained the most preserved remains with evidence for sparse grain and legume fragments alongside charred seeds of wetland plant species and a seed of stinking mayweed.

4. Discussion and Conclusions

4.1 Introduction

4.1.1 Of the six sites along the pipeline route from Poringland to Whitlingham Site 5 was the most interesting and productive. This discussion therefore largely focuses on those features dating to the medieval periods uncovered at Site 5. These features comprised ditches, pits, post-holes, gullys, flint surfaces and a cremation burial. Evidence for activity on the site dates from the Early Saxon period through to the 15th century. Sites 2 and 6 revealed boundary ditches of a post-medieval date which were widely dispersed whereas no features were identified at Sites 1, 3 and 4.

4.1.2 Whilst there was evidence for an early Saxon presence in the form of a cremation burial, the majority of the features identified at Site 5 were dated to the 11th to 14th centuries and appear to represent a continuation of an extensive medieval settlement identified to the west (NHER 52447).

4.2 Early Saxon (Phase 1)

4.2.1 The remains of a cremation (**5082**) comprising 295g of burnt bone, were found in a ceramic vessel (SF 7) that had been placed in a small shallow pit cut. The vessel is made from a sandy ware of an Early Saxon date, unfortunately it was fragmentary and as well as body sherds only one fragment of rim was recovered. A fragment of long bone from the cremation yielded a carbon date of late 5th to early 7th century (Early Saxon; 498 to 616AD, 95% probability; SUERC-73737; 1516±33 BP).

4.2.2 The cremated remains appear to have been sorted carefully from the rest of the pyre debris prior to its deposition within the vessel (Appendix C.1). Given that the bones were apparently carefully sorted, the presence of two pieces of Roman pottery found with the cremation can perhaps be seen as purposefully placed with the grave.

4.2.3 It is possible that this cremation burial was an isolated individual but equally it may indicate the presence of a larger cemetery of Early Saxon date such as that excavated outside the Roman town of Caistor St Edmund, 5km to the west. The Caistor St Edmund cemetery included a large number of cremation vessels, the majority of which were of an Early Saxon date(Myres & Green 1973: 74).

4.2.4 Although no other features at Site 5 have been identified as Early Saxon there is limited evidence for an Early Saxon presence in the form of pottery found as residual in post hole **5071.**

4.3 10th to 11th century (Phase 2)

4.3.1 Site 5 was located close to the eastern end of a complex of cropmarks interpreted as medieval settlement (Fig. 9; NHER 52447) partially overlying a probable Roman settlement (Fig. 9; NHER 52448). The investigation of Site 5 was therefore an opportunity to provide new evidence that can contribute towards the regional research question “do medieval settlements have their origins in the Saxon period?” (Medlycott 2011,70), particularly as the settlement has not previously undergone any excavation.

4.3.2 Although only two features were attributed to the Late Saxon period on Site 5 (**5083** and **5076**), pottery of Late Saxon date was identified within the backfills of several other features (**5055**, **5071**, **5073** and **5115**) but considered residual.

4.3.3 Whilst only two sherds of Late Saxon pottery had previously been recovered during field walking over the excavation area (NHER 58379) the recovery of 70 sherds of Late Saxon pottery from the excavation suggests that the site was occupied at this period.

Furthermore the presence of an assemblage of Late Saxon lava quern (9.07kg), some of which came from contemporary pits (eg **5083**) suggests that there was a settlement here. It therefore seems reasonable to suggest at least a late Saxon date for the origins of the entire settlement.

4.4 11th to 14th century (Phase 3)

4.4.1 The evidence for Site 5 indicates that settlement activity continued and grew during the medieval period. Three phases of activity (3.1, 3.2, 3.3) can be identified based on stratigraphy and, to a lesser extent, pottery dates.

4.4.2 Features included ditches, gullys, pits and post-holes alongside two flint surfaces. These features are likely to be a continuation of the medieval settlement identified to the west (NHER 52447; Fig. 9)..

4.4.3 Prior to investigation at Site 5, a large medieval settlement (NHER 52447) had been identified as cropmarks (NMP), earthworks and occasional finds recovered from fieldwalking (NHER 58379). Medlycott (2011: 70) notes that the medieval settlements identified via NMP data represents a substantial body of data that remains unanalysed. This settlement remains largely unexcavated, however the NMP data allows for the settlement to be mapped in some detail. This settlement is recorded as comprising banked and ditched enclosures, possible houses or building platforms and field boundaries covering an area measuring 535m by 300m. Although the NMP data is important in identifying such sites it does not fully represent the features that often remain. The excavation at Site 5 proves this point, since Site 5 lies beyond the edges of the settlement that can be identified by cropmarks and earthworks.

Phase 3.1: 11th to 12th Century

4.4.4 The earliest medieval features were part of a post built structure (Fig. 7; Structure 1), a second possible structure (Fig. 8; Structure 2), a flint surface (Fig. 8; Surface 1) and several ditches (Fig. 8).

4.4.5 The sub-circular surface **5055** may have also been utilised for agricultural uses such as threshing or a hayrick. A mixed assemblage of pottery was recovered from this feature (nine Saxon sherds, 18 Early Medieval sherds, 24 Late Medieval sherds and a fragment of possibly Roman CBM), the pottery sherds are generally small and abraded suggesting they had been incorporated into the feature unintentionally.

4.4.6 A possible structure was identified comprising three gullys (**5085**, **5091** and **5093**) these appear to potentially form a rectangular structure with one gully having a north-west to south-east alignment and the other two having a north-east to south-west alignment. It may be that these gullys are in fact related to feature **5055** as a clear relationship between these features was not established upon excavation.

4.4.7 Three east to west aligned boundaries formed by ditches were located in the southern section of Site 5 (Fig. 8; 5122, 5124/5126 and 5118/5120). The more northerly ditches were approximately 40 metres apart with a third only 5 metres to the south. The ditches are closely aligned to cropmarks at the western edge of NHER 52447 that appear to be a system of fields. The pair of ditches that lie close together may define a trackway for access into the fields.

4.4.8 Two ditches on a north-est to south-west alignment have also been assigned to this early medieval phase based on pottery, however, their alignment is better represented in Phase 3.2.

Phase 3.2: 11th to 13th Century

4.4.9 This phase of activity comprised post-holes and a gully within the northern area of excavation at Site 5, and north-east to south-west aligned ditches in the southern excavation area. Phasing of these features is based on stratigraphic relationships and pottery dates where available.

4.4.10 The features in the north of the Site appear to represent a possible structure (Fig. 7; curvilinear gully **5073** and post holes **5078/5080**). The gully was severely truncated so its complete form has been lost. Post hole **5082** was located at the corner of Phase 3.1 Structure 1 and may be a replaced post, indicating its continued use and maintenance.

4.4.11 The ditches in the southern section of Site 5 represent a change in alignment to the field system noted in Phase 3.1 but are consistent with some of the earthwork boundaries to the west of the site (Fig. 9; NHER52447).

Phase 3.3: 12th to 14th Century

4.4.12 Phase 3.3 comprised ditches and a large irregular hollow filled with flint (Fig. 8; Surface 2). The largest ditch (Fig. 8; **5013**) was also identified as a cropmark on Google Earth (25/5/2011) (Fig. 9) that extended into the excavation area before terminating or changing direction. The substantial size of this ditch indicates its probable function as a boundary. Adjacent to this feature was Surface 2 (**5088 = 5090)** overlain by deposit 5087 (Phase 4). The surface appeared to sit within a depression and may be the remains of a trackway or surface with a possible north to south alignment, and perhaps associated with ditch **5013**. Only a single sherd of pottery was recovered from the surface itself, but a quantity of 14th to 15th century pottery was recovered from the overlying layer (5087 = 5089). It is likely that these features are related to the later Deer Park (Phase 4) as they are very different in character from the earlier settlement/agricultural features.

4.5 14th to 15th century (Phase 4)

4.5.1 Very few features were identified as having a 14th to 15th century date however of the few features identified, a large assemblage (728g) of pottery dating to this phase was recovered. The features identified containing pottery dating to the 14th to 15th century also contained earlier residual material. Spread 5087 (=5089) that overlies flint surface 5088 (=5090) contained 22 sherds of late medieval pottery and represents a spread of material that has accumulated once the flint surface below has gone out of use. Ditches **5006** has also been attributed to this phase due to the large quantity (598g) of 14th to 15th century pottery recovered from the basal fill of the ditch, perhaps representative of a purposeful dump of material, an indicator of settlement abandonment. The lack of features dating to this phase is suggestive that the main medieval settlement identified to the west (NHER 52447; Fig. 9) and the features within the excavation area were likely abandoned at the end of the 14th century. The large pottery assemblages present in features at this one part of the site representing a deliberate dump of material marking the abandonment of the site prior to it becoming a deer park.

4.6 Post-medieval (Phase 5)

4.6.1 Although no features at Site 5 have been securely dated to the post-medieval period a considerable amount of post-medieval material was recovered during field walking (NHER 58379) including 167 pottery sherds, 50 clay tobacco stems, CBM and glass indicating at least some post-medieval presence in the area. The last datable features

on site were 14th to 15th century in date and contained a large amount of pottery and appeared to represent a period of disuse and deliberate clearance across the site.

4.6.2 Site 5 lay entirely within Kirby Bedon Deer Park as shown on Fadens Map (1797, Fig. 11; NHER 52456) which is clearly overlying the medieval settlement. It is therefore likely that the medieval settlement had either been abandoned or was purposefully cleared and emparked. The distinct decline in features and pottery dating to the 14th and 15th century may indicate that abandonment of this medieval site was already occurring at this time. The exact date of the deer park is uncertain however it a number of post-medieval buildings such as Kirby Hall to the north of the site are associated with it. The lack of post-medieval material from this excavation therefore indicates that this land was solely used for the deer park and most likely maintained until it went out of use some time in the early 1800s. A map from 1817 depicts plots of land within the former deer park which had been allotted for sale (Fig. 12).

4.6.3 Medlycott (2011: 79) notes how the decline or loss of parks and gardens should be mapped, there is little record of the deer park at Kirby Bedon. The Norfolk Deer Park project has identified that although Farrer noted a park 3 miles in circumference adjacent to Kirby Bedon Hall the deer park remains undocumented (Liddiard 2010). It is uncertain when the park also went out of use, although some time between 1797 and 1817 is suggested by the map evidence.

4.7 Conclusions

4.7.1 Research aims were identified for each of the Sites (1 to 6) that were identified for investigation for this project. The resulting fieldwork provided evidence for only three of the identified sits, with Site 5 providing the most comprehensive range of features. Sites 2 and 6 providing some limited evidence. The research aims for Sites 1, 3, and 4, could not therefore be met. For sites 2, 5 and 6 the research aims have been partially or wholly met.

4.7.2 For Site 2, the aim was to establish the presence, extent and date of any archaeological remains in particular the presence or absence of the Saxon cemetery (NHER 31192). The site established that no remains associated with the Saxon cemetery were present but did identify a single undated ditch (**2003**) in Trench 3 that had a north-east to south-west alignment and most probably represents an early (pre-enclosure) field boundary.

4.7.3 For Site 5, the aim was to shed further light on the date and duration of the medieval settlement (NHER 52447). Site 5 has been particularly valuable in contributing to this research aim, it is clear from the evidence that the medieval settlement continues tot the east of the area identified as NHER 52447 and that associated field systems survive in this area. A date for the settlement origins is indicated by pottery of Late Saxon date and the evidence suggests that the settlement was cleared and made ready for the Deer Park as early as the 14th or 15th century. Additionally and significantly, evidence for Early Saxon activity was found in the form of a single cremation burial which may indicate the presence of a larger cemetery and certainly indicates that settlement of this date must be located nearby.

4.7.4 For Site 6 the aim was to provide a context for the Roman, medieval and post-medieval finds recovered from the field through fieldwalking (NHER 58371). This aim was only partially achieved; only three ditches were identified within the area stripped (6003, 6005, 6007) and all three were post-medieval in date and two correspond directly to boundaries shown on the enclosure map of the early 19th century.

4.8 Publication

4.8.1 A summary of the results of this project will be offered for publication in the annual round up of excavations and surveys in *Norfolk Archaeology.* The need for any further publication on specific aspects of the project will be discussed and agreed with the Norfolk Historic Environment Service as part of the review process of this report.

Appendix A. Trench Descriptions and Context Inventory

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase
2000	-		Layer	Topsoil	-	-	0.3	-
2001	-		Layer	Subsoil	-	-	0.1-0.3	-
2002	-		Layer	Natural	-	-	-	-
2003	**2003**		cut	ditch	boundary	1.2	1.1	5
2004	**2003**		fill	ditch	slumping	-	0.1	5
2005	**2003**		fill	ditch	disuse	-	0.4	5
2006	**2003**		fill	ditch	disuse	-	0.6	5
2007	**2003**		fill	ditch	disuse	-	0.14	5
5001	-		Layer	natural	-	-	-	-
5002	-		Layer	subsoil	-	-	0.2	-
5003	-		Layer	topsoil	-	-	0.3	-
5004	**5004**		cut	gully	unknown	0.62	0.2	3.3
5005	**5004**		fill	gully	disuse	0.62	0.2	3.3
5006	**5006**	**5106**	cut	ditch	boundary	1.82	0.8	4
5007	**5006**		fill	ditch	disuse	-	0.12	4
5008	**5006**		fill	ditch	disuse	1	0.68	4
5010	**5006**		fill	ditch	disuse	0.62	0.16	4
5011	**5006**		fill	ditch	disuse	0.78	0.16	4
5013	**5013**	**5018, 5030, 5037, 5045**	cut	ditch	Boundary/enclosure	2.8	0.8	3.3
5014	**5013**		fill	ditch	disuse	-	0.3	3.3
5015	**5013**		fill	ditch	disuse	-	0.5	3.3
5016	**5016**		cut	pit	unknown	0.75	0.2	3.3
5017	**5016**		fill	pit	disuse	0.75	0.2	3.3
5018	**5018**	**5013, 5030, 5037, 5045**	cut	ditch	Boundary/enclosure	2.24	0.32	3.3
5019	**5018**		fill	ditch	disuse	2.24	0.32	3.3
5020	**5020**		cut	post hole	structural	0.31	0.1	-
5021	**5020**		fill	post hole	disuse	0.31	0.1	-
5022	**5022**		cut	post hole	structural	0.18	0.07	-
5023	**5022**		fill	post hole	disuse	0.18	0.07	-
5024	**5024**		cut	pit	unknown	0.65	0.36	-
5025	**5024**		fill	pit	disuse	1.2	0.1	-
5026	**5024**		fill	pit	dump	1.2	0.26	-
5027	**5030**		fill	ditch	disuse	-	0.3	3.3
5028	**5030**		fill	ditch	disuse	-	0.4	3.3
5029	**5030**		fill	ditch	disuse	-	0.65	3.3
5030	**5030**	**5013, 5018, 5037, 5045**	cut	ditch	Boundary/enclosure	4.1	0.85	3.3
5032	**5035**		fill	ditch	disuse	1.1	0.3	3.3
5033	**5035**		fill	ditch	disuse	0.8	0.4	3.3
5035	**5035**	**5043**	cut	ditch	boundary	1.6	0.7	3.3
5036	**5037**		fill	ditch	disuse	0.8	0.4	3.3
5037	**5037**	**5013. 5018, 5030, 5045**	cut	ditch	boundary	0.8	0.4	3.3
5040	**5042**		fill	ditch	disuse	0.5	0.3	3.3
5041	**5042**		fill	ditch	disuse	0.75	0.25	3.3
5042	**5042**	**5047**	cut	ditch	Boundary/enclosure	0.75	0.3	3.3

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase
5043	**5043**	**5035**	cut	ditch	Boundary/enclosure	0.6	0.75	3.3
5044	**5043**		fill	ditch	disuse	-	0.75	3.3
5045	**5045**	**5013, 5018, 5030, 5037**	cut	ditch	Boundary/enclosure	2.8	0.71	3.3
5046	**5045**		fill	ditch	disuse	-	0.7	3.3
5047	**5047**	**5042**	cut	ditch	Boundary/enclosure	1.7	0.7	3.3
5048	**5047**		fill	ditch	disuse	-	0.7	3.3
5054	**5055**		fill	Flint surface	?	3.6	0.2	3.1
5055	**5055**		cut	Flint surface	?	3.6	0.2	3.1
5056	**5056**		cut	ditch	boundary	1.12	0.1	3.2
5057	**5056**		fill	ditch	disuse	1.12	0.1	3.2
5060	**5061**		fill	post hole	disuse	0.4	0.1	-
5061	**5061**		cut	post hole	structural	0.4	0.1	-
5062	**5063**		fill	post hole	disuse	0.3	0.1	-
5063	**5063**		cut	post hole	structural	0.3	0.1	-
5064	**5065**		fill	post hole	disuse	0.4	0.18	2
5065	**5065**		cut	post hole	structural	0.4	0.18	2
5066	**5067**		fill	post hole	disuse	0.8	0.2	3.1
5067	**5067**		cut	post hole	structural	0.8	0.2	3.1
5068	**5069**		fill	pit	disuse	0.6	0.4	-
5069	**5069**		cut	pit	structural	0.6	0.4	-
5070	**5071**		fill	post hole	disuse	0.6	0.35	3.1
5071	**5071**		cut	post hole	structural	0.6	0.35	3.1
5072	**5073**		fill	gully	disuse	0.47	0.14	3.2
5073	**5073**		cut	gully	Structural?	0.47	0.14	3.2
5075	**5076**		fill	gully	disuse	0.15	0.15	3.2
5076	**5076**		cut	gully	Structural?	0.3	0.14	3.2
5077	**5078**		fill	post hole	disuse	0.5	0.2	-
5078	**5078**		cut	post hole	structural	0.5	0.2	-
5079	**5080**		fill	post hole	disuse	0.7	0.2	3.2
5080	**5080**		cut	post hole	structural	0.7	0.2	3.2
5081	**5082**		fill	cremation	burial	0.25	0.1	1
5082	**5082**		cut	cremation	burial	0.25	0.1	1
5083	**5083**		cut	pit	Rubbish disposal	0.56	0.28	2
5084	**5083**		fill	pit	Natural silting	0.56	0.28	2
5085	**5085**		cut	gully	drainage	0.6	0.12	3.1
5086	**5085**		fill	gully	disuse	0.6	0.12	3.1
5087	**-**	**5089**	layer	spread	-	5.5	0.15	4
5088	**-**	**5090**	layer	surface	Flint surface	0.8	-	3.3
5089	**-**	**5087**	layer	spread	-	5.5	0.15	4
5090	**-**	**5088**	layer	surface	Flint surface	1.6	-	3.3
5091	**5091**		cut	gully	unknown	0.5	0.07	3.1
5092	**5091**		fill	gully	disuse	0.5	0.07	3.1
5093	**5093**		cut	gully	unknown	0.65	0.18	3.1
5094	**5093**		fill	gully	disuse	0.65	0.18	3.1
5095	**5095**		cut	post hole	structural	0.7	0.25	3.1
5096	**5095**		fill	post hole	disuse	0.7	0.25	3.1
5099	**5099**	**5103**	cut	ditch	boundary	3.6	0.6	-

Context	Cut	Same as	Category	Feature Type	Function	Width (m)	Depth (m)	Phase
5100	**5099**		fill	ditch	disuse	1.1	0.6	-
5101	**5101**		cut	ditch	boundary	1.2	0.7	-
5102	**5101**		fill	ditch	disuse	1.2	0.7	-
5103	**5103**	**5099**	cut	ditch	boundary	3.6	0.5	-
5104	**5103**		fill	ditch	disuse	1.1	0.5	-
5105	**5106**	**5007**	fill	ditch	disuse	1.82	0.8	4
5106	**5106**	**5006**	cut	ditch	boundary	1.82	0.8	4
5109	**5112**		fill	ditch	disuse	0.5	0.12	3.2
5110	**5112**		fill	ditch	disuse	0.6	0.05	3.2
5111	**5112**		fill	ditch	disuse	1	0.3	3.2
5112	**5112**		cut	ditch	boundary	1	0.3	3.2
5113	**5115**		fill	pit	disuse	1	0.5	3.2
5114	**5115**		fill	pit	redeposited natural	0.6	0.4	3.2
5115	**5115**		cut	pit	rubbish disposal	1.6	0.6	3.2
5116	**5118**		fill	ditch	disuse	1.35	0.35	3.1
5117	**5118**		fill	ditch	disuse	1	0.25	3.1
5118	**5118**		cut	ditch	boundary	1.35	0.6	3.1
5119	**5120**		fill	ditch	disuse	0.9	0.2	3.1
5120	**5120**		cut	ditch	boundary	0.9	0.2	3.1
5121	**5122**		fill	ditch	disuse	0.7	0.2	3.1
5122	**5122**		cut	ditch	boundary	0.7	0.2	3.1
5123	**5124**		fill	ditch	disuse	0.9	0.3	3.1
5124	**5124**		cut	ditch	boundary	0.9	0.3	3.1
5125	**5126**		fill	ditch	disuse	0.9	0.3	3.1
5126	**5126**		cut	ditch	boundary	0.9	0.3	3.1
5127	**5128**		fill	pit	?	0.5	0.04	3.1
5128	**5128**		cut	pit	Possible hearth	0.5	0.04	3.1
5129	**5131**		fill	ditch	disuse	-	0.18	3.1
5130	**5131**		fill	ditch	disuse	-	0.85	3.1
5131	**5131**		cut	ditch	boundary	4.25	0.85	3.1
5132	**5132**		cut	ditch	boundary	0.7	0.07	3.2
5133	**5132**		fill	ditch	disuse	0.7	0.07	3.2
5134	**5134**		cut	ditch	boundary	0.58	0.05	3.1
5135	**5134**		fill	ditch	disuse	0.58	0.05	3.1
5136	**5139**		fill	ditch	disuse	-	0.5	3.3
5137	**5139**		fill	ditch	disuse	-	0.8	3.3
5138	**5139**		fill	ditch	disuse	-	0.36	3.3
5139	**5139**		cut	ditch	boundary	4.5	1	3.3
5140	**-**		layer	spread	-	1.4	0.1	-
6000	**-**		layer	topsoil	-	-	0.3	-
6001	**-**		layer	subsoil	-	-	0.1	-
6002	**-**		layer	natural	-	-	-	-
6003	**6003**		cut	ditch	boundary	0.65	0.46	5
6004	**6003**		fill	ditch	disuse	0.65	0.46	5
6005	**6005**		cut	ditch	boundary	1.32	0.9	5
6006	**6005**		fill	ditch	disuse	1.32	0.9	5
6007	**6007**		cut	ditch	boundary	0.95	0.63	5
6008	**6007**		fill	ditch	disuse	0.95	0.63	5

Appendix B. Finds Reports

B.1 Metalwork

By James Fairbairn

Introduction and methodology

B.1.1 The small metal finds assemblage comprises seven objects; a dagger chape of probable medieval to post medieval date, a fragment of a cast copper alloy belonging to a chafing dish (un-stratified), also of a medieval to post medieval date, four iron nails and one unidentifiable iron object.

Copper Alloy

B.1.2 SF **5001** (Context 5011) - an incomplete and bent post-medieval dagger scabbard chape dating from the 16th-17th century or possibly later. The object is bent, squashed and incomplete (Plate 11. Originally it would have been flat-conical in shape and octagonal or hexagonal in cross-section, it tapers to a point at the bottom. The upper edges are ragged and broken. The sides of the seam are now separated and there are no signs of rivet holes suggesting the piece was soldered rather than fixed with rivets. Length: 61mm Thickness:0.2mm, Width: 27m Weight 9.67g.

B.1.3 Un-stratified find. Fragment of cast copper alloy chafing dish of probable later medieval to post medieval date (1350-1650). The fragment is from the side wall of the vessel, worn and irregular in shape (Plate 12). The upper edge is thickened with a stepped and out-turned rim. The lower edge is also stepped out but broken.

B.1.4 Two small holes are visible piercing the object. These are 28mm apart and are possible rivet holes for one of the two handles these vessels invariably had. The vessel fragment is a mid green colour and devoid of decoration. Chafing dishes were used throughout the medieval periods and were used to keep contents warm and not for cooking over direct heat. Length: 48mm, Width: 45mm, Thickness: 5mm, Weight: 59.80g.

SF number	Context	Cut	Material	Object name	No of Items	Comments
5001	5011	**5012**	CuA	Dagger Chape	1	Fragmentary
N/A	99999	**-**	CuA	Chafing Dish	1	Vessel side

Table 1: Copper Alloy Small Finds

Iron nails

B.1.5 The iron objects from the site consist of four hand wrought iron nails and a possible staple, all are heavily corroded and mostly fragmentary. Three were found within in context 5087, one within context 5041, and one within context 5054. All are of indeterminate date.

B.1.6 SF **5005** (Context 5041). A heavily corroded and fragmentary hand wrought Iron nail. The object consists of a tapered, rectangular shaft which is bent. The head of the nail is domed and concreted to one side The point of the nail is missing. Length: 40m, Thickness: 9 mm, Weight: 12.09g.

B.1.7 SF **5006** (Context 5054). A heavily corroded complete hand wrought Iron object reminiscent of a bent nail but with a flattened terminal. The object is possibly a broken staple or a fragment of a circular iron ring of indeterminate date The inner face of the object is flattened while the outer is rounded. This suggests that it was clamped or adhered to some other object, possibly to hold it in place. Length: 76mm, Thickness: 6 mm, Weight: 17.52g.

B.1.8 SF **5011** (Context 5087). A hand forged Iron nail of indeterminate date. The nail has a bent rectangular shaft with a domed shaped head. The nail covered with iron corrosion and is reddish brown in colour. Length:55mm, Thickness 7mm, Weight: 9.70g.

B.1.9 SF **5012** (Context 5087). A heavily corroded complete hand wrought Iron nail. The object consists of a tapered, rectangular shaft (slightly bent toward the point) finishing in a sharp point. The head of the nail was probably flat. Length: 47m, Thickness: 7 mm, Weight: 7.42g.

B.1.10 Context 5087. A complete but very heavily corroded nail of indeterminate date. The object has a tapered rounded shaft terminating in a blunt point. The head is flat. Length: 46m, Thickness: approx 6 mm, Weight: 6.95g.

Small Find	Context	Cut	Material	Object Name	No. of items
5005	5041	**5042**	Fe (iron)	Nail	1
5006	5054	**5055**	Fe (iron))	Staple	1
5011	5087	-	Fe (iron)	Nail	1
5012	5087	-	Fe (iron)	Nail	1
	5087	-	Fe (iron)	Nail	1

Table 2: Iron Small Finds

Discussion

B.1.11 The copper alloy objects found during the excavation are incomplete. One of the objects (small find **5001**) would relate to a personal objects such as jewellery or a clothing accessories and is probably a casual loss. The un-stratified fragment of chafing dish (from the French chauffer, "to make warm") is a domestic item and probably would have been discarded after it was broken.

B.1.12 The iron nails recovered from the excavation all utilitarian in nature. All are small and are unlikely to relate to any large structure. The items that are bent probably became so prior to deposition.

B.2 Stone

By Simon Timberlake

Introduction and methodology

B.2.1 A total of 9.4 kg (x27 pieces) of stone were examined from this excavation, of which 9.07 kg consisted of fragmentary lava quern, the majority of which was identified as being 'Saxon' (Early Medieval type) rotary quern and possibly also worn and broken-up medieval pot quern. The fragmentary quern assemblage was recovered from a range of different features pottery spot-dated to between the 10th to 11th and 14th to 15th

centuries AD, but the majority of which were almost certainly medieval.

B.2.2 The potentially 'Saxon' type quern is typically thought of as being pre-11th century AD, although this was clearly used later, sometimes as curated/ re-worked rotary quern, and sometimes just as re-cycled stone within flooring and hearth surrounds.

B.2.3 A single piece of burnt stone (dolerite (27g)) was recovered from fill 5113 of an 11th to 13th century pit (**5115**), alongside a tiny fragment of metalworking slag which may be ferrous or non-ferrous in nature.

B.2.4 An imported whetstone made of white quartz-schist was recovered from the fill of 13th to 14th century ditch **5106** (fill 5105). This showed a moderate amount of use, and had almost certainly been used domestically for the sharpening of iron knives.

Methodology

B.2.5 All the stone was identified visually using an illuminated x10 magnifying lens, and compared where necessary with an archaeological worked stone reference collection. This included a number of specimens of basalt collected from the lava flow beds quarried in the Roman-Medieval quern quarries at Mayen, Germany. Projected quern diameters were estimated using a chart, and in some cases this involved re-fitting rim fragments. A dropper bottle containing dilute hydrochloric acid was used to confirm the presence or absence of calcite in the rock.

Catalogue and description of worked stone

B.2.6 *Quern*. A full analysis of the worked stone has revealed a fragmentary and burnt assemblage of partially re-cycled lava quern dumped as discarded stone within a range of medieval features. There is evidence that some of this stone may have been broken to shape in order to fit what may once have been the sides or bases of hearths, or perhaps gaps within stone slab floors, suggesting a history of subsequent non-quern use.

B.2.7 The primary use was as hand mill rotary querns, some 72% (by weight) of these being made up of large relatively thin (20-45 mm thick) worn stones of the '*Saxon'* (Early Medieval) type with original diameters of between 400-520 mm, with most of the remaining material (24%) consisting of what seems likely to be broken-up medieval *pot quern*. The latter become increasingly common in urban centres from the 13th century onwards.

B.2.8 The assemblage appears to be dominated by fragments of upper stone (84%) with just 15% of recognisable lower stone pieces amongst this.

B.2.9 Almost all of the grinding surfaces examined appear worn and polished, with little sign of rotational or acentric wear. This was most obvious within the exceptionally worn and thin lower stones. Within some of these the faint traces of furrow dressing could be detected, though in almost all cases this had been completely worn away. Furrow dressing is more typically (but not universally) applied to the basal recessed stone of the pot quern, but is invariably absent within the earlier 'Saxon' type hand mills. Amongst both types we find crude pick point dressing of the upper non-grinding surfaces; both this and the drilled or bored holes intended for the fixing of handles.

B.2.10 Full details of this quern assemblage are provided in Table 3. This includes a hand-specimen petrographic assessment of lava type, a summary description of which is provided in the accompanying key.

Context	Cut No	SF no	nos frags	dimensions (mm)	Wt (kg)	basalt type	U/ L stone	estim stone diam (mm)	quern type	grind surfce	burnt?	Comment
5002	-	5003	1	170 x 155 x 45 -30	1.29	A	U	400	Saxon	4		sharp angle rim
5019	**5018**		2	120 x 70 x 20-10	0.2	A	U?		Saxon	5		10-11th C
5041a	**5042**		1	70 x 60x 20	0.12	D	L?		Saxon	4		
5041b	**5042**		3	30 x 30 x 22	0.03	A				4		weathered
5087a	-	5013	3	150 x 95 x 20-25	0.54	E	U?	500+	Saxon	3		re-fitting, round rim
5087b	-	5013	2	75 x 50 x 20	0.08	A	U?	520+	Saxon	4		
5088	-	5008	1	180 x 100 x 25	0.48	E	L	520	pot quern?	5		uncertain diameter
5008	-	5009	1	115 x 70 x 55-60	0.9	E	U	350	pot quern?	5		handle hole 25x15mm*
5088	-	5010	1	145 x 145 x 20-40	0.78	A	L	int 520 ext 560	pot quern	5		v. worn, upturned rim, worn radial furrows*
5089	-		2	85x60x25-20	0.15	A	U?		Saxon ?	4	B	
5113	**5115**	5016	6	70x60x20-23	0.26	A	U?	530+	Saxon ?	4	B	weathered, re-use as hearth
99999	-		2	260x230x34-45	4.25	A	U	520	Saxon	4	B	weathered, shaped + re-use as hearth*

Table 3: Catalogue of Lava Quern

Basalt type ***A*** *= hard, coarse vesicular, med grey, pyroclast inclus, small pyroxene phenocryst (Mayen quarries?);* ***B*** *= light grey, fine vesicular, larger augite phenocryst, zeolite infill;* ***C*** *= dark grey, fine vesicular, minor zeolite + hematite infill of vesicles;* ***D*** *= moderate vesicular, light-mid grey, pyroclast inclus.+ zeolite;* ***E*** *= coarsely vesicular, hard grey, some larger vesicle zeolite fill + pyroxene phenocrysts;* ***F*** *= fine grain vesicular, mid grey, soft with no zeolite infill*

U/L stone **U** = upper stone; **L** = lower stone

Grind surface **1** = little or no wear; **2** = minor wear (patchy); **3** = flattened ridges; **4** = more extensive wear (flattened with some polish); **5** = finely ground polish

Burnt? **B=** evidence for burning, including soot stains, suggesting re-use as hearth stone ***** = recommend drawing for publication

B.2.11 *Whetstone.* The broken rectangular whetstone made of imported (Norwegian) white quartz-schist (115mm x 50mm x 35mm; weight 0.33 kg) is a fairly typical find of urban Late Saxon-Early Medieval urban settlements (Plate 14). This particular example exhibits one face which has been heavily used, and is as a result smooth, round and concave in longitudinal profile. Two other faces of the stone are less worn, but still exhibit the evidence of whetstone use, whilst the fourth shows no sign of lateral blade wear, though it does have a number of longitudinal knife cuts on it (of between 10-40mm long and 1mm wide), perhaps for the removal of metal burrs from the cutting edge(s) of the knive(s) following sharpening.

Discussion

B.2.12 This moderately well preserved assemblage of medieval lava quern resembles the assemblage recently excavated by OAE at Bramford, Suffolk. The change in manufacture and style from Roman to Anglo-Saxon/ Early Medieval rotary hand querns of Mayen and Niedermendig lavas is moderately well documented (Hörter et al. 1951; Watts 2002,33-42; Mangartz 2008), the very earliest medieval querns being somewhat larger in diameter but often thinner, with larger eyes and collars within the centre of the upper stones, an absence of furrow dressing on the grind surfaces, a distinctive pick dressing on the top stone, and frequently also small perforations for handles (such as for the rope attachment between the upper stone and a wooden pole suspended from the roof rafters which was used for the easy turning of the mill: see Figure 5). At least some of these features are recognisable within the fragmentary assemblage of 'Saxon' type quern from Poringland.

B.2.13 Produced from the 7th to 8th centuries AD, lava querns of the 'Saxon' type become more commonplace in Europe during the 9th to 11th centuries AD (Late Saxon period), a phenomenon reflecting the re-activation of the former Roman quarries at Mayen (Hörter et al. *ibid*., 73) and the increase in cross-channel trade. Nevertheless, within England we witness the continuing import of these earlier models well beyond the introduction of the pot quern which began to be produced at Mayen (and later Niedermendig) around AD 1000. More importantly still was the continuing curation of old quern stone(s), their recycling, and sometimes their refurbishment or else complete re-fashioning from broken material. We are probably therefore witnessing this same phenomenon at Poringland, given the use of old and worn quern to the point of its destruction. Beyond their useable lives we then witness their 're-use' as hearth surround stone, or possibly even as stone for the insertion into floors or walls. We cannot prove such use here, yet there are numerous other examples of the discovery of quern within the ovens and hearths of medieval houses, and sometimes even its deliberate concealment to avoid confiscation at a time of the rise of the manorial mill; the privilege of the use of which would have been an important source of income for the manor or church (Watts *ibid.*, 40).

B.2.14 The first appearance in England of three different styles of pot quern manufactured at and imported from the Mayen-Niedermendig quarries can be dated to around the 12th century. However, this reflects the fashion within the highly urban centres of London and Winchester (Watts ibid., 42), therefore a more realistic estimate for its commonplace use within the rural areas of England is more likely to be the 13th century or later. This accords well with the evidence from Poringland. All of the identified pot quern (Plate 13) from here seems to come from a confirmed 12th to 14th century AD context (5088). 'Saxon' type quern present within this and other similarly dated medieval layers and features perhaps reflects the re-cycling of discarded quern material, but equally it may

also reflect some element of continuing use. At least two fragments of probable 'Saxon' type quern were recovered from ditch **5018** (fill 5019).

B.2.15 Quern production at Mayen begins in the Late Neolithic, and was already considerably developed by the Late Iron Age (La Tène) period, although the height of production and trade with Britain and the Low Countries wasn't reached until Roman times. The latter expansion in production at Mayen followed the complete removal of the overburden of pumice ash deposits, and subsequently quarrying began on an industrial scale along a front 5000 metres long and up to 50 metres deep into the bedded lava flows, this involving the total removal of at least one and a quarter million cubic metres of stone (Hörter et al. *ibid*., 72) Boats laden with quern and millstone as ballast left the port of Andernach on the Rhine for London and Colchester. Quern blanks or rough-outs were prepared at the quarry site(s) themselves from the splitting and shaping of the polygonal-shaped columns of basalt detached from the cooling joints of the flows (Mangartz *ibid*., 66-67).

B.2.16 This same method of extraction re-commenced in the Anglo-Saxon period, but on a smaller scale at Mayen, exploiting the un-worked block areas left in between the Roman quarries. Once the industry and trade route(s) were revived in the Mid-Late Saxon times, both finished products (hand querns and millstones) and also blanks were shipped to England from a series of distribution centres, including that of Dorestad in the Netherlands (Parkhouse 1997). London, Southampton and Ipswich were amongst the receiving ports for this trade between the 9th to 11th centuries AD, and as the trade declined before its brief revival spurred on by the development of the pot quern and locally produced (English) quern and millstones during the 12th century, we witness a period of re-cycling of a temporarily scarce resource.

B.2.17 Production shifts from the now largely exhausted surface outcrops at Mayen to the Niedermendig quarries and underground mines during the 11th century AD (Hörter et al. *ibid*, 68-69), the latter site much more likely to have been the actual source of the pot querns imported into medieval Britain

B.2.18 The relatively high incidence of lava quern at Bramford and Poringland, both pre- and post-introduction of the pot quern, might relate to their proximity to the port of Ipswich, but also to its distance from the other (contemporary) English production centres for quern such as the Southern Pennines and North Yorkshire.

B.2.19 'Light-grey quartz schist' whetstone appears to be of a type common in England during the Early Medieval period, and was probably imported from Eidsborg in Upper Telemark, Norway where there was already a well-established whetstone quarrying industry. These whetstones were regularly traded across the North Sea from the port of Skien to trading ports such as Ipswich on the east coast of England from the 9th to 11th centuries (Viking period) onwards (Hansen 2009). In the 13th century the standard dimension of these exported blanks was approximately 50mm x 30mm x 300mm, which matches moderately well with the dimensions of the above piece, which was clearly then broken in two. Many of the Norwegian 'rag' whetstones were imported as undressed mullions, and were then finished-off in workshops within the urban centres of England. For this reason many of the commonly found rough fragments may simply have been broken or off-cut pieces from the production of larger items, so ending up after relatively little use within typical domestic waste contexts (see Ellis & Moore 1990, 280). This example from Poringland, Norfolk pretty well matches those found outside of the precinct of the Early Medieval Abbey of Barnwell, on Newmarket Road, Cambridge, and from the Grand Arcade excavation within the centre of Cambridge (see Timberlake in Cessford 2009).

Conclusions

B.2.20 The lava quern from Poringland is a small but significant assemblage in regional terms, with evidence for an interesting transition between Early Medieval 'Saxon' type grain hand mills and pot querns. Of interest also is its residuality and possible secondary use as hearth stone and flooring material subsequent to its breakage and abandonment as quern. The only other item of worked stone is the Norwegian whetstone, an object which would not have been uncommon within English urban settlements from the 11th century onwards; the latter being an example of a broken mullion stone, a means of spreading the commodity of imported whetstone use, and as such is most likely to be an object of the medieval period, perhaps of the 13th to14th century.

B.3 Glass

By Carole Fletcher

Introduction and methodology

B.3.1 A small assemblage of vessel glass was scanned, catalogued, weighed and recorded as individual vessels with the minimum number of vessels (MNV) recorded. The glass and archive are curated by Oxford Archaeology East.

B.3.2 The glass was recovered from a subsoil context, which produced a small fragment of vessel glass that could not be closely dated, and a single ditch 5139, which produced a basal fragment from a 19th century cylindrical utility bottle (wine bottle). The glass was recovered alongside residual medieval pottery and post-medieval ceramic building material. The assemblage is likely to be domestic in nature and represents general rubbish deposition or clearance. The plain and fragmentary nature of the assemblage means it is of little significance. The following catalogue acts as a full record, and the glass may be deselected prior to archive deposition.

Context	Cut	Glass Type	Form	Description	MNV	Count	Weight (kg)	Date
5002		Vessel	Utility Bottle	Body shard of olive green glass from a bottle. 2mm thick.	1	1	0.003	Not closely datable
5136	**5139**	Vessel	Utility Bottle (wine)	Partial basal edge (slightly bulging) and kick from a cylindrical dark olive green glass bottle, with matt surfaces.	1	1	0.086	19th century intrusive
Total					**2**	**2**	**0.089**	

Table 4: Glass by context

B.4 Roman pottery

By Alice Lyons

Introduction and methodology

B.4.1 A total of two pottery fragments, weighing 13g, were recovered from a sample associated with an Early Saxon cremation burial (**5082**). The material is in very poor condition and severely abraded and comprised two Sandy grey ware jar pieces, tempered with common small flint pieces.

Context	Sample	Fabric	Form	Sherd Count	Weight (g)	Spot Date
5081	3	Sandy grey ware (slow wheel/wheelmade)	Jar: undecorated body sherds only	2	13	Early to mid-1st century AD
Total				**2**	**13**	

Table 5: Roman pottery

B.5 Medieval Pottery

By Sue Anderson

Introduction and methodology

B.5.1 Pottery totalling 368 sherds (2850g) was collected from 39 contexts. Table 6 provides a quantification by period group. A full spotdate list by context is included in the Appendix.

Description	No	Wt/g	Eve	MNV
Early Anglo-Saxon(?)	220	468		2
Late Anglo-Saxon	70	629	1.03	54
Early medieval	77	310	0.72	63
Medieval	182	1180	1.27	97
Late medieval	38	728		8
Total	**587**	**3315**	**3.02**	**224**

Table 6:Pottery quantification by period

Methodology

B.5.2 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. All fabric codes were assigned from the author's post-Roman fabric series (Anderson unpub.). A x20 microscope was used for fabric identification and characterisation. Form terminology for medieval pottery is based on MPRG (1998). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format. The results were input directly onto an Access database.

Early Anglo-Saxon

B.5.3 An abraded body sherd (3g) of handmade, black, medium sandy pottery was recovered from post-hole fill 5070, in association with later wares. It appeared to have fingertip impressed decoration and is likely to be of Early Anglo-Saxon date, although a prehistoric date cannot be ruled out entirely.

B.5.4 Cremation burial **5082** contained a very fragmented pottery vessel (219 fragments). The pot was in a fine sandy fabric with few other inclusions visible. Both surfaces were smoothed and the external surface was oxidised to a dark red. Diagnostic fragments suggested that the vessel had an upright rim, concave neck and possibly globular or bag-shaped body, with a rounded base and defined base-angle. Only a tiny piece of the rim edge was identified, and the diameter of the rim could not be identified as a result. However the quantity of pottery is suggestive of a relatively small and simple vessel.

Late Anglo-Saxon

B.5.5 This group comprises wheelmade pottery of broadly 11th-century date. It is probably contemporary with the earliest medieval pottery described below.

Fabrics

B.5.6 The Late Anglo-Saxon pottery is dominated by Thetford-type wares which occur in several fabrics (Table 7).

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Thetford-type ware	THET	10th-11th c.	20	157	0.41	9
Thetford-type ware (Kirstead)	THETK	10th-11th c.	24	118	0.45	24
Thetford-type ware (local variant)	THETL	10th-11th c.	19	259	0.07	14
'Early medieval' sandwich wares	EMSW	11th c.	6	87	0.10	6
Saxo-Norman Wares (general)	SXNO	850-1150	1	8		1
Total			**70**	**629**	**1.03**	**54**

Table 7: Late Anglo-Saxon Pottery

B.5.7 Some of these are more typical of the harder, blue-grey and black/red types found in Thetford and Norwich. However the majority are in a softer, fine sandy micaceous fabric with sparse to moderate ferrous inclusions, occasional clay pellets, flint and/or larger sand grains. Sherds in typical grey colours are present, but others have oxidised (orange or red) surfaces, some have red cores or margins, and some are brown. 'Early medieval' sandwich ware is described by Jennings (1981), but is now thought to be a late Thetford-type ware variant. The presumed local Thetford-type wares in this group are similar to local wares of the period from other recently excavated sites around the eastern and southern periphery of Norwich (*e.g*. Anderson 2016). A 'Saxo-Norman' sherd was in a finely chalk-tempered fabric.

B.5.8 One group of 'local' Thetford-type wares stands out as being a different fabric. The closest known rural production centre to this site was at Langhale, a deserted medieval village in the modern parish of Kirstead, Norfolk (Wade 1976). Kiln samples from the site were compared with sherds from this assemblage and were very similar or identical. However, it is possible that a more local pottery existed somewhere closer to the site, using the same boulder clays.

Forms

B.5.9 Amongst the Late Anglo-Saxon group there were rimsherds from ten vessels. All were jars (one small 'AA', seven medium 'AB' and two large 'AC' types). Rim forms were mostly intermediate or later types (Anderson 2004, types 4, 5/6, 6 and 7; late 10th/11th c.), but three type 5 rims were also present, these spanning the 10th and earlier 11th centuries. All base fragments in the Thetford-type wares were flat, but some of those in the rural fabrics were poorly formed and had often been damaged when removed from the wheel. Apart from one example of shallow 'girth-grooving' and one large vessel body with applied thumbed strips, none of the group was decorated.

Distribution

B.5.10 The largest concentration of pottery of this period was a group of 24 sherds from pit **5083** in the northern trench. Another nine sherds came from pit **5055**, but these were in association with later wares. Twenty other contexts spread across the site contained material of this date, but in all cases the quantity was small (<5 sherds).

Early medieval

B.5.11 Early medieval wares are generally defined as handmade wares which first appeared in the 11th century and continued to be made into the 13th century in rural parts of East Anglia. Sometimes pots were finished on a turntable and many have wheelmade rims luted onto handmade bodies; rim forms suggest that this technique probably started in the 12th century in most areas. These handmade wares can be considered transitional between the Late Saxon and medieval wheelmade traditions, and their use overlaps with both period groups.

Fabrics

B.5.12 Several coarsewares were identifiable, although it was clear that most contained a similar range of inclusions. The fabrics, listed below, were therefore distinguished largely on the basis of coarseness and abundance of inclusions.

EMW Early medieval ware. Handmade, fine to medium sandy with few other inclusions, generally thin-walled. Hard. Dark grey-black, or oxidised. 11th–12th c.

EMWM Early medieval ware micaceous. As EMW with abundant mica.

YAR/YARN Yarmouth-type ware. Handmade body with wheelmade rim, adundant fine to medium sand with variable quantities of fine to medium shell. Hard. Variable colours but usually oxidised purple-red surfaces and grey core. Originally described by Mellor (1976) in Great Yarmouth, but more common in Norwich. M.11th–12th c.

EMWSS Early medieval ware sparse shelly. Handmade, sparse shell up to 3mm (some leached), sparse medium sand (clear/brown), sparse clay pellets/soft ferrous inclusions, moderate to common mica. Hard. Brown/grey. 11th–13th c.

GRCW Grimston coarseware (Grimston unglazed), as described by Little (1994).

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Early medieval ware	EMW	11th-12th c.	56	177	0.66	44
EMW micaceous	EMWM	11th-13th c.	1	12		1
Early medieval sparse shelly ware	EMWSS	11th-13th c.	3	7		3
Yarmouth-type ware	YAR	11th-12th c.	10	63	0.06	9

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Yarmouth-type non-calcareous	YARN	11th-12th c.?	6	40		5
Grimston coarseware	GRCW	11th-M.13th c.	1	11		1
Total			**77**	**310**	**0.72**	**63**

Table 8: Early Medieval wares

B.5.13 This group is dominated by the handmade sandy early medieval wares (EMW) typical of this part of Norfolk, with Yarmouth-type ware being the second most common ware. This pattern is the same as that seen in Norwich and nearby rural sites.

Forms

B.5.14 Of the early medieval coarsewares, six rims in two fabrics (1 YAR, 5 EMW) were identifiable as jars, and there was one EMW 'ginger jar'. All EMW jar rims were simple everted forms, and the Yarmouth-type ware rim was an upright-beaded form. The ginger jar had an inturned rim which was slightly squared at the top.

B.5.15 All EMW jars were between 150–180mm in diameter, whilst the YAR jar was larger at 220mm.

B.5.16 There were no decorated sherds in this period group.

Distribution

B.5.17 The largest single group of sherds from this period was from pit **5055**, which contained eighteen. Eleven sherds were found in pit **5115** and there were seven in post-hole **5095**. Twenty-one other contexts contained sherds of this period, each with between 1–4 sherds.

Medieval wares

B.5.18 Medieval coarsewares are wheelmade wares which are generally of 12th–14th-century date. This large group was dominated by coarsewares, the majority of which were unprovenanced. The fabrics are similar to those identified along the Norwich Northern Distributor Route (NDR; Anderson 2016a), and the same groups have been used here, with the addition of MCW10 and UPG6–7.

Fabrics

B.5.19 The following fabric groups are of uncertain provenance or are unpublished:

MCW1: common fine/medium sandy with sparse mica. Typically oxidised with buff surfaces/margins and red core, but can be reduced. Some may be handmade, but both simple and developed forms occur. Given the basic inclusions, there may be more than one production site.

MCW2: as MCW1, but no mica. Not found at this site.

MCW3: abundant fine sand, generally well-sorted, moderate clay pellets/large clay lenses, generally self-coloured in a buff, grey or black matrix. Similar to Stowmarket-type Hollesley ware. [Equivalent to MCW2 at Stoke Holy Cross (Anderson 2016b)].

MCW4: common fine/medium sandy with sparse ferrous inclusions. Often dark grey/black with a red core, although other colours occur.

MCW5: common brown and white medium sub-angular sand and moderate white coarse rounded sand. Typically

buff-coloured.

MCW6: common fine sand and sparse medium sand, micaceous, occasional ferrous inclusions, sparse burnt-out organics. Similar to LMU. Colours variable, but more frequently reduced.

MCW7: very fine micaceous version of LMU.

MCW8: fine sandy, sparse medium/coarse sand, moderate coarse angular ferrous fragments, sparse flint. Generally grey, but not many sherds found.

MCW9: moderate fine sand, occasional medium sand, moderate mica, moderate small red clay pellets. Often buff-coloured, but not a common find.

MCW10: very fine sandy, ill-sorted sand grains, occasional large fragments of rounded quartz in section, sparse mica, distinguished by moderate angular small matt orange fragments (probably ferrous). Grey with internal buff margin.

GRIMT (UPG1): medium sandy, sparse to moderate ferrous inclusions, some flint/coarse quartz – similar in appearance to Grimston, and may be a local version, but many sherds were heavily abraded and may just look different to typical GRIM due to loss of surfaces.

UPG2: moderate medium sand, sparse red clay pellets, sparse soft red clay pellets. Not found at this site.

UPG3: similar to MCW1, possibly Plumstead-type LMT or an earlier local glazed ware.

UPG4: clear and white fine sand, occasional medium sand, sparse self-coloured clay pellets, moderate burnt-out organics, occasional flint. Similar to Hollesley ware from Suffolk, and some Yarmouth-type glazed wares, but could be an LMT.

UPG5: fine sandy redware with sparse medium sand, orange glaze and brown slip decoration – regional or Dutch?

UPG6: medium sandy with occasional ferrous and flint inclusions, oxidised internally and usually externally with grey core, very thin greenish glaze. Probably local? [Equivalent to UPG2 at Stoke Holy Cross (Anderson 2016b)].

UPG7: silty appearance, very fine sandy, some larger sand visible on the surface, moderate mica. Dark grey to reddish orange. Green glazed.

B.5.20 Grimston ware is defined by Little (1994), and Grimston-type wares in this group have a similar macroscopic appearance but are slightly different microscopically (for example, they contain more or coarser sand, or more ferrous particles, than typical of the type site).

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Local medieval unglazed	LMU	11th-14th c.	59	317	0.57	27
Medieval coarseware 1	MCW1	12th-14th c.	9	86		8
Medieval coarseware 3	MCW3	12th-14th c.	17	72	0.15	7
Medieval coarseware 4	MCW4	12th-14th c.	1	3		1

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Medieval coarseware 5	MCW5	12th-14th c.	6	49	0.15	6
Medieval coarseware 6	MCW6	12th-14th c.	15	129	0.07	11
Medieval coarseware 7	MCW7	12th-14th c.	40	242	0.16	17
Medieval coarseware 8	MCW8	12th-14th c.	6	24	0.04	3
Medieval coarseware 9	MCW9	12th-14th c.	1	9		1
Medieval coarseware 10	MCW10	12th-14th c.	1	7		1
Grimston ware	GRIM	L.12th-14th c.	3	27		3
Grimston-type wares	GRIMT	13th-14th c.	6	79	0.13	5
Unprovenanced glazed 3	UPG3	Med/LMed	1	4		1
Unprovenanced glazed 4	UPG4	Med/LMed	8	41		3
Unprovenanced glazed 5	UPG5	Med/LMed	1	9		1
Unprovenanced glazed 6	UPG6	Med	7	64		1
Unprovenanced glazed 7	UPG7	Med/LMed	1	18		1
Total medieval			**182**	**1180**	**1.27**	**97**

Table 9: Medieval pottery

B.5.21 The range of fabrics present during the medieval period is varied. A high proportion of the coarsewares in this assemblage are of unknown origin, as is typical for the region, but it was possible to identify some wares which were probably made to the north-east of Norwich (LMU). Most of the other coarsewares varied only slightly from LMU and are likely to be local in origin.

B.5.22 LMU is the most frequently occurring fabric in this group, as is commonly found at sites surrounding Norwich. The other medieval coarsewares are dominated by MCW7, which was also common at Taverham, Spixworth and Plumstead on the NDR, but was not identified at Postwick, where MCW3 was the most frequent ware after LMU. The latter was also fairly frequent at Plumstead but was rare to the north-west of the route. It was the second most frequent MCW at Stoke Holy Cross, but LMU and a slightly coarser version (SHC MCW1) predominated there.

Forms

Coarsewares

B.5.23 The range of forms present in the high medieval group comprised jars, bowls and jugs. The rim forms indicated that the assemblage continued into the 14th century, although the majority of dateable types belonged to the 11th to 13th centuries.

B.5.24 In total there were twelve rims (based on MNVs) in the medieval coarseware group (2 MCW3, 1 MCW5, 1 MCW6, 2 MCW7, 1 MCW8, 5 LMU). It was not possible to discern any differences in rim types between the fabrics owing to the small sizes of most of the groups, so Table 5 shows the combined wheelmade forms and rim types.

Rim	Code	Jar	Bowl	Jug	Suggested date
Simple everted	SEV	3			11th-13th c.
T-shaped everted	T		1		13th-14th c.?
Thickened everted	THEV	6	1		13th-14th c.
Triangular bead	TRBD			1	13th-14th c.?
Totals		**9**	**2**	**1**	

Table 10: Medieval coarseware rim types and forms (MNV).

B.5.25 The wheelmade wares included three vessels with rim types similar to early medieval wares, emphasising their overlap. The majority of vessels were jars, varying in size between 130–320mm. One bowl was small (260mm) and the other was large (420mm). The jug rim was 100mm in diameter. The rims generally have parallels in the Norwich LMU type series, with simple everted rims comparable to no. 282, and thickened everted rims similar to nos 315 and 316, and the jug comparable with no. 318 (Jennings 1981). Bases were generally sagging types and no vessels were decorated.

Glazed wares

B.5.26 Glazed wares formed *c*.15% of the high medieval group (based on MNV). This is a relatively high proportion for a rural site. This may be because many of the sherds could not be identified and may be of later medieval date. If these are excluded, the proportion is reduced to *c*.9%, a proportion much more typical of rural sites in East Anglia.

B.5.27 Whilst the majority of vessels in this category were probably jugs, only one rim was present. This was a Grimston-type triangular-beaded jug rim from ditch fill 5137; a body sherd of the same vessel came from fill 5136 of the same ditch. A number of sherds were from the lower part of the vessel, and several fragments of thumbed bases were present. One sherd had incised horizontal lines on the body. Applied slip decoration in the form of lines and/or pellets was present on two Grimston-type vessels.

Imports

B.5.28 No imported wares were identified with any certainty, although it is possible that UPG5 could be a Low Countries redware.

Distribution

B.5.29 The largest group of medieval pottery generally, and also by far the largest group of glazed wares, was recovered from layers **5087/5089** overlying a cobbled surface, a total of 73 sherds. However, this group was associated with late medieval and transitional wares, as well as containing a number of developed rim forms. Ditch **5006/5106** produced 48 sherds in total, again with some later wares also present. Thirteen sherds were recovered from post-hole **5080**, and there were thirteen in the fills of ditch **5139**. Seventeen other contexts contained six sherds or fewer.

Late medieval

B.5.30 Table 6 shows the quantities of late and post-medieval wares in the assemblage. All were recovered from ditch **5006** and layers **5087/5089**.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Late medieval and transitional	LMT	15th-16th c.	35	652		5

Description	Fabric	Date range	No	Wt/g	Eve	MNV
LMT Plumstead-type	LMTP	M.14th-16th c.	3	76		3
Total late medieval			**38**	**728**		**8**

Table 11: Late Medieval pottery

B.5.31 A few definite LMT wares were identified based on their fabrics, and some were in the coarser fabric identified at the putative production site at Hare Lane, Plumstead (Anderson 2015). Fifteen sherds from fills of ditch **5006** were from a jug with a collared rim and a wide strap handle, and fourteen sherds from layer **5087/5089** were from the base of a jug. An abraded fragment of a bunghole with six deep stab-marks, from layer 5087, was recorded as LMT owing to the form, but the fabric was more typical of a Thetford-type or EMSW ware and it is possible that the sherd was a costrel rim, although there was no evidence of handles springing from the edge.

Pottery by context

B.5.32 The majority of sherds were recovered from ditch fills, pits and layers. The largest total groups of pottery were from layer **5087/5089** (98 sherds), ditch **5006/5106** (69 sherds), pits **5055** and **5084** (29 and 24 sherds respectively), post-hole **5113** (19 sherds), and ditches **5139** and **5042** (14 and 11 sherds respectively). The remaining features/contexts contained between 1–8 sherds each.

Summary and discussion

B.5.33 Apart from one possible early Anglo-Saxon sherd and a fragmented Early Anglo-Saxon vessel, this assemblage dates broadly to the 10th/11th to 14th/15th centuries. Most of the features which contained pottery, however, appear to belong to the Late Anglo-Saxon or earlier medieval periods. Contexts containing 13th to 14th-century pottery were generally the upper fills of ditches, and this material may have been deposited on the fields during manuring activity (a number of these later wares were heavily abraded), with most of the late medieval wares deriving from two features, a layer overlying a cobbled surface and the backfill of a ditch.

B.5.34 Few medieval assemblages have been excavated in this part of Norfolk in recent years, the closest large assemblages being derived from sites along the Norwich NDR (Anderson 2015 and 2016a) and Long Lane, Stoke Holy Cross (Anderson 2016b). These groups have produced similar ranges of medieval coarsewares and glazed wares, all of which show differences from the typical LMU and Grimston wares found in Norwich itself. Whilst this may in part be be due to greater degrees of abrasion changing the macroscopic appearance of sherds from rural settlements, microscopic analysis suggests that there are differences. The problems of discrimination in these fabrics have been discussed previously (e.g. Anderson 2010; Quinn 2016), with much of this area being covered in similar geological deposits, but it seems likely that other producers of similar wares are yet to be discovered.

B.5.35 The assemblages of each period recovered from this site are typical of rural settlements in the area, comprising largely cooking vessels of simple forms, all with parallels in the Norwich corpus. Glazed wares are present but seem to belong to the latest phase of occupation, and there are few jugs in the coarseware assemblage. No imports were identified with any certainty, although one sherd may be of Low Countries origin.

Phase	Context	Cut	Type	Same as	ESax	LSax	EMed	Med	LMed	Spotdate
4	5007	**5006**	ditch			2		9	14	14th-15th c.
4	5008	**5006**	ditch			2		8	1	13th-14th c.
4	5011	**5012**	gully				1	2		13th c.+
3.3	5015	**5013**	ditch			1	1	4		12th-14th c.
3.3	5017	**5016**	pit			3				10th-11th c.
3.3	5019	**5018**	ditch			1				10th-11th c.
3.3	5032	**5035**	ditch				2	6		13th-14th c.
3.3	5040	**5042**	ditch			1	3			11th-12th c.
3.3	5041	**5042**	ditch			3	3	1		13th c.?
3.3	5048	**5047**	ditch					3		12th-13th c.
3.1	5054	**5055**	pit			9	18	2		11th-13th c.
3.2	5057	**5056**	ditch			1		1		11th-13th c.
2	5064	**5065**	post hole			1				11th c.?
3.1	5066	**5067**	post hole				1	1		11th-13th c.
3.1	5070	**5071**	post hole		1	4		2		11th-13th c.
3.2	5072	**5073**	gully			4	1	1		11th-13th c.
3.2	5075	**5076**	gully			3	2	1		10th-13th c.
3.2	5079	**5080**	post hole				2	13		11th-13th c.
2	5084	**5083**	pit			24				10th-11th c.
3.1	5086	**5085**	gully				3			11th-12th c.
4	5087	-	layer	5089		1	2	55	19	M.14th-15th c.
3.3	5088	-	flint spread					1		12th-14th c.
4	5089	-	layer	5087				18	3	M.14th-15th c.
3.1	5092	**5091**	gully			1	3			11th-12th c.
3.1	5096	**5095**	post hole				7	1		11th-13th c.
4	5105	**5106**	ditch	5007			2	31		13th-14th c.+
3.2	5113	**5115**	pit			4	11	4		11th-13th c.
3.1	5116	**5118**	ditch				4	3		11th-13th c.
3.1	5117	**5118**	ditch				1			11th-12th c.
3.1	5119	**5120**	ditch				1			11th-12th c.
3.1	5121	**5122**	gully				2			11th-12th c.
3.1	5125	**5126**	gully				1			11th-12th c.
3.1	5127	**5128**	pit				1			11th-12th c.
3.1	5129	**5131**	ditch			1				11th c.+
3.1	5135	**5134**	ditch			1				11th c.
3.3	5136	**5139**	ditch					1		13th-14th c.
3.3	5137	**5139**	ditch					7		13th-14th c.
3.3	5138	**5139**	ditch			1		5		11th-14th c.
	99999	-	u/s			3	4	3		u/s

Table 12: Pottery spotdates

B.6 Ceramic Building Material and Fired Clay

By Sue Anderson

Introduction and methodology

B.6.1 Sixteen fragments of CBM weighing 339g were collected from five contexts (Table 13). Forty-six fragments of fired clay (167g) were recovered from 10 contexts (Table 15). Fragments were generally small and abraded.

B.6.2 The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured where possible, but roof tile thicknesses were only measured when another dimension was available. Forms were identified from work in Norwich (Drury 1993), based on measurements. Other form terminology follows Brunskill's glossary (1990).

Ceramic Building Material

B.6.3 A possible fragment of Roman curved roof tile (*imbrex*), with a slightly corrugated surface and in a fine sandy fabric with occasional flint inclusions, was found in pit fill 5054, in association with medieval pottery. It is possible that the fragment could be part of a later ridge tile or possibly pantile, but the corrugations are more typical of the Roman form.

B.6.4 Nine fragments of plain roof tile were collected from fill 5011, and ditch fills 5032, 5129 and

B.6.5 . All appeared to be of post-medieval date. Most were in medium sandy fabrics with flint or ferrous inclusions. Two fragments of fine sandy pantiles were also found in 5136, along with two pieces of a white-firing field drain pipe.

B.6.6 Small fragments of a red-firing medium sandy late brick and a fine white/pink late brick (or possibly a sedimentary stone) were recovered from 5011 and boundary ditch fill 5129 respectively.

Context	Cut	Fabric	Form	No	Weight (g)	Comments	Date
5011	**5012**	ms	RTP	1	8		pmed
		msx	LB	1	6		pmed
5032	**5035**	msffe	RTP?	1	15	Dark red	Pmed?
5054	**5055**	fsf	IMB?	1	24	Slightly corrugated	Rom?
5129	**5131**	msfe	RTP	1	24		pmed
		ms	RTP?	1	12		Pmed?
		wfx	LB?	1	25	Soft, poss chalk?	pmed
5136	**5139**	wfs	FD	2	118		pmed
		msf	RTP	4	75		pmed
		fs	PAN	2	27	1 sooted underside	pmed
		fs	RTP	1	5		Lmed/pmed

Table 13: CBM by context

Type	Form	Code	No. of fragments	Weight (g)
Roman	*Imbrex*?	IMB?	1	24
Roofing	Plain roof tile: post-medieval	RTP	7	112
	Plain roof tile: post-medieval?	RTP?	2	27
	Pantile	PAN	2	27
Walling	Late brick	LB	1	6
	Late brick?	LB?	1	25
Misc	Field drain	FD	2	118
Totals			**16**	**339**

Table 14. CBM by form.

Fired clay

B.6.7 Two black fragments from 5015 and 5113 had organic inclusions and may be of prehistoric date. Much of the rest of the assemblage comprised rounded and angular fragments of buff or orange clay with fine or medium sand and chalk inclusions, occasionally with flint. Some pieces had flattish smoothed or undulating surfaces and one piece had two surfaces at right angles. All fragments were too small to determine function, but pieces like this are generally associated with ovens or hearths. The angled fragment could be a piece of kiln furniture.

B.6.8 Most fragments were found in association with Late Saxon and/or medieval pottery. The majority were recovered from ditch **5118** and **5120** and pit **5115**.

Context	Cut	Fabric	Type	No	Weight (g)	Colour	Comments
5015	**5013**	org		1	1	black	Poss burnt dung?
5025	**5024**	fsc		15	22	orange	Rounded lumps
5068	**5069**	fsv		3	1	orange	Rounded lumps
5105	**5106**	fscp		2	9	Dark orange/red	
5113	**5115**	org	HL?	1	2	black	Greasy feel
		fsc		1	8	Orange purple	undulating
		fsc		3	11	orange	Rounded/angular
		fsc		1	8	red	Wattle inpressions?
		mscf		2	46	buff	Flattish angular lump
		org		6	52	Buff black	1 flattish right angled side
5116	**5118**	mscf		3	19	buff	2 joining
5117		fsc		2	10	Orange buff	angular
5119	**5120**	mscf		1	4	Buff	angular

Context	Cut	Fabric	Type	No	Weight (g)	Colour	Comments
						orange	
5135	**5134**	fsc		1	6	orange	rounded
99999		fsc		4	18	orange	Rounded lumps

Table 15: Fired Clay by context

Appendix C. Environmental Reports

C.1 Human Skeletal Remains

By Zoe Ui Choileáin

Introduction

C.1.1 A single urned cremation dated to the Early Saxon period was recovered from Site 5 of the Poringland to Whitlingham pipeline. Pit **5082** was truncated and 295 grammes of calcined bone were recovered from the urn (SF7) and surrounding fill (5081). The pit was 0.25m in diameter and 0.1m deep. This was the only feature on site which dated to this period (Phase 1).

Methodology

C.1.2 Excavation and processing of the cremation were carried out in accordance with published guidelines (Brickley and McKinley 2004; BABAO 2010).

C.1.3 Osteological analysis was undertaken in accordance with published guidelines (Brickley and McKinley 2004, Mays 2002). Identified human bone was assessed in order to explore the potential of the material to provide information on the cremation rite (as indicated by bone weight, colour and fragmentation), biological anthropology (minimum number of individuals, sex and age) and palaeopathology.

Results

C.1.4 A minimum of one individual can be estimated for this assessment as no identifiable fragments were repeated. There were no features present with which to estimate sex. A fused acetabulum and the distal epiphysis of a humerus suggest that the individual is adult. Cursory examination did not identify any pathology and the average fragment size is 5-10mm

C.1.5 The colour of the bone was primarily oxidised white. Colour reflects the degree of heat used during cremation, with bone that was exposed to the highest temperatures having a buff white appearance (Holck, 2008 110-115). This implies that all of the bone was exposed to a consistent heat.

C.1.6 All of the cremated bone displayed a mixture of transverse and curved transverse fractures and longitudinal fractures. Fractures like this are the result of bone heating then cracking as soft tissues and muscles shrink (Schmid 2008, 43). These can be used as evidence that the bodies were cremated while there was still flesh and fat attached to the bone as opposed to the bones being defleshed before being placed on the pyre (McKinley 1994a).

C.1.7 The bone weight recovered was low at only 295 grammes. Studies within modern crematoriums have shown that the average weight of a complete human body generally lies between 1600 to 3000g (McKinley 1989). As this is a disturbed feature there is no certainty that the calcined bone collected is representative of the amount originally deposited.

C.1.8 The total bone weights are presented below. The highest percentage of bone was in the 5-10mm fraction and therefore the recordable information is limited.

Cut	Deposit	Sample	>10mm frags	Weight (g)	10-4mm frags	Weight (g)	4-2mm frags	Weight (g)
5082	5081	4	Skull,acetabulum, humerus, femur, radius, tibia	99	Skull, long bone	123	Skull, unid fragments	73

Table 16: The cremated remains

Interpretation

C.1.9 As this cremation is disturbed little assumptions can be made about funerary rites however it appears to fit within the pattern of Iron Age cremations which often display low bone weights (Loe 2012). The urn is of a type commonly used for cremation burials during this time period.

C.2 Faunal Remains

By Zoe Ui Choileáin

Introduction

C.2.1 A total of 21 fragments of animal bone weighing 688g was recovered from excavations on the Poringland to Whitlingham pipeline. Bone was primarily recovered from ditches with only a minimal amount retrieved from pits or layers. Most of the bone was recovered from features dated to the 11th to 14th century AD.

Methodology

C.2.2 All bone analysed was hand collected on site. All identifiable elements were recorded using a version of the criteria described in Davis (1987). Identification of the assemblage was undertaken with the aid of Schmid (1972), plus use of the OAE reference collection. The assemblage was too small and fragmented for most taphonomic information to be observed. The preservation of the cortical bone was evaluated using the 0-5 scale devised for human bone by McKinley (2004, 16 fig. 6).

Results

C.2.3 Results are presented in the summary table below. Cattle and sheep/goat were the only species identified. The average condition of the bone represented a grade 1-2 on the McKinley scale (Brickley & McKinley 2004, 14-15). Eight specimens could be assigned an age. A cattle humerus from context 5087 showed chop marks which had removed part of the anterior and posterior surfaces of the distal epiphysis. Finer defleshing cut marks were also present on the posterior surface. Fine cut marks were observed on a large mammal humerus from context 5105 (cut **5106**).

Cut	Context	Chronology	Taxon	Weight (g)	Number of frags	Element	Butchery	Age	Erosion
	5002	undated	Large mammal	20	1	Tibia	-	-	1
5006	5007	phase 4	Sheep/ Goat	11	1	Tibia	-	adult	1
5006	5008	phase 4	Large mammal	24	1	Long bone	-	-	1

Cut	Context	Chronology	Taxon	Weight (g)	Number of frags	Element	Butchery	Age	Erosion
5012	5011	phase 4	Large mammal	7	1	Long bone	-	-	1
5013	5015	phase 3	Medium mammal	15	1	Radius	-	-	2
5042	5041	phase 3	Cattle	62	1	Metatarsus	-	adult	2
5042	5041	phase 3	Cattle	40	1	Radius	-	-	2
5055	5054	phase 3	Cattle	17	1	Calcaneus	-	-	2
5055	5054	phase 3	Cattle	64	1	Metatarsus	-	-	2
5056	5057	phase 3	Cattle	25	1	Ulna	-	adult	4
5065	5064	phase 2	Large mammal	1	1	Long bone	-	-	2
-	5087	phase 4	Cattle	146	1	Humerus	Yes	adult	2
-	5087	phase 4	Large mammal	32	1	Long bone	-	-	1
5106	5105	phase 3	Large mammal	31	1	Humerus	Yes	adult	1
5115	5113	phase 3	Cattle	62	1	Atlas	-	juvenile	1
5115	5113	phase 3	Large mammal	16	1	Long bone	-	-	1
5118	5116	phase 3	Large mammal	6	1	Long bone	-	-	2
5118	5117	phase 3	Cattle	12	1	Incisor	-	adult	2
5139	5136	phase 3	Cattle	51	1	Tarsal	-	adult	2
5139	5137	phase 3	Large mammal	8	1	Long bone	-	-	3
5139	5138	phase 3	Large mammal	38	1	Scapula	-	-	2

Table 17: Animal bone by context

Discussion and conclusion

C.2.4 The majority of the bone appears to be from phase 3 or the 11th to 14th century AD. Only a single fragment dated to the 10th to 11th century AD. All bar one identifiable fragments were young adult individuals. Butchery was present in the form of chop marks around the epiphyses with an axe or cleaver (O Connor 2004: 46) and finer defleshing marks of the type left by a knife (Ibid). This is typical of the butchery observed on a medieval domestic assemblage. The faunal remains recovered are typical of what would be expected from butchery waste in the medieval period. Due to the small size of the assemblage and the fragmentary nature of the bone no further conclusions are possible.

C.3 Environmental samples

By Rachel Fosberry

Introduction

C.3.1 Eleven bulk samples were taken during excavations along the length of the Porringland to Whitlingham Water Main, Norfolk. The purpose of this assessment is to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal.

Methodology

C.3.2 One bucket (approximately 10 litres) of each of the samples was processed by tank flotation using modified Siraff-type equipment for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The total volume of the cremation samples was processed to ensure maximum retrieval of human remains. 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. A magnet was dragged through each residue fraction for the recovery of magnetic residues 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 Table 18. 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.3.3 For the purpose of this initial assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

Items that cannot be easily quantified such as charcoal, magnetic residues and fragmented bone have been scored for abundance

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

Results

C.3.4 Preservation of by plant remains is by carbonisation but is generally poor with small flot volumes that are comprised mainly of modern rootlets. A single charred barley (*Hordeum vulgare*) grain was recovered from tree-throw **5024** but this item could be intrusive. Ditch **5112** and pit **5115** are thought to be related and the samples from each produced similar results of sparse grain and legume fragments. Fill 5110 of ditch **5112**

also contains charred seeds of wetland plant species including sedges (*Carex* spp.) and bog bean (*Menyanthes trifoliata*) in addition to a seed of stinking mayweed (*Anthemis cotula*) which is a plant that favours clay soils.

C.3.5 The cremation samples did not contain any charcoal suggesting that the calcined bone had been carefully picked out of the pyre prior to burial within a funerary urn.

Sample No.	Context No.	Feature No.	Feature Type	% context sampled	Volume processed (L)	Flot Volume (ml)	Cereals	Legumes	Weed Seeds	Charcoal <2mm
1	5025	**5024**	Pit	80	7	1	#	0	0	0
2	5072	**5073**	Gully	10	8	2	#	0	0	+++
3	5081	**5082**	Cremation	100	4	1	0	0	0	0
4	5081	**5082**	Cremation	100	5	1	0	0	0	0
5	5110	**5112**	Ditch	50	8	2	#	#	#	+++
6	5113	**5115**	Pit	<10	7	1	#	#	0	+
7	5121	**5122**	Gully	<10	6	1	0	0	0	0
8	5127	**5128**	Pit	30	7	1	0	0	0	+
9	5117	**5118**	Ditch	>10	7	1	0	0	0	+
10	5130	**5131**	Ditch	>10	8	1	0	0	0	0

Table 18: Environmental samples

Discussion

C.3.6 The samples taken from this site have limited potential due to the scarcity of preserved plant remains. The occasional charred seeds in ditch **5112** hint of the cultivation of clay soils with damp/wet field margins.

C.4 Shell

By Carole Fletcher

Introduction

C.4.1 A total of 0.138kg of shells were 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. The shell is relatively moderately well preserved and does not appear to have been deliberately broken or crushed. 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 when identification can be made.

C.4.2 A small number of shells recovered from ditch **5139** and a single example from subsoil context 5002, show evidence of damage in the form of small 'V' or 'U' shaped hole on the outer edge of the left valved shell. This damage is likely to have been caused by a knife during the opening or shucking of the oyster prior to its consumption; two shells from surface **5055** and pit **5128** may have shucking marks but this is uncertain. The shell was recovered from subsoil, and medieval pits, ditches and a gully, with oyster being the only shell present. The shells recovered represent small amounts of general discarded food waste and, although not closely datable in themselves, may be dated by their association with pottery also recovered from the features. The following catalogue acts as a full record and the shell may be deselected prior to archival deposition.

Context	Cut	Type	Habitat	No. of Shells	Description	No. of Shucked Shells	Weight (kg)
5002		Oyster	Estuarine and shallow coastal water	1	Near complete left valve. Width 58 x length 60mm	1	0.010
5011	**5012**	Oyster	Estuarine and shallow coastal water	1	Complete right valve. Width 45 x length 54mm		0.007
5019	**5018**	Oyster	Estuarine and shallow coastal water	1	Complete right valve. Width 45 x length 54mm		0.007
5054	**5055**	Oyster	Estuarine and shallow coastal water	1	Partial left valve Width 38mm	Unclear if shucked or damaged	0.003
5127	**5128**	Oyster	Estuarine and shallow coastal water	1	Near complete left valve Width 58mm	Unclear if shucked or damaged	0.012
5137	**5139**	Oyster	Estuarine and shallow coastal water	2	Complete left valve (width 42 x length 45mm) and partial left valve (lower edge is absent, width 41mm)	1	0.009
5138		Oyster	Estuarine and shallow coastal water	6	Complete right valves Width 43 x length 40mm Width 32 x length 40mm Width 43 x length 54mm Width 48 x length 58mm Width 58 x length 64mm Width 63 x length 66mm		0.050
				4	Three near complete and one partial left valve. Width 50 x length 59mm (irregular heel) Width 63 x length 71mm Width 48 x length 66mm partial - no measurements possible	2	0.040
Total				**17**		**4**	**0.138**

Table 19: Shell by context

Appendix D. Radiocarbon Dates

Scottish Universities Environmental Research Centre

Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

26 June 2017

Laboratory Code	SUERC-73737 (GU44199)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	XNFPWP16
Context Reference	5081
Sample Reference	4
Material	Crem bone: long bone : HSR
δ ^{13}C relative to VPDB	-22.5 ‰
Radiocarbon Age BP	1516 ± 33

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

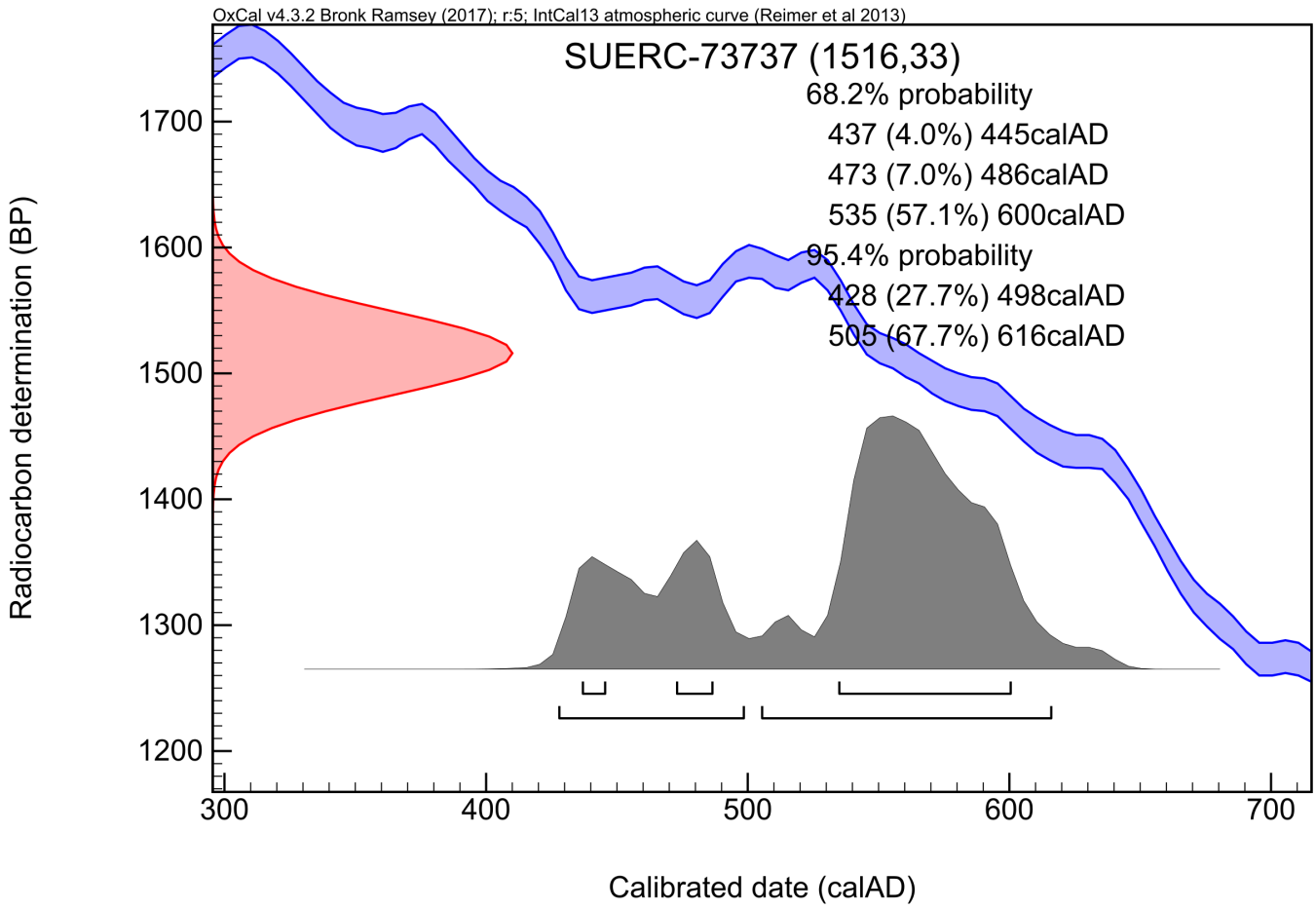
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- P. Naysmith Date :- 26/06/2017

Checked and signed off by :- B Tripney Date :- 26/06/2017

Calibration Plot



Appendix E. Bibliography

Anderson, S. 2010. *Break o' day, South Walsham (ENF124705): the pottery*. NPS Archaeology.

Anderson, S. 2015. *Hare Road, Plumstead (ENF133970): post-Roman pottery.* Report for OA East.

Anderson, S. 2016a. *Norwich Northern Distributor Route (ENF139693–139712): post-Roman pottery assessment*. Unpublished report for OA East.

Anderson, S. 2016b. 'Pottery', in Ames, J. *Excavations at Long Lane, Stoke Holy Cross (ENF133848)*. NPS Archive Report.

BABAO. 2010. *BABAO Code of Practice.* BABAO Working-Group for Ethics and Practice

Brickley, M. & McKinley, J. 2004. *Guidelines to the standards for recording human remains*.IFA Paper No. 7 British Association for Biological Anthropology and Osteoarchaeology and the Institute of Field Archaeologists

Brunskill, R.W. 1990. *Brick Building in Britain*. Victor Gollancz Ltd, London.

Cappers, R.T.J, Bekker, R.M., & Jans, J.E.A. 2006. Digital Seed Atlas of the Netherlands. Groningen Archaeological Studies 4. Barkhuis Publishing. Eelde: The Netherlands.

Davis, S.J. 1987. *The Archaeology of Animals.* Routledge

Drury, P. 1993. 'Ceramic building materials', in Margeson, S. *Norwich Households.* EAA 58: pp.163-8.

Ellis & Moore. 1990. 'Hones in Medieval Winchester' in Biddle, M. *Object and Economy in Medieval Winchester.* Vols 1+2, 868-881. Clarendon Press, Oxford

Hansen, S.C.J. 2009. Whetstones from Viking Age Iceland – as part of the Transatlantic trade in basic commodities. Sigillum University: Iceland

Holck, P. 2008. *Cremated bones.* Anatomical Institute, University of Oslo.

Jacomet, S. 2006. Identification of cereal remains from archaeological sites. IPNA, Universität Basel / Published by the IPAS, Basel University.

Jennings, S. 1981. *Eighteen Centuries of Pottery from Norwich*. East Anglian Archaeology 13, Norwich Survey/NMS.

Kershaw, I. 1973. The Great Famine and Agrarian Crisis in England, 1315 – 1322. *Past and Present* 59: 3-50

Liddiard, R. 2010. *The Norfolk Deer Parks Project: Report for the Norfolk Biodiveristy Partnership.* UEA

Little, A. 1994. 'The pottery from Sites 22954 and 24054' in Leah, M. *The Late Saxon and Medieval Pottery Industry of Grimston, Norfolk: Excavations 1962–92*. East Anglian Archaeology. 64, 84–101.

Loe, L. 2012. in Phillips, T. & Mortimer, R. *Clay Farm Trumpington.* Oxford Archaeology Report

Mangartz, F. 2008. *Römischer Basaltlava-Abbay Zwischen Eifel und Rhein.* Verlag des Römisch-Germanischen Zentralmuseums, Mainz

Masters, P. 2016. *Gradiometer Survey: Proposed route of Poringland Sewer main.* Cranfield Forensic Institute Report No 131.

Mays, S. 2002. *Human Bones from Archaeological Sites. Guidelines for Producing Assessment documents and Analytical Reports.* English Heritage.

McKinley, J.I. 1989. 'Cremations: expectations, methodologies, and realities', in Roberts, C. A., Lee, F., & Bintliff, J. Burial Archaeology: *Current research, methods and developments.* Oxford, Brit. Archaeol. Rep. 211, 65-76

McKinley, J.I. 1994a. *The Anglo-Saxon Cemetery at Spong Hill, North Elmham Part VIII: The Cremations.* East Anglian Archaeology 69

McKinley, J.I. 1994b. Bone Fragment Size in British cremation burials and its implications for pyre technology and ritual. *Journal of Archaeological Science* 21 339-42

McKinley, J. I. 2004. Compiling a skeletal inventory: disarticulated and co-mingled remains p14-17. in Brickley, M, & McKinley, J, (eds.), 2004 Guidelines to the standard for recording human remains. *IFA Paper 7* (Reading: IFA/BABAO)

Medlycott, M. 2011. Research and Archaeology Revisited: A Revised Framework for the East of England. East Anglian Archaeology. Occasional Paper 24

Mellor, M. 1976. 'The pottery', in Rogerson, A. *Excavations on Fuller's Hill, Great Yarmouth, Norfolk.* East Anglian Archaeology. 2, 169–96.

MPRG. 1998. *A Guide to the Classification of Medieval Ceramic Forms*. Medieval Pottery Research Group Occasional Paper 1.

O Connor, T. 2004. *The Archaeology of Animal Bones.* Sutton Publishing

Parkhouse, J. 1997. The distribution and exchange of Mayen lava quernstone in Early Medieval NW Europe, *Exchange and Trade: Papers of the Medieval Europe Brugge 1997 Conference.* Volume 3, 97-100

Quinn, P.S. 2015. *Petrographic Analysis of Late Medieval LMT Pottery from Plumstead, Norwich, UK*. Archive report for OA East.

Schmid, E. 1972. *Atlas of Animal Bones.* Elsevier Publishing Company

Schmid, C.H. & Symes, S.A. 2008. *The Analysis of Burned Human Remains.* Elsevier

Stace, C. 1997. *New Flora of the British Isles*. Second edition. Cambridge University Press

Timberlake, S. 2016. A published review of: Watts, S.R. 2014. *The Life and Death of Querns*. The deposition and use-contexts of querns in south-western England from the Neolithic to the Iron Age. *Southampton Monographs in Archaeology* New Series 3, Highfield Press, Southampton; in Proceedings of Prehistoric Soc. For 2016

Watts, M. 2002. *The Archaeology of Mills and Milling.* Tempus, Stroud

Zohary, D. & Hopf, M. 2000. *Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe and the Nile Valley*. 3rd edition. Oxford University Press

Electronic sources

Winder, J.M. 2011. *Oyster Shells from Archaeological Sites A brief illustrated guide to basic processing.* https://oystersetcetera.wordpress.com (accessed 24/06/17)

APPENDIX F. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-266331		
Project Name	Late Iron Age to Early Roman cremation and medieval features at the Poringland to Whitlingam pipeline		
Project Dates (fieldwork) Start	10-01-2017	Finish	16-02-2017
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	ENF141464-9	Planning App. No.	n/a
HER No.	ENF141464-9	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Select Prompt (this should be in your brief/spec)...

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
cremation	Iron Age -800 to 43	human remains	Iron Age -800 to 43
pit	Medieval 1066 to 1540	pot	Iron Age -800 to 43
ditch	Medieval 1066 to 1540	pot	Medieval 1066 to 1540

Project Location

County	Norfolk	Site Address (including postcode if possible)	
District	South Norfolk	Dove Lane Poringland Norfolk NR14 7ND	
Parish	Poringland to Whitlingham		
HER	Norfolk		
Study Area	1250m	National Grid Reference	TG 2855 0183

Project Originators

Organisation	OA EAST
Project Brief Originator	James Albone
Project Design Originator	Matt Brudenell
Project Manager	Matt Brudenell
Supervisor	Ashley Pooley

Project Archives

Physical Archive	Digital Archive	Paper Archive
NMAS	OA East	NMAS
ENF141464-9	XNFPWP16	ENF141464-9

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	☐	☐	☐

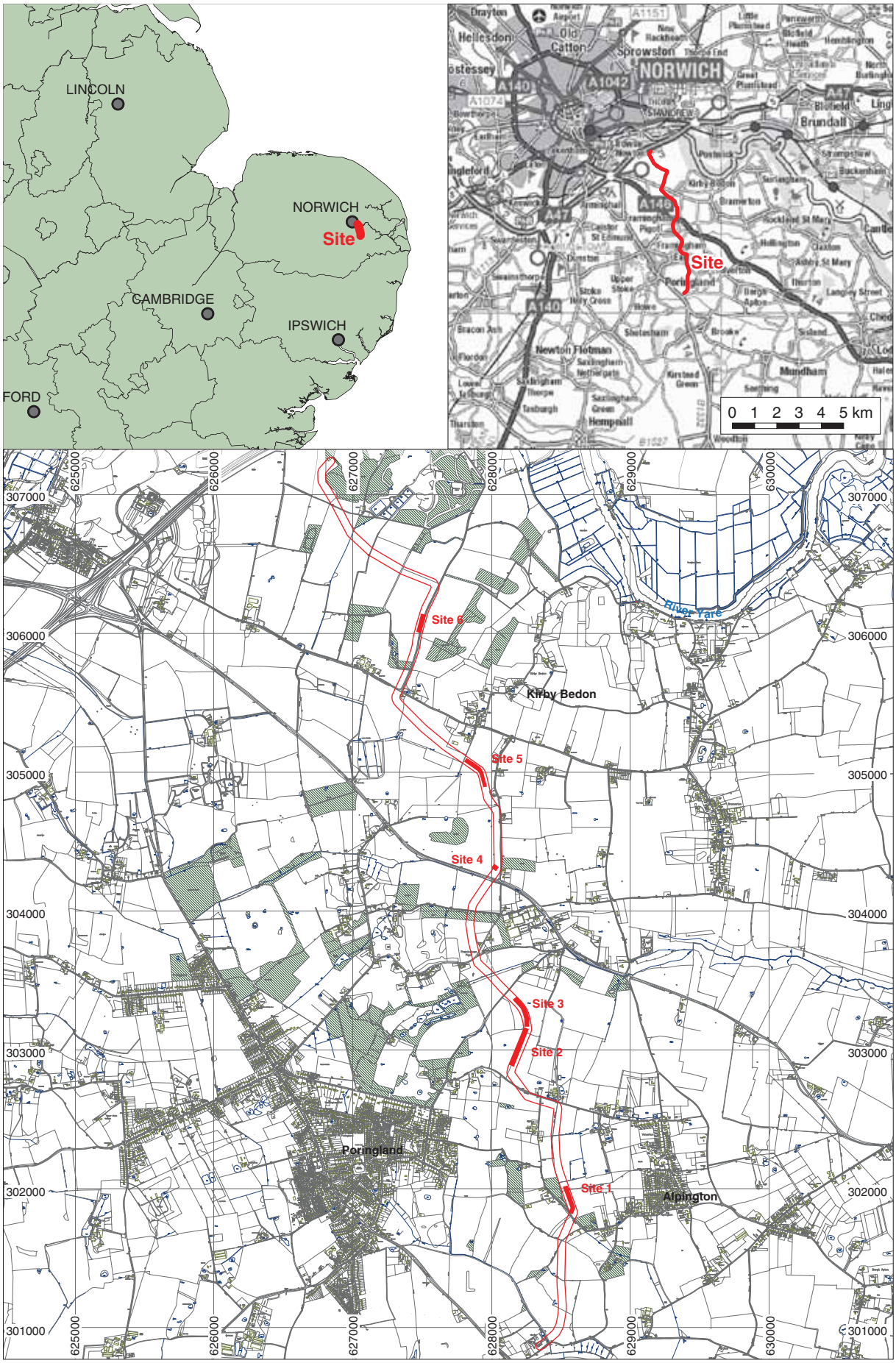
Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☐ GIS	☒ Context Sheet
☐ Geophysics	☐ Correspondence
☒ Images	☐ Diary
☐ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☒ Spreadsheets	☒ Map
☒ Survey	☒ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☐ Photos
	☒ Plans
	☒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

Notes:

Site Grid Refs: TG 2855 0183 – TG 2850 0204, TG 2814 0288 – TG 2825 0315, TG 2825 0315 – TG 2819 0333, TG 2801 0475 – TG 2785 0504 and TG 2746 0596 – TG 27500612

gully - medieval
post-hole - medieval
flint surface - medieval
ditch - post-medieval

animal bone - medieval



Contains Ordnance Survey data © Crown copyright

Figure 1: Site location map

0 1:40,000 2000 m

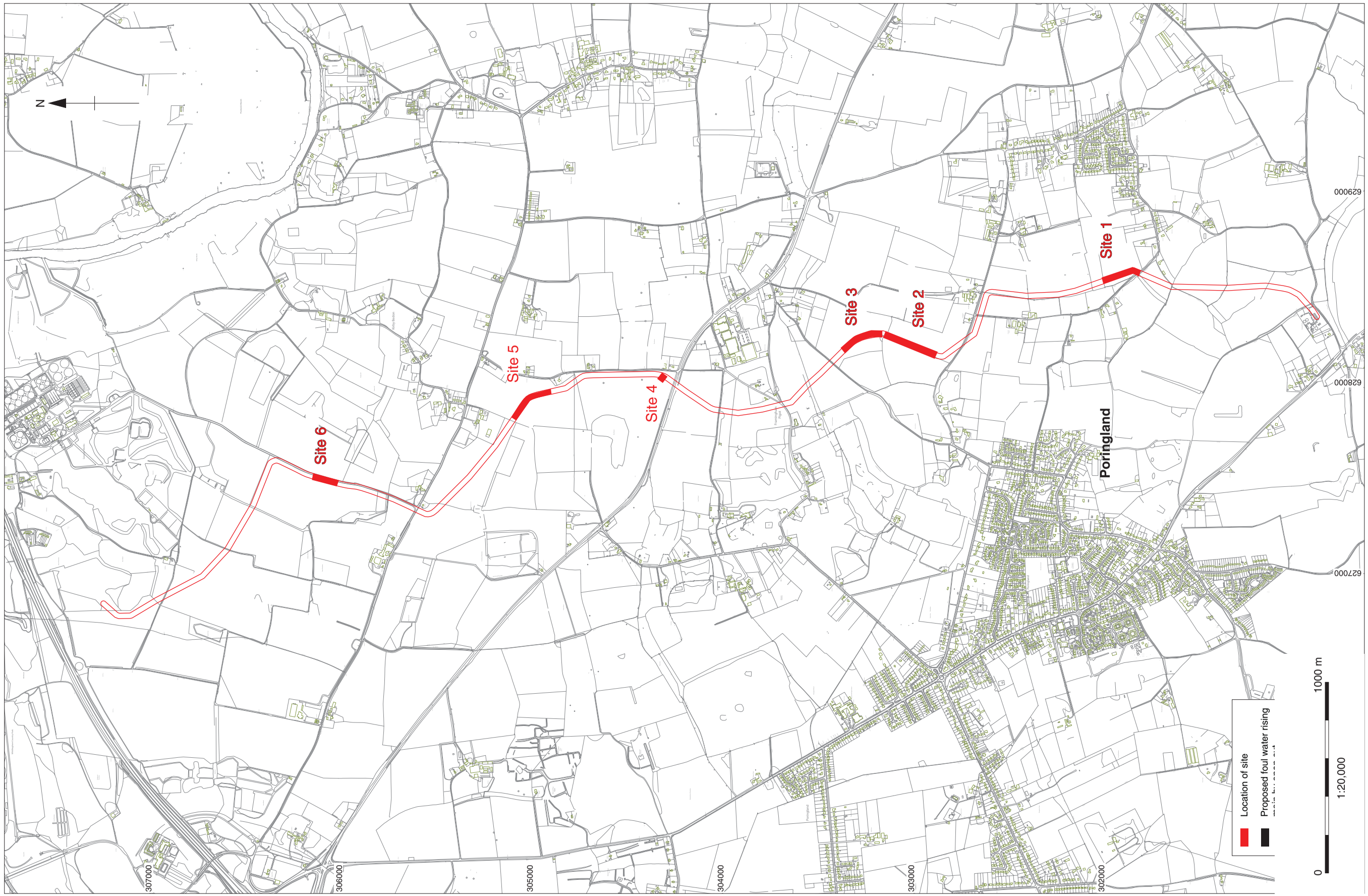


Figure 2: Pipeline route

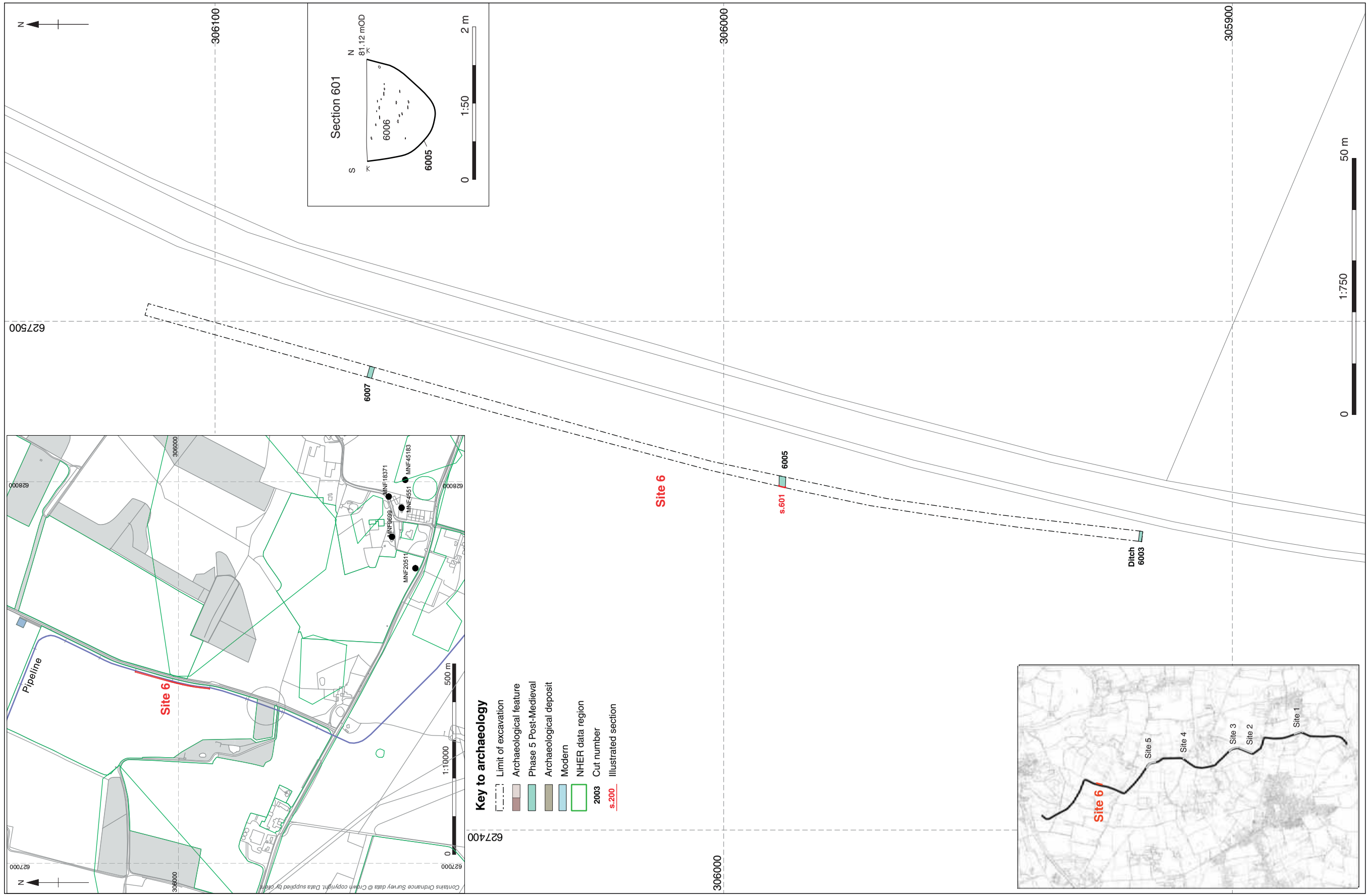


Figure 3: Site 6 - All features plan

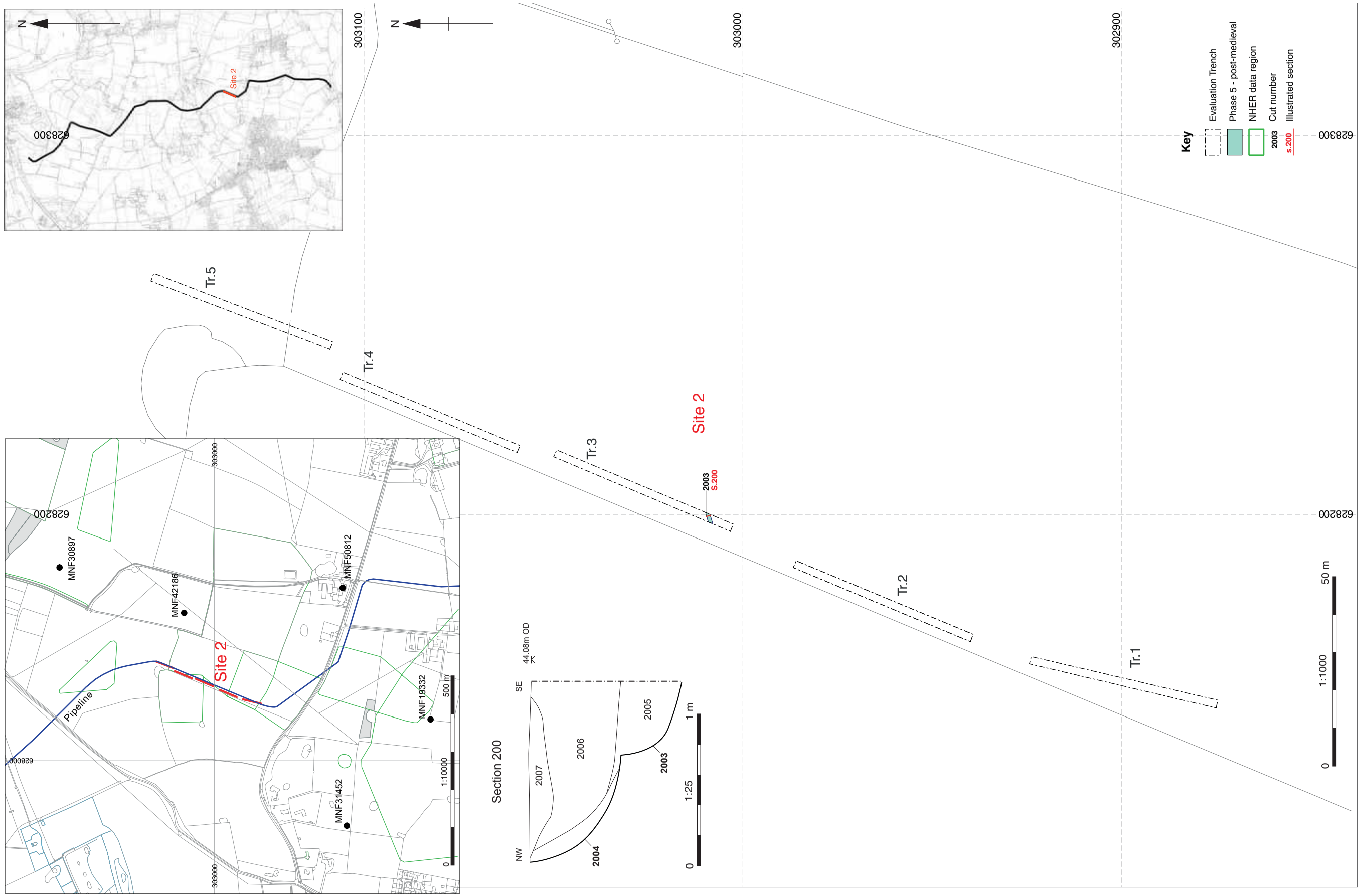


Figure 4: Site 2 - Trench plan

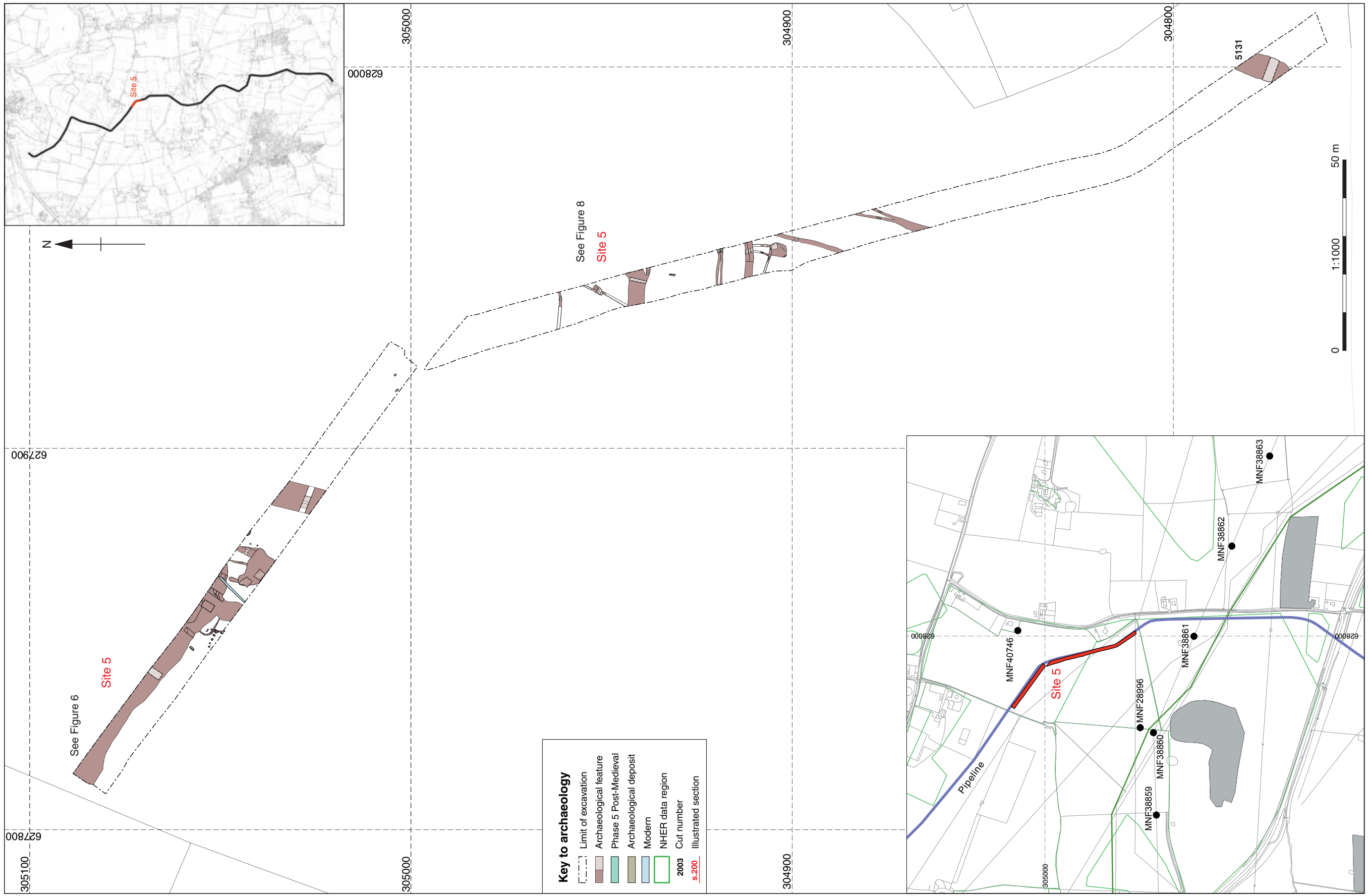


Figure 5: Site 5 All features plan

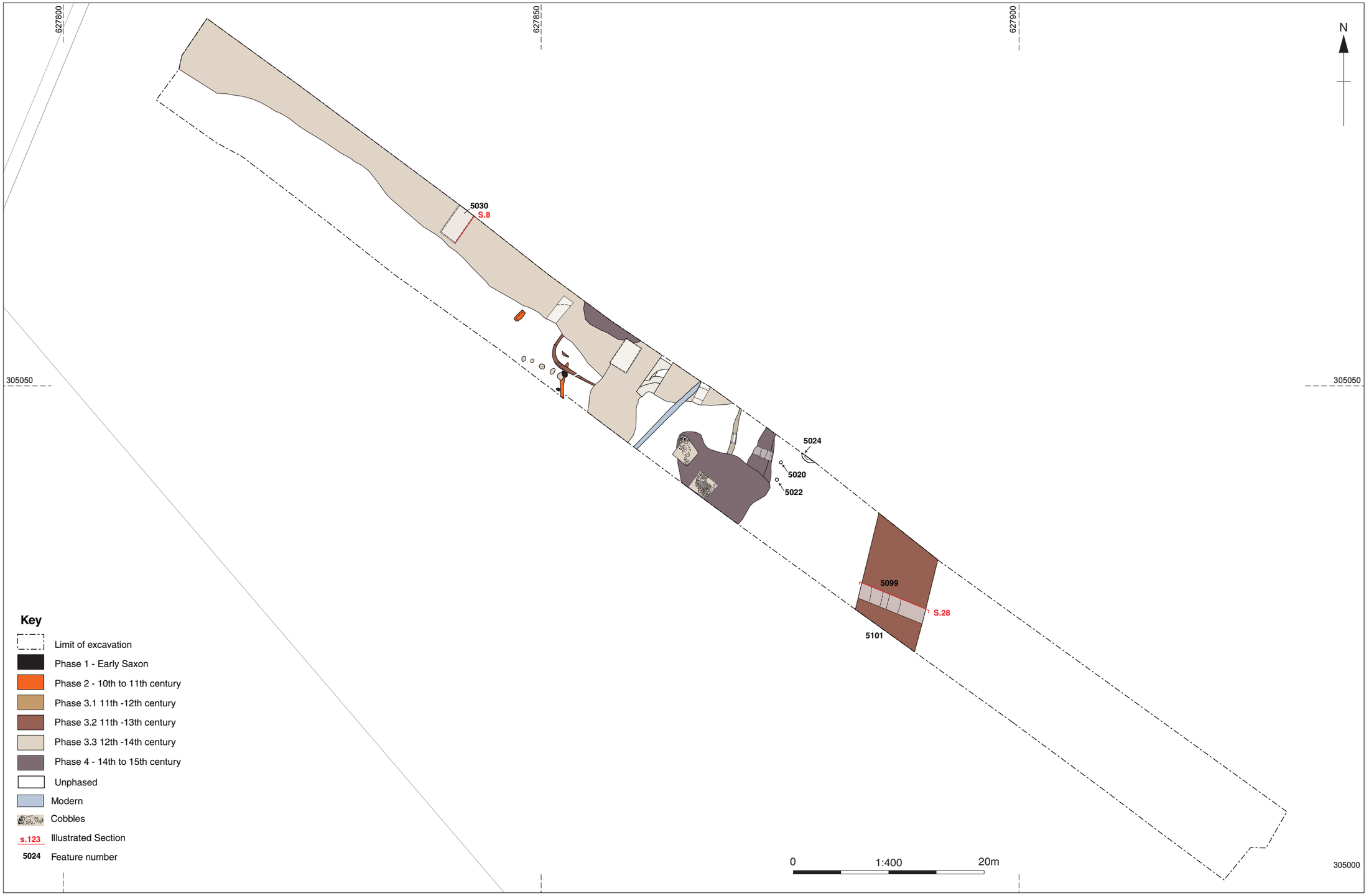
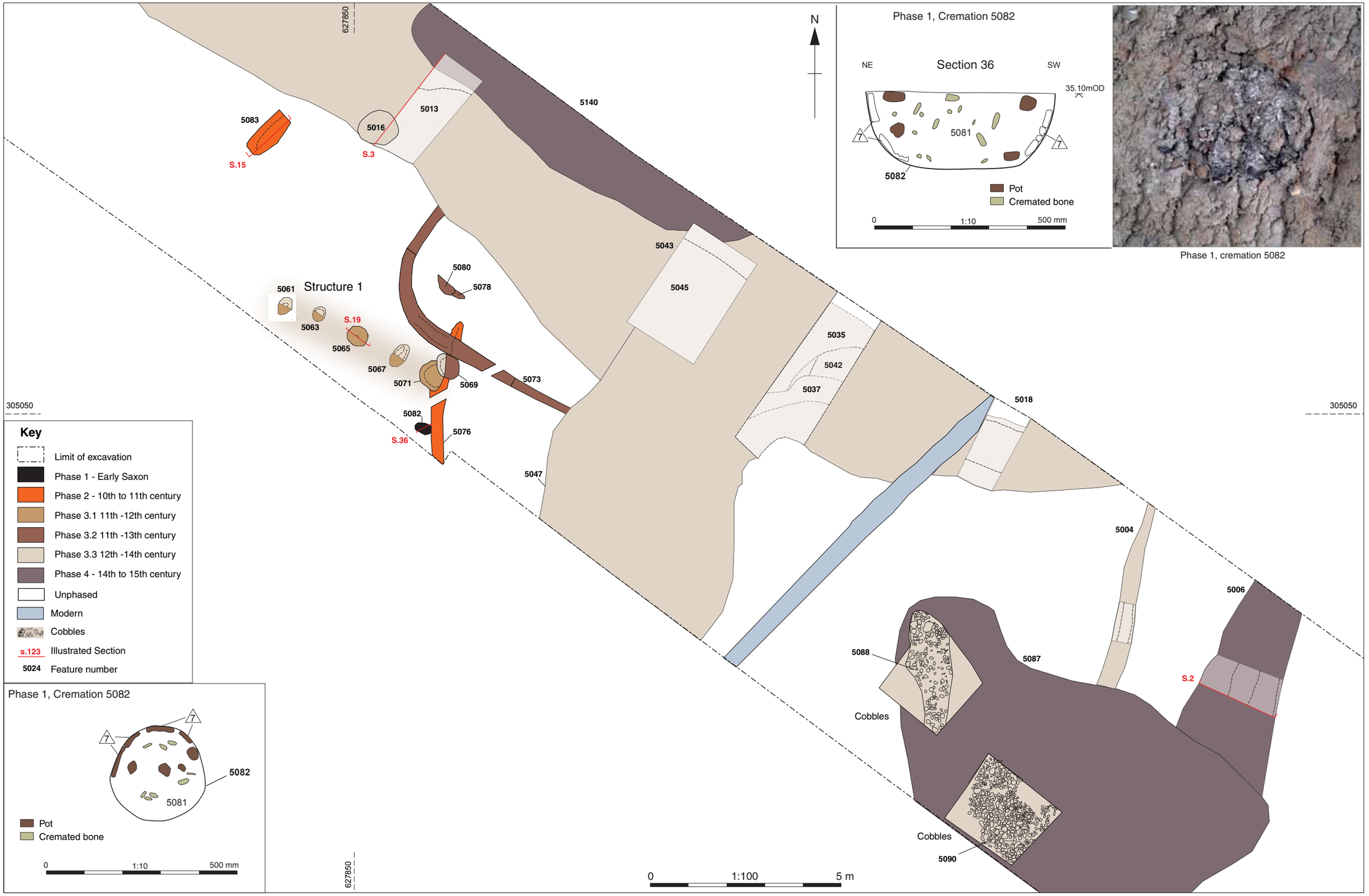


Figure 6: Phased plan of northern part of Site 5



Phase 1, cremation 5082

Figure 7: Cremation 5082 and detail of Site 5

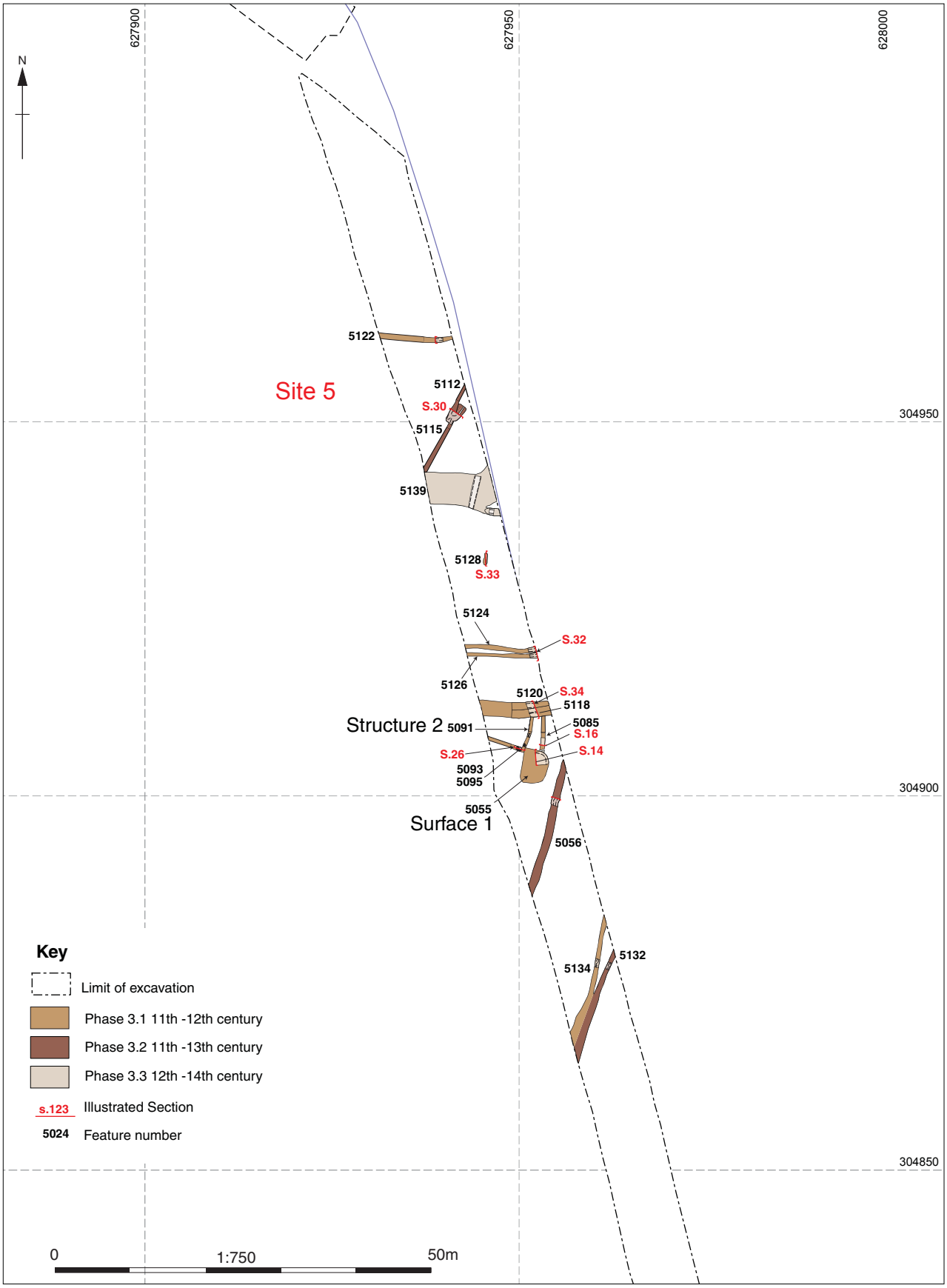


Figure 8: Phased plan of southern part of Site 5

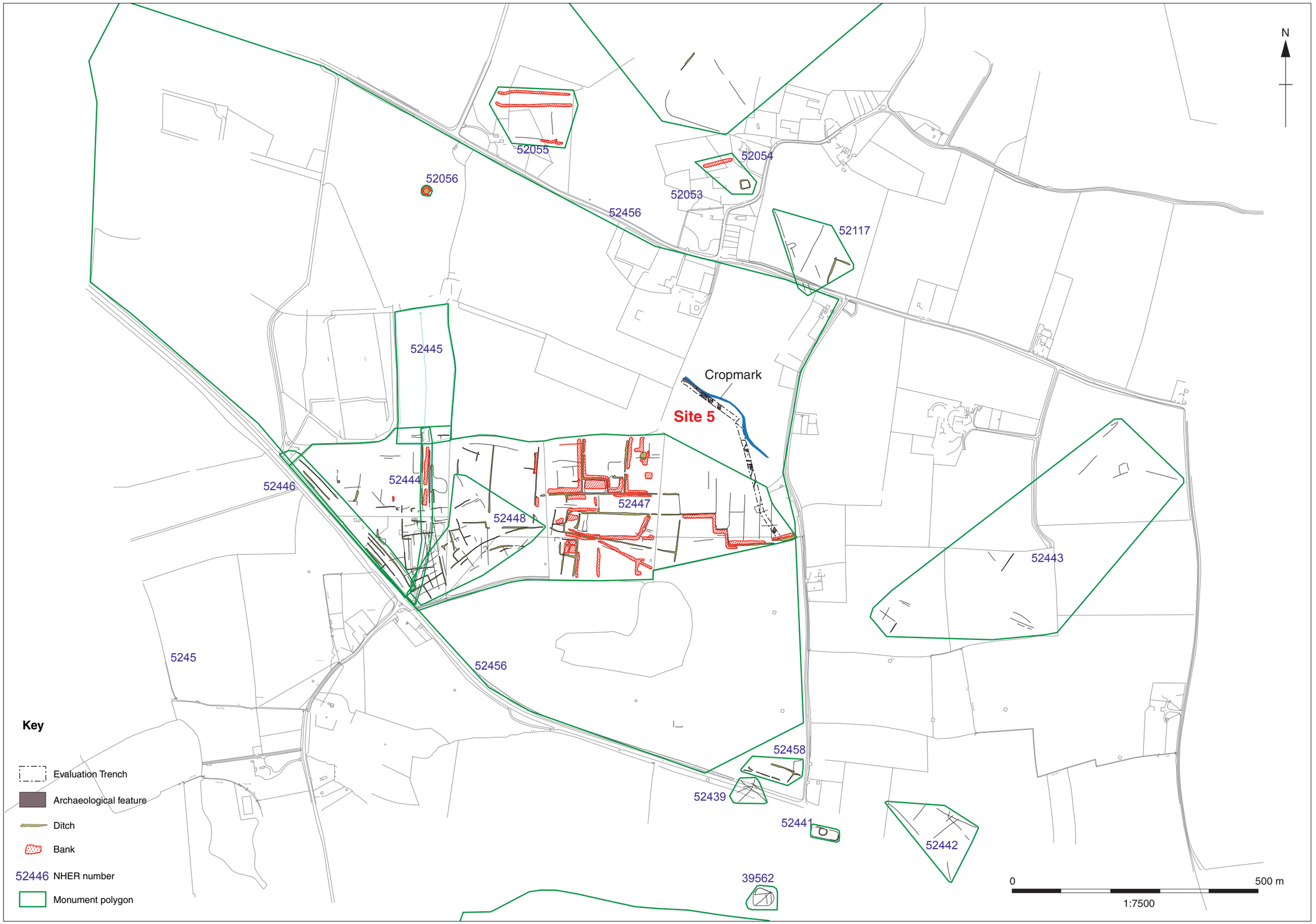
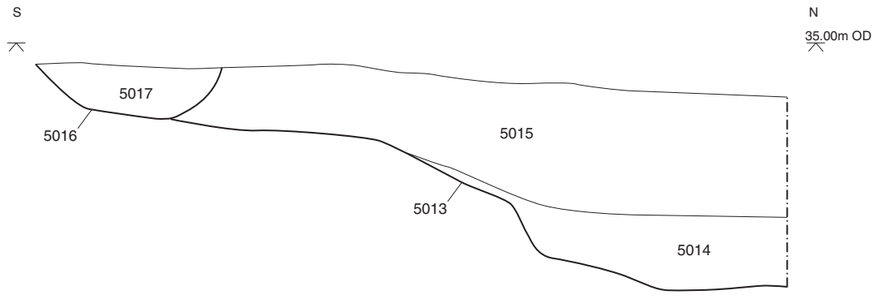


Figure 9: Site 5 and the NMP data. Scale 1:7500

Section 3



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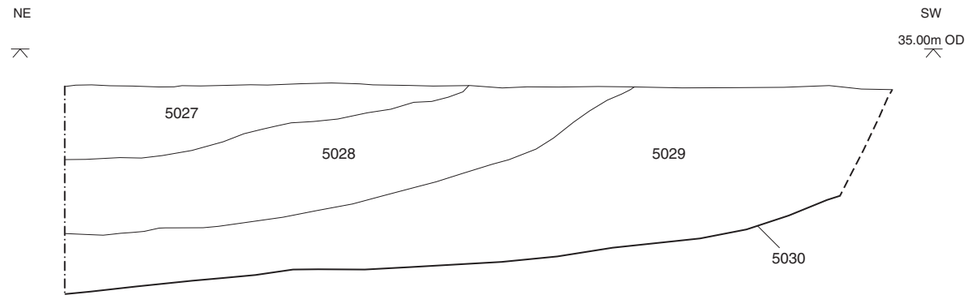

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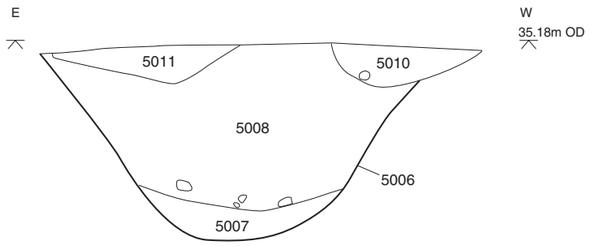

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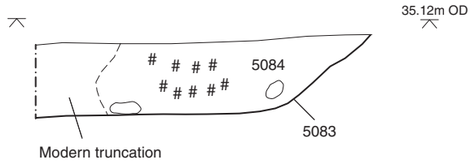

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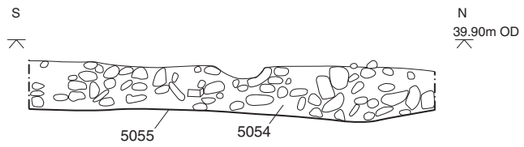

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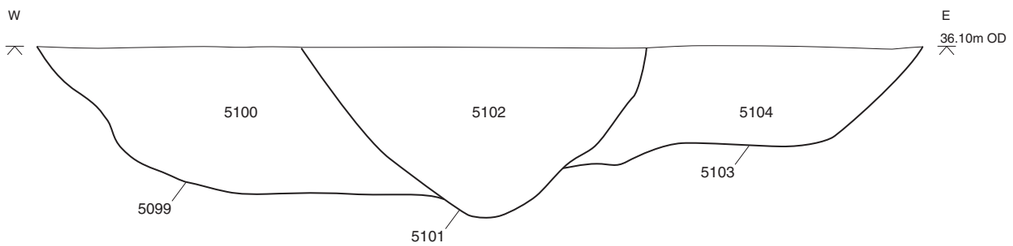

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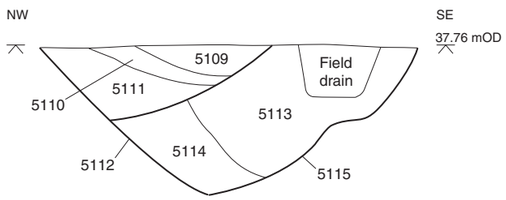

0 1 m

1:25

Figure 10a: Selected sections. 1:25 scale.

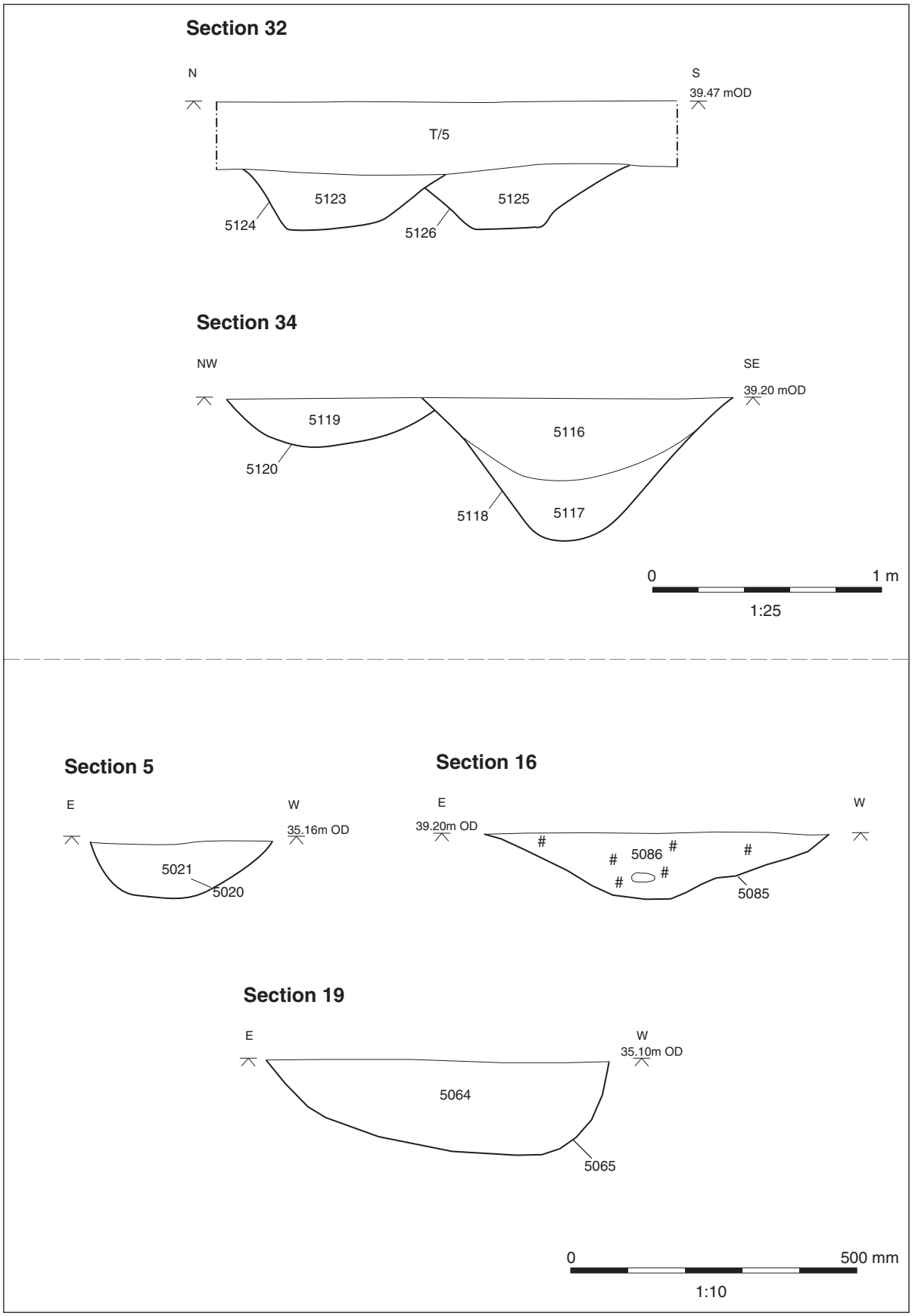

Figure 10b: Selected sections. 1:25 and 1:10 scale

Figure 11: Faden's Map 1797

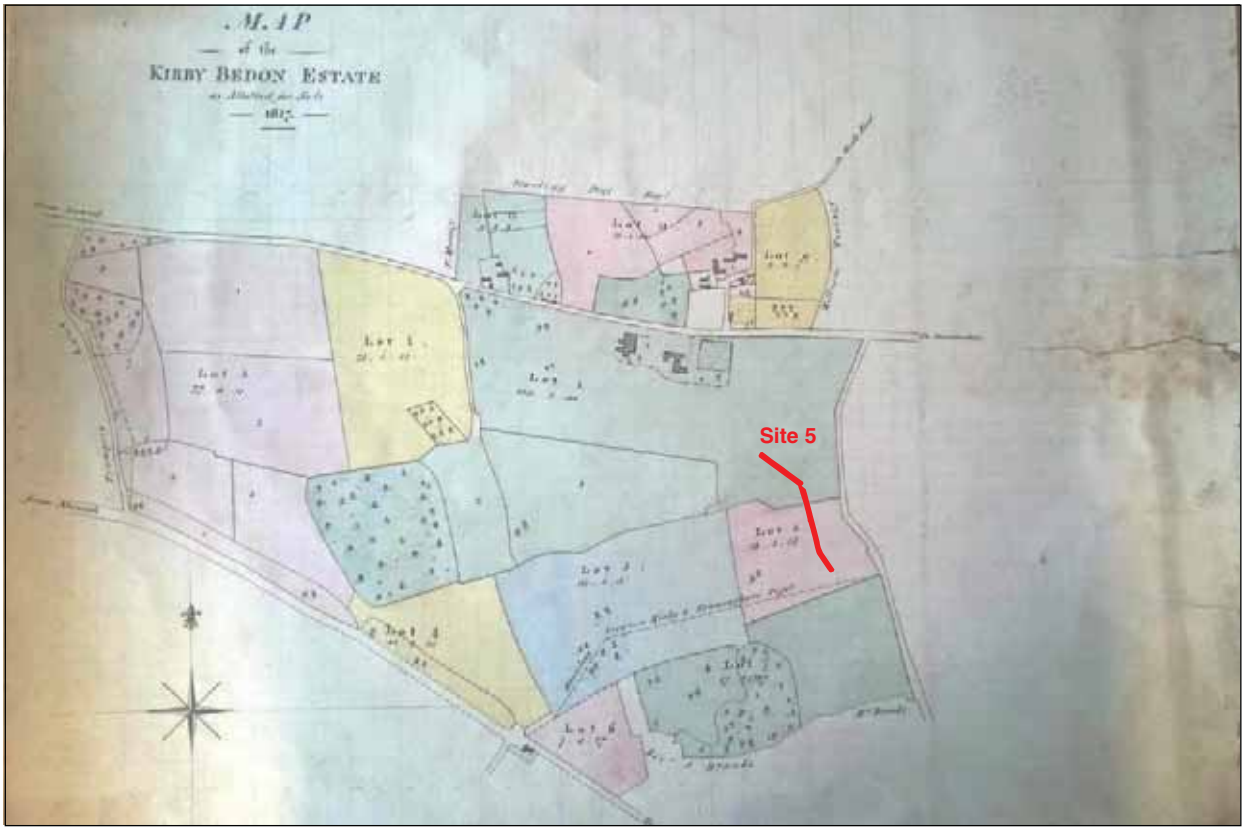

Figure 12: Map of Kirby Bedon Estate (1817) as allotted for sale.

Plate 1: Site 3 topsoil strip and pipe trench looking north-west

Plate 2: Site 6 topsoil strip, looking north north-east

Plate 3: Trench 3, Site 2, looking north-east

Plate 4: Ditch **2003**, Trench 3 (Site 2), looking north-east

Plate 5 Phase 2 (Site 5), Pit **5083**, looking south-east

Plate 6 Phase 3 (Site 5), Ditch **5013**, looking north-west

Plate 7 Phase 3 (Site 5), Pit **5115** and Ditch **5112**, looking north-east

Plate 8 Phase 3 (Site 5), Ditches **5120** and **5118**, looking east

Plate 9 Phase 3 (Site 5), Ditch **5031**, looking north-east

Plate 10 Phase 3 (Site 5), flint filled feature **5055**, looking west

Plate 11 SF 5001, Dagger Scabbard Chape

Plate 12 Copper Alloy Chafing dish

Plate 13 SF 5008, Quern Stone Fragment

Plate 14 SF 5014, Whetstone

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