Archaeological Solutions Ltd

AN ARCHAEOLOGICAL EXCAVATION ON LAND NORTH OF BLYTH HOUSES, CHURCH ROAD, SNAPE, SUFFOLK

RESEARCH ARCHIVE REPORT

HER SNP 103

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NGR: TM 394 584	Report No. 4471
District: Suffolk Coastal	Site Code: SNP 103
Approved: Claire Halpin MIfA	Project No. P4763
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Between February and May 2013 Archaeological Solutions Ltd (AS) conducted an archaeological excavation on land north of Blyth Houses, Church Road, Snape, Suffolk (NGR TM 394 584). The excavation was commissioned by Hopkins Homes Ltd and was undertaken in advance of proposed residential development of the site. It was required in compliance with a planning condition attached to planning approval (Suffolk Coastal Planning Ref. C/11/0967). The excavation adhered to a written scheme of investigation prepared by AS (dated 01/02/2013) in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT) (dated 31/01/2013) requiring a programme of archaeological investigation. The requirement followed a geophysical survey (Sabin and Donaldson 2012) and an archaeological trial trench evaluation (Lichtenstein 2013). *As was suggested by the forerunning evaluation, the excavation revealed abundant evidence of activity dating to the early Iron Age, Romano-British and early to middle Anglo-Saxon periods. Limited evidence of later medieval, post-medieval and modern activity was also encountered. The fill of a single pit also contained six early Bronze Age thumbnail scrapers. Significant features included a Romano-British enclosure system, ?trackway, and pottery kiln, three Anglo-Saxon sunken-featured buildings (SFBs), a contemporary post-built structure and two burnt flint pits of Anglo-Saxon date. Ephemeral evidence for Romano-British post-built structures was also encountered. Finds from SFB 1 were indicative of textile manufacture (spinning). Earlier Iron Age features were less coherent and did not provide a clear picture of prehistoric activity at the site.*		
Project dates (fieldwork)	*11/02/2013 – 03/05/2013*		
Previous work (Y/N/?)	*N*	Future work	*TBC*
P. number	*4763*	Site code	*SNP 103*
Type of project	*Archaeological Excavation*		
Site status	*Arable*		
Current land use	*Agricultural*		
Planned development	*Residential*		
Main features (+dates)	*Early Iron Age:* *Defined activity areas; possible feature alignments* *Romano-British:* *Enclosure system; post-built structures (x2), pottery kiln* *Anglo-Saxon:* *Post-built structure; sunken-featured buildings (x3); burnt flint pits (x2)* *Medieval:* *Pit*		
Significant finds (+dates)	*Early Iron Age:* *Spindle whorl; pottery* *Romano-British:* *Vessel glass; pottery* *Anglo-Saxon:* *Spindle whorls (x2); antler tool handle; Cu alloy bar mount; pottery; worked stone*		
Project location			
County/ District/ Parish	*Suffolk*	*Suffolk Coastal*	*Snape*
HER/ SMR for area	*Suffolk Historic Environment Record*		
Post code (if known)	-		
Area of site	*1.6ha*		
NGR	*TM 394 584*		
Height AOD (max/ min)	*16m/ 12m*		
Project creators			
Brief issued by	*Suffolk County Council Archaeological Service Conservation Team (Jess Tipper)*		
Project supervisor/s (PO)	*Laszlo Lichtenstein (excavation); Antony R.R. Mustchin (post-excavation)*		
Funded by	*Hopkins Homes Ltd*		
Full title	*An Archaeological Excavation on Land North of Blyth Houses, Church Road, Snape, Suffolk. Archive Report*		
Authors	*Antony R. R. Mustchin*		
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Date (of report)	*10th December 2013 (Revised 02/05/2014)*		

AN ARCHAEOLOGICAL EXCAVATION ON LAND NORTH OF BLYTH HOUSES, CHURCH ROAD, SNAPE, SUFFOLK

RESEARCH ARCHIVE REPORT

SUMMARY

Between February and May 2013 Archaeological Solutions Ltd (AS) conducted an archaeological excavation on land north of Blyth Houses, Church Road, Snape, Suffolk (NGR TM 394 584). The excavation was commissioned by Hopkins Homes Ltd and was undertaken in advance of proposed residential development of the site. It was required in compliance with a planning condition attached to planning approval (Suffolk Coastal Planning Ref. C/11/0967). The excavation adhered to a written scheme of investigation prepared by AS (dated 01/02/2013) in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT) (dated 31/01/2013) requiring a programme of archaeological investigation. The requirement followed a geophysical survey (Sabin and Donaldson 2012) and an archaeological trial trench evaluation (Lichtenstein 2013).

As was suggested by the forerunning evaluation, the excavation revealed abundant evidence of activity dating to the early Iron Age, Romano-British and early to middle Anglo-Saxon periods. Limited evidence of later medieval, post-medieval and modern activity was also encountered. The fill of a single pit also contained six early Bronze Age thumbnail scrapers. Significant features included a Romano-British enclosure system, ?trackway, and a pottery kiln, three Anglo-Saxon sunken-featured buildings (SFBs), a contemporary post-built structure and two burnt flint pits of Anglo-Saxon date. Ephemeral evidence for Romano-British post-built structures was also encountered. Finds from SFB 1 were indicative of textile manufacture (spinning). Earlier Iron Age features were less coherent and did not provide a clear picture of prehistoric activity at the site.

1 INTRODUCTION

1.1 Between February and May 2013 *Archaeological Solutions Ltd* (AS) carried out an archaeological excavation on land north of Blyth Houses, Church Road, Snape, Suffolk (NGR TM 394 584; Figs. 1-2; Plates 1-2). The excavation was commissioned by Hopkins Homes Ltd and was undertaken in advance of proposed residential development. The excavation complied with a planning condition attached to planning approval (Suffolk Coastal Planning Ref. C/11/09767), based on advice from *Suffolk County Council Archaeological Service Conservation Team* (SCC AS-CT) requiring a programme of archaeological investigation. The requirement followed a geophysical survey (Sabin and Donaldson 2012) and an archaeological trial trench evaluation of the site (Lichtenstein 2013).

1.2 The project was conducted in accordance with a brief issued by SCC AS-CT (Jess Tipper) (dated 31/01/2013), and a specification compiled by AS (dated 01/02/2013) and approved by SCC AS-CT. It followed the procedures outlined in the Institute of Field Archaeologists' (IfA) *Code of Conduct, Standard and Guidance for*

Archaeological Field Excavation (revised 2008). It also adhered to the relevant sections of *Standards for Field Archaeology in the East of England* (Gurney 2003).

1.3 The main objective of the excavation was to preserve the archaeological evidence contained within the site by record and to attempt a reconstruction of the history and use of the site.

1.4 The research priorities were chiefly:

- to place the excavated prehistoric, Romano-British and Anglo-Saxon activity in context with known activity of these dates in the surrounding area;
- to characterise the activity present within the site;
- to identify topographical/ geological/ geographical influences on the layout and development of the activity present within the site and its hinterland; and,
- to attempt palaeoenvironmental reconstruction

Planning policy context

1.5 The National Planning Policy Framework (NPPF 2012) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The NPPF aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. The NPPF requires applications to describe the significance of any heritage asset, including its setting that may be affected in proportion to the asset's importance and the potential impact of the proposal.

1.6 The NPPF aims to conserve England's heritage assets in a manner appropriate to their significance, with substantial harm to designated heritage assets (i.e. listed buildings, scheduled monuments) only permitted in exceptional circumstances when the public benefit of a proposal outweighs the conservation of the asset. The effect of proposals on non-designated heritage assets must be balanced against the scale of loss and significance of the asset, but non-designated heritage assets of demonstrably equivalent significance may be considered subject to the same policies as those that are designated. The NPPF states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets and to make this publicly available is a requirement of development management. This opportunity should be taken in a manner proportionate to the significance of a heritage asset and to impact of the proposal, particularly where a heritage asset is to be lost.

2 TOPOGRAPHY, GEOLOGY AND SOILS

2.1 The village of Snape is located on the northern bank of the River Alde at the point where it opens into an estuary flowing into the North Sea, *c.* 7km to the east. It also overlooks the smaller River Fromus, a tributary of the Alde, some 600m to the

west. The local topography comprises low lying and gently undulating ground. The site occupies a plateau and gradual south-facing slope with its highest point at approximately 16m AOD.

2.2 The local soils are of the Newport 4 association comprising typical brown sands which are non-calcareous sandy soils (www.landis.org.uk). These 'Estate Sandlands' are typified by sandy, free-draining soils (www.suffolklandscape.org.uk). The underlying geology is of the Woolwich and Reading Beds, comprising variegated red clay and sands overlying grey clay and sand (www.bgs.ac.uk). The heavier clay/ loam soils of the Hanslope and Ragdale associations (SSEW 1984, 7, 17) are present a short distance to the north.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND (Figs. 1-2)

3.1 Snape is best known for its Anglo-Saxon cemetery, a Scheduled Ancient Monument located 1km north-east of the site which held mixed cremations and inhumations (HER[1] SNP 007; NGR TM 4014 5932). The broad variety of burial practices among the inhumations included the use of two (possibly three) dugout log boats as burial 'containers'. Other graves made extensive use of organics, including textiles. Grave goods included the normal range of material expected from an Anglo-Saxon cemetery; more unusual finds included a lyre and a horse's head with tack. The cremation burials dated between the late 5th and 7th centuries AD, while the inhumations ranged between the mid 6th and 7th centuries (www.biab.ac.uk). The cemetery was also associated with a Bronze Age mound containing a collared urn (HER SNP 007). The cemetery site is located in the medieval area of *Thingelow*, thought to have been the meeting place of the Plomsgate Hundred.

3.2 The Benedictine priory of St Mary's was founded at Snape in AD 1155, roughly in the area of Abbey Farm, *c.* 575m to the south-west of the site (HER SNP 009; NGR TM 3877 5780). It was founded by William Martel and was subject to St. John's at Colchester. The priory was small, at times housing just two monks, and was eventually suppressed in favour of a great college at Ipswich. The priory passed into the hands of the Duke of Norfolk in AD 1532 (Page 1925). The Grade II* listed church of St John the Baptist, partly dating to *c.* 1300, is located 1km to the north of the site and stands on the site of a church recorded in Domesday (HER SNP 028; NGR TM 3950 3937).

HER points north of the site

3.3 Cropmarks have been noted in *Mallets Field* to the immediate north and west of the site (Figs. 1-2), and include field boundaries (not related to systems recorded on the tithe map (Fig. 3)), and a roughly rectangular enclosure (*c.* 50 x 30m) at the point of two converging field boundaries. They are of unknown date though pre-date the 19th century (HER SNP 032).

[1] Suffolk Historic Environment Record

3.4 Further rectangular crop marks were identified and excavated to the north of SNP 032. Site 'Q', centred on TM 3925 5879, revealed an oven and pit, superseded by two parallel ditches, and finally a building, represented by postholes and clay pads. Medieval pottery (11th to 13th century in date) and an iron knife were recovered. Site 'B', centred on TM 3929 5880, revealed a large scatter of 13th to 15th century pottery in addition to Saxo-Norman Thetford ware; two ovens were also identified (SNP 012). An excavation at Snape Hall, just to the north-east of SNP 012, found 12th century pottery and a hearth at Site 'C' (centred on TM 3936 5884). Adjacent Site 'D' (centred on TM 3941 5883) contained a further hearth and similarly dated pottery, as well as postholes and a black 'layer' (SNP 013). To the west of SNP 012 are Sites 'A' and 'N'. Site 'A' (centred on TM 3903 5881) yielded a sherd of early medieval pottery from a circular 'oven' some ten feet [3.048m] in diameter, with a floor five inches [127mm] thick (SNP 013). Site 'N' (centred on TM 3900 5878) contained an oven, 8 feet [2.438m] in diameter, with a subsidiary hearth dated to the 12th century AD (SNP 013).

3.5 The site of a 19th century brickworks, labelled 'Brick Field' on the 1837 OS map, is present *c.* 300m to the north-east of the site (TM 3955 5867). This no doubt correlates with 'Brick Kiln Farm' brickworks listed in directories as operated by James Neeve (1844-46), John Hambling (1855-64), Mrs I Hambling (1865), James Olding (1868-85) and Samuel Newson (1888-1916). Tree Cottage (SNP 092) may be an original structure associated with this complex.

4 PREVIOUS INVESTIGATIONS

4.1 A geophysical survey was undertaken prior to the evaluation stage (Sabin and Donaldson 2012), in summary:

The survey located several linear anomalies within the northern part of the site including one orientated almost east/ west and others northeast/ southwest (Figs. 4-5). It is possible that these relate to cut ditch-like features and they may have an association with the cropmarks [SNP 032]. Two discrete positive anomalies, also located in the northern part of the site, have a moderately enhanced response that may indicate burning. Further positive linear and discrete responses exist within the site, and although they may relate to natural or agricultural features, it is not possible to confidently determine their origin.

4.2 An archaeological trial trench evaluation was undertaken (Lichtenstein 2013). In summary:

The majority of features recorded during the evaluation were undated but most were postholes or stakeholes from which large numbers of finds would not be anticipated. Three phases are represented: late Bronze Age/ early Iron Age, early Romano-British and Anglo-Saxon (mid 5th to 9th century AD). The earliest feature was Pit F1023 (Trench 2) which contained 36 sherds of late Bronze Age/ early Iron Age pottery. Sparse struck flint was found in Ditch F1009 and Pits F1023 and F1068 (all Trench 2). The latter contained a later Neolithic arrowhead (oblique type). Two early Romano-British features were recorded c. 54m apart: Ditch F1009 (Trench 2) and Pit F1029 (Trench 4). These yielded 11 sherds (106g) and five sherds (38g) of

pottery respectively. Anglo-Saxon (mid 5th to 9th century AD) SFB[2] 1 (Trench 2) contained residual Roman CBM. SFB 1 also contained the common range of Anglo-Saxon domestic finds, including pottery (247g), CBM (346g), animal bone (179g), two spindle whorls and fired clay (96g). In addition, Pit F1037 and Posthole F1051 (Trench 1) each yielded Anglo-Saxon pottery. Sparse post-medieval or modern finds were also present. Ditch F1076 (Trench 9) contained a fragment of a post-medieval peg tile.

There is a broad correlation of the archaeological features with the geophysical survey data (Figs. 4-5). Certainly the archaeological features were more numerous at the northern end of the site (Trenches 1 and 2), and Ditch F1064 (Trench 1) directly compared with the geophysical survey evidence.

5 RESEARCH DESIGN

5.1 The late Bronze Age/ early Iron Age pit identified during the evaluation may indicate the presence of further activity of this date in the area. As yet, this activity may be considered to be uncharacterised but the dating of this feature suggests that, at the minimum, information relating to the Bronze Age/ Iron Age, identified as an important research subject for the eastern region (Medlycott 2011, 29), might be gained. The pottery recovered from this feature may also contribute to artefact studies, specifically the study of the regional pottery traditions and technologies; a research subject also identified as being of importance (*ibid.*).

5.2 The early date of the Romano-British features suggests that further work here has the potential to provide information on the character of early Roman activity in the area and the on the process of 'Romanisation' (*ibid.* 47).

5.3 The presence of Anglo-Saxon archaeology adds to the already considerable corpus of evidence recovered from this area. The SFB in Trench 2 is, of course, indicative of settlement activity and adds to our understanding of communities living in the area surrounding, and potentially utilising, the well-known Anglo-Saxon cemetery.

5.4 Further work at this site is likely to encounter additional settlement evidence. Settlement and social organisation is an established research priority for the East of England (*ibid.* 56). The opportunity to study a settlement of Anglo-Saxon date is likely to provide information that can be added to the existing body of work that has been carried out on the region's Anglo-Saxon settlements and has the potential to provide new information through comparison with previously identified sites. This opportunity is also likely to contribute to the region's long-established research subjects for the Anglo-Saxon period, including issues such as the agricultural and craft-based economies, culture and religion, and demography (*ibid.* 56). The site also has the potential to yield information on research subjects that have evolved from these earlier research priorities, such as settlement distribution, rural settlements and landscapes, finds studies and regional variation (*ibid.* 59).

[2] Sunken-featured Building

6 METHODOLOGY

6.1 The brief, issued by SCC AS-CT, required:

- controlled strip, map and excavation of the northern part of the site (an area measuring 125m (N/S) x 60m (E/W); and
- strip, map and sample of the site access road

6.2 In the event, due to the presence of archaeological features, an area *c.* 117m (N/S) and *c.* 56m (E/W) was excavated. An area in the far north-east of the site measuring 152m^2 was also excavated. This additional 'corridor' of excavation (Fig. 2) contained an Anglo-Saxon SFB (SFB 3), associated Anglo-Saxon features and two undated ditches (F2369 and F2402). An unexcavated section of possible curvilinear gully was also present *c.* 14m to the north-east of SFB 3. Further amorphous 'dark areas' were present in the surface of the natural sand to the north and north-west of SFB 3 but no clear features were identified (Lichtenstein *pers. comm.* 10/01/2014). This area (measuring *c.* 840m^2 in total) was subsequently backfilled with spoil to prevent potential damage to any archaeological deposits present. The area to the north/ north-west of SFB 3 lay beyond the limits of the proposed development (Fig. 40).

6.3 Undifferentiated overburden was removed under close archaeological supervision using a 360^o mechanical excavator fitted with a toothless ditching bucket. Thereafter, all investigation was undertaken by hand. Exposed surfaces were cleaned and examined for archaeological features and finds. Deposits were recorded using *pro forma* recording sheets, drawn to scale and photographed as appropriate. Excavated spoil was checked for finds and the trenches were scanned by metal detector.

6.4 The additional north-eastern excavation area did not form part of the planning application. It contained archaeological features and was partially excavated.

7 DEPOSIT MODEL

7.1 Topsoil L2000 was ubiquitous across the site. It comprised firm, mid grey brown sandy silt with occasional small angular flint (0.23-0.34m thick). L2000 overlay Subsoil L2001, comprising firm, mid orange brown sandy gravel with occasional small angular flint (*c*. 0.14-0.20m thick and deepening to the south). Natural Drift Geology L2002 was present below Subsoil L2001. L2002 comprised firm, light to mid orange/ yellow brown sand/ sandy gravel with occasional small sub angular flint (0.37 - 0.59m below the present ground surface). The soils were deeper towards the south of the site.

8 DESCRIPTION OF RESULTS

Summary of results

Chronological phasing

8.1 Based on the datable pottery assemblage and a supplementary programme of radiocarbon dating (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 2)), six chronological phases of activity were identified (Table 1). Some of the features that did not contain diagnostic material were phased based on their physical and spatial relationships with dated features. Undated features that could not be phased in this way were assigned to Phase 7. It should be noted that the two radiocarbon dates from Phase 1 Pit F2662 (1337-1131 calBC and 1259-1235 calBC respectively, see below) fall within the middle to late Bronze Age – in contrast to the 131 sherds of early Iron Age pottery from this feature – and are considered erroneous.

Phase	Period	Date	(Combined) Radiocarbon Date Range
1	Early Iron Age	750-400 BC	1337-1131 calBC*
2	Romano-British	Mid to late 1st century AD	56-74 calAD
3	Early to middle Anglo-Saxon	AD 450-850	474-575 calAD
4	Medieval	12th to 14th century AD	-
5	Post-medieval	AD 1500-1750	-
6	Early modern/ modern	AD 1750-1900+	-
7	Undated	-	-

*Table 1: Chronological phasing. Key: * = erroneous date*

Phase Summary

8.2 Residual Bronze Age pottery (three sherds weighing 48g) was found in Phase 2 Pit F2474 (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)) and six early Bronze Age thumbnail Scrapers were present in Pit F2478 (Grid Square D12) (Peachey, *The Struck Flint* (Appendix 2)). This comprises the earliest datable material from the site. A Bronze Age mound (HER SNP 007) is known *c.* 1km to the north-east of the site and an early Bronze Age arrowhead (HER SNP Misc) was found at Snape Bridge, less than 1km to the south. The earliest substantive phase of activity, the early Iron Age (Phase 1), was represented by two distinct 'activity' areas and dispersed features of uncertain function. Possible storage pits and paired pit/ posthole alignments were also assigned to this primary phase. A possible four-post 'granary' was also identified, though the constituent features were undated and their interpretation remains tentative. The subsequent Romano-British period (Phase 2) witnessed the establishing of a clearly defined rectilinear enclosure system incorporating evidence of pottery manufacture (Kiln S2633). At least one post-built structure was present in this phase. The early to middle Anglo-Saxon period (Phase 3) comprised two burnt flint pits, a sub-square post built structure and three sunken-featured buildings (SFBs); SFB 1 yielded evidence of spinning. Subsequent phases (Table 1) were less represented and of limited interest.

Phase 1: early Iron Age (750-400 BC)

Introduction

8.3 Phase 1 features were largely divided between two distinct 'activity areas', one in the far north-western corner of the site and the other towards the north-eastern corner, directly north of Phase 3 SFB 2 (Figs. 6-7). The remaining Phase 1 features were more sparsely distributed across the site. Pottery from this phase (556 sherds weighing 6336g) was almost exclusively Iron Age in date and comprised an assortment of fine and coarse flint-tempered wares in the West Harling and Darmsden ceramic traditions (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). The majority of the Iron Age pottery (359 sherds weighing 4499g) was recovered from features within Phase 1 Activity Area 1.

Phase 1 Activity Area 1

8.4 An early Iron Age 'activity area' was located in the vicinity of Phase 2 Kiln S2633 (Grid Squares B11-C11 and A12-C12). This cluster of features comprised pits and postholes numbering 39 in total (Table 2; Figs. 7-8), interspersed with undated and later features. It is possible that some of the undated features in this area were also early Iron Age in date (see below). Although the Romano-British kiln did not cut any earlier features, its location in respect to the Iron Age pits and postholes is thought to have been coincidental. A clear hiatus is represented by the dating of Phases 1 and 2 (Tables 1 and 46) and it is unlikely that the ephemeral Phase 1 features would have remained 'visible' in the Romano-British landscape.

Feature	Context	Dimensions[3]	Plan/ profile/ base	Fill	Spot date
2474	2475	2.10 x 1.40 x 0.11m	Sub-oval, gentle, flat	Friable, mid orange brown silty sand	Early Iron Age
2613	2614	0.29 x 0.26 x 0.22m	Sub-circular, steep, concave	Loose, dark brown grey silty sand	Early Iron Age
2617	2618	0.36 x 0.33 x 0.14m	Sub-circular, steep, flat	Loose, mid grey brown silty sand	Early Iron Age
2619	2620	0.28 x 0.26 x 0.21m	Sub-circular, steep, flat	Loose, mid grey brown silty sand	Early Iron Age
2629	2630	0.32 x 0.31 x 0.19m	Sub-circular, steep, concave	Loose, mid grey brown silty sand	Early Iron Age
2653	2654	0.25 x 0.25 x 0.15m	Circular, near vertical, concave	Friable, mid grey to black silty sand	Early Iron Age
2662*	2663[S]	1.35 x 1.05 x 0.54m	Circular, steep, concave	Friable, mid grey to black silty clay	Early Iron Age
	2678[P]			Friable, dark grey to black sandy silt	Early Iron Age
2666	2667	0.48 x 0.47 x 0.23m	Sub-circular, steep, concave	Friable, mid grey brown silty sand	Early Iron Age
2668	2669	0.28 x 0.14 x 0.22m	Sub-circular, steep, concave	Friable, mid grey brown silty sand	Early Iron Age
2670	2671	0.26 x 0.24 x 0.23m	Sub-circular, near vertical, concave	Friable, mid grey brown silty sand	Early Iron Age
2672	2673	0.62 x 0.70 x 0.22m	Sub-circular, steep, concave	Friable, dark grey brown silty sand	Early Iron Age
2674	2675	0.56 x 0.52 x 0.21m	Sub-circular, steep, flat	Friable, mid grey brown silty sand	Early Iron Age
2676	2677	0.42 x 0.41 x	Circular, steep, concave	Friable, mid grey brown	Early Iron

[3] All feature measurements are given as: *length x width x depth*

		0.22m		silty sand	Age
2679	2680	0.29 x 0.29 x 0.10m	Circular, moderate, concave	Friable, mid brown silty sand	Early Iron Age
2683	2684[T]	1.00 x 0.73 x 1.07m	Circular, steep, concave	Friable, mid grey to black silty sand	Early Iron Age
	2697[P]			Friable, mid grey yellow brown sand	Early Iron Age
	2702[S]			Friable, dark grey to black sandy silt	-
2687	2688	0.38 x 0.38 x 0.20m	Circular, steep, concave	Friable, mid grey to black silty sand	Early Iron Age
2691	2692	0.32 x 0.32 x 0.14m	Circular, steep, concave	Friable, mid grey to black silty sand	Early Iron Age
2698	2699	0.16 x 0.16 x 0.08m	Circular, steep, concave	Friable, dark brown silty sand	Early Iron Age
2700	2701	0.41 x 0.41 x 0.34m	Circular, steep, concave	Friable, dark brown grey silty sand	Early Iron Age
2703	2704	0.20 x 0.20 x 0.12m	Circular, steep, concave	Friable, mid brown grey silty sand	Early Iron Age
2705	2706	0.40 x 0.48 x 0.28m	Oval, steep, concave	Friable, mid grey to black silty sand	Early Iron Age
2707	2708	0.19 x 0.19 x 0.16m	Circular, steep, concave	Friable, mid brown grey silty sand	Early Iron Age
2733	2734	1.02 x 0.72 x 0.10m	Oval, gentle, concave	Friable, mid grey brown silty sand	Early Iron Age
2781	2782	0.25 x 0.25 x 0.14m	Circular, steep, concave	Friable, dark brown silty sand	Early Iron Age
2790	2791	0.27 x 0.27 x 0.12m	Circular, steep, concave	Friable, mid brown grey silty sand	Early Iron Age
2794	2795	0.31 x 0.31 x 0.12m	Circular, steep, concave	Friable, mid grey to black silty sand	Early Iron Age
2796	2797	0.48 x 0.10 x 0.25m	Sub-oval, gentle, concave	Friable, mid grey to black silty sand	Early Iron Age
2812	2813	0.45 x 0.44 x 0.20m	Circular, steep, concave	Friable, dark brown grey silty sand	Early Iron Age
2814	2815	0.44 x 0.34 x 0.24m	Circular, steep, flat	Friable, dark brown grey silty sand	Early Iron Age
2816	2817	0.63 x 0.48 x 0.26m	Circular, steep, concave	Friable, dark brown grey silty sand	Early Iron Age
2818	2819	0.45 x 0.38 x 0.24m	Circular, steep, concave	Friable, dark grey brown silty sand	Early Iron Age
2822	2821	0.48 x 0.36 x 0.27m	Circular, steep, flat	Friable, dark grey brown silty sand	Early Iron Age
2826	2827	0.67 x 0.44 x 0.22m	Circular, steep, concave	Friable, dark brown grey silty sand	Early Iron Age
2844	2845	0.46 x 0.34 x 0.28m	Circular, steep, concave	Friable, mid grey brown silty sand	Early Iron Age
2846	2847	0.63 x 0.44 x 0.34m	Circular, steep, flat	Friable, mid grey brown silty sand	Early Iron Age
2856	2857	0.74 x 0.74 x 0.24m	Circular, steep, concave	Friable, mid brown to black silty sand	Early Iron Age
2860	2861[P]	0.65 x 0.65 x 0.21m	Circular, steep, concave	Friable, mid brown to black silty sand	Early Iron Age
	2862[S]			Friable, light grey brown silty sand	Early Iron Age
2869	2870	0.47 x 0.47 x 0.36m	Circular, steep, concave	Friable, mid brown to black silty sand	Early Iron Age
2873	2874	0.49 x 0.49 x 0.30m	Circular, steep, concave	Friable, mid brown to black silty sand	Early Iron Age

*Table 2: Features forming Phase 1 Activity Area 1. Key: [P] = primary fill; [S] = secondary fill; [T] = tertiary fill; * = radiocarbon dated feature*

8.5 Although densely concentrated, the Phase 1 postholes in this area did not appear to conform to any 'structural' layout. Furthermore, their forms and fills varied considerably, perhaps indicating that they were dug at different times and/ or for different purposes. However, the majority of these features yielded securely stratified early Iron Age pottery, all of which conformed to the West Harling and Darmsden ceramic style (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). Pit F2662 yielded the largest assemblage comprising 131 sherds (1043g). Postholes F2700 (L2701) and F2794 (L2795) (Grid Square B12) also contained notable concentrations comprising 22 sherds (613g) and nine sherds (616g) respectively. These features were spaced less than two meters apart and may have been directly related. Owing to the high concentration of early Iron Age pottery from Pit F2662, and the comparative lack of high-resolution dates for early Iron Age ceramic assemblages in Suffolk (Brudenell *pers. comm.*), charred barley grains from the primary (L2678) and secondary (L2663) fills of this feature were submitted for radiocarbon dating (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 2)). The calibrated date ranges produced for this feature (1337-1131 calBC and 1259-1235 calBC respectively) fall within the middle to late Bronze Age, however, and are considered erroneous; The 'Hallstatt plateau' in the radiocarbon calibration curve, occurring at 700-400 BC (2500-2400 BP) serves to limit the resolution of dates that fall within the mid-1st millennium BC (Hajdas 2008, 16).

8.6 The Phase 1 pits in this part of the site varied greatly in terms of their size and form. One of the largest (F2683) measured 1.00 x 0.73 x 1.07m and contained three consecutive fills. The tertiary fill of this feature (L2684) yielded 29 sherds (250g) of early Iron Age pottery, fired clay (68g) and struck flint (10g). It is possible that F2683 constituted a grain storage pit, perhaps contemporary with the use of Phase 1 ?Storage Pits F2834, F2837 and F2841 (Grid Square A7) (see below); these features were morphologically different however. Overall, environmental samples from features forming Phase 1 Activity Area 1 were suggestive of cereal-based agricultural activity in the immediate area (Summers, *The Charred Plant Remains* (Appendix 2)), although the accumulation of such material in Phase 1 features may not directly reflect their primary function(s). Fully processed barley, a species well suited to cultivation on the local sandy soils, was abundant in samples from this phase (*ibid*.).

8.7 In addition to pottery, Pit F2846 (L2847) yielded a near-complete, fired clay spindle whorl (SF14; Fig. 39) of 'globular' form (Cooper, *The Small Finds* (Appendix 2)). This form is typical of Iron Age examples with parallels known from Danebury, Hampshire (Pool 1991; after Cooper, *The Small Finds* (Appendix 2)). Many of the Phase 1 pits and postholes in this area also contained sparse flint.

Phase 1 Activity Area 2

8.8 Another distinct 'cluster' of early Iron Age features was encountered immediately east of Phase 2 Ditch F2061 (=F2231) and north of Phase 3 SFB 2, towards the north-eastern corner of the site (Grid Square F10-F11). This area contained 13 Phase 1 features in total, comprising five postholes, seven pits and a single gully (Table 3; Fig. 9). Several of these were intercutting and two (Posthole

F2298 and Pit F2312) were truncated by Phase 2 Gully F2300. Interspersed, undated features were also present.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2282	2283	0.30 x 0.30 x 0.07m	Circular, steep, flat	Friable, light yellow brown silty sand	Early Iron Age
2290	2291[P]	1.25 x 0.70 x 0.38m	Oval, near vertical, flat	Friable, dark brown grey silty sand	-
	2292[S]			Friable, light yellow grey silty sand	-
	2293[T]			Friable, dark brown grey silty sand	Early Iron Age
2294	2295[P]	0.70 x 0.50 x 0.29m	Oval, near vertical, flat	Friable, dark brown grey silty sand	Early Iron Age
	2296[S]			Friable, light yellow grey sand	-
	2297[T]			Friable, dark brown grey silty sand	Early Iron Age
2298	2299[S]	0.55+ x *c.* 0.50 x 0.35m	Circular, steep, flat	Friable, dark yellow brown silty sand and charcoal	Early Iron Age
	2318[P]			Friable, light yellow brown silty sand	-
2302	2303	0.29 x 0.23 x 0.17m	Oval, steep, concave	Friable, dark yellow brown silty sand	Early Iron Age
2304	2305	0.23 x 0.24 x 0.16m	Circular, vertical, flat	Friable, dark grey silty sand	Early Iron Age
2306	2307[P]	0.68 x 0.54 x 0.44m	Sub-circular, steep, flat	Friable, mid yellow brown silty sand	Early Iron Age
	2323[S]			Friable, dark yellow brown/ black silty sand and charcoal	-
2308	2309	0.34 x 0.33 x 0.41m	Circular, near vertical, flat	Friable, dark yellow brown silty sand	Early Iron Age
2310	2311	7.30 x 0.62 x 0.11m	Linear, gentle to steep, concave	Friable, mid yellow brown silty sand	Early Iron Age
2312	2313	2.00 x 1.10 x 0.12m	Sub-oval, gentle to steep, flat	Friable, dark yellow brown silty sand	-
2314	2315	0.68 x 0.53 x 0.33m	Oval, near vertical, flat	Friable, dark yellow brown/ black silty sand and charcoal	Early Iron Age
2316	2317	0.49 x 0.38 x 0.32m	Oval, near vertical, flat	Friable, mid yellow brown silty sand	Early Iron Age
2342	2343	0.43 x 0.41 x 0.16m	Circular, steep, concave	Friable, mid yellow brown silty sand	-

Table 3: Features forming Phase 1 Activity Area 2. Key: [P] = primary fill; [S] = secondary fill; [T] = tertiary fill

8.9 Phase 1 Gully F2310 was aligned roughly N/S, parallel with Phase 2 Ditch F2061 (=F2231), some 2.20m to the west; this similarity of alignment appears to have been coincidental however. Although the fill of this gully (L2311B) yielded just two sherds (11g) of early Iron Age pottery this does not appear to represent residual material in a later, possibly Romano-British or Anglo-Saxon feature. The pottery was securely stratified and the northern terminus of Gully F2310 was cut by Phase 1 Pit F2306 which contained a larger, contemporary pottery assemblage (nine sherds weighing 85g). However, the function of Gully F2310 and its relationship to the surrounding Phase 1 features remains uncertain.

8.10 The seven pits in Phase 1 Activity Area 2 (F2290, F2294, F2298, F2306, F2312, F2314 and F2316) formed a tentative 'squared' arrangement, aligned

NNE/SSW. However, it remains uncertain whether this group of features represented a structural outline or similar. The features also displayed variation in their plans, profiles and in the number of fills they contained. Three (F2298, F2306 and F2314) yielded black or charcoal-rich material. Environmental bulk samples from Pits F2306 (L2307 and L2323) and F2314 (L2315) were found to contain charcoal (Summers 2013), though neither assemblage warranted full analysis.

8.11 Like those forming Phase 1 Activity Area 1, the Iron Age features in this part of the site yielded quantities of securely stratified pottery, albeit in lesser concentrations. Pits F2290 (L2293) and F2314 (L2315) yielded modest assemblages, comprising 36 sherds (386g) and 32 sherds (217g) respectively. Iron Age features in this area were devoid of notable finds.

Other Phase 1 features

Possible post alignments

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2601	2602[P]	0.56 x 0.48 x 0.34m	Sub-circular, steep concave	Loose, dark brown grey silty sand	Early Iron Age
	2603[S]			Loose, mid grey brown silty sand	-
2731	2732	0.29 x 0.29 x 0.26m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2735	2736	0.26 x 0.26 x 0.20m	Oval, gentle, concave	Friable, mid grey brown silty sand	-
2737	2638	0.23 x 0.23 x 0.18m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2741	2742	0.19 x 0.19 x 0.10m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2743	2744	0.18 x 0.18 x 0.10m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2745	2746	0.16 x 0.16 x 0.11m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2751	2752	0.35 x 0.35 x 0.29m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2753	2754	0.24 x 0.24 x 0.13m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2760	2761	0.18 x 0.18 x 0.10m	Circular, steep, concave	Friable, mid grey to black silty sand	-
2762	2763	0.21 x 0.21 x 0.11m	Circular, steep, concave	Friable, mid grey to black silty sand	-

Table 4: Possible Phase 1 pit/ posthole alignments. Key: [P] = primary fill; [S] = secondary fill

8.12 Two possible pit/ posthole alignments were present to the south of Phase 1 Activity Area 1 (Grid Square B11). These comprised 11 features in total (Table 4; Fig. 10), spaced *c.* 1.60-2.30m apart and aligned NE/SW. It is possible that these features represented paired post alignments (perhaps fencelines or similar). Only one of the features in this group (F2601) yielded datable pottery however (one sherd weighing 13g) and, as such, these feature were only very tentatively assigned an early Iron Age date. Nonetheless, these alignments did not respect the subsequent Romano-British enclosure system (oriented N/S-E/W) or the orientation of nearby Anglo-Saxon Post-Built Structure 3. The southernmost alignment may have included a cluster of four early Iron Age features (F1021, F1023, F1027 and F1027) identified

during the evaluation (Lichtenstein 2013). An environmental bulk sample of L2602 (F2601) yielded nothing of note (Summers 2013).

Possible storage pits

8.13 Three possible Iron Age storage pits were present in Grid Square A7 (Table 5; Fig. 11). Two of these (F2834 and F2841) had steep sides and flat bases, whilst the third (F2837) displayed a bell-shaped profile. Both types conform to Cunliffe's (2005, 412, fig. 16.2) overview of Iron Age storage pit morphologies from Danebury, although all of the Snape pits were smaller than would perhaps be expected. The largest, F2873, measured just 0.47 x 0.45 x 0.51. Furthermore, no evidence of lining or capping material (e.g. clay; *ibid.*, 411) was found in any of these features. Environmental bulk samples were collected from the fills of all three pits but contained nothing of note (Summers 2013). Although grain storage pits are a prolific feature of early Iron Age settlement sites across southern Britain (Cunliffe 2005, 411), the interpretation of these examples remains tentative. Sparse early Iron Age pottery was present in Pits F2834 and F2837; Pit F2841 was phased based on its probable association with these dated features.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2834	2835 P	0.39 x 0.34 x 0.45m	Sub-circular, steep, flat	Friable, mid grey brown silty sand	-
	2836 S			Friable, dark brown grey silty sand	Early Iron Age
2837	2838 P	0.47 x 0.45 x 0.51m	Sub-circular, bell-shaped, flat	Friable, dark grey brown silty sand	-
	2839 S			Friable, mid grey brown silty sand	Early Iron Age
	2840 T			Friable, dark grey brown silty sand	-
2841	2842 P	0.38 x 0.34 x 0.37m	Sub-circular, steep, flat	Friable, dark brown grey silty sand	-
	2843 S			Friable, mid brown grey silty sand	-

Table 5: Possible Phase 1 storage pits. Key: P = primary fill; S = secondary fill; T = tertiary fill

Isolated Phase 1 features

8.14 Several comparatively isolated Phase 1 features were recorded (Table 6; Fig. 12). These were distributed across the excavated area and produced little by way of interpretable data. The only finds of note are 27 sherds (82g) of early Iron Age pottery and 149g of burnt flint from Pit F2049 (Grid Square D6) and a single fragment of struck flint (SF2) from Pit F2128 (Grid Square C3). Phase 1 Gully F2056 (Grid Square F5-F5) ran parallel to Phase 2 Ditch F2015 (below), although the two were otherwise unrelated (allowing for the slight possibility that the early Iron Age pottery from F2056 is, in fact, residual).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2027	2028	0.46 x 0.45 x 0.16m	Sub-circular, moderate to steep, concave	Firm, mid brown grey silty sand	Early Iron Age
2029	2030	0.23 x 0.20 x 0.14m	Sub-circular, steep, flat	Firm, mid grey brown silty sand	Early Iron Age
2049	2050	0.90 x 0.60 x 0.30m	Sub-circular, near vertical, concave	Firm, dark grey silty sand	Early Iron Age
2056	2057	8.40 x 0.70 x 0.10m	Linear, gentle, concave	Friable, dark yellow brown silty sand	Early Iron Age
2076	2077	0.34 x 0.38 x 0.14m	Sub-circular, steep, concave	Firm, mid brown grey silty sand	Early Iron Age
2126	2127	0.42 x 0.40 x 0.16m	Sub-circular, steep, concave	Firm, mid brown grey silty sand	Early Iron Age
2128	2129[P]	0.52 x 1.02 x 0.22m	Sub-circular, steep, flat	Firm, mid red brown silty sand	-
	2130[S]			Firm, dark grey silty sand	Early Iron Age

Table 6: Isolated Phase 1 features. Key: [P] = primary fill; [S] = secondary fill

Phase 2: Romano-British (mid to late 1st century AD)

Introduction

8.15 The phase 2 site comprised part of a 'grid' of enclosures defined by a rectilinear system of boundary ditches (Figs. 13-15). This system appears to continue to the west and north of the excavated area (Fig. 2). At least two of the Romano-British features (Kiln S2633 and Pit F2137) alluded to some level of industrial activity within the enclosures. Structural evidence, however, was limited.

Phase 2 boundary ditches

8.16 Nine Phase 2 boundary ditches were identified forming a rectilinear system of enclosures (Table 7; Figs. 13-15). F2061 (=2231; Grid Square D6-F12) was the longest surviving Romano-British ditch, measuring some 64m (NNE/SSW). For part of its length this feature ran parallel to Phase 1 Ditch F2310, though it is unlikely that the latter was still visible by the early Romano-British period. Ditch F2061 (=2231) intersected with Phase 2 Ditch F2213 (Grid Square A9-F9) in the southern end of Trial Trench 1 and formed a squared enclosure with Ditch F2606 (Grid Square A11-A12) to the north-west. The exposed part of this north-western enclosure measured *c.* 1496m^2. A similar enclosure was present to the south of F2213 and parts of two more were identified to the east of F2061 (=2231), although these were greatly obscured by the edge of excavation and the modern line of Church Road. The exposed part of the south-western enclosure measured *c.* 1848m^2, while those parts of the north-eastern and south-eastern enclosures within the excavation measured *c.* 119m^2 and *c.* 704m^2 respectively. Ditch F2213 followed the alignment of a rectilinear cropmark (HER SNP 032) that formerly traversed the site and is still present to the west. It would seem, therefore, that Romano-British activity extended well beyond the limits of the excavated site, at least to the west and east.

8.17 The south-western Phase 2 enclosure appears to have been originally delineated to the south by Ditches F2223 (Grid Square A5-B5), F2065 (Grid Square B5-C4) and part of F2015 (Grid Square D4-F4; Fig. 13). The latter continued to the east, forming the southern boundary of the south-eastern enclosure. Two 'gaps' between the termini of these features appear to have provided access to the south-

western enclosure; a similar, albeit broader gap between the southern terminus of F2061 (=2231) and the 'return' of F2015 (Fig. 13) may have provided access to the south-eastern enclosure. The fill of Ditch F2065 (L2066) was later truncated by Phase 2 Ditch F2017 (Grid Square A5-E4). The latter seems to have redefined the southern edge of the south-western enclosure, forming a narrow access point to the south-east with the southern terminus of Ditch F2015.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2015	2016	27.20 x 1.19 x 0.34m	Linear, moderate to steep, flat/ concave	Firm, mid grey brown silty sand	Mid to late 1st C AD
2017	2021	44.00 x 0.40 x 0.08m	Linear, gentle to steep, flat/ concave	Friable/ loose, dark grey/ red brown silty sand	-
	2164			Friable/ loose, dark grey brown silty sand	Mid to late 1st C AD
	2215[S]			Friable, yellow brown silty sand	Mid to late 1st C AD
	2216[P]			Friable, mid yellow brown silty sand	Mid to late 1st C AD
2052	2053	22.00 x 0.40 x 0.10m	Linear, gentle, concave	Friable, mid grey brown silty sand	-
2061=2231	2063=2232	64.00 x 1.65 x 0.38m	Linear, moderate to steep, flat/ concave	Firm/ friable, mid orange/ yellow brown silty sand	Mid to late 1st C AD
2065	2066	14.40 x 0.62 x 0.34m	Linear, steep, concave	Firm/ friable, mid grey brown silty sand	Mid to late 1st C AD
2167	2168	6.80+ x 0.30 x 0.21m	Linear, steep, flat/ concave	Friable, mid brown grey silty sand	Mid to late 1st C AD
2213	2214	52.80+ x 1.58 x 0.48m	Linear, moderate to steep, flat/ concave	Friable, light/ mid grey brown silty sand	Mid to late 1st C AD
2223	2224	8.00+ x 0.60 x 0.16m	Linear, gentle to steep, concave	Friable, mid yellow brown silty sand	-
2606	2607[P]	18.00+ x 1.36 x 0.35m	Linear, gentle, concave	Loose, mid grey brown silty sand	Mid to late 1st C AD
	2608[S]			Loose, dark brown grey silty sand	Mid to late 1st C AD

Table 7: Phase 2 boundary ditches. Key: [P] = primary fill (in at least one segment); [S] = secondary fill (in at least one segment)

8.18 A pair of similarly aligned Phase 2 ditches (F2052 (Grid Square B3-D3) and F2167 (Grid Square A3)) was present *c.* 12-17m to the south of Ditch F2017 (Fig. 13). These ran parallel to the latter, possibly forming a wide trackway aligned WNW/ESE following the line of the Alde valley. It is possible that this ?trackway provided access to the River Fromus, some 600m to the west. Part of the northern edge of the ?trackway would have originally been defined by Ditches F2065 and F2223, allowing direct access to the south-western Phase 2 enclosure. A similar pattern of Romano-British enclosures and trackways has been encountered at several regional sites including East Winch, Norfolk (Lally *et al.* forthcoming) and Childerley Gate, Cambridgeshire (Abrams and Ingham 2008, 52ff).

8.19 Bar Ditch F2606 and Segment H of Ditch F2017, both of which contained two fills, all of the Period 2 boundary ditches contained only single fills. Furthermore, no evidence of re-cutting of individual features was encountered. The sandy nature of the site's drift geology and its exposed location means that these features would likely have filled naturally, either through wind or water erosion (or a combination of the two), within a relatively short period. A similar pattern of rapid, natural infilling was evident in Romano-British features at the former Smoke House Inn, Beck Row (Mustchin in preparation). The apparently short-lived nature of these features would

seem to suggest that Romano-British activity at the site extended little either side of the mid to late 1st century AD date range indicated by the datable pottery assemblage.

8.20 All but two of the Phase 2 boundary ditches contained mid to late 1st century AD pottery. F2052 also yielded 123g of animal bone, while F2223 was devoid of finds. However, both of these ditches formed obvious elements of the Phase 2 enclosure system (Fig. 10) and were phased accordingly. Of these features, Ditch F2606 yielded the most pottery (85 sherds weighing 461g), apparently derived from Romano-British Kiln S2633 (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). Segment B of this ditch, the primary fill of which (L2607) yielded a large concentration of kiln 'wasters', was just *c.* 6m from the kiln. It seems likely that Ditch F2606 and Kiln S2633 were contemporary, with the former being utilised for the convenient disposal of pottery wasters/ breakages. Gully F2300 (see below) yielded 125 sherds (1463g) of comparable material (*ibid.*). Two sherds (13g) of residual early Iron Age pottery were recovered from Ditch F2061 (=2231; from Segment C and an un-lettered segment adjacent to Phase 3 SFB 2), while three sherds (9g) of intrusive Anglo-Saxon pottery were recovered from Ditch F2065 (Segment C).

Phase 2 gullies

8.21 Two Phase 2 gullies (F2300 (Grid Square F11) and F2848 (Grid Square A11)) were present in the northern half of the site (Table 8; Figs. 13 and 15). F2300 truncated early Iron Age features near the western edge of the north-eastern Phase 2 enclosure. This gully ran perpendicular to Boundary Ditch F2061 (=2231) and may have formed an internal division of space within the north-eastern enclosure. Similarly, Gully F2848 was truncated by the eastern edge of Boundary Ditch F2606 and may have performed a similar function within the north-western enclosure. The single fill of Gully F2300 (L2301) yielded a large assemblage (125 sherds; 1463g) of mid to late 1st century AD pottery, predominantly representing wasters/ breakages from the nearby Romano-British kiln.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2300	2301	4.75+ x 1.40 x 0.34m	Linear, steep, flat	Friable, dark yellow brown silty sand	Mid to late 1st C AD
2848	2849	2.00+ x 0.42 x 0.36m	Linear, steep, concave	Friable, mid brown grey silty sand	Mid to late 1st C AD

Table 8: Phase 2 gullies

Phase 2 ?hearth/ fire pit

8.22 A possible Romano-British hearth or fire pit (F2137; Grid Square B1) was recorded in the far south of the site, *c.* 13m south of the Phase 2 ?trackway (Table 9; Fig. 16). The primary fill of this feature (L2138) was charcoal-rich and reddening of the underlying natural sand (photographed in section only; Plate 3) suggested *in situ* burning. The charcoal within this feature was exclusively of oak, probably derived from dead trees, reused timbers or seasoned wood (Summers, *The Charcoal* (Appendix 2)). The only pottery from this feature comprises seven sherds (11g) from tertiary Fill L2140, while two fragments of Roman vessel glass (SFs 3 and 5) were recovered from Fills L2140 and L2139 respectively (see Cooper, *The Small Finds* (Appendix 2)). The glass is consistent with a late 1st century AD date (*ibid.*). The

distribution of glass from a single vessel across separate fills might suggest the rapid infilling of F2137 post-firing. The fills did not suggest a prolonged period of use for this feature.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2137	2138[P]	1.80 x 0.20 x 0.26m	Oval, moderate, flat	Firm, grey black sand and charcoal	-
	2139[S]			Friable/ loose, light yellow grey silty sand	-
	2140[T]			Friable/ firm, dark brown silty sand	Mid to late 1st C AD

Table 9: Phase 2 Hearth/ fire Pit F2137. Key: [P] = primary fill; [S] = secondary fill; [T] = tertiary fill

Phase 2 pottery kiln

8.23 Kiln S2633 (Grid Square B12) (Table 10; Fig. 17) had an oval, clay-lined central chamber (F2634) some 0.90m wide and 1.30m long (aligned *c.* N/S). The thickness of Clay Lining L2719 (=2859) varied between 0.06m and 0.38m on the walls of the central chamber which survived to a maximum height of approximately 0.96m (Plates 4-5). Organic temper, mostly comprising spelt wheat straw, was identified within samples of the kiln's lining during post-excavation analysis (see Summers, *Kiln S2633: The Charred Plant Remains* (Appendix 2)). Reddening of the clay lining was evident in places. The fired, clay floor of the central chamber (L2719=2859) was *c.* 0.16m thick and rose sharply at the centre to form Pedestal F2770. Grooves in the top of the pedestal may have originally supported rods (Plate 4). The central chamber of the kiln was respectively linked to northern (F2765) and southern (F2714) stoke holes by tapered, clay-lined Flues F2764 and F2713, each 0.25m in length (Plate 5). The clay 'arches' of both flues had collapsed. Each stoke hole had a flat base and steeply sloping sides. Reddening of Natural L2002 around the flues was evident in both stoke holes. The fills of the central chamber and stoke holes were representative of the kiln's last firing and post-abandonment backfilling/ infilling.

8.24 Central Chamber F2463 contained four consecutive fills. Primary Fill L2635 comprised a friable, dark brown grey silty sand and yielded mid to late 1st century AD pottery (39 sherds weighing 1090g), fired clay (347g) and trace amounts of burnt bone and flint; equivalent fills (L2715 and L2766) were present in the flues. These fills were thought to represent the last firing of the kiln. The secondary fill of the central chamber (L2636) comprised compacted collapse material from clay lining L2719 (=2859) (7497g total) and represented the post-abandonment dereliction of the kiln's superstructure. This material contained further mid to late 1st century AD pottery (39 sherds weighing 737g). Tertiary Fill L2637 comprised friable, dark brown grey silty sand, containing 21 sherds (187g) of mid to late 1st century AD pottery and fired clay (269g), most likely derived from underlying Fill L2636. L2637 was thought to represent a levelling event. Uppermost Fill L2638, a friable, mid yellow brown silty sand containing 13 sherds (82g) of mid to late 1st century AD pottery and fired clay (21g), represented the natural, post-abandonment infilling of this feature.

Feature/ Context	Description	Dimensions	Plan/ profile/ base
2634	Central firing chamber	1.30 x 0.90 x 0.96m	Oval, near vertical, flat
2635	Primary fill of Firing Chamber F2634. Friable, dark brown grey sandy silt	1.30 x 0.90 x 0.08m	-
2636	Secondary fill of Firing Chamber F2634	1.30 x 0.90 x 0.30	-
2637	Tertiary fill of Firing Chamber F2634	1.30 x 0.90 x 0.05	-
2638	Quaternary fill of Firing Chamber F2634. Friable, mid yellow brown silty sand	1.30 x 0.90 x 0.06m	-
2713	Southern flue	*c.* 0.25 x ? x 0.25m	Sub-rectangular, tapering, flat
2714	Southern stoke hole	1.10 x 0.80 x 0.44m	Oval, steep, flat
2715	Primary fill of Stoke Hole F2714 and Flue F2713. Friable, dark brown grey sandy silt	0.62 x 0.70 x 0.20m	-
2716	Secondary fill of Stoke Hole F2714 (collapsed clay lining). Compact, mixed brown yellow and red orange fired and unfired clay	0.40 x *c.* 0.40 x 0.14m	-
2717	Tertiary fill of Stoke Hole F2714. Friable, dark brown grey sandy silt	0.70 x *c.* 1.00 x 0.15m	-
2718	Quaternary fill of Stoke Hole F2714. Friable, mid brown yellow silty sand	1.10 x 0.80 x 0.07m	-
2719	Clay lining of Firing Chamber F2634. Compact, mid brown red fired clay. Same as F2858	-	-
2764	Northern flue	0.25 x ? x 0.30m	Sub-rectangular, tapering, flat
2765	Northern stoke hole	1.20 x 1.20 x 0.45m	Oval, steep, flat
2766	Primary fill of Stoke Hole F2765 and Flue F2764. Friable, dark brown grey sandy silt	0.90 x *c.* 1.00 x 0.17m	-
2767	Secondary fill of Stoke Hole F2765 and Flue F2764 (collapsed clay lining). Compact, mixed brown yellow and red orange fired and unfired clay	0.80 x *c.* 0.80 x 0.23m	-
2768	Tertiary fill of Stoke Hole F2765. Friable, dark brown grey sandy silt	1.05 x *c.* 1.00 x 0.19m	-
2769	Quaternary fill of Stoke Hole F2765. Friable, mid brown yellow silty sand	1.20 x 1.20 x 0.12m	-
2770	Fired clay pedestal in central base of Firing Chamber F2634. Compact, brown yellow clay	-	-
2783	Central kiln construction cut	Not recorded	Oval, steep, flat
2858	First of two contexts forming the core of Pedestal F2770. Compact, mid brown red fired clay. Same as L2719	? x ? x 0.12	-
2859	?Unfired clay lining in the base of Firing Chamber F2634, rising to form part of Pedestal F2770. Compact, mid yellow brown clay	? x ? x ?	-

Table 10: Kiln S2633

8.25 Stoke Hole F2714, to the south of the central chamber contained four consecutive fills. Primary Fill L2715 comprised a 'sooty' deposit contemporary with the final firing of the kiln and extended into Flue F2713. L2714 yielded 48 sherds (588g) of mid to late 1st century AD pottery and 135g of fired clay, thought to represent the partial collapse of the adjacent flue. Secondary Fill L2716 comprised further collapsed clay lining from Flue F2713 and yielded just four sherds (118g) of mid to late 1st century AD pottery. The tertiary fill of F2714 (L2718), a friable, dark

brown grey silty sand, was though to represent the deliberate backfilling of the stoke hole and yielded a comparatively large mid to late 1st century AD pottery assemblage (86 sherds weighing 1278g) and fired clay (165g). Uppermost Fill L2718, a friable, mid yellow brown silty sand containing seven sherds (43g) of mid to late 1st century AD pottery (plus trace burnt flint and fired clay), was thought to represent the natural, post-abandonment infilling of this feature.

8.26 Stoke Hole F2765 (Plate 5), to the north of the central chamber, contained four fills (L2766, L2767, L2768 and L2769 (listed primary to quaternary)) exactly equivalent to those encountered in Stoke Hole F2714 (above). The distribution of pottery between these fills was more equal however, with L2766, L2767 and L2768 yielding 31 sherds (422g), 42 sherds (1203g) and 42 sherds (740g) respectively. Uppermost Fill L2769 yielded just seven sherds (19g) of pottery. Other finds from F2765 comprise moderate quantities of fired clay (collapsed lining from adjacent Flue F2764) plus trace quantities of flint, burnt flint and charcoal.

8.27 Peachey (*The Prehistoric and Roman Pottery* (Appendix 2)) suggests that the pottery from Kiln S2633 (372 sherds weighing 6470g) and the broader Phase 2 site represents a limited range of products, numbering eight in total, possibly produced to serve the needs of a single settlement somewhere in the immediate landscape. The principle products appear to have been butt beakers, a high-capacity form of drinking vessel with parallels dating to the third quarter of the 1st century AD (*ibid.*). An early Romano-British date for Kiln S2633 is further supported by additional forms making up the kiln group (*ibid.*). Comparable double flue kilns, also of early Romano-British date, are known from Bourne Hill, Wherstead (Gill *et al.* 2001, 6-8, fig. 7), *c.* 29km to the south-west of Snape. The date of pottery production and associated activity at Snape also compares well with mid to late 1st century activity at Burgh (Martin 1988) and Colchester, particularly Sheepen (Niblett 1985) (after Peachey – *The Prehistoric and Roman Pottery* (Appendix 2)).

8.28 In order to more closely date the Phase 2 pottery assemblage and provide a *terminus ante quem* for the Kiln's use, two radiocarbon dates were obtained from its fills (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 2)). Charred cereal (*Triticum spelta*) glume bases from the primary fill of Central Firing Chamber F2634 (L2635A) produced a date of 56 calAD. This fill was thought to represent the last firing of the kiln and its date fits well with the mid to late 1st century AD character of the pottery being manufactured (see Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). A charred cereal grain (*Triticum dicoccum/ spelta*) from the secondary fill of Stoke Hole F2765 and Flue F2764 (L2767) produced a date of 74 calAD. The date of this post-abandonment fill indicates the disuse and dereliction of the kiln prior to the end of the 1st century AD and suggests that the kiln may have been short-lived (possibly a single use structure (see below)).

Phase 2 ?structural evidence

Post-Built Structure 1

8.29 Post-Built structure 1 (Table 11; Fig. 18) was located within the south-eastern Phase 2 enclosure (Grid Square E6-E7 and F6-F7). The structure comprised 17 individual features (including outliers) forming a roughly rectangular arrangement

measuring some 19m^2. It was dated solely on its location in respect to Phase 2 Boundary Ditch F2061 (=2231), *c.* 8.3m to the west, with which it was aligned. None of the features forming Post-Built structure 1 yielded artefacts and its function remains uncertain.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2078 ^{O}	2079	0.80 x 0.50 x 0.20m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2080	2081	0.40 x 0.40 x 0.15m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2082	2083	0.30 x 0.29 x 0.18m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2084	2085	0.40 x 0.40 x 0.12m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2086	2087	0.45 x 0.40 x 0.22m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2088	2089	0.45 x 0.40 x 0.22m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2090	2091	0.40 x 0.30 x 0.12m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2092	2093	0.40 x 0.40 x 0.15m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2094	2095	0.50 x 0.38 x 0.14m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2096	2097	1.30 x 0.68 x 0.24m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2098	2099	1.80 x 0.85 x 0.30m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2100	2101	0.60 x 0.40 x 0.23m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2102	2103	0.40 x 0.40 x 0.20m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2104	2105	0.45 x 0.45 x 0.20m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2106^O	2107	0.80 x 0.80 x 0.23m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2108	2109	0.40 x 0.40 x 0.20m	Sub-circular, moderate, concave	Friable, mid brown sand	-
2110	2111	0.40 x 0.40 x 0.20m	Sub-circular, moderate, concave	Friable, mid brown sand	-

Table 11: Post-Built Structure 1. Key: ^{O} = possible outlier

?Post-Built Structure 2

8.30 ?Post-Built Structure 2 was located within the north-western Phase 2 enclosure, *c.* 4m north of Boundary Ditch F2213 (Grid Square A10-B10). It measured approximately 44m^2. Of the features forming this 'structure' (Table 12; Fig. 19) four (Pits F2587, F2590 and F2597, and Posthole F2775) contained mid to late 1st century AD pottery. The secondary fill (L2728) of Pit F2726 yielded two sherds (3g) of (likely intrusive) Anglo-Saxon pottery; Phase 3 Post-Built Structure 3 was located *c.* 17m to the east. The greatest Romano-British pottery assemblage is from the secondary fill (L2589) of Pit F2587, and comprises 55 sherds weighing 317g. This feature also yielded 90g of CBM. Other notable finds from this group include fragments of triangular loom weights (1063g) from the primary fill of Pit F2590 (L2591). It is generally thought that this form of loom weight was used with late Iron Age and early Romano-British warp-weighted looms (Pool 1991, 406; after Peachey, *The Fired Clay and Ceramic Building Materials* (Appendix 2)).

8.31 The *c.* NW/SE alignment of ?Post-Built Structure 2 was at odds to the enclosure system within which it was located. Also, the nature and function of this 'structure' is difficult to interpret from the finds evidence. The loom weights from Pit F2590 are more likely to represent refuse disposal or deliberately placed packing material than evidence of the structure's primary function. This Pit was also the largest Phase 2 feature in this area and may not have formed a structural element of ?Post-Built Structure 2. Furthermore, although CBM was recovered from some features the combined assemblage is too small to suggest a structural component.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2587	2588[P]	0.53 x 0.74 x 0.30m	Sub-rectangular, gentle to near vertical, concave	Loose, light grey brown silty sand	-
	2589[S]			Loose, mid brown grey silty sand	Mid to late 1st C AD
2590	2591[P]	1.74 x 1.72 x 0.61m	Sub-circular, steep, concave	Loose, light grey brown silty sand	Mid to late 1st C AD
	2592[S]			Loose, mid brown grey silty sand	-
2595	2596	0.65 x 0.64 x 0.13	Sub-circular, steep, concave	Loose, mid brown grey silty sand	-
2597	2598[P]	1.08 x 0.94 x 0.32m	Sub-circular, steep, flat	Loose, mid yellow brown silty sand	-
	2599[S]			Loose, dark brown grey silty sand	Mid to late 1st C AD
	2600[T]			Loose, mid brown grey silty sand	-
2643	2644	0.41 x 0.41 x 0.20m	Circular, gentle, concave	Friable, mid grey to black silty sand	-
2645	2646	0.36 x 0.36 x 0.15m	Circular, near vertical, concave	Friable, mid grey to black silty sand	-
2647	2648	0.35 x 0.25 x 0.14m	Oval, near vertical, concave	Friable, mid grey to black silty sand	-
2726	2727[P]	0.95 x 0.65 x 0.35	Oval, moderate to steep, concave	Friable, mid grey brown silty sand	-
	2728[S]			Firm, dark brown to black silty sand	Early to middle Anglo-Saxon
2729	2730	0.40 x 0.40 x 0.40m	Sub-circular, steep, flat	Firm, dark brown to black silty sand	-
2773	2774	0.32 x 0.21 x 0.14m	Sub-circular, steep, concave	Friable, mid grey brown silty sand	-
2775	2776	0.31 x 0.26 x 0.15m	Sub-circular, steep, concave	Friable, mid grey brown silty sand	Mid to late 1st C AD
2798	2807	0.40 x 0.40 x 0.30m	Sub-circular, moderate, concave	Firm, mid grey brown silty sand	-
2799	2808	0.40 x 0.30 x 0.33m	Sub-circular, steep, concave	Friable, mid grey brown silty sand	-
2800	2809	0.40 x 0.30 x 0.20m	Sub-circular, moderate to steep, concave	Friable, mid grey brown silty sand	-

Table 12: ?Post-Built Structure 2. Key: [P] = primary fill; [S] = secondary fill; [T] = tertiary fill

Other Phase 2 features

8.32 The remaining Phase 2 features were dispersed across the excavated area and in most cases did not appear to conform to coherent feature 'clusters'. One

exception was a loose alignment of features (Table 13) running *c.* northwards from the eastern terminus of Phase 2 Boundary Ditch F2223 (Grid Square A5 and B5-B6) (Fig. 20). This alignment of features was tentatively assigned to the Romano-British period based on its apparent relationship with F2223 and two sherds (13g) of mid to late 1st century AD pottery from the fill of Pit F2181 (L2182). Most of these features were also morphologically similar and contained comparable fills. It is possible that this alignment represented a short fenceline or similar.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2179	2180	0.20 x 0.18 x 0.09m	Sub-Circular, steep, concave	Firm, light brown silty sand	-
2181	2182	0.41 x 0.37 x 0.33m	Sub-Circular, steep, concave	Firm, light grey brown silty sand	Mid to late 1st C AD
2183	2184	0.12 x 0.10 x 0.07m	Sub-Circular, steep, concave	Firm, light/ mid brown silty sand	-
2185	2186	0.14 x 0.11 x 0.07m	Sub-Circular, steep, concave	Firm, light brown silty sand	-
2191	2192	0.37 x 0.37 x 0.26m	Circular, vertical, concave	Firm, mid orange grey silty sand	-
2195	2196	0.40 x 0.40 x 0.45	Circular, vertical, concave	Firm, mid brown grey silty sand	-

Table 13: ?Phase 2 feature alignment

8.33 A second 'cluster' of Romano-British features was present in the south-western Phase 2 enclosure (Grid Square B7-C7) (Table 14; Fig. 21). The only datable material from these features comprises four sherds (158g) of mid to late 1st century AD pottery form the fill of Pit F2211 (L2212). However, all of these features were morphologically similar and contained identical fills. No other finds were present and the function(s) of these features remains uncertain.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2203	2204	0.36 x 0.44 x 0.16m	Sub-circular, steep, concave	Firm, mid grey brown silty sand	-
2205	2206	0.38 x 0.36 x 0.12m	Sub-circular, steep, concave	Firm, mid grey brown silty sand	-
2207	2208	0.38 x 0.30 x 0.09m	Sub-circular, steep, concave	Firm, mid grey brown silty sand	-
2209	2210	0.71 x 0.34 x 0.25m	Sub-circular, steep, concave	Firm, mid grey brown silty sand	-
2211	2212	0.36 x 0.32 x 0.06m	Sub-circular, steep, flat/ concave	Firm, mid grey brown silty sand	Mid to late 1st C AD

Table 14: Phase 2 feature cluster

8.34 The remaining Phase 2 features are presented in Table 15. Pit F2571 (Table 15; Fig. 22) was located *c.* 15m north of the above feature cluster in the south-western Phase 2 enclosure (Grid Square B8-C8). It was close to undated, intercutting Pits F2649 and F2651 although any relationship between these features remains uncertain. The single fill of Pit F2571 (L2572) yielded 13 sherds (190g) of mid to late 1st century AD pottery.

8.35 Two Phase 2 pits (F2259 and F2332) (Table 15; Fig. 22) were found close to Boundary Ditch F2061 (=2231) (Grid Square F12). The secondary fill (L2261) of Pit F2259 was truncated by Ditch F2061 (=2231). L2261 yielded six sherds (38g) of mid to late 1st century AD pottery which may be intrusive from the overlying ditch fill (L2062=2232 (Segment F)). Pit F2332 was adjacent to Ditch F2061 (=2231) in the north-eastern Phase 2 enclosure. The base of this shallow feature contained most

of a large globular jar in a fine to medium flint-tempered fabric (Plate 6). The form of this vessel was not paralleled in Kiln S2663 (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). Cross joining fragments of the same vessel were found in Ditch F2300, less than 2m to the south. Although thought to have been *in situ*, the downward facing part of the jar was found to have suffered some manner of post-depositional disturbance, possibly bioturbation.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2259	2260[P]	1.24+ x 1.06 x 0.45m	Sub-circular, steep, concave	Friable, mid yellow brown silty sand	-
	2261[S]			Friable, mid brown grey silty sand	Mid to late 1st C AD
2332	2333	1.04 x 0.82 x 0.36m	Sub-circular, steep, flat	Firm, mid grey brown silty sand	Mid to late 1st C AD
2571	2572	1.17 x 0.94 x 0.32m	Sub-rectangular, steep, flat	Loose, mid grey brown silty sand	Mid to late 1st C AD
2593	2594	0.94 x 0.41 x 0.24m	Sub-circular, steep, concave	Loose, mid brown grey sandy silt	Mid to late 1st C AD
2621	2622	0.37 x 0.35 x 0.29m	Sub-circular, steep, concave	Loose, light brown grey silty sand	Mid to late 1st C AD
2709	2710	0.26 x 0.26 x 0.17m	Circular, steep, concave	Friable, mid grey to black silty sand	Mid to late 1st C AD
2854	2855	0.20 x 0.17 x 0.15m	Sub-circular, steep, concave	Friable, dark brown grey silty sand	Mid to late 1st C AD

Table 15: Remaining Phase 2 features. Key: [P] = primary fill; [S] = secondary fill

8.36 Phase 2 Pit F2593 (Table 15; Fig. 22) was located *c.* 1.6m from the eastern corner of ?Post-Built Structure 2 in the north-western enclosure (Grid Square B10). However, it did not appear to form part of this possible structure. The single fill of this pit (L2594) contained one sherd (5g) of mid to late 1st century AD pottery.

8.37 Postholes F2621 (Grid Square A12), F2709 and F2854 (Grid Square B12) (Table 16) were intermingled with Phase 1 features in the area of Kiln S2633. These features were not aligned and their function(s) remains uncertain. They yielded a total of four sherds (84g) of mid to late 1st century AD pottery.

Phase 3: early to middle Anglo-Saxon (AD 450-850)

Introduction

8.38 Phase 3 at the site (Fig. 23) saw the establishing of an early to middle Anglo-Saxon settlement comprising three *Grubenhäuser* or sunken-featured buildings (SFBs) and a single post-built structure within the excavated area. Two burnt flint pits, possibly indicating some form of industrial activity, were also present to the south of the structures. Fragments of two spindle whorls from the primary fill of SFB 1 suggest spinning at the site, while assessment of environmental samples from two of these buildings suggests domestic activity. There was no temporal 'crossover' between Phase 3 activity and earlier (Phase 2; Romano-British) or later (Phase 4; medieval) periods at the site.

Phase 3 structural evidence

Post-Built Structure 3

8.39 Post-Built Structure 3 comprised a sub-square setting of 32 pits and postholes (Table 16; Fig. 24; Plate 7), *c.* 4.20m north of Phase 2 Ditch F2213 (Grid Square C10). Average feature measurements were 0.35 x 0.32 x 0.20m. The shallow depth of many of the features forming this structure suggests that they had been truncated, possibly by medieval or later plough action. Three of the features forming this structure (Pit F2604 and Postholes F2532 and F2556) were outliers of the main 'cluster'. The structure was similar in size and plan to other regional examples, including the 'halls' at West Stow, Suffolk (West 1971, 1985). Rectangular 'hall'-type structures and 'miscellaneous' post-built structures were also excavated at the Flixton Quarry settlement, Suffolk (after Boulter and Walton Rogers 2012, 269). Like the Snape example, those at Flixton Quarry and West Stow were also found in close association with SFBs.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2508	2509	0.34 x 0.30 x 0.23m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2510	2511	0.32 x 0.32 x 0.20m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2512	2513	0.50 x 0.41 x 0.25m	Sub-circular, steep, flat	Friable, mid orange brown silty sand	-
2514	2515	0.50 x 0.46 x 0.17m	Sub-circular, steep, concave	Friable, mid orange brown silty sand	-
2516	2517	0.46 x 0.40 x 0.23m	Sub-circular, steep, concave	Friable, mid orange brown silty sand	-
2518	2519	0.36 x 0.34 x 0.21m	Sub-circular, steep, flat	Friable, mid orange brown silty sand	-
2520	2521	0.25 x 0.24 x 0.19m	Sub-circular, steep, flat	Friable, mid orange brown silty sand	-
2522	2523	0.16 x 0.16 x 0.06m	Circular, moderate, concave	Friable, mid orange brown silty sand	-
2524	2525	0.24 x 0.16 x 0.10m	Sub-oval, steep, flat	Friable, mid orange brown silty sand	-
2526	2527	0.13 x 0.13 x 0.07m	Sub-circular, steep, concave	Friable, mid orange brown silty sand	-
2528	2529	0.38 x 0.34 x 0.19m	Sub-circular, steep, flat	Friable, mid orange brown silty sand	-
2530	2531	0.30 x 0.30 x 0.40	Circular, steep, flat	Friable, mid orange brown silty sand	-
2532 [O]	2533	0.16 x 0.13 x 0.10m	Circular, moderate, concave	Friable, mid orange brown silty sand	-
2534	2535	0.14 x 0.14 x 0.07m	Sub-circular, moderate, concave	Friable, mid orange brown silty sand	-
2536	2537	0.62 x 0.36 x 0.37m	Sub-oval, steep, flat	Friable, mid orange brown silty sand	Early to middle Anglo-Saxon
2538	2539	0.67 x 0.67 x 0.30m	Circular, steep, flat	Friable, mid orange brown silty sand	Mid to late 1st C AD
2540	2541	0.32 x 0.26 x 0.25m	Sub-oval, steep, concave	Friable, mid orange brown silty sand	-
2542	2543	0.25 x 0.25 x 0.17m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2544	2545	0.39 x 0.36 x 0.25m	Circular, steep, flat	Friable, mid orange brown silty sand	-

2546	2547	0.35 x 0.28 x 0.15m	Sub-circular, moderate, concave	Friable, mid orange brown silty sand	-
2548	2549	0.36 x 0.24 x 0.20m	Sub-oval, moderate, flat	Friable, mid orange brown silty sand	-
2550	2551	0.42 x 0.42 x 0.32m	Circular, steep, concave	Friable, mid orange brown silty sand	Early to middle Anglo-Saxon
2552	2553	0.36 x 0.35 x 0.19m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2554	2555	0.36 x 0.36 x 0.25m	Circular, steep, flat	Friable, mid orange brown silty sand	Mid to late 1st C AD
2556 O	2557	0.22 x 0.22 x 0.20m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2558	2559	0.20 x 0.18 x 0.09m	Circular, moderate, concave	Friable, mid orange brown silty sand	-
2560	2561	0.12 x 0.12 x 0.07m	Circular, moderate, concave	Friable, mid orange brown silty sand	-
2562	2563	0.20 x 0.20 x 0.10m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2564	2565	0.35 x 0.35 x 0.16	Circular, moderate, concave	Friable, mid orange brown silty sand	-
2566	2567	0.24 x 0.24 x 0.10	Sub-circular, moderate, flat	Friable, mid orange brown silty sand	-
2568	2569 P	0.90 x 0.90 x 0.55m	Circular, near-vertical, flat	Loose, dark grey brown sandy silt	Early to middle Anglo-Saxon
	2570 S			Loose, light grey brown silty sand	Early to middle Anglo-Saxon
2604 O	2605	0.78 x 0.54 x 0.24m	Sub-circular, steep, concave	Loose, mid grey brown silty sand	-

Table 16: Post-Built Structure 3. Key: P = primary fill; S = secondary fill; O = possible outlier

8.40 The surviving layout of Post-Built Structure 3 (Fig. 24) suggested three possible entrances. The first of these was a *c.* 1.8m gap in the western 'wall' between Postholes F2512 and F2514. Postholes F2562 and F2564 to the west of this gap may have supported a 'porch' of some description. The second possible entrance was between Postholes F2542 and F2546 in the north-eastern corner of the structure (measuring *c.* 1.6m), while the third was in the southern 'wall', either between Postholes F2528 and F2552 or F2530 and F2554 (measuring *c.* 2.3m). Large, steep-sided Posthole F2538 (300mm deep) may have been related in some way to F2528. Two possible entrances were recorded for Hall 1 at West Stow (West 1971, 1985), respectively in the eastern and western walls of the structure, though neither included evidence of a porch. The interior of Post-Built Structure 3 at Snape did not include clear evidence of internal partitioning or any form of occupation deposit. It is possible therefore that it represented an ancillary or storage structure, perhaps subsidiary to the neighbouring SFBs.

8.41 Finds associated with Post-Built Structure 3 comprise just 16 sherds (120g) of early to middle Anglo-Saxon pottery and six sherds (12g) of mid to late 1st century AD pottery. The latter represents residual Romano-British material from Postholes F2554 and F2538, most probably derived from earlier activity within the north-western Phase 2 enclosure.

The sunken-featured buildings

8.42 Recording of the SFBs followed conventions used in the publications for West Stow (West 1985), Pennylands (Williams 1993), Hartigans (*ibid.*), and more recently, Dernford Farm (Newton forthcoming):

Key: a: maximum overall length b: distance between the gable post centres
c: mean width d: depth below stripped surface

8.43 Summary tables are presented for each SFB; the individual features forming these structures are tabulated separately.

Sunken-Featured Building 1

Type	?Two-post
Dimensions	a: 3.30m b: 3.15m c: 2.57m d: 0.15m
Area	8.48m^2
Form	Two postholes (F2577 and F2579) located centrally on east and west sides; additional postholes (F2581 and F2583) present at the south-eastern and south-western corners
Orientation	East to west
Grid square	D10-E10

Table 17: Summary of SFB 1

8.44 SFB 1 (Tables 17 and 18; Figs. 25-26; Plate 8) was located in the northern half of the site close to the southern edge of the *c.* 16m AOD plateau, some 6.5m to the west of SFB 2 (below) (Grid Squares D10-E10). This building was originally identified and sample-excavated during the evaluation (Lichtenstein 2013). The surviving elements of this structure comprised sub-rectangular Cut F2575 (3.30 x 2.75 x 0.15m) and Postholes F2577, F2579, F2581 and F2583. The postholes appeared contemporary with F2575 and probably housed upright structural timbers; it is possible that posts within F2577 and F2579 supported a ridge pole forming the apex of the roof. Average posthole measurements were 0.34 x 0.31 x 0.42m. The primary fill of Sunken Feature F2575 (L2576; equivalent to L1020 recorded during the evaluation) overlay all of the posthole fills, suggesting that any remaining timbers had been removed prior to the abandonment/ backfilling of the SFB. Fill L2576 yielded 22 sherds (377g) of early to middle Anglo-Saxon pottery, two spindle whorl fragments (SFs 1 and 13; see Cooper, *The Small Finds* (Appendix 2); Fig. 39), fired clay (285g) and slag (109g). The fired clay from this feature comprised residual Romano-British material derived from 1st century AD triangular loom weights (Peachey, *The Fired Clay and Ceramic Building Materials* (Appendix 2)). The distribution of finds was consistent throughout L2576 and did not suggest the original presence of raised floorboards; if present, these might have resulted in the accumulation of a homogenous, 'sifted' material towards the base of Cut F2575. However, the base of Sunken Feature F2575 displayed no signs of trampling associated with the building's primary use.

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2575	2576[P]	3.30 x 2.75 x 0.15m	Sub-rectangular, steep, flat	Firm, dark grey brown sandy silt	Early to middle Anglo-Saxon
	2875[S]			Firm, dark grey brown silty sand	-
2577	2578	0.35 x 0.35 x 0.58m	Circular, near vertical, flat	Firm, mid grey brown sandy silt	-
2579	2580	0.35 x 0.33 x 0.56m	Circular, near vertical, flat	Firm, mid grey brown sandy silt	-
2581	2582	0.24 x 0.24 x 0.25m	Circular, steep, concave	Friable, mid grey brown sandy silt	-
2583	2584	0.40 x 0.30 x 0.28m	Oval, steep, concave	Friable, mid grey brown sandy silt	-

Table 18: SFB 1. Key: [P] = primary fill; [S] = secondary fill

8.45 The upper fill of Sunken Feature F2575 (L2875) was a firm, dark brown/ grey silty sand with sparse charcoal (*c.* 10%; <2mm). This material contained no finds and probably represented the post-abandonment infilling of the building. This fill was equal to L1078, recorded during the evaluation (Lichtenstein 2013), and like L1078 was not drawn. Environmental sampling of the fills of SFB 1 yielded evidence of a broad-based agricultural economy (Summers, *The Charred Plant Remains* (Appendix 2)). Barley (probably a hulled, six-row variety) was the most abundant cereal taxa present, followed by wheat (mostly free-threshing), oat and rye (*ibid.*). The latter is well suited to cultivation on the local sandy soils and may represent a fodder crop (*ibid.*). The remains of pulses were also present in samples from this structure, while a fragment of plum/ cherry stone from primary Fill L2576 (=1020) might represent a gathered foodstuff.

Sunken-Featured Building 2

Type	Two-post
Dimensions	a: 3.50m b: 3.60m c: 2.58m d: 0.30m
Area	9.03m^2
Form	Two postholes (F2577 and F2579) located centrally on east and west sides
Orientation	East to west
Grid square	E10-F10

Table 19: Summary of SFB 2

8.46 SFB 2 (Tables 19 and 20; Figs. 25-26; Plate 9) was located *c.* 6.5m to the east of SFB 1 (above) (Grid Squares E10-F10). The closeness of these structures suggests the possibility that one superseded the other; this cannot be proven however. The surviving elements of this structure comprised sub-rectangular Cut F2235 (3.50 x 2.90 x 0.30m) and Postholes F2233 and F2251. The postholes were arranged centrally along the short sides of the sunken feature and probably housed timbers supporting a ridge pole that formed the apex of the roof. Average posthole measurements were 0.53 x 0.40 x 0.36m. Three 'outlying' postholes (F2268, F2270 and F2362) formed a sub-square arrangement with Posthole F2251 on the eastern edge of SFB 2 and may have represented a lean-to structure or 'porch' of some description at the structure's south-eastern corner (measuring *c.* 2.50m^2). Both fills of Sunken Feature F2235 had formed around *in situ* posts. Primary Fill L2237 was compositionally similar to the underlying natural geology (Table 20; Plate 9) and yielded just one sherd (7g) of early to middle Anglo-Saxon pottery and 4g of animal bone. The scarcity of finds from this homogenous fill might suggest the original presence of raised floorboards through which material was 'sifted'. This

interpretation is further supported by the lack of 'trampling' recorded in the base of F2235 and the greater density of finds from overlying Fill L2236, including 12 sherds (236g) of early to middle Anglo-Saxon pottery, 829g of residual Roman CBM, 191g of fired clay, 27g of animal bone and one fragment (2g) of residual struck flint. Two fragments of Samian (SF6 and SF7), weighing 56g and 57g respectively, were also recovered from this layer and may represent curated material (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2235	2236[S]	3.50 x 2.90 x 0.30m	Sub-rectangular, moderate, flat	Friable/ firm, dark brown silty sand	Early to middle Anglo-Saxon
	2237[P]			Friable, light orange brown sand	Early to middle Anglo-Saxon
2233	2234	0.35 x 0.30 x 0.25m	Oval, steep, concave	Firm, dark brown silty sand	-
2251	2252	0.70 x 0.50 x 0.46m	Sub-circular, steep, concave	Friable, light orange brown silty sand	-

Table 20: SFB 2. Key: [P] = primary fill; [S] = secondary fill

Sunken-Featured Building 3

Type	Six-post
Dimensions	a: 4.30m b: 3.90m c: 3.45m d: 0.51m
Area	14.84m^2
Form	Two postholes (F2415 and F2417) located centrally on east and west sides; corner posts at the north-west (F2447, F2449 and F2453), south-west (F2419), north-east (F2413 and F2451) and south-east (F2455) corners; beam slots (F2411 and F2470) cut into the north and south sides; peripheral postholes (F2398 and F2400) forming a ?porch at the south-east corner; linear arrangement of stakeholes (F2458, F2460, F2462, F2464 and F2466) running east to west across the base
Orientation	East to west
Grid square	E13-F13

Table 21: Summary of SFB 3

8.47 SFB 3 (Tables 21 and 22; Figs. 27-28; Plates 10-12) was located *c.* 21m to the north of SFB 2 within a north-eastern extension of the main excavation area (Grid Squares E13-F13). This area occupied a natural plateau in the local topography (*c.* 16m AOD), overlooking the surrounding landscape. The surviving elements of SFB 3 were more numerous than SFBs 1 and 2 (above), comprising Cut F2406, Beam Slots F2411 and F2470 and Postholes/ Stakeholes F2398, F2400, F2413, F2415, F2417, F2419, F2447, F2449, F2451, F2453, F2455, F2458, F2460, F2462, F2464 and F2466. Sunken Feature F2406 (4.30 x 3.45 x 0.51m) was sub-rectangular in plan with clearly 'stepped', steep to near vertical sides and a flat base. This feature truncated Phase 2 Ditch F2061 (=2231) and undated Ditch F2396. A further undated ditch (F2402) was present to the north-east of SFB 3. Large Postholes F2415 and F2417 were present at roughly central points along the eastern and western edges of F2406 and probably housed structural timbers supporting a ridge pole that formed the apex of the roof; on average these features measured 0.76 x 0.53 x 1.03m. The sides of these postholes appeared 'disturbed', perhaps by the post-abandonment removal of timbers.

8.48 Corner posts, perhaps supporting the base of the roofline or horizontal crossbeams in the gable ends[4], were evidenced by paired postholes in the north-

[4] Based on a reconstruction drawing in Heidinga and Offenberg (1992)

west (F2447 and F2449) and north-east (F2413 and F2451) corners of the structure and single postholes in the south-west (F2419) and south-east (F2455) corners. A third posthole (F2453) in the north-west corner may have represented an additional or repositioned post. Average corner posthole dimensions were 0.28 x 0.23 x 0.47m. The sides of Posthole F2455 showed signs of disturbance similar to that recorded in large Postholes F2415 and F2417 (above).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2398	2399	0.22 x 0.22 x 0.12m	Circular, steep, concave	Friable, mid orange brown silty sand	-
2400	2401	0.46 x 0.45 x 0.50m	Circular, steep, flat	Friable, mid orange brown silty sand	-
2406	2457[C]	4.30 x 3.45 x 0.51m	Sub-rectangular, steep to near vertical, flat	Friable, light yellow grey sand	-
	2407[P]			Compact, dark brown grey sandy silt	Early to middle Anglo-Saxon
	2408[S]			Compact, dark brown grey silty sand	Early to middle Anglo-Saxon
2411	2412	0.40 x 0.40 x 0.20m	Sub-rectangular, steep to near vertical, flat	Friable, mid yellow brown silty sand	-
2413	2414	0.21 x 0.21 x 0.45m	Circular, near vertical concave	Friable, mid yellow brown silty sand	-
2415	2416	0.76 x 0.60 x 1.13m	Oval, steep to near vertical, flat	Friable, mid yellow brown silty sand	-
2417	2418	0.76 x 0.46 x 0.93m	Circular, steep to near vertical, flat	Friable, mid yellow brown silty sand	-
2419	2420	0.30 x 0.22 x 0.65m	Oval, near vertical, flat	Friable, mid yellow brown silty sand	-
2447	2448	0.21 x 0.21 x 0.35m	Circular, near vertical, concave	Friable, mid yellow brown silty sand	-
2449	2450	0.21 x 0.20 x 0.43m	Circular, near vertical, concave	Friable, mid yellow brown silty sand	-
2451	2452	0.21 x 0.22 x 0.35m	Circular, near vertical, concave	Friable, mid yellow brown silty sand	-
2453	2454	0.22 x 0.21 x 0.31m	Circular, near vertical, concave	Friable, mid yellow brown silty sand	-
2455	2456	0.60 x 0.35 x 0.75m	Sub-circular, steep, flat	Friable, mid yellow brown silty sand	-
2458	2459	0.18 x 0.18 x 0.12m	Circular, steep, concave	Friable, mid yellow brown silty sand	-
2460	2461	0.14 x 0.13 x 0.10m	Circular, steep, concave	Friable, mid yellow brown silty sand	-
2462	2463	0.10 x 0.10 x 0.10m	Circular, steep, concave	Friable, mid yellow brown silty sand	-
2464	2465	0.12 x 0.11 x 0.10m	Circular, steep, concave	Friable, mid yellow brown silty sand	Early to middle Anglo-Saxon
2466	2467	0.16 x 0.15 x 0.10m	Circular, steep, concave	Friable, mid yellow brown silty sand	-
2470	2471	0.30 x 0.26 x 0.20m	Rectangular, near vertical, flat	Rectangular, near vertical, flat	-

Table 22: SFB 3. Key: [C] = colluvium; [P] = primary fill; [S] = secondary fill

8.49 A pair of outlying postholes (F2398 and F2400) was present to the east of SFB 3 and formed a square arrangement, *c.* 1.95m^2, with Postholes F2415 and F2455. This mirrored a similar arrangement of postholes in SFB 2 (above) and may have supported an external 'porch' above the building's entrance.

8.50 A single row of four stakeholes (F2458, F2460, F2462 and F2466) was present aligned E/W across the northern interior of Sunken Feature F2406. These truncated the base of F2406 and appeared contemporary with the building's

construction. A shallow, discrete ?colluvial deposit (L2457) had formed around the (*in situ*) stakes housed by these features. Stakehole F2464, some 0.80m further east, may have been an outlier of this alignment.

8.51 Corresponding Beam Slots F2411 and F2470 were recorded cutting the northern and southern edges of Sunken Feature F2406. These may have held a single timber beam running horizontally (N/S) across the building, in turn supporting part of a raised plank floor. Based on the size of these slots the beam could have measured *c.* 0.26 x 0.20 x 3.60m (maximum). The slots had been cut to the level of a clearly defined 'step' in the sides of F2406, evident to a greater or lesser extent around all edges of the feature (Figs. 27-28; Plate 12). It is possible that this step supported further floor beams for which no corresponding slots survived. The line of stakeholes cutting the base of F2406 (above) may have housed additional floor supports.

8.52 The primary fill of SFB 3 (L2407) comprised a 'dumped' (possibly redeposited) midden-type material. Tipper (2004, 107, 153, 184) suggests that most SFB fills comprise secondary or tertiary deposits resulting from the rapid, post-abandonment infilling of these features with material from surface middens. L2407 survived to a maximum depth of 0.38m and overlay all associated posthole/ stakehole fills. The lack of weathering evident in the base of Cut F2406 suggests that this material had been used to backfill the structure shortly after its abandonment and the removal of any reusable timbers. This scenario of rapid, post-abandonment backfilling (as opposed to a protracted process of natural infilling) is demonstrated by a general lack of erosion to the sides of SFBs and the absence of natural silting in the base of the sunken features (Tipper 2004, 106). Finds from L2407 include 110 sherds (2282g) of early to middle Anglo-Saxon pottery, residual Roman CBM (3751g), animal bone (2996g), residual 1st century AD loom weight fragments (1626g) and slag (606g). Of particular note are a fragment of dressed stone (SF8; Fig. 39), possibly broken from a larger piece of masonry, a complete but fragmentary antler tool handle (SF9; Fig 39), perhaps from an awl or blade, and a complete cast, plano-convex copper alloy bar mount (Cooper, *The Small Finds* (Appendix 2)). The animal bone assemblage from L2407 is the largest from the site and one of only two assemblages (both from Phase 3) deemed worthy of full recording and analysis (see Cussans, *The Animal Bone* (Appendix 2)). A dominance of domestic mammals (cattle, sheep/ goat and pig) was noted in the Phase 3 assemblage, indicating a mixed husbandry regime typical of the period in East Anglia (*ibid*.).

8.53 L2407 was sealed by secondary Fill L2408. This material survived to a maximum depth of 0.14m and was compositionally similar to L2407. Finds from both fills are similar although those from L2408 are fewer in number. L2408 yielded just 25 sherds (306g) of early to middle Anglo-Saxon pottery; notable finds are lacking from this layer. L2408 is thought to have represented a natural, post-abandonment accumulation of material in the top of F2406, possibly mixed with the underlying 'midden' material. Column samples through Fills L2407 and L2408 were taken on site for soil micromorphological analysis (Plate 11). However, upon subsequent examination, these samples were deemed non-viable, chiefly due to the dry, sandy nature of the sampled material, which failed to hold its structure within the monolith. Nonetheless, like SFB 1, environmental sampling from this building

yielded evidence of a broad-based agricultural economy (Summers, *The Charred Plant Remains* (Appendix 2)).

Dating of the SFBs

8.54 Radiocarbon dating of the basal fills of the SFB's had the potential to date their infilling (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 2)). Suitable material for dating (charred cereal grains (*Hordeum* sp. and *Triticum aestivum/ compactum* type)) was present in environmental samples from the basal fills of SFBs 1 (L2576 (A and B)) and 3 (L2407 (B and D)); no secure, datable material was present in samples from SFB 2. These primary fills produced a combined date range of 474-575 calAD (*ibid.*), although a date in the latter part of this range is most likely; Fills L2576D (SFB 1) and L2407D (SFB 3) were both dated to 540 calAD. This mid-6th century date broadly correlates with the use of the Phase 3 burnt flint pits (below) and is contemporary with the use of Snape Anglo-Saxon Cemetery (HER SNP 007; Filmer-Sankey and Pestell 2001).

Burnt flint pits

8.55 Two Phase 3 pits (F2058 (Grid Square F7) and F2365 (Grid Square E8); Table 23), each containing large quantities of burnt flint and charcoal, were found in the central eastern area of the excavation (Figs. 29-30; Plates 13-14). The pits were spaced some 16m apart and were similar in size, plan and profile (Table 23). Both were aligned approximately N/S. The primary fill of Pit F2058 (L2059) yielded two sherds (99g) of mid to late 1st century AD pottery, while Pit F2365 was devoid of datable material. Despite the Romano-British spot date from Pit F2058, these pits were closely comparable to regional Anglo-Saxon examples, including a scientifically dated example from Flixton (Boulter and Walton Rogers 2012, 94-5, fig. 6.3).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2058	2059[S]	2.00 x 1.15 x 0.58m	Sub-rectangular, steep, flat	Loose, light yellow grey silty sand	-
	2060[P]			Loose, dark brown black silty sand and charcoal	Mid to late 1st C AD
2365	2366[P]	1.61 x 1.28 x 0.29m	Sub-rectangular, steep, flat	Firm, black charcoal	-
	2367[S]			Firm, mid grey brown sand	-
	2368[T]			Friable, black charcoal and sand	-
	2369[Q]			Friable, mid grey brown silty sand	-

Table 23: Phase 3 burnt flint pits. Key: [P] = primary fill; [S] = secondary fill; [T] = tertiary fill; [Q] = quaternary fill

8.56 Samples of charcoal from primary Fills L2060C (F2058; *Quercus* sp.) and L2366 (F2365; *Corylus* sp.) were submitted for radiocarbon dating. Pit F2058 was dated to 554 calAD, in stark contrast to the Roman pottery from its basal fill, while Pit F2365 produced a date of 538 cal AD. However, the un-calibrated radiocarbon ages of these features (1564±26 BP and 1597±26 BP respectively) demonstrate a possible crossover in their use of some 19 years.

Other Phase 3 features

8.57 Two further Phase 3 features (Pits F2238 (Grid Square E11) and F2611 (Grid Square C12)) were identified in the north-eastern area of the site (Table 24; Fig. 31). Both were comparatively isolated and both yielded early to middle Anglo-Saxon pottery. Pit F2611 (L2612) yielded the largest assemblage, comprising 26 sherds (433g). Two sherds (3g) of Anglo-Saxon pottery were also recovered from the uppermost fill of Pit F2726 (Grid Square A10; Table 12), although were probably intrusive as this feature appeared to form part of Phase 2 ?Post-Built Structure 2 (above). The primary function(s) of Pits F2238 and F2611 is unclear although they seem to have been backfilled with domestic refuse. Pit F2238 yielded one of the richest animal bone assemblages from the site, comprising 263g of material (Cussans, *The Animal Bone* (Appendix 2)); it should be noted that, overall, bone preservation at the site was poor (*ibid*.).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2238	2239[S]	1.71 x 1.21 x 0.42m	Circular, near vertical, flat	Friable, dark grey brown silty sand	Early to middle Anglo-Saxon
	2242[P]			Friable, mid yellow brown silty sand	-
2611	2612	0.61 x 0.58 x 0.17m	Sub-circular, steep, concave	Loose, mid brown grey silty sand	-

Table 24: Other Phase 3 features. Key: [P] = primary fill; [S] = secondary fill

Phase 4: medieval (12th to 14th century AD)

8.58 A single, isolated medieval pit (F2133; Table 25) of unknown use was found close to the eastern edge of the site (Grid Square F5; Figs. 32-33), a short distance north of Phase 2 Ditch F2015. The single fill of this feature (L2134) yielded one sherd (14g) of 12th to 14th century AD pottery (Thompson 2013).

Feature	Context	Dimensions	Plan/ profile/ base	Fill	Spot date
2133	2134	2.40 x 1.90 x 0.28	Sub-rectangular, steep, concave	Friable, light brown grey silty sand	12th to 14th C AD

Table 25: Phase 4 Pit F2133

Phase 5: Post-medieval (AD 1500-1750)

8.59 Phase 5 activity was represented by Pits F2019 (Grid Square E5) and F2120 (Grid Square C3) (Table 26; Figs. 32-33). Each contained a single sherd of post-medieval pottery (weighing 40g and 4g respectively). It is possible that the pottery from these features is intrusive, incorporated into the fills through past agricultural activity or other disturbance. Pit F2120 was close to Phase 1 Pits F2126 and F2128 and may tentatively have been of the same date; F2019 was comparatively isolated.

8.60 Subsoil L2001 yielded 19 sherds (125g) of post-medieval pottery (Thompson 2013), possibly related to local dwellings or transported to the site with manure.

Feature	Context	Dimensions	Plan/ profile	Fill	Spot date
2019	2020	2.38 x 0.82 x 0.21m	Sub-rectangular, gentle, concave	Firm, mid grey brown silty sand	Post-medieval
2120	2121	0.46 x 0.40 x 0.24m	Sub-rectangular, steep, concave	Firm, mid yellow brown silty sand	Post-medieval

Table 26: Phase 5 features

Phase 6: early modern/ modern (AD 1750-1900+)

8.61 A single un-numbered modern ?plough mark was recorded truncating the fill of Phase 2 Ditch F2213 (L2214A; Grid Square E9-F9) (Fig. 32). The identification and dating of this feature remains uncertain however; its single fill was devoid of finds and its orientation did not respect the existing field boundaries.

Phase 7: undated

8.62 Full tabulation (Microsoft Excel spreadsheet) of the undated features (Figs. 32-35) is included on the attached data CD (Appendix 1). Numerous undated features were distributed across the site but, largely, could not be confidently assigned to one of the six dated phases due to a lack of stratigraphic and/ or finds evidence. This was no more the case than in the vicinity of Iron Age Activity Area 1 and Romano-British Kiln S2633, where numerous undated features were identified which probably belonged to either Phases 1 or 2, but could not be securely assigned to either. A possible four-post 'granary' structure, tentatively belonging to Phase 1 (comprising undated Postholes F2423, F2425, F2427 and F2429) was identified towards the centre of the site although this interpretation remains tentative at best.

9 CONFIDENCE RATING

9.1 It is not felt that any factors inhibited the recognition or recording of archaeological features and finds.

10 DISCUSSION OF RESULTS

Summary

10.1 Datable archaeological features at Snape were chiefly assigned to one of three phases: the early Iron Age (Phase 1), Romano-British period (Phase 2) and early to middle Anglo-Saxon period (Phase 3). Evidence from these phases is discussed below. Phases 4-6 (medieval, post-medieval and early modern/ modern) were represented by few features of little note (outlined above). A single feature (Pit F2478) yielded six early Bronze Age thumbnail scrapers (Peachey, *The Struck Flint* (Appendix 2)), though no Bronze Age phase was interpreted based on this minimal evidence. The remainder of the flint assemblage comprises residual material from later features (*ibid*.). No continuity was apparent between phases; datable evidence demonstrated discontinuous on-site activity. However, activity in the broader area is likely to have been largely continuous from the Bronze Age onwards.

Phase 1: early Iron Age (750-400 BC)

10.2 The early Iron Age features, although relatively plentiful, did not present a clear picture of prehistoric activity at the site. Neither of the two principal 'activity areas', encompassing 39 and 13 features respectively, were associated with clear structural evidence, although those within Phase 1 Activity Area 1 yielded significant groups of securely stratified Iron Age pottery in the West Harling and Darmsden ceramic styles. Lesser groups in the same tradition were recovered from features in Phase 1 Activity Area 2. The pottery from this phase is notable as few stratified, early Iron Age assemblages are known from Suffolk (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). The quantification and reporting of this assemblage (*ibid.*) therefore makes an important contribution to the known regional corpus of such groups. The radiocarbon dating of Pit F2662 produced an erroneous middle to late Bronze Age date range, however, at odds to the abundant pottery from this feature (Table 46). The only other find of note from this phase is a clay spindle whorl of typical Iron Age globular form (SF14; Fig. 39) (Cooper, *The Small Finds* (Appendix 2)).

10.3 A tentative 'squared' arrangement of seven pits in Phase 1 Activity Area 2 (F2290, F2294, F2298, F2306, F2312, F2314 and F2316) may have been structural, although variation in the morphology and fills of these features would tend to contradict this.

10.4 It is possible that the excavated early Iron Age evidence represents 'marginal' occupation activity, peripheral to a 'core' of settlement elsewhere in the immediate landscape. Certainly, the recovered pottery and spindle whorl are indicative of domestic activity on some scale. However, documented early Iron Age evidence from the Snape area is extremely scarce and the location of any core 'settlement' *per se* remains unknown. Early Iron Age HER records within 2km of the current site comprise only a scatter of 10 struck flints a single sherd of possible Iron Age pottery (HER TUN 013) identified by fieldwalking (centred on NGR TM 3838 5687), and further fieldwalking finds (a soil mark, one small pit and Iron Age pottery) found in the area of Swanley House/ Swanley Field (HER SNP 001; HER SNP 005), over 70m NNW of the current site.

10.5 The presence of Phase 1 ?Grain Storage Pits F2683, F2834, F2837 and F2841 might suggest the existence of nearby sedentary habitations associated with an early Iron Age arable landscape. However, the three clustered examples (F2834, F2837 and F2841) from this phase were uncharacteristically small for storage purposes and none of these features yielded an environmental sample worthy of full analysis (Summers 2013). Nonetheless, hulled barley is abundant within the Phase 1 plant assemblage and potential arable weeds are also present (Summers, *The Charred Plant Remains* (Appendix 2)). Lesser quantities of wheat and a single (possible) rye grain were also recovered from early Iron Age features (*ibid.*). Cereal grains were present as a fully 'cleaned' assemblage (*ibid.*) and it is likely that processing and storage was occurring on or close to the site.

10.6 An initial scan of the early Iron Age animal bone assemblage concluded that the material was not worthy of full recording/ assessment (Cussans 2013).

Phase 2: Romano-British (mid to late 1st century AD)

10.7 The Romano-British site comprised parts of at least four rectilinear enclosures and a possible trackway. This phase of land enclosure was the only one of its type recorded at the site. Activity in this phase was industrial in nature with a hearth/ fire pit and a double flue pottery kiln present within the enclosures. Although Phase 2 structural evidence was ephemeral, the recovery of residual box flue tile, bessalis brick and roof tile from later Anglo-Saxon (Phase 3) features attests to the presence of a bathhouse or other substantial Romano-British domestic structure somewhere in the near vicinity.

Site layout

10.8 The Phase 2 enclosure system comprised parts four rectilinear enclosures immediately north of a possible trackway running WNW/ESE across the southern part of the excavation. This trackway may have provided access to further enclosures suggested by cropmarks (HER SNP 032) as well as the River Fromus some 600m to the west. The river systems and their fertile valleys to the west and south would have represented an important resource-base, attractive to settlers. The navigable River Alde, less than 1km to the south of the site, would also have provided easy access to the coast some 7.6km distant.

10.9 The largest of the surviving enclosures measured *c.* 1848m^2 but would have originally been larger. The layout of the Phase 2 enclosure ditches appeared uniform and it is likely that all of the enclosures in this area were of a similar size, perhaps indicating that they were also functionally related; the principal Romano-British features were industrial in nature. The uniformity of the enclosure ditches and lack of evidence for re-cutting/ maintenance might also suggest a constricted period of use; also indicated by the Phase 2 pottery groups (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). The free-draining, sandy geology of East Anglia is particularly prone to wind erosion (Boardman and Evans 2006, 441) suggesting that any ditches in prolonged use at the site would have required either revetment or ongoing maintenance to keep them clear.

10.10 Romano-British enclosures are ubiquitous across East Anglia with numerous published examples. At Fosters End Drove, East Winch (Norfolk) (Lally *et al.* forthcoming) a small, late 2nd to early 3rd century enclosure was found containing structural evidence and features (including a kiln) associated chiefly with pottery production. The enclosure at East Winch was also bounded by a delineated trackway thought to link the site with similar industrial sites in the area and the River Nar located *c.* 1.8km from the excavation (*ibid.*). The delineated nature of the trackway at East Winch was thought to denote ownership and, possibly, status, with the industrial site and its neighbours potentially falling under the jurisdiction of a single individual or *villa rustica* (*ibid.*). The closest evidence of a villa to the current site is a bathhouse at Farnham (HER FNM 001), *c.* 3.2km to the north-west, excavated by Ipswich Museum in 1971. The presence of residual box flue tile, bessalis brick and roof tile in subsequent Anglo-Saxon (Phase 3) features does however allude to the existence of a similar bath house or other substantial domestic structure somewhere close to the Church Road site (Peachey, *The Fired Clay and Ceramic Building Materials* (Appendix 2)). Associated Romano-British enclosures

and trackways have also been noted at Brandon Road, Thetford (Norfolk) (Atkins and Connor 2010, 11) and Childerley Gate, Cambridgeshire (Abrams and Ingham 2008, 52). The 2nd to 3rd century (Phase 3.3) at Childerley Gate saw the establishment of a 'ladder' system of small, rectilinear enclosures with a trackway running along one side (*ibid.*). A similar system of enclosures and trackways was also identified at the former Smoke House Inn, Beck Row (Suffolk) (Mustchin in preparation). In contrast to East Winch and the current site however, enclosures at both Childerley Gate and Beck Row appear to have functioned in a pastoral capacity.

10.11 Ephemeral evidence for the internal partitioning of the Romano-British enclosures at Snape was also encountered. These 'partitions', comprising short sections of ditch and possible post alignments, did not however appear to relate to the distribution of the principal Phase 2 features, i.e. the pottery kiln (S2633) and hearth/ fire pit (F2137).

10.12 Two Romano-British structures were encountered. The interpretation of both was tentative however; Post-Built Structure 1 (*c.* 19m^2) was aligned with a nearby Phase 2 enclosure ditch but yielded no datable material, whereas ?Post-Built Structure 2 (*c.* 16.5m^2) yielded a reasonable quantity of mid to late 1st century AD pottery but was misaligned with the Phase 2 enclosure system. A small quantity of Roman CBM (five fragments weighing 90g) was recovered from ?Post-Built structure 2. Neither of these structures contained floor/ occupation deposits and their function(s) remains uncertain. It is possible that they were related in some way to concurrent industrial activity at the site.

10.13 The potential existence of a bathhouse or other substantial Romano-British structure (possibly a villa) close to the Church Road site, as indicated by residual CBM from later, Phase 3 features (Peachey, *The Fired Clay and Ceramic Building Materials* (Appendix 2)), is of considerable importance. Villas were fundamentally different to native structural forms and are synonymous with the fully *Romanised* lifestyle of the wealthy (Plouviez 1999, 42). Furthermore, the known distribution of villas in Suffolk is heavily biased towards the western half of the county (*ibid.*), adding greatly to the significance of an early villa estate linked to the current industrial site. The site of a Romano-British saltern (HER SNP 023) adjacent to the River Alde, some 2.2km to the east-south-east of the site (centred on NGR TM 414 573; Fig. 1) is a further indication of high-status Romano-British activity in the area; traditionally, slat-production elsewhere in Suffolk has been considered an imperial monopoly (Millett 1992, 120).

Romano-British industrial activity

10.14 The Romano-British site was inherently industrial in nature with the main focus being double flue Kiln S2633. A large number of vessel sherds, comprising both oxidised and reduced wares were recovered from the kiln and the fills of Phase 2 linear features (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). The kiln group conforms to the West Harling and Darmsden ceramic styles, and is datable to the third quarter of the first century AD (*ibid.*). Material relating to the last firing and post-abandonment of the kiln produced radiocarbon dates of 56 calAD and 74 calAD respectively. The limited range of vessel forms, predominantly large butt

beakers, suggests production for a specific market, possibly a rural settlement or *villa rustica*. Apparent specialisation towards the manufacture of butt beakers at the site might also be indicative of surplus production, and the large Romano-British settlement at Hacheston (Blagg *et al.* 2004), *c.* 9.2km to the west of Snape, may have been a viable outlet for tradable items. Coastal trade may have been conducted via the Alde estuary.

10.15 Kiln S2633 was itself similar in plan to two slightly later examples excavated at Bourne Hill, Wherstead (Plouviez *et al.* 2001, 6-8, fig. 7). These examples, however, were less structurally complex; the floors of both central firing chambers were unlined and both kilns lacked integral pedestals or other 'furniture' (*ibid.*). A first century AD double flue kiln was also found at Greenhouse Farm, Cambridgeshire and was associated with the production of fine wares (Gibson and Lucas 2002, 99-100 and 105). This site was also synonymous with the production of butt beakers – the principal product of the Snape kiln (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). Physiologically, the Greenhouse Farm kiln differed from the Snape example in that it contained a pair of integral pedestals running longitudinally across the floor of the firing chamber (*ibid.* 100, fig. 4). The central chamber of the Greenhouse Farm kiln was slightly larger than the Snape example however and the 'splitting' of the central pedestal may have been a purposeful adaptation to facilitate airflow during the firing process. Both kilns were clay-lined. The lining of the Snape kiln was tempered with a mix of organic material, primarily spelt wheat straw (Summers, *Kiln S2633: The Charred Plant Remains* (Appendix 2)).

10.16 The remaining 'industrial' feature was Hearth/ Fire Pit F2137. This feature was located in the far south of the site and appeared short-lived; the fills of F2137 were suggestive of rapid backfilling (post-firing). Few finds were recovered from F2137 but a possible industrial function is tentatively suggested based on the overall character of the encountered Phase 2 archaeology. Charcoal from this feature was exclusively oak (probably from dead trees, seasoned wood or reused timbers), and may indicate a specific function for which this species/ fuel was specifically selected (Summers, *The Charcoal* (Appendix 2)).

Environmental and animal bone evidence

10.17 This phase witnessed an increase in the importance of spelt wheat over hulled, six-row barley (Summers, *The Charred Plant Remains* (Appendix 2)). The former represents a staple Romano-British cereal crop throughout East Anglia (*ibid.*). This shift in arable production appears to indicate the exploitation of heavier soils during Phase 2 (*ibid.*) – the clay/ loam soils of the Hanslope and Ragdale associations are present a short distance to the north – possibly linked to extended Romano-British control over the site's hinterland. Environmental sampling of Kiln S2633 also indicated the Romano-British use of spelt wheat fine-sieving waste as fuel (*ibid.*). Spelt wheat straw also formed the bulk of organic temper in the kiln's clay lining (Summers, *Kiln S2633: The Charred Plant Remains* (Appendix 2)).

10.18 An initial scan of the Romano-British animal bone assemblage concluded that the material was not worthy of full recording/ assessment (Cussans 2013).

Phase 3: early to middle Anglo-Saxon (AD 450-850)

Summary

10.19 The early to middle Anglo-Saxon period witnessed the construction of three sunken-featured buildings (SFBs) and one post-built structure within the excavated area. These buildings were contemporary with the use of the mixed rite cemetery *c.* 1km to the north-east (HER SNP 007; Filmer-Sankey and Pestell 2001), and represent the first evidence of rural Anglo-Saxon domestic structures in the immediate area. Other, partially investigated settlements exist at Hacheston, *c.* 9.2km to the west, and Little Bealings, some 19.5km to the south-west (West 1999, 44-5). Limited evidence of craft activities, including spinning, was recorded from the SFBs. A pair of burnt flint pits was also assigned to this phase.

The Anglo-Saxon pottery assemblage

10.20 The Phase 3 pottery assemblage is chiefly derived from the fills of the SFBs and provides a broad date range between the mid 5th and mid 7th/ 8th centuries AD (Thompson, *The Anglo-Saxon Pottery* (Appendix 2)). However, the latter part of this range is based on a single, abraded sherd of probable Ipswich ware from the fill of SFB 1 (*ibid.*), is not representative of the main Anglo-Saxon occupation. Radiocarbon dating of Anglo-Saxon features produced predominantly 6th century dates (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 3)). The fills of SFB 1 appeared redeposited (see below) and were therefore not directly linked to this building's primary use. Of intrinsic interest are sparse Samian sherds from the fills of SFBs 2 and 3 which appear to represent curated material (see Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). These sherds are distinct from the Phase 2 (mid to late 1st century AD) assemblage and appear to have arrived on the site at a later date. Similar treatment of Roman material has been noted in Anglo-Saxon phases at Harston Mill, Cambridgeshire (O'Brien forthcoming) and West Stow, Suffolk (West 1985).

Settlement location

10.21 The situation of the early to middle Anglo-Saxon site on light, easily worked soils is typical of the period in Suffolk (West 1999, 44). In contrast, the county's central 'claylands' are devoid of early settlement evidence, with the exploitation of these heavier soils only beginning around AD 650-850 (*ibid.;* Wade 1999, 46). Environmental evidence from Snape (see below) does however allude to cultivation of the heavier clays and loams to the north of the site, which, together with the datable pottery assemblage, suggests continued settlement well into the middle Anglo-Saxon period.

10.22 All of the Anglo-Saxon structures at Snape occupied elevations between *c.* 15.50m and 16.00m AOD at the northern end of the site (Fig. 20). This plateau in the immediate topography commands a panoramic view of the surrounding landscape and is closely paralleled by other, regional sites. The deliberate positioning of Anglo-Saxon structures on high ground has also been noted at Brandon Road, Thetford (Norfolk) (Atkins and Connor 2010, 21) and Duxford, Cambridgeshire (Lyons 2011, 91ff). The Duxford site also occupied a position of potential importance, overlooking the point at which a branch of the Icknield Way, a

major communications route in the middle Anglo-Saxon period (Baker and Brookes 2013, 280) crossed the River Granta (Roberts *et al.* 2011, 124). Similarly, the Brandon Road settlement overlooks the Little Ouse (Atkins and Connor 2010, 2, fig. 1). At Snape, the Anglo-Saxon site sits approximately 14.00m above Snape Bridge (HER SNP 036), a crossing point over the River Alde less than 1km to the south. The River Fromus, a tributary of the Alde lays *c.* 600m to the west. Snape Bridge was first depicted on Saxton's map of 1575, though its location, at the head of the tidal river estuary is likely to have been used as a crossing and/ or mooring point for much longer. From the late prehistoric to the early Anglo-Saxon period in England, the light, fertile soils of river valleys were the chief focus of clearance, settlement and cultivation, with the rivers themselves forming major arteries for communication and commerce (Mudd 2002, 3; Williamson 2010, 146, 152). As such, the juxtaposition of Snape Bridge and the nearby Anglo-Saxon settlement might be seen as attaching significance to the latter; inhabitants of the settlement would have been well placed to exploit the resources of the Alde and Fromus valleys as well as monitor any approaching river traffic. The prominent position of the nearby Anglo-Saxon cemetery (overlooking the River Alde) has also been noted (Filmer-Sankey 2001).

Settlement form

10.23 The excavated settlement comprised three SFBs and a single post-built structure, set out in a roughly 'L'-shaped arrangement, and a pair of burnt flint pits located to the south of the structural remains; few other Phase 3 features were present. The predominance of SFBs is usual for sandy/ gravelly sites where post-built structures/ 'halls' tend to be scarcer (Tipper 2004, 24). SFBs are also broadly indicative of an early settlement date as this structural form is seen to decline during the middle Anglo-Saxon period and is absent at a number of 7th to 9th century settlements (*ibid.* 11-12). The Snape SFBs were uniformly oriented with their long axes running E/W across the slope of the site, while Post-Built Structure 3 was aligned downslope. The 'across-slope' (predominantly E/W) alignment of the SFBs is mirrored at numerous sites including Brandon Road, Thetford (Atkins and Connor 2010, 112) and Redcastle Furze, Thetford (Andrews 1995, 13ff), while the uniform alignment of contemporary structures was also noted at Spong Hill, North Elmham (Rickett 1995, 47) and Duxford (Roberts *et al.* 2011, 123). At Pennylands, Milton Keynes the E/W orientation of SFBs was thought to reflect the deliberate placement of entrances away from prevailing winds (Williams 1993, 79); a traditional interpretation attached to these structures (Tipper 2004, 81). A predominantly south-westerly wind is recorded for the East of England (www.metoffice.gov.ik/climate/uk/ee/print.html), perhaps suggesting the same reasoning behind the placement of the Snape structures; possible south-eastern entrances were apparent in SFBs 2 and 3. Tipper (2004, 81, table 26), however, notes a wide variation in the position of SFB 'entrances' between sites. The downslope orientation of Post-Built Structure 3 was also analogous to similar 'posthole structures' at Billingford, central Norfolk (Wallis 2011, 34), although the reason for this alignment remains uncertain.

10.24 Although broadly contemporary, the Phase 3 structures at Snape may have represented a temporal succession of buildings (at least in part). It is possible that SFBs 1 and 2, located *c.* 6.5m apart represented a short 'sequence' of structures with one building replacing the other. No radiocarbon dating was possible for SFB 2.

The sunken-featured buildings

10.25 Sunken-featured buildings (SFBs) or *Grubenhäuser* are the most commonly encountered form of Anglo-Saxon structure on archaeological sites and are ubiquitous throughout southern Britain (Hamerow 2011, 146; West 1971, 4). Other East Anglian examples are known from Brandon Road, Thetford (Atkins and Connor 2010), Harston Mill, Harston (O'Brien forthcoming), Dernford Farm, Sawston (Newton forthcoming), the Old Bell, Marham (Newton 2013) and Hartismere High School, Eye (Caruth and Goffin 2012). Although the function of these sub-square structures is still widely debated, a study by Tipper (2004, 64-5) defines their average measurements as 3 x 4m in plan by 0.30-0.50m deep, which falls well within the range of the Snape examples (Chart 1). Hamerow (1993, 11) has noted, however, that later, 7th century SFBs can be much larger in size (after Hamerow 2011, 146).

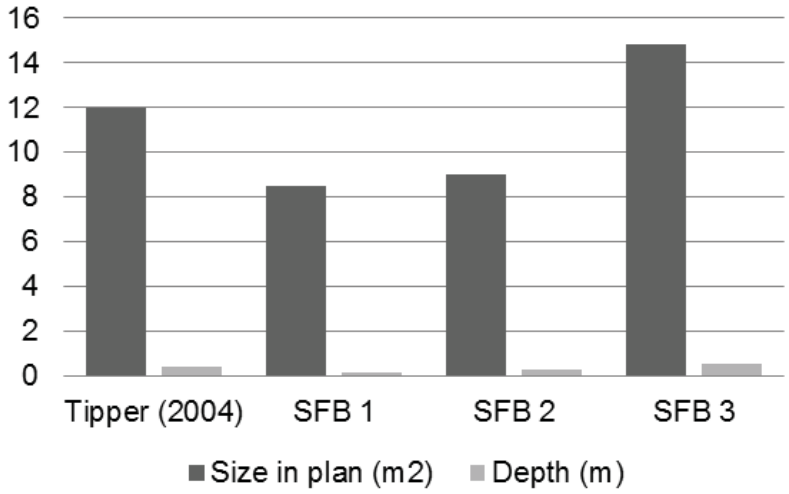

Chart 1: Snape SFB sizes and depths compared with Tipper's (2004) average dimensions. A median depth of 0.40m has been used based Tipper's (ibid.) range of 0.30-0.50m

Structural typologies

10.26 SFB typologies have previously been described by von Guyan (1952) and Ahrens (1966). All of the SFBs from Snape displayed evidence of structural postholes midway along their short sides (Figs. 22-25). These would most likely have housed upright, gable-end timbers in turn supporting a horizontal ridge pole which formed the apex of the roof. This structural format was defined by Ahrens (1966) as a *Giebelpfostenhaus* or *gable-post house* (after Tipper 2004, 68). In addition, SFBs 1 and 3 at Snape displayed additional postholes at two or more of their corners which may have held further uprights, perhaps tied into horizontal, gable-end crossbeams. Two-post SFBs (defined by von Guyan (1952)), similar to SFB 2 at Snape, are commonly occurring, whilst six-post examples, with post settings similar to SFB 3, are largely confined to south-east England and East Anglia (Tipper 2004, 69; after West 1985, 121). Both forms were represented at the Anglo-Saxon village of West Stow (West 1971; 1985) and Spong Hill (Rickett 1995). The

additional post settings present at the northern corners of SFB 3 (Fig. 24) perhaps represented maintenance or remodelling of this structure during its lifetime. Similar 'groupings' of postholes were noted in SFB 5 at Dernford Farm (Newton forthcoming). Certainly, the complexity of SFB 3 alludes to a considerable investment in terms of the construction and (possibly) maintenance of this structure.

10.27 Exceptional preservation of charred plank/ wattle walls and thatch was recorded within Hut [SFB] 15 at West Stow (West 1971, 5), one of two such structures at the site that had burnt down. No such structural evidence was preserved at Snape. However, if local, sandy turf formed a major part of the superstructure minimal survival would be expected; weight-bearing turf walls have been suggested in association with these structures at a number of sites (Tipper 2004, 80). SFB 3 may be an exception however (see below). Similar poor preservation of all (un-charred) organic building materials can be postulated based on the mostly 'poor or very poor' condition of the animal bone recovered from the site (Cussans, *The Animal Bone* (Appendix 3)). It is also likely, based on the depositional patterns recorded in SFBs 1 and 3, that the environmental evidence from these buildings is not directly representative of their primary use.

Evidence for suspended wooden floors

10.28 In addition to superstructure, the Snape SFBs all contained evidence for the original presence of suspended floors. In SFB 1 this simply constituted a lack of trampling in the base of Sunken Feature F2575 associated with the building's use. The absence of trampling was notable given the sandy nature of the underlying geology and suggests that the base of the feature did not constitute the primary floor level. Primary floor material was also absent from the base of SFBs at West Stow, for example (West 1985, 117-20; after Tipper 2004, 84). In SFB 2, a similar lack of trampling was accompanied by a dearth of finds from primary Fill L2237. It is possible that the 'sifting' of this material through floorboards had resulted in the almost total lack of artefacts. In contrast, the secondary fill of SFB 2 contained numerous finds (including residual Roman material); both fills of this building had formed around *in situ* posts. A similar finds distribution was observed in SFB 5 at Dernford where the original presence of a suspended wooden floor was also attested by micromorphological analysis of the building's fills (Newton forthcoming). This pattern is by no means universal however (see Tipper 2004, 103ff).

10.29 SFB 3 at Snape yielded the most conclusive evidence for the original presence of a suspended wooden floor. Two opposing beam slots were recorded cut into the northern and southern edges of Sunken Feature F2406 and could have housed a substantial beam spanning width of the structure. The slots had been cut to the level of a well-defined 'step' or 'sill' preserved to varying degrees around all four sides of the sunken feature. An identical 'ledge' was recorded *c.* 0.20m above the base of SFB 3161 at Spong Hill (Rickett 1995, 54) and various other examples are known. The ledge in SFB 3 may have acted as a bedding platform for further spanning timbers, possibly supporting a floor (see below). However, unlike SBF 2, the primary fill of Sunken Feature F2406 (L2407) yielded a large quantity of artefacts. This fill sealed underlying posthole/ stakehole fills and appeared to have been deposited following the abandonment of SFB 3 (cf. Tipper 2004; see below). A similar pattern of SFB fills was observed at Hertismere High School, Eye (Caruth and

Goffin 2012, 38). An alignment of five stakeholes cut into the base of SFB 3 may also have housed structural supports of some kind. A thin layer of ?colluvium (L2457) had built up around the *in situ* stakes. Similarly interpreted postholes were recorded in the base of SFB 7 at Dernford (Newton forthcoming), although were less uniformly distributed. Although the interpretation of stakes in the sub-floor space of SFBs has been criticised (e.g. Tipper 2004), the regularity of the arrangement in this case and the nature of ?Colluvium L2457 attests to their presence.

10.30 Ledges or sills have been recorded to varying degrees around the interiors of sunken features on a number of sites (Tipper 2004, 84-6). Regional examples include SFB 0326 at Hartismere High School, Eye (Caruth and Goffin 2012, 37, 212, table 7, plate 10). In many cases, these have been interpreted as remnant floor surfaces, preserved around the edges of 'trampled' central areas owing to their inaccessibility, due either to the internal pitch of the roof or the presence of 'furniture' (Tipper 2004, 84). Ledges around the interiors of SFBs at Mucking, Essex (Hamerow 1993, 11) were interpreted in this way (after Tipper 2004, 85). However, in various examples the ledges were restricted to the shorter, 'gable' ends of the structures, ruling out 'roof pitch' as a causal factor in their development (after Tipper 2004, 85-6). An alternative use for such ledges, as sleeping/ sitting platforms was suggested by Berisford (1973, 122-3; after Tipper 2004, 84).

10.31 It is possible that the internal ledge around the interior of Sunken Feature F2406 (SFB 3) (Plate 12) at Snape represented the remains of an internal revetment, either cut into the underlying sand or constructed from turfs removed during the initial excavation of the feature. No humic lenses, representing the organic component of buried turfs, were noted however. A revetment of this type may have served to prevent initial slumping of material from the feature's edges as well as possibly acting as a convenient platform for timber cross-beams below a suspended plank floor. The ledge within SFB 3161 at Spong Hill was further supported by an internal wattle lining on three sides of the sunken feature, and was thought to represent either a step or lined 'cellar' (Rickett 1995, 54). Slots recorded in the base of SFBs 0192, 2503, 3108 and 3125 at Hartismere High School (Eye) were also interpreted as evidence of possible linings (Caruth and Goffin 2012, 37-8, table 7).

10.32 Not all Anglo-Saxon SFBs are likely to have had suspended wooden floors (e.g. West 1985, 120). For example, trampled material and a hearth present in SFB 2037 at Marham, Norfolk suggests that the base of the sunken feature had itself formed the primary floor surface (Newton 2013, 335-6). The evidence from Snape however does suggest the original presence of raised floors (albeit tentatively as regards SFB 1). West (*ibid.*) has argued that the sub-floor space served to ventilate the buildings, prolonging the useful lifespan of any structural timbers. Other interpretations, such as 'cellar' space (e.g. Rickett 1995, 54), are possible however.

Depositional models

10.33 Tipper (2004, 107, 153, 184) suggests that, once derelict, most SFBs were subject to rapid backfilling with redeposited material from surface 'middens'. As such, the majority of finds from SFBs have no direct bearing on the primary use of these structures (*ibid,* 160). The finds from the Snape examples, partly indicative of

spinning (see below), may not therefore allude directly to the use of these buildings, although it is clear that such activities were occurring in the near vicinity. The evidence from SFBs 1 and 3 conforms to this depositional model, with the primary fills of the sunken features sealing associated posthole/ stakehole fills. The basal fill of SFB 2 was 'cleaner' however, possibly comprising 'sifted' material (L2237) overlain by a comparably finds-rich (possible) 'occupation' deposit some *c.* 0.20-0.22m thick (L2236). Both fills appeared to be *in situ* having formed around structural posts and may have originally been separated by a suspended wooden floor (see above), accounting for the dearth of finds at the base of Sunken Feature F2235.

Post-Built Structure 3

10.34 The features forming Post-Built Structure 3 yielded few finds and the interior of the structure did not contain any form of 'occupation' deposit or clear internal partitioning. As such, it is difficult to determine the exact function(s) of this structure. This dearth of evidence, although possibly taphonomic in origin, might however suggest that the structure was subsidiary/ ancillary to the nearby SFBs, perhaps having been used for storage. Alternatively, the sterile nature of this structure may result from the regular clearing out of refuse during the building's life (Tipper 2004 183). Nonetheless, Tipper (2004, 162) notes that the majority of early Anglo-Saxon settlements excavated in the last three to four decades have contained both SFBs and 'posthole buildings', possibly suggesting some contrast in the use these structures.

10.35 Anglo-Saxon examples of post-built, or wall-post (Tipper 2007, 23), structures are well documented; Addyman (1972, 283, fig. 5) provides a useful overview of 'post-built huts'. In some cases, 'post-hole structures', like the Snape example and those reviewed by Addyman (*ibid.*), appear superseded by 'post-in-trench' structures during the middle Anglo-Saxon period (Powlesland 2003, 107). Such 'beamslot' foundations are rarely encountered in the early Anglo-Saxon period (Lyons 2011, 92). Post-Built Structure 3 at Snape was devoid of linear groundworks, possibly indicating an early date for this structure. Similar, regional examples (also found in close association with SFBs) are known from West Stow (West 1971; 1985), Lackford Bridge Quarry (Tipper 2007), Duxford (Lyons 2011, 91ff), Billingford (Wallis 2011, 33-5) and Eye (Caruth and Goffin 2012, 33 and 35, fig. 11). Like the Snape example, the three Billingford structures were also aligned down-slope (*ibid.* 34), though the reason for this remains unclear. Buildings 6 and 11 at West Stow were similar in size to Post-Built Structure 3, measuring 28.12m^2 and 21.07m^2 respectively (West 1985, 12, 14, figs. 16 and 18). These structures were also analogous in that they contained very few finds. Some of the post-built structures or 'Halls' at West stow (e.g. Building/ Hall 7) (West 1985, 12-13) were clearly habitations, a pattern also noted at other sites. A domestic function for Post-Built Structure 3 at Snape seems unlikely however.

The burnt flint pits

10.36 The Phase 3 burnt flint pits (F2058 (Grid Square F7) and F2365 (Grid Square E8)) were substantial features. Each contained clearly defined fills yielding large quantities of burnt flint and charcoal. The primary fill of Pit F2058 also yielded two

sherds (99g) of residual mid to late 1st century AD pottery and two fragments of burnt Roman brick.

10.37 Despite the Romano-British spot date from F2058, both pits were radiocarbon dated to the 6th century AD. Comparable regional examples of this Anglo-Saxon feature type are known. Seven analogous features, also containing residual Roman material, were assigned to the early Anglo-Saxon period at Kilverstone, Norfolk (Lucy 2006, 184-6, fig. 5.16, plate XXI). These were separated from contemporary structures and were thought to function as part of a periodic industrial process of uncertain character (*ibid.*). Seventeen such pits at Hartismere High School, Eye (Suffolk) were strikingly similar to the Kilverstone examples and were found scattered across a 4.67ha area with some of the pits respecting the position of Anglo-Saxon SFBs (Caruth and Goffin 2012, 45-6). Similar features, also in close association with Anglo-Saxon structures, were found at Redcastle Furze (Andrews 1995) and were interpreted as having a cooking function (after Lucy 2006, 184, 186). A domestic role seems unlikely in this case however due to the low thermal tolerances of flint; it can explode when rapidly heated and cooled (Sieveking and Clayton 2011, 284).

10.38 Seven similar pits containing burnt flints, tentatively associated with ritual feasting, were identified at Snape Anglo-Saxon Cemetery (Filmer-Sankey and Pestell 2001; Williams 2008, 248); a number of possible functions for these features are discussed however (Pestell 2001). These pits were of particular interest as the flint they contained is atypical of the site's geology and could not have been collected locally (Pestell 2001, 259). The Snape Cemetery pits were analogous to another 'cooking' pit recorded at Flixton (Boulter and Walton Rogers 2012, 94-5, fig. 6.3). Despite containing late Iron Age/ early Roman pottery, radiocarbon dating of the Flixton pit confirmed its association with the adjacent Anglo-Saxon cemetery (*ibid.*).

The early to middle Anglo-Saxon economy

10.39 Phase 3 animal bone from L2407 (the primary fill SFB 3) and L2239 (fill of Pit F2238) was examined. This comprised the best-preserved animal bone from the site; it should be noted however that, overall, animal bone from Snape was poorly preserved (Cussans, *The Animal Bone* (Appendix 2)). No other contexts of any date yielded animal bone worthy of full recording or analysis (*ibid.*). The assemblage was dominated by domestic species, notably cattle, with sheep/ goat and pig present in lesser numbers (*ibid.*). This relative abundance of species is likely the product of preservation and hand collecting of bone however, and may not reliably represent past economic strategy (*ibid.*). Two fragments of red deer bone were also recorded. Age-at-death calculations indicated the raising of cattle for meat with possible breeding and milking animals (of an older age) also represented. No younger animals were represented though, again, this was likely the result of poor bone preservation (*ibid*.). The butchery evidence was principally representative of skinning and dismemberment/ food procurement, with possible horn working and the splintering of bone for marrow extraction or the production of material for pin manufacture (or similar) also attested (*ibid.*). A small number of bone pathologies and abnormalities were also observed but no firm conclusions could be drawn.

10.40 Overall, the Phase 3 bone assemblage represents an economy based on sedentary farming, subsidised by hunting, typical of the period in East Anglia and in keeping with evidence from other sites, e.g. Melford Meadows (Powell and Clark 2002, 101ff), West Stow (Crabtree 1985, 85ff) and Bloodmoor Hill (Higbee 2009). Wildfowling was also well attested at West Stow with 17 individual species represented (Crabtree 1990, after Sykes 2011, 330), while the site at Dernford yielded remains of woodcock, goose and wild boar (Newton forthcoming). Fish species from a variety of habitats were recorded at Bloodmoor Hill (Parks and Barrett 2009, 305). Such evidence was absent in this case however; no doubt the result of poor preservation. The location of the Snape settlement, overlooking the Alde estuary and *c.* 7.6km from the coast would have afforded easy access to similar wild resources.

10.41 The Phase 3 floral assemblage, mostly recovered from SFBs 1 and 3, attests to a varied agrarian economy similar to that seen at other regional sites (Summers, *The Charred Plant Remains* (Appendix 2)). The presence of barley, rye and oat may attest to local cultivation as these species are ideally suited to the sandy soils of the site and its hinterland (*ibid.*), while wheat grains suggest the exploitation of the loamy/ clay soils *c.* 2km to the north. Barley (likely a hulled, six-row variety) and wheat (predominantly free-threshing type) appear equally important in this phase, while samples from SFB 3 attest to the importance of oats in the diet of the site's inhabitants (*ibid.*). Pulses also appear to have played a more important economic role than in earlier phases (*ibid*.). A single cherry or plum stone fragment from the primary fill of SFB 1 might also attest to the gathering of uncultivated foodstuffs. Overall however, material from the SFBs is typical of the day-to-day processing and use of cereals and other cultivated foodstuffs (*ibid.*). Like the earlier Romano-British period, oak comprised the dominant fuelwood although numerous species were represented (Summers, *The Charcoal* (Appendix 2)).

10.42 The two spindle whorl fragments (SFs 1 and 13; Fig. 39) from SFB 1 attest to the spinning of wool. No contemporary evidence for the weaving of textiles was encountered however. Limited craft activity is also indicated by a possible awl handle (SF9; Fig. 39) from SFB 3. Anglo-Saxon SFBs are often associated with textile manufacture (Arnold 2005, 38; Hamerow 2002, 33) and Crummy (2002) suggests that early settlements were self-sufficient in terms of this industry. Regional examples of textile-related artefacts were also found within SFBs at Billingford (Wallis 2011, 32), Brandon Road, Thetford (Atkins and Connor 2010, 24), Hartismere High School, Eye (Caruth and Goffin 2012), Spong Hill (Rickett 1995, 50-3) West Stow (West 1985, 138-9) and Bloodmoor Hill (Lucy *et al.* 2009. 44). Five of the SFBs at Bloodmoor Hill yielded over 10kg of fired and unfired clay loom weight fragments (*ibid.*, 45). No such fragments were encountered at the current site. Although the fills of SFBs 1 and 3 at Snape may not directly relate to the use of these structures, it is clear that the spinning of wool played a part in the economy of the settlement. No specific use for the Snape SFBs can be postulated based on the limited evidence to hand however; it would be better to view these structures as serving a variety of functions (cf. Tipper 2004, 185 and Lucy *et al.* 2009, 45).

Life and afterlife

10.43 Between the 5th and mid 7th centuries AD the majority of Anglo-Saxons were buried in longstanding ancestral cemeteries located either adjacent to or close to settlements (Hamerow 2010, 71-2). The possible relationship between the Anglo-Saxon settlement at Church Road, Snape and the contemporary mixed rite cemetery *c.* 1km to the north-east (HER SNP 007; Filmer-Sankey and Pestell 2001) deserves closer scrutiny. Such relationships are yet to be fully addressed in the literature (cf. Hamerow 2010, 71), and the current site makes a useful contribution. Meaningful demographic modelling is impossible however. Valid comparisons between the populations of cemeteries and settlements rely on high quality data derived from the full/ majority excavation of both site types (Hamerow 2010, 72). Owing to the focussed nature of the Church Road excavation it is likely that only a portion of the overall settlement was exposed. Also, owing to the distance between the two sites it is impossible to firmly state that the population of the Snape cemetery was derived, at least in part, from the Church Road settlement (cf. Hamerow 2010), although such an association is conceivable. The ratio of cemeteries to settlements was not always equal however (*ibid.*, 72); at Flixton for example, a single early Anglo-Saxon settlement was served by two separate cemeteries (Walton Rogers 2012, 83). We must consider, therefore, the possibility that the Church Road site was served by a separate, much nearer burial ground.

11 CONCLUSIONS

11.1 Archaeological activity at Church Road, Snape appeared peripheral (to core settlement elsewhere in the immediate landscape) in all phases bar the early to middle Anglo-Saxon period. However, finds from the site attest to (possible) high-status Romano-British settlement activity in the near vicinity and the early Iron Age site appears to have been sedentary. The location of the site, on high ground overlooking the Rivers Alde and Fromus, would have been a determining factor to settlement in all phases. The river valleys would have provided fertile land, abundant wild resources and easy access to the coast. Also, although situated on sandy soils, the site is well placed to exploit heavier clays and loams, a short distance to the north, a useful resource in terms of agricultural diversity.

11.2 Although relatively numerous, the early Iron Age features did not conform to any convincingly structural outlines. Prehistoric activity appeared sedentary however, with fully cleaned cereal grains represented in the Phase 1 environmental assemblage. Agricultural use of the site, perhaps for limited crop processing/ storage, the latter hinted at by ?grain storage pits, is possible. A possible four-post 'granary' was also identified (comprising undated Postholes F2423, F2425, F2427 and F2429) although the interpretation of these features remains tentative. The Phase 1 pottery assemblage is of particular note as relatively few early Iron Age groups are known from Suffolk. The material from Activity Area 1 represents a key stratified assemblage in the corpus of West Harling-Darmsden style groups, supplementing similar assemblages from sites including Barham and Darmsden (Peachey, *The Prehistoric and Roman Pottery* (Appendix 2)). The full quantification, illustration and reporting of this material (*ibid.*) contributes to intra-site comparisons,

the need for which has been previously identified by the regional research agenda (Bryant 2000, 15).

11.3 The Industrial Romano-British site at Snape was probably associated with a *villa rustica* somewhere in the immediate landscape, previous evidence for which is lacking. Residual Roman CBM from the Anglo-Saxon SFBs suggests the local presence of a bathhouse or other substantial Roman building, probably attached to a villa. Alternatively, the site may have fallen under the broader jurisdiction of a possible villa at nearby Farnham (HER FNM 001). Either way, the presence of an early industrial site, probably belonging to a local villa estate, adds usefully to our understanding of the timing and scale of Romanisation in this part of Suffolk.

11.4 The main focus of the Romano-British site was Kiln S2633, which was used to produce a small range of vessels for localised consumption and, possibly, trade via the River Alde to the coast and/ or through the large Romano-British settlement at Hacheston. This level of production and mode of consumption has been previously defined by Peña (2007, 32). Peachey (*The Prehistoric and Roman Pottery* (Appendix 2)), however, also suggests the possible existence of another kiln in the near vicinity, the presence of which would significantly enhance the regional importance of the site. Kiln S2633 itself adds significantly to our understanding of the technology of early Romano-British pottery production in East Anglia.

11.5 The early to middle Anglo-Saxon structural evidence from Snape makes a useful contribution to our understanding of buildings of this period. In particular, the surviving elements of SFB 3 attest to a building of some complexity and, perhaps, importance, contrary to the traditional view of these structures as simple workshops or ancillary buildings (cf. Tipper 2004, 184). The Phase 3 artefactual evidence does however attest to craft-level activities and the spinning of wool on or close to the site. Each of the SFBs also produced evidence, to varying degrees, for the original presence of suspended wooden floors; evidence that will add to ongoing discussions regarding the superstructure of these buildings. In particular, the ledge around the interior of SFB 3, in conjunction with Beam Slots F2411 and F2470, adds usefully to our understanding of such features. The co-existence of SFBs and post-built structures has also been attested at a number of regional sites, a corpus to which the current site can now be added. The function of Post-Built Structure 3 remains uncertain however.

11.6 Although few, the Phase 3 structures are notable, comprising the only domestic buildings of this period known from the immediate area. Good comparisons in terms of building form, configuration and settlement layout are known from other, regional sites however. Various traits of the Snape SFBs for instance, e.g. their orientation and topographical placement, are mirrored elsewhere. The study of Anglo-Saxon settlement and social organisation has been identified as a regional research priority (Medlycott 2011, 56) and the current site makes a valuable contribution to this field. The location of the Snape settlement, within 1km of a well-documented Anglo-Saxon cemetery (HER SNP 007) is also of extreme significance. Radiocarbon dates from the primary fills of SFBs 1 and 3 provide a date range for the infilling of these structures of 474-575 calAD (see Mustchin with Summers, *Radiocarbon Dating Determinations* (Appendix 2)), although a date in the latter part of this range is likely; Fills L2576D (SFB 1) and L2407D (SFB 3) both yielded dates

of 540 calAD. No secure, datable material was present in the environmental bulk samples from SFB 2. The mid-6th century date of the Phase 2 SFBs (which correlates with the use of Burnt Flint Pits F2058 and F2365 (see below)), with possible origins in the latter part of the 5th century AD, falls well within the 5th-7th century use of Snape Anglo-Saxon cemetery. Although it is impossible to prove an association between the cemetery and Church Road sites owing to the distance separating them (cf. Hamerow 2010, 72), such an association remains possible. The cemetery included richly adorned graves including a burial containing a lyre (HER SNP 007) and it is possible that the Church Road site formed part of an important/ affluent settlement or group of settlements in the immediate landscape.

11.7 The Anglo-Saxon burnt flint pits proved more difficult to interpret. Although Pit F2058 yielded Romano-British pottery, both features produced radiocarbon dates that agreed with the Phase 3 structural evidence (above). Primary Fill L2060C of Pit F2058 was dated to 554 calAD, while primary Fill L2366 of Pit F2365 was dated to 538 calAD. Furthermore, the un-calibrated radiocarbon ages of these features displayed a potential cross-over in their use of some 19 years (Table 46). Various regional comparisons exist, including examples containing Romano-British material, all of which have also been assigned Anglo-Saxon dates. These include a burnt flint pit from Flixton (Boulter and Walton Rogers 2012, 94) which was radiocarbon dated to early-mid 5th to mid 6th century AD, in contrast to the 15 sherds of late Iron Age/ early Roman pottery recovered from its fills. Similar features were also recorded at Snape Anglo-Saxon cemetery (Pestell 2001, 259-61). The function of these pits has been interpreted differently on different sites, ranging from cooking pits to industrial features. In this instance, however, it is thought unlikely that they held a domestic/ cooking function, owing to the propensity of flint to explode when heated.

11.8 Charred plant remains and animal bone fragments from Anglo-Saxon features at Snape present a picture of a mixed farming economy based on the rearing of cattle, sheep/ goats and pigs, and the cultivation of various cereal crops. The latter, included barley, oats and free-threshing wheat, and suggested the cultivation of heavier, clay/ loam soils to the north of the site as well as the sandier soils of the immediate area. Pulses were also present and a single cherry or plum stone fragment from this phase suggests the gathering of uncultivated foodstuffs. Animals were raised for their meat and secondary products including bone marrow, hides and horns. Limited evidence of red deer hunting and the keeping of dogs was also recorded. The site's economy during the Anglo-Saxon period was broadly comparable to other, regional sites.

12 ARCHIVE DEPOSITION

12.1 Archive records, with an inventory, will be deposited at the Suffolk County Council Archaeological Store. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency. In addition to the overall site summary, it will be necessary to produce a summary of the artefactual and ecofactual data.

12.2 The archive will be deposited within six months of the conclusion of the fieldwork and report. It will be prepared in accordance with the UK Institute for

Conservation's *Conservation Guideline No. 2* and according to the document *Deposition of Archaeological Archives in Suffolk* (SCC AS Conservation Team, 2008).

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BIBLIOGRAPHY

Abrams, J. and Ingham, D. 2008, *Farming on the Edge: archaeological evidence from the clay upland west of Cambridge*, East Anglian Archaeology Report No. 123, Albion Archaeology

Addyman, P. V., 1972, 'The Anglo-Saxon House: a new review', *Anglo-Saxon England* 1, 273-307

Ahrens, C. 1966, 'Vorgeschichte des Kriesen Pinneberg und der Insel Helgoland – Die Vor- und frühgeschichtliche Denkmäler und Funde in Schleswig-Holstein, VII', in Kersten, K. (ed.) *Veröffentlichungen des Landesamtes für Vor- und Frühgeschichte in Schleswig*, 205, Wachholtz, GFR, Neumunster

Andrews, P. 1995, *Excavations at Redcastle Furze, Thetford 1988-9*, East Anglian Archaeology Report No. 72, Field Archaeology Division, Norfolk Museums Service

Arnold, C. J. 2005, *An Archaeology of the Early Anglo-Saxon Kingdoms* (New Edition), Taylor and Francis e-Library

Atkins, R. and Connor, A. 2010, *Farmers and Ironsmiths: prehistoric, Roman and Anglo-Saxon settlement beside Brandon Road, Thetford, Norfolk*, East Anglian Archaeology Report No. 134, Oxford Archaeology East

Baker, J. and Brookes, S. 2013, *Beyond the Burghal Hidage: Anglo-Saxon Civil Defence in the Viking Age*, Koninklijke Brill NV, Leiden

Berisford, F. 1973, *The Early Anglo-Saxon settlement sites in the Upper Thames Basin, with special reference to the area around Cassington and Eynsham*, Unpublished BLitt thesis, University of Oxford

Blagg, T., Plouviez, J. and Tester, A. 2004, *Excavations at a Large Romano-British Settlement at Hacheston, Suffolk, 1973-74*, East Anglian Archaeology Report No. 106, Suffolk County Council Archaeological Service

Boardman, J. and Evans, B. 2006, 'Britain', in Boardman, J. and Poesen, J. (eds.) *Soil Erosion in Europe*, 439-54, John Wiley & Sons, Chichester

Boulter, S. and Walton Rogers, P. 2012, *Circles and Cemeteries: excavations at Flixton, Volume 1*, East Anglian Archaeology Report No. 147, Suffolk County Council Archaeological Service

Bryant, S. 2000, 'The Iron Age', in Brown, N. and Glazebrook, J. (eds.) *Research and Archaeology: a framework for the eastern counties, 2: research agenda and strategy*, 14-18, East Anglian Archaeology Occasional Paper No. 8, Scole Archaeological Committee

Caruth, J. and Goffin, R. 2012, *Land South of Hartismere High School, Eye, Suffolk EYE 083. Post-Excavation Assessment Report*, Suffolk County Council Archaeological Service Report No. 2012/067

Crabtree, P. 1990, *West Stow, Suffolk: Early Anglo-Saxon Animal Husbandry*, East Anglian Archaeology Report No. 47, Suffolk County Council Planning Department

Crabtree, P. 1985, 'The Faunal Remains', in West, S. *West Stow: the Anglo-Saxon village, Suffolk*, 85-96, East Anglian Archaeology Report No. 24, Suffolk County Council Planning Department

Cussans, J. E. M. 2013, 'P4763, Snape, Suffolk: an interim report on the animal bone', internal report for Archaeological Solutions Ltd

Filmer-Sankey, W. and Pestell, T. 2001, *Snape Anglo-Saxon Cemetery: excavations and surveys 1824-1992*, East Anglian Archaeology Report No. 95, Suffolk County Council Planning Department

Gibson, D. and Lucas, G. 2002, 'Pre-Flavian kilns at Greenhouse Farm and the social context of early Roman pottery production in Cambridgeshire', *Britannia* XXXIII, 95-128

Gill, D., Plouviez, J., Symonds, R. P. and Tester, C. 2001, *Roman pottery manufacture at Bourne Hill, Wherstead*, East Anglian Archaeology Occ. Paper 9

Gurney, D. 2003, *Standards for Field Archaeology in the East of England*, East Anglian Archaeology Occasional Paper No.14, Association of Local Government Archaeological Officers, East of England Region

Guyan, W. U. von, 1952, 'Einige Karten zur Verbreitung des Grubenhases in Mitteleuropa im ersten nachchristlichen Jahrtausend und einige Hinweise auf des archäologische Problem der völkerwanderungszeitlichen Hausformen der Schweiz', *Jahrbuch der Schweizerischen Gesellschaft für Urgeschichte* 42, 174-97

Hajdas, I. 2008, 'Radiocarbon dating and its applications in Quaternary studies', *Quaternary Science Journal* 57(1/2), 2-24

Hamerow, H. 2011, 'Anglo-Saxon Timber Buildings and their Social Context', in Hamerow, H., Hinton, D. A. and Crawford, S. (eds.) *The Oxford Handbook of Anglo-Saxon Archaeology*, 128-55, Oxford University Press, Oxford

Hamerow, H. (2010), 'Communities of the Living and the Dead: the relationship between Anglo-Saxon settlements and cemeteries, c. AD 450-850' in Henig, M. and Ramsey, N. (eds.) *Intersections: the archaeology and history of Christianity in England, 400-1200*, 71-6, British Archaeological Reports (British Series), Archaeopress, Oxford

Hamerow, H. 2002, *Early Medieval Settlements: the archaeology of rural communities in north-western Europe 400-900*, Oxford University Press, Oxford

Hamerow, H. 1993, *Excavations at Mucking, Volume 2: The Anglo-Saxon Settlement*, English Heritage, London

Heidinga, H. A. and Offenberg, G. A. M. 1992, *Op zoek naar de vijfde eeuw, de Franken tussen Rijn en Maas*, Amsterdam

Higbee, L. 2009, 'Mammal and bird bone', in Lucy, S., Tipper, J. and Dickens, A. *The Anglo-Saxon Settlement and Cemetery at Bloodmoor Hill, Carlton Colville,* Suffolk 279-304, East Anglian Archaeology Report No. 131, Cambridge Archaeological Unit, Cambridge

Lally, M., Nicholson, K., Peachey, A., O'Brien, L. and Newton, A. A. S. forthcoming, *A Romano-British Industrial Site at East Winch, Norfolk,* East Anglian Archaeology Report

Lichtenstein, L. 2013, Land North of Blyth Houses, Church Road, Snape, Suffolk. An Archaeological Evaluation, Archaeological Solutions Ltd unpublished report no. 4234

Lucy, S. 2006, 'The Early Anglo-Saxon Settlement and Cemetery', in Garrow, D., Lucy, S. and Gibson, D. (eds.) *Excavations at Kilverstone, Norfolk: An Episodic Landscape History*, 170-201, East Anglian Archaeology Report No. 113, Cambridge Archaeological Unit, Cambridge

Lyons, A. 2011, *Life and Afterlife at Duxford, Cambridgeshire: archaeology and history in a chalkland community*, East Anglian Archaeology Report No. 141, Oxford Archaeology East

Medlycott, M. (ed.) 2011, *Research and Archaeology Revisited: a revised framework for the East of England*, East Anglian Archaeology Occasional Paper No. 24, Association of Local Government Archaeological Officers, East of England Region

Millett, M. 1992, *The Romanization of Britain: an essay in archaeological interpretation*, Cambridge University Press, Cambridge

Mudd, A. 2002, *Excavations at Melford Meadows, Brettenham, 1994: the Romano-British and early Saxon occupations,* East Anglian Archaeology Report No. 99, Oxford Archaeology

Mustchin, A. R. R. in preparation, *Former Smoke House Inn, Beck Row, Mildenhall, Suffolk. Research Archive Report*, Archaeological Solutions Ltd unpublished report

Newton, A. A. N. forthcoming, 'Prehistoric and Anglo-Saxon Activity at Dernford Farm, Sawston, Cambridgeshire', East Anglian Archaeology Report

Newton, A. A. S. 2013, 'Saxon and Medieval Settlement at The Old Bell, Marham', *Norfolk Archaeology* XLVI (2012), 331-56

O'Brien, L. forthcoming, *Bronze Age Barrow, Early to Middle Iron Age Settlement and Burials and Early Anglo-Saxon Settlement at Harston Mill, Harston, Cambridgeshire*, East Anglian Archaeology Report

Parks, R. and Barrett, J. 2009, 'Fish bone', in Lucy, S., Tipper, J. and Dickens, A. *The Anglo-Saxon Settlement and Cemetery at Bloodmoor Hill, Carlton Colville,* Suffolk 304-5, East Anglian Archaeology Report No. 131, Cambridge Archaeological Unit, Cambridge

Pestell, T. 2001, 'Burnt Stone Features' in Filmer-Sankey, W. and Pestell, T. *Snape Anglo-Saxon Cemetery: excavations and surveys 1824-1992*, 259-61, East Anglian Archaeology Report No. 95, Suffolk County Council Planning Department

Plouviez, J. 1999, 'The Roman Period', in Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk* (Revised and Enlarged Edition), 42-3, Suffolk County Council (Environment & Transport)/ Suffolk Institute od Archaeology and History, Ipswich

Poole, C. 1991, 'Objects of Baked Clay', in Cunliffe, B. and Poole, C. *Danebury: an Iron Age Hillfort in Hampshire. Vol.5. The Excavations 1979-1988: The Finds*, 370-80, CBA Research Report 73

Powell, A. and Clark, K. M. 2002, 'I. Animal Bones', in Mudd, A. *Excavations at Melford Meadows, Brettenham, 1994: the Romano-British and early Saxon occupations,* 101-8, East Anglian Archaeology Report No. 99, Oxford Archaeology

Powlesland, D. 2003, 'Early Anglo-Saxon Settlements, Structures, Form and Layout', in Hines, J. (ed.) *The Anglo-Saxons from the Migration Period to the Eighth Century: an ethnographic perspective*, 101-16, The Boydell Press, Woodbridge

Rickett, R. 1995, *The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Part VII: the Iron Age, Roman and early Saxon Settlement*, East Anglian Archaeology Report No. 73, Field Archaeology Division, Norfolk Museums Service

Roberts, J., Spoerry, P. and Lyons, A. 2011, 'V. Anglo-Saxon', in Lyons, A. (ed.) *Life and Afterlife at Duxford, Cambridgeshire: archaeology and history in a chalkland community*, 123-6, East Anglian Archaeology Report No. 141, Oxford Archaeology East

Sabin, D. and Donaldson, K. 2012, *Land North of Church House, Blyth Road, Snape, Suffolk. Magnetometer Survey Report,* Archaeological Surveys Ltd, Ref No. 447

Sieveking, G. de G. and Clayton, C. J. 2011, 'Frost Shatter and the Properties of Frozen Flint', in Sieveking, G. de G. and Hart, M. B. (eds.) *The Scientific Study of Flint and Chert*, 283-90, Cambridge University Press, Cambridge

Summers, J. R. 2013, 'P4763, Snape, Suffolk: an interim report on the charred plant remains', internal report for Archaeological Solutions Ltd

Sykes, N. 2011, 'Woods and the Wild', in Hamerow, H., Hinton, D. A. and Crawford, S. (eds.) *The Oxford Handbook of Anglo-Saxon Archaeology*, 327-45, Oxford University Press, Oxford

Thompson, P. 2013, 'P4763, Snape, Suffolk: an interim report on the Anglo-Saxon and later pottery', internal report for Archaeological Solutions Ltd

Tipper, J. 2007, *West Stow, Lackford Bridge Quarry (WSW 030). A Report on a Rescue Excavation undertaken in 1978-9*, Suffolk County Council Archaeological Service Report No. 2007/039

Tipper, J. 2004, *The 'Grubenhaus' in Anglo-Saxon England: an analysis and interpretation of the evidence from a most distinctive building type,* English Heritage/ The Landscape Research Centre, Yedingham

von Guyan, W. U. 1952, 'Einige Karten zur Verbreitung des Grubenhases in Mitteleuropa im ersten nachchristlichen Jahrtausend und einige Hinweise auf des archäologische Problem der völkerwanderungszeitlichen Hausformen der Schweiz', *Jahrbuch der Schweizerischen Gesellschaft für Urgeschichte* 42, 174-97

Wade, K. 1999, 'The Later Anglo-Saxon Period', in Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk* (revised and enlarged edition), 46-7, Suffolk County Council (Environment and Transport)/ Suffolk Institute of Archaeology and History, Ipswich

Wallis, H. 2011, *Romano-British and Saxon Occupation at Billingford, Central Norfolk: excavation (1991-2) and watching brief (1995-2002)*, East Anglian Archaeology Report No. 135, Field Archaeology Division, Norfolk Museums Service

Walton Rogers, P. 2012, 'Introduction', in Boulter, S. and Walton Rogers, P. *Circles and Cemeteries: excavations at Flixton, Volume 1*, 83, East Anglian Archaeology Report No. 147, Suffolk County Council Archaeological Service

West, S. 1999, 'The Early Anglo-Saxon Period', in Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk* (revised and enlarged edition), 44-5, Suffolk County Council (Environment and Transport)/ Suffolk Institute of Archaeology and History, Ipswich

West, S. 1985, *West Stow: the Anglo-Saxon village, Suffolk* (two volumes), East Anglian Archaeology Report No. 24, Suffolk County Council Planning Department

West, S. E. 1971, 'The Anglo-Saxon village of West Stow: an interim report of the excavations 1965-8', *Medieval Archaeology* 13, 1-20

Williams, H. 2008, 'Towards and Archaeology of Cremation', in Schmidt, C. W. and Symes, S. A. (eds.) *The Analysis of Burned Human Remains*, 239-70, Academic Press, London

Williams, R. J. 1993, *Pennylands and Hartigans. Two Iron Age and Saxon Sites in Milton Keynes*, Buckinghamshire Archaeological Society Monograph Series 4

Williamson, T. 2010, 'The Environmental Contexts of Anglo-Saxon Settlement', in Higham, N. J. and Ryan, M. J. (eds.) *The Landscape Archaeology of Anglo-Saxon England*, 133-56, The Boydell Press, Woodbridge

Websites

www.bgs.ac.uk

www.biab.ac.uk

www.landis.org.uk

www.suffolklandscape.org.uk

APPENDIX 1 PHASED SPREADSHEET OF FEATURES AND CONTEXTS

(see attached Data CD)

Features and contexts forming Phase 2 Kiln S2633 are tabulated within the text only (see Table 10, (above)).

APPENDIX 2 SPECIALIST REPORTS

The Prehistoric and Roman Pottery
Andrew Peachey

Excavations recovered a total of 556 sherds (6336g) of prehistoric pottery and 769 sherds (10733g) of Roman pottery (Tale 27). The prehistoric pottery was almost entirely early Iron Age in date, comprising as mix of coarse and fine flint-tempered ware vessels in the West Harling and Darmsden ceramic styles, associated with two clusters of pit and posthole features. The Roman pottery was principally associated with a mid to late 1st century AD kiln that produced a limited range of coarse ware, utilitarian form types including butt beakers, cooking pots and storage jars. However sparse sherds of curated samian ware and a late Roman/post-Roman imported storage jar were also recorded in association with the Phase 3 (Anglo-Saxon) sunken-featured buildings on the site.

Feature Group	No. of features*	Prehistoric Pottery		Roman Pottery	
		F	W	F	W
Phase 1: Activity Area 1	35	359	4499	-	-
Phase 1: Activity Area 2	11	112	1010	-	-
Phase 1: Possible Post Alignments	1	1	13		
Phase 1: Possible Storage Pits	2	15	460	-	-
Phase 1: Other Features	8	43	175	-	-
Phase 2: Pottery Kiln S2633	6	2	13	372	6470
Phase 2: Post-built Structure 2	4	1	20	66	354
Phase 2: Feature Alignment	1	-	-	2	13
Phase 2: Feature Cluster	1	-	-	4	158
Phase 2: Trackway	2	-	-	12	64
Phase 2: Enclosure Ditches	7	6	41	232	2323
Phase 2: Other Pits/Postholes	12	12	79	60	819
Phase 3: Roman pottery in SFBs	5	-	-	10	254
Phase 3: Burnt Flint Pit F2058	1	-	-	2	99
Subsoil L2001	1	5	26	9	179
Total	*97*	*556*	*6336*	*769*	*10733*

Table 27: Quantification of prehistoric and Roman pottery in feature groups, by frequency (F) and weight (W, in grams)
**that contained pottery*

Methodology

The pottery was quantified by sherd count, weight (g) and R.EVE with fabrics examined at x20 magnification in accordance with the guidelines of the Prehistoric Ceramics Research Group (PCRG 1995) and the Study Group for Roman Pottery. Fabric codes and descriptions (Roman) were cross-referenced, where possible, to the National Roman Fabric Reference Collection (Tomber and Dore 1998) or appropriate regional kiln groups, while local or indistinguishable coarse wares were assigned an alpha-numeric code and are fully described in the report. Samian ware forms reference Webster (1996) and amphora form types are cross-referenced with Williams (2005). All data has been entered into a Microsoft Excel spreadsheet that forms part of the site archive.

To avoid the repetition of lengthy references several abbreviations have been included for ease of use to designate recurring comparative assemblages. These comprise:

Cam.	The Colchester (Camulodunum) type series (Symonds and Wade 1999)
Sheepen	An early Roman industrial site at Sheepen, Colchester (Niblett 1985)
Hacheston	A Roman settlement and kiln site (Arthur and Plouviez 2004)
Burgh	An early Roman settlement (Martin 1988)
Wherstead	An early Roman kiln site (Symonds 2001)

The Prehistoric Pottery

The assemblage contained a total of 556 sherds (6336g) of slightly abraded prehistoric pottery, almost entirely characterised by early Iron Age carinated bowls and jars with varying calcined flint temper and finger-nail impressed decoration. The assemblage was almost entirely contained as in situ material in Phase 1 (early Iron Age) features, with the bulk contained in a single cluster of pits and postholes: Activity Area 1 (Table 27), with appreciable quantities also present in a second feature cluster: Activity Area 2. Negligible quantities were present in sparse other Phase 1 features and as residual material.

In addition to the early Iron Age pottery, three sherds (48g) of early Bronze Age pottery were contained as residual material in Roman Pit F2474 (L2475). The sherds were derived from a single vessel manufactured in a (bonfire-fired) orange fabric tempered with common grog (0.25-2.5mm) with occasional quartz sand and organic inclusions also present. The vessel comprised an urn with an upright rim and finger-pinched rustication on the body, typical of early Bronze Age vessels in the Rusticated Beaker ceramic tradition from the region.

The early Iron Age pottery occurred entirely in fabrics tempered with calcined flint and could be divided into finer and coarser variants. Both variants were bonfire fired with dark red-brown to dark grey surfaces over a reduced core, but can be broadly divided thus:

F1 Fine to medium flint-tempered ware. Inclusions comprise common fine calcined flint (<1.5mm, occasionally to 5mm) and common sub-angular quartz (<0.5mm). Occasional to sparse burnt out voids/impressions (organics) may also be visible on the surfaces.

F2 Coarse flint-tempered ware. Inclusions comprise common medium calcined flint (<3mm, occasionally to 10mm) and common sub-angular quartz (<0.5mm).

In the group from Activity Area 1 the finer fabric F1 is dominant in terms of sherd count but not weight (Table 28), suggesting the two fabrics have a relatively equal significance, but contrasting degrees of fragmentation dependant on the thickness and robustness of vessel walls. Despite the overall quantity of fabrics F1 and F2 in the 35 pits and postholes of Activity Area 1, concentrations of sherds are relatively sparse. Pit F2662 is notable, not only as the largest feature in the group, but also for containing a total of 131 sherds (1043g) of pottery, significantly greater than any other Phase 1 feature. Within Activity Area 1, other small concentrations of over 20 sherds/ 250g were contained in Pits F2683, F2812, F2846, Postholes F2613, F2700 and F2794.

The vessels in Activity Area 1 are dominated by a range of carinated bowls with limited finger-nail decoration that closely conform to West Harling Class II vessels (Clark and Fell 1953, 15). These include an F1 necked bowl with a decorated rim in Pit F2846 (Fig. 36.1), and an F2 bi-partite bowl with a decorated girth in Posthole F2794 (Fig. 36.2). Both vessels also find close comparisons at Broomfield,

Chelmsford (Atkinson 1995: figs. 7.14-15). Further F1 and F2 flaring rim sherds with finger-nail impressions on the exterior of the rim were also contained in Pits F2662 and F2826 (Figs. 36.3-36.5), while body sherds with decorated girths/carinations are also present, and appear to have formed part of similar vessels, comparable to examples at Framlingham (Martin 1993: fig. 42), Lofts Farm, Essex (Brown 1988: fig. 17.73-75) and Fengate, Cambs. (i.e. Hawkes 1943: vessels D3 and S3) and. Supplementing these vessels, are a range of F1 plain burnished bowls with flaring rims, including examples in Pits F2662 and F2846 (Figs. 36.6-36.7), with numerous other small fragments also in the group. These have more in common with bowls recorded at Darmsden (Cunliffe 2005, 624, fig. A:13), Barham (Martin 1993: fig. 20.34-36), Lofts Farm (Brown 1988: fig. 16.55-57) and Maldon (Bedwin 1992: figs. 5.3-7). Two similar F1 small plain vessels contained in Pits F2666 and F2812 (Figs. 36.8-36.9) may have functioned as small bowls or cups/beakers, and are comparable to vessels at Lofts Farm (Brown 1988, fig. 15.44) and Fengate (Hawkes 1943: vessels K3-4). The principal exception to this pattern of vessels comprises am F1 jar with an angular shoulder contained in Pit F2613 (Fig. 36.10), which is comparable to examples at Lofts Farm (Brown 1988: figs. 17.76-8), Maldon (Bedwin 1992: fig. 6.21) and Fengate (i.e. Hawkes 1943: vessels O2-3 and U3-4), however other isolated diagnostic sherds include an F2 omphalos base in Pit F2662 and a body sherds with stabbed bird-bone decoration in Pit F2812.

Phase 1 Feature Group	**Fabric F1**		**Fabric F2**		**Total R.EVE**
	F	W	F	W	
Activity Area 1	211	1980	148	2519	1.20
Activity Area 2	89	652	23	358	0.47
Possible Post Alignments	1	13	0	0	0.00
Possible Storage Pits	11	403	4	57	0.00
Other Features	35	120	8	55	0.10
Total	*347*	*3168*	*183*	*2989*	*1.77*

Table 28: Early Iron Age fabric types in Phase 1 feature groups

In contrast, Phase 1 Activity Area 2 contained only two small concentrations of sherds: in Pit F2290 and Posthole F2314, with the remainder of the group very sparsely distributed in other pit and posthole features. The range of vessels in this group is closely comparable to those in Activity Area 1, including a West Harling-style F1 jar in Pit F2304 with finger-nail decoration on the rim and shoulder (Fig. 36.11), closely comparable to a vessel at Trowse (Percival 2000, 177: vessels P131-2). A similar F1 bowl with a decorated rim and plain neck cordon was contained in Pit F2290 (Fig. 36.12), similar to a vessel at Little Bealings (Martin 1993, 56: vessel 21), while an F1 jar with an angular shoulder (Fig. 36.13) was contained in Pit F2294. This group also contained a component of finely burnished vessels with flaring rims, including a small F1 bowl or cup (Fig. 36.14) in Pit F2306 comparable to examples at Darmsden (Cunliffe 2005, 624: fig. A:13.4-5) and Lofts Farm (Brown 1988, 267: vessel 59).

Overall, the early Iron Age pottery groups from Phase 1 Activity Areas 1 and 2 conform closely to the characteristics of 'decorated post Deverel-Rimbury' pottery, originally defined by Barrett (1980), and more recently discussed and clarified in Norfolk (northern East Anglia) by Brudenell (2011, 17-19). Using Barrett's (1980, 302-3) system of classification, the assemblage contains a high proportion of fine bowls (Class IV), supplemented by approximately equal proportions of fine and coarse jars (Classes II & III) (Table 29). Although the sample size is limited and

diagnostic sherds fragmentary, the fine bowls are predominantly polished/ burnished and occur in a relatively narrow size range, with rim diameters ranging between 16 and 20 cm. The fine jars have a wider range of size, between 16 and 26 cm, while the coarse jars are typically larger between 22 and 32cm. There is little evidence of function for the varying vessel types or sizes, with fragmentation appearing related to vessel thickness rather than usage. Traces of soot were recorded on single examples of F1 and F2 vessels, comprising a F2 bipartite bowl in Posthole F2794 (Fig. 36.2) in Activity Area 1, and an F1 jar with an angular shoulder in Pit F2294 (Fig. 36.13) in Activity Area 2, with no other residues recorded.

Fabric	Vessel type/decoration	Barrett (1980) Class	R.EVE	Frequency
F1	Fine Jar, burnished/polished	II	0.33	3
F1	Fine Jar, finger-impressed	II	0.10	1
F1	Fine Jar, plain	II	0.10	1
F2	Coarse Bowl, finger-impressed	III	0.32	4
F2	Coarse Bowl, plain	III	0.05	2
F1	Fine Bowl, burnished/polished	IV	0.47	7
F1	Fine Bowl, finger-impressed	IV	0.30	4
F1	Fine Bowl, plain	IV	0.05	1
F1	Cup	V	0.05	1
		Total	1.77	24

Table 29: Quantification of early Iron Age vessel types using Barrett's (1980) system of classification, by R.EVE and frequency (minimum number of vessels)

The use of fabric may be directly linked to the method of manufacture and the intended robustness of the vessel, rather than investment of effort in higher status vessels. The predominance of bowls, particularly finer vessels appears to reflect a firm early Iron Age date, with the absence of coarse jars (Class I) possibly reflecting the shift in focus to smaller, finer vessels highlighted by Barrett (1980, 303), although the limited extent of the feature groups may bias the functions or activities represented in one area of a settlement. However; it may also highlight the limitations of Barretts generalised classification when applied to East Anglia, with several issues identified by Brudenell (2001, 12), especially when applied to smaller assemblages from a limited number of feature groups such as this. Nonetheless, the pattern of vessels evident here do allow for inter-site comparisons in the region that inform on the chronology of the assemblage, if not the function.

This stylistic continuum is largely defined in East Anglia by assemblages from West Harling, Norfolk (Clark and Fell 1953) and Darmsden, Suffolk (Cunliffe 1968; 2005, 624: fig. A:13), which are typified by the significant presence of fine burnished, carinated bowls alongside medium to coarse, finger-nail impressed bowls and jars, with such parallels extensively defined above. Elements of this style extend southwards into Essex at sites such as Lofts Farm, where there is an increased coarse element, although the Beacon Green, Maldon assemblage is perhaps more closely comparable in its fine ware component (Bedwin 1992, 18). Similarly, further west at sites such as Fengate, a similar range of vessels is present but there accompanied by more vessels decorated with burnished lines and chevrons. Closer to Snape, an assemblage in exactly this ceramic style was recorded at Barham with a smaller finger-decorated element, while the more limited group from Framlingham exhibits more common finger-impressed rim sherds (Martin 1993). However Barrett (1978, 270-1) has suggested variations between sites in the occurrence of fine and decorated wares dependent on function and 'status', while Brudenell (2011, 17)

highlights variations between sites within regions, stating changes and choices in style were not synchronised between sites. It is convincing to propose that this assemblage is closely contemporary with that at Barham, and also with Darmsden, between the 8th and 5th centuries BC, possibly into the 4th century BC.

The Roman Pottery

The focus of the Roman pottery assemblage is the group of waster material contained in Kiln S2633, representing either material fractured during firing or rejected and back-filled as the kiln went out of use. Further Roman pottery related to this kiln activity was contained in other Phase 2 features, notably the Enclosure Ditches, while a contrasting component of imported Roman pottery was contained in Phase 3 (Anglo-Saxon) features, representing curated sherds and exotica.

Roman Fabric Descriptions

Products of Kiln S2633

RE1	Pale brown-cream to pale-mid grey surfaces fading to a slightly contrasting core (relative to surface colour). Inclusions comprise sparse-common, moderately-sorted quartz (0.2-0.5mm), occasional rounded white chalk (0.25-1mm), fine mica, and red/black iron rich grains (<0.5mm). A hard fabric with slightly abrasive surfaces
RE2	As RE1; but with common medium-coarse quartz (typically 0.3-0.75mm; all other inclusions comparable
OX1	As RE1; but oxidised orange-red, sometimes with red-brown to black surfaces

Other early Roman Fabrics

BSW1	Black-surfaced/ Romanising grey ware. Black surfaces, thin red margins and a mid grey core. Inclusions comprise common quartz (<0.25mm, occasionally polycrystalline to 1mm) and sparse dark red/black iron rich grains/grog.
SOB GT	Southern British ('Belgic') grog-tempered ware (Tomber and Dore 1998, 214)
BAT AM2	Baetican (Late) amphorae 2 (Tomber and Dore 1998, 85)

Later Roman Fabrics in Phase 3 features

RHZ SA	Rheinzabern samian ware (Tomber and Dore 1998, 43)
TRI SA	Trier samian ware (Tomber and Dore 1998, 41)
MAY CO	Mayen coarse ware (Tomber and Dore 1998, 70)

Pottery from Phase 2 Kiln S2633

The Kiln S2633 pottery group: 372 sherds (6470g) was contained in Firing Chamber F2634 (L2635, L2636, L2637 and L2638), Stoking Pits F2713/2714 (L2715, L2716, L2717 and L2718), F2764/2765 (L2766, L2767, L2768 and L2769) and Clay Lining L2633) with the sequence of fills appearing to represent the contemporary final firing and back-filling of the kiln. Several further form types in the kiln fabrics, both reduced and oxidised occur in other Phase 2 features, indicating a contemporary chronology. Other fabric types in Phase 2 occur only in limited quantities, with imports limited to a single Baetican amphora (BAT AM2) sherd, while all samian ware and other east Gaulish imported ware occurs in Phase 3 features (Table 30).

The Kiln S2633 pottery group included eight types of vessel in three related fabrics that all appear to have been products of the kiln (Table 31). Several sherds from

within the kiln have been re-fired or 'exploded' during firing, indicating the presence of waster material, although the intended finish: oxidised or reduced, of the fabrics is unclear and given the lack of attention to finish may have been acceptable as either. Fabrics RE1 and OX1 appear interchangeable as variants of a single manufactured coarse ware, while fabric RE2 is certainly a relative of these more common types, probably at the coarser end of a fabric continuum, in which it was deliberately designed for larger jars and storage jars to ensure robustness during firing and use. Therefore, the distinctions between the three fabrics are partially subjective as they were clearly produced together as part of a single process, and the nature of waster material obscures the true intended finish, although vessels outside the kiln deposits suggest both reduced and oxidised vessels were utilised.

Fabric type	Pottery Kiln S2633		Phase 2 Enclosure Ditches		Other Phase 2 features		Phase 3 and unstratified features	
	F	W	F	W	F	W	F	W
RE1	172	1902	85	658	102	1000	9	95
RE2	45	1644	45	790	27	343	3	105
OX1	155	2924	93	595	15	65	3	44
BSW1	-	-	6	78	-	-	-	-
SOB GT	-	-	2	49	-	-	-	-
BAT AM2	-	-	1	153	-	-	-	-
RHZ SA	-	-	-	-	-	-	3	130
TRI SA	-	-	-	-	-	-	2	20
MAY CO	-	-	-	-	-	-	1	138
Total	*372*	*6470*	*232*	*2323*	*144*	*1408*	*21*	*532*

Table 30: Quantification of Roman pottery fabric types by frequency (F) and weight (W, in grams) in phase and feature groups

The principal product of Kiln S2633 appears to have been a single type of butt beaker (Table 31), with the number of neck and shoulder sherds not included in the R.EVE quantification serving to underline this prevalence. The butt beaker type has a down-turned bead rim, tall neck and plain shoulder cordon; and includes examples from Stoking Pit F2714 (RE1: Fig. 36.15, 36.16; OX1: Fig. 36.17) and Firing Chamber F2634 (RE1: Fig. 36.18), with further diagnostic sherds in all parts of Kiln S2633. The butt beaker rim sherds consistently indicate a diameter of 14-16cm, suggesting they were drinking vessels with a relatively high capacity, possibly up to 2 pints. The form type corresponds with *Cam*.113 at Colchester, which is derived from North Gaulish roulette decorated beakers; however none of the examples from Kiln S2633 exhibit any form of decoration beyond a burnished exterior. The butt beakers in this group also lack the characteristic internal ledge of the 'classic' form type, which is present on the otherwise comparable examples of *Sheepen* 33 and *Burgh* 229. However, the down-turned bead rim profile without an internal ledge is comparable *Wherstead* 16, another kiln site in the area, but in contrast the Wherstead example is decorated. Based on the close comparisons of the butt beakers from other early Roman kiln sites, notably Wherstead and Sheepen, and the lack of evidence for pre-conquest pottery production, this form type appears indicative of a date in the third quarter of the 1st century AD (*c*.AD50-75), although the type was produced to the end of the century.

Vessel type	Diagnostic characteristics	Fabrics	Total R.EVE	MNV
Beaker	Butt beaker with down-turned bead rim	RE1, OX1	1.08	6
Jar	Everted bead rim, ?single plain shoulder cordon	RE1	0.20	2
Jar	Everted bead rim, double plain shoulder cordon	OX1	0.23	1
Jar	Everted bead rim, short neck, plain body	OX1	0.32	2
Jar	Everted bead rim, short neck, grooved neck/shoulder	OX1	0.05	1
Jar	Narrow neck, everted bead rim, plain shoulder cordon, globular body	OX1	0.30	1
Jar	Miscellaneous, everted bead rim	RE1, OX1	1.00	6
Storage Jar	Everted bead rim, stabbed decoration on shoulder	RE2, OX1	0.27	2
Total			*3.45*	*21*

Table 31: Vessel types contained in Kiln S2633, quantified by R.EVE and minimum number of vessels (MNV)

Pottery production in Kiln S2663 also included several types of jar; all with everted bead rims and cordoned or plain shoulders (Table 31), consistent with utilitarian cooking and storage vessels in early Roman assemblages from the region. The jars are fairly consistently sized, with rim diameters of c.16-18 cm, with occasional jars to 24cm. Variants with plain shoulder cordons include examples from Firing Chamber F2634 (Fig. 36.19) and Stoking Pit F2764 (Fig. 36.20), which are consistent with *Cam*.218B/C and common in the region (i.e. *Burgh* 73 and 205). Several other 1st Century AD kiln sites in the region were known to produce comparable jars with parallels including *Hacheston* type 22, *Wherstead* 43-6 and *Sheepen* 100, 104 and 178. The second type of jar has a short neck and plain shoulder, including OX1 examples from Firing chamber F2634 (Fig. 36.21) and Stoking Pit F2714 (Fig. 36.22), and is consistent with the *Cam*.266 cooking pot (i.e. *Sheepen* 21). A further small jar, seemingly related to both types has three grooves at the base of the neck, such as the OX1 example from Stoking Pit F2765 (Fig. 36.23), and is comparable to jars produced at *Hacheston* (type 25: i.e. Plouviez 2004, 174: fig. 114.59). All of the above types are also paralleled in the pottery groups from other Phase 2 features; however a single narrow-neck jar in Kiln S2663 is an isolated occurrence in the assemblage. This OX1 narrow-necked jar, in Stoking Pit F2765 (Fig. 36.24) has a plain shoulder cordon and globular body comparable to the mid to late 1st century jars of *Hacheston* type 23B and *Sheepen* 186, supporting the chronology indicated by the butt beakers.

The final type of vessel recorded in Kiln S2633 is a storage jar with a (rolled) everted bead rim and stabbed decoration on the shoulder, including an RE2 example in Firing Chamber F2634 (Fig. 36.25). This form type is consistent with *Cam*.270B, and comparable to storage jars from other 1st century AD kiln sites, including *Sheepen* 209/216 and *Hacheston* type 31B, and is also common in assemblages from the region such as *Burgh* 141/352. Although clearly derived from a 'Belgic' grog-tempered precursor, this type of vessel occurs predominantly in the coarser sand-tempered fabric RE2, with occasional oxidised sherds appearing to represent mis-fired or over-fired material. Relatively few rim sherds are associated with storage jars in the kiln deposit, but shoulder sherds with either a single or double row of stabbed decoration are more common, possibly reflecting the substantially larger size of the vessels (diameter: 30-34cm), although rim sherds do appear under-represented.

Pottery from the Phase 2 Enclosure Ditches

The second significant group of Roman pottery in the assemblage was contained in the Phase 2 Enclosure Ditches, notably 85 sherds (461g) in Ditch F2606 (L2607 Seg.B) *c.*7m to the west of Kiln S2663, and a total of 125 sherds (1463g) in Ditch F2300, which indicate the continuity of activity and deposition to the north-east of the site. The concentration of pottery in Ditch F2606 (L2607 Seg.B) is limited to sherds in the three kiln fabrics (RE1, RE2 and OX1) and includes an RE2 jar with a grooved neck (Fig. 36.26) comparable to a type manufactured in Kiln S2663, along with multiple miscellaneous everted bead rims. The pottery in Ditch F2300 is also predominantly in the kiln fabrics, including two cordoned jars (Fig. 36.27 and 34.28) comparable to products of kiln S2663; but in addition, included a BSW1 tall-necked bowl with a rounded carination and burnished line decoration (Fig. 37.29). This bowl is of type *Cam.*209A, closely comparable to *Burgh* 288, and unlikely to have been produced after the 1st century AD. It was recovered in association with fragments of a globular beaker, the bulk of which was deliberately deposited in Pit F2332 (see below). Other vessels in the Phase 2 Enclosure Ditches notable for not being in the kiln fabrics include the everted bead rim of a SOB GT jar in Gully F2848 (L2849) and the rim of a Baetican (BAT AM2) Dressel 20 amphora in Ditch F2015 (L2016). The amphorae would originally have been imported from southern Spain as a container for olive oil, and has an almond profile rim with an internal ledge (Fig. 37.30) that is comparable to examples at Colchester dated to between the mid 1st and early 2nd centuries AD (*Sheepen* fig. 58.99; Symonds and Wade 1999, 155: fig. 3.13.15), and also present in 1st century AD deposits as *Burgh* 356.

Pottery from other Phase 2 features

A limited group of Roman pottery was associated with possible Phase 2 Post-built Structure 2, notably 56 sherds (308g) contained in Pit F2587 (L2589). The pottery in this group was entirely comprised of the kiln fabrics, and included sherds from as single OX1 cordoned cup or small bowl (Fig. 37.31) in both Pits F2587 and F2590. This form type is comparable to *Hacheston* type 19 and Burgh 289-291, and although not paralleled in the kiln deposit may be a contemporary mid to late 1st century AD product of Kiln S2663 or another similar facility in the close vicinity.

In addition to the Roman pottery in the significant Phase 2 feature groups, several associated 'isolated' Phase 2 features contained pottery of intrinsic interest. Foremost is Pit F2332 (L2333), which contained the bulk of a large globular beaker (cross-joining fragments were also recorded in Ditch F2300, a short distance to the south) in association with a cordoned jar. The RE1 beaker, with two plain shoulder cordons (Fig. 37.32) is of type *Cam.*108 (i.e. *Sheepen* 184), appears to have been placed deliberately at the centre of the base of the pit. It is unclear if this positioning is coincidental, or whether the presence of cross-joining sherds in Ditch F2300 represents later disturbance. The form type of the beaker was not paralleled in Kiln S2663, in contrast to the RE1 cordoned jar (Fig. 37.33) also partially contained in the pit. A similar RE1 cordoned jar (Fig. 37.34) was also contained in Pit F2571, while a further cordoned cup or small bowl (Fig. 37.35) in Pit F2259 is of the same type as the probable kiln product recorded in Phase 2 Post-built Structure 2.

Discussion of pottery production in Phase 2

Pottery production at Kiln S2663 and its use on the site does not appear specialised, and the mix of beakers, jars, storage jars) and possible cups/small bowls) would cater for the diverse requirements of a settlement in the immediate vicinity, possible even serving a single farmstead or villa. The range of sizes in the vessels would also allow for efficient stacking within the kiln chamber, with smaller vessels stacked within large vessels, and more robust vessels supporting layers of vessels above, thus maximising the capacity of the kiln. The date of production at Kiln S2663 and the associated surrounding activity appears closely comparable to that at Wherstead in the third quarter of the 1st century AD (*c.*AD50-75) as well as mid to late 1st century activity at Burgh (Martin 1988) and Colchester, notably Sheepen (Niblett 1985, 50-51).

The close comparisons with products from the major industry at Colchester raised the question at Wherstead of whether the kiln was a satellite workshop of related potters, but it was concluded that the diversity of production could function quite independently producing popular vessel types of the day to serve local communities (Symonds 2001, 24). The evidence of the butt beakers and utilitarian jars suggests that Kiln S2663 may have functioned as a similar component in the economic landscape of Roman east Suffolk, with the pottery group in Ditch F2300 suggesting either the hub of this occupation or a second kiln may not be too distant. The stylistic influence of Colchester on pottery production appears logical, especially as the earliest known kiln at Hacheston is dated to the late 1st to early 2nd century AD (Seeley 2004, 176-7), pre-dating Kiln S2663. However, the production of closely comparable mid to late 1st century AD butt beakers, jars and storage jars at Thorpe St. Andrew, Norfolk (Gregory 1979) and Greenhouse Farm, Cambridge (Gibson and Lucas 2002) supports the theory that this was part of an extensive distribution of localised early Roman industry in rural East Anglia.

Peacock (1982, 90) highlighted the fact that isolated workshops were the simplest mode of production and were more common in the countryside, where lucrative urban demand was less likely to promote nucleation. This model would explain why a single (or very few kilns) would produce a limited repertoire of utilitarian forms with a possible specialisation towards butt beakers; a mode of production that Theodore Peña (2007, 32) identifies as a not infrequent rural variant. The possible specialisation towards relatively large butt beakers may represent an attempt to create a surplus that could be exported within the local or regional area, thus elevating an industry associated with a farmstead or estate above self-sufficiency to profit.

Roman Pottery in Anglo-Saxon (Phase 3) features and un-stratified layers

A series of fragments from samian ware vessels and an imported Roman storage vessel are of intrinsic interest in association with the Anglo-Saxon sunken-featured buildings (SFBs) on the site.

The samian ware is entirely comprised of material from east Gaul: Rheinzabern (RHZ SA) and Trier (TRI SA), which would originally have been imported to Britain in the late 2nd to mid 3rd centuries AD, substantially post-dating the Roman activity of

Phase 2. However, the penultimate stage in the 'life-cycle' of these sherds appears to have been as curated fragments in the 5th – 7th centuries rather than their final use in the Roman period. SFB2 (F2235 Quadrants C and D) contained the base of a RHZ SA Dr.31 bowl with edge of a rosette stamp, and a rim sherd from a RHZ SA Curle 11 bowl with trailed decoration. SFB3 (F2406 Quadrant D) contained a rim sherd from a TRI SA Dr.37 bowl with abraded moulded decoration including an ovolo (cannot be identified), while a further rim sherd from a RHZ SA Dr.31/31R bowl was contained in Posthole F2726, tentatively assigned possible Phase 2 Post-built Structure 2 but clearly consistent with the pattern of Phase 3 consumption. All fragments are sized between 70-100x70mm with approximately triangular or rhomboid profiles and with edges, including the break, that have become rounded in antiquity (though have not been filed). The slip on all fragments is also worn but generally intact except on rims or foot rings that form the edge of a fragment where it has been removed. The base of a similar samian ware bowl has previously been recorded in the hollow of an early Anglo-Saxon SFB at Harston Mill, Cambridgeshire (O'Brien *forthcoming*: chapter 6), while numerous re-used Roman objects, mainly brooches and metal implements have previously been recorded in SFBs at sites including West Stow (West 1985, 122).

It is unclear where the Anglo-Saxon occupants of the SFBs sourced this samian ware, as it was clearly not associated with the Phase 2 activity of the mid to late 1st century AD. The samian ware may have been sourced from an exposed or disturbed Roman midden or dump in the locality, or possibly arrived after being carried by occupants from a more distant source, but either way the distinct glossy, red-slipped appear to have been deliberately selected. Wallace (2006, 264) has suggested that "the antiquity and character of re-used Roman objects in the 5th to 7th centuries AD in Britain were central to the ways of their re-use, rather than simply availability and practicality alone", and the evidence here is consistent with this in that samian ware does not appear easily available in the Phase 2 assemblage, and the character of these sherds suggests they were viewed as objects that appear to have been held or carried rather than actual vessels. Based on comparable evidence for the collection and re-use of Roman red-coloured pottery sherds (including samian ware) in southern and eastern Britain, Cool (2000, 52-3) has identified a distinctive 'suite' of Anglo-Saxon material culture in the 5th and 6th centuries AD, including counters and spindle whorls, of which the former may be applicable to the samian ware in the Phase 3 SFBs.

In contrast with the re-used samian ware, a fragment of storage jar also imported from east Gaul is very much contemporary with the occupation in Phase 3. A single rim sherd (138g) of Mayen coarse ware (MAY CO), imported from the Rhineland was recovered from Subsoil L2001, directly above SFB3 (F2406). The vessel comprised a storage jar with an angular deep ledge/lid-seated rim (Fig. 37.36) that corresponds with Gose (1950) type 545 and is comparable to vessels recorded in post-Roman deposits at Colchester (Symonds and Wade 1999, 466: fig. 6.115.64). These exceptionally hard storage jars were imported from the mid 4th century to the mid 5th centuries and although it is uncertain what commodity they may have carried, honey has been suggested (Fulford and Bird 1975, 181) as has corn (Pollard 1988, 149). Vessels have primarily been recorded at Canterbury, Richborough, Colchester and London but a sparse distribution has been recorded on the east and south coastlines, including Burgh Castle and Caistor-by-Sea, while and a vessel has also

been recorded at Gestingthorpe, close to the River Stour (Fulford and Bird 1975, 180).

References

Arthur, P. and Plouviez, J. 2004, 'The pottery from the 1973 excavation', in Blagg, T., Plouviez, J. and Tester, A. *Excavations at a Large Romano British settlement at Hacheston 1973-1974*, East Anglian Archaeology 106, 160-86

Atkinson, M. 1995, 'A Late Bronze Age enclosure at Broomfield, Chelmsford', *Essex Archaeology and History* 26, 1-24

Barret, J. 1978, 'The EPRIA Prehistoric Pottery', in Hedges, J. and Buckley, D. 'Excavations at a Neolithic Causewayed Enclosure, Orsett, Essex, 1975,' *Proceedings of the Prehistoric Society* 44, 268-88

Barrett, J. 1980, 'The pottery of the later Bronze Age in lowland England', *Proceedings of the Prehistoric Society* 46, 297-320

Bedwin, O. 1992, 'Early Iron Age settlement at Maldon and the Maldon 'burh': excavations at Beacon Green 1987', *Essex Archaeology and History* 23, 10-24

Brown, N. 1988, 'A Late Bronze Age Enclosure at Lofts Farm, Essex', *Proceedings of the Prehistoric Society* 54, 249-302

Brudenell, M. 2011, 'Late Bronze Age and Early Iron Age Pottery in Norfolk – a review', in Davies, J. (ed.) *The Iron Age in Northern East Anglia New Work in the Land of the Iceni*, BAR (British Series) 549, 11-24

Clark, J. G. D and Fell, C. I. 1953, 'The Early Iron Age Site at Micklemoor Hill, West Harling, Norfolk, and its Pottery,' *Proceedings of the Prehistoric Society* XIX, 1-38

Cool, H. 2000, 'The parts left over: material culture into the fifth century', in Wilmott, T. and Wilson, P. (eds.) *The Late Roman Transition in the North*. BAR (British Series) 299, 47-65

Cunliffe, B. 1968, 'Early Pre-Roman Iron Age Communities in East Anglia', *Antiquaries Journal* 48, 175-91

Cunliffe, B. 2005, Iron Age Communities in Britain (4th edition), Routledge, London

Fell, C. 1953, 'An Early Iron Age Settlement at Linton, Cambridgeshire', *Proceedings of the Cambridgeshire Antiquarian Society* 46, 31-42

Fulford, M. and Bird, J. 1975, 'Imported Pottery from Germany in Late Roman Britain', *Britannia* 6, 171-81

Gibson, D. and Lucas, G. 2002, 'Pre-Flavian Kilns at Greenhouse Farm and the social context of early Roman pottery production in Cambridgshire', *Britannia* XXXIII, 95-128

Gose, E. 1950 (reprinted 1976), *Gefasstypen der romischen Keramik im Rheinland*

Gregory, T. 1979, 'Early Romano-British pottery production at Thorpe St. Andrew, Norwich', *Norfolk Archaeology* XXXVII (part 2), 202-7

Hawkes, C. 1943, 'Early Iron Age Settlement at Fengate, Peterborough', *Archaeological Journal* 100, 189-223

Hull, M. 1963, *The Roman Potters' Kilns of Colchester*, Reports of the Research Committee of the Society of Antiquaries of London, Oxford

Martin, E. 1988, 'Other Pottery', in Martin, E. *Burgh: The Iron Age and Roman Enclosure*, East Anglian Archaeology Report No. 40, 34-63

Martin, E. 1993, Settlements on Hill-tops: seven prehistoric sites in Suffolk, East Anglian Archaeology Report No. 65

Niblett, R. 1985, 'The coarse pottery', in Niblett, R. *Sheepen: an early Roman industrial site at Camulodunum*, CBA Research Report 57, 78-83

O'Brien, L. forthcoming, 'Chapter 6. Phase 5: Early to middle Anglo-Anglo-Saxon (*c.* AD 450-750)', in *Bronze Age Barrow, Early to Middle Iron Age Settlement and Burials and Early Anglo-Anglo-Saxon Settlement at Harston Mill, Harston, Cambridgeshire*, East Anglian Archaeology

Peacock, D. 1982, *Pottery in the Roman world: an ethnoarchaeological approach*, Longman, London

Percival, S. 2000, 'Pottery', in Ashwin, T. and Bates, S. 'Excavations at Valley Belt, Trowse (Site 9589), 1990', in *Norwich Southern Bypass, Part 1: Excavations at Bixley, Caistor St Edmund, Trowse*, East Anglian Archaeology Report No. 91, 170-9

Plouviez, J. 1989, 'A Romano-British pottery kiln at Stowmarket', *Proceedings of the Suffolk Institute of Archaeology and History* 37, 1-12

Plouviez, J. 2004, 'The pottery from the 1974 excavation', in Blagg, T., Plouviez, J. and Tester, A. *Excavations at a Large Romano British settlement at Hacheston 1973-1974*, East Anglian Archaeology Report No. 106, 171-6

Pollard, R. 1988, *The Roman Pottery of Kent*, Kent Archaeological Society

Seeley, F. 2004, 'The Hacheston kiln products', in Blagg, T., Plouviez, J. and Tester, A. *Excavations at a Large Romano British settlement at Hacheston 1973-1974*, East Anglian Archaeology Report No. 106, 176-86

Symonds, R. 2001, 'The Roman Pottery', in Gill, D., Plouviez, J., Symonds, R. P. and Tester, C. *Roman pottery manufacture at Bourne Hill, Wherstead*, East Anglian Archaeology Occasional Paper 9, 13-24

Symonds, R. and Wade, S. (eds) 1999, *Roman Pottery from Excavations in Colchester, 1971-86*, Colchester Archaeological Report 10

Theodore Peña, J. 2007, *Roman Pottery in the Archaeological Record*, Cambridge University Press, Cambridge

Thompson, I. 1982, *Grog-tempered 'Belgic' Pottery of South-eastern England*, BAR (British Series) 108, i-iii

Tomber, R. and Dore, J. 1998, *The National Roman Fabric Reference Collection*, Museum of London, London

Wallace, C. 2006, 'Long-Lived Samian?', *Brittannia* 37, 259-72

Webster, P. 1996, *Roman Samian Pottery in Britain*, CBA Practical Handbook in Archaeology 13

West, S. 1985, *West Stow: The Anglo-Anglo-Saxon Village*, East Anglian Archaeology Report No. 24

West, S. with Martin, E. 1990, 'The Iron Age Pottery', in West, S. *West Stow: The Prehistoric and Romano-British Occupations*, East Anglian Archaeology Report NO. 48, 60-8

Williams, D. 2005, *Roman Amphorae: A Digital Resource*, University of Southampton - http://ads.ahds.ac.uk/catalogue/archive/amphora_ahrb_2005/index

The Anglo-Saxon Pottery
Peter Thompson

Introduction

The combined evaluation and excavation recovered 239 sherds weighing 3726g (the evaluation contributed 18 sherds weighing 247g). The Anglo-Saxon pottery accounted in total for 231 sherds (3482g). The additional sherds are 4 residual Iron Age sherds (150g), one medieval sherd (14g), 2 post-medieval sherds (74g), and an early modern white earthenware sherd (6g) (Table 32). The Iron Age and post-medieval sherds are not further analysed in this report.

Period	Sherd count	Fabric weight (g)
Iron Age	4	150
Anglo-Saxon	231	3482
Medieval	1	14
Post-medieval	2	74
Early Modern	1	6
Total	*239*	*3726*

Table 32: Quantification of sherds by period

Fabrics

The Anglo-Saxon fabrics for the most part consist of fine to medium quartz sand frequently with varying amounts of burnt organics, and sometimes other inclusions such as grog and calcareous material (Table 33). Two sherds contain coarse silver mica and two more contain coarse red inclusions which appear to be granitic material. A pottery industry existed around the Charnwood area of Leicestershire reaching its height in the 7th century, which traded or exchanged pots throughout the midlands and beyond (Williams and Vince, 1997). However, the inclusions within the two sherds could also have derived from local drift deposits. At the Anglo-Saxon cemetery at Flixton (in the Waveney Valley) 43% of the sherds contained granitic inclusions (often mixed with organics). A piece of granite was also found there confirming it to be present in the local boulder clay (Anderson 2012, 139), and therefore the likelihood is that the pots were of local origin. One thick, mid grey wheel-turned sandy sherd recovered from SFB 1 is an Ipswich ware (see below).

Fabric Code	Inclusions	Description	Sherd Count	% 0f Sherd Count	Fabric Weight (g)
ESO2	Organics with sand	Fine to coarse quartz with occasional coarser quartz/ mineral, and sparse to abundant organics/voids	95	41.1	1322
ESS	Sand	Moderate to common fine to medium quartz sand with occasional other sparse inclusions	46	19.9	676
ESQC	Sandstone and Sand	Moderate to common fine to medium quartz and sparse to moderate clusters/conglomerates of quartz crystals. Other inclusions are sometimes present comprising chalk, grog/ clay pellets, coarse mineral and organics	38	16.5	582
ESGS	Grog with sand	Fairly well sorted medium quartz with red or pale brown grog or clay pellets and occasional very coarse mineral	33	14.3	606
ESSC	Sand and Calcareous	Fine to medium sub-rounded quartz, with occasional coarser quartz and or flint. Rare to moderate white calcareous inclusions. Voids from burnt organic matter sometimes present	16	6.9	258
ESCF	Granite and sand	Fine to medium quartz sand with occasional coarser quartz, and coarse fragments of pink mineral, possibly granite	2	0.85	23
SIPS	Ipswich ware (sandy)	As described by Blinkhorn (2012)	1	0.45	15
Total			*231*	*100*	*3482*

Table 33: Quantification of fabrics

Forms and decoration

The forms mainly comprise either weak, baggy, or round shouldered jars with upright or slightly everted rims, with measurable rim diameters between *c.* 12 and 26cm, or else are open bowls with fairly upright rims, with diameters between *c.* 12 and 32cm (Table 34). Curving body sherds from the assemblage also indicate the presence of rounded or globular forms, but only one carinated sherd was present. Just over half of the rims are simple fairly upright forms. An exception to the above is a round shouldered jar with a flaring rim from Pit F2611 (L2612) (Fig. 38.11). Two slightly rounded or sagging bases and one flat rounded base were also identified. Two tiny

lug handles may have been decorative or false lugs as they seem too small to have been of practical use for suspension (Fig. 38.8). The only stamped sherd came from SFB 1 (L1020) comprising a double horizontal line of E 1ai impressed negative triangles (Briscoe 1981), on two conjoining sherds (Fig. 38.10). Two sherds contained incised horizontal grooves, and a third from Pit F2568 (L2570; Post-Built Structure 3) contained horizontal and vertical incised lines (Fig. 38.12). The surfaces of most of the sherds from the assemblage were smoothed and in some cases polished, but only five were burnished, three of which came from SFB 3 (L2407B) and probably all came from the same straight sided bowl.

The rusticated sherd
Paul Blinkhorn

An exception to the above surface decoration is a sherd deriving from just below the rim of a bowl which has external rusticated decoration. The sherd was recovered from SFB 1 (L1020) and has a fine sandy fabric with few visible inclusions and a few rounded voids which appear to be a result of the leaching of calcareous material. The form, fabric and surface treatment are typical of the pottery of the period in the region, with similar vessels known from a number of sites, such as West Stow (e.g. West 1984, fig. 165 no. 4), and dated between the 5th and 7th centuries.

Form	MNV
?Biconical	1
Baggy/shouldered	3
Shouldered	3
Offset/shouldered with flaring rim	1
Offset/shouldered with upright rim	1
Hemispherical bowl	3
Straight sided bowl	5
Incurved bowl	2
Straight sided vessel	2
Straight sided but with slight shoulder	1
Carinated	1
Lug	2

Rims	No.
Simple upright	14
Everted	4
Simple rims to hemispherical bowls	3
Upright thickened	3
Incurved	2
Flaring	1

Table 34: Identifiable early Anglo-Saxon forms

The Ipswich sherd
Paul Blinkhorn

An Ipswich ware sherd from SFB 1 (L1020) is in the group 2 fabric (*ibid.*), and came from the base of a small jar, a typical product of the tradition which is dated between *c.* AD 720-850.

The medieval sherd
Paul Blinkhorn

Pit 2133 (L2134C) contained a rim sherd from a medieval coarse ware jar. This fine grey sandy ware with some mica, is very similar to the products of the as-yet unpublished Hollesley Bay manufactory centuries.

The Anglo-Saxon Pottery by Feature

Table 35 shows the features that contained more than one sherd of pottery. SFB 3 (F2406) yielded the largest quantity of pottery comprising 125 (2221g), accounting for 56% of the stratified sherd count. The dominant fabric was organics (34% sherd count) followed by sand (26%) and grog (19%), while virtually the full range of identifiable forms were present as shown in (Fig. 38).

	Organic	***Sand***	***Sandstone***	***Grog***	***Calcareous***	***Granite***	***Ips***	*Total*
SFB 3	43 *(757g)*	33 *(588g)*	12 *(201g)*	24 *(452g)*	13 *(223g)*			125 *(2221g)*
SFB 1	23 *(335g)*	5 (35g)	3 *(63g)*	5 (*71*g)		2 (*23*g)	1 *(15g)*	39 *(542g)*
SFB 2	8 *(124g)*	1 *(5g)*	1 *(12g)*	3 *(75g)*	1 *(23g)*			14 *(239g)*
Post-Built Structure 3	9 *(57g)*	2 *(7g)*	1 (*36g*)	1 *(8g)*				13 *(108g)*
Pit F2611	*2 (12g)*	2 *(13g)*	21 *(270g)*					25 *(295g)*
Ditch F2065	4 (*10g*)							4 *(10g)*
Total	89 (*1*295g)	43 *(648*g)	38 (582*g*)	33 (*606g*)	14 (*246g*)	2 (*23g*)	1 (*15g*)	220 (3415g)

Table 35: Features containing more than one sherd of Anglo-Saxon pottery

SFB 1 (F2575) contained 39 sherds (542g) comprising 17.5% of the stratified sherd total, with organics the dominant fabric (59%) followed by sand and grog (13% each). This structure also contained the two granite tempered sherds including the upper profile of a small round shouldered jar with a simple upright rim, the stamp decorated sherds (Fig. 38.10) and the fragment of Ipswich ware.

SFB 2 (F2235) contained 14 sherds (239g) of which 57% of the sherds comprised organic temper. The features associated with Post-Built Structure 3 revealed 13 sherds (108g) recovered from three pits/ post-holes which were again dominated by organic tempered sherds (69%). The only other feature containing more than four sherds was Pit F2611 (L2612) which had 25 Anglo-Saxon sherds weighing 295g. The fabrics were dominated by sandstone tempered sherds making up 84% of the feature total. The most complete upper profile came from F2611, comprising the offset/ shouldered vessel with flaring rim (Fig. 38.11).

Pottery assemblages from other early Anglo-Saxon sites in east Suffolk

At Snape Anglo-Saxon cemetery approximately 50 pots serving as cremation vessels were dated between the late 5th and 7th centuries AD. The fabrics mainly comprised varying amounts of sand or grit, but a small amount contained grog (4) or chaff (2/ 3), or both (2). In addition the remains of *c.* 15 more vessels were identified in the Anglo-Saxon topsoil, of which two contained red grog (Filmer-Sankey and Pestell 2001).

The Anglo-Saxon cemetery at Flixton contained a similar, fairly modest assemblage to the current site (389 sherds; Anderson 2012a). There was a narrow range of fabrics dominated by organic temper (70.2%), sand (23.4%) and finally granitic inclusions (6.4%). However, over half the organics also contained granite (37% of the site's total) making the amount of sherds that contained granitic inclusions 43.4%. Of 14 identifiable forms, the commonest were baggy jars (4) and off-set

shouldered bowls (2). Other forms included a sub-biconical jar, inturned bowl rim and straight sided bowl. The site was dated between the 6th and mid 7th centuries. Conversely, the associated settlement had a wider range of fabric groups with very little organic tempering, and sandy fabrics predominated. Some shell-tempered wares were present, and also a relatively high proportion of red grog (Anderson 2012a, 138-40).

At the Bloodmoor Hill settlement and cemetery (Carlton Coalville), a large number of sherds were excavated (6479 weighing 55446g), with a maximum number of 5655 vessels identified. There were six major fabric groups in approximate proportions (by sherd number) of quartz 49.2%, organics 24.4%, sandstone 9.1%, calcareous 8.8%, granitic 6.3%, and grog 2.2%. The majority of forms were simple curved, globular, straight-sided ovoid, and bulbous jars, and simple curved, straight sided and inturned bowls. There was one possible sub-biconical vessel but no vessels had marked carinations. The majority of rims (58%) were simple everted, followed by short vertical rims (20%). Excluding combing and finger decoration, 131 sherds were decorated including the use of 72 different stamps, while 27 decorated bosses were also present. Radiocarbon dating suggested that the stamp decorated vessels belonged to the first half of the 6th century. The conclusion was that settlement began in the early to mid 5th century and ended in the early 8th century (Tipper 2009, 202-43).

At Hartismere High School (Eye), there were seven main fabric groups. The dominant fabrics were medium sandy wares, but fairly high proportions of fine sandy, calcareous, granitic, grog and organic tempered fabrics were also present. Of the identifiable rims almost 57% were upright and just over 30% everted or flaring, with nearly 10% inturned. There was a wide variety of forms, but the predominant ones comprised globular vessels (22.9%), followed by hemispherical bowls (17.8%) with sloping necks, and shouldered vessels each providing 13.5% of the total. The minimum number of vessels estimated was 1172 of which at least 70 had some form of decoration. Seven vessels contained *Schlickung* type rustication (a 5th century phenomenon). Stamp decoration, bossing and facetted carination was present. The presence of both 5th century characteristics such as *Schlickung* and biconical forms and 7th century elements of grass tempering and baggy vessels suggest that the site spanned the entire early Anglo-Saxon period (Anderson 2012b, 74-82).

At Handford Road, Ipswich there were seven main fabric types present but the assemblage was dominated by shelly and calcareous types (76%). Sand tempering was next with 16.7% of the total, of which fine sand was predominant (10.5%). Few organic sherds and very little residual Ipswich ware was present so the site is not thought to have lasted much into the 7th century. A few sherds had stamp decoration, incised lines or bosses, and surface treatment of burnishing, combing and pinched rustication was also present. Identifiable vessels included sub-biconical jars and hemispherical bowls, but mainly baggy or globular jars and wide mouthed bowls. The site was thought to represent a 5th/ 6th century assemblage (Anderson 2005, 41-5).

Diana Briscoe compared the Church Road stamped sherd with her database of Anglo-Saxon stamps and found it to be a relatively simple and common motif present at sites in the Lark Valley, Suffolk, around the Cambridge, area and even in the

Upper Thames region. However, when compared with the stamps recorded from 18 sites within a 20 mile (*c.* 32.2km) radius of Church Road, Snape, including those sites described above, the motif was absent. Based on patterns of similar stamp distributions, including examples from Carlton Coalville, it is suggested that this sherd might represent evidence of coastal trading (Briscoe 2014; Appendix A).

Discussion

It is clear from the above that early Anglo-Saxon sites can vary significantly in terms of pottery fabrics, forms and decoration. The potentially most diagnostic elements of the current assemblage suggest that the pottery could span almost the entire early Anglo-Saxon period. The carinated and rusticated sherds and possible biconical form are more typical of an early date when compared to the nationally important site of Mucking in south Essex (Hamerow 1993, 31, 42-4). Overall, however, forms from the current site bear fairly similar descriptions to the probable 5th/ 6th century assemblage from Handford Road, Ipswich, comprising mainly hemispherical and wide mouthed bowls and baggy and globular jars. Some forms from Church Road also parallel the early 5th to early 8th century group from Bloodmoor Hill, but with upright rather than everted rims. The dominance of organic temper is indicative of a later date as evidenced from Mucking, where an increase in the use of grass tempering in the 6th and particularly the 7th centuries was demonstrated (Hamerow 1993, 31, 42-4). The Church Road baggy forms and grass tempering are also similar to the probable 7th century assemblage at Hartismere High School, Eye.

The potentially latest material from Church Road is the single Ipswich ware sherd from the fill of SFB 1, and is unlikely to predate the mid 8th century AD. However, this single sherd is abraded and is from a redeposited context that did not relate to the primary use of the building within which it was found.

Illustrations

SFB 3

Fig. 38.1 L2407A baggy jar Fabric B
Fig. 38.2 L2407B straight sided with slight shoulder Fabric A
Fig. 38.3 L2407B straight sided bowl Fabric B

SFB 2

Fig. 38.4 L2236B offset shouldered jar Fabric C
Fig. 38.5 L2236C baggy jar Fabric D

SFB 1

Fig. 38.6 L2576D hemispherical bowl Fabric A
Fig. 38.7 L2576D straight sided bowl Fabric A
Fig. 38.8 L2576C small pierced lug Fabric C
Fig. 38.9 L1020 (=2576) hemispherical bowl Fabric A
Fig. 38.10 L1020 (=2576) E 1ai stamp decoration Fabric D

Pit F2611

Fig. 38.11 L2612 offset shouldered with flaring rim Fabric C

Pit F2568

Fig. 38.12 L2570 incised decoration with possible pendant triangle Fabric A

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References

Anderson, S. 2005, 'The Early Saxon Pottery', in Boulter, S. (ed.), *Hanford Road, Ipswich (IPS 280) Archaeological Assessment Report (Volume 1: Text),* SCCAS Report 2004/87), 41-5

Anderson, S. 2012a, 'Pottery', in Boulter, S. and Rogers, P. (eds.), *Circles and Cemeteries: Excavations at Flixton Volume I*, East Anglian Archaeology Report No. 147

Anderson, S. 2012b, 'Post-Roman Pottery', in Caruth, J. and Goffin, R. (eds.), *Land South of Hartismere High School, Eye, Suffolk, EYE 083 Post-Excavation Report*, SCCAS Report No. 2012/067, 74-82

Blinkhorn, P, 2012, *The Ipswich ware project: Ceramics, trade and society in Middle Saxon England*, Medieval Pottery Research Group Occasional Paper No. 7

Briscoe, T. 1981, 'Anglo-Saxon Pot Stamps', in Brown D., Campbell J., and Hawkes S. (eds.) *Anglo-Saxon Studies in Archaeology and History 2*, British Archaeological Reports (British Series) 92, 1-37, Oxford, Archaeopress

Briscoe, D. 2014, *Snape, (Church Road), Suffolk Archive of Anglo-Saxon Pottery Stamps*, unpublished report

Filmer-Sankey, W. and Pestell, T. 2001, *Snape Anglo-Saxon Cemetery: Excavations and Surveys 1824-1992*, East Anglian Archaeology Report No. 95

Hall, D. 2000, 'Ceramic sequence', in Mortimer, M. and Hall, D. (eds.), 'Village Development and Ceramic Sequence: The Middle to Late Saxon Village at Lordship Lane, Cottenham, Cambridgeshire', *Proceedings of the Cambridge Antiquarian Society* 89, 5-33

Hamerow, H. 1993, *Excavations at Mucking. Volume 2: the Anglo-Saxon Settlement Excavations by MU and WT Jones*, English Heritage Archaeological Report No. 21

Tipper, J. 2009, 'The Anglo-Saxon Pottery', *in Dickens, A., Lucy, S. and Tipper, J. (eds.), The Anglo-Saxon Settlement and Cemetery at Bloodmoor Hill, Carlton Coalville, Suffolk,* East Anglian Archaeology Report No. 131

West, S. E. 1985, *West Stow, the Anglo-Saxon Village*, East Anglian Archaeology Report No. 24

Williams, D. and Vince, A. 1997, 'The Characterization and Interpretation of Early to Middle Saxon Granitic Tempered Pottery in England', *Medieval Archaeology* 61, 214-20

Appendix A

Archive of Anglo-Saxon Pottery Stamps (AASPS)
Diana C. Briscoe

Eighteen Anglo-Saxon sites are identifiable within a *c.* 20 mile radius of Church Road, Snape, which have produced 199 examples of various motifs. However, none of these sites has produced any comparable examples for the motif from the current site. The sites considered are tabulated below:

County	Parish	Site Name
Essex	Bulmer Tye	Hole Farm
Essex	Little Oakley	Site IV
Norfolk	Broome	Yarmouth Road Field
Norfolk	Earsham	Church
Suffolk	Barham	Site
Suffolk	Bramford	The Street ?
Suffolk	Bromeswell	Tranmer House
Suffolk	Carlton Colville	Bloodmoor Hill
Suffolk	Eye	Hartismere High School (s. of)
Suffolk	Flixton	Flixton Park Quarry
Suffolk	Hasketon	Site
Suffolk	Ipswich	Handford Rd
Suffolk	Needham Market	The Pightle
Suffolk	Rendlesham	Hoo Hill
Suffolk	Saxmundham	Saxon Road
Suffolk	Snape	St Margaret's (garden)
Suffolk	Sudbourne	? near Ferry Cottage
Suffolk	Yaxley	Castleton Way

Rarity of stamps

1–20	Rare	**21–40**	Uncommon
41–70	Fairly common	**71–100**	Reasonably common
100–150	Common	**151+**	Very common

'Die' means the actual piece of carved bone, wood, metal or (possibly) chalk used to make the impression. Where two stamps are described as 'like' it means they have been made with the same die. A closing bracket ')' after size and pot type definition indicates the presence of more than one stamp motif on the pot or sherd. Quantities of motifs always include ones from the site being reported upon, unless otherwise stated.

Motif

Motif	Size (mm)	Pot Type	Archive No	Location	Reference
E 1ai	9 x 9	Sherd	1	Archaeological Solutions Ltd	L1020

The 'E' Category comprises all triangle and chevron motifs. 'E 1ai' describes the most basic negative triangle. This is a reasonably common stamp with 97 examples recorded. It has a wide and interesting distribution. Because of the nature of the stamp, parallels are almost impossible to establish. However, this is the largest example in the AASPS and its find spot is far removed from any comparable examples.

Discussion

One problem with the AASPS is that there are so many motifs that unless examining one one specifically, as in this case, one tends to take an overview and not look at distributions and other factors in detail. The distribution of this motif is surprizing. Finds from the cluster of sites in the Lark Valley and around Cambridge are not an uncommon event, but then to also find the motif appearing as a cluster in the Upper Thames region was unexpected. Several of the motifs attributed to the so-called Icklingham/ Lackford-Illington potter (Lethbridge 1951) have been found at Barrow Hills and Eynsham, so it is not implausible for this one to show up there as well, although this very simple motif does not appear to have been identified as another from the repertoire.

It should be noted that the author is of the opinion that, although this and other motifs were used by a potter working in the Lark Valley area, none of the motifs are unique to this area and the current example need not be a product of the 'Icklingham/ Lackford-Illington potter'.

Various unusual motifs from Bloodmoor Hill (Carlton Colville) show a similar distribution pattern to that from Church Road, Snape; two were also identified from Snape Anglo-Saxon cemetery with other examples known from Mucking in Hampshire and from sites in Yorkshire and Lincolnshire. This distribution pattern has previously been interpreted as evidence of possible coastal trade (Lucy *et al.* 2009).

References

Lethbridge, T. C. 1951, *A cemetery at Lackford, Suffolk: report of the excavation of a cemetery of the pagan Anglo-Saxon period in 1947*, Cambridge, Cambridge Antiquarian Society/ Bowes & Bowes

Lucy, S., Tipper, J. and Dickens, A. 2009, *The Anglo-Saxon Settlement and Cemetery at Bloodmoor Hill, Carlton Colville, Suffolk*, East Anglian Archaeology Report No. 131

The Small Finds

Nicholas J. Cooper

A total of seven finds were submitted for analysis from the site and are catalogued below.

Objects relating to textile production

Three spindle whorls, used to weight the spindle during the yarn spinning process, were recovered. Two (Nos. 1 and 2) are of early Anglo-Saxon date and came from the fill of Sunken-Featured Building (SFB) 1 (F2575) (one from Trial Trench 2 (F1019)) towards the northern end of the site, and the third is of Iron Age date from the fill of Pit F2846 in the north-western part of the site.

1) SF1 (Fig. 39) F1019=2575 (L1020=2576) Trial Trench 2. Primary fill of NE Quarter of SFB 1 towards northern end of the site. Shale spindle whorl. Rather laminated. Flattened bi-conical form with flattened upper and lower surfaces. Straight-sided perforation. Diameter 36mm; height 16mm, width of perforation 10mm.

Shale spindle whorls are manufactured from the Kimmeridge Shale in Dorset and Iron Age examples are known from Danebury (Laws 1991, 368, fig. 7.40.4.13), although Roman period examples are more common made at production sites such as Ower in the Isle of Purbeck (Sunter and Woodward 1987, 108, fig. 58.276-7). Bi-conical forms are most prevalent in the later Roman period and probably into the 5th century and an example came from the fill of SFB 23 at Barrow Hills, Radley, Oxfordshire (Chambers and McAdam 2007, 145, no. 404).

2) SF13 (Fig. 39) F2575 (L2576D). SFB 1 towards northern end of the site. Fragment of a lathe-turned bone spindle whorl with part of circumference preserved and portion of central, straight-sided perforation. Probably made from a femur head, the form is straight-sided with flat upper and lower surfaces. The sides and upper surface are polished and the latter is decorated with a pair of 'compass' (or lathe)-incised concentric lines. The lower surface is untreated and shows the cancellous tissue. Estimated diameter 30mm, height 22mm, estimated width of perforation 5mm.

A similar example came from the fill of SFB 38 at Barrow Hills, Radley, Oxfordshire (Chambers and McAdam 2007, 178, no. 345).

3) SF14 (Fig. 39) F2846 (L2847). Fill of pit in NW part of site containing Early Iron Age pottery. Near-complete fired clay spindle whorl of crude globular form with a tapering central perforation. Manufactured in a sandy clay, with sub-rounded clear quartz sand grains (0.1-0.5mm) and distinctive angular white fragments of calcined flint (up to 1mm), similar to that used for manufacturing pottery (see Peachey this report, fabric F1). Made by rolling in the palm of the hand with no smoothing of surfaces, before stabbing with a tapered point. Diameter 34mm, height 31mm, diameter of perforation 7mm tapering to 3mm.

Globular spindle whorls in clay are typically Iron Age in date, or are sometimes more bi-conical in shape, and a range of examples are known from Danebury (Poole 1991, 372, fig. 7.43 no. 7.87).

Tool handle

4) SF9 (Fig. 39) F2406 (L2407A). Primary fill of SFB 3 in NE corner of the site. Complete but fragmentary tool handle manufactured from a length of Red Deer antler from the beam or lower part of a tine (Jennifer Browning *pers. comm.*). The length is ovoid in section, flattened on one side, sawn transversely at both ends and along the lower edge. Halfway along the lower edge, an oval perforation penetrates through the piece towards the upper edge where there is a circular drill impression which does not break through. Presumably this accommodated the tang of a metal blade or awl perhaps to form a T-shaped arrangement, like a traditional corkscrew. Length of handle 74mm, height 44mm, width 22mm. Perforation 23mm by 10mm, perhaps enlarged through use. Diameter of drill point 7mm.

This is an unusual handle arrangement and no parallels have been traced. The lack of dressing of the sawn surfaces or decoration, and the fact that the hole is drilled through the exposed cancellous tissue on lower edge (rather than lengthways along the inside of the tine), and so made it inherently weak, indicates this is a make-shift piece and not typologically distinctive.

Bar mount

5) SF15 (Fig. 39) F2406 (L2407D) <102>. Primary fill of SFB 3 in NE corner of the site. A complete cast copper alloy bar mount with a copper alloy securing pin or rivet *in situ* at each end. The mount is of plano-convex section, the flat lower surface being secured against an organic material such as leather, and used to strengthen and decorate belts, for example. The upper, half-round surface is decorated with transverse ridges arranged in groups of three with a wider groove separating each. Length of bar 31mm, width 3mm, height 1.5mm. Width of pins 1.5mm.

This is not a typical Anglo-Saxon object type and no parallels of this date have been traced. Although belts decorated with metal fittings are current in the period (Walton Rogers 2007, 219, fig. 5.66), the use of bar mounts is more typical in the medieval period as indicated by the wide range found in London (Egan and Pritchard 1991, 209, fig. 133.1143 from a 14th century context). However, this is a very delicately-made piece and that another use, other than decorating a belt, might be considered.

Worked stone

6) SF8 (Fig. 39) F2406 (L2407A). Primary fill of SFB 3 in NE corner of the site. Small broken fragment of light grey sandstone with a single flat dressed surface incised with a series of fine parallel grooves set about 10mm apart. Trace of a chamfer along one side. This is likely to be a chunk broken off a larger block of masonry with the grooves being the remnants of tooling marks during the dressing of the surface, perhaps. Length 120mm.

Objects 4-6 all come from the primary fill (L2407) of the same SFB, alongside early Anglo-Saxon pottery and clay loom weights. The worked stone is perhaps more likely to be from a piece of medieval masonry, and so the possibility of some intrusiveness might need to be considered.

Roman vessel glass

7) SF3 F2137 (L2140A) and SF5 F2137 (L2139A) <23> (two fragments). Fill of hearth/ bonfire pit at the southern end of the site containing mid to late 1st century AD pottery. Three fragments of plain, transparent, light green glass from the same vessel. Two fragments come from the 'shoulder' of the vessel which has a convex profile and then constricts slightly to form the concave neck, the vessel thickness tapering from 2mm to 1mm going up the vessel. The final small fragment is less than 1mm thick and convex in profile. Length of largest fragment 65mm. The fragments are too small to judge the diameter of the vessel accurately, but it would appear to be large, in the region of 200mm.

It is not possible to assign a vessel type to these fragments but a later 1st or 2nd century AD date is most likely given the quality of the glass, which contains no bubbles.

References

Chambers, R. and McAdam, E. 2007, *Excavations at Radley Barrow Hills, Radley, Oxfordshire, Vol. 2, The Romano-British Cemetery and Anglo-Saxon Settlement*, Oxford, Oxford Archaeology

Egan, G. and Pritchard, F. 1991, *Dress Accessories c.1150- c.1450*: *Medieval Finds from Excavations in London 3*, London, HMSO

Laws, K. 1991, 'Objects of Kimmeridge Shale', *in* Cunliffe, B. and Poole, C. *Danebury: and Iron Age Hillfort in Hampshire, Volume 5, Excavation 1979-88: the finds* CBA Research Report 93, 368-9

Poole, C. 1991, 'Objects of baked clay' *in* Cunliffe, B. and Poole, C. *Danebury: and Iron Age Hillfort in Hampshire, Volume 5, Excavation 1979-88: the finds* CBA Research Report 93, 370-82

Sunter, N. and Woodward, P. J. 1987, *Romano-British Industries in Purbeck*, Dorset Natural History and Archaeological Society Monograph 6, Dorchester, Friary Press

Walton Rogers, P. 2007, *Cloth and Clothing in Early Anglo-Saxon England* CBA Research Report 145

The Fired Clay and Ceramic Building Materials

Andrew Peachey

Excavations recovered a total of 65 fragments of CBM and 518 fragments (14711g) of fired clay (Table 36). The CBM was entirely of Roman date, although the bulk was contained in Phase 3 (Anglo-Saxon) sunken-featured buildings (SFBs), indicating either a residual presence from Phase 2 activity and/or the recycling of

Roman material. Approximately two-thirds of the fired clay comprises kiln lining, derived and entirely contained within Phase 2 (early Roman) Kiln S2633. The remainder of the fired clay appears to represent fragmentary loom weights. The bulk of these fragments were contained within Phase 3 SFBs, but the limited diagnostic fragments indicate that these comprised triangular loom weights only, which are typical of late Iron Age or early Roman (i.e. Phase 2) activity.

Feature Group	Fired Clay: Loom Weight		Fired Clay: Kiln Lining		Roman CBM	
	F	W	F	W	F	W
Phase 1: EIA features	4	128	-	-	1	9
Phase 2: Post-built Structure 2	41	1696	-	-	5	90
Phase 2: Enclosure Ditches	23	744	-	-	-	-
Phase 2: Pottery Kiln S2633	-	-	333	9171	-	-
Phase 2: Other Pits/Postholes	-	-	-	-	2	77
Phase 3: Anglo-Saxon features	115	2878	-	-	57	5620
Subsoil L2001	2	94	-	-	-	-
Total	*185*	*5540*	*333*	*9171*	*65*	*5796*

Table 36: Quantification of fired clay and CBM in feature groups, by frequency (F) and weight (W, in grams)

Methodology

The fired clay and CBM was quantified by fragment count and weight (g) with fabrics examined at x20 magnification. Any extant dimensions or characteristics were recorded in free text, and Roman CBM forms were assigned according to Brodribb (1987).

Fired clay: loom weights

A total of 185 fragments (5540g) of 'fired clay' was identified as deriving from a sun-dried, baked or fired object, although if these only 67 (2780g) exhibited any diagnostic characteristics or were associated with diagnostic fragments. All of these fragments occurred in a loosely consistent fabric, almost certainly manufactured from local deposits of boulder clay. The friable fabric is pale yellow-brown to orange, with inclusions of poorly-sorted common quartz (0.1-0.75mm) sparse voids of burnt-out organic material, mainly chaff (1-5mm) and very occasional flint/chalk fragments (0.5-3mm). The fabric appears to have been baked or fired at a low temperature, but the poor preservation and friable nature of the fragments cannot discount sun-drying/exposure over a long duration (including use).

Although the bulk of fragments were contained in Phase 3 features (Table 36), the most substantial diagnostic fragments were associated with Phase 2 Post-built Structure 2 and the Enclosure Ditches. Pit F2590 (L2591) and Ditch F2300 (L2301) both contained fragments of triangular loom weights with sides *c.*160mm in length and 15mm wide circular holes perforated through each corner. Both features also contained the corners of other triangular loom weights, while further recognisable corner fragments were contained in Phase 3 SFB 1 (F2575), SFB2 (F2235) and SFB3 (F2406) that indicate the weights had an approximate thickness of 60mm.

Triangular loom weights of comparable size have been recorded in 1st century AD at Hacheston (Seeley 2004, 122: fig.82.141), Burgh (Martin 1988, 63) and Wherstead

(Plouviez 2001, 26). The examples at Hacheston and Burgh also had three perforated holes, while at Wherstead only a single hole was created. At Burgh (Martin 1988, 63) it was noted that wear on the holes and the poor material construction of the weights meant they must have been hung point down otherwise they would fracture, and this conclusion is equally applicable here although the poor preservation mitigates against the identification of any wear patterns. It is generally accepted that this type of triangular loom weight was used in late Iron Age and early Roman warp-weighted looms (Poole 1991, 406), a chronology consistent with Phase 2 activity, after which the Romans appear to have adopted metal or stone weights, and there is no evidence to support the presence of Anglo-Saxon 'doughnut' shaped loom weights on the site.

Fired clay: kiln lining

A total of 333 fragments (9171g) of fired clay kiln lining were recovered from the features that comprise Kiln S2633. The bulk of this material, accounting for 216 fragments (7497g) was recovered from the second fill of the firing chamber: F2634 (2636), with a sparse distribution of further fragments recovered from other fills of the firing chamber: F2634 (L2635, L2637 and L2638), Flue and Stoke Pits F2713/F2714 and F2764/F2765.

The kiln lining had been manufactured from local boulder clay, inconsistently tempered with organic matter. The fabric is mottled dark red-brown, with inclusions of poorly-sorted, common-abundant sub-rounded quartz (0.1-0.5mm), common voids of burnt-out organic material, especially coarsely chopped straw (<5mm) and occasional iron rich grains and flint (<5mm). The preservation conditions have made the kiln lining friable, but the matrix of the fabric often appears partially fused, thus demonstrating the high temperatures achieved in the firing of the mid to late 1st century AD kiln. Where extant the kiln lining does not appear to exceed a thickness of 30-40mm, and although very small areas of roughly smoothed 'internal' surface are extant, it is not possible to draw any further conclusions about the structure or use of the kiln.

The ceramic building materials

A total of 65 fragments (5796g) of Roman CBM were recovered, predominantly comprised of fragments of tegulae roof tile and bessalis brick with occasional fragments of box flue tile also present (Table 37). The bulk of the Roman CBM: 55 fragments (5074g) were contained in Phase 3 (Anglo-Saxon) SFBs (Table 36). The rare fragments in Phase 2 (Roman) features include small tegula fragments in Pits F2259 and F2587; while in contrast Phase 3 (Anglo-Saxon) Burnt Flint Pit F2058 contained two burnt fragments of bessalis brick. Bessalis bricks were used in the construction of pilae for hypocaust heating systems, as well as in the structures of ovens, kilns and hearths, and it is unclear whether these fragments were burnt when part of their original construction, or within the context of their deposition.

Roman CBM type	Fragment Count	Weight (g)
Tegula roof tile (flanged fragment)	7	890
Tegula roof tile (flat tile only)	25	2000
Bessalis brick	13	2161
Box flue tile	4	346
Miscellaneous	16	399
Total	65	5796

Table 37: Quantification of Roman CBM form types

The presence of a building, either a bathhouse or substantial domestic structure, with hypocaust heating system in the vicinity is supported by the presence of box flue tile in SFB3 (F2406), including a fragment with a x-shaped key mark inscribed with a narrow four-tooth comb. The Roman CBM in the SFBs is not present in any high concentrations but based on the presence of roof tile with bessalis brick and box flue tile must have originated from the remnants of a Roman building in the vicinity, either as re-deposited, residual material or as a deliberately re-cycled resource. Given the limited nature and quantity of the Roman CBM in the SFBs, it seems unlikely this assemblage represents deliberately re-cycled material beyond rubble brought in incidentally as hardcore, although the flat surfaces of the tile and brick may have allowed it to be incorporated into a cobble or stone floor.

References

Brodribb, G. 1987, *Roman Brick and Tile*, Gloucester

Martin, E. 1988, *Burgh: The Iron Age and Roman Enclosure*, East Anglian Archaeology Report No. 40

Plouviez, J. 2001, 'The Fired Clay', in Gill, D., Plouviez, J., Symonds, R. P. and Tester, C. *Roman pottery manufacture at Bourne Hill, Wherstead*, East Anglian Archaeology Occasional Paper 9, 26-7

Poole, C. 1991, 'Objects of Baked Clay', in Cunliffe, B. and Poole, C. *Danebury: an Iron Age Hillfort in Hampshire. Vol.5. The Excavations 1979-1988: The Finds*, CBA Research Report 73, 370-80

Seeley, F. 2004, 'The Small Finds IV: Objects Used in the manufacture or working of textiles', in Blagg, T., Plouviez, J. and Tester, A. *Excavations at a Large Romano British settlement at Hacheston 1973-1974*, East Anglian Archaeology Report No. 106, 120-3

The Slag
Andrew A. S. Newton

Introduction

A total of 14 pieces of slag, originating from 10 contexts, were recovered during the excavation. Three pieces of heavily tarnished lead were also recovered. The slag was identified on morphological grounds by visual examination.

Results

Subsoil

L2001: *1 fragment, 207g.* Lead (Pb). This context yielded a fairly large piece of heavily tarnished lead comprising an amorphous piece of metal, fairly flat on one face and more rounded on the other with a large sub-rectangular/oval nodule. It is possible that this shape indicates that it was broken from a particular object but this is unclear. Scratch/ cut marks are evident on the flat surface but it is not clear if these represent any particular activity or process. This piece is heavily tarnished; lead begins to tarnish on contact with air by forming a complex mixture of compounds which vary in colour and which, depending on the conditions, can contain significant quantities of carbonates and hydrocarbonates (Tétreault *et al.* 1998; Thurmer *et al.* 2002;).

Phase 1: early Iron Age (750-400 BC)

F2029, L2030: *1 fragment, 20g*. Iron (Fe) slag. Dark to mid brown in colour. Little to no response to magnet. No obvious diagnostic morphological traits are present. Unidentified Fe slag.

Phase 2: Romano-British (mid to late 1st century AD)

F2213, L2214A: *2 fragments, 6g*. Iron (Fe) slag. These two fragments comprise a larger piece and smaller piece that has clearly been broken from it. Dull mid brown in colour. Outer surface is rough and somewhat vesicular. Break reveals interior to be porous/ vesicular. Little or no response to magnet. Morphologically, this could be a small internal flow, formed during the smelting process (Crew 1995).

Phase 3: early to middle Anglo-Saxon (AD 450-850)

F2575, L2576A: *1 fragment, 23g.* Iron (Fe) slag. Uniform dark grey brown in colour but the interior of what appears to be a large air pocket on the lower surface and broken surfaces display a grey green iridescent vitrification. Material is fairly dense but broken surfaces reveal slight porosity/ vesicularity. The rippled upper surface may indicate that this is a very small fragment of tap slag (Morton and Wingrove 1972; Cleere 1971) from bloomery smelting. The angular fractures evident in this fragment would support such an interpretation but the vitrification of the broken surfaces is not characteristic of such slags. This might alternatively indicate that it represents a fragment of a slag prill, which could have been formed either during the smelting process or during smithing/ refining as such slags from each process are indistinguishable (Crew 1995, 1996).

F2575, L2576D: *2 fragments, 80g*. The first of these fragments weighs 14g and is comprised of light, frothy material; broken surfaces reveal much interior porosity. It is a dark grey-brown in colour. Possibly iron rich cinder (c.f. Cowgill 2003, 2012).

The second fragment from this context is a a slag prill or flow, weighing 66g, is a dull dark grey in colour. It is very dense with little indication of air pockets or bubble; this suggests that it derives from a different process, or at least a different smelt, than the

other piece of slag from this context. No response to magnet. Indistinguishable to process.

F2406, L2407A: *1 fragment, 25g*. A small, dense amorphous piece of smelted but unrefined/ smithed iron, dark grey brown in colour with a small dark red-brown patch at one end indicating the presence of oxidised iron.

F2406, L2407B: *1 fragment, 167g*. A fragment of dark grey, slightly glossy material. Very dense but broken surfaces reveal some interior air pockets. No response to magnet. This is clearly broken from a larger piece. A smooth, rippled surface indicates that it cooled and hardened in the air (rather than in contact with surrounding fuel material. However, a slight step in one end is likely to represent an impression from the furnace structure. Potentially part of a smithing hearth bottom (e.g. National Slag Collection (2009) refs. NSC018, NSC022).

F2406, L2407B: *2 fragments, 12g*. Two small fragments of heavily tarnished lead, similar in colour to the larger piece recovered from L2001.

F2406, L2407D: *1 fragment, 389g*. Iron (Fe) slag. Mostly dull dark grey in colour with some grey-green vitrification. One surface, however, is flat and smooth and a dark grey-purple to dull red-purple in colour. Most other intact surfaces are rough with some evidence of rippling or mammilation. This material is very dense but broken surfaces reveal significant air pocket/ bubbles/ internal porosity. This varies across the material with some areas displaying infrequent but large air pockets and others displaying numerous small bubbles. This material is clearly broken from a large accumulation of slag, after cooling, but morphological traits offer little indication as to the type of slag or the process from which it derives.

F2406, L2408A: *3 fragments, 83g.* Iron (Fe) slag. First fragment is light and porous, varying in colour from black to a dull red-brown which indicates a high Fe content. Moderate response to magnet. Charcoal impressions may indicate that this is a small fragment of an internal flow of slag, coalesced within the smelting furnace and demonstrate that charcoal was the fuel used.

The second fragment is a dark grey-brown in colour and is denser but with some internal air pockets. Its mammilated morphology, similar to National Slag Collection (2009) Ref. NSC006A (Martin and Wingrove 1972), suggests a small fragment of an air-cooled tap slag.

The third fragment is dense yet internally porous material which is dark grey to light grey brown in colour. It is coal-like in appearance but has no distinguishing morphological characteristics. Iron-rich cinder.

F2406, L2408B: *1 fragment, 10g*. Mid brown in colour with light orange and dull red-brown discolouration at broken surfaces. This discolouration indicates a notable Fe content but the material is unresponsive to the magnet. The material is hard and not particularly brittle. Its appearance suggests that it represents an unusually hard accumulation of Fe corrosion products.

Phase 7: Undated

F2159, L2160: *1 fragment, 6g.* Iron (Fe) slag. Dark to mid brown in colour. Little or no response to magnet. Dense and hard, little indication of internal porosity/ vesicularity, rough surface morphology. Unidentifiable to process (e.g. National Slag Collection (2009) refs. NSC011B, NSC012).

Discussion

The presence of lead in the assemblage suggests that lead working may have been carried at the site or in the vicinity. However, there is no indication of any lead smelting from this site and so it is unclear whether this material represents working of raw lead, imported to the site in smelted form, or merely represents fragments of broken lead objects. Given the small quantity of material of this type, the latter explanation is more likely. The corrosion products of lead can vary widely in colour so the fact that all of the lead in this assemblage displayed the same yellow/ white-grey tarnish indicates that it has all been subject to near identical conditions. However, as the lead was recovered from both the topsoil and the fill of SFB 3 (L2407B) it is not clear what the original depositionary context was.

Fe slag was recovered from contexts of Iron Age, Romano-British and Anglo-Saxon date. It was also present in an undated context. Although it is possible to define and describe some basic types of slag, in reality there is a more or less continuous transition from ore, through slag, to the finished iron (Crew 1995). As such it is not always possible to identify slag to a particular process. Therefore, it is suggested that the assemblage from this site is likely to represent a combination of smelting and smithing slags. From the Romano-British period, with the introduction of blast furnaces, smelting slags became more characteristic, with a glassy appearance (Bayley *et al.* 2008, 13). However, this does not necessarily indicate that the slags from Romano-British, or later, contexts are not smelting slags; they may simply have been produced using a more primitive method.

Slag was present in only very limited quantities in Iron Age and Romano-British contexts. This is insufficient evidence to state with any certainty that ironworking was being carried out at this site at this time. Paynter (2006) has demonstrated that the compositional characteristics of Iron Age and Roman slags vary from region to region, based on the ores used but small differences in composition are the direct result of furnace design, raw materials and engineering parameters (Blakelock *et al* 2009, 1745). Paynter's (2006) study, however, did not sample material from Suffolk and so it is not possible to identify if this material is typical for the area. The assemblage for the Anglo-Saxon period is larger but is still not particularly indicative of iron working at this locale. McDonnell (1989, 380) indicates that there is a paucity of evidence for smelting and smithing sites in the Anglo-Saxon period; clearly, however, the presence of slag indicates that there must have been some kind of ironworking activity in the surrounding area. It is possible that the smithing by-products are the result of an itinerant smith visiting occasionally and making and repairing items for the local community; if this is the case, however, it may be more likely that this material would have derived from a single context, as was noted at Station Road, Gamlingay (Cowgill 2006). Interestingly, this lack of evidence for smelting and smithing is in contrast to the metallographic evidence which indicates a

much higher degree of technical expertise in the Anglo-Saxon period than the preceding and proceeding periods (McDonnell 1989, 380).

No furnace or smithing hearth structures were present on site supporting the suggestion that this material was not produced at this location. Furthermore, the fact that many of the slag fragments appear to have been broken from larger pieces suggests that they are not in primary depositional contexts immediately following removal from the furnace or hearth. This material may have been removed to the current site for a variety of reasons. Fresh breaks, however, might indicate that slag was being broken up to recover small quantities of iron (Henderson 2007, 276; Crew 1988, 93).

References

Bayley, J., Crossley, D. and Ponting, M. 2008, *Metals and Metalworking; A research framework for archaeometallurgy*, English Heritage/ The Historical Metallurgy Society Occasional Publication No. 6

Blakelock, E., Martinón-Torres, M., Veldhuijzen, H. A. and Young, T. 2009, 'Slag Inclusions in Iron Objects and the search for provenance: an experiment and case study', *Journal of Archaeological Science* 36, 1745-57

Cleere, H. 1971, 'Ironmaking in a Roman furnace', *Britannia* 2, 203-17

Cowgill, J. 2003, 'The Slag', in Murray, J. *Excavations at the Former Cantor and Silver Site, Brackley, Northamptonshire*, Hertfordshire Archaeological Trust unpublished report number 604

Cowgill, J. 2006, 'The Slag', in Murray, J. and McDonald, T. 'Excavations at Station Road, Gamlingay, Cambridgeshire', *Anglo-Saxon Studies in Archaeology and History* 13, 173-330

Cowgill, J. 2012, 'The Slag', in Woolhouse, T. *Medieval Dispersed Settlement on the Mid Suffolk Clay at Cedars Park, Stowmarket; report for publication*, Archaeological Solutions report number 4111

Crew, P. 1988, 'Bryn y Castell hillfort- a late prehistoric iron working settlement in north-west Wales', in Scott, B. G. and Cleere, H (eds) *The Crafts of the Blacksmith*, Essays presented to R. F. Tylecote, in Proceedings of the 1984 Symposium of the UISPP Comité pour la Sidérurgie Ancienne, Belfast: UISPP Comité pour la Sidérurgie Ancienne and the Ulster Museum, 91-100

Crew, P. 1995, *Bloomery Iron Smelting Slags and other residues*, Historical Metallurgy Society, Archaeology Data Sheet No. 5

Crew, P. 1996, *Bloom refining and smithing slags and other residues*, Historical Metallurgy Society, Archaeology Data Sheet No. 6

Dungworth, D, with Blakelock, E. and Nicholas, M. 2009, *National Slag Collection*, Ironbridge Gorge Museums Trust/Historical Metallurgy Society

Henderson, J. 2007, *The Science and Archaeology of Materials*, Routledge, London and New York

McDonnell, G. 1989. 'Iron and its alloys in the 5th to 11th centuries AD in England', *World Archaeology 20,* 373-82

Morton, G. R. and Wingrove, J. 1972, 'Constitution of bloomery slags: Part II: Medieval', *Journal of the Iron and Steel Institute* 210, 478-88

Paynter, S. 2006, 'Regional variations in bloomery smelting slag of the Iron Age and Romano-British periods', *Archaeometry* 48 (2), 271-92

Thurmer, K., Williams, E. and Reutt-Robey, J. 2002, 'Autocatalytic Oxidation of Lead Crystallite Surfaces', *Science* 297 (5589), 2033-5

Tétreault, J., Sirois, J. and Stamatopoulou, E. 1998, 'Studies of Lead Corrosion in Acetic Acid Environments', *Studies in Conservation* 43 (1), 17-32

The Animal Bone
Dr Julia E. M. Cussans

Introduction

Following assessment of the Snape bone assemblage a small sample of the two best preserved contexts was selected for detailed analysis. Both of these contexts related to the Anglo-Saxon (Phase 3) occupation of the site. This comprised the majority of the identifiable material collected during excavation plus a considerable quantity of unidentifiable material. Overall bone preservation for the site was poor and the two selected contexts represent the best of the available material. A number of taphonomic issues were evident and are discussed. The assemblage is also discussed in light of other Anglo-Saxon sites in the region.

Method

Context selection

The initial bone scan showed that the majority of the bones from Snape were unidentifiable and in a very poor state of preservation (Cussans 2013, digital interim report held at Archaeological Solutions Ltd). Only a small number of contexts contained identifiable bone and hence were selected for detailed recording. Two contexts were selected, where the bone preservation was considerably better than for the majority of the assemblage; these contexts contained the majority of the identifiable bone from the site; no useful identifiable animal bone was present in the rest of the assemblage. These two contexts represented the best return of information gained for time spent on analysis. This said, they still included a large quantity of unidentifiable material. The contexts examined here are L2407, the primary fill of Sunken-Featured Building 3 (SFB 3), and L2239, fill of Pit F2238. Both of these features belong to Phase 3 (early to middle Anglo-Saxon, AD 450-850). Context L2407 was excavated in four segments (A,B,C,D; Fig. 24) and these are largely used in the analysis here.

Recording

Individual bones were, where possible, identified to element, species, part and body side and recorded into an MS Access database using codes provided by NABONE (NABO 2008). Data on bone zone (Dobney and Rielly 1988), fragment size, fusion state, butchery, burning, gnawing, bone erosion and weathering, sex, pathology (including non-metric traits) and tooth wear were also gathered where possible. Bone identifications were made using the in house reference collection at Archaeological Solutions Ltd. Bone fusion, butchery, burning and gnawing was recorded following the NABONE guidelines; bone weathering was recorded following Behrensmeyer (1978) and erosion following McKinley (2004). Tooth eruption and wear was recorded following Grant (1982). Tooth eruption and wear age stages were assigned following Halstead (1985) for cattle and Hambleton (1999) for pig.

Results

Taphonomy

Although the best preserved bones from the site were selected for recording these were still in a relatively poor state of preservation. During detailed recording taphonomic indicators such as fragments size, erosion, weathering, gnawing and burning were recorded.

Distribution of bone fragment sizes for all identifiable bones is shown in Chart 2. This shows that for all contexts/ segments 50% or more of the bone fragments were 5cm or less in size; only a small proportion of the bones were over 10cm in size. A very small proportion of the identifiable bones were less than 2cm in size. Due to time restraints fragments recorded as unidentified were not divided into size categories and many of these may have been under 2cm in size.

Some eroded bones were present in all contexts/ segments and more eroded bones were present than un-eroded bones (Chart 3), however the majority of bones were only given an erosion score of 1 (McKinley 2004) indicating that in most cases the erosion was only slight. Very few bones had high erosion scores. No weathering of bones was noted for Pit Fill L2239 (Chart 4) but low levels of weathering were noted for all four segments of SFB Fill L2407 where between *c.* 10-25% of bones were affected. In the majority of cases where weathering was noted this was only at stage 1 on Behrensmeyer's (1978) scale. Low levels of bone gnawing were noted in all contexts/ segments (Chart 5). These were all noted as canid gnawing, most likely caused by dogs. The highest frequencies of gnawing were noted in L2239 and L2407A. A very small number of burnt bone fragments were present in L2407A and L2407D. None of these were identifiable to species, the majority were large mammal long bone fragments; a skull fragment and vertebrae fragment were also present.

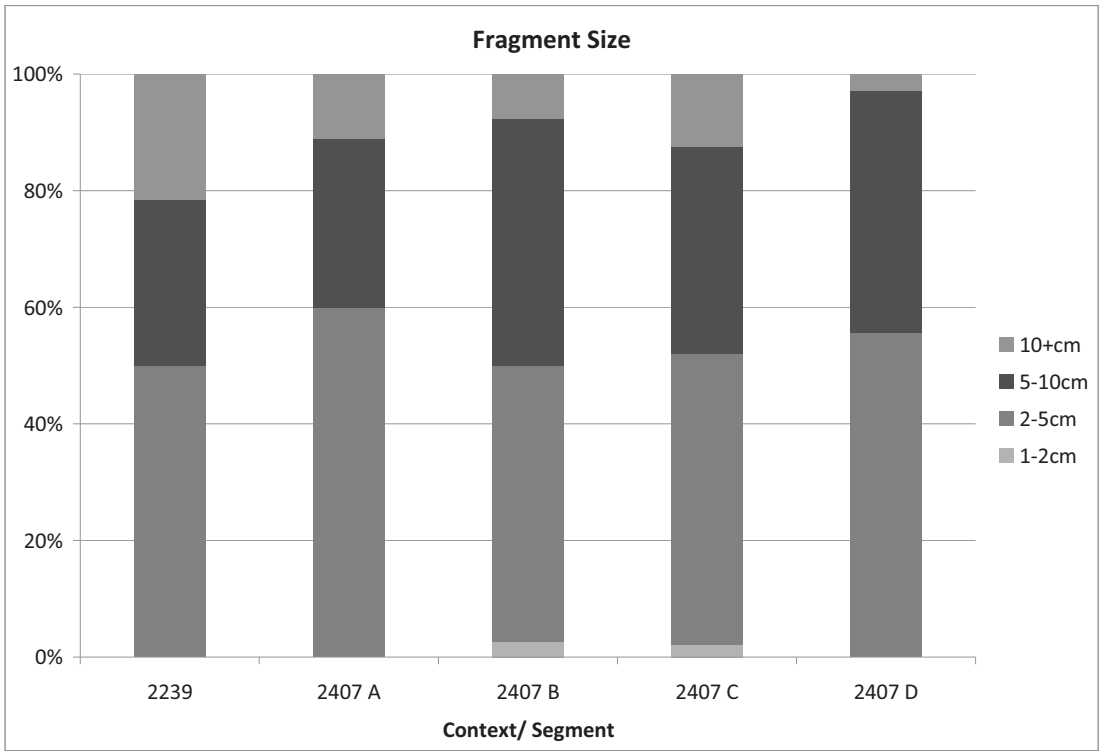

Chart 2: Distribution of bone fragments sizes by context and segment

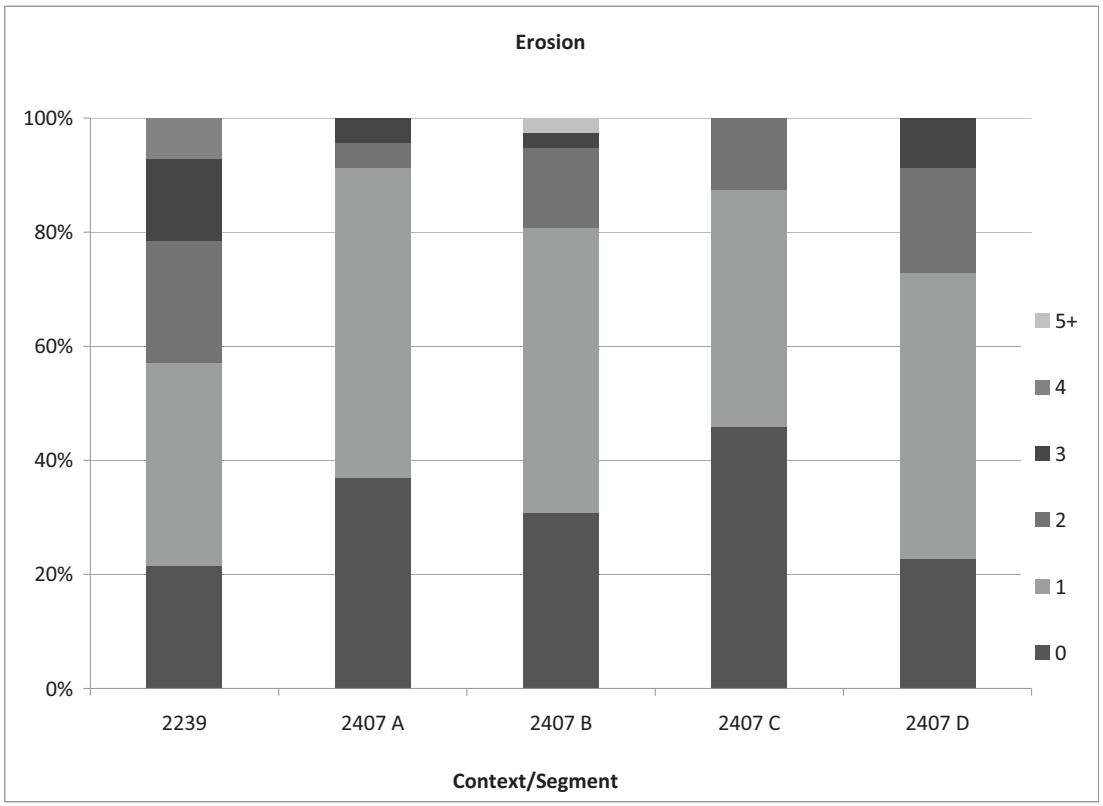

Chart 3: Levels of bone erosion on identified bone fragments, following McKinley (2004)

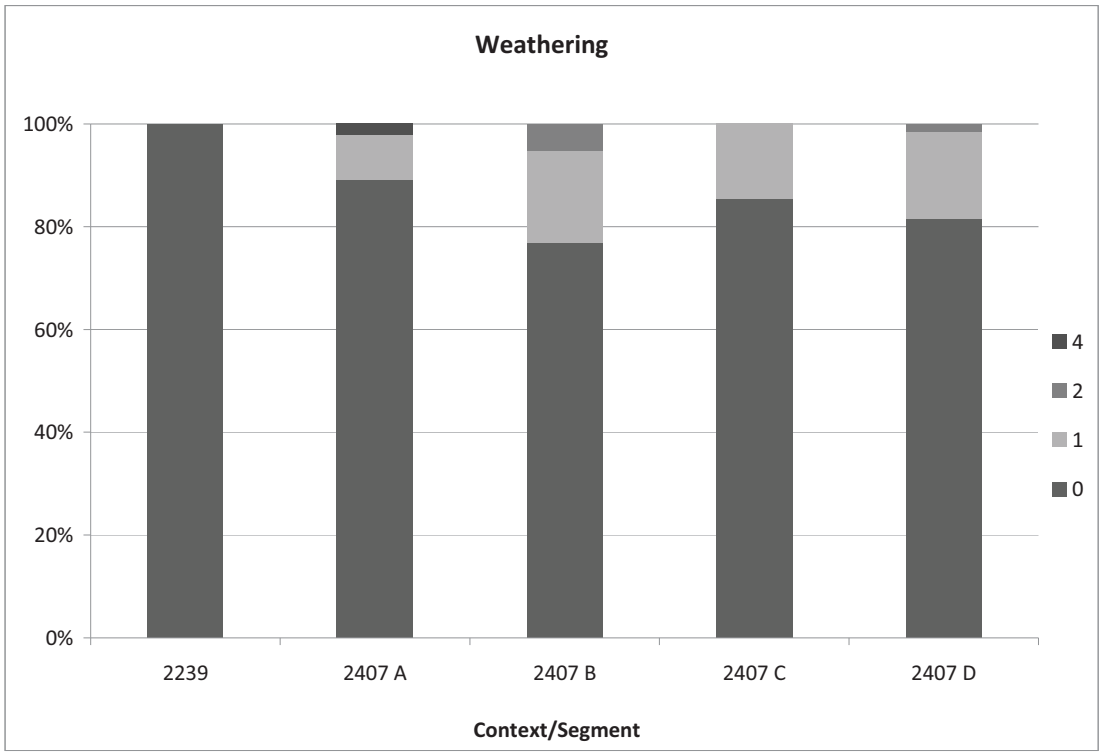

Chart 4: Levels of bone weathering on identified bone fragments, following Behrensmeyer (1978)

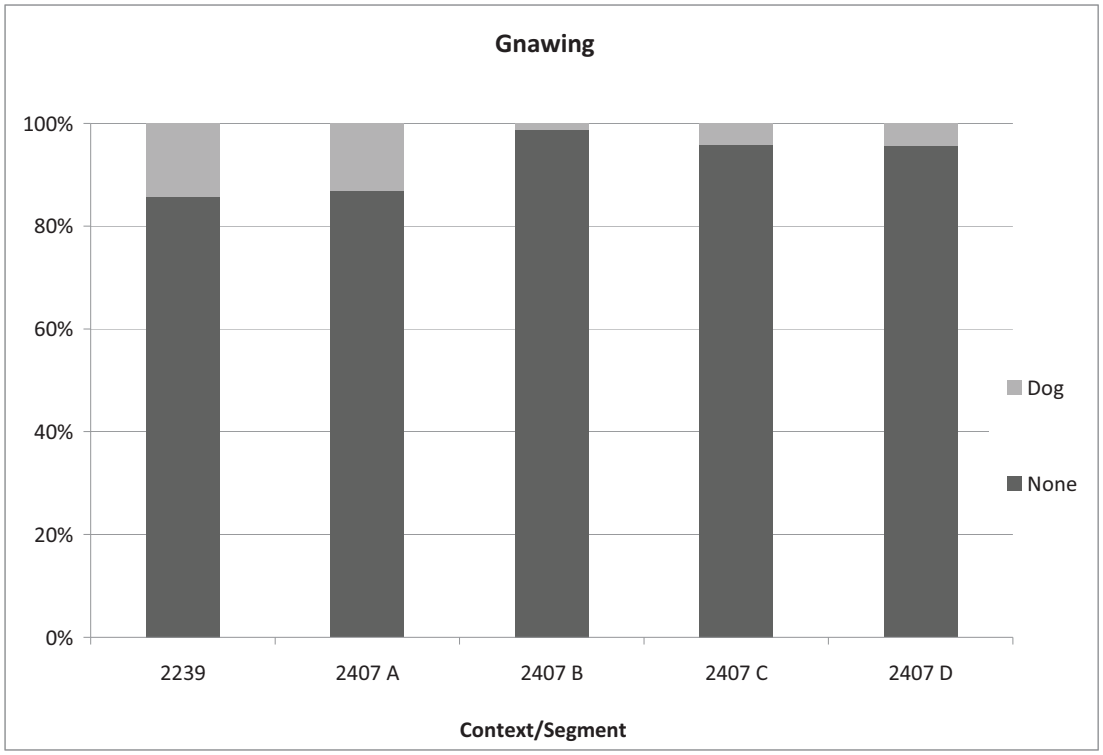

Chart 5: Occurrence of canid gnawing on identified bone fragments

Species present and quantification

Bone quantities are shown in Table 38. Due to the fragmentary and friable state of the assemblage the vast majority of bones could not be identified to species.

Approximately half of the bone fragments were recorded as unidentified and a large proportion were recorded as large or medium mammal, these included all ribs and vertebrae and fragments of limbs, feet, skulls and mandibles that could not be further identified. Identified mammal taxa, in order of abundance, were cattle, pig, sheep/ goat and red deer. A single indeterminate bird long bone fragment, thought to be from a chicken-sized bird, was also present. The single red deer bone was a left distal tibia; no antler or other deer elements were found. No diagnostic elements on which reliable distinctions between sheep and goat could be made were present.

Species	L2239	L2407A	L2407B	L2407C	L2407D	Total L2407	Total
Cattle	4	9	22	7	16	54	58
Sheep/Goat	2	1	3	1		5	7
Pig	3	3	7	7	2	19	22
Red Deer			1			1	1
Bird indet.					1	1	1
Large mammal	5	17	37	23	46	123	128
Medium Mammal		16	8	10	5	39	39
Unid.		85	112	36	43	276	276
Total	14	131	190	84	113	518	532

Table 38: Animal bone number of identified specimens (NISP) for Pit F2238 and SFB 3

The distribution of the three main taxa is examined in Chart 6. Cattle clearly dominate, followed by pig. Sheep/ goat are best represented within Pit Fill L2239. The representation of the three main species varies between the four excavated quadrants of L2407, which may indicate that this material was not particularly well mixed when it was deposited and may possibly have consisted of some semi-articulated remains; however this is difficult to determine given the extremely fragmentary nature of the remains. L2407C (NW quadrant) has the greatest proportion of pig remains and L2407D (SE quadrant) has the greatest proportion of cattle remains (and no sheep/ goat remains). L2407C has the least quantity of bones overall and L2407B the most.

Although the overall numbers of domestic mammal bones were small it was interesting to note that cattle were represented by three left and three right lower third molars, indicating a minimum number of three cattle contributing to the remains within SFB 3. Likewise pigs were represented by one male canine (loose) and one female canine (part of a maxilla fragment) indicating parts of at least two animals within SFB 3. Sheep/ goat bones could only account for a single animal and no more than one of each taxa could be accounted for from Pit Fill L2239. It is interesting that cattle and pigs are so well represented by teeth, compared to other body parts, and this will be discussed further below.

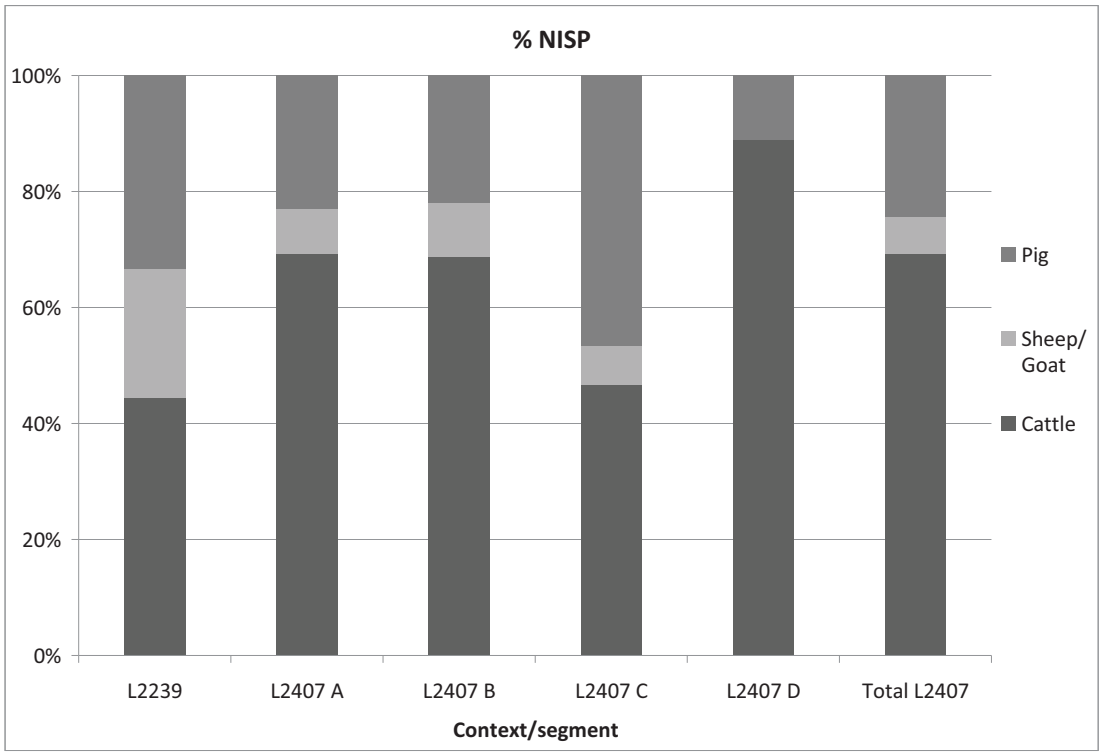

Chart 6: % NISP for the three main domestic taxa

Animal age

A small number of cattle and pig teeth were available for ageing. These were assigned to age categories following Halstead (1985) for cattle and Hambleton (1999) for pig. Of the six ageable teeth and mandibles available for cattle three were assigned as age stage E, with an indicated age of 30-36 months, two were at age stage F (young adult) and one at stage I (senile). This would indicate that in the main animals were killed for meat, with a few older animals used as breeding stock and possibly for milk production.

Two further fragments of cattle mandible were present. The first containing a dp4 and an M1, both of which were in wear; following ages for tooth eruption quoted by Silver (1969) this would indicate an animal aged approximately between six and 28 months, equivalent to Halstead's (1985) age stages C or D. The second mandible fragment showed the dp3 in wear and the P3 erupting underneath it. According to Silver (1969) the P3 erupts at around 18-30 months indicating that this animal was likely less than 18 months old at death and probably belongs to Halstead's (1985) age stage C. It is possible that these two mandible fragments (one left and one right) may have derived from the same animal. Nonetheless it does indicate the presence of at least one animal younger than those described above. No very young or neonate animals were represented by the cattle teeth.

Two pig mandible fragments were available for ageing; these gave age stages of D and E with respective suggested ages of 14-21 months and 21-27 months (Hambleton 1999). One further fragment included a dp3 and dp4 (both in wear) but no further teeth. Silver (1969) quotes pig tooth eruption ages for P3 and P4 in pigs as 12-16 month or two years from 18th century sources. This would tend to indicate

that this animal belongs in age stage D and it does not appear from the zones recorded that it can belong to the same animal as the other stage D mandible fragment.

A single incomplete set of teeth from a sheep/ goat mandible included the dp2 through to M1 plus the developing P4 from under the dp4. With the obvious exception of the P4 all of the teeth were well worn. According to the tooth eruption ages quoted by Silver (1969) for unimproved sheep breeds it seems likely that this animal was less than 30 months (eruption of P4) old at death and somewhat older than 6 months (eruption of M1).

Although bone fusion was recorded as a matter of course during the analysis these data are scant and thought likely to be unreliable due to the poor preservation conditions and the preferential destruction of young bone in such environments. Very few unfused bones were present and while this may indicate that the assemblage was made up mostly of adult animals, this may simply be the result of poor preservation of the unfused elements and better preservation of the less porous, fused elements.

Body part and butchery

A list of body parts present for cattle and pig are shown in Tables 39 and 40. Whilst these indicate that most areas of the body are represented for both species they also show bias towards certain body areas. For both species the head is by far the best represented area of the body and in both cases largely represented by loose teeth. For cattle, bones of the feet are the next most abundant, whereas for pig these are scarce. This may well be a product of the hand collection of the assemblage, as pig foot bones, particularly carpals, tarsals and phalanges are considerably smaller than those of cattle and may easily be missed.

Examination of the specific bones and parts of bones present shows that with the exception of the teeth there are not enough bones to account for any more than one animal each for cattle and pig. Additionally the parts that are present tend to be the earlier fusing and sturdier elements which are likely to survive more readily in conditions of poor preservation. It seems likely therefore that there is a great deal of bone missing from the excavated assemblage compared to what is likely to originally have been deposited. It may be that the sheer quantity of animal bone deposited within the fill of SFB 3 and Pit F2238 created a micro-climate allowing for better preservation of bone than elsewhere across the site, but that still only the most robust elements remain intact.

Body Area	Element	Number	%	West Stow Mean %
Head and Neck	Horn core	2	56.9%	44.4%
	Maxilla	1		
	Premaxilla	1		
	Mandible	7		
	Molar	14		
	Premolar	4		
	Incisor	2		
	Atlas	1		
	Axis	1		
	Total head and neck	*33*		
Fore limb	Scapula	1	10.3%	16.4%
	Humerus	1		
	Radius	4		
	Ulna	0		
	Total fore limb	*6*		
Hindlimb	Pelvis	1	3.4%	13.7%
	Femur	0		
	Tibia	1		
	Total Hindlimb	*2*		
Feet	Astragalus	2	29.3%	25.5%
	Calcaneum	2		
	Naviculocuboid	1		
	Metacarpal	2		
	Metatarsal	3		
	Metapodial	1		
	1st Phalange	6		
	Total feet	*17*		

Table 39: Body part representation for cattle from Snape and West Stow (Crabtree 1985)

Body Area	Element	Number	%	West Stow Mean %
Head	Maxilla	2	63.6%	41.4%
	Mandible	4		
	Molar	1		
	Premolar	2		
	Incisor	4		
	Canine	1		
	Total head	*14*		
Fore limb	Scapula	1	13.6%	17.5%
	Humerus	1		
	Radius	0		
	Ulna	1		
	Total fore limb	*3*		
Hindlimb	Pelvis	2	13.6%	18.1%
	Femur	0		
	Tibia	1		
	Fibula	0		
	Total hindlimb	*3*		
Feet	Tarsals/ carpals	0	9.1%	23.1%
	Metacarpal	1		
	Metatarsal	1		
	Phalanges	0		
	Total feet	*2*		

Table 40: Body part representation for pig from Snape and West Stow (Crabtree 1985)

A small quantity of butchery marks were observed during recording, the distribution of these is shown in Chart 7 as percentages of NISP by taxa. Large blade chop marks were only found on cattle, large mammal and medium mammal bones and

knife marks were found on all of the main taxa. The majority of butchery marks were found on cattle and large mammal bones with a single mark each being noted for pig and sheep/ goat and only two on medium mammal bones.

Despite the low quantity of observed butchery, likely due in part to the variety of taphonomic issues described above, there were a few marks worthy of note. Two cattle astragali had cuts on the dorsal side, just above and on the distal articulation; these likely resulted from primary carcass dismemberment. A cattle horn core had been chopped through the base, most likely for the removal of the horn for working. Two cattle mandible fragments had cuts on the lingual side possibly indicating the removal of the tongue, and a pair of metacarpals had been chopped vertically through the proximal articulation, presumably either to access marrow or to make splinters of bone suitable for working into pins or other objects.

For the large and medium mammal bones the most commonly butchered elements were the vertebrae. These included a variety of chops for the removal of the dorsal process on the thoracic vertebrae and lateral processes on the lumbar vertebrae, plus chops through the vertebral bodies. A large mammal skull fragment had deep cuts on its outer surface which may have resulted from animal skinning.

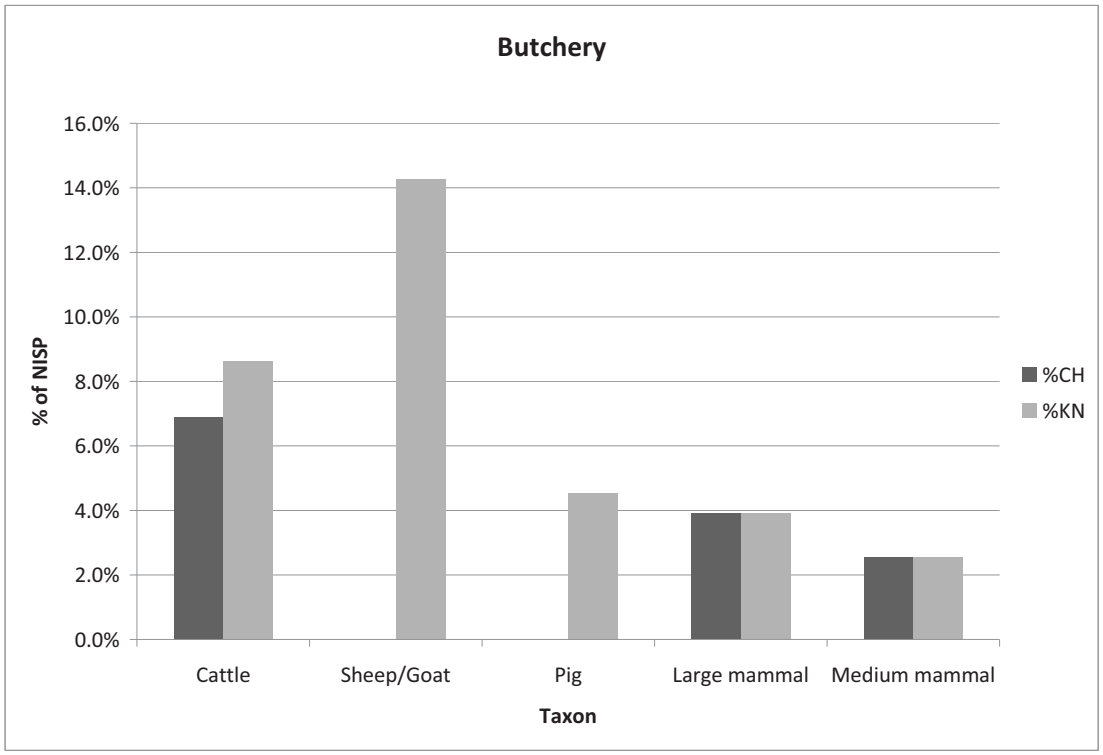

Chart 7: Percentage frequency of butchery marks by taxa

Pathology and abnormalities

Very few pathologies or abnormalities were observed and all of these occurred on cattle bones and teeth. Exostosis was found on an articulating proximal metatarsal and naviculocuboid. This is symptomatic of a number of different conditions, but as no other symptoms were present a diagnosis cannot be made (Baker and Brothwell 1980, 114).

Of the six cattle lower third molars (M3s) present two had a missing or reduced hypoconulid (3rd cusp). The cause of this malformation is unknown, but has been thought to possibly indicate a narrow gene pool (O'Connor 2000). At Anglo-Saxon Flixbrough this condition was noted on 3.9% of mandibles (Dobney *et al.* 2007, 182). In comparison, the 33% incidence seen here seems very high, although the small sample size may be a biasing factor. The final abnormality to be observed was a lower M3 which had partly sheared off on the lingual side during life and had continued to be worn; it would seem likely that this would have caused the animal some considerable pain.

Discussion

Despite its small size and relatively poor preservation some comparisons can be drawn between the assemblage from Snape and other Anglo-Saxon sites in the region. However some key factors must be borne in mind. Firstly is the state of preservation of the material and the likely biases caused, particularly in body part representation and age distribution, as well as in the identification of modifications such as butchery marks and pathologies. Secondly is that the majority of the bones come from the fill of SFB 3, deposited within the building once it had gone out of use. No occupation deposits were examined. This is important to remember when comparing with sites such as West Stow (Crabtree 1985) where only occupation deposits were examined and not the fills of features. The formation processes behind the creation of these two different types of deposit will be vastly different and will considerably affect their content in terms of animal bones (and other materials).

The species recovered from Snape and the dominance of domestic mammals is not unusual for sites of this date (e.g. Newton *et al*. 2012, Ashwin 2011, Baxter 2011, Bond 1995 and Crabtree 1985). The absence of dog bones at Snape may be seen as unusual but their presence is clearly demonstrated through the occurrence of bone gnawing. Horse bones were not present in the contexts examined here but a single horse pelvis fragment was noted during the assessment phase (L2062F, Ditch F2061=2231 (Phase 2)). The relative proportions of the three main taxa (cattle, sheep/ goat and pig), do however seem to vary from site to site. At Spong Hill (Bond 1995) cattle were dominant, followed by sheep with only a small incidence of pig bones; goats were not thought to be present. The low incidence of pigs at Spong Hill was thought to be unusual for an Anglo-Saxon site as Crabtree (1985, 89) stated that substantial quantities of pig remains was a 'hallmark of Anglo-Saxon sites in Britain'. It was thought possible that the poor preservation of bone at Spong Hill was likely to have affected pig bones more than those of sheep or cattle, due to their more porous texture. If this is true then it may be that pigs were also more prevalent at Snape than they appear from the excavated assemblage, possibly making them equal in number with cattle.

At West Stow (Crabtree 1985), sheep/ goat was the dominant taxa, followed by cattle and then pig, with pigs making up between 14 and 21% of the domestic mammal bone assemblage, a substantial proportion. The high prevalence of sheep/ goat (some sheep and a very few goat bones were positively identified) was thought a least in part due to the fact that these deposits were formed from occupation debris, likely falling through gaps in raised wooden floors and that the small bones of sheep were much more likely to fall through than those of larger animals (there was

a particularly high prevalence of loose teeth). The difference in species dominance between West Stow and Snape may well be accounted for by the difference in deposit types, formation processes and methods of recovery; given the recovery of small fish and micro-mammal bones at West Stow it seems that some sieving of deposits was carried out, even though this does not seem to have been routine. Additionally bones from West Stow were noted to be in an excellent state of preservation.

Anatomical distribution of bones of the three main domesticates were calculated for West Stow in a similar way as they were for Snape. This allows for direct comparison between the two sites and West Stow figures have been included on Tables 39 and 40 for this purpose. While the West Stow cattle assemblage, like Snape, was dominated by head and foot elements, this dominance is not so great and West Stow had a considerably better representation of limb bones than the Snape assemblage. The high prevalence of head and foot elements at West Stow may well be due to their relatively small size and the possible 'falling through the floor boards' formation process. However the high occurrence of limb bones compared to Snape seems likely due to the difference in preservation conditions at the two sites, with bones being much better preserved at West Stow. Similarly for the pig remains, although head elements dominate, other body areas are better represented at West Stow than at Snape.

Age data from Spong Hill are very similar in nature to those from Snape. Given the poor preservation at both sites the data are sparse and show a lack of unfused or juvenile bones and teeth of young animals. As has been noted for Snape, Bond (1995) was wary of over interpreting the lack of young animals at Spong Hill, as this may well be a product of poor preservation rather than a specific economic strategy.

There are a number of parallels in butchery practice between Spong Hill and Snape. Evidence for horn working at Spong Hill comes from a sheep horn core that has been sawn through the base. Cattle butchery marks include those demonstrating skinning and dismemberment, as well as longitudinal splitting of the metapodials (*ibid*.).

Conclusions

Despite the poor preservation and various taphonomic issues hindering the interpretation of the Snape animal bone assemblage, some useful information has been recovered. Cattle dominate the assemblage with pig and sheep/ goat possibly under represented. Elements of the head, particularly loose teeth are the dominant body part, present again likely due to the poorer preservation of bone compared with tooth enamel. It also seems likely that young animals are under-represented and that a considerably greater quantity of bone will have been deposited within SFB 3 and Pit F2238 than was recovered.

Overall the assemblage at Snape appears to fit within the broad pattern seen for Anglo-Saxon sites in the east of England.

References

Ashwin, T. 2011, 'Animal Bone', in Wallis, H. *Romano British and Saxon Occupation at Billingford, Central Norfolk*, East Anglian Archaeology Report No. 135, 60

Baker, J. and Brothwell, D. 1980, *Animal Diseases in Archaeology*, Academic Press, London

Baxter, I. 2011, 'Animal and Bird Bone', in Lyons, A. *Life and Afterlife at Duxford, Cambridgeshire: Archaeology and History in a Chalkland Community*, East Anglian Archaeology Report No. 141, 99

Behrensmeyer, A. K. 1978, 'Taphonomic and Ecologic Information from Bone Weathering', *Paleobiology* 4 (2), 150-62

Bond, J. M. 1995, 'Animal Bone from Early Saxon Sunken-Featured Buildings and Pits', in Rickett, R. *The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Part VII: the Iron Age, Roman and Early Saxon Settlement*, East Anglian Archaeology Report No. 73, 142-46

Crabtree, P. 1985, 'The Faunal Remains', in West, S. (ed.) *West Stow the Anglo-Saxon Village Volume 1: Text*, East Anglian Archaeology Report No. 24, 85-96

Cussans, J. E. M. 2013, 'P4763, Snape, Suffolk: an interim report on the animal bone', internal report for Archaeological Solutions Ltd

Dobney, K. and Rielly, K. 1988, 'A method for recording archaeological animal bones: the use of diagnostic zones', *Circaea* 5, 79-96

Dobney, K., Jaques, D., Barret, J. and Johnstone, C. 2007, *Farmers, Monks and Aristocrats: the Environmental Archaeology of Anglo-Saxon Flixbrough*, Oxbow Books, Oxford

Grant, A. 1982, 'The use of toothwear as a guide to the age of domestic ungulates', in Wilson, B., Grigson, C. and Payne, S. (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites*, British Archaeological Reports (British Series) 109, 91-108

Halstead, P. 1985, 'A study of mandibular teeth from Romano-British contexts at Maxey', in Pryor, F., French, C., Crowther, D., Gurney, D., Simpson, G. and Taylor, M. (eds.) *The Fenland Project: Archaeology and Environment in the Lower Welland Valley, Volume 1*. East Anglian Archaeology Report No. 27, 219-24

Hambleton, E. 1999, *Animal Husbandry Regimes in Iron Age Britain: a comparative study of faunal assemblages from British Iron Age sites,* British Archaeological Reports (British Series) 282

McKinley, J. I. 2004, 'Compiling a skeletal inventory: disarticulated and co-mingled remains', in Brickley, M. and McKinley, J. I. (eds.) *Guidelines to the Standards for Recording Human Remains*, IfA Paper No. 7, 14-17, BABAO/ IfA, Southampton/ Reading

NABO, 2008, *NABONE Zooarchaeological Database 9th Edition, Recording System Codes, North Atlantic Biocultural Organisation Zooarchaeology Working Group 9th Edn. 20th May 2008*. http://www.nabohome.org/products/manuals/fishbone/nabo.htm

Newton, A. A. S., Morris, J. and Leach, S. 2012, 'Animal Bone Present in the Sunken-Featured Building', in Newton, A. A. S. 'Saxon and Medieval Settlement at the Old Bell, Marham', *Norfolk Archaeology* XLVI, 331-56

O'Connor, T. P. 2000, *The Archaeology of Animal Bones*, Sutton Publishing, Stroud

Silver, I. A. 1969, 'The ageing of domestic animals', in Brothwell, D. and Higgs, E. (eds.), *Science in Archaeology: a survey of progress and research*, Thames & Hudson, London, 283-302

The Shell
Dr Julia E. M. Cussans

Three pieces of oyster shell were recovered. A lower valve was recovered from Subsoil L2001 and two fragments came from L2555 (fill of Posthole F2554). All of the shell pieces looked quite abraded and bore no signs of human modification.

The Charred Plant Remains
Dr John Summers

Introduction

Charred plant macrofossils were found widely across the site at Church Road, Snape, with material recovered from all three main occupation phases. Following an initial assessment (Summers 2013), a focussed approach, concentrating on the full identification and quantification of carbonised remains from a small number of key features, was implemented. This report presents the results from these analyses and discusses them in their wider archaeological context.

Methods

Samples were processed at Archaeological Solutions Ltd, Bury St. Edmunds, using a Siraf type flotation tank. The light fractions were captured in a 250µm mesh, while the heavy fractions were sieved to 500µm. The light fractions were sorted using a low-power stereomicroscope (x10 – x30 magnification). The carbonised macrofossils were identified using reference literature (Cappers *et al.* 2006; Jacomet 2006) and a reference collection of modern seeds. All cereal grains, chaff and seeds of other non-cereal taxa were fully quantified, while other items were recorded using a semi-quantitative scale (X = present, XX = common and XXX = abundant). Potential contaminants, such as modern roots, seeds and invertebrate fauna, were

quantified using the same semi-quantitative scale in order to better understand the potential effects of bioturbation on the deposits.

Results

The raw data from the analysis of the Snape samples are presented in Tables 41-43.

Phase 1: early Iron Age

From Phase 1, 61 (637.5 litres) samples were processed and assessed. As a whole, ubiquity values from Phase 1 (Chart 8) show that cereal remains were present in over half of the samples (65.57%). Barley was the most commonly occurring cereal in the Phase 1 assemblage (45.9%), followed by wheat (13.11%). Within the wheat assemblage, only glume wheats were represented, being recorded in 8.2% of samples. A small number of possible rye grains (cf. *Secale cereale*) and pulse seeds (large Fabaceae) were also present but it is not possible to use such a small number of specimens for any kind of detailed interpretation.

Of the assessed samples, only two were found to be sufficiently rich to merit full identification and analysis (Table 41). Both samples were from features in the north-western portion of the site, in an area containing a high density of small pits and postholes. Sample 199 of L2663 (pit F2662) was dominated by hulled barley grains, including a number of asymmetric grains indicative of hulled six-row barley (*Hordeum vulgare* var. *vulgare*). In addition two wheat grains were present, one of which was identified as glume wheat (*Triticum dicoccum/ spelta*). Sample 220 of L2704 (posthole F2703) was also dominated by hulled six-row barley remains, which included a single germinated grain. The presence of a small proportion of germinated grain most likely represents small-scale spoilage of the stored barley crop rather than any kind of deliberate malting activity. In addition was a single grain which was morphologically similar to rye (cf. *Secale cereale*). This is an unusual identification for such an early deposit and it is entirely likely that it represents a slender, blunt-ended glume wheat grain. As such, too much significance should not be placed upon this identification.

Within these two samples, no chaff was recorded and only a small number of non-cereal taxa were present. The implication of this is that the material represents the remains of a threshed and sieved barley product, which became carbonised in a storage accident or through day-to-day food preparation activities. The sample densities of 2.75-5.9 items per litre most likely indicate that the remains derived from the gradual accumulation of small amounts of material rather than large concentrations of material from a single event. The small number of non-cereal taxa in L2663 included goosefoot family (Chenopodiaceae), knotweed family (Polygonaceae), medium and small pulses (Fabaceae) and wild grasses (Poaceae). Preservation was relatively poor and identifications remain imprecise but they probably represent typical arable weeds.

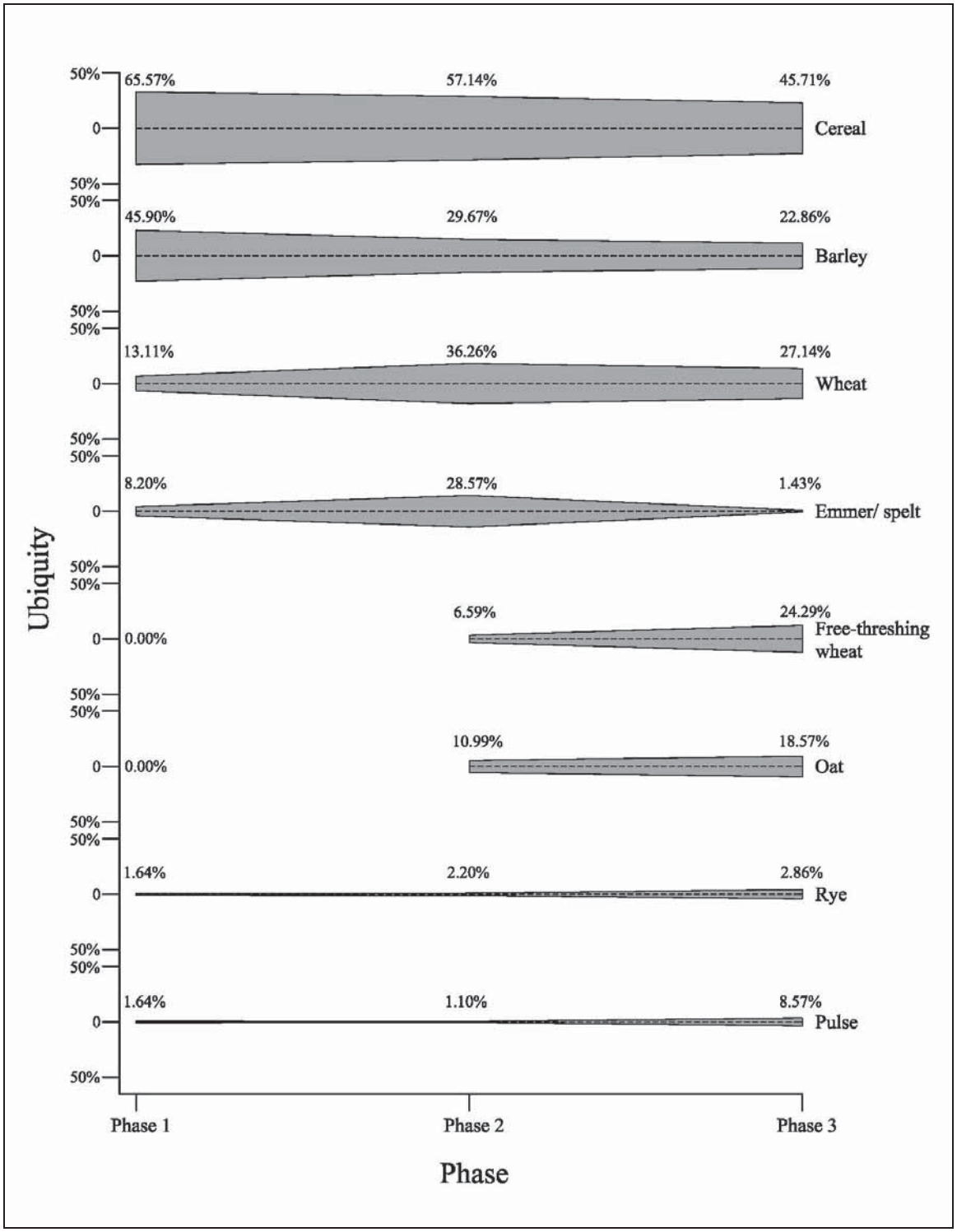

Chart 8: Ubiquity of main crop taxa across all samples by phase (Phase 1 N=61; Phase 2 N=91; Phase 3 N=70)

Phase 2: Romano-British

Phase 2 produced 91 samples (1160 litres) that were processed and assessed. Most contained only low densities of identifiable remains and those of sufficient potential for full analysis were exclusively from kiln S2633 (Table 42). Overall, ubiquity values indicate an increased presence of wheat (36.26%) over the preceding phase (Chart 8). By Phase 2, wheat had a greater percentage presence than barley, which was

present in 29.67% of samples. Within the Phase 2 samples, glume wheat had a much higher percentage presence than free-threshing type wheat (*T. aestivum/ compactum* type) (28.57% compared to 6.59%). However, the presence of the latter may indicate that it was being cultivated in the vicinity of the site at this time, although undoubtably on a smaller scale than more ubiquitous glume wheats. Amongst the glume wheat identified, a large proportion of remains, particularly those of glume bases, were identifiable as spelt wheat (*T. spelta*), although a small number of emmer wheat (*T. dicoccum*) remains were also recorded.

Oat (Avena sp.) was present in 10.99% of samples, indicating that its cultivation may have begun around this time. However, many of the identifications of oat were as awn fragments, which may not be entirely accurate (see below in relation to S2633). In addition, there was a slight increase in the percentage presence of rye (2.2%), although such a value is low and it is difficult to use this as evidence of deliberate cultivation over weed contamination. The same applies to other low-level occurrences of pulses and flax (*Linum* sp.) (1.1% ubiquity each).

Kiln S2633

A number of samples were present from kiln S2633 from the main firing chamber (F2634) as well as the flanking flues (F2713 and F2764) and stoke holes (F2714 and F2765). Wheat, predominantly spelt type (*T. spelta*) but with a small number of emmer type (*T. dicoccum*) glume bases, was the dominant cereal, followed by hulled barley (*Hordeum* sp.), oat (*Avena* sp.) and rye (*Secale cereale*).

The samples from the stoke holes F2714 (L2717) and F2765 (L2768) had a density of 3.05 and 3.43 items per litre respectively. The sample from L2717 (F2714) was dominated by non-cereal taxa, including a large proportion of goosefoot (*Chenopodium* sp.). Cereal grain was present in the form of hulled glume wheat (56.25%) and hulled barley (43.75%), which was accompanied by glume wheat chaff, including spelt wheat glume bases. A ratio of 2.93:1 for glume wheat grains to glume bases was calculated, which could be interpreted as clean grain, although the high proportion of non-cereal taxa contradicts this. Material from the northern stoke hole F2765 (L2767) was slightly different in character. From this deposit, there was an almost equal representation of cereal grain, chaff and non-cereal taxa. As in L2717, wheat was the most numerous cereal grain type (53.57%), followed by barley (35.71%), rye (7.14%) and oat (3.57%). A ratio of 0.6:1 for glume wheat grains to glume bases was calculated, which, considered independently, gives the appearance of carbonised spelt spikelets.

Three samples were present from flues F2713 (L2715) and F2764 (L2766 and L2767). The density of remains was comparable to those in the samples from the stoke holes at between 3.6 and 4.55 items per litre. All three samples were dominated by the seeds of non-cereal taxa, with lesser proportions of cereal grain and chaff. Deposit L2715 (F2713) contained a higher proportion of chaff then either L2766 or L2767 (F2764), which is also shown in the ratios of glume wheat grains to glume bases (0.22 in L2717, 2 in L2766 and 3.6 in L2767).

The kiln chamber (F2634), divided into four segments (A-D), provided the richest samples from S2633. Four samples were taken from the primary fill of this feature (L2635) and all were dominated by the remains of non-cereal taxa and cereal chaff.

Ratios of glume wheat grains to glume bases ranged from 0.08 to 0.3, strongly indicative of fine-sieving debris. The non-cereal assemblage was dominated by goosefoot (*Chenopodium* sp.) and black bindweed (*Fallopia convolvulus*), with goosefoot and goosefoot family (Chenopodiaceae) accounting for 83% of the non-cereal taxa in L2635.

The combined results for all samples from S2633 show that the dominant cereal grain type within the feature was spelt wheat (61.54%), with lesser quantities of hulled barley (29.91%), oat (5.98%) and rye (2.56%) and the dominant class of material was non-cereal taxa, followed by spelt wheat glume bases and spikelet forks. Calculations produced an overall ratio of 0.19:1 for glume wheat grains to glume bases. In addition, a ratio of 0.12:1 was calculated for the number of cereal grains to weed seeds. Together, these provide a signature for spelt wheat fine-sieving by-products. Based on the role of the feature as a pottery kiln, is most likely that this material was used as fuel.

Within this feature, it is most likely that the distribution of remains is more a reflection of the dynamics of airflow within the kiln rather than any direct indication of the use made of different areas of the structure. It seems possible that the dominance of chaff in the firing chamber and its poor representation in the stoke holes and flues is a result of air movement in the kiln, dragging the very light chaff elements out of the stoke holes and depositing them within the kiln chamber where they were protected from the full ferocity of the fires. Due to the preservation bias against chaff elements compared to cereal grain (Boardman and Jones 1990), it is also likely that much of this material was burned to ash in the stoke holes where the fire was most intense, resulting in an elevated proportion of grain. Within the firing chamber itself, the samples from the southern portion (quadrants A and D) were much richer than those from the northern portion (quadrants B and C) for all classes of material. The reason for this accumulation is unclear but may relate to the airflow within the kiln, perhaps in the form of an off-centre vent in the roof of thee kiln.

Although considered to predominantly represent spelt wheat fine-sieving by-products, there was a significant presence of barley grain, as well as smaller quantities of oat, rye and a single pea/ bean seed (large Fabaceae). Oats, rye and pulses seem likely to be present as weed contamination of the crop. However, the relatively high proportion of barley may indicate that it was present through other means. Considering the nature of the wheat assemblage, it is possible that the barley was present as the fine-sieving debris of a barley crop, which would consist of weed seeds and occasional grains, the rachis having been removed in earlier stages of processing. The incompatibility of barley, which is a free-threshing cereal, and glume wheat makes it unlikely that the remains of a maslin crop are present and raises the possibility that the processing by-products of two crops may have been mixed and used as fuel. Alternatively, it might simply be that there was significant contamination of the spelt wheat crop by barley, a significant proportion of which was removed during processing. Only 119 positively identified cereal grains were present across all ten samples, which means that the grain proportions may not be entirely reliable.

Much of the oat in the samples was recorded as awn fragments, which is not necessarily an accurate representation of the presence of this taxon. The main

problem is that some other wild grasses have similarly spiralled awns, such as *Arrhenatherum elatius*. However, the presence of oat grains in some samples shows that it was at least present in low concentrations, perhaps as a weed contaminant of other crops.

As already noted, the assemblage of non-cereal taxa is dominated by goosefoot (*Chenopodium* sp.) and black bindweed (*Fallopia convolvulus*). Goosefoot is characteristic of fertile soils, as are a number of other plants in the assemblages, such as oraches (*Atriplex* sp.), knotweed (*Persicaria* sp.), dock (*Rumex* sp.), wild radish (*Raphanus raphanistrum*), nipplewort (*Lapsana communis*), stinking chamomile (*Anthemis cotula*) and scentless mayweed (*Tripleurospermum* sp.) (Hill *et al.* 2004). This is likely to reflect manuring and fertilisation of cultivated areas. Many of the taxa reflect soils of average moisture content (Hill *et al.* 2004) but stinking chamomile, knotweed, blinks (*Montia fontana*) and sedge (*Carex* sp.) are more characteristic of wetter and occasionally heavier soils. Such conditions are likely to be seen in the seasonally wet loams and clays situated approximately 1km to the north (Soilscapes 2013), which may have been exploited for wheat cultivation. Wild radish (*Raphanus raphanistrum*) is more commonly a weed of lighter soils and may be more associated with a barley crop, although this is tentative.

Phase 3 – early to middle Anglo-Saxon

A total of 70 samples (879 litres) were taken and processed from Phase 3 features. Six of these were taken to full identification and quantification (40), all of which were associated with sunken-featured buildings (SFBs) 1 and 3. In addition, two samples (TT1 and TT2) from L1020 (=L2576 SFB 1), taken during trial excavations at the site, were also fully quantified.

In Phase 3, the percentage presence of cereals was lower than in the previous phases, with cereals present in 45.71% of samples (Figure XX1). Wheat (*Triticum* sp.) was slightly more common than barley, occurring in 27.14% of samples compared to 22.86% for barley (*Hordeum* sp.). Within the wheat assemblage, free-threshing type wheat (*T. aestivum/ compactum* type) was the dominant variety (24.29% ubiquity compared to 1.43% glume wheat). By this phase, the percentage presence of oat (*Avena* sp.) had reached a point which is likely to imply local cultivation, with 18.57% of samples containing oat remains, predominantly in the form of carbonised grains. Rye was present in a relatively small number of samples (2.86%), being concentrated in the SFBs. In addition, evidence for pulses, in the form of both horse bean (*Vicia faba* var. *minor*) and pea (*Pisum sativum*), was also common, with such remains present in 8.57% of samples. As with rye, these were most common from SFBs. Flax (*Linum* sp.) was present in a single sample from posthole F2219, associated with SFB 3.

SFB 1

Four samples of suitable density were present from the basal fill of SFB 1 (L1020=2576), along with an additional sample from posthole fill L2580 (F2579). Amongst the crop taxa, barley grains, most likely of a hulled, six-row variety (*H. vulgare* var. *vulgare*), were the most numerous, accounting for 54% of the identified crop remains (Chart 9). This was followed by wheat (22%), which was

predominantly of a free-threshing type (*T. aestivum/ compactum* type). In the absence of diagnostic rachis remains from any of the Phase 3 deposits, it was not possible to distinguish between tetraploid or hexaploid wheat, both of which are known from other Anglo-Saxon settlements (e.g. Carruthers 2008; Moffett 2008; Campbell 2012).

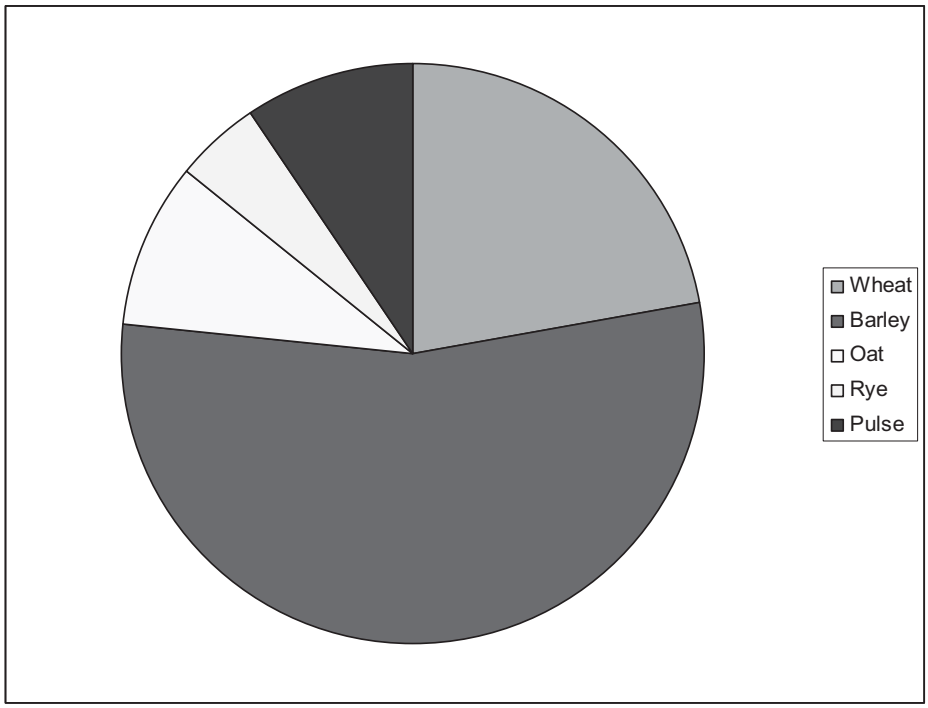

Chart 9: Proportions of main crop taxa in SFB 1 (L1020=2576 and L2580)

Amongst the cereals, oat (*Avena* sp.) was the next most numerous (9%). No diagnostic chaff elements were present to allow the distinction between wild and cultivated forms but the number of grains and the fact that they were present in all five samples is suggestive of a crop rather than a weed contaminant of other cereals. The status of rye (*Secale cereale*) is less certain. Although present in four of the five samples, the number of items was quite low, accounting for just 5% of the crop plant assemblage. Rye could have been valuable in the exploitation of local sandy soils due to its extensive root systems and drought tolerance (cf. Murphy 1985, 104) and it may have been used primarily for fodder rather than human consumption. As such, it would be less likely to be well represented in more 'domestic' assemblages such as that from SFB 1.

Pulses, in the form of both horse bean (*Vicia faba* var. *minor*) and pea (*Pisum sativum*) accounted for 10% of the likely crop taxa. Horse bean was more common across all samples, while pea was only recorded in L2576D. There is a strong likelihood that both had a role in the food economy of the site, with benefits including their high protein content. Agricultural benefits include their nitrogen-fixing root systems and they could also have had a role as animal fodder.

A fragment of plum/ cherry (*Prunus* sp.) stone in L1020 (=2576) could represent evidence of wild foods gathered from surrounding hedgerow or woodland habitats. However, there is the possibility that such material entered hearths with fuel wood, since charcoal from L2576D contained a small quantity of *Prunus* sp. fragments.

The assemblage of non-cereal, wild taxa was quite varied but dominated by a small number of plants. Most numerous were seeds of goosefoot (*Chenopodium* sp.) and goosefoot family (Chenopodiaceae), accounting for 34% of identified non-cereal taxa. Other more common plants were black bindweed (*Fallopia convolvulus*) and knotweed family (Polygonaceae) (27%), wild grasses (Poaceae) (16%) and vetch/ wild pea (*Vicia/ Lathyrus* sp.), along with medium legumes (Fabaceae) (8%). These are all likely to represent arable weeds associated with the cereal and pulse crops. Goosefoot, along with stinking chamomile (*Anthemis cotula*) are weeds more common in fertile, well manured soils. The latter is also common in heavier soils, such as those preferred by bread wheat (*T. aestivum*) and may be associated with this crop (cf. Moffett 2006, 48).

In terms of spatial patterning within the feature, there was little evidence of variation between the samples. This is consistent with an interpretation of midden deposition rather than occupation debris generated within the structure.

SFB 3

Three samples of suitable density were present from the basal fill of SFB 3 (L2407). Chart 10 shows the proportion of the main crop taxa, highlighting some variation between this building and SFB 1. The proportions of wheat (predominantly free-threshing type) and barley (hulled six-row variety) are broadly comparable to those in SFB 1 (22% and 48% respectively). However, oat accounts for a much larger proportion (25%) of the assemblage from SFB 3. Correspondingly, rye is completely absent from this structure and pulses (all *Vicia faba* or indeterminate) only account for 5% of the assemblage.

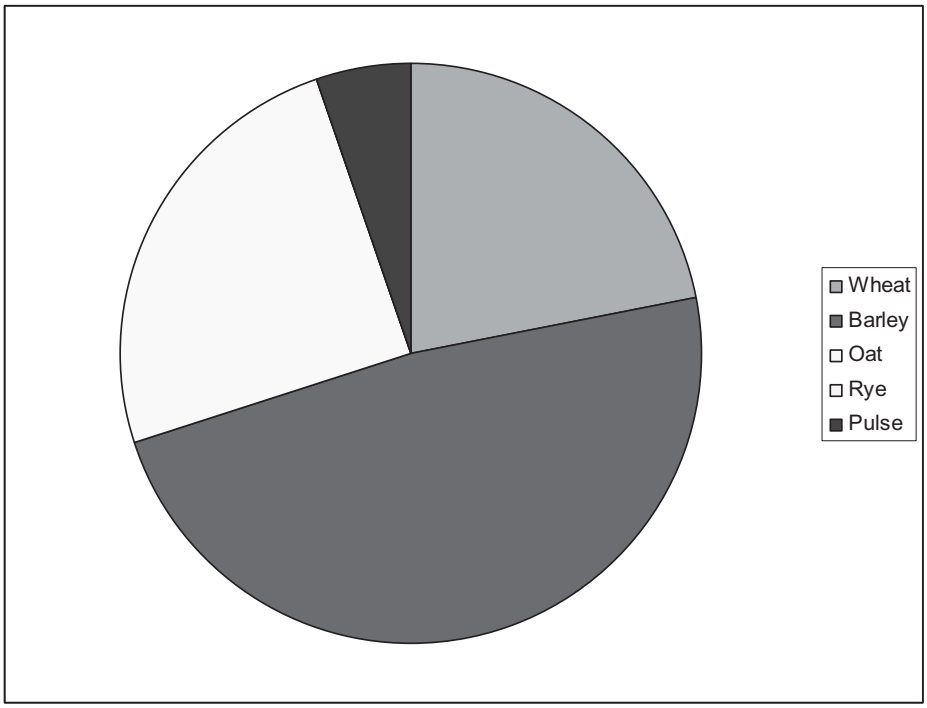

Chart 10: Proportions of main crop taxa in SFB 3 (L2407)

The fact that barley grains were more numerous than those of wheat re-enforces the apparent significance of barley in the site's economy and the possible secondary

importance of wheat, at least in terms of dietary significance for the site's inhabitants. As in SFB 1, no diagnostic chaff elements were present but the proportion of grains present is strongly suggestive of a deliberately cultivated crop rather than a wild form growing as a weed contaminant.

The single fragment of hazelnut shell (*Corylus avellana*) in L2407B may reflect some use of wild resources, as could the single elder (*Sambucus* nigra) seed. However, there is also the possibility that such material could have entered the deposit as fuel debris rather than deliberately gathered foods.

Non cereal taxa were dominated by stinking chamomile (*Anthemis cotula*), with indeterminate daisy family (Asteraceae) (38%), followed by goosefoot (*Chenopodium* sp.) and goosefoot family (Chenopodiaceae) (22%). As in SFB 1, wild grasses (Poaceae) had a significant presence (10%), as did members of the knotweed family, including knotgrass (*Polygonum* sp.), black bindweed (*Fallopia convolvulus*) and dock (*Rumex* sp.). The bulk of the weed community points towards fertile soils, with a strong signature for heavy soils (i.e. *Anthemis cotula*), and some evidence of wetness from poor drainage (e.g. *Eleocharis palustris* and *Carex* sp.). This is most likely to be associated with the wheat remains due to the preference of this crop for heavy, fertile soils. Wild radish (*Raphanus raphanistrum*) is more associated with fertile but more freely draining soils and may represent part of a weed community associated with oats or barley.

The remains from SFB 3, like SFB 1, are similarly 'domestic' in character, being representative of hearth ash containing the remains of daily crop processing and food preparation activities. This is likely to reflect occupation in the vicinity of the structure.

Phase 4 – Medieval

Only a single sample was present from Phase 4, from pit fill L2134C (F2133). The sample contained two cereal grains, one of which was identified as hulled barley. No further analysis of Phase 4 samples was undertaken.

Unphased

In total, 53 samples (559 litres) were taken and processed from deposits which have remained un-phased. Most of the samples were barren or contained only low densities of carbonised plant remains. The exception to this were Samples 189 of L2659 (posthole F2658) and 229 of L2748 (posthole F2747), which were rich in carbonised remains, despite the small sample size. The sample from L2659 was rich in carbonised cereal grain, predominantly in the form of hulled, six-row barley, along with a small number of glume wheat grains. Seeds of non-cereal taxa were rare, with goosefoot and black bindweed both present. The sample from L2747 contained only hulled six-row barley grains and a small amount of oak charcoal. These posthole samples are comparable to a number of the Phase 1 postholes in the vicinity, although the evidence is insufficient to date them accurately. As these samples were un-phased, none were considered of sufficient merit to pursue full identification and analysis.

Discussion

Phase 1 – early Iron Age

The bulk of the material from Phase 1 was in the form of hulled six-row barley grains, with few other cereals present. This can be used to infer that barley was the dominant cereal grown during this period. Barley is more resilient than wheat to drier, free-draining soils, such as the sands in the immediate vicinity of the site, which may indicate that agricultural production during this time was focussed upon the sandy soils around the site. Little more can be said about the arable economy of this period based on the limited number of rich samples. However, the ubiquity of cereal remains across the site as a whole during Phase 1 indicates the common use and processing of cereal crops, most likely those cultivated by the site's inhabitants.

Phase 2 – Romano-British

The results from Phase 2 are heavily influenced by the material recovered from kiln S2633. However, it would appear that across the site as a whole, there is a general increase in the importance of spelt wheat over hulled six-row barley. It is apparent that wheat was the most economically significant crop, as is seen at a wide range of Romano-British sites (e.g. Murphy 2003; Carruthers 2008; Stevens 2009; Campbell 2008a; Pelling 2008; Pelling 2011), although both crops clearly had an important role on the site. The expansion of the wheat economy in Phase 2 appears to have led to an increased exploitation of heavy soils away from the immediate vicinity of the site. This may reflect a larger territory controlled by the settlement or simply an expansion of arable cultivation into land previously used for pasture. There is an increase in the ubiquity of oats in Phase 2 which can potentially be used to infer cultivation, although no accurate identifications have been made to distinguish wild and cultivated forms. The low ubiquity of both rye and pulses is insufficient to infer any kind of cultivation.

Kiln S2633

The use of spelt wheat fine-sieving debris was a common practice in all kinds of kiln and oven structures throughout Roman Britain (e.g. Murphy 1989; Huntley 1996; Fryer 2004; Carruthers 2008, 34.9; Campbell 2008; van der Veen 1989). The majority of the features from which samples are known are from agricultural kilns (corndriers and malt ovens) or ovens. However, comparable examples to the Snape example are known from Catterick (Huntley 1996) and Stowmarket (Murphy 1989). These examples were also found to have been fuelled by spelt wheat processing waste. In the Catterick example, it was hypothesised that the feature had multiple uses which may have included cereal processing, as well as being a pottery kiln (Huntley 1996). However, it is considered that this is unlikely and that the amount of grain in the feature either reflects inefficient processing or comparatively high levels of attrition of glume bases over cereal grain. As has been found in the Snape investigations, the choice of sampling location within such features can have a significant effect on the charred plant macrofossil assemblage recovered.

Interestingly, there were no features around S2633 which appeared to have received waste and spent fuel debris from the kiln. This could simply imply that rake-out from the stoke holes and flues was not dumped in any open features within the excavation

area. However, it could also raise the possibility that the kiln was a single use feature or that it had quite a limited lifespan, which meant it did not need cleaning out during its use. The concentration of burnt material within the kiln itself could indicate that it was not cleared after its final use, which is perhaps comparable to some of the other examples which have been sampled (e.g. Murphy 1989; Huntley 1996). However, it should be noted that the relative sparsity of the material within the stoke holes compared to the kiln chamber could indicate some cleaning of these areas as much as it could result from more complete combustion.

The variation between the different portions of the kiln clearly shows the need to take multiple samples from such features to gain a more accurate interpretation of its use. These results are also a clear demonstration of some of the taphonomic principles outlined by Boardman and Jones (1990).

Phase 3 – early to middle Anglo-Saxon

The evidence from Phase 3 is indicative of a more varied arable economy than in preceding phases. The ubiquity of oats and pulses in particular, as well as the density of such plants in the fills of SFBs 1 and 3, are a good indication of a more significant role in the site's economy than in previous periods. The significance of rye is more difficult to determine, although it was more common in Phase 3. Its concentration within the fill of SFB 1 may indicate low-level use. The possibility of rye fulfilling a role as a fodder crop is significant and may account for its generally poor representation.

The common occurrence of pulse seeds, in the form of horse bean and pea, is likely to be partly a reflection of the types of deposit that are represented. The material from Phase 2 predominantly represent industrial and agricultural activities, while those from Phase 3 are more domestic in nature. However, increased diversity in Anglo-Saxon deposits is also seen elsewhere (e.g. Ballantyne 2005).

SFBs 1 and 3

The results from the SFBs have the appearance of material derived from the day-to-day processing and use of cereals and other plant foods (i.e. pulses). The deposits L2407 and L2576 are likely to represent post-abandonment fills of the open features rather than debris directly related to the occupation of the specific buildings. However, the remains do reflect contemporary occupation around these buildings and the site's economy at this time. The mixed nature of the crop remains from these buildings, along with the presence of charcoal remains leads to an interpretation of domestic refuse in the form of hearth rake-out. The presence of both crops and weed seeds indicates that the hearths were receiving a mixture of remains from the daily processing and use of cereals and other crops.

In both SFB fills, the predominance of barley indicates that it is likely to have made a significant dietary contribution for those occupying the site in the Anglo-Saxon period. Whether this means that it was the primary crop is difficult to determine, although the comparable ubiquity values suggest that it was in roughly equal use to wheat at this time. The dominant wheat variety in Phase 3 was of a free-threshing type, which is quite typical for the period (e.g. Carruthers 2008; Murphy 2005;

Ballantyne 2005), which also appears to have made a significant contribution to the diet and economy of the site.

The significant proportion of oat, particularly in SFB 3, would appear to be an indication that it was also important for human consumption. At Stansted, Essex, a late Saxon beamslot produced a sample of clean, processed oat grain, most likely destroyed in a storage accident (Carruthers 2008, 13.15-13.16). Also, at Springfield Lyons, Essex, oats were amongst the most common cereals recovered from late Saxon deposits (Murphy 2005). This is reasonable proof that oats were an established Anglo-Saxon crop in the region which, although they are more frequently considered to represent fodder than human food (cf. Murphy 2005, 159-160).

The status of rye is much less certain, although it is a crop that is highly drought tolerant and well suited to the free-draining, sandy soils in the immediate vicinity of the site. Anglo-Saxon rye cultivation has been hypothesised at a number of other sites in the East of England, particularly those within the Breckland of Suffolk and Norfolk. For example, at West Stow, Suffolk, two large deposits of Anglo-Saxon rye were recovered, providing good evidence of deliberate cultivation (Murphy 1985). Rye was also present, although not abundant, at Springfield Lyons, Essex (Murphy 2005), and Redcastle Furze, Thetford (Murphy 1995). In addition, a late Saxon deposit at West Fen Road, Ely, produced a significant quantity of rye chaff, indicating that it was cultivated and processed by the site's inhabitants (Ballantyne 2005, 102). It is possible that rye was used as a fodder, accounting for its regular occurrence but low density at many Anglo-Saxon sites.

The presence of pulses in a set of samples with a domestic appearance suggests that these crops were also making a significant contribution to the diet of the site's inhabitants during the early to middle Saxon period. However, in other contexts, such crops have also been considered to have a potential role as fodder (e.g. Murphy 2005). Such crops are not only important on a dietary level, but their nitrogen-fixing properties make them significant in a crop rotation system.

Although there are numerous crop taxa (oat, rye and barley) which indicate the exploitation of local sandy soils for arable production, there is good evidence from the non-cereal taxa that a more extensive territory was exploited. In particular, the presence of stinking chamomile (*Anthemis cotula*) is an indication of the use of heavier clay or loam soils, most likely for the cultivation of free-threshing type wheat. Whether this was the direct result of cultivation by the site's inhabitants or present as imported grain is difficult to determine based on the present evidence. However, the number of weed seeds, particularly stinking chamomile seeds in SFB 3, which are likely to be associated with the free-threshing type wheat remains, may indicate some on-site processing of the wheat crop.

The general view of the mid-late Saxon economy from Snape is of a diverse arable system exploiting a fairly wide area around the site, which includes at least two distinct habitat types. This may reflect the efforts of the site's inhabitants or could represent trade and/ or co-operation with neighbouring settlements.

Conclusions

The sampling programme conducted at Snape has produced an assemblage of carbonised plant macrofossils which has given some useful insights into the past economy of the site and the dynamics of particular features. The material is able to help define arable practices during the three main phases of occupation.

In all of the three main phases, there is reasonable evidence for the local cultivation of a range of crop taxa. In Phase 1, there appears to be a focus upon hulled six-row barley, accompanied primarily by spelt wheat. By Phase 2, the increased presence of spelt wheat and the identification of weeds of heavier soils (i.e. *Anthemis cotula* and *Persicaria* sp.) shows an expansion of the arable system into heavier soils at some distance from the excavation area. Although there appears to be extensive use of local sandy soils for crops such as oat, rye and potentially barley during Phase 3, there is likely to have been a continued exploitation of heavier soils for the cultivation of free-threshing type wheat.

Although the assemblage has provided some very interesting interpretations, the material analysed only comes from a small number of features, each representing a particular set of specialised activities. As such, it is not possible to be certain that the results and interpretations are representative of the settlement's economy as a whole during each of the three main phases.

References

Ballantyne, R. 2005, 'Plants and seeds', in Mortimer, R., Regan, R. and Lucy, S, *The Saxon and Medieval Settlement at West Fen Road, Ely: The Ashwell Site*, East Anglian Archaeology 110, Cambridge Archaeological Unit, Cambridge, 100-112

Boardman, S. and Jones, G. 1990, 'Experiments on the effects of charring on cereal plant components' *Journal of Archaeological Science* 17, 1-11

Campbell, G. 2008, 'Plant utilization in the countryside around Danebury: a Roman perspective', in Cunliffe, B. *The Danebury Environs Roman Programme: A Wessex Landscape During the Roman Era. Volume 1: Overview*, Oxford University School of Archaeology Monograph No. 70, Oxford, 53-100

Campbell, G. 2012, *Assessment of Charred and Mineral-Replaced Macroscopic Plant Remains from Excavation at Lyminge, Kent, 2008-10*, University of Reading

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

Carruthers, W. J. 2008, 'Charred, mineralized and waterlogged plant remains', in Cooke, N., Brown, F. and Phillpotts, C. *From Hunter-Gatherers to Huntsmen: A History of the Stansted Landscape*, Framework Archaeology Monograph No. 2, Chapter 34 on CD

Fryer, V. 2004, 'Charred macrofossils and other remains', in Bales, E. *A Roman Maltings at Beck Row, Mildenhall, Suffolk*, East Anglian Archaeology Occasional Paper No. 20, Suffolk County Council, Bury St. Edmunds, 49-54

Hill, M. D., Preston, C. D. and Roy, D. B., 2004, *PLANTATT, Attributes of British and Irish Plants: Status, Size, Life History, Geography and Habitats,* Centre for Ecology and Hydrology, Huntingdon

Jacomet, S. 2006, *Identification of Cereal Remains from Archaeological Sites* (2nd edn), Laboratory of Palinology and Palaeoecology, Basel University

Moffett, L. 2006, 'The archaeology of medieval food plants', in Woolgar, C.M., Serjeantson, D. and Waldron, T. (eds), *Food in Medieval England: Diet and* Nutrition, Oxford University Press, Oxford, 41-55

Moffett, L. C. 2007, 'Charred plant remains', in Mair Charles, B, Williams, R. J. and Hardy, A. *Death and Taxes: The Archaeology of a Middle Saxon Estate Centre at Higham Ferrers, Northamptonshire*, Oxford Archaeology, Oxford

Murphy, P. 1985, 'The cereals and crop weeds', in West, S. *West Stow. The Anglo-Saxon Village. Volume 1: Text*, East Anglian Achaeology 24, Suffolk County Planning Department, 100-108

Murphy, P. 1995, 'Plant macrofossils', in Andrews, P. *Excavations at Redcastle Furze, Thetford, 1988-9*, East Anglian Archaeology 72, Norfolk Museums Service, 131-135

Murphy, P. 2003, 'Botanical evidence', in Germany, M. *Excavations at Great Holts Farm, Boreham, Essex, 1992-4*, East Anglian Archaeology Report Number 105, Essex County Council, Chelmsford, 204-215

Murphy, P. 2005, 'Environmental evidence', in Tyler, S. and Major, H. *The Early Anglo-Saxon Cemetery and Later Saxon Settlement at Springfield Lyons, Essex*, East Anglian Archaeology Report Number 111, Essex County Council, Chelmsford, 149-163

Pelling, R. 2008, 'Charred and waterlogged plant remains', in Booth, P., Bingham, A. M. and Lawrence, S. *The Roman Roadside Settlement at Westhawk Farm, Ashford, Kent: Excavations 1998-9*, Oxford Archaeology Monograph 2, Oxford, 349-357

Pelling, R. 2011, 'Charred plant remains', in Dinwiddy, K.E. and Bradley, P. *Prehistoric Activity and a Romano-British Setltement at Poundbury Farm, Dorcesher, Dorset*, Wessex Archaeology, Salisbury, 142-157

Soilscapes, 2013, National Soil Resource Institute, Cranfield University, https://www.landis.org.uk/soilscapes/ (consulted 23/07/2013)

Stevens, C. J. 2009, 'Charred plant remains', Wright, J., Seager Smith, R., Stevens, C. J and Leivers, M. *Cambourne New Settlement: Iron Age and Romano-British Settlement on the Clay Uplands of West Cambridgeshire. Volume 2: Specialist Appendices*, Wessex Archaeology, Salisbury

Summers, J. R. 2013, 'P4763, Snape, Suffolk: an interim report on the charred plant remains', internal report for Archaeological Solutions Ltd

van der Veen, M. 1989, 'Charred grain assemblages from Roman-period corn driers in Britain', *Archaeological Journal* 146, 302-19

Sample number	**199**	**220**
Context number	**2663**	**2704**
Feature number	**2662**	**2703**
Feature type	**Pit**	**Posthole**
Phase	**1**	**1**
Volume (litres)	**20**	**10**
Cereal grains:		
Indet. cereal grain frags	X	X
Cereal NFI	18	15
Hordeum sp. - Barley	9	7
Hordeum sp. - Hulled barley	20	36
(*Hordeum vulgare* - twisted grain)	(3)	(9)
(*Hordeum vulgare* - germinated grain)	-	(1)
Triticum sp. - Wheat	1	-
Triticum dicoccum/spelta - Emmer/spelt wheat	1	-
cf. *Secale cereale* - Rye	-	1
Wild taxa:		
Chenopodiaceae - Goosefoot family	1	-
Polygonaceae indet. - Knotweed family	1	-
Fabaceae indet. - Pea family (medium)	1	-
Fabaceae indet. - Pea family (small)	1	-
Bromus sp. L. - Brome grass	1	-
Poaceae indet. - Grass (large)	1	-
Contaminants:		
Modern roots	XX	X
Modern mollusc	-	-
Modern seeds	-	X
Modern insect	-	-
Earthworm egg capsules	X	-

Table 41: Quantified charred plant macrofossils from Phase 1 features. Key: X = present; XX = common; XXX = abundant

	Kiln S2633									
Sample number	**176**	**180**	**203**	**207**	**210**	**233**	**235**	**237**	**238**	**239**
Context number	**2635A**	**2635B**	**2635C**	**2635D**	**2638D**	**2715**	**2717**	**2766**	**2767**	**2768**
Feature number	**2634A**	**2634B**	**2634C**	**2634D**	**2634D**	**2713**	**2714**	**2764**	**2764**	**2765**
Feature type	**Kiln**	**Kiln**	**Kiln**	**Kiln**	**Kiln**	**Kiln Flue**	**Kiln Stoke hole**	**Kiln Flue**	**Kiln Flue**	**Kiln Stoke hole**
Phase	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Volume (litres)	**10**	**10**	**10**	**10**	**10**	**20**	**40**	**20**	**10**	**40**
Cereal grains:										
Indet. cereal grain frags	X	X	X	XXX	X	X	XX	X	X	XX
Cereal NFI	23	4	10	28	5	9	10	5	1	17
Cereal NFI/Large Poaceae	1	-	-	-	-	-	1	-	-	-
Hordeum sp. - Barley	-	3	-	7	2	-	4	2	1	7
Hordeum sp. - Hulled barley	1	-	-	-	2	-	3	-	-	3
Triticum sp. - Wheat	7	1	1	19	2	-	7	1	1	11
Triticum dicoccum/spelta - Emmer/spelt wheat	1	1	2	4	-	4	2	-	2	4
Triticum spelta type - Spelt type wheat	2	-	-	-	-	-	-	-	-	-
cf. *Avena* sp. - Oat	-	-	-	2	-	-	-	-	-	-
Avena sp. - Oat	-	-	-	2	-	1	-	-	1	1
Secale cereale - Rye	-	-	-	-	-	-	-	1	-	2
Cereal chaff:										
Triticum spelta - Spelt wheat glume base	33	3	8	25	3	8	2	-	-	7
Triticum spelta - Spelt wheat spikelet fork	3	-	-	2	-	-	-	-	-	-
Triticum dicoccum - Emmer wheat glume base	-	-	-	1	-	-	-	-	-	-
Triticum dicoccum/spelta - Emmer/spelt wheat glume base	230	10	61	89	11	35	3	1	1	25
Triticum dicoccum/spelta - Emmer/spelt wheat spikelet fork	50	-	9	11	1	4	-	-	-	4
Triticum dicoccum/spelta - Emmer/spelt wheat rachis	1	-	-	1	-	-	-	-	-	-
Triticum sp. - Indet. wheat rachis	3	-	1	-	-	-	-	-	-	-
Triticum sp./*Hordeum* sp. - Wheat/barley awn fragment silica skeleton	X	-	-	-	-	-	-	-	-	-
Avena sp. - Oat awn fragment	-	2	40	31	-	9	2	1	-	10
Other cultivars:										
Fabaceae indet. (large) - Pea/ bean	-	-	-	-	-	-	-	-	-	1
Wild taxa:										
Chenopodium sp. L. - Goosefoot	310	41	56	575	4	63	46	46	15	10
Atriplex sp. L. - Oraches	9	2	2	10	-	1	1	-	-	-

Chenopodiaceae - Goosefoot family	130	12	17	96	4	17	14	13	3	2
Montia fontana L. - Blinks	2	-	-	-	-	-	-	1	1	-
Caryophyllaceae indet. - Pink family	-	1	-	2	-	1	-	-	2	-
Persicaria sp. Mill. - Knotweed	4	-	1	6	-	5	1	-	-	-
Polygonum sp. L. - Knotgrass	-	-	-	1	-	-	-	2	-	-
Fallopia convolvulus (L.) A.Love - Black-bindweed	38	10	9	62	3	19	7	3	5	7
cf. *Fallopia convolvulus* (L.) A.Love - Black-bindweed	4	-	-	5	-	-	-	-	-	-
Rumex acetosella L. - Sheep's sorrel	-	-	-	1	-	-	-	-	-	-
Rumex sp. L. - Dock	8	-	-	5	-	-	1	-	-	2
Polygonaceae indet. - Knotweed family	-	2	2	2	-	1	-	1	-	4
Raphanus raphanistrum L. - Wild radish	2	-	-	1	-	-	-	-	1	2
Vicia/Lathyrus sp. L. - Vetch/wild pea	-	-	-	-	-	1	-	-	-	-
Fabaceae indet. - Pea family (medium)	-	-	-	1	-	-	-	-	-	-
Fabaceae indet. - Pea family (small)	-	-	-	1	-	-	-	2	-	-
Apiaceae indet. - Carrot family	-	-	-	-	-	1	-	-	-	-
Lapsana communis L. - Nipplewort	-	-	-	1	-	-	-	-	-	-
Anthemis cotula L. - Stinking chamomile	-	-	-	-	-	-	-	1	-	-
Tripleurospermum inodorum (L.) Sch. Bip. - Scentless mayweed	2	-	-	-	-	1	1	-	-	-
Asteraceae indet. - Daisy family	3	-	-	4	-	1	1	-	-	-
Carex sp. L. - Sedge	-	-	-	-	-	-	-	1	-	-
Cyperaceae indet. - Sedge family	-	-	-	-	-	1	-	-	-	-
Bromus secalinus type L. - Rye brome/ chess	-	-	-	1	-	2	3	2	-	1
Bromus sp. L. - Brome grass	2	-	-	2	-	3	5	1	1	4
Poaceae indet. - Grass (large)	4	3	-	10	2	4	6	5	1	11
Poaceae indet. - Grass (medium)	-	-	-	-	-	-	-	-	-	-
Poaceae indet. - Grass (small)	6	-	-	3	-	1	-	2	-	-
Seeds indet.	5	-	-	16	-	3	2	-	-	2
Charcoal:										
Charcoal >2mm	-	-	-	-	X	X	-	-	-	X
Contaminants:										
Modern roots	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Modern mollusc	X	X	X	XX	-	X	X	-	-	-
Modern seeds	X	-	X	X	X	X	X	X	-	X
Modern insect	-	-	-	-	-	-	X	-	-	-
Earthworm egg capsules	-	-	-	-	-	-	-	-	-	X

Table 42: Quantified charred plant macrofossils from Phase 2 features. Key: X = present; XX = common; XXX = abundant

	SFB 1				SFB 3			
Site Code	**SNP103**	**SNP103**	**SNP103**	**SNP103**	**SNP103**	**SNP103**	**SNP103**	**SNP103**
Sample number	**TT2**	**TT2**	**151**	**152**	**154**	**90**	**92**	**102**
Context number	**1020 (=2576)**	**1020 (=2576)**	**2576A**	**2576D**	**2580**	**2407A**	**2407B**	**2407D**
Feature number	**1019**	**1019**	**2575A**	**2575D**	**2579**	**2406A**	**2406B**	**2406D**
Feature type	**SFB 1**	**SFB 1**	**SFB 1**	**SFB 1**	**Posthole**	**SFB 3**	**SFB 3**	**SFB 3**
Phase	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Volume (litres)	**20**	**20**	**40**	**40**	**10**	**40**	**40**	**40**
Cereal grains:								
Indet. cereal grain frags	XX	XX	XX	XX	X	X	X	X
Cereal NFI	16	22	31	19	11	12	13	14
Hordeum sp. - Barley	10	7	20	11	3	6	11	5
Hordeum sp. - Hulled barley	6	9	8	20	9	3	3	9
(*Hordeum vulgare* - twisted grain)	(3)	(2)	-	(5)	(2)	-	-	(1)
(*Hordeum vulgare* - tail grain)	-	(1)	-	-	-	-	(1)	-
(*Hordeum vulgare* - germinated grain)	(1)	-	-	-	(1)	-	-	-
Triticum sp. - Wheat	2	1	9	7	1	3	3	2
Triticum aestivum/ compactum type - Free-threshing type wheat	3	1	7	10	1	1	7	1
cf. *Avena* sp. - Oat	-	-	-	4	-	3	2	3
Avena sp. - Oat	1	3	1	5	3	4	3	4
Triticum/ Secale sp. - Wheat/ rye	-	-	-	-	1	-	-	-
cf. *Secale cereale* - Rye	-	2	2	-	-	-	-	-
Secale cereale - Rye	1	-	1	-	2	-	-	-
Other cultivars:								
Vicia faba L. - Horse bean	1	-	1	1	1	-	1	-
cf. *Vicia faba* L. - Horse bean	-	1	-	-	-	-	-	-
Pisum sativum sp. L. - Pea	-	-	-	2	-	-	-	-
cf. *Pisum* sp. L. - Pea	-	-	-	1	-	-	-	-
Fabaceae indet. (large) - Pea/ bean	1	3	3	2	-	2	1	-
Linum usitatissimum L. - Flax	-	1	-	-	-	-	-	-
Wild taxa:								
Chenopodium sp. L. - Goosefoot	-	3	4	5	5	6	3	5
Chenopodiaceae - Goosefoot family	-	2	2	2	2	1	5	-
Caryophyllaceae indet. - Pink family	-	-	1	2	-	-	-	-
Polygonum sp. L. - Knotgrass	-	-	-	-	-	1	-	-
Fallopia convolvulus (L.) A.Love - Black-bindweed	2	1	4	4	1	2	3	1
Rumex sp. L. - Dock	-	-	-	-	-	-	1	-
Polygonaceae indet. - Knotweed family	1	1	1	3	2	-	3	2
Raphanus raphanistrum L. - Wild radish	-	-	-	-	-	2	-	-
Brassicaceae indet. - Cabbage family	-	-	-	-	-	1	-	-
Vicia/Lathyrus sp. L. - Vetch/wild pea	-	-	1	-	-	-	-	-
Fabaceae indet. - Pea family (medium)	1	-	3	1	-	2	-	-
Fabaceae indet. - Pea family (small)	-	-	2	-	-	-	1	1
Apiaceae indet. - Carrot family	-	-	-	-	-	-	-	1
Prunella vulgaris L. - Selfheal	1	-	-	-	-	-	-	1
Plantago lanceolata L. - Ribwort plantain	-	-	-	-	-	-	1	-
Valerianella dentata (L.) Pollich - Narrow-fruited cornsalad	-	-	-	-	-	-	1	-
Anthemis cotula L. - Stinking chamomile	1	-	-	-	1	2	21	6
Asteraceae indet. - Daisy family	-	-	-	1	1	-	1	4
Eleocharis palustris (L.) Roem. and Schult. - Common spike-rush	-	-	-	-	-	-	1	-
Carex sp. L. - Sedge	-	-	-	-	-	-	-	1

Poa cf. *annua* L. - Annual meadow-grass	-	-	-	-	-	-	1	-
Poaceae indet. - Grass (large)	2	2	1	3	-	1	2	-
Poaceae indet. - Grass (medium)	-	1	-	-	-	1	1	-
Poaceae indet. - Grass (small)	-	-	-	3	-	-	3	-
Seeds indet.	1	-	2	-	1	2	4	1
Hazelnut shell:								
Corylus avellana L. - Hazel (nut shell)	-	-	-	-	-	-	1	-
Trees/ shrubs:								
Prunus sp. L. - Cherries	-	1	-	-	-	-	-	-
Sambucus nigra L. - Elder	-	-	-	-	-	-	1	-
Charcoal:								
Charcoal >2mm	X	XX	X	XX	XX	XX	X	XX
Other carbonised:								
cf. carbonised small mammal droppings	-	X	-	-	-	-	-	-
Other:								
Small mammal bone	-	-	-	-	-	X	-	-
Indet. bone frag	-	-	-	X	-	XX	-	-
Fuel ash slag	X	X	X	X	-	-	X	-
Molluscs:								
Trichia hispida group	-	-	-	X	-	-	-	-
Vallonia sp.	-	-	-	-	-	-	-	X
Contaminants:								
Modern roots	XX	XX	XX	XX	XX	XX	XX	XX
Modern mollusc	-	-	-	-	-	-	X	-
Modern seeds	XX	X	XX	X	X	X	X	X
Modern insect	-	-	-	-	X	-	-	-
Earthworm egg capsules	X	-	-	-	-	-	-	-

Table 43: Quantified charred plant macrofossils from Phase 3 features. Key: X = present; XX = common; XXX = abundant

The Charcoal

Dr John Summers

Introduction

Excavation and sampling at Church Road, Snape, produced abundant charcoal remains from a range of features dating to the Roman and Anglo-Saxon periods (Phases 2 and 3). These included large deposits within a Roman (Phase 2) hearth and more limited assemblages from Phase 2 kiln S2633. From Phase 3, rich deposits were present from two 'burnt flint pits', along with a small amount of material from two sunken-featured buildings (SFBs). This report presents the results from the full identification and quantification of charcoal from these features and discusses these results in a wider archaeological context.

Methods

Charcoal was collected through the bulk sample processing programme (see Summers, *The Charred Plant Remains* (above)). Charcoal remains were identified from both the light and heavy fractions (where available). Pieces were fractured on three planes (transverse, tangential and radial) for microscopic analysis. Transverse sections were characterised using a low-power stereomicroscope (x10-x30 magnification) and the microscopic features in the tangential and radial planes were examined using a metallurgical microscope with magnification up to x400. Identifications were made using reference literature (Schweingruber 1978; Schoch *et al*. 2004). Identifiable charcoal fragments over 2mm were recorded by fragment count and by weight (to the nearest 0.001g).

Results

The data from charcoal identification and quantification are shown in Table 44.

Phase 2 – Romano-British

The charcoal analysed from Phase 2 was from a small number of discrete features. These included abundant charcoal from large Hearth/ Fire Pit F2137 and a much smaller sample from kiln stoke hole F2714 (part of S2633).

Hearth/ Fire Pit F2137

Material from L2138C of F2137 was composed exclusively of oak (*Quercus* sp.). Almost all of the fragments had weak ring curvature, showing that larger diameter branches or trunks were used. The presence of tyloses in nearly two thirds of the fragments indicates heartwood, again suggesting mature trunk wood was being burned. No small diameter roundwood was identified. The largest ring count from the sample was 31, although this is a minimum due to the absence of either pith of bark to provide a full sequence. Within the identified remains were 18 fragments showing evidence of insect degradation. The agent of this damage is uncertain, although the some of the holes noted were quite large (3-4 mm), which may indicate damage by deathwatch beetle (*Xestobium rufovillosum*). The presence of such

insect damage suggests the burning of dead wood, which could be in the form of dead trees/ branches, re-used timber or seasoned timber.

Kiln S2633

Only a small amount of charcoal was recovered from kiln S2633 with the richest sample being that analysed from stoke hole F2714 (L2718). All of the identified specimens were of oak (*Quercus* sp.), although the small number of identifiable fragments makes it difficult to determine whether this is representative of the original diversity of the fuel supply.

Phase 3 – early to middle Anglo-Saxon

Burnt Flint Pits F2058 and F2365

Charcoal from two features (F2058 and F2365) loosely labelled as 'burnt flint pits' was recovered in abundance and fully quantified. The intention was to gain an understanding of fuel selection and perhaps provide inferences regarding the function of these pits. Although excavated in quadrants, it was considered sufficient to examine the charcoal from only one quadrant of each pit due to the homogeneity of the fill.

The material from L2366 of F2365 was composed predominantly of oak (Quercus sp.) charcoal (96% by weight), with a much smaller amount of hazel (*Corylus* sp.). Tyloses were present in 39% of oak fragments and ring curvature was judged weak or moderate for most fragments, with no small diameter roundwood present. The largest ring count was 22 from a fragment of oak, although this is a minimum age based on the absence of either pith or bark. The assemblage appears to indicate the burning of wood from mature oak trees, supplemented by a small amount of hazel. A small number of insect holes were also noted, indicating the presence of dead wood.

Remains from L2060C of F2058 were more varied, with oak (*Quercus* sp.), hazel (*Corylus* sp.), plum/ cherry (*Prunus* sp.) and *Sorbus/ Malus/ Pirus/ Crataegus* sp. group (Maloideae) all present. Maloideae was dominant by weight (54%) and fragment count, followed by oak (35%), hazel (11%) and a trace amount of plum/ cherry.

Most fragments in L2060C displayed some curvature in the growth rings and no evidence of heartwood was encountered. This indicates that large, mature trees were not felled to fuel the activities associated with F2058. Where fragments were suitable for an assessment of age through ring counting, a maximum age of 31 years was obtained from a piece of hazel wood. A fragment of oak showing a complete sequence gave an age at death of 22 years and another fragment provided an age in excess of 24 years. Fragments of Maloideae provided ages between around 14 years up to in excess of 28 years.

Hazel and numerous Maloideae genera commonly occur in oak woodland and it seems likely from the ring counts and the taxa present that the fuel wood was gathered from young, mixed woodland communities. The felling of 20-30 year old

trees in such a habitat could have been part of a thinning out process in managed woodland.

Two fragments provided evidence of seasonality, one oak and one hazel. Both had complete outer rings, indicating that they were cut at the end of the growing season (autumn/ winter). Unfortunately, the diffuse-porous Maloideae wood makes it very difficult to accurately determine season of felling from charred wood remains. Whether these results reflect the time at which the fire pit was used is indeterminate. A small number of fragments displayed evidence of woodworm attack, which could have happened while fuel wood was in store, being seasoned. Alternatively, a proportion of the timber could have been gathered as old, dead wood.

SFB 1

A single sample was analysed from SFB 1 (L2576D of F2575D). This sample contained only 14 charcoal fragments but a wide range of taxa was present, including elm (Ulmus sp.), oak (*Quercus* sp.), plum/ cherry (*Prunus* sp.), *Sorbus/ Malus/ Pirus/ Crataegus* sp. group (Maloideae) and holly (*Ilex* sp.). A small number of fragments allowed identification of moderate to strong ring curvature, demonstrating the presence of small diameter wood. The wide range of taxa, despite the low density of material, indicates exploitation of a wide range of sources of fuel wood.

SFB 3

Three samples were analysed from fills L2407 and L2408 in F2406 (SFB 3). As with the sample from SFB 1, the density of charcoal fragments was quite low. The range of taxa included elm (Ulmus sp.), oak (*Quercus* sp.), hazel (*Corylus* sp.) and *Sorbus/ Malus/ Pirus/ Crataegus* sp. group (Maloideae). Throughout, oak was the dominant taxon by both fragment count and weight. The range of taxa implies some flexibility in fuel wood choice but the dominance of oak may imply a greater degree of selection than the material in SFB 1.

Discussion

Phase 2 – Romano-British

Hearth/ Fire Pit F2137

High quality oak timber appears to have constituted the sole fuel source for this feature and must have been deliberately sought for this purpose. The number of insect holes in the wood suggest that it may have been sitting for some time to season prior to use, which would have enhanced the quality of the fuel. It is not possible to accurately determine the source of the oak timber, which may have been felled locally but could also have been brought to the site from elsewhere as a high quality fuel. The precise role of the hearth is not clear but it is likely that it needed such oak fuel to perform effectively.

Kiln S2633

The small quantity of charcoal associated with S2633 further reinforces the interpretation from the charred plant macrofossils (Summers, *The Charred Plant Remains* (above)) that the dominant fuel resource was spelt wheat fine-sieving by-product. The small amount of oak wood appears to have represented a supplement rather than a primary fuel resource, although this could have been influenced by cleaning of the stoke holes and flues, which would have removed more of the larger charcoal remains. The use of chaff, rather than wood, to fuel Roman pottery kilns is a phenomenon seen elsewhere (e.g Murphy 1989; Huntley 1996) and it may be that the fierce, high temperature burning of this material was preferred for such applications.

Phase 3 – early to middle Anglo-Saxon

Burnt Flint Pits F2058 and F2365

It is clear that there were quite significant differences between the charcoal assemblages from the two burnt flint pits, with F2058 containing a much more varied and less mature selection of timber than F2365. This is of interest since it indicates that very careful selection of timber may not have been considered of necessary in relation to the activities associated with these features. The difference in this fuel to that from F2058 could indicate that either a different area of woodland was exploited or that it was imported from elsewhere. This said, however, the dominant taxa Maloideae and oak are both high quality hard wood fuels which would burn slowly and evenly.

Comparable features have been widely encountered on Anglo-Saxon sites, both in domestic and funerary contexts (e.g. Garrow *et al*. 2006, 184-186; Andrews 1995, 22; Caruth and Goffin 2012, 45-46; Boulter and Rogers 2012, 94). The absence of any other diagnostic ecofactual or artefactual remains makes it impossible to narrow down the interpretation of these features from previous hypotheses presented elsewhere (e.g. Andrews 1995, 22; Caruth and Goffin 2012, 45-46; Boulter and Rogers 2012, 94). In addition to heat treatment of flint and pit cooking, a further interpretation is that they could have been used for charcoal production. The excellent preservation of the charcoal indicates that the fire provided suitable reducing conditions and some traditional charcoal burners take the form of similarly sized rectangular pits. However, it is difficult to rationalise the presence of large quantities of flint under this scenario, which would have little practical role in charcoal production.

Charcoal from a similar feature at Flixton was found to be more mixed than the samples from the two pits at Snape. The charcoal from the pit at Flixton included hazel (*Corylus* sp.), ash (*Fraxinus* sp.), oak sapwood and heartwood (*Quercus* sp.), blackthorn (*Prunus spinosa*), willow/ polar (*Salix/ Populus* sp.) and Maloideae. It is uncertain why the assemblage was more mixed but implies that there was less careful selection of fuel wood to fire the pit than there was at Snape. Material from Flixton was radiocarbon dated with a range of AD 420-555 (Boulter and Rogers 2012, 94). This places the feature in the Anglo-Saxon period and compares well

with the radiocarbon dates from the Snape examples (538 calAD and 554 calAD respectively)

SFBs 1 and 3

The material recovered from SFBs 1 and 3 is likely to represent hearth ash and debris deposited in the pits with other refuse and midden material following the structures' abandonment. The diverse assemblage of fuel wood from the two SFBs shows limited concern with wood selection. This indicates that the wood is likely to have been gathered from a range of suitable habitats, including hedgerows and woodland. This is what might be expected for general domestic purposes, where specific temperature control is less significant.

Conclusions

The use of wood fuel at Snape appears to have varied depending on the application, with more domestic deposits from the SFBs showing greater variety and less deliberate selection. This is a common scenario, where industrial activities frequently receive the higher quality fuel to ensure predictable results.

The selection of tree species suggests that plentiful supplies of timber were available to the inhabitants of the site during the early Roman and early-middle Anglo-Saxon periods. Mature oak woodland and less mature, mixed woodland are likely to have been available and probably managed by the communities around Snape.

References

Andrews, P. *Excavations at Redcastle Furze, Thetford, 1988-9*, East Anglian Archaeology 72, Norfolk Museums Service

Boulter, S and Rogers, P. W. 2012, *Circles and Cemeteries: Excavations at Flixton. Volume 1*, East Anglian Archaeology Report No. 147. Suffolk County Council

Caruth, J. and Goffin, R. 2012, *Land South of Hartismere High School, Eye, Suffolk, EYE 083: Post-Excavation Assessment Report*, Suffolk County Council Archaeological Service Report 2012/067

Garrow, D., Lucy, S. and Gibson, D. *Excavations at Kilverstone, Norfolk: An Episodic Landscape History*, East Anglian Archaeology 113, Cambridge Archaeological Unit, Cambridge

Huntley, J. P. 1996, 'The plant remains', in Busby, P. A., Evans, J., Huntley, J. P. and Wilson, P. R., *A Pottery Kiln at Catterick*, Britannia 27, 293-296

Murphy, P. 1989, 'Plant remains', in Plouviez, J. 'A Romano-British pottery kiln at Stowmarket', *Proceedings of the Suffolk Institute of Archaeology* 37, 1-12

Schoch, W., Heller, I., Schweingruber, F. H. and Kienast, F. 2004, *Wood anatomy of central European Species*, www.woodanatomy.ch

Schweingruber, F. H. 1978, *Macroscopic Wood Anatomy: structural variability of stems and twigs in recent and subfossil woods from central Europe,* Swiss Federal Institute of Forestry Research, Birmensdorf

Sample No	Context	Feature	Feature Type	Volume (l)	Phase	Fraction	Ulmus		Quercus		Corylus		Prunus		Maloideae		Ilex		Indet./unidentified	Total Weight (g)
							Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Weight (g)	
22C	2138C	2137C	Hearth/ Fire Pit	10	2	LF	-	-	300	67.629	-	-	-	-	-	-	-		-	82.224
						HF	-	-	100	114	-	-	-	-	-	-	-		-	48
						Tot	-	-	400	181.63	-	-	-	-	-	-	-		-	130.224
263	2718	2714	Kiln stoke hole	10	2	LF	-	-	6	0.069	-	-	-	-	-	-	-		-	0.185
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	-	-	6	0.069	-	-	-	-	-	-	-		-	0.185
10	2060C	2058C	Burnt flint pit	10	3	LF	-	-	16	0.793	8	0.496	-	-	7	0.26	-		-	3.715
						HF	-	-	81	82.55	107	24.77	2	0.126	221	129.38	-		-	20.185
						Tot	-	-	97	83.343	115	25.26	2	0.126	228	129.64	-		-	23.9
145	2366	2365	Burnt flint pit	10	3	LF	-	-	319	58.052	31	2.172	-	-	-	-	-		-	72.768
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	-	-	319	58.052	31	2.172	-	-	-	-	-		-	72.768
90	2407A	2406A	SFB 3	40	3	LF	1	0.031	13	0.787	1	0.015	-	-	4	0.157	-		-	3.583
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	1	0.031	13	0.787	1	0.015	-	-	4	0.157	-		-	3.583
102	2407D	2406D	SFB 3	40	3	LF	-	-	4	0.078	2	0.061	-	-	-	-	-		-	0.409
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	-	-	4	0.078	2	0.061	-	-	-	-	-		-	0.409
103	2408D	2406D	SFB 3	20	3	LF	-	-	3	0.051	-	-	-	-	-	-	1		0.012	0.503
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	-	-	3	0.051	-	-	-	-	-	-	1		0.012	0.503
152	2576D	2575D	SFB 1	40	3	LF	2	0.085	5	0.136	-	-	3	0.096	3	0.267	1		0.042	1.304
						HF	-	-	-	-	-	-	-	-	-	-	-		-	-
						Tot	2	0.085	5	0.136	-	-	3	0.096	3	0.267	1		0.042	1.304

Table 44: Charcoal data

The struck flint

Andrew Peachey

Excavations recovered a total of 40 pieces of struck flint (308g) in an un-patinated, fresh condition (Table 45). The assemblage includes a small group from a single pit that may date to the early Bronze Age, while the bulk of the assemblage appears to be residual in early Iron Age, Romano-British and Anglo-Saxon features. The assemblage includes a range of technological traits that indicate varying prehistoric origins, ranging from the later Mesolithic/ earlier Neolithic to the early Bronze Age.

Struck flint type	Frequency	Weight (g)
Scraper	8	65
Blade	3	7
Debitage (blade-like)	12	56
Debitage (broad, squat)	10	166
Debitage (chip)	7	14
Total	*40*	*308*

Table 45: Quantification of struck flint implements and debitage by frequency and weight

Methodology and terminology

The flint was quantified by fragment count and weight (g), with all data entered into a Microsoft Excel spreadsheet that will be deposited as part of the archive. Flake type (see 'Dorsal cortex', below) or implement type, patination, colour and condition were also recorded as part of this data set, along with free-text comments.

The term 'cortex' refers to the natural weathered exterior surface of a piece of flint, and the term 'patination' to the colouration of a flaked surface exposed by human or natural agency. Dorsal cortex is categorised after Andrefsky (2005, 104, 115) with 'primary flake' referring to those with cortex covering 100% of the dorsal face; 'secondary flake' with 50-99%; 'tertiary' with 1-49% and 'un-corticated' to those with no dorsal cortex. A 'blade' is defined as an elongated flake whose length is at least twice as great as its breadth, often exhibiting parallel dorsal flake scars (a feature that can assist in the identification of broken blades that, by definition, have an indeterminate length/ breadth ratio). Terms used to describe implement and core types follow the system adopted by Healy (1988, 48-9).

Commentary

The only concentration of flint struck in the assemblage comprises 8 pieces (53g) contained in Pit F2478 (L2480), of which 6 pieces comprise thumbnail scrapers, with the remaining two comparably sized debitage flakes. The thumbnail scrapers are all sized between 20-30mm length/ width, with the thickness of 5mm and formed by the application of abrupt retouch. They include examples that may be regarded as end, side and horseshoe scrapers but are united by their small size; characterising them as thumbnail scrapers, an expedient implement characteristic of early Bronze Age lithic technology. A further comparable thumbnail scraper was contained as residual material in SFB 3 (L2408 Quadrant A).

The remaining residual implements in the assemblage include blades and a side scraper. The blades include a crested blade in SFB 3 (L2407 Quadrant B) and a bladelet (<20mm) in Posthole F2653 (L2654) that may have been produced in the Mesolithic period, by carefully maintained, systematic core reduction, but similar flakes were also produced using the systematic blade technology of the earlier Neolithic, which likely produced a blade in Posthole F2423 (L2424). The only other retouched implement in the assemblage comprises a side scraper contained in Pit F2128 (L2130), formed by the application of abrupt retouch to a flake, and only slightly larger than the thumbnail scrapers in the assemblage, suggesting possibly comparable chronological origins.

The sparsely distributed debitage flakes in the assemblage exhibit highly contrasting technological characteristics. The 12 blade like tertiary or un-corticated debitage flakes were probably a bi-product of earlier Neolithic blade production, but are residual and only ever present as 1-3 flakes in any context. Similarly scarce the 10 broad-squat flakes were struck by direct percussion with a hard-hammer, characteristic of the declining skill in later Neolithic to early Bronze Age lithic technology. Particularly crudely struck flakes were contained in Pit F2294 (L2295) and Posthole F2298 (L2299), while the chips of debitage are likely to represent shatter from this relatively uncontrolled process.

References

Andrefsky, W. 2005, *Lithics: Macroscopic Approaches to Analysis (2nd Edition)*, Cambridge University Press, Cambridge

Healy, F. 1988, *The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Part VI: Occupation during the Seventh to Second Millennium BC*, East Anglian Archaeology Report No. 39

Radiocarbon Dating Determinations
Antony R.R. Mustchin with Dr John Summers

Introduction

Based on the advice of members of Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT; Dr Jess Tipper, Ms Jude Plouviez and Dr Matthew Brudenell) and Dr John Summers (Environmental Archaeologist, Archaeological Solutions Ltd), ten radiocarbon dating samples were submitted to the Scottish Universities Environmental Research Centre (SUERC; University of Glasgow). Six features/ structures were dated: Phase 1 (early Iron Age) pottery-rich Pit F2662; Phase 2 (Romano-British) Kiln S2633; Phase 3 (early to middle Anglo-Saxon) SFBs 1 and 3 and Burnt Flint Pits F2058 and F2365. Recommendations for radiocarbon dating were made by SCC AS-CT, while the availability and suitability of material for dating was determined by Dr Summers.

Research questions

During the excavation at Church Road, Snape, environmental bulk samples were collected from various features/ contexts. Following the processing of these samples

(see Summers – *The Charred Plant Remains/ The Charcoal* (above)), material suitable for radiocarbon dating was identified and isolated. The radiocarbon dating programme for the site was developed as part of the post-excavation phase of the project based on research questions put forward by members of SCC AS-CT. These are summarised below for each phase:

Phase 1 (Brudenell *pers. comm.*)

Regional and national research agendas clearly identify the dating of Iron Age ceramic assemblages as a topic requiring further attention. Haselgrove *et al.* (2001, 31) state that (nationally) 'Chronology is a major problem for the earlier first millennium BC' and that 'Research is needed on regional pottery sequences, supported by absolute dating programmes'. In the East of England, Medleycott (2001, 29) notes that 'The chronology of early Iron Age pottery is vaguely known…' and that '…features with good pottery assemblages need to be targeted'. Suffolk in particular lacks high resolution AMS radiocarbon dates associated with early Iron Age pottery assemblages, although a plateau in the calibration curve limits resolution. The dating of both fills of Phase 1 pottery-rich Pit F2662 had the potential to make a valuable contribution to this research area.

Phase 2 (Plouviez *pers. comm.*; Tipper *pers. comm.*)

Based on pottery recovered from its fills, Phase 2 pottery from Kiln S2633 was dated to the third quarter of the 1st century AD (*c*. AD 50-75) (Peachey, *The Prehistoric and Roman Pottery* (above)). However, sand tempered wheel thrown fabrics are present in east Suffolk from earlier in the 1st century. Radiocarbon dating of the basal fills of Kiln S2633 had the potential to more closely date the Phase 2 assemblage and provide a *terminus ante quem* for the Kiln's use.

Phase 3 (Tipper *pers. comm.*)

Phase 3 Burnt Flint Pit F2058 yielded mid to late 1st century AD pottery, although this feature type is regionally characteristic of the Anglo-Saxon period (see above). The radiocarbon dating of Pits F2058 and F2365 had the potential to closely date both (within the early to middle Anglo-Saxon period) and add to the corpus of known, dated features of this type in East Anglia, e.g. Boulter and Walton Rogers (2012, 94).

Radiocarbon dating the basal fills of the SFB's had the potential to date their infilling, bearing in mind that the fills of such features need not be representative of their use.

Sample availability
with Dr John Summers

Phase 1 Pit F2662

Pit F2662 yielded a reasonable assemblage of carbonised plant macrofossils. Well preserved hulled barley grains (*Hordeum* sp.) were numerous in sample 199 from secondary Fill L2663, while sample 200 from primary Fill L2678 yielded just six cereal grains, two of which were identifiable. Radiocarbon samples were submitted from both fills of this feature (Table 46), although there remains a strong possibility

that the low density of material in Fill L2678 represents intrusive remains from the over-lying deposit, for example due to bioturbation.

Phase 2 Kiln S2633

Abundant material for radiocarbon dating was present within samples from the stoke holes, flues and central firing chamber of the Phase 2 kiln (Table 46). The most appropriate material comprised spelt wheat (*Triticum spelta*) glume bases and grains which likely formed part of the primary fuel source (fine-sieving by-products). Although storage of these fine-sieving by-products is possible, extended curation prior to their use is unlikely.

Phase 3 structures/ features

The SFBs

Two bulk samples (151 and 152) from primary Fill L2576 of Sunken Feature F2575 (SFB 1) yielded reasonable assemblages of carbonised plant macrofossils which appeared to represent a secure material originating as post-abandonment midden infill. Barley (*Hordeum* sp.) and wheat (Triticum sp.) grains from this deposit represented excellent candidates for radiocarbon dating (Table 46). Environmental samples from the primary fill of SFB 3 yielded similar carbonised remains (Table 46).

The density of carbonised plant macrofossils within Sunken Feature F2235 (SFB 2) was very low. No remains were recorded in primary Fill L2237 and only six carbonised cereal grains and three non-cereal seeds were present in secondary Fill L2236. Such remains are liable to movement and reworking within archaeological deposits, especially on loose, sandy substrates where the action of earthworms and burrowing molluscs can be significant in the movement of small items from over-lying deposits. It is also possible, due to the nature of SFB fills (see section 10.33, above), that the sparse material from L2236 was residual. No dating of SFB 2 was attempted.

The burnt flint pits

The fills of Pit F2058 contained abundant charcoal, with the richest deposits from primary Fill L2060. Analysis of charcoal from L2060 (Seg.C) showed the presence of a range of taxa, including a fragment of oak roundwood with the terminal growth ring preserved. The age at death of this material was likely to be closely associated with the use/ firing of the pit and, as such, represented a prime candidate for radiocarbon dating (Table 46).

The primary fill (L2366) of Pit F2365 contained abundant charcoal but no other carbonised remains. The taxa present were oak (*Quercus* sp.) and hazel (*Hazel* sp.). Although oak was the dominant taxon, ring diameters – where identifiable – were weak. Many fragments contained tyloses in the vessels, indicating the presence of heartwood. This signified that the oak fuel was in the form of mature timber. Due to the relatively high level of fragmentation, the identification of suitable sapwood for dating was problematic. The remains of shorter-lived hazel wood, although much less abundant, represented the best candidate for radiocarbon dating

(Table 46). Unfortunately, the fragments were too small to accurately determine the age of the wood present.

Results

The results of the radiocarbon dating programme are shown in Table 46 and Chart 11. ^{14}C ages are displayed in conventional years BP (before present (1950)). Calibrated age ranges were determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4). Conventional ages and calibrated age ranges were calculated by Dr Elaine Dunbar (SUERC).

Phase	Feature/ Structure		Context	Sample Type	Genus/ Species	Lab. No. (SUERC-)	Date BP	Calibrated Date/ Date Range
1	Pit F2662		L2678[P]	Charred grain	*Hordeum* sp.	50955 (GU32888)	3019±30	1337-1131 calBC
			L2663[S]	Charred grain	*Hordeum* sp.	50954 (GU32887)	3060±26	1259-1235 calBC
2	Kiln S2633	Firing Chamber F2634	L2635A[P]	Charred glume bases	*Triticum spelta*	50950 (GU32886)	2020±29	56 calAD
		Flue F2764/ Stoke Hole F2765	L2767[S]	Charred grain	*Triticum dicoccum/ spelta*	50956 (GU32889)	1982±29	74 calAD
3	SFB1	Sunken Feature F2575	L2576A[P]	Charred grain	*Triticum aestivum/ compactum* type	51160 (GU32884)	1560±35	575 calAD
			L2576D[P]	Charred grain	*Hordeum* sp.	50949 (GU32885)	1594±29	540 calAD
	SFB3	Sunken Feature F2406	L2407B[P]	Charred grain	*Triticum aestivum/ compactum* type	50946 (GU32881)	1631±29	474-535 calAD
			L2407D[P]	Charred grain	*Hordeum* sp.	50947 (GU32882)	1597±29	540 calAD
	Burnt Flint Pit F2058		L2060C[P]	Charcoal	*Quercus* sp.	50945 (GU32880)	1564±26	554 calAD
	Burnt Flint Pit F2365		L2366[P]	Charcoal	*Corylus* sp.	50948 (GU32883)	1597±26	538 calAD

Table 46: Radiocarbon determinations (calibrated using OxCal4). Key: [P] = primary fill; [S] = secondary fill; BP = before present (AD 1950)

The results of the radiocarbon dating programme are cited and discussed within the archaeological narrative (above).

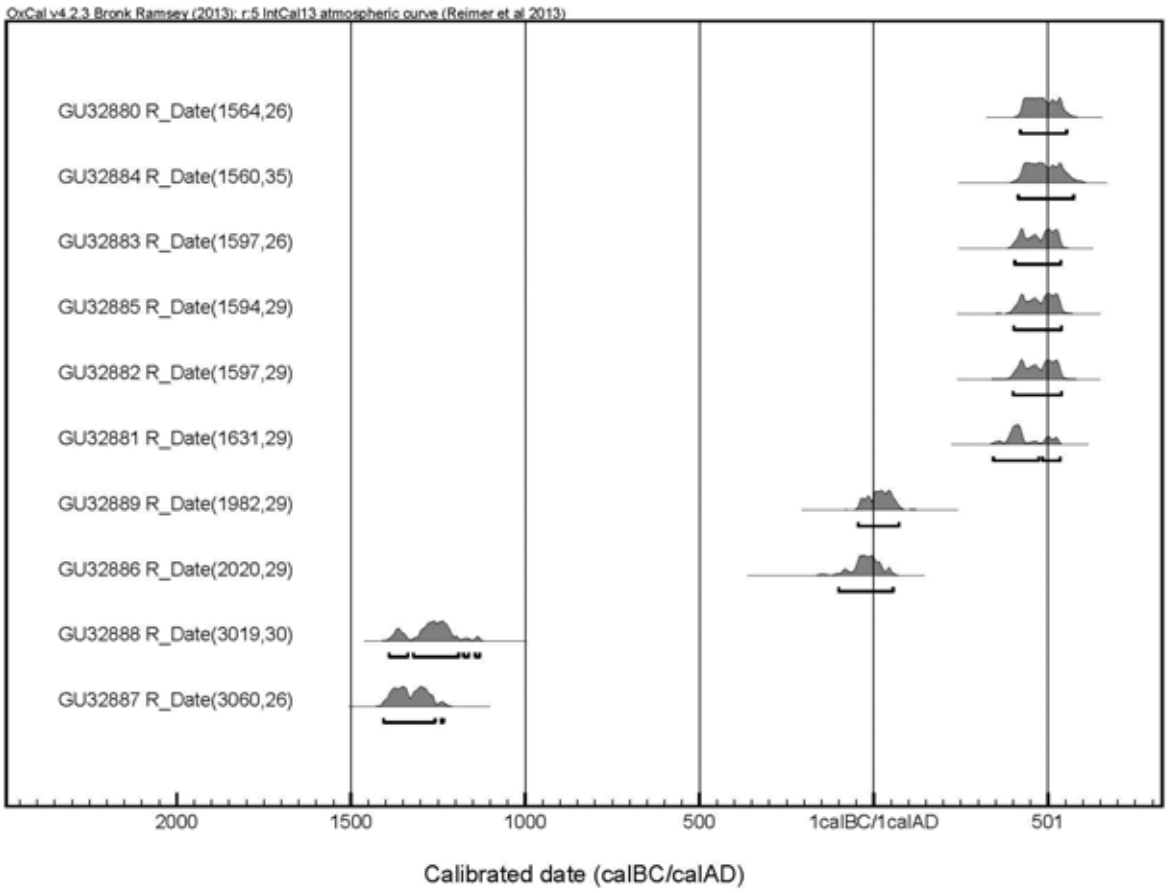

Chart 11: Radiocarbon probability distributions

Acknowledgements

The author would like to thank Dr Zoe Outram (English Heritage Science Advisor (East of England)) for her advice regarding the results of the radiocarbon dating programme.

References

Boulter, S and Rogers, P. W. 2012, *Circles and Cemeteries: Excavations at Flixton. Volume 1*, East Anglian Archaeology Report No. 147. Suffolk County Council

Haselgrove, C. C., Armit, I., Champion, T., Creighton, J., Gwilt, A., Hill, J. D., Hunter, F. and Woodward, A. 2001, *Understanding the British Iron Age. An Agenda for Action*, Salisbury, Trust for Wessex Archaeology

Medleycott, M. (ed.) 2001, *Research and Archaeology Revisited: a revised framework for the East of England*, East Anglian Archaeology Occasional Paper No. 24, Association of Local Government Archaeological Officers

APPENDIX 3 PROPOSAL FOR PUBLICATION

Format

It anticipated that the combined results of the excavation and forerunning evaluation (Lichtenstein 2013) will be published as an article in the county journal (*Proceedings of the Suffolk Institute of Archaeology and History; PSIAH*) (Table 47); the proposed word count is based on guidance from Joanna Martin (Hon. Editor of Proceedings, *PSIAH*). This will allow a focussed discussion of the archaeology, with particular emphasis placed on the Romano-British and early to middle Anglo-Saxon periods (Phases 2-3), and the inclusion of abridged specialist data.

Summary of anticipated article statistics	Approximation
Words	5000-8000
Tables	5 - 10
Figures	5
Plates	4

Table 47: Anticipated article statistics

The article will comprise a brief discussion of the background of the project followed by a detailed description and analysis of features, structures and other significant entities. The archaeological description will focus on Phases 2 to 3 as these constitute the principle episodes of human activity. Local and regional comparisons will enable subsequent discussion of the site within the broader archaeological landscape. Significant finds, animal bone assemblages and environmental data will also be integrated within the archaeological narrative.

APPENDIX 4 WRITTEN SCHEME OF INVESTIGATION

CHURCH ROAD, SNAPE, SUFFOLK

WRITTEN SCHEME OF INVESTIGATION FOR
ARCHAEOLOGICAL EXCAVATION

1st February 2013

CHURCH ROAD, SNAPE, SUFFOLK

SPECIFICATION FOR ARCHAEOLOGICAL EXCAVATION

1 INTRODUCTION

1.1 This Written Scheme of Investigation has been prepared in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT) (dated 31st January 2013). It provides for a programme of archaeological investigation on land at Church Road, Snape, Suffolk (NGR TM 394 584). The investigation is required to be undertaken to comply with a planning condition attached to planning permission for the residential development of the site (Ref. C/11/0967). The requirement follows a geophysical survey (Sabin and Donaldson) and a trial trench evaluation of the site (Lichtenstein 2013).

2 COMPLIANCE

2.1 The terms and conditions contained in the SCC AS-CT brief have been read, understood and are accepted. The project will adhere also to the *Code of Conduct* of the Institute for Archaeologists. The investigation will adhere to the IfA's *Standard and Guidance for Archaeological Excavation (revised 2008);* the SCC AS-CT document *Requirements for Archaeological Excavation 2012 Ver 1.1* and *Standards for Field Archaeology in the East of England* (Gurney 2003).

3 ARCHAEOLOGICAL BACKGROUND

3.1 A geophysical survey (Sabin and Donaldson) and an archaeological evaluation (Lichtenstein) of the site was carried out.

In summary the geophysical survey revealed:

The survey located several linear anomalies within the northern part of the site including one orientated almost east/west and others northeast/southwest. It is possible that these relate to cut ditch-like features and they may have an association with the cropmarks. Two discrete positive anomalies, also located in the northern part of the site, have a moderately enhanced response that may indicate burning. Further positive linear and discrete responses exist within the site, and although they may relate to natural or agricultural features, it is not possible to confidently determine their origin.

In summary the trial trench evaluation revealed:

The majority of features recorded during the evaluation are undated but the majority of features are post holes or stakeholes where numerous finds would not be anticipated. Three phases are represented: late Bronze Age/early Iron Age, early Roman and Saxon (mid 5th – 9th century). The earliest feature was Pit F1023 (Trench 2) which contained numerous (36) sherds of late Bronze Age/early Iron Age pottery

(Pottery Report below). Sparse struck flint was found in Ditch F1009 (Tr.2), Pit F1023 (Tr.2) and Pit F1068 (Tr.2). The latter contained a later Neolithic arrowhead (oblique type). Two early Roman features were recorded relatively close by (Trenches 2 and 4): Ditch F1009 (Tr.2) and Pit F1029 (Tr.4). They contained 11 (106g) and 5 (38g) sherds of pottery respectively. SFB F1019 (Trench 2) contained residual Roman CBM (CBM Report below). Saxon (mid 5th – 9th century) features were recorded in Trenches 1 and 2, in particular a Sunken Featured Building F1019 in Trench 2. The SFB contained the common range of domestic finds (pottery (247g), CBM (346g), animal bone (179g), a spindlewhorl (17g) and fired clay (96g)). In addition to the SFB Pit F1037 (Tr.1) and Post Hole F1051 each contained a Saxon pottery sherd. Sparse post-medieval or modern finds were present. Ditch F1076 contained a fragment of a post-medieval peg tile (CBM Report below).

There is a broad correlation of the archaeological features with the geophysical survey data. Certainly the archaeological features were more numerous at the northern end of the site (Trenches 1 and 2), and Ditch F1064 (Tr.1) directly compares with the geophysical survey evidence

4 REQUIREMENTS MITIGATION STRATEGY COMPRISING EXCAVATION

4.1 All stages of the excavation will be carried out in accordance with the procedures and guidance contained within *Management of Archaeological Projects 2,* English Heritage (1991) and MoRPHE (2006).

5 MITIGATION STRATEGY DETAILS

5.1 Aims and Objectives

5.1.1 The primary objective is to preserve the archaeological evidence contained within the site by record and to attempt a reconstruction of the history and use of the site.

5.2 Research Priorities

5.2.1 Principally:

- Place the prehistoric, Roman and Anglo-Saxon activity in context with the known activity of these dates in the surrounding area
- Characterise the activity present within the site
- Identify topographical/geological/geographical influences on the layout and development of the activity present within the current site and in the surrounding area.
- Environmental reconstruction

6 PROGRAMME OF WORKS

Archaeological Excavation

6.1 The brief requires:
a) controlled strip, map and excavation of the northern part of the site – an area 125m (N/S) x 60m (E/W), and
b) Strip, map and sample of the access road

6.2 The topsoil and subsoil strip of a) and b) will be carried out under archaeological supervision.

6.3 Details of proposed work are presented below.

6.4 All of the above stages and operations will be carried out in accordance with MAP2 (EH 1991), MORPHE and the IFA *Standard and Guidance for Archaeological Watching Briefs* and *Excavations* (revised 2008), as well as the documents listed in Section 2 (above). A Method Statement for dealing with archaeological remains, if present, is presented below (Appendix 2).

7 EXCAVATION METHODOLOGY

7.1 As set out in the brief. A Method Statement is presented (Appendix 1).

7.2 The research design and details of proposed work amplify the methodology.

8 SPECIFIC REQUIREMENTS

8.1 As set out in the brief.

8.2 The SCC AS attaches considerable importance to the public archaeology associated with the work. AS also has a commitment to educational work, and will arrange for outreach as required as part of the project.

8.3 A programme of environmental sampling will be undertaken according to guidelines of the document *Environmental Archaeology; A guide to the theory and practice of methods, from sampling and recovery to post-excavation,* Centre for Archaeology Guidelines, English Heritage, 2011. The results of the project will be made known to the English Heritage Regional Advisor in Archaeological Science. A method statement for sampling and scientific analysis is presented (Appendix 1).

9 GENERAL REQUIREMENTS

9.1 STAFF

9.1.1 Archaeological Team

As to be set out in the brief. Details, including the name, qualifications and experience of the site director and all other key project personnel are provided (as required) (Appendix 2).

Senior Project Manager	Claire Halpin MIfA
Project Manager	Jon Murray MIfA
Assistant Project Managers	Martin Brook
Project Officer	TBC
Outreach Officer	Andrew Newton MPhil PIfA
	Andy Peachey MIfA

All have extensive experience of the archaeology of the local area.

Finds on-site will be managed by Martin Brook, who will appoint a suitable member of the site staff for their day to day care and transport from site. Finds cleaning, conservation, quantification and analysis will be managed by Martin Brook who has experience of finds management from large scale excavations such as Dernford Farm, Sawston, Cambridgeshire, Panshanger Quarry, Hertfordshire and Bridge House Dairies, Mildenhall, Suffolk.

All senior AS Field Staff have experience of the use of metal detectors during excavation projects.

AS is recognised as an Investor in People, a Registered Organisation of the Institute of Field Archaeologists and is certified to ISO: 9001 & 14001.

9.2 RESEARCH DESIGN

9.2.1 The late Bronze Age/early Iron Age pit that was identified during the evaluation may indicate the presence of further activity of this date in the area. As yet, this activity may be considered to be uncharacterised but the dating of this feature suggests that, at the minimum, information relating to the Bronze Age/Iron Age, identified as important research subject for the eastern region (Medlycott 2011, 29), might be gained. The pottery recovered from this feature may also contribute to artefact studies, specifically the study of the pottery traditions and technologies of the region; a research subject also identified as being of regional importance (Medlycott 2011, 29).

9.2.2 The early date of the Roman features suggests that further work here has the potential to provide information relating to the character of early Roman activity in the area and, therefore, possibly on the subject of Romanisation (Medlycott 2011, 47).

9.2.3 The presence of Anglo-Saxon archaeology adds to the corpus of information about this period recovered from the Snape area. The presence of a Sunken Featured Building is, of course indicative of settlement activity, and helps to provide information regarding the communities living in the area surrounding, and presumably using, the well-known Anglo-Saxon cemetery.

9.2.4 The presence of settlement evidence at this location suggests that further work here is likely to provide more information on the same subject. Settlement and social organisation is an established research priority for the east of England (Medlycott 2011, 56). The opportunity to study a settlement of Saxon date is likely to provide information that can be added to the existing body of work that has been carried out on the region's Anglo-Saxon settlements and has the potential to provide new information through comparison with these previously identified sites. This opportunity is also likely to provide information to contribute to the regions long-established research subjects for the Anglo-Saxon period, which include issues such as the agricultural and craft-based economies, culture and religion and demography (Medlycott 2011, 56). The site also has the potential to yield information on research subjects that have evolved from these earlier research priorities, such as settlement distribution, rural settlements and landscapes, finds studies and regional differences (Medlycott 2011, 59).

References

Lichtenstein L. 2013, *Land North of Blyth Houses, Church Road, Snape, Suffolk. An Archaeological Evaluation.* AS Report No. 4234

Medlycott, M. (ed.) 2011, *Research and Archaeology revisited: a revised framework for the East of England*, ALGAO East of England Region, East Anglian Archaeology Occasional Papers 24

Sabin, D., and Donaldson, K. 2012, *Land North of Church House, Blyth Road, Snape, Suffolk. Magnetometer Survey Report,* Archaeological Surveys Ltd. Ref No. 447

10 DETAILS OF PROPOSED WORK

10.1 Areas of Excavation

- The brief requires formal archaeological excavation of an area 125m x 60m (described above encompassing Trenches 1-6). Commencing at the northern end of the site if archaeological features run out before the full strip is completed the topsoil and subsoil stripping will cease. This cessation will only occur with the agreement of the planning archaeologist.
- The access road will be subject to a strip, map and sample exercise.

The excavation will address the research priorities listed above

10.2 Excavation Methodology

Methodology for the excavation is contained in Appendix 1.

It is understood that the excavation should comprise the following stages:

- Mechanical stripping of topsoil and overburden within the two defined areas (125m x 60 and the access road).
- Cleaning/base planning of archaeological features.
- Review with SCCAS. This will be an ongoing part of management of the project at regular intervals. Monitoring visits will include all phases of the excavation and will be essential at key points e.g. decisions to vary requirements in the brief or this WSI, any proposal for supplementary machine stripping of layers or features, before any area is treated as completed and backfilled or otherwise degraded.
- Full excavation and recording of the archaeological deposits as specified in the brief and Appendix 1.

The above will be carried out according the requirements of the document *Management of Research Projects in the Historic Environment. The MoRPHE Project Managers Guide* (English Heritage 2006).

10.3 Arrangements for Access

Access is to be arranged by the client.

10.4 Security

Throughout all site works care will be taken to maintain all existing security arrangements and to minimise disruption to landowners and local residents.

10.5 Reinstatement

No provision has been made for reinstatement of the excavation areas, not even backfilling.

10.6 TIMETABLE FOR THE PROPOSED WORK

10.6.1 As required
Excavation Duration c.8 weeks

Composition of the excavation team:
Project Officer, Supervisor and 4 Archaeological Excavators (to be deployed as necessary after the site has been stripped and planned).

10.7 DETAILS OF ALL SPECIALISTS

10.7.1 Details of all specialists are presented (Appendix 2) as required

10.8 METHOD OF RECORDING

10.8.1 Details of the method of recording are presented (Appendix 1) as required.

10.9 LEVELS AND GRADES OF ALL KEY PROJECT STAFF

10.9.1 The levels and grades of all key project staff are presented (Appendix 2) as required. AS is a recognised Investor in People.

10.10 POST-EXCAVATION ANALYSIS & PUBLICATION

10.10.1 This specification includes provision for the post-excavation assessment, analysis and final publication of the project results, to the requirements and timescales set out in the SCC AS brief, and to be agreed with SCC AS following the results of the excavation and assessment. An interim report will be prepared immediately on conclusion of the site works, followed by a Post-Excavation Assessment. This will follow the guidelines and format outlined in MAP2 (English Heritage 1991) and MoRPHE (English Heritage 2006).

10.10.2 Publication of the project results will be made in the appropriate county journal or the relevant national period-specific journal, depending on the results of the project.

11 CONSTRAINTS

11.1 All constraints will be identified prior to the start of works.

12 HUMAN REMAINS

12.1 As set out in the brief and also Appendix 1.

13 RISK ASSESSMENT & INSURANCES

13.1 A risk assessment will be prepared prior to the commencement of the field work .

13.2 AS is a member of FAME, formerly the Standing Conference of Archaeological Unit Managers (SCAUM) and operates under the 'Health & Safety in Field Archaeology Manual'.

13.3 AS is a member of the Council for British Archaeology and is insured under their policy for members.

14 ARRANGEMENTS FOR THE LONG TERM STORAGE AND DEPOSITION OF ALL ARTEFACTS

14.1 As set out in the brief and Method Statement (Appendix 1). Any necessary conservation of items will be carried out by the specialists listed in Appendix 2. Long-term storage and deposition of all artefacts will be at the SCC County Store and in accordance with *Deposition of Archaeological Archives in Suffolk.*

14 PROJECT ARCHIVE

14.1 The SCC County Store, Suffolk, will be the depository for the resulting project archive. The deposition of the archive will be agreed prior to the commencement of the fieldwork. A unique reference number will be obtained.

15 MONITORING

151 As set out in the brief

16 CHANGES TO THE SPECIFICATION ACKNOWLEDGEMENT OF SCCAS

16.1 As set out in the brief

17 OASIS REPORTING

17.1 The results of the project will be communicated to the OASIS project.

APPENDIX 1

METHOD STATEMENT

The archaeological excavations will be conducted in accordance with the project brief, and the code and guidelines of the Institute for Archaeologists

1 Topsoil Stripping

1.1 A mechanical excavator with a 1.8-2 m wide toothless bucket will be used to remove the topsoil and subsoil. The machine will be powerful enough for a clean job of work and be able to mound spoil neatly, at a safe distance from the trench edges.

1.3 Removal of overburden will be controlled, under the full-time supervision of an experienced archaeologist.

2 Grid and Bench Marks

2.1 Following the stripping the temporary bench marks (with corrected levels) and an accurate site grid (pegs at 5-10 m intervals) will be surveyed.

3 Site Location Plan

3.1 On conclusion of the site stripping, a `site location plan', based on the current Ordnance Survey 1:1250 map and indicating site north, will be prepared. This will be supplemented by an `area plan' at 1:200 (or 1:100) which will show the location of the area(s) investigated in relationship to the development area, OS grid and site grid. The location of the OS bench marks used and site TBMs will also be indicated.

4 Manual Cleaning & Base Planning of Archaeological Features

4.1 As set out in the brief.

4.2 Ahead of any excavation a complete site plan will be composed. The principal purpose will be to quantify the composition of the site from the outset in order to agree a detailed excavation strategy.

5 Archaeological Excavation

The archaeological features will be excavated according to the requirements of the SCCAS brief

Archaeological Excavation Strategy

Negative features will be half-sectioned and box sections may be excavated through more homogeneous layers as appropriate. These may provide a window into any underlying deposits present on the site.

Where archaeological features are encountered at a 'high' level; e.g. cutting earlier horizons, they will be base planned, cleaned, hand excavated and recorded prior to excavation proceeding to the underlying archaeological horizons.

100% excavation will be undertaken of:

- **structural features;** (including post holes unless clearly not part of a recognisable structure)

- **surviving internal floors;** e.g. within ring gullies, or buildings, will be fully exposed, carefully cleaned, planned (at 1:50 or 1:20) and photographed, prior to being hand excavated to reveal possible underlying features. Where appropriate these surfaces will be excavated in a grid of 1m^2 test pits, in 5cm spits in order to assess artefact density and distribution.

- **positive features obscuring earlier features;** will be cleaned, photographed and planned (at 1:50 or 1:20) prior to being excavated stratigraphically and in phase. Component deposits or structural elements will be recorded on *pro-forma* recording (Context) sheets and in section if appropriate prior to 100% excavation.

- **hearths;** will be hand cleaned and planned, hand excavation of 50% of the feature will be carried out stratigraphically and in phase in order for a profile to be drawn and a full assessment the component deposits be made. Additional environmental and specialist sampling will be carried out on specialist advice, prior to 100% hand excavation of the feature.

- **graves or animal burials;** each grave cut will be cleaned, fully defined and planned. The grave fill(s) will be hand excavated in phase and any skeletal remains carefully cleaned and exposed; environmental bulk samples will be taken from the grave fill(s) and abdominal cavity (for stomach contents, kidney stones etc) as appropriate. The exposed skeletal remains will be recorded using *pro forma* recording (Skeleton) sheets photographed and planned at 1:20 or 1:10 dependant on size and complexity. Small finds such as grave goods, shroud pins or coffin fittings will be will be three dimensionally recorded.

- **industrial features**; (pottery kilns, furnaces etc) will be excavated stratigraphically and in phase. Sections will be recorded through the length of each feature (large features such as a limekiln may be quadranted) incorporating any surviving flue or stoke hole allowing a full assessment the component deposits be made and any industrial waste, or structural components (e.g. kiln furniture, tuyeres) to be identified. These features will

photographed and planned at 1:20. All industrial features will be sampled for appropriate scientific analysis (e.g. archaeometallurgical, artefactual and environmental analysis). The document Archaeomaetallurgy (English Heritage Centre for Archaeology Guidelines 2001) will be used to give guidance to the project. Advice on archaeomagnetic dating will be obtained from the relevant specialists (e.g. Dr Cathy Batt, University of Bradford) as necessary.

- **wells;** will be hand excavated stratigraphically and in phase. The backfills of the well shaft will be 'half-sectioned' to a maximum depth of 1.2m. The deposits revealed will be recorded using *pro-forma* recording (Context) sheets, photographed and drawn at 1:10 or 1:20 as appropriate, any lining or structure will be cleaned and recorded prior to 100% excavation and investigation of any possible construction cut. Excavation will only continue beyond a depth of 1.2m once the area of excavation has been made safe either by 'stepping' or shoring. Specialist advice (such as Maisie Taylor) will be sought if a preserved wooden lining or water-logged remains are encountered.

50% excavation will be undertaken of:

discrete features, pits, post and stake holes (the latter which are clearly not part of a structure). Pits with a suggestion of 'placed' deposits or which contain significant artefactual/ecofactual assemblages will be 100% excavated as required

10% excavation will be undertaken of:

simple linear features not directly associated with core settlement, with more detailed investigation of intersections/terminals/re-cuts/specialised deposits etc

A minimum of 25% excavation will be undertaken of linear features associated with settlement in hand excavated slots up to 2m in length.

Building remains

Building remains may be encountered. These structures are likely to comprise SFBs, stake holes, post holes, beam slots, gullies and, more rarely masonry foundations or low masonry walls. Associated features may be represented e.g. stone, tile floors, cobbled yard surfaces and hearths.

These features will be fully excavated in plan/phase.

Where encountered the structural remains of early buildings will be hand cleaned to reveal their full extent and then planned at 1:50 or 1:20 as appropriate.

The internal areas will be stratigraphically excavated and recorded by quadrants where appropriate to establish the sequence of post-use deposition and abandonment and to identify any *in situ* occupation or floor surfaces.

Any surviving walls or foundations of structures will be cleaned and recorded using *pro forma* recording (Masonry) sheets. Elevations will be drawn of external and

internal wall faces as appropriate. Sections will be excavated and recorded through the fabric of the walls in order to fully understand their construction.

Samples of worked stone, early tile and any bonding or render material will be taken for specialist analysis.

Waterlogged Deposits/Remains

Should deposits such as the above be encountered, provision has been made for controlled hand excavation and sampling. Appropriate specialists will be on hand to advise as necessary.

All industrial features will be sampled for appropriate scientific analysis (eg archaeometallurgical, artefactual and environmental analysis). The document Archaeomaetallurgy (English Heritage Centre for Archaeology Guidelines 2001) will be used to give guidance to the project.

Sieving Strategy

Dry-sieving of onsite deposits will be carried out to enhance finds recovery.

6 Written Record

6.1 All archaeological deposits and artefacts encountered during the course of the excavation will be fully recorded on the appropriate context, finds and sample forms.

6.2 The site will be recorded using AS's excavation manual which is directly comparable to those used by other professional archaeological organisations, including English Heritage's own Central Archaeological Service. Information contained on the site record forms will be entered into a database programme to enable computerised manipulation of the data. The data entry will be undertaken in tandem with the fieldwork.

7 Photographic Record

7.1 An adequate photographic record of the investigations will be made. It will include black and white prints and colour transparencies (on 35mm) illustrating in both detail and general context the principal features and finds discovered. It will also include 'working and promotional shots' to illustrate more generally the nature of the archaeological operations. The black and white negatives and contacts will be filed, and the colour transparencies will be mounted using appropriate cases. All photographs will be listed and indexed.

8 Drawn Record

8.1 A record of the full extent, in plan, of all archaeological deposits encountered will be drawn on A1 permatrace. The plans will be related to the site, or OS, grid and

be drawn at a scale of 1:50. Where appropriate, e.g. recording an inhumation, additional plans at 1:10 will be produced. The sections of all archaeological contexts will be drawn at a scale of 1:10 or, where appropriate, 1:20. The OD height of all principal strata and features will be calculated and indicated on the appropriate plans and sections.

9 Recovery of Finds

GENERAL

The principal aim is to ensure that adequate provision is made for the recovery of finds from all archaeological deposits.

The Small Finds, e.g. complete pots or metalwork, from all excavations will be 3-Dimensionally recorded.

A metal detector will be used to enhance finds recovery. The metal detector survey will be conducted on conclusion of the topsoil stripping, and thereafter during the course of the excavation. The spoil tips will also be surveyed. Regular metal detector surveys of the excavation area and spoil tips will reduce the loss of finds to unscrupulous users of metal detectors (treasure hunters). All non-archaeological staff working on the site should be informed that the use of metal detectors is forbidden.

WORKED FLINT

When flint knapping debris is encountered large-scale bulk samples will be taken for sieving.

POTTERY

It is important that the excavators are aware of the importance of pottery studies and therefore the recovery of good ceramic assemblages. A Roman ceramic specialist will visit during the excavations as required, to provide on-site advice.

The pottery assemblages are likely to provide important evidence to be able to date the structural history and development of the site.

The most important assemblages will come from ‘sealed’ deposits which are representative of the nature of the occupation at various dates, and indicate a range of pottery types and forms available at different periods.

‘Primary’ deposits are those which contain sherds contemporary with the soil fill and in simple terms this often means large sherds with unabraded edges. The sherds have usually been deposited shortly after being broken and have remained undisturbed. Such sherds are more reliable in indicating a more precise date at which the feature was ‘in use’. Conversely, ‘secondary’ deposits are those which

often have small, heavily abraded sherds lacking obvious conjoins. The sherds are derived from earlier deposits.

The pottery specialist is likely to seek important or key groups which will be studied in detail.

If several sherds from a single pot are found, the other half of the feature will be dug to obtain conjoins and a more complete pottery profile.

METALWORKING

The excavation team will be made fully aware of the potential presence of any early metalworking evidence. It is envisaged that where there is evidence for industrial activity, large technological residues will be collected by hand. Separate smaller samples will be collected for micro-slags, as detailed in the EH/HMS *Archaeometallurgy in Archaeological Projects*, Centre for Archaeology Guidelines 2001. Appropriate specialists (e.g. Jane Cowgill/Oxford University Research Laboratory for Archaeology) will be invited to visit the site if significant deposits (e.g. slag) are encountered.

The requirements of the Treasure Act 1996 (with subsequent amendments) will be adhered to, in the event of significant items of metalwork being recovered.

HUMAN BONE

If human remains are encountered, AS will obtain an exhumation licence for human remains from the Ministry of Justice.

Post-excavation analysis will follow the guidelines outlined in the English Heritage document *Human Bones from Archaeological Sites, Guidelines for producing assessment documents and analytical reports*, Centre for Archaeology Guidelines 2002.

ANIMAL BONE

Animal bone is one of the principal indicators of diet. As with pottery the excavators will be alert to the distinction of primary and secondary deposits. It will also be important that the bone assemblages are derived from dateable contexts.

SAMPLING

Provision will be made for the sampling of appropriate materials for specialist and/or scientific analysis (e.g. radiocarbon dating, environmental analysis). The location of samples will be 3-dimensionally recorded and they will also be shown on an appropriate plan. AS has its own environmental sampling equipment (including a

pump and transformer) and, if practical, provision will be made to process the soil samples during the fieldwork stage of the project.

The programme of environmental sampling will adhere to the guidelines, in particular, it will accord with *Model clauses on Archaeological Science for Briefs and Specifications* (EH Advisors for Archaeological Science from all 9 regions), December 2000 and the document *Environmental Archaeology; a guide to the theory and practice of methods, from sampling and recovery to post-excavation*, English Heritage, Centre for Archaeology Guidelines 2011.

If waterlogged remains are found advice on sampling will be obtained on site from Dr Rob Scaife. Dr Rob Scaife and AS will seek advice from the EH Regional Scientific Advisor if significant environmental remains are found.

The study of environmental archaeology seeks to understand the local and near-local environment of the site in relation to phases of human activity and as such is an important and integral part of any archaeological study. The evaluation report notes the potential of deposits within the site for the preservation of charred plant remains.

Environmental remains, both faunal and botanical, along with pedological and sedimentological analyses may be used to understand the environment and the impact of human activity.

There may be a potential for the recovery of a range of environmental remains (ecofacts) from which data pertaining to past environments, land use and agricultural economy should be forthcoming.

To realise the potential of the environmental material encountered, a range of specialists from different disciplines is likely to be required. The ultimate goal will be the production of an interdisciplinary environmental study which can be of value to an understanding of, and integrated with, the archaeology.

Organic remains may allow study of the contemporary landscape (Romano-British occupation/industrial/agricultural impact and land use) and also changes after the abandonment of the site.

The nature of the environmental evidence

Aspects of sampling and analysis may be divided into four broad categories; faunal remains, botanical remains, soils/sediments and radiocarbon dating measurements.

a) Faunal remains: These comprise bones of macro and microfauna, birds, molluscs and insects.

a.i) Bones: The study of the animal bone remains, in particular domestic mammals, domestic birds and marine fish will enhance understanding of the development of the settlement in terms of the local economy and also its wider influence through trade. The study of the small animal bones will provide insight into the immediate habitat of any settlement.

The areas of study covered may include all of the domestic mammal and bird species, wild and harvested mammal, birds, marine and fresh water fish in addition to the small mammals, non-harvest birds, reptiles and amphibia.

Domestic mammalian stock, domestic birds and harvest fish

The domestic animal bone will provide insight into the different phases of development of any occupation and how the population dealt with the everyday aspect of managing and utilising all aspects of the animal resource.

Small animal bones

Archaeological excavation has a wide role in understanding humans' effect on the countryside, the modifications to which have in turn affected and continue to affect their own existence. Small animals provide information about changing habitats and thereby about human impact on the local environment.

a.ii) Molluscs: Freshwater and terrestrial molluscs may be present in ditch and pit contexts which are encountered. Sampling and examination of molluscan assemblages if found will provide information on the local site environment including environment of deposition.

a.iii) Insects: If suitable waterlogged contexts (pit, pond and ditch fills) are encountered (which can potentially be expected to be encountered on the project), sampling and assessment will be carried out in conjunction with the analysis of waterlogged plant remains (primarily seeds) and molluscs. Insect data may provide information on local site environment (cleanliness etc.) as well as proxies for climate and vegetation communities.

b) Botanical remains: Sampling for seeds, wood, pollen and seeds are the essential elements which will be considered. The former are most likely to be charred but possibly also waterlogged should any wells/ponds be encountered.

b.i) Pollen analysis: Sampling and analysis of the primary fills and any stabilisation horizons in ditch and pit contexts which may provide information on the immediate vegetation environment including aspects of agriculture, food and subsistence. These data will be integrated with seed analysis.

b.ii) Seeds: It is anticipated that evidence of cultivated crops, crop processing debris and associated weed floras will be present in ditches and pits. If waterlogged features/sediments are encountered (for example, wells/ponds) these will be sampled in relation to other environmental elements where appropriate (particularly pollen, molluscs and possibly insects).

c) Soils and Sediments: Characterisation of the range of sediments, soils and the archaeological deposits are regarded as crucial to and an integral part of all other aspects of environmental sampling. This is to afford primary information on the nature and possible origins of the material sampled. It is anticipated that a range of 'on-site' descriptions will be made and subsequent detailed description and analysis of the principal monolith and bulk samples obtained for other aspects of the

environmental investigation. Where considered necessary, laboratory analyses such as loss on ignition and particle size may also be undertaken. A geoarchaeologist will be invited to visit the site as necessary to advise on sampling.

d) Radiocarbon dating: Archaeological/artifactual dating may be possible for most of the contexts examined, but radiocarbon dating should not be ruled out

Sampling strategies

Provision will be made by the environmental co-ordinator that suitable material for analysis will be obtained. Samples will be obtained which as far as possible will meet the requirements of the assessment and any subsequent analysis.

a) Soil and Sediments: Samples taken will be examined in detail in the laboratory. An overall assessment of potential will be carried out. Analysis of particle size and loss on ignition, if required would be undertaken as part of full analysis if assessment demonstrates that such studies would be of value.

b) Pollen Analysis: Contexts which require sampling may include stabilisation horizons and the primary fills of the pits and ditches, and possibly organic well/pond fills. It is anticipated that in some cases this will be carried out in conjunction with sampling for other environmental elements, such as plant macrofossils, where these are also felt to be of potential.

c) Plant Macrofossils: Principal contexts will be sampled directly from the excavation for seeds and associated plant remains. It is anticipated that primarily charred remains will be recovered, although provision for any waterlogged sequences will also be made (see below). Sampling for the former will, where possible (that is, avoiding contamination) comprise samples of an average of 40-60 litres which will be floated in the AS facilities for extraction of charred plant remains. Both the flot and residues will be kept for assessment of potential and stored for any subsequent detailed analysis. The residues will also be examined for artifactual remains and also for any faunal remains present (cf. molluscs). Where pit, ditch, well or pond sediments are found to contain waterlogged sediments, principal contexts will be sampled for seeds and insect remains. Standard 5 litre+ samples will be taken which may be sub-sampled in the laboratory for seed remains if the material is found to be especially rich. The full sample will provide sufficient material for insect assessment and analysis. Where wood is found, representative material will be sampled during the excavation and stored wet/moist to facilitate later identification.

d) Bones: Predicting exactly how much of what will be yielded by the excavation is clearly very difficult prior to excavation and it is proposed that in order to efficiently target animal bone recovery there should be a system of direct feedback from the archaeozoologist to the site staff during the excavation, allowing fine tuning of the excavation strategy to concentrate on the recovery of animal bones from features which have the highest potential. This will also allow the faunal remains to materially add to the interpretation as the excavation proceeds. Liaison with other environmental specialists will need to take place in order to produce a complete

interdisciplinary study during this phase of activity. In addition, this feedback will aid effective targeting of the post-excavation analysis.

e) Insects: If contexts having potential for insect preservation are found, samples will be taken in conjunction with waterlogged plant macrofossils. Samples of 5 litres will suffice for analysis and will be sampled adjacent to waterlogged seed samples and pollen; or where insufficient context material is available provision will be made for exchange of material between specialists.

f) Molluscs: Terrestrial and freshwater molluscs. Samples will be taken from a column from suitable ditches. Pits may be sampled, based on the advice of the Environmental Consultant and / or English Heritage Regional Advisor. Provision will also be made for molluscs obtained from other sampling aspects (seeds) to be examined and/or kept for future requirements.

g) Archiving: Environmental remains obtained should be stored in conditions appropriate for analysis in the short to medium term, that is giving the ability for full analysis at a later date without any degradation of samples being analysed. The results will be maintained as an archive at AS and supplied to the EH regional co-ordinator as requested.

Waterlogged Deposits/Remains

Should waterlogged deposits (such as wells/deep ditches) be encountered, provision has been made for controlled hand excavation and sampling. Dr Rob Scaife will visit to advise of sampling as required, and AS will take monolith samples as necessary for the recovery of palaeoenvironmental information and dating evidence.

Scientific/Absolute Dating

- Samples will be obtained for potential scientific/absolute dating as appropriate (eg Carbon-14).

FINDS PROCESSING

The Project Manager (and Project Officer) will have overall responsibility for the finds and will liaise with AS's own finds personnel and the relevant specialists. A person with particular responsibility for finds on site will be appointed for the excavation. The person will ensure that the finds are properly labelled and packaged on site for transportation to AS's field base. The finds processing will take place in tandem with the excavations and will be under the supervision of AS's Finds Officer.

The finds processing will entail first aid conservation, cleaning (if appropriate), marking (if appropriate), categorising, bagging, labelling, boxing and basic cataloguing (the compilation of a Small Finds Catalogue and quantification of bulk finds), i.e., such that the finds are ready to be made available to the specialists.

The Finds Officer, having been advised by the Project Officer and relevant specialists, will select material for conservation. AS's Finds Officer, in conjunction with the Project Officer, will arrange for the specialists to view the finds for the purpose of report writing.

APPENDIX 2
ARCHAEOLOGICAL SOLUTIONS:
PROFILES OF KEY STAFF & SPECIALISTS

DIRECTOR **Claire Halpin BA MIfA**

Qualifications: Archaeology & History BA Hons (1974-77).
Oxford University Dept for External Studies In-Service Course (1979-1980).
Member of Institute of Archaeologists since 1985: IFA Council member (1989-1993)
Experience: Claire has 25 years' experience in field archaeology, working with the Oxford Archaeological Unit and English Heritage's Central Excavation Unit (now the Centre for Archaeology). She has directed several major excavations (e.g. Barrow Hills, Oxfordshire, and Irthlingborough Barrow Cemetery, Northants), and is the author of many excavation reports e.g. St Ebbe's, Oxford: *Oxoniensia* 49 (1984) and 54 (1989). Claire moved into the senior management of field archaeological projects with Hertfordshire Archaeological Trust (HAT) in 1990, and she was appointed Manager of HAT in 1996. From the mid 90s HAT has enlarged its staff complement and extended its range of skills. In July 2003 HAT was wound up and Archaeological Solutions was formed. The latter maintains the same staff complement and services as before. AS undertakes the full range of archaeological services nationwide.

DIRECTOR **Tom McDonald MIfA**

Qualifications: Member of the IfA
Experience: Tom has twenty years' experience in field archaeology, working for the North-Eastern Archaeological Unit (1984-1985), Buckinghamshire County Museum (1985), English Heritage (Stanwick Roman villa (1985-87) and Irthlingborough barrow excavations, Northamptonshire (1987)), and the Museum of London on the Royal Mint excavations (1986-7)., and as a Senior Archaeologist with the latter (1987-Dec 1990). Tom joined HAT at the start of 1991, directing several major multi-period excavations, including excavations in advance of the A41 Kings Langley and Berkhamsted bypasses, the A414 Cole Green bypass, and a substantial residential development at Thorley, Bishop's Stortford. He is the author of many excavation reports, exhibitions etc. Tom is AS's Health and Safety Officer and is responsible for site management, IT and CAD. He specialises in prehistoric and urban archaeology, and is a Lithics Specialist.

OFFICE MANAGER **Rose Flowers**

Experience: Rose has a very wide range of book-keeping skills developed over many years of employment with a range of companies, principally Rosier Distribution Ltd, Harlow (now part of Securicor) where she managed eight accounts staff. She has a good working knowledge of both accounting software and Microsoft Office.

SENIOR PROJECTS MANAGER **Jon Murray BA MIfA**

Qualifications: History with Landscape Archaeology BA Hons (1985-1988).

Experience: Jon has been employed by HAT (now AS) continually since 1989, attaining the position of Senior Projects Manager. Jon has conducted numerous archaeological investigations in a variety of situations, dealing with remains from all periods, throughout London and the South East, East Anglia, the South and Midlands. He is fluent in the execution of (and now project-manages) desk-based assessments/EIAs, historic building surveys (for instance the recording of the Royal Gunpowder Mills at Waltham Abbey prior to its rebirth as a visitor facility), earthwork and landscape surveys, all types of evaluations/excavations (urban and rural) and environmental archaeological investigation (working closely with Dr Rob Scaife), preparing many hundreds of archaeological reports dating back to 1992. Jon has also prepared numerous publications; in particular the nationally-important Saxon site at Gamlingay, Cambridgeshire (*Anglo-Saxon Studies in Archaeology & History*). Other projects published include Dean's Yard, Westminster (*Medieval Archaeology*), Brackley (*Northamptonshire Archaeology*), and a medieval cemetery in Haverhill he excavated in 1997 (*Proceedings of the Suffolk Institute of Archaeology).* Jon is a member of the senior management team, principally preparing specifications/tenders, co-ordinating and managing the field teams. He also has extensive experience in preparing and supporting applications for Scheduled Monument Consent/Listed Building Consent

PROJECTS MANAGER
(FIELD & ARCHIVES) **Martin Brook BA**

Qualifications: University of Leicester BA (Hons) Archaeology (2003 -2006)

Experience: Martin worked on archaeological excavations throughout his university career in and around Leicester including two seasons excavating a medieval abbey kitchen at Abbey Park, Leicester with ULAS. He specialised in Iron Age funeral traditions and grave goods for his 3rd year dissertation advancing his skills in museum research, database use and academic correspondence. He joined AS in September 2006 as an excavator involved in projects such as Earsham Bronze Age Barrow and cremation site. From May 2007, Martin has moved across to the Post-Excavation team to become Assistant Archives Officer, and thereafter Martin has returned to fieldwork as a Supervisor before being promoted to project management in 2009

PROJECT OFFICER **Zbigniew Pozorski MA**

Qualifications: University of Wroclaw, Poland, Archaeology (1995-2000, MA 2003)

Experience: Zbigniew has archaeological experience dating from 1995 when as a student he joined an academic group of excavators. He was involved in numerous archaeological projects throughout the Lower Silesia region in southwest Poland and a number of projects in old town of Wroclaw. During his university years he specialized in medieval urban archaeology. He had his own research project working on an early/high medieval stronghold in Pietrzykow. He was a member of a University team which located and excavated an unknown high medieval castle in Wierzbna, Poland. Zbigniew has worked for archaeological contractors in Poland on several projects as a supervisor where he gained experience in all types of evaluations and excavations in urban and rural areas. Recently he worked in Ireland

where he completed two large long-term projects for Headland Archaeology Ltd. He joined AS in January 2008 as a Project Officer. Zbigniew is qualified in the Construction Skills Certification Scheme (CSCS) and is qualified in First Aid at Work (St Johns Ambulance).

SUPERVISOR Gareth Barlow MSc

Qualifications: University of Sheffield, MSc Environmental Archaeology & Palaeoeconomy (2002-2003)
King Alfred's College, Winchester, Archaeology BA (Hons) (1999-2002)
Experience: Gareth worked on a number of excavations in Cambridgeshire before pursuing his degree studies, and worked on many archaeological projects across the UK during his university days. Gareth joined AS in 2003 and has worked on numerous archaeological projects throughout the South East and East Anglia with AS. Gareth was promoted to Supervisor in the Summer 2007.

Gareth is qualified in the Construction Skills Certification Scheme (CSCS) and is qualified in First Aid at Work (St Johns Ambulance).

SUPERVISOR Mariusz Gorniak BA MPhil

Mariuz Gorniak joined AS in 2012 as a highly experienced archaeologist, having spent over 12 years working in commercial field archaeology, notably in Colchester. After graduation from Jagiellonian University, Poland, he completed an MPhil (Hons) in Mediterranean Archaeology. Mariuz has authored numerous papers and reports on archaeology in Britain and Europe, and is a skilled illustrator of archaeological finds and architecture. He is also fluent in numerous European languages.

Mariuz is qualified in the Energy and Utility Skills Scheme (EUSS).

SUPERVISOR Stephen Quinn BSc

Stephen Quinn joined AS as a Site Assistant 2009, and in 2012 was promoted to the role of Supervisor. After graduating in Archaeology and Palaeoecology at Queens University Belfast, he worked for several commercial archaeology units including on Neolithic settlement and burial sites and a Bronze Age henge monument in Northern Ireland; early industrial pottery productions sites in Glasgow, and urban Roman excavation in Lincoln. In 2012 Stephen has been heading AS' excavation of a Roman fenland settlement site at Soham, Cambridgeshire.

Stephen is qualified in the Construction Skills Certification Scheme (CSCS).

SUPERVISOR Kamil Orzechowski BA, MA

Kamil Orzechowski joined AS in 2012, as an experienced field archaeologist after spending five years in various commercial archaeology units working on large-scale construction projects including railways and pipelines. Before becoming a field archaeologist, Kamil graduated from the Institute of Ethnology and Cultural Anthropology, Adam Mickiewicz University, Poznan, Poland.

Kamil is qualified in the Construction Skills Certification Scheme (CSCS).

SUPERVISOR **Samuel Egan BSc**

Samuel Egan joined AS in 2012 as an experienced field archaeologist after working on a range of excavations in Northamptonshire including a large-scale road project, community projects, evaluation and excavation projects, and geophysical syrveys. Samuel graduated from Bournemouth University with two degrees: Fdsc Field Archaeology and BSc (hons.) Field Archaeology.

Samuel is qualified in the Construction Skills Certification Scheme (CSCS) and is a qualified in First Aid at Work (Red Cross).

SUPERVISOR **Laszlo Lichtenstein MA, MSc**

Laszlo Lichtenstein joined AS in 2012 as a Supervisor, highly experienced in a range of archaeological project management, field archaeology and archaeozoology. Laszlo has extensive experience spanning Hungary, and later Northamptonshire, including directing evaluation and excavation projects; managing project set-up including written schemes of investigation, desk-based assessments and geophysical survey; and post-excavation analysis. Laszlo completed his academic studies at University of Szegad, Hungary, including his PhD on geophysical and archaeological investigations of late Bronze Age to early Iron Age settlements in south-east Hungary, and has published numerous articles on his areas of research.

Laszlo is qualified in the Construction Skills Certification Scheme (CSCS) and is qualified in First Aid at Work.

PROJECT OFFICER
(DESK-BASED ASSESSMENTS) **Kate Higgs MA (Oxon)**

Qualifications: University of Oxford, St Hilda's College; Archaeology & Anthropology MA (Oxon) (2001-2004)

Experience: Kate has archaeological experience dating from 1999, having taken part in clearance, surveying and recording of stone circles in the Penwith area of Cornwall. During the same period, she also assisted in compiling a database of archaeological and anthropological artefacts from Papua New Guinea, which were held in Scottish museums. Kate has varied archaeological experience from her years at Oxford University, including participating in excavations at a Roman amphitheatre and an early church at Marcham/ Frilford in Oxfordshire, with the Bamburgh Castle Research Project in Northumberland, which also entailed the excavation of human remains at a Saxon cemetery, and also excavating, recording and drawing a Neolithic chambered tomb at Prissé, France. Kate has also worked in the environmental laboratory at the Museum of Natural History in Oxford, and as a finds processor for Oxford's Institute of Archaeology. Since joining AS in November 2004, Kate has researched and authored a variety of reports, concentrating on desk-based assessments in advance of archaeological work and historic building recording.

ASSISTANT PROJECTS MANAGER
(POST-EXCAVATION) Andrew Newton MPhil PIFA

Qualifications: University of Bradford, MPhil (2002-04)
University of Bradford, BSc (Hons) Archaeology (1998-2002)
University of Bradford, Dip Professional Archaeological Studies (2002)

Experience: Andrew has carried out geophysical surveys for GeoQuest Associates on sites throughout the UK and has worked as a site assistant with BUFAU. During 2001 he worked as a researcher for the Yorkshire Dales Hunter-Gatherer Research Project, a University of Bradford and Michigan State University joint research programme, and has carried out voluntary work with the curatorial staff at Beamish Museum in County Durham. Andrew is a member of the Society of Antiquaries of Newcastle-upon-Tyne and a Practitioner Member of the Institute for Archaeologists. Since joining AS in early Summer 2005, as a Project Officer writing desk-based assessments, Andrew has gained considerable experience in post-excavation work. His principal role with AS is conducting post-excavation research and authoring site reports for publication. Significant post-excavation projects Andrew has been responsible for include the Ingham Quarry Extension, Fornham St. Genevieve, Suffolk – a site with large Iron Age pit clusters arranged around a possible wetland area; the late Bronze Age to early Iron Age enclosure and early Saxon cremation cemetery at the Chalet Site, Heybridge, Essex; and, Church Street, St Neots, Cambridgeshire, an excavation which identified the continuation of the Saxon settlement previously investigated by Peter Addyman in the 1960s. Andrew also writes and co-ordinates Environmental Impact Assessments and has worked on a variety of such projects across southern and eastern England. In addition to his research responsibilities Andrew undertakes outreach and publicity work and carries out some fieldwork.

PROJECT OFFICER
(POST-EXCAVATION) Antony Mustchin BSc MSc DipPAS

Qualifications: University of Bradford BSc (Hons) Bioarchaeology (1999-2003)
University of Bradford MSc Biological Archaeology (2004-2005)
University of Bradford Diploma in Professional Archaeological Studies (2003)

Experience: Antony has 12 years' experience in field archaeology, gained during his higher education and in the professional sector. Commercially in the UK, Antony has worked for Archaeology South East (2003), York Archaeological Trust (2004) and Special Archaeological Services (2003). He has also undertaken a six-month professional placement as Assistant SMR Officer/ Development Control Officer with Kent County Council (2001-2002). Antony is part-way through writing up a PhD on Viking Age demographics, a long-term academic interest that has led to his gaining considerable research excavation experience across the North Atlantic. He has worked for projects and organisations including the Old Scatness & Jarlshof Environs Project, Shetland (2000-2003), the Viking Unst Project, Shetland (2006-2007), the Heart of the Atlantic Project/ Føroya Fornminnissavn, Faroe Islands (2006-2008) and City University New York/ National Museum of Denmark/ Greenland National Museum and Archives, Greenland (2006 & 2010). Shortly before Joining Archaeological Solutions in November 2011, Antony spent three

years working for the Independent Commission for the Location of Victims Remains, assisting in the search for and forensic recovery of "the remains of victims of paramilitary violence ("The Disappeared") who were murdered and buried in secret arising from the conflict in Northern Ireland". Antony has a broad experience of fieldwork and post-excavation practice including specialist (archaeofauna), teaching, supervisory and directing-level posts.

POTTERY, LITHICS AND CBM RESEARCHER **Andrew Peachey BA MIfA**

Qualifications: University of Reading BA Hons, Archaeology and History (1998-2001)
Experience: Andrew joined AS (formerly HAT) in 2002 as a pottery researcher, and rapidly expanded into researching CBM and lithics. Andrew specialises in prehistoric and Roman pottery and has worked on numerous substantial assemblages, principally from across East Anglia but also from southern England. Recent projects have included a Neolithic site at Coxford, Norfolk, an early Bronze Age domestic site at Shropham, Norfolk, late Bronze Age material from Panshanger, Hertfordshire, middle Iron Age pit clusters at Ingham, Suffolk and an Iron Age and early Roman riverside site at Dernford, Cambridgshire. Andrew has worked on important Roman kiln assemblages, including a Nar Valley ware production site at East Winch Norfolk, a face-pot producing kiln at Hadham, Hertfordshire and is currently researching early Roman Horningsea ware kilns at Waterbeach, Cambridgeshire. Andrew is an enthusiastic member of the Study Group for Roman Pottery, and also undertakes pottery and lithics analysis as an 'external' specialist for a range of archaeological units and local societies in the south of England.

POTTERY RESEARCHER **Peter Thompson MA**

Qualifications: University of Bristol BA (Hons), Archaeology (1995-1998)
University of Bristol MA; Landscape Archaeology (1998-1999)
Experience: As a student, Peter participated in a number of projects, including the excavation of a Cistercian monastery cemetery in Gascony and surveying an Iron Age promontory hillfort in Somerset. Peter has two years excavation experience with the Bath Archaeological Trust and Bristol and Region Archaeological Services which includes working on a medieval manor house and a post-medieval glass furnace site of national importance. Peter joined HAT (now AS) in 2002 to specialise in Iron Age, Saxon and Medieval pottery research and has also produced desk-based assessments. Pottery reports include an early Iron pit assemblage and three complete Early Anglo-Saxon accessory vessels from a cemetery in Dartford, Kent.

PROJECT OFFICER (OSTEOARCHAEOLOGY) **Julia Cussans PhD**

Qualifications: University of Bradford, PhD (2002-2010)
University of Bradford, BSc (Hons) Bioarchaeology (1997-2001)
University of Bradford, Dip. Professional Archaeological Studies (2001)

Experience: Julia has c. 12 years of archaeozoological experience. Whilst undertaking her part time PhD she also worked as a specialist on a variety of projects in northern Britain including Old Scatness (Shetland), Broxmouth Iron Age Hillfort and Binchester Roman Fort. Additionally Julia has extensive field experience and has held lead roles in excavations in Shetland and the Faroe Islands including, Old Scatness, a large multi-period settlement centred on an Iron Age Broch; the Viking Unst Project, an examination of Viking and Norse houses on Britain's most northerly isle; the Laggan Tormore Pipeline (Firths Voe), a Neolithic house site in Shetland; the Heart of the Atlantic Project, an examination of Viking settlement in the Faroes and Við Kirkjugarð, an early Viking site on Sanday, Faroe Islands. Early on in her career Julia also excavated at Sedgeford, Norfolk as part of SHARP and in Pompeii, Italy as part of the Anglo-American Project in Pompeii. Since joining AS in October 2011 Julia has worked on animal bone assemblages from Beck Row, a Roman villa site at Mildenhall, Suffolk and Sawtry, an Iron Age, fen edge site in Cambridgeshire. Julia is a full and active member of the International Council for Archaeozoology, the Professional Zooarchaeology Group and the Association for Environmental Archaeology.

ENVIRONMENTAL ARCHAEOLOGIST **John Summers PhD**

Qualifications: 2006-2010: PhD "The Architecture of Food" (University of Bradford)
2005-2006: MSc Biological Archaeology (University of Bradford)
2001-2005: BSc Hons. Bioarchaeology (University of Bradford)

Experience: John is an archaeobotanist with a primary specialism in the analysis of carbonised plant macrofossils and charcoal. Prior to joining Archaeological Solutions, John worked primarily in Atlantic Scotland. His research interests involve using archaeobotanical data in combination with other archaeological and palaeoeconomic information to address cultural and economic research questions. John has made contributions to a number of large research projects in Atlantic Scotland, including the Old Scatness and Jarlshof Environs Project (University of Bradford), the Viking Unst Project (University of Bradford) and publication work for Bornais Mound 1 and Mound 2 (Cardiff University). He has also worked with plant remains from Thruxton Roman Villa, Hampshire, as part of the Danebury Roman Environs Project (Oxford University/ English Heritage). John's role at AS is to analyse and report on assemblages of plant macro-remains from environmental samples and provide support and advice regarding environmental sampling regimes and sample processing. John is a member of the Association for Environmental Archaeology.

SENIOR GRAPHICS OFFICER **Kathren Henry**

Experience: Kathren has twenty-five years' experience in archaeology, working as a planning supervisor on sites from prehistoric to late medieval date, including urban sites in London and rural sites in France/Italy, working for the Greater Manchester Archaeological Unit, Passmore Edwards Museum, DGLA and Central Excavation Unit of English Heritage (at Stanwick and Irthlingborough, Northamptonshire). She has worked with AS (formerly HAT) since 1992, becoming Senior Graphics Officer. Kathren is AS's principal photographer, specializing in historic building survey, and she manages AS's photographic equipment and dark room. She is in charge of AS's Graphics Department, managing computerised artwork and report production. Kathren is also the principal historic building surveyor/illustrator, producing on-site and off-site plans, elevations and sections.

HISTORIC BUILDING RECORDING **Tansy Collins BSc**

Qualifications: University of Sheffield, Archaeological Sciences BSc (Hons) (1999-2002)

Experience: Tansy's archaeological experience has been gained on diverse sites throughout England, Ireland, Scotland and Wales. Tansy joined AS in 2004 where she developed skills in graphics, backed by her grasp of archaeological interpretation and on-site experience, to produce hand drawn illustrations of pottery, and digital illustrations using a variety of packages such as AutoCAD, Corel Draw and Adobe Illustrator. She joined the historic buildings team in 2005 in order to carry out both drawn and photographic surveys of historic buildings before combining these skills with authoring historic building reports in 2006. Since then Tansy has authored numerous such reports for a wide range of building types; from vernacular to domestic architecture, both timber-framed and brick built with date ranges varying from the medieval period to the 20th century. These projects include a number of regionally and nationally significant buildings, for example a previously unrecognised medieval aisled barn belonging to a small group of nationally important agricultural buildings, one of the earliest surviving domestic timber-framed houses in Hertfordshire, and a Cambridgeshire house retaining formerly hidden 17th century decorative paint schemes. Larger projects include The King Edward VII Sanatorium in Sussex, RAF Bentley Priory in London as well as the Grade I Listed Balls Park mansion in Hertfordshire.

HISTORIC BUILDING RECORDING **Lisa Smith BA**

Qualifications: University of York, BA Archaeology (1998-2001)

Experience: Lisa has nine years archaeological experience undertaken mainly in the north of England previously working as a senior site assistant for Field Archaeology Specialists in York on both rural and urban sites as well as Castle Sinclair Girnigoe and Tarbat in Scotland. Prior to working for FAS Lisa was involved in various excavation projects for Oxford Archaeology North and Archaeological Services, University of Durham. Lisa joined AS as a supervisor in January 2008 and in November 2009 transferred to historic building recording and has since worked on a variety of buildings dating from the medieval period onwards, working closely with external consultant Dr Lee Prosser.

GRAPHICS OFFICER **Rosanna Price BSc**

Qualifications: University of Kent, Medical Anthropology BSc (Hons) (2005-2008)

Experience: Rosanna's interests have always revolved around art and human history, and she has combined these throughout her work and education. During her degree she specialised in Osteoarchaeology and Palaeopathology, and personally instigated the University's photographic database of human remains. This experience gained her the post of Osteoarchaeologist at Kent Osteological Research and Analysis in early 2009, where she worked on a number of human bone collections including the Thanet Earth Skeletons. In January 2010 she joined AS as a Finds and Archives assistant, and by the summer had achieved a new role as graphics officer. In her current position Rosanna uses a range of computer programmes, such as AutoCAD, Adobe Illustrator and CorelDraw to produce digital figures and finds illustrations. These accompany a wide range of archaeological reports, from desk-based assessments and interim reports through to publication standard.

GRAPHICS OFFICER **Charlotte Davies MPhil**

Qualifications: University of Exeter, Archaeology BA (Hons) (2004-2007)
Surrey Institute of Art & Design, BTEC Foundation Diploma in Art & Design (2003-2004)
University of Cambridge, Archaeology (Heritage & Museum Studies) MPhil (2010-2011).

Experience: Charlotte has always had a passionate interest in art and archaeology, and has combined these interests in her higher education. Charlotte worked on archaeological excavations in South Dakota, USA, before joining AS in 2007 as part of the graphics team. Charlotte's role within AS comprises the production of a wide range of high quality figures and illustrations for reports, from desk-based assessments and interim reports through to publication. Charlotte became a member of the Association of Archaeological Illustrators and Surveyors in 2009 (this subsequently became incorporated into the Institute for Archaeologists), and in 2010 undertook a masters degree in archaeology at the University of Cambridge.

ARCHAEOLOGICAL SOLUTIONS: PRINCIPAL SPECIALISTS

GEOPHYSICAL SURVEYS	Stratascan Ltd
AIR PHOTOGRAPHIC ASSESSMENTS	Air Photo Services
PHOTOGRAPHIC SURVEYS	Ms K Henry
PREHISTORIC POTTERY	Mr A Peachey
ROMAN POTTERY	Mr A Peachey
SAXON & MEDIEVAL POTTERY	Mr P Thompson
POST-MEDIEVAL POTTERY	Mr P Thompson
FLINT	Mr A Peachey
GLASS	H Cool
COINS	British Museum, Dept of Coins & Medals
METALWORK & LEATHER	Ms Q Mould, Ms N Crummy
SLAG	Ms J Cowgill
ANIMAL BONE	Dr J Cussans
HUMAN BONE:	Ms J Curl
ENVIRONMENTAL CO-ORDINATOR	Dr R Scaife
POLLEN AND SEEDS:	Dr R Scaife
CHARCOAL/WOOD	Dr J Summers
SOIL MICROMORPHOLOGY	Dr R MacPhail, Dr C French
CARBON-14 DATING:	English Heritage Ancient Monuments Laboratory (for advice).
CONSERVATION	University of Leicester

APPENDIX 5 OASIS DATA COLLECTION FORM

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: archaeol7-178347

Project details

Project name	Land North of Blyth Houses, Church Road, Snape, Suffolk
Short description of the project	Between February and May 2013 Archaeological Solutions Ltd (AS) conducted an archaeological excavation on land north of Blyth Houses, Church Road, Snape, Suffolk (NGR TM 394 584). The excavation was commissioned by Hopkins Homes Ltd and was undertaken in advance of proposed residential development of the site. It was required in compliance with a planning condition attached to planning approval (Suffolk Coastal Planning Ref. C/11/0967). The excavation adhered to a written scheme of investigation prepared by AS (dated 01/02/2013) in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT) (dated 31/01/2013) requiring a programme of archaeological investigation. The requirement followed a geophysical survey (Sabin and Donaldson 2012) and an archaeological trial trench evaluation (Lichtenstein 2013). As was suggested by the forerunning evaluation, the excavation revealed abundant evidence of activity dating to the early Iron Age, Romano-British and early to middle Anglo-Saxon periods. Limited evidence of later medieval, post-medieval and modern activity was also encountered. The fill of a single pit also contained six early Bronze Age thumbnail scrapers. Significant features included a Romano-British enclosure system, ?trackway, and pottery kiln, three Anglo-Saxon sunken-featured buildings (SFBs), a contemporary post-built structure and two burnt flint pits of Anglo-Saxon date. Ephemeral evidence for Romano-British post-built structures was also encountered. Finds from SFB 1 were indicative of textile manufacture (spinning). Earlier Iron Age features were less coherent and did not provide a clear picture of prehistoric activity at the site.
Project dates	Start: 11-02-2013 End: 03-05-2013
Previous/future work	No / Not known
Any associated project reference codes	P4763 - Contracting Unit No.
Any associated project reference codes	SNP 103 - Sitecode
Type of project	Research project
Site status	None
Current Land use	Other 15 - Other
Monument type	FEATURES Early Iron Age
Monument type	PIT Medieval
Significant Finds	SPINDLE WHORL Early Iron Age
Significant Finds	POTTERY Early Iron Age

Investigation type	'"Full survey"'
Prompt	Research

Project location

Country	England
Site location	SUFFOLK SUFFOLK COASTAL SNAPE Land North of Blyth Houses, Church Road, Snape, Suffolk
Study area	1.60 Hectares
Site coordinates	TM 394 584 52.1712448921 1.50149300211 52 10 16 N 001 30 05 E Point
Height OD / Depth	Min: 12.00m Max: 16.00m

Project creators

Name of Organisation	Archaeological Solutions Ltd
Project brief originator	Suffolk County Council Archaeological Service Conservation Team
Project design originator	Jon Murray
Project director/manager	Jon Murray
Project supervisor	Laszlo Lichtenstein
Type of sponsor/funding body	Hopkins Homes

Project archives

Physical Archive recipient	Suffolk County Archaeological Store
Physical Contents	"Ceramics","Glass"
Digital Archive recipient	Suffolk County Archaeological Store
Digital Contents	"Survey"
Digital Media available	"Images raster / digital photography","Survey","Text"
Paper Archive recipient	Suffolk County Archaeological Store
Paper Contents	"Survey"
Paper Media available	"Drawing","Photograph","Plan","Report","Survey "

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Land North of Blyth Houses, Church Road, Snape, Suffolk
Author(s)/Editor(s)	Mustchin, A

Other bibliographic details	Archaeological Solutions Report No. 4471
Date	2013
Issuer or publisher	Archaeological Solutions Ltd
Place of issue or publication	Bury St Edmunds

Entered by	Sarah Powell (info@ascontracts.co.uk)
Entered on	7 May 2014

OASIS:

Please e-mail English Heritage for OASIS help and advice

PLATES

Plate 1: Site record shot (pre-excavation) (looking N)

Plate 2: Site record shot (during excavation/ development (looking S)

Plate 3: Phase 2 ?Hearth/ Fire Pit F2137 (fifty per cent excavated) (looking NE)

Plate 4: Central chamber of Phase 2 Kiln S2633 showing detail of Pedestal F2770 and Flue F2713 (post-excavation) (looking south)

Plate 5: Phase 2 Kiln S2633 (post-excavation) showing Stoke Hole F2714 and Flue F2713 (foreground), Central Chamber F2463, sections through Clay Lining F2719 and Pedestal F2770 (centre), Flue F2764 and Stoke Hole F2765 (background) (looking north)

Plate 6: In situ fine to medium flint-tempered pot in the base of Phase 2 Pit F2332 (post-excavation) (looking south)

Plate 7: Post Built Structure 3 (post-excavation) (looking south)

Plate 8: Phase 3 SFB 1 (post-excavation) (looking east)

Plate 9: Phase 3 SFB 2 (fifty per cent excavated) (looking west). The N/S line of Phase 2 Ditch F2061 (=2231) can be seen truncating Cut F2235 to the west

Plate 10: Phase 3 SFB 3 (Quadrant B) (post-excavation) (looking south)

Plate 11: Column sampling of fills in Phase 3 SFB 3 (Quadrant B) for soil micromorphological analysis (looking south-west)

Plate 12: Phase 3 SFB 3 (post-excavation) (looking east). The 'stepped' cut of F2406 is clearly visible to the east and south

Plate 13: Phase 2 Burnt Flint Pit F2058 (under excavation) (looking north-east)

Plate 14: Phase 2 Burnt Flint Pit F2365 and Postholes F2370, F2372 and F2374 (mid-excavation) (looking east)

Reproduced from the 1999 Ordnance Survey 1:25000 map with the permission of Her Majesty's Stationery Office. © Crown copyright Archaeological Solutions Ltd Licence number 100036680

● HER PLOTS

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Fig. 1 Site location plan

Scale 1:25,000 at A4

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Fig. 2 All features plan with cropmark (SNP 032)

Scale 1:625 at A3

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Fig. 3 Tithe map
Not to scale

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Fig. 4 Processed magnetometer data

Scale 1:1500 at A3

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Fig. 5 Geophysical survey data

Scale 1:1500 at A3

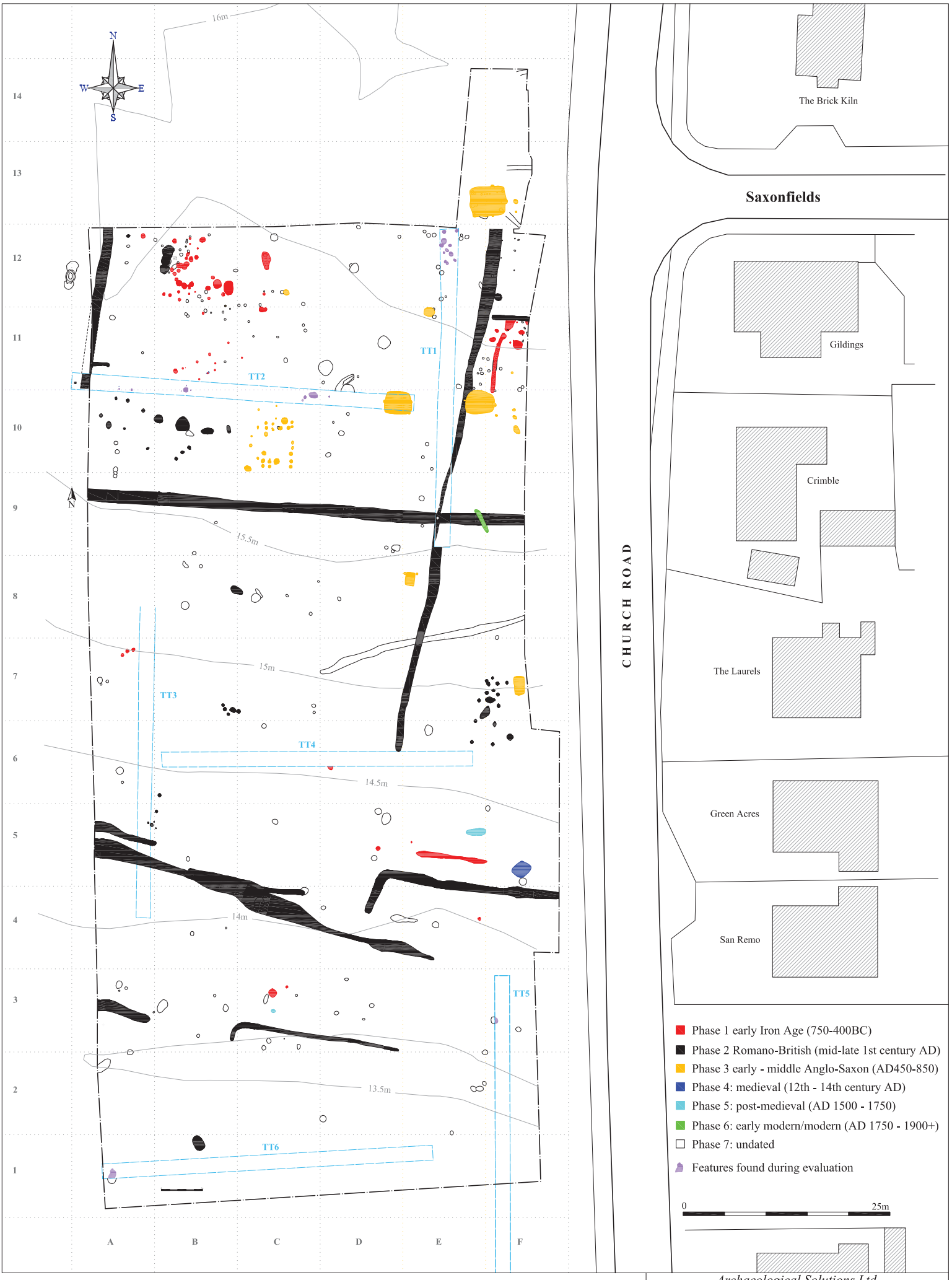

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Fig. 6 All features phase plan

Scale 1:400 at A3

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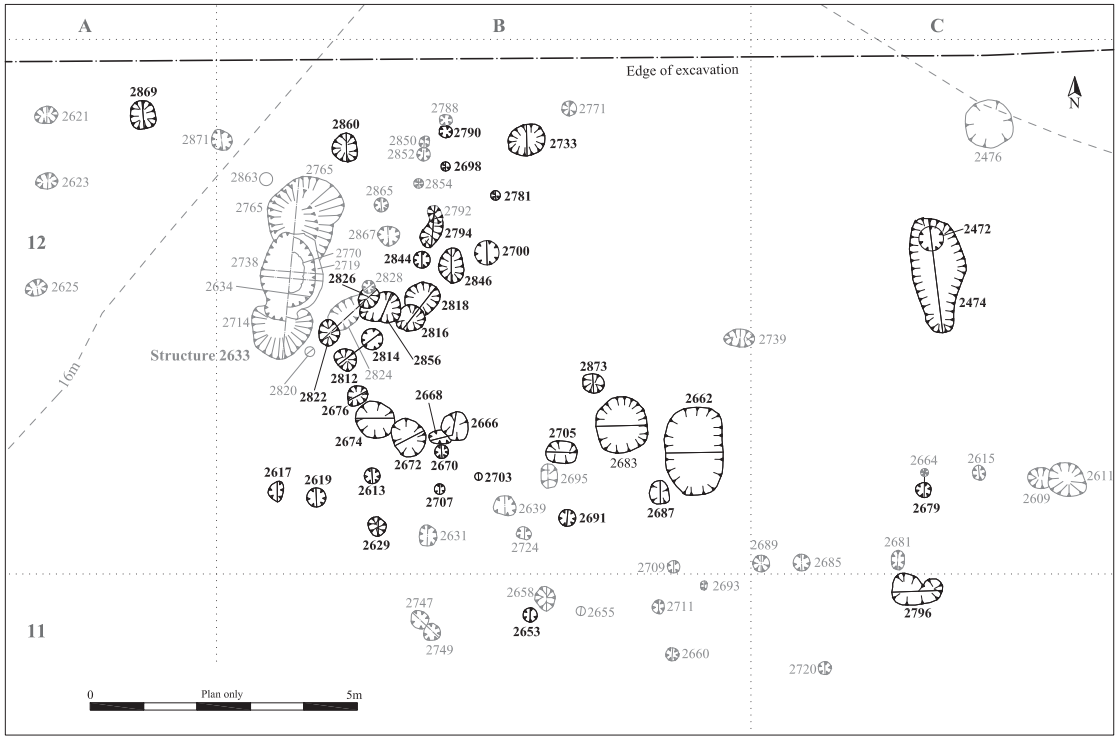
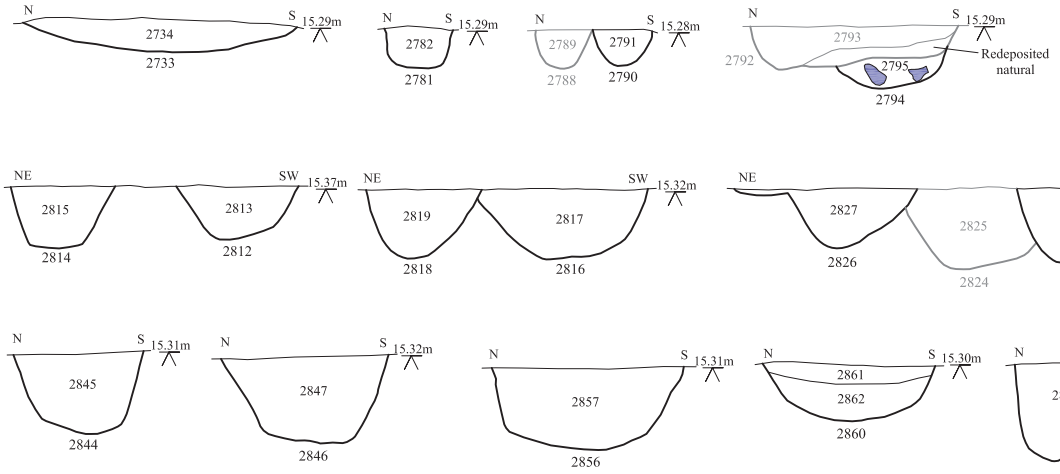
Fig. 7 Phase 1: early Iron Age (750-400BC)

Scale 1:400 at A3



ACTIVITY AREA 1



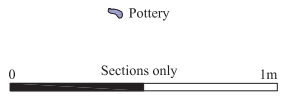


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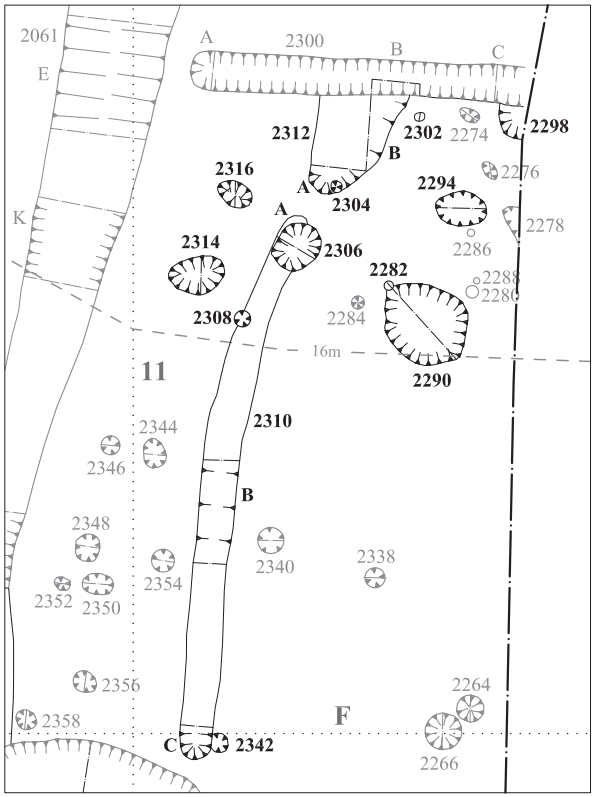
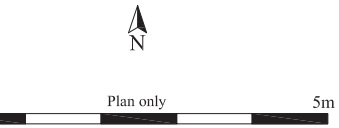
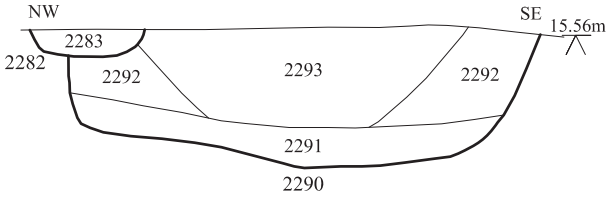
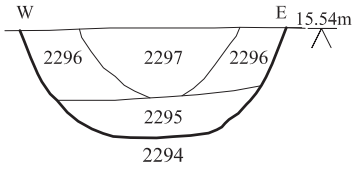
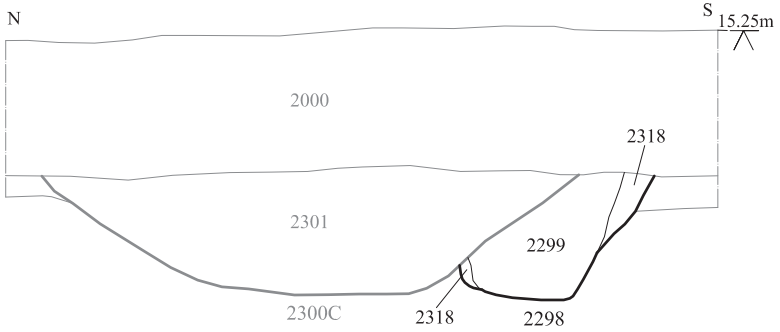
Fig. 8 Phase 1 Activity Area 1
Scale Plan 1:100, sections 1:20 at A3

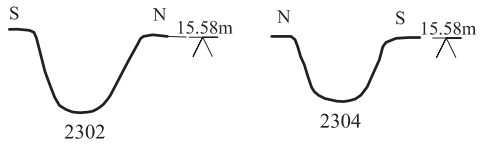


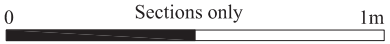


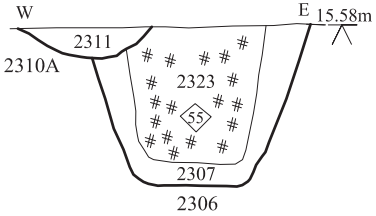


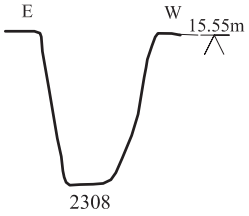


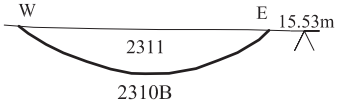


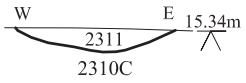


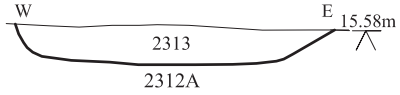


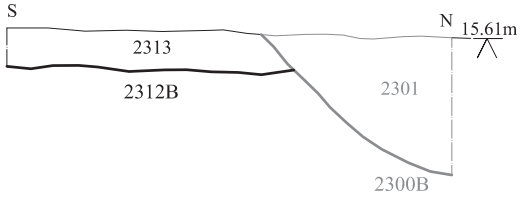


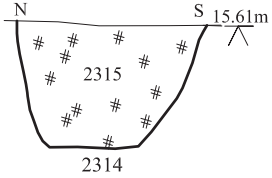












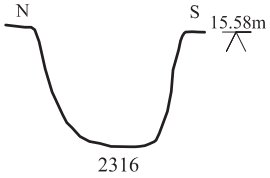


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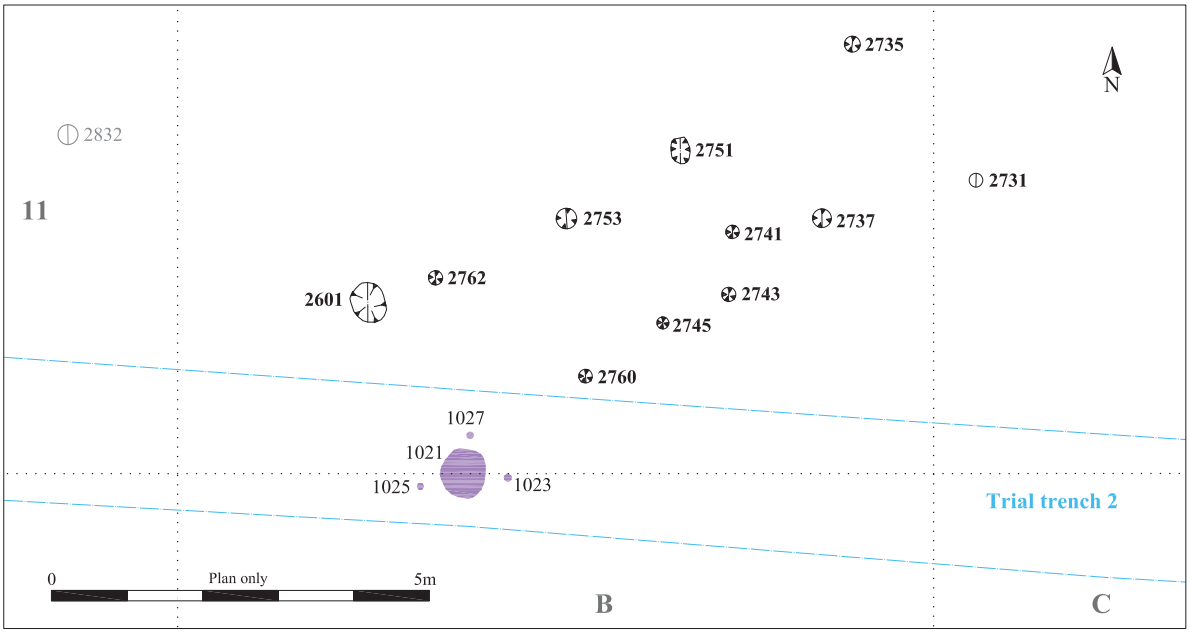
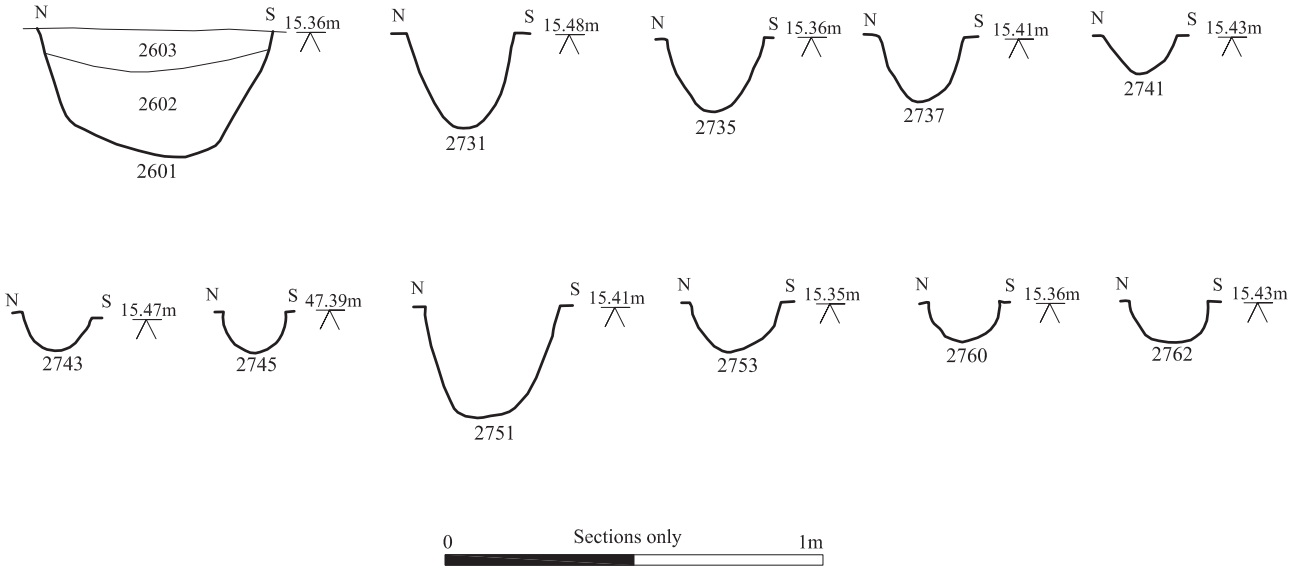
Fig. 9 Phase 1 Activity Area 2
Scale Plan 1:100, sections 1:20 at A4





Features found during evaluation

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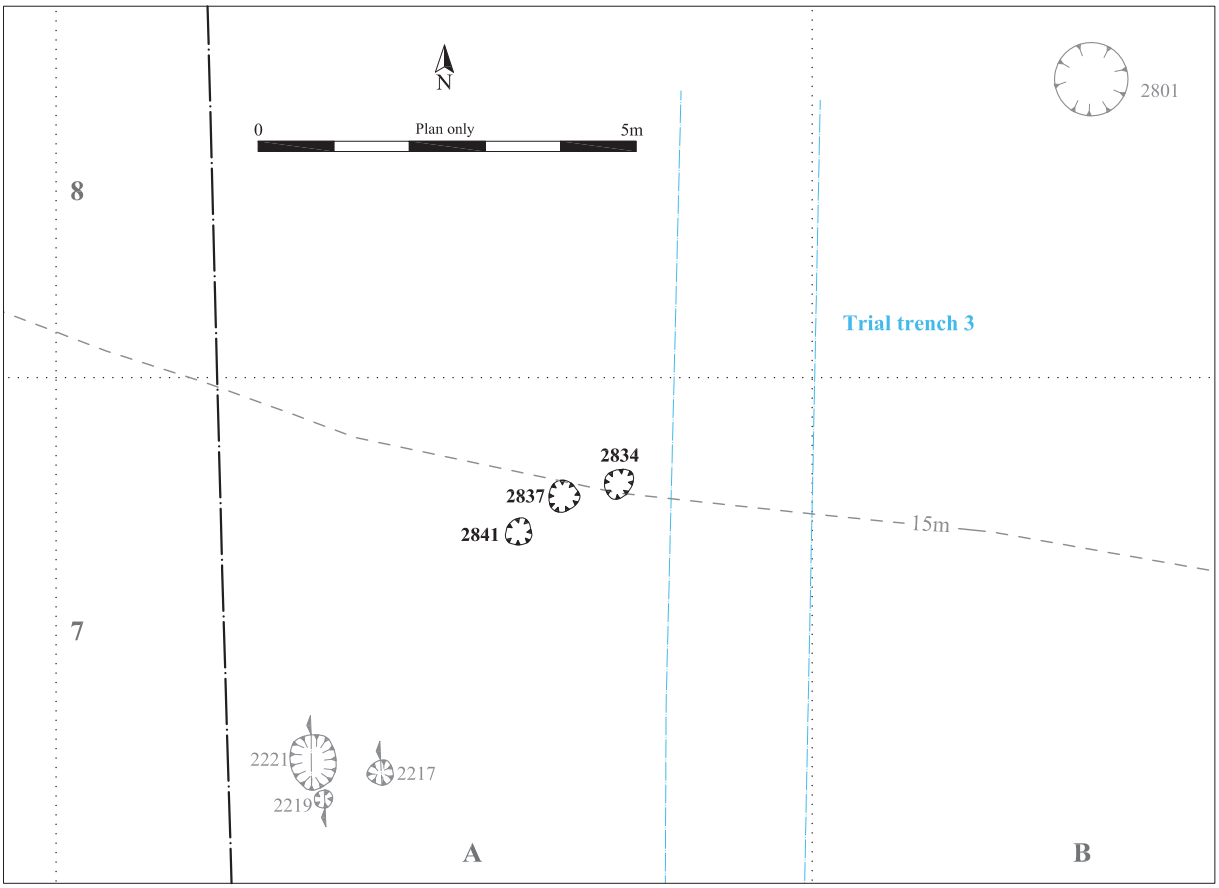
Fig. 10 Possible Phase 1 post alignments

Scale Plan 1:100, sections 1:20 at A4



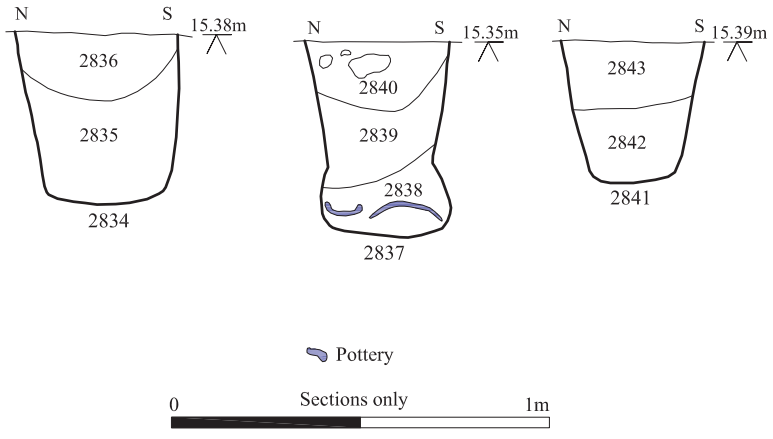


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Fig. 11 Possible Phase 1 storage pits

Scale Plan 1:100, sections 1:20 at A4

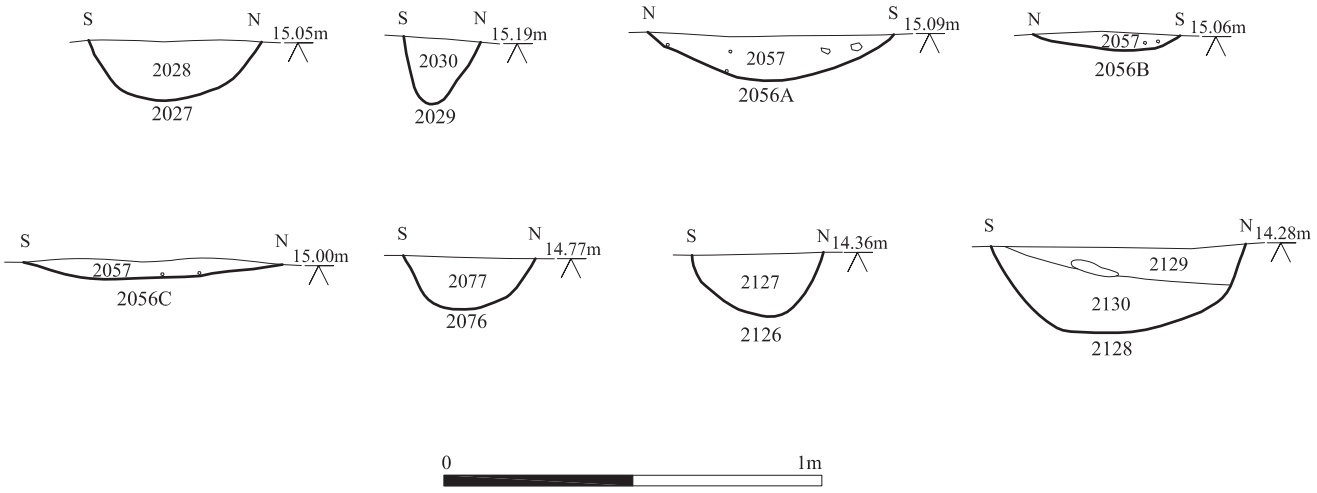

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Fig. 12 Other Phase 1 feature sections
Scale Sections 1:20 at A4

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Fig. 13 Phase 2: Romano-British (mid-late 1st century AD)

Scale 1:400 at A3

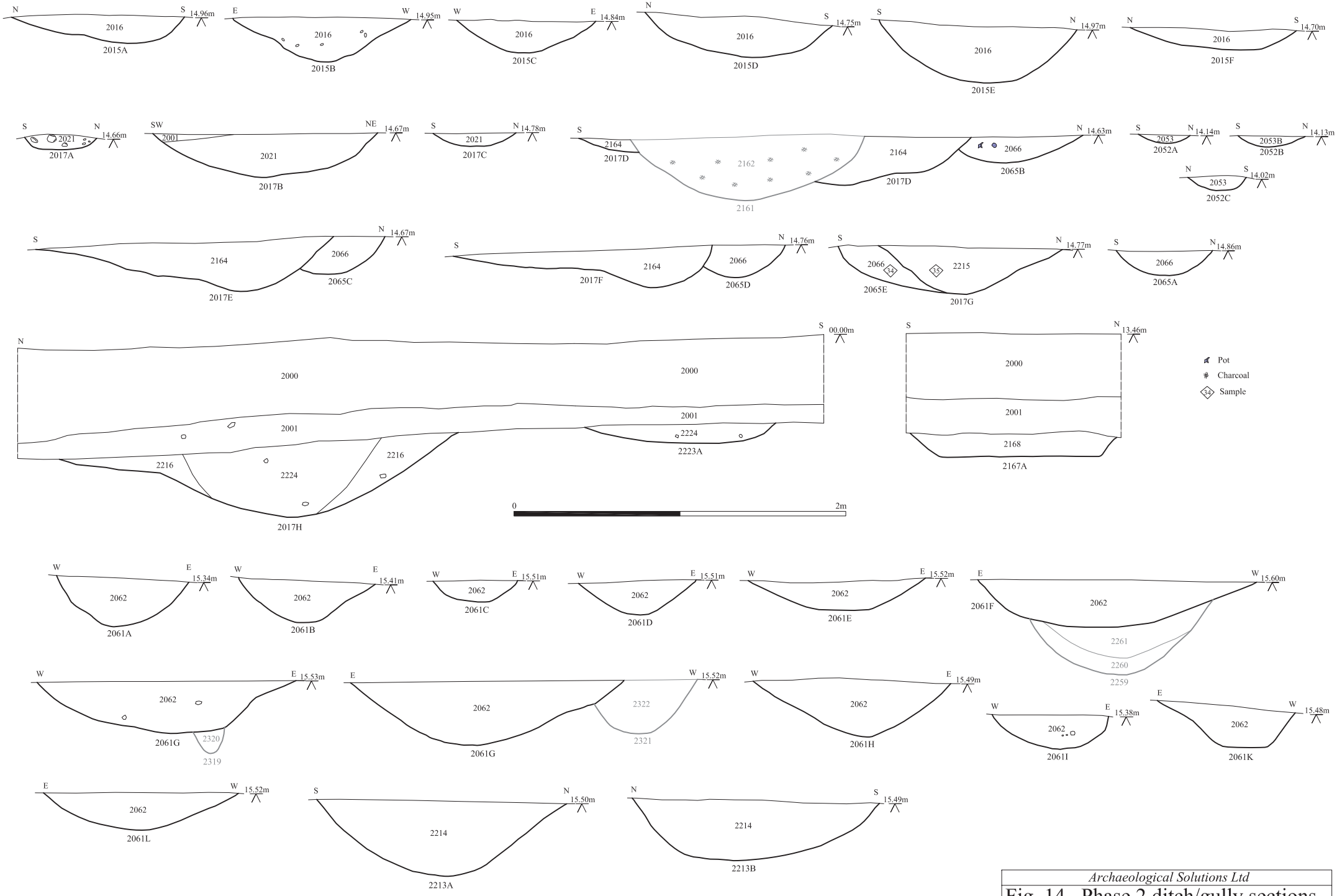

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Fig. 14 Phase 2 ditch/gully sections

Scale 1:20 at A3

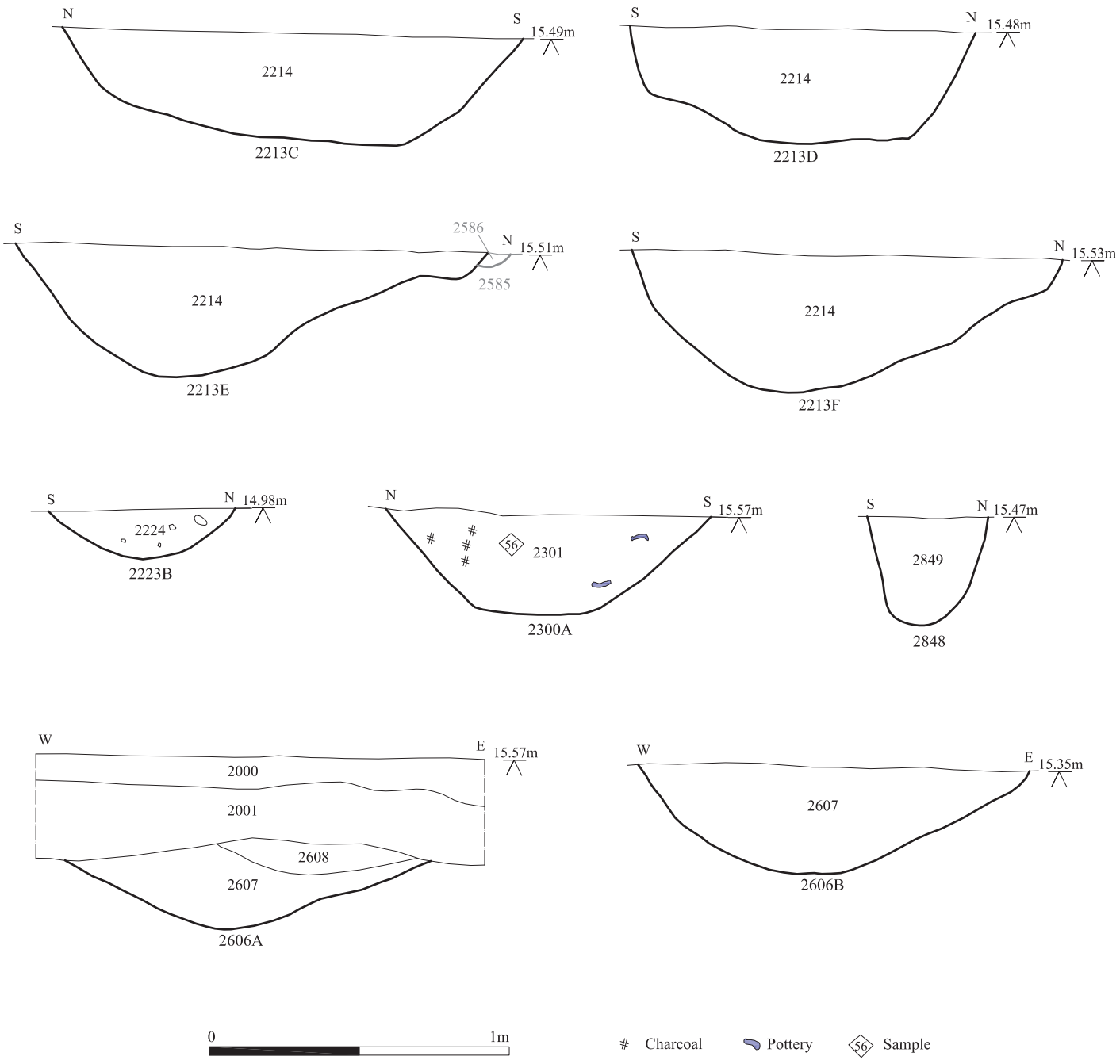

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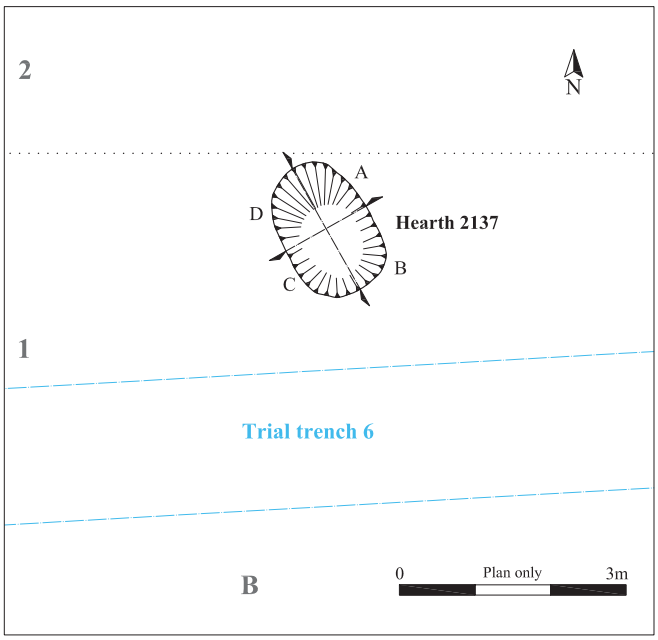
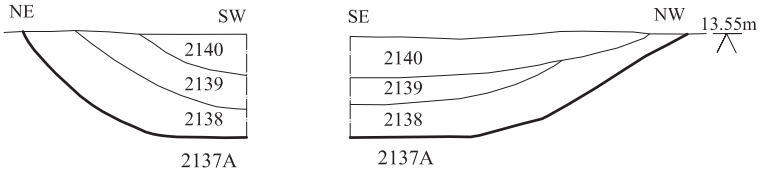
Fig. 15 Phase 2 ditch/gully sections (continued)

Scale 1:20 at A4





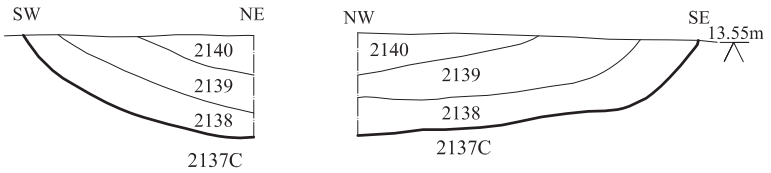


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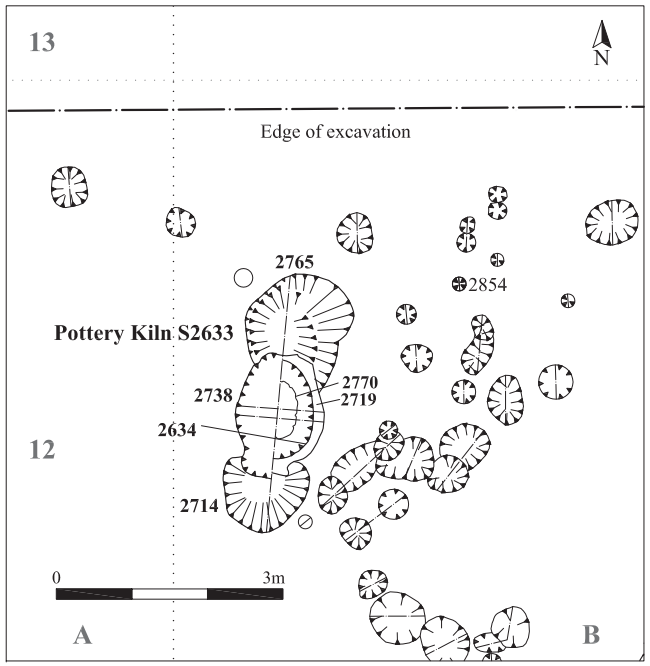
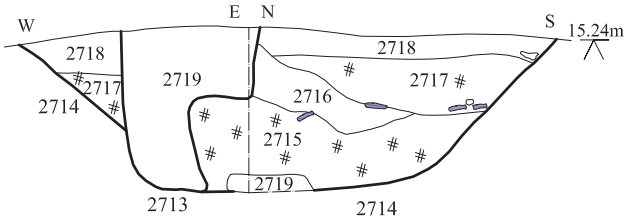
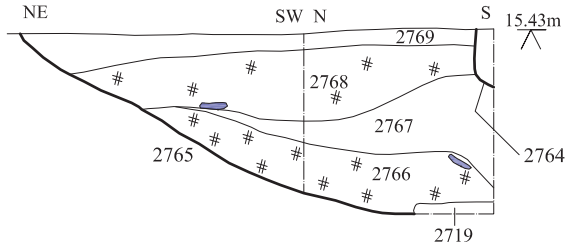
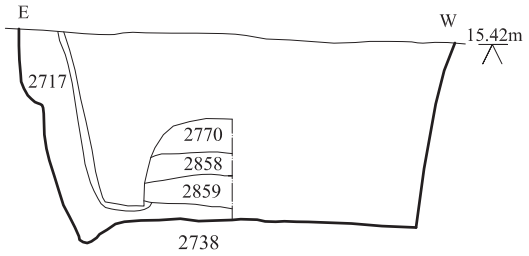
Fig. 16 Phase 2 ?Hearth/Fire Pit

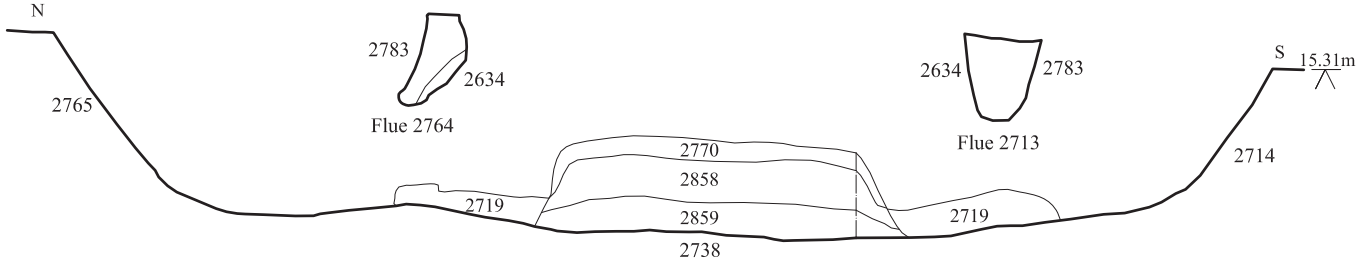
Scale Plan 1:100, sections 1:20 at A4

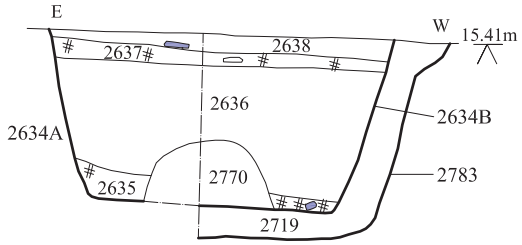












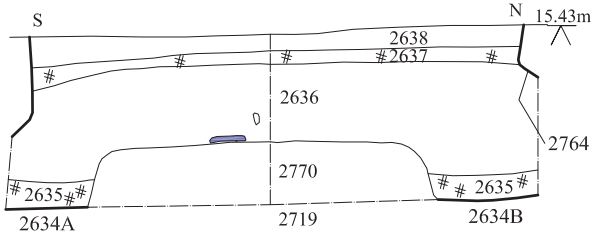


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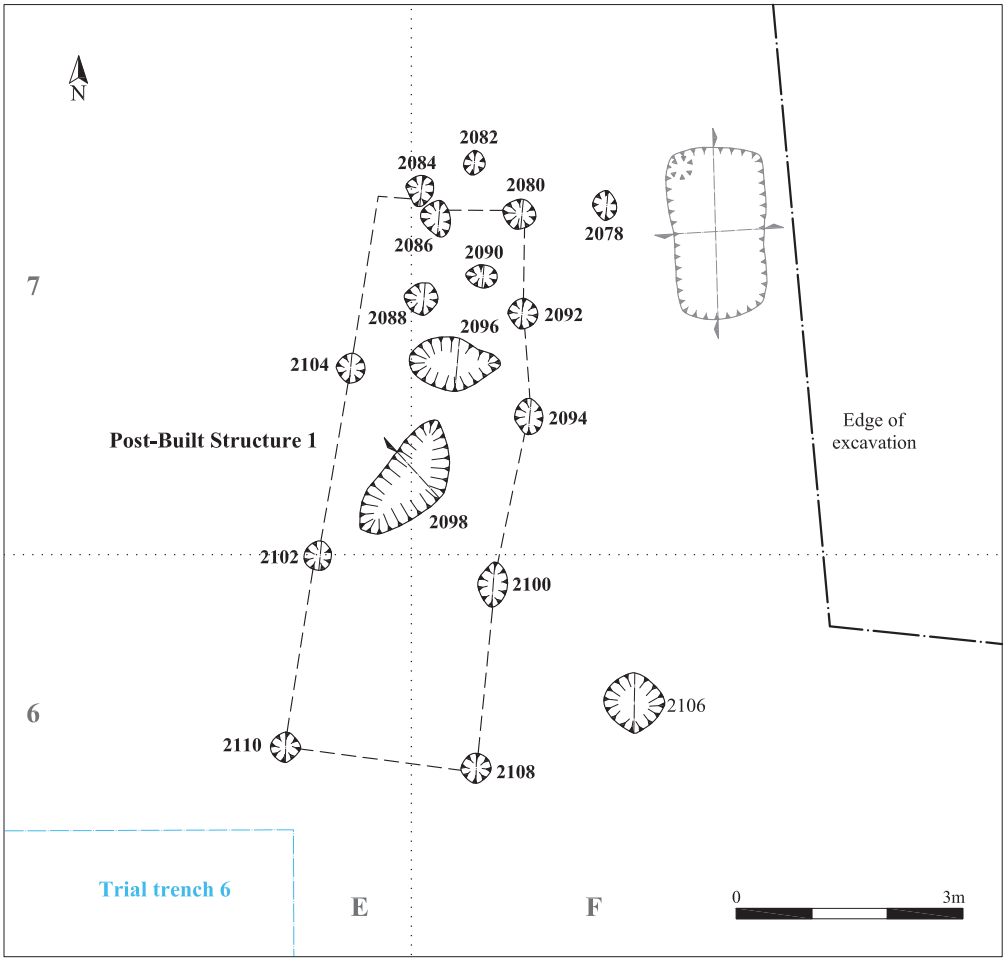
Fig. 17 Pottery Kiln S2633

Scale Plan 1:100, sections 1:20 at A4



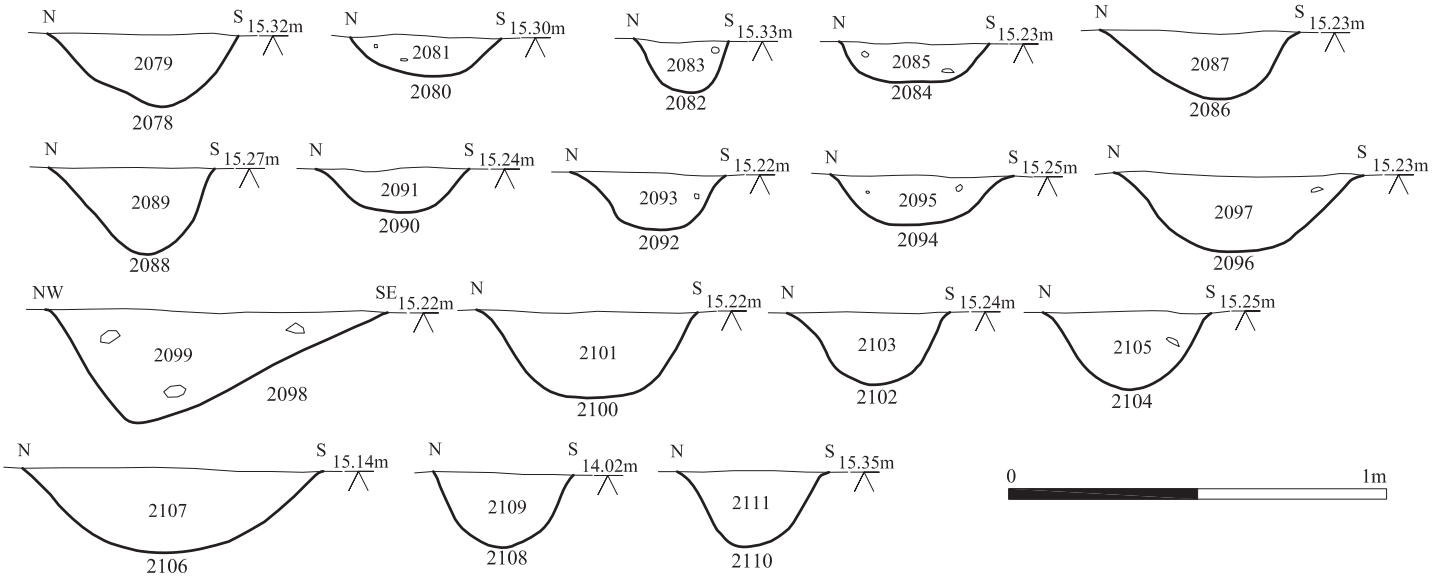


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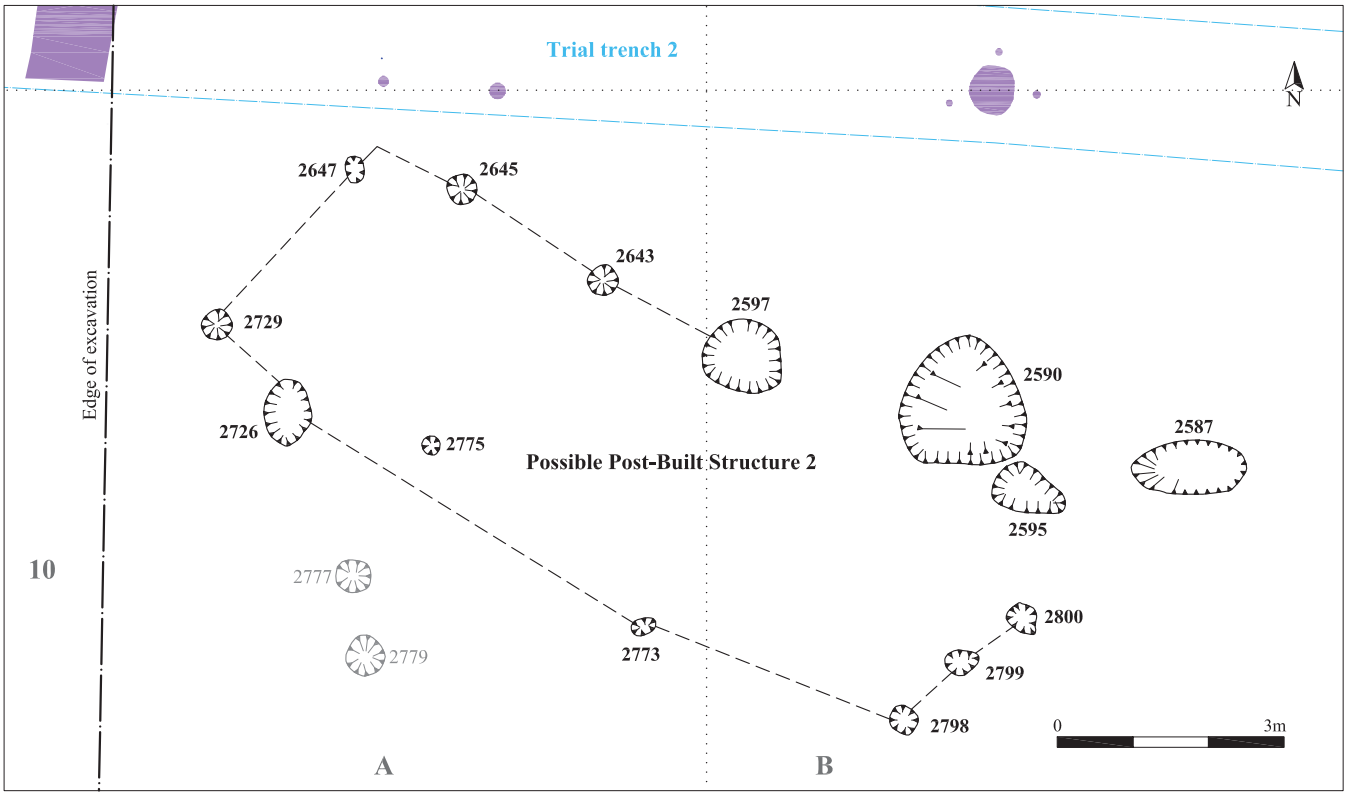
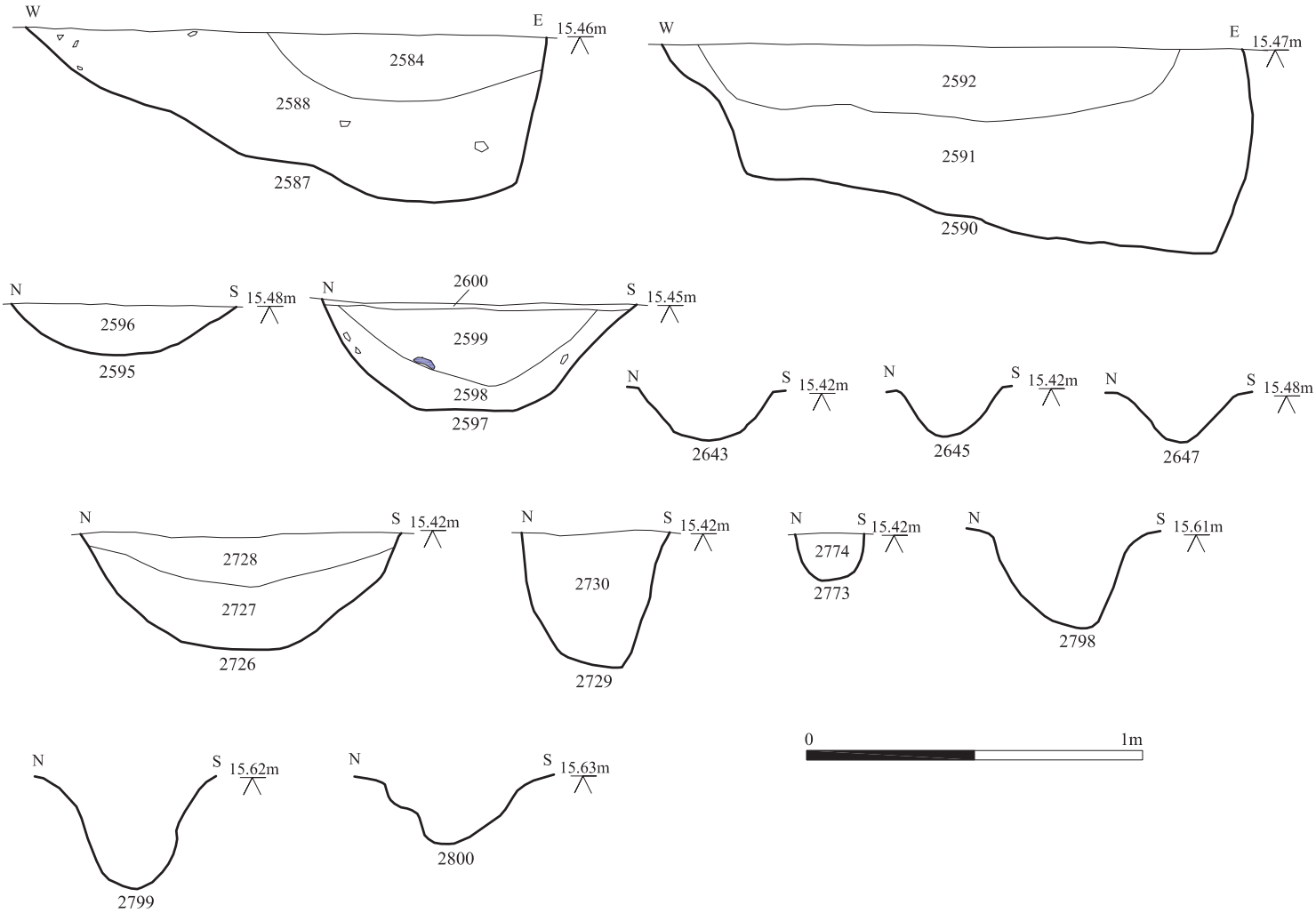
Fig. 18 Post-Built Structure 1

Scale Plan 1:100, sections 1:20 at A4





Features found during evaluation

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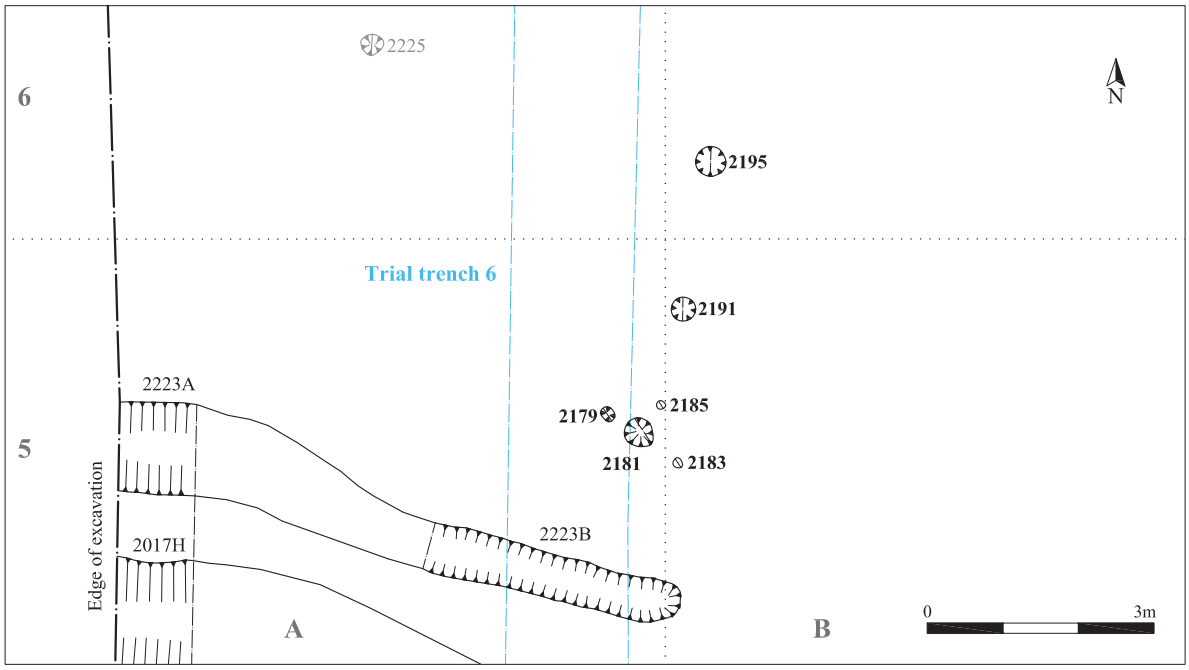
Fig. 19 Possible Post-Built Structure 2

Scale Plan 1:100, sections 1:20 at A4



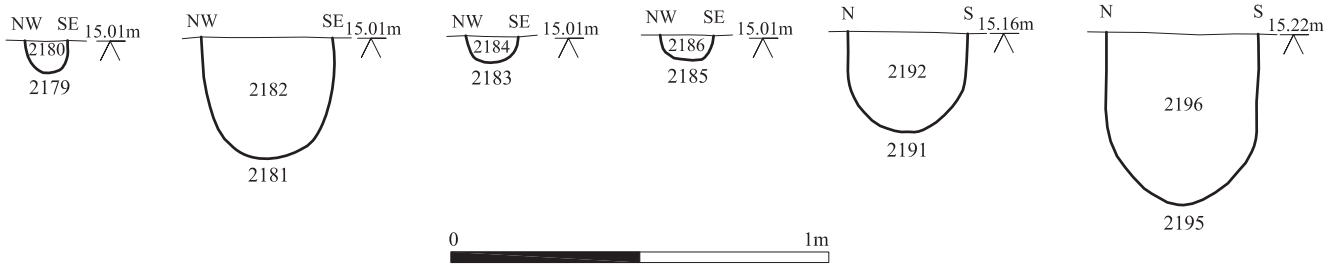


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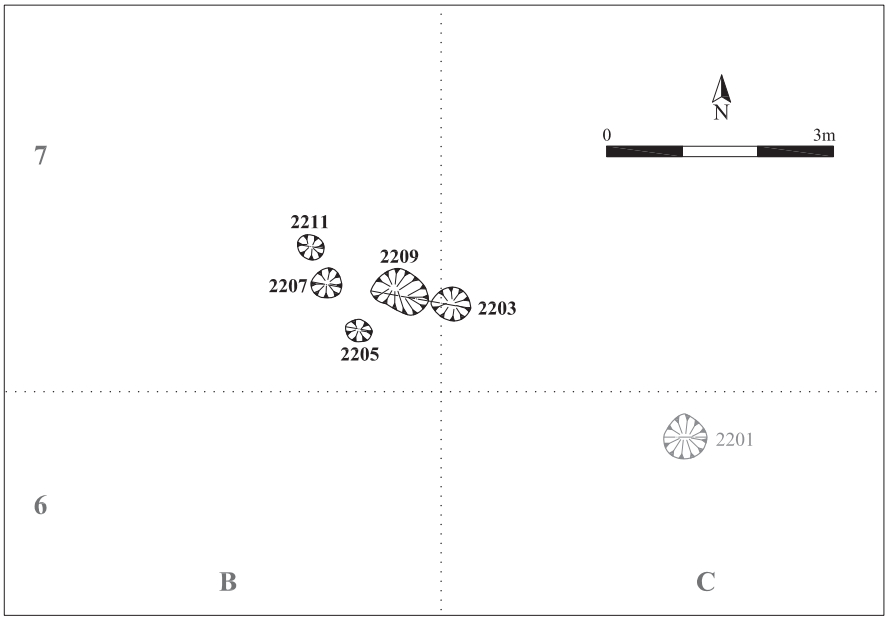
Fig. 20 Possible Phase 2 feature alignment

Scale Plan 1:100, sections 1:20 at A4



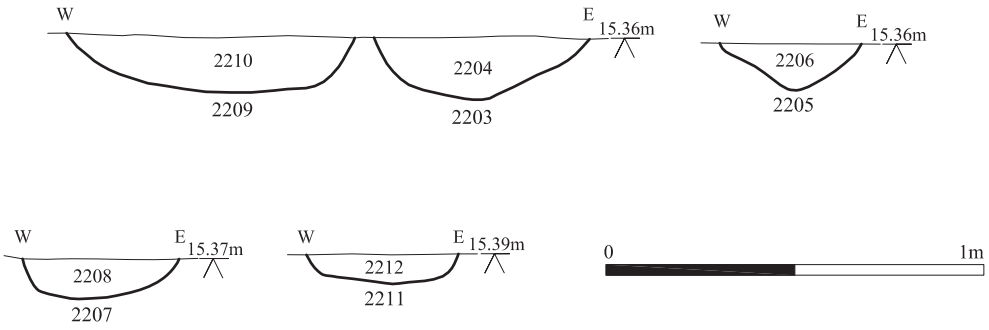


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Fig. 21 Phase 2 feature cluster
Scale Plan 1:100, sections 1:20 at A4

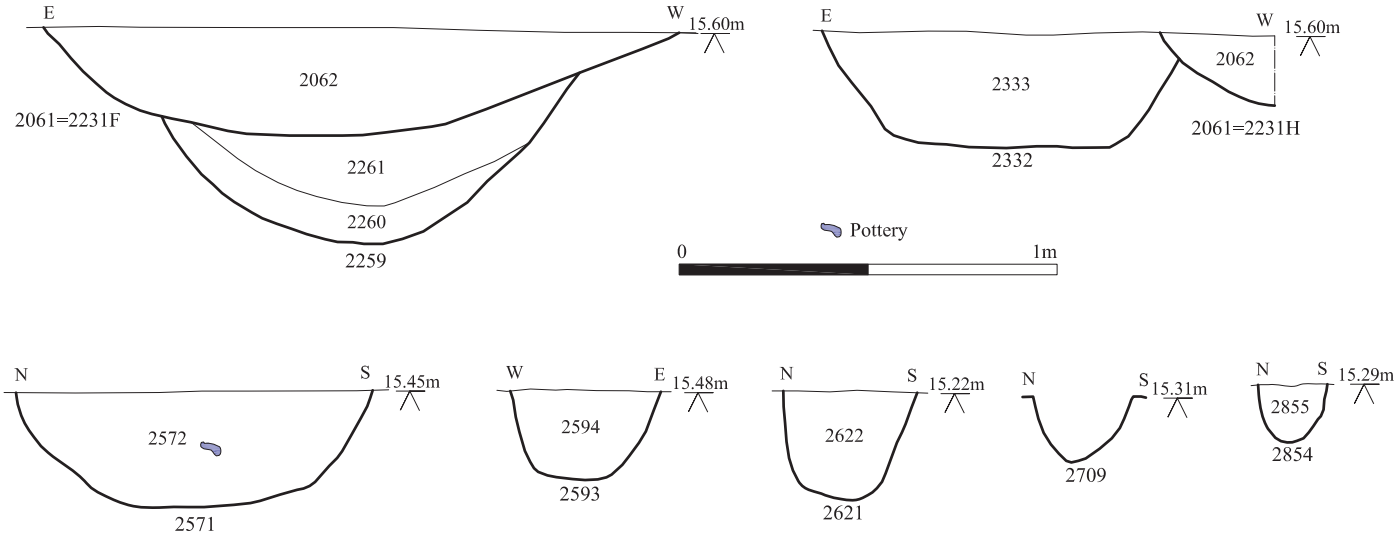

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Fig. 22 Other Phase 2 feature sections
Scale Sections 1:20 at A4

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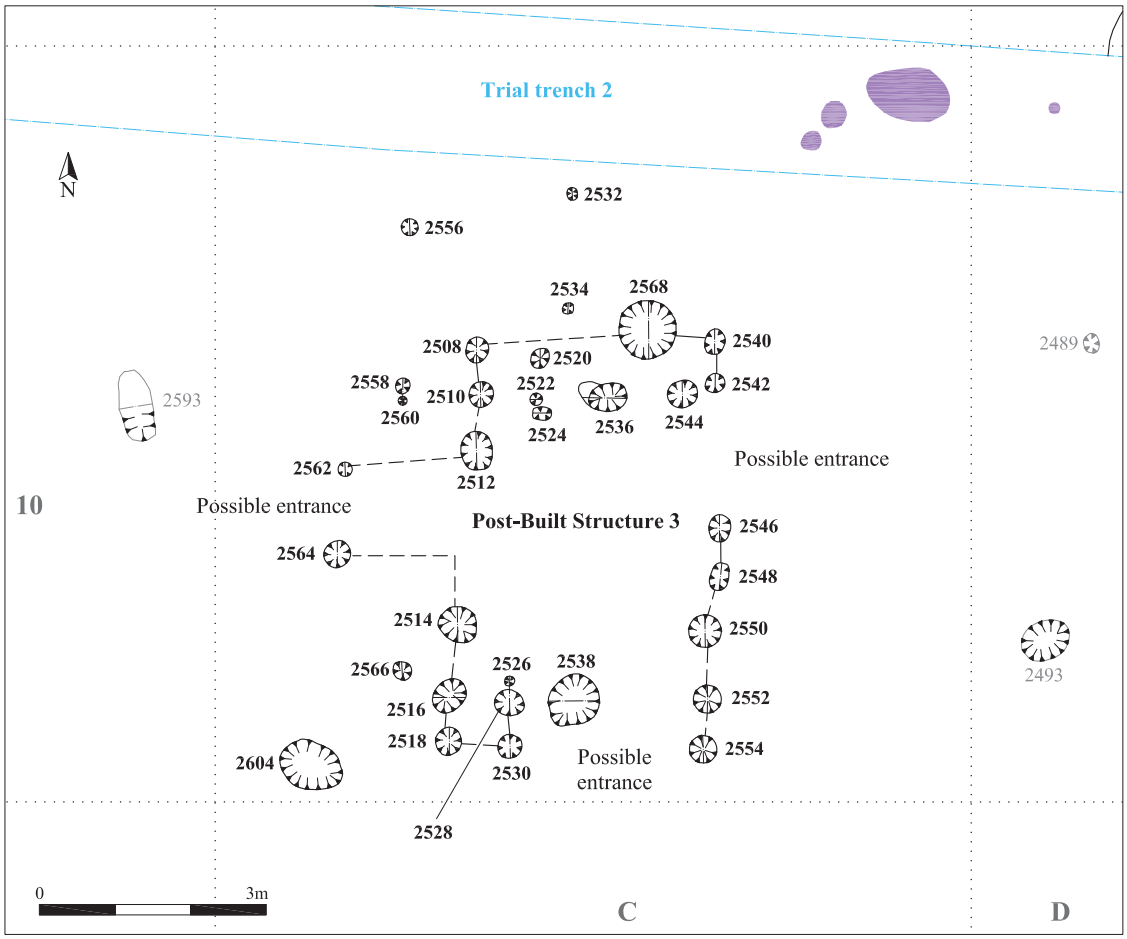
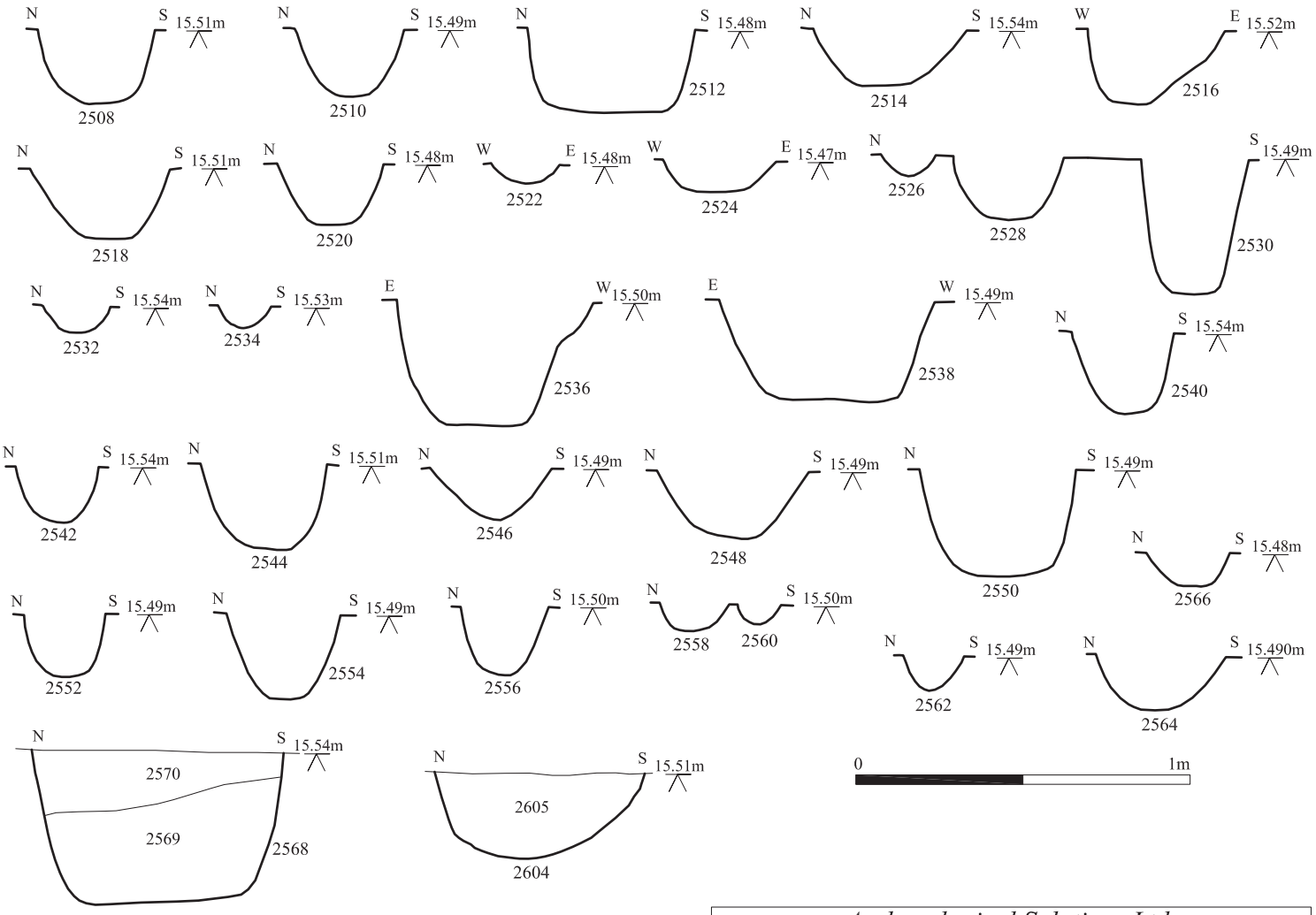
Fig. 23 Phase 3: early to middle Anglo-Saxon (AD 450-850)

Scale 1:400 at A3





Features found during evaluation

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Fig. 24 Post-Built Structure 3

Scale Plan 1:100, sections 1:20 at A4

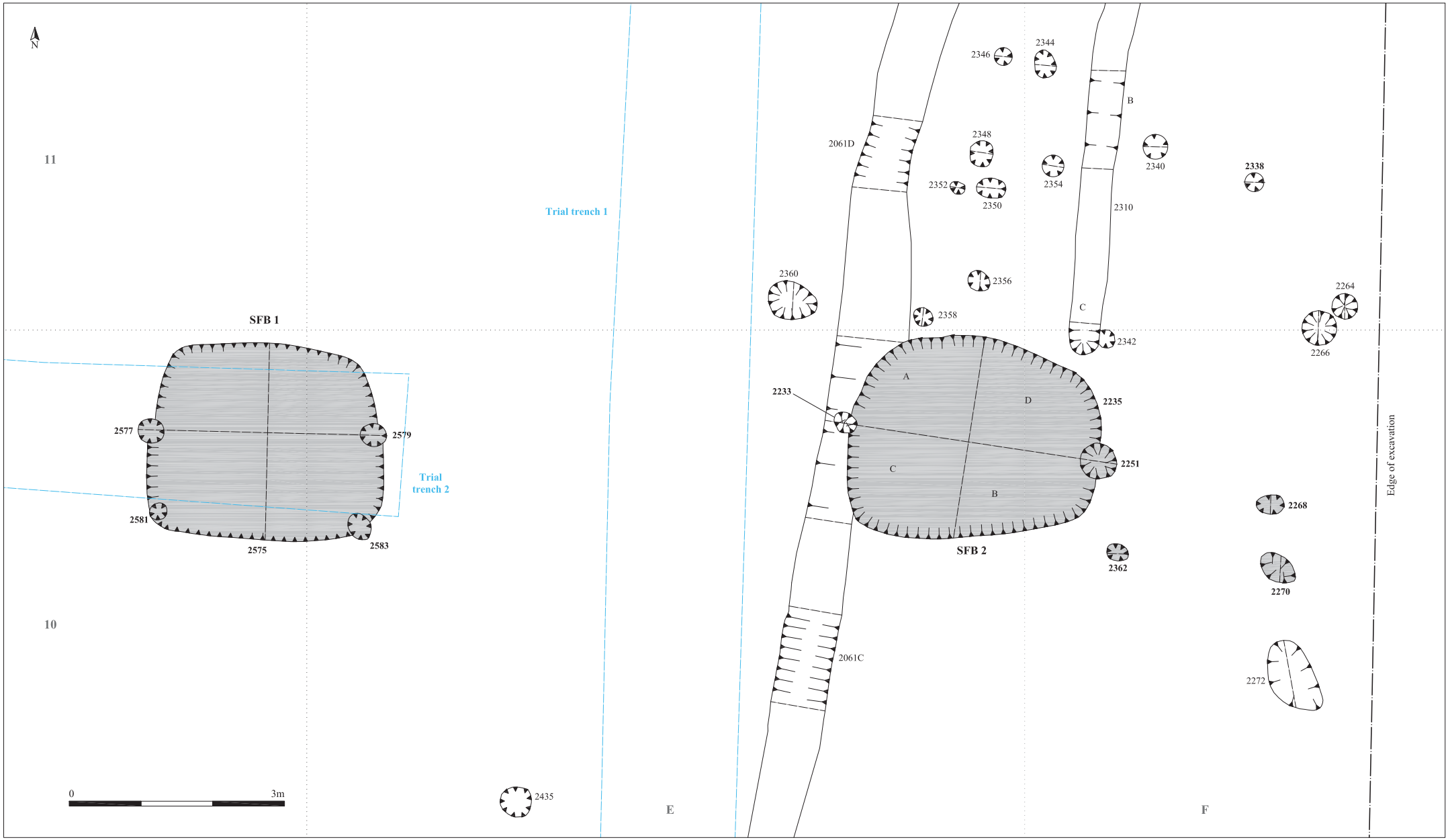

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Fig. 25 Plan of SFBs 1 & 2
Scale Plan 1:50 at A3

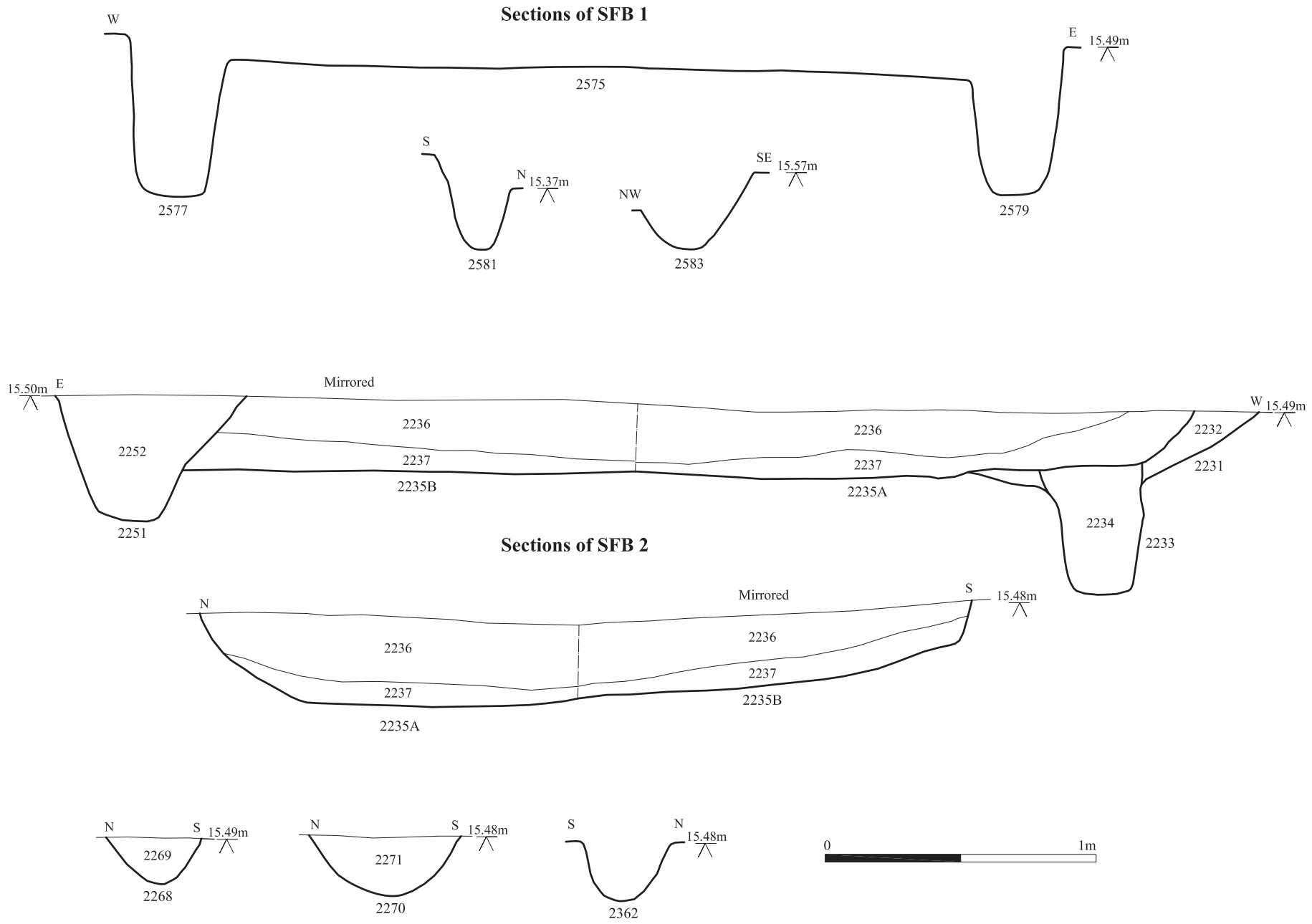

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Fig. 26 Sections of SFBs 1 & 2 with associated pits

Scale Sections 1:20 at A4

Features found during evaluation

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Fig. 27 Plan of SFB 3

Scale Plan 1:100 at A4

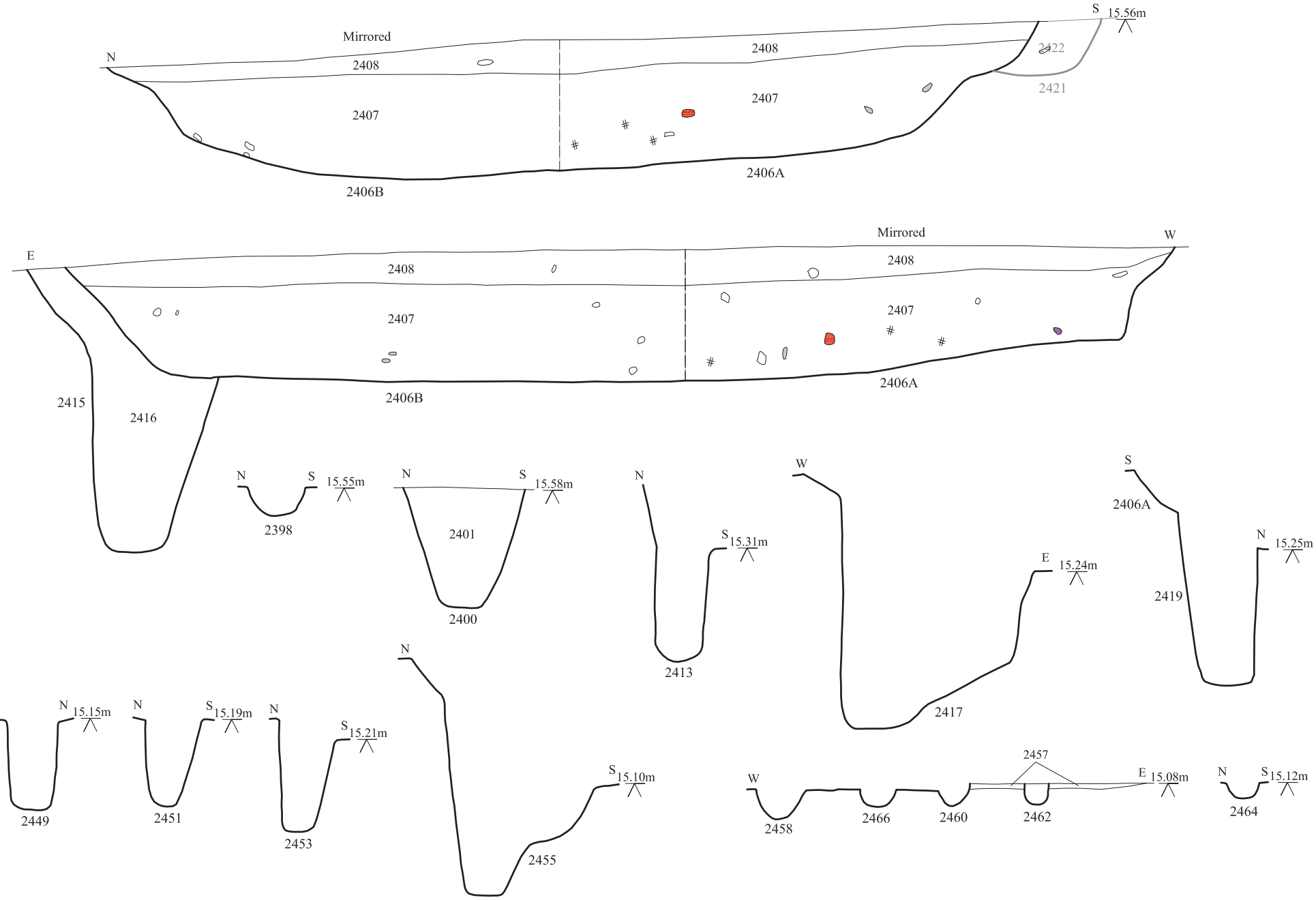

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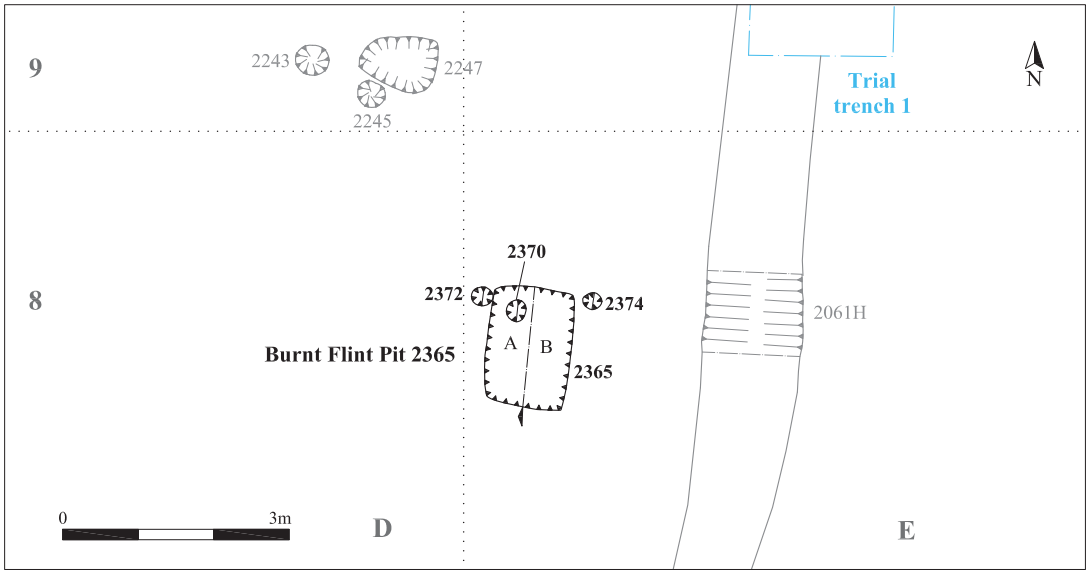
Fig. 28 Sections of SFB 3

Scale Sections 1:20 at A4



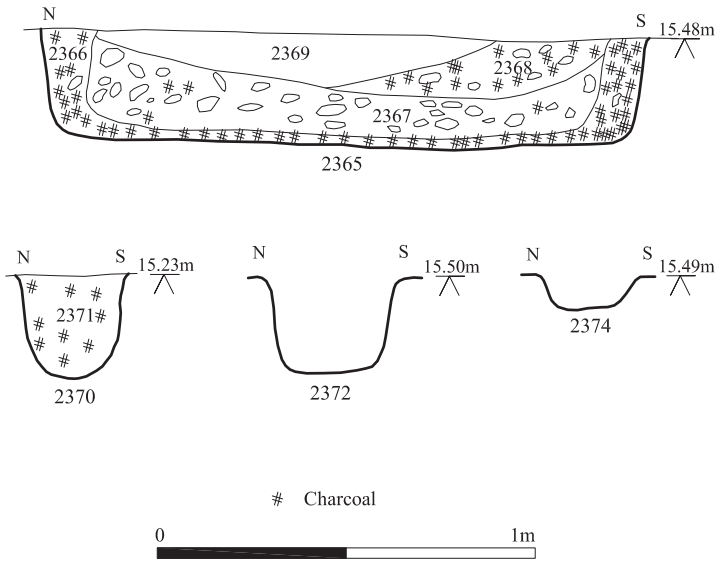


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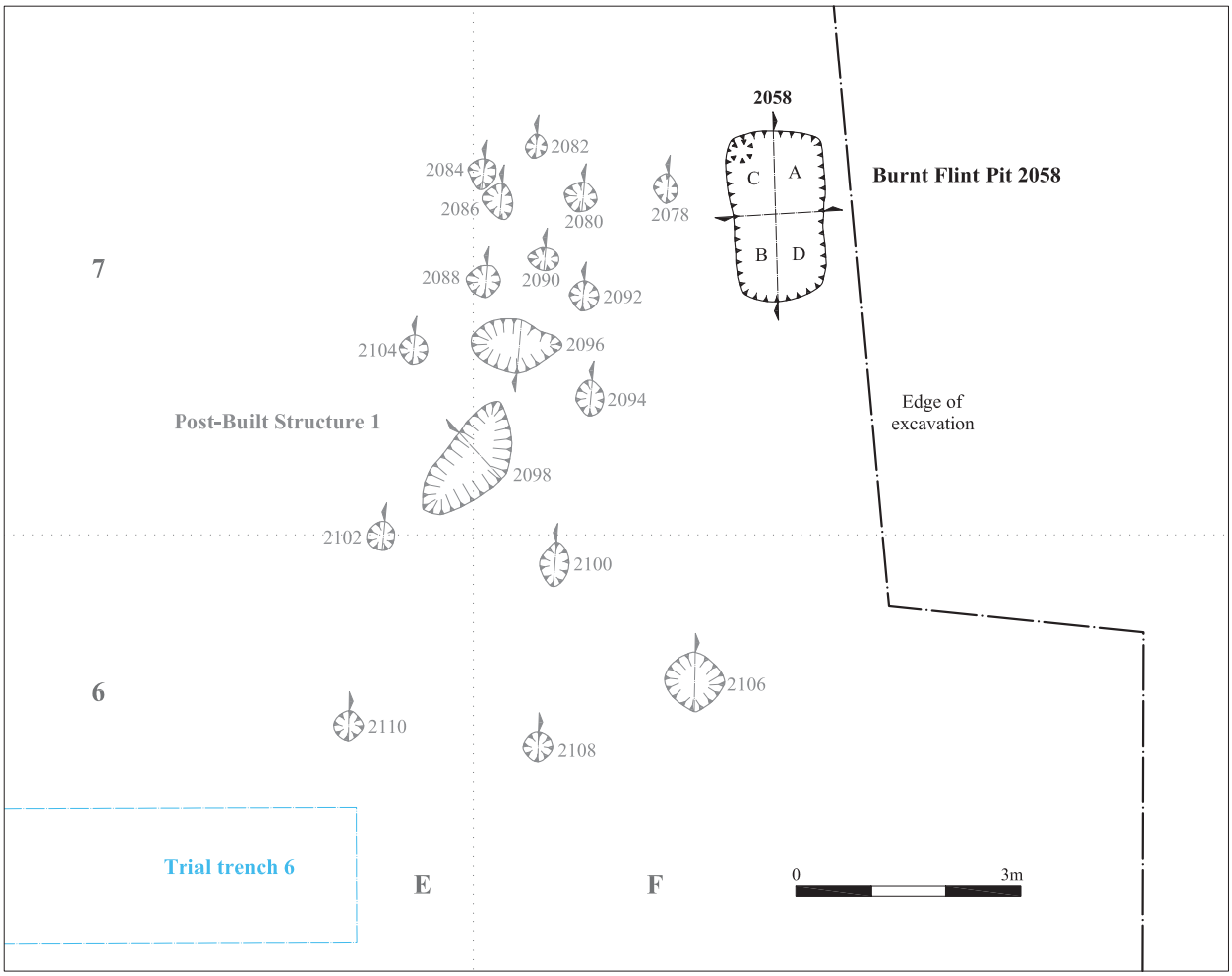
Fig. 29 Burnt Flint Pit F2365
Scale Plan 1:100, sections 1:20 at A4



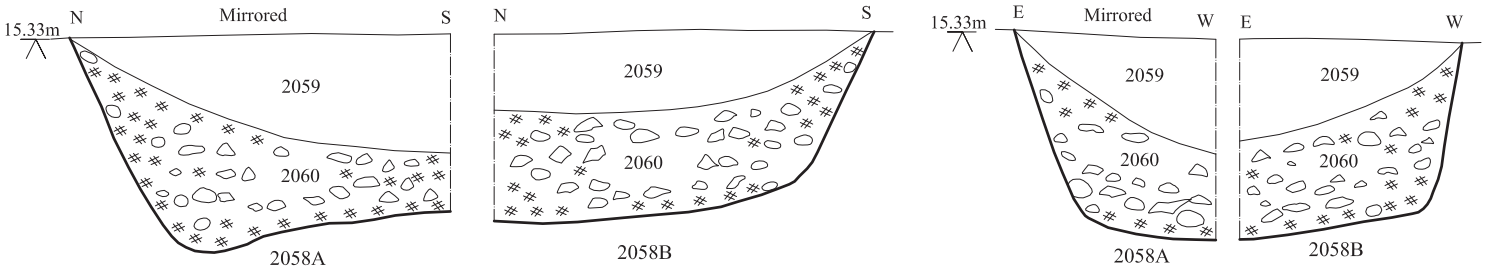


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Fig. 30 Burnt Flint Pit F2058
Scale Plan 1:100, sections 1:20 at A4

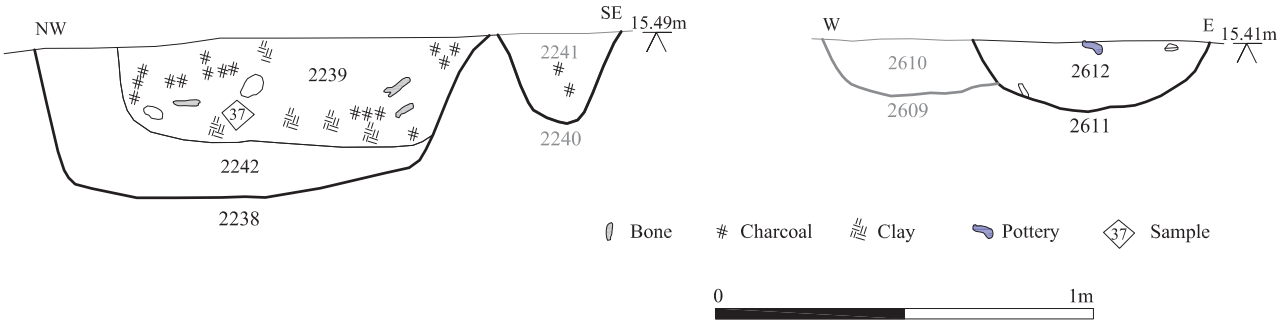

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Fig. 31 Other Phase 3 feature sections
Scale Sections 1:20 at A4

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Fig. 32 Post Anglo-Saxon and undated features

Scale 1:400 at A3

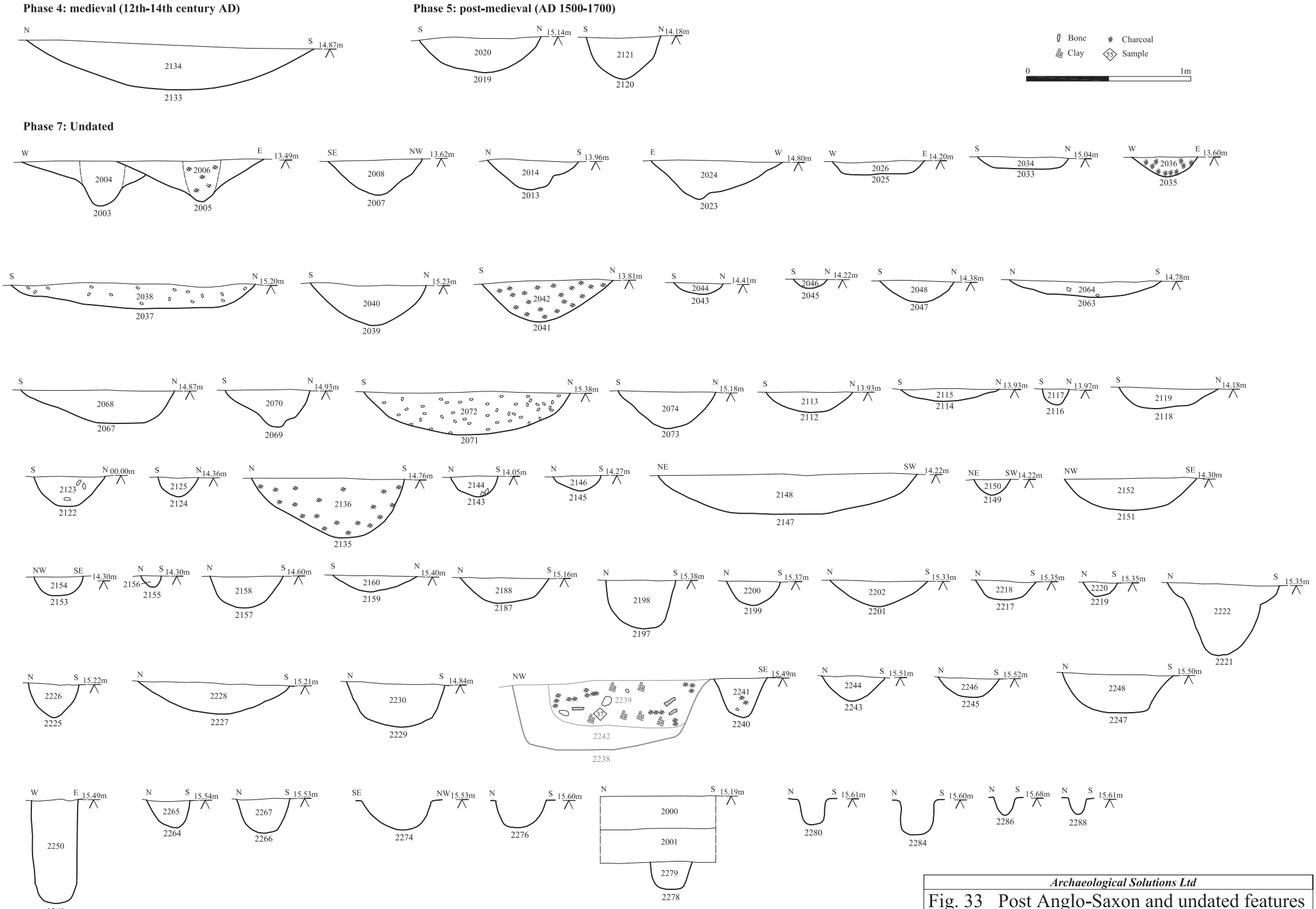

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Fig. 33 Post Anglo-Saxon and undated features

Scale 1:20 at A3

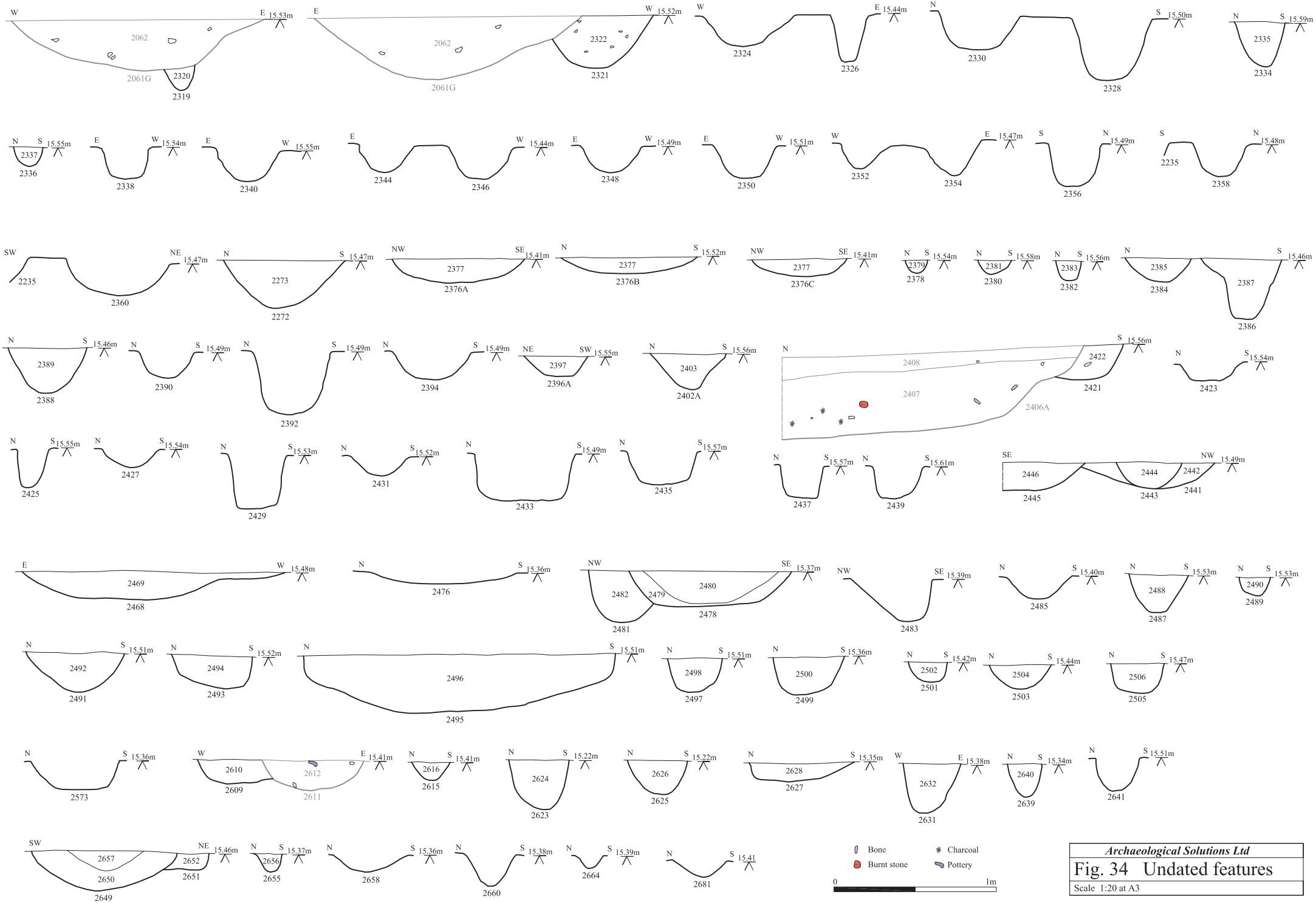

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Fig. 34 Undated features

Scale 1:20 at A3

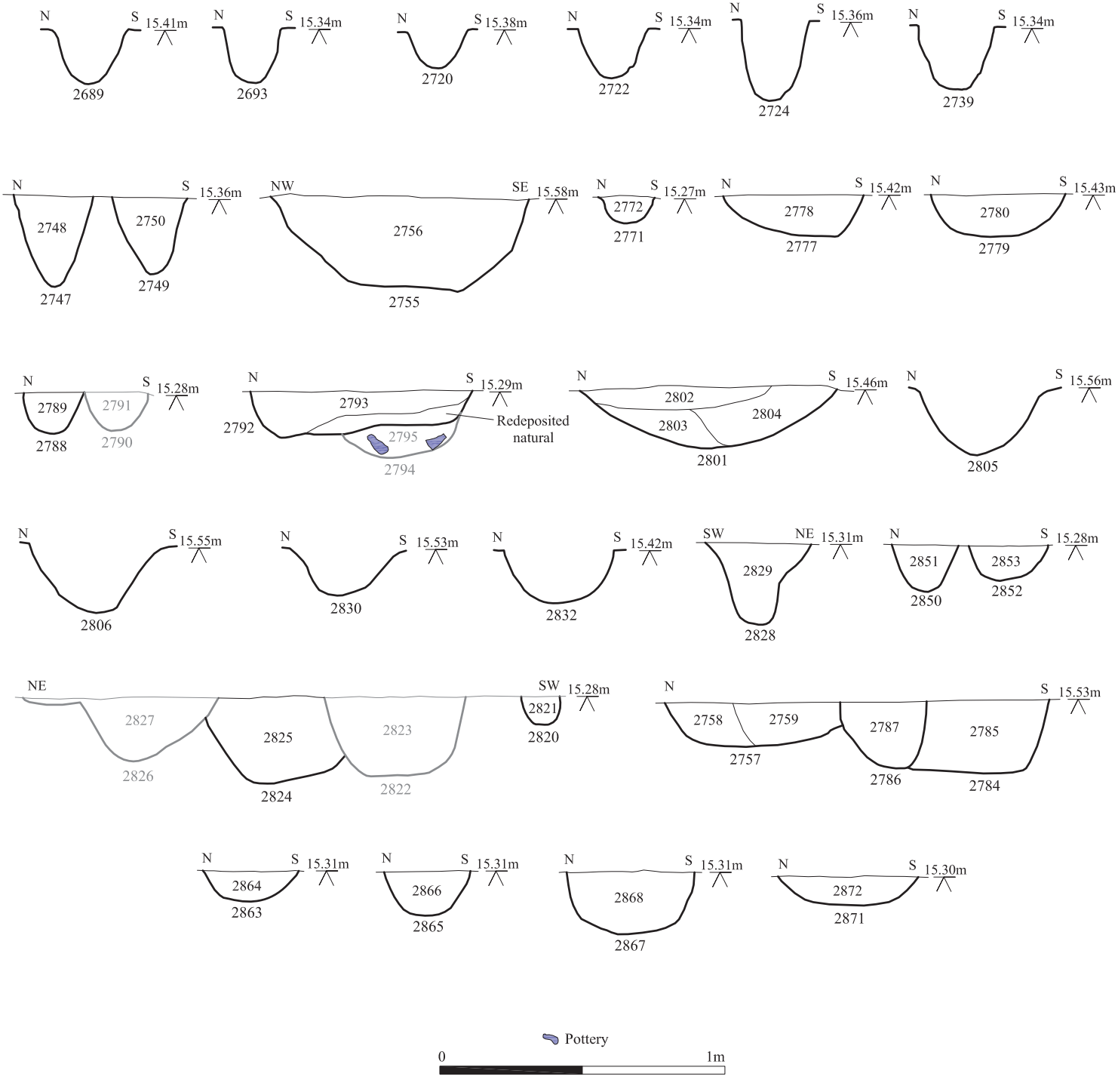

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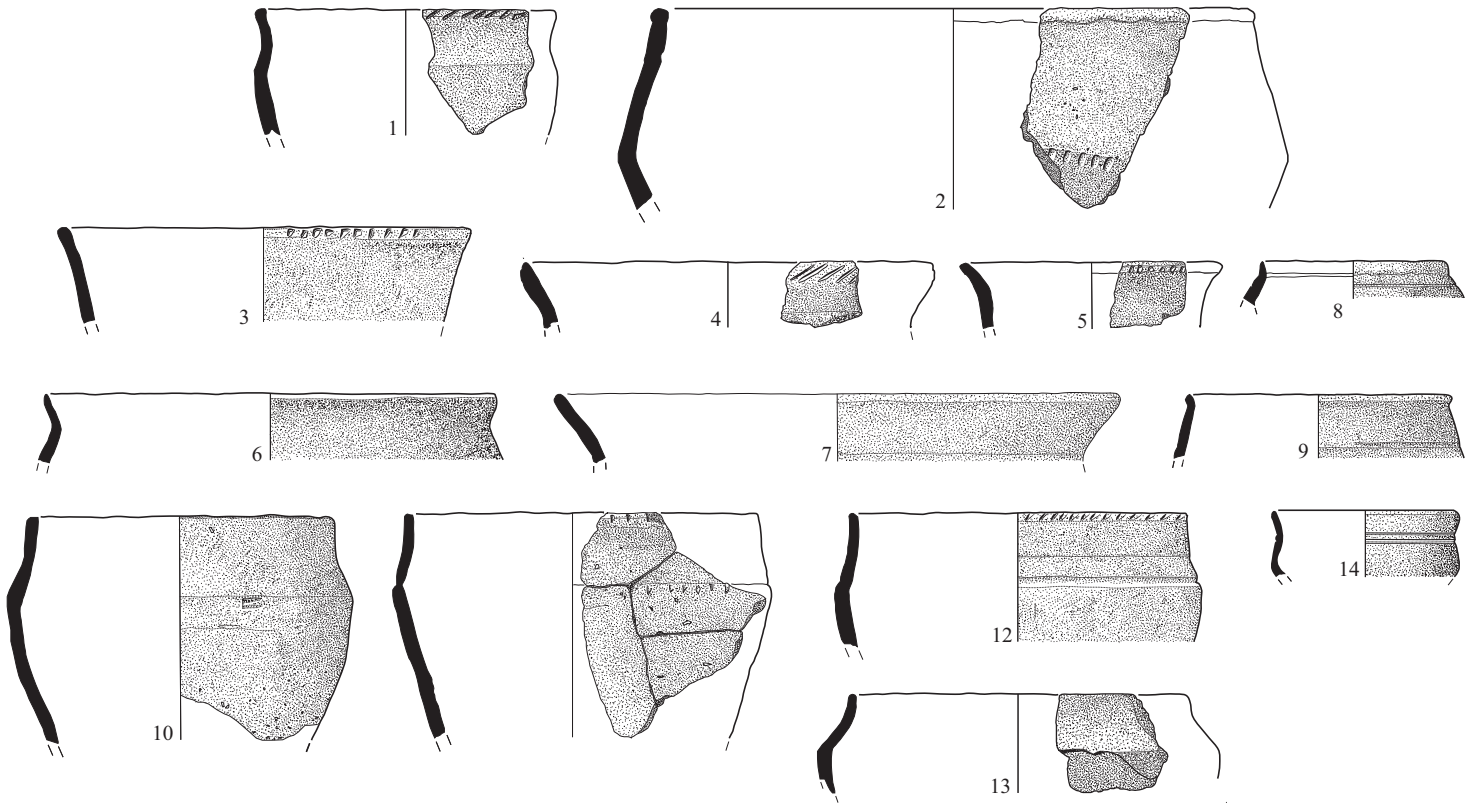
Fig. 35 Undated features
Scale 1:20 at A4

PREHISTORIC



ROMAN

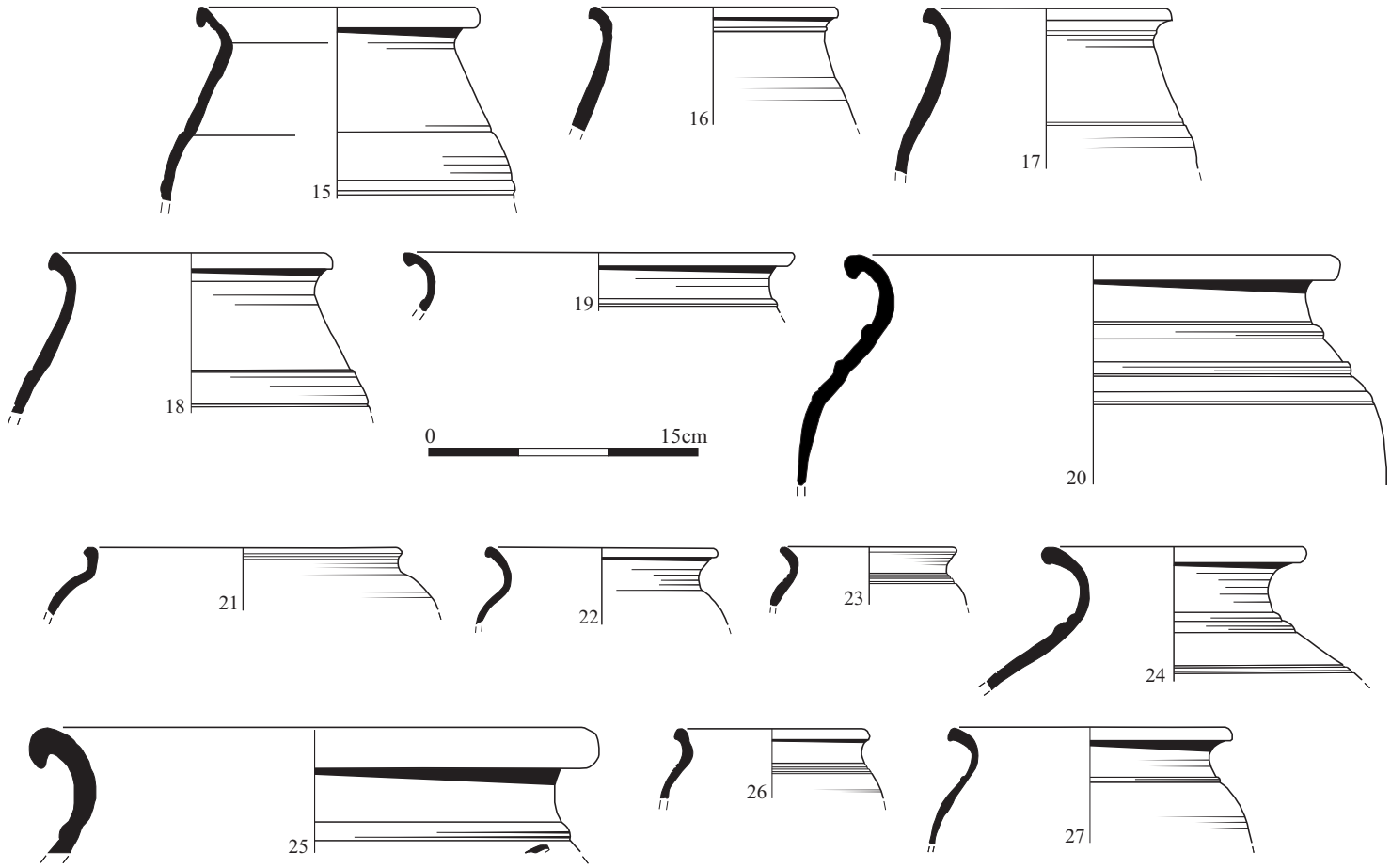


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Fig. 36 Pottery illustrations

Scale 1:4 at A4

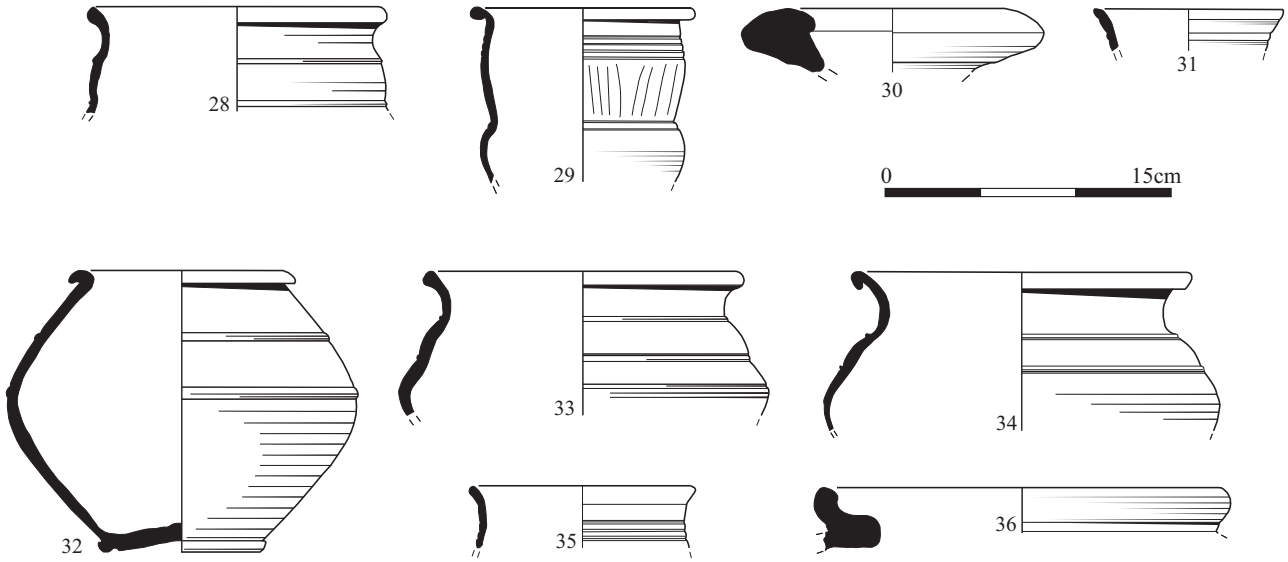

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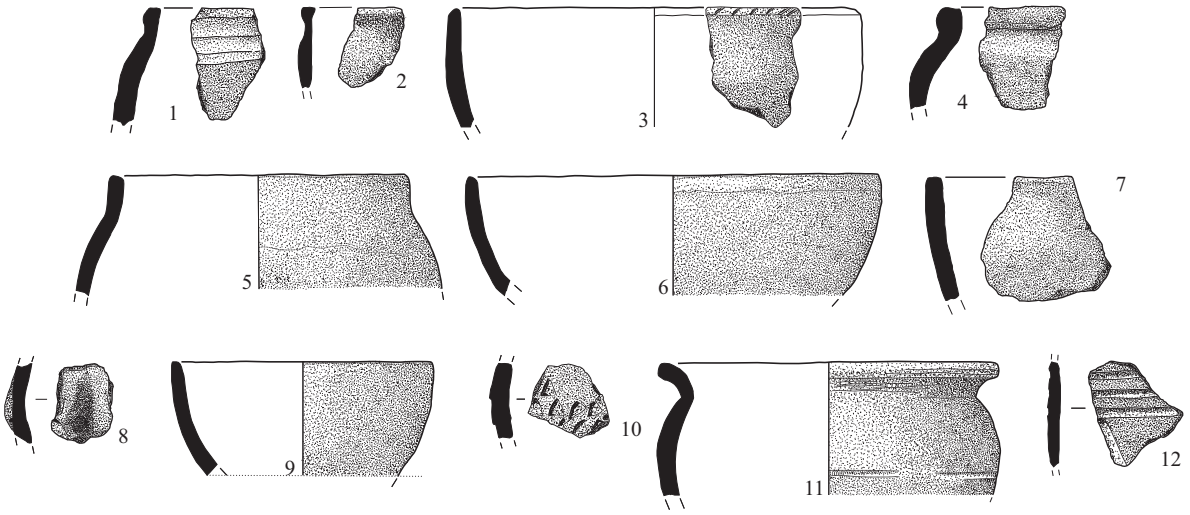
Fig. 37 Pottery illustrations

Scale 1:4 at A4

SAXON



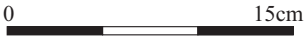


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Fig. 38 Pottery illustrations
Scale 1:4 at A4

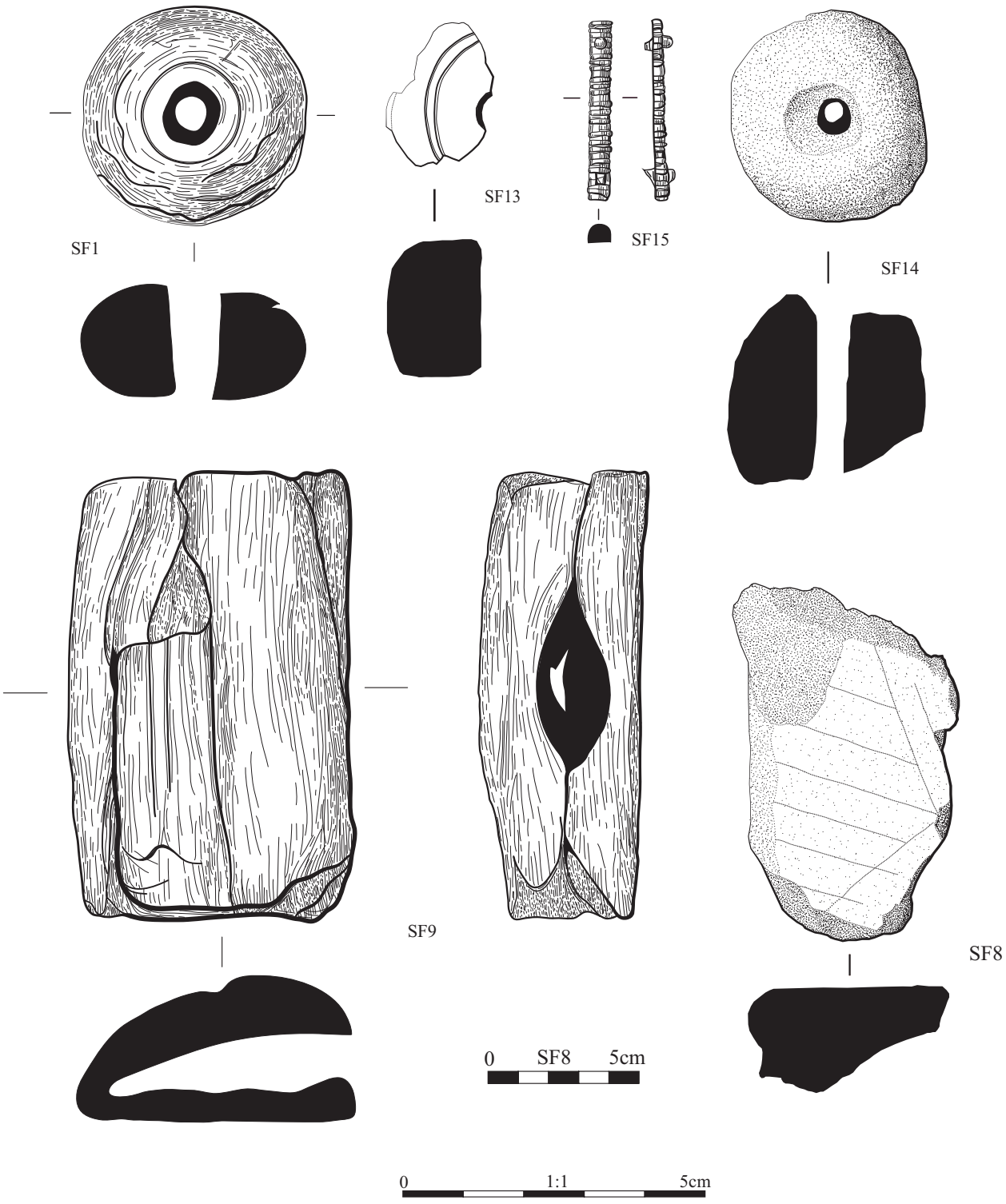

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Fig. 39 Finds illustrations

Scale 1:1, SF8 1:2 at A4

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Fig. 40 Proposed development plan

Scale 1:1000 at A4