



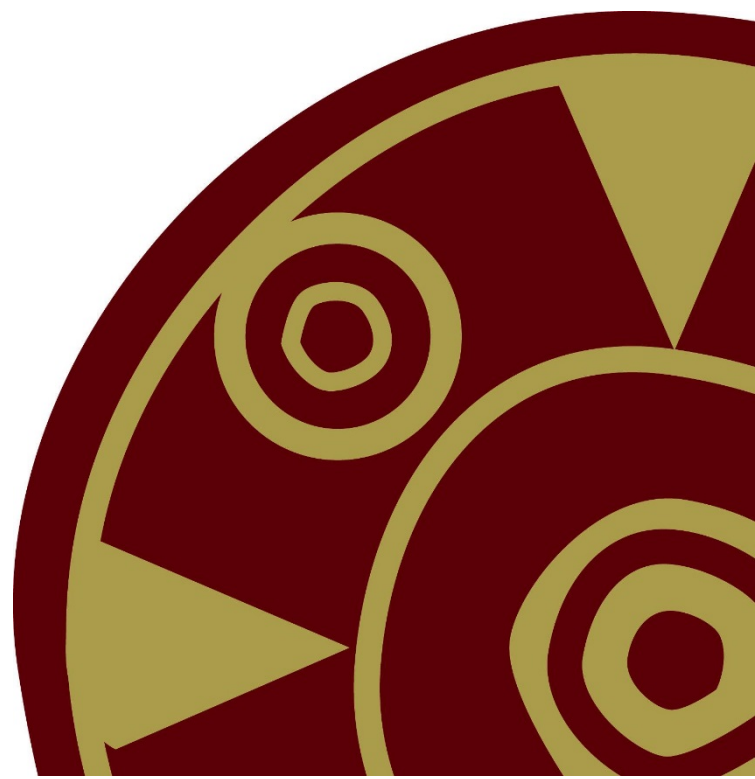
Windmill Hill

Exning, Suffolk

Client:
Lors Homes Ltd

Date:
November 2016

EXG 105 / ESF22346
Archaeological Excavation Report
SACIC Report No. 2016/091
Author: Simon Cass and John Craven
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Windmill Hill, Exning

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Summary

An archaeological excavation was undertaken by Suffolk County Council Archaeological Service Field Team (SCCAS/FT, now Suffolk Archaeology CIC) on land at Windmill Hill, Exning, Suffolk, in June/July 2014, prior to the proposed development of a small-scale residential estate. The excavation targeted a small area where previous phases of geophysical survey and trial trench evaluation had identified the presence of archaeological deposits dating to the Bronze Age and Roman periods.











The excavation confirmed the presence of two ditches of Middle Bronze Age and probable Roman date, both identified in the earlier archaeological evaluation, and two additional small undated pits. The Middle Bronze Age ditch was a substantial feature and has been dated via a modest assemblage of pottery belonging to the Deverel Rimbury tradition (1500–1150 BC) and the radiocarbon dating of two samples. The radiocarbon dating results of 3047 +/-29 BP and 3079 +/-28 BP correlate well with the stratigraphy of the feature and the finds evidence.

While this ditch provides evidence for significant activity in this period in the vicinity it is, at present, an isolated feature and there is little indication of where any focus of activity may lie. It predates that of the significant Iron Age site at EXG 082 however, some 250m to the west, and it seems most likely that associated settlement also lies uphill to the north or west.












Limited monitoring of groundworks in the surrounding area showed that any potential archaeological horizon was not being disturbed, with the majority of the development access road being built up and with associated services not penetrating an extensive modern dump deposit spread across the central and eastern half of the site.

Drawing Conventions

Plans

- Limit of Excavation 
- Features 
- Break of Slope 
- Features - Conjectured 
- Natural Features 
- Sondages/Machine Strip 
- Intrusion/Truncation 
- Illustrated Section  S.14
- Cut Number 
- Archaeological Features 

Sections

- Limit of Excavation 
- Cut 
- Modern Cut 
- Cut - Conjectured 
- Deposit Horizon 
- Deposit Horizon - Conjectured 
- Intrusion/Truncation 
- Top of Natural 
- Top Surface 
- Break in Section 
- Cut Number 
- Deposit Number 0007
- Ordnance Datum $\frac{18.45\text{m OD}}{\times}$

1. Introduction

An archaeological excavation was undertaken by Suffolk County Council Archaeological Service Field Team (SCCAS/FT, now Suffolk Archaeology CIC) on land at Windmill Hill, Exning, Suffolk (Fig. 1) in June/July 2014, ahead of the proposed development of a small-scale estate of eleven residential properties.

The project was undertaken as a requirement of the Suffolk County Council Archaeological Service Conservation Team (SCCAS/CT) the Archaeological Advisor to the Local Planning Authority (LPA), through a condition on planning application F/2012/0653/OUT), in accordance with national planning policy. The scope of the project was detailed in an SCCAS/CT Brief produced by Jess Tipper (dated 16/06/2014).

The project followed an earlier program of geophysical survey and trial trench evaluation undertaken by Pre-Construct Archaeology Ltd (PCA) and Cranfield University in September and October 2012 (EXG 099, Hinman 2012). This work had identified features dating to the Middle Bronze Age and potentially also the Roman period, with the Bronze Age activity predating the major Iron Age enclosure ditch seen to the west of the site (EXG 082) and the later Roman finds indicating occupation extending into the historic period.

The targeted excavation of the area around two proposed plots in the north-eastern corner of the site was subsequently carried out in accordance with a SCCAS/FT Written Scheme of Investigation (WSI, Appendix 1) approved by SCCAS/CT prior to commencement. The project was commissioned by Lors Homes Ltd.

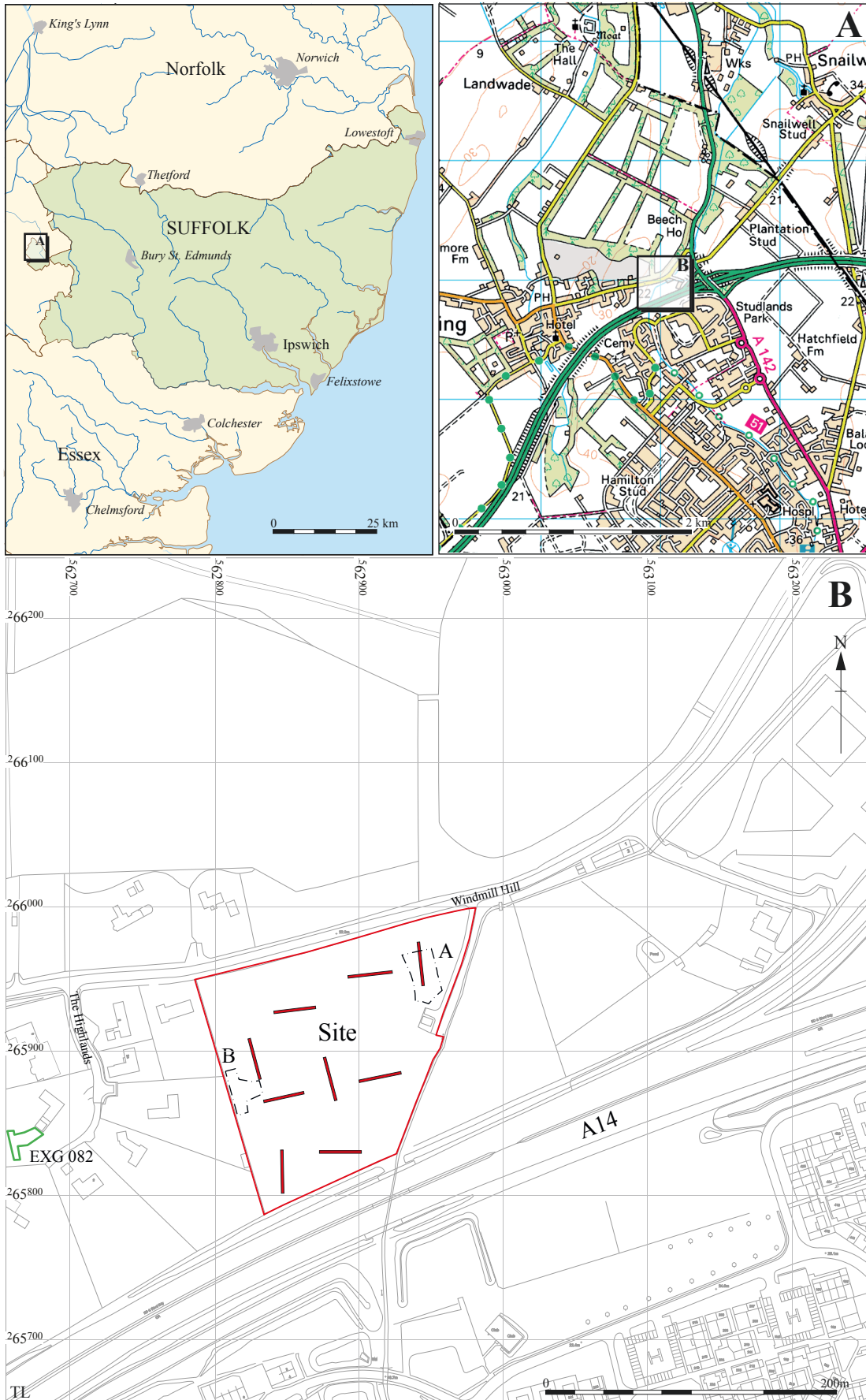


Figure 1. Site location and previous phase evaluation trenches (red), site excavation and monitored strip areas (A and B) and relevant local HER data (green)

2. The Excavation

2.1. Location, geology and topography

The site lies to the east of Exning village centre and to the north of Newmarket on the south-east facing slopes of Windmill Hill, a ridge of high ground aligned south-west to north-east that overlooks tributaries of the River Snail to the east and the New River to the west, at a height of c.15m-30m above Ordnance Datum.

The site geology consists of well-drained coarse and fine loamy soils (Ordnance Survey 1983) overlying superficial river terrace deposits of sand and gravel which in turn seal chalk bedrock of the Zig Zag formation (British Geological Survey website).

2.2. Archaeological and historical background

The site lies in close proximity to important archaeological remains which have been recorded to the west on Windmill Hill. Evidence of an Early Anglo-Saxon cemetery of potential national importance lies 250m to the west (EXG 005) and two graves are also recorded as having been found 130m to the west during the excavation of footings for 8, The Highlands in 1981 (EXG 028), one of which had iron grave goods suggesting a male burial of Early Anglo-Saxon date.

Small scale archaeological investigations at EXG 028 during construction of extensions to 8, The Highlands, at 14 Thawnie Croft, Windmill Hill (EXG 086) and in the garden of 8, The Highlands (EXG 090) have not found any further evidence of burials although excavations at 7, The Highlands (EXG 082, approximately 260m west of the current site) identified a substantial Iron Age ditch running east-west across the line of, and at the top of, the natural slope. This was interpreted as potentially being part of a hill-top enclosure which had been used for the disposal of domestic waste upon falling into disuse. The upper fills of the ditch contained one of the largest Iron Age pottery and worked flint assemblages known in Suffolk, with fragments of nearly 800 separate vessels of a domestic nature being recovered. A date range of 800-600/550 BC for the assemblage has been confirmed by AMS radiocarbon analysis. The ditch is currently an isolated feature but indicates the presence of a substantial and hitherto unknown Early Iron Age settlement in the immediate vicinity.

The initial phase of archaeological investigation on this site included both trial trenching and geophysical survey of the area (EXG 099, Hinman 2012). The geophysical survey identified a large area of modern disturbance, interpreted by the evaluation as a modern quarry pit, as well as a small number of fairly weak linear anomalies. The trial trenching located features of Middle Bronze Age date in the north-eastern corner of the site, thought to indicate the potential for settlement of some status within and to the north of the site, and two mid Roman ditches possibly forming part of an enclosure or field system which were seen in the southern and north-eastern parts of the site. This area, in the north-eastern corner of the site, was identified as having the greatest potential for further investigation and as such, was demarked for full excavation as part of the next phase of work.

3. Methodology

The site identified for excavation due to the results of the previous evaluation undertaken in 2012 by PCA was where a concentration of significant features dating to the Middle Bronze Age and Roman period were located and recorded in the north-eastern corner of the site (area A on Fig. 1). The large area of modern disturbance identified by the geophysical survey formed the western boundary of the excavation area, which as a result was significantly reduced.

A new road being constructed through the centre of the site was originally intended to be monitored but after discussion with the groundworkers and the client it was ascertained that the majority of its length would not in fact involve penetrative groundwork, the majority of the route requiring embankment instead, so only the westernmost end was monitored (area B on Fig. 1). No finds or features were encountered there and no further mention is made of this aspect of the archaeological fieldwork.

The excavation area was stripped with a 14-tonne tracked mechanical excavator fitted with a toothless 'ditching' bucket under constant archaeological supervision with the resultant spoil stockpiled close to the edges of the excavation area (forming a bund to the eastern and northern sides). The area to be stripped was identified in consultation

with the Archaeological Conservation Officer, with reference to the results of a previous phase of field evaluation via trial trenching and located using a high-accuracy GPS system. In total an area of approximately 640m² was stripped, with three additional small test pits around the south and western sides of the excavation area.

All features were hand excavated, with linear ditches being sampled at approximately 10% (equating to a section of 1m length being dug every 10m). Discrete pits and postholes were half-sectioned (50% excavated) and recorded, then fully excavated to maximise artefact recovery and soil sample retention. All features were scanned with a metal detector and periodic area scans were undertaken in order to attempt to recover any stray finds not within identified features. The prehistoric ditch was additionally sampled to maximise finds recovery from the most important deposit on the site.

Environmental samples were taken for processing and analysis from appropriate features, with at least one section sampled from each feature with multiple excavated sections. These samples were processed in-house and the recovered ecofacts sent to appropriate specialists while any significant bulk finds recovered from this source were included in the main finds reporting process. Flots from two samples were subsequently selected for radiocarbon dating.

Individual feature plans and sections were all hand-drawn on permatrace sheets in accordance with SCCAS standard guidelines, and the site was surveyed using a Leica GPS survey instrument to an accuracy of c. 0.02m.

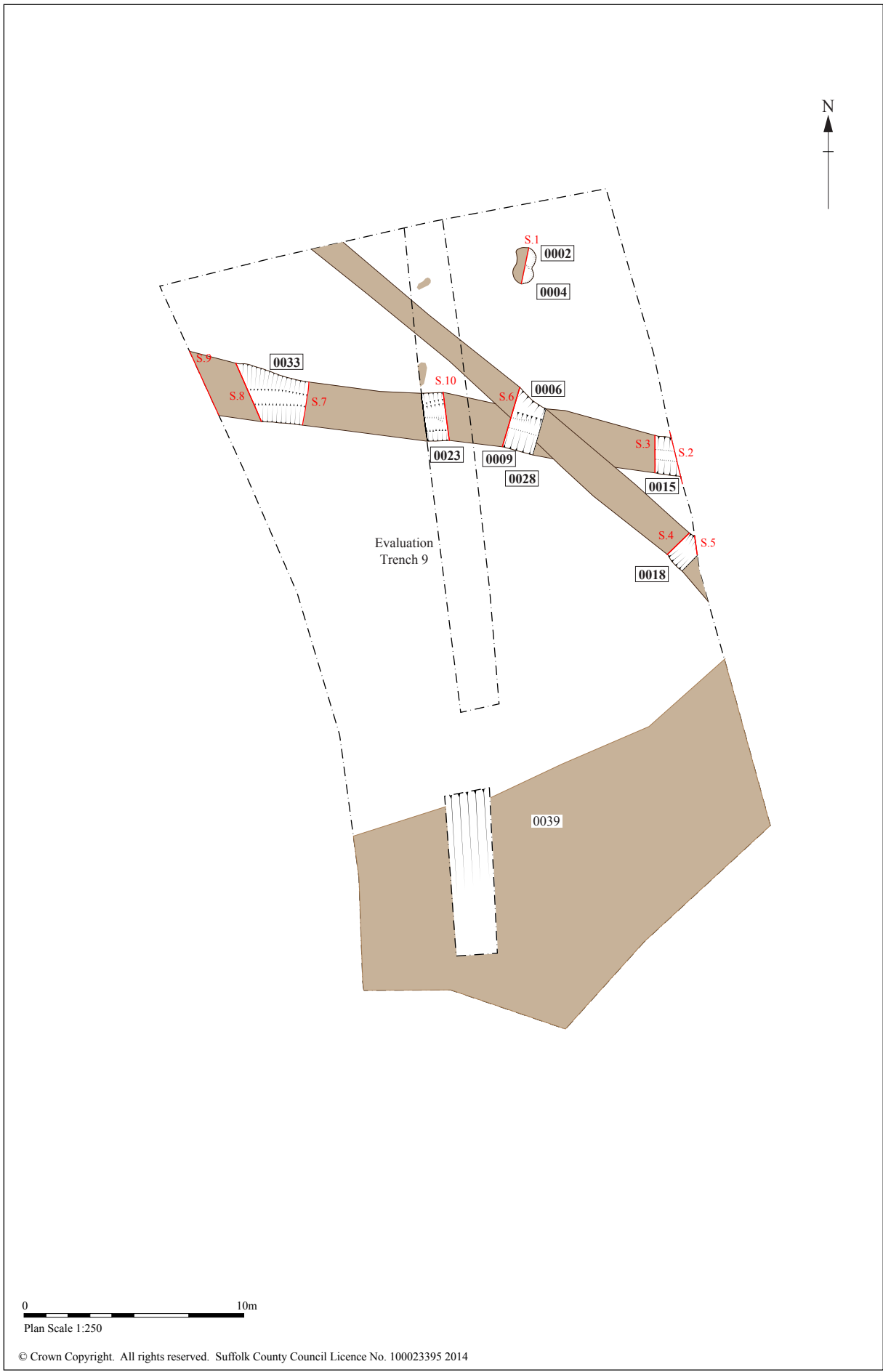


Figure 2. Site plan, showing excavated features as well as evaluation trench 9

4. Results

The results of this excavation can be summarised in three phases; prehistoric (Middle Bronze Age), Roman and undated. Figure 2 shows all the encountered features, as well as those found within the previous evaluation trench (also shown) which were not re-excavated.

4.1. Phase I: Middle Bronze Age

A single ditch (Group Number 0040) was recorded, orientated approximately east/west. During the initial evaluation phase, it was assumed that this ditch contained a possible beam slot or palisade although only the upper fill of the ditch was excavated at the time due to a misidentification of a slumped deposit of natural sands. The four full profiles excavated through this feature did not support this interpretation, rather suggesting that the apparent beam slot/palisade may have just been part of a redefinition of an existing boundary ditch.

The stratigraphy observed in the ditch segments varied although the general profile remained similar across all segments - a wide, moderately sloped upper portion with a narrow steep/vertically sided slot to the base, approximately 2.0m wide with a depth of between 1.65m and 1.85m below natural surface levels. The lowest fills of this ditch (in the narrow steep-sided slot) consisted of bands of slumped sand and subsoil deposits, whilst the fills of the upper portion were more subsoil-like. Towards the middle of the feature in segments 0009, 0028 and 0023 (Pl.3 and PL.4) and apparently just stretching to segments 0015 and 0033 (Pl.1 and PL.2) but not passing through them a very dark blackish brown deposit was noted with a high quantity of charcoal, worked flint and pottery fragments. This deposit was also further excavated between sections 6 and 10 to maximise finds recovery from the feature although full recording of the additional excavated profiles was not undertaken. Environmental samples taken from this deposit contained charcoal fragments and charred cereal fragments.

The pottery recovered from the ditch was of Deverel-Rimbury style, dating to the Middle Bronze Age. Material recovered from the sampling of the upper (0007) and lower (0008) fills in section 0009 were sent for radiocarbon dating and have returned results of 3047 +/-29 BP and 3079 +/-28 BP respectively (Appendix 4).

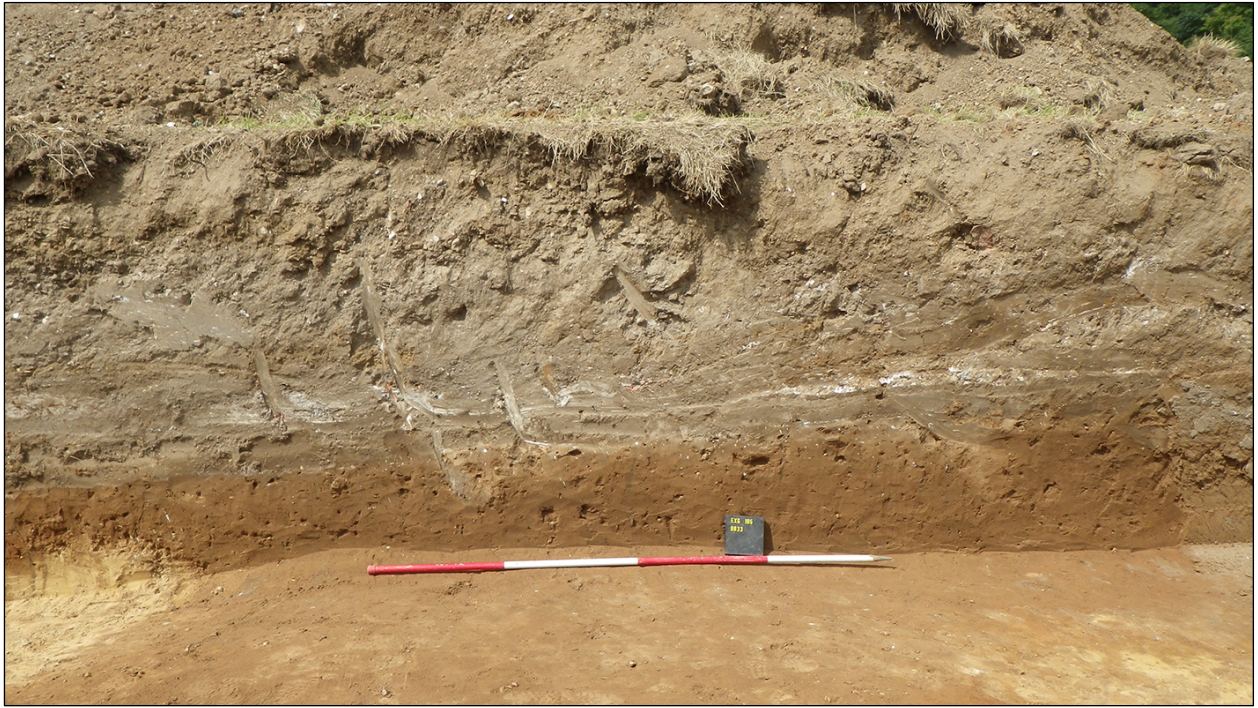


Plate 1. Ditch 0033 facing west showing modern dump deposit (S.9, 2m scale)



Plate 2. Ditch 0033 facing east (S.7, 2m and 1m scales)



Plate 3. Ditch 0028, facing east (S.10, 2m scale)

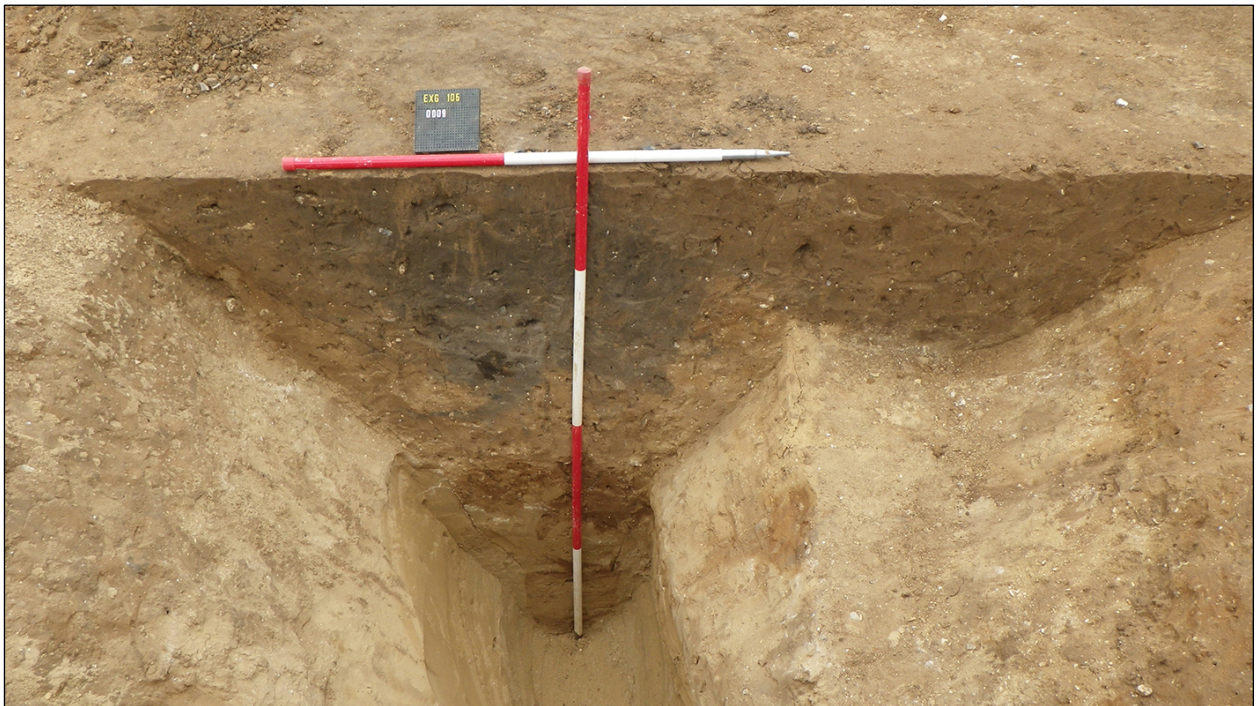


Plate 4. Ditches 0006, 0009 and 0028 facing west (S.6, 2m and 1m scales)

4.2. Phase II: Roman

Ditch 0041 (comprising segments 0006 and 0018, Pl.4 and Pl.5) was 24m long, 1.8m wide and up to 0.6m deep with moderately steep, slightly concave sides to a shallow/broad concave base and was orientated northwest/southeast. It clearly cut through the earlier Middle Bronze Age ditch 0040 at Section 06 – both in plan and section (Pl.4). In the evaluation this feature was identified as being of Roman (mid second century) date although the only dateable evidence recovered during the excavation was a single sherd of prehistoric pottery, possibly dating to the later Iron Age, believed to be as a result of residual deposition. It should be noted that the Roman pottery dating this feature was also only a single sherd, weighing 1g, recovered during the evaluation phase.



Plate 5. Ditch 0018 facing northwest (S.4, 1m scale)

4.3. Phase III: Modern

The deposits noted in the evaluation and referred to as a possible quarry pit were identified across the excavation area. They were the prime reason for the reduction in size of the excavation. After observation during the overburden stripping, as well as some test-pitting to the west and south of the excavation area, it appears that these deposits were modern (various modern CBM fragments, metal objects and part-degraded wood were found within the layers) and that they did not penetrate the underlying subsoil deposits as might be expected from a quarry. It seems likely that they are the remnants of either imported soil for embankments along the route of the A14, or a spoil dump from nearby cuttings. Supporting evidence for this may be the site's location, just off a junction and in an area where a flyover, embankments and a cutting were required to be constructed (the author has previously encountered similar deposition of soil near junction 11 of the M4 with between 2.1m and 3.8m of deposited material a similar distance away from the junction to the present site).



Plate 7. Test pit showing depth of modern overburden, facing west (2m scale)

4.4. Undated

Two intercutting pits (0002 and 0004, Pl.6) were located to the north of the intersection of ditches 0040 and 0041. No relationship was visible between these two intercutting pits and no dateable material was recovered from either feature.

Pit 0002 was 0.9m+ long and 1.0m wide with an irregular ovoid shape, with its southern edge obscured by pit 0004 to the south. It was up to 0.18m deep with moderately steep sloped sides to an irregular flattish base and was filled with a mid orangey brown compact silty clay with occasional small angular and rounded flints

Pit 0004 was oval in plan, though partially obscured by to pit 0002 to the north, with moderately sloped concave sides and a slightly concave base. It measured 1m+ in length, 0.98m wide and was 0.22m deep.



Plate 6. Pits 0002 and 0004, facing west (1m scale)

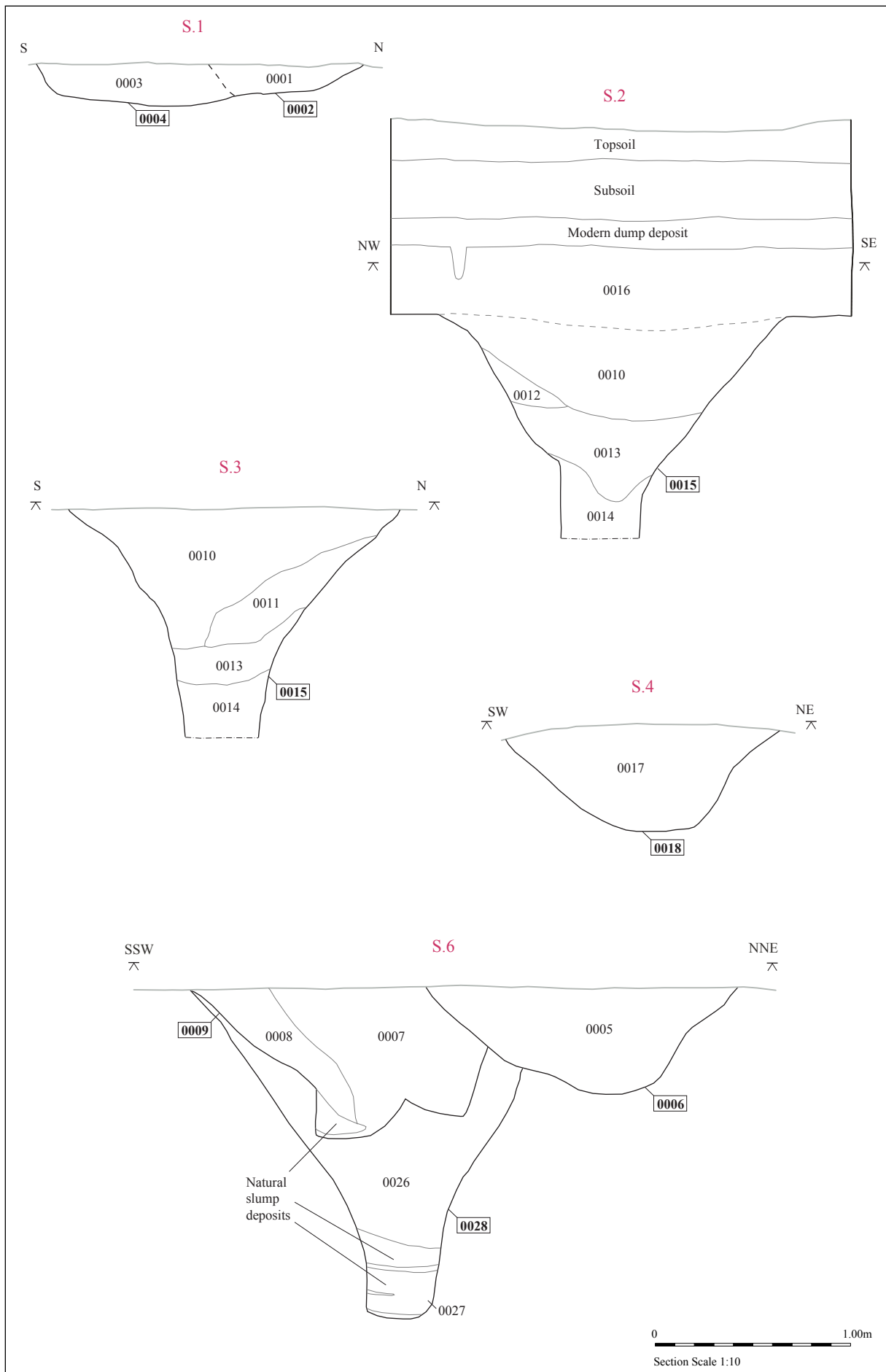


Figure 3. Sections 1-4 and 6

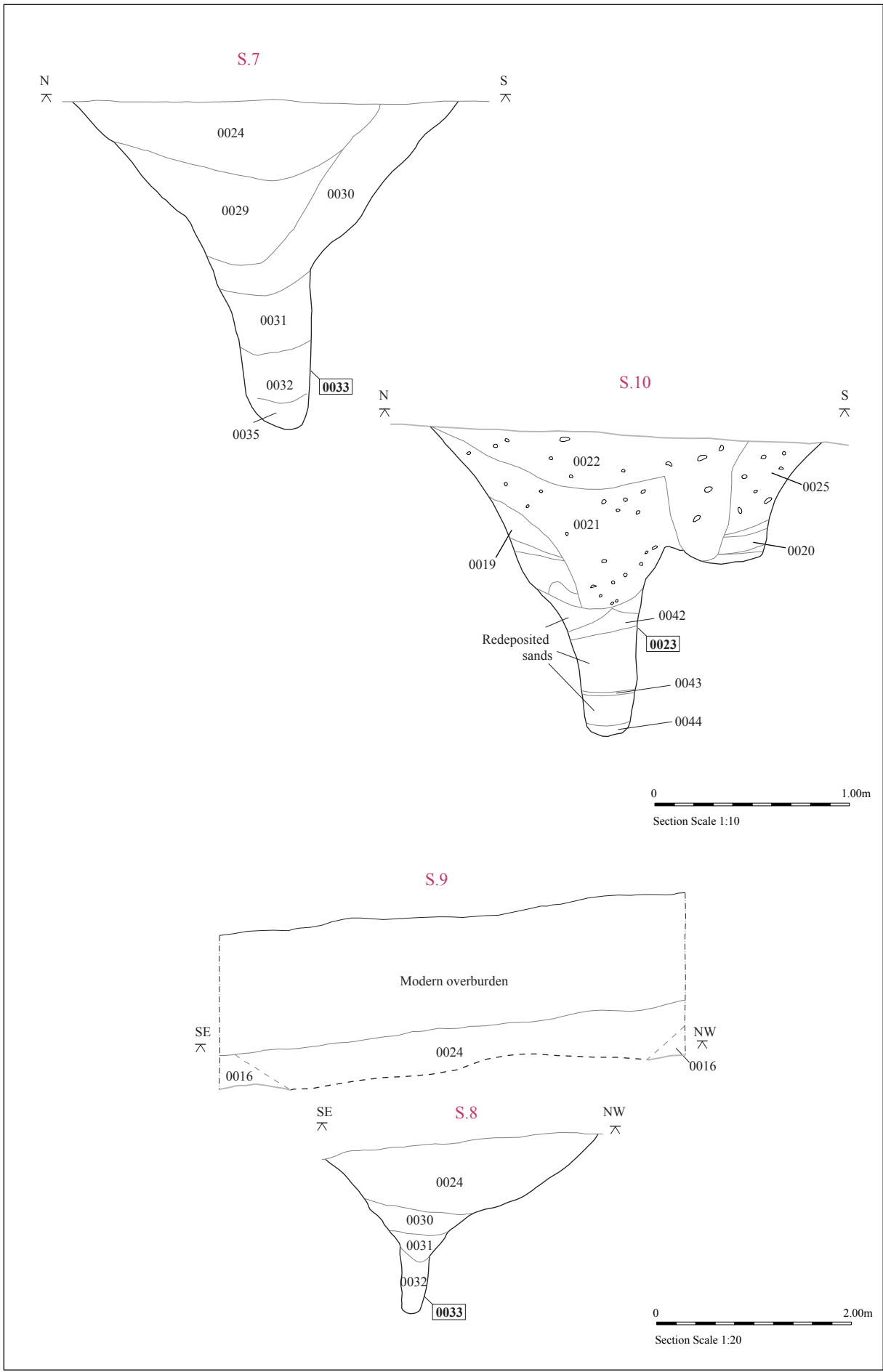


Figure 4. Sections 7-10

5. The finds evidence

Cathy Tester

5.1. Introduction

Finds were collected from twelve contexts in three features or feature groups during the excavation and the quantities by context and material are listed in Table 1 below. Finds recovered during the processing of three environmental samples are included in the overall finds quantities from contexts 0007, 0008 and 0010.

Context	Feature	Pottery		Flint		A Bone		Miscellaneous	Date
		No.	Wt/g	No.	Wt/g	No.	Wt/g		
0007	0009	13	20	34	95	9	57	Bt flint: 56-256g, Bt St.:4-74g	MBA
0008	0009	4	4	6	12	30	5	Bt flint: 87-14g	MBA
0010	0015			11	267	3	30	Bt flint: 3-10g	(Preh)
0013	0015	3	4	7	155	2	26	Charcoal: 1-2g	MBA
0017	0018	1	11			1	69	Oyster 1-7g	Preh
0021	0023	4	3	3	22	5	10		MBA
0024	0033			20	492	101	457		(Preh)
0029	0033	5	7	7	95	0	0	Charcoal: 2-1g	MBA
0030	0033			3	58	8	85		(Preh)
0034	0009	13	11	2	23	20	29	Fired clay: 9-13g	MBA
0036	0009			1	8	27	97	Charcoal: 9-1g	(Preh)
0037	0037			1	1				
Total		43	60	95	1228	206	865		

Table 1. Finds quantities by context

5.2. Prehistoric pottery

5.2.1. Introduction and methodology

Forty-three small sherds of undecorated hand-made prehistoric pottery weighing 60g were recovered from seven contexts, six of them from four excavated segments of ditch 0040 (0009, 0015, 0023 and 0033) and one from ditch 0041 (0018/17). Most of the pottery probably belongs to the Middle Bronze Age Deverel-Rimbury tradition which dates from around 1500 – 1150 BC. The pottery was recorded by count and weight by fabric, form element (b = bodysherd, r = rim) and context. Fabrics were broadly identified by their main visible inclusions. Although fragmentary, the sherds are in fair condition. The fabrics are summarised in Table 2 and the pottery is briefly listed by context in Table 3.

Fabric	code	No	Wt (g)
Flint tempered	HMF	5	4
Grog and shell tempered	HMG	11	11
Sand-tempered	HMS	3	13
Shell tempered	HMSH	24	32
Total		43	60

Table 2. Prehistoric pottery fabric quantities

Ctxt	Feature	Fabric code	Sherd	No	Wt	Note
0007	0009	HMSH	b	1	6	
0007	0009	HMSH	b	4	9	
0007	0009	HMSH	b	2	1	SS 1
0007	0009	HMG	b	6	4	SS 1
0008	0009	HMSH	b	1	1	SS 3
0008	0009	HMSH	b	2	2	SS 3
0008	0009	HMF	b	1	<1	
0013	0015	HMSH	b	3	4	
0017	0018	HMS	b	1	11	
0021	0023	HMF	b	4	3	
0029	0033	HMG	b	5	7	
0034	0009	HMSH	r	1	5	square rim
0034	0009	HMSH	b	12	6	

Table 3. Prehistoric pottery quantities by context, fabric and form

5.2.2. Discussion

Four broad fabric types were identified with flint, grog, sand or shell as their main visible inclusions. The majority of them are grog or shell-tempered. The shell and grog-and-shell fabrics are fairly typical of Middle Bronze Age Deverel-Rimbury vessels from the Cambridgeshire Fens and areas of southern Cambridgeshire. The small flat topped rim (0034) almost certainly belongs to a barrel shaped vessel for which good parallels can be found in the published assemblage from Grimes Graves (Longworth et al. 1988, Matt Brudenell *pers. comm.*)

All of the sherds but one were recovered from four excavated segments of ditch 0040 – 0009, 0015, 0023, 0033 (42 sherds, 49g). The single bodysherd recovered from ditch 0041 which is stratigraphically later than ditch 0040 is the only sand-tempered piece and may possibly be later Iron Age. The same ditch produced a few sherds of Roman pottery during the evaluation (Hinman 2012).

5.3. Fired clay

Nine fragments of fired clay (13g) fired red-brown in a medium sandy fabric with occasional small chalk inclusions (msc) were collected from ditch segment 0009 (part of ditch 0040), fill 0034. The material, which is undiagnostic, was found in association with small amounts of animal bone and prehistoric/Middle Bronze Age pottery.

5.4. Struck flint

Sarah Bates

5.4.1. Introduction and methodology

Ninety-five struck or shattered flints were recovered from the site. The flint is mostly mid to dark grey with some having a patchy or slightly mottled appearance. A few pieces are of a more homogenous almost black flint which is of better quality. One small tertiary flake is of a semi-transparent light brownish grey colour. Cortex, where present, ranges in colour from white to dark orangey cream and from thin to quite thick, some of the latter having some surfaces which are abraded and glossy. The flint derives from surface-collected fragments. Much of the flint has a slight misty patina.

Each piece of flint was examined and recorded by context in an Access database table. The material was classified by category and type (see archive) with numbers of pieces and numbers of complete, corticated, patinated and hinge fractured pieces recorded. Additional descriptive comments were made as necessary. The assemblage is summarised in Table 4 and listed by context in the Appendix 3. The full record and quantification by context is available within the digital archive.

Type	No.
multi platform flake core	2
single platform flake core	1
tested piece	7
struck fragment	1
shatter	7
flake	46
blade-like flake	2
blade	1
spall	24
chip	1
retouched flake	2
utilised flake	1
Total	95

Table 4. Summary of flint types

5.4.2. The assemblage

Two quite small multi platform cores are present; one is an irregular piece with abraded cortex (0029), the other is minimally struck (0010). A single platform core (0030) is on an irregular fragment with some abraded cortical surfaces. Seven tested pieces are present. These are mainly squat, all are struck several times from one edge which is usually wider than the 'length' of the fragment (0010, 0013, and 0024). One irregular piece is simply recorded as a struck fragment (0001) and seven irregular shattered fragments may be the result of mis-strikes or fractures during knapping.

Three blade-like flakes were found. One is patinated a glossy white colour, unlike the rest of the flint from site (0013) and is likely to be a residual piece. It has some slight abrasion of its platform edge. There is also a very small piece and a hard hammer struck example with a patinated platform.

Forty-six unmodified flakes are present. These are mostly small or very small in size and most are irregular in nature and struck by hard hammer; several have wide obtuse-angled platforms and three flakes have hinge fractures. The majority of the flakes have cortex (74% by number) with three of these being entirely cortical primary flakes. Seven flakes have cortex on their platforms. One small flake of semi-transparent flint, unlike the rest of the flint from the site, may be from the edge of a flaked tool; it has multi-directional flake scars on its dorsal surface and a small surviving part of the possible former edge of the tool (0021).

Twenty-four spalls and a small chip are also present. The relatively high number of these small pieces is partly due to their recovery from soil samples. They nevertheless suggest that knapping occurred nearby.

Only three pieces are modified; two retouched flakes include an irregular quite thick flake with a short length of retouch on one side (0030) and a squat flake with an obtuse-angled thick platform has probable retouch of an edge (0010). Another flake has a utilised edge (0008).

5.4.3. Flint by context

Apart from a single spall from a subsoil deposit, all of the flint from the site was recovered from excavated segments of a large ditch 0040. No flint was found in the narrow gully-like lower part of the ditch where, presumably, primary silting of the feature had occurred. In all cases, the flint came from the fills in the upper parts of the ditch (in the case of ditch segment 0009, from fills of a re-cut of the ditch).

The largest amounts of flint were found in segment 0033 (thirty flints) which may partly reflect the fact that this was the largest excavated segment and in the re-cut segment 0009 (forty-three flints).

5.4.4. Discussion

Flint was recovered from the upper fills and recutting of a large ditch which is thought to be of Bronze Age date.

Two pieces, a heavily patinated blade-like piece and a flake of semi-transparent flint which may be from a flaked tool, stood out from the rest of the assemblage and are likely to be of a residual nature representing earlier activity at the site. The rest of the flint is consistent in character with a later prehistoric date; there are irregular and minimally used cores and tested fragments, small irregular hard hammer struck flakes, several of which have notably thick and obtuse-angled platforms, patinated surface-collected flint has been utilised and no formal tools are present. The only modified pieces, other than the core type pieces, are two slightly retouched flakes and a utilised flake.

The nature of the flint conforms to trends identified elsewhere as being suggestive or indicative of Iron Age flint working although many of the traits are also prevalent in later Bronze Age assemblages (Robins 1996, Humphrey 2007). The flint cannot, therefore, be closely dated to either of these periods although its recovery from the upper ditch fills may be significant; most of the flint is quite sharp and some similar small pieces, notably from segment 0009, suggest that this material is from the same knapping period. No flint was found in the lower fills of the ditch suggesting that the knapping debris relates to the period when the ditch was partly infilled or that it derived from redeposited surface

(or other) deposits. The nature and sharpness of the flint and the presence of small spalls suggests that the former is more likely. The flint can be compared with material from Late Bronze Age/Iron Age contexts at other Suffolk sites and reported on by this writer (e.g. HVH 072, HLN 009, WLY 011).

5.5. Heat-altered stone

One hundred and fifty (150) fragments of heat-altered flint and stone weighing 354g were recovered from amongst the non-floating residues during the processing of environmental samples from ditch 0040 segment 0009, fills 0007 and 0008 and segment 0015, fill 0010.

Included are 146 fragments of flint (280g) mainly from deposit 0007. Some of these pieces can be classified as 'pot boiler', grey-white and extremely fire-cracked and fragmented from prolonged exposure to high temperatures while others are affected to a much lesser degree. Four fragments of heat affected sandstone and quartzite pebble (74g) were also from deposit 0007. The material is not datable but pot-boiler is regarded as evidence of prehistoric activity. This interpretation is further supported by the presence in the same context of a fairly significant amount of mainly unpatinated struck flint flakes of later prehistoric date and a very small amount of prehistoric, Middle Bronze Age pottery. A small representative sample of the burnt flint has been retained and the rest was discarded after recording.

5.6. The small finds

Three unstratified metal detector finds were recorded as small finds:

- SF1001 A copper alloy as of Nero (?). The obverse legend reads ...?NER] O CAESAR AVG.' The reverse has no legend but shows Victory (left) holding a buckler. Weight 9g, diameter 29mm
- SF1002 A very worn copper alloy *nummus*, House of Valentinian. Reverse legend -'Securitas Republicae', Victory holding a wreath and palm. Date AD 364-378. Weight 2g, diameter 17mm.
- SF1003 A cast lead alloy musket ball (7g) of most probable late 17th/18th century date.

Note: SF1001 & 1002 identified by Andrew Brown (SCCAS/CT)

6. The environmental evidence

6.1. Animal bone

6.1.1. Introduction and methodology

A total 206 fragments of animal bone weighing 865g was collected from ten contexts - mainly in the upper fills of the two ditches. Nine contexts were from excavated segments of ditch 0040 (0015, 0023, 0033 and 0009) and one was from ditch 0041 (0018). Associated finds in these features included small amounts of Middle Bronze Age and possible Iron Age pottery and struck flint. The condition of some of the bone is fair but most of it is fair to poor due to its age and post-depositional conditions. It is mostly quite brittle and fragmentary with very eroded surfaces. Consequently, the most identifiable pieces are the more durable elements such as teeth. Counts and weights were recorded for each context and notes were made of the species and elements present. The bone was identified with reference to Hillson (1992) and Schmid (1972). Descriptive comments regarding age and condition were made as required. Details by context are shown in Table 5 below.

Context	Feature	No	Wt/g	Notes
0007	0009	9	57	Sheep: tooth; Pig: upper jaw & teeth; Cattle: tooth; LM & SM: long bones; Misc: frags
0008	0009	30	5	Small mammal & herpetofauna bones (SS3 from base of ditch) <3>
0010	0015	3	30	Cattle: molar & rib (very eroded)
0013	0015	2	26	Sheep: tibia & pelvis (v eroded)
0017	0018	1	69	Cattle: femur head (eroded surf)
0021	0023	5	10	Large mammal: long bone frags
0024	0033	101	457	Cattle: 8 articulated vert, sacrum & calcaneus, tooth; Sheep: tooth; Large mammal: long bone; Misc: frags
0030	0033	8	85	Cattle: metatarsal, vert (unfused), tooth; Large mammal: long bone; Medium mammal: long bone (burnt)
0034	0009	20	29	Sheep: mandible; Bird: sternum; Large mammal: long bone, rib
0036	0009	27	97	Cattle: mandible, phalange (gnawed); Large mammal: long bone frags (chopped); Medium mammal: long bone (burnt)
Total		206	865	

Table 5. Animal bone quantities by context

6.1.2. The assemblage

Species identified are cattle, sheep, pig and bird, probably domestic fowl. Some bone could only be broadly identified as large, medium or small mammal or herpetofauna (frogs/toads). Cattle bone from a young animal with unfused epiphyses was seen in ditchfill 0030. Burnt bone was found in ditchfills 0030 and 0036, gnawed and chopped

bone was also seen in deposit 0036.

Of interest is the presence of thirty fragments (5g) of small mammal and herpetofauna recovered during processing of Sample 3 which came from the lower fill of ditch 0040 segment 0009 (0008). Their presence in this assemblage may represent hibernating individuals that did not survive the winter period (J Curl, pers. comm.) or may represent the remains of individuals that had fallen into an open feature.

The animal bone assemblage probably represents the remains of food waste from domestic activity in the vicinity. Although much of the bone comes from the fills of various excavated segments of what has been identified as a Bronze Age ditch, the material from the backfill is probably more recent, perhaps Iron Age or even later. In all probability, the feature may have remained open and visible for quite a long time before it was filled in completely.

6.2. Shell

A single fragment of oyster shell (7g) was found in ditch 0018 fill (0017). Other finds from this feature include 1 bodysherd of prehistoric pot and a cattle femur fragment.

6.3. Plant macrofossils and other remains

Anna West

6.3.1. Introduction and methods

Three bulk samples were taken from two archaeological features during the excavation. The samples were all processed to assess the quality of preservation of plant remains and their potential to provide insight into to utilisation of local plant resources, agricultural activity and economic evidence for this site.

The samples were processed using manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. Once dried, the flots were scanned using a binocular microscope at x16 magnification and the presence of any plant remains or

artefacts was recorded (Table 6). Identification of plant remains is with reference to Stace (2010). For this initial assessment, remains such as seeds and cereal grains were scanned and recorded by quantity and remains that could not be easily quantified were scored for abundance (see Key to Table 6). The non-floating residues were collected in a 1mm mesh and sorted when dry. All artefacts/ecofacts were retained.

6.3.2. Results

SS No	Context	Feature/	Type	Spotdate	Flot contents
1	0007	0009	Ditch (upper fill)	Middle Bronze Age	Charred cereal grains ##, Charred weed seeds #, Vitrified material +, Charcoal ++, Bone fragments +, Snails ++, Rootlets +, Small mammal/Amphibian bones +, Uncharred weed seeds #
2	0010	0015	Ditch	Middle Bronze Age	Charred seeds +, Uncharred weed seeds +, Charcoal +, Rootlets ++, Snails +++
3	0008	0009	Ditch (lower fill)	Middle Bronze Age	Charred cereal grains ###, Charred weed seeds ##, Charcoal fragments ++, Amphibian/small mammal bones ##, Snails +

Table 6. Plant macrofossils and other remains

Key: # = 1-10, ## = 11-50, ### = 51+ specimens; + = rare, ++ = moderate, +++ = abundant

The preservation of the macrofossils within all three samples was through charring and is generally fair to poor. Wood charcoal fragments were present in all of the samples but were highly comminuted, leaving them little potential for radiocarbon dating or species identification. Fibrous rootlets were also present within all the samples in small quantities and can be regarded as modern contaminants.

Samples 1 and 3, from the upper and lower fills of ditch 0009 (0007 and 0008), both contained charred cereal caryopses. A mixture of Wheat (*Triticum* sp.) and Barley (*Hordeum* sp.) was common throughout, present in roughly equal quantities with wheat grains perhaps being slightly dominant. Many of the cereal grains were puffed and fragmented however, making them difficult to identify in any detail. No chaff elements, which would have suggested grain processing on site, were observed.

Charred weed seeds were observed in small numbers. A single possible charred Cabbage family (*Brassicaceae*) seed was seen in Sample 1 (0007). Charred grass family (*Poaceae*) caryopses were common within Sample 2 from ditch 0015 (0010).

Uncharred weed seeds were also present in all of the samples in the form of Clovers (*Trifolium* sp.), Campions (*Silene* sp.), Polygonum family (*Polygonaceae*), Cleavers (*Galium aparine* L.), Goosefoot family (*Chenopodium* sp.) and Gromwell (*Lithospermum officinale* L.). These species are all common arable and wayside weeds and may well have been accidentally collected along with a crop. However, as many of them are uncharred, it is possible that they are in fact intrusive within the archaeological deposits.

Small fragments of animal bone were common in Sample 1 (0007) and small mammal/amphibian bones were present in Sample 3 (0008) from ditch 0009. Snail shells were common in Sample 2 from ditch 0015 (0010).

6.3.3. Conclusions

In general, the samples were fair to poor in terms of identifiable material. Although cereal grains were present, there is an absence of chaff elements, which would have suggested cereal processing on site when cereal is dried through heating and then pounded in order to release the grains from the spikelet. The mix of material present within the flots most likely represents domestic refuse or chance loss during food preparation which was later discarded as waste within the archaeological deposits.

6.4. Charcoal

In addition to the environmental samples, fragments of charcoal were recovered from three ditch 0040 contexts: ditch segments 0015 (0013), ditch 0033 (0029) and ditch 0009 (0036). Unfortunately none of the fragments of charcoal proved suitable for radiocarbon dating techniques, being in the main too highly comminuted to be useable although charred cereal remains have been identified and sent for analysis.

7. Discussion

The excavation has confirmed the presence of a substantial Middle Bronze Age ditch, dated via a modest assemblage of pottery belonging to the Middle Bronze Age Deverel Rimbury tradition (1500 – 1150 BC) and the radiocarbon dating of two samples. The radiocarbon dating results of 3047 +/-29 BP and 3079 +/-28 BP correlate well with the stratigraphy of the feature and the finds evidence. The associated struck flint assemblage exhibits many of the characteristics of later prehistoric assemblages and is comparable to material from later Bronze Age/Iron Age contexts from other Suffolk sites.

While this ditch provides evidence for significant activity in this period in the vicinity it is, at present, an isolated feature and there is little indication of where any focus of activity may lie other than it possibly most likely being uphill to the north or west and away from the likely flooding zone represented by deposit 0039 to the south and east. The environmental samples demonstrate the presence of charred botanical remains which are thought to represent domestic refuse and it is notable that the deposition of pottery, flint and animal bone is mainly within the upper fills, suggesting that it had become partly infilled by the time these materials were deposited.

Measuring at least 2m wide (though indications from section 9 suggest that it could have been 3-4m+ wide originally) and potentially 2m deep, the ditch would have formed a significant land barrier/marker but there seems no reason for it to have such a narrow lower profile if it was simply a boundary ditch. The deep narrow part of the ditch appears to have been allowed to fill with slumped material (or been purposefully backfilled?) quite soon after being dug leaving a much broader but shallower profile while the ditch was still in use – perhaps this is evidence of a design change, where the ditch was originally supposed to be deeper and wider, but the local geology made it impractical to excavate or maintain such a depth.

Although Roman pottery was identified in the fill of ditch 0041 during the evaluation (Hinman 2012), none was found during the excavation. However, two Roman coins (both copper alloy, one 1st century and one 4th century) were surface metal-detected finds from the topsoil strip. As large amounts of soil had been imported to the site these coins are not necessarily indicative of Roman activity nearby but they are believed to

have originated within the intact subsoil layer and thus have been *in situ*.

8. Conclusions

This excavation has revealed evidence of activity in the area from the Middle Bronze Age, predating the significant Iron Age site, inferred from the presence of the ditch seen at EXG 082, some 250m to the west.

This could indicate a long occupation of the same area through the Bronze Age and Iron Age and, while the main focal point of activity for both periods has yet to be definitively identified, it is likely that such occupation was centred on the higher slopes of Windmill Hill. The height difference between the two sites (EXG 082 being at 31m OD and the present site being at 18m OD) is not thought relevant as the features at both sites are lengths of ditch which extend out of their respective excavation areas in both directions and could easily climb and descend the slopes of the hill in areas that have not been investigated.

9. Archive deposition

The finds and environmental archives were deposited with SCCAS/CT at the end of 2014, prior to SCCAS/FT's transfer to Suffolk Archaeology CIC. Updated paper and digital archives are to be submitted on completion of the project.

10. Acknowledgements

The fieldwork was carried out by Simon Cass, Tim Carter and John Sims. Project management was undertaken by John Craven.

Post-excavation management was provided by Richenda Goffin. Finds processing and analysis was undertaken by Jonathan Van Jennians and Cathy Tester respectively.

The specialists' finds report was compiled by Cathy Tester, with specialist analysis by Andrew Brown (SCCAS/CT), Julie Curl (freelance) and Anna West. Additional advice on the Middle Bronze Age pottery assemblage was provided by Matt Brudenell (SCCAS/CT).

The report illustrations were created by Simon Cass and Beata Wieczorek-Oleksy and the report was edited by John Craven and Richenda Goffin.

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Websites

British Geological Survey

<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Appendix 1. Written Scheme of Investigation

Land at Windmill Hill, Exning, Suffolk EXG 105

Written Scheme of Investigation and Risk Assessment Archaeological Excavation

Client: Lors Homes Ltd

Suffolk County Council Archaeological Service Field Team

Author: John Craven

June 2014

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Project details

Planning Application No:	F/2012/0653/OUT
Curatorial Officer:	Dr Jess Tipper, SCCAS/CT
Grid Reference:	TL 6287 6589
Area:	c.2000sqm
HER Event No/Site Code:	EXG 105
Oasis Reference:	suffolkc1-181971
Project Start date	W/B 23 rd June
Project Duration:	2-3 weeks
Client/Funding Body:	Lors Homes Ltd
SCCAS/FT Project Manager	John Craven
SCCAS/FT Project Officer:	Simon Cass
SCCAS/FT Job Code:	EXNIWIH001

1. Introduction

- A program of archaeological excavation is required to record any archaeological deposits on the proposed site of residential development at Windmill Hill, Exning, Suffolk (Fig. 1). The work is required by two conditions on planning application F/2012/0653/OUT, in accordance with paragraph 141 of the National Planning Policy Framework.
- The work required is detailed in a Brief (dated 16/06/2014), produced by the archaeological adviser to the Local Planning Authority (LPA), Dr Jess Tipper of Suffolk County Council Archaeological Service Conservation Team (SCCAS/CT). The Brief specifies two areas for an investigation; excavation of an area covering plots 10 & 11 and adjacent access road in the north-east part of the development site and a controlled strip, map and record of the access road to the west of evaluation trench 4.
- Suffolk County Council Archaeological Service Field Team (SCCAS/FT) has been contracted to carry out the project. This document details how the requirements of the Brief and general SCCAS/CT guidelines (SCCAS/CT 2012) will be met, and has been submitted to SCCAS/CT for approval on behalf of the LPA. It provides the basis for measurable standards and will be adhered to in full, unless otherwise agreed with SCCAS/CT.
- It should be noted that, following the excavation fieldwork, the assessment report will establish the further analysis required to publish the site in an updated project design (UPD). If approved by SCCAS/CT the work outlined in the UPD will need to be completed to allow final discharge of planning conditions. The client is advised to consult with SCCAS/CT as to their obligations following receipt of the excavation assessment report.

2. The Site

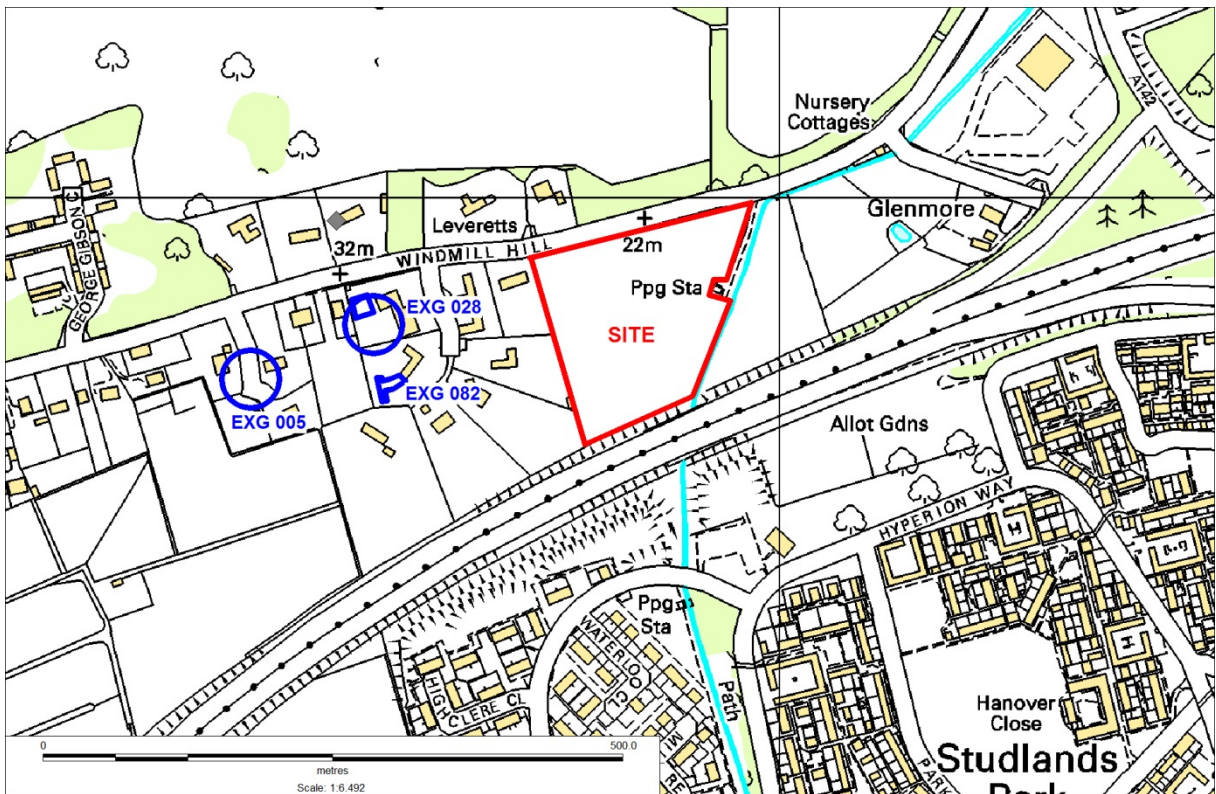
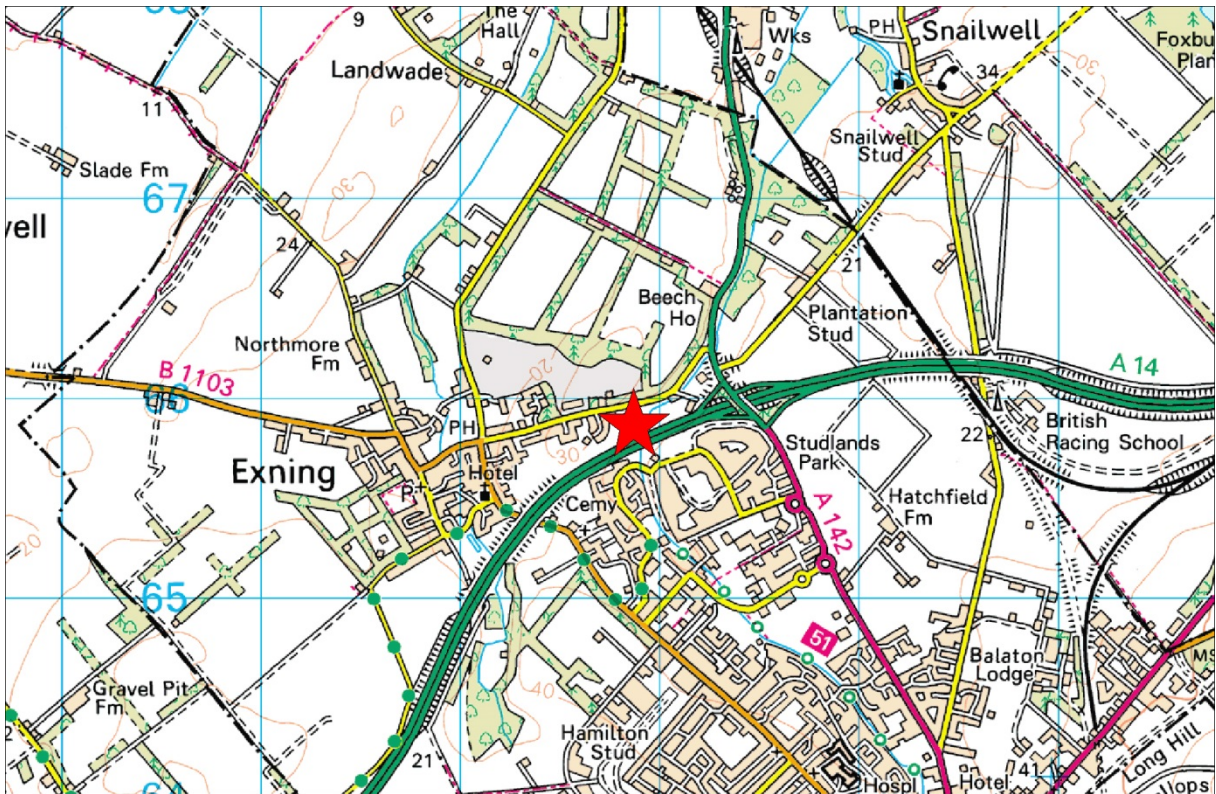
- The proposed development of 11 properties and associated infrastructure lies in a triangular area of former paddocks measuring c.2.4ha. The site lies on the south-east facing slopes of Windmill Hill, a ridge of high ground aligned south-west to north-east that overlooks tributaries of the River Snail to the east and the New River to the west, at a height of c.15m-30m above Ordnance Datum.
- The site geology consists of well drained coarse and fine loamy soils (Ordnance Survey 1983) overlying superficial river terrace deposits of sand and gravel which in turn overlie chalk bedrock of the Zig Zag formation (British Geological Survey website).

3. Archaeological and historical background

- The site was initially deemed of interest by SCCAS/CT as it lies in close proximity to important archaeological remains which have been recorded to the west on Windmill Hill. It is believed that a possible early Anglo-Saxon cemetery of potential national importance lies 250m to the west (EXG 005) as Early Anglo-Saxon burials were reportedly found at a gravel pit in the early 20th century. Two graves are also recorded as having been found 130m to the west during the excavation of footings for 8, The Highlands in 1981 (EXG 028), one of which had iron grave goods suggesting a male burial of early Anglo-Saxon date. Small scale archaeological investigations however, at EXG 028 during construction of extensions to 8, The Highlands, at 14 Thawnie Croft, Windmill Hill (EXG 086) and in the garden of 8, The Highlands (EXG 090) have not found any further evidence of burials.
- Archaeological evaluation at 7, The Highlands (EXG 082) also did not find any further evidence of Anglo-Saxon burials but did identify a substantial Iron Age ditch running east-west across the line of, and at the top of, the natural slope. This was interpreted as potentially being part of a hill-top enclosure and had been used for the disposal of domestic waste, upon falling into disuse. The upper fills of the ditch contained one of the largest pottery and worked flint assemblages known in Suffolk, with fragments of nearly 800 separate vessels of a domestic nature being recovered. A date range of 800-600/550 BC for the assemblage has been

confirmed by AMS radiocarbon analysis. The ditch is currently an isolated feature but indicates the presence of a substantial and hitherto unknown Early Iron Age settlement in the immediate vicinity.

- These records, combined with the site's general topographic location which is favourable for early occupation, meant that the site was seen as having potential for the discovery of important unknown archaeological sites and features
- SCCAS/CT therefore requested that the site be assessed for heritage assets through a geophysical survey and trial trench evaluation, prior to consideration of the planning application.
- The geophysical survey, which was carried out by Cranfield University in 2011 (Cranfield Forensic Institute Report No. 065), identified two ephemeral linear anomalies and zones of intense positive magnetic anomalies, together indicating previous activity on the site.
- The subsequent trial-trench evaluation of the site, which targeted some of these anomalies, was carried out by Pre-Construct Archaeology in 2012 (PCA Report No. R11313). This identified a group of archeological features, sealed at a depth of 1.4m, in the north-east corner of the site (Trench 9). These consisted of a substantial ditch containing a structural beam slot or palisade trench and two pits which together appear to represent Middle Bronze Age settlement. Another ditch, combined with one in the south-west part of the site (Trench 2) are thought to indicate the presence of a Mid Roman field system or enclosure. The area of intense strong positive magnetic anomalies in the central northern part of the site was proved to mark a large backfilled quarry pit of modern date.

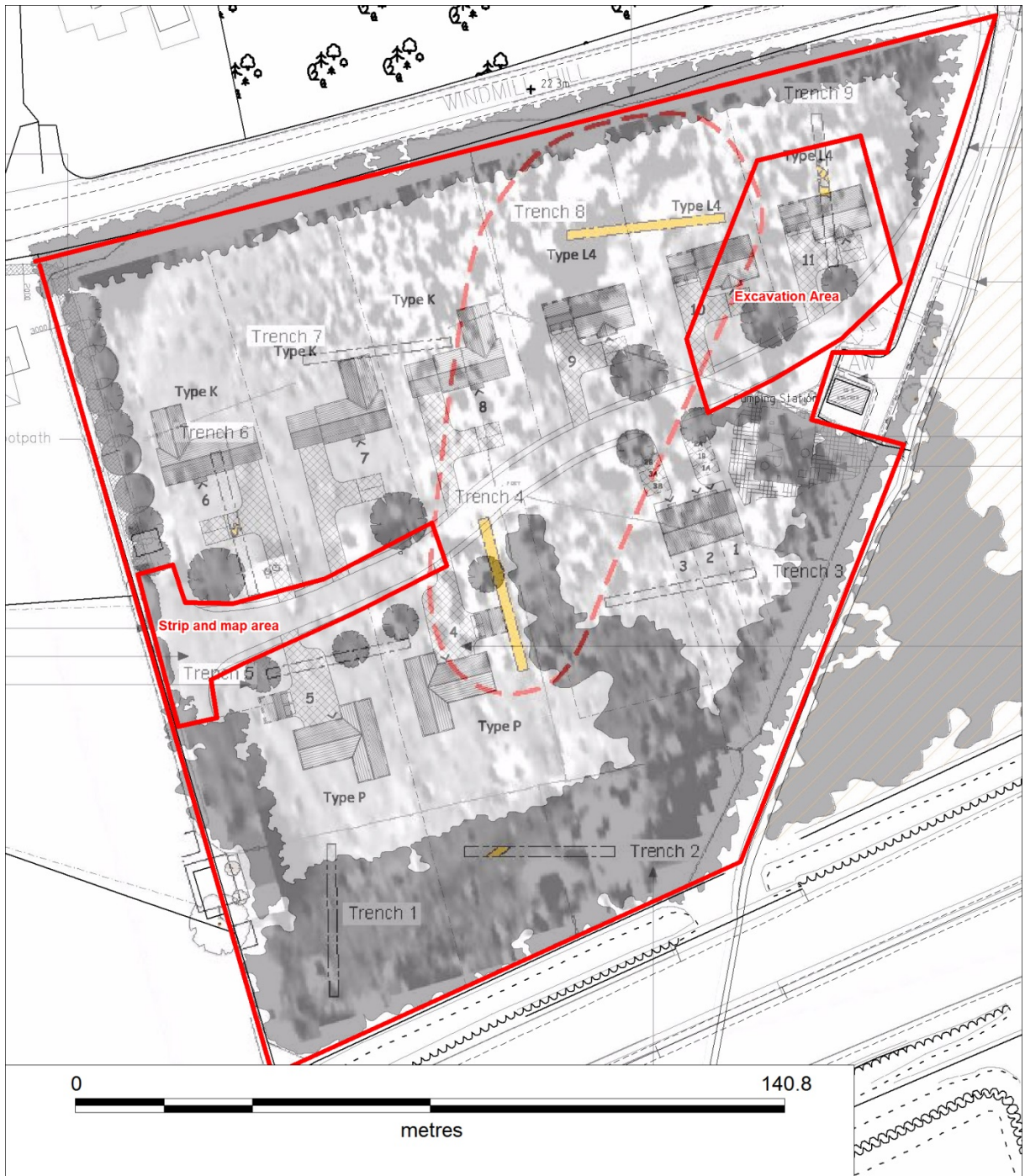


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Figure 1. Location map

4. Project Objectives

- The aim of the project is to ‘preserve by record’ all archaeological deposits within the defined excavation area, prior to its development, and to produce a post-excavation assessment report.
- The project will:
 - Excavate and record all archaeological deposits present on the site.
 - Answer site specific research questions suggested by the evaluation results;
 - Further understanding of the Middle Bronze Age ditch, 0011, and associated features. Does it represent an important settlement boundary and what is its stratigraphic position in relation to subsoil layers?
 - Further collection and assessment of environmental samples from archaeological deposits, the evaluation report having highlighted the site’s potential to ‘provide very valuable data about early agricultural practises within East Anglia’. Establish potential for obtaining radiocarbon dates from samples to support site phasing.
 - Assess the potential of the site to address other research aims as defined in the Regional Research Framework for the Eastern Counties (Brown and Glazebrook 2000, Medlycott 2011). The evaluation results indicate that these aims are likely to relate to general themes for the Bronze Age and Roman periods but it is also possible that the site could yield further evidence as to the known Iron Age occupation of Windmill Hill.
 - Provide an updated project design with proposals and a timetable for further analysis, dissemination and archive deposition.
 - Provide sufficient information for the client to establish any further cost implications for the development regarding the application areas heritage assets.



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Figure 2. Excavation area plan

Overlaid onto extract from a development plan and the PCA evaluation report supplied by the client

5. Archaeological method statement

5.1. Management

- The project will be managed by SCCAS/FT Project Officer John Craven in accordance with the principles of *Management of Research in the Historic Environment* (MoRPHE, English Heritage 2006).
- SCCAS/CT will be given five days notice of the commencement of the fieldwork and arrangements made for SCCAS/CT visits to enable the works to be monitored effectively.
- Full details of project staff, including sub-contractors and specialists are given in section 6 below.

5.2. Project preparation

- An event number has been obtained from the Suffolk HER Officer and will be included on all future project documentation.
- An OASIS online record has been initiated and key fields in details, location and creator forms have been completed.
- A pre-site inspection and Risk Assessment for the project has been completed.

5.3. Fieldwork

- Fieldwork standards will be guided by 'Standards for Field Archaeology in the East of England', EAA Occasional Papers 14, and the Institute For Archaeology's (IFA) paper 'Standard and Guidance for archaeological field excavation', revised 2008.
- The archaeological fieldwork will be carried out by members of SCCAS/FT led by Project Officer Simon Cass. The fieldwork team will be drawn from a pool of suitable staff at SCCAS/FT and will include an experienced metal detectorist/excavator.
- The project Brief requires the excavation of an area encompassing evaluation trenches 09 and the footprints of two of the proposed properties, Nos. 10 and 11.

A proposed excavation area, overlaid onto a supplied design plan and an extract of a map from the PCA evaluation report, is shown on Fig 2; this measures c.1375sqm and is designed to cover the proposed development areas and establish the edge of the former quarrying. If necessary minor modifications to the excavation plan may be made onsite to respect any previously unknown buried services, areas of disturbance/contamination or other obstacles.

- The 'strip and map' area to the west measures c.770sqm and overlies in full the access road to the west of the quarried area. The excavation will expose in full the natural geological or archaeological horizon unless it can be demonstrated that the development formation level will leave a sufficient 0.3m subsoil buffer *in situ*.
- The excavation locations will be marked out using an RTK GPS system.
- The site will be excavated using a machine equipped with a back-acting arm and toothless ditching bucket (measuring at least 1.8m wide), under the supervision of an archaeologist. This will involve the removal of an estimated 0.5m-1m of topsoil or modern deposits and subsoils until the first visible archaeological surface or natural surface is reached.
- Spoilheaps will be created adjacent to the site and topsoil and subsoil will be kept separate if required. Spoilheaps will be examined and metal-detected for archaeological material.
- The excavation of all archaeological deposits will be by hand, including stratified layers, unless it can be demonstrated to the satisfaction of SCCAS/FT that no information will be lost by using a machine. All features will be excavated by hand unless otherwise agreed with SCCAS/CT. Typically 50% of discrete features such as pits and 10% of linear features (in 1m slots) will be sampled by hand excavation, although significant archaeological features such as solid or bonded structural remains, building slots or postholes will be examined in section then 100% excavated. Occupation levels and building fills will be sieved using a 10mm mesh.
- Any fabricated surface (floors, yards etc) will be fully exposed and cleaned.
- Metal detector searches will take place throughout the excavation by an experienced SCCAS/FT metal-detectorist.
- The depth and nature of colluvial or other masking deposits across the site will be

recorded.

- Environmental sampling of archaeological contexts will, where possible, be carried out to assess the site for palaeoenvironmental remains and will follow appropriate guidance (English Heritage 2011). In order to obtain palaeoenvironmental evidence, bulk soil samples (of at least 40 litres each, or 100% of the context) will be taken using a combination of judgement and systematic sampling from selected archaeological features or natural environmental deposits, particularly those which are both datable and interpretable. All environmental samples will be retained until an appropriate specialist has assessed their potential for palaeoenvironmental remains. Decisions will be made on the need for further analysis following these assessments.
- If necessary, for example if waterlogged peat deposits are encountered, then advice will be sought from the English Heritage Regional Advisor for Archaeological Science (East of England) on the need for specialist environmental techniques such as coring or column sampling.

Site recording

- An overall site plan showing feature positions, sections and levels will be made using an RTK GPS or Total Station Theodolite. Individual detailed trench or feature plans etc will be recorded by hand at 1:10, 1:20 or 1:50 as appropriate to complexity. All excavated sections will be recorded at a scale of 1:10 or 1:20, also as appropriate to complexity. All such drawings will be in pencil on A3 pro forma gridded permatrace sheets. All levels will refer to Ordnance Datum. Section and plan drawing registers will be maintained.
- The site, and all archaeological features and deposits will be recorded using standard pro forma SCCAS/FT registers and recording sheets and numbering systems. Record keeping will be consistent with the requirements of the Suffolk HER and will be compatible with its archive.
- A photographic record, consisting of high resolution digital images, will be made throughout the evaluation. A number board displaying site code and, if appropriate, context number and a metric scale will be clearly visible in all photographs. A photographic register will be maintained.

- All pre-modern finds will be kept and no discard policy will be considered until all the finds have been processed and assessed. Finds on site will be treated following appropriate guidelines (Watkinson & Neal 2001) and a conservator will be available for on-site consultation as required.
- All finds will be brought back to the SCCAS/FT finds department at the end of each day for processing, quantifying, packing and, where necessary, preliminary conservation. Finds will be processed and receive an initial assessment during the fieldwork phase and this information will be fed back to site to inform the on-site excavation methodology.
- If human remains are encountered guidelines from the Ministry of Justice will be followed. Human remains will be treated at all stages with care and respect, and will be dealt with in accordance with the law and the provisions of Section 25 of the Burial Act 1857. The evaluation will attempt to establish the extent, depth and date of burials whilst leaving remains in situ. If human remains are to be lifted, for instance if analysis is required to fully evaluate the site, then a Ministry of Justice license for their removal will be obtained in advance. In such cases appropriate guidance (McKinley & Roberts 1993, Brickley & McKinley 2004) will be followed and, on completion of full recording and analysis, the remains, where appropriate, will be reburied or kept as part of the project archive.
- In the event of unexpected or significant deposits being encountered on site, the client and SCCAS/CT will be informed. Such circumstances may necessitate changes to the Brief and hence excavation methodology, in which case a new archaeological quotation will have to be agreed with the client, to allow for the recording of said unexpected deposits. If the excavation is aborted, i.e. because unexpected deposits have made the development unviable or led to other mitigation measures such as project redesign, then all exposed archaeological features will be recorded as usual prior to completion of fieldwork and a PXA report produced.
- Fieldwork will not end without the prior approval of SCCAS/CT. On completion the site will be handed over to the client, to either backfill or begin development.

Outreach

- Due to the small size and likely short duration of the project outreach activities such as an open day or tours for the general public, local schools, councillors, societies etc, are unlikely to be viable. If warranted, and the site is not deemed too archaeologically sensitive, a press release will be issued to local media and information boards placed on the site perimeter during the fieldwork stage of investigation.

5.4. Post-excavation

- All finds will be processed and marked (HER site code and context number) following ICON guidelines and the requirements of the Suffolk HER. For the duration of the project all finds will be stored according to their material requirements in the SCCAS Archaeological Stores at Bury St. Edmunds or Ipswich. Metal finds will be stored in accordance with ICON) guidelines, *initially recorded and assessed for significance* before dispatch to a conservation laboratory within 4 weeks of the end of the excavation. All pre-modern silver, copper alloy and ferrous metal artefacts and coins will be x-rayed if necessary for identification. Sensitive finds will be conserved if necessary and deposited in bags/boxes suitable for long term storage to ICON standards. All coins will be identified to a standard acceptable to normal numismatic research.
- All on-site derived site data will be entered onto a digital (Microsoft Access) SCCAS/FT database compatible with the Suffolk HER.
- Bulk finds will be fully quantified and the subsequent data will be added to the digital site database. Finds quantification will fully cover weights and numbers of finds by context and will include a clear statement for specialists on the degree of apparent residuality observed.
- Assessment reports for all categories of collected bulk finds will be prepared in-house or commissioned as necessary and will meet appropriate regional or national standards. Specialist reports will include sufficient detail and tabulation by context of data to allow assessment of potential for analysis and will include non-technical summaries.

- Representative portions of bulk soil samples from archaeological features will be processed by wet sieving and flotation in-house in order to recover any environmental material which will be assessed by external specialists. The assessment will include a clear statement of potential for further analysis.
- All hand drawn site plans and sections will be scanned.
- All raw data from GPS or TST surveys will be uploaded to the project folder, suitably labelled and kept as part of the project archive.
- Selected plan drawings will then be digitised as appropriate for combination with the results of digital site survey to produce a full site plan, compatible with MapInfo GIS software.
- Selected hand-drawn sections will be digitised using autocad software.
- Digital photographs will be allocated and renumbered with a code from the Suffolk HER photographic index.

5.5. Report

- A full post-excavation assessment report (PXA) will be produced, consistent with the principles of Management of Research in the Historic Environment (MoRPHE, English Heritage 2006). If the fieldwork results do not warrant such an assessment and publication SCCAS/CT will be asked to approve the production of a full grey literature archive report.
- The PXA report will contain a description of the project background, location plans, excavation methodology, a period by period description of results, finds assessments and a full inventory of finds and contexts. The report will also include scale plans, sections drawings, illustrations and photographic plates as required.
- The PXA will present a clear and concise assessment of the archaeological value and significance of the results, and identify the site's research potential in the context of the Regional Research Framework for the East of England (Brown and Glazebrook, 2000, Medlycott 2011). This will include an assessment of potential research aims that could be addressed by the site evidence.
- The PXA will include an Updated Project Design, with a timetable, for analysis, dissemination and archive deposition.

- The report will include a summary in the established format for inclusion in the annual '*Archaeology in Suffolk*' section of the Proceedings of the Suffolk Institute of Archaeology and History.
- A copy of this Written Scheme of Investigation will be included as an appendix in the report.
- The report will include a copy of the completed project OASIS form as an appendix.
- An unbound draft copy of the report will be submitted to SCCAS/CT for approval within 6 months of completion of fieldwork.

5.6. Project archive

- On approval of the report a printed and bound copy will be lodged with the Suffolk HER. A digital .pdf file will also be supplied, together with a digital and fully georeferenced vector plan showing the application area and trench locations, compatible with MapInfo software.
- The online OASIS form for the project will be completed and a .pdf version of the report uploaded to the OASIS website for online publication by the Archaeological Data Service. A paper copy of the form will be included in the project archive.
- A second bound copy of the report will be included with the project archive.
- A digital .pdf copy of the approved report will be supplied to the client, together with our final invoice for outstanding fees. Printed and bound copies will be supplied to the client on request.
- The project archive, consisting of the complete artefactual assemblage, and all paper and digital records, will be deposited in the SCCAS Archaeological Store at Bury St Edmunds within 6 months of completion of fieldwork. The project archive will be consistent with MoRPHE (English Heritage 2006) and ICON guidelines. The project archive will also meet the requirements of SCCAS (SCCAS/CT 2010).
- All physical site records and paperwork will be labelled and filed appropriately. Digital files will be stored in the relevant SCCAS archive parish folder on the SCC network site.

- The project costing includes a sum to meet SCCAS archive charges. A form transferring ownership of the archive to SCCAS will be completed and included in the project archive.
- If the client, on completion of the project, does not agree to deposit the archive with, and transfer to, SCCAS, they will be expected to either nominate another suitable depository approved by SCCAS/CT or provide as necessary for additional recording of the finds archive (such as photography and illustration) and analysis. A duplicate copy of the written archive in such circumstances would be deposited with the Suffolk HER.
- Exceptions from the deposition of the archive described above include:
 - Objects that qualify as Treasure, as detailed by the Treasure Act 1996. The client will be informed as soon as possible of any such objects are discovered/identified and the find will be reported to SCCAS/CT and the Suffolk Finds Liaison Officer and hence the Coroner within 14 days of discovery or identification. Treasure objects will immediately be moved to secure storage at SCCAS and appropriate security measures will be taken on site if required. Any material which is eventually declared as Treasure by a Coroners Inquest will, if not acquired by a museum, be returned to the client and/or landowner. Employees of SCCAS, or volunteers etc present on site, will not eligible for any share of a treasure reward.
 - Other items of monetary value in which the landowner or client has expressed an interest. In these circumstances individual arrangements as to the curation and ownership of specific items will be negotiated.
 - Human skeletal remains. The client/landowner by law will have no claim to ownership of human remains and any such will be stored by SCCAS, in accordance with a Ministry of Justice licence, until a decision is reached upon their long term future, i.e. reburial or permanent storage.

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Websites

British Geological Survey

<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Economy, Skills and Environment
9–10 The Churchyard, Shire Hall
Bury St Edmunds
Suffolk
IP33 1RX

Brief for Archaeological Excavation

at

Land at Windmill Hill, Exning

PLANNING AUTHORITY: Forest Heath District Council

PLANNING APPLICATION NUMBER: F/2012/0653/OUT

HER NO. FOR THIS PROJECT: EXG 099

GRID REFERENCE: TL 6287 6589

DEVELOPMENT PROPOSAL: Residential

THIS BRIEF ISSUED BY: Jess Tipper
County Archaeologist
Tel. : 01284 741225
E-mail: jess.tipper@suffolk.gov.uk

Date: 16 June 2014

Summary

- 1.1 The Local Planning Authority (LPA) will be advised by Suffolk County Council's Archaeology Conservation Team (SCCAS/CT) that any planning consent should be conditional upon an agreed programme of archaeological investigation work taking place before development takes place in accordance with a Written Scheme of Investigation (WSI) which has been approved in writing by the LPA. This is in line with the *National Planning Policy Framework* (paragraph 141).
- 1.2 This brief stipulates the minimum requirements for the archaeological investigation, and should be used in conjunction with SCCAS/CT's Requirements for Archaeological Excavation 2012 Ver 1.1. These should be used to form the basis of the WSI.
- 1.3 The archaeological contractor, commissioned by the applicant, must submit a copy of their WSI to SCCAS/CT for scrutiny, before seeking approval from the LPA.

- 1.4 Following acceptance by SCCAS/CT, it is the commissioning body's responsibility to submit the WSI to the LPA for formal approval. No fieldwork should be undertaken on site without the written approval of the LPA.
- 1.5 The WSI should be approved before costs are agreed with the commissioning client, in line with Institute for Archaeologists' guidance. Failure to do so could result in additional and unanticipated costs.
- 1.6 The WSI will *provide the basis for measurable standards* and will be used to establish whether the requirements of the brief will be adequately met. If the approved WSI is not carried through in its entirety (unless a variation is agreed by SCCAS/CT), SCCAS/CT will be unable to advise discharge of the condition.

Archaeological Background

- 2.1 A trenched archaeological evaluation was undertaken by Pre-Construct Archaeology Limited in October 2012 (HER no. EXG 099; Oasis ref. preconst1-136070).

Fieldwork Requirements for Archaeological Investigation

- 3.1 Archaeological investigation is to be carried out prior to development:

Excavation area of the two plots (10 & 11) in the north-east part of the development site (area of evaluation trench 9), incorporating the access road in this part of the site.

Controlled strip, map and record of the access road to the west of evaluation trench 4 (from the west edge of the quarry).

Arrangements for Archaeological Investigation

- 4.1 The project has a unique code number from the evaluation (HER no. EXG 099). This number must be clearly marked on all documentation relating to the work.
- 4.2 The composition of the archaeological contractor's staff must be detailed and agreed by SCCAS/CT, including any subcontractors/specialists. Ceramic specialists, in particular, must have relevant experience from this region, including knowledge of local ceramic sequences.
- 4.3 A timetable for fieldwork and assessment stages of the project must be presented in the WSI and agreed with SCCAS/CT before the fieldwork commences.
- 4.4 All arrangements for the excavation, the timing of the work and access to the site, are to be defined and negotiated by the archaeological contractor with the commissioning body.
- 4.5 If the archaeological excavation is scheduled to be undertaken immediately before construction, the commissioning body should be aware that there may be a time delay for excavation and recording if unexpected and complex archaeological remains are defined. Adequate time is to be allowed for full archaeological recording of archaeological deposits before any construction work can commence on site (unless otherwise agreed by the LPA on the advice of SCCAS/CT).

- 4.6 The project manager must also carry out a risk assessment and ensure that all potential risks are minimised, before commencing the fieldwork. The responsibility for identifying any constraints on fieldwork, e.g. designated status, public utilities or other services, tree preservation orders, SSSIs, wildlife sites and other ecological considerations, and land contamination, rests with the commissioning body and its archaeological contractor.
- 4.7 The WSI must state the security measures to protect the site from vandalism and theft, and to secure any deep holes.
- 4.8 Provision should be included in the WSI for public benefit in the form of communication and outreach activities.
- 4.9 The archaeological contractor will give SCCAS/CT ten working days notice of the commencement of ground works on the site, in order that the work of the archaeological contractor may be monitored, signed off as satisfactory and in accordance with the WSI. The method and form of development will also be monitored SCCAS/CT to ensure that it conforms to agreed locations and techniques in the WSI.

Post-Excavation Assessment and Archival Requirements

- 5.1 Within four weeks of the end of fieldwork an updated timetable for post-excavation assessment, updated project design and/or reporting must be produced, which must be approved by SCCAS/CT. Following this, a written statement of progress on post-excavation work – whether assessment, analysis, report writing and publication or archiving – will be required at six monthly intervals.
- 5.2 A post-excavation assessment (PXA) report on the fieldwork should be prepared in accordance with the principles of *Management of Research Projects in the Historic Environment (MoRPHE)* (English Heritage 2006). The PXA will act as a critically assessed audit of the archaeological evidence from the site; see *East Anglian Archaeology Draft Post Excavation Assessments: Notes on a New Guidance Document* (available from SCCAS/CT).
- 5.3 In certain instances a full PXA might be unnecessary. The need for a full PXA or otherwise should be discussed and formally agreed with SCCAS/CT within four weeks of the end of fieldwork.
- 5.4 The PXA must present a clear and concise assessment of the archaeological value and significance of the results, and identifies the research potential, in the context of the Regional Research Framework (*East Anglian Archaeology, Occasional Papers 3, 8 and 24, 1997, 2000 and 2011*). It must present an Updated Project Design, with a timetable, for analysis, dissemination, publication where appropriate and archive deposition. The PXA will *provide the basis for measurable standards* for SCCAS/CT to monitor this work.
- 5.5 An archive of all records and finds is to be prepared, consistent with the principles of *MoRPHE*. It must be adequate to perform the function of a final archive for deposition in the Archaeological Store of SCCAS/CT or in a suitable museum in Suffolk (see *Archaeological Archives Forum: a guide to best practice 2007*).

- 5.6 Finds must be appropriately conserved and stored in accordance with guidelines from *The Institute of Conservation* (ICON).
- 5.7 The project manager should consult the intended archive depository before the archive is prepared regarding the specific requirements for the archive deposition and curation, and regarding any specific cost implications of deposition. The intended depository must be prepared to accept the entire archive resulting from the project (both finds and written archive) in order to create a complete record of the project. A clear statement of the form, intended content, and standards of the archive is to be submitted for approval as an essential requirement of the WSI.
- 5.8 The PXA should offer a statement of significance for retention for each finds category, based on specialist advice, and - where it is justified – the UPD should propose a discard strategy. This should be agreed with the intended archive depository.
- 5.9 For deposition in the SCCAS/CT's Archaeological Store, the archive should comply with SCCAS Archive Guidelines 2010. If this is not the intended depository, the project manager should ensure that a duplicate copy of the written archive is deposited with the Suffolk HER.
- 5.10 The UPD should state proposals for the deposition of the digital archive relating to this project with the Archaeology Data Service (ADS), or similar digital archive repository, and allowance should be made for costs incurred to ensure proper deposition (<http://ads.ahds.ac.uk/project/policy.html>).
- 5.11 An unbound hardcopy of the PXA and UPD (or grey literature report if otherwise agreed), clearly marked DRAFT, must be presented to SCCAS/CT for comment and approval within six months of the completion of fieldwork unless other arrangements are negotiated. Where a report fails to meet the required standards, a revised draft report should be submitted to SCCAS/CT. Following approval of the report by SCCAS/CT, a single hard copy of the report as well as a digital .pdf version of the report should be sent to the archaeological officer, who will deposit both with the HER.
- 5.12 Where appropriate, a copy of the approved PXA should be sent to the local archaeological museum, whether or not it is the intended archive depository. A list of local museums can be obtained from SCCAS/CT or online (<http://www.suffolkmuseums.org/suffolk1/cgi-bin/index.cgi>).
- 5.13 SCCAS/CT supports the OASIS project, to provide an online index to archaeological reports. Before fieldwork commences, an OASIS online record <http://ads.ahds.ac.uk/project/oasis/> must be initiated and key fields completed on Details, Location and Creators forms. When the project is completed, all parts of the OASIS online form must be completed and a copy must be also included in the final report and also with the site archive. A .pdf version of the approved report must be uploaded to the OASIS website before discharge of the planning condition is advised by SCCAS/CT.
- 5.14 On approval, the PXA and UPD should be submitted to the LPA. SCCAS/CT will advise the LPA that the scheme of investigation for post-excavation analysis, dissemination and archive deposition has been agreed.

- 5.15 Where positive results are drawn from a project, a summary report must be sent to the archaeological officer, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the *Proceedings of the Suffolk Institute of Archaeology and History*. This summary should be included in the project report, or submitted to SCCAS/CT by the end of the calendar year in which the work takes place, whichever is the sooner.

Standards and Guidance

Detailed requirements are to be found in our Requirements for Archaeological Excavation 2012 Ver 1.1 and in SCCAS Archive Guidelines 2010. These can be downloaded from: <http://www.suffolk.gov.uk/libraries-and-culture/culture-and-heritage/archaeology/>

Standards, information and advice to supplement this brief are to be found in *Standards for Field Archaeology in the East of England*, East Anglian Archaeology Occasional Papers 14, 2003. This can be downloaded from: <http://www.eaareports.org.uk/Regional%20Standards.pdf>

The Institute for Archaeologists' *Standard and Guidance for archaeological excavation* (revised 2008) should be used for additional guidance in the execution of the project and in drawing up the report. This can be downloaded from: <http://www.archaeologists.net/codes/ifa>

Notes

There are a number of archaeological contractors that regularly undertake work in the County and SCCAS will provide advice on request. SCCAS/CT does not give advice on the costs of archaeological projects. The Institute for Archaeologists maintains a list of registered archaeological contractors (<http://www.archaeologists.net> or 0118 378 6446).

This brief remains valid for one year. If work is not carried out in full within that time this document will lapse; the brief may need to be revised and re-issued to take account of new discoveries, changes in policy and techniques.

Appendix 2. Context list

Context Number	Feature Number	Group Number	Feature Type	Category	Description	Length	Width	Depth	Over	Under	Cut by	Cuts	Samples
0001	0002	0002	Pit	Fill	Mid orangey brown silty clay. Compact. Occasional small angular and rounded flints. Rare chalk flecks. Horizon clear with natural relationship with 0003 unclear. Single fill.			0.16m	0002				
0002	0002		Pit	Cut	Sub oval in plan, shape unclear due to unclear relationship with 0004. Possibly cuts 0004? Profile has a sharp break of slope, concave sides and a slightly concave/flattish base.	0.94m	0.8m?	0.16m	0003	0001		0003	
0003	0004		Pit	Fill	Mid/dark orange greyish brown silty clay. Compact. Occasional small rounded and angular flints. Horizon clear. Single fill.			0.22m	0004	0002	0002		
0004	0004		Pit	Cut	Oval in plan, unclear as possibly truncated by [0002]. Profile has a sharp break of slope, concave sides and a slightly concave base. Possible cut by 0002. Filled by 0003.	>1m	0.98m	0.22m		0003			
0005	0006	0041	Ditch	Fill	Mid orangey brown silty sand. Firm. Occasional small-medium angular and rounded flints. Rare very small chalk nodules. Horizon clear. Single fill.			0.54m	0006				
0006	0006	0041	Ditch	Cut	Linear in plan, aligned NW-SE. Profile is a shallow "U" shape with a sharp break of slope, concave sides and a concave base. Filled by 0005. Same as 0018 and 0041.		1.6m	0.54m	0007	0005		0027	
0007	0009	0040	Ditch	Fill	Dark greyish brown silty sand. Firm. Horizon clear. Top fill of re-cut 0009. Charcoal rich fill.			0.76m	0008	0006			1
0008	0009	0040	Ditch	Fill	Mid greyish brown silty sand. Firm. Occasional small angular and round flints. Horizon clear.			0.28m	0009	0007			3
0009	0009	0040	Ditch	Cut	Linear in plan, aligned E-W. Profile "U" shaped to the south but with a more shallow concave side to the north. Re-cut of ditch 0023 and 0028 seen in sections 5/6. Filled by 0020, 0022 and 0025. Same as 0040.		2m	0.64m	0021, 0026	0008, 0020			
0010	0015	0040	Ditch	Fill	Mid orangey greyish brown compact silty sand. Occasional small rounded and angular flints. Rare small rounded chalk nodules. Horizon clear with 0012 and 0011 and diffuse with 0013. Top fill.			0.48m	0011, 0012	0016			2
0011	0015	0040	Ditch	Fill	Dark brownish grey silty sand. Compact. High charcoal content. Occasional small angular and rounded flints. Occasional chalk and charcoal flecks. Horizon clear.			0.26m	0013	0010			
0012	0015	0040	Ditch	Fill	Pale orange brown firm silty sand. Frequent small chalk nodules and flecks. Occasional small angular and rounded flints. Horizon clear.			0.18m	0013	0010			
0013	0015	0040	Ditch	Fill	Mid orangey greyish brown compact sandy silt. Rare chalk			0.44m	0014	0011,			

Context Number	Feature Number	Group Number	Feature Type	Category	Description	Length	Width	Depth	Over	Under	Cut by	Cuts	Samples
					flecks and small angular and rounded flints. Horizon clear. Animal bone, pottery and flint recovered.					0012			
0014	0015	0040	Ditch	Fill	Slumping fill. Lenses of pale yellowish brown sand and mid orangey greyish brown silty sand. Friable. Common small chalk nodules and small angular and rounded flints. Lowest excavated fill - not fully excavated.			>0.4m	0015	0013			
0015	0015	0040	Ditch	Cut	Linear in plan, aligned roughly east to west. Profile has a sharp break of slope, sides are generally slightly convex at an angle of 70-80° the slope then breaks again to near vertical. Filled by 0010, 0011, 0012, 0013, 0014 and possibly sealed by subsoil 0016.	>1.1m	1.7m	>1.2m		0014			
0016	0016		Subsoil	Layer	Mid greyish orangey brown firm silty sand. Occasional small-medium angular and rounded flints. Horizon clear. Possibly seals archaeological features 0015 and 0018? Appears to be cut by 0033?			0.42m	0010, 0017		0033?		
0017	0018	0041	Ditch	Fill	Mid orangey brown silty sand. Firm. Occasional chalk flecks and small angular and rounded flints. Horizon clear. Single fill.			0.52m	0018	0016			
0018	0018	0041	Ditch	Cut	Linear in plan, aligned NW-SE. Profile has a sharp break of slope, NE edge convex, SW side concave, slightly concave base. Filled by (0017). Possibly sealed by (0016). Same as 0041.	>0.96m	1.42m			0017			
0019	0023	0040	Ditch	Fill	Mainly slumped natural pale creamy sand with lenses/pockets of mid/dark silty sand.			0.32m	0038	0021			
0020	0009	0040	Ditch	Fill	Mid brown silty sand with lenses of pale sand.			0.18m	0009	0025			
0021	0023	0040	Ditch	Fill	Mid brown silty sand with moderate chalk flecks and small flints and stones.			0.64m	0019	0009			
0022	0009	0040	Ditch	Fill	Dark grey/black sandy silt with moderate small flints and stones. Horizon clear. Firm.			0.28m	0025				
0023	0023	0040	Ditch	Cut	Linear in plan, aligned E-W. Same as 0015, 0033 and 0028. Large "ankle breaker" in profile, sharp break of slope, convex sides becoming vertical. Narrow concave base. Filled by 0038, 0019, 0021. Same as 0040.		>1.28m	1.58m		0038			
0024	0033	0040	Ditch	Fill	Mid orangey brown silty sand. Firm. Occasional small-medium angular and rounded flints. Flints and partially articulated animal skeleton recovered.			>0.74m	0029				
0025	0009	0040	Ditch	Fill	Dull greyish brown silty sand with moderate small flints and stone. No chalk flecking.			0.48m	0020	0022			
0026	0028	0040	Ditch	Fill	Mid/pale orange brown silty sand. Firm. Occasional small-			0.76m	0027	0009			

Context Number	Feature Number	Group Number	Feature Type	Category	Description	Length	Width	Depth	Over	Under	Cut by	Cuts	Samples
					medium angular and rounded flints. Rare chalk flecks. Horizon clear.								
0027	0028	0040	Ditch	Fill	Mixed orange brown silty sand and pale yellowish grey slightly silty sand. Friable. Horizon clear. Basal fill.			0.38m	0028	0026			
0028	0028	0040	Ditch	Cut	Linear in plan, aligned east-west. Profile is large "ankle breaker", steep convex sides and a narrow concave base. Filled by 0027 and 0026. Same as 0040.		>1.7m	1.72m		0027	0006		
0029	0033	0040	Ditch	Fill	Mid-dark greyish brown firm silty sand. Moderate small-medium angular and rounded flints. Occasional charcoal flecks. Horizon clear. Flint and pot recovered.			0.46m	0030	0024			
0030	0033	0040	Ditch	Fill	Pale-mid orangey brown firm silty sand. Occasional small angular and rounded flints. Horizon clear. Occasional chalk flecks. Animal bone and flint recovered.			0.26m	0031	0029			
0031	0033	0040	Ditch	Fill	Mid/dark greyish orange brown silty sand. Firm. Lenses of pale greyish white sand. Horizon clear. No finds.			0.32m	0032	0030			
0032	0033	0040	Ditch	Fill	Slumped natural fill of ditch. Pale greyish yellow slightly silty sand with lenses of mid greyish brown silty sand. Occasional small flints. No finds.			0.6m	0035	0031			
0033	0033	0040	Ditch	Cut	Linear in plan, aligned east-west. Same as 0023, 0028 and 0015. Profile large "ankle breaker", steep convex sides breaking to a vertical slope with a narrow concave base. Top of northern slope at a shallower angle and concave in places. Filled by 0035, 0032, 0031, 0030, 0029 and 0024.		2m	c. 1.72m		0035		0016?	
0034	0009	0040	Ditch	Fill	Dark fill of Bronze Age ditch [0009] excavated for 1m east of slot 0023/0028.								
0035	0033	0040	Ditch	Fill	Mid/dark greyish orange brown silty sand. Firm. Horizon clear. Basal fill. No finds.			0.06m	0033	0032			
0036	0009	0040	Ditch	Fill	Dark fill of ditch [0009] excavated for 1m east of (0034).								
0037	0037		subsoil		Over burden above 0036. Probably same as 0016.								
0038	0023	0040	Ditch	Fill	Pale yellowish grey slightly silty sand with lenses of mid brown silty sand. Horizon clear. Friable. Basal ditch fill.			0.66m	0023	0019			
0039	0039			Other	Number given to natural river alluvium/edge of hillwash colluvium along southern edge of site. Seen to be over 1m deep where it shelves away from natural hill slope, Mid reddish brown slightly sandy silts similar to subsoil deposit 0016.								
0040	0040	0040	Ditch	Cut	Group number for east-west ditch crossing site. Prehistoric (Iron Age?) in date.	20	2	1.8		0041			
0041	0041	0041	Ditch	Cut	Group number for Roman(?) NW/SE orientated ditch crossing				0040				

Appendix 3. Flints by context

Context	Type	No	Comment
0007	flake	8	Small/v small mainly thickish, Irregular small pieces
	flake	13	Irregular mainly v small, one qu small and qu thick flake is def from a multi plat core, struck from both ends
	spall	3	
	spall	10	Very small, some chip like
0008	flake	2	Irregular
	spall	3	
	utilised flake	1	Has slight utilised edge, strangely this is an irregular slightly flawed edge
0010	multi platform flake core	1	Minimally struck, slight pat
	tested piece	1	Irregular squat frag struck along one edge, slight pat
	flake	1	Irregular squat flake
	flake	2	Quite small, irregular
	spall	2	
	retouched flake	1	Squat flake with obtuse thick platform which has white patination, flake slight pat, short length retouch one edge post-dates pat - cld be delib retouch
	struck fragment	1	Irregular, some pat of some surfaces
	non-struck fragment	0	Discarded
0013	tested piece	1	Fairly large fragment, it is a wide squat piece with slightly pitted or/cream cortex and a flat thermal opp surface, struck 2 or 3 times from one edge and there are some incipient cones on same edge
	blade-like flake	1	Differs to other flint from ctxt (and site generally), pat slightly glossy white, poss a resid eneo piece?
	flake	4	Irregular, generally broad
	spall	1	
0021	flake	3	2 are broad, one of these with cortical platform, other is small thin trans flint with mdf and with abraded adeg - may be from edge of flaked tool
0024	tested piece	5	Irregular pieces all struck from one edge several times, some with pat ical platform, all quite short/squat removals
	blade-like flake	1	V small
	flake	9	Various, incl some small, b most are clearty hh struck
	shatter	4	Irregular qu chunky pieces which may be from knapping/mis-strikes etc
	spall	1	
0029	multi platform flake core	1	Small with abraded cortex, is qu Irregular/jagged
	blade-like flake	1	Hard hammer w. white pat platform & slight misty patina,
	flake	2	1 v small prim flake, other with irregular platform
	shatter	2	1 flake-like frag, 1 Irregular thick jagged....?both
	spall	1	
0030	single platform flake core	1	Irregular frag with much thick white/cream cortex, incl glossy abr areas, and a few flakes from one platform
	chip	1	V small wirh thick cream cortex
	retouched flake	1	V Irregular. roughly triang piece, quite thick with cortex, some pat one side and a short length of retouch on one edge
0034	flake	1	Quite small thick hard hammer platform, may be overhang or other irregular type mp core
	shatter	1	
0036	flake	1	Quite small irregular hard hammer flake has v obtuse Irregular platform
0037	spall	1	

Appendix 4. Radiocarbon dating



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



RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code SUERC-69893 (GU42094)

Submitter Jo Caruth
Suffolk Archaeology CIC
Unit 5, Plot 11
Lion Barn Industrial Estate
Maitland Road
Needham Market IP6 8NZ

Site Reference EXG 105
Context Reference Upper fill of ditch 0009
Sample Reference 1, 0007

Material Cereal

$\delta^{13}\text{C}$ relative to VPDB -24.9 ‰

Radiocarbon Age BP 3047 \pm 29

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

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

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

Conventional age and calibration age ranges calculated by :- *E. Dunbar*

Date :- 07/11/2016

Checked and signed off by :- *P. Naynab*

Date :- 07/11/2016

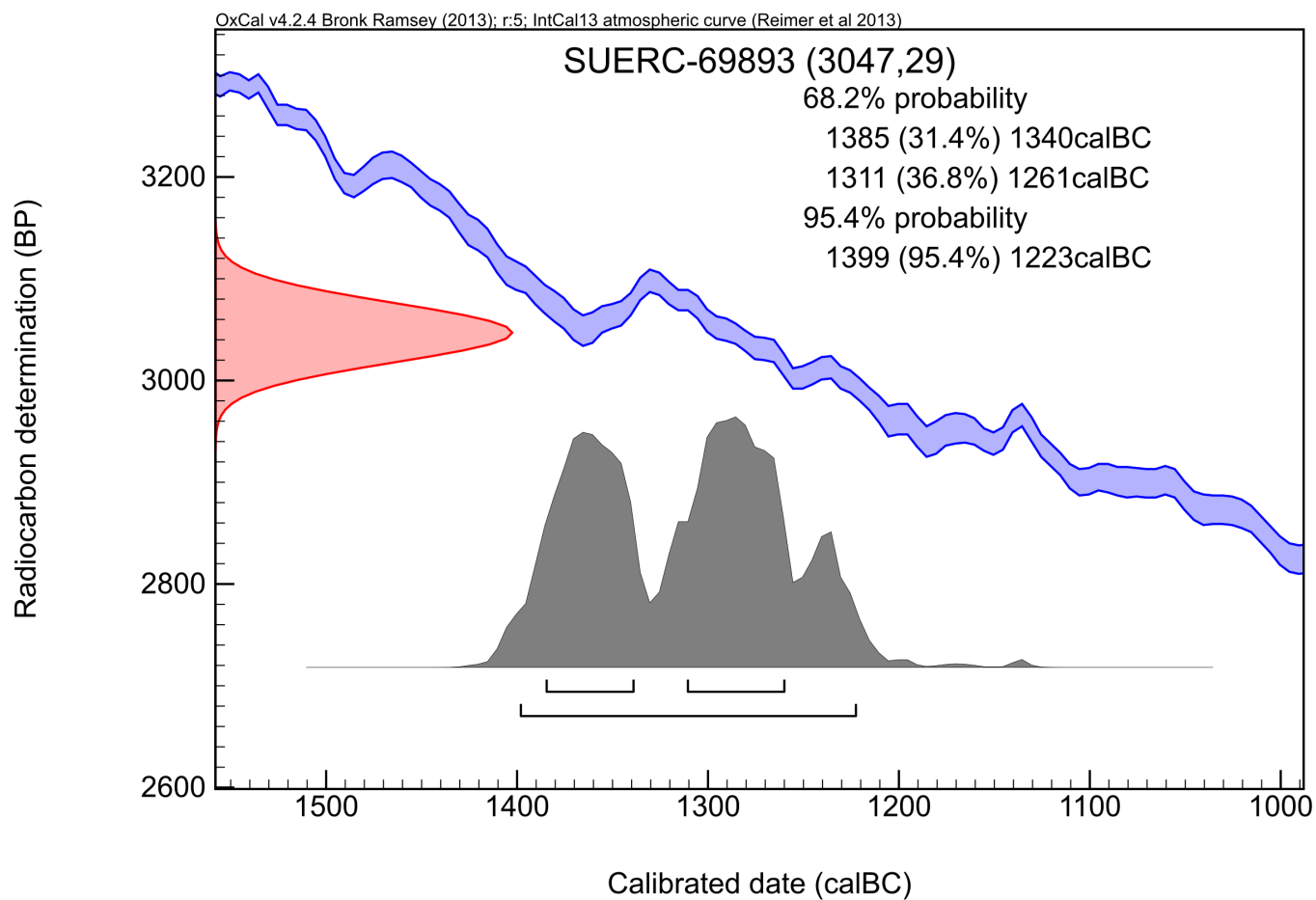


The University of Glasgow, charity number SC004401



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Calibration Plot





RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code SUERC-69894 (GU42095)

Submitter Jo Caruth
Suffolk Archaeology CIC
Unit 5, Plot 11
Lion Barn Industrial Estate
Maitland Road
Needham Market IP6 8NZ

Site Reference EXG 105
Context Reference Lower fill of ditch 0009
Sample Reference 3, 0008

Material Cereal

$\delta^{13}\text{C}$ relative to VPDB -24.6 ‰

Radiocarbon Age BP 3079 \pm 28

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

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

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

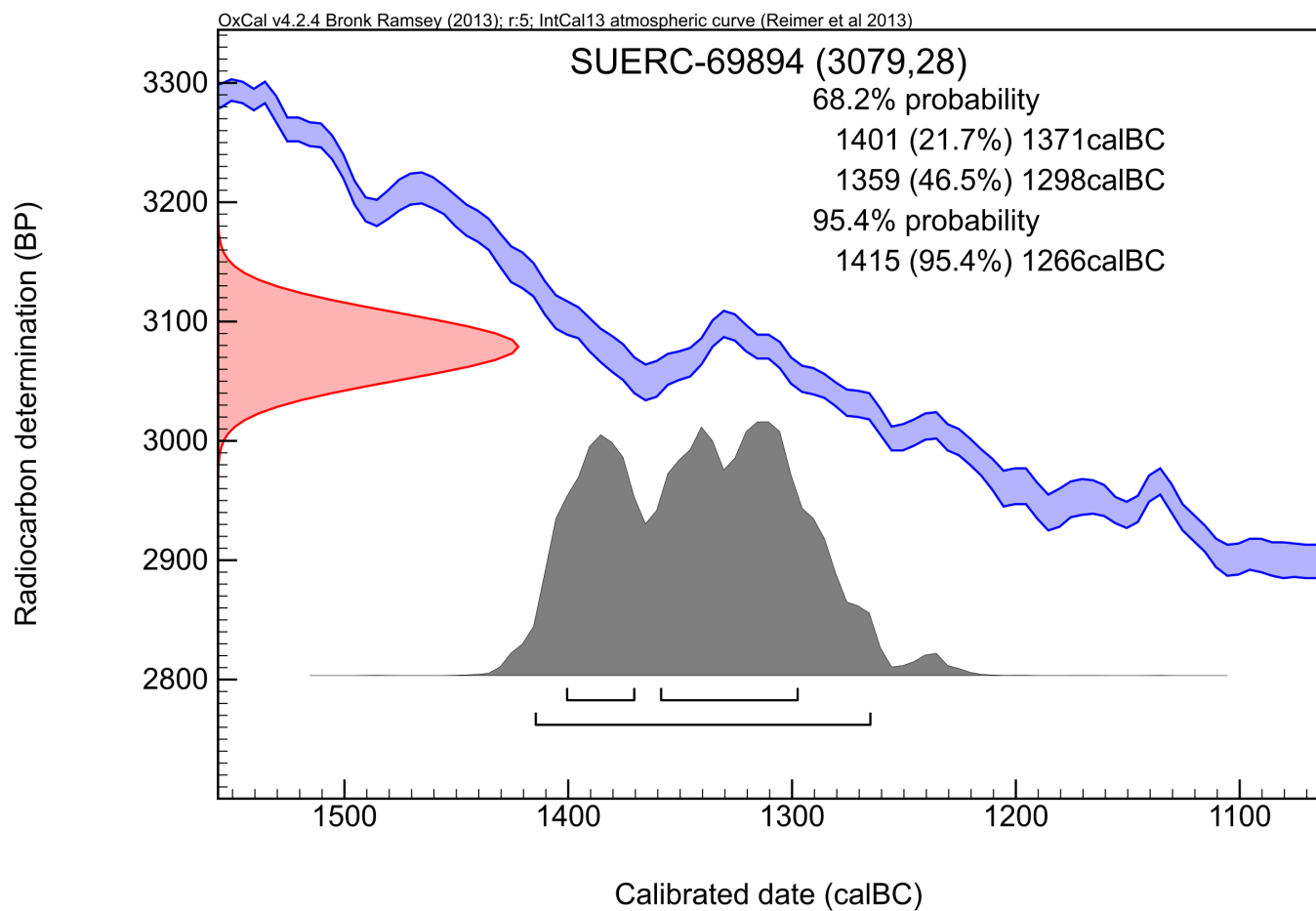
Conventional age and calibration age ranges calculated by :- *E. Dunbar*

Date :- 07/11/2016

Checked and signed off by :- *P. Naynab*

Date :- 07/11/2016

Calibration Plot



Appendix 5. OASIS form

OASIS ID: suffolka1- 269767

Project details

Project name	Land off Windmill Hill, Exning
Short description of the project	<p>An archaeological excavation was undertaken by Suffolk County Council Archaeological Service Field Team (SCCAS/FT, now Suffolk Archaeology CIC) on land at Windmill Hill, Exning, Suffolk, in June/July 2014, prior to the proposed development of a small-scale residential estate. The excavation targeted a small area where previous phases of geophysical survey and trial trench evaluation had identified the presence of archaeological deposits dating to the Bronze Age and Roman periods.</p> <p>The excavation confirmed the presence of two ditches of Middle Bronze Age and probable Roman date, both identified in the earlier archaeological evaluation, and two additional small undated pits. The Middle Bronze Age ditch was a substantial feature and has been dated via a modest assemblage of pottery belonging to the Deverel Rimbury tradition (1500–1150 BC) and the radiocarbon dating of two samples. The radiocarbon dating results of 3047 +/-29 BP and 3079 +/-28 BP correlate well with the stratigraphy of the feature and the finds evidence.</p> <p>While this ditch provides evidence for significant activity in this period in the vicinity it is, at present, an isolated feature and there is little indication of where any focus of activity may lie. It predates that of the significant Iron Age site at EXG 082 however, some 250m to the west, and it seems most likely that associated settlement also lies uphill to the north or west.</p> <p>Limited monitoring of groundworks in the surrounding area showed that any potential archaeological horizon was not being disturbed, with the majority of the development access road being built up and with associated services not penetrating an extensive modern dump deposit spread across the central and eastern half of the site.</p>
Project dates	Start: 30-06-2014 End: 11-07-2014
Previous/future work	Yes / No
Any associated project reference codes	EXG 105 - HER event no.
Any associated project reference codes	F/2012/0653/OUT - Planning Application No.
Type of project	Recording project
Site status	None
Current Land use	Vacant Land 3 - Despoiled land (contaminated derelict and ?brownfield? sites)
Monument type	DITCH Middle Bronze Age
Monument type	DITCH Roman
Significant Finds	POTTERY Middle Bronze Age
Significant Finds	COIN Roman
Significant Finds	LITHIC IMPMELENT Bronze Age
Significant Finds	LITHIC IMPLEMENT Iron Age
Significant Finds	MUSKET BALL Post Medieval
Significant Finds	ANIMAL REMAINS Uncertain
Investigation type	"Open-area excavation"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	SUFFOLK FOREST HEATH EXNING Land off Windmill Hill, Exning
Study area	2000 Square metres
Site coordinates	TL 6287 6589 52.2665811186 0.387058564154 52 15 59 N 000 23 13 E Point

Height OD / Depth Min: 15m Max: 30m

Project creators

Name of Organisation Suffolk Archaeology CIC
Project brief originator Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator Dr Jess Tipper
Project director/manager John Craven
Project supervisor Simon Cass
Type of sponsor/funding body Developer
Name of sponsor/funding body Lors Homes Ltd

Project archives

Physical Archive recipient Suffolk HER
Physical Contents "Environmental", "Metal", "Worked stone/lithics", "Ceramics"
Digital Archive recipient Suffolk HER
Digital Contents "Ceramics", "Environmental", "Metal", "Survey", "Worked stone/lithics"
Digital Media available "Database", "Images raster / digital photography", "Survey", "Text"
Paper Archive recipient Suffolk County SMR
Paper Contents "Ceramics", "Environmental", "Metal", "Survey", "Worked stone/lithics"
Paper Media available "Context sheet", "Notebook - Excavation", " Research", " General Notes", "Photograph", "Plan", "Report", "Section", "Survey "

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)
Title Windmill Hill, Exning EXG 105 Archaeological Excavation Report
Author(s)/Editor(s) Cass, S.
Other bibliographic details 2016/091
Date 2016
Issuer or publisher Suffolk Archaeology CIC
Place of issue or publication Bury St Edmunds
Description Suffolk Archaeology CIC A4 bound excavation report

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