ARCHAEOLOGICAL EVALUATION REPORT

Land adjacent to Park Grove, Euston Estate, Sapiston SAP 012

A REPORT ON THE ARCHAEOLOGICAL EVALUATION, 2006
(Planning app. no. SE/05/02844)

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SCCAS Report No. 2008/213

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Acknowledgements

This project was commissioned by Miles Waterscapes Ltd, on behalf of the developer, Euston Farms and was monitored by Jess Tipper (Suffolk County Council Archaeological Service, Conservation Team).

The evaluation fieldwork was carried out by a number of archaeological staff, (Jo Caruth, John Craven, Michael Green, Alan Smith, Nick Taylor and Jonathan Van Jennians) all from Suffolk County Council Archaeological Service, Field Team.

The project was directed and managed by Jo Caruth, who also provided advice during the production of the report.

The post-excavation was managed by Richenda Goffin. Finds processing and the production of site plans and sections was carried out Gemma Adams and Anna West, and the specialist finds and environmental reports by Cathy Tester, Sue Anderson, Sarah Bates, Sarah Percival and Val Fryer. Finds illustrations are by Donna Wreathall.

Summary

Sapiston, Land adjacent to Park Grove, Euston Estate (TL/ 924763; SAP 012): An archaeological evaluation and excavation of arable farmland in advance of the construction of a farm reservoir identified two phases of activity. The earliest was a possible focus of Late Neolithic/Early Bronze Age occupation, which was indicated by the presence of scattered finds and one posthole, firmly dated to this phase by its pottery assemblage and the result of a radiocarbon analysis of hazel shell collected from its fill. The second was a more substantial scatter of pits and postholes, representing a period of domestic Iron Age activity in three areas, of which two were immediately investigated further in small open area excavations.

The features hinted at the possible presence of small buildings and hearths although no discernable spatial patterns were apparent. Feature fills frequently contained small amounts of material likely to have originated from domestic refuse or hearth waste, the majority of the pottery dating to the Early Iron Age. A single feature contained material from a partially intact human cremation. Radiocarbon dates of carbonised material within the fills of two features confirmed the activity as occurring in the Early-Mid Iron Age.

The third and main spread of Iron Age features lay wholly within the area of the reservoir bund and agreement was reached to exclude this area of c.2700sqm from the general topsoil strip. The bund was subsequently built over untouched ground, leaving the archaeological deposits preserved *in situ*.
(John Craven, S.C.C.A.S. for Euston Farms).

HER information

Planning application no.	SE/05/02844
Date of fieldwork:	2nd-9th October 2006
Grid Reference:	TL 924763
Funding body:	Euston Farms
Oasis reference	Suffolkc1-18619

1. Introduction

An archaeological evaluation was carried out in advance of the construction of a reservoir on the Euston Estate, Sapiston. The work was carried out to a Brief and Specification issued by Jess Tipper (Suffolk County Council Archaeological Service, Conservation Team – Appendix 1) to fulfil a planning condition on application SE/05/02844. The work was commissioned by Miles Waterscapes Ltd, on behalf of the developer, Euston Farms.

The site lies at TL 924 763 (Fig. 1), stretching across two arable fields on a gentle south-east facing slope, from 42m to 33.5m OD, which overlooks the Blackbourn river valley to the south-east. The natural subsoil over much of the site consisted of orange/yellow clay/silt, lying directly below the ploughsoil. Towards the base of the slope the subsoil contained increasing quantities of gravel and was at times sealed under a layer of mid brown silt. The reservoir, which is now completed, occupies a total area of 8ha, with a central area of c.3.8ha that was excavated to a depth of 2-9m. The remaining 4.2ha was stripped of topsoil and built up with excavated material from the centre to form a surrounding bund.

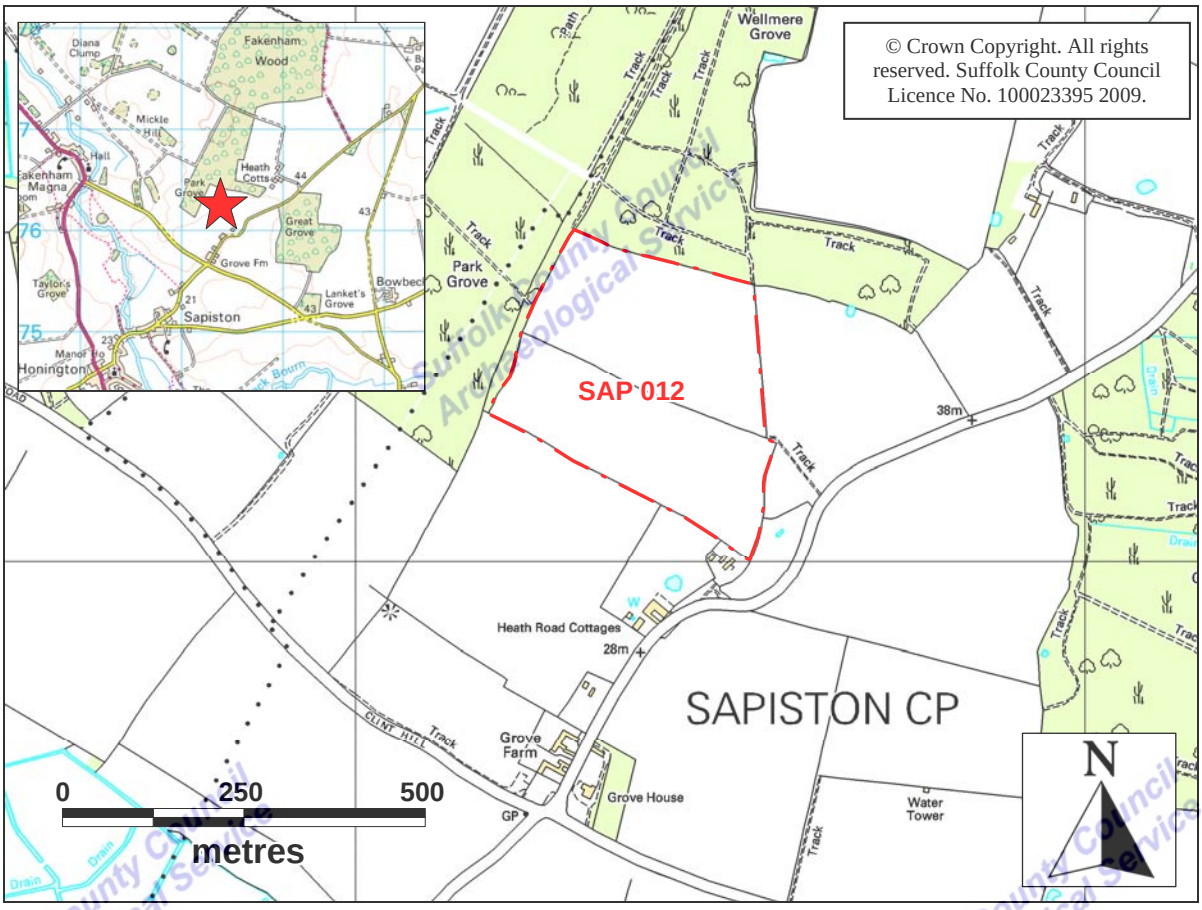

Figure 1. Site location plan

An archaeological desk-based assessment of the development (Rolfe, 2006), produced as part of an Environmental Impact Assessment commissioned by Euston Farms, indicated that the site was of potential archaeological interest. Although there is no record of any archaeological sites within the area of the reservoir the size and setting of the site, on a ridge overlooking a river valley, had potential for evidence of prehistoric occupation.

Any archaeological deposits on the site would be totally removed and destroyed within the central area of the development. The topsoil strip of the outer ring for the bund would also expose and probably truncate any archaeological deposits, with further machine movements and

the creation of the bund likely to cause heavy damage if not total destruction. A programme of archaeological evaluation was therefore required to assess the archaeological potential of the site and to establish any archaeological implications for its development.

When the evaluation identified three areas, Trenches 28, 30 and 35, as being of specific archaeological interest it was agreed by Jess Tipper, Euston Farms and the SCCAS Field Team to immediately extend Trenches 28 and 33 into small-scale excavation areas. The third area, which occupied c.2700sqm, was centred on Trench 35. As it lay wholly within the area of the bund Miles Waterscapes Limited and Euston Farms decided to exclude this area from the general topsoil strip, meaning the bund would be built over untouched ground, leaving archaeological deposits preserved *in situ*. This report therefore covers both the results of the field evaluation and of the limited subsequent fieldwork that was subsequently required.

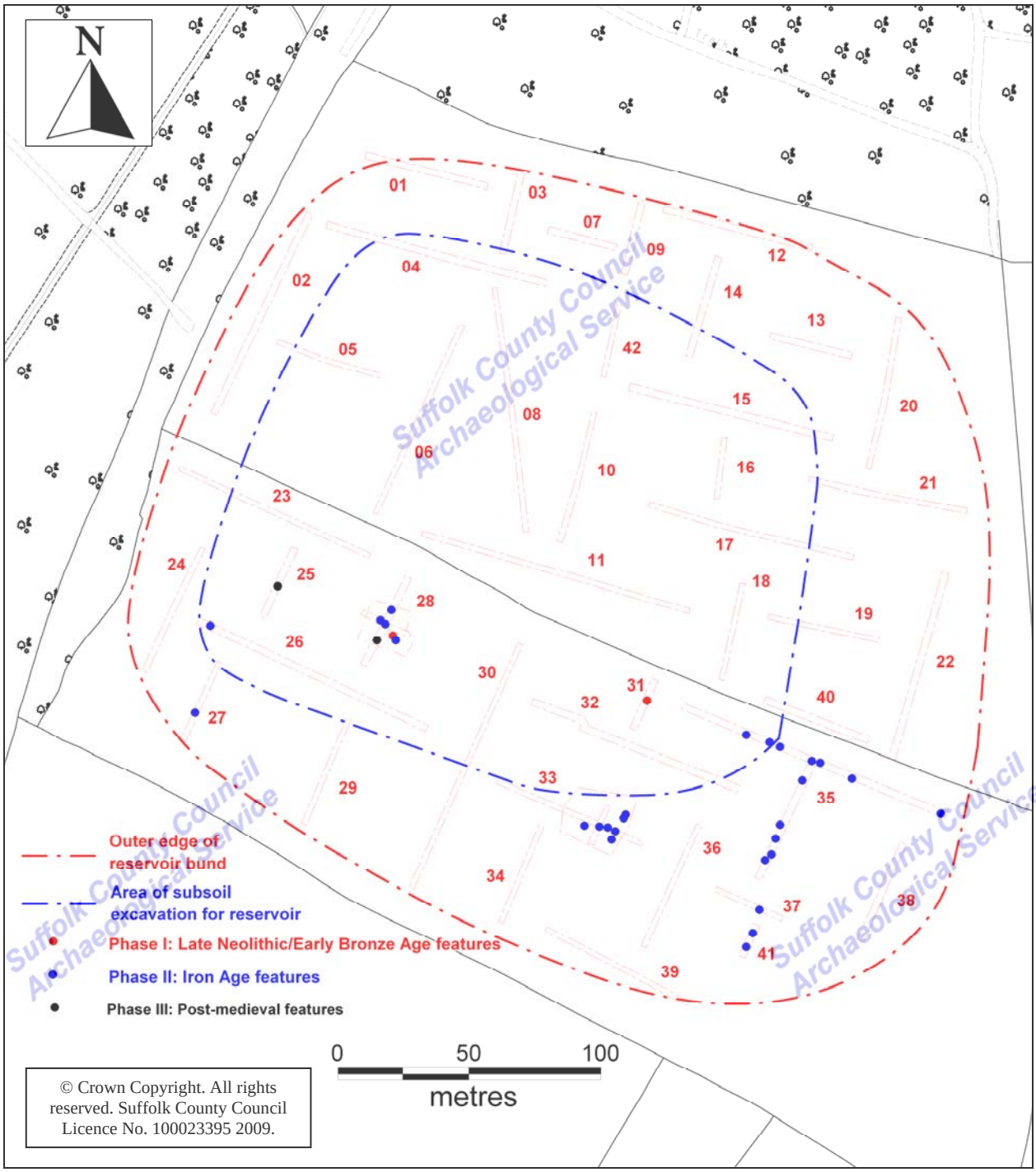

Figure 2. Trench layout

2. Methodology

A total of forty-two trenches, with a total length of 2383.5m, were laid out to cover the proposed extraction area in the centre of the fields and the encircling strip, which would be affected by the construction of the bund (Fig. 2),. Trenches 28, 33 and 35 were extended to help define areas of specific interest, after the planned trenching was complete.

The trenches were excavated to the top of the archaeological levels by two mechanical excavators, equipped with 1.8m and 2.6m wide ditching buckets, each under the supervision of an archaeologist. 1194m of trench were excavated at 1.8m wide and 1189.5m at 2.6m width, giving a total evaluated area of 5242sqm. This amounted to just over 6.5% of the total 8ha area, considerably more than the 5% minimum required by the brief, due to the placement of some extra trenches and the 2.6m wide bucket on one of the excavators.

The trenches were generally excavated to a depth varying from 0.3m-0.5m. This consisted of the removal of 0.3m-0.4m of ploughsoil and occasional thin layers of mixed silt, clay or gravel hillwash deposits, particularly in the easternmost trenches. Removal of the ploughsoil exposed the natural subsoil, which was normally a mix of yellow/orange clay and silt, with occasional mid brown clay/silt infilled shallow hollows. Archaeological features were identifiable at this depth cutting the subsoil and only limited hand cleaning of specific areas was required. After excavation the spoil was examined for finds, and all the trenches and spoilheaps were metal-detected.

Two areas were subsequently opened around Trenches 28 and 33, measuring 290sqm and 500sqm respectively. Archaeological deposits in these areas were excavated and recorded as part of the evaluation.

A single context continuous numbering system was used, with numbers 0001-0041 reserved for unstratified finds from the respective trenches. Archaeological features and deposits were numbered from 0050 onwards. The majority of the archaeological features consisted of scattered pits and postholes. These were excavated by hand, initially 50% of the pits and postholes being excavated prior to recording before being fully 100% removed. Bulk soil samples were taken from a selection of contexts, particularly from those containing datable finds material. Individual feature sections and plans were drawn at a scale of 1:20. The trenches were planned, and site levels were taken using a Total Station Theodolite. Site levels are relative to an OD benchmark supplied by Miles Waterscapes Limited. Digital colour (300dpi resolution) and black and white print photographs were taken of all stages of the evaluation and are included in the site archive.

Site data has been input onto an MS Access database and recorded using the County Historic Environment Record code SAP 012, and inked copies of section drawings and plans have been made. Bulk finds were washed, marked and quantified, and the resultant data was also entered onto a database.

An OASIS form has been completed for the project (reference no. suffolkc1-18619) and a digital copy of the report submitted for inclusion on the Archaeology Data Service database (http://ads.ahds.ac.uk/catalogue/library/greylit).

The site archive is kept in the main store of Suffolk County Council Archaeological Service at Bury St Edmunds under HER No. SAP 012.

3. Results

3.1. Introduction

Archaeological features were located in nine of the forty-two trenches (see Appendix 2) and these all lay within the smaller southern field. A further seven trenches (No's. 02, 17, 18, 23, 29, 30 and 40) contained unstratified material and a single small find, 1001, was metal detected from Trench 35. The features consisted of a very broad and sparse scatter of pits and postholes, with two or three natural hollows also being investigated. Material dating evidence was recovered from the majority of contexts and the various features predominantly belong to a main phase of Early Iron Age activity. A smaller quantity of material also indicates an earlier phase of activity in the Late Neolithic/Early Bronze Age. Scattered post-prehistoric finds were either unstratified (0002, 0017, 0023 and 1001) or probably intrusive in earlier contexts. 0064 was potentially a post-medieval ditch but does not indicate any substantial phase of activity. Basic trench descriptions are listed in Table 1 below.

Trench No	Length	Width	Description	Associated OP No's
01	48m	2.6m	0.25m of ploughsoil overlying subsoil of very thick orange clay.	
02	85m	2.6m	0.3m of ploughsoil overlying subsoil of orange clay, thin layer of brown silt, 0.05m thick lying above subsoil in places.	0002
03	32m	2.6m	0.3m of ploughsoil overlying subsoil of very thick orange clay.	
04	87m	2.6m	0.25m of ploughsoil overlying subsoil of very thick orange clay.	
05	40m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay with occasional scattered gravel.	
06	78.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt, slightly shallower to north.	
07	27m	2.6m	0.25m of ploughsoil overlying subsoil of orange clay.	
08	93m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay with increasing silt and gravel to the south.	
09	29.5m	2.6m	0.25m-0.35m of ploughsoil overlying subsoil of orange clay.	
10	50.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt.	
11	105m	1.8m	0.3m of ploughsoil overlying subsoil of orange clay/silt with occasional scattered flints.	
12	59m	2.6m	0.3m of ploughsoil overlying subsoil of yellow/orange clay at west end. To east the trench deepens to 0.4m, with a 0.1m thick layer of silt overlying the subsoil which contained increasing amounts of gravel and silt.	
13	32m	2.6m	0.3m-0.4m ploughsoil overlying subsoil of orange clay/silt.	
14	40m	2.6m	0.3m ploughsoil overlying subsoil of orange clay/silt.	
15	79m	2.6m	0.3m ploughsoil overlying 0.1m of brown silt. Subsoil of orange clay/silt with increasing silt/gravel	

Trench No	Length	Width	Description	Associated OP No's
			to east.	
16	22.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional gravel.	
17	79.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt. One sherd of pottery recovered from subsoil surface.	0017
18	36.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional gravel.	0018
19	42.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with some gravel.	
20	58.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional gravel.	
21	61m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional gravel.	
22	73m	2.6m	0.35m of ploughsoil overlying subsoil of orange clay/silt.	
23	79m	2.6m	0.45m of ploughsoil overlying subsoil of heavy clay/chalk, shallower with increasing silt/gravel to east.	0023
24	52m	1.8m	0.3m of ploughsoil overlying subsoil of yellow/grey clay.	
25	29m	2.6m	0.3m of ploughsoil overlying subsoil of orange clay/silt.	0064
26	96m	2.6m	0.25m-0.3m of ploughsoil overlying subsoil of orange clay with occasional patches of boulder clay.	0056
27	32.5m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay with occasional silt patches.	0050
28	37m & 18m	2.6m & 1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional areas of brown silt.	0052, 0055, 0060, 0062, 0072-0076
29	43m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of yellow/orange clay with occasional silt patches. One unstratified flint flake recovered from ploughsoil.	0029
30	102m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt. Scattered unstratified struck flints recovered from subsoil surface.	0030
31	21m	2.6m	0.3m of ploughsoil overlying subsoil of orange clay/silt.	0070
32	85m	2.6m	0.3m-0.4m of ploughsoil overlying subsoil of orange/brown clay/silt with scattered gravel.	
33	59m & 15m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt with scattered chalk.	0078-0084, 0100, 0103-0109
34	40m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt with occasional yellow/brown clay/silt patches.	
35	157m	2.6m	0.4m of ploughsoil overlying subsoil of orange clay/silt at west end. To east it deepens with subsoil containing increasing amounts of silt and gravel	0035, 0086-0098, 0110, 0114, 0117, 0119, 1001

Trench No	Length	Width	Description	Associated OP No's
36	51m	1.8m	0.4m of ploughsoil overlying subsoil of orange clay/silt with frequent irregular hollows infilled with mid brown clay/silt.	
37	26m	1.8m	0.4m of ploughsoil overlying subsoil of orange clay/silt with frequent irregular hollows infilled with mid brown clay/silt.	0112
38	39m	2.6m	0.4m of ploughsoil overlying 0.2m of brown silty. Subsoil a mix of brown clay/silt and gravel.	
39	60m	1.8m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt.	
40	42m	2.6m	0.3m-0.4m of ploughsoil overlying subsoil of orange clay/silt and gravels.	0123
41	13m	2.6m	0.4m of ploughsoil overlying 0.2m of brown silty. Subsoil a mix of brown clay/silt and gravel.	0066, 0068
42	28m	1.8m	0.3m of ploughsoil overlying subsoil of yellow/orange clay/silt with occasional flints.	

Table 1. Trench descriptions

3.1. Phase I: Late Neolithic/Early Bronze Age

(Figs. 3 & 7-8)

Four features contained Beaker pottery (27 sherds weighing 263g): postholes 0055, 0060 and 0076 in Trench 28 and pit 0070 in Trench 31. However this assemblage is mainly thought to be residual material deposited within the feature fills, consisting as it does of small abraded sherds and, in postholes 0055 and 0060, being recovered along with greater quantities of early Iron Age pottery. It seems likely therefore that these two features at least are contemporary with the surrounding evidence of Iron Age activity.

0070 was an oval pit aligned south-west to north-east, measuring 0.45m by 0.65m and 0.18m deep, with steep sides and a flat base. Its fill, 0071, was a mix of mid brown/orange clay/silt with traces of charcoal. Fifteen sherds of Late Neolithic/Early Bronze Age pottery were collected, including a partially complete profile (Fig. 16).

The remaining feature, 0076, was an oval pit or posthole in Trench 28 (see below, Figs. 7 and 8), measuring 0.5m by 0.55m and 0.32m deep with near-vertical sides and a concave base. Its fill, 0077, was a mid-dark brown clay/silt with increasing amounts of charcoal towards the base, analysis of which has given a radiocarbon date of 2200-1980 BC (see below and Appendix 9). Seven sherds of pottery were also collected and confirm a Late Neolithic/Early Bronze Age date for the feature.

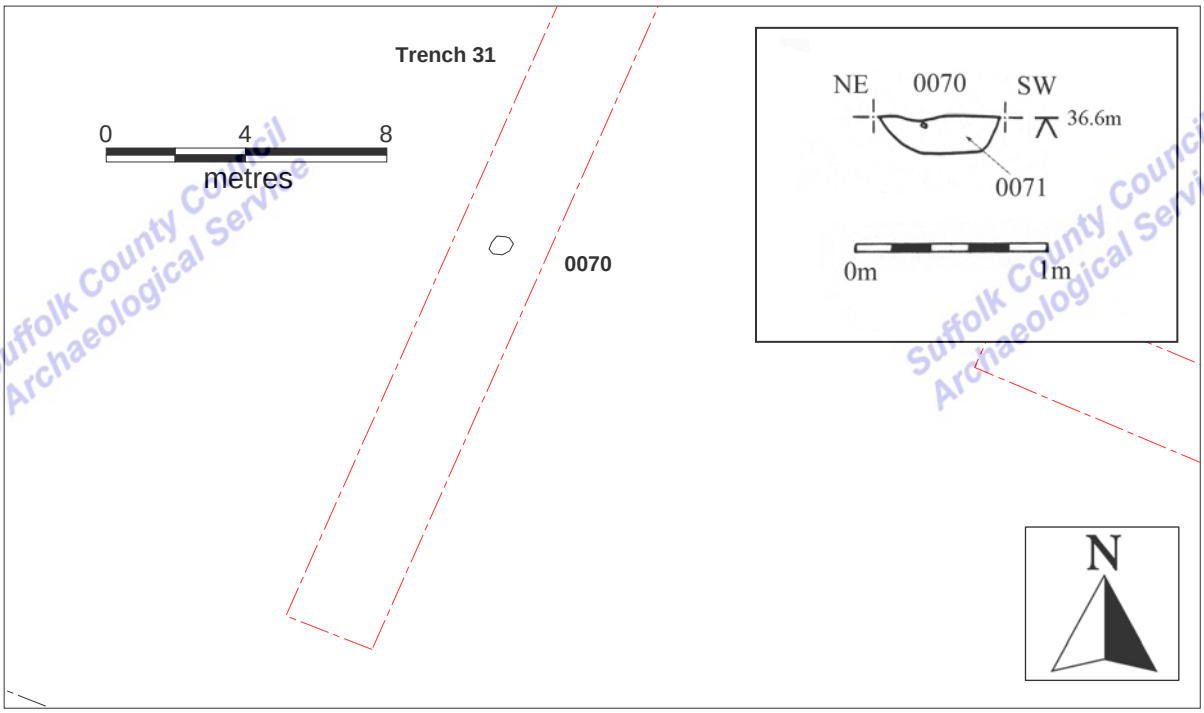

Figure 3. Trench 31 - 0070 plan and section

3.2. Phase II: Early Iron Age

(Figs. 4-15)

Features attributable to a phase of domestic occupation activity in the Iron Age were mainly identified in three general areas within Trenches 28, 33 and 35, although a few scattered features were seen in outlying trenches. Of the 33 features or hollows/spreads identified on the site, 17 contained Iron Age material. A further 12 features, although undated, contained similar fills with frequent deposits of charcoal and burnt flint and are thought to be contemporary.

Trench 18

Five sherds of Iron Age pottery, 0018, were recovered from the topsoil during machining.

Trench 26

0056 was an oval pit lying partially under the trench baulk. Measuring 0.6m by 0.8m and 0.15m deep it had two fills. 0058 was a discrete deposit of charcoal and dense, crushed burnt flint lying at the western end of the feature, partially below 0057, a mid brown clay/silt with fragments of burnt flint, clay, and occasional charcoal. No finds or samples were collected from either fill.

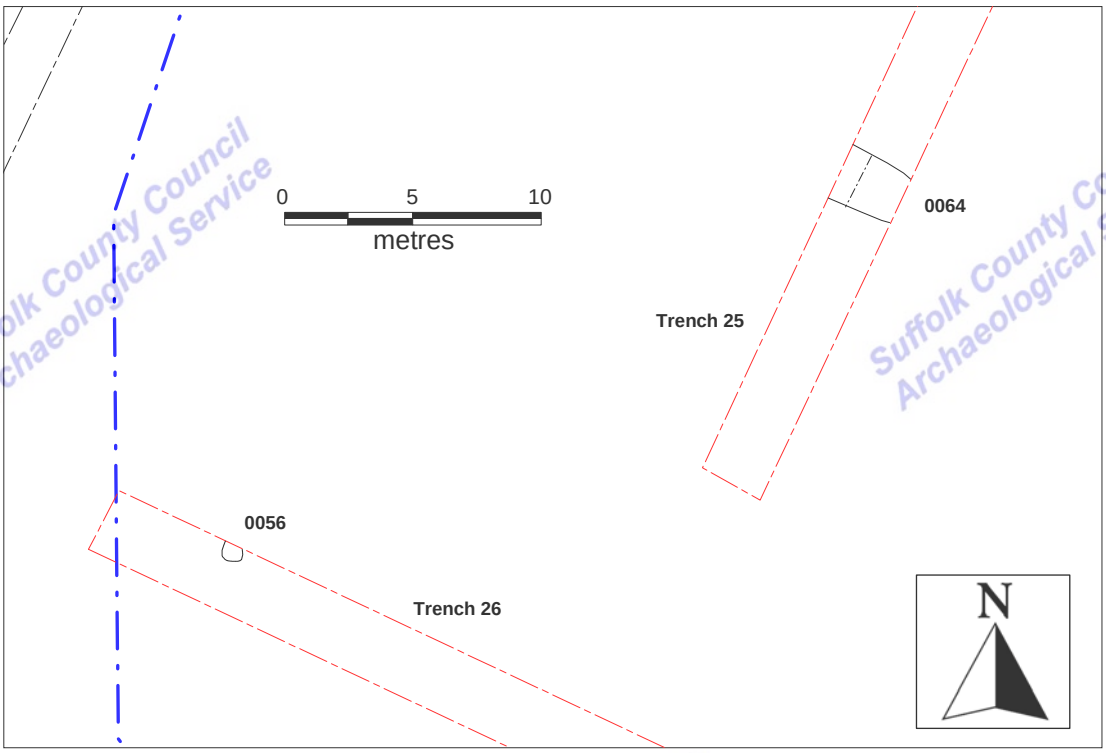

Figure 4. Trenches 25 and 26 plan

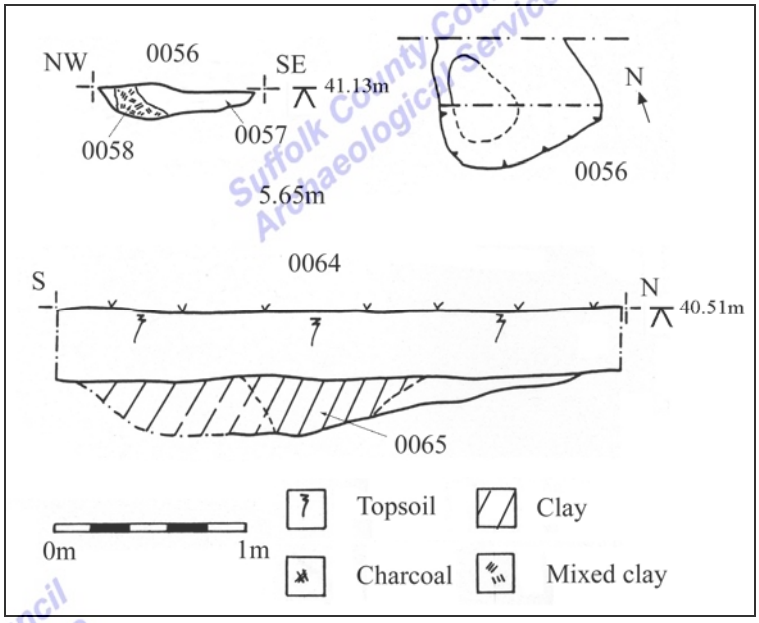

Figure 5. Trenches 25 and 26 - feature plans and sections

Trench 27

0050 was a small circular pit, measuring 0.4m in diameter and 0.2m deep, with steep sides and a concave base. A possible deeper stakehole lay on the west side. Its fill, 0051, was a mottled mid brown/orange clay/silt with frequent scattered charcoal and occasional pieces of burnt clay or flint. No finds were collected.

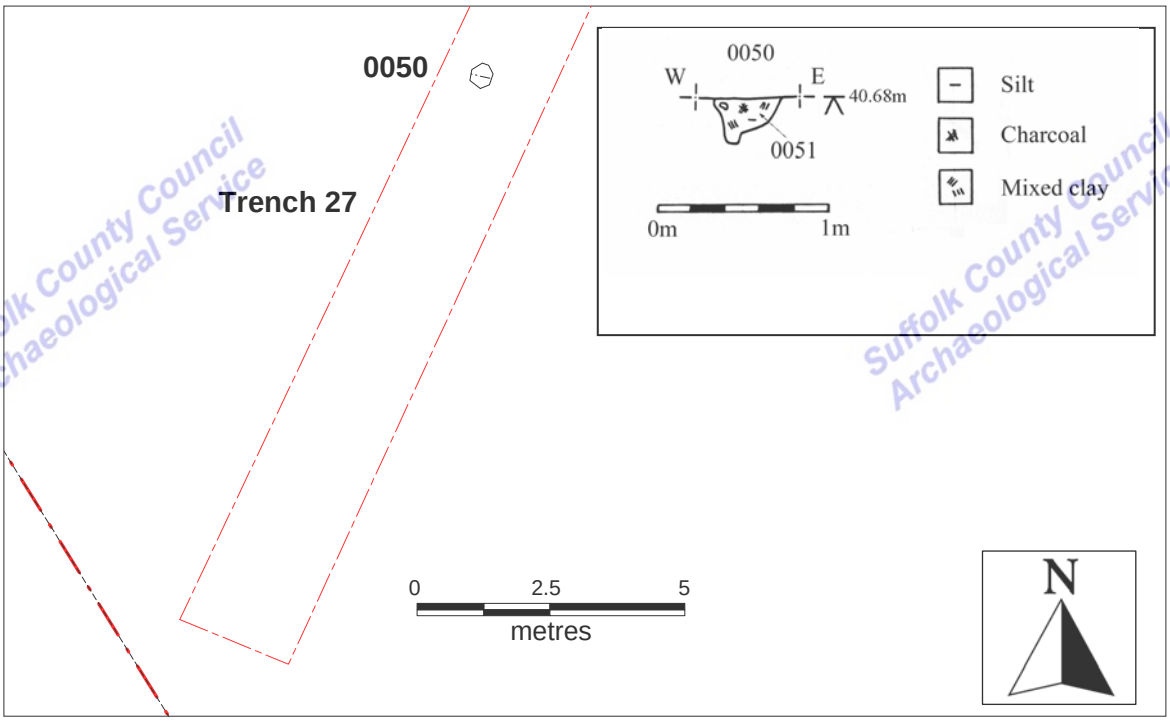

Figure 6. Trench 27 - 0050 plan and section

Trench 28

0055 was a circular posthole, measuring 0.4m in diameter and 0.28m deep, with steep sloping sides and a concave base. Ten sherds of Iron Age and four sherds of Late Neolithic/Early Bronze Age pottery were recovered from its fill, 0059, a mid brown silt/clay with occasional flints and charcoal flecks. Radiocarbon analysis of seeds from this fill gave a date of 390-200 BC (see section 4.6.4. below and Appendix 9).

0060 was a circular posthole, measuring 0.4m in diameter and 0.35m deep, with steep sides and concave base. Three sherds of Iron Age and a single residual sherd of Late Neolithic/Early Bronze Age pottery were recovered from its fill, 0061, a mid-dark brown silt/clay with occasional flints, frequent charcoal and flecks of burnt clay.

0062 was a small oval posthole, measuring 0.22m by 0.25m and 0.2m deep, with moderate sloping sides and a flat base. Its fill, 0063, was a mid brown/pale grey silt/clay with occasional charcoal flecks.

0073 was a silt layer lying across the excavation area around trench 28. It contained occasional areas of charcoal flecks and iron pan and scattered sherds of Iron Age pottery and a single Roman sherd, 0072, lay on its surface near the various features. As the features cut the layer, and with surface cleaning and excavation of a sample trench showing a distinct lack of material, it is though to be a natural deposit.

0074 was an oval posthole, measuring 0.4m by 0.55m and 0.3m deep. It had vertical sides with a concave base and a fill, 0075, of mid brown clay/silt with increasing amounts of charcoal towards the base and scattered flints.

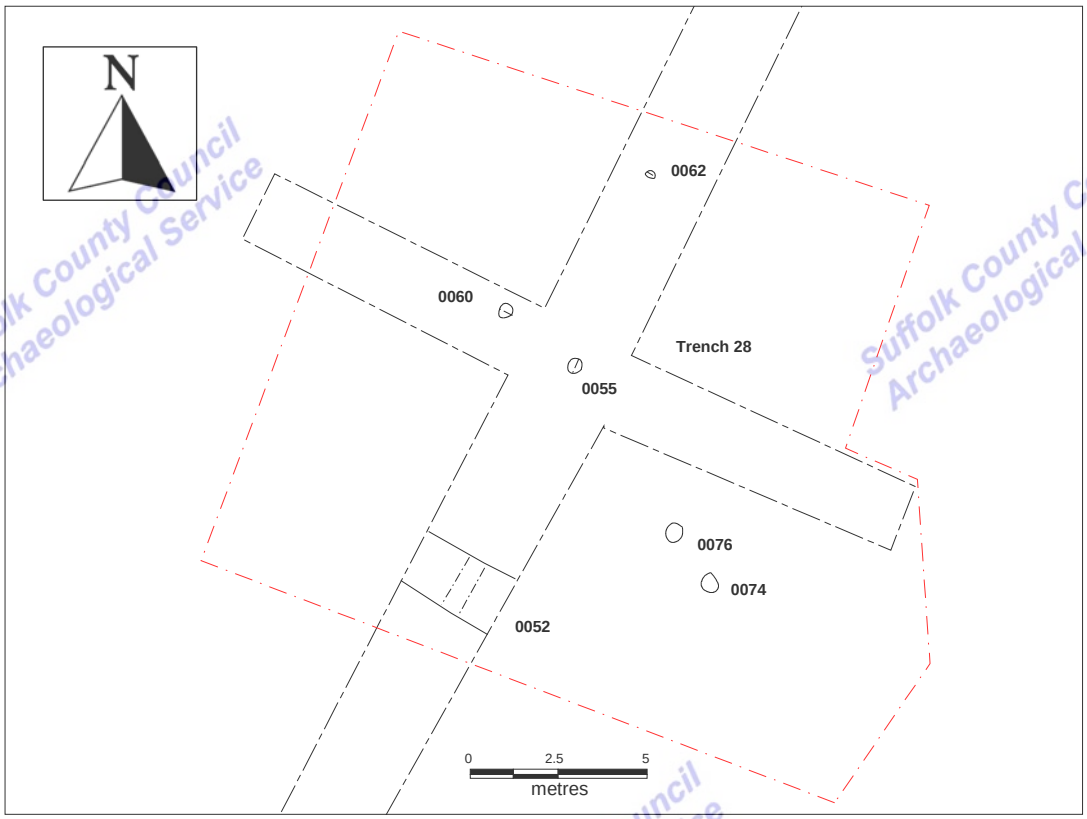

Figure 7. Trench 28 plan

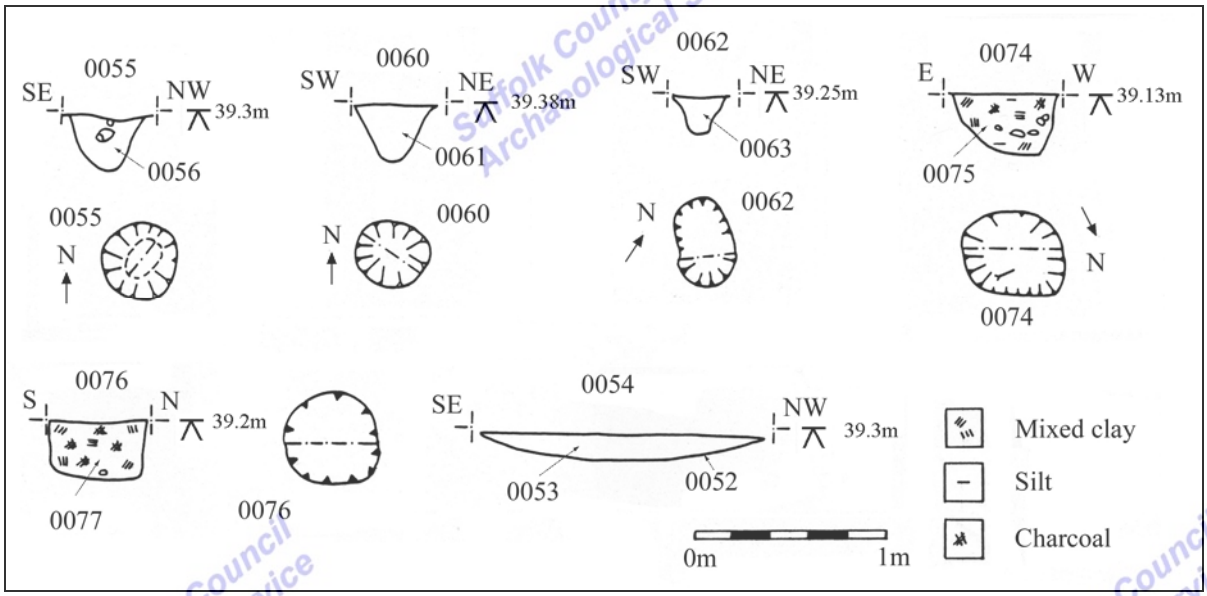

Figure 8. Trench 28 - feature plans and sections

Trench 33

0078 was an oval posthole, measuring 0.45m by 0.25m and 0.2m deep. It had steep sides, a concave base and a fill, 0079, of dark brown clay/silt with charcoal from which three sherds of Iron Age pottery were recovered. After 100% excavation a deeper circular posthole, 0.25m in diameter and 0.4m deep was apparent at the northern end.

0080 was a deep oval posthole, measuring 0.32m by 0.25m and 0.4m deep. It had steep sides, an irregular base and a fill, 0081, of dark brown clay/silt with charcoal from which five sherds of Iron Age pottery were recovered.

0082 was a small, circular posthole, measuring 0.2m in diameter and 0.24m deep, with vertical sides and a concave base. Its fill, 0083, was a mid brown silt/clay with occasional charcoal flecks from which three sherds of Iron Age pottery were recovered.

0084 was a large circular posthole, measuring 0.6m in diameter and 0.54m deep, with steep sides and a concave base. Its fill, 0085, was a dark grey/brown silt clay with charcoal flecks and occasional flints from which fifteen sherds of Iron Age pottery were recovered. Cremated bone in the fill consisted of parts of a possible juvenile cremation mixed with animal bone.

0100 was a small pit, containing fragments of an adult human cremation. Measuring 0.45m in diameter and 0.2m deep it had moderate sloping sides and a concave base. The basal fill, 0102, was a light orange/brown clay mixed with burnt clay and charcoal flecks. Above this was 0101, a dark brown/black silt/clay with charcoal, daub and burnt bone. No other finds were collected from either fill.

0103 was a circular pit, measuring 0.85m in diameter and 0.28m deep, with steep sides and a flat base. Its fill, 0104, was a mottled pale brown silt with frequent charcoal fleck, fired clay, burnt bone and scattered flints. Lying on the base of the north-east half of the pit were 24 sherds of Iron Age pottery, 0109, amounting to c.80% of the total weight of the phase pottery assemblage. Originally thought to be a possible human cremation, the burnt bone has now been identified as being almost certainly of animal origin (see section 4.6.1.below). Radiocarbon analysis of charcoal from the fill gave a date of 760-410 BC (see section 4.6.4. below and Appendix 9).

There was an irregular pit or hollow in the western part of the excavated area, approximately 5m in diameter, and infilled with 0105, a homogenous layer of mid brown silt and 0106, a homogenous layer of dark grey/brown silt. Set within the top of fill 0106 were two deposits of bone, 0107 and 0108, initially thought to be a possible burial but again identified as being of animal origin (see section 4.6.1. below). These were recorded and removed prior to a slot section, 0124, being excavated across 0105 and 0106. This section showed a natural slope to the hollow on the south and eastern sides, with 0105 slumping in towards the centre, under 0106. In the centre of the hollow the trench reached a depth of 0.55m before it was abandoned due to waterlogging caused by poor weather conditions and one of the test boreholes excavated for the reservoir development.

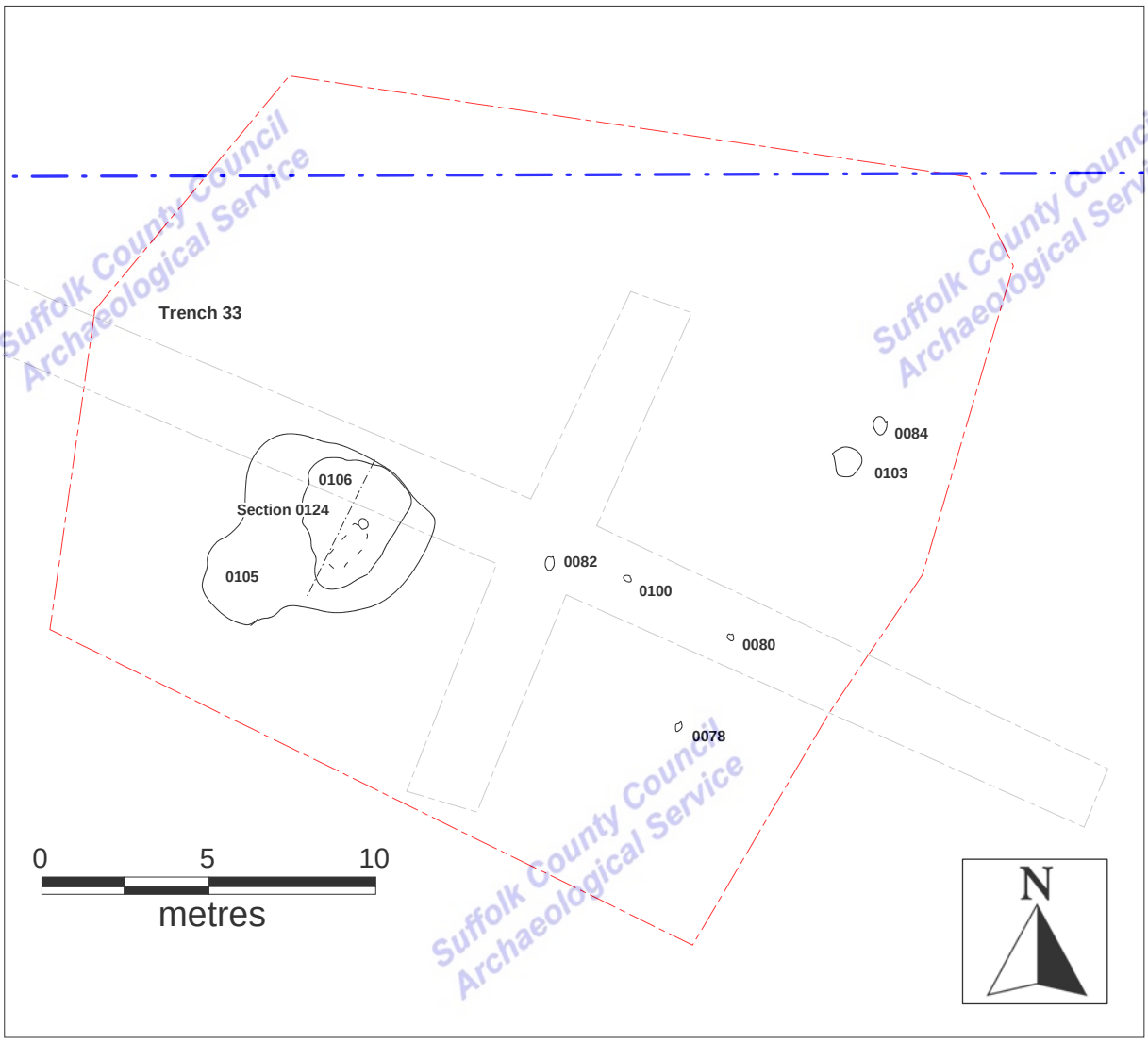

Figure 9. Trench 33

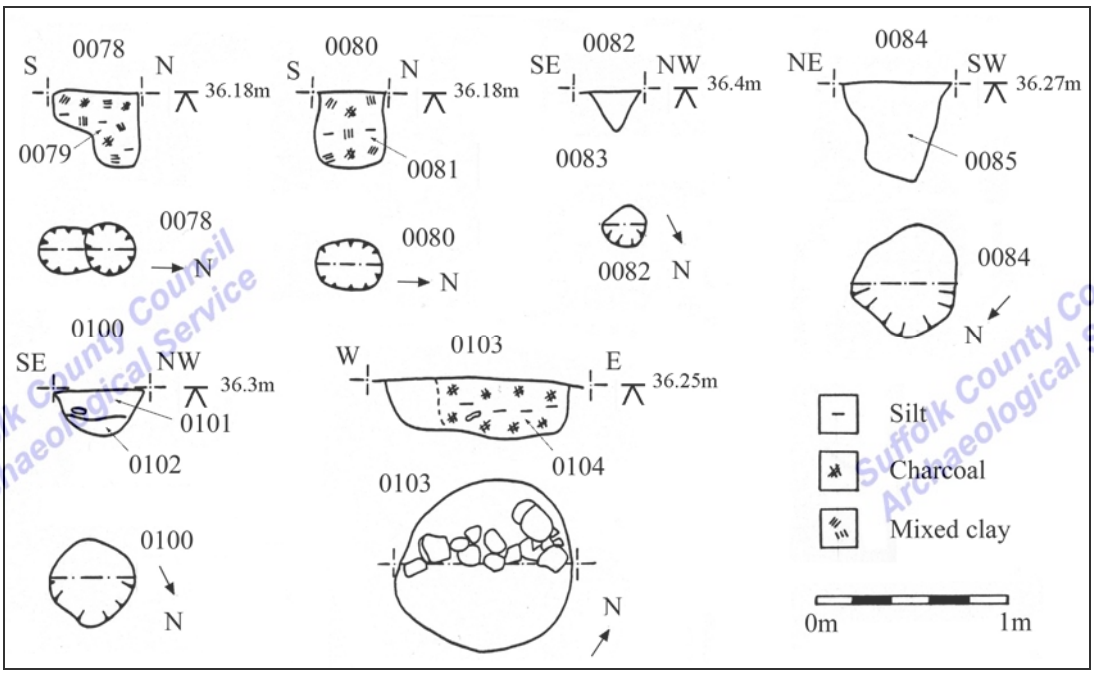

Figure 10. Trench 33 - feature plans and sections

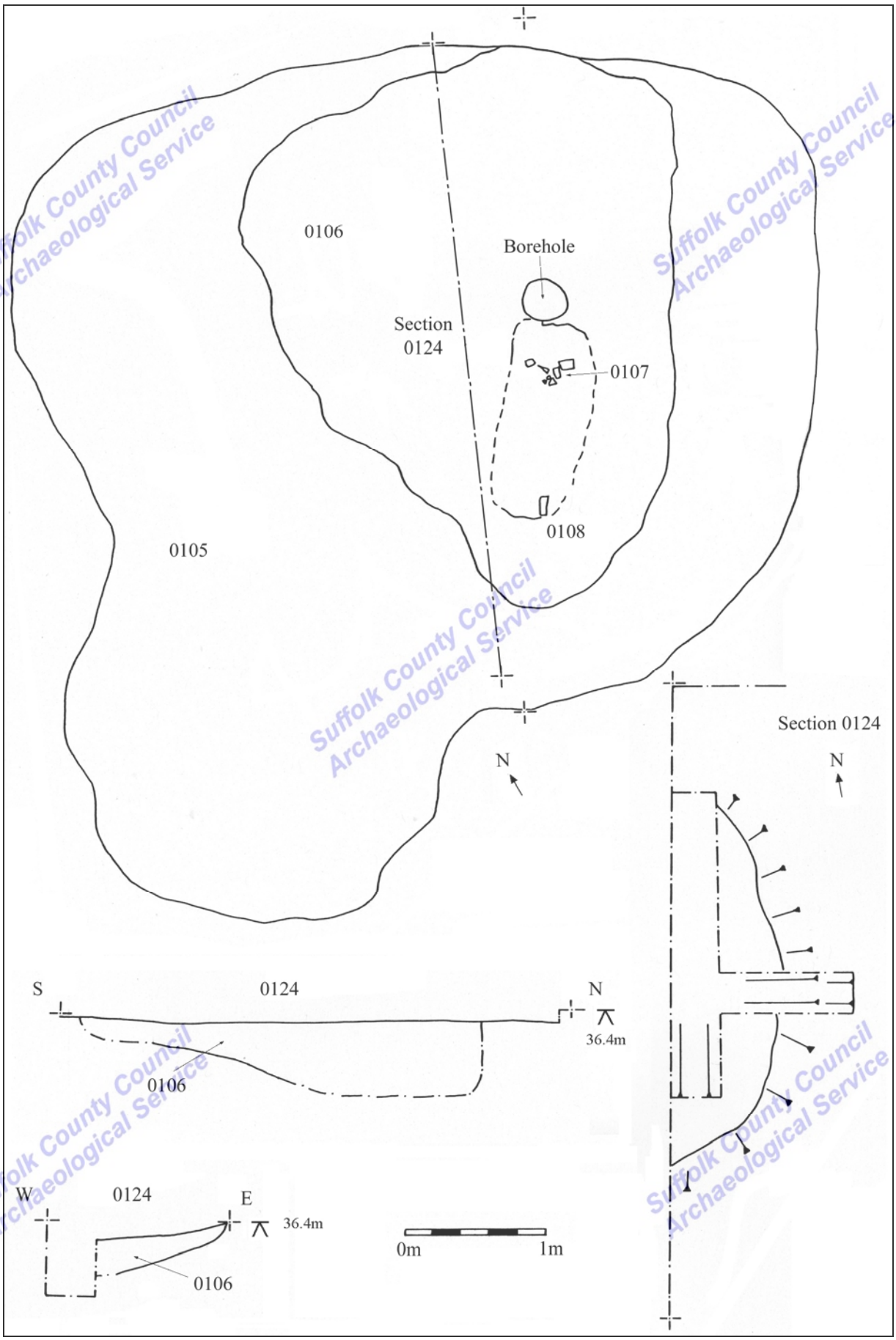

Figure 11. Trench 33 - feature plans and sections

Trench 35

Three sherds of Iron Age pottery, 0035, were recovered from the ploughsoil during machining of the trench.

0086 was a shallow, oval pit, measuring 0.6m by 0.8m and 0.1m deep. It had gentle sloping sides, a flat base and a fill, 0087, of mid brown silt/clay with charcoal flecks from which a single sherd of Iron Age pottery was recovered.

0088 was a circular posthole, 0.34m in diameter and 0.28m deep, with moderate sloping sides and a concave base. Its fill, 0089, was a mid-dark brown silt with occasional flecks of charcoal and flints from which six sherds of Iron Age pottery were recovered.

0090 was a circular posthole, measuring 0.4m diameter and 0.23m deep, with moderate sloping sides and a concave base. Its fill, 0091, was a mid brown silt with charcoal flecks and orange sand from which ten sherds of Iron Age pottery were recovered. Analysis of the charcoal within the fill has given a radiocarbon date of A.D. 1220-1300 (see section 4.6.4. below and Appendix 9). As the feature was otherwise similar to, and therefore probably contemporary with, others in the trench this may be an unreliable result caused by disturbance to the deposit.

0092 was a circular pit, clearly defined on its western side but merging into a natural silt hollow to the east. Measuring 1m in diameter and 0.2m deep with gentle sloping sides and a flat base it had a fill, 0093, of mid brown silt/clay from which a single sherd of Iron Age pottery was recovered.

0094 was a small circular posthole, measuring 0.3m in diameter and 0.08m deep. It had irregular sides and base with a fill, 0095, of mid brown clay/silt with traces of charcoal.

0096 was a circular posthole, 0.3m in diameter and 0.2m deep. Its fill, 0097, was a mid brown silt/clay with charcoal flecks.

0098 was a small circular posthole, 0.3m in diameter and 0.1m deep with moderate sloping sides and a concave base. Its fill, 0099, was amid brown clay/silt with traces of charcoal from which a single sherd of Iron Age pottery was recovered.

0110 was a small circular posthole, 0.3m in diameter and 0.2m deep, with near vertical sides and a flat base. Its fill, 0111, was a dark grey, charcoal rich, silt, with very few stones.

0114 was an oval pit, measuring 0.5m by 0.38m and 0.18m deep, with steep sides and a concave base. Its fill, 0115, was a dark brown silt/clay from which two sherds of Iron Age pottery were recovered.

0117 was a circular, 0.6m in diameter and 0.24m deep, with steep sides and a concave base. Its fill, 0118, was a mid brown silt with flint inclusions.

0119 was a circular pit, lying partially under the trench baulk and heavily disturbed by an animal burrow. It was 0.8m in diameter and 0.25m deep and had moderate/steep sides and a concave base. Its fill, 0120, was a dark grey/brown clay silt with occasional flints and charcoal.

0121 was a circular pit, 0.8m in diameter and 0.15m deep, with moderate sloping sides and an uneven concave base. Its fill, 0122, was a mid brown silt/clay with flints from which four sherds of Iron Age pottery were recovered.

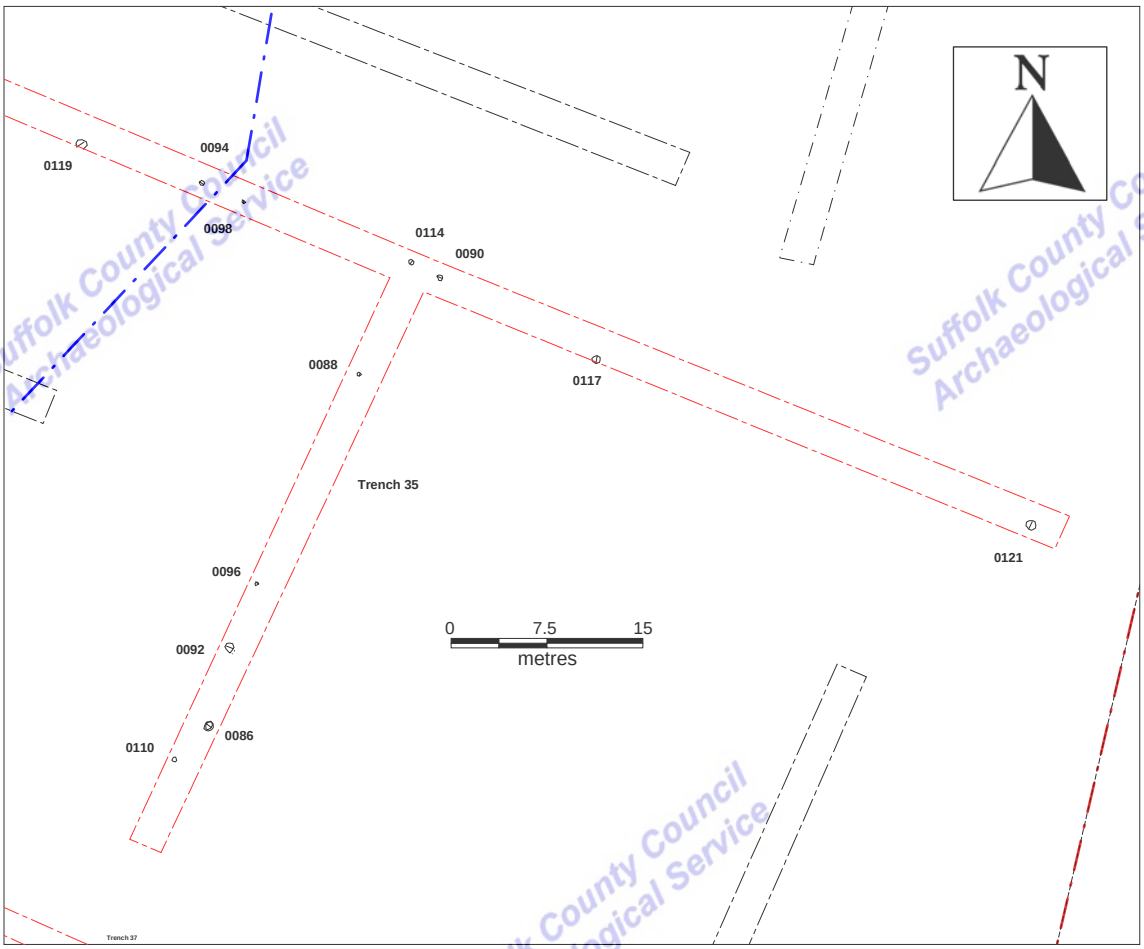

Figure 12. Trench 35 plan

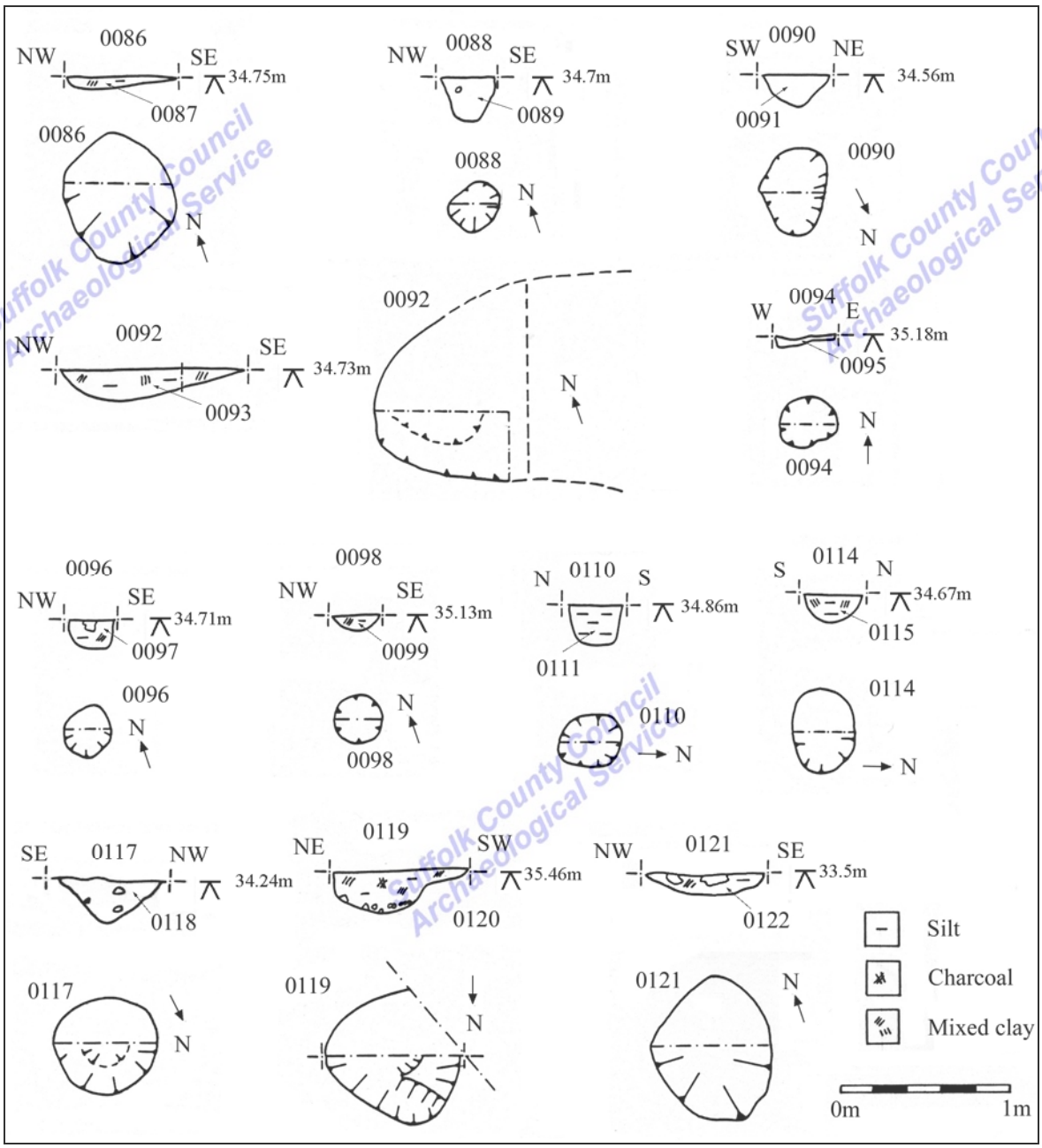

Figure 13. Trench 35 - feature plans and sections

Trenches 37 and 41

0112 was an oval pit, partially underlying the trench edge and aligned north-west to south-east. It measured 0.9m by 1.1m and 0.17m deep and had moderate sloping sides and a concave base. Its fill, 0113, was a dark brown silt/clay with charcoal from which fourteen sherds of Iron Age pottery were recovered.

0066 and 0068 were a pair of possible linear features. However both had somewhat irregular cuts through natural clay but bases of natural silt. This, together with their homogenous, stoneless brown silt fills, 0067 and 0069 respectively, indicates that they are natural channels. A single sherd of Iron Age pottery was collected from 0069.

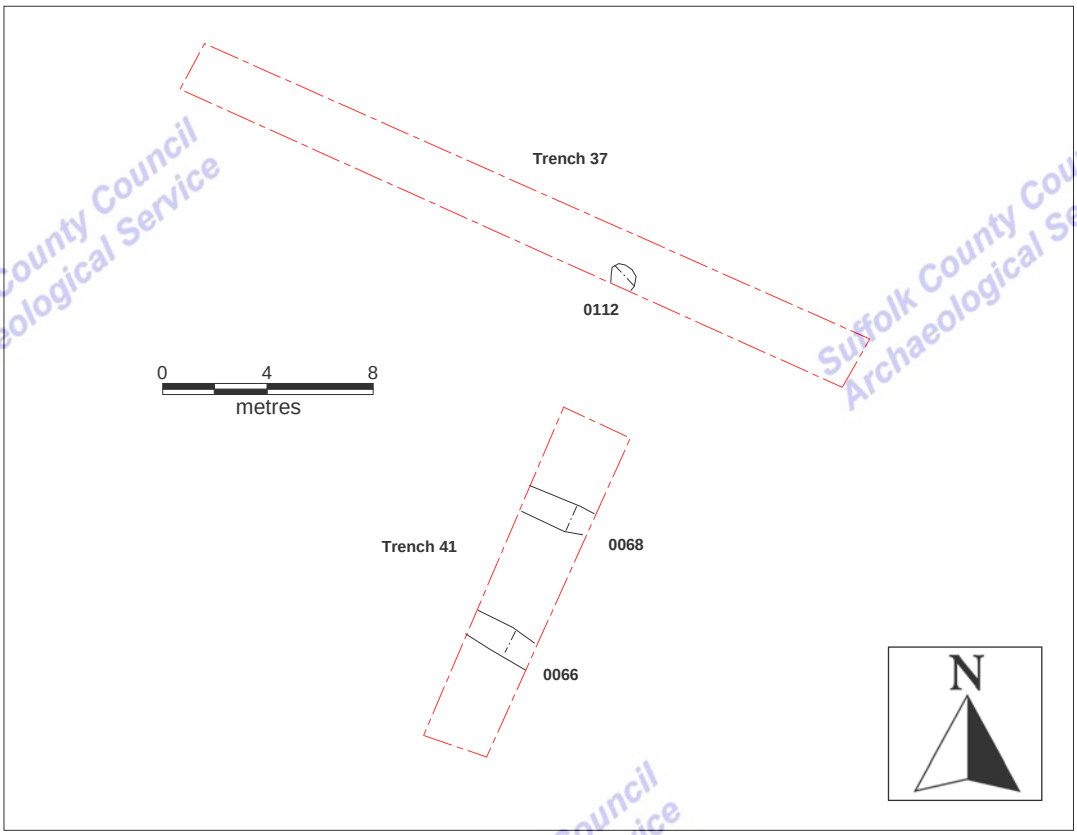

Figure 14. Trenches 37 and 41 plan

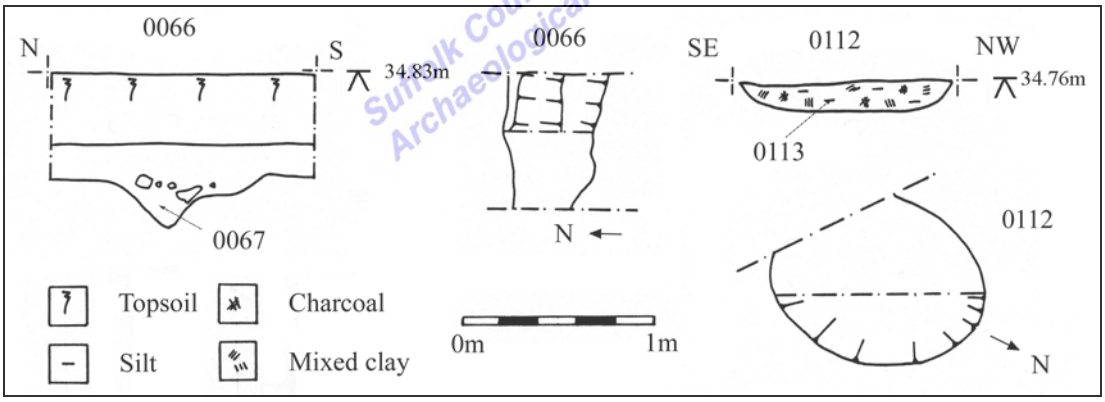

Figure 15. Trenches 37 and 41 - feature plans and sections

Trench 40

A single sherd of Iron Age pottery, 0123, was recovered during machining of the trench.

3.4. Phase III: Post-medieval

(Figs. 3 and 4)

0064 was a possible ditch in Trench 26, but more likely a natural hollow, measuring up to 2.7m wide and 0.3m deep. Its fill, 0065, was a mid brown clay/silt and contained a post-medieval iron nail and a copper alloy disc.

0052 was an irregular hollow, measuring up to 1.55m wide and 0.15m deep. Excavated in section 0054 its fill, 0053, was a light-mid brown clay/silt. Following the extension of the trench it was apparent that it merged with layer 0073. A single sherd of 16th-18th century pottery and a fragment of CBM were collected.

4. Finds and environmental evidence

Cathy Tester

4.1. Introduction

Table 2 shows the quantities of finds collected during the evaluation and excavation. A full quantification by context is included as Appendix 3.

Find type	No.	Wt/g
Pottery	206	2866
CBM	6	142
Fired clay	25	143
Worked flint	52	812
Burnt flint/stone	78	917
Iron	1	7
Copper alloy*	2	39
Animal bone	67	291

Table 2. Finds quantities (* = inc small find)

4.2. Pottery

A total of 206 sherds of pottery were recovered during the excavation. Almost all of the material is prehistoric, only a few sherds are later. The quantities by period are summarised in Table 3 and the full catalogue is in Appendix 4.

Period	No.	Wt/g
Prehistoric	203	2823
Roman	1	13
Medieval	1	22
Post-medieval	1	8
Total	206	2866

Table 3. Pottery quantities by ceramic period

4.2.1. Prehistoric Pottery

Sarah Percival

Two hundred and three sherds of prehistoric pottery weighing 2823g were recovered from twenty excavated contexts and four unstratified surface collections. Stratified contexts produced 96% of the assemblage, 4% is unstratified. The majority of the sherds are of earlier Iron Age date with a smaller number of later Neolithic to earlier Bronze Age pottery. The assemblage is moderately well preserved with 22% being abraded or very abraded. The quantities by ceramic period are shown in Table 4 and the full catalogue by context is in Appendix 4.

Date	No.	% No.	Wt/g	% Wt
Iron Age	173	85.2	2546	90.2
Later Neolithic to earlier Bronze Age	27	13.3	263	9.3
Not closely datable	3	1.5	14	0.5
Total	**203**	**100.**	**2823**	**100%**

Table 4. Prehistoric pottery quantities by period

Methodology

The assemblage was analysed using the pottery recording system described in the Norfolk Archaeological Unit Pottery Recording Manual and in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 1992; 1997). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded: R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted.

Later Neolithic to earlier Bronze Age

Twenty seven sherds of Beaker pottery, weighing 263g, were recovered from four features comprising one pit and three postholes. Beaker pottery dates from the later Neolithic to the earlier Bronze Age and was current from approximately 2600 to 1800BC (Kinnes *et al* 1991). Posthole 0076 (0077) produced an associated radiocarbon date of 3700±30 BP with a calibrated age range of 2200-1980 BC (95.4% probability).

Fabric

Three fabrics were identified in two fabric groups (Table 5). Sandy fabrics predominate with a smaller quantity of sherds being flint tempered. The fabrics are fairly typical for Beaker styles from East Anglia, although the assemblage lacks grog tempering which might have been expected.

Fabric	Description	No.	% No	Wt./g	% Wt
F3	Moderate medium sub rounded burnt flint; occasional quartz sand.	12	44.4	39	14.8
Q1	Common rounded quartz sand; very occasional flint	14	51.9	220	83.7
Q2	Common rounded quartz sand	1	3.7	4	1.5
Total		27	100.0	263	100.0

Table 5. Late Neolithic to earlier Early Bronze Age fabric quantities

Form and decoration

Vessel form is hard to establish as the assemblage is highly fragmentary. One partial profile, from pit 0070 (Fig. 16), suggests a globular vessel similar to examples from Felixstowe (Clarke 1970, corpus no. 393) and Runcton Holme (*ibid* corpus no 402). The Beaker pottery has impressed bands made with a fine square tooth comb alternating with wide undecorated bands (*cf*. Healy 1996, fig.99, P326). A single sherd from a second vessel with comb impressed bands was also found in pit 0070.

Five sherds have single fingernail impressions similar to examples from Wattisfield (Gibson 1982 Fig. WAT.3, 13) and seven have pinched fingertip impressions. The use of fingertip impressed decoration is very common amongst fen edge non funerary Beaker assemblages (Gibson 1982, Bamford 1982, Healy 1996).

Figure 16. 0071 pottery illustration, Beaker, comb impressed fabric Q1

Deposition

Beaker pottery was recovered from four features (Table 6). Three postholes, from Trench 28, produced modest quantities of small abraded sherds. Pit 0070, from Trench 31, contained the remains of two vessels, one represented by a single sherd and one by a partially complete profile of a globular comb impressed vessel. All the features contained dark charcoal rich deposits perhaps suggesting that the fill was formed of redeposited midden material (Healy 1995, 174; Thomas 1999, 64; Garrow 2006).

Trench	Feature	No.	% No	Wt./g	% Wt
28	Posthole 0055	4	14.8	18	6.8
	Posthole 0060	1	3.7	5	1.9
	Posthole 0076	7	25.9	16	6.1
31	Pit 0070	15	55.6	224	85.2
Total		27	100.0	263	100.0

Table 6. Beaker pottery quantities by trench and feature

Iron Age

An assemblage of 173 sherds weighing 2546g was recovered from sixteen features and four collections of unstratified finds. The Iron Age sherds vary in condition, whilst many are small and abraded, some, such as those found in pit 0103, are larger and well preserved.

Fabric

Six fabrics were identified in two fabric groups (Table 7). Flint-tempered sherds form the majority of the assemblage making up over 93% of the total weight (2372g). Quartz sand fabrics form just under 7% of the assemblage (174g).

Fabric	Description	No.	% No.	Wt./g	% Wt
F	Indeterminate flinty fabric	1	0.6	1	0.0
F1	Common fine angular flint; moderate medium rounded quartz sand	30	17.3	175	6.9
F2	Common medium angular flint; moderate medium rounded quartz sand	95	54.9	2027	79.6
F4	Moderate medium to coarse angular flint; moderate medium rounded quartz sand	22	12.7	169	6.6
Q3	Common rounded quartz sand; rare to moderate medium angular flint	20	11.6	130	51
Q4	Common rounded quartz sand	5	2.9	44	1.7
Total		173	100.0	2546	100.0

Table 7. Iron Age fabric quantities

The high proportion of flint fabrics is consistent with assemblages of earlier Iron Age date, such as those found at Barham and Great Bealings (Martin 1992, 46).

Form

The assemblage contains a minimum of eleven vessels based on rim count. Eight rims can be classified, using the system devised by Barrett (1980), as being medium to large coarse Class I jars with flattened or folded rims. A partial profile, from pit 0103 (Fig. 17), is also from a Class I jar with flat rim and angular shoulder similar to examples from West Harling (Clark and Fell 1953, fig.15, 70). The vessel is undecorated, the exterior is smoothed and the interior is rough wiped. The jar is fairly large with a diameter at the rim of 200mm. One rim has fingertip impressions along the rim top.

Two examples of rims with rounded rim endings and burnished exteriors suggest that the assemblage also contains a smaller number of fine, thin-walled Class II vessels. It is likely that some of the sherds, such as an incised decorated sherd from posthole 0088, may be from Class IV fine bowls but no Class V small fine cups were identified.

Decoration is rare. Single fingernail impressions occur on two sherds, one sherd is fingertip impressed (Martin 1993, fig.23, 70). A single sherd, from posthole 0088, has a triple band of wide shallow incised lines, a decorative technique also found at Little Bealings (Martin 1993, fig.37, 20).

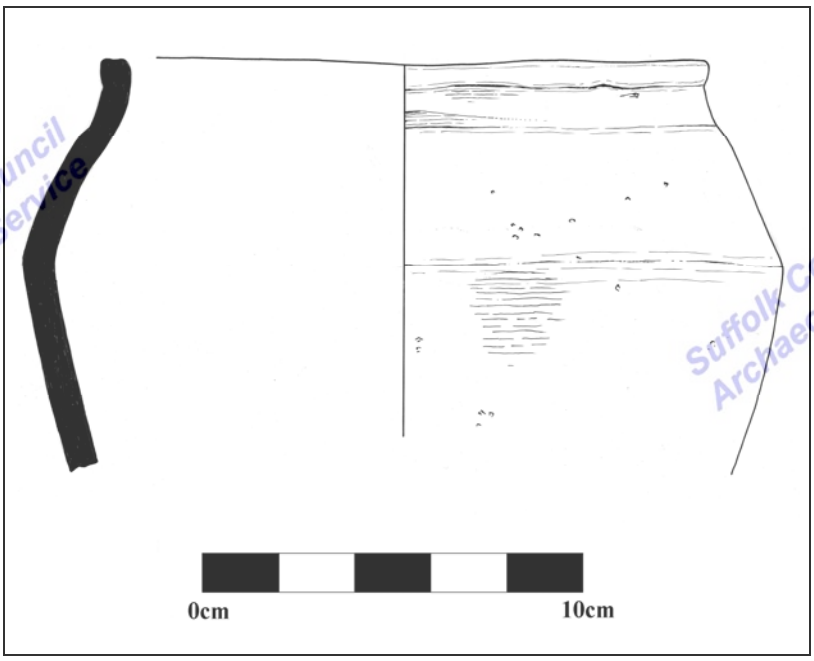

Figure 17. 0109 pottery illustration, Iron Age, fabric F2

Deposition

Over 85% of the assemblage (2175g) was recovered from pits, 10% (243g) is from postholes and less than 1% came from the fill of linear features. The remaining 4% of the Iron Age pottery came from unstratified surface collection.

The distribution of the pottery between the pits is uneven, whilst most of the features contained less than 50g of pottery, one pit, 0103, produced over 2000g (Table 8). The assemblage from pit 0103 contained large sherds from four vessels including the partial profile of a large jar. The large size and good condition of the sherds in pit 0103 contrasts with the small abraded sherds found in the other features.

Trench	Identifier	Feature	No.	Wt./g
18	Unstratified	0018	5	27
28	Posthole	0055	10	21
		0060	3	4
	Unstratified	0073	6	13
33	Pit	0103	74	2037
	Posthole	0078	3	20
		0080	5	12
		0082	3	20
		0084	15	119
35	Pit	0086	1	11
		0092	1	2
		0114	2	4
		0121	4	21
	Posthole	0088	6	36
		0090	10	10
		0098	1	1
	Unstratified	0035	3	58
37	Pit	0112	14	100
40	Unstratified	0123	1	12
41	Linear feature	0068	1	18
Total			173	2546

Table 8. Iron Age pottery deposition by trench and feature

Discussion

The Iron Age pottery from Sapiston reservoir is a plain-ware assemblage of post Deverel-Rimbury style. The assemblage finds parallels with the earlier Iron Age sherds from Barham, 25miles to the south-east (Martin 1993, 38), which dates to the ninth to fourth centuries BC. Pit 0103 (0104) produced an associated radiocarbon date of 2455 ± 30 BP with calibrated age ranges of 760-680 BC (25.8% probability) and 670-410 BC (69.6% probability). Posthole 0055 (0059) produced a date of 2225±30 BP with a calibrated age range of 390-200 BC (95.4% probability). The pots were almost certainly domestic, suggested by the high proportion of coarse jars with the assemblage and the presence of sooting and other residues indicating the vessels were used for cooking.

The deposition of the sherds within the fills of pits and postholes is typical of many earlier Iron Age assemblages from East Anglia. Most of the pits and postholes contain the fragmentary remains of incomplete vessels, many represented by a single or small number of sherds. In contrast one pit, 0103 contained a large assemblage. It is probable that features 0055 and 0060 at least do not represent the original context of deposition for the pottery, which may have been incorporated into the features within a dump of mixed domestic debris from a conserved pre-pit context (Hill 1995). Pit 0103 contained large fresh sherds from a single vessel alongside small abraded sherds from a pre-pit context. It is possible that this pit represents a slightly different depositional practice where large unabraded sherds were deliberately selected and placed within the pit.

4.2.2. Post-prehistoric pottery

A Roman grey micaceous ware (GMG) jar base was collected from the surface of silt layer 0073 (0072).

A medieval coarseware (MCW) handle of 12th-14th century date was unstratified in Trench 17 (0017).

A glazed red earthenware (GRE) bodysherd of 16th-18th century date was found in linear feature 0052 (0053) in Trench 28.

4.3. Ceramic Building Material (CBM) and fired clay

4.3.1. CBM

Six fragments of post-medieval rooftile (142g) were found in three contexts. All were made in an orange sandy fabric with few other inclusions.

Two fragments (19g) were unstratified in Trench 2 (0002) and three (116g) were unstratified in Trench 23 (0023). One fragment (7g) was found with associated pottery of 16th-18th century date in linear feature, possible ditch 0052 in Trench 28 (0053).

4.3.2. Fired clay

Twenty-five fragments of fired clay (143g) were collected from seven contexts, five postholes, a pit and one was unstratified.

All were tempered with medium to coarse sand and some with organic matter as well. Fragments with smoothed surfaces were found in posthole fills 0061and 0085 and pit fill 0104 and these were probably pieces of daub. The other fragments had no distinguishing features. The material is undatable but had associated Iron Age pottery in all but one context.

4.4. Miscellaneous

4.4.1. Flint

Sarah Bates

Introduction

Fifty flints were recovered from the site. The flint is mostly mid to dark grey with cortex, where present, usually being a dirty cream or off-white colour. Quite a few pieces have patinated glossy white surfaces showing that weathered, surface-collected, flint was used as a raw material. A small number of pieces have thin pebble-type cortex. The assemblage is summarised in Table 9 and detailed by context in Appendix 5.

Type	No.
core fragment	1
core/tool	1
shatter	1
flake	31
blade-like flake	4
blade	1
spall	2
end scraper	1
piercer	1
retouched flake	4
utilised flake	3
Total	**50**

Table 9. Summary of the flint

The assemblage

Part of a core was found in fill 0097 of post-hole 0096. It has been struck from the side of a core and has a heavily battered platform area and a few scars from previous removals. Its dorsal surface is mostly cortical.

Another fragment has all of its faces corticated or heavily patinated to a glossy white surface 0097. Flakes have been quite neatly struck from along one side; the piece may have been used as a core or be a crude scraper-type tool.

A shattered fragment came from fill 0087 of pit 0086.

Most of the assemblage comprises unmodified flakes. These are mostly small and often quite irregular; several pieces have cortical platforms showing that little preparation of the cores probably occurred prior to their use. A few pieces appear to have been struck from very small 'cores' – possibly small fragments of flint gravel. A small number of blade-like pieces are present, two of them are very small and two, along with a small blade, were recovered from a sample from fill 0071 of pit 0070, an apparently isolated feature in Trench 31.

Two probable tools are present but both of them have been only minimally modified for use, if at all. There is a blade-like flake which is quite thick with thin pebble-type cortex (unstratified context 0029). Its distal end – which is naturally 'scraper-like' has been slightly retouched – or possibly just utilised as an end scraper. An irregular flake from fill 0122 of pit 0121 has a long protruding distal point and may have been used as a piercer.

There are also four other miscellaneous retouched flakes and an utilised flake.

A total of eighteen pieces of flint were recovered from unstratified contexts.

Discussion

A small number of blade-like pieces came from the fill, 0071, of pit 0070, and it is notable that this feature also contained pottery of Late Neolithic/early Bronze Age date; the flint seems likely to be contemporary with the ceramic material especially as the flint is quite sharp.

Mostly, however, the flint is much more irregular, mostly hard hammer struck and little care seems to have been taken in preparing and using cores. A variety of raw material has been used – indicated for example, by the presence of pebble cortex and patinated flint – and there are no well-made formal implements – those tools that are present are, more or less, flakes which were of suitable shape and size without further modification. It seems most likely that the assemblage represents the fairly *ad hoc* use of surface-collected flint. These attributes have all been suggested as characteristic of assemblages from the later prehistoric period (later Bronze Age or Iron Age) (Young and Humphrey 1999) and the recovery of many of the present flints from deposits which also include Iron Age pottery may not be coincidental.

4.4.2. Burnt flint and stone

Seventy-eight fragments of burnt flint and stone were collected from seven contexts. All of the flint is blue-grey or white and fire-cracked and was probably used as pot-boilers. The largest group (64 pieces, 457g) was from pit 0056 (0058). There were no other concentrations. A fragment of burnt sandstone (127) was collected from posthole 0055 (0059). Most of the contexts had associated pottery and flint of Iron Age or late Neolithic to early Bronze Age date.

4.5. Small finds and metalwork

An iron nail (7g) and a copper alloy disc (22mm diameter) found in possible ditch/linear feature 0064 (0065) are post-medieval. A fragment of copper alloy, lead-rich 'waste metal' (36g) is 46mm wide and 18mm long with a thickness of 9mm at the cut edge, tapering on its other three sides. The piece is undatable and was unstratified (SF 1001).

4.6. Biological evidence

4.6.1. Cremation burials

Sue Anderson

Introduction

This report examines the cremated bone collected from three features during the evaluation. All three groups of bone were found in the area uncovered by Trench 33, and came from post-hole 0084, cremation burial 0100 and pit 0103.

Methodology

The burnt bone was collected as bulk samples and sieved, the contents being divided into <5mm and >5mm fractions was washed. In addition to the cremated bone, the <5mm samples contained pea grit, charcoal fragments and occasional shell, so the bone was hand separated from this residue for weighing.
The bone from each context was sorted into six categories: skull, axial, upper limb, lower limb, unidentified long bone, and unidentified. All fragments in the first five categories were counted and weighed to the nearest tenth of a gram, those in the sixth were weighed only. This allowed an average fragment weight to be calculated. Measurements of maximum skull and long bone fragment sizes were also recorded. These data are listed in Appendix 6. Observations were made, where possible, concerning bone colour, age, sex, dental remains and pathology. Identifiable fragments were noted. Methods used follow the Workshop of European Anthropologists (WEA 1980) and McKinley (1994 and 2004). A catalogue of burials is included as Appendix 7.

Quantification, identification, collection and survival

Table 10 shows the bone weights, percentages of identified bone from each burial, and the proportions of bone identified from the four areas of the skeleton (skull, axial, upper limb, lower limb). Expected proportions are provided in the first row.

Context	Total wt/g	% identified	% Skull	% Axial	% U limb	% L limb
*Expected**			*18.2*	*20.6*	*23.1*	*38.1*
0084	27.1	4.4	50.0	8.3	-	41.7
0100	114.4	19.3	52.9	1.4	4.5	41.2
0103	11.2	0.0	-	-	-	-

Table 10. Percentages of identified fragments out of total identified to area of skeleton.
(*expected proportions from McKinley 1994, 6)

This shows that skull and lower limb fragments are over-represented amongst the identifiable material, and that other areas of the skeleton are under-represented. It has been suggested that 'it should be possible to recognise any bias in the collection of certain areas of the body after cremation' (McKinley 1994, 6), but in this case the groups are too small to identify this.

Mays (1998, Table 11.2) notes that the combusted weight of an adult skeleton has a mean of around 1500g for females and 2300g for males. The largest quantity of bone in this assemblage came from cremation burial 0100, but it represents only a very small proportion of the combusted weight of an average adult skeleton.

The cremation burials

Only one of the three groups, 0100, could be identified as human with any certainty. This consisted of fragments of skull and long bones of an adult, but the individual was unsexable and there was no evidence to provide a closer estimate of age. No joint surfaces or margins were present and this, together with the lack of any axial fragments, meant that it was not possible to assess the remains for degenerative changes. The two other groups contained abraded bones which appeared to include some juvenile fragments in 0084, but there were almost certainly animal remains in both this and 0103.

The degree of fragmentation, based on average fragment weight, was very high. The largest fragment was only 25mm long. Fragments from 0084 and 0103 had a chalky texture and showed signs of abrasion suggestive of redeposition, although those from 0100 appeared less abraded.

The majority of bone in this group was fully oxidised and cream to white in colour, although some internal areas were grey-blue, and some fragments from 0084 were unburnt, strengthening the suggestion that this was a mixed deposit of animal bone. The presence of a high proportion of white bone indicates firing temperatures in excess of c.600°C (McKinley 2004, 11).

Summary and Discussion

The three groups of bone represent a minimum of one adult and possibly one juvenile, although it seems likely that the latter was a juvenile mammal mixed with other animal remains. One of the groups, 0103, was almost certainly animal in origin and therefore either a funerary meal or the remains of domestic hearth waste.

There was no evidence for more than one skeleton within the definite human burial, although the quantity of bone was small. The total weight of bone indicates that the entire skeleton was not present in this burial. This may be due to incomplete collection, but appears more likely to be due to truncation at some point after burial. It should be noted, however, that cremations of Iron Age date are commonly found to be less intact and more crushed than those of the Bronze Age, whether urned or not, perhaps suggesting a change in the cremation rite during this period.

4.6.2. Animal bone

A total of 67 fragments of animal bone weighing 291g was recovered during the excavation. Apart from the burnt group from pit 0103, animal bone was only found in four contexts and that which was present was in very poor condition due to acid soil conditions which probably account for the absence of bone from other features as well.

Two small groups of large and medium mammal long bone fragments were recovered from within layer 0106, the fill of a natural hollow in Trench 33 (0106 and 0108) with no associated datable finds. Fragments of a single sheep tooth were found in posthole 0110 (0111) in Trench 35. Large and medium mammal bones and teeth were found with associated Iron Age pottery in pit 0112 (0113) in Trench 37.

Overall, the group is too small and poorly preserved for any conclusions regarding its composition to be made, but it probably represents the remains of food waste from domestic activity in the area.

4.6.3. Plant macrofossils

Val Fryer

Introduction and method statement

Samples for the retrieval of the plant macrofossil assemblages were taken from across the excavated area of the evaluation and twelve were submitted for assessment.

The samples were processed by manual water flotation/washover and the flots were collected in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed in Appendix 8. Nomenclature within the table follows Stace (1997). All plant remains were charred. Modern contaminants including fibrous roots, seeds and arthropods were present throughout.

Results

With the exception of charcoal fragments, which were common or abundant throughout, plant macrofossils were scarce, with five assemblages (samples 1 (0059), 9 (0101), 10 (0102), 14 (0113) and 20 (0091)) containing single fragmentary cereal grains or seeds of common cereal crop weeds, and two samples (5 (0071) and 8 (0077)) producing moderate densities of hazel (Corylus avellana) nutshell fragments. Small pieces of charred root or stem were noted within three of the assemblages studied. Preservation was generally poor, with most of the macrofossils being heavily coated with yellow/brown mineralised concretions.

Other material types were equally scarce, although most assemblages contained small fragments of bone, many of which were burnt. The latter were particularly abundant within the fill, 0085, of Iron Age posthole 0084. Small pellets of burnt or fired clay were noted within samples 1 (0059), 2 (0061), 9 (0101) and 11 (0085), and burnt stone fragments were present within samples 3 (0058) and 9 (0101).

Conclusions

In summary, the assemblages are generally very small, with all but two being of 0.1 litres or less in volume. Charcoal/charred wood fragments, some of which are flaked (possibly signifying combustion at very high temperatures), are predominant, although their origin is uncertain. The presence of a number of burnt bone fragments may be indicative of disturbed/dispersed cremation deposits, and an intact cremation was recorded within feature 0100 (samples 9 and 10). It is assumed that most of the remaining plant macrofossils are either derived from scattered refuse or from additional materials used as kindling/fuel for the cremation pyres.

Recommendations for further work

As none of the assemblages contain sufficient material for quantification (i.e. 100+ specimens), no further analysis is recommended. However, at the request of the excavator, material which may be suitable for AMS/C14 dating was identified.

4.6.4. Radiocarbon analysis

Four samples were submitted to SUERC for AMS dating. These were measured on a 250 kV single stage accelerator mass spectrometer and the resultant radiocarbon ages calibrated to the calendar timescale using OxCal 3.10 (Copyright Christopher Bronk Ramsey 2005). The dating certificates are included in Appendix 9.

Indeterminate seeds from the fill of posthole 0055 (0059) produced a radiocarbon age of 2225 ± 30 BP [Sample code: SUERC-19596 (GU-16920)]. This produced a calibrated age range of 390-200 BC (95.4% probability).

Hazelnut shell from the fill of posthole 0076 (0077) produced a radiocarbon age of 3700 ± 30 BP [Sample code: SUERC-19597 (GU-16921)]. This produced an overall calibrated age range of 2200-1980 BC (95.4% probability). Within this overall range, there is an 84.3% probability that the age lies within the range 2150-2010 BC.

Indeterminate grains from the fill of posthole 0090 (0091) produced a radiocarbon age of 730 ± 30 BP [Sample code: SUERC-19598 (GU-16922)]. This produced calibrated age ranges of 1220-1300 AD (95.4% probability) and 1260-1290 AD (68.2% probability).

Unidentified charcoal from the fill of pit 0103 (0104) produced a radiocarbon age of 2455 ± 30 BP [Sample code: SUERC-19599 (GU-16923)]. This produced calibrated age ranges of 760-680 BC (25.8% probability) and 670-410 BC (69.6% probability).

4.7. Discussion of the finds and environmental evidence

The evaluation and excavation produced an assemblage of mainly prehistoric finds. The material appears to be domestic waste and probably indicates occupation on this site or in the near vicinity.

The pottery assemblage includes a small amount of later Neolithic to earlier Bronze Age Beaker pottery found in four contexts, two of which also contained later-dated material. The majority of the pottery is Iron Age, a plainware assemblage of post Deverel-Rimbury style that has parallels with earlier Iron Age pottery from Barham. It is almost certainly domestic in nature as indicated by a high proportion of coarse jar sherds with sooting and other residues that suggest they have been used for cooking.

Similarly, the flint assemblage contains some material that is probably later Neolithic or early Bronze Age and found in contexts with associated pottery of the same date. Apart from these few pieces however, most of the flint has attributes that are characteristic of later Bronze Age or Iron Age assemblages.

One of three groups of cremated bone was identified as human remains. The other two groups were identified as animal remains which could represent a funereal meal or domestic hearth waste. With the exception of the burnt material, animal bone preservation was poor. Due to adverse soil conditions very little was recovered.

Apart from charcoal fragments which were abundant, plant macrofossil assemblages were very small and preservation was poor but did provide suitable material for four AMS/C14 dates. The material is assumed to derive from scattered refuse or fuel debris.

There is no evidence that the site was used intensively after the Iron Age. Later material included single sherds of Roman, medieval and post-medieval pottery and post-medieval rooftile fragments, a nail and other metal fragments.

5. Discussion

The evaluation demonstrated a near total absence of archaeological evidence in the northern of the two fields forming the reservoir site. With only a limited quantity of unstratified material being recovered from Trenches 02, 17, 18 and 40 it seems unlikely that any substantial deposits have been lost to truncation processes such as ploughing and that the lack of deposits is a genuine reflection of an absence of past human activity.

In contrast nine of the eighteen trenches in the southern field contained archaeological features. As a further three trenches, No's 23, 29 and 30, contained unstratified material it is possible that truncation may have removed other shallow deposits. Evidence of domestic activity in the Late Neolithic/Early Bronze Age period was identified, mainly in Trench 28, with one firmly dated feature, posthole 0076, and other finds possibly being redeposited in two later features but also in Trench 31 with feature 0070.

The majority of the features are thought to be of an Iron Age date and probably represent a low level of domestic activity over a broad period of time, as indicated by the radiocarbon dates of 0104 (760-410 BC) and 0059 (370-200 BC). Features consisted of a sparse scatter of pits and postholes, hinting at the possible presence of small buildings and hearths although no discernable spatial patterns were apparent and there was no evidence of any associated enclosure ditch. Feature fills frequently contained small amounts of material likely to have originated from domestic refuse or hearth waste. The nature of the pottery assemblage also indicated the presence of domestic activity and suggests an Early Iron Age date for this occupation, which is supported by radiocarbon dating of the fill of 0103. However some of the features may be of a slightly later Middle Iron Age date, as indicated by the radiocarbon date of the fill of 0055.

One research aim listed as a high priority in the Regional Research Framework (Bryant 2000, 16) is for the development of dating methods for Iron Age sites. The combination of the pottery assemblage with two radiocarbon dates, in particular in pit 0103, is therefore important data which could aid in the development of regional pottery sequences.

The site's position, overlooking the Blackbourn river valley to the south-east, was thought to offer high potential for prehistoric settlement as topographic locations such as this in Suffolk are often sites of prehistoric occupation and there were known find spots of prehistoric material in the immediate vicinity such as SAP 001, 500m to the north-west. For instance in the adjacent parish of Barnham, 6km to the west, a Late Iron Age enclosure, BNH 009, which followed intermittent occupation, has been partially excavated on a site overlooking the Little Ouse (Martin 1992, 1-22). At Chilton, 34km to the south, a Late Bronze or Early Iron Age enclosure, CHT 009/CHT 015, has been excavated on high ground above the Stour valley (Abbot 1998 and Craven in prep). At Barham two Iron Age settlement areas, BRH 015 and BRH 017, both apparently unenclosed, have been investigated on hills overlooking the River Gipping, 25miles to the south-east (Martin 1992, 23-40). The topographic resemblance of these latter sites to the area evaluated is paralleled by similarities between the unenclosed nature of the occupation and the pottery assemblages.

Despite these examples however, opportunities for large-scale archaeological investigation in such rural areas is often limited so that the extent and distribution of known Iron Age settlements is thought to be only a fraction of the true number (Bryant 2000, 14). This site was the first program of fieldwork to occur in the vicinity and so is of particular importance as it has demonstrated the presence of preserved prehistoric deposits where no evidence had previously been recorded. This indicates that further sites are likely to be scattered throughout the arable

fields along the slopes of the Blackbourn valley and it is clear that future archaeological work in the vicinity could help in the study of research topics such as the chronology, form and function of settlement or the development of the agrarian economy during the Iron Age.

There is no indication of activity on the site following the Iron Age period. The site is likely to have been open farmland, however, by the medieval period. A documentary survey by A. M. Breen, included in the desktop assessment of the site (Rolfe 2006, 18-22), details how the site is shown as farmland, sub-divided into small strips, on a map dated 1667. The probable subdivision of the field by a series of raised banks explains the lack of medieval/post-medieval drainage ditches or boundaries which could commonly be expected to occur within the trenching of an arable site this size. Only two features, 0052 and 0064, appears to be of this date and, although 0052 was of uncertain shape, may in fact be a single ditch possible function.

6. Conclusion and Recommendations

The evaluation identified a possible focus of Late Neolithic/Early Bronze Age activity amidst the more substantial remains of a phase of domestic Iron Age activity, the latter being centred in Trenches 28, 33 and 35.

The subsequent recommendation for further work arising from the evaluation results was for open area excavation centred upon these three areas. Due to the urgent requirements of the development it was agreed on site with Jess Tipper and Euston Farms to open the excavation areas around Trenches 28 and 33 immediately and to incorporate the results with those of the evaluation. The combined results are of significant interest and warrant further analysis and publication in a volume such as the Proceedings of the Suffolk Institute of Archaeology and History.

The main area of interest however, a relatively dense distribution of Iron Age features seen in Trench 35 lay wholly within the area of the reservoir bund. Agreement was reached to exclude this area of c.2700sqm from the general topsoil strip, meaning the bund would be built over untouched ground leaving any further archaeological deposits preserved *in situ*. As a result no further fieldwork was required to meet the planning condition following completion of the evaluation. However it is worth noting that in future, if development of the site preserved under the bund should occur – perhaps in repair or enlargement of the reservoir – then a programme of archaeological excavation of this area will be required.

John Craven

June 2008

Disclaimer

Any opinions expressed in this report about the need for further archaeological work are those of the Field Projects Division alone. The need for further work will be determined by the Local Planning Authority and its archaeological advisors when a planning application is registered. Suffolk County Council's archaeological contracting service cannot accept responsibility for inconvenience caused to clients should the Planning Authority take a different view to that expressed in the report.

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Appendix 1

SUFFOLK COUNTY COUNCIL
ARCHAEOLOGICAL SERVICE - CONSERVATION TEAM

Brief and Specification for an Trenched Evaluation

LAND ADJACENT TO PARK GROVE, EUSTON ESTATE, SAPISTON

The commissioning body should be aware that it may have Health & Safety responsibilities, see paragraph 1.7.

1. Background

1.1 A planning application has been approved for the construction of a reservoir for agricultural irrigation for the Euston Estate, together with approximately 2km of pipeline line to the Black Bourn, on land adjacent to Park Grove, Euston Estate, Sapiston (TL 9231 7637).

1.2 The Planning Authority has been advised that any consent should be conditional upon an agreed programme of work taking place before development begins (PPG 16, paragraph 30 condition). As stated in the Environmental Impact Assessment, a trenched evaluation of the application area will be required as the first part of a programme of archaeological mitigation; decisions on the need for, and scope of, any further work will be based upon this stage of the evaluation. A further Brief will be required for the archaeological monitoring of the pipeline route.

1.3 The proposed reservoir area will involve the total destruction of an area of *c*. 8ha. This location has not been subject to systematic archaeological survey and we have no specific information relating to it. However, the landscape setting of the site, on a ridge above a valley, has high potential for early occupation and the Environmental Statement indicated a likelihood that previously unidentified archaeological sites may be present within the area.

1.4 All arrangements for the field evaluation of the site, the timing of the work, access to the site, the definition of the precise area of landholding and area for proposed development are to be defined and negotiated with the commissioning body.

1.5 Detailed 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.

1.6 In accordance with the standards and guidance produced by the Institute of Field Archaeologists this brief should not be considered sufficient to enable the total execution of the project. A Project Design or Written Scheme of Investigation (PD/WSI) based upon this brief and the accompanying outline specification of minimum requirements, is an essential requirement. This must be submitted by the developers, or their agent, to the Conservation Team of the Archaeological Service of Suffolk County Council (Shire Hall, Bury St Edmunds IP33 2AR; telephone/fax: 01284 352443) for approval. The work must not commence until this office has approved both the archaeological contractor as suitable to undertake the work, and the PD/WSI as satisfactory. The PD/WSI will *provide the basis for measurable standards* and will be used to establish whether the requirements of the planning condition will be adequately met.

1.7 Before any archaeological site work can commence it is the responsibility of the developer to provide the archaeological contractor with either the contaminated land report for the site or a written statement that there is no contamination.

2. Brief for the Archaeological Evaluation

2.1 Establish whether any archaeological deposit exists in the area, with particular regard to any which are of sufficient importance to merit preservation *in situ* [at the discretion of the developer].

2.2 Identify the date, approximate form and purpose of any archaeological deposit within the application area, together with its likely extent, localised depth and quality of preservation.

2.3 Evaluate the likely impact of past land uses, and the possible presence of masking colluvial/alluvial deposits.

2.4 Establish the potential for the survival of environmental evidence.

2.5 Provide sufficient information to construct an archaeological conservation strategy, dealing with preservation, the recording of archaeological deposits, working practices, timetables and orders of cost.

2.6 This project will be carried through in a manner broadly consistent with English Heritage's *Management of Archaeological Projects,* 1991 (*MAP2*), all stages will follow a process of assessment and justification before proceeding to the next phase of the project. Field evaluation is to be followed by the preparation of a full archive, and an assessment of potential. Any further excavation required as mitigation is to be followed by the preparation of a full archive, and an assessment of potential, analysis and final report preparation may follow. Each stage will be the subject of a further brief and updated project design; this document covers only the evaluation stage.

2.7 The developer or his archaeologist will give the Conservation Team of the Archaeological Service of Suffolk County Council (address as above) five working days notice of the commencement of ground works on the site, in order that the work of the archaeological contractor may be monitored.

2.8 If the approved evaluation design is not carried through in its entirety (particularly in the instance of trenching being incomplete) the evaluation report may be rejected. Alternatively the presence of an archaeological deposit may be presumed, and untested areas included on this basis when defining the final mitigation strategy.

2.9 An outline specification, which defines certain minimum criteria, is set out below.

3. Specification: Field Evaluation

3.1 Trial trenches are to be excavated to cover a minimum 5% by area, which is *c*. 4000m^2 of the total area for evaluation that measures *c*. 8.0ha (Figure 1). These shall be positioned to sample all parts of the site. Linear trenches are thought to be the most appropriate sampling method. Trenches are to be a minimum of 1.8m wide unless special circumstances can be demonstrated; this will result in a minimum of *c*. 2,222m of trenching at 1.8m in width. If excavation is mechanised a toothless 'ditching bucket' at least 1.2m wide must be used. A scale plan showing the proposed locations of the trial trenches should be included in the Project Design and the detailed trench design must be approved by the Conservation Team of the Archaeological Service before field work begins.

3.2 The topsoil may be mechanically removed using an appropriate machine with a back-acting arm and fitted with a toothless bucket. All machine excavation is to be under the direct control and supervision of an archaeologist. The topsoil should be examined for archaeological material.

3.3 The top of the first archaeological deposit may be cleared by machine, but must then be cleaned off by hand. There is a presumption that excavation of all archaeological deposits will be done by hand unless it can be shown there will not be a loss of evidence by using a

machine. The decision as to the proper method of further excavation will be made by the senior project archaeologist with regard to the nature of the deposit.

3.4 In all evaluation excavation there is a presumption of the need to cause the minimum disturbance to the site consistent with adequate evaluation; that significant archaeological features, e.g. solid or bonded structural remains, building slots or post-holes, should be preserved intact even if fills are sampled.

3.5 There must be sufficient excavation to give clear evidence for the period, depth and nature of any archaeological deposit. The depth and nature of colluvial or other masking deposits must be established across the site.

3.6 Archaeological contexts should, where possible, be sampled for palaeoenvironmental remains. Best practice should allow for sampling of interpretable and datable archaeological deposits and provision should be made for this. The contractor shall show what provision has been made for environmental assessment of the site and must provide details of the sampling strategies for retrieving artefacts, biological remains (for palaeoenvironmental and palaeoeconomic investigations), and samples of sediments and/or soils (for micromorphological and other pedological/sedimentological analyses. Advice on the appropriateness of the proposed strategies will be sought from J. Heathcote, English Heritage Regional Adviser for Archaeological Science (East of England). A guide to sampling archaeological deposits (Murphy, P.L. and Wiltshire, P.E.J., 1994, *A guide to sampling archaeological deposits for environmental analysis*) is available for viewing from SCCAS.

3.7 Any natural subsoil surface revealed should be hand cleaned and examined for archaeological deposits and artefacts. Sample excavation of any archaeological features revealed may be necessary in order to gauge their date and character.

3.8 Metal detector searches must take place at all stages of the excavation by an experienced metal detector user.

3.9 All finds will be collected and processed (unless variations in this principle are agreed with the Conservation Team of SCC Archaeological Service during the course of the evaluation).

3.10 Human remains must be left *in situ* except in those cases where damage or desecration are to be expected, or in the event that analysis of the remains is shown to be a requirement of satisfactory evaluation of the site. However, the excavator should be aware of, and comply with, the provisions of Section 25 of the Burial Act 1857.

3.11 Plans of any archaeological features on the site are to be drawn at 1:20 or 1:50, depending on the complexity of the data to be recorded. Sections should be drawn at 1:10 or 1:20 again depending on the complexity to be recorded. All levels should relate to Ordnance Datum. Any variations from this must be agreed with the Conservation Team.

3.12 A photographic record of the work is to be made, consisting of both monochrome photographs and colour transparencies.

3.13 Topsoil, subsoil and archaeological deposit to be kept separate during excavation to allow sequential backfilling of excavations.

4. **General Management**

4.1 A timetable for all stages of the project must be agreed before the first stage of work commences, including monitoring by the Conservation Team of SCC Archaeological Service. The archaeological contractor will give not less than ten days written notice of the commencement of the work so that arrangements for monitoring the project can be made.

4.2 The composition of the project staff must be detailed and agreed by this office, including any subcontractors/specialists. For the site director and other staff likely to have a major responsibility for the post-excavation processing of this evaluation there must also be a

statement of their responsibilities or a CV for post-excavation work on other archaeological sites and publication record.

4.3 It is the archaeological contractor's responsibility to ensure that adequate resources are available to fulfill the Brief.

4.3 A general Health and Safety Policy must be provided, with detailed risk assessment and management strategy for this particular site.

4.4 No initial survey to detect public utility or other services has taken place. The responsibility for this rests with the archaeological contractor.

4.5 The Institute of Field Archaeologists' *Standard and Guidance for Archaeological Desk-based Assessments* and for *Field Evaluations* should be used for additional guidance in the execution of the project and in drawing up the report.

5. **Report Requirements**

5.1 An archive of all records and finds must be prepared consistent with the principles of English Heritage's *Management of Archaeological Projects*, 1991 (particularly Appendix 3.1 and Appendix 4.1).

5.2 The data recording methods and conventions used must be consistent with, and approved by, the County Sites and Monuments Record.

5.3 The objective account of the archaeological evidence must be clearly distinguished from its archaeological interpretation.

6.4 An opinion as to the necessity for further evaluation and its scope may be given. No further site work should be embarked upon until the primary fieldwork results are assessed and the need for further work is established.

5.5 Reports on specific areas of specialist study must include sufficient detail to permit assessment of potential for analysis, including tabulation of data by context, and must include non-technical summaries.

5.6 The Report must include a discussion and an assessment of the archaeological evidence, including an assessment of palaeoenvironmental remains recovered from palaeosols and cut features. Its conclusions must include a clear statement of the archaeological potential of the site, and the significance of that potential in the context of the Regional Research Framework (*East Anglian Archaeology*, Occasional Papers 3 & 8, 1997 and 2000).

5.7 Finds must be appropriately conserved and stored in accordance with *UK Institute of Conservators Guidelines*. The finds, as an indissoluble part of the site archive, should be deposited with the County SMR if the landowner can be persuaded to agree to this. If this is not possible for all or any part of the finds archive, then provision must be made for additional recording (e.g. photography, illustration, analysis) as appropriate. Account must be taken of any requirements the County SMR may have regarding the conservation, ordering, organisation, labelling, marking and storage of excavated material and the archive.

5.8 The site archive is to be deposited with the County SMR within three months of the completion of fieldwork. It will then become publicly accessible.

5. 9 Where positive conclusions are drawn from a project (whether it be evaluation or excavation) a summary report, in the established format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the *Proceedings of the Suffolk Institute for Archaeology*, must be prepared. It should be included in the project report, or submitted to the Conservation Team, by the end of the calendar year in which the evaluation work takes place, whichever is the sooner.

5.10 County SMR sheets must be completed, as per the county SMR manual, for all sites where archaeological finds and/or features are located.

5.11 At the start of work (immediately 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.

5.12 All parts of the OASIS online form must be completed for submission to the SMR. This should include an uploaded .pdf version of the entire report (a paper copy should also be included with the archive).

Specification by: Dr Jess Tipper

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Date: 19 September 2006 Reference: / ParkGrove-Euston 2006

This brief and specification remains valid for six months from the above date. If work is not carried out in full within that time this document will lapse; the authority should be notified and a revised brief and specification may be issued.

Archaeological contractors are strongly advised to forward a detailed Project Design or Written Scheme of Investigation to the Conservation Team of the Archaeological Service of Suffolk County Council for approval before any proposals are submitted to potential clients.

If the work defined by this brief forms a part of a programme of archaeological work required by a Planning Condition, the results must be considered by the Conservation Team of the Archaeological Service of Suffolk County Council, who have the responsibility for advising the appropriate Planning Authority.

Appendix 2. Context list

Opno	Feature	Trench	Identifier	Description	Over	Under	Soil sample	Spotdate
0002	0002	02	Unstratified	Unstratified finds from Trench 02.				Pmed
0017	0017	17	Unstratified	Unstratified finds from Trench 17.				post-Rom
0018	0018	18	Unstratified	Unstratified finds from Trench 18.				IA
0023	0023	23	Unstratified	Unstratified finds from Trench 23				Pmed
0029	0029	29	Unstratified	Unstratified finds from Trench 29.				Preh
0030	0030	30	Unstratified	Unstratified finds from Trench 30.				
0035	0035	35	Unstratified	Unstratified finds from Trench 35.				IA
0050	0050	27	Posthole cut	Small circular pit, 0.4m in diameter and 0.2m deep. Steep sided with a concave base, 100% excavated. Possible deeper stakehole on west side.				
0051	0050	27	Posthole fill	Mottled mid brown/orange clay/silt with occasional flints, frequent scattered charcoal and occasional pieces of burnt clay or flint.				
0052	0052	28	Linear feature cut	Possible ditch, 1.55m wide and 0.15m deep, although cut was unclear and may be a natural hollow. Possibly same as 0064?				
0053	0052	28	Linear feature fill	Light-mid brown silt/clay in section 0054 of 0052.				PMed 16th-18th
0054	0052	28	Section	Section of 0052.				
0055	0055	28	Posthole cut	Circular posthole, 0.4m diameter and 0.28m deep, with steep sloping sides and a concave base.				
0056	0056	26	Pit cut	Oval pit, aligned west-east, measuring 0.6m by 0.8m and 0.15m deep. Partially under trench baulk but 100% of visible area excavated.				
0057	0056	26	Pit fill	Main fill of pit 0056. Mid brown clay/silt with fragments of burnt flint and clay, and occasional charcoal.	0058			
0058	0056	26	Pit fill	Discrete deposit of charcoal and dense, crushed burnt flint at west end of pit 0056.		0057	03	[preh]
0059	0055	28	Posthole fill	Mid brown silt/clay with occasional flints and charcoal flecks.			01	IA, LNeo-EBA

Opno	Feature	Trench	Identifier	Description	Over	Under	Soil sample	Spotdate
0060	0060	28	Posthole cut	Circular posthole, 0.4m diameter and 0.35m deep, with steep sides and concave base. 100% excavated.				
0061	0060	28	Posthole fill	Mid-dark brown silt/clay with occasional flints, frequent charcoal and flecks of burnt clay.			02	IA, LNeo-EBA
0062	0062	28	Posthole cut	Small oval posthole, measuring 0.22m by 0.25m and 0.2m deep, with moderate sloping sides and a flat base. 100% excavated.				
0063	0062	28	Posthole fill	Mid brown/pale grey silt/clay with occasional charcoal flecks.				Pmed
0064	0064	25	Linear feature cut	Possible ditch, up to 2.7m wide and 0.3m deep, although cut was unclear and may be a natural hollow. Possibly same as 0052?				
0065	0064	25	Linear feature fill	Mid brown clay/silt.			04	[PMed] preh
0066	0066	41	Linear feature cut	East-west aligned linear feature, irregular in plan. Base of feature is a natural silt, although the sides were clay, so is most likely a natural channel.				
0067	0066	41	Linear feature fill	Homogenous, almost stoneless, brown silt with a single band of flints running down the centre.				
0068	0068	41	Linear feature cut	Irregular shaped feature, possible pit but probably natural like 0066.				
0069	0068	41	Linear feature fill	Homogenous, almost stoneless, brown silt.			06	IA
0070	0070	31	Pit cut	Oval pit, aligned SW-NE, measuring 0.45m by 0.65m and 0.18m deep, Steep sided, flat base. 100% excavated, probably overdug and was originally only 0.1m deep?				
0071	0070	31	Pit fill	Mixed mid brown/orange clay/silt with traces of charcoal.			05	LNeo-EBA
0072	0073	28	Unstratified finds	Surface finds recovered from silt layer 0073 during machining of excavation area around trench 28. Generally found near modern drains or features so probably redeposited material.				IA
0073	0073	28	Layer	Silt layer within excavation area around trench 28, above subsoil. Occasional areas of charcoal flecks, iron pan etc. Several areas were cleaned and a sample trench excavated but it contained no stratigraphy or cultural material. Cut by features and so is a natural deposit.				
0074	0074	28	Posthole cut	Oval posthole, 0.4m by 0.55m by 0.3m deep. Vertical sides with a concave base. 100% excavated				
0075	0074	28	Posthole fill	Mid brown clay/silt with increasing amounts of charcoal towards base, scattered flints.			07	

Opno	Feature	Trench	Identifier	Description	Over	Under	Soil sample	Spotdate
0076	0076	28	Posthole cut	Oval posthole, 0.5m by 0.55m by 0.32m deep. Near-vertical sides with a concave base. 100% excavated				
0077	0076	28	Posthole fill	Mid-dark brown clay/silt with increasing amounts of charcoal towards base.			08	LNeo-EBA
0078	0078	33	Posthole cut	Oval posthole, 0.45m by 0.25m by 0.2m deep. Steep sides with a concave base. After 100% excavation a deeper circular posthole, 0.25m diameter and 0.4m deep was apparent at the north end.				
0079	0078	33	Posthole fill	Dark brown clay/silt with charcoal throughout.				IA
0080	0080	33	Posthole cut	Deep oval posthole, 0.32m by 0.25m by 0.4m deep. Steep sides, irregular base. 100% excavated.				
0081	0080	33	Posthole fill	Dark brown clay/silt with charcoal throughout.				IA
0082	0082	33	Posthole cut	Small, circular posthole, 0.2m diameter and 0.24m deep, with vertical sides and a concave base.				
0083	0082	33	Posthole fill	Mid brown silt/clay with occasional charcoal flecks.				IA
0084	0084	33	Posthole cut	Large circular posthole, 0.6m diameter and 0.54m deep. Steep sided with a concave base, 100% excavated.				
0085	0084	33	Posthole fill	Dark grey/brown silt clay with charcoal flecks and occasional flints.			11	IA
0086	0086	35	Pit cut	Shallow oval pit, 0.6m by 0.8m by 0.1m deep. Gentle sides, flat base. 100% excavated.				
0087	0086	35	Pit fill	Mid brown silt/clay with charcoal flecks.			15	IA
0088	0088	35	Posthole cut	Circular posthole, 0.34m diameter and 0.28m deep, with moderate sloping sides and a concave base. 100% excavated.				
0089	0088	35	Posthole fill	Mid-dark brown silt with occasional flecks of charcoal and flints.				IA
0090	0090	35	Posthole cut	Circular posthole, 0.4m diameter and 0.23m deep, with moderate sloping sides and a concave base. 100% excavated.				
0091	0090	35	Posthole fill	Mid brown silt with charcoal flecks and orange sand.			20	IA
0092	0092	35	Pit cut	Circular? Pit, clearly defined on west side but merging into a natural silt hollow to east. Probably 1m diameter and 0.2m deep with gentle sloping sides and a flat base.				

Opno	Feature	Trench	Identifier	Description	Over	Under	Soil sample	Spotdate
0093	0092	35	Pit fill	Mid brown silt/clay.				IA
0094	0094	35	Posthole cut	Small circular posthole, 0.3m diameter and 0.08m deep. Irregular sides and base. 100% excavated.				
0095	0094	35	Posthole fill	Mid brown clay/silt with traces of charcoal.				
0096	0096	35	Posthole cut	Circular posthole, 0.3m diameter and 0.2m deep. 100% excavated.				
0097	0096	35	Posthole fill	Mid brown silt/clay with charcoal flecks.			16	[preh]
0098	0098	35	Posthole cut	Small circular posthole, 0.3m diameter and 0.1m deep. Moderate sloping sides and a concave base. 100% excavated.				
0099	0098	35	Posthole fill	Mid brown clay/silt with traces of charcoal.				IA
0100	0100	33	Cremation? Cut	Possible cremation pit, 0.45m diameter and 0.2m deep, with moderate sloping sides and a concave base.				
0101	0100	33	Cremation fill	Upper fill of possible cremation pit. Dark brown/black silt/clay with charcoal, daub and burnt bone.	0102		09	
0102	0100	33	Cremation fill	Lower fill of possible cremation pit. Light orange/brown clay mixed with burnt clay and charcoal flecks.		0101	10	
0103	0103	33	Pit cut	Small circular pit, 0.85m diameter and 0.28m deep with steep sides and a flat base. 100% excavated. NE part of pit contained a large quantity of IA pot (0109), at its base.				
0104	0103	33	Pit fill	Mottled pale brown silt with frequent charcoal flecks and fired clay, scattered flints.			13	IA
0105	0105	33	Layer	Even homogenous layer of mid brown silt, irregular in plan, surrounding, and underlying? layer 0106. Infill of a natural shallow hollow. See section 0124.				
0106	0106	33	Layer	Even homogenous layer of dark grey/brown silt, irregular in plan, surrounded by, and overlying? layer 0105. Contained bone 0107 and 0108, following the removal of which a section, 0124, was placed across it. Infill of a natural shallow hollow.				
0107	0106	33	layer Finds	Deposit of bone fragments within layer 0106.				
0108	0106	33	layer Finds	Bone fragments within layer 0106 -possible femur? Set vertically in fill.				
0109	0103 0104	33	pit fill Finds	Pottery lying across base of north-east half of pit within fill 0104.				IA

Opno	Feature	Trench	Identifier	Description	Over	Under	Soil sample	Spotdate
0110	0110	35	Posthole cut	Small circular posthole, 0.3m diameter and 0.2m deep, with near vertical sides and a flat base. 100% excavated.				
0111	0110	35	Posthole fill	Dark grey charcoal rich silt, very few stones.			12	
0112	0112	37	Pit cut	Oval pit, partially under trench edge, aligned NW-SE. Measured 0.9m by 1.1m and 0.17m deep with moderate sloping sides and a concave base.				
0113	0112	37	Pit fill	Dark brown silt/clay with charcoal.			14	IA
0114	0114	35	Pit cut	Oval pit, 0.5m by 0.38m and 0.18m deep, with steep sides and a concave base. 100% excavated.				
0115	0114	35	Pit fill	Dark brown silt/clay.			17	IA
0116			NOT USED	NOT USED.				
0117	0117	35	Pit cut	Circular pit, 0.6m diameter and 0.24m deep, with steep sides and a concave base. 100% excavated.				
0118	0117	35	Pit fill	Mid brown silt with flint inclusions.			21	
0119	0119	35	Pit cut	Circular pit, partially under baulk and heavily disturbed by an animal burrow. 0.8m diameter and 0.25m deep with moderate/steep sides and a concave base.				
0120	0119	35	Pit fill	Dark grey/brown clay silt with occasiona lflints and charcoal.			18	
0121	0121	35	Pit cut	Circular pit, 0.8m diameter and 0.15m deep, with moderate sloping sides and an uneven concave base. 100% excavated.				
0122	0121	35	Pit fill	Mid brown silt/clay with flints.			19	IA
0123	0123	40	Unstratified finds	Unstratified finds from trench 40.				IA
0124	0105 0106	35	Section	Section across probable hollow infilled by 0105 and 0106. Excavated after removal of bone 0107 and 0108. Natural slope of hollow seen to south and east but not to north where excavated depth reached 0.55m and was abandoned due to water filling from the test borehole.				

Appendix 3: Finds quantities

Ctxt	Pot		Flint		Burnt Flint		Fired clay		Miscellaneous	Spotdate
	No	Wt/kg	No	Wt/kg	No	Wt/kg	No	Wt/kg		
0002			1	0.006					CBM 2 (0.019)	PMed
0017	1	0.022								Post-Rom
0018	5	0.027	5	0.020			1	0.010		IA
0023									CBM 3 (0.116)	PMed
0029			1	0.024						Preh
0030			10	0.208						
0035	3	0.058	1	0.016						IA
0051					2	0.021				
0053	1	0.008							CBM 2 (0.007)	PMed 16-18th
0058					64	0.457				[preh]
0059	14	0.039	1	0.005					Bt stone 4 (0.127)	IA, LNeo-EBA
0061	4	0.009	1	0.007	5	0.026	9	0.038		IA, LNeo-EBA
0063							1	0.001		Pmed
0065	1	0.008							Iron 1-7g; Cu Alloy 1 (0.003)	[PMed] Preh
0069	1	0.018								IA
0071	16	0.229	7	0.026						LNeo-EBA
0072	6	0.013								IA
0075										
0077	8	0.017	2	0.019						LNeo-EBA
0079	3	0.020								IA
0081	5	0.012								IA
0083	3	0.020								IA
0085	15	0.119	2	0.009			5	0.026		IA
0087	1	0.011	4	0.095	1	0.029				IA
0089	6	0.036					1	0.001		IA
0091	10	0.010	3	0.015	1	0.244	2	0.005		IA
0093	1	0.002			1	0.013				IA
0097			5	0.261						[Preh]
0099	1	0.001								IA
0101									Cremated HSR	
0104	55	0.699					6	0.062		IA
0106			2	0.008						
0107									ABone 13-0.031	
0108									ABone 20-0.034	
0109	24	1.338								IA
0111			1	0.004						
0113	14	0.100							ABone 30-0.221	IA
0115	2	0.004	1	0.023						IA
0118										
0120										
0122	4	0.021	5	0.066						IA
0123	1	0.012								IA

Appendix 4. Pottery

Ctxt	fabric	dsc	No	Wt/g	Comment	Spotdate
0017	MCW	h	1	22	medieval coarseware handle	12th-14th C
0018	F1	D	1	2	Shallow incised lines. Smoothed surface	Iron Age
	F1	U	2	8	Smoothed surface	Iron Age
	F2	U	2	17		Iron Age
0035	F2	U	3	58	Smoothed surface	Iron Age
0053	GRE	b	1	8	Glazed red earthenware bodysherd	16th-18th C
0059	F2	U	1	6	Abraded	Iron Age
	F3	U	9	15		Iron Age
	F3	D	4	18	Single fingertip impressions	LNeo-EBA
0061	F3	D	1	5	Single fingertip impressions	LNeo-EBA
	F2	U	1	2	Abraded	Iron Age
	F2	U	2	2	Very abraded	Iron Age
0065	Q1	U	1	8		Preh
0069	F2	U	1	18		Iron Age
0071	Q1	D	7	211	Beaker square tooth comb impress bands.Occ flint. Abraded (illus Fig 00.)	LNeo-EBA
	Q1	U	7	9	Beaker. Very abraded	LNeo-EBA
	F3	U	1	5		Preh
	Q2	D	1	4	Beaker - comb-impressed filled bands	LNeo-EBA
0072	GMG	ba	1	13	Roman jar base	Roman
	Q1	U	2	5	Abraded	Iron Age
	Q2	U	1	5	Abraded	Iron Age
	F2	U	3	3	Abraded	Iron Age
0077	F3	D	7	16	Fingertip impressed. Very abraded	LNeo-EBA
	Q	U	1	1		Preh
0079	F2	U	3	20	Smoothed surface	Iron Age
0081	F2	U	3	8	Abraded	Iron Age
	Q1	U	1	3		Iron Age
	Q2	U	1	1	Abraded	Iron Age
0083	F1	U	3	20	Abraded. Wiped surface	Iron Age
0085	F2	U	10	66	Abraded	Iron Age
	F2	D	1	11	Rows of single fingertip impressed. Abraded	Iron Age
	Q2	U	1	18	Scored. Abraded	Iron Age
	F1	U	2	17	Abraded	Iron Age
	F1	R	1	7	Medium jar, simple round upright rim	Iron Age
0087	F1	U	1	11		Iron Age
0089	F1	R	1	7	Medium jar, simple round upright rim. Smoothed surface	Iron Age
	F1	U	2	11	Smoothed surface	Iron Age
	F1	D	1	12	Shallow incised lines. Smoothed surface	Iron Age
	F	U	1	1	Very abraded	Iron Age
	Q2	U	1	5	Scored	Iron Age
0091	F1	U	7	7	Very abraded	Iron Age
	F1	R	2	2	Rounded rim. Smoothed surface	Iron Age
	F1	R	1	1	Rounded rim. Smoothed surface	Iron Age
0093	F2	U	1	2		Iron Age
0099	F2	U	1	1	Very abraded	Iron Age
0113	F4	U	1	20	Flinted base. Abraded	Iron Age
	F2	R	1	3	Flat rim. Very abraded	Iron Age
	Q1	U	10	54	Smoothed surface	Iron Age
	F2	D	1	8	Single fingertip impressed	Iron Age
	Q2	D	1	15	Random fingernail impressed	Iron Age
0115	F1	U	1	3	Abraded	Iron Age
	F2	U	1	1	Abraded	Iron Age
0122	F2	U	3	16		Iron Age
	F1	R	1	5	Fine jar, rounded rim	Iron Age
0123	F2	U	1	12	Very abraded	Iron Age
0104	F1	B	1	56	Fine jar. Smoothed surface	Iron Age
	F1	R	1	5	Fine jar, rounded rim. Smoothed surface	Iron Age
	F1	U	2	1	Scraps	Iron Age
	Q1	U	7	68	Abraded	Iron Age
	F2	U	20	175	Medium jar	Iron Age
	F2	R	2	120	Medium jar, rounded rim 220mm diameter short upright neck rounded shoulder	Iron Age
	F4	R	2	18	Coarse jar, fingertip impressed on flat rim top	Iron Age
	F4	U	10	116		Iron Age
	F2	U	8	106	Orange. Abraded	Iron Age
	F2	B	1	16	Orange, pinched base	Iron Age
	F2	R	1	18		Iron Age
0109	F2	R	24	1338	Coarse jar flat folded rim, no neck, simple base. Smoothed	Iron Age

Appendix 5: Flint by context

Ctxt	Type	No.	Notes
0002	retouched flake	1	Slight irregular retouch of left edge - other side broken
0018	flake	4	All small irregular
	blade-like flake	1	Very small
0029	end scraper	1	Long quite thick blade-like with thin pebble type cortex. Edges damaged, possibly some through use, but distal end has slight retouch - or utilisation? of naturally scraper-like edge
0030	flake	8	Irregular, generally quite thick. Several with cortical platforms
	utilised flake	1	Very small - possible utilised edge
	retouched flake	1	Slight retouch or possible utilisation of a steep edge, possibly used as scraper
0035	flake	1	Hard hammer struck
0059	flake	1	Small, cortical
0061	flake	1	Broad, hard hammer struck
0071	spall	2	Very small, from sample 5
	flake	2	Small, both quite squat, from sample 5
	blade-like flake	2	From sample 5
	blade	1	From sample 5
0077	utilised flake	1	Thin, cortical platform, slight utilised edges
	retouched flake	1	Slight retouch right edge
0085	flake	2	Both quite small
0087	flake	2	One irregular, one very small
	shatter	1	
0091	flake	3	One small, thick and hard hammer struck, others quite small
0097	flake	2	One quite thick w thick cortex around all side - 'slice'-like, some patination /glossy
	core/tool	1	Irregular fragment, completely cortical - white glossy & abraded apart from one side which has flakes from along it - could be a crude scraper -type tool or a core
	core fragment	1	Mostly cortical from side of core - has battered platform area
0106	flake	1	Quite small
	blade-like flake	1	Very small
0111	flake	1	Small
0115	utilised flake	1	Cortical - cortical edge utilised
0122	flake	3	Irregular
	retouched flake	1	Broad hard hammer struck, thin pebble type cortex
	piercer	1	Large with long protruding distal point which may have been used as piercer

Appendix 6: Cremated bone quantification and measurements

Feature	Fill	Frac	Skull			Axial			Upper limb			Lower limb			Unident long bone			Unident	Totals	max skull	max l.b.
			No.	Wt/g	Ave. wt	No.	Wt/g	Ave. wt	No.	Wt/g	Ave. wt	No.	Wt/g	Ave. wt	No.	Wt/g	Ave. wt	Wt/g	Wt/g	(mm)	(mm)
0084	0085	<5mm	3	0.2	0.06	2	0.1	0.05							49	3.6	0.07	17.4	21.3	11	9
		>5mm	3	0.4	0.13							3	0.5	0.17	11	2.1	0.19	2.8	5.8	11	17
Totals			**6**	**0.6**	**0.10**	**2**	**0.1**	**0.05**				**3**	**0.5**	**0.17**	**60**	**5.7**	**0.10**	**20.2**	**27.1**		
0100	0101	<5mm	58	4.0	0.07	2	0.1	0.05	1	0.1	0.1	8	1.3	0.16	34	5.0	0.15	63.8	74.3	12	22
		>5mm	33	7.7	23.3	2	0.2	0.10	3	0.9	0.3	12	7.8	0.65	17	6.3	0.37	16.2	39.1	17	25
	0102	all																1.0	1.0		
Totals			**91**	**11.7**	**0.13**	**4**	**0.3**	**0.08**	**4**	**1.0**	**0.25**	**20**	**9.1**	**0.46**	**51**	**11.3**	**22.2**	**81.0**	**114.4**		
0103	0104	<5mm													5	0.5	0.10	4.4	4.9		8
		>5mm													5	4.6	0.92	1.7	6.3		17
Totals															**10**	**5.1**	**0.51**	**6.1**	**11.2**		

Appendix 7: Cremated bone catalogue

Cremation burial 0085 (feature 0084): ?juvenile and/or animal

Quantification:	Total weight 27.1g: Skull 6 (0.6g), axial 2 (0.1g), upper limb 0 (0g), lower limb 3 (0.5g), unidentified long bone 60 (5.7g), unidentified (20.2g).
Description:	Unurned calcined bone. Possibly a mixed deposit.
Condition:	Fair, mostly very small fragments, abraded.
Determination of age:	Size of bones.
Determination of sex:	No evidence.
Identified elements:	Fragments of ribs, tarsal, ?phalanges.
Measurements:	Max skull frag size 11mm, max long bone frag size 17mm.
Colours:	White, a few blue-grey pieces.
Teeth:	None.
Pathology:	Nothing observed.

Cremation burial 0101/0102 (feature 0100): unsexed adult

Quantification:	Total weight 114.4g: Skull 91 (11.7g), axial 4 (0.3g), upper limb 4 (1.0g), lower limb 20 (9.1g), unidentified long bone 51 (11.3g), unidentified (81.0g).
Description:	Unurned, small pit.
Condition:	Fair, a few medium-sized fragments.
Determination of age:	Skull thickness and size of long bone fragments.
Determination of sex:	No evidence.
Identified elements:	Ribs, humerus, femur, tibia.
Measurements:	Max skull frag size 17mm, max long bone frag size 25mm.
Colours:	Mostly cream/white.
Teeth:	Five root fragments.
Pathology:	Nothing observed.

Cremation burial 0104 (feature 0103): animal?

Quantification:	Total weight 11.2g: Skull 0 (0g), axial 0 (0g), upper limb 0 (0g), lower limb 0 (0g), unidentified long bone 10 (5.1g), unidentified (6.1g).
Description:	Unurned calcined bone.
Condition:	Fair, small fragments, abraded.
Determination of age:	No evidence.
Determination of sex:	No evidence.
Identified elements:	None.
Measurements:	Max long bone frag size 17mm.
Colours:	Mostly white.
Teeth:	None
Pathology:	Nothing observed.

Appendix 8. Charred plant macrofossils and other remains

Sample No.	5	8	1	11	13	14	19	2	9	10	20	3
OP No.	**0071**	**0077**	**0059**	**0085**	**0104**	**0113**	**0122**	**0061**	**0101**	**0102**	**0091**	**0058**
Feature No.	**0070**	**0076**	**0055**	**0084**	**0103**	**0112**	**0121**	**0060**	**0100**	**0100**	**0090**	**0058**
Feature type	**Pit**	**ph**	**Pit**	**ph**	**Pit**	**Pit**	**Pit**	**ph**	**Crem.**	**Crem.**	**ph**	**Pit**
Date	**LN/EBA**	**LN/EBA**	**BA/IA**	**IA**	**IA**	**IA**	**IA**	**?IA**	**?**	**?**	**Prehis.**	**Prehis.**
Plant macrofossils												
Cereal indet. (grains)			x			xcf			x		x	
Bromus sp.			xcf									
Fabaceae indet.										xcf		
Fallopia convolvulus (L.)A.Love			x			xtf						
Persicaria maculosa/lapathifolia						x						
Corylus avellana L.	xx	xx										
Charcoal <2mm	xxx	xxxx	xxx	xxxx	xxxx	xxx	xxxx	xxxx	xxxx	xxx	xxx	xxxx
Charcoal >2mm	x	xxx	x	xxx	xxx	x	x	xx	xx			xx
Charcoal >5mm		x					x		x			
Charred root/stem						x	x	x				
Other materials												
Black tarry material								x				
Bone	xb	xb	x	xxxb	x xb	xx xb	xb	x	xb	xb	x xb	
Burnt/fired clay			x	x				x	x			
Burnt stone									x			x
Vitrified material								x				
Small coal frags.											x	
Sample volume (litres)	**10**	**20**	**20**	**20**	**30**	**20**	**20**	**20**	**20**	**20**	**20**	**10**
Volume of flot (litres)	**<0.1**	**0.4**	**<0.1**	**0.1**	**0.2**	**<0.1**	**<0.1**	**0.1**	**0.1**	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**25%**	**100%**	**100%**	**50%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Key:x = 1 – 10 specimens; xx = 10 – 50 specimens; xxx = 50 – 100 specimens; xxxx = 100+ specimens;
cf = compare; tf = testa fragment; b = burnt; ph = post hole; Crem = cremation;
LN = Late Neolithic; EBA = Bronze Age; IA = Iron Age; Prehis = prehistoric
L = low; M = Medium; H = High

Appendix 9. Radiocarbon dating certificates

SUERC

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RADIOCARBON DATING CERTIFICATE

31 July 2008

Laboratory Code	SUERC-19596 (GU-16920)
Submitter	Cathy Tester Suffolk County Council Archaeological Service Shirehall Bury St. Edmunds IP33 2AR
Site Reference	Euston Reservoir, Sapiston, Suffolk
Sample Reference	SAP012 0059
Material	Seeds : Indeterminate
$\delta^{13}C$ relative to VPDB	-22.6 ‰
Radiocarbon Age BP	2225 ± 30

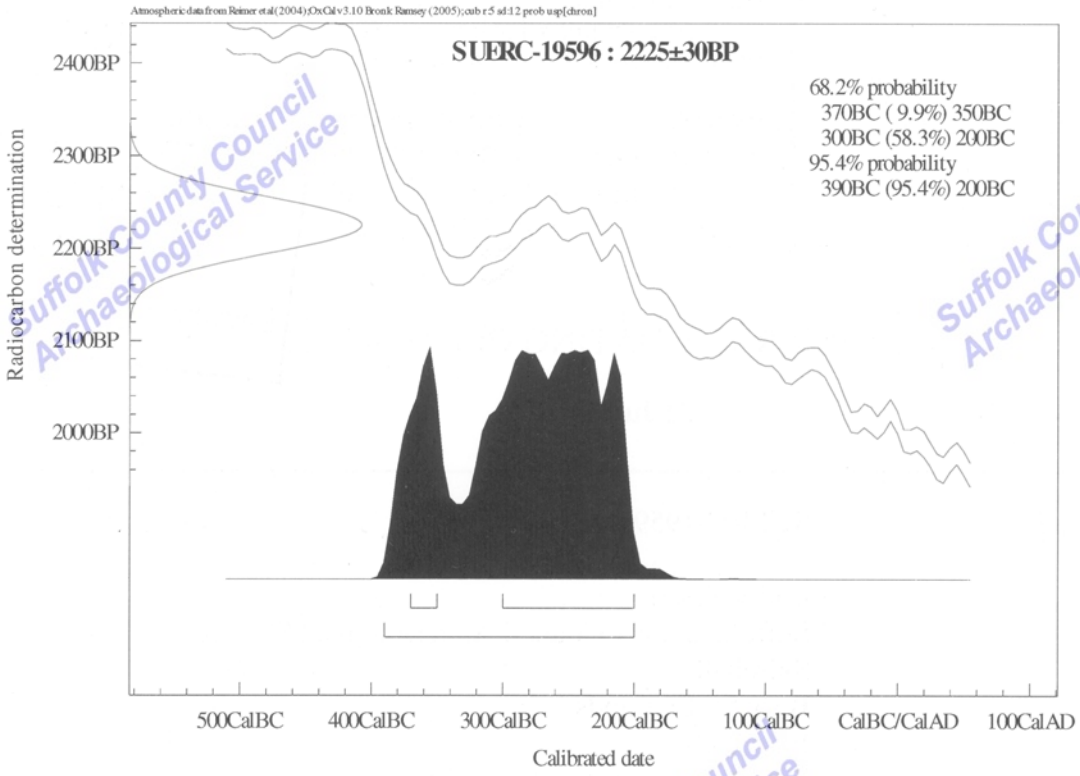
N.B.

1. 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.
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
3. 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.

Conventional age and calibration age ranges calculated by :- P. Naysmith Date :- 31-7-08

Checked and signed off by :- Gordon Cook Date :- 31-7-08

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

31 July 2008

Laboratory Code	SUERC-19597 (GU-16921)
Submitter	Cathy Tester Suffolk County Council Archaeological Service Shirehall Bury St. Edmunds IP33 2AR
Site Reference	Euston Reservoir, Sapiston, Suffolk
Sample Reference	SAP012 0077
Material	Nutshell : Hazel-Corylus avellana
$\delta^{13}C$ relative to VPDB	-23.9 ‰
Radiocarbon Age BP	3700 ± 30

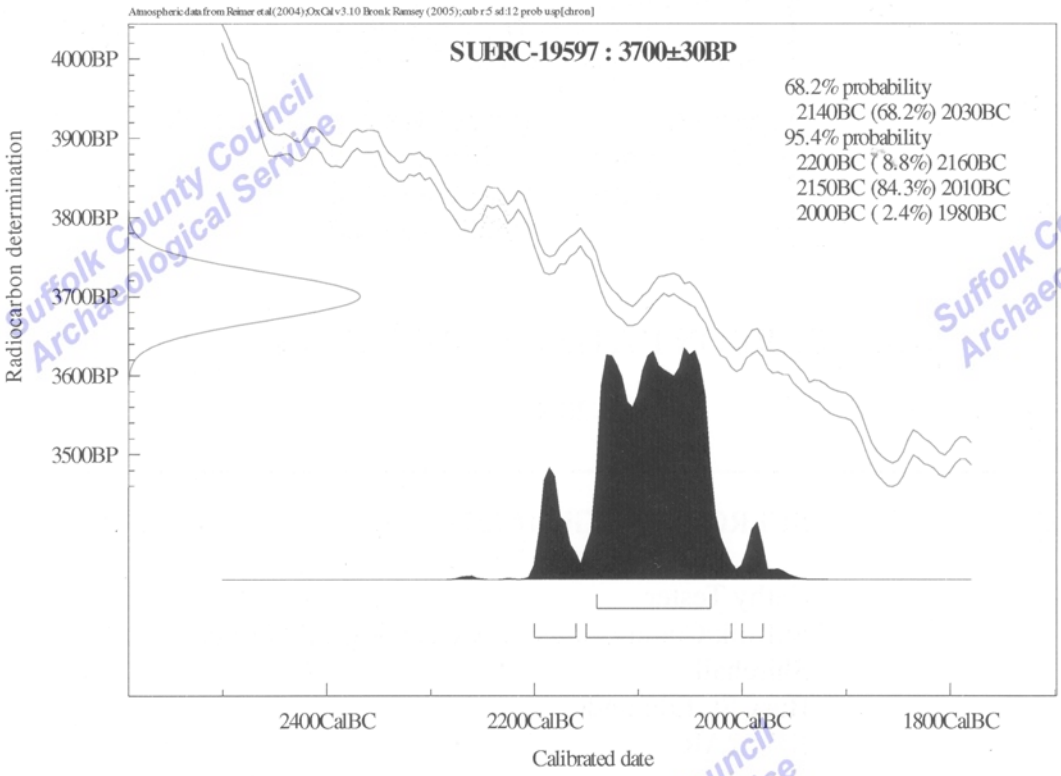
N.B.

1. 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.
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
3. 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.

Conventional age and calibration age ranges calculated by :- P. Naysmith Date :- 31-7-08

Checked and signed off by :- Gordon Cook Date :- 31-7-08

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

31 July 2008

Laboratory Code	SUERC-19598 (GU-16922)
Submitter	Cathy Tester Suffolk County Council Archaeological Service Shirehall Bury St. Edmunds IP33 2AR
Site Reference	Euston Reservoir, Sapiston, Suffolk
Sample Reference	SAP012 0091
Material	Seeds : Indeterminate
$\delta^{13}C$ relative to VPDB	-22.8 ‰
Radiocarbon Age BP	730 ± 30

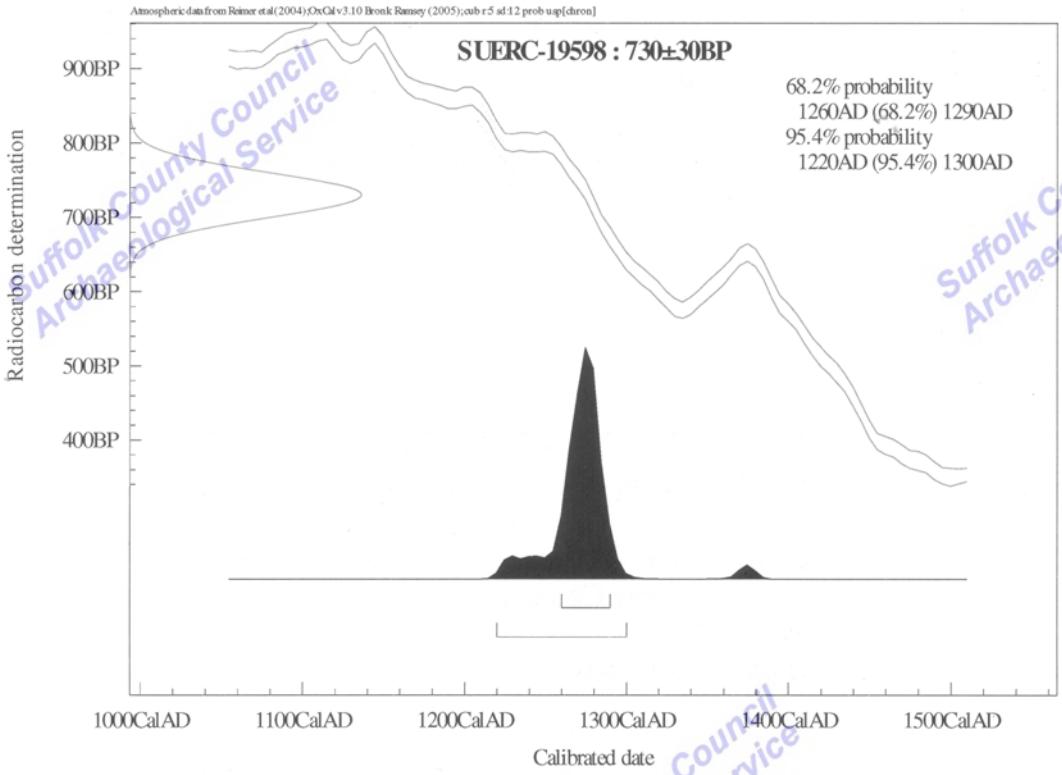
N.B.

1. 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.
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
3. 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.

Conventional age and calibration age ranges calculated by :- P. Naysmith Date :- 31-7-08

Checked and signed off by :- Gordon Cook Date :- 31-7-08

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

31 July 2008

Laboratory Code	SUERC-19599 (GU-16923)
Submitter	Cathy Tester Suffolk County Council Archaeological Service Shirehall Bury St. Edmunds IP33 2AR
Site Reference	Euston Reservoir, Sapiston, Suffolk
Sample Reference	SAP012 0104
Material	Charcoal : Unknown
$\delta^{13}C$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	2455 ± 30

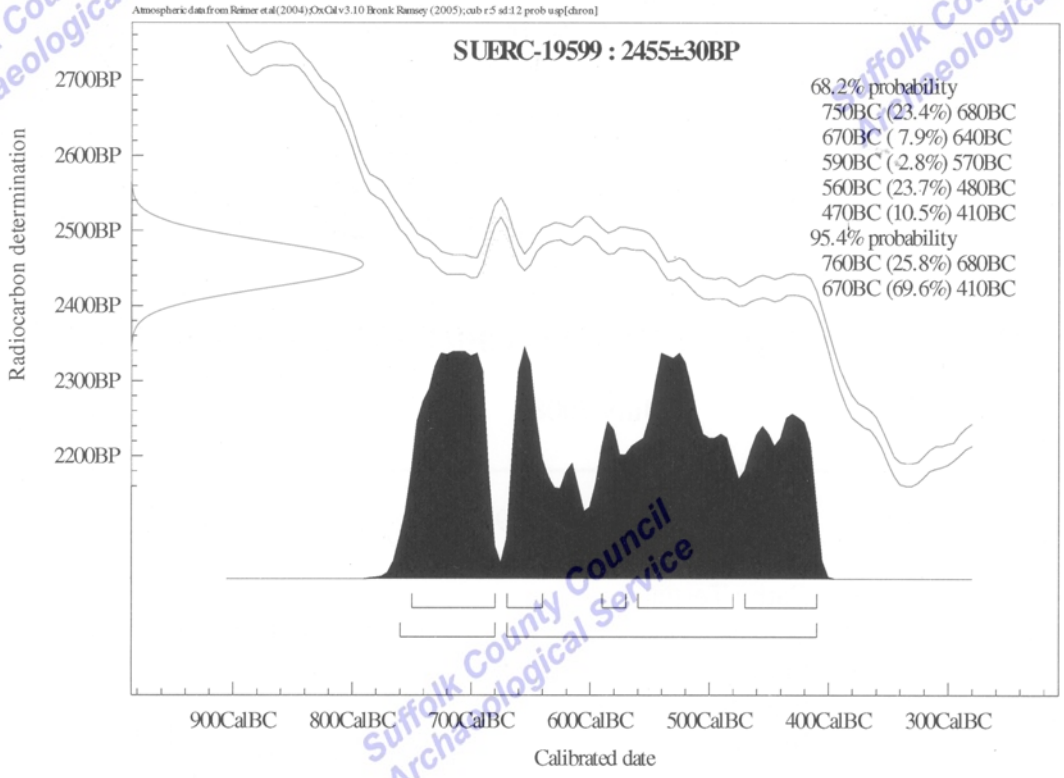
N.B.

1. 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.
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
3. 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.

Conventional age and calibration age ranges calculated by :- P. Naysmith Date :- 31-7-08

Checked and signed off by :- Gordon Cook Date :- 31-7-08

Calibration Plot



Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]