

97/12

**ARCHAEOLOGICAL
WATCHING BRIEF REPORT**

Grantham Road, Navenby

Site Code: GRN96
LCNCC Acc No. 25.96
NGR: SK 9890 5730

60557 - Prehistoric

Some LI 5152
LI 1530

Event: LI 5028

97/12

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Report prepared for Ploughsound Ltd by Colin Palmer-Brown
September 1997

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Summary

- * *Following a non-intrusive field evaluation, a standard archaeological watching brief was carried out on behalf of Ploughsound Ltd during the construction of a residential development on land south of Winton Road, Navenby, Lincolnshire*
- * *An isolated group of middle - late Iron Age pits were exposed during access and sewer construction, some of which contained significant quantities of charred plant remains, pottery sherds and fire-shattered pebbles*
- * *Although important, the archaeology appeared to concentrate in one specific area and the brief was concluded prior to the completion of the development*
- * *The results of the watching brief add significantly to earlier investigations close to Ermine Street, where a late Iron Age settlement appears to have been superseded by a Romano-British ribbon development.*

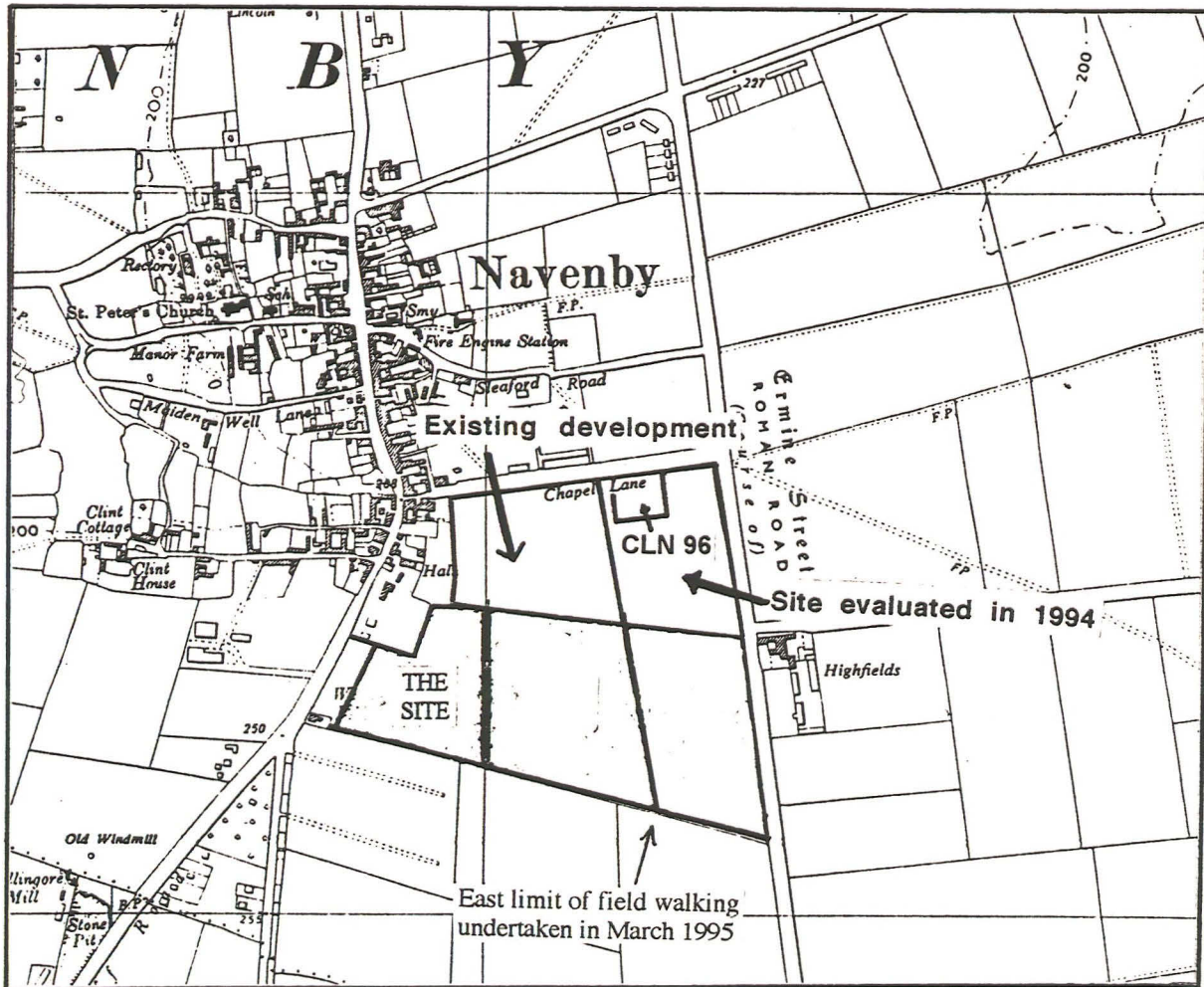


Fig. 1 1:10000 site location
(OS copyref. AL 515 21 A0001)

1.0 Introduction

An archaeological watching brief was carried out during the construction of a residential development off Winton Road, Navenby, Lincolnshire. The works were commissioned by Ploughsound Ltd. to fulfil a planning requirement issued by North Kesteven District Council (Planning Reference N/40/0947/95), and centred on NGR SK 9890 5730. This text documents the results of the fieldwork and post-fieldwork analysis. Copies of the report have been forwarded to Ploughsound Ltd, the District Planning Authority, the Heritage Officer for North Kesteven, the County Sites and Monuments Record, and the Lincolnshire Archives Office.

The project was carried out in accordance with an archaeological project brief issued by the Heritage Officer of North Kesteven. The methodology employed followed details set out in a written specification (prepared by PCA, dated January 1996).

Work on the site commenced February 1st, 1996 and was completed June 18th, 1997. In total, fourteen separate inspections took place, and the brief was terminated at a time when some measure of certainty was possible concerning the limited extent of the archaeological remains.

Funding was provided by the clients; including additional sums for the assessment of environmental evidence, for which sincere thanks are expressed. Thanks are also due to M Darling for her assessment of the pottery and to DJ Rackham for his assessment of the archaeological remains. Finally, on behalf of the clients, thanks are expressed to the Heritage Officer for her support and professional advice during the course of the investigation.

2.0 Location and description

Navenby is in the administrative district of North Kesteven, approximately 10km south of Lincoln. The development site is on the extreme south side of the village, south of Winton Road, and consists of an L-shaped unit measuring approximately 3 hectares in area (Fig. 1). The unit is basically flat and its elevation above mean sea level is approximately 70m. West of Navenby (and the Oolitic limestone on which the settlement was founded) the land drops dramatically to approximately 20m OD where it nears the floor of the Witham valley. The River Witham is approximately 7.5km west of the village, with the closest natural water source being the River Brant; a tributary to the Witham, approximately 4.5km west of Navenby (there are less imposing sources of water which follow the spring line along the west edge of the limestone scarp).

3.0 Planning background

Full planning permission was granted by the District Council in 1995 for fourteen house plots and associated infrastructure. The permission was granted subject to the undertaking of an archaeological watching brief on all associated groundworks (planning reference N/40/0947/95).

4.0 Archaeological and historical background

The local and regional archaeological significance of Navenby was elevated in 1965 when the head teacher of the local primary school, assisted by pupils, collected large quantities of Romano-British artefacts, including pottery and coins from fields to the north, south and west of Chapel Lane. The local press were quick to pick up on the discovery and, over the past thirty or so years, academic archaeologists have attempted to explain the significance of this settlement, which lies adjacent to Ermine Street; mid-way between Ancaster and Lincoln.

Despite the excitement of three decades ago, subsequent knowledge and theory owes more to 'chance discovery' and good will on the part of interested individuals than it ever does to systematic archaeological research; of which there has been little. The County Sites and Monuments Record (SMR) is bulging with entries which cover large areas of the parish, and appear to indicate continuous settlement from the prehistoric periods to the present.

The SMR contains a catalogue of prehistoric artefacts (usually worked flints) that have been recovered from widely-separated contexts within the parish. Fieldwalking by the former Community Archaeologist, Alison Peach, in 1991 revealed a large flint scatter on a site lying in the angle of Ermine Street and Chapel Lane. This same site was the subject of a field evaluation for Ploughsound Ltd in 1994, when seven trial trenches were opened to assess a series of geophysical anomalies. *In situ* prehistoric remains were confined to the later Iron Age, though unstratified flint artefacts were recovered in some numbers, suggesting an earlier phase of occupation or exploitation in the late Neolithic (New Stone Age) or Bronze Age periods.

In situ Bronze Age remains were discovered in 1996 during an intense watching brief on land south of Chapel Lane. The project, which has also been commissioned by Ploughsound Ltd. to comply with a planning condition, is not yet complete, and the full results have yet to be determined. That said, of some sixteen cremation burials excavated, three or more are provisionally dated to the Bronze Age (one of which was contained within a Bucket Urn).

One large series of geophysical anomalies identified in 1994 related to an enclosure which contained the outlines of circular native-style, buildings. From a section of the enclosure ditch, fragments of late Iron Age (type) pottery were recovered, suggesting perhaps that, on the dawn of the Roman Conquest, the value of the site was already well known to the native Britons, and indeed, the Bronze Age community that preceded them. Whether or not there was a hiatus between these two broad phases has yet to be determined.

There is good evidence to suggest that Navenby was of some considerable importance to the Roman army, and that a military installation was established in the C1st AD; perhaps as a policing point on Ermine Street between the fort at Ancaster and the Legionary Fortress at Lincoln (*Lindum*). The site of the installation has not been determined, though a range of artefacts have been recovered (principally by metal

detectorist K Borell) which indicate a military presence in the years following the Conquest of AD43.

Although the initial effects on (and acceptance by) the local community (which belonged to a tribe known now as the *Corieltauvi*) cannot easily be determined, it is clear that a large Romanized community continued to prosper at Navenby long after the departure of the military. Trial excavations in 1994 close to the Ermine Street frontage exposed stone building remains and finds suggesting a strong Romano-British presence which continued to the end of the Roman period in Britain. It may be that, for some, the presence of the Roman army created an attractive commercial market for traders or 'camp followers' and that this market continued to develop throughout the Roman period, when Navenby may have been on the boundary of the *territorium* of Lincoln (Whitwell 1992).

Following abandonment at the end of the Roman period, the site which centres on Ermine Street was not re-settled (not until the present time that is). Saxon occupation appears to have centred within the historic core of the present/medieval village. A recent watching brief on land north of Church Lane, for example, identified a dense cluster of late Saxon features (late C9th/early C10th), with residual sherds of early and middle Saxon pottery being recovered in the same location. It would appear that the post-Roman settlement was sited closer to the limestone cliff, closer to a more readily-accessible water supply.

The site to the south of Winton Road, which is the main subject of this report, lies within a broader land parcel that was field walked in 1995 following a commission from Ploughsound Ltd. An area measuring approximately 8.0 hectares was divided into 20m grids, and a rapid field walking survey was carried out. A range of artefacts were picked up, including worked flints, a small quantity of ?late Iron Age pottery and 81 sherds of Romano-British pottery. There were no dense clusters of artefacts, with the highest concentration of Romano-British remains lying on the south-east side of the site (east of the area currently under review).

The present 3.0 hectare site was the subject of a magnetometer survey which was carried out in 1995 by GeoQuest Associates. The survey was not entirely satisfactory, but its conclusions did suggest that there was some evidence of archaeological activity on the north-east side of the site.

5.0 Requirement and objectives

The fieldwork was carried out in accordance with a project brief issued by the Heritage Officer for North Kesteven and a specification prepared by PCA (27th January 1996).

The purpose of the recording brief, in essence, has been to identify and record archaeological remains exposed or disturbed as a result of the development; effectively, to preserve 'by record' the archaeology; to create a comprehensive site archive (of both the object and paper elements), and to produce a report, both for the purpose of the clients and the local planning authority.

Broadly, an archaeological watching brief may be defined as:-

“a programme of observation and investigation conducted during the destruction of archaeological deposits, resulting in the preparation of a report and ordered archive” (Institute of Field Archaeologists, *Standard Guidance for Archaeological Watching Briefs*, 1994).

6.0 Methodology

The project was monitored intermittently between February 2nd, 1996 and June 18th, 1997. The fieldwork was carried out by M Otter, SC Johnson, and the writer.

Initial work centred on the monitoring of excavations for the main sewer and road which extended southwards from Winton Road for a distance of approximately 60m, before deviating to the east. Four manhole trenches were excavated within the 60m length and one of these (manhole F2) was centred within or close to the cluster of prehistoric pits described below. The main sewer was excavated to a depth approximately 1.5m beneath the top of the ploughsoil; the manhole trenches slightly deeper. Excavations for the access road itself involved the removal of the ploughsoil only, exposing pockets of subsoil, limestone brash and archaeological remains of limited extent.

Eleven house plots were monitored during the course of the brief (101 - 107; 111 - 114); resulting in the exposure of no archaeological remains over a relatively large area; and the eventual termination of the brief (see Fig. 2).

Recording was undertaken using pro-forma Watching Brief Record Sheets (incorporating physical descriptions, interpretations and stratigraphic relationships). Section and plan drawings were made at scale 1:50 and 1:20, and all records were cross-referenced to 1:500 development plans provided by Ploughsound Ltd. A detailed photographic record was maintained throughout.

Following the completion of fieldwork, all artefactual remains were washed and/or processed and were then submitted for specialist appraisal (see Appendices 1 and 2). A detailed site archive is currently in preparation, which may be accessed at Lincoln City and County Museum by quoting its Global Accession Number (25.96).

7.0 Results

The ploughsoil [2], which measured approximately 30cm in thickness, comprised a mixture of heavy grey-brown silty clay-sand mixed with a relatively high proportion of limestone fragments (with these being derived as a result of ploughing degraded parent material). There was little or no subsoil present beneath the ploughsoil, which usually rested over an extensive bed of limestone brash. In many areas, this brash was interrupted by regular and irregular pit-like depressions filled with clean red-brown sandy clay. Initially, these depressions were thought to be archaeological because, in

form, many resembled pits and post holes. However, the homogeneity and sterility of their fills, as well as a general absence of any patterning, demonstrated that the features were in fact natural: it is assumed they formed in a glacial or periglacial environment and must date to a period 12,000 or more years before the present.

Beneath the topsoil and/or the above was an extensive deposit of limestone brash; into which all of the archaeological features were cut. The main north-south sewer trench indicated that the brash gave way to solid limestone at a depth approximately 1.3m beneath the top of the modern ploughsoil.

7.1 Archaeological features

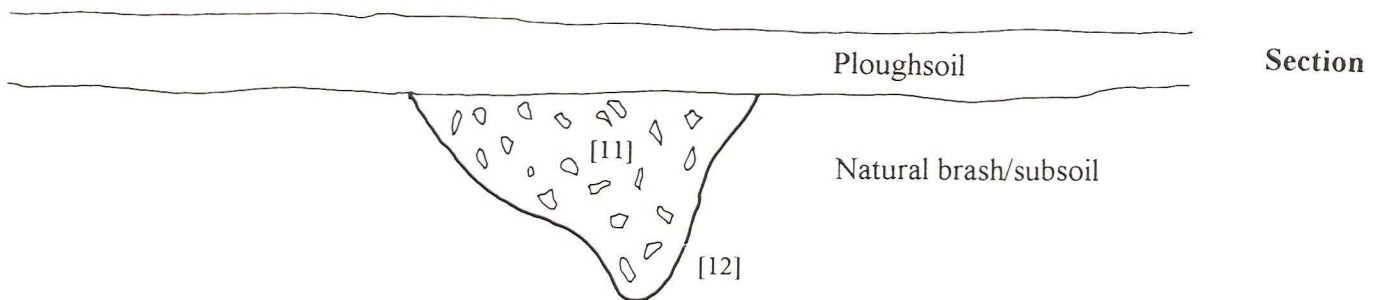
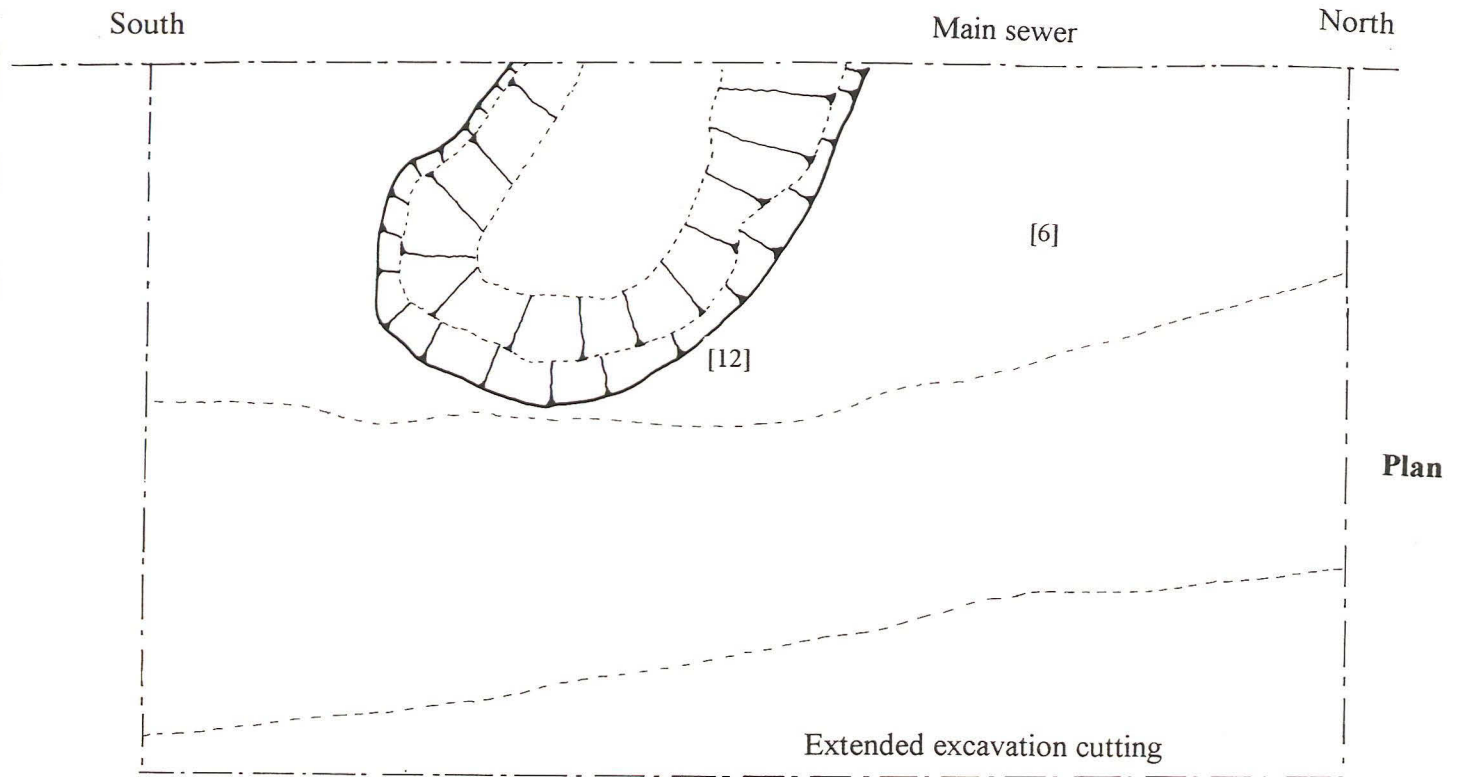
Despite the monitoring of a substantial proportion of the development (incorporating most of the main sewer network and eleven house plots), all of the archaeological remains appeared to concentrate in the vicinity of a single manhole, F2 (Fig. 2). These features are first described collectively and then individually below. A summary and conclusion is presented at the end of the main text.

Five pits of similar form and character were exposed in the sides of the sewer trench, the manhole F2 or the road excavation. Each pit was cut through limestone brash, and each was sealed with modern ploughsoil. None showed direct evidence of in-situ burning, though each of the soil fills contained quantities of charcoal and burnt remains, usually incorporating fire-shattered pebbles or stones. To assess the full profiles of these features, trench edges were usually battered back to provide ground plans of the pits, which contained animal bone and pottery fragments.

Pit [12]

This was exposed in the east face of the main sewer trench, approximately 7m south of manhole F2. It did not appear in the west section face and its full ground plan was not therefore established. From the plan made, it appeared to be broadly oval, its length exceeding 1.2m. Its width was 90cm and its maximum recorded depth was 60cm. Its sides sloped at between 30° and 45°, and these merged with an even, rounded, base. The pit was filled with relatively loose dark brown clay-silt mixed with limestone fragments, pottery sherds and fragments of animal bone.

Fig. 3 Plan and section, Pit [12] at scale 1:20

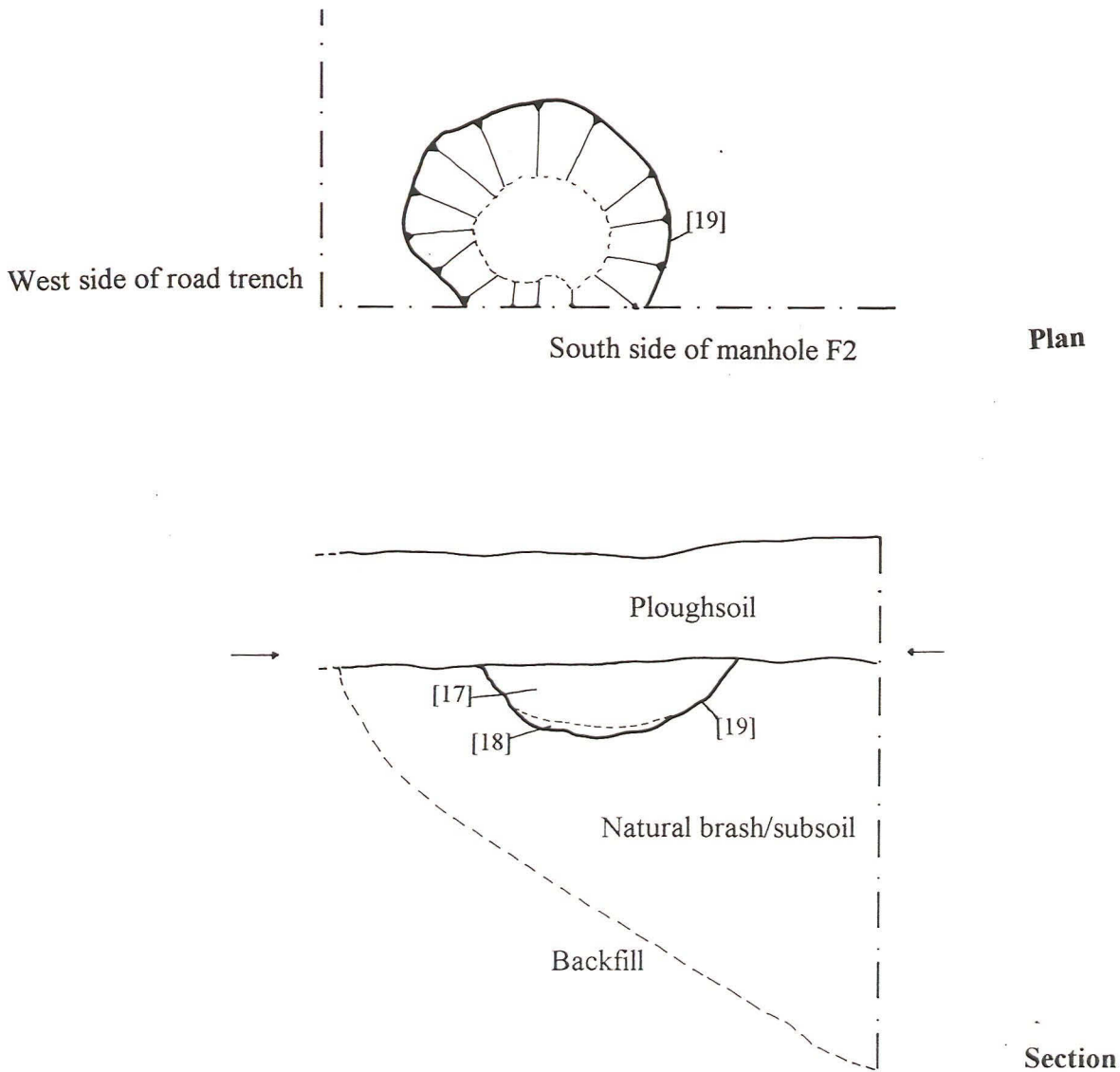


Pit [19]

This was sectioned on the south side of manhole F2, west of the main sewer trench. Its north edge had been cut away during mechanical excavation, but enough remained for a reasonable record to be made. In plan, it measured approximately 80cm north-south, 60cm east-west; its maximum recorded depth was 25cm. Its profile was broadly bowl-shaped.

The base was lined with a thin lens of very dark brown sandy silt [18], which contained large charcoal fragments. Above this, the bulk fill comprised up to 27cm of red-brown sandy silt mixed with stones, burnt pebbles, pottery sherds and fragments of animal bone.

Fig. 4 Plan and section, Pit [19] at scale 1:20

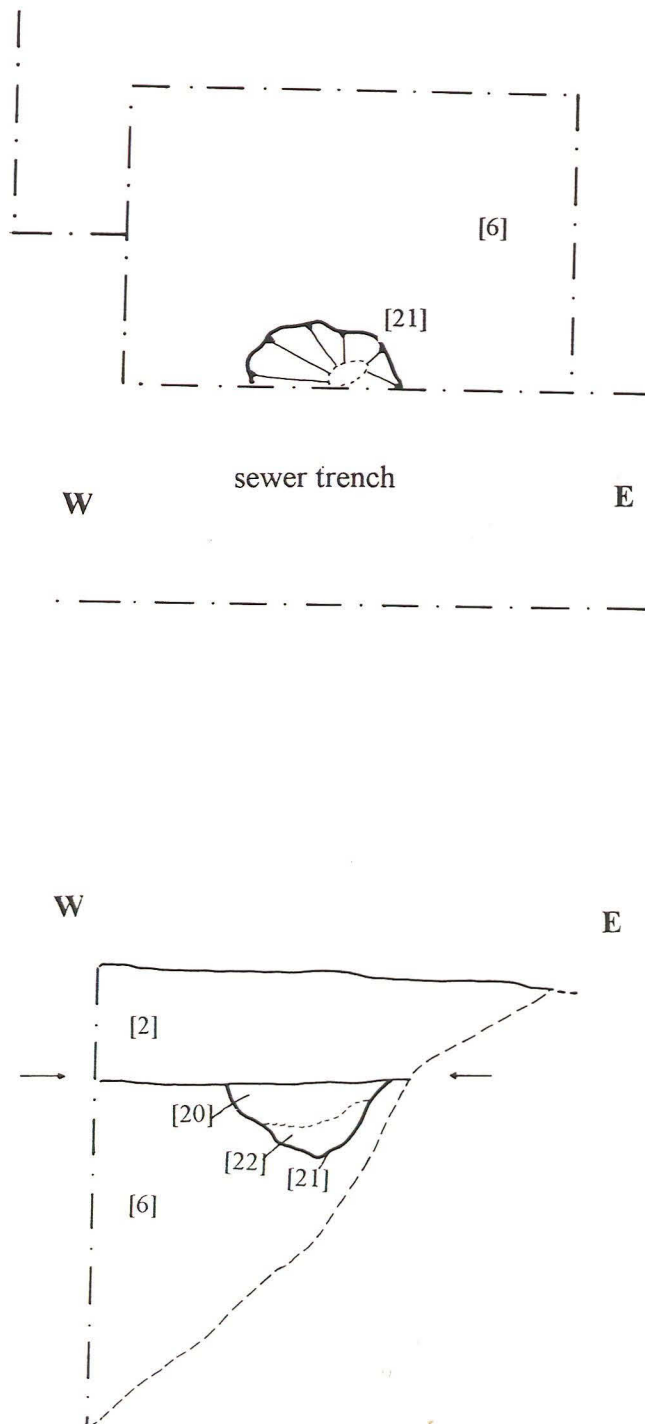


Pit 21

Pit [21] was first exposed in the north face of a sewer trench extending east from manhole F2. A small area beyond the trench was stripped of topsoil to expose the remainder, which was subsequently excavated.

The cut of the pit, which measured approximately 40cm on its east-west axis and 25cm in depth, was very irregular and difficult to clarify in places. Its lower void was filled with 10cm of dark brown sandy silt mixed with limestone and charcoal fragments. Above this was up to 15cm of lighter soil containing pottery sherds. No fire-cracked or fire-reddened stones were recovered from this feature.

Fig. 5 Plan and section, Pit [21] at scale 1:20

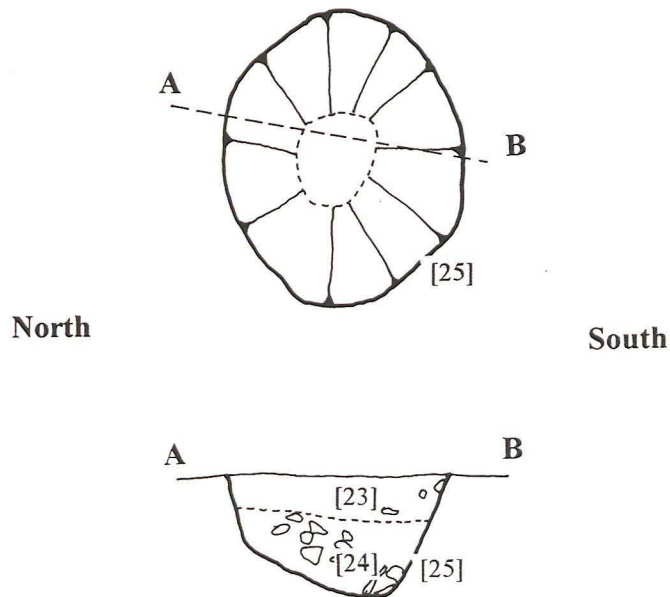


Pit [25]

This was exposed south of the sewer trench described above during topsoil stripping for road construction, very close to [21]. On this occasion, it was possible to record a full plan of the feature as it was not sectioned by the sewer trench.

In plan, the pit measured approximately 70cm x 58cm; its surviving depth was 32cm, and its sides were steep. Its lower void was filled with up to 18cm of dark grey/black sandy silt mixed with limestone fragments, charcoal and fragments of animal bone. Above this was a deposit of lighter sandy clay containing pottery sherds, bone fragments and fire-shattered pebbles.

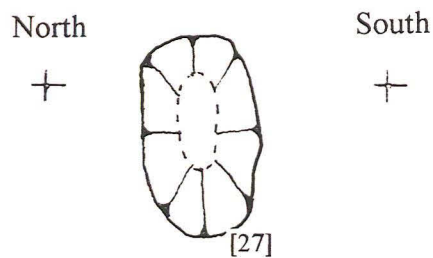
Fig. 6 Plan and section, Pit [25] at scale 1:20



Pit 27

The fifth and last pit was located within the road area, immediately north-west of manhole F2. In plan, it was small, measuring approximately 50cm x 30cm; its surviving depth was 17cm. It was oval in shape, and its sides were less pronounced than those of the other pits. It contained only one discrete fill, comprising firm light grey-brown sandy clay mixed with limestone fragments, pottery sherds and animal bone fragments.

Fig. 7 Plan of Pit [27] at scale 1:20



8.0 Conclusions and discussion

The watching brief has resulted in the exposure and excavation of a closely-spaced group of middle or later Iron Age pits, the contents of which suggest some kind of processing. Quite what materials or foodstuffs were being processed is unclear. Samples recovered from the pit fills themselves contained quantities of crop processing residues, but this does not mean that crop processing was the main activity on this part of the site: clearly, the chaff recovered from context [11], for example, could as easily be explained as a convenient source of fuel as an *in situ* crop processing area. Suggestions by Rackham (Appendix 2) that barns or other buildings may be located close by are interesting, though it is suggested (on the basis of the relatively wide areas investigated) that these cannot be within the immediate vicinity of the pits, or that any such evidence has been totally removed as a result of ploughing and/or other activities.

It is already well established that a potentially large Iron Age settlement existed at Navenby prior to the arrival of the Romans in the middle years of the C1st AD. At Chapel Lane in 1994, a middle-late Iron Age enclosure was sampled, as were other features, although the extent of this settlement has not been established. The evidence so far points to a centre of population whose main focus appears to have been Ermine Street (a native forerunner, that is). In this light, it may be that the pits exposed to the south of Winton Road reflect peripheral activities in an area that was otherwise devoid of direct occupation, although some significance must be attached to the presence of both the pottery and the animal bone fragments, which were not insignificant in number.

Were the contents of the pits directly associated with these features in a functional sense, or were the pits simply for disposal purposes? The occurrence of charred material, fire-cracked pebbles, pottery sherds and animal bone in discrete contexts in a seemingly isolated location would imply that all of these items/artefacts were directly related to each other, although evidence of *in situ* burning was not seen on the sides of any of the pits (fire-reddened limestone chunks were recovered from at least one of the pits).

It is tenuously suggested, on the basis that evidence of *in situ* burning was not found, that the contents of the pits were not functionally related to the pits themselves - that the pits were excavated simply to dispose of (or possibly cool) burnt material associated with some other activity, possibly just cooking. The fact that several pits were found so close together could be taken as evidence of use over several seasons; or at least over a protracted period of time.

The above interpretation is little more than a working hypothesis which may be upheld or dismissed following further investigations at the site.

9.0 References

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REPORT ON THE POTTERY FROM NAVENBY, GRN96

for PRE-CONSTRUCT ARCHAEOLOGY

by Margaret J. Darling, M.Phil., F.S.A., M.I.F.A.

1 September 1997

QUANTITY AND CONDITION

86 sherds, 810g, from four contexts, archived to the standard recommended by the *Study Group for Roman Pottery*. Apart from the abraded nature of the sherds from cxt 2, virtually all post-Roman sherds, the sherds were in relatively good condition considering their nature, but their fragility will require careful handling and storage.

DATING AND DISCUSSION

The quantities by context are listed in Table 1.

Table 1

Cxt	Sherds	g	Date	
2	8	76	POST-MED	TILE FRAG ?ROM;FLINT FLAKE
11	23	205	MLIA	
17	36	296	MLIA	
23	4	20	MLIA	
26	15	213	MLIA	PROB. SINGLE VESSEL
Total	86	810		

Virtually all the sherds are shell-gritted (IASH) and hand-made, but some are so sparsely gritted as to fall into the category of GYMS, grey with minimal shell. The shell inclusions vary from coarse to fine. Some sherds are less certainly hand-made, although the use of a turn-table or slow wheel is possible.

The identifiable forms appear to be cooking vessels, with thin delicate rims, slightly curved (dwgs 1 and 2; given the irregularity of such vessels, these could be the same vessel). Several sherds have smooth interiors, suggesting relatively open forms. One of the vessels from (11) in GYMS (Dwg 3) appears to have burnish/smoothing on both interior and exterior. A small sherd from (11) appears to have no shell inclusions and is coded GREY; this also appears to have burnish on both surfaces. Joining bodysherds from (23) have traces of what appears to be vertical scratching or wiping. There is no certain example of scoring.

The dating on such a small group is difficult, but the cooking vessels appear to be types current in the Middle Iron Age, continuing in the Later Iron Age, and one or two of the sherds seem more likely to fit into the later period.

RECOMMENDATIONS

Consultation with an Iron Age specialist is recommended, particularly in view of the lack of evidence from this area. Three vessels should be drawn for publication in the public domain.

Drawings

Cxt	Fab	Fm	Manuf	V	D?	DNo	Details	Shs	g
17	IASH	JBNAT	HM	1	D	1	RIMS/BSS;D22-24; DKGRY/GRYBN SURFS	8	75
11	IASHC	JBNAT	HM	1	D	2	RIMS/BS;MED/COARSE; RB EXT;SIMIL.DWG1	7	76
11	GYMS	BNAT?	HM	1	D	3	RIMS;BURNISH BOTH SURF;DKGRY	3	17

ARCHIVE DATABASE

Cxt,Fab,Fm,Manuf,V,D?,DNo,Details,Links,Shs,g

2,GREY,-,-,-,-,TINY FLAKE,-,1,1
2,GYMS,-,-,-,-,BS;POSSIBLE WM,-,1,15
2,PRO,-,-,-,-,POST MED SHS;GLAZE,-,6,60
2,ZDATE,-,-,-,-,POST-MED,-,-,-
2,ZZZ,-,-,-,-,FRAG TILE ?RO;FLINT FLAKE,-,-,
11,GREY,-,HM,-,-,-,BS;BURNISH BOTH SURF;DKGRY;NO VISIBLE SHELL,-,1,5
11,GYMS,-,HM,-,-,-,BSS;DKGRY;COARSER,-,2,10
11,GYMS,-,HM?,-,-,-,BS;BURNISH EXT;WEAR INT;V.SPARSE SHELL,-,1,8
11,GYMS,-,HM?,-,-,-,FLAKE BASE SH;DKGRY;EXT BURNISH;PART DWG3?,-,1,9
11,GYMS,BNAT?,HM,1,D,3,RIMS;BURNISH BOTH SURF;DKGRY,-,3,17
11,IASH,-,HM,-,-,-,BS,-,1,2
11,IASH,-,HM,-,-,-,MISC LTBN BSS;V.SPARSE SHELL,-,7,78
11,IASHC,JBNAT,HM,1,D,2,RIMS/BS;MED/COARSE;RB EXT;SIMIL.DWG1,-,7,76
11,ZDATE,-,-,-,-,MLIA,-,-,-
17,IASH,-,HM,-,-,-,BSS;DKGRY;MORE THAN 1 VESS?,-,10,80
17,IASH,-,HM,-,-,-,BSS;RB INT;INCL NR BASE;POSS 1 VESS,-,15,110
17,IASH,-,HM?,-,-,-,CURVED RIM FRAG;FM U/K,-,1,4
17,IASH,JBNAT,HM,1,D,1,RIMS/BSS;D22-24;DKGRY/GRYBN SURFS,-,8,75
17,IASH,OPEN,HM?,1,-,-,J BSS;INT BURNISH/SMOOTH;DKGRY,-,2,27
17,ZDATE,-,-,-,-,MLIA,-,-,-
23,IASH,-,HM;SCRA,1,-,-,J BSS;?VERT SCRATCHING,-,3,13
23,IASHF,-,HM?,-,-,-,BS;SMOOTH INT SURF;SPARSE FINE SHELL,-,1,7
23,ZDATE,-,-,-,-,MLIA,-,-,-
26,IASHC,JBNAT?,HM,1?,-,-,BSS;DKGRYBN EXT;DKGRY FAB,-,15,213
26,ZDATE,-,-,-,-,MLIA,-,-,-

Cxt	Fabric	Form	Manuf	Vess	D?	DNo	Details	Links	Shs	g
2	GYMS	-	-	-	-	-	BS;POSSIBLE WM	-	1	15
2	GREY	-	-	-	-	-	TINY FLAKE	-	1	1
2	PRO	-	-	-	-	-	POST MED SHS;GLAZE	-	6	60
2	ZDATE	-	-	-	-	-	POST-MED	-	-	-
2	ZZZ	-	-	-	-	-	FRAG TILE ?RO;FLINT FLAKE	-	-	-
11	IASHC	JBNAT	HM	1	D	2	RIMS/BS;MED/COARSE;RB EXT;SIMIL.DWG1	-	7	76
11	IASH	-	HM	-	-	-	MISC LTBN BSS;V.SPARSE SHELL	-	7	78
11	GYMS	BNAT?	HM	1	D	3	RIMS;BURNISH BOTH SURF;DKGRY	-	3	17
11	GYMS	-	HM?	-	-	-	FLAKE BASE SH;DKGRY;EXT BURNISH;PART DWG3?	-	1	9
11	GYMS	-	HM	-	-	-	BSS;DKGRY;COARSER	-	2	10
11	GREY	-	HM	-	-	-	BS;BURNISH BOTH SURF;DKGRY;NO VISIBLE SHELL	-	1	5
11	GYMS	-	HM?	-	-	-	BS;BURNISH EXT;WEAR INT;V.SPARSE SHELL	-	1	8
11	IASH	-	HM	-	-	-	BS	-	1	2
11	ZDATE	-	-	-	-	-	MLIA	-	-	-
17	IASH	JBNAT	HM	1	D	1	RIMS/BSS;D22-24;DKGRY/GRYBN SURFS	-	8	75
17	IASH	-	HM?	-	-	-	CURVED RIM FRAG;FM U/K	-	1	4
17	IASH	OPEN	HM?	1	-	-	J BSS;INT BURNISH/SMOOTH;DKGRY	-	2	27
17	IASH	-	HM	-	-	-	BSS;RB INT;INCL NR BASE;POSS 1 VESS	-	15	110
17	IASH	-	HM	-	-	-	BSS;DKGRY;MORE THAN 1 VESS?	-	10	80
17	ZDATE	-	-	-	-	-	MLIA	-	-	-
23	IASH	-	HM;SCRA	1	-	-	J BSS;?VERT SCRATCHING	-	3	13
23	IASHF	-	HM?	-	-	-	BS;SMOOTH INT SURF;SPARSE FINE SHELL	-	1	7
23	ZDATE	-	-	-	-	-	MLIA	-	-	-
26	IASHC	JBNAT?	HM	1?	-	-	BSS;DKGRYBN EXT;DKGRY FAB	-	15	213
26	ZDATE	-	-	-	-	-	MLIA	-	-	-

Appendix 2

Environmental Archaeology Assessment

Five small soil samples and a few animal bones collected from middle to late Iron Age features during an evaluation at Navenby were submitted for assessment.

The following samples were received:

	context	volume	sample type	context type
		l.		
GRN96	11	-	charcoal sample	pit fill
GRN96	11	0.6 l.	soil sample	pit fill
GRN96	17	1.5	soil sample	pit fill
GRN96	18	0.6	soil sample	pit fill
GRN96	22	0.55	soil sample	pit fill

Sample processing

Sample volume and weight were measured prior to processing. The samples were washed in a bowl with the floating and light material in suspension being washed over into a sieve with a 0.25mm mesh and the residue subsequently washed through a 1mm mesh. The material retained on this mesh was kept, while that which passed through was discarded. Both residue and float were dried. The dry volume of the flot was measured, and the volume and weight of the residue recorded.

The sample residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was then run through the residue to pick up any magnetised material (particularly flake and spheroidal hammerstone) after which the residue was bagged. The float of each sample was scanned under a low power binocular microscope and a record made of the categories of material present (*ie* snails, charcoal, carbonised seeds, bones *etc*) with their abundance and species diversity noted on the assessment sheet. The float was then bagged. The float and finds constitute the material archive of the samples. The sorted residue was discarded.

The assessment sheets are attached and the results summarised below.

Results

Archaeological finds from the residues were limited (see Table 1) but these were extremely small samples and the absence of bone and relative absence of other finds such as pottery is not surprising. It is normally recommended that samples taken for flotation and residue sorting are 30 litres in size.

Table 1: Finds recorded from the soil samples (all weights in grammes)

Context	Residue vol. ml.	Hammer-scale	Pottery wt g.	Burnt stone	Bone wt	Snails	Char-coal	grain	Carbonised chaff	seeds	Water-logged seeds	Flot vol.
11	35			+		++	+++++	++	+++	+		50
17	250	+	17	+	1	++	++				+	8
18	30		<1			++	++	++	++		+	8
22	60		<1	+	<1	++	++	++	++	++	++	10

+ = 0-10 items; ++ = 11-100; +++ = 101-250; ++++ = 251-500; +++++ = >500;

This is reflected by the finds from the sample from context 17 which was more than twice the size of the other samples and produced a much larger residue. Of some interest are the finds of a few flakes and spheroids of hammerscale in this context which indicates that smithing must have been taking place somewhere at the site, although it may not have been particularly close to this context (this material can be wind blown but structures, hedges, etc would have formed effective barriers).

Terrestrial snails are relatively common in the samples, but the species diversity is low and most of the individuals are the burrowing snail *Cecilioides acicula*, which need not be contemporary with the deposits in which it occurs. The only other species identified during this assessment are specimens of *Vallonia* sp. and *Pupilla muscorum* both groups typically found in short calcareous grasslands (Cameron and Redfern, 1978).

One or two uncarbonised seeds, including *Chenopodium* sp., may be recent specimens that have moved down through the soil. There is little likelihood that such remains would have survived in these soils since the Iron Age.

The most abundant remains are those of carbonised plant material. Much of this is charcoal and, apart from the charcoal sample collected from context 11, is too fragmented to identify. However in context 11 there is a considerable quantity of burnt straw and chaff, and considering the small size of the sample these remains are particularly dense, several hundreds of chaff fragments per litre of sediment. Carbonised cereal grains and weeds seeds are considerably less frequent and it would appear that this pit was filled with burnt chaff and straw, possibly the crop waste from winnowing (see Hilman 1981). Chaff occurs also in relatively large numbers in the samples from contexts 18 and 22. All three of the samples producing chaff also produced carbonised cereal grains, but these occurred with less frequency than the chaff, as did the few carbonised weeds seeds present in contexts 11 and 22. The cereals have been preliminarily identified as barley and wheat but 'specific' identification of all the cereal types present should be possible through study of the chaff rachis fragments.

Very little animal bone was recovered from the samples. This may in part be due to preservational problems (see below). All this material was unidentifiable, although it included fragments of small rodent skeleton in context 11.

Animal Bone

The small collection of animal bone was catalogued following the method of the Environmental Archaeology Consultancy (see attached Archive). The preservation of this material was not good and much of the bone showed surface erosion and pitting, probably resulting from leaching in the soil. Fragments of cattle, sheep and pig were identified but considering the condition of the bone it is probable that some of the material originally deposited has not survived.

Interpretation

Limited interpretation of these assemblages can be made but it would appear that these pits are associated with an area in which crop processing activities took place and context 11 could reflect *in situ* burning of such waste, although chaff can be used as a fuel, being fast burning and producing a high temperature which makes it suitable for use in ovens, eg bread ovens (Rowena Gale pers comm.). This would suggest a farmstead and may indicate that barns or other buildings are located nearby. The hammerscale also indicates that smithing was taking place nearby.

Recommendations

If further work is carried out at this site it is recommended that a programme of sampling of all pits and ditches in this area is undertaken, and that samples of 30 litres be collected. These samples could be used both to interpret the spatial distribution of activities relating to crop processing and more accurately define the general character of the site and its crop economy. Other aspects of the environmental archaeology hold less potential, although retrieval of the animal bone during any further work can be expected to shed some light on the animal husbandry at the site.

If no further work is anticipated it is recommended that the carbonised botanical material in contexts 11, 18 and 22 is studied by an archaeobotanist and the specific species of cereals identified and the quantified remains compared with other contemporary plant assemblages. This would be a useful assemblage, if quantified, for comparison with other Iron Age sites in Lincolnshire.

Acknowledgements

Jane Cowgill sorted the sample residues for finds and kindly read through and commented upon the text.

Bibliography

Cameron, R.A.D. and Redfern, M. 1978 *British Land Snails*, Linnean Society of London, Academic Press.

Hilman, G. 1981 Reconstructing crop husbandry practices from charred remains of crops. In R.Mercer (ed.) *Farming Practice in British Prehistory*, Edinburgh University Press, 123-162

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Key to codes used in the cataloguing of animal bones

SPECIES	BONE	SIDE	FUSION
BOS cattle	SKL skull	W - whole	Records the fused/unfused condition of the epiphyses
CSC cattle size	TEMP temporal	L - left side	P - proximal; D - distal; E - acetabulum;
SUS pig	FRNT frontal	R - right side	N - unfused; F - fused; C - cranial; A - posterior
OVCA sheep or goat	PET petrous	F - fragment	
OVI sheep	PAR parietal	TOOTH WEAR - Codes are those used in Grant, A. 1982 The use of tooth wear as a guide to the age of domestic animals, in B.Wilson, C.Grigson and S.Payne (eds) <i>Ageing and sexing animal bones from Archaeological sites, 91-108.</i>	
SSZ sheep size	OCIP occipital	Teeth are labelled as follows in the tooth wear column:	
EQU horse	ZYG zygomatic	h ldpm4/dupm4	f ldpm2/dupm2
CER red deer	MAN mandible	H lpm4/upm4	g ldpm3/dupm3
CAN dog	MAX maxilla	I lm1/um1	
MAN human	ATL atlas	J lm2/um2	
UNI unknown	AXI axis	K lm3/um3	
CHIK chicken	CEV cervical vertebra		
GOOS goose, dom	TRV thoracic vertebra		
LEP hare	LMV lumbar vertebra		
UNB indet bird	SAC sacrum		
MALL duck, dom.	CDV caudal vertebra	ZONES - zones record the part of the bone present.	
GULL gull sp.	SCP scapula	The key to each zone on each bone is on page 2	
FISH fish	HUM humerus		
UNIB bird indet	RAD radius		
UNIF fish indet	MTC metacarpus	MEASUREMENTS - Any measurements are those listed in A.Von den Driesch (1976) <i>A Guide to the Measurement of Animal Bones from Archaeological Sites</i> , Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA	
GOSE goose size	MCL-4 metacarpus 1-4		
BEAV beaver	INH innominate		
CORN crow or rook	ILM ilium		
BUCZ buzzard	PUB pubis		
	ISH ischium		
	FEM femur		
	TIB tibia		
	AST astragalus		
	CAL calcaneum		
	MTT metatarsus		
	MT1-4 metatarsus 1-4		
	PH1 1st phalanx		
	PH2 2nd phalanx		
	PH3 3rd phalanx		
	LM1-LM3 lower molar 1 - molar 3		
	UM1-UM3 upper molar 1 - molar 3		
	LPM1-LPM4 lower premolar 1-4		
	UPM1-UPM4 upper premolar 1-4		
	DLPM1-4 deciduous lower premolar 1-4		
	DUPM1-4 deciduous upper premolar 1-4		
	MNT mandibular tooth		
	MXT maxillary tooth		
	LBF long bone		
	UNI unidentified		
	STN sternum		
	INC incisor		
	TTB indet. tooth		
	CMF carpo-metacarpus		

ZONES - codes used to define zones on each bone

SKULL - 1. paraoccipital process	METACARPUS -	1. medial facet of proximal articulation, MC3
2. occipital condyle		2. lateral facet of proximal articulation, MC4
3. intercornual protuberance		3. medial distal condyle, MC3
4. external acoustic meatus		4. lateral distal condyle, MC4
5. frontal sinus		5. anterior distal groove and foramen
6. orbitale		6. medial or lateral distal condyle
7. entorbitale		
8. temporal articular facet	FIRST PHALANX	1. proximal epiphysis
9. facial tuber		2. distal articular facet
0. infraorbital foramen		
	INNOMINATE	1. tuber coxae
MANDIBLE		2. tuber sacrale + scar
1. Symphyseal surface		3. body of ilium with dorso-medial foramen
2. diastema		4. iliopubic eminence
3. lateral diastemal foramen		5. acetabular fossa
4. coronoid process		6. symphyseal branch of pubis
5. condylar process		7. body of ischium
6. angle		8. ischial tuberosity
7. anterior dorsal ascending ramus posterior M3		9. depression for medial tendon of rectus femoris
8. mandibular foramen		
	FEMUR	1. head
VERTEBRA		2. trochanter major
1. spine		3. trochanter minor
2. anterior epiphysis		4. supracondyloid fossa
3. posterior epiphysis		5. distal medial condyle
4. centrum		6. lateral distal condyle
5. neural arch		7. distal trochlea
		8. trochanter tertius
SCAPULA	TIBIA	1. proximal medial condyle
1. supraglenoid tubercle		2. proximal lateral condyle
2. glenoid cavity		3. intercondylar eminence
3. origin of the distal spine		4. proximal posterior nutrient foramen
4. tuber of spine		5. medial malleolus
5. posterior of neck with foramen		6. lateral aspect of distal articulation
6. cranial angle of blade		7. distal pre-epiphyseal portion of the diaphysis
7. caudal angle of blade		
HUMERUS	CALCANEUM	1. calcaneal tuber
1. head		2. sustentaculum tali
2. greater tubercle		3. processus anterior
3. lesser tubercle		
4. intertuberal groove	METATARSUS	1. medial facet of proximal articulation, MT3.
5. deltoid tuberosity		2. lateral facet of proximal articulation, MT4
6. dorsal angle of olecranon fossa		3. medial distal condyle, MT3
7. capitulum		4. lateral distal condyle, MT4
8. trochlea		5. anterior distal groove and foramen
		6. medial or lateral distal condyle
RADIUS		
1. medial half of proximal epiphysis		
2. lateral half of proximal epiphysis		
3. posterior proximal ulna scar and foramen		
4. medial half of distal epiphysis		
5. lateral half of distal epiphysis		
6. distal shaft immediately above distal epiphysis		
ULNA		
1. olecranon tuberosity		
2. trochlear notch- semilunaris		
3. lateral coronoid process		
4. distal epiphysis		

Navenby- GRN96

Animal Bone Archive

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	comments	preserva -tion
GRN96	11	BOS	MAN	1	R		7			I17J16K15	MOLAR ROW	3
GRN96	11	BOS	MAN	1	R		4				MOST OF CORONOID	3
GRN96	11	BOS	ULN	1	R						SHAFT BELOW PROX ARTIC	3
GRN96	11	CSZ	RIB	2	F			KN			SHAFT FRAG- CUT MARKS ON ONE PIECE	3
GRN96	11	OVCA	MAN	1	L		123			gI9	3 PIECES- DP4 LOST-DEC INCISOR PRESENT	3
GRN96	17	CSZ	LBF	1	F						SHAFT FRAG- 2PIECES - SMALL	3
GRN96	23	BOS	INN	1	L	EF	45				PUBIC AND ISCHIAL FRAGS	3
GRN96	23	SUS	SKL	1	F						OCCIPITAL FRAG- 3PIECES	3
GRN96	23	SUS	UM3	1	W					K6	NO WEAR L-35	3
GRN96	23	UNI	MAX	1	F						FRAG WITH ALVEOLI	3
GRN96	24	BOS	TIB	1	F						DISTAL SHAFT FRAG- 2 PIECES	4
GRN96	24	CSZ	UNI	3	F						INDET	3
GRN96	26	BOS	PH1	1	L	PF	12				PROX END DAMAGED	3
GRN96	26	CSZ	LBF	1	F						SHAFT FRAG - 2 PIECES	3
GRN96	26	CSZ	RIB	1	F						SHAFT FRAG	3



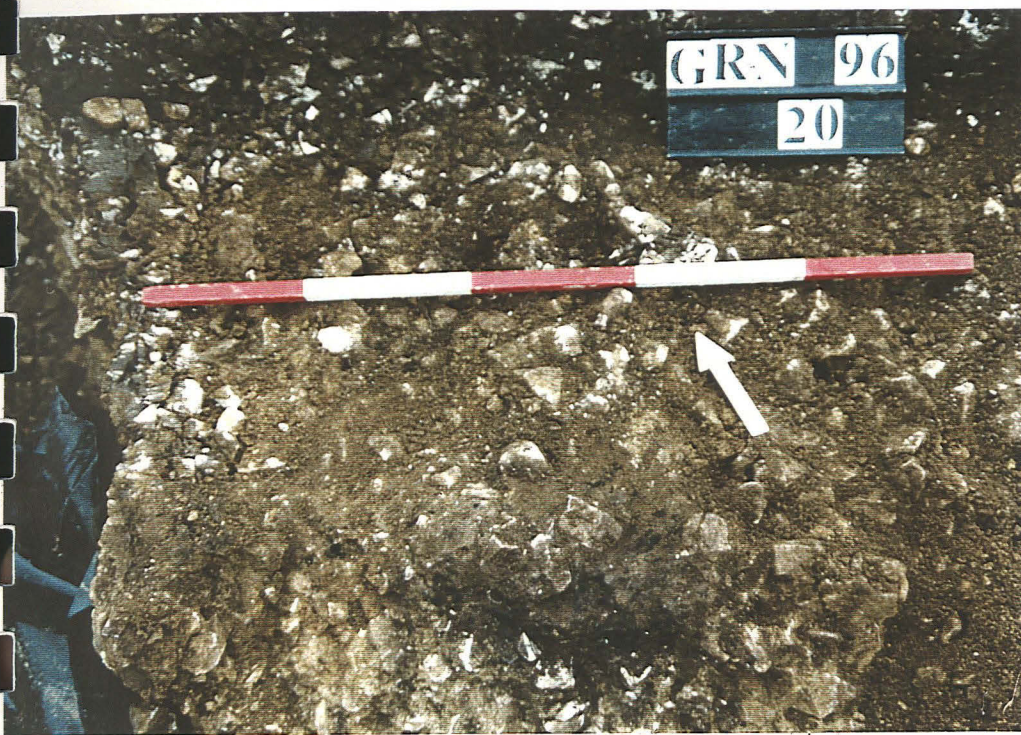
P1. Pit [11]/[12] as exposed in sewer trench, looking east



P2. As above with fill [11] completely excavated, looking west



P3. Pit [25] with fill half-sectioned, looking east



P4. Upper fill of pit [21], prior to excavation, looking north-east



P5. Pit [19], fully excavated, looking south



P6. Some of the Iron Age pottery and fire-shattered pebbles recovered from the features

Appendix 4 List of archaeological contexts

<i>Context</i>	<i>Description</i>
[1]	'Feature' exposed in east + west section faces of N-S sewer trench c. 20m south of Winton Rd. Probably natural, pertaining to [3], [4], [5], [7] and [8]; a complex of natural (?periglacial) features. Initially, these features were thought to be archaeological but continued investigations suggest natural origin.
[2]	Topsoil: grey-brown heavy silty clay-sand mixed with frequent small limestone inclusions: a modern ploughsoil sealing all archaeological and natural deposits
[3]	'Cut' number associated with [1]: natural feature exposed in both sections of sewer trench extending southwards from Winton Road.
[4]	Soil fill immediately north of [1]/[3] in N-S sewer trench: natural ?solifluxion deposit contained by [5]
[5]	Pit-like feature containing [4]: natural
[6]	Context number given to limestone brash below topsoil: 1.25m+ of pale yellow natural limestone brash intermingled with silty clay; stone element becomes larger at base of trench, approx. 1.6m below modern ground surface.
[7]	Number allotted to post-hole-type feature seen in section in base of 'feature' [1]/[3]. Again, probably natural, possibly glacial.
[8]	Number allotted as 'cut' for the above: natural feature in base of 'feature' [1]/[3].
[9]	Fill of natural-looking depression, seen in side of F2 manhole cutting. Could possibly be cultural as excavator claimed that some charcoal seen in soil. Approx. 27m south of Winton Road junction.
[10]	Cut given to above 'pit-like' feature.
[11]	Fill of elongated pit-like feature seen, first in east section face of north-south sewer trench, and later in plan, following removal of surrounding soil, south of manhole F2. Predominantly dark brown silty clay, mixed with frequent burnt stones, fire-cracked pebbles, flecks and lumps of charcoal, as well as frequent sherds of Iron Age/native pottery and animal bone. Almost identical to fills [17] and [18].

- [12] Cut associated with the above: elongated pit-like feature with steep upper sides, breaking gradually to a rounded base. There is no evidence of burning in the sides and base of the cut (comprising clean yellow limestone brash and clay), and it is assumed that the burnt stones and charcoal in fill [11] represent secondary deposition.
- [13] Fill of natural feature [14], seen in east side of north-south sewer trench, approximately 17m south of manhole F2: clean reddish orange sandy clay mixed with limestone chippings.
- [14] 'Cut' associated with the above: in section, an irregular U-shaped ditch-like profile. However, when machine clearance took place to expose in plan, this became an irregular, rather unlikely, candidate as an archaeological feature and again, a periglacial origin could be sought.
- [15] Clean fill of shallow irregular depression seen in west face of north-south sewer trench, approximately 26m south of manhole F2: light brown sandy clay mixed with small limestone fragments. Natural.
- [16] 'Cut' associated with the above: shallow, irregular, possibly periglacial.
- [17] Upper fill of feature [19]: up to 27cm of reddish-brown silty sand mixed with burnt and fire-reddened fragments and fire-shattered pebbles and charcoal fragments. Very similar to fill [11]: Iron Age/native pottery.
- [18] Lower fill of feature [19]: thin layer of very dark brown, slightly sticky, silty sand mixed with limestone fragments and many large charcoal fragments.
- [19] Cut containing [17] and [18]: small pit-like feature; circular in plan with gently-sloping sides, producing a classic bowl-shaped profile with a flattened base. No evidence of burning in pit sides. Located at south side of manhole F2, in junction of F2 and sub-sewer trench extending west off F2. Surrounding area machined to expose entire plan in road area.
- [20] Upper fill of feature [21], located in north section face of sub-sewer trench extending east off manhole F2. c. 15cm of reddish-brown silty sand mixed with limestone fragments, and occasional flecks of charcoal. Stones not apparently burnt.
- [21] Cut of small -pit-like depression (containing [20] and [22]): small, shallow and irregular. No evidence of *in-situ* burning.
- [22] Lower fill of feature [21]: c. 10cm of dark brown, slightly sticky, silty sand - almost identical to fill [18] in feature [19], but containing more charcoal fragments.
- [23] Upper fill of feature [25]: 10 - 14cm thickness of brown/grey clay-sand

mixed with angular limestone fragments, pottery, animal bone frags., as well as fire-shattered pebbles; soft consistency, sealed beneath topsoil

- [24] Lower fill of feature [25]: 18cm depth of dark grey/black, firm, sandy silt mixed with 30% limestone fragments, small number of animal bone fragments and flecks of charcoal (not sampled)
- [25] Pit cut containing [24] and [25]: depth = 32cm; width = 58cm; length = 70cm; orientation east-west. Sub-rounded pit with steep sides and relatively flat base
- [26] Fill of pit-like feature: humic, firm, sandy clay mixed with unworked flint fragments, limestones, as well as fragments of pottery and animal bone; contained by [27]
- [27] ?Truncated remains of pit-like feature containing [26]: depth = 17cm; width = 20cm; length = 42cm; orientation east-west.