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An Archaeological Excavation
on land South of Bourne Road,
Spalding, Lincolnshire

NGR TF ~~231 219~~ 2323 2194

carried out by

John Samuels Archaeological Consultants

on behalf of

1106

Broadgate Builders (Spalding) Ltd
Broadgate House
Weston Hills
Spalding
Lincs PE12 6DB

Planning Ref : H/16/1145/96

November 1998
JSAC 379/98/02

Site Code :BRS 98
Museum Accession No : 86.98

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An Archaeological Excavation at Land South of Bourne Road, Spalding, Lincs

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Summary

Broadgate Builders Ltd have obtained planning permission for the residential development of an area of land to the south of Bourne Road, Spalding (NGR TF 231 219) . As part of their planning application they were required to conduct an evaluation excavation. This was undertaken in July 1997 by Archaeological Project Services (APS report 39/97) and revealed a number of ditches and pit-like features determined to have a Late Iron Age to early Romano-British date.

The planning permission (no. H/16/1145/96) was granted with a condition for a recording action to ensure that these Iron Age and Romano-British features were recorded in advance of their destruction by the development. However, following discussions between John Samuels Archaeological Consultants, Broadgate Builders Ltd and the County Archaeological Officer it was agreed that the nature and extent of the archaeological remains would be better understood if additional excavation were undertaken. Further, excavation would allow the area of greatest archaeological interest, as identified by APS, to be focussed on, and therefore be less onerous to the development than a condition for a recording action over the entire development site.

The results of that excavation, undertaken in April 1998 are presented here. An enclosure of late Iron Age - Romano-British date was identified with associated probable eaves-drip gullies indicating the locations of domestic structures both within and exterior to the enclosure. The artefactual remains, particularly the pottery and bone, are also clearly indicative of domestic occupation. Large quantities of briquetage (rough fired clay) found from the site indicate salt-making activities in the immediate vicinity. Although no hearths were found, large quantities of charcoal suggest that this process took place on site. A number of other pits and gullies were identified, of uncertain function. A massive ditch was also identified, curving around the eastern side of the enclosure. Faunal and floral remains show that this settlement was located on a high intertidal flat or roddon, which was surrounded by long grasses and was probably seasonally flooded.

This site is of clear importance to the understanding of settlement and industry in the late Iron Age /Roman transitional phase. The association of domestic activity with industrial processing is uncommon in the vicinity and the artefacts clearly point to such a situation. The excavation has been successful in determining the nature of the site and has added to our knowledge of transitional period salterns and settlement in the Spalding area.

1.0 Introduction

1.1 Planning Background

1.1 Broadgate Builders Ltd have obtained planning permission for the residential development of a area of land to the south of Bourne Road, Spalding. As part of their planning application they were required to conduct an evaluation excavation. This was undertaken in July 1997 by Archaeological Project Services and revealed a number of ditches and pit-like features determined to have a Late Iron Age to early Romano-British date.

1.1.2 The planning permission (no. H/16/1145/96) was granted with a condition for an archaeological watching brief over the entire site, to ensure that these Iron Age and Romano-British features were recorded in advance of their destruction by the development. However, following discussions between John Samuels Archaeological Consultants, CAO and developer it was agreed that the nature and extent of the archaeological remains would be better understood with further excavation. Further, the excavation would allow the area of greatest archaeological interest to be focussed on, and would therefore be less onerous to the development than a watching brief over the entire development site.

1.1.3 *John Samuels Archaeological* Consultants produced a specification for the excavation, as presented in Appendix E. Monitoring was undertaken by Jim Bonnor, Lincolnshire County Council Archaeological Section, on behalf of the Local Planning Authority.

1.2 Site Location

1.2.1 The development site covers an area of approximately 4.3 ha situated to the south of Bourne Road, Spalding, Lincs. It was most recently used as a garden nursery. The soil is calcareous alluvium overlying marine alluvium and is level ground at around 3.5m OD.

1.3 Archaeological Background

1.3.1 Spalding itself is known to be an area of moderate early archaeological activity, thought to be due to the fact that the majority of Spalding was either submerged by marine flooding or composed of salt marshes, particularly during the prehistoric period. Roman activity in the area is perhaps best represented by the Baston Outgang Roman road. Beginning in Baston, the Romano-British gravel road can be traced from cropmarks to within seven hundred metres of the area under investigation (Hallam 1970, 30). Its projected line would take it straight through the development site.

1.3.2 Although no Saxon activity has been recorded in the Spalding area, it is thought that the area continued to be of some importance in the post-Roman period. The strongest evidence for this is a tribal name 'Spaldas', first referred to in the seventh century Tribal Hideage (Phillips 1970, 30, 41 and 60). The name Spalding is likely to come from the

word Spaldingas, meaning descendants of Spaldas in Old English (Ekwall 1991, 432). The Baston Outgang was probably still in use in at least the early Saxon period, as suggested by the presence of a cremation cemetery near its junction with King Street in Baston.

1.3.3 Four hundred metres to the north of the development area is the site of a medieval moated grange, Monk's House, belonging to Spalding Priory. The moated grange was mentioned in a survey towards the end of the thirteen century. The medieval moats, however, were obliterated by a series of houses built in the sixteenth and seventeenth centuries. These latter properties still survive. Much of the fens were a party to wholesale drainage during the seventeenth century. In 1642 the draining of Deeping Fen and construction of Vernatt's drain only one kilometre north of the site had a profound effect on the entire area.

1.3.4 In recent years modern disturbance has included the construction of the railways, concrete pill box defences built during the second world war and the extensive greenhouse developments of a garden nursery which occupied the site prior to development.

1.3.5 Within the development site itself, an archaeological evaluation excavation was undertaken in July 1997 by APS, primarily to identify the course of the Baston Outgang Roman road, in advance of the determination of planning permission. The road was not found, but the excavation revealed a sequence of late Iron Age and Romano-British deposits. A quantity of burnt animal bones was found within a late prehistoric fragmented pottery vessel. Several pits and small gullies were found to contain pottery fragments from the late Iron Age and Romano-British period. Several spreads of briquetage were discovered on the site, indicating the presence of nearby salt production.

2.0 Methodology

2.1 An area of around 900m^2 was excavated in the form of an open area excavation.

2.2 Topsoil and overburden were removed by a mechanical excavator using a toothless bucket, where possible, to a depth at which archaeological remains were identified. Due to the presence of hardcore material and concrete foundation deposits, it was not possible to use the toothless bucket at all times. Following mechanical excavation the remains were hand cleaned and recorded on an individual context basis in line with the Institute of Field Archaeologists guidelines (IFA 1994). In this report, fills are denoted by rounded brackets () and cuts by square brackets [ ].

2.3 All artefacts were treated in accordance with UKIC guidelines, *First Aid For Finds* (1981), and were bagged and labelled in accordance to the individual deposit from which they were recovered, ready for later cleaning and analysis. Pottery was initially analysed by Nansi Rosenberg BA, PIFA and John Samuels BA, PhD, FSA, MIFA; and subsequently by Shiela Elsdon BA who also produced the illustrations (see Appendix A); briquetage was analysed by Jane Cowgill with drawings by D W Hopkins (see Appendix B); analysis of animal bone was undertaken by Robert C. Alvey MPhil (see Appendix C). Material considered suitable for environmental analysis was sampled for examination by Mr. James Rackham (see Appendix F).

2.5 A full written, drawn and photographic record was kept throughout. Details of the paper and artefactual archive are presented in Section 8.0.

2.6 The excavation was directed by Nansi Rosenberg BA, PIFA with daily supervision by Richard Pullen. This report was written by Richard Pullen and Nansi Rosenberg BA, PIFA in consultation with John Samuels BA, PhD, FSA, MIFA.

2.7 The excavation corresponded to the guidelines set out in Planning Policy Guidance : *Archaeology and Planning* (DoE 1991) (PPG16). It has been designed in accordance with current best archaeological practice and the appropriate national standards and guidelines, including :

Management of Archaeological Projects (English Heritage 1991);

Standard and Guidance for Archaeological Excavations (Institute of Field Archaeologists 1994);

Code of Conduct (Institute of Field Archaeologists 1995); and

Archaeological Handbook (Lincolnshire County Council1998)

3.0 Results

3.1 A square area 30m x 30m was opened, centred on Archaeological Project Services trenches 6, 17 and 19 (APS report No 26/97). The area was excavated to a depth at which the natural laminated silts (04) were encountered. This involved the removal of the modern disturbance (01), the topsoil layer (02) and in some areas, the subsoil (03). Numerous archaeological features were identified, dominated by a sub-rectangular enclosure with an east-facing entrance. Other features included pits, gullies and ditches. Four areas of modern intrusion were encountered in the area of the large ditch [20] and were identified as concrete fencing or building foundation blocks. The whole site is dissected by a field drain running east-west approximately a third of the way down the site.

3.2 Three small, shallow ovoid pits were identified around the entrance way to the large enclosure. Two were of similar size and depth: [05] being 1.15m x 0.50m and 0.36m deep, and [15] which measured 1.40m x 0.55m and continued to a depth of 0.30m. The third [08] was larger and more irregularly shaped, being at least 2.20m x 1.00m and 0.20m in depth. All three pits contained similar final fills of a mid to dark grey / brown firm clay silt, contexts (06), (09) and (16) respectively. These fills all contained frequent flecks of charcoal and small fragments of mid-red fired clay, possibly degraded briquetage material. A small fragment of baked clay, possibly daub (although see section 4.2 below), was retrieved from context (16). Pits [05] and [08] each had a lower fill of a light orange / brown firm silt clay which also contained a quantity of small fired clay fragments. This primary fill is identified as (07) in pit [05] and (10) in feature [08] and is most likely to be the result of flooding, it being very similar to the surrounding natural.

3.3 Two shallow linear features running, east-west parallel to each other were discovered slightly to the south of the entrance way to the large enclosure, and both cutting pit [08]. The first, cut number [11] ran for a length of 3.20m, was 0.48m wide and was a mere 0.05m deep. It contained a fill (12) very similar in make up to the fills of the three other pits [05], [08] and [15]. Just to the north of this was a possible drip gully [13]. Running for a length of 5m, a width of 0.42m and depth of 0.17m. It contained a single fill (14) of firm mid grey / brown silt clay containing frequent small irregular mottles of light yellow / brown silt clay and occasional mottling of a mid blue / grey firm clay. Frequent small fragments of charcoal and fired clay briquetage material were also encountered. The enclosure ditch [26] cuts [13] at its western end, indicating the formers later use. A single sherd of pottery was retrieved from (14), part of the rim of a lid-seated vessel.

3.4 On the western side of the site just inside the large square enclosure is another fragment of drip gully [17] with the fill (18) being similar to that in cut [13]. Also, as with cut [13], this gully is truncated by the southern arm [26] of the main enclosure. It could be theorised that these two fragments of similar drip gully were once part of one long feature, now partially destroyed by the later, larger enclosure.

3.5 Three other fragments of drip gully were visible in the otherwise undisturbed area of natural (04) to the south of the site. These three gully fragments were all similar in depth, profile and fill. They are identified as cut [35] containing fill (36), [53] with fill (54) and cut [55] with fill (56). The only other feature in this otherwise empty southern part of the site was a small, 0.64m by 0.30m, possible pit. This small sub rectangular cut [31] is shallow at only 0.07m and contains a single friable fill (32) of a mid to dark grey / brown silt clay.

3.6 Curving north-westwards from the eastern edge of the site was a large broad ditch feature [20]. Extending 20m from the northern edge of the site to a rounded terminus at its southern end, the ditch contained a main fill of a firm light grey / brown clay silt (22) with substantial leaching of mid orange silt clay through root action. A shallow fill (21) (also recorded as (60)) of firm mid blue / grey clay silt with a depth of 0.10m overlay (22) along the entire length of the central part of this feature but with a gap at approximately 8m from the southern end. This gap gave the initial impression that a causeway existed between two segments of a large ditch but the lower fill, which is much closer to the natural in colour and texture, continues through the entire length of the feature and it may instead be that the upper layer was removed during machining in this particular location.

3.7 The main large square enclosure in the middle of the site was made up of three visibly different arms. The northern one [58] ran for 14m east west and was up to 1.75m wide. It contained a fill of an extremely pale light blue grey silt clay (59). This feature was excavated by APS in Trench 6 of their evaluation and identified as [069], a possible palaeochannel.

3.8 The southern arm of the enclosure [26] also ran for 14m and was up to 2m wide with a depth of 0.63m. Four fills were recorded in this feature, the uppermost, (27), being equivalent to (59) in the northern enclosure ditch. A total of 39 sherds of pottery, as well as briquetage and bone were retrieved from this upper fill. The bone (sheep and cow) had clearly been butchered (see Appendices A & B). Below this final fill, (28), a thin band of mid to dark blue / grey clay silt was identified, containing substantial amounts of charcoal. This overlay (29), a uniform silting layer of mid red / brown clay silt containing 14 further sherds of pottery, similar in fabric and form to those found in the uppermost fill of this feature. The primary fill, (030) comprised a dark grey / brown clay silt only 0.05m thick.

3.9 The final arm, [24], ran north-south on the western side of the enclosure between [58] and [26]. It measured 6.50m in length and was 0.68m wide with a conspicuously shallow profile of only 0.10m. The fill (25) was a friable mid grey brown silt clay with a high briquetage content and four sherds of pottery. Due to high charcoal content, this arm was visibly darker than those to the north and south. Enclosure arm [26] cut the shallower western arm [24] at the southern corner where they converged. The relationship between [58] and [24] was unclear due to the intrusion of the APS 1997 Trench 6. That evaluation did not identify a stratigraphic relationship between the two features, possibly due to the obscuring presence of a field drain (APS context 007). However, given the alignment of

the features and the presence of an identified southern edge to the northern enclosure ditch in the evaluation, it seems likely that this northern ditch post-dates the western enclosure arm.

3.10 The fourth, eastern, side of the enclosure was formed by the turning in of enclosure ditches [58] and [26]. These terminated in square-ended pits, leaving a 1.90m wide entrance to the enclosure. The northern terminal was formed by a shallow clay-lined rectangular pit [33], 2.90m in length and 0.46m in width. Within the clay lining (39) was an accumulation of natural silts (04), 0.13m deep. The main fill (37) of this feature was an extremely mixed fill of friable mid grey / brown silt clay with mottles of light orange / brown silt clay. Large quantities of briquetage fragments and charcoal were much in evidence. This feature is probably is thought to be of some possible connection to salt making processes. The corresponding southern terminus [57] was much deeper, at least 0.70m. This feature was not fully excavated due to constant and rapid water inflow. There was a thin primary silting (48) at the edges of this feature before the main fill (47) of extremely dark grey burnt organic material. This feature contained much briquetage and charcoal and may have been directly associated with salt-making activities.

4.0 Discussion and Conclusion

4.1 There is sufficient evidence from this site to conclude that it was used both for domestic and industrial activities. More than one phase of activity is also indicated by the stratigraphical relationships, notably of the gullies [17] and [13] and the southern enclosure ditch [26]. Relatively large quantities of pottery were recovered and the ring gullies may well represent the positions of former domestic structures. House mouse remains were recovered from one of the environmental samples, indicating that domestic structures were present on the site (Appendix F) and several of the bones were recorded to have been butchered (Appendix C).

4.2 Stratigraphically, pit [08] is the earliest feature on site. It is not easy to establish a clear pattern of activity through the various phases on this site as there are a number of isolated features. Ring gully [17] predates the latest phase of the rectangular enclosure, but could be contemporary with an earlier phase. Similarly, the ring gullies in the southern part of the site are stratigraphically isolated. However, it is clear that domestic occupation continued in close proximity to the rectangular enclosure, based on the large quantities of domestic pottery and animal bone debris recovered from its fills. The large curvilinear ditch in the eastern part of the site is also unlocated within the stratigraphic sequence. The pottery is too similar from each of these features to clearly identify a chronology.

4.3 The dating of all activity on this site is broadly within the late Iron Age - early Roman transition. Cropmark evidence indicates that the areas to the west of Spalding were intensively occupied in the Romano-British period (see Hallam 1970) and the evidence of the evaluation was taken to indicate that this site was an early Romano-British site, fitting in with both with Hallam's and Lane's (1992) distributions of Romano-British settlement. However, the pottery is of a type particularly difficult to date. All but one sherd is hand-made and the fabrics and forms are of a 'native' type. Expert opinion is divided on whether they are late Iron Age or Roman in date (pers. comm. T Lane; J R Samuels, S Elsdon - Appendix A). The ceramic finds from the evaluation were almost entirely dated to the late Iron Age (Elsdon and Precious 1997). A single sherd of mid-late 1st century was the latest find from that programme of works and that had been recovered from a land drain (feature 007 in Herbert 1997). In this phase of works, one sherd was wheel made and appeared therefore to be later. This was found within the large curving ditch on the eastern side of the site and does not therefore directly assist the dating of the enclosure and ring gullies. One sherd was dated by one of the specialists to the 2nd century AD (S Elsdon; see Appendix A). However this opinion was not supported by the Roman pottery specialist and the stratigraphic relationships place this feature in the earlier phase of activity.

4.4 Given the evidence of the pottery from both this and the evaluation phase, the evidence of structural remains and the briquetage it seems likely that this is a late Iron Age site which may have continued to be used into the Roman period. No typically Roman pottery fabrics were recovered and elements of the briquetage assemblage suggest that it belongs

between the groups identified as middle Iron Age and early Roman. One sherd of ceramic material was suggested to have a possibly 'Dark Age' date (context 16; S M Elsdon). However, given the nature of the piece, other evidence from the site and the depositional sequence, it seems more likely that this was a fragment of daub or other fired clay material.

4.4 Previous work has been undertaken on Iron Age and Romano-British saltern sites in the south of Lincolnshire, most notably by Tom Lane (in Hayes and Lane 1992, pp. 218-229). Lane's survey area was to the west of the site currently under discussion but was particularly concerned with identifying any saltern sites of pre-Roman origin. No Late Iron Age sites were identified by that survey but the briquetage types found at Bourne Road, Spalding fall between Lane's Groups A and B sites (Cowgill, Appendix B; Lane 1992:220). Type A sites have been dated to the middle Iron Age, and Group B to the early Roman period. A clustering of these sites appears on the eastern edge of Lane's survey area, at its closest point to Spalding and lying on the roddon that continues eastwards to the Bourne Road site. Lane states "*Group B (Romano-British) sites ...were generally found on the seaward side of the peat, often further east than their Iron Age counterparts.*" (1992: 226). The evidence of this excavation may indicate that the move eastwards occurred at an earlier date than previously recognised.

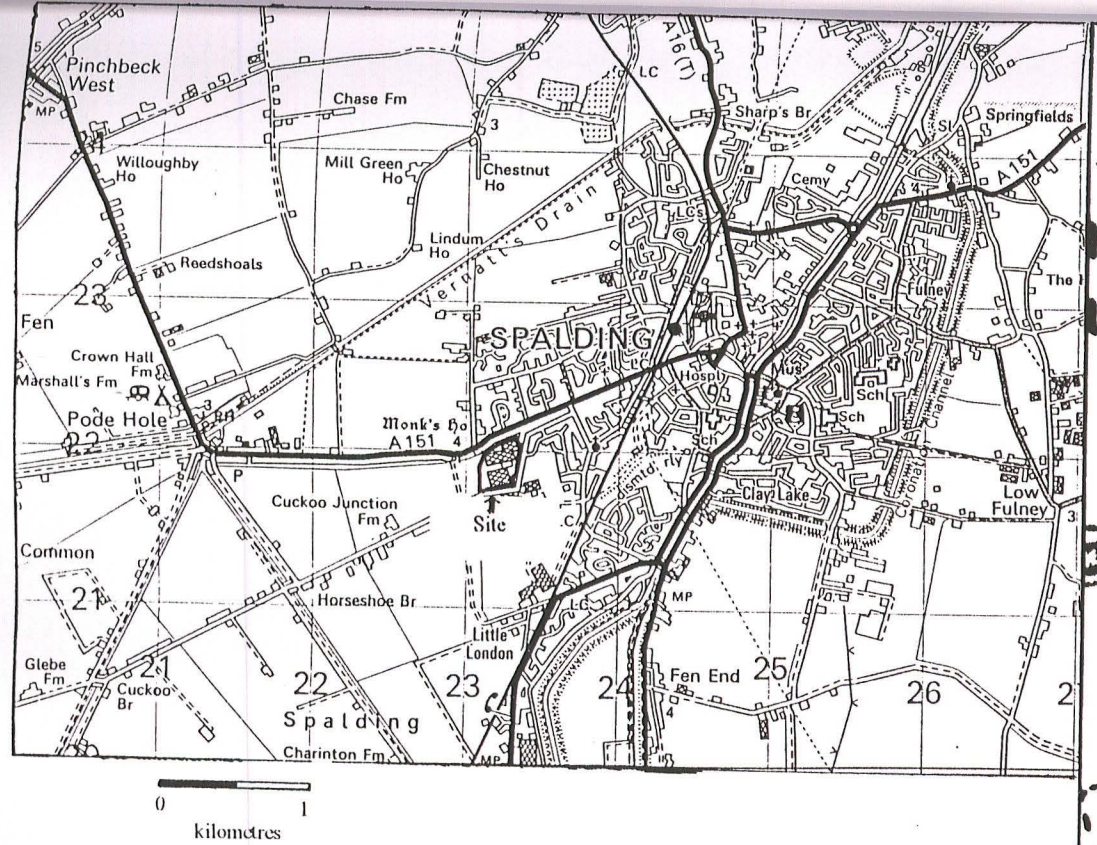
4.5 The site is clearly of importance in understanding the development of settlement and industry into the fen area. In addition, it has allowed insight into the nature of the environment in the western Spalding area. Long grasses and sedges surrounded the site, based on both the pollen and faunal (harvest mouse) evidence. The area appears to have suffered relatively little marine flooding, as the environmental samples produced very little evidence for salt-water species. Cattle and sheep were the only domestic food species represented in the bone assemblages, although the horse bones recovered may also have been butchered for food. Wheat and barley appear to have been consumed but not grown nearby. Eels were the only fish species recorded in the animal bone assemblage and were likely to have been obtained from fresh-water creeks; there was no evidence for sea-fishing (Rackham; Appendix F).

4.6 Passing close by the site, but not yet precisely located in the immediate vicinity, the Baston Outgang was a route apparently constructed in the Roman period. It is possible that the roddon on which this site lies was used as an earlier route to and from the salt making sites around Spalding. Further investigation of the Spalding area may reveal additional activity during this transitional period, both for domestic and industrial activities. However, in order to prove the date of such sites, an essential element of further research will be the construction of a datable pottery sequence based on stratigraphic relationships.

4.7 Within the excavated site itself, the sequence of events identified is of a group of circular buildings, represented by the ring gullies, as an open settlement on the roddon. A number of small pits and gullies may be associated with this settlement. Either contemporary with

one or more of the ring gullies, or post-dating thenm all, was the excavation of a rectangular ditched enclosure measuring 7.5m by 12m internally. An entrance in the eastern side of this enclosure was bounded by two pits, of markedly different forms, cutting the northern and southern arms. All elements of this enclosure, and the few isolated pits and gullies associated with it contained evidence for salt-making.

5.0 Figures and Plates



Note : Map based upon Ordnance Survey with the sanction of the Controller of H.M. Stationery Office, Crown Copyright Reserved. Licence No. AL 52216A0001

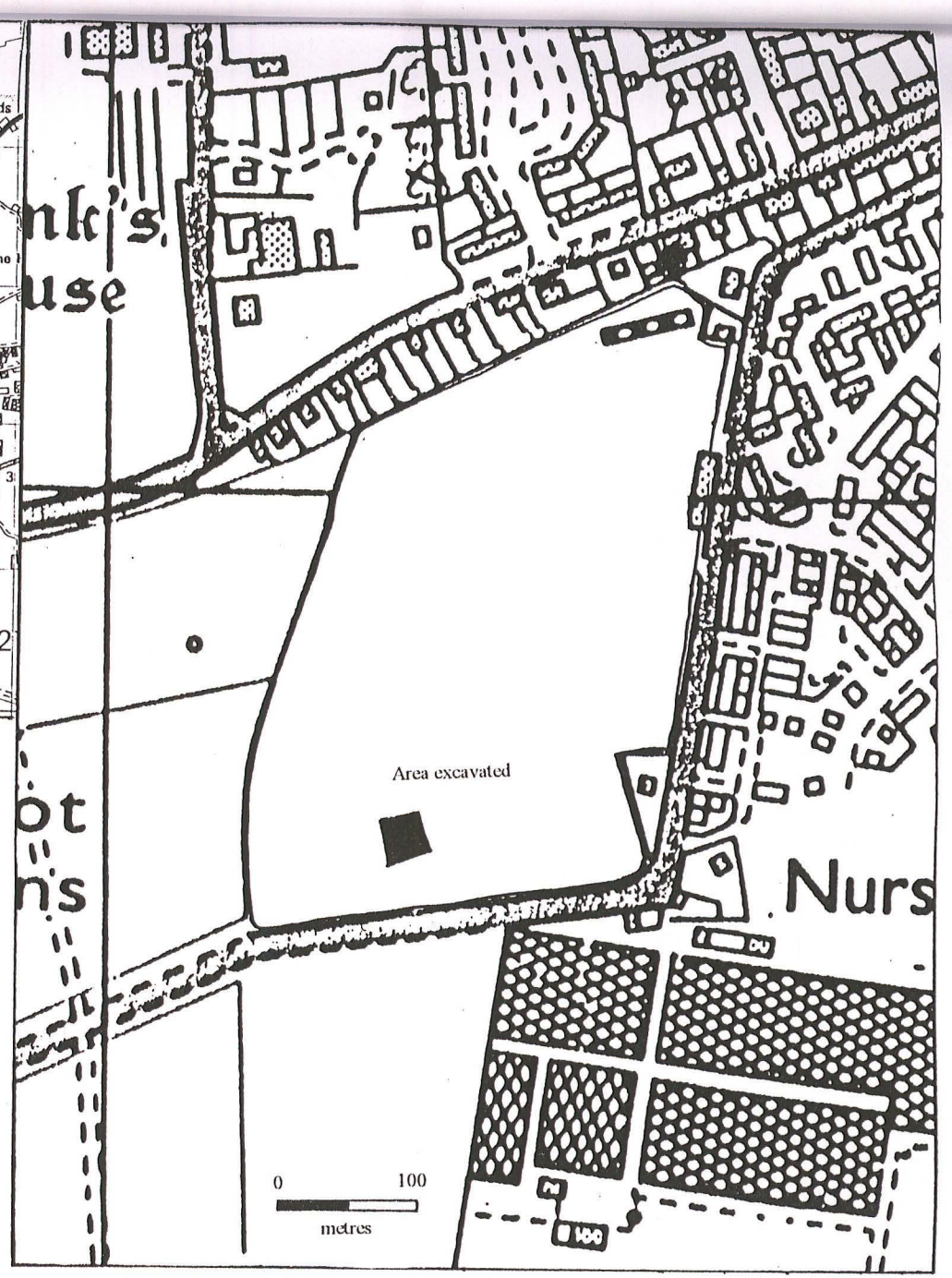


Figure 1 : Location of the excavation site

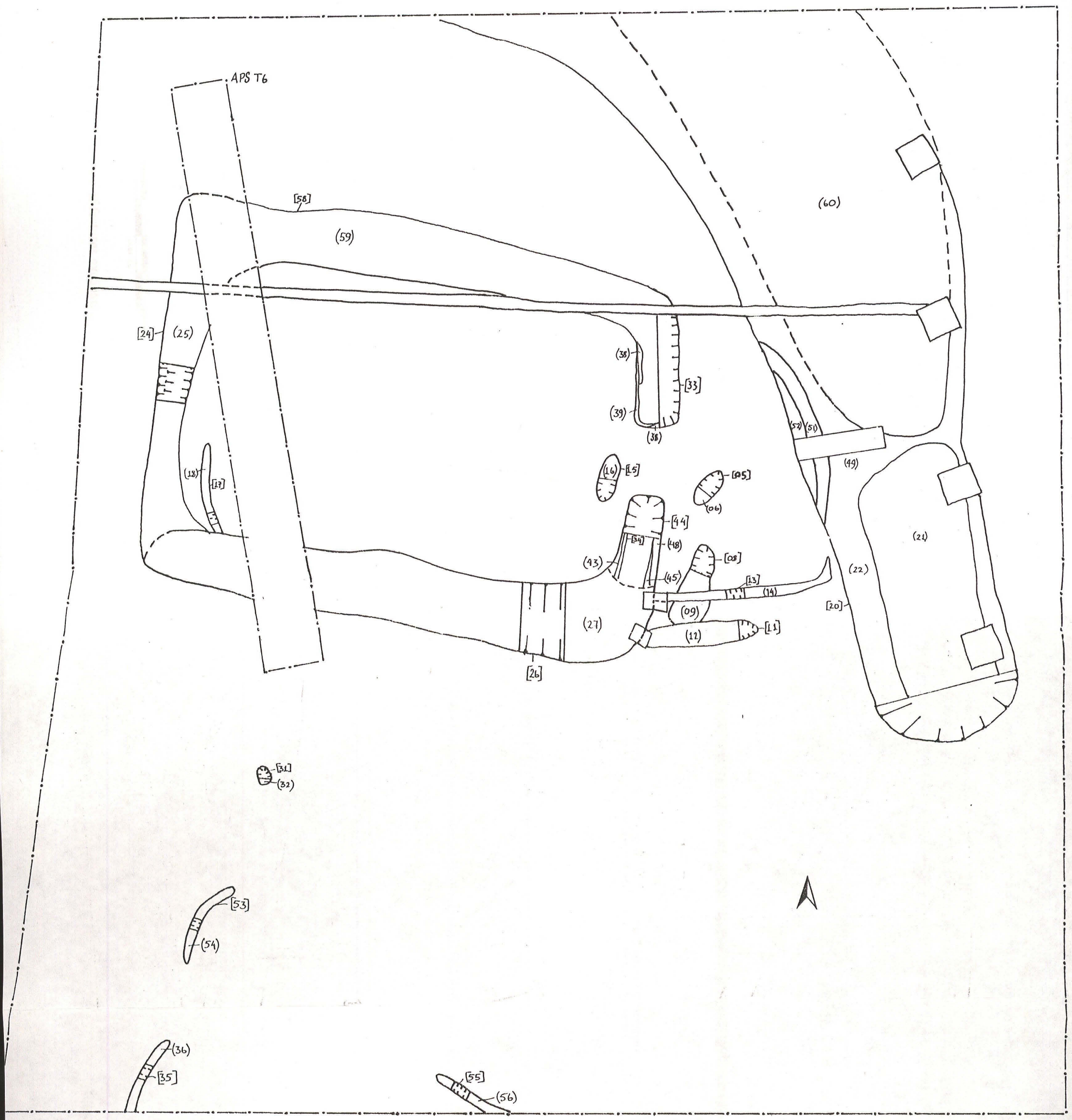


Figure 2 : Plan of identified features. Scale 1:100

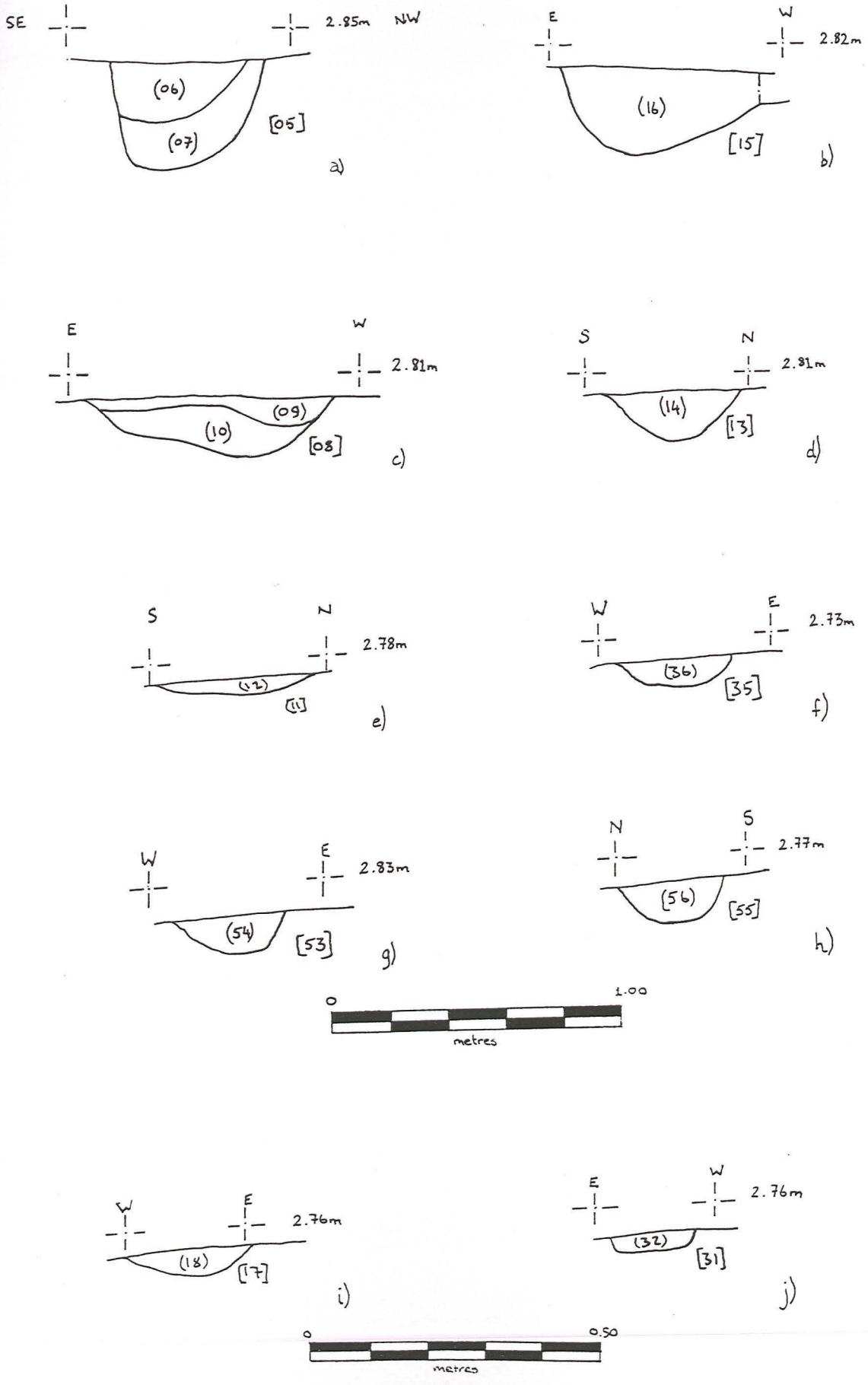


Figure 3 : Section s of features excavated. a) - h) scale 1:20
i) - j) scale 1:10

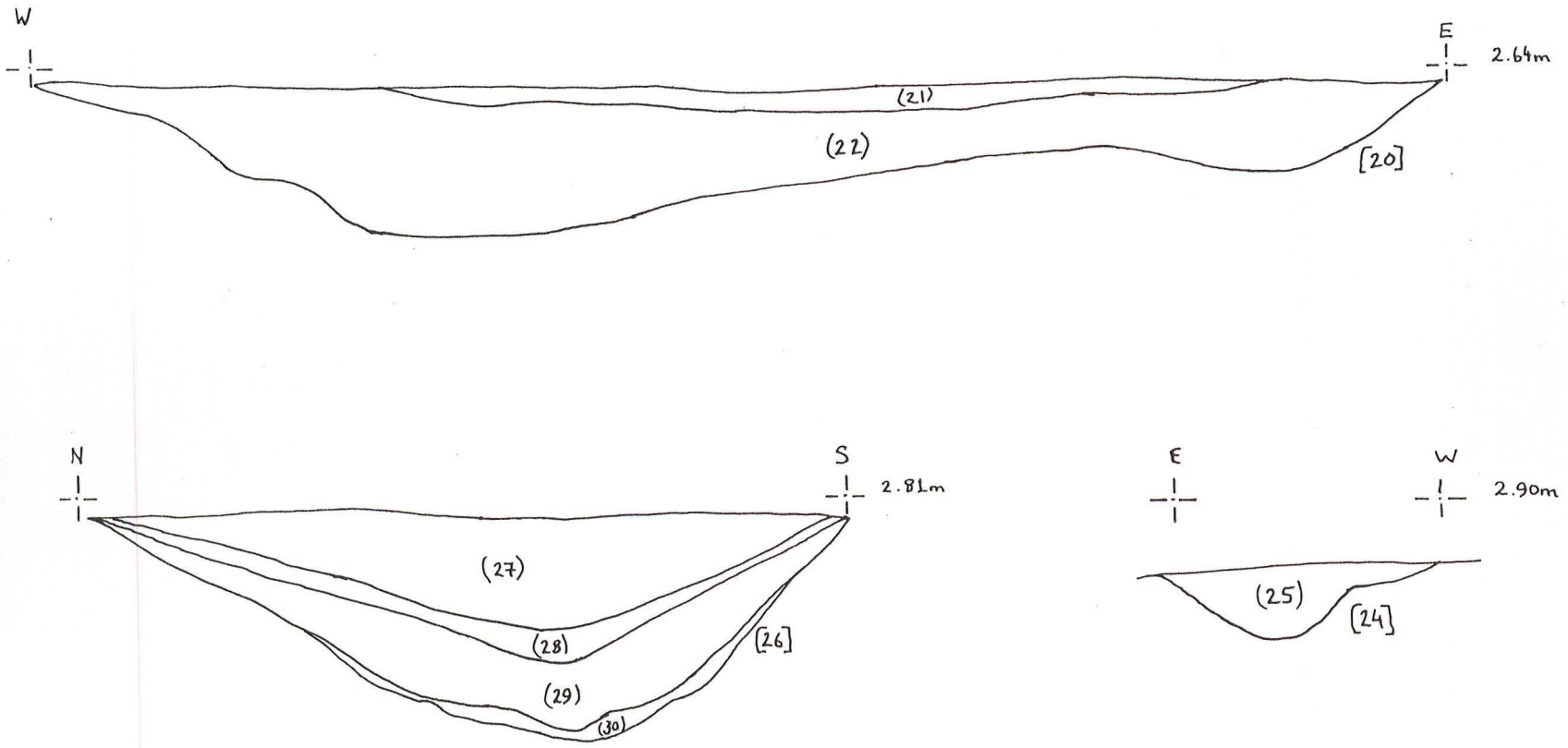


Figure 4 : Sections of features excavated Scale 1:20

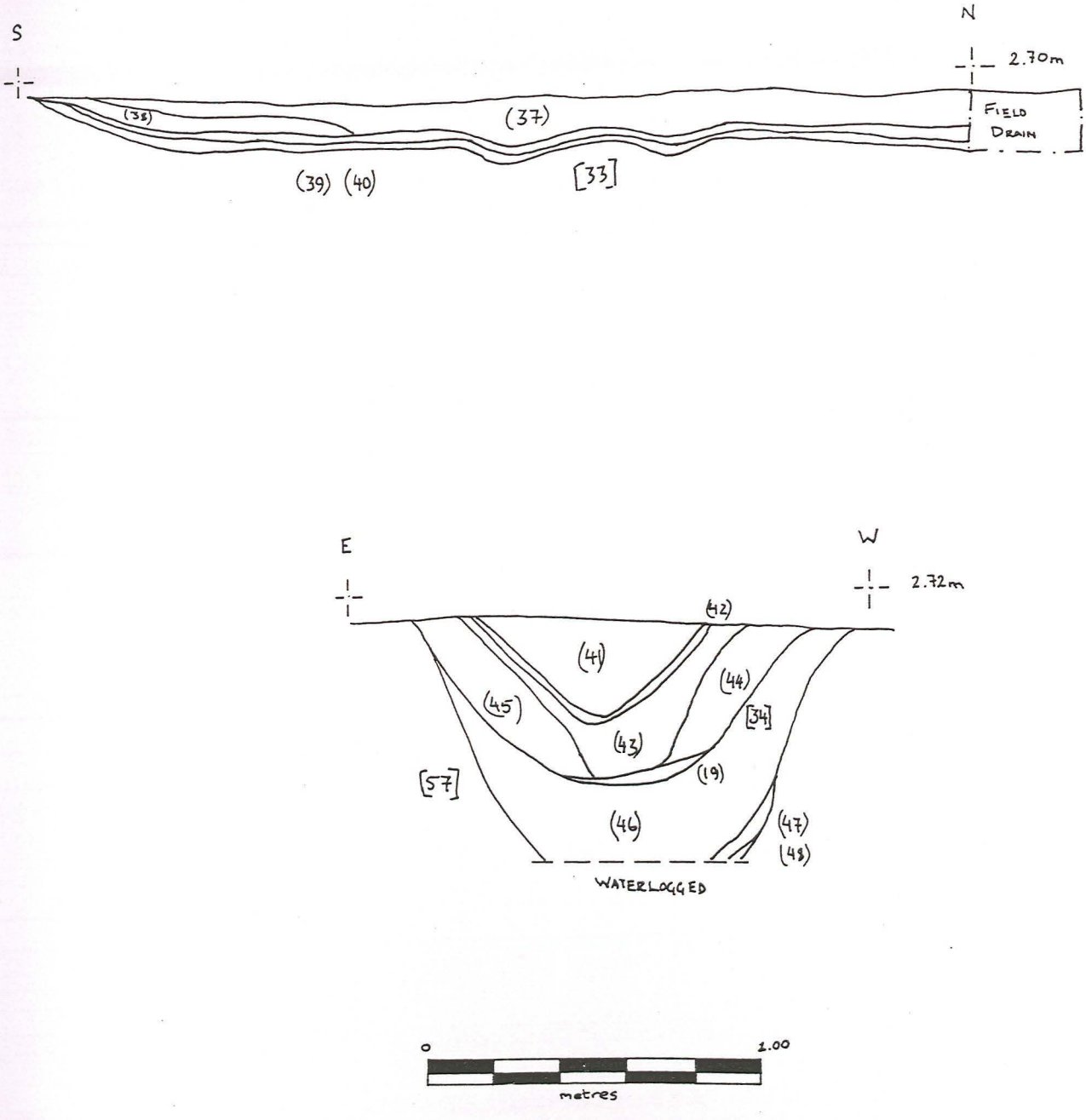


Figure 5 : Section of features excavated Scale 1:20

Plate 5 : The northern terminal of the enclosure ditch, looking west

Plate 3 : Feature [24], the western enclosure ditch, looking south

Plate 4 : Enclosure ditch [26] from the west

Plate 1 : The excavation area following machining, looking south-east

Plate 2 : Feature [20] from the south-east

Plate 6 : The southern terminal, [34], from the north

Plate 7 : The entrance to the enclosure as defined by features [33] and [34], looking north

Plate 1 : The excavation area following machining, looking south-east

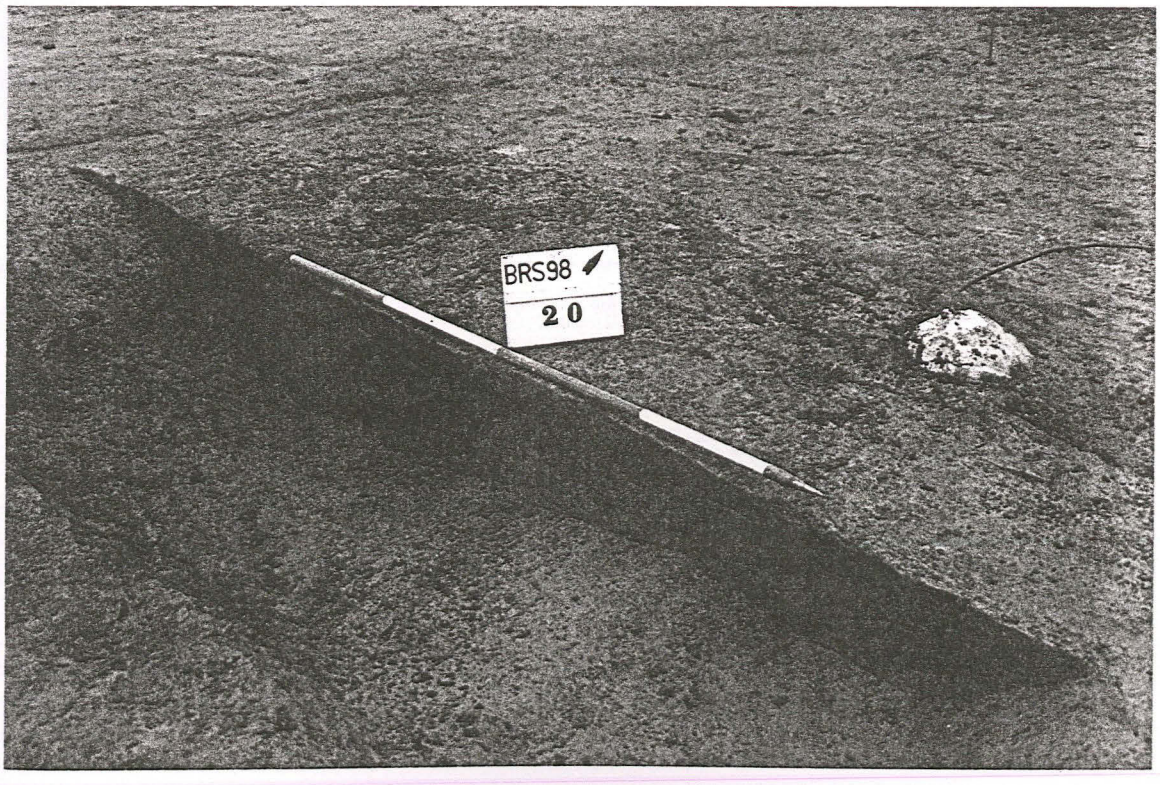


Plate 2 : Feature [20] from the south-east

Plate 3 : Feature [24], the western enclosure ditch, looking south

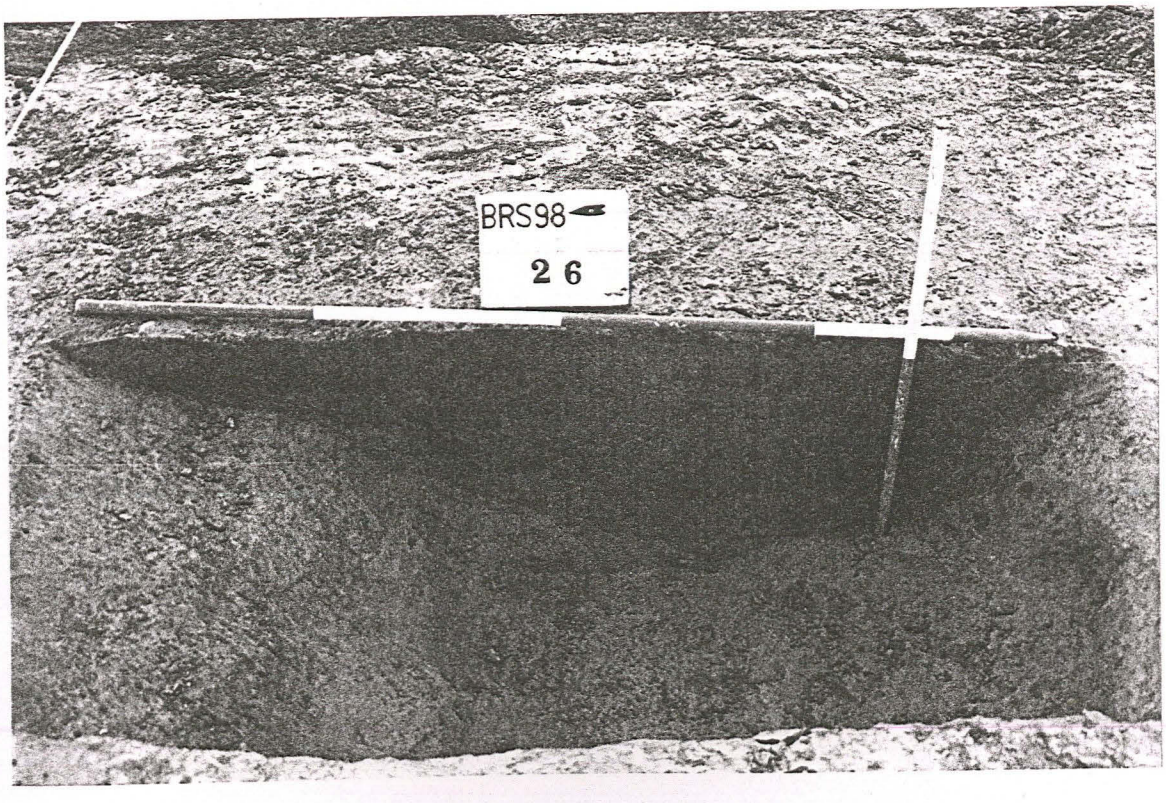


Plate 4 : Enclosure ditch [26] from the west

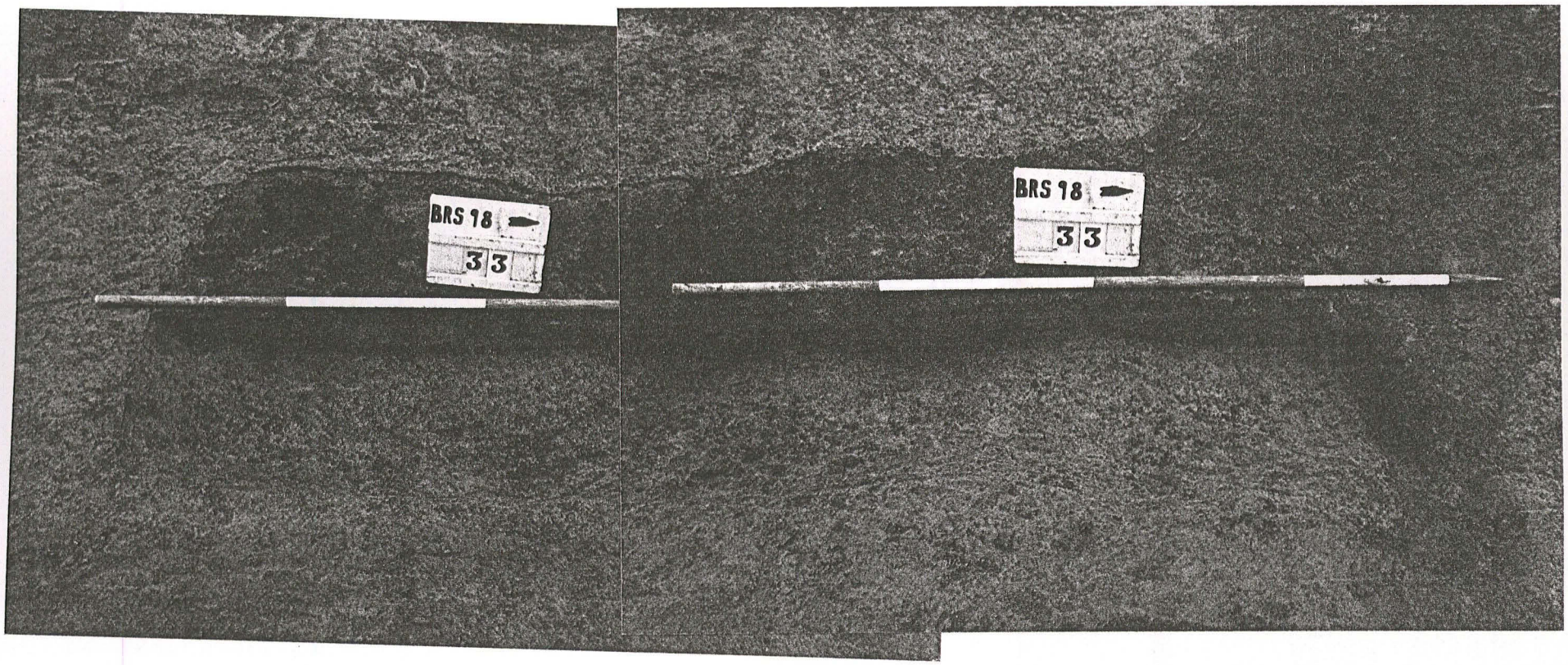


Plate 5 : The northern terminal of the enclosure ditch, looking west

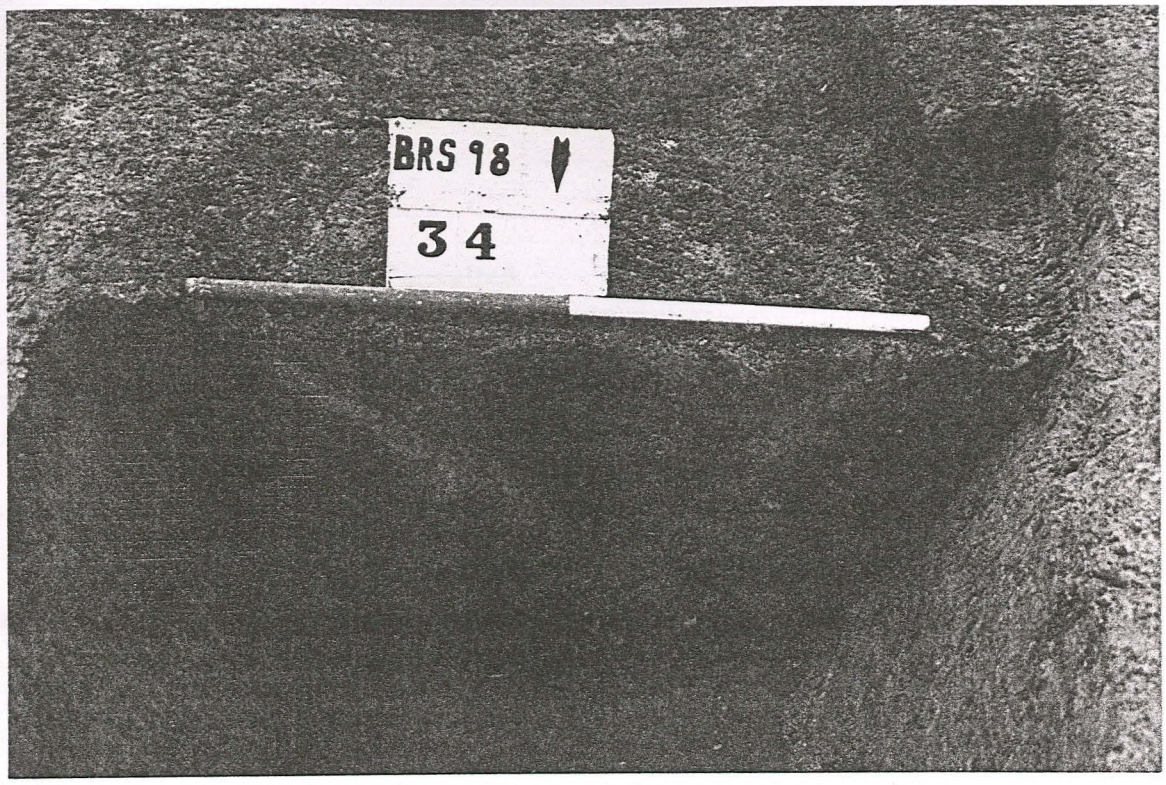


Plate 6 : The southern terminal, [34], from the north

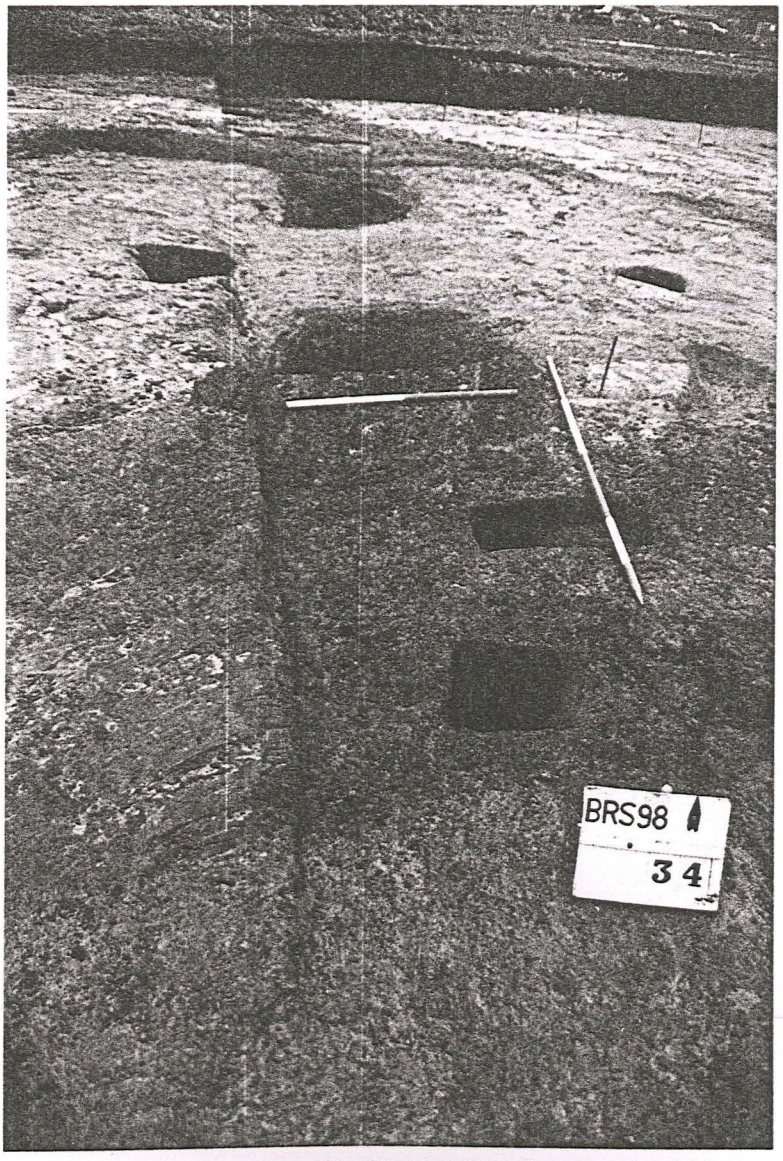


Plate 7 : The entrance to the enclosure as defined by features [33] and [34], looking north

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7.0 Archive

60 Context sheets
1 Drawing register sheet
1 Sample sheet
44 each colour prints, black and white prints, colour transparencies
1 file correspondence
1 box of finds

The archive is currently held by John Samuels Archaeological Consultants at The Manor, Normanton-on-Trent, Newark, Nottinghamshire, NG23 6RQ. It is to be deposited at City and County Museum Lincoln under accession number 86.98, site code BRS98.

Appendix A :
Pottery Catalogue

Descriptions by N Rosenberg & J Samuels

Context No	No of sherds	Description
14	1	Lid-seated rim sherd. Grey/brown fine shelly fabric. Slight rilling on exterior indicating that this pot was wheel finished
16	1	Baked clay - possibly daub with straw impressions
21	1	Fine vesicular shelly fabric. Light brown/grey interior, light orange/grey exterior
	1	Vesicular shelly fabric. Dark grey/brown interior, light grey with orange exterior.
	1	Vesicular shelly fabric. Light orange/brown exterior and interior.
25	4	Coarse brown/grey shelly fabric. Body sherd from large straight sided vessel
27	5	Rim sherds of jar with bead rim. Grey/brown shelly fabric
	2	Rim sherds of jar. Grey/brown shelly fabric
	2	Base sherds of grey/brown shelly fabric. Flat bases. 1 sherd 'kicks-out' slightly just before base
	30	Body sherds of grey/brown shelly fabric. Some exterior surfaces chipped off
29	2	Bead rimmed jar. Black shelly ware with charcoal on exterior and interior
	12	Light brown/black coarse shelly fabric. Darker interior, some charcoal
40	1	Beaded rim sherd with pronounced shoulder. Light-dark grey/brown shelly ware

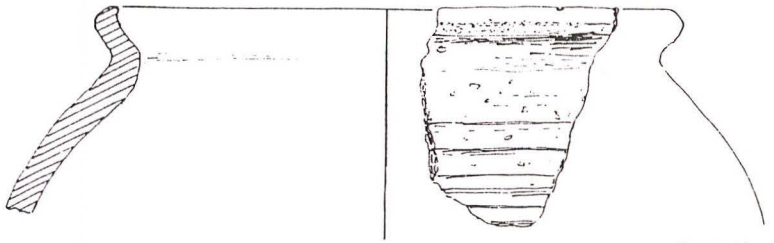
See section 4.0 of main report for discussion.

Comments by S M Elsdon (24-08-98)

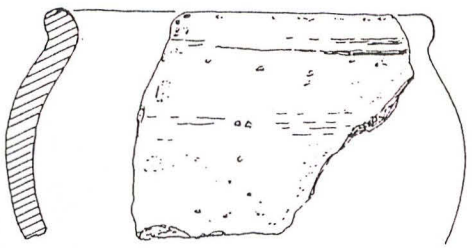
This assemblage consists of one early second century vessel (context 14); five bead rimmed, thin-walled, calcite gritted jars which are probably hand made and one, possibly Dark Age sherd.

The only diagnostic sherd is early second century Ad and there is no reason to suppose that the rest are not of the same date except for the sherd from context 16.

N.B. Please refer to my report on (?same site) for APS, Heritage Lincs, Gary Taylor, 15 09 97.



Context 14



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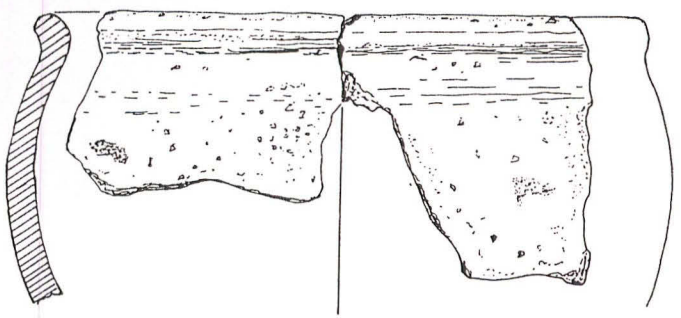
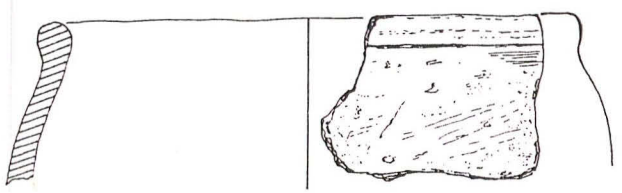
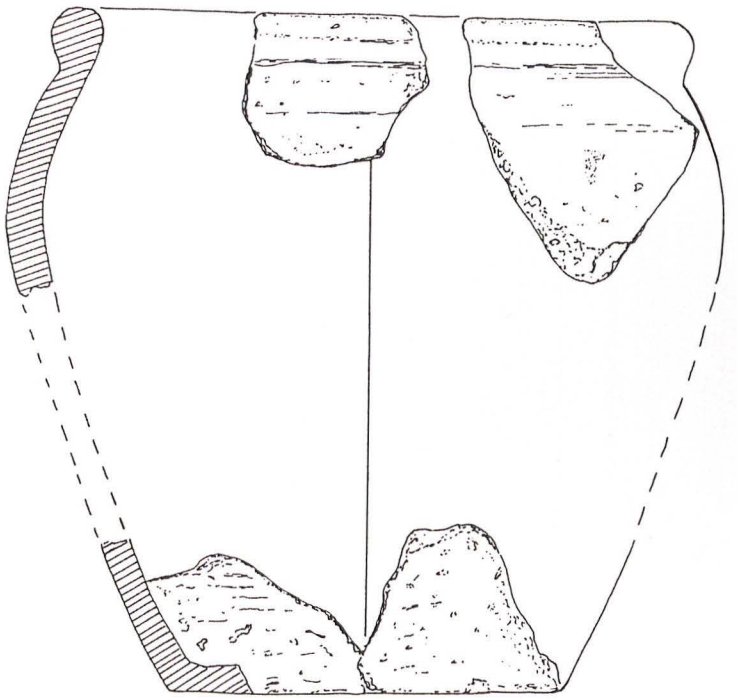




Context 29



Context 27

Appendix B :
Briquetage Report
by J. Cowgill

ASSESSMENT OF THE BRIQUETAGE FROM THE EXCAVATION AT BOURNE ROAD, SPALDING (BRS98).

Jane Cowgill©
August 1998

Background.
A late transitional Iron Age/Romano-British site was excavated during April 1998 from which this assemblage of briquetage was recovered. A number of pits, drip gullies and an enclosure were uncovered but no evidence for hearths or ovens were found.

Recording Methodology.
The assemblage from the site has been identified and recorded on *pro forma* recording sheets. This information was entered into a Microsoft Access database and consists of the following encoded fields: Context; Material; Type; Quantity; Weight; Comments. The briquetage was visually examined and identified on the basis of fabric and form, sometimes with the aid of a x10 binocular microscope. (For a full catalogue see Appendix 1.) The fabric types and chronological groups developed by Lane have been referred to (Lane 1992).

The Briquetage.
A total of 3763g (190 pieces) of briquetage and a single piece of ?hearth (28g) made from a different clay fabric was recovered by hand during the excavation. A further 2172g (a minimum of 269 pieces) from four environmental samples have also been recorded and are discussed here. The composition of the two groups is very different and emphasises the importance of sampling this type of material during the excavation. The hand-collected assemblage is well preserved and a high percentage could be identified to type, which is very unusual because small indeterminate lumps with few or no surfaces present dominate the majority of assemblages. The sampled material, however, was composed almost entirely of small unidentifiable lumps but also contained some of the smaller types of briquetage, such as clips, which were noticeably absent amongst the hand collected assemblage. The two groups when studied together therefore are able to give a more balanced impression of the assemblage that actually existed at the site.

There is very little briquetage or fired clay material that may once have formed part of a hearth or oven structure.

In common with most other sites a single fabric appears to have been used to make all the types of briquetage. It is generally an orange/red/brown colour with frequent pale yellow or cream coloured surfaces. The fabric is soft to medium in hardness and is made from a silty clay tempered with frequent small organic (chaff?) inclusions. This description matches types T2B and T3A in Lanes typology (Lane 1992) although the not infrequent purple tinge noted and the overall colour suggests some similarity with T8 but the vegetable temper is not sparse and the individual sherds are not particularly small. The thickness of the vessel walls ranges from 7 to 13mm which again tallies well with types T2B and T3A rather than the 5 – 8 suggested for T8.

Both T2B and T3A have been assigned to the chronological Group B that is dated to the Romano-British (Early?) period. There are, however, a few factors concerning this assemblage that are more characteristic of Middle Iron Age sites than Romano-British and it is worth noting that there is no

Group assigned to the Late Iron Age. A reasonably large number of supports were recovered and these objects are much more common on the early Group A sites and are relatively infrequent on the Group B sites (18 found on 14 out of a total of 112 sites). Hourglass supports are the most common Middle Iron Age type whereas the cylindrical types were the most prevalent here. The fact that this assemblage seems to sit between Lanes Groups A and B (Lane 1992) suggests that it may make a good type site for the transitional Late Iron Age/Romano-British period in the south-west Lincolnshire Fens.

Table 1. The quantity of briquetage by type.

Type	Quantity	Weight (g)
Uncertain	237*	3060
Bar	2	113
Bun	1	86
Clip	1	24
'Lump'	1	119
Rod	1	10
Support	27	1107
Vessel	181	1201

*Small fragments were not counted

All the briquetage was hand made with only roughly finished sides and edges. It is this irregularity that makes many of the pieces difficult to categorise. Although the pieces have been subdivided into a number of forms, within each form there is a diverse range of shapes and it is evident that consistency of shape was not a significant factor in their production.

Bars

These are often uncommon finds at Saltern sites and this has proved to be the case with this assemblage. Only two bars have been positively identified, nine other pieces are possibilities. The incomplete bar from pit 33 is unusual for this assemblage because it is a fawn/buff colour, but the fabric is the same. It has an irregular square section (minimum length: 85 x 25 x 25mm) and has the imprints of straw along one side. The other bar is from linear cut 24 and probably has a trapezoidal section in common with two of the other possible bars The remaining possible bars have rectangular, square and oval sections. The widths of these vary between 33 - 45mm.

Supports and Clips

These comprise the vertical stands that supported the troughs or trays and horizontal clips that appear to have functioned as spacers and presumably also added stability to the vessels. Both seem to have been placed along side the vessels when the clay was maleable because distinct impressions of vessel bases and corners can be seen on some supports while the clips may have rim impressions from individual vessels on them. A number of pieces (particularly the larger cylindrical supports) may have been baked or fired before use and these would have been reused along with any of the others deemed suitable and unbroken.

The majority of the fragments recovered were probably once part of supports or clips. At least four of the supports are complete but all but one of the clips are all fragmentary. The majority of the

supports are cylindrical with roughly circular sections although some have distinctly oval sections. Most are large with heights greater than 60mm and end measurements of c. 55mm. Two of the supports with oval sections have ends wider than their heights whilst the reverse is more usual. There are three noticeably smaller cylindrical supports from ditch 23 with basal diameters in the region of 33mm. The two hourglass supports are also small, the most complete measures 25mm high by 48 x 30mm.

The complete clip from linear cut 24 is quite large but has no clear rim impression and may therefore have been placed between a vessel and the hearth or oven wall and may not be technically a true clip. One reason for the difficulty in identifying the clips is the fact that the majority of the rims are simple plain rounded forms whose curved profile would leave very similar impressions to those formed by finger imprints which are found on a great many pieces. There are two rims that taper to a point and there is a single possible clip from ditch 23 that may have once been attached to this rim type.

There is also a small group from ditch 23 that have been catalogued as spacers or small supports. They are all irregular in shape with no or few flat surfaces. These pieces may have been added for extra stability and just wedged in where ever the need was felt.

Vessels

The vessel fragments form the largest group of identified briquetage. The individual sherds vary in thickness from 7 to 13mm and the majority have walls that curve downwards between the rim and base. Along the length of the sherds the walls are straight suggesting that they are the remains of rectangular or square-shaped vessels. The main evidence for a corner on the base of these trays or troughs was the imprint of a square corner on one of the cylindrical supports.

Plain rounded rims were the most common recovered (two from ditch 23 and five from the linear cut 24) but there are also two that tapered to a point (from linear cut 24). All these rims were from straight-sided vessels as were two of the bases. One of these bases possibly had an applied lug on the base 8mm in diameter, but it is so rough in appearance that it may just have been a small ball of clay that accidentally became attached. Two other bases are possibly from the same vessel (although the sherds do not join) because they are both from a circular vessel with a basal diameter of 110mm. Briquetage vessels other than troughs or trays are, however, very rare on salterns and these may be examples of the sub-rounded bases also encountered on a Group B site at Billingborough (Lane 1992, Fig. 131 No. 7). The maximum height recorded on a rim was 68mm while the maximum wall height attached to a base is 50mm. There is also a very crudely made piece of probable vessel wall which is 70mm high and appears to have an applied cordon running down its length (from linear cut 24); unfortunately the piece is quite small and so irregular this is difficult to confirm.

There is also a very large 'rim' from a hearth, oven or vessel. The piece has a straight side, is 30mm thick and the rim is well formed and rounded. The fabric has taken a pinkish white coloration on the ?internal face.

Miscellaneous Briquetage

A very unusual type of evidence is presented by the thirty-nine thin brittle pieces of briquetage most of which have thin holes pierced through them. The perforations are 3 – 5mm in diameter, are irregularly spaced and appear to have been casually, perhaps rapidly, made possibly using a twig or piece of reed. They all have one smoothish surface and most have an uneven underside that also

appears to have been a sort of surface. They resemble spalled repairs to perhaps an oven or hearth but the clay that has been pushed through from the hole is clearly visible on the underside. There are no parallels for these pieces known from any of the Fenland Saltern sites of any date (pers comm T Lane). The majority of the pierced pieces are small in size, most are barely 20mm across, so it may be significant that all the examples found were recovered from the samples.

A number of other pieces that are not readily classified were found. The bun shaped piece was probably originally oval in shape, has a flat base and a curved top. Two other pieces are probably fragments of the same type of object. The 'lump' has no discernible shape and just appears to have been loosely formed in the palm of a hand. A possible disc, some 25 -30mm in diameter, may represent a gaming counter but the surviving sides are not well formed and it may just be a worn vessel sherd.

Most of the pieces recorded as possible hearth fragments have one flat but irregular surface that is usually a white to fawn colour. The pieces generally become less well fired the further or deeper into the fragment away from the surface. One piece had a very hard surface and was 80mm thick with a range of colours displayed from a pink-white on the surface to an orangey-brown where the break opposite the surface occurred. There were also five oxidised pieces of very hard-fired clay from sample 2 (pit 57) that had a very large amount of organic temper inclusions including much longer and larger pieces than those present in the briquetage. All the surfaces were irregular suggesting that these may be from a hearth or oven structure.

The two pieces from the site in a different fabric have been interpreted as a hearth fragment. The clay may be the same as that used for the briquetage (although no iron inclusions were present) but there was no organic temper evident. The pieces are fairly small and one has a single fairly flat cream coloured surface.

Discussion

Table 2. The quantity of briquetage from each context.

Context	Feature	Quantity	Weight (g)	Sample size
06	Pit 05	7	74	
09	Pit 08	17	67	
12	Linear Cut 11	17	68	
14	Linear Cut 13	5	32	
16	Pit 15	5	91	
21	Ditch 20	2	18	
25*	Linear Cut 24	135	1914	20 ltr
27	Linear Cut 26	7	687	
37*	Pit 33	23	133	19 ltr
46#	Pit 57	166	1456	16 ltr
49#	Ditch 23	10	129	20 ltr
51	Ditch 23	64	1236	

* Includes some briquetage from a sample.

All the briquetage is from a sample.

The assemblage recorded here represents a very small percentage of the material that occurred on the site. As is standard practice only small sections were excavated across the features and therefore the vast majority of the briquetage will not have been recovered. This particularly will be the case with the 'enclosure' ditch from which two of the biggest assemblages were recovered (contexts 25 and 27). The context records for 27 and 51 mention frequent small fragments of briquetage or a high fired clay content in the feature fills and if they had been sampled the catalogue for these contexts would probably be similar to those features that were. There is no hand-collected briquetage from contexts 46 and 49 even though the former contained a large assemblage in the sample. It is evident that when analysing the distribution across a site of solely hand collected finds that caution is needed.

All the main features on the site produced some briquetage although the quantity from the main ditch 20 (fill 21) suggests that it may be intrusive. The salt production seems to have been concentrated around the 'enclosure' but the amount recovered from features near the 'entrance' may be misleading because that is where the features concentrate. The lack of hearths is puzzling as is the general lack of hearth or oven derived material amongst the assemblage. This does in general, however, survive very badly and would be expected to constitute the majority of the crumbly and smaller indeterminate fragments encountered.

Conclusion

The site is undoubtedly a Late Iron Age/transitional saltern that was also a settlement site on the basis of the quantity of domestic debris found in the environmental sample. The site is probably situated on the large roden that crosses Deeping Fen and continues in the direction of Spalding along which a number of other salterns have been found (Lane 1992). The assemblage of briquetage is large and important particularly because it contains a type that appears to be unique to the site. The small pierced brittle pieces found at the Bourne Road, Spalding site have not been recognised at any of the other Fenland saltern sites (pers comm T Lane).

Bibliography

Lane TW 1992, Iron Age and Roman Salterns in the South-Western Fens, in Hayes PP and Lane TW, *The Fenland Project, Number 5: Lincolnshire Survey, The South-West Fens*, East Anglian Archaeol. No **55**, 218 – 229.

APPENDIX 1

THE CATALOGUE OF THE BRIQUETAGE

Codes used in the catalogue:

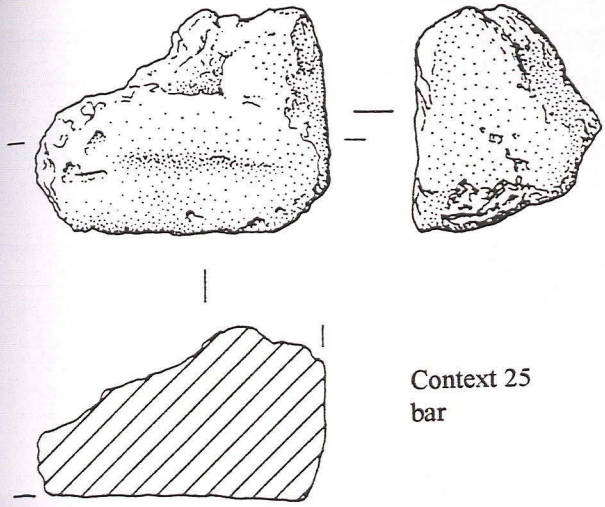
BRIQ	Briquetage
CYLIND	Cylindrical
DIAM	Diameter
FIRE	Fired clay
H	Height
L	Length
VESS	Vessel
W	Width

Context	Sample No	Material	Type	Quant	Weight	Comments
6		BRIQ		1	3	CLIP?? VERY SMALL FRAGMENT
6		BRIQ		1	28	BAR? RECTANGULAR SECTION; L? X 35 X 33MM
6		BRIQ		5	43	FRAGMENTS; TOO THICK FOR VESSELS
6		STONE		1	10	BURNT LIMESTONE
9		BRIQ		1	3	DISC FRAGMENT? DIAM 25-30MM; EDGES MAY NOT BE REAL
9		BRIQ		11	36	FRAGMENTS; MOST TOO THICK TO BE VESSELS
9		BRIQ	SUPPORT	2	12	FRAGMENTS
9		BRIQ	VESS	3	16	8 - 12MM THICK
12		BRIQ		13	20	SMALL FRAGMENTS
12		BRIQ	SUPPORTS	2	65	LARGE FLAT CIRCULAR BASES; MINIMUM HEIGHT 35MM
12		BRIQ	VESS	2	3	10MM THICK
14		BRIQ		1	20	CLIP? WORN/ROUNDED EDGES
14		BRIQ		2	8	FRAGMENTS
14		BRIQ	VESS	2	4	7 - 8MM THICK
16		BRIQ		4	45	FRAGMENTS ALL TOO THICK FOR VESSELS
16		BRIQ	SUPPORT	1	46	CYLIND; H: MINIMUM 40MM; ?BASE DIAMETER MINIMUM 55MM
21		BRIQ		2	18	FRAGMENTS TOO THICK FOR VESSELS
25				1	28	HEARTH FRAGMENT? CREAM COLOURED SURFACE; DIFFERENT CLAY - NO IRON CONTENT
25		BRIQ		1	15	BAR FRAGMENT? L? X 40 X 35MM; TRAPEZOID SHAPE
25		BRIQ		1	25	SUPPORT OR CLIP FRAGMENT
25		BRIQ		1	28	PIECE WITH FLAT SIDE AND IRREGULAR EDGE; FABRIC PURPLE
25		BRIQ		1	35	VESS CORNER? 70MM HIGH WITH APPLIED RIDGE; VERY ROUGHLY MADE
25		BRIQ		1	38	PROBABLY A CLIP BUT POSSIBLY A BAR FRAGMENT
25		BRIQ		1	39	LARGE BAR END? L? X 45 X 40MM; TRAPEZOID SHAPE
25		BRIQ		1	83	BAR? OVAL SECTION; L: MINIMUM 60MM; MAXIMUM W: 45MM
25		BRIQ		2	22	BUN FRAGMENTS? BOTH FLATTISH BASE
25		BRIQ		3	64	SUPPORT OR CLIP FRAGMENTS
25		BRIQ		21	95	FRAGMENTS; MOST TOO THICK FOR VESSELS
25		BRIQ	BUN	1	86	FLATTISH BASE; PROBABLY OVAL SHAPE; H: 40; W: 70MM
25		BRIQ	LUMP	1	119	IRREGULAR BUT 'COMPLETE' LUMP
25		BRIQ	SUPPORT	1	43	CYLIND; FLAT ?BASE; H: MINIMUM 60MM
25		BRIQ	SUPPORT	1	47	HOURGLASS OR POSSIBLY A LARGE CLIP
25		BRIQ	SUPPORT	1	79	CYLIND; FLAT ?BASE; H:60MM
25		BRIQ	SUPPORT	1	104	WHOLE; CYLIND; FLAT TOP AND BASE; H:55MM
25		BRIQ	VESS	1	35	BASE? VERY FLAT; 11MM THICK
25		BRIQ	VESS	1	52	BASE FRAGMENT; WALL CURVES OUT BUT SIDE STRAIGHT; H: 50MM; POSSIBLE SMALL LUG ON BASE DIAM 8MM
25		BRIQ	VESS	2	38	POINTED RIMS; STRAIGHT SIDES BUT CURVES TOWARDS BASE; 1X 68MM HIGH
25		BRIQ	VESS	3	51	PLAIN ROUNDED RIMS; STRIAGHT SIDES
25		BRIQ	VESS	19	303	ALL HAVE A CURVED WALL BUT STRAIGHT SIDES; THICKNESS 7 - 12MM
25	4	BRIQ		0	215	FRAGMENTS
25	4	BRIQ		1	8	BAR OR SQUARISH SUPPORT
25	4	BRIQ		3	12	PROBABLE CLIP FRAGMENTS
25	4	BRIQ		15	15	THIN PIECES; 9 POSSIBLY WITH HOLES
25	4	BRIQ		28	80	PROBABLE VESSEL FRAGMENTS; 1 FLAT FACE ONLY
25	4	BRIQ	BAR	1	44	POSSIBLY TRAPEZOIDAL; MINIMUM L:52MM; MINIMUM W:40MM
25	4	BRIQ	CLIP	1	24	COMPLETE

Context	Sample No	Material	Type	Quant	Weight	Comments
25	4	BRIQ	SUPPORT	1	9	FRAGMENT
25	4	BRIQ	SUPPORT	5	14	CURVED SURFACES
25	4	BRIQ	VESS	1	6	BASE
25	4	BRIQ	VESS	1	6	BASE OR NEAR BASE
25	4	BRIQ	VESS	2	9	SIMPLE RIM WITH A STRAIGHT WALL
25	4	BRIQ	VESS	10	43	7 - 12MM THICK
27		BRIQ		1	14	HEARTH FRAGMENT? WHITEISH SLIGHTLY IRREGULAR SURFACE = 90 X 30MM; MINIMUM H:30MM
27		BRIQ		1	19	FRAGMENT
27		BRIQ		1	22	SUPPORT OR CLIP
27		BRIQ		1	93	SUPPORT OF HEARTH FRAGMENT; 1 FLAT WHITE SURFACE
27		BRIQ		1	203	VERY HARD WHITE UNEVEN SURFACE; H: 80MM; COLOUR GRADES FROM WHITE/PINKISH/ORANGEY BROWN
27		BRIQ	SUPPORT	1	112	OVAL CYLIND; L: 65; W: 55; MINIMUM H: 35MM; SUPPORTED STRAIGHT SIDED VESSEL
27		BRIQ	SUPPORT	1	224	CYLIND; L: 68; W: 58; H:55MM; SLIGHTLY BOWLED SURFACES; BUILT IN 3 LAYERS; PURPLE CORE
37		BRIQ	BAR	1	69	FAWN/BUFF COLOUR; IRREGULAR SQUARISH SECTION L:85 X 25 X 25; STRAW IMPRINTS ON 1 SIDE
37	5	BRIQ		0	18	FRAGMENTS RETURNED TO SAMPLE RESIDUE
37	5	BRIQ		1	5	VESSEL? 2 4MM HOLES THROUGH THICKNESS; 18MM THICK; FLAT SURFACE
37	5	BRIQ		4	2	THIN FLAKES; 3 WITH PERFORATIONS
37	5	BRIQ		13	16	PROBABLY VESSEL FRAGMENTS; ALL HAVE SINGLE SURFACE
37	5	BRIQ	ROD	1	10	CIRCULAR SECTION; DIAMETER 14MM
37	5	BRIQ	SUPPORT	1	10	OVAL SECTION?
37	5	BRIQ	VESS	2	3	10MM THICK
46	2	BRIQ			612	FRAGMENTS; MOST BRIQ BUT SOME HEARTH PIECES; RETURNED TO SAMPLE RESIDUE
46	2	BRIQ		1	43	SUPPORT OR BAR; ROUNDED EDGE; MINIMUM L:50MM; MINIMUM W:45MM
46	2	BRIQ		2	4	VERY THIN PIECES WITH CURVED EDGES; CLIPS?
46	2	BRIQ		5	11	PROBABLE CLIP FRAGMENTS
46	2	BRIQ		20	36	THIN BRITTLE PIECES WITH ONE SMOOTH SURFACE; 3 - 5MM DIAMETER HOLES PUSHED THRU
46	2	BRIQ		28	150	SUPPORT OR VESSEL FRAGMENTS; MOST SURFACES TOO IRREGULAR FOR VESS
46	2	BRIQ	SUPPORT	1	28	PROBABLY OVAL; FOR STRAIGHT WALLED VESSEL
46	2	BRIQ	SUPPORT	1	35	OVAL? HOURGLASS?
46	2	BRIQ	SUPPORT;	1	37	OVAL?
46	2	BRIQ	VESS	1	3	RIM? OR POSSIBLY A PART OF A CLIP
46	2	BRIQ	VESS	1	11	BASE; SLIGHTLY CURVED WALL
46	2	BRIQ	VESS	2	10	STRAIGHT WALLS; 9 - 10MM THICK
46	2	BRIQ	VESS	11	86	CURVED WALLS; 8 - 13MM THICK
46	2	BRIQ	VESS	41	96	FRAGMENTS OF VESSEL? 1 SURFACE ONLY
46	2	BRIQ	VESS	46	125	FRAGMENTS; 8 - 12MM THICK
46	2	FIRE		5	169	VERY FREQ ORGANIC INCLUSIONS AND LESS SILTY THAN BRIQ; IRREGULAR SURFACES
49	1	BRIQ		0	81	FRAGMENTS; RETURNED TO SAMPLE RESIDUE
49	1	BRIQ		1	21	LUMP; PROBABLY PART OF A SUPPORT
49	1	BRIQ		5	8	FRAGMENTS WITH A SINGLE SURFACE
49	1	BRIQ	VESS	3	11	10 - 11MM THICK
49	1	FIRE		1	8	OXIDISED SILTY PIECE WITH NO ORGANIC INCLUSIONS
51		BRIQ		1	13	CLIP? FOR VESSEL WITH POINTED RIM
51		BRIQ		1	88	HEARTH FRAGMENT? FLATTISH SURFACE; FAWN/BROWN COLOUR; MINIMUM THICKNESS 40MM
51		BRIQ		1	175	HEARTH/VESSEL RIM; 30MM THICK; STRAIGHT SIDE; PINK/WHITE INTERNAL WALL
51		BRIQ		2	37	BAR FRAGMENTS? BOTH HAVE TWO L-SHAPED SIDES

Context	Sample No	Material	Type	Quant	Weight	Comments
51		BRIQ		5	93	SPACERS OR SMALL SUPPORTS; ALL HAVE IRREGULAR SHAPES WITH NO FLAT SURFACES
51		BRIQ		21	298	FRAGMENTS; MOST TOO THICK FOR VESSELS
51		BRIQ	SUPPORT	1	34	HOURGLASS; H:25? X 48 X 30MM; SOME SURFACES NOT SMOOTH
51		BRIQ	SUPPORT	1	67	WHOLE; OVAL; H:60 X 55 X 35MM
51		BRIQ	SUPPORT	1	102	CYLIND; WHOLE; H:50 X 55 X 52MM; SUPPORTED A SQUARE CORNER
51		BRIQ	SUPPORTS	3	39	CYLIND; ALL SMALL; 1 X BASE DIAM: 33MM
51		BRIQ	VESS	1	12	DAMAGED PLAIN ROUNDED RIM? 12MM THICK
51		BRIQ	VESS	1	16	PLAIN ROUNDED RIM WITH ROUND PERFORATION IN SECTION; DIAM 5MM; SHERD 14MM THICK
51		BRIQ	VESS	1	34	BASE; BUFF TO WHITE SURFACES; STRAIGHT SIDE
51		BRIQ	VESS	2	55	CIRCULAR BASE DIAM 110; SAME VESSEL?
51		BRIQ	VESS	22	173	7-12MM THICK; SOME VERY PURPLE IN FRESH BREAKS; WHITE - BUFF SURFACES COMMON

B.R.S. 98 Bourne Road Spalding Briquetage 1/5 D.W. Hopkins 28/1/99.



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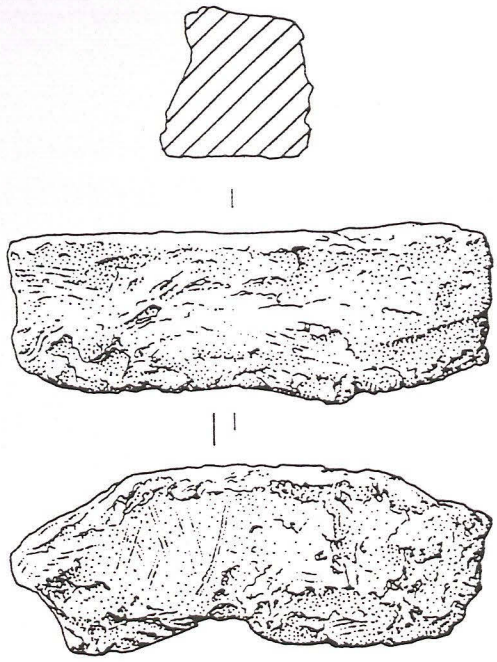
bar



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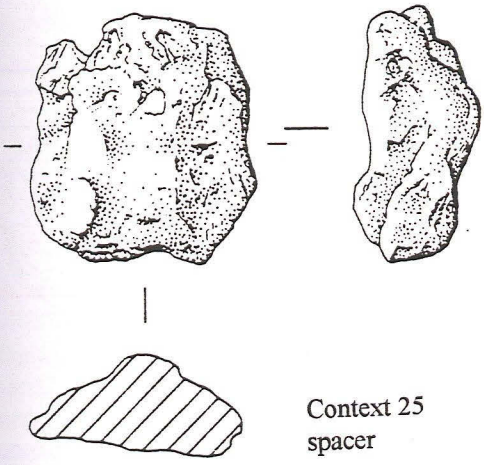
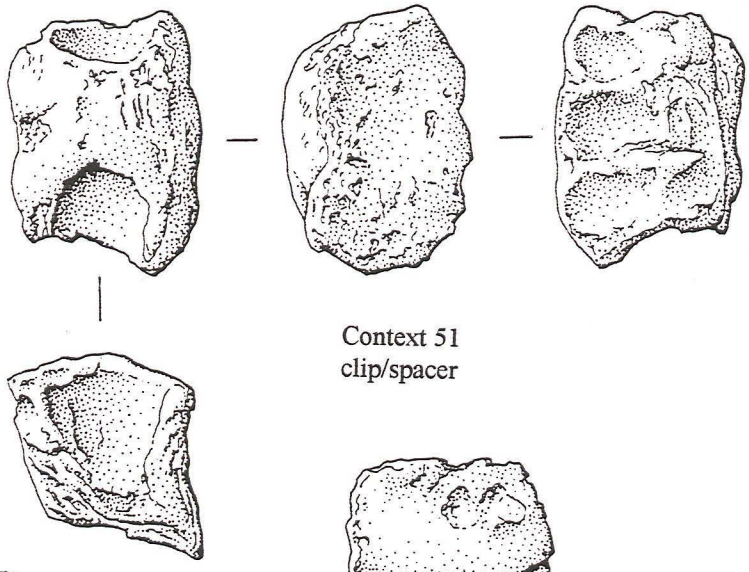
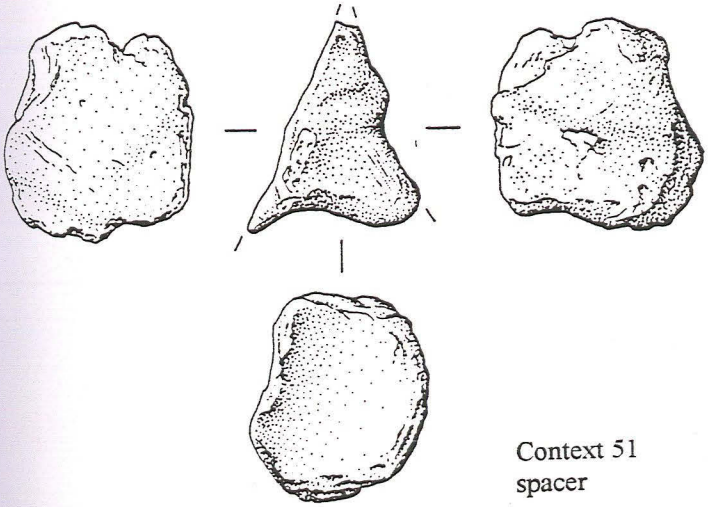


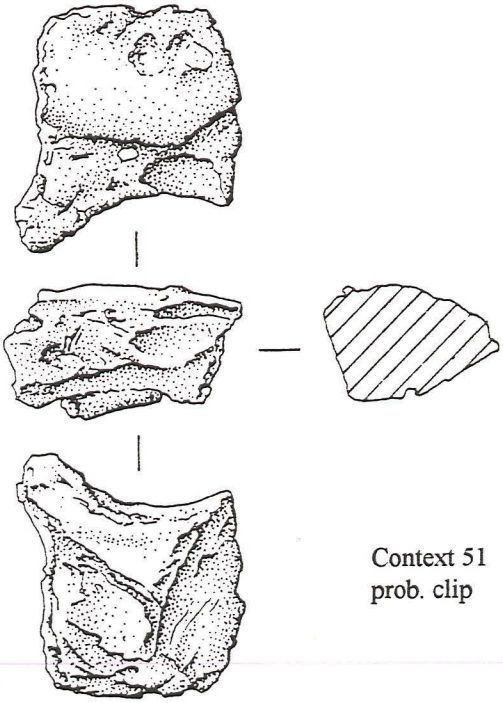
Context 25
spacer



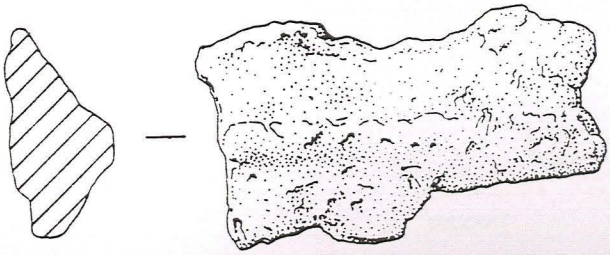
Context 51
clip/spacer



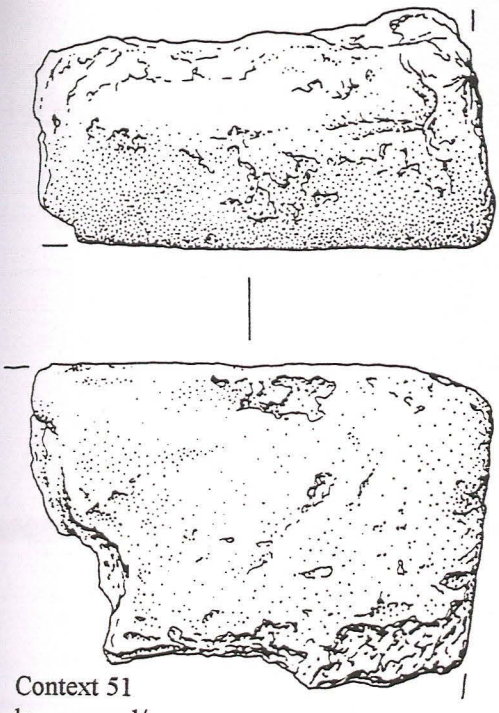
Context 51
spacer



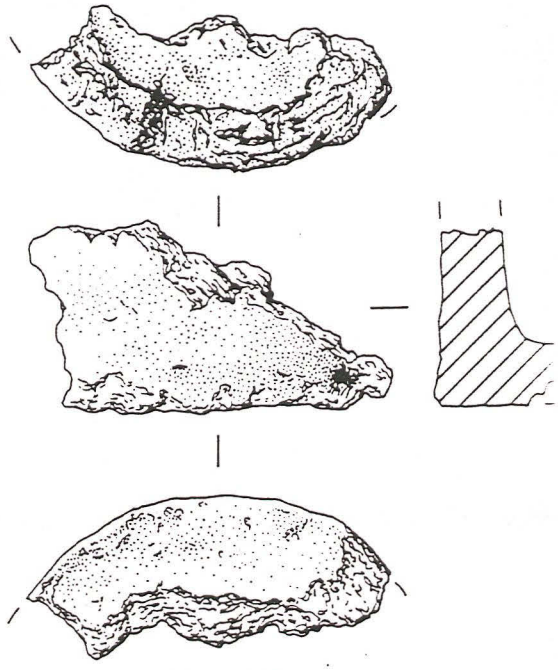
Context 51
prob. clip



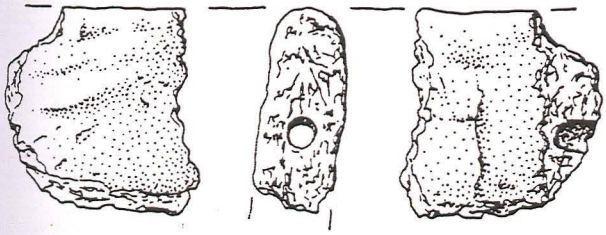
Context 25
vessel wall



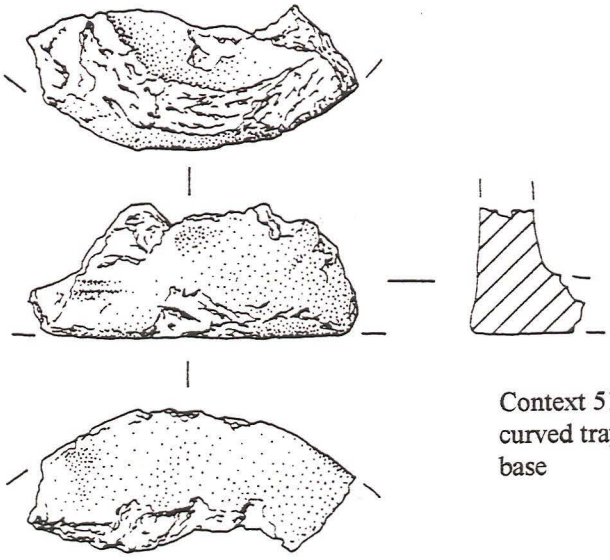
Context 51
large vessel/
hearth rim



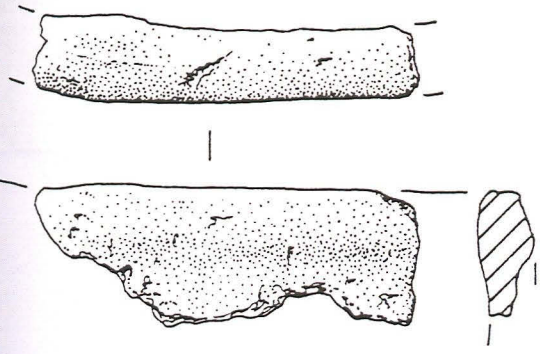
Context 51
curved tray
base



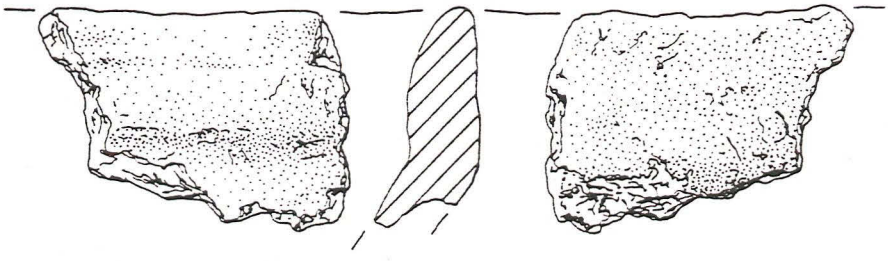
Context 51
vessel rim
with perforation



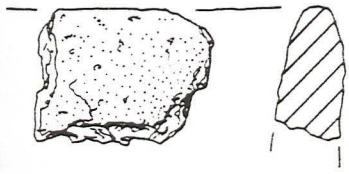
Context 51
curved tray
base



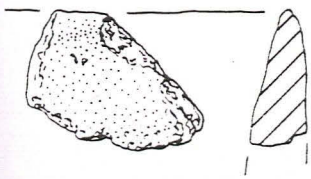
Context 25
vessel rim



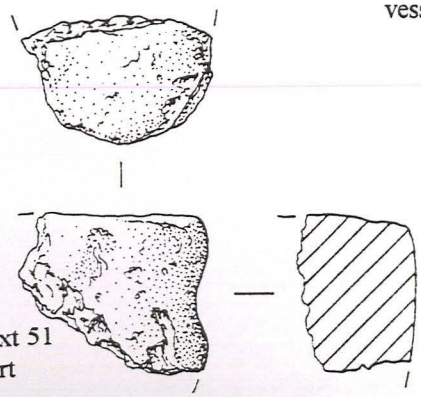
Context 25
vessel rim



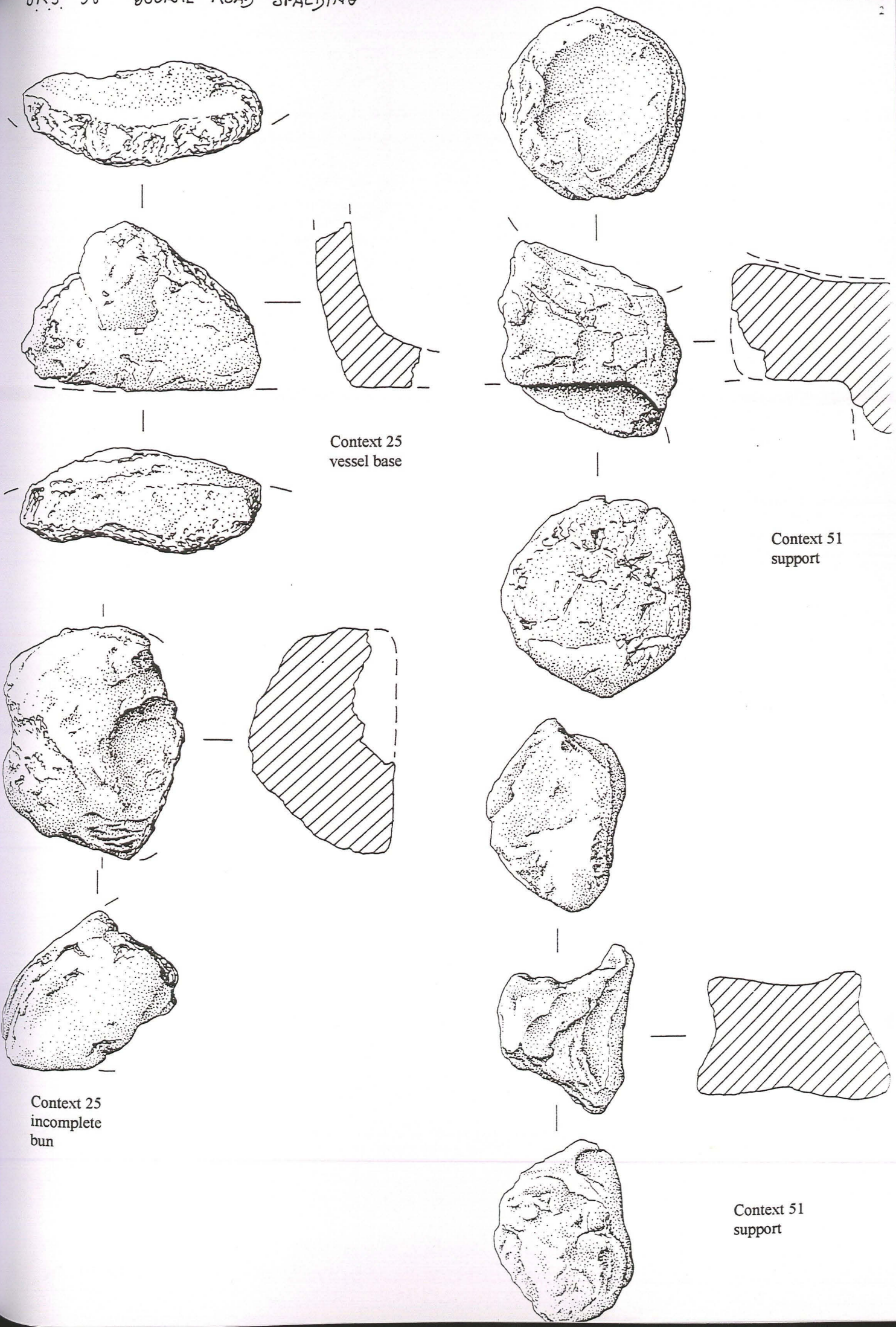
Context 25
vessel rim



Context 25
vessel rim



Context 51
support

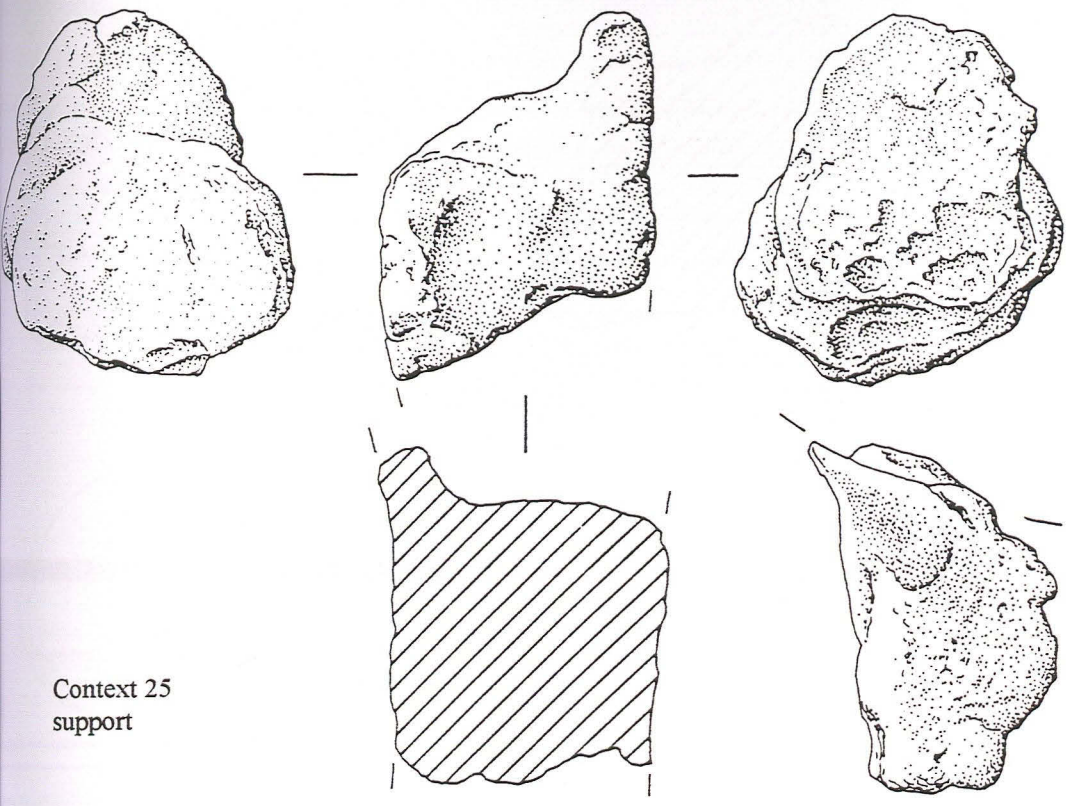


Context 25
vessel base

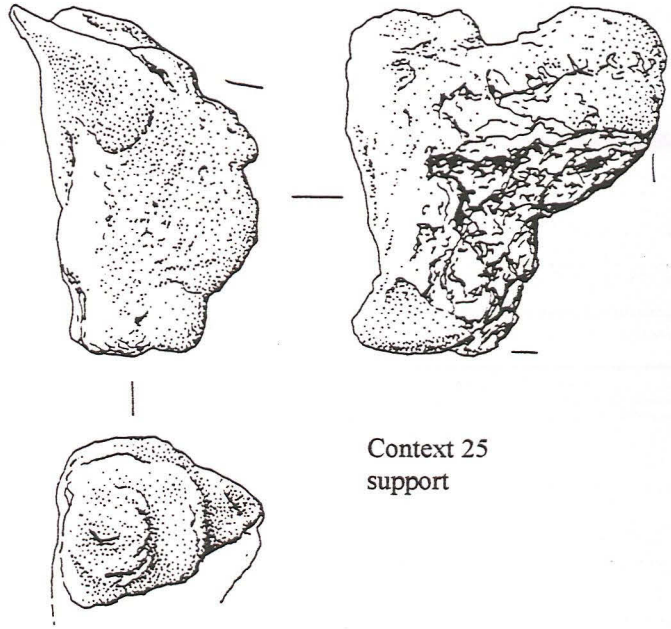
Context 51
support

Context 25
incomplete
bun

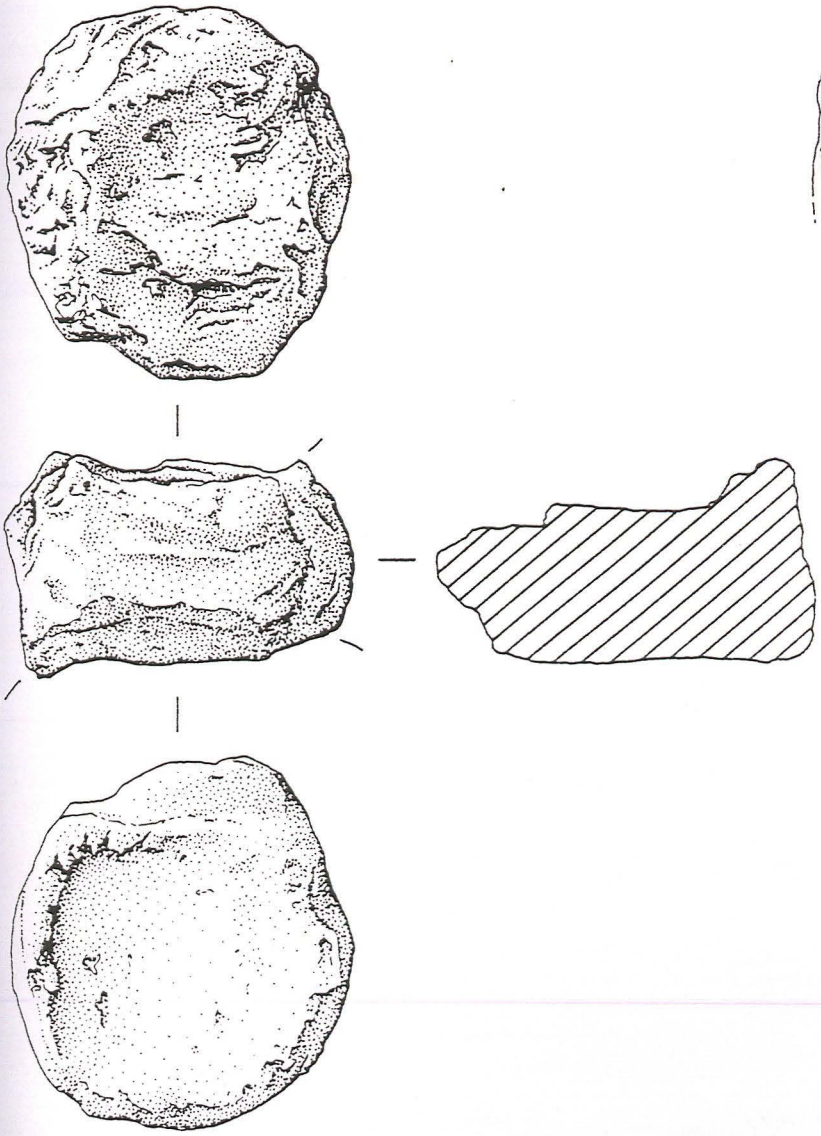
Context 51
support



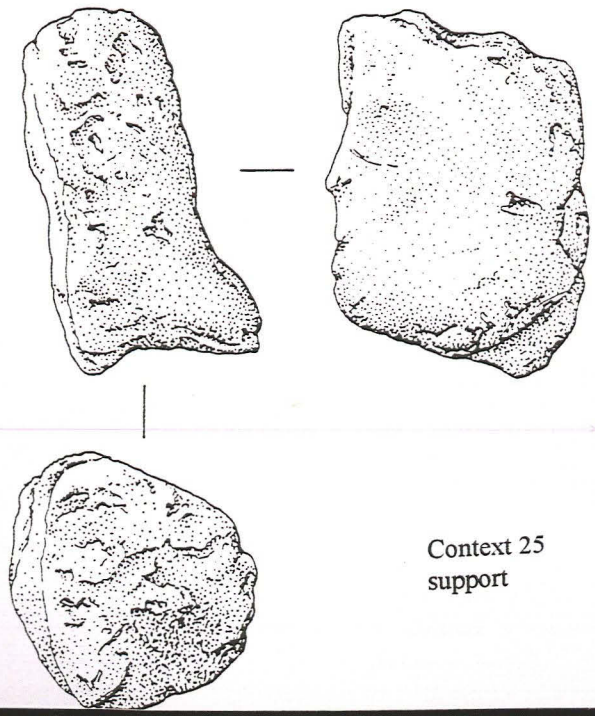
Context 25
support



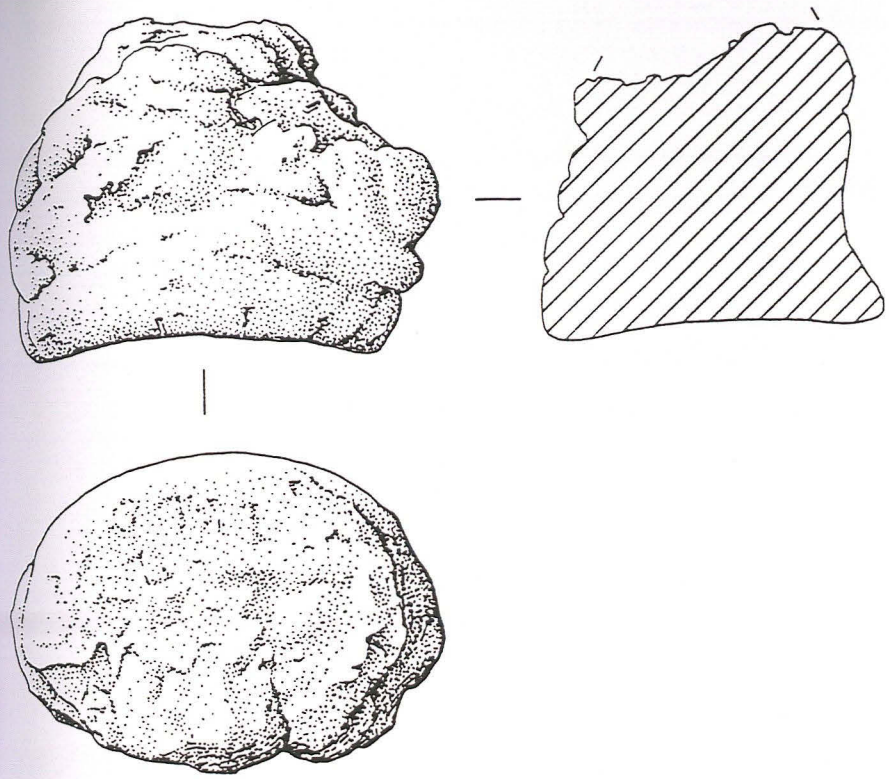
Context 25
support



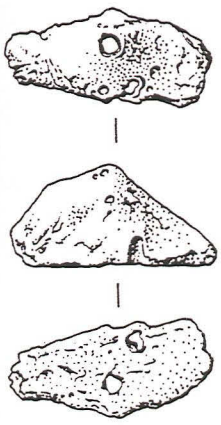
Context 27
support



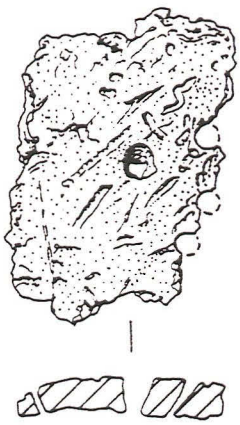
Context 25
support



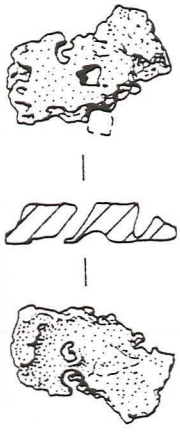
Context 27
support



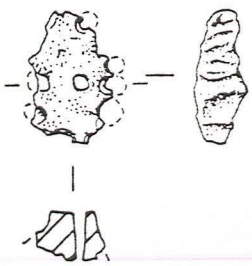
Context 37
perforated
pieces



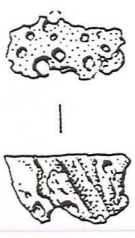
Context 46
perforated
pieces



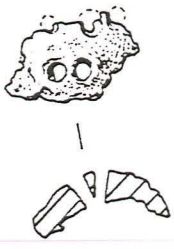
Context 25
perforated
pieces



Context 46
perforated
pieces



Context 46
perforated
pieces



Context 46
perforated
pieces

Context 46
perforated
pieces

Appendix C :
Bone Report
by R.C. Alvey

samples) is 1262 grams. Sheep bones were recovered in greater quantities than any other type, although cattle and horse remains were also represented. It is possible that were used as food, although the assemblage is too small to make any detailed comments. None of the species represented is uncommon in a late Iron Age/ early Romano-British context. (For comparison, see Harman 1996: 141-161). The horse bones showed evidence of butchery, although this does not necessarily imply their consumption as food

These remains would apear to indicate domestic occupation of the site. The small sample size may be due to differential deposition patterns within the features, or depostion of midden material in areas outside that excavated. The smaller mammals, reptiles and fish remains are fully discussed in the Environment Report, which forms Appendix F of this report.

Dobney, K M, Jaques, S D & Irving, B G 199-. *Of Butchers and Breeds: Report on vertebrate remains from various sites in the City of Lincoln.* Lincoln Archaeological Studies: No. 5

Harman, M 1996. 'Mammalian Bones' in May, J. *Dragonby*. pp. 141-161 Oxbow Monograph 61.

Rackham, J 1997. 'Environmental Assessment, Bourne Road Spalding'. Appendix 7 in Herbert, N *Archaeological Evaluation on Land South of Bourne Road, Spalding, Lincolnshire (SBR97)*. APS Report No. 39/97.

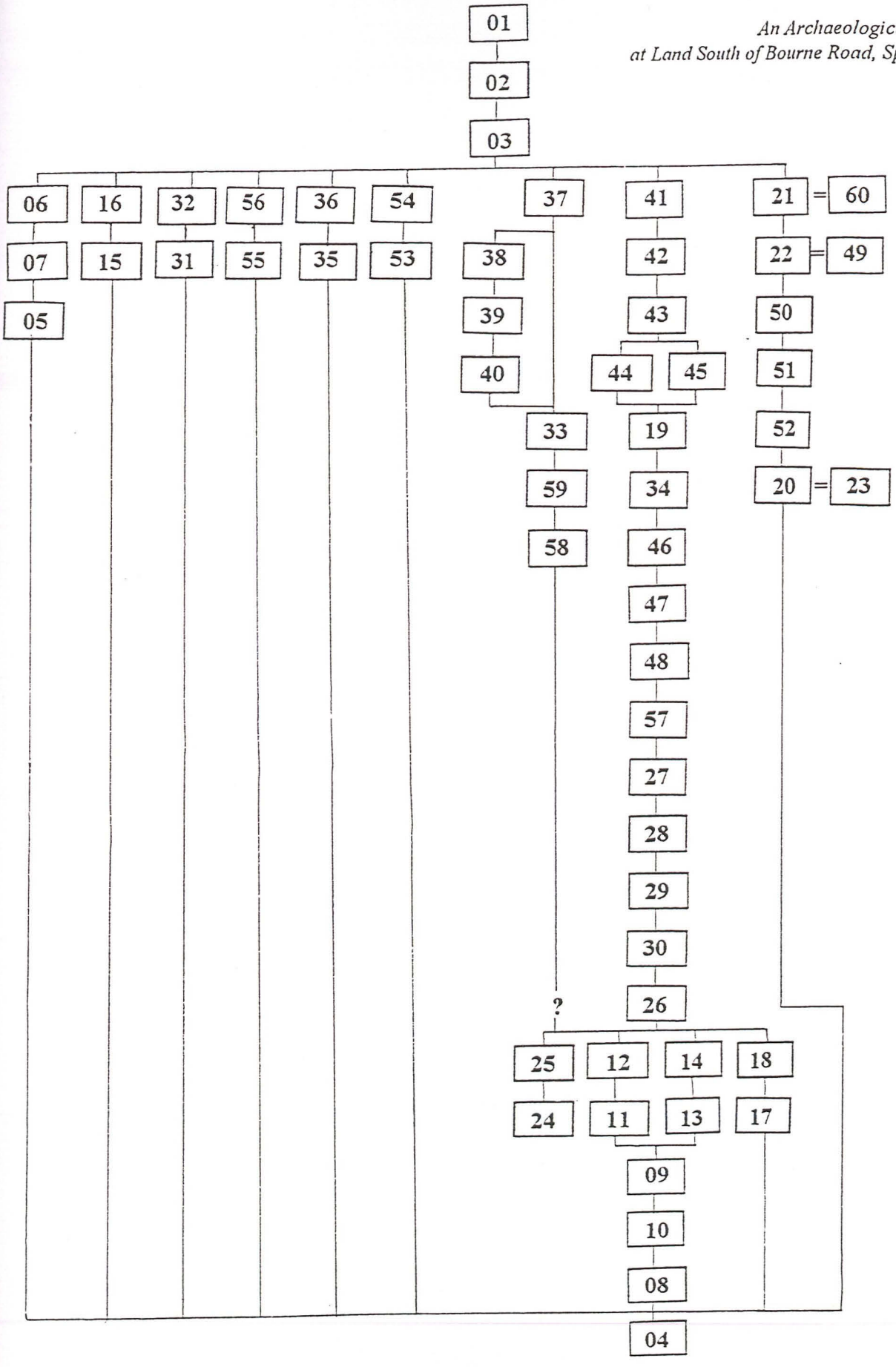
Appendix D :
Context Summary

Context No.	Description	Pot	Bone	Briq.	Comments
01	Modern Disturbance				
02	Topsoil				
03	Subsoil				
04	Natural				Sample 6,7,8
05	Cut - pit				
06	Fill of [05]		✓	✓	
07	Fill of [05]				
08	Cut - pit remnant?				
09	Fill of pit [08]			✓	
10	Fill of pit [08]				
11	Cut-linear				
12	Fill of linear cut [11]			✓	
13	Cut - linear				
14	Fill of linear cut [13]	✓		✓	
15	Cut - pit				
16	Fill of pit cut [15]	✓		✓	
17	Cut - drip gully				
18	Fill of drip gully [17]				
19	Fill - thin layer in pit cut [36]				
20	Cut - ditch				
21	Fill of ditch cut [20]	✓	✓	✓	
22	Fill of ditch cut [20]		✓		
23	Cut - ditch				
24	Cut - west side of enclosure				
25	Fill of linear cut [24]	✓	✓	✓	Sample 4

Context No.	Description	Pot	Bone	Briq.	Comments
26	Cut - south side of enclosure				
27	Fill of linear cut [26]	✓	✓	✓	
28	Fill of linear cut [26]				
29	Fill of linear cut [26]	✓			
30	Fill of linear cut [26]				
31	Cut - possibly natural				
32	Fill of cut [31]				
33	Cut - pit				
34	Cut - pit				
35	Cut - drip gully				
36	Fill of linear cut [35]				
37	Fill of pit cut [33]	✓	✓	✓	Sample 3 & 5
38	Fill of pit cut [33]				
39	Fill of pit cut [33]				
40	Fill of pit cut [33]	✓	✓		
41	Fill of pit cut [34]				
42	Fill of pit cut [34]				
43	Fill of pit cut [34]				
44	Fill of pit cut [34]				
45	Fill of pit cut [34]				
46	Fill of pit cut [57]	✓	✓	✓	Sample 2
47	Fill of pit cut [57]				
48	Fill of pit cut [57]				
49	Fill of ditch cut [23]	✓	✓	✓	Sample 1
50	Fill of ditch cut [23]				
51	Fill of ditch cut [23]		✓	✓	

Context No.	Description	Pot	Bone	Briq.	Comments
52	Fill of ditch cut [23]				
53	Cut - drip gully				
54	Fill of drip gully [53]				
55	Cut - drip gully				
56	Fill of drip gully [55]				
57	Cut - pit				
58	Cut north side of enclosure (59)				
59	Fill of cut [58]				
60	Fill of cut [20]				Same as (21)

Appendix E : Site Matrix


01
02
03
06
16
32
56
36
54
37
41
21 = 60
07
15
31
55
35
53
38
42
22 = 49
05
39
43
50
40
44
45
51
33
19
52
59
34
20 = 23
58
46
47
48
57
27
28
29
30
?
26
25
12
14
18
24
11
13
17
09
10
08
04

Appendix F :
Environmental Analysis
by J. Rackham

Bourne Road, Spalding - BRS98

Environmental Archaeology Report

Introduction

A series of eight samples were taken from natural sediments, an enclosure ditch and its terminals and a large ditch on a late Iron Age/early Roman saltern to the west of Spalding (Table 1).

Table 1: List of samples from Bourne Road, Spalding

sample	context	vol. in lt	feature	location
1	49	20	massive ditch 23	fill - eastern ditch
2	46	16	enclosure terminal 57	fill - southern terminal
3	37	2 tubs	enclosure terminal 33	fill - northern terminal
4	25	20	enclosure ditch 24	fill, western section
5	37	19	enclosure terminal 33	fill - northern terminal
6	04	1 tub	natural, laminated sandy silts	middle of enclosure
7	04	1 tub	natural, laminated sandy silts	between terminals 33 and 34
8	04	1 tub	natural, laminated sandy silts	extreme south of the site

Sample 1 was taken from the upper fill of the large ditch east of the enclosure entrance (Fig. 1). Sample 2 was a dark red-brown silt with charcoal taken from the lower fill of the southern terminal, 57. Samples 3 and 5 derive from context 37, a mid grey brown silt with charcoal forming the upper fill of the northern terminal 33. Sample 4, context 25, was taken from a charcoal rich fill of the western arm of the enclosure ditch which also contained large quantities of pottery and briquetage. Samples (6-8) from context 04 sample the natural laminated sandy silts that underlie the whole site and represent the tidal sediments laid down probably during the 1st millennium BC.

Methods

Sub-samples of approximately 0.5 litres were taken from samples 1, 2 and 4-8 for foraminiferal analysis (see below). Samples 1, 2, 4 and 5 were processed for environmental evidence and finds.

The bulk soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet-sieve of 1mm mesh for the residue. Both residue and float were dried, and the residues subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flots was measured, and the volume and weight of the residue recorded. A total of 75 litres of soil was processed in this way.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The float of each sample was studied under a low power binocular microscope. The presence of environmental finds (ie snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The float was

then bagged. The float and finds from the sorted residue constitute the material archive of the samples.

The individual components of the samples were then identified and the results are summarised below in Tables 2 - 5.

Results

The archaeological finds were dominated by briquetage (see Cowgill 1998) with contexts 25 and 46 being particularly rich. Approximately 33% by volume of the sample from context 46, and 10% of that from context 25 was briquetage, much of it composed of small fragments. In contrast there was appreciably less briquetage in the northern terminal, context 37, and the large ditch in front of the enclosure entrance. This difference in density of briquetage may reflect the fact that the latter two samples derive from the upper fills of their respective features. Fuel ash slag, presumably from the fires associated with the salt making and domestic activity, occurs in all the processed samples and was particularly abundant in context 46.

Table 2: Finds evidence from the samples

Context	sample	vol in lt	residue vol. lt	brique-tage *	pot wt.g.	coal #	slag wt g.	bone wt g.	comments
25	4	20	2.25	+++++	1	+	9	4	50-60% of residue briquetage; fuel ash slag
37	5	19	0.5	+++	11	+	1	6	50% of residue briquetage; fuel ash slag
37	3	-							not processed
46	2	16	5.5	+++++	2	+		3	residue almost entirely briquetage; fuel ash slag
49	1	20	0.95	+++	60		1	115	80% of residue briquetage; fuel ash slag

* frequency of items: +=1-10; ++= 11-50; +++=51-150; ++++=151-250; +++++=>250
# + - present but not quantified

Pottery and bone is more abundant in the contexts with less briquetage, 49 and 37. The bone includes fragments of cattle and sheep, but also eel and other edible fish. Surprisingly no marine shell was recovered.

Charcoal, much of it small twiggy fragments, is present in all the samples, and charred cereal grain, including wheat and barley, is present in all. The charred remains appear to include many charred plant stem fragments and grass seeds, and these are particularly abundant in context 46. No chaff was observed in any of the samples (see below).

The small mammal fauna indicates something of the contemporary environment with short tailed vole (*Microtus agrestis*), water vole (*Arvicola terrestris*), wood mouse (*Apodemus sylvaticus*), harvest mouse (*Micromys minutus*) and frog or toad present. House mouse (*Mus musculus*) occurs in context 46 and suggests that there were domestic buildings on the site. Stickleback (*Gasterosteus aculeatus*) spines are present in context 37. This species is commonly found in fresh and brackish water environments.

Table 3: Environmental evidence from the samples

context	sample	residue vol. lt	flot vol	char-coal *	char'd grain *	char'd seed #	snail #	comments
25	4	2.25	10	2	1	4/3	2/1	frog/toad, water vole, field vole, wood mouse, harvest mouse; burnt bone; charcoal non-woody plant stems and wood approx. 50:50
37	5	0.5	1	2	2	2/2	2/1	eel, stickleback, water vole, frog/toad; burnt bone; mainly wood charcoal
46	2	5.5	26	2	1	4/3	2/1	vole, house mouse; mineralised wood, lots concretions; charcoal mainly non-woody plant stems
49	1	0.95	7	3	1	3/3	2/2	cattle, sheep, field vole, water vole, frog/toad; burnt bone; mainly wood charcoal

* frequency of items: 1=1-10; 2= 11-50; 3=51-150; 4=151-250; 5=>250
# frequency/diversity; the latter recorded as follows: 1=1-3; 2=4-10; 3=11-25; 4=26-50 taxa.

The molluscs identified from the samples (Table 4) suggest a freshwater habitat, but *Hydrobia ulvae* a species characteristic of estuarine and saltmarsh environments occurred in the briquetage rich sample, context 46, and these and many other fragments, probably of *H. ulvae,* were burnt. These shells may have been introduced with the salt laden material or collected with material used as fuel. The large ditch to the east of the enclosure has a freshwater/marsh assemblage but no indication of marine influence, and a similar although depleted fauna is present in terminal 33 and the western part of the enclosure ditch.

Table 4: Molluscs species in each sample.

	49	46	25	37
	ditch 23	terminal 57	encl ditch 24	terminal 33
Hydrobia ulvae		9#		
*Bithynia tentaculata**	11	1	6	5
Bithynia leachii	2			
Lymnaea glabra	1			
Lymnaea truncatula	6		2	2
Planorbis leucostoma	2	2		2
Planorbis laevis	1		1	
Succinea sp	3		1	
Succinea putris	1			
cf Catinella arenaria	1			
Vallonia sp.				1
Vallonia cf excentrica	1			
Vallonia pulchella				1
Cochlicopa lubrica			1	
Cecilioides acicula	4	1	6	4

* -opercula; #burnt shells and many shell fragments

The terrestrial molluscs are relatively uninformative although species of the genus *Vallonia* are considered typical of grassland (Evans 1972).

The Charred Plant Remains
J.A.Giorgi

Introduction
The four processed bulk samples included charred plant remains which were presented to the author for analysis. It was hoped that this material could potentially provide information on human activities at the site, including the type of fuel used to fire the salt making.

Methods of analysis
The flots from each sample were separated by size through a stack of sieves for ease of sorting. The charred plant remains (with the exception of charcoal) were sorted from the flots and a binocular microscope used for the identification of the botanical material. Modern and charred reference material and reference manuals were used for identification purposes. The plant items were quantified with the exception of stem and charcoal fragments.

Results
The results are tabulated in Table 5. All four samples contained identifiable charred plant remains, which were dominated by wild plants, in particular large numbers of small grass (Poaceae) seeds. Other charred botanical material included occasional cereal grains, stem fragments and small fragments and flecks of charcoal. The condition of the charred material was generally poor and the majority of the seeds could not be identified to species. Uncharred seeds were present in small numbers in most of the samples, with mainly high seed-producing plants of waste places and disturbed ground being represented, with seeds of goosefoots/oraches etc. (*Chenopodium/Atriplex* spp.) in all samples plus occasional seeds of small nettle (*Urtica urens*), campions (*Silene* spp.) and black nightshade (*Solanum nigrum*). These seeds are probably intrusive given the nature of the soils at the site.

The cereals: the cereals in the samples were represented by very few grains the majority of which could not be identified. Wheats (*Triticum* spp.) included a single grain of free-threshing ?bread wheat (cf.*Triticum aestivum*) and one grain of a glume wheat, either emmer (*T. dicoccum*) or spelt (*T. spelta*). Barley (*Hordeum* spp.) was represented by a small number of poorly preserved grains. This range of cereal grains is not unusual for the time span of the site (Greig 1991).

The wild plants: most of the seeds in the samples represented wild plants, with the greater part of each charred assemblage dominated by a large number of small grass seeds (Poaceae indet.). The majority of these grass seeds, however, were poorly preserved and fragmentary and could not be identified further; the better preserved and complete specimens were virtually all between 1mm and 2mm in length. A comparison with modern reference material suggests that the better preserved of the small grass seeds were probably from meadow grasses (*Poa* spp.) of which there are 16 species (including several introductions) listed in Stace (1991) and 15 species in Clapham *et al* (1987) found in the British Isles. These grow in a wide range of habitats which include wetland and coastal areas similar to the environment around the site. A small number of the meadow grasses were tentatively identified as annual poa (*Poa* cf. *annua*) which is abundant throughout the British Isles in waste places, gardens, cultivated land, grassland, on mountains and by water (Clapham *et al* 1987).

Members of the Cyperceae (sedge) family were represented by the next largest number of seeds; these included sea-club rush (*Scirpus maritimus*), which is found in shallow water at the

muddy margins of tidal rivers and in ditches and ponds near the sea (Clapham *et al* 1987) and spike-rushes (*Eleocharis palustris/uniglumis*), which are also found in wetland environments, including marshes, ditches and in and by ponds. The spike rush seeds from ditch fill [49] were interesting as they were preserved as silica skeletons, a characteristic of plant material being burnt in high temperature oxidising conditions which burn out all the carbon, leaving the silica skeleton (Straker and Robinson 1991, 10). Gipsy-wort (*Lycopus europaeus*) was represented by a single seed from the fill [25] of an enclosure ditch; this plant grows on the banks of rivers and ditches, in marshes and in fens (Clapham *et al* 1987).

Charred rounded, ribbed and hollow stem fragments were found in all four samples; these probably belong to the grasses rather than the sedges as stems of Cyperaceae tend to be three angled and solid whereas those of grasses are cylindrical or flattened and mostly hollow between the nodes (Hubbard 1992, 446); some of the grass stems in ditch fill [46] were considerably larger than the other stems and may be cereal straw although it is difficult to distinguish between the straw of cereals and the stems of large wild grasses (van der Veen 1991, 353).

Table 5: The charred plant remains from Bourne Road, Spalding (BRS98)

	Feature	ditch	termina l 57	enclo-sure	termina l 33	**total**
	context	49	46	25	37	
	sample	1	2	4	5	
	Volume	20	16	20	19	
	flot vol.	26	7	10	1	
Species						
Cereal grains						
Triticum dicoccum/spelta	emmer/spelt	1				**1**
cf *T. aestivum*	?bread wheat				1	**1**
Triticum sp(p).	wheat	1			2	**3**
Hordeum sp(p).	barley	1			2	**3**
cf *Hordeum* sp(p).	?barley	1	2		2	**5**
indeterminate cereals	large grains (est.)	9			9	**18**
Other plants						
Fabaceae indet.	indet legume frags				1	**1**
Lycopus europaeus L.	gipsy-wort				1	**1**
Juncus sp.	rush (seed capsule)		1			**1**
*Eleocharis palustris/uniglumis**	spike-rush	13				**13**
Scirpus maritimus L.	sea club-rush	4	3	1	3	**11**
Carex sp(p).	sedges	1				**1**
Cyperaceae		1	6		8	**15**
Bromus sp.	bromes				1	**1**
Poa cf *annua*	?annual poa		18	9		**27**
Poa type	poa	18	102	136	5	**261**
Poaceae indet.	small seeded grasses (est)	52	339	434	24	**849**
indet.seeds		+	+	+	+	
stems	round ribbed hollow	+	+++	++	+	
charcoal		+++	+++	+++	+++	

* silica skeletons

Quantities were estimated as follows: + = 1-10; ++ = 10-100; +++ = 100+ fragments.

Discussion.
In all four samples, the predominance of wild seeds, mainly from grasses, suggests that the botanical remains represent the burnt residues of plant material, which may have been used as fuel in salt making. The seed evidence suggests that these plants were collected locally from the surrounding fenland environment, including the margins of river banks, with grasses apparently being a particularly important component of this fuel resource. It is not possible to establish whether this was a managed resource or simply the opportunistic gathering of plant material. A comparison of the species from Bourne Road with plants indicative of hay meadows (Greig 1991a) shows few similarities with the exception of the grasses and sedges which may, however, grow in a range of habitats. Little comment may be made on the small number of cereal grains; these may either represent other human activities at the site (cereal processing) or relics from previous harvests in the area collected together with the wild plants.

Foraminiferal analysis
Mike Godwin

Introduction
The preservation of microfossils in these shallowly emplaced sediments was generally poor. Large numbers of juveniles (<125 microns) and broken fragments of foraminiferal tests were present in most samples. The juveniles are not included in the data as they are too easily transported in suspension and are therefore not necessarily diagnostic of the environment of deposition.

Methods
Samples were soaked for 24 hours in a 3% solution of hydrogen peroxide then sieved over 125 and 63 micron meshes with cold water. Residues were dried at 50° C for about 20 minutes and then examined under a binocular microscope.

Results
The results are presented in Table 6.

Context 04, sample 6 — natural laminated silts, middle of enclosure
The low numbers of individuals is caused by poor preservation and the extreme nature of the environment of deposition. The planktonic individuals (*Globigerina*) have been carried in by the incoming tide. The assemblage could belong to either a roddon deposit or a high intertidal flat. The author favours the latter interpretation given the site location. Salinity could range between 10-35 per mille, with a summer minimum temperature of 20° C.

Context 04, sample 7 — natural laminated sandy silts, between terminals 33 and 34.
This assemblage is fairly typical of a high intertidal flat fauna, although low numbers of individuals were positively identifiable due to preservation problems. It includes a number of marine species which have been transported in suspension on the incoming tide, indicating direct connection to the sea. Levels of current activity were fairly high. Diurnal salinity ranges would have been fairly wide (the dominance of one species suggests extreme conditions) perhaps as much as 10-35 per mille. Summer temperatures probably exceeded 20° C, diurnal dessication of the sediment excludes many species from this environment.

Context 04, sample 8 — natural laminated sandy silts — extreme south of the site

This assemblage is very diverse, but the dominance of *Elphidium* suggests low intertidal flat conditions. Current activity would have been high with diurnal salinity ranging between 15 and 35 per mille.

Context 25, sample 4 — enclosure ditch 24, fill of western section
The preservation of the estuarine species in this sediment is extremely poor, there were many which could not be positively identified. However, the saltmarsh species (*T inflata, M. fusca*) were well preserved and probably indicative of the actual environment of deposition. The sediment contained large quantities of briquetage and eroded fragments of oyster and cockle shells, these and the estuarine foraminifera may have been imported into the ditch. The mollusc assemblage has a freshwater character and the foraminifera indicate very low salinities 0-10 per mille. Brackish water incursions may have been seasonal (spring/summer). Similar mixed assemblages have been found at other Fenland sites in the Market Deeping area. Levels of current activity would have been low and summer water temperatures may have reached 30° C.

Table 6: The Foraminifera from Bourne Road, Spalding (BRS98)

Feature		natural	natural	natural	ditch	terminal 57	enclosure	terminal 33
Context		04	04	04	49	46	25	37
Sample		6	7	8	1	2	4	5
Preservation		poor	poor		very poor	no forams	very poor	very poor
Foraminifera	**Habitat**							
Globigerina sp.	planktonic	2						
Quinqueloculina sp.	marine						2	
Sprillina vivipara	marine							1
Glabratella milletti	marine/shelf		1					
Rosalina anomala	marine/shelf		1	1				
Rosalina williamsoni	marine/shelf			1				
Asterigerinata mamilla	marine/shelf		1	1				
Elphidium excavatum	estuarine		1	3			1	
Elphidium magellanicum	estuarine			1				
Haynesina germanica	cosmopolitan	10	14	1				1
Ammonia beccarii	cosmopolitan	8	1	1	+			1
Miliammina fusca	m. saltmarsh						3	
Jadammina macrescens	m. saltmarsh			1				
Trochammina inflata	u. saltmarsh						4*	?1
Ostracoda								
Cypriodeis torosa	l. saltmarsh			2				

* well preserved; l, m, u - lower, middle, upper

Context 37, sample 5 — enclosure terminal 33 — fill of northern terminal.
This sample contains numerous juveniles of *H. germanica* and *A. beccarii*. The molluscan assemblage is entirely freshwater and includes *Planorbis*. Again this may indicate seasonal fluctuation between fresh and brackish water conditions. The environment may have been as sample 4. The presence of the juveniles indicates that tidal waters were reaching right around the enclosure on some occasions.

Context 46, sample 2 —enclosure terminal 57 — fill of southern terminal
No foraminifera were collected from this soil-like sediment. Numerous plant and wood fragments were encountered along with molluscan debris which included *Hydrobia*. Taphonomic process may have removed all the foraminiferal material. This seems likely given the nature of the sediment. The environment was probably similar originally to terminal 33.

Context 49, sample 1 — massive ditch 23 — fill eastern ditch
This contained abundant briquetage, some shell, and a few specimens of *Hydrobia ulvae* and *Ammonia beccarii*. Preservation was very poor. Some brackish water influence is indicated in the 10-25 per mille range. However as the macrofauna seems to be entirely freshwater/terrestrial this may only be indicative of an occasional marine flooding event — the foraminifera do not constitute a living assemblage and *A. beccarii* is a very common species in the Wash.

General Discussion
The dominance of marine and estuarine foraminifera, with those of more generalised habit, from the 'natural' sediments on site indicate that the site occupied a high inter-tidal mudflat or roddon from which the sea had retreated, probably sometime in the late Iron Age. The laminated sandy silts that formed the 'natural' on the site being laid down under tidal conditions.

The molluscan fauna from the enclosure ditch was largely freshwater, and although *Hydrobia ulvae* an estuarine and salt marsh species, was common in one of the terminals (57) these were all burnt, and therefore probably introduced, and may not reflect the actual environment within the ditch. The foraminifera indicate very low salinities and brackish water incursions into the ditch may have been seasonal with tidal waters reaching around the whole enclosure ditch on some occasions.

In contrast to this picture the large ditch immediately east of the enclosure entrance is dominated by a mollusc fauna characteristic of freshwater ditches and marshes. The sample from this feature produced only identifiable examples of the cosmopolitan foraminifera *Ammonia beccarii* and although this species could have been introduced by occasional marine flooding the poor preservation might indicate material reworked from the deposits through which the ditch is cut. Neither this large ditch nor the enclosure ditch appear likely to be connected with the functioning of the saltern since salinity levels are not high and there is a strong freshwater marsh element in the snail fauna.

The highest density of briquetage is associated with the southern terminal of the enclosure ditch, 57, while the section through the western side of the ditch also produced a relatively high density. In the northern terminal 33, although briquetage comprised most of the residue it formed only a small proportion of the whole sample, a similar picture to the fill, 49, of the eastern ditch 20. These latter two samples appear to include a larger input of domestic rubbish, such as bone, pottery and charred cereal remains, with 49 producing appreciably higher densities of bone and pottery than the other samples. The two briquetage rich samples are also those that produced the greatest quantitiy of charred grass seeds, which suggests that these may be directly related to the salt making process, possibly as kindling fuel or even incorporated in the fen peats. The charcoal from contexts 49 and 37 largely comprised wood charcoal, while that from the briquetage rich samples was dominated by small non-woody

plant stems. This might possibly reflect different fuel sources, wood being used for domestic fires while the salt making process utilises a different fuel, possibly turves or peat.

The cereals, animal bone and pottery indicates that there was definitely some domestic occupation at the site. Wheat and barley were eaten, although due to the absence of chaff this may not have been grown nearby. Cattle and sheep are the only domestic food species identified, and the relative absence of fish and shellfish would appear to indicate little exploitation of marine resources other than salt, while the eel vertebrae probably derive from fish caught seasonally in the freshwater creeks and ditches.

There are indications that the area surrounding the site was a grassland of sedges and grasses. Harvest mouse is a very rare archaeological find and it is a clear indicator of long grasses or reeds near the site. The local area may have been seasonally flooded and within the reach of the highest spring tides during the period of occupation.

Acknowledgements
We should like to thank Alison Foster who processed and sorted the bulk samples.

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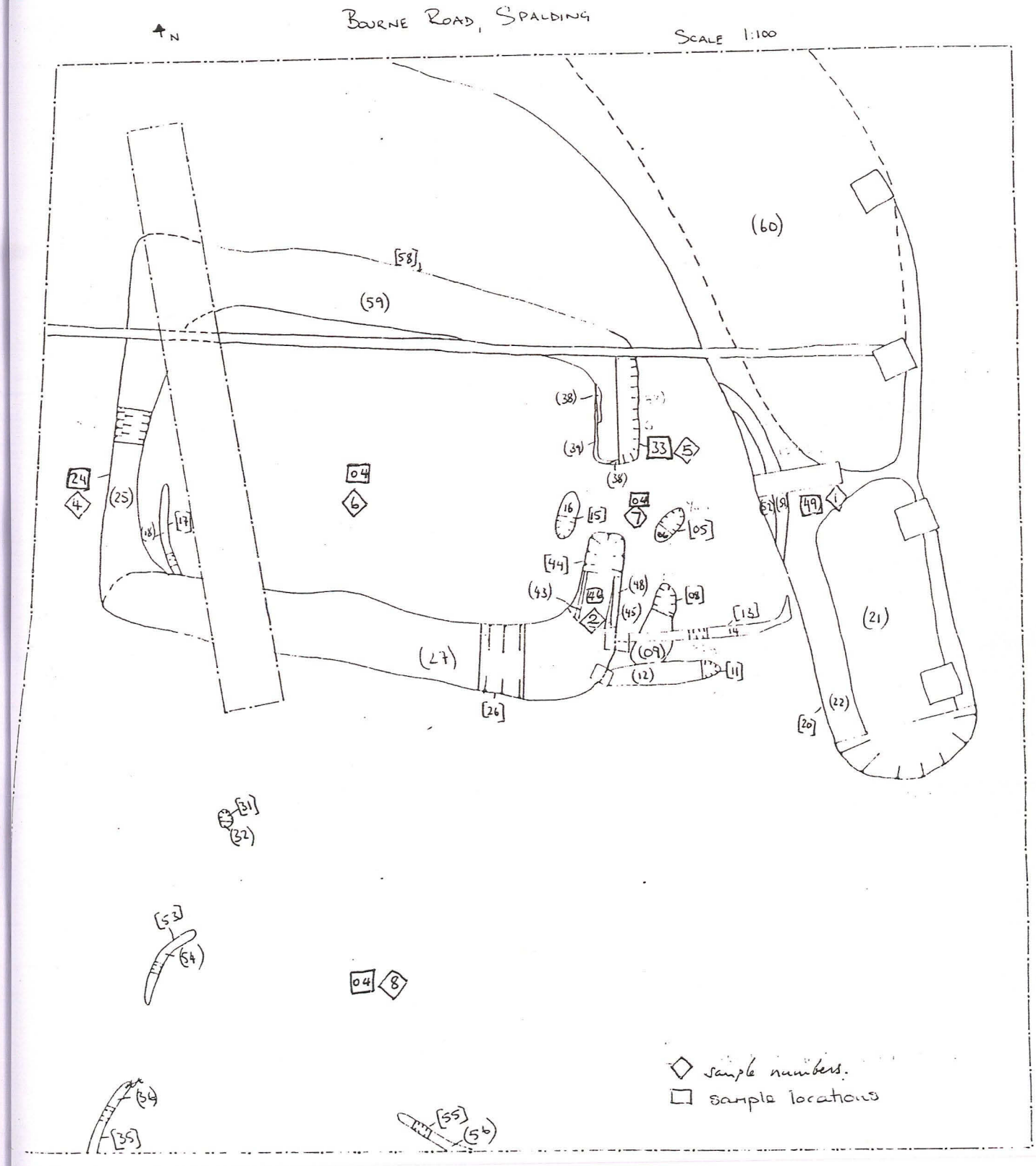
Figure. 1.


BOURNE ROAD, SPALDING
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sample locations

Appendix G : Specification

Summary

Planning permission has been granted for development of land south of Bourne Road, Spalding, Lincs with an archaeological condition. Following discussion with the County Archaeological Officer it has been agreed that this would be best fulfilled by the archaeological excavation of a specific area. Comprising about 900 sq m, it was where late Iron Age and Roman gullies and pit founds were found in earlier trial excavations.

The specification describes the methodology to be adopted and provides details about timetable, personnel, insurance and health and safety.

1.0 Introduction

1.1 Site Location and Description

1.1.1 The site is situated about 2km west of Spalding town centre at NGR TF 231 219. To the north it is bounded by Bourne Road and to the south and east Horseshow Road. It comprises approximately 4.3ha and most recently has been used as a garden nursery. The soil is calcareous alluvium overlying marine alluvium and is flat land at about 3.5m OD.

1.2 Planning and Project Background

1.2.1 Following an application in December 1996 for renewal of outline planning permission, the local planning authority requested that an archaeological evaluation should be undertaken. This was done by Archaeological Project Services who identified in their report (APS 39/97) an area of small gullies and pits of late Iron Age and Roman date.

1.2.2 Planning permission was granted with an archaeological condition :

"Arrangements shall be made for an archaeologist recognised by the Local Planning Authority to monitor all stages of the development involving ground disturbance in accordance with a scheme to be submitted to and approved in writing by that authority before development is commenced. A report of the archaeologist's findings shall be submitted to the Local Planning Authority within one month of the last day of the watching brief and shall include arrangements for the conservation of artefacts removed from the site.

Reason : The site is of archaeological interest."

Condition No. 9

1.2.3 The condition would seem to require an archaeological watching brief over the whole site. However, after discussions with the County Archaeological Officer, it was agreed that it would be more appropriate to concentrate on the area of archaeological interest already identified by APS (see Figure 2).

1.3 Archaeological and Historical Background

1.3.1 An assessment of the site by APS (Report No 26/97) and subsequent evaluation (Report No. 39/97) have described and analysed existing recorded information and the results of trial excavations.

1.3.2 In summary, the evidence consisted of cropmarks of buried archaeological features in the general vicinity and an area of small gullies and pits of late Iron Age and Roman date found in trial excavations.

1.4 Excavation Objectives

1.4.1 The purpose of the excavation will be to preserve by record any archaeological remains which might exist. The aims will be to establish the function and phasing of activities which have taken place on the site and to place them within their local and regional contexts.

1.5 This specification conforms to the requirements of *Planning Policy Guidance: Archaeology and Planning* (DoE 1990) (PPG16). It has been designed in accordance with current best archaeological practice and the appropriate national standards and guidelines including :

Management of Archaeological Projects (English Heritage, 1991);

Model Briefs and Specifications for Archaeological Assessments and Field Evaluations (Association of County Archaeological Officers, 1994);

Code of Conduct (Institute of Field Archaeologists, 1994);

Standard and Guidance for Archaeological Excavations (Institute of Field Archaeologists, 1994); and

Standard Brief for Archaeological Projects in Lincolnshire (Lincolnshire County Council 1997).

2.0 Methodology

2.1 Excavation

2.1.1 It is proposed that a total of about 900 sq m should be excavated in the form of an open area excavation (see Figure 2).

2.1.2 Topsoil and overburden will be removed by a JCB or similar machine under continual archaeological supervision. The spoil generated during the evaluation will be mounded around the edges of the area with topsoil being kept separate from the other excavated material. A toothless ditching bucket will be used and mechanical excavation will cease at either undisturbed natural deposits or when archaeological features are identified. The nature of these deposits will be assessed by hand excavation. Excavation of archaeological features exposed will be undertaken as far as is required to determine their date, sequence, density and nature.

2.1.3 The exposed area will be cleaned by hand and discrete archaeological features (e.g. pits) that are identified for excavation will be assessed by half- or quarter-sectioning. Where linear features are encountered, sufficient will be excavated to determine their nature, profile and, where possible, their date and function.

2.1.4 The exposed area will be recorded at an appropriate scale by measured drawing and photography and the deposits encountered described fully on pro-forma individual context recording sheets. The sections of excavated archaeological features will also be recorded by measured drawing at an appropriate scale (normally 1:20). The recording system is based on the Museum of London's '*Archaeological Site Manual*' (1994). Spot heights and those of individual features will be recorded relative to Ordnance Datum.

2.1.5 The photographic record will be maintained during the course of the excavation and will include:

i. the site prior to commencement of fieldwork;
ii. site during work, showing specific stages of fieldwork;
iii. the layout of archaeological features within each trench;
iv. individual features and, where appropriate, their sections;
v. groups of features where their relationship is important;

2.1.6 All artefacts will be treated in accordance with UKIC guidelines, *'First Aid for Finds'* (1981). All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis.

2.1.7 Any material considered suitable for environmental analysis will be sampled for examination by either Mr. James Rackham or Mr. Robert Alvey who will be available for advice on site. The following strategy is proposed :

i. Any securely dated deposits containing the following will be sampled at a minimum of 20 litres where possible.
- charred plant remains;
- large quantities of molluscs;
- large quantities of bone;
- hearths and other burnt features;
- other domestic features, e.g. house gullies, potentially containing the above .

ii. Charred plant samples will be wet sieved with flotation using a 0.5mm mesh. All residues will be checked.

iii. Should waterlogged deposits be encountered further consultation with one of the above named specialists will determine methods for recovery.

2.1.8 Any human remains encountered will be cleaned with minimal disturbance, recorded and left *in situ* and only removed if necessary. The contractor will comply with all statutory consents and licences under the Disused Burial Grounds (Amendment) Act, 1981 or other Burial Acts regarding the exhumation and interment of human remains. The archaeological contractor will comply with all reasonable requests of interested parties as to the method of removal, reinterment or disposal of the remains or associated items. Every effort will be made, at all times, not to cause offence to any interested parties.

2.1.9 The County Archaeological Officer will be given notice of when work is due to commence and will be free to visit the site by prior arrangement with the project director. Should any significant remains be found it may be necessary, in liaison with the County Archaeological Officer, to formulate a strategy designed to fully establish their character, distribution, extent, condition, dating and further treatment.

2.1.10 Archaeological staff will respect Health and Safety provisions and site specific safety regulations (see section 4.0).

2.1.11 The material excavated from the trenches will be used to backfill them following the completion of work.

2.2 Post-excavation

2.2.1 Post excavation work will comprise the following:

i. checking of drawn and written records during and on completion of fieldwork;
ii. production of a stratigraphic matrix of the archaeological deposits and features present on the site, if appropriate;
iii. cataloguing of photographic material and labelling of slides which will be mounted on appropriate hangers;

iv. cleaning, marking, bagging and labelling of finds according to the individual deposits from which they were recovered. Any finds requiring specialist treatment and conservation will be sent to the Conservation Laboratory at the City and County Museum, Lincoln. Finds will be identified and dated by appropriate specialists;

2.2.2 A report detailing the finds of the evaluation will be prepared within three months of the completion of site works and will consist of:

i. a title page detailing site address, site code and accession number, NGR, author/originating body, clients name and address;
ii. full contents listing;
iii. a non-technical summary of the findings of the evaluation;
iv. a description of the archaeological background with reference to the desk-top assessment and previous fieldwork;
v. a description of the topography and geology of the evaluation area;
vi. a description of the methodologies used during the evaluation;
vii. a description of the findings of the evaluation;
viii. plans of each of the trenches showing the archaeological features exposed;
ix. sections of the excavated archaeological features;
x. interpretation of the archaeological features exposed and their context within the surrounding landscape;
xi. specialist reports on the artefactual/environmental remains from the site;
xii. appropriate photographs of specific archaeological features;
xiii. a consideration of the importance of the archaeological remains present on the site in local, regional and national terms
xiv. a list of contexts.

2.2.3 Copies of the evaluation report will be sent to Broadgate Builders (Spalding) Ltd, the Local Planning Authority, the Lincolnshire County Archaeological Officer and Lincolnshire SMR.

2.2.4 The project archive will be prepared according to the recommendations in *Guidelines for the Preparation of Excavation Archives for long term storage* (UKIC 1990), *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission 1992). This excludes items of gold and silver which by law must be reported to Her Majesty's Coroner. An archive list will be sent to the County Archaeological Office for subsequent inclusion in the SMR. The archive will be deposited with the City and County Museum, Lincoln under accession number (applied for), within 6 months of the completion of field work.

2.2.5 Notes or articles describing the results of the evaluation will be submitted for publication to Lincolnshire History and Archaeology and/or national journals, dependant on the nature of the results. A copy of any such works will be sent to the County Archaeological Officer and to the County SMR.

3.0 Timetable and Personnel

3.1 The excavation is expected to take up to 20 working days with 4 staff. An interim report or assessment will produced within four weeks of the completion of field work.

3.2 John Samuels BA, PhD, FSA, MIFA will direct the excavation, with daily supervision by Aleck Russell. Additional members of JSAC staff will be brought in as required. CVs will be provided on request.

3.3 Specialist assistance, where required, will be provided by the following persons :

Robert Alvey - Small finds / environmental sampling / post-medieval pottery
John Carney - Geological analysis
Jane Cowgill - Slag
Sheila Elsdon - Prehistoric pottery
James Rackham - Environmental analysis
John Samuels - Roman pottery
Robert White - Conservation
Jane Young - Medieval pottery

4.0 Insurance

4.1 The archaeological contractor will produce evidence of Public Liability Insurance to the minimum value of £5 m and Professional Indemnity Insurance to the minimum of £2m.