M1/08

PRE-CONSTRUCT ARCHAEOLOGY

LINCOLN

ARCHAEOLOGICAL EVALUATION REPORT: LAND WEST OF ERMINE STREET, CHAPEL HEATH, NAVENBY

Site Code:	ESNA01
NGR:	499300 357300
Planning Ref.	N/A
Accession No.	2001.66

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EVENT LI 1995
SOURCES LI 6714 LI 6715
PRN 61718 LI 81668
61719 LI 81669
61721 LI 81672
63247 LI 86358
60537 LI 60537
61724 LI 81675

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17. APR 01

Report prepared for Ploughsound Ltd.
by Mark Allen and Colin Palmer-Brown

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Summary

- *A trial excavation was undertaken on behalf of Ploughsand Ltd. to determine the archaeological potential of land on the west side of Ermine Street at Navenby in Lincolnshire. This work was undertaken to advise a proposed access construction and extensions to an existing residential development.*

- *Based on the findings of a preceding geophysical survey, ten evaluation trenches were investigated. These trenches have confirmed the presence of well preserved Romano-British stone structures adjacent to Ermine Street and a minor road extending westwards from it. Close to the junction of Ermine Street and the road extending westwards, an unusual polygonal structure was identified, which probably pre-dates the construction of the sub-road. The morphology of this structure suggests that it was not of domestic origin, and it could even represent the remains of a temple or shrine.*

- *To the west of the primary building remains, which appear to occur within 60m or less of the Ermine Street frontage, several inhumation burials were identified over a relatively wide area, and the grave goods associated with these remains confirm their Romano-British date.*

- *Earlier activity at the site is represented by low numbers of worked flints*

- *In terms of advising a strategy for the proposed new access road, there are no clearly definable archaeologically sterile areas in the vicinity of Ermine Street: however, the north side of Trench 1 did not contain any dense stone building remains, and this area is a potential candidate.*

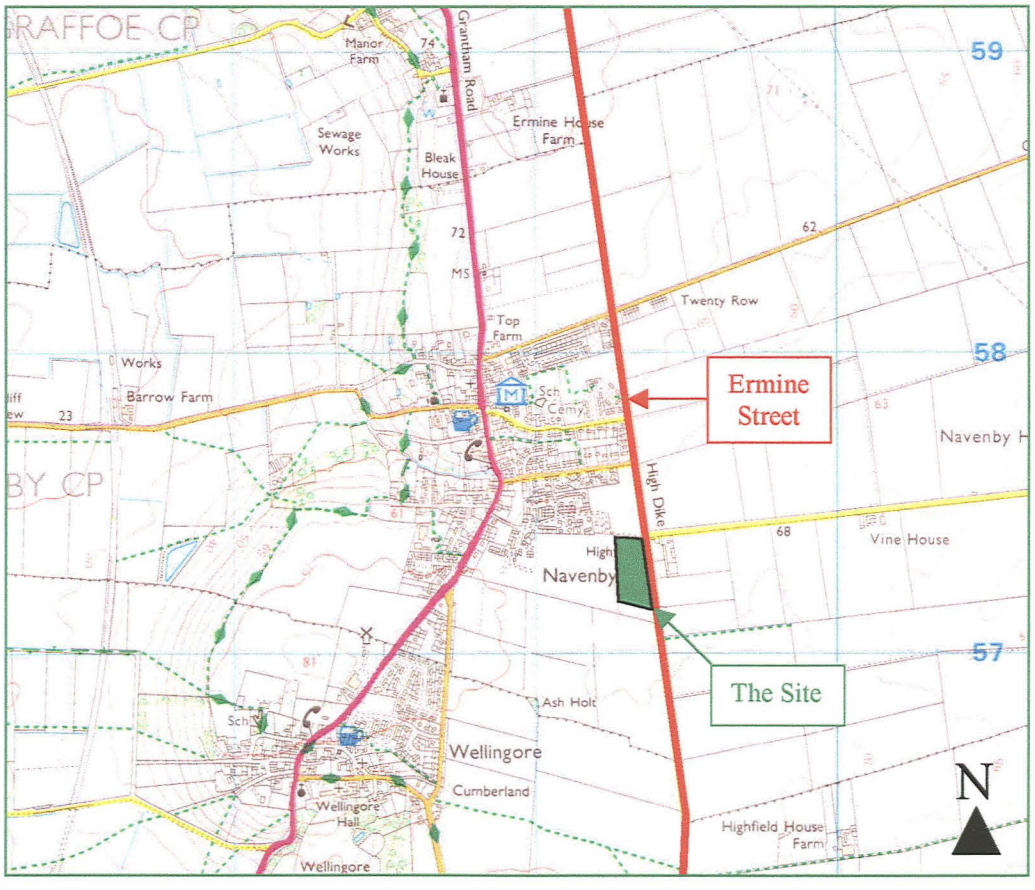

Figure 1: Site location at scale 1:25,000

1.0 Introduction

Ploughsound Ltd. Commissioned Pre-Construct Archaeology (Lincoln) to undertake a programme of trial excavation, recording and reporting in advance of a possible access construction that will link an existing residential development centred on Grantham Road with Ermine Street to the east. The purpose of the evaluation was also to establish the nature of the archaeological resource within a 4 hectare unit that is currently grassed and has been utilized in recent times for agricultural purposes. The commissioning client may submit an application for residential development at some future time, although the evaluation was undertaken on a pre-application basis.

2.0 Location and description

Navenby is in the administrative district of North Kesteven. It occupies high ground on the west side of the Jurassic Edge, and lies between Boothby Graffoe to the north and Wellingore to the south.

The site that is the subject of this report is situated on the immediate west side of Ermine Street, approximately 230m to the south of Chapel Lane, and opposite a building complex that is known as Highfields. The ground surface is predominantly level, and its elevation above mean sea level is approximately 68m OD.

To the west of the Oolitic limestone ridge (west of the post-Roman settlement), the land drops dramatically to approximately 20m OD, where it approaches the floodplain of the River Witham. The river itself is approximately 7.5km west of the village, with the closest major natural water source being the River Brant; a tributary of the Witham, approximately 4.5km west of Navenby. There are less significant sources of water that follow the spring line along the edge of the limestone scarp.

3.0 Planning background

The evaluation was undertaken to establish the archaeological potential of the site in advance of any formal planning application. Ploughsoud Ltd. may, at some future date, submit this report in support of an application for planning permission to develop some areas of the site.

4.0 Archaeological and historical background

Despite the discovery in the 1960s, of a roadside settlement or small town bracketing Ermine Street at Navenby, no serious attempt has been made to quantify the resource or place it in context. Instead, researchers have concentrated upon the strategic and military significance that this place may have held in the mid-C1st AD (an extrapolation based upon its location on Ermine Street mid-way between Lincoln (*Lindum*) and Ancaster).

Although Whitwell (1982) and Jones (1980) may be correct when they identify Navenby as a site of Roman military importance during the Roman Conquest of eastern England, recent development-led investigations can neither support nor refute this supposition. However, results do suggest that, by the C1st AD, the area was an established focus of settlement. Consequently, it is necessary to consider how the Romans adopted or adapted the pre-existing social geography. At Navenby this question can also be directed at each preceding social

formation, at least as far back as the early Neolithic. The material assemblages representing successive cultures demonstrate that this area had a significance that resonated through millennia.

Since 1994, a number of investigations have taken place at Navenby: predominantly in a small area defined by Ermine Street, Grantham Road, and Chapel Lane. These projects were all development-led, and most have been funded by Ploughsound Ltd. in advance of / during development. The results of these investigations are summarized below.

- Approximately 3.7 hectares of land on the west side of Ermine Street, immediately south of Chapel Lane, was surveyed by gradiometry in 1994, and trial excavations showed that Romano-British stone buildings lined the frontage in the C3rd/C4th AD (Palmer-Brown, 1994). The remains were well stratified, and sealed earlier phases of archaeology that were summarily investigated. An extremely well preserved native-type settlement enclosure (incorporating several circular buildings) was identified by geophysics and investigated by trial excavation. Other (e.g. elliptical) enclosures were not investigated due to the survival of well preserved remains above them. The Romano-British occupation at the site appeared to have continued until the later C4th or early C5th AD, after which, there appears to be spatial discontinuity, the settlement shifting westwards, closer to the limestone edge.

- A watching brief on the north part of the above site identified a localised and unusual cemetery / ceremonial site containing **a)** Bronze Age cremation burials **b)** undated cremation burials **c)** a stone-capped pit containing a butchered horse and high status scored pottery **d)** Romano-British cremation burials **e)** Anglo-Saxon inhumation burials with grave goods (Palmer-Brown & Albone 1999).

- A watching brief some 350m west of Ermine Street identified a small group of pits containing charred plant remains, fire-shattered pebbles and post-Deverel-Rimbury pottery sherds, suggesting occupation of the area in the very Late Bronze Age/Early Iron Age (Palmer-Brown, 1995). Similar pits were found in low numbers in 1999 when approximately 3.0 hectares of land, falling between the above and the current site, was investigated in advance of development (Palmer-Brown & Rylatt 1999). Excluding these pits, however, most of the site was archaeologically sterile, with most of the activity associated with later periods occurring further to the east, closer to Ermine Street.

The extent of the Roman roadside settlement has never been established, although current evidence suggests that its northern limit does not extend more than 200m north of Chapel Lane. A fluxgate gradiometer survey of 2.14 hectares to the north of Centurion Close did not identify anomalies of potential archaeological significance (Bunn & Hardwick 2000), and subsequent trial excavations exposed no evidence of the stone buildings that occur to the south (J Hockley, pers. com.).

The archaeology on the east side of Ermine Street remains relatively unexplored, although unquantified surface scatters of pottery, building debris and other remains strongly suggests a high level of activity that is probably comparable to what we know of the west frontage in the Chapel Lane area. Altogether, Navenby has not received a great deal of academic attention in comparison with, for example, the less well preserved small town at Sapperton, and a discussion of this site was notably absent in a recently published Oxbow monograph (Brown 1995).

The site that is the subject of this report was surveyed by gradiometry in 1996, and a

restricted area (a zone extending 60m west of Ermine Street) was surveyed using a resistance meter (Lyall 1996). Both surveys showed a high level of activity to the west of Ermine Street, with a progressive reduction in the density of anomalies towards the west. The majority of localised anomalies appeared to respect the alignment of a composite of substantial linear anomalies that were orientated north-south, 35m – 75m west of the frontage (these have not been resolved, but are represented by the diffuse light bands seen in fig. 2, extending northwards to the east of Trenches 8 and 10, between Trenches 3 and 2, and west of Trench 5).

The gradiometer and resistance surveys confirmed the continuation of the ribbon development that was sampled in 1994. As noted above, this appeared to be restricted to the eastern side of the diffuse anomalies referred to above. To the west of this, some of the linear anomalies continued, including a possible road or track. However, most of the western part of the survey was characterized by anomalies that were believed to be of a geological origin (eg ice wedges).

In summary, the resistance and gradiometer surveys suggested that the greatest archaeological potential was associated with the eastern part of the site: west of Ermine Street, and east of the diffuse linear anomalies that can be seen in fig. 2.

5.0 Methodology

A final phase of evaluation has involved the excavation of ten trial trenches as indicated on fig. 2. This scheme was described in a formal project specification in advance of works. The only variation was Trench 1, which was extended from 30m to 40m to assess the viability of constructing a new road that would link an existing residential development to the west of the current site with Ermine Street.

Trenches 1 to 4 were investigated to assess the viability of access construction; the objective being to attempt to define a zone that was relatively clear of building remains. Each trench was positioned to intercept gradiometer anomaly P3/F7; interpreted as a possible road or track (Lyall 1996), and the viability of constructing a modern access over the top of an ancient access was a consideration.

Trench 5 was positioned to investigate magnetic anomalies towards the rear of the frontage complex. Trench 6 was examined to investigate two extensive east-west anomalies that were detected by the gradiometer survey, and Trench 7 was sited to investigate a group of localised anomalies towards the south-west of the survey. Trench 8 was randomly positioned to assess archaeological potential on the immediate west side of a hypothetical 60m buffer zone, as well as a small group of pit-like anomalies (there are no current plans to develop the site to the east of this line, excluding the proposed access that will link existing developments with Ermine Street). Trench 9 was also located at random; to examine the south-west corner of the proposed development area. Finally, Trench 10 was positioned to intercept aspects relating to a group of small, localised anomalies (possible pits).

For each of the ten areas investigated, a JCB fitted with a wide toothless blade was used to remove all topsoil and subsoil deposits, to expose natural and/or archaeological horizons. All further excavation was by hand. The investigation was

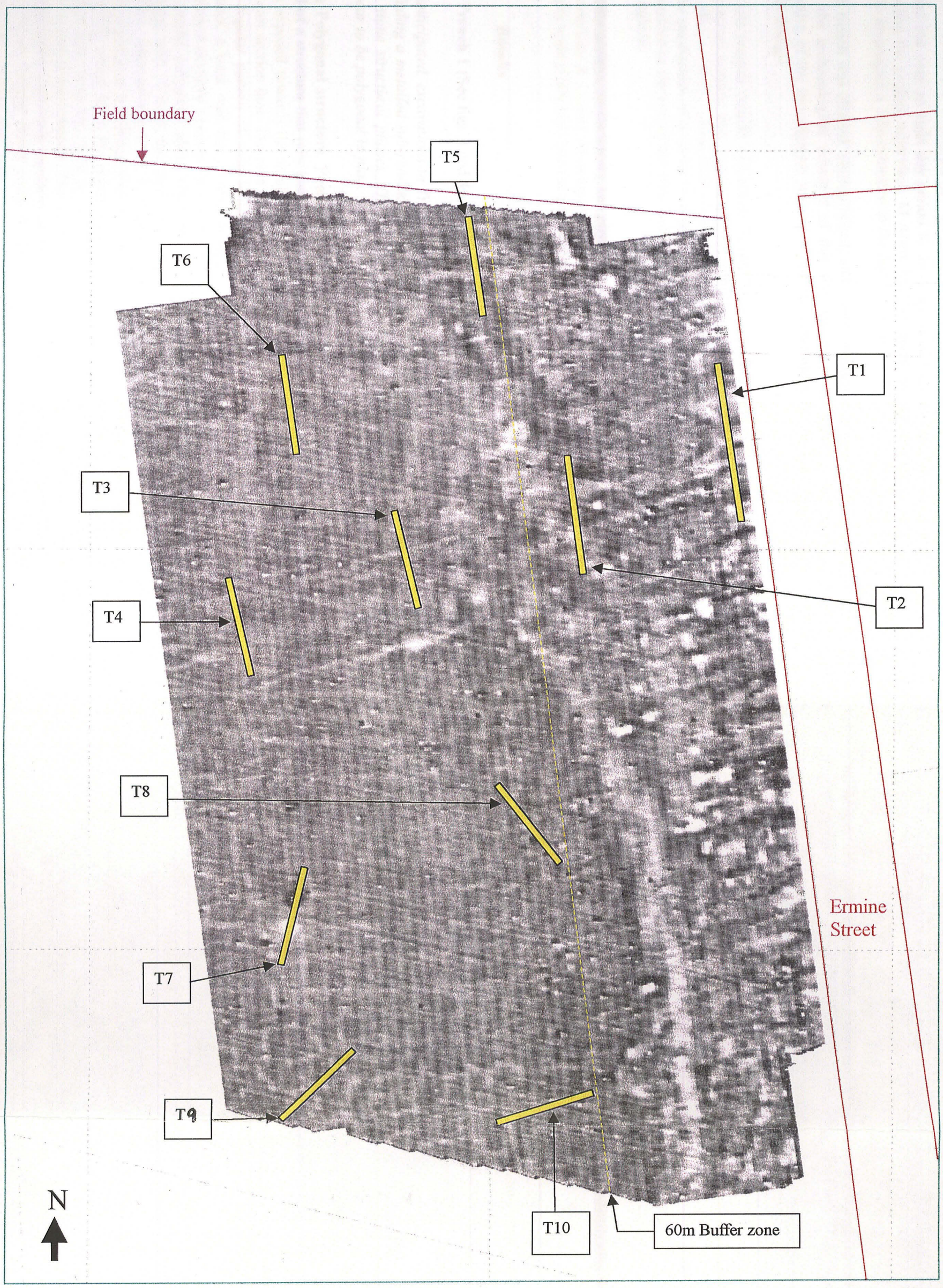

Figure 2: Location of Trenches at scale 1:1000
Superimposed over geophysical survey results

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carried out over an eight day period by an experienced team of eight archaeologists, including the project supervisor, M Allen. M Allen spent an additional three days on site to investigate a 10m extension to the north of Trench 1. 27-29 Mar 2001.

Each trench was cleaned, photographed, and sample excavated as appropriate. Given that the archaeological potential of this site was never in question, the primary objective of the investigation was to record the archaeology by the least destructive methodology.

The site records consist of Context Record Sheets, scale drawings and photographs. Artefactual remains that were recovered from the site were washed and processed at the offices of PCA. These finds were then submitted to a range of specialists, resulting in the production of a series of reports. These reports are available as independent appendices at the end of this text, and their main conclusions are considered in context throughout.

The site archive (documentary and physical) is in preparation, and will be submitted to Lincoln City & County Museum within 6 months. Access may be granted by quoting the site code (ESNA01) and the global accession number (2001.66).

6.0 Results

6.1 Trench 1 (See figs. 3 and 4)

As anticipated, excavations in Trench 1 exposed a dense range of structural features, including a metalled sub-road extending westwards from Ermine Street, and at least two stone structural phases. The earlier of these relates to a building that would appear to be polygonal in plan.

The Polygonal structure. Potentially, the earliest building phase relates to the west wall of a structure that only just fell within the excavated area. This wall, context 115, was exposed towards the south side of the trench, where it featured longitudinally in the east section face. The plan of this wall is interesting in that it does not conform to the regular pattern of strip buildings that were a feature of the 1994 evaluation. Instead, a west wall face, 5.40m in length was exposed. At each end of this, the alignment deviated towards the east by between 35 degrees and 41 degrees, suggesting an overall polygonal plan. When projected, the 35 degree angle would present a building with 10 sides, the maximum plan dimension of which would be in the region of 17m. Alternatively, if the 41 degree angle is projected, this does not translate to a regular polygon: a building with 9 sides is a possibility, the maximum plan dimension of which would be in the region of 15m. This situation cannot be resolved without further data; however, there is every indication that the remains constitute part of a Roman polygonal structure. This structure possibly measured between 15m and 17m in diameter/plan (assuming regularity of all sides), and this suggests that the west edge of the Roman Ermine Street could lie 15 – 17m to the east of Trench 1: this is a possibility, and one that agrees with earlier suggestions that the medieval High Dike was both narrower and on a slightly altered alignment to its Roman precursor, Ermine Street.

No direct evidence from which to date this structure was recovered during the investigation. An examination of its construction levels was not practical or ethical, given the destructive nature of such exercises. The wall was beneath a mixture of soil and limestone fragments, 108, probably representing both demolition and robbing of the building. This material incorporated 87 pottery shards, suggesting demolition possibly in the middle to late 3rd century (see Appendix 2). A 4th century coin from this context is probably intrusive.

Later structure and road. Following demolition/dismantling of the above, it would appear that a sub-road extending westwards of Ermine Street was constructed. This road was flanked by two stone walls (in Trench 1 only), and the northern wall was built directly over the truncated remains of the polygonal building.

This northern wall, 111 was (more conventionally) orientated east-west. It was approximately 1.5m wide, and it survived to just one course.

A wall, parallel with the above, and almost certainly related, was exposed approximately 7.5m farther to the south, 112. At 1.3m, this foundation was slightly narrower than 111, although its construction was identical: roughly cut external blocks, mixed rubble core bonded with dirty yellow clay. Two courses of stonework survived.

Filling the gap between these walls was a succession of at least three, extremely well preserved, road surfaces, 113 – 149 (reflecting linear anomaly P3/F7 in the gradiometer survey). Only the uppermost of these was examined in detail; the others being visible within depressions that were created in antiquity. This uppermost surface was made of large (almost clumsy) and medium sized quartzite boulders, creating an uneven surface that possessed a slight camber (not present in fig. 4 main section).

Beneath 113, two earlier surfaces were exposed in restricted areas. Both of these, 148 and 149, appeared to be of an entirely different construction: they were made from small rounded limestone fragments and occasional quartzite pebbles, and one can only surmise that these surfaces, overall, were much smoother than 113. 113 itself could even represent a sub-Roman or post-Roman attempt to continue the alignment, although there is no dating evidence to support this hypothesis. It was beneath a relatively stone-free deposit of grey-brown sandy silt, 110, that contained five pottery sherds of 3rd century date.

On the immediate south side of wall 112 was a parallel ditch-like feature, 119. This was approximately 2m wide, and its south side was steep. The feature was summarily investigated, involving the removal of c. 20cm of fill; 122, 123, and 124. These contexts contained pottery dating between mid/late 3rd century and the 4th century, and the uppermost deposit that both filled and sealed the feature, 122 contained only middle to late 4th century pottery (x46 sherds). It has been suggested that this feature was a roadside ditch, and this is a possibility. However, it proximity to (and presumed contemporaneity with) wall 112 may raise some doubts. It is perhaps of some interest that the upper fill of the north side of the presumed ditch contained quantities of stone

that may have fallen from wall 112: also, 112 itself showed slight traces of subsidence towards the ditch void.

North side of trench. No discrete structures (ie buildings) were defined to the north of wall 115, although several features of structural form were defined, beyond what may have been some kind of yard surface that existed to the north and west of the polygonal building, 116/117. This was an intermittent horizon consisting of worn limestone fragments, some of which were burnt. Two undiagnostic Romano-British pottery sherds were recovered from 117, which was not seen in the drawn section face (fig. 4 main section).

The northern limit of 117 was defined by an east-west gully/slot, 106. This, very regular, feature was approximately 0.5m wide, and 0.2m deep. Its fill contained two pottery sherds, probably of 3rd century date. A suggestion that this feature was structural (ie a beam slot) is not in question, although it could not be directly associated with other features that shared its alignment or ran perpendicular to it. For example, a feature of similar dimension and form was exposed almost 8m further south, 136. This alignment was similarly respected by a group of linear features at the extreme south end of the trench: a single course, narrow foundation 132, and a similarly aligned (damaged) foundation that was approximately 0.7m to its north, 134. Both of these appeared to be of dry stone construction and are not, therefore believed to be load-bearing external building walls, although they could conceivably have been associated with internal partition in some form. Immediately to the west of 134, but stratigraphically earlier, was a vertically-sided, stone-filled, drain-like feature, 137.

None of the above were dated by associated finds.

The north end of the trench contained evidence of at least two different phases of activity. One of the backfilled linear features described above, 136, was truncated by a slot-like feature, 135 that was sectioned longitudinally through the main east section face; it being perpendicular to the earlier slot. This feature was also of structural form, with vertical sides and a flat base, and it may have been a trench for a timber/wattle and daub partition (the original records describe it as a robber trench, but this seems unlikely, given the strict regularity of the cut). Its fill contained nine pottery sherds of early to middle third century date.

A pit-like feature, 121, was investigated a short distance to the north of slot 105; with which it appeared to be stratigraphically contemporary. Only a very small section of its fill was investigated, and its full plan was not obtained. Its sides were moderately steep, and its base was flat. Its associated fills, 118 and 109, yielded six sherds of Romano-British pottery, and these can be loosely dated between the 2nd and 3rd centuries.

Cutting through a deposit of demolition rubble, 128, was a sub-rectangular pit-like feature, 145, that did not respect the alignment of any of the slots/gullies; it was orientated north-east to south-west, and could represent the latest phase of activity within the trench. A section through one end revealed its steep sides, and these broke to a bowl-shaped base. The recorded depth of this feature was 0.75m. Its lower bulk fill, 147, consisted of olive/grey silty sand intermingled with limestone fragments:

above this was a lens of charcoal-rich and reddened silt that incorporated burnt animal bone. The upper fill, 129, was a thick deposit of compact sandy clay mixed with occasional limestones. Pottery from the upper fill of this feature could be 3rd century, although the lowest fill, 147, contained eight sherds of late 4th century pottery. In relation to the stratigraphy, a 4th century date is perhaps more likely.

Inevitably, it has not been possible within this section to provide absolute interpretations on all occasions, and this is a direct function of 'keyhole' intervention. That said, enough information has been gathered and collated to provide an adequate insight into the nature and potential importance of these remains; and for an assessment to be made regarding the impact of any future road construction.

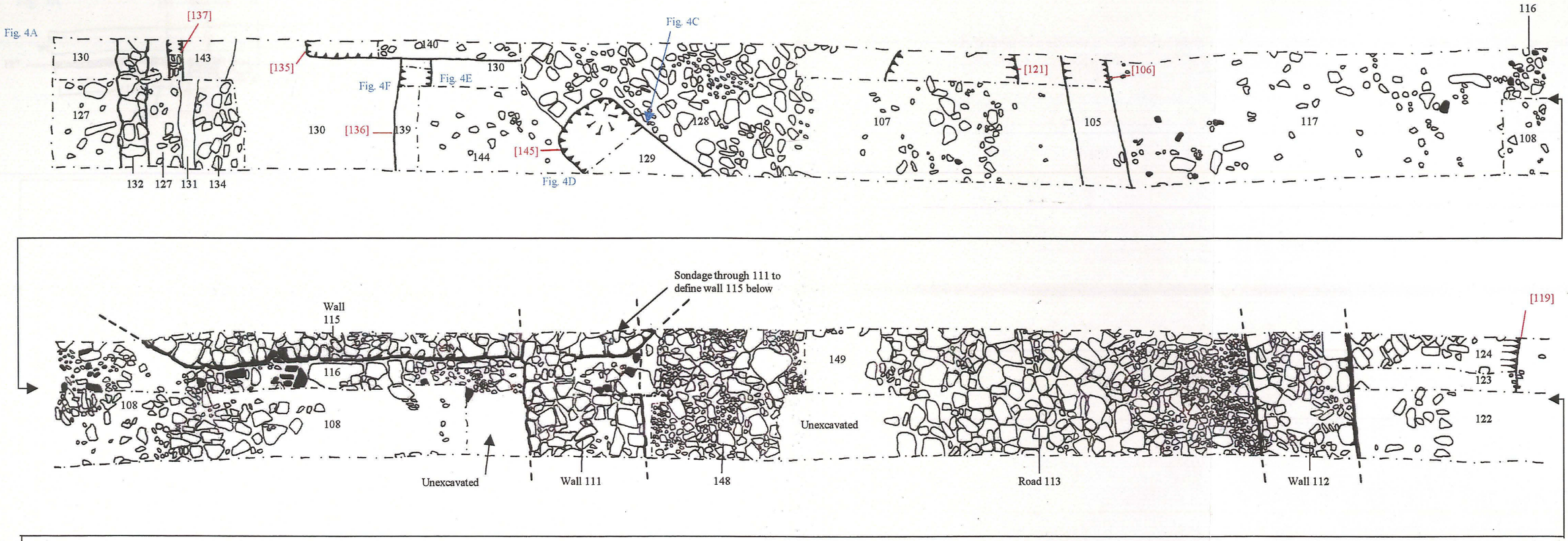


Figure 3: Trench 1 plan

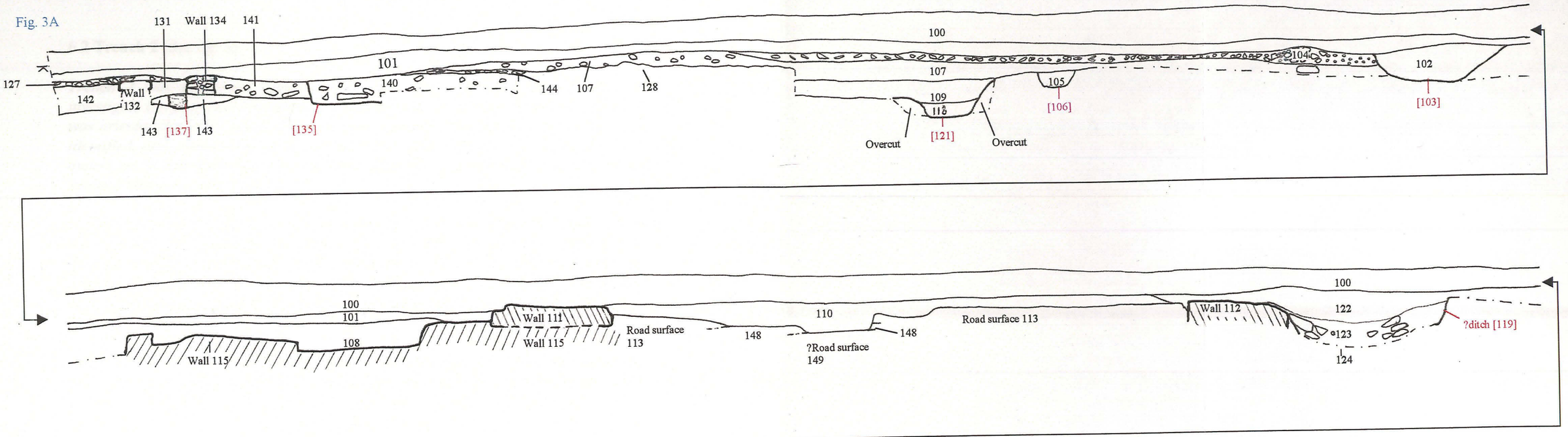


Figure 4: Trench 1 sections

6.2 Trench 2 (See fig. 5)

Trench 2 was positioned approximately 50m to the west of Ermine Street to investigate the projected alignment of the proposed new access. It was 30m long and was orientated north – south. The westerly continuation of the Roman sub-road was identified, and a human burial was investigated a short distance to the south of it. A quarry pit to the north may have provided stone for some of the buildings that are situated along the road frontage.

In the base of the trench, natural sand and gravel (203) was exposed throughout the southern half and central area, approximately 0.5m below the modern ground surface. This was cut by a large feature of unknown extent, [204], most probably a quarry pit. This remained excavated, excluding a small section that was removed by machine to a depth of 0.7m. This upper fill consisted of brown silty sand mixed with small limestone fragments, (205).

Approximately 4.5m to the south of the pit was the continuation of the sub-road that was exposed in Trench 1, (208), measuring 7m wide. This was similar to the section in Trench 1, although the stones were slightly less robust, and there was no clear indication of any earlier surfaces (further investigation would have required destruction of (208).

1.4m to the south of the road was an extended human inhumation burial, (210). This was orientated east-west. The cut for the grave, [206], was all but obliterated by ploughing, and the skeletal remains were poorly preserved, with only parts of the arm and leg bones identifiable. The arms were folded and a Romano-British pottery vessel was on the left side of the body. The remains, including the accessory vessel, were left *in situ* following completion of the evaluation.

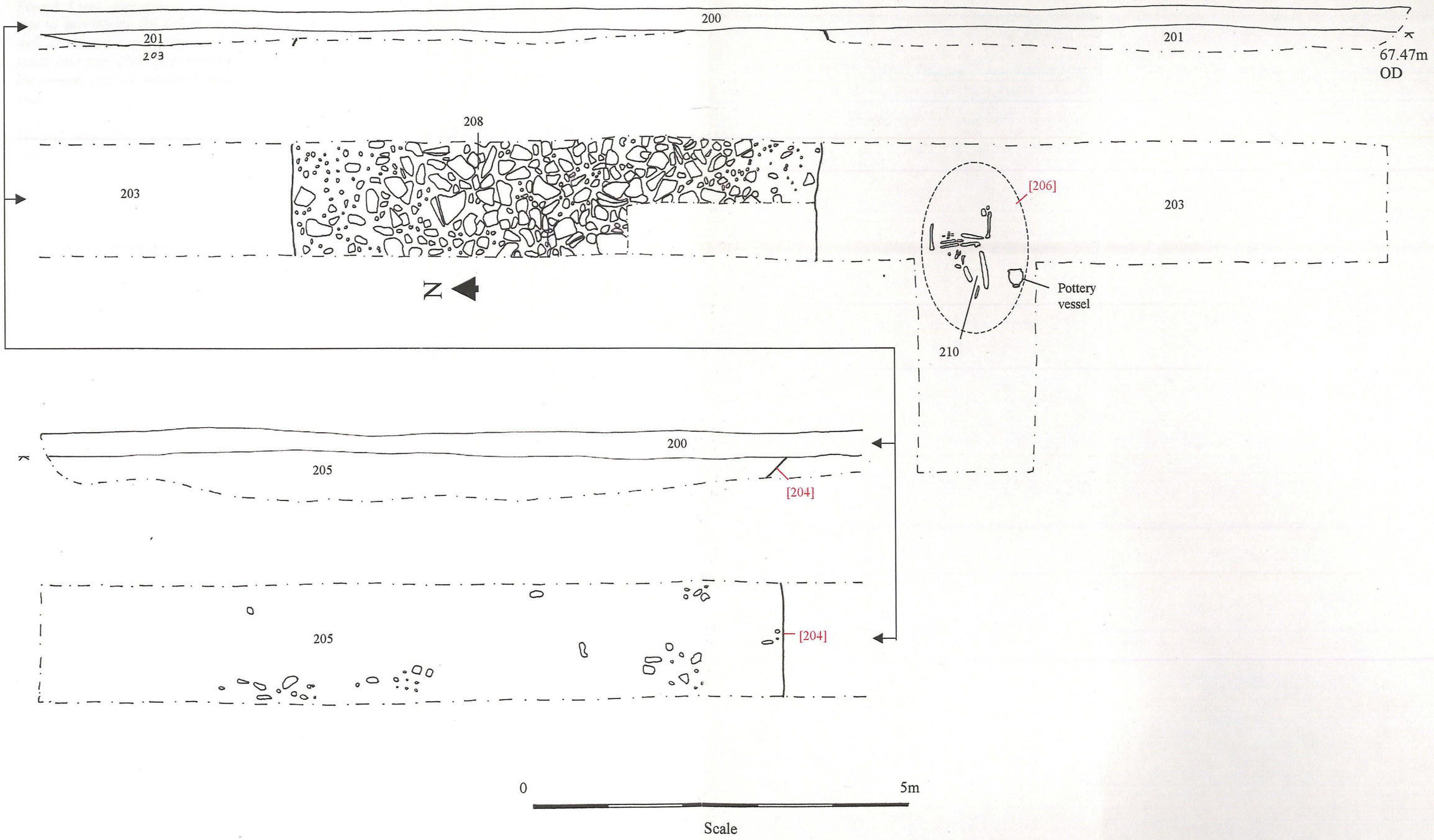


Figure 5: Trench 2 plan and section

6.3 Trench 3 (See fig. 6)

Trench 3 was approximately 100m west of Ermine Street. Again, its primary purpose was to investigate the linear anomaly that we now know was a Roman sub-road, as well as the projected alignment of the proposed new access. It was orientated north-south and was 25m long. Remains of the sub-road were exposed at the south end of the trench, and an extended human inhumation burial was investigated at the north end.

Natural orange/brown sand and limestone (303) was exposed throughout the trench at approximately 0.4m below modern ground level. At the south end of the trench, this was beneath a metalled surface of quartzite and limestone fragments: the Roman sub-road, (305). The surface was a little over 6m wide at this point.

At the north end of the trench was a north-south aligned burial [303]. The grave cut survived to a depth of 0.22m and was 1.8m long, 0.73m wide. The skeletal remains, (307) were those of an adult, extended, with the head to the north. The arms were folded and the feet crossed, with no grave goods present. No dating evidence was recovered.

There were no other archaeological features in this trench.

6.4 Trench 4 (See fig. 6)

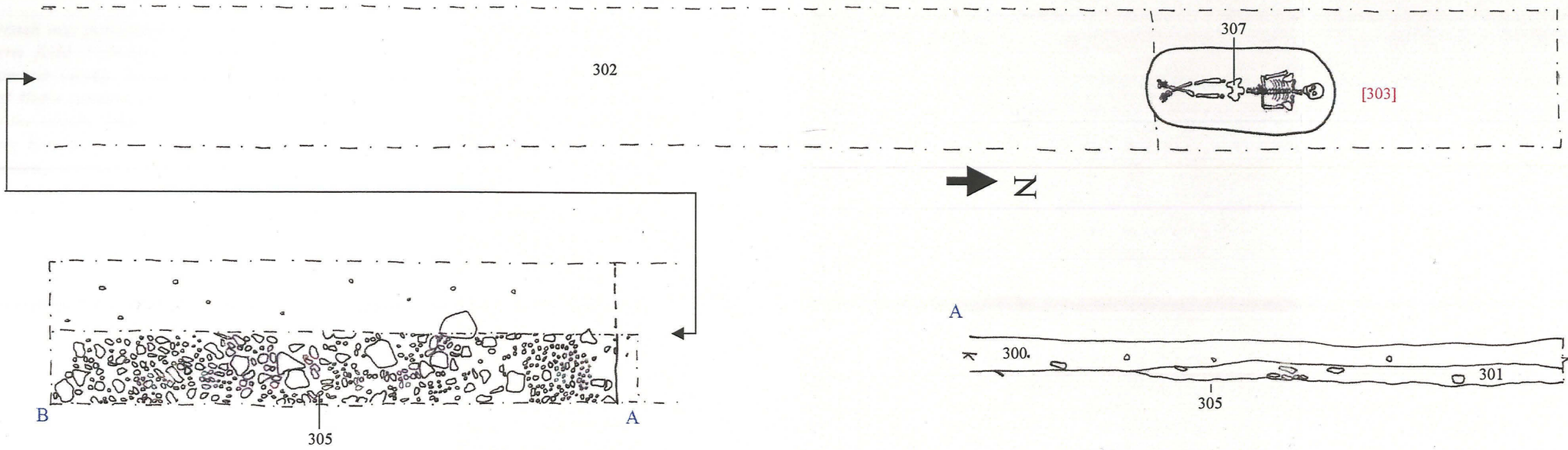
This was approximately 145m west of Ermine Street. The trench was 25m long, and was orientated north-south. The Roman sub-road was exposed at the north end of the trench, and linear grooves within its surface were identified as possible wheel ruts.

Removal of the topsoil, (400), exposed natural limestone brash (406) throughout the trench.

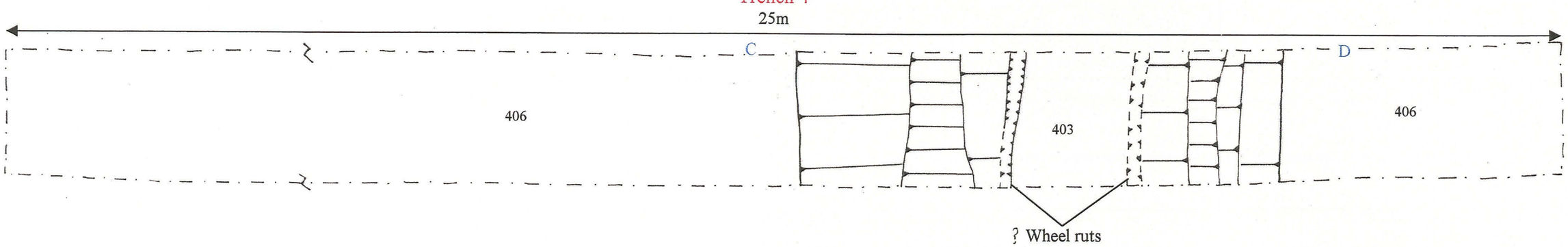
A 5.75m wide depression (402) was exposed at the north end of the trench. In this was a layer of small and medium sized rounded pebbles, representing the road surface, which was now approximately 5.7m wide. Two linear grooves towards the centre of the surface were interpreted as possible wheel ruts.

No other features were exposed in this area.

Trench 3



Trench 4



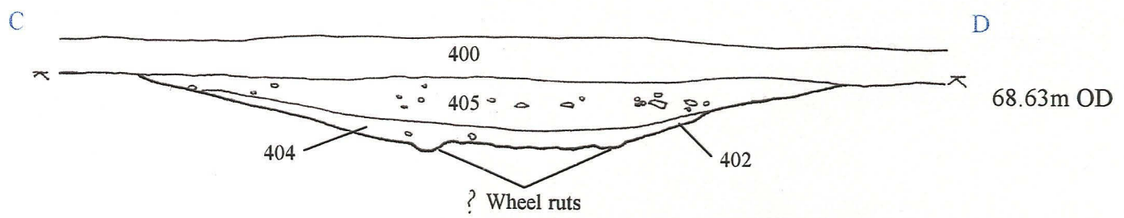


Figure 6: Trenches 3 and 4 plans and sections

6.5 Trench 5 (See fig. 7)

The trench was positioned approximately 70m west of Ermine Street, adjacent to the northern field boundary, to examine several linear anomalies detected by the gradiometer survey. It was 25m long, and was orientated north - south. A limestone wall of slight construction and an adjacent shallow gully were exposed at the north end of the trench. These features could represent boundaries to the rear of properties fronting Ermine Street. A spread of rubble at the south end of the trench was not interpreted.

Removal of the topsoil and subsoil exposed a shallow gully [506] that was orientated east-west. It was 0.4m wide and 0.2m deep, with gradually sloping sides and a slightly rounded base. Two fragments of pig scapula were found within the gully fill (507).

Approximately 1.3m south of the above, was a parallel dry stone wall, (504). Only two courses of this survived (approximately 0.5m high). The wall appeared to rest on a shallow (c. 0.04m) layer of brown silty sand (508), immediately above the natural (502).

At the south end of the trench was a stone spread (503). This comprised small – large sub-angular limestone fragments set within a matrix of brown sandy silt. Pottery of probable third century date and animal bone fragments (horse, sheep/goat and cow-sized) was recovered from this context. The rubble sealed a deposit of brown silty sand (509), similar in composition to (508) at the north end of the trench.

The rubble spread could not be interpreted, but it could relate to some form of stone structure in the vicinity of the trench.

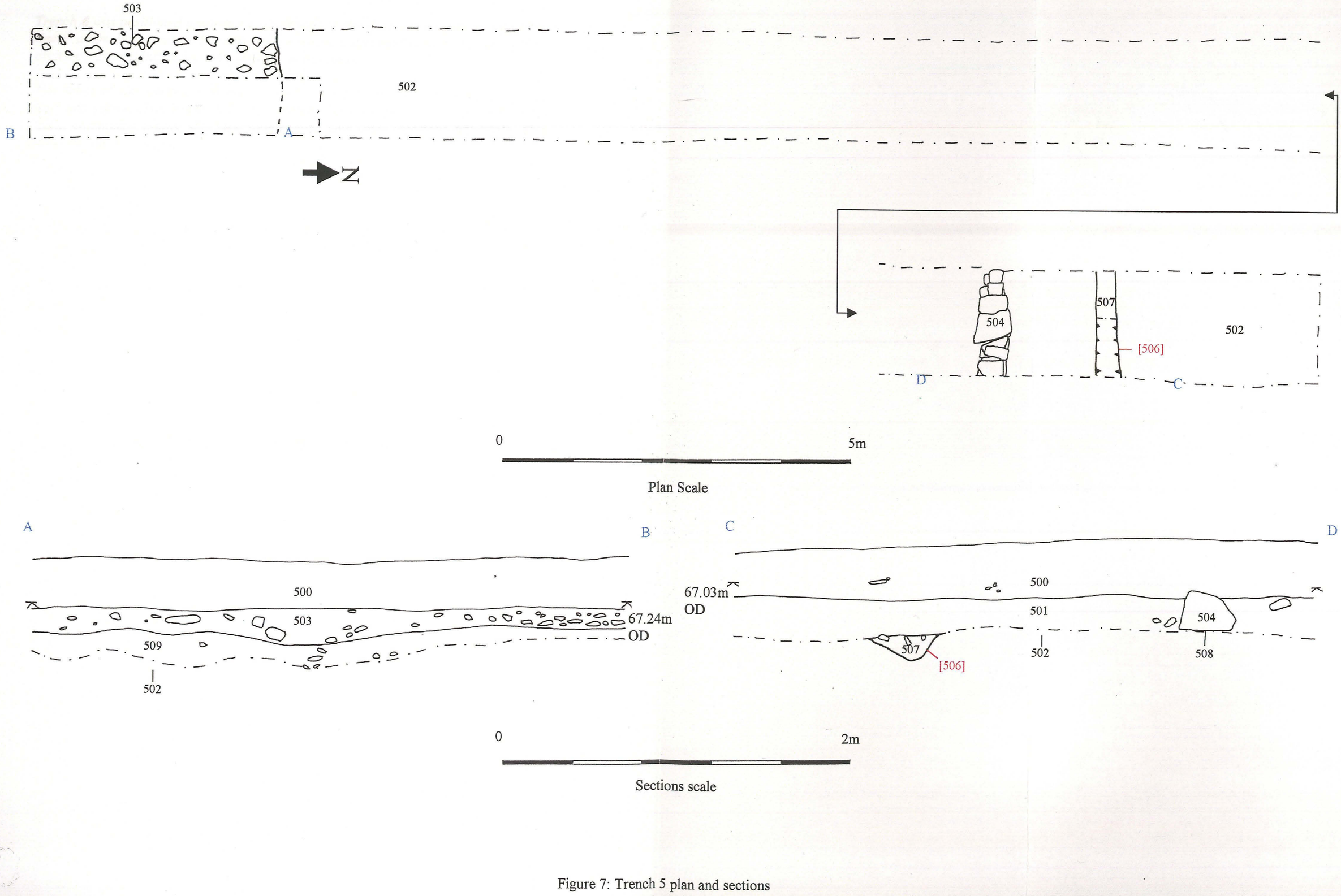


Figure 7: Trench 5 plan and sections

6.6 Trench 6 (See fig. 8)

Trench 6 was positioned towards the north-west of the site to investigate two possible linear anomalies. It was 25m long and was orientated north-south. No deposits of archaeological significance were exposed in this area.

The lower of three deposits identified, (602), was a mixture of limestone gravel, red sand and yellow clay. Above this was a subsoil horizon, (601), that was up to 0.3m thick, comprising orange silty sand intermingled with small limestone fragments. This was beneath the ploughsoil.

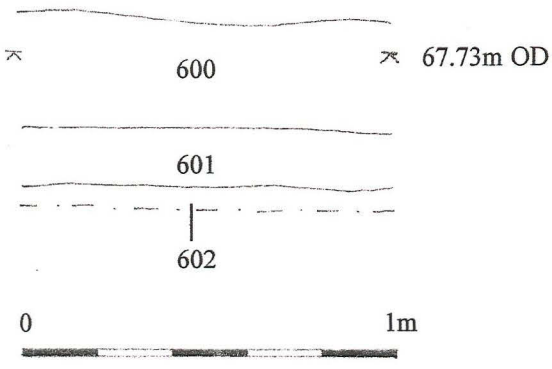


Fig. 8: South end of east facing section (representative)

6.7 Trench 7 (See fig. 9 below)

Trench 7 was positioned towards the south-west of the survey to traverse a group of localised anomalies. It was 25m long and was orientated north-south. No deposits of archaeological significance were exposed in this area.

Removal of the topsoil (700) exposed clean limestone brash, (701).

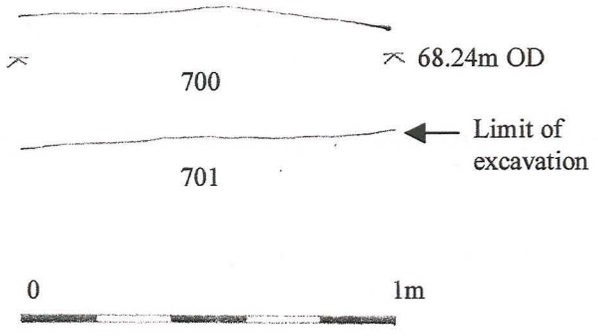


Figure 9: South end of south-east facing section (representative)

6.8 Trench 8 (See fig. 10)

This was sited to assess a group of small localised anomalies (possible pits) on the immediate west side of the hypothetical 60m buffer zone towards the southern field boundary. It was 25m long, and was orientated north-west to south-east. Two burials and a charnel pit were exposed within the southern half of the trench. These appeared to be bounded by linear gullies to the north-west and south-east. All of these features are probably of Roman date.

Removal of the topsoil (800) and subsoil (801) exposed a ditch or trench at the south-east end of the trench [802] that was orientated north-south. This was 0.6m wide and 0.3m deep, with steep to moderately sloping sides and a flat base. The sections revealed that slumpage (823) had occurred on both sides of the feature beneath the bulk fills (803) and (822). No dated finds were recovered from this feature.

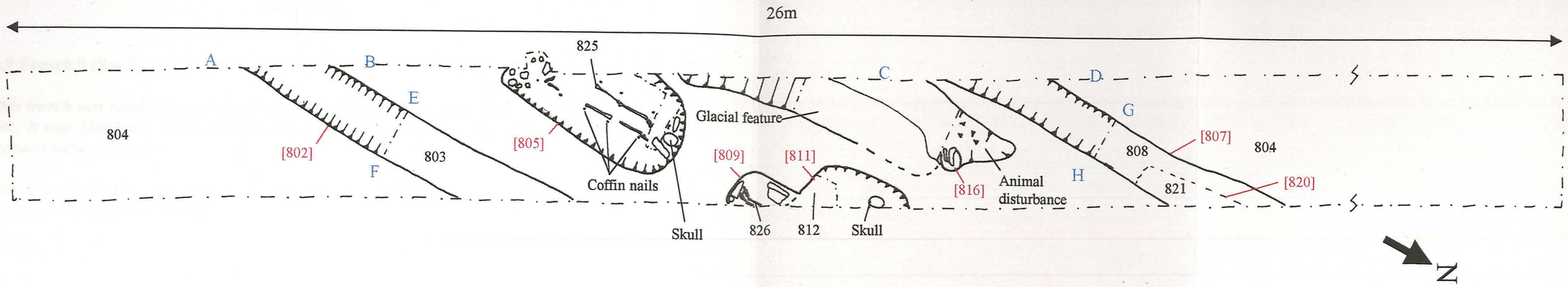
Adjacent to the above on its north-west side was grave cut [805]. The grave was sub-rectangular in plan, and was orientated north-south. It was more than 2.2m long and 1.1m wide. The remains it contained appeared to represent a poorly preserved juvenile or possibly a young adult within a wooden coffin (represented by several iron nails about the periphery of the body), with the disarticulated head placed face down close to the feet. An accessory vessel (Romano-British) was placed where the head should have been. This was left in situ, although a single sherd that was recovered from the grave fill could date between the early/middle 2nd century.

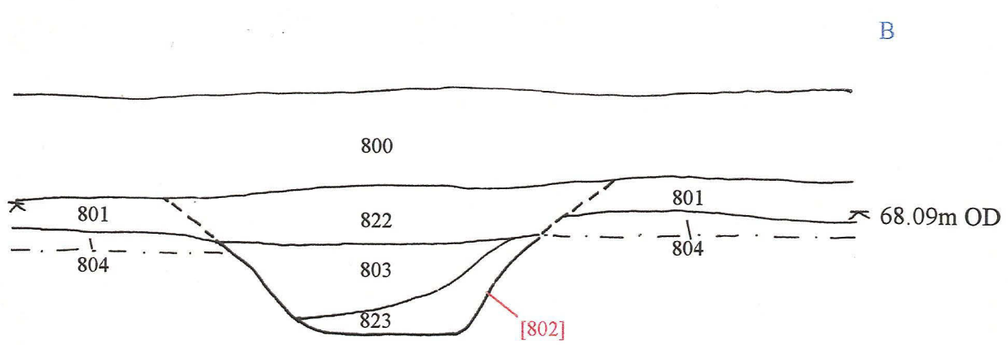
Less than 1m to the north of [805], grave [809] was partially exposed, with only the feet and parts of the lower leg being visible. The grave appeared to be stone-lined, although a single iron nail may indicate the presence of a coffin. It was cut by a sub-rectangular pit [811], and this contained a mixture of disarticulated human remains (827) and the fragmentary remains of a Romano-British vessel within its red/brown silty sand fill (812). This is interpreted as some form of charnel pit.

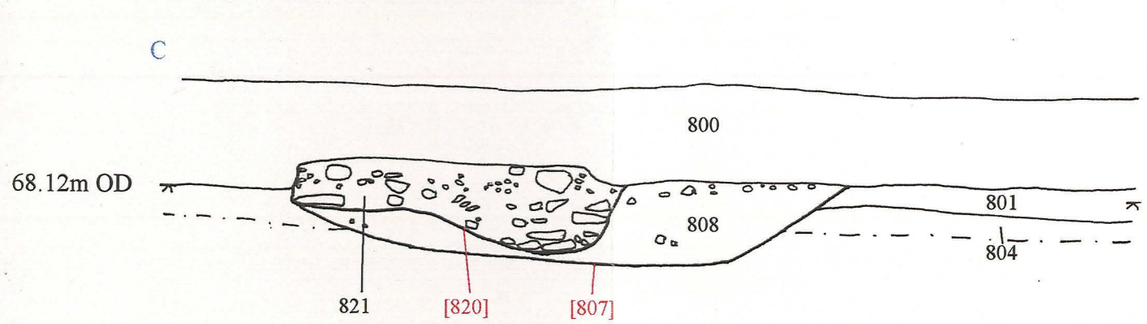
Within an area of ?glacial activity/animal disturbance to the immediate west of the above, a circular area of pitched limestone measuring 0.25m in diameter was interpreted as a possible posthole [816], although a context for this feature was not established.

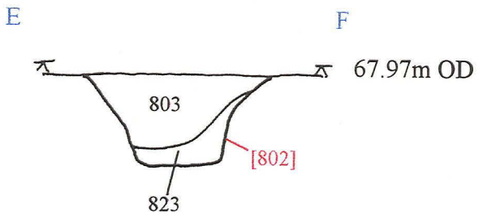
Close to the above was a shallow gully/trench [807], approximately 0.7m north of the posthole. This was parallel with ditch/trench [802]. Its sides appeared to be moderately steep and its base was flat (0.28m deep and 0.5m wide). Its fill consisted of brown sandy silt mixed with frequent small limestone fragments (808). An apparent recut of this feature [820] was recorded in the south-east section face, where it contained numerous medium and large sized limestone fragments (821).

The relationship between the graves and the linear gullies in this trench has not been resolved, although there is certainly a very clear spatial relationship between them. All of the burials occurred within the confines of gullies [802] and [807]/[820]. It would seem possible, therefore, that these features represent some kind of funerary monument, including the posthole that would have been internal to this monument. Clearly, this issue cannot be resolved without further intervention.









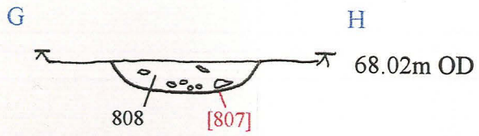


Figure 10: Trench 8 plan and sections

6.9 Trench 9 (See fig. 11)

This trench was randomly positioned to examine the extreme south-west corner of the site. It was 25m long, it was orientated north-east to south-west. No archaeological features were exposed

The topsoil (900) sealed limestone brash bedrock, which incorporated occasional pockets of orange sand (901).

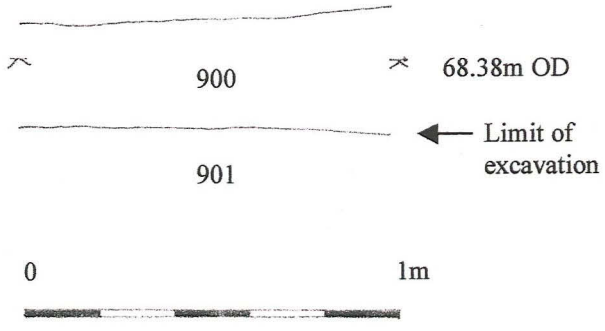


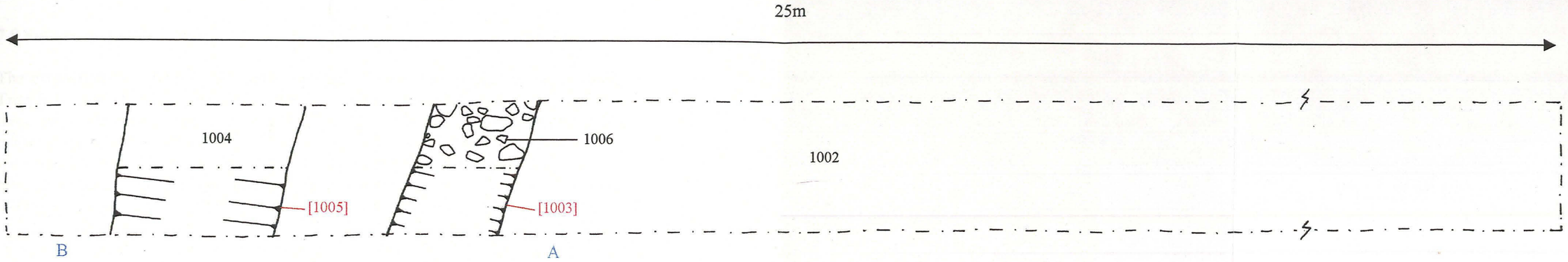
Figure 11: South end of south-east facing section (representative)

6.10 Trench 10 (See fig. 12)

This was randomly sited at the south end of the site. The trench was 25m long, and was orientated east-west. Two negative linear features were exposed at the south end of the trench.

Removal of the topsoil and subsoil revealed a ditch [1005] at the south end of the trench, where it cut through the limestone brash (1002). This was orientated north-south and measured 2.1m in width and was 0.52m deep, with gradually sloping sides and a slightly rounded base. Its fill comprised brown sandy silt incorporating a moderate amount of small and medium sized limestones (1006). No dateable material was recovered from this feature.

Parallel with [1005] was a second linear feature [1003]. This had relatively steep sides and a flat base, measuring 1.28m wide and 0.42m deep. Its fill comprised brown sandy silt mixed with numerous fragments of small to large limestone (1004). Three sherds of abraded pottery from the fill are thought to be of 3rd/4th century date.



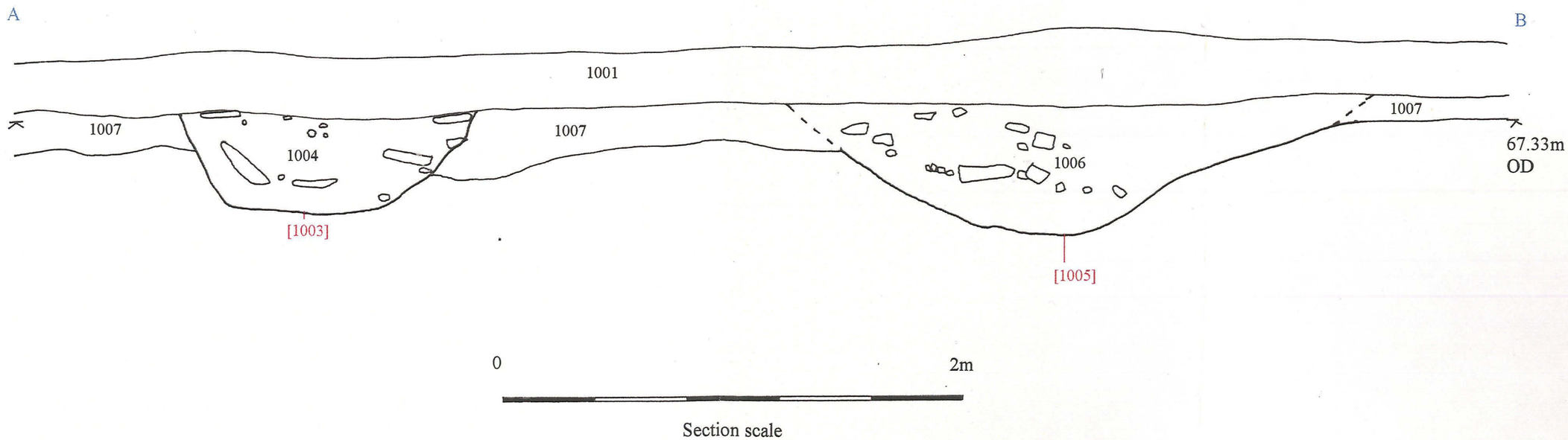


Figure 12: Trench 10 plan and section

7.0 Summary and conclusions

The evaluation has clarified the archaeological status of the Ermine Street frontage. Trench 1 has revealed evidence of at least two stone structural phases, the earliest of these being associated with what appears to be some form of polygonal building. The evidence for this was restricted to a section of wall foundation that was exposed in the west section face. Assuming this to be part of a complete and regular polygon, it is estimated that the diameter of this structure was in the region of 15 – 17m. However, this interpretation is inevitably tempered by the restricted area that was investigated.

Polygonal buildings of Roman date have been recorded elsewhere in England, where they are usually interpreted as temples. A good example is temple 3 at Godmanchester; a small town that grew up around the river crossing of the Great Ouse by Ermine Street in the Cambridgeshire Fenland (Green 1968). This building was mainly of timber construction. It had eight sides that were not all of equal length, and had an entrance to the south-east. A similar example was discovered at Brigstock, temple 2, and at Nettleton in Wiltshire, the 3rd century temple of Apollo was octagonal (de la Bedoyere, 1993). Other examples can be cited at Brigstock (11 sides), Collyweston 2 (8 sides), Collyweston 3 (6 sides) and Silchester 4 (16 sides) (Lewis 1966).

Whether a temple or not, if we accept that wall 115 is part of a polygonal structure, then this probably pre-dated the construction of the sub-road that was investigated to the south of it: if one projects the alignment of the southern element of 115, there would appear to be a substantial overlap between the two features, and in any case, the north wall flanking the edge of the road, 111 was built directly over the top of the dismantled 115.

The significance of the minor road should not perhaps be over-stated. Its change of state between Trench 1 on the east side and Trench 4 on the west side is noteworthy. In the former, the structure was robust and was clearly resurfaced on at least two occasions. In the latter, it was little more than a slight depression in the bedrock surface, showing little evidence of resurfacing. Perhaps this road led both to a cemetery to the rear of the settlement, and to the rural hinterland beyond.

The junction of the sub-road and Ermine Street itself may have been quite grand. This is suggested by the two stone walls that flanked it in Trench 1. The status of these walls has not been established, although they were certainly thick enough to support some form of superstructure. One fragment of stone that was recovered from ditch 119, adjacent to wall 112, had one very carefully chiselled face, suggesting perhaps that the external face of the superstructure was not modest.

Given the specific objectives of this study, the burials that were exposed to the west of the ribbon development were not removed for further study, and so there is no specialist anatomical information available for the graves that were investigated. These were exposed in trenches 2 (one burial), 3 (one burial) and 8 (x2 burials and charnel pit, possibly within mortuary enclosure), but none were exposed in the four trenches on the west side of the site (4, 6, 7 and 9). This might suggest that they occupy a linear north-south zone to the west of the ribbon development, and it is possible that some of the small discrete anomalies seen on the gradiometer greyscale image represent graves

(eg in the vicinity of Trench 8, between Trenches 8 and 10). Defining the limit of this cemetery is a problem.

In terms of the resource management that is needed at this site, this report should be sufficient to provide both the commissioning client and the curator with sufficient information on which to base decisions that will, hopefully, be to mutual satisfaction. Ploughsound Ltd. have given no indications that the east side of the site (ie the 60m buffer zone) will be developed, and such action would assist with the long-term preservation of the site. However, there is a practical need to establish a road that will link existing developments with Ermine Street. Also, an application for further residential development may be made in due course.

The western part of the site would appear from this evaluation, coupled with the geophysical survey results, to be largely sterile and, as noted above, human remains were not exposed in Trenches 4, 6, 7 and 9. Therefore, further development in this area is unlikely to destroy important archaeological remains. However, locating human remains is a problem, and the point at which the cemetery appears is not completely certain.

The proposed access road could perhaps be constructed from the north end of Trench 1. This area was comparatively clear of building remains, but was not, by any measure, archaeologically sterile. Ploughsound Ltd. have stated their intention to preserve as much of the archaeology as possible during any such construction, and this will be worthy of further exploration in due course.

8.0 Acknowledgements

The authors would like to thank the commissioning clients, Ploughsound Ltd. They would also like to thank the North Kesteven Heritage Officer, Jo Hambley, for her assistance throughout the course of this investigation.

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Appendix 1: Colour Photographs

Pl 1. General view from north-west corner of site, looking south-east
(the white van is on Ermine Street, adjacent to Trench 1)

Pl 2. General view of Trench 1 following cleaning, looking north

Pl 3. Polygonal structure in Trench 1 (to left of ranging rod), with overlying wall, 111, and road surface 113 in background, looking north-east

Pl 4. Road surface 113, Trench 1, looking south-east

Pl 5. North end of Trench 1, looking south-south-east

Pl 6. Trench 2: skeleton 210, with Roman road 208 in background, looking NE.

Pl 7. Trench 3: skeleton 307, looking north.

Pl 8. Trench 4: Roman road surface 402, looking SE.

Pl 9. Trench 4: close-up of wheel rut in Roman road 402, looking east.

Pl 10. Trench 5: pre-excavation, looking north. Rubble spread 503 is in the foreground, with wall 504 at the north end of the trench.

Pl 11. Trench 8: post-excavation, looking NW.

Pl 12. Trench 8: skeleton 825, looking south.

Pl 13. Trench 8: skeleton 826 and charnel pit 811, looking south-west

Pl 14. Trench 10: ditches 1003 and 1005, looking south-west

Appendix 2

REPORT 80 ON THE POTTERY FROM EVALUATION TRENCHES AT NAVENBY, ESNA01

for PRE-CONSTRUCT ARCHAEOLOGY

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

9 April 2001

QUANTITY AND CONDITION

The pottery came from 28 contexts in seven trenches, and amounted to 300 sherds, 6.984 kg. The condition is generally good, with some relatively large sherds, and an average sherd weight overall of 23.3g. The pottery, however, included several large sherds of Dressel 20 amphorae, and if these are excluded, the average sherd weight is 15.7g. Abrasion is limited to the upper layers, although context 122 contained a few abraded sherds (consistent with its identification as a general build-up and possible turf line). No problems are anticipated for long term storage. The pottery has been archived using count and weight as measures according to the guidelines laid down for the minimum archive by *The Study Group for Roman Pottery*. The fabrics are defined in Appendix 1. A copy of the database is attached (and can be supplied on disk), and will be curated for future study.

The pottery quantities and dating by context is shown on Table 1. The bulk of the pottery (88% sherds, 93% weight) came from Trench 1, with only insignificant quantities from the other trenches.

Table 1 Quantities and dating by context

Cxt	Cut		Sherds	Weight	Date	Comments
Tr.1						
100		Topsoil	1	22	2C?	Amph only
104		Demolition	19	359	ML3	Possible link to 108
105	106	Robber tr.	2	19	3C	
107		Occupation	1	54	L3-4	
108		Demolition	87	2938	ML3?	Mixed dates; link? to 104
109	121	e-w ditch	5	15	2-3C	No close dating
110		Over road	5	42	3C	No close dates
114		Demolition	3	345	ML2?	
117	106	Floor surf.	2	14	ROM	
118	121	e-w ditch	1	4	EM3	
122		Soil build-up	46	782	ML4	Some abr shs
123	119	roadside ditch	7	150	4C PROB	Link to 124
124	119	roadside ditch	2	23	ML3-4	Link to 123
126		Demolition	8	193	L4	
127		Demolition	38	847	3C	
129	145	Pit	4	42	3C?	
138	137	Drain?	1	4	ROM	
140	135	Robber Tr?	9	233	EM3	
141		Demolition	4	210	2C?	
144		Demolition	10	102	3C	
147	145	Pit	8	126	L4	
Tr.2						
201		Subsoil	10	178	3-4C/POSTMED	Abraded

Tr.3						
301		Subsoil	13	81	ROM	Abraded
Tr.4						
404	402	Over road	2	4	ROM	
Tr.5						
501		Subsoil	1	34	M3+	
503		Demoliton	7	143	3C POSS	Abraded
Tr.8						
806	805	Grave	1	1	EM2?	Only unus samian hdle & iron pan
Tr.10						
1004	1003	Ditch	3	19	3-4C?	Abraded
Total			**300**	**6984**		

The only links between contexts noted are between demolition layers 104 and 108, and the fill of the roadside ditch, 123 and 124.

OVERVIEW OF FABRICS AND VESSEL FORMS

The fabrics represented are shown in Table 2.

Table 2 Fabrics

Fabric	Code	Sherds	%	Weight	%
Colour-coated	CC	1	0.33	5	0.07
Cream	CR	6	2.00	17	0.24
Amphora Dressel 20	DR20	16	5.33	2529	36.21
Dales ware shell-gritted	DWSH	6	2.00	35	0.50
Dales ware shell-gritted?	DWSH?	2	0.67	35	0.50
Grey fine	GFIN	1	0.33	6	0.09
Grey micaceous	GMIC	1	0.33	7	0.10
Grey	GREY	151	50.33	2568	36.77
Grey fairly fine	GRFF	11	3.67	73	1.05
Grog-tempered	GROG	11	3.67	452	6.47
Grey minimal shell	GYMS	4	1.33	53	0.76
Iron Age tradition gritty	IAGR	1	0.33	30	0.43
Nene Valley colour-coated	NVCC	24	8.00	250	3.58
Nene Valley colour-coated	NVCC?	1	0.33	24	0.34
Oxidized	OX	7	2.33	56	0.80
Post-Roman	PRO	1	0.33	20	0.29
Samian Central Gaul	SAMCG	11	3.67	33	0.47
Shell-gritted	SHEL	35	11.67	469	6.72
Swanpool oxidized	SPOX	2	0.67	27	0.39
Tile	TILE	8	2.67	295	4.22
Total		300	100	6984	100

A single post-Medieval sherd occurred, in the subsoil of Trench 2. Imported pottery consists of samian from Central Gaul (from 108, 109, 122 and 806) and Dressel 20 amphorae, olive oil containers from Baetica, Spain (from 100, 108, 114 and 127). The samian is fragmentary, and includes an unusual and rare handle, probably from a dish of form 42 (from 806). Most of the sherds seem likely to date to the early to mid 2nd century, although a single rim is possibly of later 2nd century date. The amphorae are all of a fabric consistent with a 2nd century rather than earlier date, and includes a stamped handle (from 108), details of which are below. Fine wares are confined to Nene Valley colour-coated ware, mostly beakers including a number of folded types, but also fragments of bowls and dishes. None of these are positively of 4th century date, although fragments of a painted beaker (from 123 and 124) could extend in date into the 4th century. The source of a single colour-coated sherd is unknown, being in a coarser

fabric with traces of painted decoration (from 1004). Cream flagon type body sherds in a fine fabric came from 108, 140 and 144, and are more likely to be of 2nd century date.

The bulk of the pottery consists of various grey wares (GREY), a number being in a light fabric with darker surfaces, suggesting the use of less iron-rich clays, possibly from sources drawing on the lias beds to the south rather than the Lincoln area. Some of the grey wares are, however, likely to be from the 4th century kilns at Swanpool (Webster and Booth 1947), and there are two sherds of Swanpool oxidised ware, both from 123, the roadside ditch. The grey wares range in date from the 2nd century, particularly a fairly fine carinated bowl or beaker (No 3 from 108), and include a number of later forms, high bead-and-flange bowls (No 9 and No 10 from 122 and 147), a late inturned bead-and-flange bowl (No 11 from 126), fragments of folded beakers, a beaker base (No 2 from 122), wide-mouthed bowls and copies of dales ware jars. A bead-and-flange bowl from 126 (No 8) is unusual in its relatively small size, and the rim type being close to that appearing in Nene Valley colour-coated wares in the 4th century. The oxidized (OX) vessels are quartz-gritted as standard grey wares, and where identified for form, open bowls (as copies of samian form 38) occur. Unfortunately none survive sufficiently to be drawn, but there is also a plainer bowl (No 12), which resembles forms seen in later Roman contexts in Lincoln in Swanpool oxidised ware.

Shell-gritted dales ware jars (DWSH) are relatively sparse, represented by only body sherds (from 122 and 124). The other main coarse ware is shell-gritted (SHEL) ware, mostly from wheel-made jars, including a double-lid-seated jar (No 5), and a single dish (No 15), both from 122. The double lid-seated jar is particularly interesting, as it seems to be a form intermediate between the classic dales ware jar and the later double-lid-seated range. At least one sherd (from 147) has inclusions of *punctate brachiopods*, suggesting some of this shell-gritted ware came from southern Lincolnshire or further south. There are no sherds of the classic South Midlands shell-gritted jars of late Roman date. There is a small group of grog-tempered ware (GROG) sherds, all body sherds but probably from fairly large jars. Some of these may be from a single vessel (from 105, 127, 140 and 144), being in a distinctive fabric with multi-coloured grog inclusions.

DISCUSSION

Over half the pottery came from demolition contexts in Trench 1, mostly of later 3rd century date, although sherds from 126 (including the late inturned bead-and-flange bowl fragment, No 11) should be of 4th century date. The pottery from the only larger group apart from the demolition layers, the build-up of soil and possible turf-line 122, forms a fairly consistent later 4th century group, and the roadside ditch fills also appear to be of 4th century date. The main chronological emphasis of the assemblage is in the later Roman period, 3rd to 4th century, but there is evidence for 2nd century occupation. The only sherd from a grave (Trench 8, 806) is the unusual handle from a samian vessel, and if from a form 42, this should date to the Hadrianic period. This is, however, only a fragment which suggests it was residual in the grave fill.

RECOMMENDATIONS

Recommendations are conditioned by the prospect of possible further excavation on the site. Navenby is a vitally important site for the Iron Age and Roman period, and at some stage, the various individual archaeological interventions need to be the subject of an integrated publication, so that the settlement can be understood and placed in the context of Roman settlement in the area. Any pottery from the cemetery is very important, and it is essential that this is further explored, to obtain dating evidence to integrate it with the occupation evidence.

The pottery from Navenby is particularly interesting, drawing on a variety of sources at differing times within the Roman period, and is thus crucial for understanding the development of the settlement and its contacts.

The seventeen vessels identified as suitable for illustration are catalogued below. The samian is fairly fragmentary, and specialist attention should be considered if further excavated finds occur.

AMPHORA STAMP

The amphora stamp is complete but in poor condition and badly impressed. A possible reading is: MMCS▒. The last letter/s is illegible but may start with an upright stroke. This appears to be a stamp reported by Callender (1965, p 188, no 1139, fig 11, 31, 32) on a South Spanish amphora, dated to AD 140-180? The letters MMC appear to be the initials of the *tria nomina*, whilst the remaining letters probably represent place-names. The various final letters are: SAE, SAPI (or SARI), SVR, SI. The letters SVR have the V and R ligatured, and these might fit the space. The possible places associated with this range of stamps include Tarraconensis, where there was a tribe called the SVRDAONES, while SAE is perhaps the same place mentioned on other stamps, most of which were found at Las Huertas del Rio (Baetica). Callender notes that a significant point about these stamps is the frequency of occurrence on the Antonine Wall sites, as well as Corbridge and Newstead, and it is this fact that provides the date. The fabric of this example is consistent with such a 2nd century date. (Cxt 108)

CATALOGUE

The sequence is: Illustration number, fabric, details, context and original drawing number.

1 GREY, Beaker, red-brown fabric with grey core; grey surfaces, probably originally burnished. 104, 02

2 GREY, Base probably from a beaker, similar to RPNV63 type, burnished bands externally. 122, 15

3 GREY, Carinated bowl or beaker, fairly sandy light grey fabric, burnished externally. 108, 04

4 GREY, Dales ware type jar, burnt on rim, sandy fabric. 122, 09

5 SHEL, Lid-seated jar, intermediate in form between the dales ware, and the double lid-seated types, wheel-made, sooted on the rim. 122, 11

6 GREY, Jar cooking pot. Light grey sandy fabric, with darker surfaces. 122, 10

7 NVCC, Bowl or dish with flange, cream fabric. 108, 03

8 GREY, Bead-and-flange bowl, light grey fabric, moderate quartz inclusions, the rim type being closer to that used for similar bowls in Nene Valley and other colour-coated wares. 126, 16

9 GREY, Bead-and flange bowl with high bead, darker grey fabric, moderate quartz, burnished surfaces. 122, 08

10 GREY, Bead-and flange bowl with high bead, dark grey fabric and almost black burnished surfaces. 147, 14

11 GREY, Bowl with inturned bead-and-flange, light grey fabric, moderate quartz, and black iron ore inclusions. 126, 17

12 OX, Bowl, fairly sandy dark grey fabric, with red-brown burnished surfaces. 122, 07

13 GREY, Grooved rim dish, red-brown sandy fabric, grey surfaces. Another (from 104 is decorated with pointed burnished intersecting arcs). 114, 06

14 GREY, Dish with an angular plain rim, light grey fabric with moderate quartz, darker surfaces, almost crazed due to heat either in firing or subsequent use. 126, 13

15 SHEL, probably a dish, burnished surfaces, dark grey-black fabric with moderate ill-sorted shell, some burning traces. 122, 12

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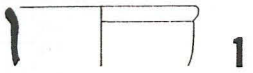
APPENDIX 1 FABRICS

Publication of *The National Roman Fabric Reference Collection*, abbreviated NRFRC (Tomber and Dore 1998), obviate the need to describe the major imported and widely traded Romano-British wares in detail.

CC	Colour-coated of unknown source, coarser quartz-gritted fabric.
CR	Cream, miscellaneous cream wares. Sherds attributed to a fabric group rather than a discrete fabric, mostly from flagons or closed forms. Fine smoothed fabric.
DR20	Amphorae Dressel 20 amphorae. Peacock & Williams 1986 Class 25; **NRFRC: Baetican (Early) Amphorae 1 BATAM1; (Late) Amphorae 2 BATAM 2 (3)**
DWSH	Shell-gritted dales ware jars, hand-made and wheel-finished from sources in north Lincolnshire around the Humber area. **NRFRC: DAL SH**
GFIN	Grey fine. This coding is used for reduced fabrics lying between the common quartz-gritted GREY used for most jars and bowls, and the very fine fabrics used for London-type ware and Parisian ware.
GMIC	Grey micaceous, particularly micaceous fabric. Single sherd.
GREY	Grey, undifferentiated quartz-gritted grey fabrics, hard wares with sparse to common quartz inclusions.
GRFF	Grey fairly fine, used to differentiate fabrics intermediate between fine and ordinary quartz-gritted greywares, usually with finer quartz inclusions.
GROG	Grog-tempered. Most are in a grey fabric with a red-brown cortex, and grey-brown surface, with multi-coloured grog inclusions. The manufacture method is difficult to determine due to the loss of internal surfaces and generally poor condition, but may be wheel-thrown. One body sherd is grey with grey grog.
GYMS	A fabric group to cover sherds, usually wheel-made, grey with minimal very sparse shell inclusions. While often found in vessels typical of the later Iron Age or early Roman period, the sherds (from 108) are light grey fabric, with shell and calcareous inclusions, probably from a jar form.
IAGR	Coarse tempered, often pimply with grog and other inclusions, IA tradition fabric, which continues in use into the Roman period. Single body sherd from 141.
NVCC	Nene Valley colour-coat **NRFRC: LNVCC**
OX	Oxidized, miscellaneous oxidized wares. This coding comprises all miscellaneous oxidized sherds, usually in varying red-brown shades and degrees of grittiness, for which no significant fabric groupings are evident. The oxidized sherds are quartz-gritted, and form a fairly consistent group.
PRO	Post-Roman sherds
SAMCG	Samian Central Gaul, from Lezoux. **NRFRC : LEZ SA**
SHEL	Shell-gritted, miscellaneous shell-gritted ware, wheel-thrown where manufacture can be ascertained; probably from sources south of Navenby.
SPOX	Oxidized quartz-tempered fabric, usually with a burnished slip, often decorated with white painted designs, made at the Swanpool kilns, Lincoln, in the 4th century (Webster & Booth 1947).

APPENDIX 2 VESSELS SUITABLE FOR ILLUSTRATION

Illus	DNo	Cxt	Fabric	Form	Manuf+	Ves	Details	Shs	Wt
01	02	104	GREY	BK	-	-	RIM/PT WALL	1	5
02	15	122	GREY	BK?	-	-	BASE AS RPNV63 TYPE	1	25
03	04	108	GREY	B334	-	1	RIMS>CARINATION+;DIAM 13	8	55
04	09	122	GREY	JDW	-	-	RIM/SHLDR;BURNT ON RM	1	42
05	11	122	SHEL	JDLS	-	1	RIMS;WALL;WM	6	99
06	10	122	GREY	JCUR	-	1	RIM CP CURVE;NON J BS;LTGY QTZY FB	2	30
07	03	108	NVCC	BDFL	-	1	RIM/PT WALL;CR FAB	2	35
08	16	126	GREY	BFB	-	-	RIM/PT WALL	1	18
09	08	122	GREY	BFBH	-	1	RIM/MOST WALL	3	97
10	14	147	GREY	BFBH	-	1	RIM/WALL;DKGRY BURNISHED	2	96
11	17	126	GREY	BIBF	-	-	RIM ONLY	1	12
12	07	122	OX	B	-	-	RIM DKGRY F;LTRB SURFS;MOD QTZ;BURNISH ORIG	1	14
13	06	114	GREY	DGR	-	1	RIMS/WALL	2	42
14	13	126	GREY	DPR	-	-	RIM/WALL;SANDY LTGRY F;MOTTLED SURF	1	17
15	12	122	SHEL	BD	-	1	RIM;PT WALL;DKGRY	3	23
-	01	104	GREY	DGR	BIAP	1	RIMS/WALL;BASE FRAG;LTGRY CORTEX	4	58
-	05	108	DR20	A	NAME	1	BSS;HDLE/STAMP;MID FB;LTRB INT;FLAKY	6	1756
-	-	108	GREY	JEV	-	-	RIM FRAG;SANDY LTGY;DKER SURFS	1	15
-	-	122	GREY	BDFL	-	-	RIM FRAG;	1	18
-	-	127	GREY	JCUR	-	1	RIM/SHLDR;CP TYPE	3	23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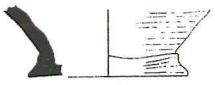
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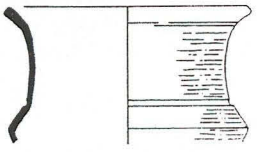
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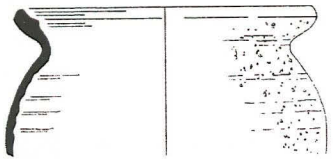
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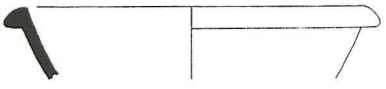
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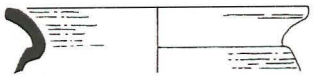
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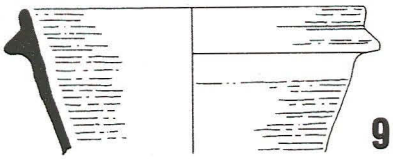
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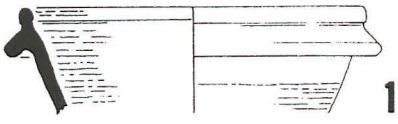
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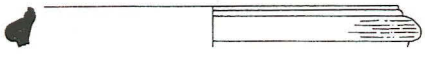
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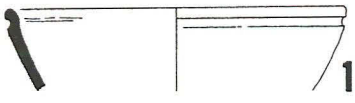
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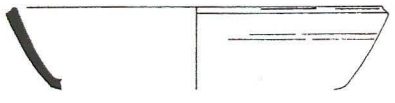
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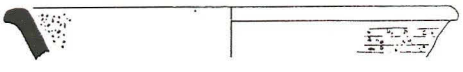
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Cxt	Fabric	Form	Manuf+	Ves	D?	DNo	Details	Link	Shs	Wt
1004	CC	CLSD?	PA	-	-	-	BS GRY FAB&CC;LINEAR PA	-	1	5
108	CR	F?	-	1	-	-	BSS;THIN W;F.SMOOTH WHITE FAB	-	3	10
108	CR	F?	-	-	-	-	HDLE SMALL;2R;POSS X ABOVE VESS	-	1	1
140	CR	F?	-	-	-	-	BS THIN WALL	-	1	5
144	CR	F?	-	-	-	-	BS FINE CR;THIN WALL	-	1	1
100	DR20	A	-	-	-	-	BS MID FAB	-	1	22
108	DR20	A	NAME	1	D	05	BSS;HDLE/STAMP;MID FB;LTRB INT;FLAKY	-	6	1756
114	DR20	A	-	-	-	-	BS;MID FAB	-	1	303
127	DR20	A	-	1?	-	-	BSS/FLAKES;MID FAB	-	8	448
104	DWSH	J	-	-	-	-	BSS;ABR	-	4	22
122	DWSH	J	HM	-	-	-	BSS	-	2	13
122	DWSH?	J	HM	-	-	-	BS THICKISH	-	1	19
124	DWSH?	J	HM	-	-	-	BS SPARSE SHELL	-	1	16
126	GFIN	JBK	-	-	-	-	RIM FRAG	-	1	6
122	GMIC	JBK	-	-	-	-	BS TWIN GROOVES;LTGRY MICAC	-	1	7
108	GREY	-	-	-	-	-	BSS MISC	-	9	69
109	GREY	-	-	-	-	-	BSS	-	2	4
117	GREY	-	-	-	-	-	BS	-	1	6
122	GREY	-	-	-	-	-	BSS	-	3	35
126	GREY	-	-	-	-	-	BS	-	1	15
127	GREY	-	-	-	-	-	BSS	-	6	17
129	GREY	-	-	-	-	-	BSS	-	2	21
138	GREY	-	-	-	-	-	BS	-	1	4
140	GREY	-	-	-	-	-	BS	-	1	9
140	GREY	-	-	-	-	-	BS SANDY RB;DKGRY SURFS	-	1	2
144	GREY	-	-	-	-	-	BS	-	2	18
147	GREY	-	-	-	-	-	BSS;ONE GROOVED	-	4	24
201	GREY	-	-	-	-	-	BSS;ABR	-	3	44
301	GREY	-	-	-	-	-	BSS ABR	-	2	5
404	GREY	-	-	-	-	-	CHIP	-	1	1
503	GREY	-	-	-	-	-	BSS ABR	-	3	16
1004	GREY	-	-	-	-	-	BS VVABR	-	1	7
108	GREY	B	-	1	-	-	BASE/PT WALL	-	3	36
108	GREY	B	-	-	-	-	BASE/PT WALL;FINER FB;SOME MICA	-	1	17
108	GREY	B?	-	-	-	-	RIM FRAG;CURVED	-	1	5
108	GREY	B334	-	1	D	04	RIMS>CARINATION+;DIAM 13	-	8	55
108	GREY	BD	-	-	-	-	BASE/PT WALL	-	1	15
108	GREY	BD	-	1	-	-	BASE;CHAMFERED	-	2	115
110	GREY	BD	-	-	-	-	BASE >ANGLE	-	1	19
122	GREY	BD	SCRIB	-	-	-	BASE;SCRIBBLE U'SIDE	-	1	34
122	GREY	BD	-	-	-	-	BASE;STRING SMOOTHED OVER	-	1	27
122	GREY	BD	-	-	-	-	BASE;STRING SMOOTHED OVER	-	1	39
123	GREY	BD	-	-	-	-	BASE WM;U'SIDE CRUDE TOOLING	-	1	76
122	GREY	BDFL	-	-	-	-	RIM FRAG;PT WALL;SOOTED?;ABR	-	1	10
122	GREY	BDFL	-	-	D?	-	RIM FRAG;	-	1	18
126	GREY	BFB	-	-	D?	-	RIM/PT WALL	-	1	18
122	GREY	BFBH	-	1	D	08	RIM/MOST WALL	-	3	97
147	GREY	BFBH	-	1	D	14	RIM/WALL;DKGRY BURNISHED	-	2	96
126	GREY	BIBF	-	-	D?	-	RIM ONLY	-	1	12
104	GREY	BK	-	-	D	02	RIM/PT WALL	-	1	5
107	GREY	BK?	-	-	-	-	BASE TYPE AS RPNV63;GROOVE UNDER;DKGRY SURFS	-	1	54
108	GREY	BK?	-	-	-	-	BASE;GROOVE U'SIDE;NR FTM	-	1	8
122	GREY	BK?	-	-	D?	-	BASE AS RPNV63 TYPE	-	1	25
144	GREY	BKEV	-	-	-	-	RIM FRAG;LTGRY F;MOTTLED SURF	-	1	6
108	GREY	BKFO	-	1	-	-	BSS;LTGRY CORTEX	-	2	9
129	GREY	BKFO	-	-	-	-	BS LTGRY QTZY FAB	-	1	6
144	GREY	BKFO	-	1?	-	-	BSS	-	2	24
104	GREY	BWM	-	-	-	-	RIM FRAG ONLY	-	1	12
201	GREY	BWM	-	-	-	-	RIM FRAG;VABR	-	1	25
123	GREY	BWM?	-	-	-	-	RIM U/CUT;HI BURNISH;?PLATE FM	-	1	14
126	GREY	BWM?	-	-	-	-	BS W GROOVE	-	1	104
201	GREY	BWM?	-	1	-	-	BSS;NECK/SHLDR;ABR	-	2	24
108	GREY	CLSD	-	1	-	-	BSS;BURNISHED	-	2	10
108	GREY	CLSD	-	-	-	-	BS;DKGRY/BLK SURFS;COARSEISH	-	1	33
104	GREY	DGR	BIAP	1	D	01	RIMS/WALL;BASE FRAG;LTGRY CORTEX	-	4	58
114	GREY	DGR	-	1	D	06	RIMS/WALL	-	2	42
126	GREY	DPR	-	-	D	13	RIM/WALL;SANDY LTGRY F;MOTTLED SURF	-	1	17
104	GREY	J	LA?	1	-	-	BSS TRACES LA	-	2	20
108	GREY	J	-	-	-	-	BASE JL;SIM.LTGY F;DKER SURFS;QTZ TO HDLE	-	2	211
108	GREY	J	LA	-	-	-	BSS SANDY	-	2	13
108	GREY	J	LA;FET	1	-	-	BSS WM MOD QTZ;FETTLING INT	-	2	16
108	GREY	J	-	-	-	-	BS;SANDY LTGRY;BURNT/SOOT EXT;L'SCALE INT	-	1	10
109	GREY	J	LA	-	-	-	BS	-	1	7

Cxt	Fabric	Form	Manuf+	Ves	D?	DNo	Details	Link	Shs	Wt
109	GREY	J	-	-	-	-	SHLDR;BURNISH	-	1	3
117	GREY	J	-	-	-	-	BS COARSER SANDY;BURNT EXT	-	1	8
122	GREY	J	LA	-	-	-	BS	-	1	15
122	GREY	J	STAB	-	-	-	BS SANDY	-	1	20
122	GREY	J	-	-	-	-	SHLDR/BODY GROOVED;DKGRY	-	1	10
127	GREY	J	LA	-	-	-	BS	-	1	4
141	GREY	J	-	-	-	-	RIM TINY CHIP;DKGRY SURF	-	1	2
1004	GREY	J	-	-	-	-	RIM FRAG	-	1	7
104	GREY	J?	-	-	-	-	BASE;STRING;?WASTER	-	1	152
108	GREY	J?	-	-	-	-	BASE;GROOVED U'SIDE	-	1	60
404	GREY	J?	-	-	-	-	RIM CHIP ONLY	-	1	3
108	GREY	JB	-	-	-	-	RIM FRAG	-	1	5
108	GREY	JB	-	1	-	-	BSS J;LTGRY;SOME CALCAR.INCLS;MICA	-	3	25
110	GREY	JB	-	-	-	-	BASE FRAG;PLAIN	-	1	8
122	GREY	JB	-	-	-	-	BASE;STRING	-	1	14
122	GREY	JB	BS?	-	-	-	BS;VABR;TRACES BL DEC	-	1	21
129	GREY	JB	-	-	-	-	BASE FTM;ABR	-	1	15
141	GREY	JB	-	-	-	-	BS SHLDR	-	1	11
503	GREY	JB	-	-	-	-	BASE FRAG;ABR	-	1	48
110	GREY	JBCUR	-	-	-	-	RIM FRAG;ABR	-	1	6
108	GREY	JBK	-	-	-	-	BS SHLDR;BURNISHED	-	1	5
108	GREY	JBK?	-	-	-	-	RIM CURVED;POSS SAME VES AS BKFO	-	1	5
108	GREY	JBK?	-	-	-	-	BS;SANDY LTGRY;BLK SURFS;GROOVED	-	1	6
110	GREY	JBK?	-	-	-	-	BS;SM.DIAM;TWIN GROOVES;BURNISHED	-	1	8
127	GREY	JBK?	-	-	-	-	BASE;FTM	-	1	8
104	GREY	JCUR	-	-	-	-	RIM(DAMAGED);STRONG CAVETTO	-	1	10
108	GREY	JCUR	-	-	-	-	RIM FRAG;BURNISH INT;3-4C?	-	1	12
122	GREY	JCUR	-	1	D	10	RIM CP CURVE;NON J BS;LTGY QTZY FB	-	2	30
127	GREY	JCUR	-	1	D?	-	RIM/SHLDR;CP TYPE	-	3	23
122	GREY	JDW	-	-	D	09	RIM/SHLDR;BURNT ON RM	-	1	42
122	GREY	JDW	-	-	-	-	RIM FRAG	-	1	12
501	GREY	JDW	-	-	-	-	RIM ONLY;SANDY FAB;BURNT	-	1	34
108	GREY	JEV	-	-	D?	-	RIM FRAG;SANDY LTGY;DKER SURFS	-	1	15
108	GREY	JEV	-	-	-	-	RIM FRAG;SOOTED	-	1	6
108	GREY	JH	-	-	-	-	HDLE FRAG;2R;LTGRY F;DKER SURFS;QTZ	-	1	9
108	GREY	JL	HM?	-	-	-	LGE BS;>18MM THICK;QTZ-T	-	1	158
104	GREY	JUR	-	-	-	-	RIM FRAG ONLY;12DIAM	-	1	9
108	GRFF	CLSD	-	-	-	-	BS;AS IN 301	-	1	3
301	GRFF	CLSD	-	1	-	-	BSS;FINER FAB;LTGRY SANDW FB;EXT SLIP?	-	10	70
105	GROG	CLSD?	-	-	-	-	BS;VABR;MULTI-COL GROG;CF 127;140	-	1	18
127	GROG	J?	-	1?	-	-	BSS;ABR;RB CORTEX;MULTI-COL GROG	-	3	36
144	GROG	J?	-	-	-	-	BS;DKGRY EXT;RB CORTEX;MULTI GROG;GROOVED	-	1	21
141	GROG	JL	-	-	-	-	LGE BASE SH;GREY W GREY GROG	-	1	167
140	GROG	JL?	-	-	-	-	BSS;ABR;GROOVED;MULTI-COL GROG	-	5	210
108	GYMS	J?	-	1	-	-	BSS;LTGRY;SPARSE CALCAR;SHELL	-	4	53
141	IAGR	J	-	-	-	-	BS COARSE W QTZ;?GREY GROG;WIPED EXT	-	1	30
105	NVCC	-	ROUZ	-	-	-	FLAKE;CR FAB;FM UK	-	1	1
104	NVCC	BD	-	-	-	-	BS X BASE;CR-PINK FAB	-	1	8
108	NVCC	BD	-	-	-	-	BASE FRAG;CR FAB	-	1	15
108	NVCC	BD	-	-	-	-	BASE ANGLE FRAG;CR FAB	-	1	4
104	NVCC	BD?	-	-	-	-	BS; CR FAB	-	1	3
108	NVCC	BDFL	-	1	D	03	RIM/PT WALL;CR FAB	-	2	35
108	NVCC	BK	-	-	-	-	BS;LTBN FAB;CRAZED DK CC	-	1	6
110	NVCC	BK	-	-	-	-	BS;LTBN FAB	-	1	1
123	NVCC	BK	PA	-	-	-	BS;LTRB FAB;CR LINEAR DEC;PROB SAME	124	1	15
124	NVCC	BK	-	-	-	-	BS RB FAB AS BKPA IN	123	1	7
127	NVCC	BK	-	-	-	-	BASE;WALL;CR FAB	-	1	101
144	NVCC	BK	-	-	-	-	BS;CR FAB	-	1	9
127	NVCC	BKCR	-	-	-	-	RIM ONLY;CR FAB	-	1	3
122	NVCC	BKFO	-	-	-	-	BS;CR/GRY FAB;IRRIDESC CC	-	1	7
122	NVCC	BKFO	-	1	-	-	BSS;LTBN/GRY FB;IRRIDESC CC	-	2	5
108	NVCC	BKFO?	-	-	-	-	BS;BASAL ZONE;CR FAB	-	1	4
108	NVCC	BKFOS	-	-	-	-	BS;CR FAB	-	1	4
118	NVCC	BKFOS	-	-	-	-	BS;CR FAB;BURNT	-	1	4
123	NVCC	BKFOS	-	-	-	-	BS;LTRB FAB	-	1	5
140	NVCC	BKFOS	-	-	-	-	BS;CR FAB	-	1	7
108	NVCC	CLSD	-	-	-	-	BS;LTBN FAB	-	1	3
127	NVCC	CLSD	-	-	-	-	BS;ABR;CR FAB	-	1	3
122	NVCC?	BK	-	-	-	-	BASE AS RPNV47;LTBN FB;F.SANDY	-	1	24
123	OX	-	-	-	-	-	BS FLAKED;COARSE SANDY FAB	-	1	13
144	OX	-	-	-	-	-	BS TINY THIN WALL;BURNT	-	1	1
122	OX	B	-	-	D	07	RIM DKGRY F;LTRB SURFS;MOD QTZ;BURNISH ORIG	-	1	14
104	OX	B38?	-	-	-	-	RIM ONLY;RB F&S;MOD.QTZ	108	1	4

Cxt	Fabric	Form	Manuf+	Ves	D?	DNo	Details	Link	Shs	Wt
108	OX	B38?	-	-	-	-	BS;PT FLANGE;NOT DEF AS IN 104	-	1	11
108	OX	B38?	-	-	-	-	BS POSS BASE;SAME AS IN 104	104	1	7
301	OX	CLSD?	-	-	-	-	BS ABR	-	1	6
201	PRO	-	-	-	-	-	GLAZED POSTMED	-	1	20
109	SAMCG	-	-	-	-	-	FTRG FRAG	-	1	1
108	SAMCG	18/31 OR 31	-	-	-	-	BS	-	1	1
108	SAMCG	18/31R OR 31R	-	-	-	-	BS	-	1	5
122	SAMCG	33	-	-	-	-	RIM	-	1	3
122	SAMCG	37?	-	-	-	-	RIM ONLY FRAG;VBURNT	-	1	7
806	SAMCG	42?	-	-	-	-	THIN HDLE FRAG;?FM 42;HADRIANIC	-	1	1
108	SAMCG	79?	-	-	-	-	RIM FRAG	-	1	4
108	SAMCG	BD	-	-	-	-	FLAKE BS	-	1	2
108	SAMCG	D	-	-	-	-	BS	-	1	3
108	SAMCG	D	-	-	-	-	BS	-	1	2
108	SAMCG	D	-	-	-	-	BS	-	1	4
122	SHEL	-	-	-	-	-	BSS;VABR;WM OR HM?	-	2	23
122	SHEL	-	-	-	-	-	BS;LTGRY;MOD SHELL;VABR	-	1	30
122	SHEL	BD	-	1	D	12	RIM;PT WALL;DKGRY	-	3	23
122	SHEL	J	-	-	-	-	NR RIM;SHLDR;WM;POSS JDLS?	-	1	12
126	SHEL	J	-	-	-	-	SHLDR;WM;SOOTED	-	2	21
127	SHEL	J	-	1	-	-	BSS;BASE;WM;L'SCALE INT	-	13	204
144	SHEL	J	-	-	-	-	BS;GRY;MOD SHELL;WM	-	1	22
147	SHEL	J	-	-	-	-	BS;L'SCALE INT;PROB WM	-	1	3
147	SHEL	J	-	-	-	-	BS;GREY;PUNCT.BRACH'S	-	1	3
201	SHEL	J	-	-	-	-	RIM TINY FRAG;WM?	-	1	2
108	SHEL	J?	WM	1?	-	-	BSS DKGRY	-	2	9
108	SHEL	J?	-	-	-	-	BS;VABR	-	1	18
122	SHEL	JDLS	-	1	D	11	RIMS;WALL;WM	-	6	99
123	SPOX	B38	-	-	-	-	BS W FLANGE	-	1	8
123	SPOX	CLSD	-	-	-	-	BS WALL W CONSTRICTION	-	1	19
104	TILE	-	-	-	-	-	FRAG ?TEGULA	-	1	56
108	TILE	-	-	-	-	-	FRAG;TEGULA?	-	1	50
122	TILE	-	-	-	-	-	FRAG;TEGULA?	-	1	47
201	TILE	-	-	-	-	-	FRAGS VABR;ONE ?MORTAR TRACES	-	2	63
503	TILE	-	-	-	-	-	FRAGS	-	3	79
100	ZDATE	-	-	-	-	-	2C?	-	-	-
104	ZDATE	-	-	-	-	-	ML3	-	-	-
105	ZDATE	-	-	-	-	-	3C	-	-	-
107	ZDATE	-	-	-	-	-	L3-4	-	-	-
108	ZDATE	-	-	-	-	-	ML3?	-	-	-
109	ZDATE	-	-	-	-	-	2-3C	-	-	-
110	ZDATE	-	-	-	-	-	3C	-	-	-
114	ZDATE	-	-	-	-	-	ML2?	-	-	-
117	ZDATE	-	-	-	-	-	ROM	-	-	-
118	ZDATE	-	-	-	-	-	EM3	-	-	-
122	ZDATE	-	-	-	-	-	ML4	-	-	-
123	ZDATE	-	-	-	-	-	4C PROB	-	-	-
124	ZDATE	-	-	-	-	-	ML3-4	-	-	-
126	ZDATE	-	-	-	-	-	L4	-	-	-
127	ZDATE	-	-	-	-	-	3C	-	-	-
129	ZDATE	-	-	-	-	-	3C?	-	-	-
138	ZDATE	-	-	-	-	-	ROM	-	-	-
140	ZDATE	-	-	-	-	-	EM3	-	-	-
141	ZDATE	-	-	-	-	-	2C?	-	-	-
144	ZDATE	-	-	-	-	-	3C	-	-	-
147	ZDATE	-	-	-	-	-	L4	-	-	-
201	ZDATE	-	-	-	-	-	3-4C/POSTMED	-	-	-
301	ZDATE	-	-	-	-	-	ROM	-	-	-
404	ZDATE	-	-	-	-	-	ROM	-	-	-
501	ZDATE	-	-	-	-	-	M3+	-	-	-
503	ZDATE	-	-	-	-	-	3C POSS	-	-	-
806	ZDATE	-	-	-	-	-	EM2?	-	-	-
1004	ZDATE	-	-	-	-	-	3-4C?	-	-	-
100	ZZZ	-	-	-	-	-	AMPH ONLY	-	-	-
108	ZZZ	-	-	-	-	-	MIXED DATES	-	-	-
109	ZZZ	-	-	-	-	-	NO CLOSE DATING	-	-	-
110	ZZZ	-	-	-	-	-	NO CLOSE DATES	-	-	-
122	ZZZ	-	-	-	-	-	SOME ABR SHS	-	-	-
806	ZZZ	-	-	-	-	-	ONLY UNUS SAMIAN HDLE	-	-	-
806	ZZZ	-	-	-	-	-	IRON PAN FRAG	-	-	-

Appendix 3

Navenby - ESNA01

A small collection of eighty fragments of animal bone were recovered by hand excavation during evaluation of a site at Navenby. The bulk of the contexts are believed to be of Roman date and the bone finds are summarised in Table 1 below.

The animal bone was identified by reference to modern reference skeletons in the collection of the author and recorded directly into an ACCESS database using the recording procedures and codes routinely used by the Environmental Archaeology Consultancy. The details of these codes and the data recorded in each field are given in the key accompanying the attached Bone Catalogue.

Preservation is generally good although the dog tibia from Trench 3 shows severe pitting of the bone surface, suggesting perhaps a context somewhat older than the others which produced bone or different soil conditions.

Table 1: Frequency of hand collected bone fragments

species	No. fragments
Horse	7
Cattle	16
Cattle size	38
Sheep or goat	12
Sheep size	2
Pig	4
Dog	1
Unidentified bird	1

Cattle and cattle size bones dominate in the assemblage with sheep or goat reasonably common. Other species identified include horse, dog and pig. A few of the bones have been gnawed by dogs and a small number show chop marks. The dental evidence indicates the presence of immature and adult sheep (or goat) and adult cattle.

D.J.Rackham
2nd April 2001

THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

Key to codes used in the cataloguing of animal bones and marine shells

SPECIES:

SPECIES CODE			SPECIES CODE	
MAN	human		DOVE	Dove species
EQU	Horse		FER	Feral dove
EQSZ	Horse size		PART	Partridge
BOS	Cattle		SWAN?	Swan?
BOSL	Cattle-large		WOOD	Woodcock
CSZ	cattle size		CURL	Curlew
SUS	Pig		WADE	wader
OVCA	sheep or goat		CROK	Crow or rook
OVI	Sheep		CORV	Crow or rook
CRA	Goat		JACK	Jackdaw
SSZ	sheep size		OWL	Owl indet.
FEL	Cat		BUZZ	Buzzard
CAN	Dog		GULL	Gull sp.
AUR	Aurochs			
AUR?	Aurochs?		TURD	Turdidae
CER	red deer		BIRD	Identifiable but not id'd
DAM	Fallow deer		PASS	Passerine
CLS	roe deer		LBIRD	Large bird
LEP	Hare		UNIB	Bird indet
ORC	Rabbit			
LAG	Lagomorph		FROG	Frog
CARN	Carnivore		FRTO	Frog or toad
FOX	Fox			
POLE	Polecat/ferret			
WEA	weasel		GAD	Gadid, cod family
BADG	Badger		LING	Ling
SEAL	seal		HADD	Haddock
SQU?	Squirrel?		RAY	ray
BEAV	Beaver		FISH	Fish
ROD	Rodent		UNIF	Fish indet
RAT	Rat			
AGR	Field vole		OYS	oyster
ARV	Water vole		COK	Cockle
MUS	House mouse		MUSS	Common Mussel
SORA	Common shrew		WHELK	Common whelk
MOLE	Mole		HEL	Helix aspersa
SMA	Small mammal		HELIX	Helix sp.
UNI	Unknown		HELN	Helix nemoralis
			SNAIL	snail
CHIK	Chicken			
CHKZ	Cicken size		FOSS	Fossil bone
GOOS	Goose, dom			
GOOS?	Goose, dom.?			
GSSZ	Goose size			
GSSP	Goose species			
GOSZ	Goose, poss. Wild			
DUCK	Duck, domestic sp.			
DUCK?	Duck?			
DKSP	Duck species			
DSP	Duck species indet			
MALL	Duck, dom.			
TURK	Turkey			

BONE ELEMENT:

BONE CODE		BONE CODE	
SKEL	skeleton	SCP	scapula
SKL	skull	HUM	humerus
ANT	antler	RAD	radius
ANT?	antler?	ULN	ulna
ATT	antler tine	RUL	radius and ulna
HC	horn core	C/T	carpus/tarsus
TEMP	temporal	C23	carpus 2+3
FRNT	frontal	CAR	carpus
PET	petrous	CPA	accessory carpal
PAR	parietal	CPI	intermediate carpal
OCIP	occipital	CPR	radial carpal
ZYG	zygomatic	CPU	ulnal carpal
NAS	nasal	MTC	metacarpus
PMX	premaxilla	MC1-5	metacarpus 1-5
MAN	mandible	MTP	metapodial
MNT	mandibular tooth	MPL	lateral metapodial
DLI	deciduous lower incisor	INN	innominate
DLPM1-4	deciduous lower premolar 1-4	ILM	ilium
LI	lower incisor (and 1-3)	PUB	pubis
LC	lower canine	ISH	ischium
LPM1-LPM4	lower premolar 1-4	FEM	femur
LM1-LM3	lower molar 1 - molar 3	PAT	patella
MAX	maxilla	TIB	tibia
DUI	deciduous upper incisor	FIB	fibula
UI	upper incisor (1-3)	LML	lateral malleolus
UC	upper canine	AST	astragalus
DUPM	deciduous upper premolar	CAL	calcaneum
DUPM1-4	deciduous upper premolar 1-4	CQ	centroquartal
UPM1-UPM4	upper premolar 1-4	TAR3	tarsus 3
UM1-UM3	upper molar 1 - molar 3	T4	tarsus 4
MXT	maxillary tooth	TAR	tarsus
TTH	indeterminate tooth	MTT	metatarsus
INC	incisor	MT1-5	metatarsus 1-5
HYD	hyoid	MTL	lateral metatarsus
ATL	atlas	SES	sesamoid
AXI	axis	PH1	1st phalanx
CEV	cervical vertebra (and 3-7)	PH2	2nd phalanx
TRV	thoracic vertebra (and 1-13)	PH3	3rd phalanx
LMV	lumbar vertebra	PHL	lateral phalanx
SAC	sacrum	LBF	long bone
CDV	caudal vertebra	UNI	unidentified
VER	vertebra		
STN	sternum	CLV	clavicle
CC	costal cartilage	COR	coracoid
RIB1	first rib (2 etc)	CMP	carpo-metacarpus
RIB	rib	CMC	carpo-metacarpus
		WPH1-3	wing phalanges 1-3
URO	urostyle	WPH	wing phalanx
		LSA	lumbosacrale
DENT	dentary		
CLEI	cleithrum		
RAY	fin ray		
SHELL	shell		
UV	upper valve		
VAL	valve		

NUMBER: number of fragments in the entry

SIDE: W - whole L - left side R - right side F - fragment

FUSION: records the fused/unfused condition of the epiphyses
P - proximal; D - distal; E - acetabulum; N - unfused; F - fused; C - cranial; A - posterior

ZONES: records the part of the bone present.
The key to each zone on each bone is on page 4

BUTCHERY: records whether a bone has been chopped (CH), cut (KN), worked (W), burnt (C)

GNAWING: records if a bone has been gnawed by dogs (DG), cats (FEL) or rodents (RG)

TOOTH WEAR - Codes are those used in Grant, A. 1982 The use of tooth wear as a guide to the age of domestic animals, in B.Wilson, C.Grigson and S.Payne (eds) *Ageing and sexing animal bones from Archaeological sites*, 91-108.

Teeth are labelled as follows in the tooth wear column:

Deciduous	Permanent
f ldpm2/dupm2	F lpm2/upm2
g ldpm3/dupm3	G lpm3/upm4
h ldpm4/dupm4	H lpm4/upm4
	I lm1/um1
	J lm2/um2
	K lm3/um3

MEASUREMENTS :Any measurements are those listed in A.Von den Driesch (1976*) A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA

PATHOLOGICAL: A 'P' indicates that the bone fragment carries a pathology

COMMENTS: This may include a short description of the fragments, any pathologies, butchery or gnawing evidence

PRESERVATION: records the condition of the bone in the following manner

1- enamel only surviving
2- bone very severely pitted and thinned, tending to break up; teeth with surface erosion and loss of cementum and dentine
3- surface pitting and erosion of bone, some loss of cementum and dentine on teeth
4- surface of bone intact, loss of organic component, material chalky, calcined or burnt
5- bone in good condition, probably with some organic component

ZONES - codes used to define the zones on each bone

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

Archive Catalogue of Animal Bone from Navenby – ESNA01

site	cont	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path	comment	preservation
ESNA01	1006	CSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	104	BOS	AST	1	R		1				L1-68.6 L2-63 Bp-46.2 Bd-43.6 Dd-32.9		COMPLETE	4
ESNA01	104	BOS	MAN	1	R		123	CH					DIASTEMAL FRAGMENT WITH CUT MARKS	4
ESNA01	104	CSZ	LBF	1	F								SHAFT FRAGMENT	4
ESNA01	104	CSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	104	EQU	TAR	1	W		1						COMPLETE	4
ESNA01	108	BOS	AXI	1	F		2						ANT CENTRUM	4
ESNA01	108	BOS	HUM	1	L								DISTAL SHAFT FRAGMENT	4
ESNA01	108	BOS	HUM	1	R	DF	8	CH					SPLIT DISTAL END-CHOPPED MEDIALLY	4
ESNA01	108	BOS	LI	1	L								SL WEAR	4
ESNA01	108	BOS	MAN	1	L				DG				POST FRAGMENT ASC RAMUS-VENTRAL CHEWED	4
ESNA01	108	BOS	UM3	1	L					K15				4
ESNA01	108	CSZ	HUM	1	F								SHAFT FRAGMENT	4
ESNA01	108	CSZ	LBF	1	F								SHAFT FRAGMENT	4
ESNA01	108	CSZ	LMV	1	F								FRAGMENT OF TRANS PROCESS	4
ESNA01	108	CSZ	MAN	1	F								MEDIAL FRAGMENT HORI RAMUS	4
ESNA01	108	CSZ	RIB	5	F								SHAFT FRAGMENT	4
ESNA01	108	CSZ	UNI	1	F								? CEV EPIPHYSIS?	4
ESNA01	108	EQU	CEV	1	F	CF	1245						SOME VENTRAL DAMAGE	4
ESNA01	108	EQU	LM	1	F								CUSPS BROKEN	4
ESNA01	108	EQU	LPM2	1	L								MED WEAR	4
ESNA01	108	OVCA	HUM	1	R	DF	69		DG				DISTAL HALF-CONDYLE CHEWED OFF	4
ESNA01	108	OVCA	LM1	1	R					I12				4
ESNA01	108	OVCA	LM2	1	R					J10				4
ESNA01	108	OVCA	MTT	1	R		12						PROX HALF	4
ESNA01	108	OVCA	PH1	1	R	PF	12						COMPLETE	4
ESNA01	108	SSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	108	SUS	RIB	1	L								SHAFT	4
ESNA01	109	OVCA	FEM	1	R	DF	467						DISTAL END-CONDYLE CHOPPED OFF-MODERN CHOP?	4

site	cont	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path	comment	preservation
ESNA01	110	BOS	TIB	1	R		4						PROX SHAFT FRAGMENT	4
ESNA01	110	CSZ	LBF	1	F								SHAFT FRAGMENT	4
ESNA01	110	CSZ	RAD	1	F								SPLIT SHAFT FRAGMENT	4
ESNA01	110	CSZ	SKL	2	F								FRAGMENT	4
ESNA01	122	BOS	INN	1	R		9	CH					ACETABULAR FRAGMENT OF ILIUM-SHAFT CHOPPED	4
ESNA01	123	OVCA	MAN	1	L		2			fgh11			M1 PROB UP BUT LOST	4
ESNA01	123	SSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	126	BOS	LPM4	1	R					H11				4
ESNA01	126	BOS	MAN	1	R		5						FRAGMENT ASC RAMUS WITH CONDYLE	4
ESNA01	126	CSZ	LMV	1	F	CNAN	4						CENTRUM	4
ESNA01	129	BOS	MTC	1	F	DN	5						DISTAL SHAFT	4
ESNA01	129	CSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	144	BOS	ULN	1	F								PROX SHAFT FRAGMENT	4
ESNA01	144	UNIB	LBF	1	F								? CHIK SIZE-TIB?	4
ESNA01	146	CSZ	LBF	7	F			C					CALCINED SHAFT FRAGMENT	4
ESNA01	146	CSZ	VER	1	F			C					CALCINED FRAGMENT	4
ESNA01	147	CSZ	FEM	1	F								SHAFT FRAGMENT	4
ESNA01	147	CSZ	LBF	1	F								SHAFT FRAGMENT	4
ESNA01	147	CSZ	RIB	1	F								PROX SHAFT FRAGMENT	4
ESNA01	147	CSZ	TRV	1	F		5						BASE SPINE	4
ESNA01	147	EQU	AST	1	L		1						BROKEN- 3 PIECES	4
ESNA01	147	OVCA	HUM	1	L		69						DISTAL HALF SHAFT	4
ESNA01	147	OVCA	LI	1	R								CUSP BROKEN	4
ESNA01	147	OVCA	LM2	1	R					J8				4
ESNA01	147	OVCA	TIB	1	F				DG				DISTAL SHAFT-CHEWED	4
ESNA01	147	SUS	MAN	1	R								FRAGMENT WITH PM ALEVOLI	4
ESNA01	147	SUS	TIB	1	L								PROX SHAFT FRAGMENT-2 PIECES	4
ESNA01	201	BOS	MAN	1	L		7						ANT FRAG ASC RAMUS	4
ESNA01	201	CSZ	LBF	1	F								SHAFT FRAGMENT	4
ESNA01	201	CSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	201	CSZ	TTH	1	F								SPLIT ENAMEL FRGAMENT-INCISOR	4

site	cont	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path	comment	preservation
ESNA01	201	CSZ	UNI	2	F								INDET	4
ESNA01	201	CSZ	VER	1	F								FRAG NEURAL ARCH	4
ESNA01	301	CAN	TIB	1	R		4						PROX SHAFT-HEAVILY ERODED AND PITTED	3
ESNA01	503	CSZ	RIB	1	F								SHAFT FRAGMENT	4
ESNA01	503	EQU	FEM	1	R		4						SHAFT- 10 PIECES	4
ESNA01	503	OVCA	LM3	1	L					K12				4
ESNA01	507	SUS	SCP	1	F		4						SPINE - 2 PIECES	4
ESNA01	806	BOS	UM1	1	R					I16			WELL WORN	4
ESNA01	806	EQU	UM	1	L								WELL WORN	4

Appendix 4: List of Archaeological Contexts

Trench 1

Context No.	*Category*	*Description*
100	layer	topsoil
101	layer	subsoil
102	fill	fill of [103]
103	cut	pit
104	deposit	demolition
105	fill	backfill of [106]
106	cut	robber trench
107	layer	occupation debris
108	deposit	demolition (?of hexagonal building)
109	layer/fill	possibly upper fill of [121]
110	layer	?dark earth sealing roman road
111	wall	e-w limestone wall
112	wall	e-w limestone wall
113	surface	Roman road
114	deposit	demolition
115	wall	limestone wall (?hexagonal building)
116	surface	yard surface (?assoc. with hexagonal building)
117	surface	floor surface (assoc. with robber trench [106])
118	fill	fill of [121]
119	?cut	possible roadside ditch
120	void	-
121	cut	e-w ?ditch
122	layer	general soil build-up/former turf line?
123	?fill	fill of roadside ditch [119]
124	?fill	fill of roadside ditch [119]
125	layer	orange/brown sand natural
126	deposit	demolition
127	layer	demolition
128	deposit	demolition
129	fill	clay fill of pit [145]
130	layer	orange sand natural
131	layer	soil build-up
132	wall	e-w limestone wall
133	void	-
134	wall	e-w limestone wall
135	cut	?possible robber trench
136	cut	beam slot/boundary gully
137	cut	stone-filled ?drain
138	fill	stone within possible drain [137]
139	fill	silting of [136]
140	fill	backfill of ?robber trench [135]
141	deposit	demolition
142	layer	soil build-up
143	layer	redeposited natural sand
144	deposit	demolition
145	cut	nw-se rectangular pit
146	fill	burnt fill of pit [145]

147	fill	clay fill of [145]
148	?levelling	levelling for (113)
149	?surface	?Roman road earlier than (113)

Trench 2

Context No.	*Category*	*Description*
200	layer	topsoil
201	layer	subsoil
202	void	-
203	layer	orange sand and limestone gravel natural
204	cut	quarry pit
205	fill	fill of quarry [204]
206	cut	e-w grave
207	fill	backfill of grave [206]
208	surface	roman road
209	layer	subsoil layer over road (208)
210	skeleton	Roman inhumation

Trench 3

Context No.	*Category*	*Description*
300	layer	topsoil
301	layer	subsoil
302	layer	natural sand, gravel and clay mix
303	cut	n-s grave cut
304	fill	backfill of grave [303]
305	?cut	possible cut for roman road
306	surface	roman road
307	skeleton	Roman inhumation

Trench 4

Context No.	*Category*	*Description*
400	layer	topsoil
401	layer	subsoil
402	?cut	possible cut for roman road
403	surface	roman road surface
404	layer	soil build-up over roman road [402]
405	layer	soil build-up over (404)
406	layer	limestone brash

Trench 5

Context No.	*Category*	*Description*
500	layer	topsoil

Appendix 4: List of Archaeological Contexts

501	layer	subsoil
502	layer	natural
503	deposit	demolition
504	wall	e-w wall
505	void	-
506	cut	e-w gully
507	fill	fill of gully [506]
508	layer	buried soil (same as (509))
509	layer	buried soil (same as (508))

Trench 6

Context No.	*Category*	*Description*
600	layer	topsoil
601	layer	subsoil
602	layer	sand, gravel and clay natural mix

Trench 7

Context No.	*Category*	*Description*
700	layer	topsoil
701	layer	limestone brash natural

Trench 8

Context No.	*Category*	*Description*
800	layer	topsoil
801	layer	subsoil
802	cut	n-s ditch
803	fill	fill of ditch [802]
804	layer	sand, gravel and clay natural
805	cut	n-s grave
806	fill	backfill of grave [805]
807	cut	n-s gully
808	fill	fill of gully [807]
809	cut	n-s grave
810	fill	backfill of grave [809]
811	cut	pit containing human remains
812	fill	backfill of pit [811]
813	cut	glacial feature
814	fill	fill of glacial feature [813]
815	fill	fill of glacial feature [813]
816	cut	?posthole (?grave-marker)
817	fill	backfill of posthole [816]
818	fill	fill of animal burrow [819]
819	cut	animal burrow
820	recut	recut of gully [807]

821	fill	?robbed-out wall
822	fill	fill of ditch [802]
823	fill	fill of ditch [802]
824	stone	packing in posthole [816]
825	skeleton	Roman inhumation
826	skeleton	Roman inhumation
827	skeleton	Roman inhumation

Trench 9

Context No.	*Category*	*Description*
900	layer	topsoil
901	layer	limestone brash natural

Trench 10

Context No.	*Category*	*Description*
1000	void	-
1001	layer	topsoil
1002	layer	limestone brash natural
1003	cut	n-s ditch
1004	fill	fill of ditch [1003]
1005	cut	n-s ditch
1006	fill	fill of ditch [1005]

Appendix 5

The Registered Finds from Ermine Street, Navenby (ESNA01)

Twelve registered finds were recovered from Trench 1; these are principally of stone, with some iron and copper alloy, two pieces of glass and a single fragment of bone, as listed below. All of the metalwork is corroded, particularly the ironwork.

All finds were examined in conjunction with the relevant X-ray plates (produced by the Lincolnshire County Council Heritage Service Conservation Department), recorded on standard finds cards to basic archive level, and sketches made.

List of Registered Finds

Context	Finds No.	Material	Object	Comments
108	1	Bone	Pin	Roman; decorated
108	2	Copper alloy	Coin	Late Roman; mid-4th C+
108	3	Stone	Quern	Upper stone; Millstone Grit
108	4	Copper alloy	Sheet	Scrap?
107	5	Iron	Nails	x2
107	5	Iron		Fragment: knife?
122	6	Glass	Window	Late Roman; 4th C
122	7	Glass	Vessel	Early Roman; 1st - early 2nd C
141	8	Copper alloy	Tapering wire	Needle?
126	9	Iron	Loop/ring	
126	10	Stone	Hone	Roman; Kentish Ragstone
147	11	Stone	Quern	Upper stone; Millstone Grit
147	12	Stone	Quern	Lower stone; Millstone Grit

All finds were recovered from stratified Roman deposits but few are closely datable. A single small chip of glass <7> is from a deep blue vessel, the strong colour of which suggests a 1st- to early 2nd-century date. The conical head of a bone pin <1> is ornamented with a zone of lattice decoration between shallow grooves; the shaft is broken but was almost certainly of the plain, tapering form that is generally thought to belong to the earlier Roman period (1st to early/mid 3rd century).

The little detail that is visible on the coin <2> indicates that this is a 4th-century piece. It cannot be more closely identified in its present condition although the reverse type, almost certainly depicting two Victories, is no earlier than the middle of the century. The only other find tentatively identified as of late Roman date is a piece of thin (1.5mm), greenish colourless window glass <6>; within it are very fine, elongated bubbles indicating that it is blown, rather than cast glass, which would indicate a 4th-century date. The occurrence of window glass here would be more in keeping with relatively high-status activity, or with a villa, than with a normal (domestic) roadside building.

The high proportion (25%) of quernstones among the finds is an unusual feature of the assemblage. All three <3, 11, 12> are of Millstone Grit from the Pennines, the difference in thickness of the stones and in the coarseness of the material indicating that they are from three separate quernstones. The grinding surfaces of all three are worn, suggesting that all were well used, and all have the remains of a central hole. One <11> has the remains of what appears to be a shallow groove around the hole while another <3> is broken along the

remains of a rectangular groove, almost certainly one of a pair placed on opposing sides of the hole; a similar feature appears on a quern from excavations at Baldock, Hertfordshire (Stead & Rigby 1986, fig 78, 795). The diameter of the stone can be estimated from the surviving outer edge as approximately 48 cm; a smoke-blackened area extending over a small area of both faces and one broken edge indicates contact with heat some time after the quern had broken.

Recommendations

The glass should be submitted for specialist examination to verify identification and date; no further work is required on any of the other finds.

Reference

Stead, I M, & Rigby, V, 1986 *Baldock. The Excavation of a Roman and Pre-Roman Settlement 1968-72, Britannia Monograph,* 7

Appendix 6

Land off Ermine Street, Navenby, Lincolnshire.

ESNA01

Lithic Materials: Catalogue and Assessment

Report by Jim Rylatt – April, 2001

1.0 Catalogue

7 pieces of worked flint were recovered during the excavation:

Context No.		Description
108	Broken blade	Proximal fragment of a conchoidal tertiary flake, with small complex platform, and relatively diffuse bulb having eraillure flake removed, and feathered termination. Dorsal surface has scars suggesting removal of similar parallel-sided flakes from a single platform, and there has been a significant amount of trimming and preparation of the platform edge prior to flake removal. Probably late Mesolithic to early Neolithic. Slight abrasion to both lateral edges and very tip of distal end missing as a result of post-depositional processes. Patinated brownish-grey opaque flint.
108	Secondary flake	Irregular, squat, conchoidal flake, with flat platform, moderately pronounced bulb, and stepped termination. The dorsal surface is c. 10% cortical. Series of small, parallel flake removals from one lateral edge, with angle between platform and dorsal face exceeding 90°, suggests that this flake was produced to rejuvenate the core. Lightly patinated brownish-grey opaque flint. 20 x 27mm.
144	Misc. scraper	Thick, irregular, squat flake, with quite a wide flat platform and relatively pronounced bulb having eraillure flake removed, and feathered termination. The distal end, part of one lateral edge, and the dorsal face of the platform at the proximal end, have been retouched by the removal of small, abrupt and semi-abrupt pressure flakes. Browny-grey opaque flint, probably burnt. 21 x 23mm.
201	Broken tertiary flake	Distal fragment of a conchoidal flake, with a feathered termination. Dorsal surface has scars suggesting removal of flakes from several platforms, and one facet appears to have been ground and polished, raising the possibility that this is a fragment of a sharpening flake from a bifacially worked tool. Grey-brown opaque flint.
301	Broken secondary flake	Proximal fragment of flake, with flat platform, and diffuse bulb, also probably burnt. Dorsal surface has scars suggesting removal of similar parallel-sided flakes from a single platform, and there has been some trimming and preparation of the platform edge prior to flake removal. Dorsal surface c. 20% cortical. Damage to one lateral edge and removal of distal end occurred as a result of post-depositional processes. Patinated brownish-grey opaque flint.

Context No.		Description
404	Misc. scraper	Small squat flake, with flat platform and moderately pronounced bulb, the latter having an incipient cone of percussion immediately adjacent, and feathered termination. The distal end and half of one lateral edge have been retouched by the removal of small, semi-abrupt pressure flakes - the latter being somewhat more irregular than scale-flakes of late Neo/EBA. Patinated grey opaque flint, possibly burnt. 18 x 21mm.
507	Broken secondary flake	Distal fragment of roughly parallel-sided conchoidal flake, with feathered termination. One lateral edge has possible use-wear, but this may also result from post-depositional processes. The dorsal surface is c. 25% cortical. Grey-brown opaque flint.

***NB*:** Measurements are given only for complete flakes. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

Table 1: Summary of the worked lithic material, showing attributes and modifications

	Number present	Burnt	Broken	Polished	Blades & blade-like flakes
Secondary flakes	3	1	2		1
Tertiary flakes	2		2	1	1
Misc. scraper	2	2			
Total	7	3	4	1	2

2.0 Description and context

This is a very small assemblage, which restricts the level of information that can be derived from its analysis. All of the worked stone is flint, most, if not all, of which appears to be derived from secondary deposits; secondary flakes having a thin, abraded cortex. This suggests that they were produced from water-transported nodules, a factor accounting for the considerable variation in colour, composition and quality.

There were no cores or core fragments in the assemblage, but a flake recovered from (108) appears to have been produced to rejuvenate a core. This suggests that only the later stages of the core reduction sequence were undertaken on the site, but this is only a tentative statement, as the assemblage is very small and will therefore amplify any biases.

Examination of the scars on the dorsal surfaces of the flakes indicates there are two distinct patterns of working evident in the assemblage. Two, or possibly three, of the flakes have been removed from prepared cores, having single platforms. They are relatively narrow and parallel sided, with feathered terminations indicating a high degree of control. Additionally, the dorsal surfaces exhibit the scars of trimming flake removals, indicating that the cores were being carefully maintained during the reduction process. In contrast, a few flakes are the product of multiple platform working, with the latter cores being characterised by a relatively random patterning of the relationships between the platforms. These latter flakes are relatively thick and squat.

There are 2 scrapers, constituted 28.6% of the assemblage. This sub-set suggests that in addition to core reduction, tools were being used on, or within the immediate vicinity of, the site. The form of these tools suggests that they are both of a comparable date.

3.0 Dating

The assemblage contains 2 to 3 blades, or blade-like flakes. These morphological attributes, attesting to highly controlled patterns of working, indicate that this component was manufactured during the later Mesolithic, or early Neolithic. Many of the blades are small, and while this is also likely to reflect the mean size of the nodules of raw material, it could also tentatively suggest an earlier date in this range.

The flakes produced from multiple platform cores belong to a later phase of activity. The 2 scrapers, from (144) and (404), have attributes that have been noticed in Late Bronze Age and Iron Age assemblages - particularly the irregularity of the flakes and the incipient cone of percussion (Young & Humphrey, 1999). Given that previous archaeological investigations in the vicinity of the current site have detected the presence of Late Bronze Age/Early Iron Age and Late Iron Age activity (Palmer-Brown, 1994; Palmer-Brown & Rylatt, 1999), such an attribution does not seem unlikely.

4.0 References

Palmer-Brown C. 1994 *Chapel Heath, Navenby: Archaeological Field Evaluation Report.* Pre-Construct Archaeology (Unpublished report).

Palmer-Brown C. & Rylatt, J. 1999 *Archaeological Field Evaluation Report, Land at Chapel Heath, Navenby, Lincolnshire.* Pre-Construct Archaeology (Unpublished report).

Young, R. & Humphrey, J. 1999 Flint use in England after the Bronze Age: a time for a re-evaluation? *Proceedings of the Prehistoric Society* **65**: 231-242.