

M11/09

**ARCHAEOLOGICAL EXCAVATION AND
WATCHING BRIEF ON LAND AT THE
FORMER ARMY CADET FORCE HQ,
NEWPORT,
LINCOLN
(LINA 09 and LINA 10)**

Work Undertaken For
CgMs Consulting Limited on behalf of
McCarthy and Stone Limited

October 2011

Report Compiled by
Mark Peachey BA(Hons)

Planning Application No: (2008/0543/F)
National Grid Reference: SK 976 727
The Collection Accession No: 2008.40
OASIS ID No: archaeo11-106681

Report No: **89/11**

**ARCHAEOLOGICAL
PROJECT
SERVICES**



Quality Control
Land at the Former Army Cadet Force HQ,
Newport, Lincoln
(LINA 10)

Project Coordinator	Gary Taylor
Supervisor	Mark Peachey
Site Staff	Andy Failes, Ross Kendall, Jonathon Smith
Surveying	Mark Dymond, Andy Failes
Watching Brief	Andy Failes, Bob Garland, Bob Hamilton, Vicky Mellor, Mark Peachey
Finds Processing	Denise Buckley
Environmental Sample Processing	Jonathon Smith
Photographic Reproduction	Mark Peachey
Finds Illustrations	David Hopkins
CAD Illustration	Mark Peachey
Post-excavation Analysis	Mark Peachey

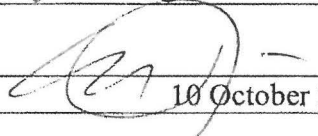
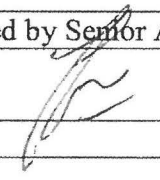
Checked by Project Manager	Approved by Senior Archaeologist
Gary Taylor 	 Tom Lane
Date: 10 October 2011	Date: 10 October 2011

Table of Contents

List of Figures

List of Plates

1.	SUMMARY	1
2.	INTRODUCTION.....	1
2.1	DEFINITION OF AN EVALUATION	1
2.2	PLANNING BACKGROUND.....	1
2.3	TOPOGRAPHY AND GEOLOGY	2
2.4	ARCHAEOLOGICAL SETTING	2
3.	AIMS AND OBJECTIVES	4
4.	METHODS	4
5.	RESULTS	5
6.	DISCUSSION	11
7.	CONCLUSION	13
8.	ACKNOWLEDGEMENTS	13
9.	PERSONNEL	13
10.	BIBLIOGRAPHY	14
11.	ABBREVIATIONS.....	15

Appendices

1. Specification for an Archaeological Evaluation
2. Context descriptions
3. The Finds by Alex Beeby, Anne Irving, Lavinia Green, Barbara Precious and Gary Taylor
4. The Human Remains- the Inhumations by Ross Kendall
5. The Cremated bone (LINA 08) by Jennifer Wood
6. Animal bone by Matilda Holmes
7. Notes on the environmental samples by James Rackham
8. Glossary

9. The Archive

List of Figures

- Figure 1 General location plan
- Figure 2 Site location plan
- Figure 3 Overall Plan
- Figure 4 Plan of east area features
- Figure 5 Plan of central area features
- Figure 6 Plan of west area features
- Figure 7 Plan of Block A footings
- Figure 8 Plan of Block B footings
- Figure 9 Plan of Newport service trench
- Figure 10 Sections 1-8
- Figure 11 Sections 9-19
- Figure 12 Sections 20-34
- Figure 13 LINA 09 watching brief sections
- Figure 14 Roman pottery illustrations
- Figure 15 Medieval pottery illustrations
- Figure 16 Metal objects
- Figure 17 Stone and worked bone objects

List of Plates

- Plate 1 Pre-machining view of east end of site looking towards Newport
- Plate 2 Machining east end of the site looking southwest
- Plate 3 Pit [016], Section 2 looking northeast
- Plate 4 Roman cess pit [042], in foreground, cut by pit [025], Section 28
- Plate 5 Pit [067], Section 13

- Plate 6 Stone structure [030] looking west with pit [041] and ditch terminus [048] to rear
- Plate 7 Stone structure [030], Section 5 looking northeast
- Plate 8 Detail of southwest corner of stone structure [030]
- Plate 9 Pit [041], Section 6 looking west
- Plate 10 Partial stone lining [040], set into the top of pit [041], looking northeast
- Plate 11 Ditch terminus [048], Section 9 looking northwest
- Plate 12 Stone lining (064) of pit [063] looking south
- Plate 13 Pit [087], Section 17 looking east
- Plate 14 Skeleton (085) in grave [086], cut by pit [090]
- Plate 15 Pit [097], Section 19 looking southeast
- Plate 16 Stone structure [030], post excavation view looking northwest
- Plate 17 Block A looking southeast during watching brief on footings
- Plate 18 Block A watching brief. North edge of quarry pit [609], Section 28 looking south
- Plate 19 Watching brief on Newport service trench. Wall [627] looking north

1. SUMMARY

An archaeological excavation was undertaken on land at the former Army Cadet Force HQ, Newport, Lincoln as the area is archaeologically-sensitive, lying alongside the Ermine Street Roman road and near to previous discoveries of Roman buildings and burials. The site lies within the 11th to 13th century Newport Earthworks scheduled monument immediately to the east of its western ditch. Additionally, the site is in area that was occupied by a market during the medieval period.

An evaluation of the site had identified a group of Roman ditches, probably property boundaries, laid out north-south and east-west. Near to the Roman road was an area of Roman funerary activity. Two burials, one with pottery grave goods, and two cremations in an urn and a pit were found. A medieval stone-lined cess pit was also revealed.

The excavation identified two main periods of occupation of the site: in the 2nd to early 4th centuries AD and in the 11th to mid 13th centuries. It confirmed the presence of a Roman enclosure system, probably backfilled in the 3rd century AD. There were several rectangular pits of 2nd to early 4th century date, rich in finds indicating nearby domestic occupation as well as probable funerary activity. Two further north-south aligned burials, one cutting a backfilled ditch and the other a backfilled pit, along with two more revealed on a subsequent watching brief, emphasised the importance of Newport as an extramural cemetery.

An 11th-12th century boundary ditch and oval pit were revealed on the eastern part of the site. The mid 12th to early 13th century cesspit partially revealed on the evaluation was fully exposed and proved to be adjacent to a rectangular stone structure of probable 12th century date. This was probably the undercroft of a

timber building and had been used for dumping a variety of rubbish, dating up to the mid 13th century. A neonate had been buried within these deposits. Just northwest of these features was a ditch terminus of 12th to early 13th century date.

A possibly medieval grave was encountered at the west end of site. Aligned east-west, the grave was undated but was cut by a 13th century pit.

Parts of the south central and southwest areas of the site had been quarried away in the post-medieval or early modern periods for limestone.

Finds retrieved comprised a large quantity of Roman and medieval pottery, brick/tile, metals and animal bone. Four human skeletons including a neonate were also recovered.

2. INTRODUCTION

2.1 Definition of an Excavation

An archaeological excavation is defined as, "a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during the fieldwork are studied and the results of that study published in detail appropriate to the project design" (IfA 2008).

2.2 Planning Background

Planning permission had been granted (2008/0543/F) for the partial retention, conversion and extension of the existing frontage building and the construction of two and three storey buildings to the rear, containing apartments for the elderly, and associated facilities including car parking

and landscaping. This was subject to a programme of archaeological work consisting of an excavation and subsequent watching brief. Archaeological Project Services was commissioned to undertake this work. The excavation was carried out between 25th January and 18th February, and the watching brief from 11th January to 12th July 2010, in accordance with a specification prepared by CgMs Consulting Limited and approved by the Lincoln City Archaeologist (Appendix 1).

2.3 Topography and Geology

Newport runs northward through the northern part of the city of Lincoln (Fig 1). The site is located 1km north of the cathedral, on the west side of Newport, at national grid reference SK 976 727 (Fig. 2). It covers 0.65 hectares and was occupied by the buildings of the former Army Cadet HQ. The front two-thirds of the site had concrete hard-standing around the site of the buildings, while the rear third was largely grassed over (Plates 1-4). The site lies at c.63m O.D. on the limestone plateau above the Lincoln edge. Local soils have not been mapped as the area is urban but are likely to be calcareous fine loamy soils of the Elmton 1 Association developed on Jurassic Lincolnshire Limestone (Hodge *et al.* 1984, 179; BGS 1999).

2.4 Archaeological Setting

The city of Lincoln contains significant archaeological remains from the Iron Age to the present day. Lincoln is first mentioned by Ptolemy c.150 AD as *Lindon*, derived from the Primitive Welsh *Linn* or pool, referring to Brayford Pool (Cameron 1998).

After the Roman conquest in 43 AD Lincoln became a major military installation. The fortress was converted into the *colonia* (a military colony or settlement for veteran soldiers) of *Lindum* towards the end of the first century AD

and developed into one of the most important cities in Roman Britain, becoming the capital of the province of *Britannia Secunda* at the end of the third century (Jones *et al.* 2003, 124-5).

The Newport Arch, the surviving north gate of the *colonia*, stands 650m south of the proposed development. Evidence of extra-mural settlement and extensive cemeteries have been recorded spreading northwards from the gate along both sides of the Ermine Street Roman road.

The site is located immediately west of Ermine Street outside of the walled Roman town, in the suburb of Newport. Settlement of the Lincoln suburbs increased as the colony flourished.

The Roman *colonia* was ringed with cemeteries lying close to roads such as Ermine Street. Romano-British burials have been recorded in the modern Newport Cemetery 300m southeast of the site (Jones *et al.* 2003, 110). A north-south aligned burial was revealed in a foundation trench for an extension to the principal's house at Bishop Grosseteste College (Wragg 1996) on the opposite side of Newport. Remains of stone buildings occupied between the 2nd and 4th centuries AD were also excavated at the college (Wragg 1997), immediately opposite the current site, and were possibly part of a farm, representing the diffusion of the suburb into the agricultural hinterland (Jones *et al.* 2003, 96).

A possible hearth and clay surface was found in association with Roman pottery during an evaluation at the former service station fronting Newport, immediately south of the site (Trimble 1994).

From the late 5th century AD activity, within the old Roman walls, seems to have been extremely localised (Jones *et al.* 2003, 143), until Lincoln re-emerged as a town from the late 9th century onwards, during the Anglo-Scandinavian period

(*ibid* 159).

By the time of the Domesday survey in *c.* 1086, over 970 residences were accounted for in the city (Foster and Longley 1976). Lincoln cathedral was founded at the end of the 11th century (Pevsner and Harris 1989) and lies approximately 1km south of the development site.

During the 11th and 12th centuries the Newport suburb was re-established along a narrow market place, *Newport Green*, developed along the side of Ermine Street. Earthwork defences were later constructed around the suburb, which was granted a market charter in 1330 (Jones *et al.* 2003, 227). A succession of ten maps dating from 1817 to 1868, clearly show that, although property boundaries had encroached, the layout of the former market place was respected until well into the 19th century, with buildings on both sides set back from a single straight street, the present Newport (Mills and Wheeler 2004 and Jones *et al.* 2003, 226).

The site lies immediately within the west side of these earthworks, a scheduled monument (SAM 21, HER MONS 694/5).

In the centre of the market place stood St. John the Baptist's church and cemetery. The church was demolished in 1546, following the decline of the medieval city, but the steeple remained until 1674. It was marked on William Stukeley's map of 1722 as being in the centre of Newport a short distance southeast of the current site. The service station evaluation immediately south of the site, revealed the possible northwest corner of the north transept of the church and three east-west aligned graves in what is now the south part of the veterinary centre car park. The churchyard was not thought to have extended any further north (Trimble 1994). Human remains were also revealed during gas main renewal along the front of the veterinary centre but did not extend as far north as the TA centre (Trimble 2000).

Surfaces formed of compacted limestone cobbles and pebbles found 180m to the southeast of the site at 74 Newport may have been part of the market (Bradley-Lovekin 2008).

Evidence of a succession of both timber and stone medieval buildings dating from the late 11th to the late 13th/early 14th centuries was found overlying the Roman remains at Bishop Grossteste College (Wragg 1997).

Quarrying was undertaken in the area during the Roman, medieval and post-medieval periods and the eastern limit of it was located in the service station evaluation (Trimble 1994).

During the 18th and 19th centuries Newport was established as a principally residential area. The army buildings on the site were constructed during 1937 and extended to the west *c*1960 (CgMs 2008).

A watching brief identified a medieval tile scatter that may represent the position of a building in a test pit in the southwest part of the TA site, as well as possible evidence for quarrying (Nugent 2008).

A watching brief on a service trench immediately south of the site revealed an undated limestone wall and several 19th century brick walls. However, the trench was less than 1m in depth (Cope-Faulkner and Peachey 2009).

An evaluation of the site revealed a group of Roman ditches laid out north-south and east-west. These probably defined boundaries to property or other land parcels alongside the Roman road, near to which was an area of Roman funerary activity. Two burials and a cremation in an urn were found. In the same area a Roman pit was partially exposed. It contained burnt pottery, numerous hobnails and further cremated bone. A medieval stone-lined cess pit was also revealed. This is likely to have been associated with nearby

occupation of the period, though other medieval remains were restricted to a pit containing 10th-12th century pottery. In the central southern section of the site was a large post-medieval limestone quarry (Peachey and Taylor 2009).

3. AIMS AND OBJECTIVES

In accordance with the principles of PPG16 for "preservation by record", the objective was to examine the archaeological resource of the site within a framework of defined aims, to seek a better understanding of that resource, to analyse the findings/record and then to disseminate the results of the work.

Specific aims were:

To establish a relative and absolute chronological framework for the site. Priority was to be given to establishing an overall plan of the site and determining the various phases and sub-phases of activity.

To determine the internal morphology of the site and land-use, to identify the nature, date and range of zones of activity: residential, industrial, religious, etc. and to determine the dynamics of the spatial distribution of activities and changes over time. Within these parameters, the excavation presented an opportunity to address the following research objectives:

- What was the natural topographic configuration of the site?
- Can the existing detailed understanding of the character and chronology of the Roman occupation of Lincoln be extended?
- What evidence was there relating to the origins and development and decline of the Roman occupation/activity along Newport?
- Was there evidence for further

burials and if so, what could this reveal about the afterlife beliefs of the occupants?

- What evidence was there for industrial, domestic and agricultural activity on the site?
- What evidence was there for ritual/religious activity on the site?
- What was the nature of the medieval occupation/activity within the site?

Further aims were:

To determine the environmental history of the site and its immediate surrounding area throughout the sequence of human activity on the site.

To support the detailed assessment of the chronology of the artefactual and environmental material with a programme of radiocarbon samples if appropriate.

To enhance the understanding of the Roman and medieval occupation in the region through the examination of the date, form and character within its local, regional and national context.

4. METHODS

A watching brief (LINA 09) was maintained on the excavation of three geotechnical test pits and on the grubbing out of the footings of the former drill hall (Figs 3, 13).

Following demolition of the TA centre buildings, an irregular shaped area, measuring 117m long by up to 22m wide was excavated by machine under archaeological supervision (LINA 10).

A subsequent watching brief was maintained on the excavation of footings for Blocks A and B, which were largely

outside the excavated area, and on a service trench extending into Newport (also LINA 10, Fig. 3).

The trenches were cleaned by hand and examined for archaeological remains. Each deposit was allocated a unique reference number (context number) with an individual written description. A list of all contexts and their descriptions appears as Appendix 2. A photographic record was compiled and sections were drawn at a scale of 1:20. Recording was undertaken according to standard Archaeological Project Services practice.

Following excavation, records were checked and a stratigraphic matrix produced. Phasing was assigned based on the nature of the deposits and recognisable relationships between them.

5. RESULTS

Archaeological contexts are listed below and described. The numbers in brackets are the context numbers assigned in the field.

5.1 Excavation

Phase 1 Natural Deposits

Natural deposits were mid orangey grey limestone brash with clay (003), (031), (054), (073) and (078).

Phase 2 Romano-British Deposits

At the east (Newport) end of the site the terminus of north-south aligned ditch [004], the continuation of ditch [310] in evaluation Trench 3 (Peachey and Taylor 2009), was excavated. This ditch was at least 4m long, 1.05m wide and 0.15m deep and filled with grey clayey silt (005) which contained Roman pottery and ceramic building material (CBM) and animal bone. There was also a very small sherd of early medieval pottery which was probably

intrusive. As on the evaluation, where the ditch was cut by grave [312], skeleton (313) (Appendix 4), the terminus was cut by a north-south aligned grave. Sub-rectangular, steep sided grave [006] (Figs 4, 10, Section 1) was 1.77m long by 0.7m wide and 0.38m deep. It contained a prone adult skeleton (007) (Appendix 4) with its head to the north. There were no coffin nails and the grave had been backfilled with dark grey clayey silt (008) which contained patches of redeposited natural. Finds included mid to late 3rd century pottery, CBM, animal bone and a further sherd of probably intrusive medieval pottery.

Immediately west of this feature, near vertical sided rectangular pit [016] (Figs 4, 10, Section 2, Plate 3) was 1.88m wide on its east-west axis (it was truncated by a modern service trench on north side) and 2.3m deep (base reached by auger). The feature contained several fills. Augered probable base fill (024) was 0.31m thick mid to light grey clay and was overlain by 0.16m thick mid yellowish red clay (020). Above this, greyish brown sandy clay (019), 0.08m thick, was overlain by a 0.04m thick band of charcoal and ash (015), an environmental sample from which contained wheat seeds, mussel shell and frog/toad bones (Appendix 4). This was sealed by 0.28m thick greyish brown sandy clay (014) which was below 0.27m thick mid reddish brown clayey sand (013). This was overlain by 0.55m thick greyish brown clayey sand (012), in turn sealed by 0.3m thick mid yellowish greyish brown silty sand (011), which contained mid to late 2nd century pottery. Above this was 0.44m thick brown silty sand (010) containing mid to late 2nd century pottery and animal bone. The top fill of the pit was 0.52m thick mid brown silty clayey sand (009) which contained 27 sherds of Roman, including 4th century, pottery, animal bone and iron smithing slag. The later pot may represent final filling of this probable cess pit while four sherds of 10th/11th century Saxo-Norman

pottery were probably intrusive, perhaps having been trodden in at this later date.

Ten metres west of this pit was a group of three north-south aligned rectangular pits (Fig 4). Pit [042] (Fig 10, Sections 7, 8, Plate 4) was rectangular with very steep sides. It measured at least 3.45m long by 2m wide and at least 1.25m deep. Lower fill (043) was at least 0.4m thick light greenish brown clay and contained early to mid 3rd century pottery and animal bone. An environmental sample produced many vole, mice and weasel bones indicating that such animals were unable to extricate themselves from the pit, and mineralised insect larvae suggesting that this fill was cess (Appendix 7). Up to 0.55m thick redeposited natural limestone and clay (044) had been dumped over this, sealed by 0.8m thick mid grey clay silt (045), containing rubbish including mid 3rd century pottery, animal bone and shell.

A short distance to the west, similar shaped pit [067] (Fig 11, Section 13, Plate 5) was at least 3m long, 1.72m wide and 1.15m deep. An up to 0.12m thick band of light greyish green silt (068) lined the bottom of the pit and was overlain by up to 0.35m thick light greenish grey silt (069) which contained mid 3rd to early 4th century pottery, animal bone and shell. The greenish colour of these fills may be indicative of cess. An environmental sample produced small bones including rodent, small bird, chicken and fish (Appendix 7). Above this, 0.5m thick mid grey clayey silt (070) contained late 2nd to 3rd century pottery, animal bone and a copper alloy pin. Overlying this, a 0.4m thick dump of probable redeposited natural (071) was sealed by 0.15m thick mid grey clayey silt top fill (072).

Between these two pits was rectangular pit cut [063] which was 2.05m long, 1.95m wide and at least 0.71m deep. The sides of this pit were lined with roughly hewn tabular limestone blocks [064] (Fig 11, Section 16, Plate 12). The lowest fill

excavated (080) was mid greenish brown clay, probable cess. This was overlain by a 0.5m thick mix of dark greyish brown clayey silt and large sub-angular limestone cobbles (079) containing mid 3rd to early 4th century pottery and animal bone. A north-south aligned supine adult skeleton (065) (Appendix 4) had been laid on this fill with its head to the south. Several large tabular limestone blocks had been laid over the body and there were also possible coffin nails in association. The skeleton had been covered with 0.5m thick dark brownish grey clayey silt (066) containing late 3rd to 4th century pottery, disarticulated human remains (617) and animal bone.

In the central part of the site, two ditches intersected. Ditch [057]/[062], excavated as [208] in evaluation Trench 2, was mostly aligned east-west, turning to the northwest in its western part. At the point where the alignment changed the ditch was met by north-south ditch [059] (Fig 5). The latter (Fig 11, Section 14) was concave sided and 1.15m wide by 0.3m deep. It was filled with mid brown clayey silt (058) containing mid 2nd-3rd century pottery and oyster shell. It was cut by concave sided ditch [057] (Fig 11, Section 11) which was 1.15m wide and 0.3m deep and filled with dark greyish brown clayey silt (056) containing late 2nd-3rd century pottery. Segment [062] (Fig 11, Section 12) of this ditch was convex sided, 1.3m wide and 0.26m deep. It was filled with dark greyish brown clayey silt (061) from which was collected mid 3rd to 4th century pottery.

Aligned NNW-SSE towards the west end of the site was ditch [076] (Figs 5, 11, Section 15) which was 1.4m wide and 0.36m deep and filled with light reddish grey clayey silt (077) which contained animal bone. An environmental sample produced mussel shell, sheep/goat, rodent and frog/toad bones (Appendix 7). This was the same ditch as [105] in evaluation Trench 1 which contained early-mid 3rd century pottery, pieces of tile and fired

clay and a Roman hobnail.

In the northwest corner of the site, part of a probable pit [107] (Fig 12, Section 23) was revealed. It measured at least 1.2m by 0.7m in plan and was 0.35m deep. Mid greyish brown clayey silt fill (106) contained 2nd century pottery.

Phase 3 Medieval Deposits

Towards the east end of the site, north-south aligned ditch [017] (Fig 4, Fig 10, Section 3) was at least 6m long by 1.6m wide and 0.52m deep and filled with stony brownish grey clayey silt (018) containing mid 11th to early 12th century pottery.

Immediately west of the ditch, oval pit [025] truncated 3rd century Roman pit [042] (Figs 4, 10, Sections 7, 8). Pit [025] had severely undercutting sides and a flat base. Primary fill (028) was 0.7m thick brownish grey clayey silt containing 11th-12th century pottery, animal bone, shell and glass. An environmental sample produced a relatively large assemblage of cereal grain including wheat, barley and oats along with hazelnut, shrew, house mouse, mussel shell and eel (Appendix 7). Burnt bone and ash slag suggests domestic fire debris was also dumped in the pit (Appendix 4). This fill was sealed by 0.6m thick dark grey silt (027) containing residual 3rd century pottery. Present only on the west side of the feature was 0.15m thick mix of greyish yellow silty clay and dark reddish brown sandy silt (026).

The feature was cut by ovoid pit [081] (Fig 4) adjacent to the north baulk of the site. Measuring 1.1m wide, the pit was filled with dark grey silt (082). Although not excavated for safety reasons, residual 13th century pottery was retrieved from the fill.

In the central part of the site was rectangular stone structure [030] (Fig 5; Plates 6, 8, 16). This was 3.7m wide by at least 4.4m long and was formed of three walls of up to 8 courses, between 0.65 and 0.75m high and 0.3m wide. The walls

were composed of roughly hewn limestone blocks up to 0.45m long, 0.15m broad and 0.07m thick which were not mortared (Plate 8). Both the north and south walls butted the west wall and were not keyed into it. The floor was firm natural silty clay (031).

The floor was cut, close to the north wall, by four post holes, probably representing the corners of a small structure, measuring 1m by 0.8m. Ovoid post hole [098] (Fig 12, Section 25) measured 0.38m by 0.35m and was 0.13m deep. Post hole [100] (Fig 12, Section 20) was also ovoid and was 0.4m long, 0.3m wide and 0.12m deep. Adjacent post hole [102] (Fig 12, Section 21), again ovoid, was 0.4m long, 0.26m wide and 0.12m deep while ovoid post hole [104] (Fig 12, Section 22) was 0.28m long, 0.26m wide and 0.1m deep. All four post holes had similar fills, (099), (101), (103) and (105) respectively, of a poorly sorted mix of grey and brown clay with limestone pebbles containing no finds.

Immediately south of this structure was an oblong patch of pink clayey silt (089), up to 0.9m long, 0.5m wide and 0.03m thick and representing a burnt area on the floor of the stone structure.

The post holes and burnt patch were sealed by up to 0.18m thick light yellowish brown silt with occasional limestone fragments (032) which was thicker in places where there were slight dips in the natural floor, and a patch overlay post hole [098] (Fig 12, Section 25, Plate 13). A probable occupation layer, it contained mid/late 12th to early/mid 13th century pottery, animal bone, a nail and a spindle whorl. An environmental sample produced food waste including grain, marine shell and eel bones (Appendix 7).

This layer was sealed by 0.12m thick light yellowish grey silty clay (033) (Fig 10, Section 5, Plate 7), a probable redeposited natural reflooring of the structure containing no finds. Above this was up to

0.25m thick dark brownish grey silt (034) which contained mid/late 13th to early/mid 14th century pottery, roof tile including residual (reused?) Roman tiles, animal bone, including a partial cat skeleton, a spindle whorl and metal. An environmental sample from this layer contained similar food waste to (032) along with fish and domestic bird bones. It produced further cat, as well as mouse, bones and large numbers of terrestrial snails suggesting this layer represents an abandonment episode consistent with an empty dilapidated structure (Appendix 7). Above this layer was up to 0.3m thick light yellowish grey clayey silt (035) with frequent small to large rounded and angular limestone fragments representing the probable demolition layer of the building. Finds included 13th century pottery, medieval roof tile and animal bone. In the southwest corner of the building, the layer contained neonate skeleton (023) (see Appendix 4). The top fill of the structure was up to 0.24m thick mid yellowish grey clayey silt (036) with frequent small to medium limestone fragments containing early to mid 13th century pottery, roof tile and animal bone.

Just south of this building was small ovoid pit [021] (Figs 5, 10, Section 4) which measured 1m by 0.85m and 0.12m deep with gradually sloping sides and an uneven base. It was filled with mid grey clayey silt (022) containing late 12th-mid 13th century pottery, CBM and animal bone.

Immediately to the west of the stone structure was pit [041] (Figs 5, 10, Section 6, Plates 6, 9), the east side of which had been excavated as [205] in evaluation Trench 2. This pit was ovoid with steep, concave sides and a flattish base and measured 3m long by 2.1m wide and 1m deep. In the north side of the bottom of this pit was 0.2m thick mid red/yellow, possibly burnt, silty clay (047) from which was retrieved a single sherd of residual Roman pottery. This was overlain by 0.15m thick mid brown silt (046)

containing a residual sherd of 3rd century pottery and animal bone. Above this was up to 0.3m thick greenish yellow brown silt (038) which contained redeposited natural material. This was overlain by 0.32m thick dark greyish brown clayey silt (039) which contained 11th-12th century pottery and animal bone. An environmental sample produced sheep, pig, bird and eel bones and mussel shell (Appendix 7).

A three-sided stone structure [040] was cut into the top of the pit, partly over fill (039) (Plate 10). It measured 2.15m long, 1m wide and 0.4m deep and was composed of roughly hewn limestone blocks of sizes from quite small to up to 0.45m long, 0.25m deep and 0.2m wide. The stones were not bonded and were formed in two to three courses. They had been recorded as [204] on the evaluation. They appear to be a partial lining added after the pit had been in use for some time and contained 0.7m thick mid greyish brown clayey silt fill (037) (recorded as (203), containing a sherd of 13th-14th century pottery, during the evaluation) which contained a sherd of mid 12th to early/mid 13th century pottery and a near complete juvenile goose skeleton.

Immediately northwest of this pit was the terminus of east-west aligned ditch [048] (Figs 5, 11, Sections 9.10; Plate 11). This had concave sides and a flat base and was at least 5m long by 3.05m wide and 1.15m deep. Lower fill (055) was 0.25m thick yellowish grey silt (055). This was overlain by 0.28m thick mid brown silt (053) with occasional limestone blocks which contained late 11th to 12th century pottery, CBM and animal bone. An environmental sample produced mineralised seeds and small fish bones (Appendix 7). This fill was sealed by 0.65m thick mid to dark grey clayey silt (052) containing 11th to 12th century pottery, CBM, animal bone and a socketed bone point dated to the 9th to 12th century. Above this was 0.28m thick light

yellowish grey clayey silt (051) which contained 11th-12th century pottery and animal bone. A thin lens of dark grey clayey silt with frequent charcoal flecks (050) overlay this and was sealed by a 0.32m thick top fill of dark grey clayey silt (049) containing early 13th century pottery. A good deal of residual Roman pottery was also retrieved from this feature.

A few metres to the southwest was ovoid pit [087] (Figs 5, 11, Section 17, Plate 13) which had concave sides and a flat base. This was 2.6m long, 1.95m wide and 0.6m deep and filled with mid brownish grey silty clay (088) which contained late 13th to early/mid 14th century pottery, animal bone, mussel shell and a probably Late Roman small iron knife blade and a few residual sherds of 2nd-3rd century pottery.

In the western part of the site, extending from the southern baulk, was sub-rectangular pit [097] (Figs 6, 11, Section 19; Plate 15). This was 5.4m east-west by at least 4.5m north-south and 1.1m deep with steep sides and a sloping base. Lower fill (096) was up to 0.7m thick mid brown clayey silt containing late 12th to 15th century pottery and animal bone. It was overlain by 0.5m thick dark greyish brown clayey silt (095).

In the northwest part of the site was east-west aligned rectangular grave [086] (Fig 5) which had near vertical sides and was 1.15m long, 1.15m wide and 0.8m deep. It contained the legs and feet of supine adult skeleton (085) (Appendix 4) and several coffin nails. The grave was backfilled with mid grey clayey silt (084) with frequent limestone fragments. This was cut by sub-rectangular pit [090] (Fig 11, Section 18, Plate 14) which measured 1.1m wide and 0.6m deep and had disturbed the skeleton. The pit was filled with grey/orange clayey silt (083) which contained a single sherd of 13th century pottery and some of the bones from the top half of the skeleton. The pit was overlain by a shallow, irregular shaped cut [075], roughly 3m wide and up

to 0.2m in depth and filled with dark greyish brown clayey silt (074) containing 13th century pottery.

Phase 4 Post-medieval Deposits

In the central part of the site was a large irregular cut [091] (Figs 5, 6) measuring at least 10m long and 5m wide and filled with dark brownish grey clayey silt (092). This had been recorded as large quarry pit [212], fill (211) in evaluation Trench 2, dated to the 17th-18th centuries.

There was a similar pit [094] (Fig 6) in the southwest corner of the site. This measured at least 9m by 7.5m and was filled with very dark greyish brown silt (093) containing 19th century pottery.

Between these two quarry pits was irregular curvilinear cut [108] which was at least 3.75m long, 2.2m wide and 0.34m deep and filled with mid greyish brown clayey silt (109) which contained early modern mortar and probably residual 11th-12th century pottery.

Phase 5 Modern Deposits

The features in the eastern and central parts of the site which had been beneath the army depot concrete were all sealed by up to 0.6m thick dark brown clayey silt subsoil with occasional limestone fragments (002) (Fig 10, Section 3). This was overlain by modern overburden (001). In the former garden area of the far west of the site, the features were sealed by 0.3m thick topsoil (110).

5.2 Watching Brief

Prior to the excavation phase, a watching brief (LINA 09) was maintained on three geotechnical test pits and on the grubbing out of the former Territorial Army building footings (Fig 3). No archaeological features were revealed, rather a sequence of natural, subsoil, buried topsoil and modern deposits (Fig 13).

Following the excavation, a watching brief was maintained on the footings outside the excavation area, namely Block A and the eastern part of Block B. A service trench running from just inside the main gate into the Newport carriageway was also monitored.

Phase 1 Natural Deposits

At a depth of 2.4m below the surface in the Newport service trench was at least 0.66m thick yellowish grey degraded limestone (626). This was overlain by mid orangey grey limestone brash with clay (625), numbered (603) in the footings.

Phase 2 Romano-British Deposits

Two grave cuts containing skeletons were revealed cutting the natural limestone brash in the northern part of the Block A footings (Fig 7).

Oblong northwest-southeast grave [612] was at least 1.08m long, 0.65m wide and 0.38m deep. It contained supine skeleton (611) (Fig 12, Section 30, Appendix 4) which had an iron object placed on the centre of the pelvis. This had a serrated edge and was probably a saw, perhaps an indicator of the individual's likely occupation. A curry comb, used for cleaning horses' hides, is an alternative explanation (see Appendix 3). Clayey silt grave fill (618) contained 2nd-3rd century pottery, all close to the skull, along with disarticulated juvenile skeleton (610) and further residual human bone (616) (see Appendix 4).

Immediately to the north NNW-SSE aligned grave cut [615] was 1.3m long, 0.4m wide and 0.3m deep and contained skeleton (614) (Appendix 4). Its clayey silt fill (613) contained 3rd to 4th century pottery around the feet of the skeleton.

Phase 4 Post-medieval Deposits

Also revealed cutting the natural in the

Block A footings was large convex sided quarry pit [609] (Figs 7, 12, Sections 28, 29; Plate 18). This pit was 13m wide by at least 13m long and 1.4m deep and was probably the same feature, the fills of which were, encountered in evaluation Trench 4. It had been backfilled with loose clayey silt and limestone rubble (608).

A smaller probable quarry pit [602] (Fig 12, Section 26) was revealed in the southwest corner of the plot. This was near vertical sided with a flat base and measured 3m wide and 1.1m deep. It was filled by dark grey brown limestone and clay rubble (601).

The features were sealed by up to 0.4m thick greyish brown clayey silt subsoil (607) overlain by 0.3m thick buried topsoil (606). These layers were overlain by modern overburden (Fig 12, Section 27).

Cutting the natural [603] in the Block B footings was the continuation of quarry pit [091] (Fig 8). This was sealed by 0.3m thick clayey silt topsoil (606) overlain by 0.3m thick red brick rubble (604) (Fig 12, Sections 31, 32)

In the Newport service trench was approximately north-south aligned construction cut [628] filled by roughly finished limestone wall [627] (Figs 9, 12, Section 34; Plate 19). This wall was at least 0.7m long, 0.35m wide and 0.45m deep and may have been a property front wall dating from a time when the road was narrower. This was sealed by up to 0.68m thick limestone with clayey silt layer (624), a probable earlier road surface. Above this was 0.25m thick brownish grey clayey silt levelling layer (631) in the pavement section and up to 0.4m thick clayey silt with limestone (623) in the road (Fig 12, Section 33). Especially beneath the pavement these layers were cut by numerous modern service trenches.

6. DISCUSSION

Natural deposits consisted of limestone brash. The surface of these deposits declined gently from west to east, corresponding to the natural dip slope of the topography.

In the Roman period a series of ditches and gullies were laid out across the area. Most of these are aligned north-south, parallel with the Ermine Street Roman road, which lies below Newport at the eastern edge of the site, though there is one east-west. At least some of these probably demarcated the land into several rectangular blocks aligned to the thoroughfare. These ditches were subsequently infilled in the 3rd century or later.

In the eastern part of the site, close to the course of the Roman road, two human burials and two cremations were revealed on the evaluation. One of the graves [312], had been cut into one of the ditches which had been backfilled in the late 3rd-4th century. On the excavation, a further north-south aligned grave [006] containing skeleton (007) was revealed cutting this ditch immediately south of grave [312].

Other north-south burials have been found around Lincoln, including close by at Bishop Grosseteste College (Jones *et al.* 2003, 111). Moreover, previous discoveries have identified both inhumations and cremations of Roman date around the current site (*ibid.*, Fig 10.59).

Burials in earlier, infilled, ditches are not uncommon in the Roman period, particularly the latter part. A series of 4th century burials were dug into the backfill of an earlier ditch at Worcester (Dalwood and Edwards 2004, 215-217). In Lincolnshire, one was found in a ditch infilled in the late 2nd-early 3rd century at Guthram Gowt, near Bourne (Herbert 1999, 10).

Although no cremations were found on the excavation phase, a report on the analysis of two cremations found during the evaluation is included with this report (Wood, Appendix 5). A heavily disturbed 2nd-3rd century urn with cremation (315) was recovered from the east end of Trench 3 while in Trench 5, close to the Newport frontage, was a pit [513] that contained late 1st-early 2nd century pottery, much of it burnt, as well as hobnails and plentiful charcoal (Peachey and Taylor 2009). An environmental sample from the fill contained cremated human bone. At the 1st century cremation cemetery at Monson Street, in the southern part of Lincoln, excavated in 1982, cremations (frequently in urns) were associated with rusticated jars, plentiful hobnails and glass unguent bottles, many of which had been melted through being placed on the funeral pyre. The presence of hobnails suggested that the shoes may have been put on the pyre, either worn by the corpse or as part of the funeral offerings (Steane 2001, 20-21, 34). The contents of the Newport pit are not dissimilar to those from the Monson Street cemetery, though with burnt pottery vessels rather than melted glass ones.

There were four rectangular pits dating to the Roman period in the east part of the site. Near vertical sided probable cess pit [016] was probably of late 2nd century date although pottery within its top fill suggests final infilling in the 4th century. Pit [042] was dated to the mid 3rd century while adjacent stone lined pit [063] and elongated pit [067] dated between then and the early 4th century. The latter feature contained a probable piece of triple vase intended to hold oil which may have been used in funerary rituals in a similar way to the glass unguent vessels found at Monson Street.

A further north-south aligned skeleton was revealed, laid in the top of pit [063], associated with late 3rd to 4th century pottery.

The Roman pottery on the site dated overwhelmingly to between the 2nd and late 3rd centuries. There was a high proportion of drinking vessels and a relatively large proportion of imported pottery, indicative of high status consumption.

No evidence of activity was identified on the site between the 4th and the 11th to 12th centuries AD.

North-south ditch [018] was dated to the mid 11th to early 12th century and probably formed the rear boundary of a plot along the Newport frontage. A pit [025], immediately to the west, recorded cutting Roman pit [042], was also dated to the 11th-12th century.

However, the main period of medieval activity on the site was between 1150 and 1250.

Large rectangular stone structure [030] was probably the undercroft of a timber building. A small four post hole structure adjacent to the north wall may represent the bottom of timber steps. An occupation layer over the floor contained mid 12th to mid 13th pottery. This was sealed by a layer of redeposited natural containing no finds, probably representing reflooring. Following disuse, the structure had been filled with refuse including a large amount of redeposited 12th to mid 13th century pottery and other material including a roof tile, spindle whorls and a partial cat skeleton which may have been dumped following death, or perhaps died having sheltered in the structure. A neonate human burial was also found, presumably having been buried surreptitiously.

The full extent of a medieval cesspit partially excavated on the evaluation was revealed immediately west of structure [030]. This pit [041] contained occasional sherds of mid 12th to early 13th century date. The top of it had apparently received a stone lining after some years of use.

Ditch terminus [048], immediately to the north, was of a similar date but contained much more material including residual Roman pottery and a bone socketed point of 9th to 12th century date.

Further medieval pits lay towards the west end of the site including a probable quarry pit [097] and 13th century pit [090] which cut grave [086]. The lack of any Roman finds and its east-west alignment suggest this may be a medieval rather than a Roman grave, perhaps an outlier of the churchyard of St John the Baptist which lay in Newport, a short distance southeast of the site.

Previous investigations at the site identified a concentration of medieval roof tile in the southwest of the development, which may signify the proximity of buildings of the period (Nugent 2008, 3).

Extensive post-medieval quarrying for the extraction of limestone was identified in the west and central parts of the site. Large quarry pit [091] was a continuation of that revealed in the southern part of evaluation Trench 2. Artefacts from the quarry backfills suggest it was infilled in the 17th-18th century. Limestone extraction is known to have occurred extensively around the Newport area from the Roman to post-medieval periods (Jones *et al.* 2003) and 19th century maps show that stone quarrying gradually expanded across the ground immediately south of the site (Padley 1851; Padley 1883; OS 1887). These maps indicate that the quarry apparently petered out to the west; its extent, as shown on the 1887 map, is marked on Fig. 3.

Modern deposits of topsoil, in the western part of the site, and hardcore covered with concrete or tarmac formed the present ground surface.

7. CONCLUSION

An archaeological excavation was carried out on land at the former Army Cadet Force HQ, Newport, Lincoln. The site lay adjacent to the Ermine Street Roman road and in close proximity to Roman buildings and burials. It also lay within the 11th to 13th century Newport Earthworks scheduled monument, immediately to the east of its western bank and ditch, within the vicinity of a medieval market.

An earlier evaluation had revealed several Roman ditches and gullies forming enclosures, two Roman burials, both aligned north-south, and two cremations. A medieval stone-lined cesspit was also recorded.

The excavation identified two main periods of occupation of the site: in the 2nd to early 4th centuries AD and in the 11th to mid 13th centuries. This corresponds well to other archaeological evidence from the vicinity and to the periods when Newport was known to have been a suburb of the city of Lincoln.

It confirmed the presence of a Roman enclosure system, probably backfilled in the 3rd century AD. There were several rectangular rubbish and cess pits of 2nd to early 4th century date, rich in finds indicating nearby domestic occupation as well as probable funerary activity. Two further north-south aligned burials, one cutting a backfilled ditch and the other a backfilled pit, along with two more revealed on the watching brief in the Block A footings, emphasised the importance of Newport as an extramural cemetery.

An 11th-12th century boundary and oval pit were revealed on the eastern part of the site. The mid 12th to early 13th century cesspit found on the evaluation was fully exposed and proved to be adjacent to a rectangular stone structure of probable 12th century date. This was probably the undercroft of a timber building and had

been used for dumping a variety of rubbish, dating up to the mid 13th century. A neonate had been buried within these deposits. Just northwest of these features was a ditch terminus of 12th to early 13th century date.

A possibly medieval grave was encountered at the west end of site. Aligned east-west in the Christian manner, the grave contained no Roman finds and was cut by a 13th century pit.

Parts of the south central and southwest areas of the site had been quarried away in the post-medieval or early modern periods for limestone.

Finds retrieved comprised a large quantity of Roman and medieval pottery, brick/tile, metals and animal bone. Four further human skeletons including a neonate were also recovered.

8. ACKNOWLEDGEMENTS

Archaeological Project Services wishes to acknowledge the assistance of Rob Bourn and Simon Mortimer of CgMs Consulting Limited who commissioned the fieldwork and post-excavation analysis on behalf of McCarthy & Stone Limited whose representative, Keith West, provided on site assistance. Thanks are also due for the assistance of the Heritage Team at Lincoln City Council. The work was coordinated by Gary Taylor who edited this report along with Tom Lane.

9. PERSONNEL

Project Coordinator: Gary Taylor
 Site Supervisor: Mark Peachey
 Site Staff: Andy Failes, Ross Kendall, Jonathon Smith
 Surveying: Mark Dymond, Andy Failes
 Watching Brief: Andy Failes, Bob Garland, Bob Hamilton, Vicky Mellor, Mark Peachey

Finds processing: Denise Buckley
 Environmental sample processing:
 Jonathon Smith
 Photographic reproduction: Mark Peachey
 Finds Illustrations: David Hopkins
 CAD Illustration: Mark Peachey
 Post-excavation analysis: Mark Peachey

IfA, 2008 *Standards and Guidance for Archaeological Excavations*

Jones, MJ, Stocker, D, and Vince, A, 2003 *The City by the Pool: Assessing the archaeology of the city of Lincoln*, Lincoln Archaeological Studies No. 10

10. BIBLIOGRAPHY

BGS, 1999 *Market Rasen: Solid and drift geology*, 1:50 000 map sheet 102

Mills, DR, and Wheeler, RC, 2004, *Historic Town Plans of Lincoln 1610-1920*, The Lincoln Record Society, The Survey of Lincoln, Volume 92

Bradley-Lovekin, T, 2008 *Archaeological Investigations on land at 74 Newport, Lincoln* Unpublished APS Report 108/08

Nugent, M, 2008 *Archaeological Watching Brief at the former Army Cadet Force HQ, Newport, Lincoln, Lincolnshire (LINA 08)*, unpublished APS report 27/08

Cameron, K, 1998 *A Dictionary of Lincolnshire Place-Names*, English Place-Name Society Popular Series Vol. 1

OS, 1887 *Lincolnshire Sheet LXX.3.17. Lincoln*, 1:500 map

CgMs, 2008 *Archaeological Desk-based Assessment. Land at Lincs Army Cadet HQ, Newport, Lincoln*

Padley, JS, 1851 *Plan of the City of Lincoln* (2nd ed)

Cope-Faulkner, P, and Peachey, M, 2009 *Archaeological Monitoring and Recording at the Veterinary Hospital, Newport, Lincoln (LNVH09)*, Unpublished APS Report 58/09

Padley, JS, 1883 *Plan of the City of Lincoln* (3rd ed)

Peachey, M, and Taylor, G, 2009 *Archaeological Evaluation on land at the Former Army Cadet Force HQ, Newport, Lincoln (LINA 08)* Unpublished APS Report 117/09

Dalwood, H, and Edwards, R, 2004 *Excavations at Deansway, Worcester 1988-89 Romano-British small town to late medieval city*, CBA Res Rep 139

Pevsner, N, and Harris, J, 1989 *Lincolnshire, The Buildings of England* (2nd edition, revised N Antram)

Foster, CW, and Longley, T (eds), 1976 *The Lincolnshire Domesday and Lindsey Survey*, The Lincoln Record Society 19

Steane, K, 2001 *The Archaeology of Wigford and the Brayford Pool Lincoln* Archaeological Studies No. 2

Herbert, N, 1999 *Archaeological Investigations on the Route of a Water Pipeline between Guthram Gowt and West Pinchbeck, Lincolnshire*, Unpublished APS Report 64/98

Trimble, R, 1994 *The Former Broadway Service Station, Newport, Lincoln, Archaeological Evaluation* CLAU Archaeological Report 115

Hodge, CAH, Burton, RGO, Corbett, WM, Evans, R and Seale, RS, 1984 *Soils and their use in Eastern England*, Soil Survey of England and Wales 13

Trimble, R, 2000 *Gas Mains Renewal, Newport, Lincoln, Archaeological Watching Brief* CLAU Report 439

Wragg, K, 1996 *Principal's House, Bishop Grosseteste College, Newport, Lincoln* CLAU Unpublished Report **280**

Wragg, K, 1997 *Library Extension, Bishop Grosseteste College, Newport, Lincoln* City of Lincoln Archaeological Unit Unpublished Report **262**

11. ABBREVIATIONS

APS Archaeological Project Services

CLAU City of Lincoln Archaeological Unit

IfA Institute for Archaeologists

OD Ordnance Datum (height above sea level)

OS Ordnance Survey



Figure 1. General Location Plan

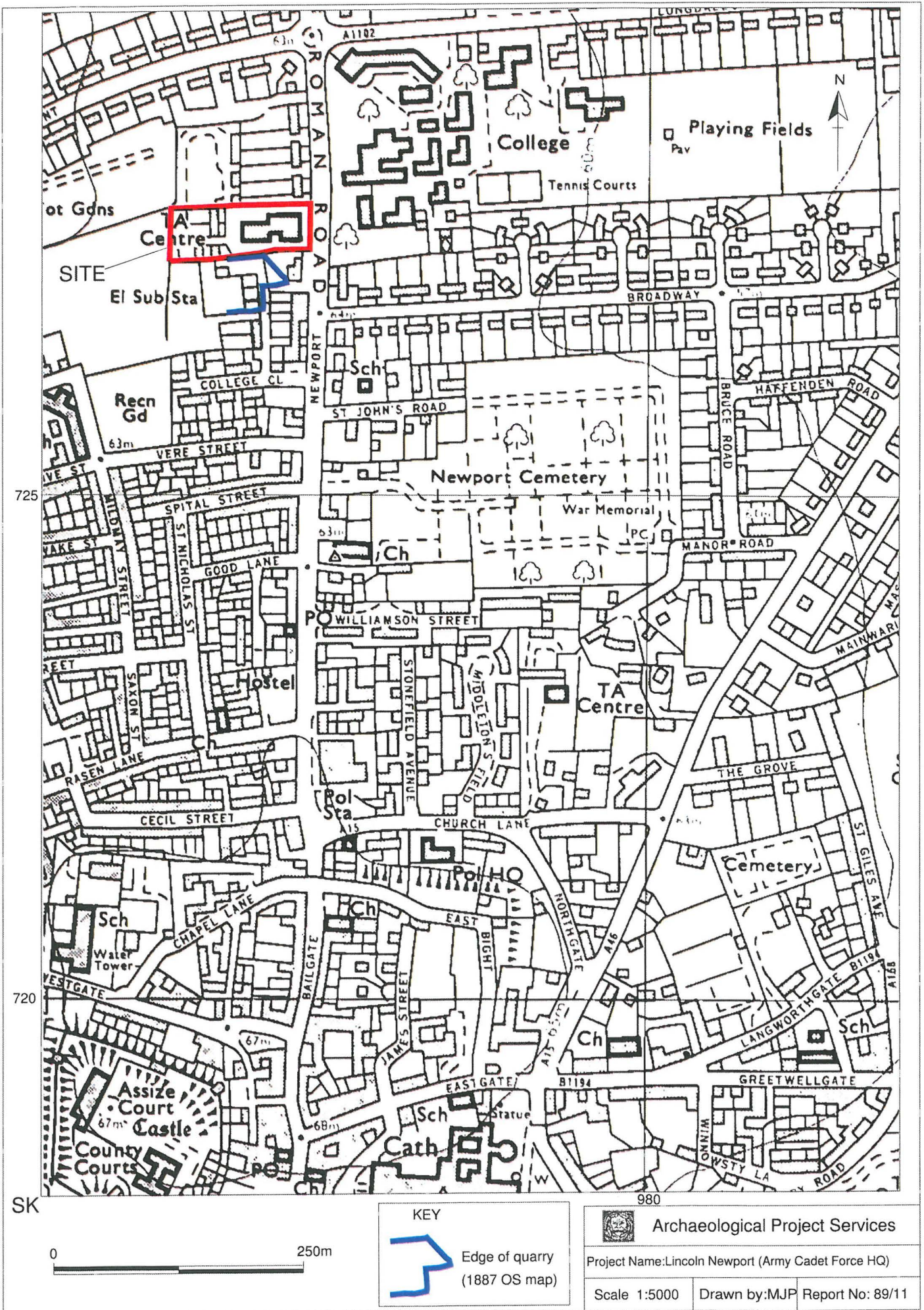


Figure 2. Site Location Plan

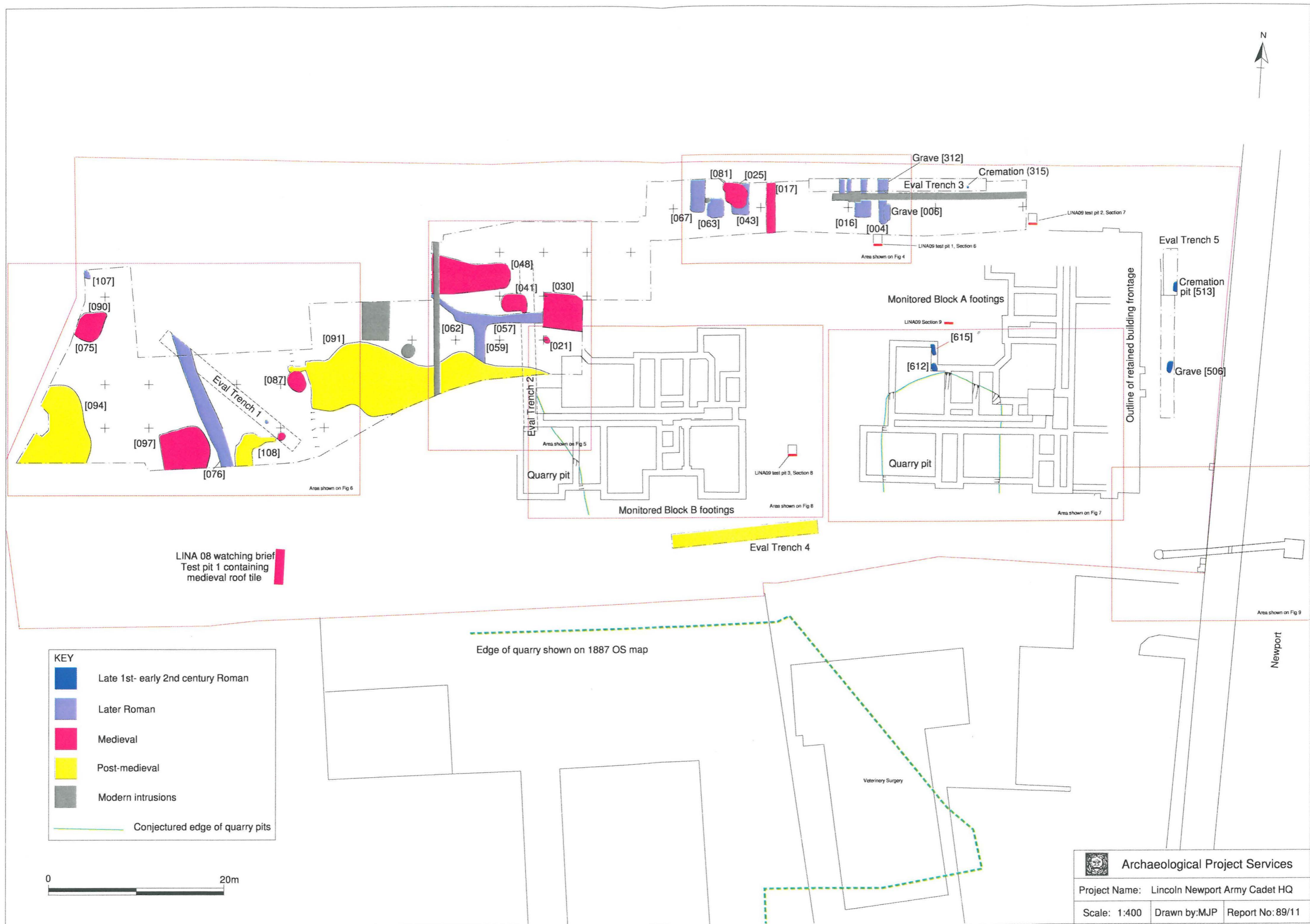


Figure 3. Overall Plan.

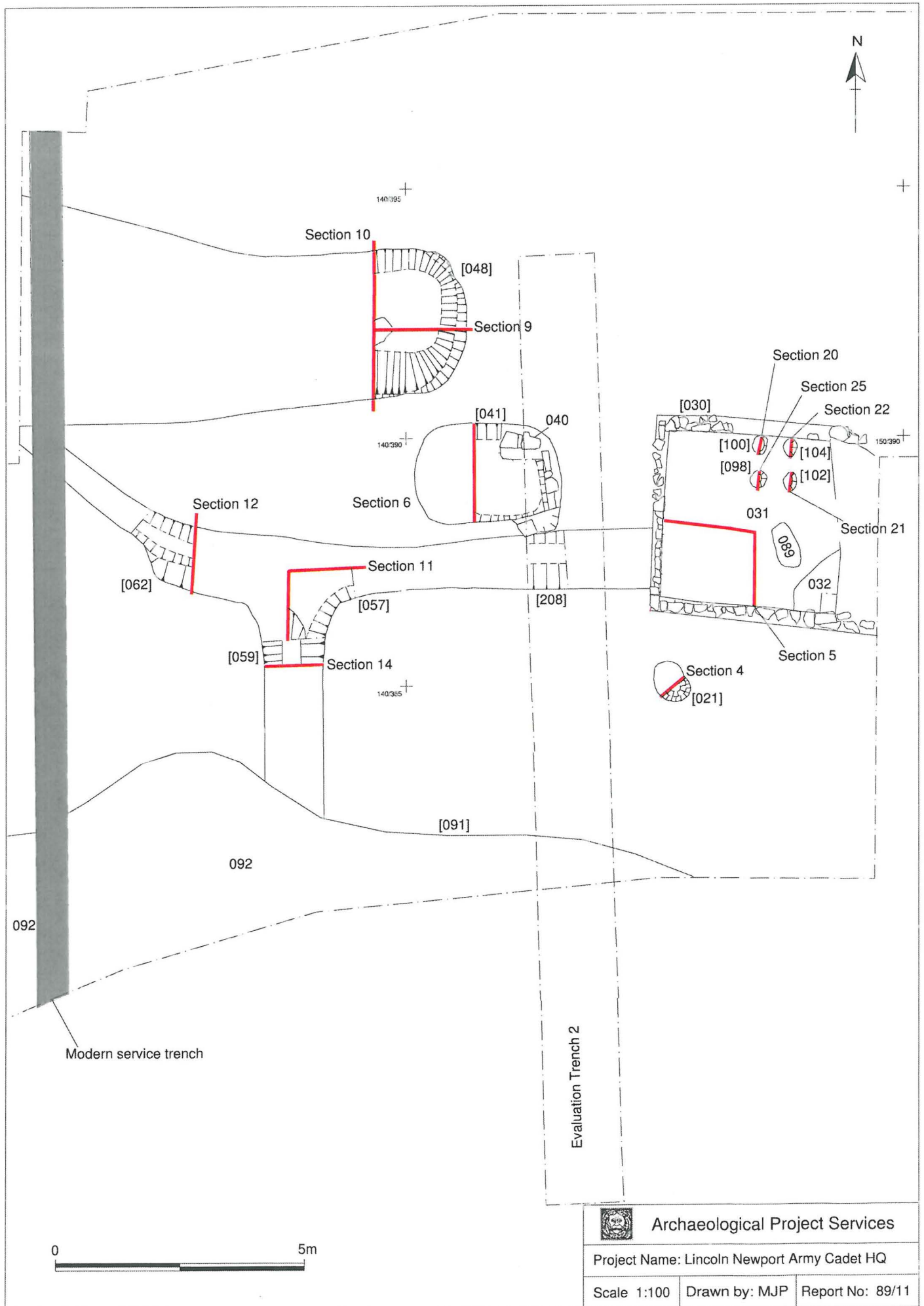


Figure 5. Plan of central area features

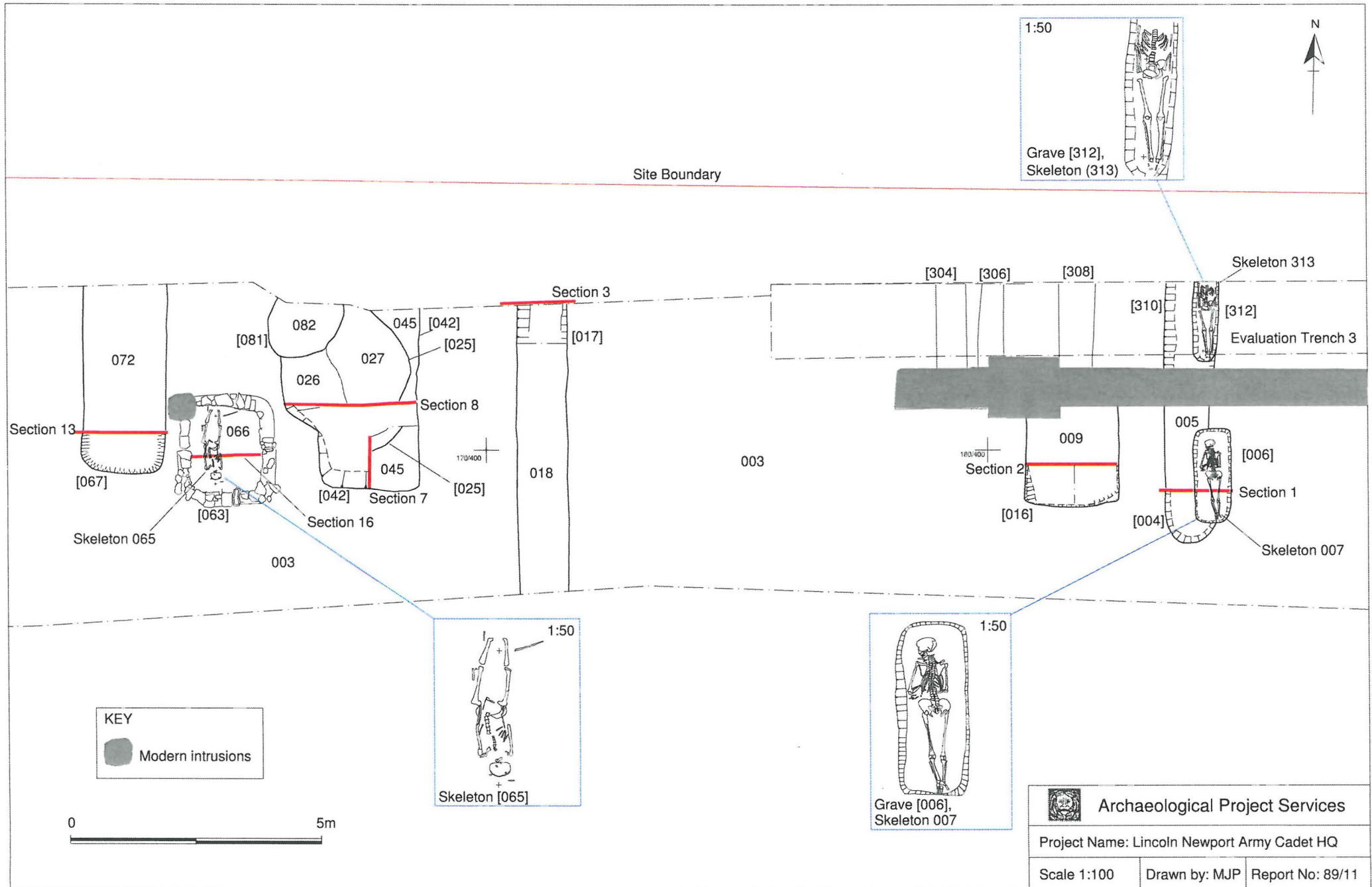


Figure 4. Plan of eastern area features

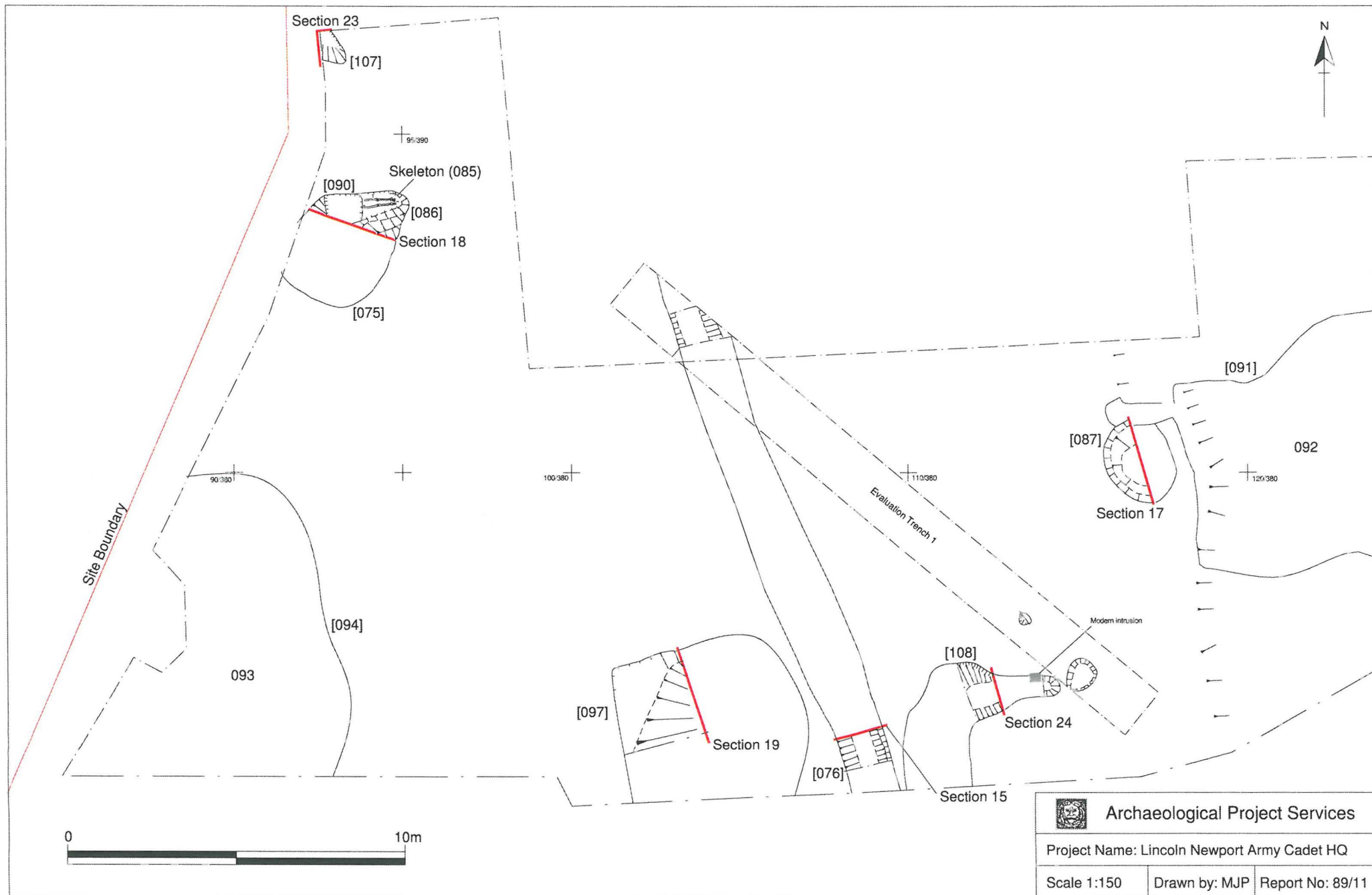


Figure 6. Plan of west area features.

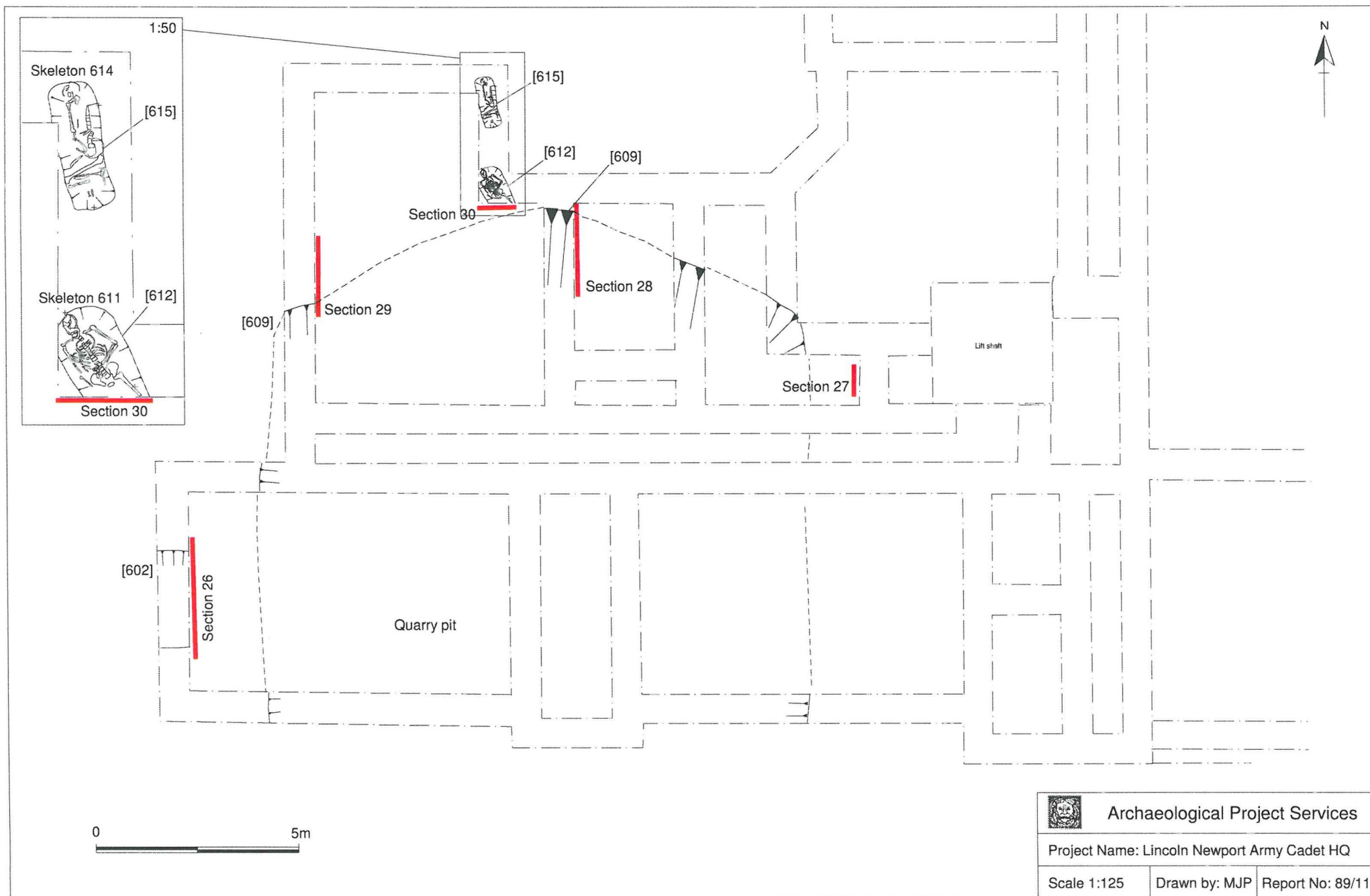


Figure 7. Block A footings

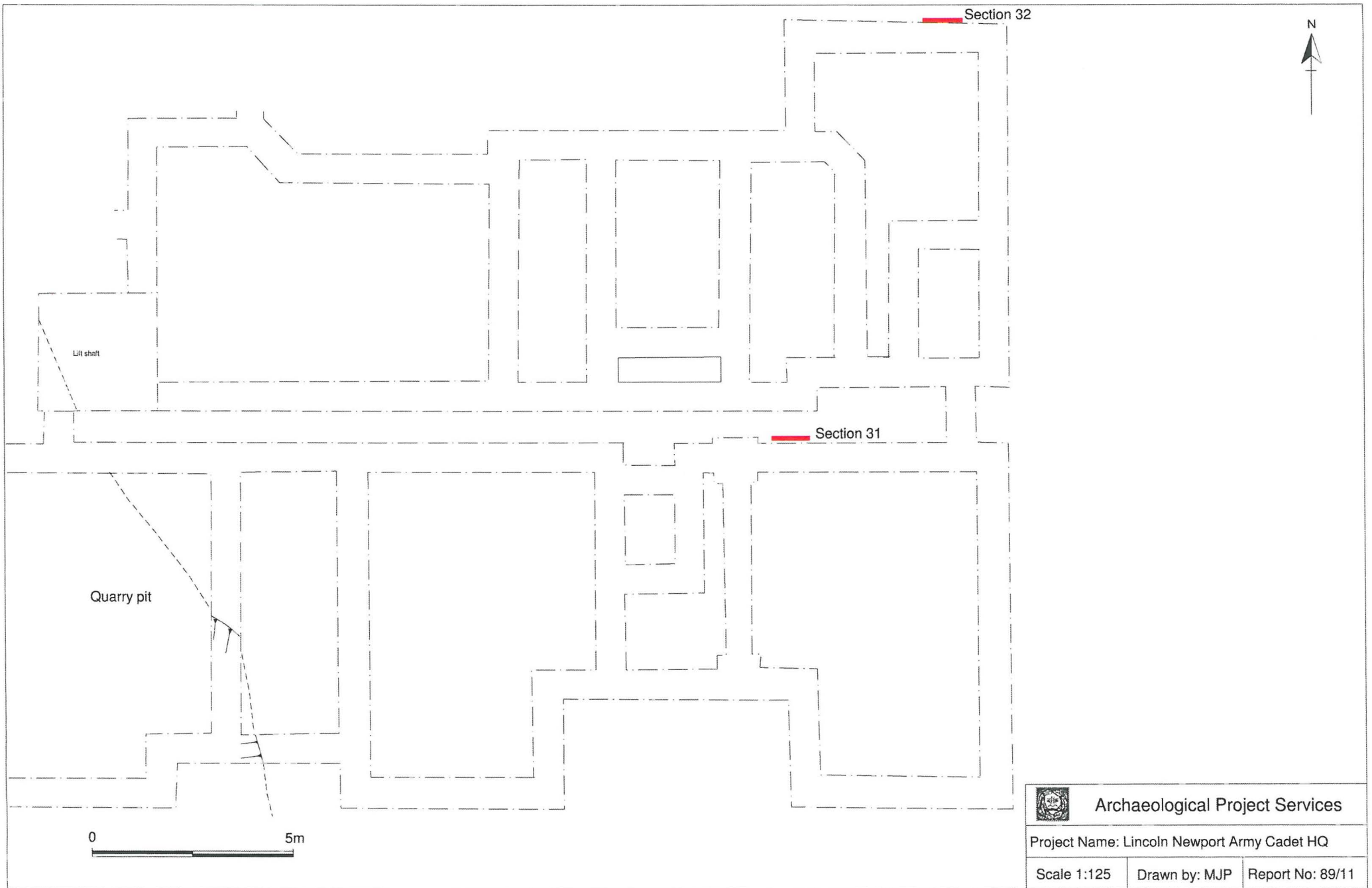


Figure 8. Plan of Block B footings

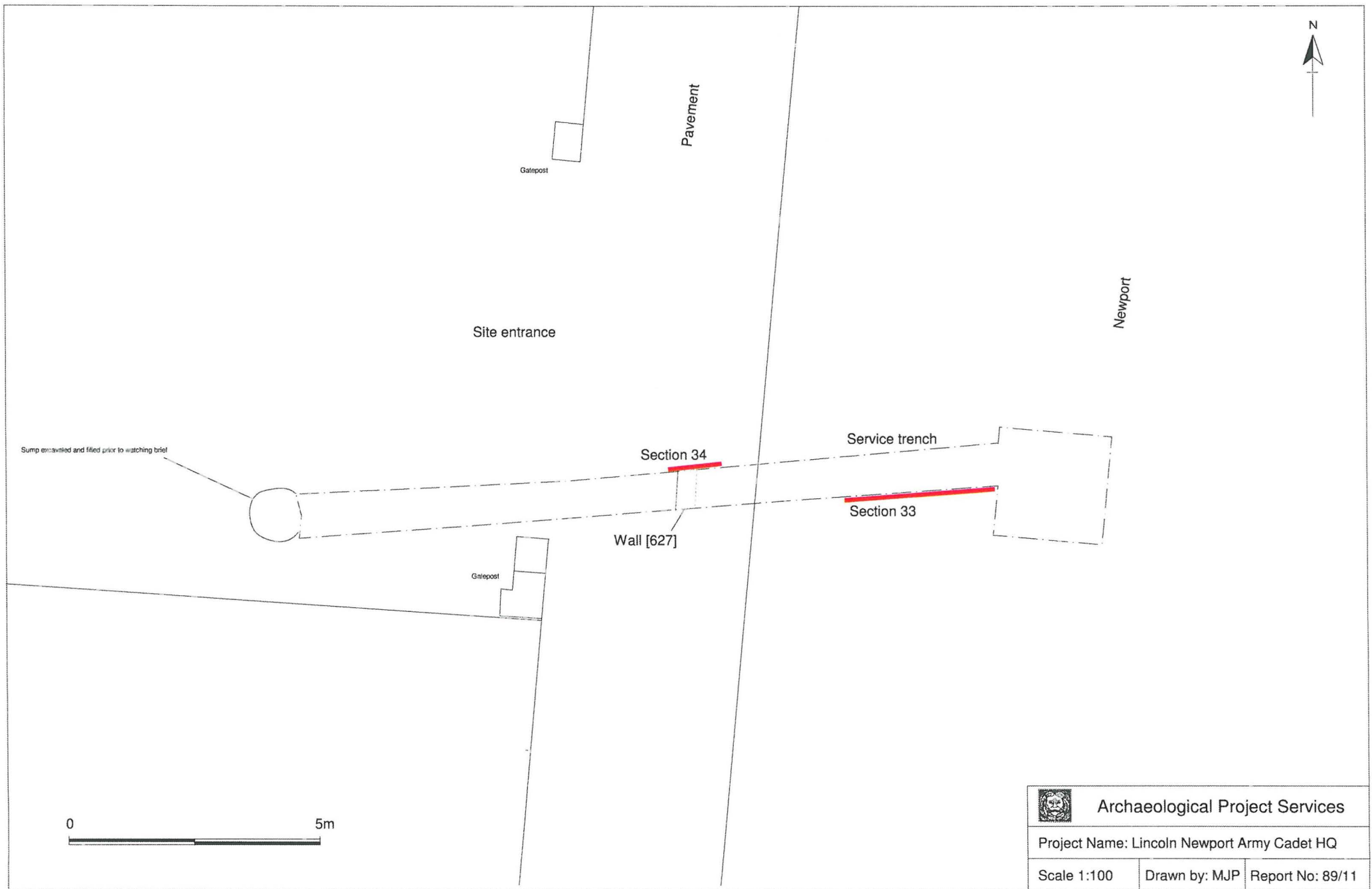



Figure 9. Plan of Newport service trench

 Archaeological Project Services		
Project Name: Lincoln Newport Army Cadet HQ		
Scale 1:100	Drawn by: MJP	Report No: 89/11

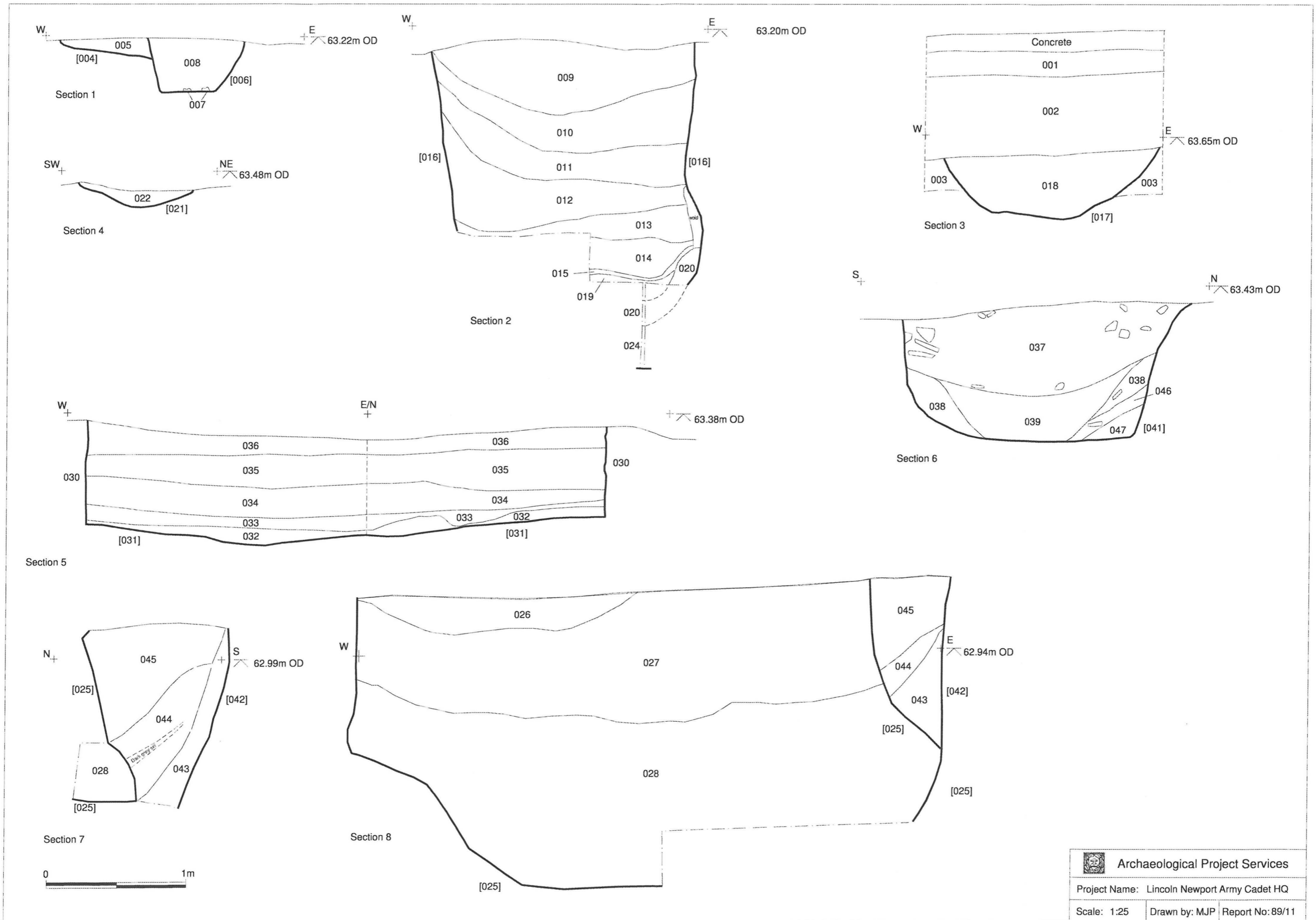


Figure 10. Sections 1-8

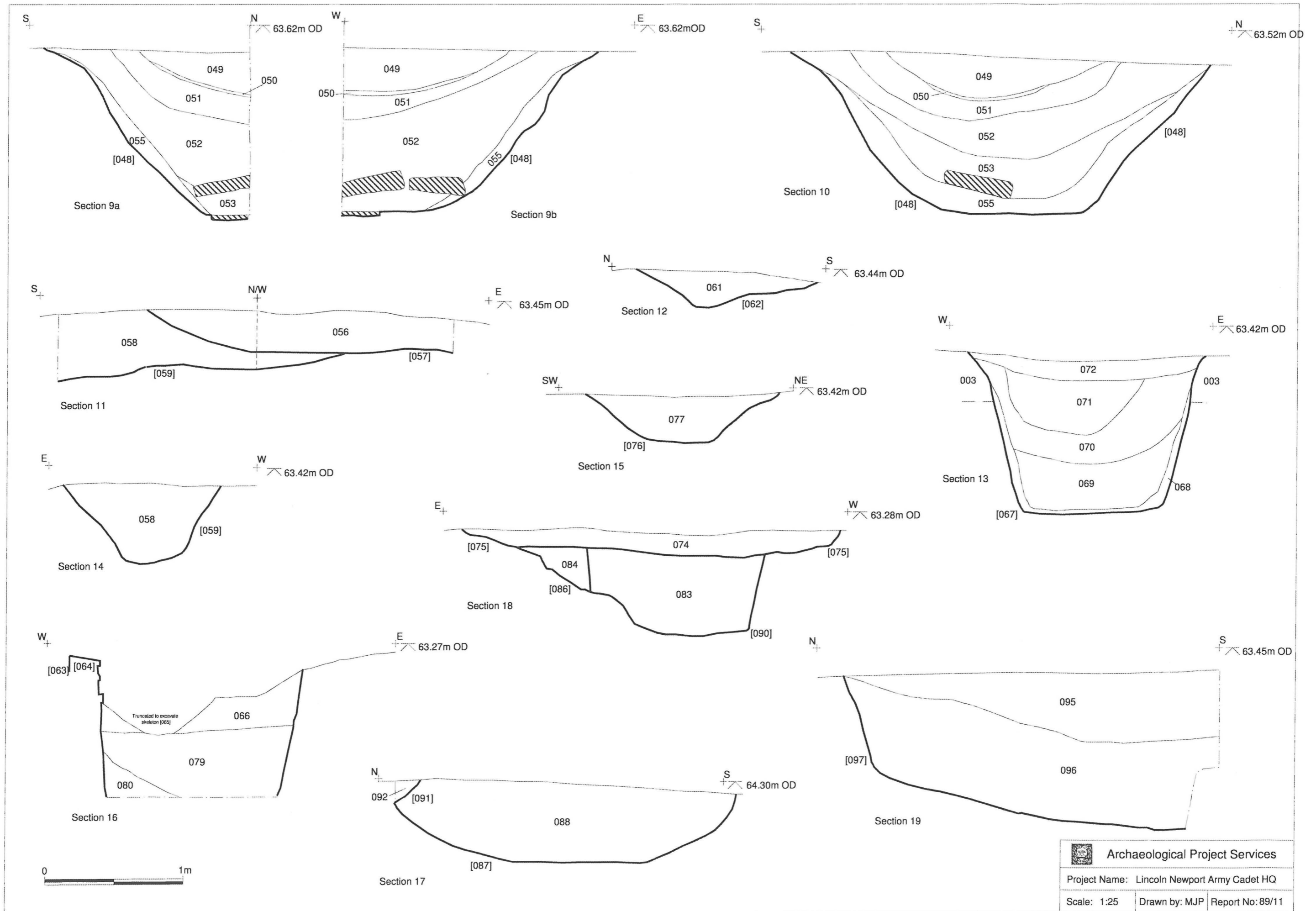


Figure 11. Sections 9-19

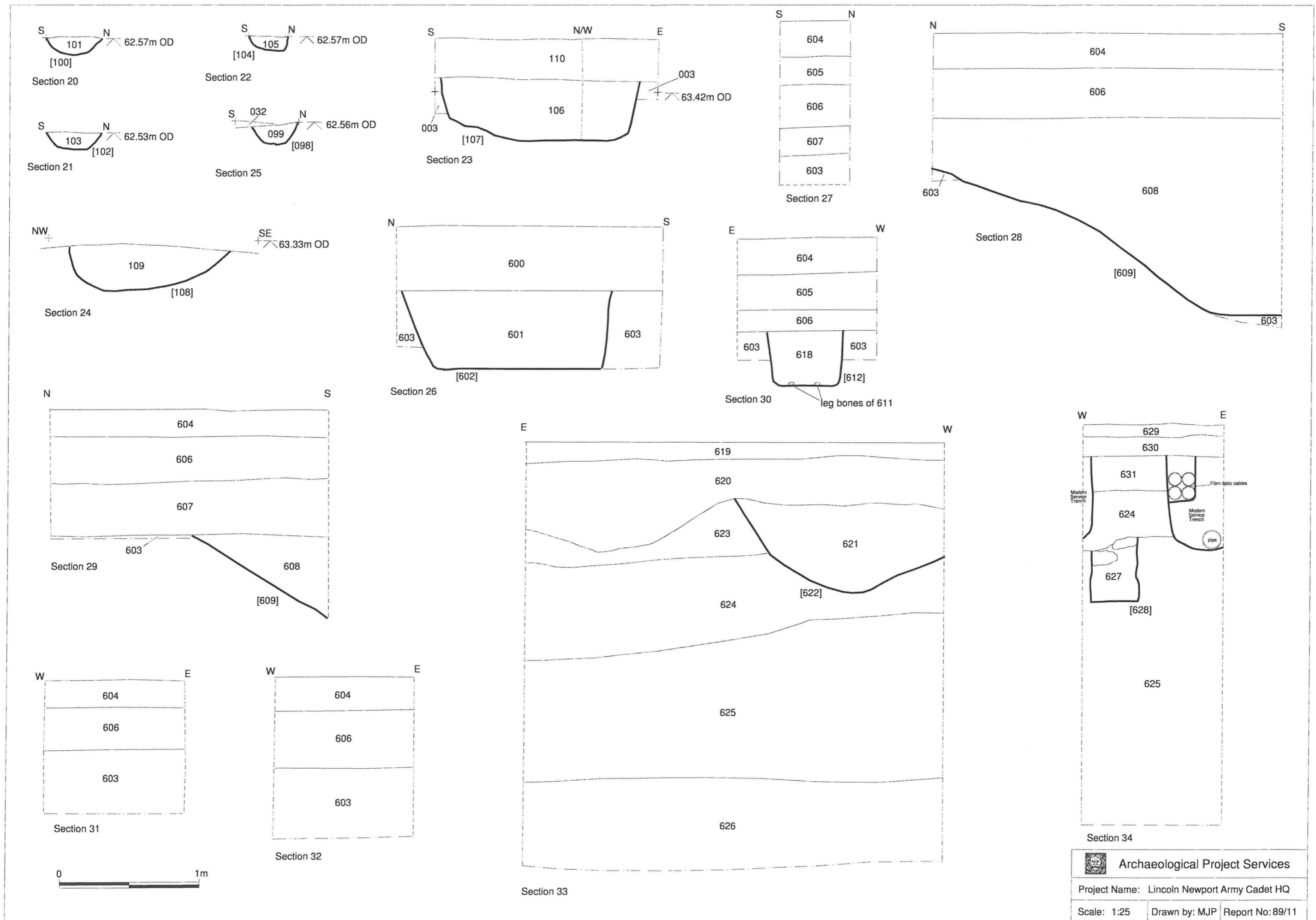

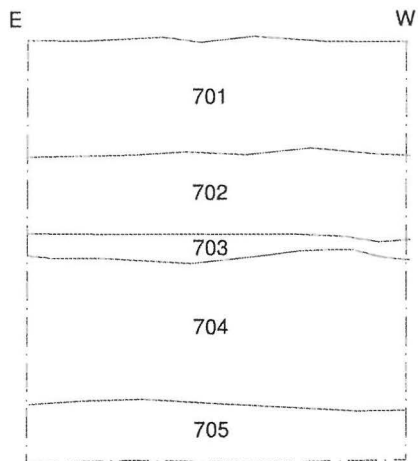


Figure 12. Sections 20-34

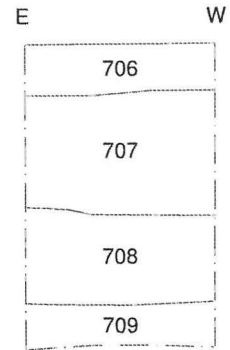
 **Archaeological Project Services**

Project Name: Lincoln Newport Army Cadet HQ

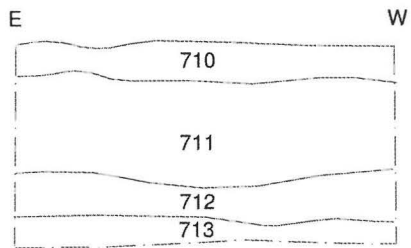
Scale: 1:25 | Drawn by: MJP | Report No: 89/11



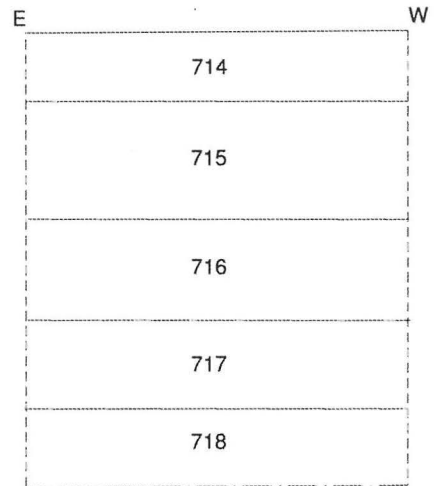
Section 6



Section 7



Section 8



Section 9



Archaeological Project Services

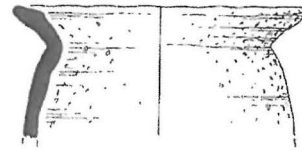
Project Name: Lincoln Newport Army Cadet HQ LINA10

Scale 1:20 | Drawn by: MJP | Report No: 89/11

Figure 13. LINA 09 watching brief sections



1 (008)



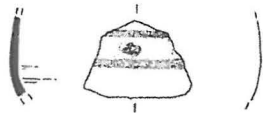
6 (079)



2 (009)



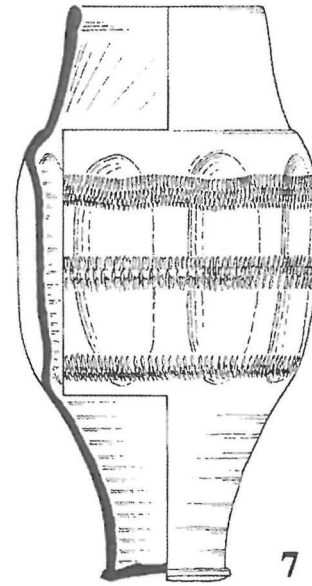
3 (043)



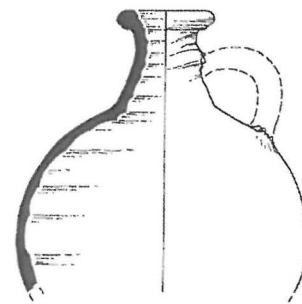
4 (066)



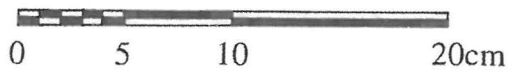
5 (070)



7 (079)



8 (043)



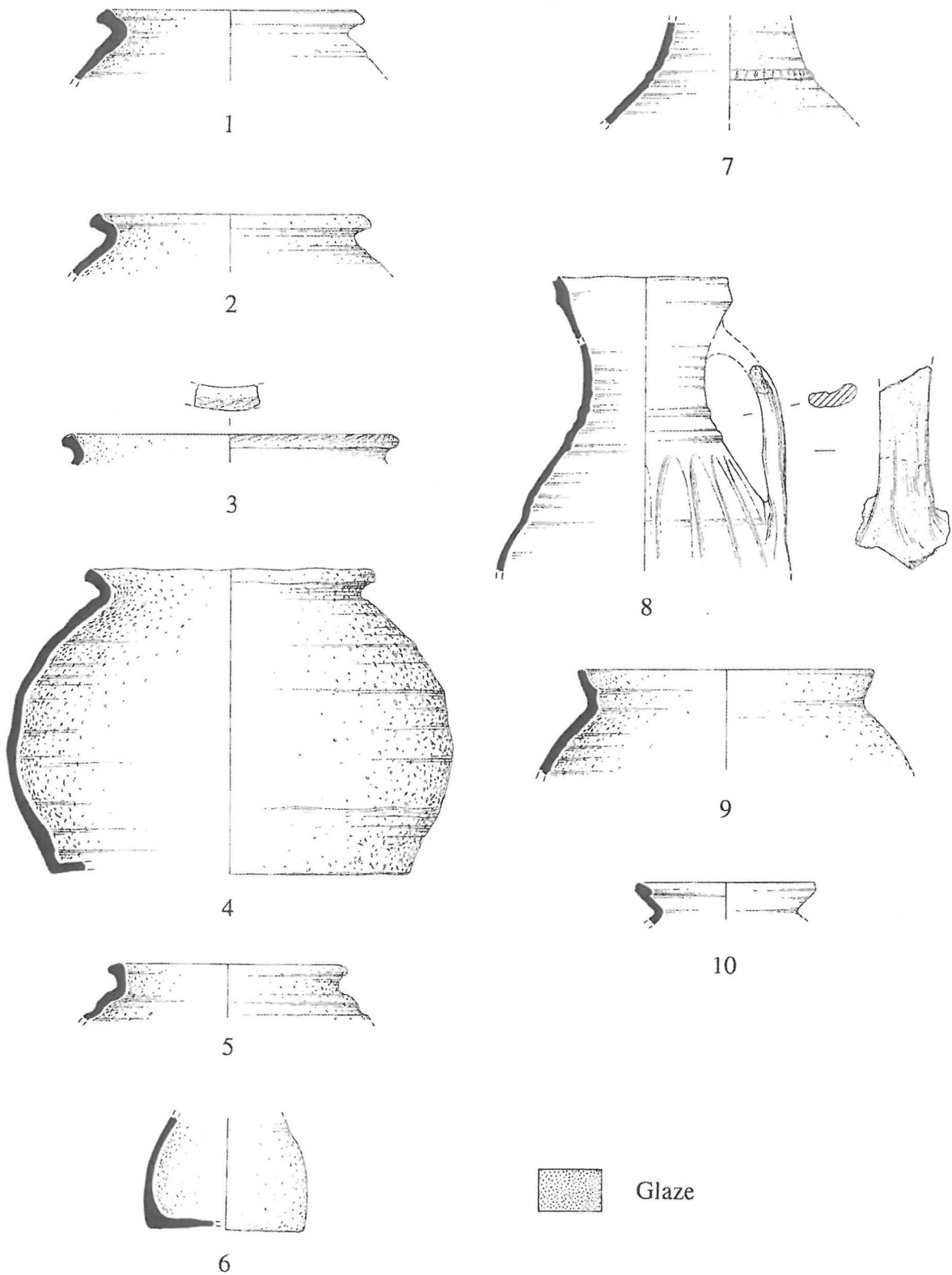
Archaeological Project Services

Project Name: Lincoln Newport Army Cadet Force HQ

Drawn by: DH

Report No: 89/11

Figure 14. Roman pottery illustrations



0 5 10 20 cm



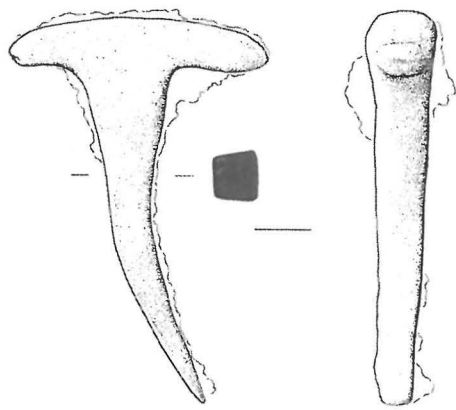
Archaeological Project Services

Project Name: Lincoln Newport Army Cadet HQ

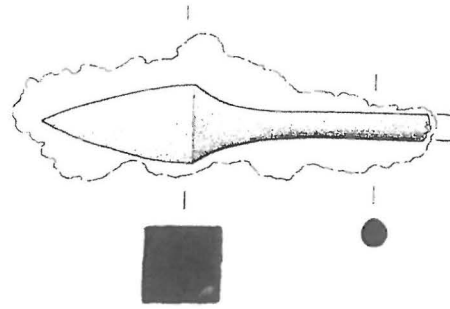
Drawn by: DH

Report No: 89/11

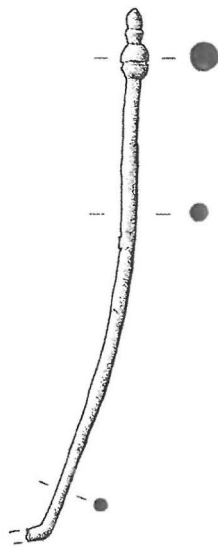
Figure 15. Medieval pottery illustrations



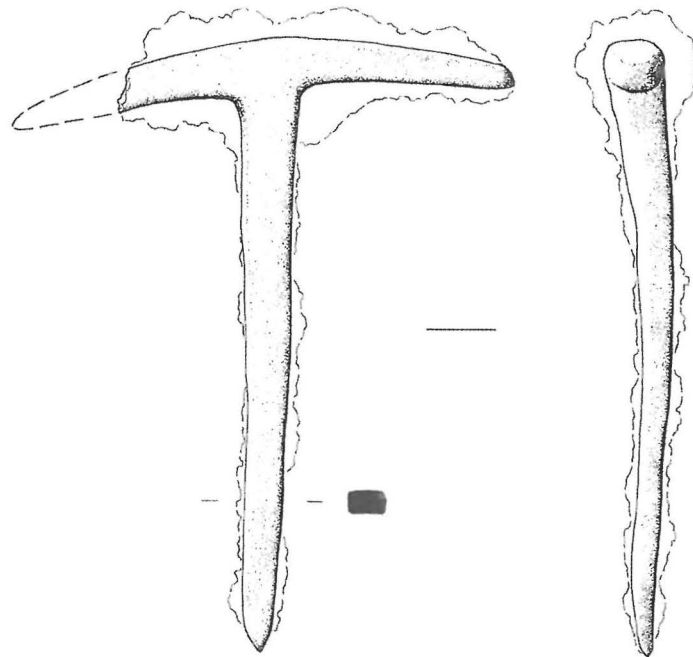
Iron T - shaped spike (034)



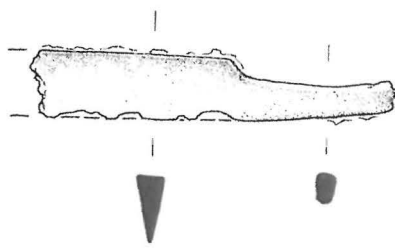
Iron Masonry Bit/Punch (070)



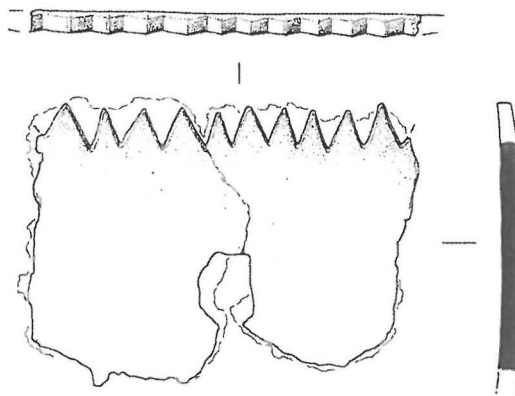
Copper Alloy Pin (070)



Iron T - shaped spike (074)



Iron Small Knife (088) S.F. 5



Iron Saw/Curry comb fragment (611)




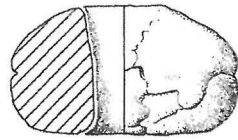
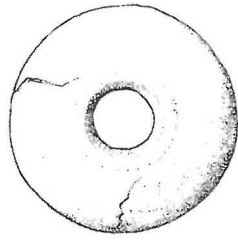
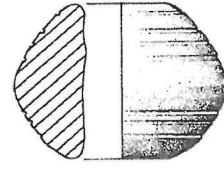
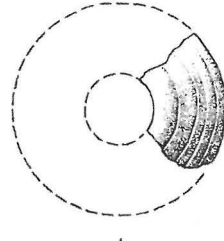
	Archaeological Project Services
Project Name: Lincoln Newport Army Cadet HQ	
Drawn by: DH	Report No: 89/11

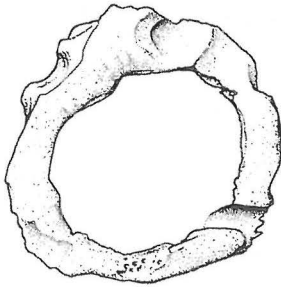
Figure 16. Metal objects



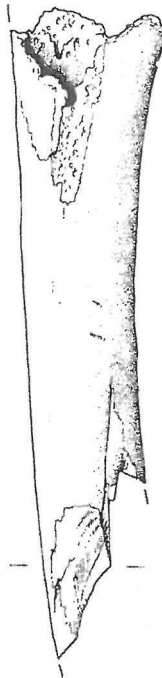
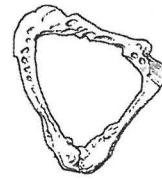
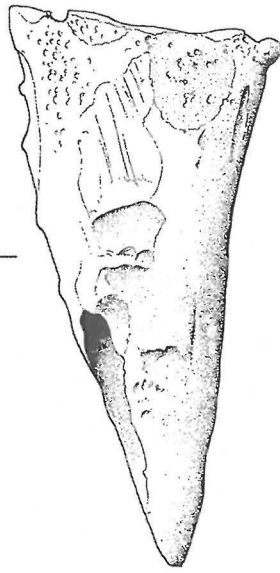
Stone spindle whorl
(032) S.F.1



Stone Spindle whorl
(034) S.F.7



Bone point
(052) S.F.2



Bone point
(049) S.F.8



Archaeological Project Services

Project Name: Lincoln Newport Army Cadet HQ

Drawn by: DH

Report No: 89/11

Figure 17. Stone and worked bone objects



Plate 1. Pre-machining view of east end of site looking towards Newport



Plate 2. Machining east end of the site looking southwest



Plate 3. Pit [016], Section 2 looking northeast



Plate 4. Roman cess pit [042], in foreground, cut by pit [025], Section 8



Plate 5. Pit [067], Section 13



Plate 6. Stone structure [030] looking west with pit [041] and ditch terminus [048] to rear



Plate 7. Stone structure [030], Section 5 looking northeast



Plate 8. Detail of southwest corner of stone structure [030]



Plate 9. Pit [041], Section 6 looking west



Plate 10. Partial stone lining [040], set into the top of pit [041], looking northeast



Plate 11. Ditch terminus [048], Section 9 looking northwest



Plate 12. Stone lining (064) of pit [063] looking south



Plate 13. Pit [087], Section 17 looking east



Plate 14. Skeleton (085) in grave [086] cut by pit [090]



Plate 15. Pit [097], Section 19 looking southeast



Plate 16. Stone structure [030], post excavation view looking northwest



Plate 17. Block A looking southeast during watching brief on footings



Plate 18. Block A watching brief. North edge of quarry pit [609], Section 28 looking south



Plate 19. Watching brief on Newport service trench. Wall [627] looking north

**Appendix 1: SPECIFICATION FOR AN ARCHAEOLOGICAL EXCAVATION
FORMER ARMY CADET FORCE HQ
NEWPORT
LINCOLN
ROB BOURN BA MA MIFA
DECEMBER 2009
Grid Reference: SK 976 727**

1.0 INTRODUCTION

1.1 CgMs Consulting has been commissioned by McCarthy & Stone Retirement Lifestyles Ltd., to organise an archaeological excavation at the former Army Cadet HQ, Newport Road, Lincoln.

1.2 Site Location And Description

1.2.1 The site is approximately 0.65 hectares in extent, and is located approximately 1.5km from Lincoln city centre at the junction of Newport and the A15 Riseholme Road at grid reference SK 976 727. The site itself is occupied by the buildings of the Army Cadet HQ. The front two-thirds of the site have concrete hard-standing around the buildings, while the rear third is grassed over. It lies at c. 63m OD and the underlying geology is Lincolnshire Limestone.

1.3 Planning Background

1.3.1 Planning permission has been granted (2008/0543/F) for the partial retention, conversion and extension of the existing frontage building and the construction of 2 and 3 storey buildings to the rear containing 76 apartments for the elderly and associated facilities including car parking and landscaping (Fig. 2). Condition 10 of the permission states:

"No development, geotechnical investigation, site clearance or other enabling work shall take place on the site until the details of the measures to be taken to evaluate, preserve and/or record the archaeological content of the site, which shall include a timescale for the investigation, have been submitted to and approved by the Local Planning Authority. All archaeological work such thereafter proceed in accordance with the approved programme."

1.4 Archaeological Background

1.4.1 The site has been the subject of a desk-based assessment which demonstrated that the potential for Roman remains was high, except where the cellars of the buildings lie and where the site may have been quarried in its western part. It also concluded that there was a possibility for medieval remains to be present.

1.4.2 APS undertook a watching brief on a limited geotech site investigation toward the rear of the site followed by a five trench evaluation (Appendix 1). The evaluation revealed a number of ditches of Roman date probably relating to property boundaries alongside Ermine Street. A number of cremations and burials were recorded toward the Roman road and a pit which contained burnt pottery, hobnails and charcoal which has been interpreted as a refuse pit or possibly a cremation pit. A medieval stone lined cess pit and a pit containing 10th-12th century were also recorded.

2.0 AIMS AND OBJECTIVES

2.1 Objectives

2.1.1 In accordance with the principles of PPG16 for "preservation by record", the objective is to examine the archaeological resource of the site within a framework of defined aims, to seek a better understanding of that resource, to analyse the findings/record and then to disseminate the results of the work.

2.2 Specific Aims

2.2.1 To establish a relative and absolute chronological framework for the site. Priority is to be given to establishing an overall plan of the site and determining the various phases and sub-phases of activity.

2.2.2 To determine the internal morphology of the site and land-use, to identify the nature, date and range of zones of activity: residential, industrial, religious, etc. and to determine the dynamics of the spatial distribution of activities and changes over time. Within these parameters, the excavation presents an opportunity to address the following research objectives:

What is the natural topographic configuration of the site?

Can the existing detailed understanding of the character and chronology of the Roman occupation of Lincoln?

What evidence is there relating to the origins and development and decline of the Roman occupation/activity along Newport Road?

Is there evidence for further burials and if so, what this can reveal about the afterlife beliefs of the occupants?

What evidence is there for industrial, domestic and agricultural activity on the site?

What evidence is there for ritual/religious activity on the site?

What is the nature of the medieval occupation/activity within the site?

2.2.3 To determine the environmental history of the site and its immediate surrounding area throughout the sequence of human activity on the site.

2.2.4 To support the detailed assessment of the chronology of the artefactual and environmental material with a programme of radiocarbon samples if appropriate.

2.2.5 To enhance the understanding of the Roman and medieval occupation in the region through the examination of the date, form and character within its local, regional and national context.

3.0 MACHINE STRIPPING – EXCAVATION

3.1 The areas to be excavated are shown in Fig. 3. The footprint of the Army Cadet building is excluded as it has a basement and formation levels that are below the levels at which archaeology has been shown to be present. The southern part of the site is excluded as the evaluation has established that post-medieval quarrying in this area will have removed all archaeological remains.

3.2 A site grid is to be established, using an EDM or theodolite, and this is to be tied into the National Grid, at the outset of the project. The limits of the site will be defined prior to commencement of archaeological work on site.

3.3 A full archaeological investigation in the form of a topsoil and partial sub-soil strip followed by excavation is to be undertaken.

3.4 All areas are to be stripped mechanically under archaeological direction. Intermittent testing of the remaining depth of overburden by hand should help to ensure the appropriate level above the archaeology is reached. Care should be taken not to machine into archaeological features or deposits but it is important that the archaeological level is reached and not still covered by overburden. It is hoped that general hand cleaning can be kept to the minimum so machine stripping needs to be well supervised and of a high quality.

3.5 During this operation all earthmoving and other vehicles will avoid travelling on the freshlystripped subsoil and areas of archaeological investigation.

3.6 Stripping will be carried out using a wide, toothless bucket. Machinery would be required to work back from one or several fronts but not track over the surface exposed.

4.0 EXCAVATION STRATEGY

4.1 On completion of machine-stripping, the resultant surface may require some hand cleaning until the uppermost outlines of features become readily discernible and intelligible. Areas of obvious natural sub-soil devoid of any archaeological interest will not require extensive hand-cleaning. Following the removal of the topsoil the surface of the exposed subsoil horizon will be examined for the presence of any archaeological features/deposits. All revealed features, i.e. linear features, postholes and pits, will be accurately planned at 1:100.

4.2 The archaeological team is to be structured to ensure that the hand-cleaning and planning operations run in close sequence. The initial site plan should be updated as new features become apparent.

4.3 Areas containing particularly significant or sensitive archaeological remains should be protected, e.g. not left open to the weather.

4.4 The excavation strategy will be justified against the stated aims and objectives of the project and/or any other appropriate criteria. The site will be excavated stratigraphically. Unless otherwise agreed the following sampling strategy will be followed.

4.5 Structural remains and other areas of significant and specific activity (domestic, industrial, religious, hearths, military, etc) will be fully excavated and recorded. Where appropriate, for instance where the stratigraphy is complex, single context planning will be used.

4.6 Non-structural linear cut features will be sample excavated and recorded with a sufficient number of sections to establish the feature's character, date and morphology. Intersections will be excavated and recorded to establish relative chronologies. Other minor linear features will also be sample excavated if appropriate to the understanding the site's character, date and morphology.

4.7 Non-structural pits will be half-sectioned unless the character, number or size of the pits makes this unpractical. For instance, if a pit contains several intersections and re-cuts, it would not always be appropriate to half-section it. In this situation, the archaeological contractor will consider 'quadranting' or single context planning. The strategy will need to be agreed with the Lincoln Archaeologist and CgMs.

4.8 Non-structural post and stake-holes will be half-sectioned sufficiently to clarify character, relationships and chronology.

4.9 In order to establish clearly dated stratigraphic sequences, artefacts will be recovered carefully from feature intersections. Where artefact assemblages are concentrated, the percentage of sampling will be increased to ensure maximum retrieval and recording of this material.

4.10 Hand-recovery of artefacts will be supplemented by appropriate environmental sampling. This sampling will not normally be from feature intersections.

4.11 An appropriate sample of any alluvium and palaeosoils will be excavated in order to meet the stated aims and objectives of the work.

4.12 Inhumations, cremations and any other ritual, or possibly ritual, features or deposits will be excavated completely and should be given priority in the excavation programme in order to limit the chances of deterioration of the feature and vandalism.

4.13 The sampling excavation strategy set out above will be reviewed continuously and, if necessary, amended in order to take account of changing circumstances. Any changes or amendments will be agreed with the Lincoln Archaeologist and CgMs.

4.14 Deposits must be sampled for retrieval and assessment of the preservation conditions and potential for analysis of all biological remains. A strategy for the recovery and

sampling of environmental remains from the site should be agreed with an environmental consultancy, in advance of the project (see *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation*: English Heritage/Centre for Archaeology Guidelines 2002): the sampling strategy should include a reasoned justification for selection of deposits for sampling, and should be developed in collaboration with a recognised bioarchaeologist.

5.0 RECORDING

5.1 The standards below shall apply in general terms to all phases of the investigation.

5.2 All structures, deposits and finds are to be recorded according to accepted professional standards. The stratigraphy in all sections is to be recorded, even where no archaeological deposits have been identified.

5.3 A plan to indicate the location of the boundaries of the excavated area and the site grid is to be drawn at a scale of 1:1250. Plans to indicate the locations of archaeological features are to be drawn at a scale of 1:100, with more detailed plans and sections as necessary. Detailed plans shall normally be drawn at a scale of 1:20 and sections at a scale of 1:10. All detailed plans and sections are to be related to the 1:100 plans. All plans are to be related to the site grid.

5.4 All plans and sections are to be drawn with pencil on waterproof polyester based drawing film and each plan and/or section is to be clearly labelled.

5.5 All archaeological contexts are to be recorded individually on context record sheets. A further more general record of the work comprising a description and discussion of the archaeology is to be maintained as appropriate.

5.6 A full black and white and colour (35mm transparency) photographic record of the work is to be kept. The photographic record is to be regarded as part of the site archive.

5.7 The archaeological contractor shall allow project records to be inspected and examined at any reasonable time, during or after the excavation work by the Lincoln Archaeologist and CgMs.

5.8 **Archive (including finds)** - all artefacts recovered during the excavations on the site are the property of the landowner. They are to be suitably bagged, boxed and marked in accordance with the *United Kingdom Institute for Conservation, Conservation Guidelines nos. 2* and the landowner shall discuss arrangements for them to be deposited in a museum or similar repository agreed with the Lincoln Archaeologist.

5.9 The site archive, to include all project records and cultural material produced by the project, is to be prepared in accordance with *Guidelines for the preparation of excavation archives for long-term storage (UKIC 1990)*. On completion of the project the archive will be deposited in the appropriate repository.

5.10 Original site drawings, the photographic record and other written records shall be regarded as part of the site archive. On completion of the project the archaeological contractor shall discuss with the Lincoln Archaeologist where they might be most suitably deposited.

6.0 REPORTING

6.1 The contractor is to submit to CgMs and the Lincoln City Council regular written/emailed report indicating progress. Any variations to the excavation strategy are similarly to be notified. The report shall briefly describe the archaeological features revealed on the site and provide a provisional interpretation of the work to date. Any incidents concerning Health and Safety and unauthorized visits to the site shall also be reported.

6.2 Within 4 months of completion of excavation work on site the archaeological contractor will produce a MAP2 post-excavation assessment report. Copies will be provided for CgMs and the Lincoln Archaeologist. A post-excavation programme taking the site through to

publication will be agreed with the Lincoln Archaeologist.

6.3 Post-excavation assessment report will contain as a minimum the following:

- a) a copy of the exposed area location plan at 1:1250 together with (if appropriate) a plan of the main archaeological features at 1:100 together with more detailed plans and section drawings of all major features;
- b) a description and interpretation of the archaeology of the site, together with a summary list of features containing information on stratigraphical relationships;
- c) a table showing, per area, the features, classes and numbers of artefacts located and their interpretation;
- d) a catalogue and discussion of the finds by category. The level of detail will depend on the assessment but all stratified pottery and other datable material will need a certain level of study.
- e) a consideration of the methodology used, including a confidence rating;
- f) a review of the site aims and objectives and research questions.

6.4 The report will be submitted to the Lincoln Archaeologist in hard-copy and in digital format. The digital copy will be supplied for preference in .pdf format or alternatively in .rtf format (from within Microsoft Word) accompanied by digital copies of images, plans and maps in .bmp, .tif or .jpg format. The medium should be either on a PC-formatted floppy disk, on a PC CD-ROM. Whichever software is used the digital files must be supplied in a PC readable format.

6.5 **Publication** - The archaeological contractor shall discuss with CgMs and the Lincoln Archaeologist the format and destination of subsequent publication(s) arising from excavation and post-excavation work on the site. The archaeological contractor will be expected to produce a paper suitable for publication within 18 months of completion of work on site.

6.6 The archaeological contractor is to provide the Lincoln Archaeologist with duplicates of a representative selection of transparencies which may be used for future promotion of the archaeology of the site and the project.

7.0 GENERAL SITE REQUIREMENTS

7.1 **Team Structure** - The team will comprise a Site Director/Supervisor and an Assistant Site Director/Supervisor, both of whom shall be familiar with all aspects of the project and would be able to take the site through to publication. One of the site supervisors should be available on site at all times and throughout any post excavation programme. The archaeological contractor shall provide details of the composition of their teams for the machine stripping and excavation works.

7.2 The 'in house' on-site team will also comprise an environmental specialist and a finds specialist to give day to day advice and provide quick and accurate assessment of dating of pottery, clarification of artefact types, identification of ritual, industrial activities etc, which may need to guide alterations to the excavation strategy.

7.3 In the event that human burials are discovered, a Home Office Licence will be required (in accordance with Section 25 of the Burial Act 1857) before the remains can be lifted. The need for a Home Office Licence applies to both inhumation and cremated remains. Application for a licence will be made by the archaeological contractor.

8.0 GENERAL

8.1 The archaeological contractor will notify the Lincoln Archaeologist of their appointment, the start date and progress of work on site and arrange for monitoring visits to be undertaken.

8.2 **Conservation of finds** - the archaeological contractor shall submit a statement and standard procedures for the use of the on-site conservation of specific artefact classes.

8.3 **Codes of Practice** - The following statutory provisions and codes of practice are to be adhered to where relevant:

- a. all statutory provisions and by-laws relating to the work in question, especially

the Health and Safety at Work *etc* Act 1974.

b. the Institute of Field Archaeologists Code of Conduct

c. the Institute of Field Archaeologists Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology

d. the Country Code

Appendix 2

CONTEXT DESCRIPTIONS

No.	Description	Interpretation	Date
001	Firm light yellow/red limestone frags and bricks, 0.2m thick	Rubble base for concrete	Modern
002	Moderately firm dark brown clayey silt with occasional limestone frags, up to 0.6m thick	Subsoil	
003	Soft, sticky mid orangey grey silty clay with frequent limestone brash, at least 0.3m thick	Natural	
004	Cut of southern terminus of linear feature, same as evaluation feature [310], with shallow, concave sides, at least 4m long, 1.05m wide, 0.15m deep	Ditch terminus	
005	Soft mid to dark grey clayey silt with frequent medium to large angular limestone frags, occasional charcoal flecks, 0.15m thick.	Fill of [004]	Roman
006	Sub-rectangular cut 1.77m long x 0.7m wide x 0.38m deep with steep sides and flattish base	Cut of grave	
007	N-S aligned prone adult skeleton within [006]	Inhumation	
008	Soft dark grey, with light orangey yellow natural patches, clayey silt with frequent mid-large angular limestone frags, occasional charcoal flecks, 0.38m thick. Presence of natural patches indicates immediate backfill of grave	Fill of [006]	M-L 3 rd century 12 th -13 th OR century (1 sherd, intrusive?)
009	Friable mid brown silty clayey sand with frequent limestone pebbles/fragments and frequent charcoal flecks, 0.52m thick	Dumped top fill of [016]	4 th century
010	Friable mid to light yellow greenish brown silty sand with occasional limestone pebbles/frags, 0.44m thick	Fill of [016]	M-L 2 nd century
011	Friable mid yellowish greyish brown silty sand with occasional charcoal flecks, occasional limestone pebbles, 0.3m thick	Fill of [016]	M-L 2 nd century
012	Firm mid greenish greyish brown clayey sand with moderate charcoal flecks 0.55m thick	Fill of [016]	
013	Firm mid reddish brown clayey sand with occasional charcoal flecks 0.27m thick, possibly redeposited natural	Fill of [016]	
014	Soft dark greyish brown sandy clay 0.28m thick	Fill of [016]	
015	Friable light grey and black charcoal and ash up to 0.04m thick	Dump in [016]	
016	Rectangular cut with rounded corners and near vertical sides 1.88m wide x 1.81m+ deep (augered to possible base at 2.3m depth)	Cut of pit, possibly a cess pit	
017	North-south aligned linear cut 6m+ long x 1.6m wide x 0.52m deep with gradual sides and rounded base	Cut of ditch	
018	Soft dark brownish grey clayey silt with frequent small to large angular limestone frags, occasional pebbles, 0.52m thick	Fill of [017]	M 11 th -E 12 th century
019	Soft dark greyish brown sandy clay at least 0.08m thick	Fill of [016]	
020	Firm mid yellowish red clay, at least 0.16m thick	Fill of [016]	
021	Ovoid cut 1m long x 0.85m wide x 0.12m deep with gradual sloping sides and uneven base	Cut of shallow pit	
022	Friable mid grey clayey silt with frequent angular limestone frags and occasional charcoal flecks, 0.12m thick	Fill of [021]	L 12 th -M 13 th
023	Supine neonate skeleton within fill (035) in SW corner of feature [030]	Inhumation	

024	Soft mid to light grey clay 0.31m thick, augured deposit.	Primary Fill of [016]	
025	Oval cut at least 2.6m long x 2.55m wide x 1.25m deep, severely undercut sides with a flat base	Cut of pit	
026	Mix of soft mid greyish yellow silty clay and loose dark reddish brown sandy silt with occasional patches of dark brown silt, 0.15m thick	Fill of [025]	
027	Soft dark grey silt 0.6m thick	Fill of [025]	3 rd century
028	Soft mid brownish grey clayey silt with occasional sub-angular limestone pebbles, 0.7m thick	Fill of [025]	11 th -12 th century
029	Sub-rectangular cut with near vertical sides and flat base	Construction cut for structure (030)	
030	Rectangular structure consisting of limestone walls at least 4.4m long x 3.7m wide	Sunken building or undercroft	
031	Firm light yellowish white/grey silty clay	Natural -floor of [030]	
032	Firm light yellowish brown silt with occasional charcoal flecks and small angular limestone frags, up to 0.18m thick	Fill of [030]	M 12 th -M 13 th century
033	Firm light yellowish grey silty clay with occasional small angular limestone frags, up to 0.12m thick	Redeposited natural layer within [030]	
034	Firm dark brownish grey silt with occasional small to medium angular limestone frags, frequent charcoal flecks shells, up to 0.25m thick	Possible occupation layer within [030]	M 13 th -M 14 th century
035	Soft light yellowish grey clayey silt with frequent small to large rounded and angular limestone frags, up to 0.3m thick, contains neonate burial (023)	Possible demolition layer within [030]	13 th century
036	Soft, sticky mid yellowish grey clayey silt with frequent small to medium limestone frags, up to 0.24m thick	Top fill of [030]	E-M 13 th century
037	Friable mid greyish brown clayey silt with common small to medium limestone frags, 0.7m thick	Top fill of [041]	2 nd -3 rd century OR 12 th -13 th century (1 sherd, intrusive?)
038	Soft greenish yellow brown silt, 0.3m thick	Redeposited natural fill of [041]	
039	Friable dark greyish brown clayey silt with occasional small limestone frags, 0.32m thick	Fill of [041]	11 th -12 th century
040	3-sided limestone structure 2.15m long x 1m wide x 0.4m deep, set into top of pit [041]	Stone pit lining	
041	Ovoid cut 3m long x 2.1m wide x 1m deep with steep, concave sides and a flattish base	Fill of cess or rubbish pit	
042	Rectangular cut with very steep sides at least 3.45m long x 2m wide x at least 1.25m deep	Cut of probable cess pit	
043	Soft light greenish brown clay at least 0.4m thick	Fill of [042]	E-M 3 rd century
044	Firm mid yellow clay with frequent large sub-angular limestone pebbles and a lens of dark brown silt, 0.55m thick	Redeposited natural fill of [042]	
045	Firm mid grey clay silt with occasional sub-angular limestone pebbles, 0.8m thick	Rubbish fill of [042]	M 3 rd century
046	Friable mid brown silt 0.15m thick	Fill of [041]	
047	Firm mottled mid red/yellow silty clay, 0.2m thick	Burnt fill of [041]	Roman
048	East-west aligned linear cut with concave sides and flat base at least 5m long x 3.05m wide x 1.15m deep	Cut of linear terminus	

049	Soft dark grey clayey silt with occasional charcoal flecks, occasional small to medium angular limestone frags, 0.32m thick	Fill of [048]	3 rd century OR 9 th -12 th century
050	Thin lens of soft dark grey clayey silt with frequent charcoal flecks, occasional small angular limestone frags, 30mm thick	Fill of [048]	
051	Soft light yellowish grey clayey silt with occasional small to medium angular limestone frags, 0.28m thick	Fill of [048]	11 th -12 th century
052	Firm mid to dark grey clayey silt with frequent small to large angular limestone frags, occasional charcoal flecks, 0.65m thick	Fill of [048]	12 th -13 th century
053	Friable mid brown silt with occasional small angular limestone frags, occasional shells, 0.28m thick	Fill of [048]	2 nd -3 rd century
054	Friable light greenish yellowish grey clayey silt with occasional small angular limestone frags	Natural	
055	Friable light whitish yellowish grey silt with occasional small to medium angular limestone frags, 0.25m thick	Fill of [048]	
056	Soft dark greyish brown clayey silt with occasional small angular limestone frags, 0.3m thick	Fill of [057]	L 2 nd -3 rd century
057	East-west aligned linear cut with concave sides and uneven base 1.45m long segment, 1.15m wide, 0.3m deep. Same as [208] on evaluation	Cut of probable field boundary ditch	
058	Soft mid brown clayey silt with common small to medium angular limestone frags, 0.57m thick	Fill of [059]	M 2 nd -3 rd century
059	North-south aligned linear cut with concave sides and uneven base, 1.45m segment, 1.15m wide, 0.57m deep	Cut of probable field boundary ditch	
060	Soft light yellowish brown silt	Fill of [029]	
061	Friable dark greyish brown clayey silt with occasional small angular limestone frags, 0.26m thick	Fill of [062]	Mid 3 rd century+
062	NW-E aligned curvilinear cut with convex sides and rounded base 1.3m wide, 0.26m deep	Cut of ditch	
063	Roughly rectangular cut 2.05m long, 1.95m wide, 0.71m deep	Cut of pit	
064	Rectangular structure of roughly hewn tabular limestone blocks	Stone lining of [063]	
065	N-S aligned supine extended adult skeleton laid in top of [064]	Inhumation	
066	Mix of soft dark brownish grey clayey silt and large subangular limestone cobbles, 0.5m thick	Backfill over (065)	L 3 rd -4 th century
067	Rectangular cut with near vertical sides and flat base, at least 3m long, 1.72m wide, 1.15m deep	Cut of very long pit	
068	Soft light greyish green silt with occasional small angular limestone frags, up to 0.12m thick, possibly stained natural	Fill of [067]	
069	Friable light greenish grey silt with occasional angular limestone frags, occasional charcoal flecks, up to 0.35m thick	Fill of [067]	M 3 rd -E 4 th century
070	Soft mid grey clayey silt with frequent small to mid angular limestone frags, occasional charcoal flecks, 0.5m thick	Fill of [067]	M 2 nd -3 rd century
071	Firm mid greyish red silty clay with frequent angular limestone frags, 0.4m thick, prob redeposited natural	Fill of [067]	
072	Soft mid grey clayey silt with frequent small angular limestone frags, occasional charcoal flecks, 0.15m thick	Fill of [067]	
073	Firm light whitish grey silty clay exposed in base of pit [067]	Natural	
074	Friable dark greyish brown clayey silt with occasional small angular limestone frags, up to 0.2m thick	Fill of [075]	13 th century
075	Shallow, irregular shaped cut roughly 3m across, up to 0.2m deep	Cut of depression	

076	NW-SE aligned linear cut 1m long, 1.4m wide, 0.36m deep, same as [105] on evaluation	Cut of ditch	
077	Soft light reddish grey clayey silt with occasional small angular limestone frags, frequent small shells, 0.36m thick	Fill of [076]	
078	Friable light whitish grey clayey silt/limestone brash mix with frequent angular limestone frags	Natural	
079	Mix of soft dark greyish brown clayey silt and 50% large sub-angular limestone cobbles, 0.5m thick	Fill of [064]	M-L 3 rd -E 4 th century
080	Soft mid greenish brown clay with frequent large subangular pebbles, at least 0.3m thick	Fill of [064]	
081	Circular cut 1.6m long x at least 1.1m wide, not excavated	Cut of pit	
082	Soft dark grey silt with occasional sub-angular pebbles	Fill of [081]	13 th century
083	Friable mottled mid grey/light grey/orange clayey silt with 30% small to medium angular limestone frags, 0.6m thick, largely redeposited natural	Fill of [090]	
084	Loose mottled light/mid grey clayey silt with 60% small to medium limestone frags, 0.8m thick	Fill of [086]	
085	Supine legs and feet of skeleton in grave [086], several coffin nails	Skeleton	
086	Oblong cut with rounded corners, 1.15m long (truncated), 1.15m wide, 0.8m deep, vertical to near vertical sides, uneven base	Cut of grave	
087	Ovoid cut with concave sides and flat base 2.6m long, 1.95m wide, 0.6m deep	Cut of pit	
088	Soft mid brownish grey silty clay with occasional large subangular pebbles, 0.6m thick	Fill of [087]	L 2 nd -3 rd century
089	Friable pink clayey silt, 0.03m thick	Patch of burning on floor of [030]	
090	Sub-rectangular cut with steep sides and flattish base, 1.1m wide x 0.6m deep	Cut of pit	
091	Irregular cut at least 10m long, 5m wide	Cut of quarry	Post-medieval
092	Soft dark brownish grey clayey silt	Fill of [091]	Post-medieval
093	Soft very dark greyish brown clayey silt with occasional brick frags, 0.5m+ thick	Fill of [094]	Post-medieval/19 th century
094	Sub-rectangular cut	Cut of quarry	Post-medieval
095	Soft dark greyish brown clayey silt with occasional small angular limestone frags, up to 0.5m thick	Top fill of [097]	
096	Friable mid brown clayey silt with occasional small angular limestone frags, up to 0.7m thick	Fill of [097]	11 th -12 th century
097	Sub-rectangular cut with rounded corners, steep sides and sloping base, 1.1m deep	Cut of quarry pit	
098	Ovoid cut with straight sides and flat base, 0.38m long, 0.35m wide, 0.13m deep	One of 4 post holes forming internal structure within [030]	
099	Soft mix of light grey and light brown clay with moderate angular limestone pebbles, 0.13m thick	Backfill of [098]	
100	Ovoid cut with straight sides and flat base 0.4m long, 0.3m wide, 0.12m deep	One of 4 post holes forming internal structure within [030]	
101	Soft, poorly sorted mix of light grey and light brown clay with moderate sub-angular limestone pebbles, 0.12m thick	Backfill of [100]	

102	Ovoid cut with straight sides and flat base 0.4m long, 0.26m wide, 0.12m deep	One of 4 post holes forming internal structure within [030]	2 nd century
103	Soft, poorly sorted mix of light grey and light brown clay with moderate sub-angular limestone pebbles, 0.12m thick	Backfill of [102]	
104	Ovoid cut with straight sides and flat base 0.28m long, 0.26m wide, 0.1m deep	One of 4 post holes forming internal structure within [030]	
105	Soft, poorly sorted mix of light grey and light brown clay with moderate sub-angular limestone pebbles, 0.1m thick	Backfill of [104]	
106	Friable mid greyish brown clayey silt with occasional small angular limestone frags, 0.35m thick	Fill of [107]	
107	Sub ovoid cut with steep NE side, gradual SW side, rounded corners 1.2m+ long, 0.7m wide, 0.35m deep	Cut of pit	
108	South to west aligned curvilinear cut with concave sides at least 3.75m long, 2.2m wide, 0.34m deep,	Cut of ditch	
109	Soft mid greyish brown clayey silt with frequent small angular limestone frags, 0.36m thick	Fill of [108]	11 th -12 th century
110	Friable dark greyish brown clayey silt with rare small angular limestone frags 0.3m thick	Topsoil (garden soil) in west part of site	
600	Loose dark greyish brown brick/stone/ash rubble 0.9m thick	Overburden in Block 4 footings	
601	Loose mottled dark grey/brown limestone/clay/earth rubble 1.1m thick	Fill of [602]	
602	Cut of unknown shape with near vertical sides and flat base 3m wide, 1.1m deep	Cut of quarry pit	
603	Soft mid orangey grey silty clay with frequent limestone frags	Natural	
604	Loose largely red brick rubble, 0.3m thick	Demolition layer	
605	Soft light greyish yellow silty clay, 0.2m thick	Redeposited clay layer	
606	Friable dark greyish brown clayey silt with occasional angular limestone frags, 0.3m thick	Buried topsoil	
607	Friable mid greyish brown clayey silt with occasional small angular limestone frags	Subsoil	
608	Loose mid yellowish brown 50% clayey silt, 50% small to medium limestone frags	Backfill of [609]	
609	Cut of unknown shape with convex sides and flat base	Cut of quarry pit	
610	Disarticulated juvenile skeleton from grave fill (618)	Skeleton in (618)	2 nd -3 rd century
611	Supine skeleton with Fe object lying on centre of pelvis	Skeleton in [612]	
612	NW-SE aligned oblong cut with rounded corners, steep sides and uneven base, 1.08m+ long, 0.65m wide, 0.38m deep	Cut of grave	
613	Friable mid brown clayey silt with moderate small angular limestone frags, 0.3m thick. Pottery around feet of (614).	Fill of [615]	2 nd -3 rd century
614	Skeleton with head tilted to right and legs flexed. Right arm had been removed by machine.	Skeleton in [615]	
615	NNW-SSE aligned rectangular cut with rounded corners, steep sides and flattish base 1.3m long, 0.4m wide, 0.3m deep, roughly in line with [612]	Cut of grave	

616	disarticulated human remains from grave fill (618)	Disarticulated human remains in [612]	
617	disarticulated human remains from grave fill (066)	Disarticulated human remains from (066)	
618	Loose mottled dark brown/mid yellowish grey clayey silt, 50% small angular limestone frags, 0.38m thick, high redeposited natural content. Pottery all close to skull of (611)	Fill of grave [612]	

Appendix 3 THE FINDS

ROMAN POTTERY

By Alex Beeby and Barbara Precious

Introduction

All the material was recorded at archive level in accordance with the guidelines laid out by Darling (2004) and to conform to Lincolnshire County Council's *Archaeology Handbook*. The pottery was recorded using the codes and system developed for the city of Lincoln archaeological unit (CLAU) (Darling and Precious, forthcoming). A total of 280 sherds from at least 230 vessels, weighing 4291 grams was recovered from the site.

Methodology

The material was laid out and viewed in context order. Sherds were counted and weighed by individual vessel within each context. The pottery was examined visually and using x20 magnification. This information was then added to an Access database. An archive list of the pottery is included in Archive Catalogue 1 with a summary by fabric type in Table 2 below. Two sherds including a single example in Nene Valley Mica Dusted ware (NVMIC) from context (009) and a second in Site Specific Greyware Type 1 (GREY1) from (066) were removed for the Roman fabric type series held at the Heritage Trust of Lincolnshire.

Condition

The condition of the assemblage is mixed but is generally very fragmentary. This is reflected in the low mean average sherd weight of just 15.3 grams. There are few pieces with a considerably higher weight than the average and sherds from just nine individual vessels weigh over 100 grams. It is of note however that there is an unusually high proportion of fineware vessels represented which are generally finer bodied and more liable to break into smaller pieces than larger thicker walled types. Table 3 below shows average sherd weights as well listing the feature types from which pottery was recovered.

A high proportion of the material (15.2%) is abraded, with 35 vessels falling into this category. In addition, 22 vessels (9.5%) are burnt or probably burnt. These effects were most probably caused after disposal and suggest a moderately high level of redeposition. A total of 13 vessels (5.6%) are sooted internally and/or externally, although it is of note that only one of these is also burnt. Sooting is often indicative of use over a hearth or fire. Three dishes in south and central Gaulish Samian ware (SAMCG and SAMSG), (forms 31 and 18/31-31) from contexts (009) and (043) have wear on the lip indicating use, possibly even re-use as lids. There is a single example of a cross-context vessel, from (010) and (011), adjacent fills within pit [016].

Dating

There is a broad range of Roman material largely dating from the 2nd to late 3rd century AD, much of which is residual. There are no noticeably early or 'periconquest' types likely to date to before 100 AD. There is some material of almost certain 4th century date but this is relatively rare. Grave features [006], (065), [612] and [615] seem to belong to the 3rd and 4th Centuries, whilst the remainder of the features have a broad chronological span. Pit [016] has a curious mix of a substantial amount of 2nd century material from all three fill deposits and small amounts of 3-4th century material deriving from a single fill (009). This may be because an earlier feature was disturbed when the pit was dug meaning the bulk of the pottery is redeposited, or there may be more than one cut represented.

Table 1, Summary of Dating

Context	Date of Latest Material (AD)
005	Roman
008	Mid to Late 3rd Century
009	4th Century
010	Mid to Late 2nd Century
011	Mid to Late 2nd Century
018	Late 2nd to 3rd Century

Context	Date of Latest Material (AD)
027	3rd Century
028	Late 2nd Century
032	3rd to 4th Century
034	2nd Century
035	Mid 3rd to Mid/Late 4th Century
037	2nd to 3rd Century
039	2nd to 3rd Century
046	2nd Century
047	Roman
043	Early to Mid 3rd Century
045	Mid 3rd Century
049	Mid 2nd to Early 3rd
051	Mid 3rd to 4th Century
052	Mid/Late 3rd Century
053	2nd to 3rd Century
056	Late 2nd to 3rd Century
058	Mid 2nd to 3rd Century
061	Mid 3rd to 4th Century
066	Late 3rd to 4th Century
069	Mid 3rd to Early 4th Century
070	Mid 2nd to 3rd Century
074	Mid/Late 2nd to Early 3rd Century
077	Roman
079	Mid/Late 3rd to Early 4th Century
082	3rd Century
088	Late 2nd to Mid 3rd Century
096	2nd Century
106	2nd Century
109	Mid 2nd Century
613*	3rd to 4th Century
618*	2nd to 3rd Century

* Watching Brief Area

Results

A summary of the pottery types recovered from LINA10 is included in the table below (Table 2). The assemblage is dominated by coarse miscellaneous greyware types (GREY), this pottery representing 41.3% of the total by vessel count and 37.7% by sherd number. Finewares make up the second largest group and are also substantially represented, including a large proportion of imported Samian ware.

Table 2, Summary of the Roman Pottery by Fabric Type

Fabric Class	Cname	Full name	NoS	NoV	W(g)
Amphora	DR20	Dr 20 Amphorae	2	2	300
Mortaria	MOSC?	South Carlton Mortaria?	1	1	16
Samian	SAMCG	Central Gaulish Samian Ware	14	14	119
	SAMEG	East Gaulish Samian Ware	3	3	8
	SAMSG	South Gaulish Samian Ware	1	1	9

Fabric Class	Cname	Full name	NoS	NoV	W(g)
Imported Fine (Reduced)	MOSL	Moselkeramik	1	1	1
Oxidised (Fine)	NVCC	Nene Valley Colour-Coated	36	24	536
	NVCC1	Early Nene Valley Colour Coat	2	2	17
	NVCC2/NVCC2?	Later Nene Valley Colour Coat*	7	7	34
	NVMIC	Nene Valley Colour-Coated with Mica Overslip	1	1	24
	SCCC/ SCCC?	South Carlton Colour-Coated*	6	3	38
Fine (Oxidised or Reduced)	CC	Undifferentiated Colour-coated	8	7	63
Oxidised (Coarse)	PARC	Parchment; Cream Painted red	2	2	12
	CR/CR?	Cream Flagon Fabric*	11	8	165
	SPOX/SPOX?	Swanpool Oxidised Ware*	2	2	7
Fine (Reduced)	GFIN/GFIN?	Miscellaneous Fine Grey Ware*	5	5	10
	GMIC	Grey Fine Micaceous Ware	1	1	1
	PART	Parisian Type Ware	3	2	28
Reduced (Coarse)	BB1	Black Burnished Ware 1	3	3	43
	BBT	Black Burnished Type Ware	3	3	18
	GREY/ GREY?	Miscellaneous Grey Ware*	107	95	1775
	GREY1/GREY1?	Grey Ware Type 1 (Site Specific)*	13	10	184
	GREYC	Miscellaneous Coarse Grey Ware	3	3	34
	GRFF/GRFF?	Fairly Fine Grey Ware*	11	5	213
	GROG	Grog Tempered Ware	1	1	160
	GRSAN	Undifferentiated Grey Ware with Sandwich Core	5	4	39
	GYBN	Undifferentiated Grey Ware with Brown Surfaces	1	1	2
	GYMS	Grey Wheel-Made With Minimal Fine Shell	1	1	9
Shell	DWSH	Dalesware Late Shell Tempered	13	9	233
	SHEL	Undifferentiated Shell-Tempered	11	7	191
Misc	UID	Uncertain Fabric	2	2	2
Total			280	230	4291

*Includes some examples with uncertain fabric ID

Provenance

Pottery was recovered from a variety of features including pits, ditches and graves. See table 3 for a full breakdown of contexts and feature types. Generally speaking, 1-20 grams is a low (fragmented) weight; whilst 20-30 would usually be seen as a moderate weight.

Table 3, Table showing origin of pottery and average sherd weight

Context	Cut	Feature Type	NoS	W(g)	Av. Sherd W(g)	Note
005	004	Ditch	1	9	9	
008	006	Grave	16	312	19.5	Includes Single Sherd of Post Roman material which may be intrusive
009	016	Pit (Poss Cess)	27	597	22.1	
010			6	155	25.8	
011			3	18	6	
018	017	Ditch	1	7	7	Residual

Context	Cut	Feature Type	NoS	W(g)	Av. Sherd W(g)	Note
027	025	Pit	1	1	1	Probably Residual
028			5	72	14.4	
032	030	Sunken Building or Undercroft	7	29	4.1	Residual
034			2	15	7.5	
035			2	19	9.5	
037	041	Pit (Cess or Rubbish)	1	3	3	Residual?
039			2	11	5.5	
046			1	188	188	
047			1	4	4	
043	042	Pit (Poss Rubbish)	12	262	21.8	
045			13	171	13.1	
049	048	Linear Feature	7	73	10.4	Residual
051			12	159	13.3	
052			24	224	9.3	
053			3	6	2	
056	057	Ditch	9	242	26.9	
058	059	Ditch	9	110	12.2	
061	062	Ditch	11	97	8.8	
066	065 (No cut)	Grave	31	518	16.7	
069	067	Pit	13	110	8.5	
070			9	41	4.5	
074	075	Cut of "Depression"	5	49	9.8	Probably Residual
077	076	Ditch	3	3	1	
079	064	Pit	16	462	28.9	
082	081	Pit	3	43	14.3	
088	087	Pit	3	38	12.7	
096	097	Pit (Quarry)	2	9	4.5	Residual
106	107	Pit	3	6	2	
109	108	Ditch	3	21	7.7	Residual
613*	615	Grave	2	38	19	
618*	612	Grave	11	169	15.4	

* Watching Brief Area

Range

There is a good range of both open and closed forms largely comprised of jars, beakers and bowls. Forms associated with drinking (beakers and flagons) make up 25.2% of the total by vessel count, which is a relatively high proportion. The assemblage recovered from the evaluation of this site (LINA08) recovered evidence of feasting probably in connection with funerary ritual and the high proportion of drinking utensils recovered here may be connected with this activity.

Coarse Reduced

There is a restricted range of reduced coarsewares. This group is dominated by miscellaneous grey wares (GREY) in which there is a good range of both open and closed forms. Vessels of note include, a low bead and flanged bowl (BFBL) from grave [006] (Dr 1) and an early wide mouthed bowl - type 1 (BWM1) from pit [042] (Dr 3). Typologically both of these are mid to late 3rd century forms, and they probably represent some of the very latest material within this fabric group. A bowl with an expanded rim (BEXR) and a large wide mouthed bowl (BWM), from [016], are likely to be later though, probably 4th century.

A fragment of a very small closed vessel from [067] is of special interest, this piece (TV?) (Dr5) could be from a triple vase. Triple vases are elaborate items, with an assumed ritual function, intended to hold oils or some other liquid substance. It is possible that these vessels may have been used, for example, in funerary rituals. The possible association with burials of pre-Christian date on this site is of interest.

The origin of vessels in GREY is unknown and although the majority are probably locally produced, some are likely to be regional imports. The BWM1 form from [042] has flint inclusions suggesting production somewhere outside Lincolnshire, perhaps Norfolk or Cambridgeshire. There are just two vessels in the characteristic blue-grey fabric of the Swanpool/Rookery Lane kilns; this is another indication that most of the material pre-dates the 4th Century. These vessels are commonly found in assemblages dating from the late 3rd century or later and their near absence here is notable.

A single grey ware fabric, grey ware type 1 (site specific) (GREY1), is unique and forms a clear subgroup within the assemblage. This variety, has a pale reduced body with darker coloured, fumed external surfaces. The clay matrix contains frequent moderately well sorted milky-coloured to translucent subrounded to rounded quartz up to 0.5mm as well as rare quartz grits up to 4.0mm and very rare, elongated shale pieces up to 1.5mm in length. This fabric is visually similar to the post Roman Saxo-Norman Lincoln Sandy fabric found in this area and is probably therefore a local product. Forms in GREY1 within this assemblage include jars, at least one, possibly two black burnished ware imitation 'cook pot' jar/s and a bowl or dish. Three vessels are decorated with acute burnished lattice patterning. The date of this fabric is unclear but sherds occur largely within contexts containing pottery of 2nd to 3rd century date and it is unlikely to be later than this.

There are three sherds of black burnished ware 1 (BB1) all from bowl or dishes. One of these may be a product of the Doncaster kilns rather than those at Poole Harbour. A highly micaceous sherd in black burnished ware type fabric (BBT) recovered from grave (065) is very unusual. This piece, from a bead and flanged bowl (BFL), is a highly accomplished imitation of the standard BB1, but the fabric is far too micaceous for a standard source (such as Poole Harbour) to be likely. The south west of England, possibly south Devon, is one possible origin. Black burnished type products from that area are known to have been traded as far away as London in the 3rd Century (Rhodes, 1984, 125), although they are not widely recognised further north.

Coarse Oxidised Wares

There are just eight vessels in this category and all are in the commonly found cream ware, cream flagon fabric (CR). A segmental bowl with a double bead is unusual (Dr 2), whilst a small flagon with prominent top ring (FTR) (Dr 8) is paralleled in material from Lincoln's Colonia rampart (Darling, 1984, Fig. 16.96). Both of these vessels are likely to be of 2nd Century date.

Imports and Finewares (Oxidised and Reduced)

There is a notably high proportion of finewares including locally produced types and regional and foreign imports. These account for almost a third (31.3%) of the total assemblage by vessel count. The largest group here is made up of Nene Valley products, largely colour-coated types (NVCC, NVCC1, NVCC2, NVMIC). These account for 15.2% by vessel number, and 16.8% by sherd number, forming the second largest fabric group. Although this may seem a high number this is not unusual for an assemblage of this date in Lincoln. It is of particular note that almost all of the vessels in NVCC, NVCC1 and NVCC2 are beaker forms; the range here including a high number of folded vessels. Diagnostic examples include folded and scaled beakers from [048] and [067], likely to date to the later 2nd to early 3rd century AD and a folded beaker with a funnel neck from [064] (Dr 7), with a 3rd century date. The only piece not to derive from a beaker is a single sherd from a flagon in Nene Valley Colour Coat with a mica overslip (NVMIC) from [016]. This is a rare find in this area and probably dates to around 200-250AD.

A 3rd Century date is likely for the majority of the Nene Valley beakers at LINA10 as it was during this period that the fabric is thought to have become widely distributed in this area. By the 4th Century the Nene Valley colour-coat repertoire also included a wide variety of other vessel types including large bowls, flagons and occasionally jars. Their general absence here, along with a lack of the late Roman 'Pentice moulded' beaker form, suggests that the nature of activity and deposition on the site had changed by the 4th century AD. As well as Nene Valley products there are other vessels in very similar, but not identical fabrics. These pieces recorded simply as undifferentiated colour coated ware (CC) probably have a variety of sources, and many if not all are likely to have been locally produced. A vessel from ditch [059] has early roughcast decoration, despite superficially appearing to be a later Roman Nene Valley product.

Other finewares of note include the fine reduced 'Parisian' type ware (PART) and grey fine micaceous ware (GMIC). There are three beaker or jar/ beaker vessels in PART including a carinated type from [075].

There is a relatively large amount of material imported from outside Britain, including an example of a folded beaker in Moselkeramik (MOSL) from the Rhineland, and 18 Samian ware vessels. Samian types include 14 vessels from central Gaul (SAMCG), three from eastern Gaul (SAMEG) and a single south Gaulish piece (SAMSG). There are also two fragments from two Dressel 20 amphorae (DR20) from the Baetican region of southern Spain.

The presence of such a relatively large amount of foreign imports of this kind, as well as local finewares is not unusual in urban contexts and is indicative of high status consumption and Romanised practices of eating and drinking

Shell-Tempered Wares

There are nine vessels in Dales ware (DWSH), probably all of which are standard jar forms (JDW). Additionally there are seven more in undifferentiated shell-tempered (SHEL). Some of the SHEL pieces may actually be Dales ware, whilst others may be pre or post Roman. The sherds are too degraded and fragmentary for any more meaningful identification.

Table 4, Summary of the Pottery Forms Recovered

Class	Cname	Form	Full name	NoS	NoV	W(g)	
Samian Forms	27	Cup	Samian Form 27	2	2	10	
	33		Samian Form 33*	2	2	11	
	36?	Bowl	Samian Form 36?	1	1	1	
	37		Samian Form 37	1	1	7	
	38		Samian Form 38	2	2	38	
	18/31-31	Dish	Samian Form 18/31 or 31*	3	3	15	
	31		Samian Form 31	2	2	14	
	31R		Samian Form 31R	1	1	14	
	43	Mortaria	Samian Form 43	1	1	6	
	C21	Bowl	Samian Form Curle 21	1	1	14	
Closed	F	Flagon	Unclassified Flagon	1	1	24	
	FTR		Flagon with Ringed Top	4	1	136	
	BK	Beaker	Unclassified Beaker*	40	37	212	
	BKBAG		Baggy Beaker*	3	2	57	
	BKCAR?		Carinated Beaker	1	1	3	
	BKEV		Beaker with Everted Rim	4	2	25	
	BKFO		Folded Beaker*	11	10	43	
	BKFOF		Folded Beaker with Funnel Rim	9	1	320	
	BKFOSC		Folded Scaled Beaker with Curved Rim	2	2	50	
	BKPR		Plain Beaker with Upright Rim	1	1	1	
	JBK		Jar/Beaker	Unclassified Jar/Beaker	18	18	75
	JBKCAR			Carinated Jar or Beaker	3	2	27
	JBKFO	Jar/Beaker with Folded Body Wall		1	1	15	

Class	Cname	Form	Full name	NoS	NoV	W(g)
	CP	Cook Pot	Cook Pot	5	5	65
	J	Jar	Unclassified Jar	56	43	525
	JCR		Jar with Collared Rim	1	1	16
	JCUR		Jar with Curved Rim	3	2	113
	JDW		Dales Ware Jar*	10	8	202
	JEV		Jar with Everted Rim	4	4	36
	JFO		Jar with Folded Body	1	1	4
	JL		Large Jar	15	8	397
	JNN		Narrow Necked Jar	1	1	8
	JS		Storage Jar	6	4	522
	CLSD		Closed	Closed Form	1	1
Open	B	Bowl	Unclassified Bowl	2	2	23
	B334		Carinated Bowl or Jar	1	1	10
	BEXR		Bowl with Expanded Rim	1	1	66
	BFBL		Low Bead and Flange Rim Bowl	1	1	60
	BFL		Bowl with Flat Flanged Rim	4	4	97
	BGR		Bowl with Grooved Rim	2	2	20
	BSEG		Segmental Bowl	2	2	45
	BTR		Triangular Rimmed Bowl	1	1	19
	BWM		Wide Mouthed Bowl	2	1	88
	BWM1		Wide Mouthed Bowl Type 1	1	1	82
	DGR	Dish	Dish with Grooved Rim	1	1	18
	DPR		Dish with Plain Rim	2	2	31
	BD	Bowl/Dish	Unclassified Bowl or Dish	16	15	313
Amphora	A	Amphora	Unclassified Amphorae	2	2	300
Mortaria	M	Mortaria	Unclassified Mortaria	1	1	16
Other	TV?	Misc	Triple Vase?	1	1	9
Unknown	U	Undiagnostic	Undiagnostic of Form	23	19	82
Total				280	230	4291

*Includes some examples with uncertain form ID

Potential

The pottery should be retained as part of the site archive and should pose no problems for long term storage. A total of eight vessels have been illustrated (Fig 14) for their intrinsic value (see Table 5 below).

Table 5, Vessels for Illustration

Draw	Context	Fabric Cname	Fabric Full Name	Form Code	Form Full Name
1	008	GREY	Miscellaneous Grey Ware	BFBL	Low Bead and Flange Rim Bowl
2	009	CR	Cream Flagon Fabric	BSEG	Segmental Bowl
3	043	GREY	Miscellaneous Grey Ware	BWM1	Early Wide Mouthed Bowl (Type 1)
4	066	PARC	Parchment Ware; Cream Painted Red	JBK	Unclassified Jar or Beaker
5	070	GREY	Miscellaneous Grey Ware	TV?	Triple Vase?
6	079	DWSH	Dalesware Late Shell Tempered	JDW	Dalesware Jar
7	079	NVCC	Nene Valley Colour-Coated	BKFOF	Folded Beaker with Funnel Rim
8	043	CR	Cream Flagon Fabric	FTR	Flagon with Prominent Top Ring

Summary

A good but relatively highly residual assemblage of Roman pottery was recovered from a range of feature types during the archaeological investigations at LINA10. Most of the material dates from the 2-3rd centuries AD, with some 4th Century pottery also represented. The assemblage as a whole is indicative of relatively high status Romanised urban living and consumption. Although much of the material is undoubtedly domestic in nature, some may be connected with funerary activities on the site.

POST ROMAN POTTERY

By Lavinia Green, Anne Irving and Alex Beeby

Introduction

All the material was recorded at archive level in accordance with the guidelines laid out in Slowikowski *et al.* (2001) and to conform to Lincolnshire County Council's *Archaeology Handbook*. The pottery codenames (Cname) are in accordance with the Post Roman pottery type series for Lincolnshire, as published in Young *et al.* (2005). A total of 534 sherds from 306 vessels, weighing 6396 grams was recovered from the site.

Methodology

The material was laid out and viewed in context order. Sherds were counted and weighed by individual vessel within each context. The pottery was examined visually and using x20 magnification. This information was then added to an Access database. An archive list of the pottery is included in Archive Catalogue 2 with a summary in Table 6 below. The pottery ranges in date from the early to middle Saxon through to the early modern period. There are eight cross-context vessels, see Table 6 below for a full list.

Condition

The pottery is in mixed but generally fragmentary condition. The average sherd weight is low at 12 grams, although many sherds are considerably smaller than this. See Table 7 below for a full list of sherd average weights by feature. Much of the pottery shows signs of use including soot deposits and internal residues. There are a total of eight cross-context vessels. Even though this is a high number, indicating the generally disturbed nature of the deposits, the majority came from a single feature, (030). See Table 6 below for a full list.

Table 6, cross context vessels

Number*	Cxts	Cname	Full name	Form
V01	034,036	LSW1	12th Century Lincoln Glazed Ware	Jar
V02	034,035	EMHM	Early Medieval Handmade Ware	Jar
V03	034,035	LEMS	Lincolnshire Early Medieval Shelly	Jar
V04	034,035	LSW1/2	12th-13th Century Lincoln Glazed Ware	Jug
V05	034,035	LSW2	13th to 14th century Lincoln Glazed Ware	Jug
V06	034,035	LSWA	Lincoln Glazed Ware Fabric A	Indented jug
V07	034,035,036	LSWA	Lincoln Glazed Ware Fabric A	Jug
V08	052,053	LFS	Lincolnshire Fine-shelled Ware	Bottle

See archive catalogue for individual vessels

Results

Table 7, Summary of the Post Roman Pottery

Period	Cname	Full Name	Earliest Date	Latest Date	NoS	NoV	W(g)
Early Saxon to Middle Saxon	EMSAX	Early or Middle Saxon Wares	400	870	1	1	8
Late Saxon to Early Medieval	LFS	Lincolnshire Fine-shelled Ware	970	1200	46	34	415
	ST	Stamford Ware	970	1200	5	5	57
Late Saxon to Saxo-Norman	SNLS	Saxo-Norman Lincoln Sandy Ware	970	1080	4	4	21
Late Saxon to Late Medieval	LSW	Lincoln Glazed Sandy Ware	1070	1200	1	1	1
Saxo-Norman to Early	BLGR	Paffrath (Blue-grey) Ware	1050	1200	1	1	22

Period	Cname	Full Name	Earliest Date	Latest Date	NoS	NoV	W(g)
Medieval	NLFS	North Lincolnshire Fine-Shelled Ware	1075	1150	2	1	165
Early Medieval	LSW1	12th Century Lincoln Glazed Ware	1100	1200	78	65	609
	BEVO1T	Beverley Orange-Type Ware Fabric 1	1100	1230	1	1	17
	EMHM	Early Medieval Handmade Ware	1100	1250	50	3	720
	LEMS	Lincolnshire Early Medieval Shelly	1130	1230	204	131	2863
	DST	Developed Stamford Ware	1150	1230	2	2	10
Early Medieval to Medieval	NSP	Nottingham Splashed Ware	1100	1250	6	2	17
	LSW1/2	12th-13th century Lincoln Glazed Ware	1100	1300	7	5	90
	LSW2	13th to 14th century Lincoln Glazed Ware	1200	1320	16	7	381
	LSWA	Lincoln Glazed Ware Fabric A	1100	1500	84	27	688
	MEDLOC	Medieval Local Fabrics	1150	1450	11	1	262
	LSWV2	Lincoln Sandy Ware Variant Fabric 2	1275	1300	1	1	9
	POTT	Potterhanworth-type Ware	1250	1500	1	1	15
Post Medieval to Early Modern	LSWV	Lincoln Sandy Ware Variant	1280	1325	1	1	9
	CEP	Chinese Export Porcelain	1640	1850	1	1	3
	ENPO	English Porcelain	1750	1900	3	3	4
Early Modern	CREA	Creamware	1770	1830	2	2	3
	NCBW	19th-century Buff Ware	1800	1900	1	1	5
Unknown	NCBLCB	19th Century Blue-bodied Earthenware	1800	1950	1	1	1
	MISC	Unidentified Types	-	-	4	4	1
Total					534	306	6396

Provenance

Pottery was recovered from a number of feature types including pits, a sunken floored building or undercroft and linear features. See Table 7 below for a full list.

Range By Area

Although a variety of types dating from the Saxon to early modern period was recovered during the excavation, the vast majority comprises early and high medieval types with a narrow range of dates.

Most of the material came from four fills, these being deposits (032, 034, 035 and 036) within possible undercroft structure 030. This yielded 83.7% of the total post Roman ceramic assemblage by vessel count and 87.8% by sherd number. The pottery here is dominated by 12th and 13th century types, most of which are unlikely to post date the mid 13th century. The 12th century material includes types of definite mid to late 12th century date allowing a suggested hypothetical date of deposition between 1150 and 1250 AD. The types recovered from this feature represent a good cross section of domestic wares in use in Lincoln at this time including 121 vessels in Lincolnshire early medieval shelly ware (LEMS) and 65 vessels in 12th century Lincoln glazed ware (LSW1). Even though this group may be indicative of sustained disposal over a period of years or even decades, the fragmentary nature of the material does suggest some level of redeposition, and it is quite likely that this feature is not the original point of disposal.

Virtually every other feature, that yielded Post Roman pottery on the site produced material of a similar date to that from 030. Linear cut [048] is the most notable of these, producing a total of 30 sherds from 16 vessels, all of a 12th to early 13th century date. Whilst most the material from within this feature is probably of 12th century date, a single sherd from an anthropomorphic jug in Lincoln sandy ware type 2 (LSW2) is unlikely to have been produced much before the early 13th century; and as such, is probably the latest piece deposited within this feature.

Table 7 below shows a breakdown of the ceramic dating of each post Roman feature excavated. This also shows average sherd weight, a figure which helps to indicate the level of redeposition, as highly fragmented assemblages are more likely to be redeposited. A sherd weight below 10 grams is considered to be relatively low, whilst a figure above 20 grams is moderately high. Primary deposition deposits and kiln waste assemblages often have an average weight far in excess of this figure.

Table 7, Summary of Pottery Dating from Post Roman Features

Cut	Feature Type	Latest Likely Date	NoS	NoV	W(g)	Av. Sherd W(g)
004	Ditch	10th-13th	1	1	3	3
006	Grave Cut	Early Mid 12th-Early Mid 13th (Prob Intrusive within RB Cxt)	1	1	3	3
016	Pit	10th to 11th	4	4	21	5.25
017	Ditch	Mid 11th-Early 12th	3	2	32	10.7
021	Pit	Late 12th - Mid 13th	1	1	11	11
025	Pit	11th - 12th	5	5	86	17.2
029 (structure 030)	Sunken Building or Undercroft	Mid 13th - Mid Late 13th	469	256	5631	12
041	Pit	Mid 12th - Early Mid 13th	2	2	29	14.5
048	Linear Feature	Early 13th	30	16	528	17.6
075	Depression	13th	1	1	3	3
090	Pit	13th	1	1	4	4
087	Pit	Late 13th-Early Mid 14th	5	5	17	3.4
094	Quarry Excavation	19th	8	8	16	2
097	Pit (Quarry)	Late 12th-15th	1	1	1	1
108	Ditch	11th-12th	2	2	11	5.5
Total			534	306	6396	11.98

Range By Pottery Type

A discussion of all of the main post Roman pottery types recovered from LINA10, listed by ceramic period is included below.

Early/ Middle Saxon

A single sherd of Early or Middle Saxon ware (EMSAX) was retrieved from the excavation from context (049) the fill of a linear terminus. The form is uncertain and only a general date span of the 5th to 9th century can be assigned to it.

Saxo-Norman

Earliest sherds that date to this period are Saxo-Norman Lincoln Sandy ware (SNLS) dating from the 10th to the 11th centuries. The range of forms associated with SNLS is well established, however context (009) contained an unusual folded rim (DR10). It must be noted that this sherd is possibly intrusive as the majority of pottery found in the associated feature dates to the Roman period.

Other vessels dating to this period include a single Stamford ware (ST) sherd from a jar/pitcher dating to the early 11th century and an imported Paffrath (Blue-grey) ware (BLGR) sherd. Two sherds of North Lincolnshire Fine-Shelled ware (NLFS) from a jar with a double kick rim date from the late 11th to 12th century (DR09). Lincolnshire Fine-shelled ware (LFS) is mainly present as jar forms; these often show signs of spalling, soot and carbonised deposits, particularly in contexts (018) and (028), suggesting these vessels were used for cooking.. This ware also crosses over into the Early Medieval period and continues to be produced until the early 13th century.

Early Medieval

Lincolnshire Fine Shelled ware continued in this period and occurs in deposits until the early part of the 13th century. A bottle form was noted within the assemblage, from cross contexts (052) and (053), it had a carbonised deposit, soot and was internally leached (DR06).

The majority of the pottery from the site falls within this period spanning the 12th and 13th centuries, and displays a wide range of fabrics, forms and decoration. Many vessels are sourced from Lincoln and the surrounding local areas, although wares found during the excavation also originate from Nottingham (NSP), Beverley (BEVO1T) and Stamford (DST).

Lincoln Glazed ware fabric A and Lincoln Glazed Sandy ware forms found during the excavation are mainly jugs. One rare form, that of an indented jug with a splashed mottled cooper glaze, is also present (DR01). Jug forms in 12th century Lincoln Glazed ware (LSW1) were mainly encountered in context (034) and decoration included roller stamping on the neck (DR04), notched cordons and a pressed strap handles. Some forms were noted to be abraded, spalled, with soot and concretions adhering to them, again suggesting their use in a domestic context.

A near complete Early Medieval Handmade ware (EMHM) jar was retrieved from contexts (034) and (035). It has an Early Medieval type flaring rim, and internal soot and carbonised deposits.

Lincolnshire Early Medieval Shelly (LEMS) forms are present although only one example is decorated with a tool pressed rim. Five jars with various rims, some internally leached, spalled, sooted and with carbonised deposits have been illustrated (Drawings 1-5).

Medieval

A single sherd of Potterhanworth-type ware was collected from (034) the fill of a possible sunken building. It dates to the early/mid 13th centuries and was sooted and had a sanded base. From the same context, 11 sherds possibly from one single vessel made of a Medieval local fabric (MEDLOC) were retained for the archive.

All the Lincoln Glazed ware (LSW2) jugs are likely to date to the early 13th century, including one anthropomorphic vessel. Sherds of this fabric were found to have debris of internal deposits, pitted glaze and one had the remains of stacking scar from over-firing in the kiln.

Post Medieval/Early Modern

Sherds collected from this period varied from Chinese export porcelain (CEP) to 19th century Buff ware (NCBW), dating from the mid 17th to 20th centuries. All of the sherds came from fill (093) within possible quarry pit [094].

Potential

The pottery should be retained as part of the site archive and should pose no problems for long term storage. A total of ten vessels have been illustrated (Fig 15) for their intrinsic value. These are listed in Table 8 below.

Table 8, Vessels for Illustration

Draw	Context	Fabric Cname	Fabric Full Name	Form
1	034	LEMS	Lincolnshire Early Medieval Shelly	Jar
2	034	LEMS	Lincolnshire Early Medieval Shelly	Jar
3	034	LEMS	Lincolnshire Early Medieval Shelly	Jar
4	034,035	LEMS	Lincolnshire Early Medieval Shelly	Jar
5	034	LEMS	Lincolnshire Early Medieval Shelly	Small Jar
6	052,053	LFS	Lincolnshire Fine-Shelled Ware	Bottle
7	034,036	LSW1	12th Century Lincoln Glazed Ware	Jug
8	034,035	LSWA	Lincoln Glazed ware Fabric A	Indented Jug
9	053	NLFS	North Lincolnshire Fine-Shelled Ware	Jar
10	009	SNLS	Saxo-Norman Lincoln Sandy Ware	Narrow Neck Jar

Summary

A total of 534 sherds of post Roman pottery from 306 vessels were recovered during the excavation,. The vast majority of the vessel types recovered date to the 12th and 13th centuries when there seems to have been a relatively intense period of activity on the site. Most of this material came from a single feature, an undercroft or sunken floored building (030), where it may have been redeposited. Small amounts, mostly of a similar medieval date, were also recovered from

other types of feature, including pits and ditches. A single redeposited sherd of pottery dated to the Early to Middle Saxon period is of special additional note, as material of this period is very rare in this area.

CERAMIC BUILDING MATERIAL

By Lavinia Green, Anne Irving and Alex Beeby

Introduction

All the material was recorded at archive level in accordance with the guidelines laid out by the ACBMG (2001) and to conform to Lincolnshire County Council's *Archaeology Handbook*. A total of 44 fragments of ceramic building material, weighing 1378 grams was recovered from the site.

Methodology

The material was laid out and viewed in context order. Fragments were counted and weighed within each context. The ceramic building material was examined visually and using x20 magnification. This information was then added to an Access database. An archive list of the ceramic building material is included in Archive Catalogue 3, with a summary in Table 9 below.

Condition

There is a mixture of fresh and abraded fragments of ceramic building material, a Roman Imbrex tile from context (088) has flaked off abraded edges and other fragments present have been burnt, sooted and partially vitrified. Two joining fragments of Tegula tile from context (034) have an unusual white deposit, evidence of oxidisation over the break and show signs of being burnt after disposal.

Results

Table 9, The Ceramic Building Material

Cname	Full name	NoF	W (g)
CBM	Ceramic Building Material	17	43
IMB	Roman Imbrex	2	119
PNR	Peg, Nib or Ridge Tile	8	486
RID	Unidentified Ridge Tile	1	52
RTIL/RTIL?	Roman Tile/ Roman Tile?	6	120
RTMISC	Roman or Post-Roman Tile	2	10
TEG	Roman Tegula	8	548
Total		44	1378

Provenance

Ceramic Building Material was recovered from grave [006], pits [016], [021], [025], ditch [017] and sunken floored building or undercroft (030).

Range

Roman

Roman tile forms identified were Tegula (TEG) Imbrex (IMB) and unclassified Roman Tile (RTIL). The fabrics include a restricted range of fine, medium and sandy types. Most of these have inclusions of ferruginous grits or pieces and/or shale. A single Tegula Flange type (31) was recorded, another flange was noted but due to its fragmentary condition could not be placed within the type series. One interesting fragment of possibly Roman tile from context (008) is shell tempered and so quite different to the remainder of the Roman material. This piece has punctuate brachiopod/Bryozoan fossil shell fragments and is therefore not a locally produced piece. Similar products are known to have been manufactured at the Harrold production site, Bedfordshire, from where they were widely distributed in the South Midlands.

Medieval/Late Medieval

A total of eight fragments of peg, nib and ridge (PNR), flat roofing tiles were retained from the excavation. These date to between the late 12th to 15th centuries. Lincoln fabrics 1 and 7 are the most common fabrics present and examples of

sooting, a sunken margin and a stacking scar have been recorded. A single piece of unidentified ridge tile with Lincoln Glazed ware type (fabric A) dates to between the 12th and 16th centuries.

Potential

There is limited potential for further work, the material should be retained as part of the site archive and should pose no problems for long term storage.

Summary

A small assemblage of Roman and Post Roman ceramic building material, mostly tile, was recovered during investigations at LINA10. Most, if not all, of the Roman material is residual within later contexts.

FIRED CLAY

By Alex Beeby

Introduction

All the material was recorded at archive level in accordance with the guidelines laid out in the Lincolnshire County Council's *Archaeology Handbook*.

Methodology

The material was laid out and viewed in context order. Fragments of fired clay were counted and weighed within each context. This information was then added to an Access database. An archive list of the fired clay is included in Table 10 below.

Condition

Most of the material came from samples and every piece here is abraded and extremely fragmentary. One piece is pale in colour and may have been bleached by chemical action (such as salt) or exposure to heat or sunlight.

Results

Table 10, Fired Clay Archive

Context	Classification	Fabric	Comment	Date	Fraggs	W(g)
009	FIRED CLAY	Dull Oxid; fine sandy	Formless; surfaceless fragment; pale; bleached?; high fired; vesicular due to organic inclusion hollows; abraded	Undated	1	15
010	FIRED CLAY	Oxid; fine	Formless; surfaceless; abraded; high fired poss from CBM; sample 4	Undated	1	1
032	FIRED CLAY	Oxid; fine	Formless; surfaceless; abraded; high fired poss from CBM; sample 9	Undated	1	1
039	FIRED CLAY	Oxid; fine	Formless; surfaceless; abraded; sample 10	Undated	2	1
052	FIRED CLAY	Oxid; fine sandy?	Formless; abraded; prob flakes of CBM; sample 12	Roman or Post Roman?	3	1
077	FIRED CLAY	Oxid; fine sandy	Formless; abraded; prob flakes of CBM; sample 19	Roman or Post Roman?	4	1
Total					12	20

Provenance

Fired clay came from pits [016] and [041] as well as ditches [048] and [076]. A single tiny fragment was also recovered from layer (032) within sunken building or undercroft [030].

Range

A total of 12 fragments were recovered during the excavation. All of these are formless and surfaceless fragments, some of which may come from items of ceramic building material.

Potential

There is limited potential for further work. The material should be retained as part of the site archive and should pose no problems for long term storage.

Summary

Twelve small fragments of fired clay were recovered during investigations at LINA10. These pieces provide little information about activities on the site.

MOLLUSC SHELLS

By Gary Taylor

Introduction

A total of 24 (264g) fragments of mollusc shells were recovered from stratified contexts.

Provenance

The mollusc shells were recovered from fills of graves (008, 066), pit fills (009, 027, 028, 039, 069, 070), ditch fills (018, 058), and the fill of a possible undercroft (034).

Condition

The overall condition of the remains was good to moderate, although they are naturally fragile.

Table 11, Fragments Identified to Taxa

Cxt	Taxon	Element	Side	Number	W (g)	Comments
008	oyster	shell	bottom	1	21	
009	oyster	shell	bottom	1	15	
018	oyster	shell	top	1	4	
027	mussel	shell		4	7	
028	cockle	shell		2	3	
	mussel	shell		2	2	
034	cockle	shell		3	2	
	Garden snail	shell		4	5	
039	oyster	shell	top	1	53	Large U-shaped opening notch at lip
058	oyster	shell	3 bottom & 1 top	1	77	
066	oyster	shell	Top & bottom	2	47	Bottom has V-shaped opening notch at lip
069	oyster	shell	bottom	1	24	
070	oyster	shell	top	1	4	Possibly cut

Summary

Most of the mollusc shells are probably food waste, though the garden snails are natural fauna of the site.

GLASS

By Gary Taylor

Introduction

A single piece of glass weighing 152g was recovered.

Condition

Although naturally fragile the glass is in good condition and a virtually complete object.

Results

Table 12, Glass Archive

Cxt	Description	NoF	W (g)	Date
631	Colourless moulded hexagonal bottle, embossed: 'NOT TO BE TAKEN'	1	152	Late 19 th -early 20 th century

Provenance

The glass was recovered from a modern levelling layer.

Range

A single piece of early modern glass was recovered.

Potential

As an isolated object of early modern date, the glass is of limited potential other than providing some dating evidence and indicating that the layer it was recovered from was little disturbed after its original deposition.

Recommendations for further work

No further work is required on the glass.

METAL FINDS

By Gary Taylor

Introduction

Fifty-six metal items weighing a total of 769g were retrieved. A selection of the assemblage was X-rayed.

Condition

All of the metal finds are in good condition, though corroded.

Results

Table 13, Metals

Cxt	Material	Description	NoF	W (g)	Date
032	Iron	Nail or rectangular-sectioned rod (X-rayed)	1	26	
034	iron	Nails	3	24	
	iron	T-shaped spike, Roman?	1	25	
	iron	Lozenge-sectioned rod – coated?, late post-medieval	1	21	
049	iron	Nails	3	34	
065	iron	Nails (coffin)	20	244	
066	iron	Rectangular block with sheet, unidentified (X-rayed)	1	60	
	iron	Nails (coffin)	4	34	
069	iron	Nail	1	16	
070	iron	Nail shafts and heads, and amorphous lumps (X-rayed)	6	60	Roman, late 2 nd century+
	iron	Possible masonry bit or punch (X-rayed), Roman?	1	25	
	Copper alloy	Pin, with reel and bead below acorn-shaped head, Roman, probably late 2 nd century+	1	4	
074	iron	T-shaped spike	1	40	Roman?
079	iron	nail	1	10	
082	iron	nail	1	11	
085	iron	Nails (coffin)	6	97	
088	iron	Small knife, straight-backed with rectangular tang continuing the line of the blade, broken, point missing (X-rayed)	1	4	Roman, perhaps late
109	iron	Sheet (X-rayed)	1	11	
611	iron	Toothed sheet, probable saw or possibly curry comb (X-rayed)	2 (link)	23	

Provenance

Metal objects were recovered from fills of a possible undercroft (032, 034), ditch fills (049, 109), grave fills (065, 066, 085, 611), pit fills (069, 070, 082, 088), the fill of a shallow depression (074), and the fill of a stone-lined pit (079).

Range

The T-shaped spikes from (034) and (074) are very similar to a clamp from Exeter considered probably to be for fixing box flue tiles to a wall (Holbrook and Bidwell 1991, 265-6). Other comparable T-shaped staples have been found at Bancroft Roman villa (Skinner 1994, 337-8).

Two linking pieces or iron sheet with a serrated edge were recovered from (611). This is probably part of a saw and comparable examples have been found in London previously where they were recovered from 16th century deposits (Egan 2005, 151-2). An iron saw was recovered from a late 3rd-mid 4th century context at Birdoswald Roman fort but differs from the present example in having asymmetrical teeth, a narrow blade and curved back (Summerfield 1997, 302; fig 217). Alternatively, the item may be a curry comb, used in cleaning horses' hides, and the two pieces may have broken apart around a hole which perhaps was a socket for a handle. A similar curry comb was recovered from the Roman military-works depot at Longthorpe in Cambridgeshire (Webster 1987, 103-4). However, an item identified as a three-pronged curry comb found in a mid 2nd century level at Birdoswald was distinctly different to the present example from Lincoln (Summerfield 1997, 302; fig 217). Additionally, the Lincoln piece does not resemble medieval curry combs, which generally are made from angled sheet so that they have a pair of parallel long toothed edges set close together (Clark 2004). Clark references two curry combs found at Roman sites but expresses doubts about their provenance and date and further opines that the earliest British examples appear to be 12th century (*ibid.*, 163-5).

An incomplete knife was recovered from (088). Similar small knives have been found at Birdoswald Roman fort in later 4th century deposits (Summerfield 1997, 301-2).

A decorative copper alloy pin was recovered from (070). Similar pins have been found in Exeter (Holbrook and Bidwell 1991, fig 109), at Birdoswald Roman fort in deposits of 5th cent or later date (Summerfield 1997, fig 197), at Colchester in later 3rd century contexts (Crummy 1995, fig 31), and at Baldock Roman villa in late 2nd-3rd century levels (Stead 1986, fig 54).

A possible drill pit or punch was recovered from (070). This has a solid shaft and lanceolate head, though this is not flat but fairly triangular in section. Comparable objects have been reported from Roman settlements at Colchester (Crummy 1995, fig 206) and Baldock in Hertfordshire (Manning and Scott 1986, fig 65).

Groups of coffin nails were recovered from some of the burials.

Potential

The other finds are of moderate potential. The knife and T-clamps provide functional evidence, many of the nails are from coffins and the pin indicates personal adornment.

The T-shaped spikes, saw/curry comb, drill bit, knife and copper pin have been illustrated (Fig 16).

OTHER FINDS

By Gary Taylor

Introduction

Fourteen other finds weighing a total of 650g were retrieved.

Condition

All of the other finds are in good archive-stable condition.

Results

Table 14, Other Materials

Cxt	Material	Description	NoF	W (g)	Date
009	stone	Burnt stone	2	284	Roman?
	Industrial residue	Iron smithing slag, plano-convex hearth bottom, Roman?	1	188	
032	Stone	Spindle whorl, globular/ slightly biconical, 33mm	1	24	Roman

		diameter, 18mm high, 10mm diameter perforation			
034	Stone	Spindle whorl fragment, biconical, lathe turned, 22mm high	1	4	Roman
043	Industrial residue	Fuel ash slag	3	1	
049	Bone	Socketed point, made from sheep right tibia, smoothed through use, 9 th -12 th centuries?	1	20	9 th -12 th centuries?
	Stone	Burnt stone	1	51	
052	Bone	Socketed point, made from cattle metatarsal, smoothed through use	1	42	9 th -12 th centuries?
053	Industrial residue	Iron smithing slag	1	10	
109	Industrial residue	Iron smithing slag	1	11	Early modern – intrusive?
	mortar	Mortar, early modern – intrusive?	1	15	

Provenance

The other finds were recovered from pit fills (009, 043), fills of a possible undercroft (032, 034), and ditch fills (049, 052, 053, 109).

Range

Two spindle whorls were recovered, both of them of stone, apparently a fine-grained limestone. Both were probably lathe-turned, but only one retains marks of this method of manufacture. Spindle whorls of this form occur regularly on Roman sites, for example, in Exeter (Holbrook and Bidwell 1991, fig 126) and in Colchester they tend to be dated to the late 3rd century (Crummy 1995, 67).

The two bone points are closely comparable with previous discoveries elsewhere. Although this artefact type is not rare its function is obscure. They are commonly found on sites of Viking Age and later, mostly 9th-12th century, date (MacGregor *et al.* 1999, 1989). These present examples may be of similar date, though in both cases the bone looks fresh and there is the possibility that they are much later.

There are a few pieces of industrial residue. Half of them are iron smithing slags, and one of them has the appearance of Roman material. The remainder is fuel ash slag. This type of material is produced when silicates, present in clays, come into contact with alkalis, found in wood ashes, in high temperature processes. As such, fuel ash slag does not necessarily indicate metallurgical activities on site (English Heritage 2001, 21).

Potential

The other finds are of moderate potential. The spindle whorls indicate the spinning of yarn at the site, while the smithing slag suggests the working of iron in the vicinity.

The worked bone and spindle whorls have been illustrated (Fig 17).

SPOT DATING

The dating in Table 14 is based on the evidence provided by the finds detailed above.

Table 14. Spot dates

Cxt	Date	Earliest Horizon	Latest Horizon	Comments
005	10th-13th	ASH8	MH6	Based on a single small sherd
008	Mid to late 3rd	R	R (poss MH4)	Contains single piece of Post Roman pottery (dated early/mid 12th to early/mid 13th) which is probably intrusive, perhaps deriving from the fill of [006]
009	10th to 11th	ASH11	ASH13	
010	Mid to late 2nd	R	R	
011	Mid to late 2nd	R	R	
018	Mid 11th to early 12th	ASH13	ASH14	Based on a single sherd

022	Late 12th to mid 13th	MH3	MH5	Based on a single sherd
027	3rd	R	R	Based on a single sherd
028	11th to 12th	ASH12	MH3	
032	Mid/late 12th to early/mid 13th	MH3	MH4	
034	Mid/late 13th to early/mid 14th	MH5	MH6	
035	13th	MH4	MH5	Most Likely MH4
036	Early to early/mid 13th	MH4	MH4	
037	Mid 12th to early/mid 13th	MH2	MH4	
039	11th to 12th	ASH12	MH3	
043	Early to mid 3rd	R	R	
045	Mid 3rd	R	R	
046	3rd	R	R	Based on a single sherd
047	Roman	R	R	Based on a single sherd
049	Early 13th	MH4	MH5	
051	11th to 12th	ASH12	MH3	
052	11th to 12th	ASH12	MH3	As well as pottery, also includes 1 worked bone dated 9th-12th
053	Late 11th to 12th	ASH14	MH2	
056	Late 2nd to 3rd	R	R	
058	Mid 2nd to 3rd	R	R	
061	Mid 3rd to 4th	R	R	
066	Late 3rd to 4th	R	R	
069	Mid 3rd to early 4th	R	R	
070	Late 2nd to 3rd	R	R	Based on metal (I2+) and pottery (mid 2-3c)
074	13th	MH4	MH5	
077	Roman	R	R	
079	Mid 3rd to Early 4th	R	R	
082	3rd	R	R	
083	13th	MH4	MH6	
088	Late 13th-early/mid 14th	MH6	MH7	
093	19th	EMH	EMH	
096	Late 12th – 15th	MH3	MH10	Based on 1 peg, nib or ridge tile as well as single tiny sherd dated 11th-12th
106	2nd	R	R	
109	11th to 12th	ASH12	MH3	Also contains 1 piece of early modern mortar – intrusive?
613	3rd to 4th	R	R	
618	2nd to 3rd	R	R	

ABBREVIATIONS

ACBMG	Archaeological Ceramic Building Materials Group
BS	Body sherd
CBM	Ceramic Building Material
CXT	Context
LHJ	Lower Handle Join
NoF	Number of Fragments
NoS	Number of sherds

NoV	Number of vessels
PCRG	Prehistoric Ceramic Research Group
TR	Trench
UHJ	Upper Handle Join
W (g)	Weight (grams)

REFERENCES

- ~ 2001, *Draft Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material*, third version [internet]. Available from <<http://www.geocities.com/acbmgl/CBMGDE3.htm>>
- ~ 2003, *Lincolnshire Archaeological Handbook* [internet]. Available at <<http://www.lincolnshire.gov.uk/section.asp?catId=3155>>
- Clark, J. (ed), 2004 *The Medieval Horse and its Equipment c. 1150-c. 1450*, Medieval Finds from Excavations in London 5
- Crummy, N., 1995, *The Roman Small Finds from Excavations in Colchester 1971-9*, Colchester Archaeological Report 2
- Darling, M. J., 1984, *Roman Pottery from the Upper Defences*. The Archaeology of Lincoln XVI-2
- Darling, M. J., 2004, 'Guidelines for the Archiving of Roman Pottery', *Journal of Roman Pottery Studies* 11, 67-74
- Rhodes, M., 1986, 'The Finds' in T. Dyson, (ed) , *The Roman Quay at St Magnus House, London*. London and Middlesex Archaeological Society 8
- Egan, G., 2005 *Material Culture in London in an Age of Transition, Tudor and Stuart period finds c1450-c1700 from excavations at riverside sites in Southwark*, MoLAS monograph 19 (London)
- English Heritage, 2001 *Archaeometallurgy*, Centre for Archaeology Guidelines 1
- Holbrook, N. and Bidwell, P. T., 1991 *Roman Finds from Exeter*, Exeter Archaeological Reports 4 (Exeter)
- MacGregor, A., Mainman, A. J. and Rogers, N. S. H., 1999 *Craft, Industry and Everyday Life: Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*, The Archaeology of York, The Small Finds 17/12, CBA and YAT
- Manning, W. H. and Scott, I. R., 1986 'Iron objects', in I. M. Stead and V. Rigby, *Baldock The Excavation of a Roman and Pre-Roman Settlement, 1968-72*, Britannia Monograph Series 7, 145-162
- Skinner, C., 1994 'Iron objects', in R. J. Williams and R. J. Zeepvat, *Bancroft The Late Bronze Age/Iron Age Settlement Roman Villa and Temple-Mausoleum, Vol 2 Finds and Environmental Evidence*, Buckinghamshire Archaeological Society Monograph Series 7, 322-47
- Slowikowski, A. M., Nenck, B., and Pearce, J., 2001, *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics*, Medieval Pottery Research Group Occasional Paper 2
- Stead, I. M., 1986 'Other bronze objects', in I. M. Stead and V. Rigby, *Baldock The Excavation of a Roman and Pre-Roman Settlement, 1968-72*, Britannia Monograph Series 7, 125-140
- Summerfield, J., 1997 'The small finds', in T. Wilmott, *Birdoswald Excavations of a Roman fort on Hadrian's Wall and its successor settlements: 1987-92*, English Heritage Archaeological Report 14, 269-361
- Webster, G. A., 'Objects of iron', in G. B. Dannell and J. P. Wild, 1987 *Longthorpe II The Military Works-Depot: An Episode in Landscape History*, Britannia Monograph Series 8, 101-113
- Young, J., Vince, A.G. and Nailor, V., 2005, *A Corpus of Saxon and Medieval Pottery from Lincoln* (Oxford)

ARCHIVE CATALOGUES

Archive catalogue 1, Roman Pottery

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
005	SHEL	J		1			BS; MICRO FOSSILS; MICACEOUS		1	9
005	ZDATE						RO			
008	NVCC	BK		1			BS; BURNT OR V HIGH FIRED		1	15
008	ZDATE						ML3C			
008	GREY	BFBL		1	SOOT EX	1	PROFILE; SIMILAR TO G226 WIITH SINGLE BEAD/REED		1	60
008	NVCC	BK		1			BS		1	1
008	NVCC2	BKFO		1			BS; LATE FAB		1	2
008	GREY	JS		1			BSS; CLAY PELLIS		2	102

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
008	GREY	JL		1			BASE		1	16
008	GREY	J?		1			BS		1	2
008	GREY	J		1	INT SCALE		BS		1	16
008	NVCC	BKFO		1	ABR		BS; HEAV INT GROOVES		1	12
008	GREY	JCR	B	1			RIM NECK; SWANPOOL?		1	16
008	GREY1?	CP	LA	1			BS; SOOT EX; PALE FAB		1	17
008	DWSH	J		1			BSS; SMOOTH; COMM FINE MICA; WELL FIRED		3	31
008	DWSH	JDW		1	SCALE INT; SOOT INT AND EX		BS		1	22
009	MOSC?	M		1	V BURNT; WORN TRITS; SOOTED		BS; ML2C		1	16
009	SAMCG	38		1			FRAG; LEZOUX		1	2
009	CR	BSEG		1	ABR RIM	2	RIM SIDE WALL; 2C		1	18
009	BB1	BD	B	1			BASE; DONCASTER?		1	24
009	BB1	BD	BIA; LA	1			BASE; DORSET SHALE		1	13
009	GREY	BGR	B	2			RIMS		2	20
009	GREY	BEXR	BA	1			RIM SIDE WALL		1	66
009	GREY	JS		1			RIM; CLAY PELLE		1	135
009	GREY	BWM	B; BG	1			BSS; V LARGE; 4C		2	88
009	GREY	J	BL	1			BS		1	12
009	GREY	U		1			BS		1	3
009	GREY	JCUR	LA	1			RIM; BS; LARGE VESS		2	103
009	NVCC	BK		2			BASE; BS		2	19
009	PARC	BK	PL	1			BS		1	3
009	CR	BK		1			BS; SOUTH CARL		1	2
009	MOSL	BKFO		1			BS		1	1
009	SPOX	J		1			BS		1	1
009	GREY	J		1			BS		1	5
009	GREY	J	LML	1			BS; CRISS CROSS BURNISHED LINE DEC		1	16
009	GREY	BD		1			BS; BBT TYPE WITH CHAMFER		1	10
009	NVCC2	BKFO		1	SOOT EX AND O BREAK		BS; L FAB		1	11
009	ZZZ						MIX INCL EARLY TYPES			
009	ZDATE						4C			
009	NVMIC	F		1			BS; LHJ; FS		1	24

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
009	SAMCG	31		1	ABR ON TOP OF RIM - USED AS LID?		RIM		1	5
010	GFIN	BK	B EX	1			FRAG; SAMPLE 4		1	1
010	DR20	A		1			BS; LATE FAB; WHITE WASH; L2+		1	112
010	SCCC	BK	RCC ?	1			BSS		2	19
010	SAMCG	33		1			RIM; MDV?; 2C		1	9
010	SAMCG	C21		1			FLANGE; ML2C		1	14
010	ZDATE						ML2C			
011	ZDATE						ML2C			
011	SCCC	BKEV		1			RIM; BSS; POSS SAME VESS AS 010	AS 010	3	18
018	NVCC	BKEV		1			RIM; LARGE CHALK GRITS;		1	7
018	ZDATE						L2-3C			
027	NVCC	BKPR		1			RIM		1	1
027	ZDATE						3C			
028	ZDATE						L2C			
028	BB1	BD	B; BL	1			BASE; THIN; PROB DIABLO DEC		1	6
028	SAMCG	31		1	ABR RIM		RIM		1	9
028	GRSAN	J	BGS	1	ABR		BS		1	5
028	GREY	BFL		1			RIM GIRTH; FRESH; DEEP VESS		1	51
028	NVCC	BK		1			FRAG; SAMPLE 11		1	1
032	NVCC	BKFO ?	PA	1	V BURNT		BS; SAMPLE 9		1	1
032	CC	BK		1			FRAG; SAMPLE 9		1	1
032	ZDATE						3-4C			
032	GREY	BD		1			BASE; HARD BLACK ROUNDED FE		1	16
032	NVCC	BK		1	ABR		BS		1	1
032	GREY	J	J	1			BS		1	7
032	NVCC	BKFO		1	ABR		BSS		2	3
034	CC	U	RCC	1			FTM; LARGE PCS RED FE; SCARLTON?		1	14
034	NVCC	BK		1			FRAG; BKFO?; VFINE WALLED; SAMPLE 8		1	1
034	ZDATE						2C			
035	SHEL	U		1	V ABR		BS; DWSH?		1	6
035	ZDATE						M3-ML4C			
035	DWSH	JDW		1			BASE; PULLING MARKS		1	13
037	GREY	JBK		1	SL ABR		BS		1	3
037	ZDATE						2-3C			
039	GREY	JBK		1			BS; THIN WALLED		1	3
039	GREY	J	B?	1			BS; PROB BBT		1	8
039	ZDATE						2-3C			
043	CR	FTR	B	1	SMASH	8	RIM TO GIRTH; BSS; SPARSE MICA; 120-140		4	136
043	GFIN	BK?	B EX	1			BS; PART TYPE; SAMPLE 13		1	1

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
043	GREY	BD	B EX	1			BASE; SAMPLE 13; COULD BE BB2		1	2
043	GREY	BWM1		1		3	RIM TO GIRTH; LG FLINT INCL		1	82
043	UID	U		1			FRAG; POSS FIRED CLAY; SAMPLE 13		1	1
043	GFIN	JBK		1			BS; MICA		1	5
043	SAMSG	18/31-31		1	SL WARE ON RIM		RIM; LATE SG		1	9
043	SAMCG	18/31-31		1	SL WARE ON RIM		RIM		1	5
043	ZDATE						EM3C			
043	GREY	CP	B	1			RIM; LATER TYPE; L2-3C; PALE FAB		1	21
045	GREY1	J		1			FTM; COTTAGE CHEESE; HARD ROUNDED FE; GREY ROCKS		1	54
045	ZDATE						M3C			
045	GREY1	CP	LA	1			BS; V LIGHT FIRING; GRITS - SHALE?		1	15
045	GREY	JBK	SWL	1			BS; OCC ROUNDED Q GRITS		1	4
045	SAMCG	27		1			RIM TO LWALL; EM2C		1	9
045	GREYC	JL		1	BURNT SCALE INT; SL BURNT		BS; WELL SORTED ROUNDED TO SUBROUNDED Q UP TO 0.5MM; CLAY PELLETS		1	18
045	GREY1	J		1			BS; COTTAGE CHEESE		1	4
045	GYMS	J?		1	B EX		BS; MICACEOUS; RARE CLAY PELLETS; RED MARGINS; DARK SURFACES		1	9
045	SPOX?	CLSD		1			BS; REDUCED CORE		1	6
045	ZZZ						MIXED GROUP BASED ON DWSH AND SAMEG			
045	SAMCG	31R		1			BS		1	14
045	SAMEG	27		1	SL WARE ON RIM		RIM TO GIRTH; THICK PLAIN BAND ABOVE DEC; BRIGHT OX FAB		1	1
045	DWSH	JDW		2			BSS; NO PBS		2	31
045	SAMEG	43		1	ABR		FTM		1	6
046	DR20	A		1	BURNT; SL ABR		HANDLE; 2C FAB		1	188
046	ZDATE						2C			0
047	ZDATE						RO			
047	GREYC	J		1	ABR		BS		1	4
049	ZDATE						M2-E3C			
049	NVCC	BKFO SC		1			BS; ABR		1	6
049	GRSAN	B		1			BASE; HARD ROUNDED FE; SHALE		1	18
049	GREY	J		1	SCALE INT		BS; J		2	30
049	NVCC1	BK		1	ABR		BS; FINE FAB		1	4
049	CR	BK		1	BURNT OX		BS		1	1

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
049	GREY	J		1			BS		1	14
051	DWSH	JDW		1	SOOT INT AND EX; ABR		RIM		1	10
051	GREY	J		1	ABR		BS		1	28
051	GRFF	J		1	SCALE INT AND OVER BREAK; BG		BSS		5	46
051	GREY	J		1			BS; OVERFIRED; PALE FAB; SHALE		1	7
051	ZDATE						M3C+			
051	DWSH	JDW?		1	ABR		RIM; VERY LARGE VESS PROB JDW ST JAR BUT POSS BOWL		1	56
051	NVCC	BKFO		1	BURNT		BS; FINGER PRINT IN FOLD		1	10
051	NVCC	BKFO		2			BS; FLINT INC?		2	2
052	GREY	BFL		1	BURNT		RIM		1	8
052	GREY	JBK		1			BS		1	3
052	GREY	JBK		1	SCALE INT; BURNT		BS		1	3
052	GREY	J		1	SL ABR		BSS		3	19
052	GREY1	J	DOU BLE SHG	1			BS; V LIGHT FIRING		1	7
052	SHEL	JS		1			BSS; FLINT		2	125
052	SHEL	U		1	V ABR		FRAGS FROM SAMPLE; SAMPLE 12		4	1
052	NVCC	BK		1	ABR		FRAGS; SAMPLE 12		3	1
052	GREY	BD		1			BASE; CP TYPE WITH CHAMFERED EDGE		1	15
052	NVCC2	BK		2			BS; LARGE VESS; LATE FAB		2	10
052	GREY	JEV		1			RIM; CP TYPE		1	11
052	SAMCG	U		1			FLAKE		1	1
052	SAMCG	18/31- 31?		1			BS		1	1
052	GREY	CP	LA	1			BS		1	7
052	GREYC	JL		1			BS		1	12
052	ZDATE						ML3C			
053	GYBN	JBK		1	PROB BURNT OX		BS; FAIRLY FINE FAB		1	2
053	CC	BK		1			BS		1	1
053	CR	U		1	BURNT		BS; COARSE FAB		1	3
053	ZDATE						2-3C			
056	GREY	BD		1			BASE		1	97
056	GREY	J	BG	1			BS		1	8
056	GREY	J		1	SL BURNT		BS		1	15
056	GREY	JBK?		1	BURNT?		BS; THICK WALL; SMALL VESS		1	10

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
056	GREY	JEV		1			RIM; RIDGE UNDER RIM		1	15
056	GREY	CP	LA	1			BS; DARK SURFS; BB TYPE		1	5
056	GREY	BD		1			BASES; DRK SURFACES; SING PC ABRADED; BB TYPE		2	84
056	GREY	JNN	COR D	1			BS		1	8
056	ZDATE						L2-3C			
058	GREY	J		1			BS		1	5
058	NVCC	BK		1	SPALLED		BS; V LARGE VESS		1	20
058	ZDATE						M2-3C			
058	GREY	JBKF O	TRIP LE BG	1			BS; LOOK FOR PARRS?		1	15
058	GREY	J		1			BS		1	6
058	GRSAN	J		1			BSS; PALE CORE		2	13
058	GREY	J		1			BS		1	7
058	CC	BK	RCC	1			BASE; STRING; LOOKS LIKE 3C NVCC FAB BUT ROUGH CAST DEC - LOCAL PRODUCT?		1	40
058	GREY	JBK	B?	1			BS		1	4
061	GREY	J		1			BS; V THIN WALLED		1	7
061	ZDATE						M3C+			
061	GREY	BD		1			BS; CHAMFERED EDGE; BB TYPE		1	9
061	DWSH	JDW		1	SMASH; LEACH		BSS; JOIN		3	19
061	GRSAN	JBK		1			BS; ORANGE MARGINS		1	3
061	ZZZ						MIXED; SOME 2C			
061	GREY	J		2			BSS		2	13
061	GREY	JL		1			BS		1	29
061	NVCC	BK		1	BURNT?		BS; DARK CORE		1	10
061	GREY	J	RNO D	1			BS; 2C		1	7
066	GREY	J	LA; SHG	1			BS		1	9
066	GROG	JS		1			BS; PROB CLAY PELLs RATHER THAN GROG; LIGHT FIRING FABRIC		1	160
066	GREY	BD	JRO U; BZZ	1			BS; COURSE FAB BUT THIN WALLED VESS		1	7
066	GREY	JEV		1	SOOT		RIM; BBT J; GREY FAB		1	8
066	GRFF	JL	BG; BDL	1			BS; PARRS?		1	135
066	GREY1	J	BG	1			BS; V LIGHT FIRING; LARGE CHALK GRIT		1	6
066	GREY	JBK	BG	1	FE CONC		BS; MICA		1	4
066	GMIC	BK		1	BURNT		BS; WHITE EX SURFACE		1	1
066	BBT	BFL	BA	1			RIM; MICACEOUS OTHERWISE CLASSIC BBT; SOUTH DEVON/LONDON MICACEOUS BB?		1	4

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
066	GREY	JCUR		1			RIM; UNUSUAL ALMOST JUR		1	10
066	CC	BK	RCC	1			BS; 3C NVCC TYPE FAB BUT RCC		1	2
066	NVCC2	BK		1	BURNT		BS; GREY INT PROB BURNT; FE; LARGE BEAKER		1	9
066	GREY	DPR	BA	1	SOOT EX		PROFILE; SWANPOOL TYPE FABRIC		1	26
066	NVCC	BKBA G?		1			BS		1	9
066	GREY1	BD		1			BASE		1	11
066	PARC	JBK	PS	1		4	BS; V UNUS BLACK PAINT; PHOTO		1	9
066	GREY	JFO		1			BS		1	4
066	SHEL	U		1			BS		1	11
066	SHEL	U	HM?	1	SOOT EX		BS		1	20
066	ZDATE						L3-4C			
066	GREY	JBKC AR		1			BS		1	3
066	GREY	J	BG	1			BS		1	3
066	GREY1	J	BG	1			BSS; V LIGHT FIRING; SHALE?; QUARTZITE ROCKS; FE; FS		2	7
066	GREY	BK		1			BS; FINE WALLED; SILTY BACKGROUND WITH SPARSE ROUNDED Q INCL; NOT FINE ENOUGH FOR GRFF OR PART;		1	16
066	GREY	J		1			BS		1	1
066	GREY	BD	BA	1			BS; STRANGE SQ RIM?		1	4
066	GREY	J		1	SL ABR		BS		1	21
066	SAMCG	B		1	BURNT		BS; V MICACEOUS FAB		1	5
066	GREY	JBK		1	SCALE INT		BS		1	3
066	SAMCG	37		1	ABR; SPALLED		BS; MOULDED DEC		1	7
066	GREY	BKCA R?		1			BS; POSS AS VESS AS BK; SAME FABRIC		1	3
069	NVCC	BK		1	BURNT		BS; LARGE VESS		1	4
069	GREY	BSEG		1			RIM TO GIRTH		1	27
069	BBT	JEV	B	1	SCALE INT; SOOT INT		BS		1	2
069	CC	U		1			FRAG; NOT NVCC; SAMPLE 16; V MICACEOUS		1	1
069	BBT	BD	LA	1	SOOT EX		PROFILE		1	12
069	GREY	BK		1			FRAG; SAMPLE 16; POSS NV		1	1
069	SAMCG	33?		1			BASE		1	2
069	GREY?	U		1			FLAKE; SAMPLE 16; V MICACEOUS		1	1
069	NVCC2	BK?		1			FRAG; THINWALLED VESS; SAMPLE 16		1	1
069	CR	BK		1			FRAG; SAMPLE 16		1	1
069	NVCC	BKFO SC		1			BS; FRESH; THUMB PRINT IN SLIP; V LARGE VESS		1	44

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
069	NVCC1	BK	BAD	1	SLIP FLAKED		BS; FE GRITS		1	13
069	ZDATE						M3-E4C			
069	ZZZ						MOSTLY 2-3C MATERIAL PROBABLY M3C GRP			
069	GREY	U		1			FLAKE; SAMPLE 16		1	1
070	GREY	B334		1			BS		1	10
070	GREY	TV?		1		5	RIM TO LOWER WALL; TINY VESSEL		1	9
070	ZZZ						SOME ID QS			
070	ZDATE						M2-3C			
070	CR?	BK		1			BS; STAMFORD WARE?		1	1
070	GREY1	J		1	SCALE INT		THIN WALLED; COTTAGE CHEESE		1	4
070	SCCC?	BK		1			BS; MICACEOUS FINE FAB; THIN WASH LIKE SLIP		1	1
070	GREY	U	LA	1			BS		1	2
070	GRFF?	JBK		1	SOOT INT AND EX; THICK SCALE INT		BS; VERY STRANGE FAB; MED STAMFORD?; SILTY; MICACEOUS		1	9
070	GREY	BD	B; BA	1			BS		1	3
070	GREY	JBK	BG	1			BS		1	2
074	GREY	U		1	ABR		BS		1	4
074	ZDATE						ML2-E3C			
074	PART	JBKC AR		1	SL ABR		RIM; BS		2	24
074	GFIN	JBK?		1	ABR; LEACH; BURNT; SOOT +OB		BS; SMALL CLAY PELLETS		1	2
074	GREY	BTR		1	ABR		RIM		1	19
077	GREY	U		1	V ABR; BURNT		BS; SAMPLE 19		1	1
077	GFIN?	U		1			FRAG; REMARKABLY FINE WALLED VESS; SAMPLE 19		1	1
077	ZDATE						RO			
077	UID	U		1			FRAG; PROB GREY; SAMPLE 19		1	1
077	ZZZ						SCRAPS FROM SAMPLES			
079	GREY	DPR	B	1			RIM		1	5
079	DWSH	JDW		1	SOOT INT AND EX	6	RIM TO GIRTH		1	51
079	ZDATE						ML3C-E4C			
079	NVCC	BKFO F	ROU L	1	SMASH	7	RIM TO GIRTH; BSS; BASE; RIMS; VERY LARGE VESS; 3C FAB		9	320
079	NVCC	BKBA G		1			BASE; BS; SLOPPY FINISH; FINGER TIP MARKS; L2-E3C		2	48

Cxt	Cname	Form	Dec	NoV	Alter	Dr	Comments	Join	NoS	W(g)
079	GREY	J		1			BS		1	11
079	GREY	J		1	BURNT OX EX		BS		1	9
079	GREY	DGR		1	SOOT IN AND EX		RIM TO LWALL		1	18
082	SAMCG	38		1	ABR; HEAVY PALE DEPOSIT		FTM; INTERNAL STAMP; VERY MICACEOUS; UNTIDILY FINISHED; BET AND DELOR 2000 - TYPICAL FOOTRING; 120-200		1	36
082	GREY	BK		1			BS; VERY HIGH FIRED		1	3
082	PART	JBK		1	ABR		BS		1	4
082	ZDATE						3C			
088	GREY	BFL		1			RIM; PUSHED OVER; COARSE FAB		1	34
088	GRFF	BK		1	ABR		BS; SAND CORE		1	3
088	ZDATE						L2-M3C			
088	SAMEG	36?		1	VABR		RIM; ORANGE FAB		1	1
096	GREY	U		1	V ABR		BS; PALE SANDY FAB		1	6
096	CR	BK?		1			BS; POSS WORN CC		1	3
096	ZDATE						2C			
106	ZDATE						2C			
106	GREY	JBK		1	ABR		BS		1	2
106	CC	U	BAD Z	1	ABR		BSS; JOIN; UNUSUAL		2	4
109	SHEL	J		1	ABR		BASE; MED?		1	19
109	ZDATE						M2C			
109	NVCC2	BKFO		1	V ABR		BS; EARLY FAB		1	1
109	GREY	BK		1	V ABR		BS		1	1
610	ZDATE						2-3C			
610	GREY	JL		1			BSS; SOME JOIN; CLAY PELLE		5	90
610	GREY1	JL	LA	1	BURNT SCALE INT		BASE; BSS; PALE FAB; SHALE; ROUDED FE; CA		3	59
610	GRFF	J		1			BSS; JOIN		3	20
613	ZDATE						3-4C			
613	GREY	JL	SWL; BGS	1			BSS; VERY UNUSUAL DEC		2	38

Archive Catalogue 2, Post-Roman Pottery

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
005	ST	B/C	Jar/ Jug	1	1	3		BS		?ID	10th to 13th
008	LSW1		Jug	1	1	3		BS		?ID; abraded	
009	SNLS		?	3	3	9		BS			
009	SNLS		Narrow Neck jar	1	1	12		RIM	DR10	For illustration, possible intrusive	10th to 11th

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
										sherd, unusual folded rim	
018	LFS		Jar	2	1	11		BS		Spalled; soot and carbonised deposit	11th to 12th
018	ST	G	Jar/ pitcher	1	1	21		BS		Internal deposit; burnt; soot	Early 11th
022	LSW1/2		Jug	1	1	11		Neck		Misfired glaze	Late 12th to mid 13th
028	LFS		Jar	1	1	85		BS		Soot and carbonised deposit; internal and external brown deposit	11th to 12th
028	MISC		?	4	4	1		BS		Sample 11	
032	LFS		Jar	1	1	2		Base			
032	LFS		Jar	3	1	10		Rim + BS		Internal deposit; external soot; double kick rim; cf Faxengate 33.13	Late 11th to 12th
032	LFS		Jar	3	3	10		BS		Soot and carbonised deposit; abraded	
032	LFS		Jar/ bowl	3	1	12		BS		Soot and carbonised deposit	
032	LFS		Jar/ bowl?	2	2	1		BS		Sample 9	
032	LSW		Jar/ bowl?	1	1	1		BS			
032	LSW1		Jug	1	1	4		BS			
032	LSW1		Jug	1	1	6		BS			Mid/late 12th to early/mid 13th
032	LSW1		Jug	1	1	10		BS			
032	ST	B/C	?	1	1	1		BS		ID?	10th to 13th
034	BEVO1 T		Jug/ jar	1	1	17		BS		Spalled	
034	DST	B	Jug	1	1	1		BS		Cu mottled	
034	DST	B	Jug	1	1	9	Applied vertical cordon	BS		Internal white deposit; cu mottled	

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
034	EMHM		Jar	48	1	702		Profile	V02	EMT rim; soot and carbonised deposit; internal deposit	
034	LEMS		Jar	1	1	13	Tool pressed rim top	Rim	DR03	Round everted rim; soot	
034	LEMS		Jar	1	1	79		Rim	DR01	Hollow everted	
034	LEMS		Jar	3	1	81		Rim + BS	DR02	Long hollow everted	
034	LEMS		Jar	17	1	23		BS;BASE		Sample 8	
034	LEMS		Jar	27	1	716		Base + BS	V03; DR04	External soot; spalled; leached	Later 12th to early 13th
034	LEMS		Jar/ bowl	3	1	34		BS		Internally leached; soot and carbonised deposit	
034	LEMS		Jar/ bowl	3	1	53		Base		White internal deposit; sanded base	
034	LEMS		Jar/ bowl	5	5	49		Rim			
034	LEMS		Jar/ bowl	10	10	139		Base		Some soot; some internal deposit; some leached	
034	LEMS		Jar/ bowl	100	100	693		BS		Soot	
034	LEMS		Small jar	1	1	31		BS		Hollow everted	
034	LEMS		Small jar	2	1	27		Rim	DR05	Upright rounded	
034	LFS		Jar	1	1	33		Base		Spalled; soot; late	
034	LFS		Jar	3	3	6		BS		Soot?	
034	LFS		Jar/ bowl	1	1	4		Rim			
034	LFS		Jar/ bowl	7	7	30		BS		Some soot; some leached; late	
034	LSW1		Jar	1	1	1		BS			
034	LSW1		Jar	1	1	16		Base		Spalled	
034	LSW1		Jug	1	1	3		BS		Internal deposit; burnt	
034	LSW1		Jug	1	1	5		Rim			
034	LSW1		Jug	1	1	6		BS		Heavy soot and carbonised deposit	

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
034	LSW1		Jug	1	1	8		BS		Soot and carbonised deposit	
034	LSW1		Jug	1	1	8	Cordon	Neck		Burnt	
034	LSW1		Jug	1	1	9	Cordon	BS			
034	LSW1		Jug	1	1	10		BS		Internal deposit	
034	LSW1		Jug	1	1	49	Roller stamped neck cordon	Neck	V01; DR07	Vessel 6 cross cxt (036)	
034	LSW1		Jug	2	1	19	Cordon	BS			
034	LSW1		Jug	2	2	16		Base			
034	LSW1		Jug	3	1	23		BS		Concretion	
034	LSW1		Jug	3	1	47	Pressed strap handle	Rim + Handle + BS		Inturned rim; all same vessel?	
034	LSW1		Jug	4	1	43		Base		Soot	
034	LSW1		Jug	6	1	56		BS		Amber glaze	
034	LSW1		Jug	12	12	60		BS			
034	LSW1		Jug	27	27	160		BS			
034	LSW1		Narrow jug	1	1	13		Neck		Concretion	
034	LSW1/2		Jug	2	1	35		Handle + base	V04	Vessel 7 cross cxt (035)	
034	LSW2		Jug	1	1	2		BS			
034	LSW2		Jug	1	1	12		BS	V05	Internal white deposit	
034	LSWA		Indented jug	29	1	189		Rim + BS	V06; DR08	Splashed glaze with mottled cu; Inturned rim	Last quarter 12th to 1st quarter 13th
034	LSWA		Indented Jug	16	1	14		BS		Sample 8, cross cxt vessel with (035)	Last quarter 12th to 1st quarter 13th
034	LSWA		Jug	1	1	5		BS			
034	LSWA		Jug	1	1	6		BS		Very abraded	12th to 16th
034	LSWA		Jug	1	1	9		BS with HJ			
034	LSWA		Jug	2	2	87		Base			
034	LSWA		Jug	12	1	137	Cordon	BS with LHJ + base	V07		
034	LSWA		Jug	13	13	63		BS		Some spalled	
034	LSWA		Small bowl	1	1	4		Rim		Rounded rim	

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
034	LSWV2		Jug	1	1	9		Rim		Rounded cuff rim; stacking scar	Mid/late 13th to early/mid 14th
034	MEDLO C	A	Jar/ bowl	11	1	262		Base + BS		Spalled; soot; leached; all same vessel?	
034	POTT		Jar/ bowl	1	1	15		Base		Soot; sanded base	MH4
035	EMHM		Jar	1	1	2		BS	V02	Internal soot	
035	EMHM		Jar	1	1	16		BS	V02	Internal soot and carbonised deposit	
035	LEMS		Jar	23	1	778		Base + rim + BS	V03; DR04	Soot; spalled; leached	Later 12th to early 13th
035	LEMS		Jar/ bowl	1	1	6		Neck		Soot	
035	LFS		Jar/ bowl	2	2	6		BS		Soot	
035	LSW1/2		Jug	1	1	16		Handle	V04	Strap handle, vessel 7, cross cxt (034)	
035	LSW2		Jug	10	1	339		BS with HJ + handle	V05	Cream internal deposit; fe pitted glaze; white slip; strap handle; stacking scar on side	
035	LSWA		Jug	1	1	35		Base		Spalled, cross cxt with (034)	
035	LSWA		Jug	2	1	15	Applied horizontal cordon	BS	V07	Vessel 2, cross cxt with (034)	
035	LSWA		Jug	3	1	98		Handle	V06; DR08	Strap handle; mottled cu and splashed glaze	Last quarter 12th to first quarter 13th
035	NSP	Sandy	Jug	1	1	4		BS		Residual	
036	LEMS		Jar/ bowl	1	1	6		BS		Spalled	
036	LEMS		Jar/ bowl	2	1	68		BS + base		?ID or LFS; internal white deposit; soot	
036	LSW1		Jug	1	1	8		BS		cu specks	12th
036	LSW1		Jug	1	1	14	Notched cordon	Neck	V01; DR07	Vessel 6 cross cxt (034)	Last quarter of 12th to 1st quarter of

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
											13th
036	LSW2		Jug	1	1	7		BS			13th
036	LSWA		Jug	1	1	15		BS	V07	Fe fabric; sparse splashed glaze with deep pits	Mid to late 12th
037	LSW1		Small jug	1	1	7		Base			
039	BLGR		Jar	1	1	22		BS		Soot; ?ID	11th to 12th
049	EMSAX		?	1	1	8		BS		Fabric description moderate quartz sub-angular between 0.03mm to 1mm, rare unusual grey/black stones sub-rounded up to 3mm	5th to 9th
049	LEMS		Jar/ bowl	1	1	23		Rim		Square everted rim; soot	
049	LEMS		Jar/ bowl	2	1	36		BS		Soot	
049	LSW1		Jug	1	1	5		BS			
049	LSW1/2		Jug	2	1	17		Neck		Pocked amber glaze	
049	LSW1/2		Jug/ jar	1	1	11		Base		Concretion	
049	LSW2		Anthropomorphic jug	1	1	14	Applied arm	BS		Pitted glaze	1st part of 13th
049	LSWA		Jug	1	1	11		BS		Unmatured glaze; abraded	
049	NSP	fine/medium	Jug	5	1	13		BS			Mid to mid/late 12th
051	LEMS		Jar	1	1	8		Rim		Long everted rim	
051	LFS		Jar	1	1	50		BS		Soot and carbonised deposit; ?ID	
052	LFS		Bottle	4	1	81		Base	V08; DR06	External carbonised deposit and soot on lower body & centre of base; internally leach	11th to 12th

Cxt	Cname	Fabric	Form	NoS	NoV	W (g)	Dec	Part	Cross Cxt Vess/Dr	Description	Date
053	LFS		Bottle	5	1	54		Base	V08; DR06	Soot and carbonised deposit; internally leached	
053	NLFS		Jar	2	1	165		Rim + BS	DR09	Rim with double kick; soot and carbonised deposit; fabric contains echinoid spines	Late 11th to 12th
053	ST	B	Jar/ pitcher	1	1	18		BS		Yellow glaze	11th to 12th
053	ST	B	Jar/Pitcher	1	1	14		BS		Thin yellow glaze	11th to 12th
074	LSW2		Jug	1	1	3		BS		Full glaze; thin walled; gritty fabric	13th
083	LSW2		Jug	1	1	4		BS			MH4-MH6
088	LFS		Jar	4	4	8		BS			
088	LSWV		Jar/ bowl	1	1	9		BS			
093	CEP		Teacup / bowl	1	1	3		Rim			
093	CREA		?	1	1	1		BS		Flake	
093	CREA		Hollow	1	1	2	Blue slip bands	BS		Abraded	
093	ENPO		?	1	1	1		BS		Flake	
093	ENPO		Flat	1	1	2	Moulded	Rim			
093	ENPO		Tea cup	1	1	1		Handle			
093	NCBLC B		Jar/ bowl	1	1	1	Moulded	BS			
093	NCBW		Hollow	1	1	5		BS			
096	LFS		Jar	1	1	1		BS		Soot	11th to 12th
109	LFS		Jar	2	2	11		BS		Soot and carbonised deposit	11th to 12th

Archive catalogue 3, Ceramic Building Material

Cxt	Cname	Fabric	Sub Form	NoF	W(g)	Description	Date
008	RTIL?	Ox, fine sandy		1	29	With punctate brachiopod, similar products made at Harold, Bedfordshire	Roman?
008	IMB	Oxid, fine sandy		1	74	Heat affected	Roman
008	TEG	Oxid, fine sandy		1	45		Roman

009	TEG	Oxid, occ Fe, Medium-coarse sandy		1	109	Poorly mixed clay, knife trimmed base	Roman
022	CBM	Oxid, fine sandy		1	4		
027	CBM			1	2	Frag	
027	CBM			1	3		
032	RID	LSWA		1	52		12th - 16th
034	PNR	Lincoln fabric 1		1	169	FLR, sooted	Late 12th - 15th
034	PNR	Lincoln fabric 7		1	47	FLR	Late 12th - 15th
034	PNR	Lincoln fabric 7		1	35	FLR, sunken margin, sooted	Late 12th - 15th
034	TEG	Ox,r,ox, medium coarse sandy, shale		2	293	Joining pieces, white deposit on top of tile, oxidised over break, burnt after disposal, 20mm	Roman
034	RTIL	Ox,r,ox, medium sandy		1	27	Burnt over break, partially vitrified	Roman
034	RTMISC	Oxid		1	5	Frag	Roman or Post Roman
034	TEG	Oxid, fine sandy	flange type 31	1	25	Very burnt, sooted, flange	Roman
034	TEG	Oxid, fine sandy	flange type?	1	11	End of a flange? not enough to distinguish type	Roman
034	RTIL	Oxid; medium sandy		1	12	Frag; ID?; prob end of TEG flange	Roman
034	TEG	Oxid; fine sandy	flange type 31	1	25	Burnt; sooted	Roman
035	PNR	Lincoln fabric 1		1	124	FLR, sooted over break, unusual organic inclusion	Late 12th - 15th
035	PNR	Lincoln fabric 7		1	66	FLR, High fired	Late 12th - 15th
036	PNR	Ox,r,ox, fine sandy		1	31	FLR, stacking scar mark	Late 12th - 15th

043	CBM			2	1	Sample 13	
043	CBM	Oxid; fine sandy		2	1	Flake; smoothed surface; prob Roman; sample 13	Roman or Post Roman
049	PNR	Lincoln fabric 7		1	6	FLR	Late 12th - 15th
051	CBM			1	6	Flake	Roman or Post Roman
052	CBM			5	1	Sample 12	
052	CBM			1	2		
052	TEG	Ox, medium sandy		1	40	Poorly mixed clay	Roman
053	CBM			1	9	Burnt over broken edge	
066	RTMISC			1	5		Roman or Post Roman
066	IMB	Oxid, fine sandy		1	45	Abraded, flaked off	Roman
070	RTIL	Ox, medium sandy		2	7	1 with poorly mixed clay, lines on the upper surface may possibly be part of a box tile or TEG	Roman
088	CBM			1	6	Possibly pottery	
088	RTIL	Oxid, medium-coarse sandy		1	45	Probably IMB, ABR	Roman
096	PNR	Ox,r,ox, fine sandy		1	8	FLR?	Late 12th - 15th
109	CBM	Oxid, fine sandy		1	8	Probably RTIL	

Appendix 4
The Human Remains – The Inhumations
by Ross Kendall BA (Hons), MA, PIFA
Archaeological Project Services

1. Contents

- 1. Contents**
- 2. Introduction**
- 3. Methodology**
 - 3.1** Completeness
 - 3.2** Sex Estimation
 - 3.3** Age Estimation
 - 3.4** Metric Traits
 - 3.5** Non-metric Traits
 - 3.6** Dentition and Dental Pathology
 - 3.7** Pathology
- 4. Results**
 - 4.1** Skeleton (007)
 - 4.2** Skeleton (023)
 - 4.3** Skeleton (065)
 - 4.4** Skeleton (085)
 - 4.5** Skeleton (313)
 - 4.6** Skeleton (507)
 - 4.7** Skeleton (610)
 - 4.8** Skeleton (611)
 - 4.9** Skeleton (614)
 - 4.10** Skeleton (616)
 - 4.11** Skeleton (617)
- 5. Discussion**
 - 5.1** The Burials
 - 5.2** Stature
 - 5.3** Non-metric Traits
 - 5.4** Pathology
 - 5.4.1** Trauma
 - 5.4.2** Joint Disease
 - 5.4.3** Metabolic Disease
 - 5.4.4** Congenital Disease
 - 5.4.5** Neoplastic Disease
 - 5.4.6** Dental Disease
- 6. Conclusion**
- 7. Bibliography**

2. Introduction

The aim of this report is to present the data collected from the osteological analysis of human skeletal remains recovered from the former Army Cadet Force HQ, Newport, Lincoln (LINA10). The excavation was carried out by Archaeological Project Services in 2009 and 2010. A small assemblage of skeletal remains, totalling 11 individuals, was recovered from the site. The individuals comprised nine adults, one juvenile, and one perinate. Of the adults, two were male, three were possibly male, one was possibly female, and one was female. Two of the adult individuals were of undetermined sex. Adult ages at death ranged from 18 to 35 in most individuals, with one female aged over 50 years.

The burials were mostly confined to the Roman-British period: one furnished burial dated to the early to mid 2nd century and five to the 3rd-4th centuries. The isolated perinate burial was dated to the 13th century.

3. Methodology

The skeletons were catalogued on a database, with all available scores for sex, age, pathology, metric and non-metric traits noted in accordance with the guidelines specified by the British Association of Biological Anthropology and Osteoarchaeology (BABA0) and the Institute for Archaeologists (Brinkley and McKinley 2004). Methods for the individual scoring traits are outlined below.

3.1 Completeness

Completeness of the human remains was recorded through an assessment of the amount of material representing different areas of the body. Each area of the skeleton was assessed and then placed into the following four categories of completeness: 75%>, 50-75%, 25-50%, <25% (Buikstra and Ubelaker 1994). An overall completeness was then assigned following the same categories.

3.2 Sex Estimation

The determination of biological sex was based upon macroscopically observable morphological traits of the cranium and pelvis (Bass 1971; Buikstra and Ubelaker 1994) and by observation of the sexually dimorphic metrics of the post-cranial skeleton, where available (Bass 1971). Sex was categorised as Female, Possible Female, Indeterminate, Possible Male, or Male. No estimation of sex was made for sub-adult remains, as the diagnostic characteristics are usually ambiguous before puberty.

3.3 Age Estimation

The determination of the age at death was assessed employing several techniques on the extant skeletal elements. Dental wear (Miles 1963; Brothwell 1981), dental development (Gustafson and Koch 1974), epiphyseal fusion (Schaefer *et al.* 2009), pubic symphyseal modification phase (Brooks and Suchey 1990), auricular surface modification phase (Buikstra and Ubelaker 1994), ectocranial suture closure (*ibid*) and modification phase of the sternal ends of ribs (Bass 1971) were recorded, where present.

In the case of foetal/neonatal and young child epiphyseal/element fusion stage, dental eruption stage, and long bone diaphyseal length are the preferred indices used (Schaefer *et al.* 2009). As a multi-factorial approach produces a range of ages, age categories are used for generalisation and comparison purposes. These categories are listed below (Table 1).

Table 1: Summary of Age Categories

Category	Age Range
Foetal	8 - 39 week gestation
Perinate/neonate	Birth - 5 months
Infant	6 months - 2 years
Child	3 - 6 years
Older Child	7 - 15 years
Juvenile	Below 15 years
Adolescent	16 - 20 years
Young Adult	21 - 35 years
Middle Adult	36 - 44 years
Old Adult	45 years - 60 years
Senile	61+ years
Adult	Over 25 years

3.4 Metric traits

Measurements were taken from the extant cranial and post-cranial elements, where completeness allowed. Measurements were recorded using the criteria outlined by Brothwell (1981) and Howells (1973). Stature estimations are based upon the equations by Trotter and Gleser (1958). These measurements were taken from fused long bones, dependent on preservation.

3.5 Non-metric traits

Non-metric traits are morphological features that occur both in bone and dentition. These features have no specific functional purpose and occur in some individuals and not in others. The origins of non-metric traits are complex, each having its own etiology and each being influenced to differing extents by genetics, the environment and by physical activity.

The purpose of analysing and recording non-metric traits is to assess the prevalence rates of expression within a small group or entire population. The presence of non-metric traits may demonstrate individual, idiosyncratic variation. However, they may also be used to discern genetic relationships within a group (White 2000:426). Cranial non-metric traits were scored using the system outlined by Berry and Berry (1967), while post-cranial traits were scored according to the descriptions by Finnegan (1976). Due to the small size of this assemblage, non-metric traits have been recorded in order to allow future comparisons with other Romano-British populations.

3.6 Dentition and Dental Pathology

Tooth representation was recorded based on presence/absence of teeth. Carious lesions (cavities) and enamel hypoplasia were recorded according to Lukacs (1989). Calculus (calcified plaque) build-up and periodontal disease were recorded as described by Brothwell (1981) and Roberts and Manchester (2005).

3.7 Pathology

Pathological changes in human bone reflect an imbalance in the normal biological processes of bone growth and repair. Such an imbalance may be caused by external trauma, infectious disease, metabolic stress, or tumours (White 2000:382). All pathological lesions, trauma and gross morphological abnormalities were described using standard clinical terminology. The specific pathologies and anatomical locations were recorded photographically with accompanying description in an attempt to provide a diagnosis. Specific pathologies and their significance to the population in question are examined in the discussion section.

4. Results

4.1 Skeleton (007): possible female, aged 21-30, approximately 156cm (5'1") tall

Skeleton (007) was recovered from sub-rectangular grave cut [006] on a north-south orientation (head to the north). The skeleton was in an extended prone position, with the hands lying under the stomach area (plate 1). There was no evidence that the hands were bound, nor for a coffin. No grave goods were associated with the individual, although the skeleton position suggests that the body may have been shrouded. The grave was cut into the eastern edge of earlier linear [004], and the grave fill contained mid-late 3rd century pottery.

The skeleton was in very good condition with a high level of preservation, although the skull required partial reconstruction, prohibiting extensive cranial metric analysis. The good appendicular condition allowed for analysis of non-metric traits and pathologies.



Plate 1 – Skeleton (007): position of burial, looking north.

Completeness

Skeleton (007) was >75% complete.

Sexing

Morphological characteristics of the skull displayed a number of possible female traits. These included the supraorbital ridges, orbital rims, mastoid processes, and mandibular gonial angle. Sexual morphological characteristics of the pelvis (ischio-pubic ramus, preauricular sulcus, pelvic brim and iliac auricular surface), along with post-cranial metric indices (radial, humeral and femoral head diameters and clavicle length) indicated that the individual was possibly female.

Age

All extant epiphyses were fully fused, indicating an age at death of least 21 years. All permanent teeth, including the 3rd molars, were fully erupted and in occlusion, suggesting an age of at least 18 years. Attrition of the mandibular and maxillary first and second molars suggested an age of 18-24 years. The reconstructed skull showed closure, but non-obliteration of the coronal, sagittal and lambdoidal sutures. This placed skeleton (007) into the 'middle adult' category, hence suggesting an age of 36-45. Modification of the pelvic auricular surfaces were categorised as phase 3 (aged 30-34), while pubic symphyseal modification suggested an age of 22-24 years and extant rib end modification an age of 24-28 years.

Stature

Measurements of the long bones of skeleton (007) provided a stature estimation of approximately 156cm (5'1").

Non-metric traits

The non-metric traits exhibited by skeleton (007) included a right supra-orbital foramen, and exostosis of the right femoral trochanteric fossa.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 2. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 2: Summary of dentition and dental pathology for skeleton (007)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
O	O	/	O	O	O	O	O	O	O	O	O	O	X	O	O
	G	/	L	L	L		L	L	L	G	L	G	X	G/C	L
O	X	O	O	O	O	O	O	O	O	O	O	O	O	O	X
G/C	X	L	L	L		G	G	G	G	L	L		L	G	X

Key:

- = Jaw missing

A= Abscess

/= Lost postmortem

RO= Root only

U= Unerupted

X= Lost antemortem

C= Caries

NP= Not Present

O= Present

B= Broken

L= Hypoplasia Line

G= Hypoplasia Groove

P= Hypoplasia Pit

The mandible and maxilla were complete, with survival of most teeth. The right mandibular 3rd molar was affected by two separate mesial carious lesions, while the left maxillary 2nd molar exhibited one small mesial lesion.

Enamel hypoplasia in the form of lines and grooves was present on the majority of teeth, spread evenly between maxillary and mandibular.

All of the surviving teeth displayed flecked to medium concretions of calculus (plaque), affecting all surfaces of the teeth in the majority of cases.

Pathology

Skeleton (007) exhibited marked robusticity of the upper right appendicular elements, in particular the clavicle and humerus. The right clavicle displayed distinct anterior-posterior curvature in comparison to the left clavicle (plate 2). The right humerus was noticeably longer than the left, with larger muscle attachments evident. This may suggest that individual (007) was predominantly right handed.

Minor vertebral joint degeneration was evident in the form of osteophytic lipping affecting the articular facets of the middle lumbar vertebrae.

Minor osteophytic lipping of the pelvic sacroiliac joint surfaces was noted, along with corresponding small facets on the sacrum.

Schmorl's nodes were present on the body surfaces of T11, while L5 exhibited slight compression of the vertebral body.

Both 1st metatarsals (proximal articular surfaces) displayed likely osteochondritis dissecans.



Plate 2 - Skeleton (007): left and right clavicles. The right displays stronger robusticity and anterior-posterior curvature.

3.2 Skeleton (023): perinate/neonate, approximately 38-40 weeks old.

Neonate skeleton (023) was recovered from demolition fill (035) within masonry structure (030). There was no discernable grave cut or evidence for a coffin. The individual was oriented northwest-southeast (head to northwest) and was in a supine

position. The neonate seemed to have been placed on a large, flat limestone block before having other blocks placed over it (possibly a form of cist?). This burial arrangement resulted in collapse of the stones and crushing of the remains, with cranial and pelvic preservation particularly badly affected. Pottery from the surrounding context has dated this burial to the early-mid 13th century.

Completeness

This individual was assessed as being 50-75% complete.

Sexing

Sexing of foetal remains is not currently possible from macroscopic skeletal analysis.

Age

Fusion stage of extant elements (sphenoid, temporal, occipital, mandible, vertebrae, sacrum and humerus) suggested an average age of less than 12 months. Metric analysis of the scapula, clavicle, humerii, ulna, femur and tibia indicated that the individual was approximately 38-40 weeks old at time of death. Dental eruption stage was not observable since only three loose tooth crowns were recovered; there were no teeth remaining in the maxillary/mandibular crypts.

Stature

Stature estimation is not usually applicable to foetal/neonate remains and young children since calculations require long bones with fused epiphyses.

Non-metric traits

No non-metric traits were observed.

Dentition

Presence and absence of deciduous maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 3. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 3: Summary of deciduous dentition and dental pathology for skeleton (023)

R5	R4	R3	R2	R1	L1	L2	L3	L4	L5
/	/	/	/	O	/	/	/	/	/
/	/	/	/		/	/	/	/	/
/	O	/	/	/	/	/	/	/	O
/		/	/	/	/	/	/	/	

Key:

- = Jaw missing
- A= Abscess
- /= Lost postmortem
- RO= Root only
- U= Unerupted
- X= Lost antemortem
- C= Caries
- NP= Not Present
- O= Present
- B= Broken
- L= Hypoplasia Line
- G= Hypoplasia Groove
- P= Hypoplasia Pit

The three surviving teeth were in the form of loose crowns only. No teeth remained in crypts. No dental pathology was observed on the extant crowns.

Pathology

No pathology was observed.

3.3 Skeleton (065): possible male, aged 25-30, approximately 163cm (5'3 1/2")

Skeleton (065) was recovered from a stone-lined pit on a north-south orientation (head to south). The skeleton was in an extended supine position, with the hands placed over the pelvic area (plate 3). The presence of several iron nails suggests that the remains were originally confined, although no grave cut was identified. There was a possible grave good recovered from the left knee area of the individual, consisting of 6 small iron objects forming a circle around the knee. This could perhaps be interpreted as a small item of decoration or clothing, or maybe a coincidental arrangement of coffin furniture.

The skeleton was in generally poor condition, particularly the skull and pelvic area. This is probably attributable to crushing by several large tabular limestone cobbles placed above the burial.



Plate 3 – Skeleton (065): position of burial, looking west.

Completeness

Skeleton (065) was recorded as being 50-75% complete.

Sexing

Extant morphological characteristics of the skull included possible male traits exhibited by the mastoid processes and nuchal crest area. Sexual morphological characteristics of the pelvis (ischio-pubic ramus, ventral arch, obturator foramen and acetabulum), along with a post-cranial metric measurement (scapular glenoid width) suggested that the individual was possibly male.

Age

All extant epiphyses were fully fused, indicating the age at death to be at least 21 years. All extant permanent teeth, including the 3rd molars were fully erupted and in occlusion, suggesting an age of at least 18 years. Attrition of the mandibular and maxillary first and second molars suggested an age at death of 25-30 years. Surviving

cranial sutures showed closure, but non-obliteration, placing the individual in the 'middle adult' category (35-45).

Stature

Humeral length measurement provided a stature estimation of approximately 163cm (5'3 1/2").

Non-metric traits

Skeleton (065) exhibited no post-cranial non-metric traits. However, there was an accessory intra-orbital foramen present on the one extant right zygomatic bone.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 4. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 4: Summary of dentition and dental pathology for skeleton (065)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
O	O	O	O	O	O	O	/	-	-	-	-	-	-	O	-
	C	C	C	C	L	L	/	O	O	O	O	O	O	L	O
O	O	O	O	O	O	L	O	O	O	O	O	O	O	O	O
L		L		L	G/P/C	L	L		L	L	L	L	L	L	L

Key:

- = Jaw missing
- A= Abscess
- /= Lost postmortem
- RO= Root only
- U= Unerupted
- X= Lost antemortem
- C= Caries
- NP= Not Present
- O= Present
- B= Broken
- L= Hypoplasia Line
- G= Hypoplasia Groove
- P= Hypoplasia Pit

The mandible and right maxilla were complete. The left maxilla did not survive, although the loose left maxillary 2nd molar was present. The right mandibular canine and right maxillary 2nd molar were affected by small occlusal carious lesions, while right maxillary premolars and 1st and 2nd molars both exhibited large occlusal lesions.

Enamel hypoplasia in the form of lines was present on the majority of teeth, although the right mandibular canine displayed both hypoplastic grooving and pitting.

All surviving teeth displayed flecked to medium concretions of calculus (plaque), affecting all surfaces of the teeth in the majority of cases.

Pathology

Pathology affecting skeleton (065) was limited to minor osteophytic lipping of most rib costal facets, the fovea capitis of the left femur, and the superior anterior edge of the left patella. Osteophytic lipping was also present on vertebrae T12, L4 and L5.

T12 exhibited a Schmorl's node on the superior vertebral body surface.

Skeleton (065) displayed marked robusticity of the upper right appendicular elements, as evidenced by the presence of an enthesopathic lesion on the distal inferior surface of the right clavicle and ossified muscle attachment at the humeral site of insertion of the coracobrachialis muscle. This may suggest right handedness.

A fragment of ossified thyroid cartilage was also present. This could be an indicator of trauma to the throat, although ossification was more likely a natural process as no other evidence of trauma was noted.

3.4 Skeleton (085): indeterminate sex, aged over 18 years.

This individual was recovered from sub-rectangular east-west oriented (head to west) grave cut [065], the western half of which was truncated by pit [090]. Thus, the skeleton was also truncated, leaving only the lower limbs in an extended supine position. Fragments of skull, upper limbs and pelvis were recovered from pit fill (083) and attributed to skeleton (085). The presence of several iron nails surrounding the lower body suggests that the remains were originally confined. The skeleton was in generally poor condition, particularly the fragments recovered from the pit fill. Although the grave was undated, truncating pit [090] contained a single sherd of 13th-14th century pottery, giving a possible *terminus ante quem* for the grave.

Completeness

This individual was assessed as being 25-50% complete.

Sexing

There were no surviving observable morphological cranial or pelvic characteristics. Femoral bicondylar width suggested that this individual was male. However, given that this is the only surviving metric index, a sex of indeterminate was ascribed.

Age

All extant epiphyses were fully fused, indicating the age at death to be at least 18 years. All surviving permanent teeth, including the mandibular 3rd molars were fully erupted and in occlusion, suggesting an age of at least 18 years. Molar attrition suggested an age 20-25 years. The surviving sagittal suture was closed, but not obliterated, placing the individual in the 'middle adult' category (35-45). Age indicators of the pelvis or rib ends were not observable.

Stature

Stature estimation was not possible due to the lack of complete or reconstructible elements.

Non-metric traits

Skeleton (085) exhibited no non-metric traits on extant skull fragments. There was possibly a squatting facet present on the posterior border of the medial malleolar talar facet of the left tibia.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 5. The top two

lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 5: Summary of dentition and dental pathology for skeleton (085)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
O	O	O	/	/	/	/	/	/	/	O	O	/	O	O	O
		L	/	/	/	/	/	/	/	G/C	G	/	L/C	L	L

Key:

- = Jaw missing
- A = Abscess
- / = Lost postmortem
- RO = Root only
- U = Unerupted
- X = Lost antemortem
- C = Caries
- NP = Not Present
- O = Present
- B = Broken
- L = Hypoplasia Line
- G = Hypoplasia Groove
- P = Hypoplasia Pit

The mandible was complete, but missing many teeth (postmortem loss). The maxilla did not survive, although the loose right maxillary 2nd molar was present. The left mandibular 1st molar was affected by a small buccal carious lesion and the left mandibular canine exhibited a small occlusal lesion.

Enamel hypoplasia in the form of lines was present on most of the mandibular teeth and the left canine displayed hypoplastic grooving.

All surviving teeth displayed flecked to heavy concretions of calculus (plaque), affecting all surfaces of the teeth in the majority of cases.

Pathology

The only observed pathology was ossification at the insertion site of the peroneus longus muscle on the medio-distal left fibula.

3.5 Skeleton (313): male, approximately 35 years old and approximately 169cm (5'5 1/2") tall.

Skeleton (313) was recovered from sub-rectangular grave cut [312], oriented north-south (head to the north). The individual was in an extended supine position, with the hands placed over the pelvic area (plate 4). There was no evidence for a coffin, although the narrow cut and 'tight' placement of the bones may suggest that the individual was shrouded.

The skeleton was in very good condition, particularly the post-cranial elements. The skull required partial reconstruction, precluding cranial metric analysis.

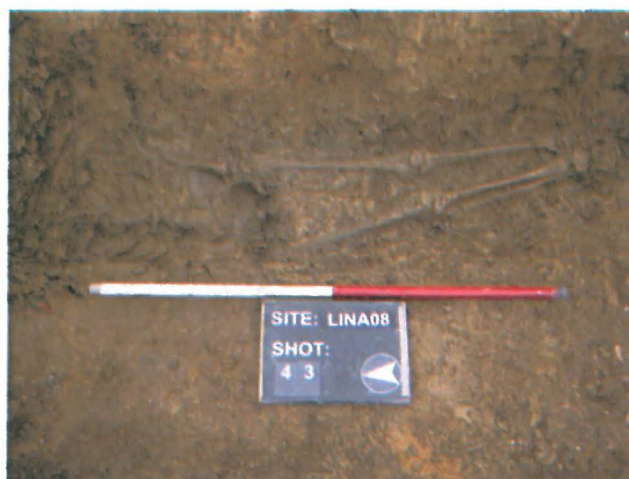


Plate 4 - Skeleton (313): burial position, looking east.

Completeness

This individual was >75% complete.

Sexing

Morphological characteristics of the skull exhibiting possible male traits included the supra-orbital ridges and the posterior zygomatic and nuchal crest areas. Sexual morphological characteristics of the pelvis (sub-pubic angle, ischio-pubic ramus, obturator foramen, acetabula and iliac auricular surface) suggested possible male sex, as did the greater sciatic notch. All post-cranial metric indices indicated that skeleton (313) was male.

Age

All extant epiphyses were fully fused, indicating the age at death to be at least 21 years. All extant permanent teeth, including the 3rd molars, were fully erupted and in occlusion, suggesting an age of at least 18 years. Attrition of the mandibular and maxillary third molars suggested an age at death of 28-35 years. Surviving cranial sutures showed closure, but non-obliteration, placing the individual in the 'middle adult' category (35-45). Modification of the pelvic pubic symphyses indicated an age of 35-39 years, while the auricular surfaces matched this estimation. Rib end modification suggested an age of 34-56 years.

Stature

Humeral length measurement provided a stature estimation of approximately 169cm (5'5 1/2").

Non-metric traits

Cranial non-metric traits present included bilateral extra-sutural mastoid foramina and bilateral complete supra-orbital foramina. The post-cranial skeleton exhibited two non-metric traits. Firstly, the atlas had bilateral double facetting of the superior articular facets and secondly, the calcanei exhibited bilateral double facetting of the medial articular talar facets.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 6. The top two

lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 6: Summary of dentition and dental pathology for skeleton (313)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
/	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
/	C				L				O	L/C	C				C
O	O	O	O	O	O	O	O	X		O	O	O	X	O	C
		C			G	G	G	X		G		L	X		

Key:

- = Jaw missing X= Lost antemortem B= Broken
 A= Abscess C= Caries L= Hypoplasia Line
 /= Lost postmortem NP= Not Present G= Hypoplasia Groove
 RO= Root only O= Present P= Hypoplasia Pit
 U= Unerupted

The mandible and maxilla were both complete. The left mandibular 1st incisor and 1st molar were lost ante-mortem, with corresponding alveolar resorption evident. On the maxilla the right 2nd molar and left 1st premolar exhibited medium mesial caries. The left 3rd molar had a large occlusal cavity and left canine displayed a large mesial cavity. The mandibular right 1st molar had a large mesial carious lesion.

Enamel hypoplasia in the form of lines was present on the maxillary canines and mandibular left 1st molar, while hypoplastic grooving was evident on four mandibular teeth.

The vast majority of the surviving teeth displayed flecked to medium concretions of calculus (plaque), affecting all surfaces of the teeth.

Pathology

Individual (313) exhibited two separate healed fractures. The first affected the 10th left rib, occurring on the rib mid-shaft with negligible distortion to the rib shape. The presence of a bony callous at the site of the fracture indicated that healing was well progressed, although was not complete at the time of death.

The second fracture identified was located on the mid-shaft of the left clavicle and resulted in a marked shortening of the element.

Minor osteophytic/osteoarthritic proliferation was evident on most rib costal facets and corresponding vertebral articular facets. Minor proliferation was also noted on the clavicular notches of the manubrium and bilaterally on the posterior border of the lateral articular facet of the tali. Moderate proliferation and minor porosity was observed on the right scapular acromial facet and corresponding lipping and macroporosity on the distal end of the right clavicle.

Schmorl's nodes were recorded on both vertebral body surfaces of T5-12 and L1-5.

The sacrum exhibited an extra posterior foramen immediately medial to the left 1st sacral foramen. A similar foramen was discovered in the same location on skeleton (614).

The right femur displayed a large, hollow ossified muscle attachment on the supero-lateral aspect of the linea aspera (plate 5) at the insertion site of one of the adductor muscles. This ossification is possibly the result of repeated micro-trauma to the attachment site.

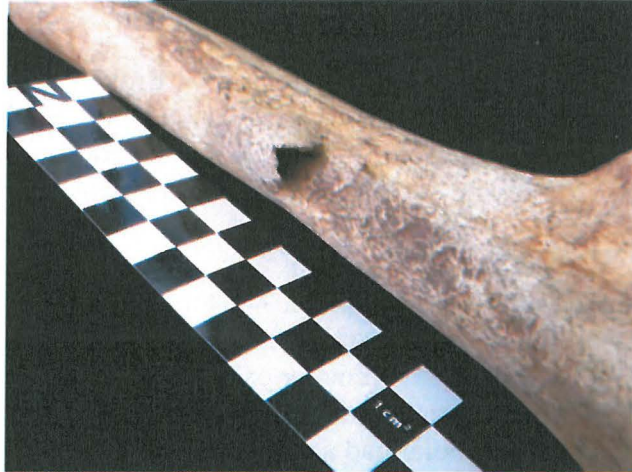


Plate 5 - Skeleton (313): large ossified muscle attachment on posterior right femur

3.6 Skeleton (507): female, at least 50 years old and approximately 155cm (5'1") tall

Individual (507) was recovered from ovoid grave cut [506], oriented north-south (head to the north). The individual was in a semi-flexed position with legs lying on the left side. The left hand was drawn up to the left shoulder area, while the right hand rested on the upper chest area (plate 7). The burial was accompanied by a complete carinated beaker/jar and a near complete drinking flagon (plate 6). These have been dated to the early-mid 2nd century AD (Beeby and Precious 2009). A complete cow scapula was also placed on the thorax area of the individual.



Plate 6 – Skeleton (507) with grave goods, looking east.



Plate 7 – Skeleton (507) after removal of grave goods, showing hand positions, looking east.

Completeness

Skeleton (507) was observed to be >75% complete.

Sexing

Morphological characteristics of the skull exhibiting female traits were the orbital rims and gonial angle. Possible female traits of the skull included the supraorbital ridges, mastoid processes, posterior zygomatic areas and mental eminence. Sexual morphological characteristics of the pelvis (sub-pubic angle, ischio-pubic ramus, ventral arch, obturator foramen, and acetabulum) suggested possible female sex, while the sciatic notch suggested female sex. All post-cranial metric indices indicated that skeleton (507) was female.

Age

All extant epiphyses were fully fused, indicating the age at death to be at least 21 years. Due to genetic absence of all 3rd molars, tooth eruption age estimation was based on the extant 2nd mandibular molars, which were fully erupted and in occlusion. Attrition suggested an age at death of 46-52 years. Surviving cranial sutures showed closure, but non-obliteration, placing the individual in the 'middle adult' category (35-45). Modification of the pelvic pubic symphyses indicated an age of at least 50 years, while auricular surface modification suggested an age of 50-59 years. Progressive masculinisation of the skull and sacrum was observed. This phenomenon is often noted in older females and is attributed to hormonal changes associated with advancing age.

Stature

Long bone measurement provided a stature estimation of approximately 169cm (5'5 1/2").

Non-metric traits

Cranial non-metric traits present included bilateral extra-sutural mastoid foramina and the congenital absence of all 3rd molars. The post-cranial skeleton exhibited bilateral squatting facets affecting the tibiae.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 2. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 7: Summary of dentition and dental pathology for skeleton (507)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
NP	X	O	X	X	/	/	/	/	O	O	O	X	/	X	NP
NP	X		X	X	/	/	/	/	O	O	O	X	/	X	NP
NP	O	O	O	O	O	O	O	X	O	O	O	O	O	O	NP
NP	A			L	L			X							NP

Key:

- = Jaw missing	X= Lost antemortem	B= Broken
A= Abscess	C= Caries	L= Hypoplasia Line
/= Lost postmortem	NP= Not Present	G= Hypoplasia Groove
RO= Root only	O= Present	P= Hypoplasia Pit
U= Unerupted		

The mandible and maxilla were both complete. No 3rd molars were present (congenital absence) and numerous maxillary molars were lost both post-mortem and ante-mortem. 3rd molars were also congenitally absent on skeleton (614). Two left mandibular teeth were also lost ante-mortem. Alveolar resorption was evident in all cases of ante-mortem loss, likely a result of periodontal disease. There was a probable abscess beginning to form below the right mandibular 2nd molar at the time of death. Minor periodontal disease was noted throughout.

Enamel hypoplasia in the form of lines was present on the mandibular right canine and 1st molar. It was noted that calculus concretion to an extent that evidence of hypoplasia was obscured on most teeth.

All surviving teeth displayed slight to heavy concretions of calculus (plaque), affecting all surfaces of the teeth.

Pathology

The majority of the pathology observed in individual (507) was in the form of age-related osteoarthritis and joint degeneration. Such bone changes were mostly exhibited in the form of minor bone proliferation (osteophytosis). Elements affected included the left metatarsal articular facets, and the articular facets of the left patella, distal femur and proximal tibia. Minor osteophytic proliferation was also noted affecting the vertebral column, including C1-5, T2, T5, T7, T9, T11-12 and all lumbar vertebrae. L4 and L5 exhibited moderate bone proliferation and minor subchondral porosity affecting the articular facets.

More extensive osteoarthritis in the form of porosity and eburnation was observed affecting the articulator surfaces between the right calcaneus and cuboid and also the inferior border of the right talar head. Eburnation and associated porosity was also noted on the left scaphoid, affecting the surfaces articulating with the radius and

lunate. Degeneration in the form of macroporosity and woven bone was present affecting the sternal ends of bone clavicles, with corresponding osteophytic proliferation observed on the clavicular notches of the sternum.

A case of unhealed bilateral spondylolysis was observed affecting the 4th lumbar vertebra.

The 6th right rib exhibited a well healed fracture, which resulted in a slight misalignment of the rib shaft.

Bilateral cribra orbitalia was observed on the roof of both eye orbits.

3.7 Skeleton (610): juvenile, aged 14-17

Individual (610) was recovered from fill (618) of grave cut [612]. The remains were disarticulated within the fill, suggesting that they were disturbed by the digging of later grave [612]. The remains were in poor condition. Only the left mandible and fragments of torso, lumbar vertebrae, pelvis and lower limbs were recovered.

Completeness

Skeleton (610) was recorded as being <25% complete.

Sexing

Sexing was not possible with juvenile individual (610).

Age

Although fragmentary, it was possible to identify partial fusion of the right medial clavicle, rib heads and vertebral annular rings. Non-fused (open) elements and epiphyses included the iliac crest, humerus, tibia, radius, fibula and scapula. Together, these suggested an age at death of 14-17 years. On the extant left mandible the 3rd molar was unerupted, while the second molar was erupted but not yet in occlusion, suggesting an age of 12-15.

Stature

Stature was non calculable given the fragmentary nature of the bones and lack of epiphyseal fusion.

Non-metric traits

No non-metric traits were observed.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 8. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 8: Summary of dentition and dental pathology for skeleton (610)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	O	O	O	O	U
-	-	-	-	-	-	-	-	-	-	-	-		L		U

Key:

- = Jaw missing	X= Lost antemortem	B= Broken
A= Abscess	C= Caries	L= Hypoplasia Line
/= Lost postmortem	NP= Not Present	G= Hypoplasia Groove
RO= Root only	O= Present	P= Hypoplasia Pit
U= Unerupted		

The left mandible was all that survived. No caries were identified on the extant teeth.

Enamel hypoplasia in the form of a line was present on the left mandibular 1st molar.

All extant teeth displayed flecked to slight concretions of calculus (plaque).

Pathology

No pathology was observed.

3.8 Skeleton (611): male, aged 25-35 years, approximately 166.5cm (5'5") tall

This individual was recovered from oblong grave cut [612] aligned northwest-southeast (head to the northwest). The individual was supine with left hand placed on the stomach area and right hand beside the right pelvis (plate 8). Presence of iron nails associated with the burial suggested that the individual was coffined. The grave was only partially excavated, as the southeast end ran beneath the limit of excavation. Thus all lower body elements except the left femur and patella remain in the grave. Recovered bone was in generally good condition, including the skull which was reconstructed to near completeness. The grave fill contained 3rd to 4th century pottery.



Plate 8 - Skeleton (611): burial position, looking northwest.

Completeness

The individual was recorded as being 50-75% complete.

Sex

Morphological characteristics of the skull which suggested male sex included the supraorbital ridges, mastoid processes and nuchal crest. Possible male features included the orbital rims and goneal angle, while the mental eminence suggested possible female sex. The pelvis exhibited several characteristics suggesting possible male sex. These included the sciatic notch, obturator foramen and acetabula, while subpubic angle and concavity suggested male sex. Morphological characteristics of the sacrum also suggested male sex. Metric indices of the post-cranial skeleton indicated male sex in all extant elements, other than clavicular length.

Age

All extant epiphyses were fused, suggesting an age at death of at least 21 years. Extant, non-broken, cranial sutures were closed, demonstrating that this individual was a middle-aged adult. All 3rd molars had erupted but were not yet in occlusion, signifying an age of approximately 18-24 years, while attrition of the 2nd molars suggested an age of 24-30 years. Analysis of tooth cementum annulations performed by Dr Don Reid (University of Newcastle) suggested a possible age of 25-30 years. Pubic symphyseal and auricular surface modification suggested an age of 27-39 years, while rib end modification suggested 24-31 years.

Stature

Long bone measurements provided a stature for skeleton (611) of approximately 165.5cm, or 5'5".

Non-metric traits

A Poirier's facet was recorded on the proximal left femur.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 9. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 9: Summary of dentition and dental pathology for skeleton (611)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
O	O	X	/	RO	/	RO	O	/	O	O	O	RO	/	O	O
	C	X/A	/A	C	/		L	/			L	C	/	C/A	C/A
O	O	O	O	O	O	O	O	O	O	O	O	RO	O	O	O
				L	L		L		L	L	L	C	C/A	L/C/A	L

Key:

- = Jaw missing
- A= Abscess
- /= Lost postmortem
- RO= Root only
- U= Unerupted
- X= Lost antemortem
- C= Caries
- NP= Not Present
- O= Present
- B= Broken
- L= Hypoplasia Line
- G= Hypoplasia Groove
- P= Hypoplasia Pit

The mandibular teeth displayed misalignment due to overcrowding (plate 9).

Large carious lesions were present on the left maxillary 2nd premolar, 2nd and 3rd molars, and right maxillary 1st premolar. The mandibular left 2nd premolar and 2nd and 3rd molars also exhibited large cavities.

Enamel hypoplasia in the form of lines was present on the right maxillary 1st incisor and left 1st premolar. Lines were also observed on mandibular teeth, including right 1st incisors, canine and 1st premolar, and left 2nd incisor, canine, 1st premolar and 3rd molar. Tooth section analysis performed by Dr Don Reid (University of Newcastle) suggested that individual (611) was reasonably stress-free during permanent tooth development, although a possible disturbance in cuspal enamel occurred around the age of 3 years.

All extant teeth (not including root-only teeth) displayed flecked to medium concretions of calculus (plaque).

Skeleton (611) exhibited six abscesses affecting both maxillary and mandibular elements.



Plate 9 - Skeleton (611): misalignment of mandibular teeth due to overcrowding.

Pathology

As noted above, this individual suffered from very poor dental health, with numerous cavities, abscesses, and periodontal disease very much in evidence. The active abscess affecting the left maxillary 2nd and 3rd molars was particularly interesting as it had probably resulted in the spread of infection to the canine fossa immediately above the alveolus. This was characterised by posterior resorption and macroporosity of the bone.

Visible through the broken floor of the left orbit was a large neoplastic growth originating from the floor of the maxillary sinus.

Skeleton (616) displayed sacralisation of the fifth lumbar vertebra.

Bilateral cribra orbitalia was observed, with the left orbit displaying more healing than the right.

3.9 Skeleton (614): possible male, aged 30-35 years, approximately 166cm (5'4") tall

This individual was recovered from sub-rectangular grave cut [615] aligned northwest-southeast (head to northwest). The individual was supine with legs flexed, with right hand was placed over the pelvic area and left forearm was across the stomach area (plate 10). The post-cranial bones were in moderate condition (with some long bone reconstruction necessary) and the skull was quite significantly damaged, precluding most cranial metric analysis. Iron nails associated with the skeleton suggest that the individual was coffined.



Plate 10 - Skeleton (614): burial position, looking west.

Completeness

Skeleton (614) was observed to be 50-75% complete.

Age

All extant epiphyses were fused, suggesting an age of at least 21 years. The 3rd molars were congenitally absent, but the 2nd molars were fully erupted and in occlusion, giving an age of at least 12 years. Attrition of the 2nd molars suggested an age of 30-35 years. Pubic symphyseal and auricular surface modification suggested ages of 20-21 years and 30-34 years, respectively.

Sex

Many pelvic morphological aspects suggested possible male sex. These included the sciatic notch, subpubic angle/concavity, ischo-pubic ramus, ventral arch, acetabulum and iliac auricular surface. Morphology of the sternum and sacrum, however, was suggestive of possible female sex. Post-cranial metrics were inconclusive.

Stature

Measurement of the extant right humerus suggested an approximate stature of 166cm, or 5'4".

Non-metric traits

The skull displayed congenital absence of all 3rd molars. The only observed post-cranial trait was bilateral double facetting of the medial talar facets of the calcanei.

Dentition

Presence and absence of maxillary and mandibular teeth along with the presence of carious lesions (cavities) and enamel hypoplasia is recorded in Table 10. The top two lines represent the maxillary teeth and pathologies, the bottom two mandibular teeth and pathologies.

Table 10: Summary of dentition and dental pathology for skeleton (614)

R8	R7	R6	R5	R4	R3	R2	R1	L1	L2	L3	L4	L5	L6	L7	L8
NP	O	O	O	O	O	O	/	/	O	O	O	O	O	O	NP
				L	L					L			C	C	
NP	O	O	O	O	O	O	O	O	O	O	O	O	O	O	NP
			L		L				L						

Key:

- = Jaw missing X= Lost antemortem B= Broken
- A= Abscess C= Caries L= Hypoplasia Line
- /= Lost postmortem NP= Not Present G= Hypoplasia Groove
- RO= Root only O= Present P= Hypoplasia Pit
- U= Unerupted

All teeth apart from the medial maxillary incisors and congenitally absent 3rd molars were present, despite the fragmentary nature of the skull. 3rd molars were also congenitally absent on skeleton (507). Carious lesions were identified on the left maxillary 1st and 2nd molars.

Enamel hypoplasia in the form of lines was present on the right maxillary canine and 1st premolar, and left canine. Lines were also present on the right mandibular canine and 2nd premolar, and left 2nd incisor.

All extant teeth displayed flecked to medium concretions of calcified plaque.

Minor periodontal disease was noted.

Pathology

The right fibula exhibited a fracture on the proximal shaft. The presence of a large bony callous suggests that this fracture was actively healing at the time of death.

Minor osteoarthritic and degenerative changes were noted affecting quite a few elements. These included the articular surface of the right cuboid (articulation with the lateral cuneiform), the articular surfaces between the left calcaneus and talus, the articular surfaces between the left lateral and medial cuneiforms, and the plantar surfaces of left and right metatarsals 2-5. Minor changes were also noted on most extant costal facets of the ribs, the clavicular notches of the sternum and the right scapular acromion. The majority of thoracic and lumbar vertebrae were affected, although changes were generally more marked on coastal and articular facets, particularly on the right side of the mid-thoracics.

Schmorl's nodes were present on the superior vertebral body surfaces of T11 and L1, and inferior body surface of T10.

The sacrum exhibited an extra foramen immediately medial to the first posterior sacral foramen. A similar foramen was noted in the same location on skeleton (313).

The atlas (C1) displayed what initially seemed to be pathological bony proliferation affecting the posterior arch, intruding into the spinal canal (plate 11). Further analysis demonstrated that this "proliferation" was actually calcified coffin liquor, or

decomposition fluids. Although not commonly reported in the literature, this phenomenon sometimes occurs when burial conditions prohibit the drainage of decomposition fluids, such as in cases of burial in a watertight coffin (personal communication, Sharon Clough, Oxford Archaeology Heritage Burial Services).



Plate 11 – Skeleton (614): accretion of calcified coffin liquor in the vertebral foramen of atlas (C1). Note the ‘tide mark’ calcification on the superior articular facets.

3.10 Skeleton (616): possible male, aged approximately 17-22 years

Skeleton (616) was recovered from fill (618) of grave [612] and consisted of disarticulated fragments. The grave of this individual was probably disturbed by later intrusion, probably the digging of grave [612]. The extant skeletal elements were in moderately good condition, consisting of the atlas, sternal and rib fragments, left clavicle and partial right scapula.

Completeness

Skeleton (616) was <25% complete.

Sexing

Estimation of sex was based on measurement of the extant scapular glenoid cavity and general robusticity of the clavicle, both of which suggested a male individual.

Age

Partial fusion of the inferior angle of the scapula suggested an age of 17-22, while fusion of the medial clavicle suggested an age of at least 21 years.

Stature

Stature estimation was not possible due to lack of long bones.

Non-metric traits

No non-metric traits were observed on the fragmentary remains.

Dentition

No dentition was present for this individual.

Pathology

No pathology was identified on the extant skeletal remains.

3.11 Skeleton (617): indeterminate sex, at least 16 years old

Skeleton (617) was recovered from backfill (066) which covered skeleton (065) and consisted of two disarticulated fragments. The extant skeletal elements were in moderately good condition, consisting of left clavicle and partial left scapula.

Completeness

This individual was <25% complete.

Sexing

Measurement of the extant scapular glenoid cavity was inconclusive. Indeterminate sex was therefore assigned for this individual.

Age

Fusion of the glenoid suggested an age of at least 16 years. No other ageing data was available.

Stature

Stature estimation was not possible due to lack of elements.

Non-metric traits

No non-metric traits were observed on the fragmentary remains.

Dentition

No dentition was present for this individual.

Pathology

No pathology was identified on the extant skeletal elements.

4. Discussion

Overall, the condition of the skeletal material was fair to very good and whilst the completeness of the skeletons varied, the majority were more than 50% complete, allowing significant osteological data to be gathered. The discussion section is split into the following categories: The Burials, Stature, Non-metric traits, and Pathology.

4.1 The Burials

The earliest grave of known date was [506], an ovoid cut containing elderly female individual (507), oriented north-south. Situated close the western edge of Newport (the course of Ermine Street, a major Roman road), the burial was accompanied by early-mid 2nd century pottery. Inhumation began to replace cremation as the dominant

burial type during the second century (Roberts and Cox 2003), so this grave potentially represents the earliest inhumation activity on the site, occurring less than a century after the construction of Ermine Street itself. The provision of goods associated with feasting suggests pagan activity and this individual may have been of elevated social status. Excavation in the grounds of Bishop Grosseteste College (opposite the site, across Ermine Street) revealed Roman stone buildings, which Jones (2003:121) suggests were part of a farm or villa estate. He further suggests that the building complex reached its peak of activity and status in the 2nd-3rd centuries. It is therefore possible that individual (507) was a person of some importance with direct associations with this estate.

The majority of dated burials at the site occurred during the 3rd to 4th centuries. These include (007), (065), (313) and (611) and (615). Disturbed, disarticulated individuals (610), (616) and (617) were recovered from fills of 3rd-4th century dates, suggesting the disturbance of earlier graves. The concentration, sequence and general north-south alignment of graves suggests that the site may have evolved from a casual (although potentially special, considering individual 507), burial site in the mid 2nd century to a small, organised roadside cemetery serving either the *colonia* or local building complex across Ermine Street in the 3rd-4th centuries.

The latest dated burial was of perinate/neonate (023), which was recovered from a building demolition layer dated to the early-mid 13th century. One would expect that this was an isolated burial and that the focus of burial activity at this point in time was elsewhere in the city. It is likely that this individual died at, or slightly after birth. The burial context – opportunistic rather than conventional churchyard – is maybe a reflection of poor parental financial status, rather than any nefarious intent or lack of compassion.

The majority of the burials were recovered from purposely dug graves oriented generally north-south and containing individuals in supine positions. Although there was a general trend towards extended, east-west oriented inhumations in the later Roman period (O'Brien 1999), only one grave (that of individual 085) was oriented thus on this site. The occurrence of north-south burials is thought to reflect a possible retention of older native practices, even in highly Romanised areas (*ibid*).

Skeleton (007) was buried in an extended prone position; there was no indication from the positioning of the hands to suggest binding. There was no evidence of a coffin, but the body may have been shrouded. Prone burials occur in a minority of cases within Romano-British cemetery contexts. A total of 6 out of 62 inhumations from the 4th century cemetery at Godmanchester were buried thus (Jones, 2003:85). It is often assumed that prone individuals were of lower social status, were guilty of a misdemeanour, or were somehow stigmatised by society. Farwell and Molleson (1993), for instance, document the prone burial of a child who displayed auditory tori, which likely caused deafness. It is unknown whether disabled individuals in the Roman world were stigmatised and whether the prone burial of a potentially deaf child resulted from a lack of compassion. Roberts and Cox (2003:116) suggest that prone burials could actually “represent high status and indicate a mark of respect.”

4.2 Stature

The average stature for the females/possible females was 155.5cm (5'1") and 168cm (5'5") for the males/possible males. Both of these averages are slightly below the Romano-British averages of 159cm (5'2") for females and 169cm (5'5 ½") suggested by Roberts and Cox (2003:163). Unfortunately the sample is too small to draw firm conclusions that may explain this slight discrepancy.

4.3 Non-metric traits

The most commonly encountered cranial non-metric traits were supra-orbital foramina, recorded on individuals (007) and (313), extra-sutural mastoid foramina on individuals (313) and (507), and congenitally absent 3rd molars on skeletons (507) and (614). Individual (065) displayed a right accessory infra-orbital foramen.

Post-cranially, the most commonly observed trait was double facetting of the superior, medial talar facets of the calcanei. This trait was displayed by individuals (065), (085) and (313). Tibial squatting facets were noted on (085) and (507), while skeleton (007) exhibited exostosis of the right femoral trochanteric fossa. Skeleton (611) exhibited a left femoral Poirier's facet.

Squatting facets are a commonly reported non-metric trait and are characterised by the presence of supernumerary facets that can be both articular and non-articular. These generally present as a lateral articular facet on the neck of the talus that articulates with a facet on the anterior border of the distal tibia (Boulle 2001). The etiology of squatting facets is usually linked to the adoption of the squatting position and the hyperdorsiflexion of the ankle joint, bringing the talus and tibia into immediate contact, thus initiating the formation of facets (*ibid*).

The high prevalence of doubling of the calcaneal facets in this population is intriguing, particularly since the three individuals involved have fairly close date ranges (3rd-4th centuries). A possible familial relationship may exist here. However, this population is too small to draw solid conclusions concerning such relationships or population idiosyncrasies based upon non-metric traits. As stated earlier, the recording of these traits here is mainly for the purpose to providing comparative data.

4.4 Pathology

The pathologies recorded fell into the following aetiological categories: Trauma, Joint Disease, Metabolic Disease, Congenital Disease (including developmental disorders), Neoplastic Disease, and Dental Disease.

4.4.1 Trauma

No evidence of blade wounds, blunt force cranial trauma, or interpersonal violence was found among the skeletal assemblage. The only traumatic injuries encountered were fractures which, along with dental and joint disease, are among the most frequently encountered pathologies in the archaeological record.

Four instances of bone fracture affecting three individuals were encountered. Skeleton (614) exhibited a fracture to the proximal shaft of the right fibula, which was in the process of healing at the time of death (plate 12). Fractures of the fibula which do not also involve the tibia are relatively rare, and usually result from a direct blow to the bone. Skeleton (313) exhibited a healed fracture of the left clavicle (plate 13) and healing fracture of the 10th left rib (plate 14), while skeleton (507) suffered a fracture of the 6th right rib (plate 15).

Rib fractures usually result from a direct blow to the element, while fractures of the clavicle are often associated with falls at high speed and archaeological instances are frequently attributed to accidents arising whilst riding or handling horses (Roberts and Cox 2003: 203). In the case of skeleton (313) the fracture was likely transverse (the most common type) in nature and caused by such a fall, which forced the fractured ends together, thus shortening and straightening the bone.

Both clavicle and rib fractures are commonly encountered in archaeological populations and usually heal well without medical intervention (*ibid*:105). Rib fractures occur in approximately 3% of Romano-British individuals, while clavicle and fibula fractures occur in less than 1% (Roberts & Cox, 2003:151-158).



Plate 12 – Skeleton (614): fractured right fibula, healing at time of death.



Plate 13 - Skeleton (313): healed fracture of the left clavicle.



Plate 14 - Skeleton (313): healed fracture of 10th left rib.



Plate 15 –Skeleton (507): misalignment of the 6th right rib due to fracture.

4.4.2 Joint disease

Primary osteoarthritis and joint degeneration are inevitable consequences of old age when the body's tissues are unable to repair themselves adequately (Salter 1999). It was, therefore, unsurprising to find that the oldest individual, skeleton (507), exhibited the most severe vertebral and appendicular joint degeneration. The condition is clinically more common in adult women, though it occurs in 80% of women and men over the age of 75 years (*ibid*). Joint degeneration is diagnosed through increased porosity of articular surfaces of the joints and vertebrae and the appearance of osteophytes around the periphery the margins of vertebral bodies (osteophytosis).

In the most severe cases, eburnation of the articulating surfaces is present. Eburnation is characterised by polishing of the affected articular surfaces, resulting from complete destruction of cartilage lining the joint and subsequent direct abrasion of bone surfaces. Individual (507) suffered minor to moderate degeneration in the vertebral column and eburnation affecting the right ankle and left wrist. These conditions were most likely age related, although the eburnation may be indicative of occupational practices of the individual, since less than 0.5% of Romano-British females (Roberts and Cox 2003:148-150) exhibit wrist and ankle joint degeneration.

Minor primary osteoarthritis and joint degeneration was commonly recorded in the assemblage, affecting individuals (007), (065), (313) and (614). All of these individuals were adults, aged between 20 and 35 years. The presence of minor degeneration in these individuals is unsurprising and probably represents the effects of ageing as well as the biomechanical demands of life and work.

Secondary osteoarthritis/joint degeneration can develop as a response to traumatic injury or infection of the joint. No instances of this were identified in the assemblage.

Schmorl's nodes were recorded affecting the vertebrae of individuals (007), (065) and (313). Schmorl's nodes are characterised by depressions (lesions) in the surfaces of the vertebral bodies. These lesions were most commonly located in the lower thoracic and lumbar areas, as would be expected due to the load bearing capacity of these vertebrae. The appearance of Schmorl's nodes is associated with the degeneration of intervertebral discs and subsequent increasing pressure on vertebral body surfaces. Although the etiology is unclear, trauma in the form of repeated biomechanical loading has been implicated (Roberts and Manchester 2005:140). The presence of degenerative joint disease and Schmorl's nodes in the individuals may reflect occupational activities that frequently transmitted heavy stresses through the lower back (e.g., heavy lifting). Approximately 6% of Romano-British individuals exhibit Schmorl's nodes (Roberts and Cox 2003:147).

4.4.3 Metabolic disease

Metabolic disorders are generally associated with a lack of a particular vitamin in the diet or an imbalance of an essential hormone responsible for regulating normal organ function in the body.

Cribra orbitalia, commonly considered to be the result of iron-deficiency anaemia, is characterised by the presence of porosity in the eye orbits. This results from the expansion of the trabeculae produced by the response of bone marrow to increased production of red blood cells (Roberts and Manchester 2005). It is generally accepted that lesions located in adult and juvenile eye orbits are actually manifested during infancy. Lesions are usually, although not always, bilateral. The extent to which lesions are active or healed in adult material is difficult to ascertain and no attempt at distinguishing between the two was made here. Bilateral cribra orbitalia was recorded affecting skeletons (507) and (611). Since these individuals both displayed enamel hypoplasia (507 to lesser extent), they were probably exposed to poor nutrition and/or high disease or parasite load during early childhood.

4.4.4 Congenital disease

A disease classified as 'congenital' is defined as one that was present at birth and can be hereditary or acquired between fertilisation and birth (Roberts and Cox 2003:31).

A case of bilateral spondylolysis was noted affecting skeleton (507). Spondylolysis is a developmental defect of the vertebral column. Although its etiology is unknown, it is thought to arise from a congenital weakness in the neural arches of lower lumbar vertebrae. This leads to non-fusion or separation of the lower part of the neural arch

from the main body and upper part of the neural arch (plate 16). Spondylolysis is encountered in approximately 10% of all modern adults and is generally asymptomatic (Salter 1999). 2% of Romano-British individuals exhibit the condition (Roberts and Cox 2003:152).

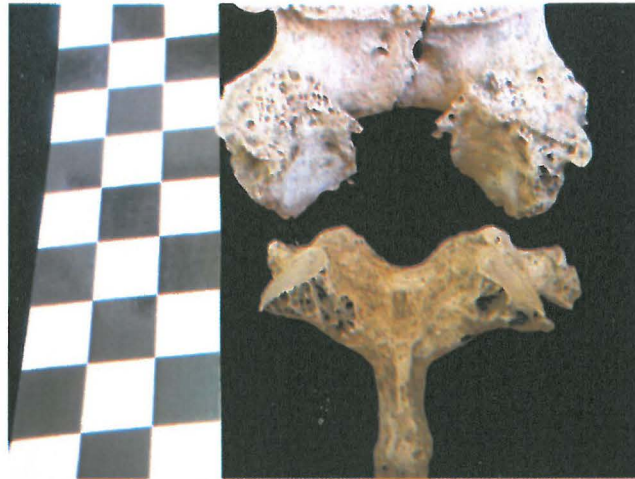


Plate 106 - Skeleton (507): unhealed, bilateral spondylolysis of the 4th lumbar vertebra

Osteochondritis dissecans is a condition associated with impaired blood supply to an area of epiphyseal bone, causing necrosis (tissue death) of the affected area. The etiology of the disorder is uncertain, but it is thought to be either developmental or influenced by minor repeated micro-trauma to the joint surface, resulting in separation of the affected area from the epiphysis. The separate segment may die completely and undergo resorption or, in some cases, is revascularised and eventually heals onto the epiphysis (Salter 1999). This condition generally occurs during older childhood and adolescence during times when the bones are developing rapidly. The condition affects the knee joint in 80% of cases and affects males more often than females (Roberts and Manchester 2005:121). Skeleton (007) displayed bilateral osteochondritis dissecans affecting the proximal articular surfaces of the 1st metatarsals (plate 17). The condition has a 0.4% prevalence rate among Romano-British populations (Roberts and Cox 2003:152).



Plate 17: Skeleton (007): bilateral osteochondritis dissecans affecting the proximal articular surfaces of the 1st metatarsals.

Superfluous sacral foramina were noted in individuals (313) and (614). In both instances the condition was characterised by an extra foramen immediately medial to the 1st posterior sacral foramen (plates 18 and 19). The etiology of this not known, but it is likely to be developmental in nature and asymptomatic. It is interesting that two individuals from this site presented with this condition, particularly since they both exhibited doubling of medial talar articular facets of the calcanei (a non-metric trait). A tentative familial link could be made between these individuals.



Plate 18 - Skeleton (313): extra posterior sacral foramen medial to 1st sacral foramen.



Plate 19 – Skeleton (614): extra posterior sacral foramen medial to 1st sacral foramen.

Sacralisation was present in one individual (611). This condition is characterised by the complete fusion of the 5th lumbar vertebra and the 1st sacral segment (plate 20). Although the exact etiology is unclear, it has been suggested that the condition is caused by a developmental defect (Roberts and Cox 2003). 2.4% of Romano-British individuals display sacralisation (*ibid*:116).



Plate 20 - Skeleton (611): sacralisation of 5th lumbar vertebra and 1st sacral segment.

4.4.5 Neoplastic disease

A neoplasm is defined as “an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of normal tissues” (Roberts and Manchester 2005:252). Neoplasms can be benign or malignant; the former remain at their site of origin with usually few effects on bodily function. The latter spread uncontrolled throughout the body via the bloodstream and lymphatic system and metastasising in almost any organ. Malignant neoplasms, if untreated, destroy organ function and result in the death of the individual. Neoplastic diseases are rarely observed in the archaeological record due to the fact that they tend not to result in macroscopically diagnosable changes to the skeleton.

Skeleton (611) exhibited a highly unusual neoplastic pathology affecting the left maxillary sinus: a giant osteoid osteoma, or osteoblastoma. The condition is characterised here by extensive osteoblastic bone proliferation originating from the floor of the sinus and extending superiorly, probably forcing the floor of the left eye orbit upwards (although the orbit is partially broken here) and possibly resulting in partial closure of the inferior orbital fissure (plates 21 and 22).

The etiology of this neoplasm is unknown, but could have been influenced by the particularly poor dental health of (611), who exhibited numerous abscesses. The active abscess associated with the left 2nd and 3rd maxillary molars is of particular interest, as infection seemed to have spread to the canine fossa immediately above the maxillary alveolus, resulting in posterior resorption and macroporosity of the bone (plates 21 and 23). Such infections from an early age could have triggered an osteoblastic response in the maxillary sinus (the individual possibly suffered from Garre’s osteomyelitis in childhood. Suma, *et al.* 2007). The presence of the neoplasm probably interfered with normal sinus drainage. Hence the individual likely suffered repeated episodes of sinusitis. Normal sight in the left eye may have been affected through proptosis (eye bulging) and, if the infra-orbital nerve was impinged upon, the individual may also have suffered partial paralysis of the left upper lip and lower eyelid. Other than this, the neoplasm may well have presented with few symptoms.

The pathology was examined macroscopically by the author, through x-ray by Julia Beaumont and Jo Buckberry (University of Bradford), and through CT scan by Dr Iain MacLeod (University of Newcastle).



Plate 21 - Skeleton (611): osteoblastoma (neoplastic growth) in the left maxillary sinus.



Plate 22 – Skeleton (611): closer view of maxillary sinus neoplasm.



Plate 23 - Skeleton (611): active, externally draining abscess and associated infection and resorption of canine fossa above

4.4.6 Dental disease

Dental disease includes conditions that can affect the teeth, the surrounding soft tissues, and alveolar bone. Each condition can give an indication of different aspects of lifestyle, health and dietary quality of an individual. Caries (cavities), for example, is associated with diets high in sucrose and carbohydrates. The presence of calculus (calcified plaque) can inform us about dental hygiene, while enamel hypoplasia may indicate developmental stresses during childhood.

Caries is probably the most commonly encountered dental disease and may manifest as opaque spots through to large cavities (Hillson 1986:287). Caries is caused by the production of acid through the combination of plaque bacteria and sucrose. The acid causes demineralisation of the tooth enamel and hence progressive destruction of the tooth surface (Roberts and Manchester 2005:65). Caries affected approximately 17.7% of Romano-British individuals, an increase from 7.5% in the Iron Age. This represents a decline in oral health and an increase in the consumption of sugars, likely in the form of honey, wine, *sapa* and imported figs and dates (Roberts and Cox 2003:130-131, 134). The skeletons in this assemblage are no exception: all of the adults except the earliest individual (507) exhibited at least one, if not numerous carious lesions. This may indicate increasing local access over time to sugar-rich foods, or may suggest differential procurement of such foods.

Calculus is the build up of calcified plaque and is also commonly encountered in archaeological populations. Calculus is composed of mineralised micro-organisms and proteins and its presence may reflect a diet high in protein and carbohydrates and/or lack of dental hygiene. Calculus deposits can lead to periodontal disease, caries and abscesses. Roberts and Cox (2003:132) record a calculus prevalence rate of 26% among the Romano-British. This assemblage displays a very high prevalence of calculus. All adults with extant teeth displayed at least slight, if not medium levels of calculus concretion affecting most tooth surfaces. This either reflects particularly poor dental health among this population, or a diet richer than usual in protein/carbohydrates.

Periodontal disease was noted in individuals (611) and (614). The condition is associated with inflammation of the gums as a result of the formation of periodontal pockets (Roberts and Manchester 2005). These pockets are created by the accumulation of calculus on the teeth which traps food particles between the teeth and the gum. Bacteria on the food particles cause inflammation and, if left unchecked may enter the tooth pulp cavity, especially if there is coexistent nearby caries. This may result in ante-mortem tooth loss and the formation of a dental abscess, as seen in individual (611). Periodontal disease is commonly encountered in the Romano-British populations, with nearly 30% of people affected (Roberts and Cox 2003:137). The presence of periodontal disease in individuals (611) and (614) likely reflects a particularly poor standard of dental hygiene.

The formation of abscesses is often linked to periodontal disease, calculus build-up and ante-mortem tooth loss. Abscesses can form when bacteria infiltrate the tooth pulp cavity or periodontal pockets. This leads to inflammation which spreads into the tooth root, surrounding tissues and alveolar bone. Pus build-up results in the

formation of an external or internal sinus, or drain, which allows the pus to escape (Roberts and Manchester 2005:70). Abscesses cause severe pain and can potentially be fatal, especially if infection affecting the maxillary molars spreads unchecked to the paranasal sinuses and beyond. Abscesses affect 3.9% of Romano-British individuals (*ibid*:71).

In this population individual (507) exhibited a possible active abscess at time of death, while skeleton (611) displayed six abscesses; four showed signs of healing, two were active at the time of death. The left mandible displayed one active and one healed abscess, affecting the 1st and 2nd molars, respectively. Both were externally draining (plate 24). The maxilla exhibited two externally draining, healed abscesses on the right side, one of which, in conjunction with the periodontal disease, led to the ante-mortem loss of the 1st molar (plate 25). The left maxilla was affected by one healed, internally draining abscess (3rd molar) and one active, externally draining abscess affecting the 2nd molar. The active abscess affecting the left maxillary 2nd and 3rd molars was particularly interesting as it had likely resulted in the spread of infection to the canine fossa immediately above the alveolus. This was characterised by posterior resorption and macroporosity of the bone (plate 23, above). The terrible condition of individual (611)'s dentition suggests a serious lack of attention to dental hygiene, possibly combined with a diet high in sucrose, proteins and carbohydrates.



Plate 24 – Skeleton (611): active and healed abscesses affecting the 1st and 2nd molars. Note also the large carious lesions affecting the 2nd premolar, 1st and 2nd molars.



Plate 25 - Skeleton (611): healed abscesses affecting the right maxilla.

Enamel hypoplasia defects in the form of pitting, lines or grooves were recorded in all individuals with extant teeth, except perinate/neonate (023). Hypoplastic modification of tooth enamel is generally considered to be an indicator of stresses suffered during the development of dentition. Such stressors may include nutritional deficiency, disease load, or illness suffered during childhood (Roberts and Manchester 2005:75). 13.5% of Romano-British individuals exhibit enamel hypoplasia (Roberts and Cox 2003:140). All adults with extant teeth on this site were affected, possibly suggest that these individuals suffered childhood stress in the form of disease, parasites, or poor nutrition. It is unclear what part socio-economic status had to play in the prevalence of hypoplastic defects; however one might expect individuals of lower status to be more greatly affected by disease and poor nutrition.

5. Conclusions

The excavations by Archaeological Project Services at the former Army Cadet Force HQ in Lincoln recovered the remains of 11 inhumed individuals in fair to very good condition. These included nine adults, one juvenile and one perinate. There were two males, three possible males, one female and one possible female. Four individuals were of indeterminate sex. The majority of the group was aged between 18 and 35 years at death. This conforms to the generally accepted life expectancy from birth of 20 to 30 years in the Roman Empire.

The majority of dated burials occurred in the 3rd-4th centuries AD, although one elderly female interred close to the edge of Ermine Street had accompanying grave goods dating to the early-mid 2nd century. This burial may represent the first inhumation activity on the site and the individual may have been associated with the 2nd century building complex immediately to the east of the site. Grave disturbance, dating, orientation, and spatial evidence suggest that the site may have evolved into a small, organised roadside cemetery by the 4th century with possible continuance/adoption of native burial practices. The isolated perinate dated to the 13th century and possibly represented an opportunistic burial by financially poor parents.

Although the skeletal assemblage was too small to make solid inferences of familial relationships based on non-metric traits, pathological evidence provides a snapshot of

local health, particularly in the 3rd and 4th centuries. The dental health of the group was, in general, very poor. Higher than average prevalence of calculus, cavities, ante-mortem tooth loss, and abscesses point to a particular lack of attention to dental hygiene. Dating provides tentative evidence for possible changing dietary habits between the 2nd and 4th centuries, with the later individuals possibly having wider access to foods richer in sugars, protein and carbohydrates. However, the high prevalence of hypoplastic enamel defects in these individuals suggests either poor nutrition or high disease/parasite load in childhood. One male (611) had particularly poor dental health, exhibiting numerous cavities and abscesses. He also suffered with a rare osteoblastoma in the left maxillary sinus, which may have resulted from repeated localised infections from an early age.

The skeletal assemblage, in general, displayed pathologies that would be expected for a semi-rural Romano-British population. The pattern of age-related osteoarthritis, vertebral and appendicular joint degeneration was not surprising, with the middle-aged adults exhibiting minor incidence and the oldest suffering more severe pathology. The presence of fractures, Schmorl's nodes and unhealed spondylolysis may be suggestive of occupational stresses, but incidence of these conditions is not out of the ordinary for a Romano-British population.

6. References

- Bass, W.M. 1987. *Human Osteology: A Laboratory and Field Manual*. Columbia, Missouri Archaeological Society.
- Beeby, A., and Precious, B. 2009. 'Roman Pottery' in Peachey, M., and Taylor, G. 2009. *Archaeological Evaluation on land at the former Army Cadet Force HQ, Newport, Lincoln (LINA 08)*, Archaeological Project Services.
- Berry, A.C., and Berry, R.J. 1967. Epigenetic Variation in the Human Cranium. *Anatomy* 101, 2:361-79.
- Bouille, E. 2001. Osteological features associated with ankle hyperdorsiflexion. *International Journal of Osteoarchaeology*, 11(5): 345-349.
- Brinkley, M., and McKinley, J.I. (eds.) 2004. *Guidelines to the Standards for Recording Human Remains*. IFA Paper No. 7. BABAO and IFA.
- Brooks, S., and Suchey, J. 1990. Skeletal Age Determination on the OS Pubis: A Comparison of the Acsadi-Nemeskeri and Suchey-Brooks Methods. *Human Evolution* 5:227-38.
- Brothwell, D. 1981. *Digging Up Bones*. London, British Museum of Natural History.
- Buikstra, J.E., and Ubelaker, D.H. 1984. *Standards for Data Collection from the Human Skeleton*. Arkansas, Arkansas Archaeological Survey Research Series No. 44, Fayetteville.

Farwell, D.E., and Molleson, T. 1993. *Poundbury, Volume 2, The Cemeteries*, Dorset Natural History and Archaeology Society, Monograph Series No. 11.

Finnegan, M. 1976. Non-metric Variation of the Infracranial Skeleton. *Journal of Anatomy* 125: 23-27.

Gustafson, G., and Koch, G. 1974. Age estimation up to 16 years of age based on dental development, *Odontology Revy* 25(3):297-306.

Hillson, S. 1986. *Teeth*. Cambridge, Cambridge University Press.

Jones, A. 2003. 'The Discussion', in Alex Jones (ed.) *Settlement, Burial and Industry in Rural Godmanchester: Excavations in the extra-mural area: The Parks 1998, London Road 1997-8 and other investigations*. BAR British Series 346: 80-88.

Lukacs, J.R. 1989. 'Dental Pathology: Methods for Reconstructing Dietary Patterns.' In Iscan, M.Y., and Kennedy, K. (eds.) *Reconstruction of Life from the Skeleton*. New York, Alan Liss, p.261-86.

Miles, A.E.W. 1963. 'The Dentition in the Assessment of Individual Age in Skeletal Material.' In Brothwell, D.R., (ed.) *Dental Anthropology*. Pergamon, Oxford.

O'Brien, E. 1999. *Post-Roman Britain to Anglo-Saxon England: Burial Practices Reviewed*. BAR Series 289.

Roberts, C., and Cox, M. 2003. *Health and Disease in Britain: From Prehistory to the Present Day*. Gloucestershire, Sutton Publishing.

Roberts, C., and Manchester, K. 2005. *The Archaeology of Disease*. Gloucestershire, Sutton Publishing.

Salter, R. 1999. *Textbook of Disorders and Injuries of the Musculoskeletal System*. 3rd ed. Williams and Wilkins, Maryland.

Schaefer, M., Scheuer, L., and Black, S. 2009. *Juvenile Osteology: a Laboratory and Field Manual*. Elsevier, London.

Suma, R., Vinay, C., Shashikanth., M.C., and Subba Reddy, W. 2007. Garre's Sclerosing Osteomyelitis. *Journal of Indian Society Pedodontics and Preventive Dentistry* 25:30-33.

Trotter, M., and Gleser, G.C. 1958. A Re-evaluation of Estimation of Stature Based on Measurements of Stature taken during Life and of Long Bones after Death. *American Journal of Physical Anthropology* 16(1):79-123.

White, T.D. 2000. *Human Osteology*. Second edition. Academic Press, San Diego.

Appendix 5
The Cremated Bone (LINA 08)
By Jennifer Wood

Introduction

Two small cremation deposits were recovered during a program of archaeological works undertaken at the Army Cadet Force site, Newport, Lincoln by Archaeological Project Services. Cremation deposit (315) was recovered from a heavily disturbed urn dated from 2nd-3rd century, deposited within an isolated cut [313]. Cremation deposit (512) was recovered from a rectangular pit cut [513] with the fragments of 6 ceramic vessels dated from the 1st- early 2nd century.

Methodology

The cremated remains were processed and analysed according to the standards recommended by the British Association of Biological Anthropologists and Osteologists (BABAO) in conjunction with the Institute for Archaeologists (IfA) (Guidelines to recording Human Remains, Brickley and McKinley (eds) 2004). The remains were macroscopically analysed to assess the efficiency of cremation, level of fragmentation, skeletal part representation, demographics, estimation of minimum number of individuals and pathological change.

Quantification

Two deposits of cremated human remains were recovered from the scheme of archaeological works, the deposits were quantified by weight; the total weights of the deposits after the removal of pyre goods, are summarised within Table 1.

Table 1, Quantification Summary of the Cremated Deposits

Context Number	Total Weight of Deposit (g)	Total Weight of Identifiable remains (g)	Percentage of Identifiable Remains
315	67	46	67%
512	244	112	46%

Fragmentation

The analysis of fragmentation of the deposit is valuable in the assessment of the potential quality of the overall data that can be attained from the cremated remains. The remains were passed through three sieve fractions calibrated at 10mm, 5mm, and 2mm to aid the assessment of fragmentation levels.

Table 2, Fragmentation

Sieve Fraction	Percentage of Total Weight by Context	
	315	512
>10mm	51%	45%
>5mm	39%	48%
>2mm	9%	6%
<2mm	1%	1%

As can be seen in Table 2, both deposits have been subject to fragmentation. Deposit (315) was subject to slightly less fragmentation with the majority of 51% occurring within the >10mm sieve fraction, with a maximum fragment size of 40mm and an average fragment size of 16mm. Deposit (512) was subject to more extensive fragmentation with 48% of the assemblage falling within the >5mm fraction, with a maximum fragment size of 51mm and an average fragment size of 13mm.

Fragmentation can occur within a cremated bone deposit for numerous reasons. The dehydration of the bone during burning, raking and collection of remains during the cremation process and the subsequent interment of the remains may all cause fragmentation. There is also the potential for purposeful fragmentation of the remains as part of the cremation ritual (McKinley 1994b). However, further and extensive damage/fragmentation can be caused by the excavation and post-excavation process (Lange *et al* 1997, McKinley 1994b).

Identifiable Remains

Due to the fragmentary nature of cremated remains, the potential to identify skeletal elements can be severely limited. The identifiable elements for the cremated deposits are summarised within the inventory in appendix 1.

Table 3, Percentage of Identified Remains Weight, of overall Assemblage

Context	Head	Axis	Upper Limb	Lower Limb
315	24%	13%	16%	15%
512	12%	10%	19%	5%

Table 3 shows the breakdown of the identifiable remains within the overall assemblage. Long bones often have a better survival due to their robust nature and cranial fragments are usually biased in collection and identification due to its unique form.

Demography

Context (315) was a very small deposit, weighing a total of 82g (67g after the removal of pyre goods). The identified remains suggest that a minimum of 1 individual was represented within the deposit. No sexually diagnostic remains were identified within the remains. Very little material has survived that would have provided an approximate age at death was identifiable within the assemblage. A single fragment of un-erupted premolar suggests that the remains were from a juvenile individual aged approximately <11 years (Schaefer, Black and Scheuer 2009). Macroscopic examinations of the remains show the remains to be thin and gracile, possibly representing a child rather than adult remains.

Context (512) was highly fragmentary and also fairly small in size (282g). The number of identifiable remains within the assemblage was limited. The identified remains suggest that a minimum of 1 individual was represented within the deposit. Sexually diagnostic remains were limited within the assemblage, with only a single fragment of occipital protuberance indicating the individual was potentially male was identified. Very little material has survived that would have provided an approximate age at death was identifiable within the assemblage. Fused phalanx and metatarsal fragments suggest the individual was over the age of 15 years (Schaefer, Black and

Scheuer 2009). The remains were relatively robust, which may suggest that the individual was of an adult.

Pathology

A single fragment of possible lumbar vertebra centrum recovered from deposit (512), displayed evidence of osteophytic lipping on the superior margin. Osteophytic lipping on vertebral bodies is usually a stress response to mechanical pressure from a constant upright posture. Changes to the vertebral column often increases with age, as the vertebral column has been subjected to mechanical stresses for longer. However, the condition is also exacerbated through physical activity (Roberts & Manchester 1995:106).

Pyre Technology and Efficiency

Human remains require a high heat and a sufficient length of time at the required heat to be cremated efficiently. Variations in the heat and time elements may vary the efficiency of the burning of the bone. Complete combustion of the remains will result in complete oxidation of the organic content of the bone, with only the mineral portion remaining (McKinley 1994a, Lange *et al* 1987).

The colour of the burnt bone fragments is considered to represent the variation of the temperature to which the remains have been burnt and the efficiency of oxidation, brown/orange= unburnt, black=charred (*c*300° C), grey/blue= incompletely oxidised (*c* 600°), white = completely oxidised (>600°) (Holden *et al.* 1995a and 1995b).

Both cremation deposits (315) and (512) contained a majority of fully oxidised bone of white colouration, suggesting a firing of over 600° C. A very small number of fragments (1-2%) within both deposits displayed some blue/grey colouration, especially within the structure of the diploë and medullary cavities, which may suggest that some of the more robust bone structures may not have fully oxidised.

Both deposits yielded pyre goods. Within deposit (315) fragments of burnt pig humerus, radius and ulna, probably representing a forelimb joint was recovered commingled within the remains. Deposit (512) yielded several fragments of burnt bird bone, one fragment positively identifiable as domestic fowl within the cremated bone deposit.

No pyre debris was recovered from either deposit.

Discussion

The cremated human remains deposits, dated from the Romano-British period (1st-early 2nd century and 2nd-3rd century), were recovered from isolated features within an area of known Romano-British activity, including several inhumation burials within the immediate area.

Uncontained cremated material in the case of deposit (512) and a heavily truncated urned cremation (315) suggests that it is likely that these deposits will have been subject to post depositional disturbance. Both deposits were very small which may

suggest selective collection of remains for interment rather than the burial of the entire pyre deposit. A single individual from a modern cremation deposit can weigh between 1227.4g and 3001.3g of bone. From this it is suggested that a whole body and deposition of the remains in an archaeological context would realistically produce between 1001.5g and 2422g of cremated human bone (McKinley 1993). The small size of the two deposits would therefore suggest that the contexts do not represent complete remains.

Deposits (315) and (512) both represented single individuals, a juvenile aged approximately <11 years from deposit (315) and a probably adult male individual from deposit (512). Both deposits were white in colour, suggesting that the remains were fully oxidised and had been burnt at a temperature of over 600°. Both deposits contained animal bone pyre goods of a pig forelimb joint (315) and a domestic fowl (512). The inclusion of food offerings are fairly common within cremated burial deposits of this period. Analysis of early Roman cremation cemeteries indicate that pig joints and domestic fowl remains were the most commonly included offerings, with smaller numbers of lamb and beef joints also represented and on more rare occasions unburnt fish offerings (Barber and Bowsher 2000, 71-76).

References

- Barber, B, and Bowsher, D, 2000 *The Eastern Cemetery of Roman London: Excavations 1983-1990*, MoLAS monograph 4
- Brickley, M. and McKinley, J. 2004, *Guidelines to the Standards and Recording Human Remains*. BABAO and IfA. IfA Paper No. 7.
- Holden, J.L. Phakey, PP and Clement JG 1995a, Scanning electron microscope observations of incinerated human femoral bone: A case study. *Forensic Science International* 74:17-28
- Holden, J.L. Phakey, PP and Clement JG 1995b, Scanning electron microscope observations of heat treated human bone: A case study. *Forensic Science International* 74:29-45
- Lange, M., Schutkowski, H., Hummel, S. & Herrmann, B. 1987, *A Bibliography on Cremation*. Strasbourg: PACT.
- McKinley, J.I. 1993, Bone Fragment Size and Weights of Bone from Modern British Cremations and their Implications for the Interpretation of Archaeological Cremations. In *Internat. J. Osteoarchaeology* 3, 283-7.
- McKinley, J.I. 1994a, Bone Fragment Size in British Cremation Burials and its Implications for Pyre Technology and Ritual. In *J. Arch. Sci.* 21, 339-342
- McKinley, J.I. 1994b, The Anglo-Saxon Cemetery at Spong Hill, North Elmham: Part VIII The Cremations. *East Anglian Archaeology* 69

Roberts, C. and Manchester, K. 1995. *The Archaeology of Disease*. Gloucestershire, Sutton Publishing

Schaefer, M., Black, S. & Scheuer, L. 2009, *Juvenile Osteology: A Laboratory and Field Manual*. Academic Press.

Appendix 6
ANIMAL BONE
by Matilda Holmes

Introduction

This small assemblage was recovered from a number of features associated with the various phases represented (Table 1). Due to the lengthy chronology of the site, the individual sample sizes for each phase were too small to be analysed in depth, although the basic character of the assemblage will be summarised below.

Methodology

Bones were identified using the author's reference collection. Due to anatomical similarities between sheep and goat, bones of this type were assigned to the category 'sheep/goat', unless a definite identification (Prummel and Frisch, 1986; Payne, 1985) could be made.

Bones that could not be identified to species were, where possible, categorised according to the relative size of the animal represented (small – rodent /rabbit sized; medium – sheep / pig / dog size; or large – cattle / horse size). Ribs were not identified to species and only the maxilla, zygomatic arch and occipital areas of the skull were identified from skull fragments. All fragments were recorded, although articulated or associated fragments were entered as a count of 1, so they did not bias the relative frequency of species present. Details of associated bone groups were recorded in a separate table.

Tooth wear and eruption were recorded using guidelines from Grant (1982) and Silver (1969), as were bone fusion (Amorosi, 1989 and Silver, 1969), metrical data (von den Driesch, 1976), anatomy, side, zone (Serjeantson 1996) and any evidence of pathological changes, butchery (Lauwerier, 1988) and working. The condition of bones was recorded on a scale of 1-5, where 1 is perfectly preserved and 5, the bone is so badly degraded to be unrecognisable (Lyman 1994). Other taphonomic factors were also recorded, including the incidence of burning, gnawing, recent breakage and refitted fragments.

Taphonomy and Condition

The bones were in good to fair condition (Table 2), but fragmentary, and the incidence of fresh breakage was considerable in all but the medieval phase indicating that the bones were friable. A large number of fragments showed canid gnawing, suggesting that a significant proportion (between 10 and 23%) of the bones were available for dogs to chew prior to burial. However, there were very few loose teeth – the majority still held in the mandible – which indicates that they underwent fairly rapid burial, as teeth are liable to fall out of the mandible once the connective tissue breaks down.

Two associated bone groups were recorded:

- Medieval pit (context 37), 28 bones from a nearly complete juvenile goose.
- Medieval layer from the sunken building (context 34), 10 bones from a partial cat skeleton.

It is unlikely that the goose was deposited as the remains of a meal, as there was no butchery evident, and the head and neck were also recovered, though it could represent the burial of an animal that died by accident or disease. The partial cat skeleton from layers within the sunken building or undercroft also contained no signs of butchery, and it could represent the convenient disposal of a non-food animal in a disused area of the building.

Butchery and Carcass Parts Represented

The occurrence of butchery was high in all phases, and was recorded almost exclusively on the bones of the main domestic mammals (cattle, sheep/ goat and pig), but also a horse tibia and domestic fowl ulna, both from medieval contexts. Butchery was carried out with a chopper type implement and, more rarely, using a knife. There was evidence for the use of a saw on a medieval cattle radius. Butchery marks were generally observed on the limb bones and vertebrae, typical of the disarticulation and jointing of the carcass. However, transverse cut marks on a cattle skull from the Roman phase was consistent with removal of the skin.

Although sample sizes were too small for detailed analysis, all parts of the carcass were represented for the major domesticates (Table 3), which indicates that animals were brought to the site either as whole carcasses, or on the hoof, before being butchered. There were no discreet deposits of butchery or craft waste. Together, the butchery and anatomical representation of the assemblage are indicative of domestic refuse, bones that were disposed of as a result of food waste.

The Assemblage

The largest assemblages came from the Roman (mid 2nd – 4th centuries) and medieval (late 12th – 14th) phases, but a few bones were also recorded from Saxo-Norman (11th – 12th centuries) contexts (Table 4). Bones were also recovered from the Roman graves, which will be discussed separately.

Although the main domestic species (cattle, sheep/ goat and pig) were predominant in all phases, there was also considerable diversity in species represented. Cattle were the most common animals in the Roman phase, but this changed in the Saxo-Norman and medieval phases to be sheep/ goat. Pigs, horses, dogs and cats were recovered in comparatively small numbers, except for a large proportion of horse bones in the Roman phase. Sheep were positively identified in all phases, and a goat horn core in a Roman context.

Of the minor species, roe deer were only present in the Roman assemblage, and indicates that hunting was used to procure the animal. The main domestic bird species (goose and chicken) were found in Roman and medieval phases and may have been kept on site. The presence of a duck humerus in a medieval context could have been from a hunted bird or one kept domestically.

Tooth wear and fusion data were similar for both the cattle and sheep/ goat assemblages – the majority of cattle were not culled until old age in both the Roman and medieval assemblages, although there were a small number of immature animals recorded in both phases, which may indicate a cull of animals excess to requirements, in an otherwise secondary-product oriented economy, where animals were apparently valuable for the production of milk or power. The absence of suitable metrical data makes the herd structure unavailable to more accurately designate a particular strategy.

Sheep were also generally old in the Roman phase, culled from 3 years of age onwards. In the medieval period there was a cull of prime meat animals at around 1-2 years, then again at approximately 3 ½ years.

The Inhumations

The species recovered from grave fills reflected the proportions of species from contemporary domestic contexts elsewhere on the site.

The largest assemblage from the inhumations came from context 008, the fill of grave 006. Although this may have been disturbed from more general deposits during backfilling, it contained two bone groups of note: bones from sheep/ goat hind limbs (femurs, tibias, calcanea, metatarsals), and a number of cattle vertebrae (thoracic, lumber and sacral), all of which may have been deliberately placed in the grave, representing meat offerings.

The Fish Bones

Two fragments of cod were recorded from a medieval pit (037).

Bibliography

Amorosi, T (1989). *A postcranial guide to domestic neo-natal and juvenile mammals*. BAR Int. series 533.

Grant, A. (1982). The use of toothwear as a guide to the age of domestic ungulates. *Ageing and Sexing Animal Bones from Archaeological Sites*. B. Wilson, C. Grigson and S. Payne. Oxford, BAR British Series 109: 91-108.

Lauwerier, R. (1988). *Animals in Roman Times in the Dutch Eastern River Area*. Amersfoort: ROB Nederlandse Oudheden. Vol 12.

Lyman, R. L. (1994). *Vertebrate Taphonomy*. Cambridge, Cambridge University Press.

Payne, S. (1985). Morphological distinctions between the mandibular teeth of young sheep and goats. *Journal of Archaeological Science* 12: 139-147.

Prummel, W. and H. Frisch (1986). A guide for the distinction of species, sex and body side in bones of sheep and goat. *Journal of Archaeological Science* 13: 567-577.

Serjeantson, D. (1996) The animal bones. In *Refuse and disposal at area 16 East Runnymede*. S.Needham and T. Spence (eds). Runnymede bridge research excavations 2

Silver, I. A. (1969). The ageing of domestic animals. *Science and Archaeology*. D. R. Brothwell and E. S. Higgs. London, Thames and Hudson.

von den Driesch, A. (1976). *A guide to the measurement of animal bones from archaeological sites*. Cambridge, Massachusettes, Harvard University Press.

Table 1: Number of Identified bones

	Saxo- Norman	Grave	Medieval	Roman	Unphased	Total
Ditch	8				1	9
Grave		41				41
Layer			167			167
Linear	4		7	25	15	51
Pit	20		1	144	14	179
Sunken building			14			14

Table 2: Condition and taphonomy of identified bones

Condition		Grave	Roman	Saxo- Norman	Medieval
Excellent	1		1		3
Good	2	17	66	15	90
Fair	3	19	41	7	50
Poor	4		5	4	
Very bad	5				
Butchery		14%	18%	12%	19%
Burning		0%	0%	0%	1%
Gnawing		17%	12%	23%	10%
Fresh break		19%	22%	19%	5%
Refits		4=9	5=38	2=6	2=9
loose:mandible		0:2	0:12	0:2	2:7

Table 3: Fragment representation (epiphysis only count)

Anatomy	Roman			Saxo-Norman		Medieval		
	Cattle	Sheep/ Goat	Pig	Cattle	Sheep/ Goat	Cattle	Sheep/ Goat	Pig
Horn core*	1					1		
Mandible*	3	7	2		2	1	4	1
Occipital		1					1	
Zygomatic						2		
Skull	1	1						
VC	5			2		4	2	
VC1							4	
VC2	1				2		2	
VL							4	
VSA							1	
VT	6			2			2	2
Scapula		1			1		2	
Humerus	4				2	1	2	
Radius	3	1				3		
Ulna	2							
Pelvis	2	1			2		3	
Femur	6	3		1		1		1
Tibia	5	2				3	1	1
Calcaneus						1		
Metacarpal	3	5			3	1	6	
Metapodial	1		2		2			
Metatarsal	4	5		1		3	2	
1st phalange**	3	1		1		2	2	1
2nd phalange**	1					2	2	
3rd phalange**	1					3	1	
Total	52	28	4	7	14	28	41	6

* horn cores with zones 1 or 2 present (Serjeantson 1996); mandibles with molars present

** adjusted for frequency bias

Table 4: Species representation (NISP)

	Grave	Roman	Saxo- Norman	Medieval
Cattle	19	71	8	46
Sheep/ Goat	12	35	11	78
Sheep		5	4	1
Goat		1		
Pig	1	5	1	9
Horse	1	24		8
Dog		3	2	3
Cat		1		5*
Roe deer		1		
Rabbit	1			
Goose	1	1*	1	1
Chicken		1		10
Duck				1
Frog				2
Total identified	35	147	27	159
Unidentified mammal	43	8	5	59
Large mammal	23	128	9	62
Medium mammal	38	26	15	61
Small mammal		2		13
Unidentified bird		1		9
Large bird				1
Fish				1
Total	139	312	56	364

* associated bone groups included as a count of 1

Appendix 7. Lincoln, Newport, Army Cadet HQ – LINA10

Notes on the environmental samples.

Investigations undertaken by APS at the Army Cadet HQ, Newport, Lincoln, recorded ditches, pits and deposits of Roman and medieval date. Samples (Table 1) were taken and processed by APS and their flots and sorts submitted to the Environmental Archaeology Consultancy for comments.

Table 1. List of samples taken and assessed from Newport Road, Lincoln – LINA10

Sample	context	feature	Date	Volume l.
1	010	Fill of pit 016	Roman	4
2	015	Fill of pit 016	Roman	3
3	034	Fill within structure 030	Medieval	10
4	032	Fill within structure 030	Medieval	9
5	039	Fill of pit 041	Medieval	10
6	028	Fill of Roman pit 025	Roman	9
7	053	Fill of terminus 048	Medieval	9
8	043	Cess fill of pit 042	Early Roman	9
9	069	Fill of feature 067	Roman	9
10	077	Fill of linear 076	Roman	15

The assessed samples derive from medieval and Roman features, including Roman pits 016, 025 and 042, Roman linear 076 and Roman feature 067, medieval structure 030 and terminus 048, and medieval pit 041.

Methods

The samples were bulk floated and the flots were collected in a 300 micron mesh sieve. No assemblages contained waterlogged remains so all the residues and flots were stored dry. The sorted finds were briefly scanned and identified but not weighed. The volume of the flots was measured and the flots were then scanned under a low power microscope at magnifications between 10 and 40x and a preliminary identification made of the snails, cereals and any small bones contained within. Some charred and mineralised seeds were identified but the records are not comprehensive. Estimates were made of the abundance of each category of environmental find (see Table 3) but no counts were made. Data on the archaeological finds from the samples (Table 2) was taken from the sample sheets supplied by APS

Table 2. Archaeological Finds from the assessed environmental samples

Sample	context	feature	Date	Volume l.	Residue wt kg.	Pottery	Metal	Hammer-scale	Slag	
1	010	Fill of pit 016	Roman	4	1.72	X		1	Vfa	
2	015	Fill of pit 016	Roman	3	0.33			6		
3	034	Fill within structure 030	Medieval	10	2.21	X	Fe -nail?	3	X	Coal
4	032	Fill within structure 030	Medieval	9	1.55	X			X	Coal
5	039	Fill of pit 041	Medieval	10	2.26					Brick/tile
6	028	Fill of Roman pit 025	Roman	9	1.52	X		3	X	Smelting slag?
7	053	Fill of terminus 048	Medieval	9	1.73	X		11		Coal, clinker
8	043	Cess fill of pit 042	Early Roman	9	3.37	X				Brick/tile, coal, daub
9	069	Fill of feature 067	Roman	9	3.55	X	Fe object	1		Coal
10	077	Fill of linear 076	Roman	15	0.8	X		3		Brick/tile, coal

Note: 'Fe' = iron; 'Vfa' = vitrified fuel ash slag

Table 3. Environmental Finds from the assessed environmental samples

sample	context	feature	Date	flot vol. ml	char- coal \$	snails *	char'd grain *	char'd seed *	mam mal bone *	fish bone *	marine shell *	
4	010	pit 016	Roman	1	1/1	1	1		1			Plants: Wheat Snails: <i>Trichia hispida</i> , <i>Cecilioides acicula</i> , <i>Vertigo</i> sp.
7	015	pit 016	Roman	7	2/5	2	1	2	1		1	Plants: <i>Hordeum vulgare</i> , <i>Triticum dicoccum/spelta</i> , <i>Chenopodium</i> , moss, etc Snails: <i>T. hispida</i> , <i>C. acicula</i> , <i>Vertigo</i> sp., <i>Vallonia costata</i> , <i>Helix aspersa</i> , <i>Vitrina</i> sp., <i>Aegopinella pura</i> Other fauna: common mussel, frog/toad, burnt bone
8	034	structure 030	Med.	10	2/4	4	3	2	2	1	2	Plants: Wheat, barley, oats?, <i>Lithospermum arvense</i> , <i>Chenopodium</i> Snails: <i>Cochlicopa</i> sp., <i>C. acicula</i> , <i>A. pura</i> , <i>Pupilla muscorum</i> , <i>Vitrea</i> sp., <i>T. hispida</i> , <i>Helicella itala</i> , <i>V. excentrica</i> , <i>V. costata</i> , <i>Discus rotundatus</i> Other fauna: mussel, periwinkle, cockle, frog/toad, mouse, cat, chicken, goose?, eel, herring
9	032	structure 030	Med.	2	2/3	2	2	2	2	1	1	Plants: <i>Hordeum/Triticum</i> , wheat, barley, <i>Rumex</i> Snails: <i>V. excentrica</i> , <i>T. hispida</i> , <i>Cochlicopa</i> sp., <i>C. acicula</i> , <i>D. rotundatus</i> , <i>P. muscorum</i> Other fauna: Oyster, cockle, mussel, frog/toad, rodent, eel
10	039	pit 041	Med.	1	1/2	1	2	1	2	2	1	Plants: <i>Triticum aestivum</i> , <i>Triticum</i> sp, <i>Hordeum</i> sp., <i>Vicia/Lathyrus</i> , mineralised cf <i>Prunus</i> Snails: <i>T. hispida</i> , <i>Helicella</i> sp., <i>V. excentrica</i> , <i>Cochlicopa</i> sp., <i>C. acicula</i> Other fauna: mussel, sheep, pig, bird, eel
11	028	pit 025	Roman	8	2/4	2	3	2	2	1	1	Plants: <i>Hordeum vulgare</i> , <i>Triticum</i> sp., cf <i>T. aestivum</i> , <i>Bromus</i> sp., hazelnut, <i>Chenopodium</i> , <i>Rumex</i> , <i>Anthemis cotula</i> , <i>L. arvense</i> Snails: <i>V. excentrica</i> , <i>T. hispida</i> , <i>H. itala</i> , <i>P. muscorum</i> Other fauna: shrew, house mouse, chicken?, eel
12	053	terminus 048	Med.	4	1/2	3	2	1	2	1	1	Plants: <i>Triticum aestivum</i> , <i>Hordeum</i> sp, <i>Pisum/Vicia</i> sp, mineralised seed Snails: <i>Cochlicopa</i> sp., <i>P. muscorum</i> , <i>V. costata</i> , <i>V. excentrica</i> , <i>C. acicula</i> , <i>Cepeae</i> sp., <i>T. hispida</i> , <i>Helicella</i> sp., <i>A. pura</i> Other fauna: small fish
13	043	pit 042	Early	2	1/2	2	1	1	2			Plants: <i>Triticum</i> sp, mineralised seeds

			Roman									Snails: <i>H. aspersa</i> , <i>T. hispida</i> , <i>Vitrina</i> sp., <i>V. costata</i> Other fauna: woodmouse, field vole, house mouse, common shrew, weasel, mineralised larvae
16	069	Feature 067	Roman	3	2/2	2	1	1	2	1	1	Plants: <i>Triticum</i> sp. Snails: <i>V. excentrica</i> , <i>V. costata</i> , <i>C. acicula</i> , <i>T. hispida</i> , <i>P. muscorum</i> Other fauna: oyster, mussel, pig, rodent, small bird, chicken, fish
19	077	linear 076	Roman	15	1/2	5	1	1	1		1	Plants: <i>Triticum</i> sp., <i>Hordeum</i> sp. Snails: <i>V. pygmaea</i> , <i>Punctum pygmaeum</i> , <i>Aegopinella nitidula</i> , <i>Carychium</i> sp., <i>Oxychilus</i> sp., <i>P. muscorum</i> , <i>Cochlicopa</i> sp., <i>D. rotundatus</i> , <i>Clausilidae</i> , <i>H. itala</i> , <i>A. pura</i> , <i>C. acicula</i> , <i>C. nemoralis</i> , <i>T. hispida</i> , <i>V. excentrica</i> , <i>V. costata</i> Other fauna: mussel, sheep/goat, rodent, frog/toad

* = abundance: 1=1-10, 2=11-50, 3=51-150, 4=151-250, 5=250+; \$ = abundance >2mm/abundance < 2mm;

Results

A few uncharred seeds were recovered in the flots but these have been excluded from this report on the basis that they are probably recent contaminants. A magnetic component was present and indicated the presence of hammerstone, evidence for smithing, in both Roman and medieval samples, while slag present in Roman pit 025 has the appearance of being possible smelting slag. Pottery is present in most of the samples with a little coal in both Roman and medieval samples but since the latter is predominantly small pieces it may be intrusive.

The environmental assemblages from both Roman and medieval contexts are dominated by charred plant remains and snails. Charred grain, seeds and mineralised seeds are particularly abundant in medieval occupation deposit, sample 8, in structure 030, and Roman pit 025, sample 11. Several other samples have produced charred cereal grains and weed seeds in small numbers.

An absence of chaff in any of the samples and relatively few charred weed seeds suggest that most of these assemblages derive from domestic waste. Bread wheat, emmer/spelt wheat, barley and possible oats have been identified in the assemblages. The charred weed component may reflect weeds growing with the crop and indicate the character of the soils and potentially the season of sowing of the crops.

Charcoal is present in all the samples although not abundant in any. Charcoal tends not to float well on first washing of the samples and the second flot gathered from the dried residue often contains the majority of charcoal so it is possible that the charcoal content of the deposits was greater than that indicated by the studied flots. A few twigs and tubers are included amongst the charcoal and several samples include identifiable fragments but on the basis of these samples there is little justification for detailed charcoal analysis.

There is very little identifiable material among the animal bones recovered. Sheep, sheep/goat, pig, cat, chicken and possible goose are the only larger vertebrates identified during this scan. Small vertebrates are more abundant and common shrew, field and house mouse, small bird, frog/toad, eel, herring and several unidentified small and medium sized fishes are present. The presence of house mouse in two of the Roman samples suggests domestic buildings nearby. Importation of marine shell as well as fish from coastal areas is indicated by the presence of cockle, mussel, oyster and periwinkle fragments.

The most abundant environmental evidence are the terrestrial snails. All samples have produced some snails with at least two samples containing in excess of 200 shells. So called open country or grassland taxa appear to dominate the assemblages with *Vallonia excentrica*, *V. costata*, *Pupilla muscorum* and *Trichia hispida* being generally the most abundant, but several samples include taxa normally associated with more shady habitats such as *Aegopinella pura*, *Oxychilus* sp, Clausilidae and *Discus rotundatus*. Quantification of these fauna may permit a more informed interpretation of the assemblages from each feature, and the samples from Roman pit 016 could afford the opportunity to identify any changes in the immediate environment of the pit during its infilling, being a sequence of fills in the pit.

Deposits 34 and 32 from medieval structure 30 both include significant quantities of food waste including grain, marine shell, fish bones and domestic bird bones. The provisional field interpretation of context 34 as an 'occupation layer' would be consistent with the archaeological debris but is perhaps inconsistent with the large assemblage of terrestrial snails which would imply an external deposit that built up over some time. Depending upon the

context of layer 34 this could reflect an abandonment episode. The presence of several snail taxa that prefer shaded and damp ground would certainly be consistent with an empty dilapidated structure.

Early Roman pit 042 appears to have acted as a 'pit fall trap'. This is a trap into which small vertebrates fall but cannot extricate themselves. It has an abundance of small voles, mice, shrews and even a weasel. This same pit has been provisionally identified in the field as containing 'cess'. There are certainly some mineralised weed seeds present and also some mineralised insect larvae which would suggest the presence of cess. Medieval pit 041 also produced a mineralised cf *Prunus* stone which may also suggest some cess.

Roman pit 025 contained a relatively large assemblage of charred cereal grain, including wheat, barley, some oats and a *Bromus* seed. The sample also included a collapsed eel vertebra which is generally taken to result from passage through the gut. These finds with other fish vertebrae and a charred hazelnut fragment indicates some food waste, and the sample processing record notes fragments of marine mussel shell, which unfortunately were not retained and cannot therefore be confirmed. Burnt bone and a little vitrified fuel ash slag suggest domestic fire debris was probably deposited in the pit.

The residues of all samples should be retained for checking and not discarded.

Acknowledgments

I should like to thank John Giorgi for identifying some of the charred plant remains.

© James Rackham
6th January 2011

Appendix 8

GLOSSARY

Anglo-Saxon	Pertaining to the period when Britain was occupied by peoples from northern Germany, Denmark and adjacent areas. The period dates from approximately AD 450-1066.
Context	An archaeological context represents a distinct archaeological event or process. For example, the action of digging a pit creates a context (the cut) as does the process of its subsequent backfill (the fill). Each context encountered during an archaeological investigation is allocated a unique number by the archaeologist and a record sheet detailing the description and interpretation of the context (the context sheet) is created and placed in the site archive. Context numbers are identified within the report text by brackets, e.g. [004].
Cut	A cut refers to the physical action of digging a posthole, pit, ditch, foundation trench, etc. Once the fills of these features are removed during an archaeological investigation the original 'cut' is therefore exposed and subsequently recorded.
Domesday Survey	A survey of property ownership in England compiled on the instruction of William I for taxation purposes in 1086 AD.
Fill	Once a feature has been dug it begins to silt up (either slowly or rapidly) or it can be back-filled manually. The soil(s) that become contained by the 'cut' are referred to as its fill(s).
Iron Age	A period characterised by the introduction of Iron into the country for tools, between 800 BC and AD 50.
Layer	A layer is a term used to describe an accumulation of soil or other material that is not contained within a cut.
Medieval	The Middle Ages, dating from approximately AD 1066-1500.
Natural	Undisturbed deposit(s) of soil or rock which have accumulated without the influence of human activity
Post hole	The hole cut to take a timber post, usually in an upright position. The hole may have been dug larger than the post and contain soil or stones to support the post. Alternatively, the posthole may have been formed through the process of driving the post into the ground.
Post-medieval	The period following the Middle Ages, dating from approximately AD 1500-1800.
Prehistoric	The period of human history prior to the introduction of writing. In Britain the prehistoric period lasts from the first evidence of human occupation about 500,000 BC, until the Roman invasion in the middle of the 1st century AD.
Romano-British	Pertaining to the period dating from AD 43-410 when the Romans occupied Britain.
Saxon	Pertaining to the period dating from AD 410-1066 when England was largely settled by tribes from northern Germany

Appendix 9

THE ARCHIVE

The archive consists of:

8	Context register sheets
155	Context record sheets
6	Photographic record sheets
2	Plan record sheets
3	Section record sheets
36	Daily record sheets
2	Sample record sheets
21	Environmental sample sheets
1	Small finds record sheet
59	Sheets of scale drawings
1	Stratigraphic Matrix
17	Boxes of finds

All primary records are currently kept at:

Archaeological Project Services
The Old School
Cameron Street
Heckington
Sleaford
Lincolnshire
NG34 9RW

The ultimate destination of the project archive is:

The Collection
Danes Terrace
Lincoln
LN2 1LP

The archive will be deposited in accordance with the document titled *Conditions for the Acceptance of Project Archives*, produced by the Lincolnshire City and County Museum.

The Collection Accession Number:	2008.40
Archaeological Project Services Site Code:	LINA 10
OASIS Record No:	archaeo11-106681

The discussion and comments provided in this report are based on the archaeology revealed during the site investigations. Other archaeological finds and features may exist on the development site but away from the areas exposed during the course of this fieldwork. *Archaeological Project Services* cannot confirm that those areas unexposed are free from archaeology nor that any archaeology present there is of a similar character to that revealed during the current investigation.

Archaeological Project Services shall retain full copyright of any commissioned reports under the *Copyright, Designs and Patents Act 1988* with all rights reserved; excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Specification.