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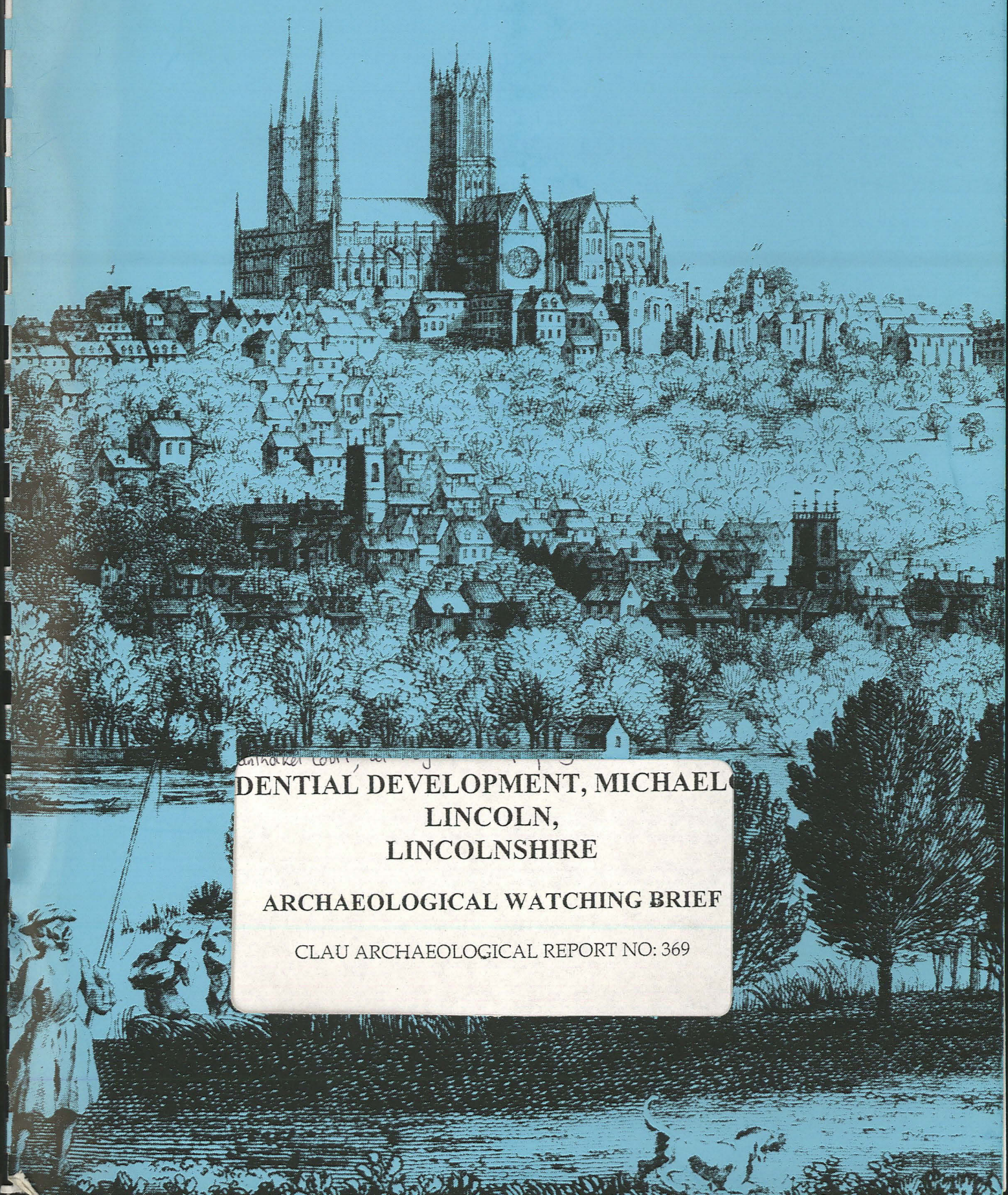

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LINCOLN,
LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

CLAU ARCHAEOLOGICAL REPORT NO: 369

Jody 1.50 22.1.99

Message from John Hockley. Re SPMC97

original planny appl. was for development on land at the junction of Spring Hill and St Michael gate. Subsequently the Developer named the site Stonthaket Court, Spring Hill. Thus the site has 2 names.

To catch all of these on the computer I suggest calling the site 'Stonthaket Court at the junction of Spring Hill and St Michael gate'.

Mark.

[redacted]

Event LI1293
Sources

70204 - RB (LI80763)
70205 - EMed (LI80764)
70206 - Med (LI80765)
70207 - PMed (LI80768)
70208 - Med church (LI80790)

A
Report to
Foxby Court Developments Ltd

January, 1999

Prepared by

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Stanthaket Court, at the junction of Spring Hill and Michaelgate

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

CLAU ARCHAEOLOGICAL REPORT NO: 369

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

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Appendices

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

1.0 INTRODUCTION

Between 12th June 1997 and February 1998 representatives from the City of Lincoln Archaeology Unit (CLAU) undertook a programme of archaeological monitoring and investigation, on behalf of Foxby Court Developments Ltd, during groundworks associated with the construction of six residential dwellings at the above site location.

2.0 SITE LOCATION

The triangular shaped site is located at NGR SK 9753 7163 (approximate centre of Site) and lies approximately 150m south of the Lincoln Castle and 200m south-west of the cathedral on the south facing upper scarp of the Lincoln Edge at the heart of the historic city.

The Site lies in the apex formed by Spring Hill to the west and Michaelgate to the east. The western boundary of the site is partly defined by a brick wall surrounding the properties of 1 and 5 Michaelgate. Its northern boundary coincides with the base of a steep east-west slope which extends between the paved area fronting new housing to the east (Michaelgate Villas) and the base of the steps leading to Gibraltar Hill to the west (Fig. 1).

3.0 ARCHAEOLOGICAL & HISTORICAL BACKGROUND

The following information sets out a brief background to the known history and archaeology of the site and its environs (for a more detailed account see CLAU Assessment/Evaluation Report No.331, Trimble, 1997).

Pre-Roman (1st century BC and earlier)

There is no evidence for pre-Roman occupation in proximity to the Site. However, its presence cannot be entirely discounted.

Romano-British Period (1st -4th century AD)

The Roman army probably reached Lincoln around *c.* AD50. By *c.* AD96, Lincoln had the status of a `Colonia', a self-governing civic community that utilised the `uphill' site of the former fortress. By the end of the 2nd century the defences of the Colonia were extended down to the river front. The Site is located in the north-west quadrant of the lower walled city, approximately 150m south-west of the south gate of the earlier legionary fortress. The centre of the site lies approximately 70m to the west of the line of Ermine Street - the main north-south Roman thoroughfare. Buildings revealed during excavations in the lower city suggest that many of the domestic houses on the hillside were large and impressive, with terracing of the slopes being necessary to accommodate these structures. A line of possible terracing crosses the site itself, running between Beaumont Fee and the line of Gibraltar Steps and eastwards through to the lower garden of the Bishops Old Palace. This line runs approximately along the northern boundary of the site. Further evidence for north-south terracing was found during excavations on the south-west part of the site in 1983 (SPM83) - these excavations also revealed evidence for a substantial Roman building and an adjacent north-south street. The 1997 evaluation of the site (Trimble, 1997) succeeded in locating stratified Roman material, but the evidence from the evaluation was too fragmentary to draw any firm conclusions about the topography

of the site during the Roman period. Evidence was however, forthcoming to suggest that the line of a major east-west terrace survives on the site more or less preserved in the later Victorian terrace that is still evident today.

Anglo-Saxon and Anglo-Scandinavian Period (5th - 11th centuries)

Abandonment of the Roman City seems to have started in the late 4th Century with town life reduced to a small community between the 5th to late 9th centuries. Following the Viking take-over of Lindsey in 874, Lincoln became a centre for a Viking army and, later, a Viking town. Excavation carried out at Hungate (H83 - to the south of the site) and Michaelgate Chestnut House (MCH84), to its east, indicated that re-occupation of the area in proximity to the Site was taking place from *c. AD*900 with the construction of timber buildings.

The Medieval Period (late 11th - 15th centuries)

At the time of the Norman Conquest Lincoln was home to perhaps 6-7000 people and formed one of the largest settlements in the newly conquered kingdom. The main post-conquest change to be noted archaeologically is the introduction of stone for domestic buildings form the mid-late 12th century.

The site's evaluation in 1997 revealed evidence of early medieval activity. An 11/12th century kiln or oven was located at relatively shallow depth towards the northern boundary to the site, on the higher hillside terrace. Although unclear as to its function, this feature was indicative of an unspecified type of industrial activity taking place. The discovery of an 11/12th century pit at shallow depth during the evaluation also suggests that evidence of early medieval occupation may be present at almost present day ground level over the western part of the lower terrace of the site.

The church of St Peter Stanthaket, which lay in the south-east corner of the site, dates from this period, falling out of use at some time before 1461. Parts of the church and its graveyard were excavated in 1983 (SPM83). The archaeological evaluation of the site in 1997 succeeded in further defining the limits of the graveyard of the church. Here, burials were revealed to lie at a much shallower depth than those recorded during previous excavations on the site of the church. This appears to confirm that the graveyard probably continued to the north of the church but on a higher level (the church lying on a lower, now obscured, terrace of the site). The absence of burials on the site's highest terrace may indicate the graveyard's northern boundary. An absence of human remains in the western half of the site suggested that the graveyard's western boundary lay at some point approximately mid-way across the site. Previous observations indicate that the graveyard also extended into the area of the modern gardens of the properties fronting on to Michaelgate to the east.

Post-Medieval (16th -18th centuries)

The late 14th to 17th centuries saw a period of physical decay in the city. It declined in importance and the population diminished, many houses and churches were demolished and by the second quarter of the 16th century large areas of the city were in a ruinous state. While some localised redevelopment was carried out, further damage and destruction occurred during the civil war in the mid 17th century.

4.0 AIMS & METHODOLOGY

The aims of the watching brief were:

A. to produce an archive record of deposits and remains generally within the constraints of the groundwork contractors' working methods and programme as related to the project design, with due regard to current Health and Safety legislation.

B. to produce a report on the archaeological importance of the discoveries.

C. to produce a project archive from which the potential for further study and academic research could be assessed.

D. to provide information for accession to the County Sites and Monuments Record (SMR) and the Lincoln Urban Archaeological Database (UAD).

Plate 1:General View of the site as the development nears completion (looking east). The careful management of the site's buried archaeological resource has meant that much of the archaeology has been preserved in situ.

Extent of Archaeological observations (Fig. 2)

The following information summarises the extent of groundworks that were monitored as part of the archaeological scheme of investigation.

a) *Slope stabilisation measures* - in order to proceed with the construction of Plot 1/2, the steep earthen bank forming the northern boundary to the site had to be stabilised. These works required a certain amount of earth moving and excavation prior to the construction, to its south, of a timber retaining wall.

b) *Piling operations* - although the client had opted for a driven pile solution to the site, an archaeological representative had to be present during this element in order to advise on, and aid in, the removal of any obstructions encountered during the piling programme.

c) *Excavation of groundbeam trenches for new building plots* - for the most part, archaeological deposits had been preserved through design, by raising construction levels to the respective building plots. Since some excavation would still be required an archaeological representative was in attendance to record archaeological deposits and features exposed by these works.

d) *Excavation of trenches for buried services* - damage to archaeological deposits was minimised by the design of a single, combined service trench (CST - containing all of the main services: water, gas, electricity and telephone). An archaeological representative was required to attend during the excavation of this trench in order to record any archaeological deposits and features exposed as a result of these works.

e) General groundwork for landscaping of the site - an archaeological representative was required to attend in order to record archaeological deposits and features exposed by these works.

f) Excavations to create formation levels for new access roads - as above.

5.0 ANALYSIS AND CONCLUSIONS

For the purposes of this report, the analysis of the archaeological record is presented by area, followed by a Concluding section in chronological order.

5.1 Analysis

Plot 1/2 (Fig. 3-6, 19 & 20)

Retaining Wall

In order to facilitate the construction of Plot 1/2, the steep earthen bank immediately to its north required some modification. This entailed the cutting back of this bank prior to the construction of a timber retaining wall. A standing (near vertical) section of the bank (up to 3m high) was exposed during this process. Unfortunately, the instability of the bank precluded any formal archaeological record. It was however, possible to draw and record a short section of this exposed face at its western end (see below), to the west of Plot 1/2, immediately adjacent to the steps leading to Gibraltar Hill. Examination of the area immediately after the cutting back of the bank revealed a complex series of deposits covering the Late-Saxon to the post-medieval periods. Silty/sand deposits [895] and [894] formed evidence for late-Saxon occupation here. Both deposits descended towards the south and contained pottery dating to the 10th century. Evidence for the medieval occupation present in this area of the site directly overlay the Late-Saxon deposits. The remnants of what appeared to represent the western terminal end of an east-west stone wall [877], overlay deposit [895]. This wall was constructed from unhewn limestone and was revealed to have been faced on its western and south facing sides (base of wall 40.66m OD). To the north of the stonework lay [872], an extensive accumulation of soil that contained 12th century pottery. Remnants of metalling lay on top of [872], on its north and west sides (contexts [875] and [876] - 41.16m OD). Several narrow bands of earth sloping down to the south lay to the south of wall [877], abutting its southern face. These deposits ([871], [880] - [888], [891], [892] and [893]) post-dated the construction of wall [877]. Analysis of the ceramics recovered from these deposits indicate a probable 13th century date for their deposition. It is suggested that wall [877] represents the western end of a retaining wall, possibly a terrace. The metalling recorded to the wall's north and west may have represented a road or path, the function of which was unclear.

Further, deposits following the lie of the hill-slope and dated to the post-medieval period, overlay the previously described events. Evidence of pits was found lying between these accumulations; suggesting occupation of a domestic nature occured during this time. Remaining deposits were associated with the construction of the Gibraltar Hill steps and the construction and subsequent demolition of the Victorian terraces which once occupied the site.

Foundations

An east-west evaluation trench, 6m x 2m x 1.8m deep, was excavated on the line of a foundation trench of Plot 1/2, on its southern side. This was requested by the City Council's Archaeology Officer, in order to understand better the nature and extent of deposits in this area of the site. The Archaeology Officer's request came prior to his confirmation of the archaeological response required for the excavation of foundations trenches for Plot 1/2. The excavation of the foundation trenches was eventually monitored as part of the standard watching brief.

Deposits of natural clay were encountered at various levels in the area of Plot 1/2. The highest point was recorded at the base of the remodelled earthen bank (*c.* 39.00m OD), and the lowest, lay at the base of the evaluation trench (*c.* 38.00m OD). This difference in height suggests that a terrace cut lay somewhere between these two points of record (further evidence indicating a terrace was also recorded during the monitoring of the north-south spur of the CST).

Natural deposits were sealed, in the area of the trial trench, by several extensive layers and deposits (contexts [906], [926] and [933] - 38.80m OD). The lack of dateable material meant that it was unclear whether these deposits dated to the Roman period or were post-Roman in date. However, a similar sequence of deposits, suggested as being Roman, was recorded in Trench 5 of the site's 1997 evaluation). A post-hole ([844]) possibly suggesting the presence of a structure (38.60m OD) was recorded between two of the deposits in this sequence. Small stones lining the cut may indicate post-packing.

Several large pits were recorded cutting into these deposits (cuts [925], [911], [912], 937] and [938] - *c.* 39.00m OD). The pits dated to the Late-Saxon period and were very similar to those recorded during the 1997 evaluation. All contained primary fills suggesting silting prior to their infilling. Pottery recovered from intentional infills indicated a 10th-11th century date.

Further evidence suggesting the continuation of the east-west 'retaining wall' recorded in the north-west corner of the site (see *Retaining wall* above), was recorded during the monitoring of the excavation of foundation trenches for Plot 1/2. Here, the westernmost north-south foundation trench revealed what appeared to be an east-west robber trench [900]. A further robber trench was recorded at the eastern end of the foundation trench for Plot 1/2. The remaining deposits and features associated with the medieval use of the site were primarily soil dumps and rubbish pits, the majority of which had been severely truncated by later activities, therefore precluding their formal interpretation.

In the main, post-medieval activity was centred on the Victorian use of the site and the enabling works associated with this current redevelopment.

Plot 3 (Figs. 7, 8 & 21)

For the most part, design measures had greatly reduced the destructive impact of the development on buried archaeological deposits in the area of Plot 3, and it was therefore monitored as part of the standard archaeological watching brief. Groundworks for this plot occurred on the upper and lower terraces of the site. Excavation on the upper level was minimal and only disturbed the upper 200mm of deposits. These deposits were recent in date, having been formed as part of the enabling works for the current development programme.

Excavation for Plot 3's groundbeams, on the lower level, at the base of the existing Victorian terrace wall, revealed deposits of natural clay *c.*500mm below ground level. This natural deposit was sealed by [1085], an extensive (500mm thick) deposit of clayey/silty soil presumed to be Roman in date (c. 38.40m OD). The remnants of a north-south limestone wall's foundations ([982]) cut in to deposit [1085]. The wall was exposed for approximately 4m and consisted of unfaced, unbonded, medium sized limestone fragments. Although the western edge of the wall was not determined, it would appear to have been in the region of 800mm wide (further evidence for this wall was recorded in the CST trench - context [1050]). A deposit of re-deposited natural clay ([985]) containing mid-late 2nd century pot was present to the west of wall [982] (partially sealing it), and was in turn sealed by [981], a yellow/brown clayey silt. A linear, north-south cut, [983], lay above wall [982], cutting through dumps [1085] and [981]. Interpretation suggests that this event represents the robbing of stone from wall [982]. A pit, [984], was recorded cutting into dump deposit [1085], to the east of wall [982]. The pit appeared to be lined with a brittle, semi-organic, cess-like material. Finds recovered from the pit indicate an 11th-12th century date for its infilling. No further deposits or features were recorded in the area of Plot 3.

Plot 4 (Figs. 9, 10 & 21)

As with Plot 3, Plot 4 was monitored as part of the standard watching brief, with most archaeological deposits remaining undisturbed by the excavation of the building's groundbeams.

Dump deposits of probable medieval date ([974] and [978], producing 13th century pottery) were recorded during the excavation of groundbeams for Plot 4. (37.60m OD). Although no burials were found, these deposits are thought to represent the continuation of the graveyard soil recorded in the

CTS (see below). A pit feature, context [988], cut into this dump, and whilst undated, its fills were ashy and similar to those recorded in pits of medieval date recorded elsewhere during the watching brief. Remaining deposits and features were associated with the Victorian terraces, which once occupied the site.

Plot 5 (Figs. 11, 12 & 21)

The excavation of groundbeams for Plot 5 was monitored as part of the standard watching brief. Prior to the commencement of this work, however, the Archaeology Officer requested a small exploratory investigation over an area of stonework exposed during the piling operations.

The earliest deposits encountered during the investigation of Plot 5 were a series of deposits (contexts [942], [943], [949], [951] and [956] - *c.*36.50m OD), containing pottery covering the mid-late 12th to late 14th centuries. Interpretation is difficult with such limited information, but it is likely that these deposits represent demolition/levelling events, possibly associated with the church of St. Peter Stanthaket (c. 36.70m OD).

A spread of clay, possibly representing a NE angle of a structure, was recorded sealing the aforementioned deposits (contexts [945], [947] and [948]). The E-W remnants of a limestone wall ([946] and [950] - 36.70m OD) were present on top of the clay. Truncation by previous archaeological works and the limitations of the archaeological response meant that the full extent of the clay and stone feature was not evident, so that a conclusive interpretation cannot be offered. Part of an angular cut ([944] - not investigated), truncating the structure discussed above, was thought to represent a further grave associated with the medieval church of St. Peter Stanthaket.

An extensive dump deposit, [941/954], sealed all of the above events and although undated is considered to be post-medieval in date (37.00m OD). Remaining deposits and features were recent in date, being associated with the current development programme.

Plot 6 (Figs. 13, 14 & 21)

For the most part, design measures had greatly reduced the destructive impact of the development on buried archaeological deposits in the area of Plot 6, and it was therefore monitored as part of the standard archaeological watching brief.

The earliest deposits recorded here were dumps [1107] and [1108]. Although no dating material was recovered from them, these deposits were considered to be Late Saxon, as they were very similar to those recorded in the area of the CST and Plot 1/2. In turn, they were sealed by further soil accumulations representing material similar to the graveyard soil recorded towards the eastern end of the CST ([1100], [1101] and [1104] - *c.* 37.50m OD). Three burials were recorded cutting into this graveyard soil. Two of them, appearing to represent east-west aligned adult inhumations, were revealed in the base of the foundation trench for Plot 6 ([1094] and [1109]). The third burial was visible in section only and represented an east-west aligned juvenile ([1105]). Burial [1105] sealed burial [1094]. The remaining deposit and features recorded in the area of Plot 6 were associated with recent (Victorian and later) events.

Combined Services Trench (Figs. 15-18 & 22 & Appendix 4)

The combined services trench was by far the most intrusive of the groundworks responded to during the watching brief. The CST ran east-west across the entire length of the site (*c.* 85m), with an average width of 600mm and a depth in excess of 1m. A N-S spur, 16m long and of similar dimensions to the CST, also ran northwards off the CST, across the ramped access to the garages of Plot 1/2, to the base of the new timber retaining wall.

Natural clay was encountered in two areas of the CST: firstly, at the far eastern end of the trench, at the base of the existing Victorian terrace wall (context [1073]); secondly (context [1001]), at the

northern end of the N-S length of the CST, to the east of Plot 1/2, at the base of the new timber retaining wall.

Natural clay, recorded in the N-S alignment of the CST, was noted to descend slowly towards the south, terminating sharply 4.5m south of the timber retaining wall (38.50m OD). This vertical "cut" may represent an earlier terrace line, probably Roman in date, which lay *c.*4m to the north of the existing Victorian terrace wall (see Plot 1/2 above).

Plate II: The CST looking west towards Plot 1/2

Sealing the natural clay across most of the site's lower platform were deposits [1029] [1054] and [1057], compact yellow/brown clays with frequent charcoal and oyster shell flecks and containing occasional mid 2nd to mid 3rd century pot, animal bone, and tile fragments. A deposit of loosely compacted, small-medium sized angular limestone fragments, in a mid-light brown sandy soil, [1046], appeared to truncate [1029], and may represent the fill of a pit. The northern part of an E-W limestone wall, [1025], were recorded crossing the CST in the area of Manhole FMH 6 (see Fig. 16 & Plate III, foreground). The wall consisted of two courses of loosely bonded; medium sized limestone fragments, roughly faced on their north side. Smaller stones to the south of the face, running into the trench section, represented the wall's core material. No further evidence for this wall was recovered during the watching brief, and its full extent and significance were not evident.

Further evidence for the continuation of probable Roman wall [982] (Plot 3) was recorded in the CST, as north-south wall [1050]. Here, the wall was revealed to be *c.*1m wide and consist of medium-large limestone blocks. No mortar was evident, but, an orange/yellow sand was present between the stones (top of wall - 37.00m OD). A second, N-S wall, [989], lay approximately 6.5m to the west of [1050]. This wall was *c.*700mm wide and stood at least three courses high, continuing below the base of the CST (36.80m OD). A later robber cut had removed all stonework at a higher level). The 1983 excavations on the site recorded a north-south street immediately to the east of an extensive Roman town house. Projecting the street's alignment has revealed walls [989] and [1050] to lie to either side of it. Although no evidence for metalling was found, earthen deposits were recorded as lying between walls [989] and [1050]. The earliest was [1053], a narrow (100mm) band of mid grey/green, cess-like silty/clay/ash soil containing late 2nd – early 3rd century pottery. The second and final contemporary spread of material between the two walls was [1075]. As with [1053], this deposit was also 'organic' in appearance (37.20m OD).

Eventually the area between limestone walls, [1050] (the later common graveyard and Roman structure wall) and [989] (the west wall of the Roman structure). was infilled with deposits[1051] and [1052], possibly to the level of the later medieval graveyard (these deposits were undated but are thought to be post-Roman in date - possibly late Saxon).

Plate III: The CST - showing burials [1016] and [1014] (scales are 1m and 500mm).

The west wall was subsequently robbed (context cut [1056]), but here the robbing was far more extensive. Not only had the stone from the wall been removed but the west side of the robber was not found (extending *c.*5m west and continuing into the trench section). The fill of the robber trench, [1055] contained only Roman pottery and was thought to be the same material as dump deposit [1065] (this lay immediately to the south of, and abutted, E-W retaining wall [1066]). No positive explanation can be offered why robber cut 1056] was apparently so extensive. A large, bowl shaped pit, [1059], was recorded cutting into robbing event [1056]. The fill of the pit, [1058], a friable, mid brown sandy/silt contained occasional fragments of bone, shell and charcoal as well as a small quantity of late 3rd - 4th century pot. [1059] was in turn truncated on its northern side by a further similarly-shaped and -sized pit, [1061]. This pit was also recorded in Trench 5 of the site's evaluation and recorded as being Late-Saxon.

Deposits and features revealed during the excavation of the N-S run, off the main CST, revealed further evidence supporting the alteration to, and formation of, terraces during the medieval period. Unfortunately, most of this section had been obscured by the insertion of a temporary drainage pipe intended to assist in the drainage of the natural springs occurring higher up the slope of the hillside. Sealing the natural clay, and appearing to infill the terrace cut noted here, was a series of extensive dump deposits (no dating was recovered but they are probably post-Roman in date). The earliest of these, [1072], comprised very frequent small-medium sized, angular limestone fragments in a grey/brown sandy soil. [1072] was recorded as spilling over the edge of the earlier cut in the natural clay. A second dump deposit, [1071], sealed the former and also dipped into the cut. No further dumps were recorded at this higher level as the drain obscured the trench section. At the point where the north-south spur to the CST was located, the westward continuation of the CST was shallower and narrower, making identification and recording difficult. Those deposits that were present appeared to be a continuation of the Late-Saxon events recorded in the area of Plot 1/2.

Approximately 6.6m south of the cut into the natural clay, at a point where the recent drain did not obscure the trench section, a further dump deposit was recorded. This dump, [1069], appeared to represent a further deposit obscuring the probable Roman terrace, as indicated by the cut into natural to its north. The remains of an E-W limestone wall were recorded cut into dump [1069] (38.10m OD, undated). This wall, [1066], consisted of four (visible) courses of unbonded, medium sized limestones (300mm x 200mm). The wall was 300mm thick (the thickness of individual stones), and appeared to represent a terrace/retaining wall, possibly of medieval date (no further evidence for this wall was encountered during the watching brief).

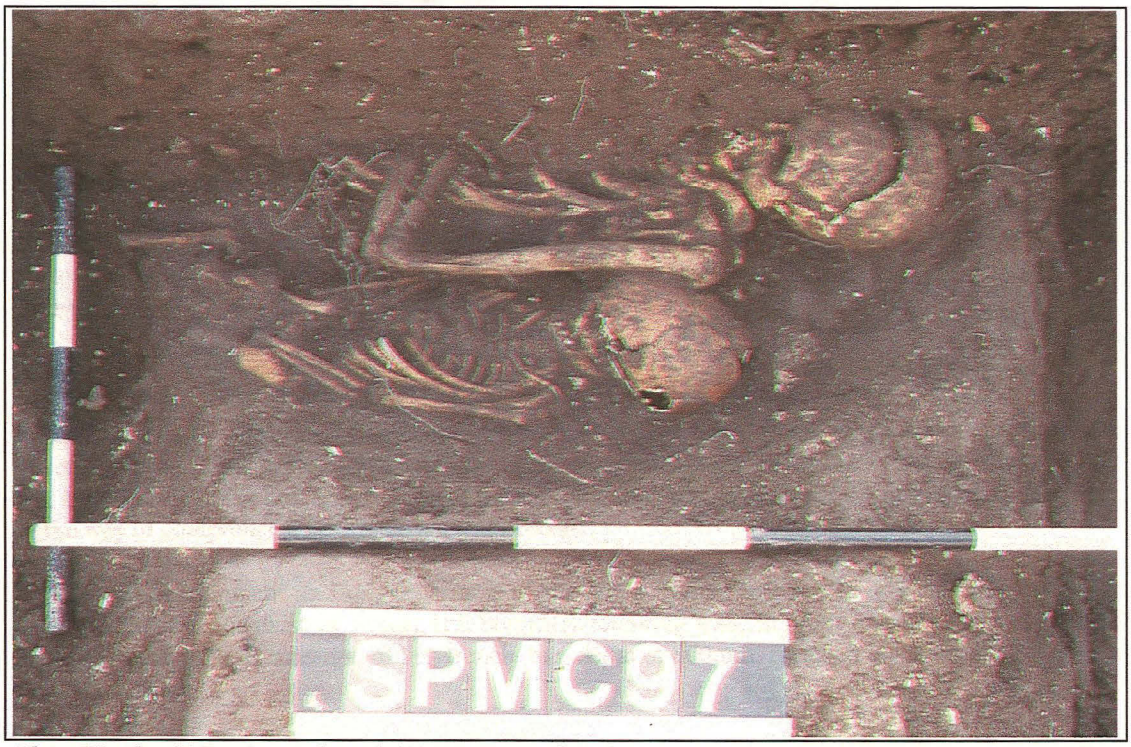

Plate IV: The CST – Group burial [1041]. View of Skeletons [1039] and [1040]. Skeleton [1037] has already been removed from the grave.

An extensive deposit, up to 600mmm thick, of mid brown sandy/silt, [1024], sealed deposit [1029], and wall [1025], extending from the approximate location of FMH 6, westwards for *c.*11m, to where it 'abutted' a N-S limestone wall (context [1050] - see below). This deposit was also recorded in the area of Plot 4 as contexts [974] and [978], and interpreted as graveyard soil associated with the Church of St. Peter Stanthaket. The northern and southern limits of the graveyard were not established during the watching brief. The excavation of the CST revealed ten, E-W orientated graves (containing 12 skeletons – see Appendix 4) cutting into deposit [1024]. This would appear to suggest that [1024] represents the graveyard soil of the church of St. Peter Stanthacket, its western boundary being delineated by wall [1050].

One grave, [1041], lying 2m to the east of wall [1050], was revealed to contain three skeletons (see Plate IV above). The primary skeleton in this grave, [1040], was a juvenile, *c.* 5yrs old, the lower legs of which had been removed by machine excavation of the CST. The juvenile's skull was inclined to the south and its hands were revealed to lie under its pelvis. The secondary burial in the grave was [1039], an adult male. It lay on the south side of the grave cut with its skull inclined to the south and its left shoulder lying across the skull of skeleton, [1040], and its left arm was positioned across its own pelvis. Its right arm lay under the trench section, however, during the removal of the skeleton from the trench, finger bones were revealed around the skeletons neck region. The third skeleton in the grave was [1037]. This skeleton, a juvenile 12-13.5yrs old, lay on the north side of the grave cut. The skeleton lay on its back, with its arms to its side (bones below the pelvis had been removed). The torso was inclined to the south, twisting the spine. This was due to the fact that the burial lay partially along the side of the grave cut. The cut for the grave ([1041]) was apparently oval in shape, having

steep, concave sides and a rounded, flattish base. Its fill, [1038], a mid-brown clayey soil, contained few inclusions, although a small quantity of 11th – 12th century pottery was present.

Only one of the burials revealed evidence for a grave structure, or cist. This grave, [1035], lay immediately to the west of Manhole FMH 6, and was visible in section only, with few bones removed by the cutting of the CST. A late cut to its north had extensively truncated the skeleton ([1033] - adult) with no bones surviving above the tops of the lower legs. A flat limestone had been laid on edge at the west end of the grave cut. A large, flat limestone slab (700mm x 100mm) was located on top of the burial, with its southern end resting on the limestone at the foot of the grave (37.54m OD).

The remaining burials (grave cuts: [990], [1019], [1080], [1079], [1023], [1021], [1076] and [1028]) all appeared to be articulated, extended and probably supine. However, machine excavation of the CST had extensively truncated many of them. Evidence for the continued use of the graveyard was established, with some burials sealing and truncating others (Grave [990] was sealed by [1035] and [1019]. Grave [1080] was sealed by [1079]).

Remaining deposits and features recorded during the excavation of the CST were associated with the Victorian terraces once present on the site, and enabling works associated with the site's current redevelopment.

Access roads

Excavation for the formation of vehicular access was contained within the upper 400mm of the site's lower platform. Some groundwork was also undertaken during the formation of the driveway to Plot 1/2, between the lower and upper levels of the site. The monitoring of this element produced very little in the way of comprehensible archaeological deposits.

Prior to the realignment and reconstruction of the site's Spring Hill access, a small trial hole was excavated against the existing Spring Hill boundary/retaining wall, in order to establish the nature of deposits in this area. Excavation of this trench, to a depth of 800mm, revealed no deposits earlier than the 18th century.

5.2 Conclusions

1) Romano-British Period (1st -4th century AD - Fig. 23)

For the most part, mitigation measures applied by the developer, assisted in reducing the impact of the development on remains of Roman date. Those that were encountered were generally difficult to interpret.

The monitoring of groundwork in the area of Plot 1/2 appears to have located the position of a Roman terrace (evidenced by a vertical cut in to the underlying natural clay) 4m to the north of the existing Victorian terrace wall. Deposits to the south of this cut are deeply buried and also suggest the probable presence of a further terrace to the south (the Roman town house discovered in 1983 lies at the base of this assumed southern terrace). Excavations on the site in 1983 also revealed evidence for a north-south street immediately to the east of the Roman town house. One of the objectives of the watching brief was to try and further establish the presence of this street and/or associated structures. In the event, no evidence for the street was found, but, the two Roman walls recorded in the sections of the CST appear to lie on either side of the street's projected line. This suggests that walls [989] and [1050] represent the remnants of buildings fronting on to the street, as evidenced by the building excavated in 1983, or, that they are the remnants of north-south terrace wall. No evidence for the extensive metalling found adjacent to the town house was recorded. This may have been due to the limited depth of the CST as well as to its extensive truncation by later activity.

2) Anglo-Saxon and Anglo-Scandinavian Period (5th - 11th centuries)

Occupation ascribed to post-Roman occupation of the site generally occurred towards its western half, further corroborating the evidence found during the site's earlier evaluation. The events recorded show extensive levelling (possibly forming the terraces later utilised during the medieval period) and pitting activities of a probable domestic nature. However, no evidence for associated structures was recorded.

3) The Medieval Period (late 11th - 15th centuries - Fig. 24)

The evaluation of the site in 1997 suggested that much of the evidence for the medieval occupation in this area of the site had been previously removed during the construction of the Victorian terraces or later works taking place on the site. This was corroborated by the evidence recorded during the watching brief, with few deposits and features of medieval date surviving to any great extent.

By far the most obvious event was the formation of the graveyard of the church of St. Peter Stanthaket, on the middle terrace of the site. The watching brief further defined the extent of this graveyard. The site's evaluation in 1997 suggested a mid-way point across the site for the extent of the graveyard. This was borne out early in the evaluation, with the discovery of the eastern wall to the supposed Roman structure which was also common to the later graveyard as a boundary wall (this suggests some form of continuation of property boundaries - presumably the Roman street would have been obscured by this time). The monitoring of groundworks during the excavation of Plot 6's foundation revealed further evidence for burials. This would appear to suggest the continuation of the graveyard further to the west than was originally thought, possibly to west of wall [989]. Interestingly, the burials found in the area of Plot 6 appear to be on a slightly different alignment from those to the east of the site. This arrangement suggests a different phase of burials and may also indicate the expansion of the graveyard on either existing church land, or by taking in new property, possibly from the benefactor. Ground level for the eastern part of the graveyard appeared to be *c.*600mm higher than the postulated ground level to the west of the common graveyard wall, and may indicate that the graveyard was raised above surrounding ground level.

The wall termination recorded to the west of Plot 1/2 and its subsequent continuation eastwards (as a robber trench) through Plot 1/2, are suggested as representing a retaining wall, possibly a terrace. The adjacent metalling may have represented a lane or path, the function of which was unclear.

4) Post-Medieval - Modern (16th -20th centuries)

Activity immediately post-dating the medieval period was not generally present. It is, however, likely that the graveyard wall [1050] was robbed during this period. Later events were associated with the construction of terracing during the Victorian period, prior to the construction of the 19th century terraces, which once occupied the area currently under development.

Review of Archaeological Response

In conclusion, while preservation *in situ* is the preferred solution as a response to re-development, it can have certain drawbacks in terms of interpreting the resultant archaeological record. In this instance, the site record was recovered primarily as part of a watching brief. Only when the results from previous investigations (if available) are easily to hand, can limited archaeological interventions be interpreted sufficiently to define coherently a site's archaeological sequence. Fortunately, the area around and including the site has been previously subjected to many several interventions (see Trimble, 1997). And whilst some areas of the site are still not fully understood, a reasonable sequencing of its archaeological history has been achieved.

6.0 ACKNOWLEDGEMENTS

The City of Lincoln Archaeology Unit would like to thank Mr Victor Tapp of Foxby Court Developments Ltd, for funding the watching brief and post-fieldwork analysis, and also to the site contractor (Foxby Court Developments Ltd) for their assistance and co-operation throughout the duration of the archaeological programme of investigation. Acknowledgement is also made of Mr Ian George - Archaeology Officer, Lincoln City Council, for his guidance and assistance during the archaeological works.

Project Team

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Kevin Wragg	Field Officer
Russell Trimble	Field Officer
Yvonne Rose	Finds Supervisor/Site Assistant
John Hockley	Projects Manager
Mick Jones	Editor
Jenny Mann	Registered Finds/Ceramic Building Materials
Jane Young	Post-Roman and later pottery
Barbara Precious	Roman Pottery (Freelance)

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Whitwell, J B, *Roman Lincolnshire*, (History of Lincolnshire, Vol. II, Lincolnshire Local History Society, 1970; new edition 1992).

NOTE

The information in this document is presented with the proviso that further data may yet emerge. The Unit, its members and employees cannot, therefore, be held responsible for any loss, delay or damage, material or otherwise, arising out of this report. The document has been prepared in accordance with the terms of the Unit's Articles of Association, the Code of Conduct of the Institute of Field Archaeologists.

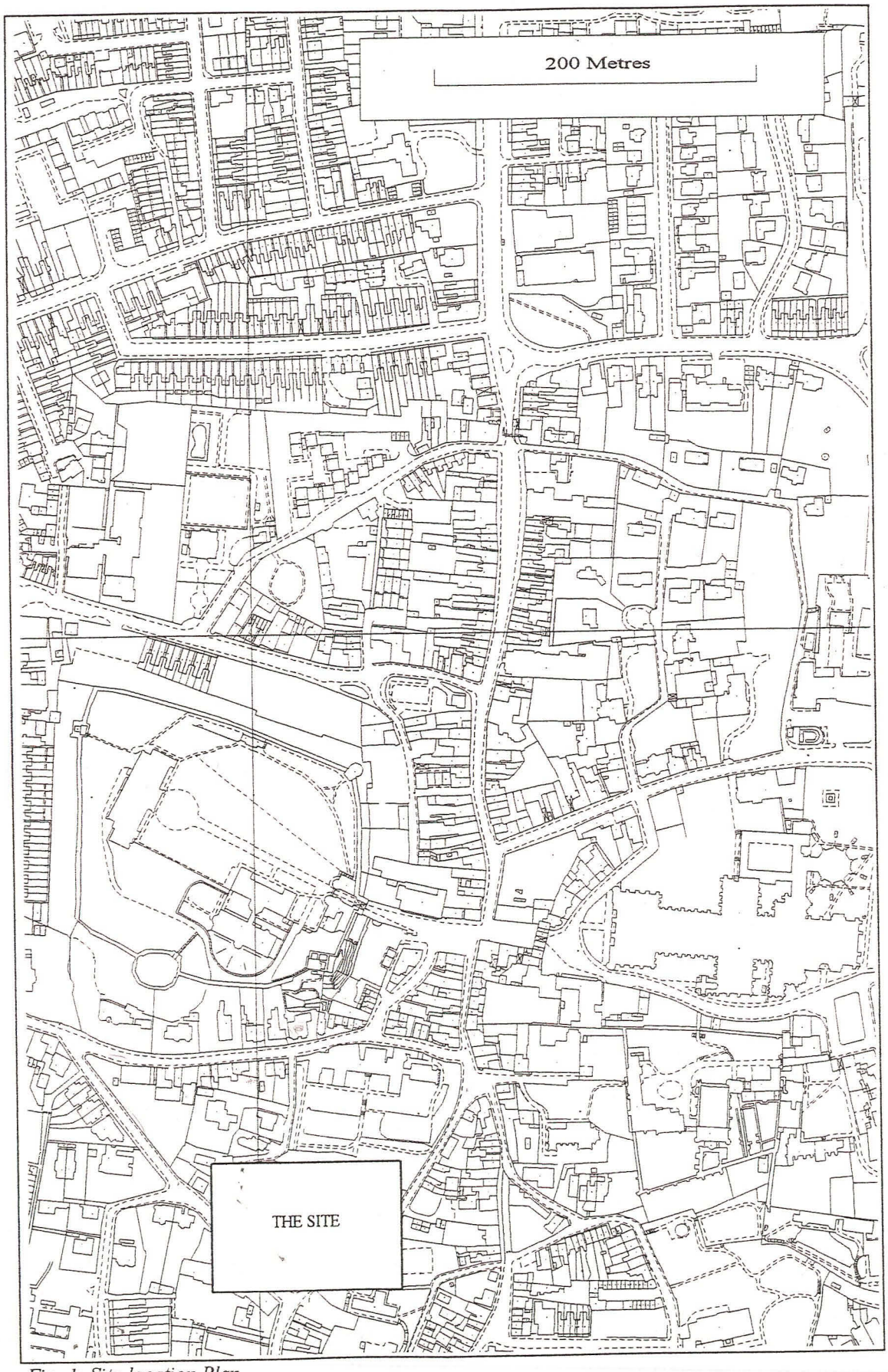


Fig. 1: Site location Plan.

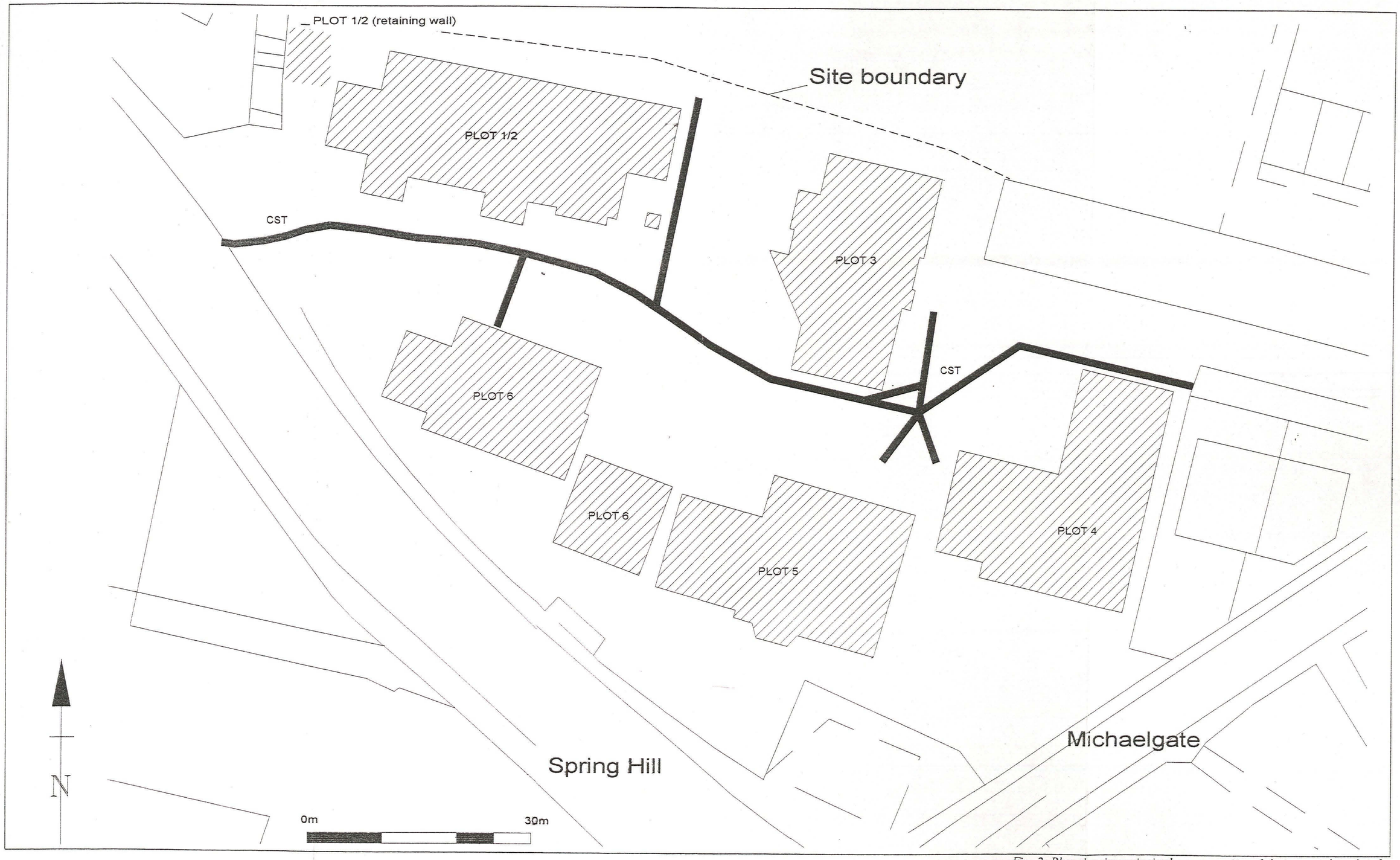


Fig. 2: Plan showing principal areas monitored during watching brief.

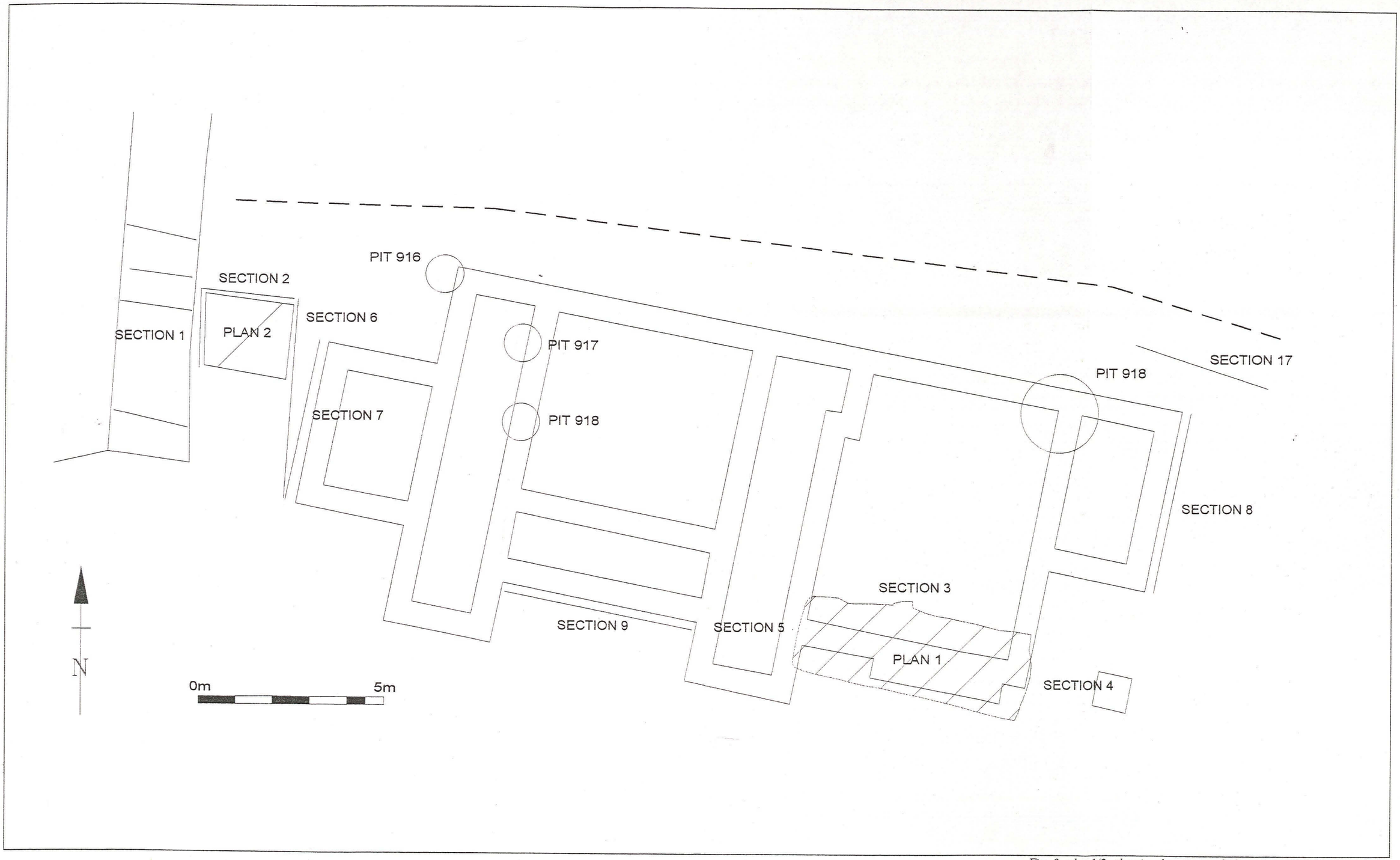
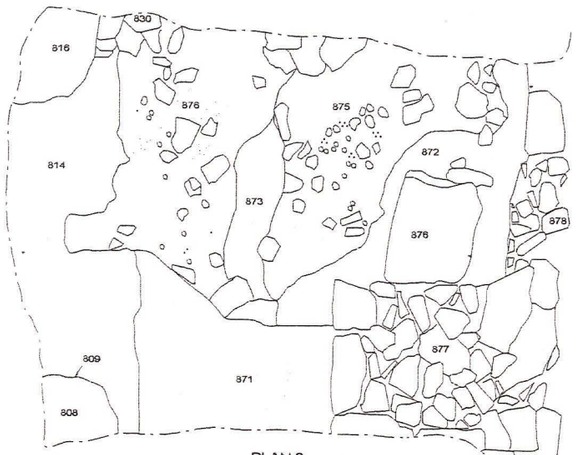


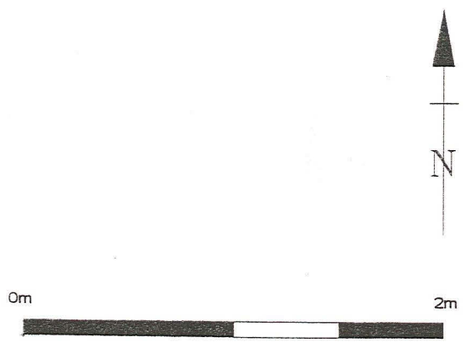
Fig. 3: plot 1/2- showing locations of Plans 1 and 2 & Sections 1-9.

SECTION 2

SECTION 1

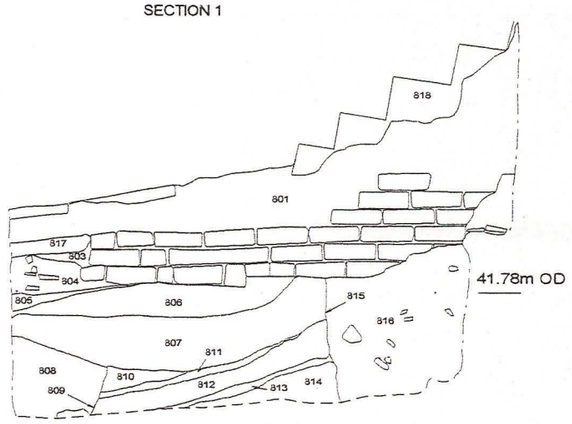


PLAN 2



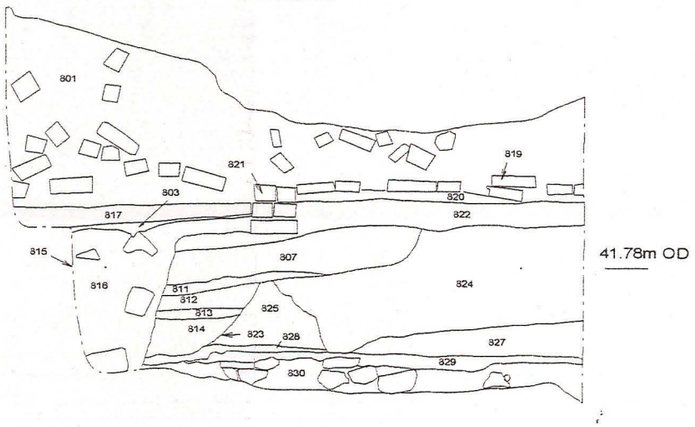
S N

SECTION 1



W E

SECTION 2



SECTION 6

SECTION 6

S N

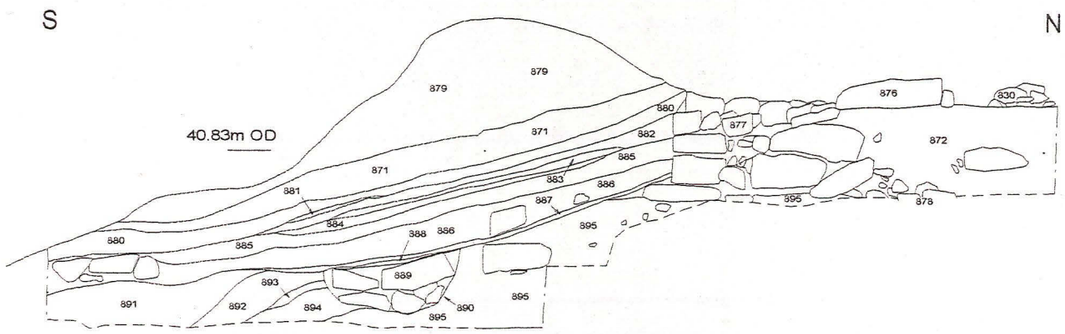


Fig. 4: Plot 1/2 – Plan 2 & Section s 1, 2 & 6.

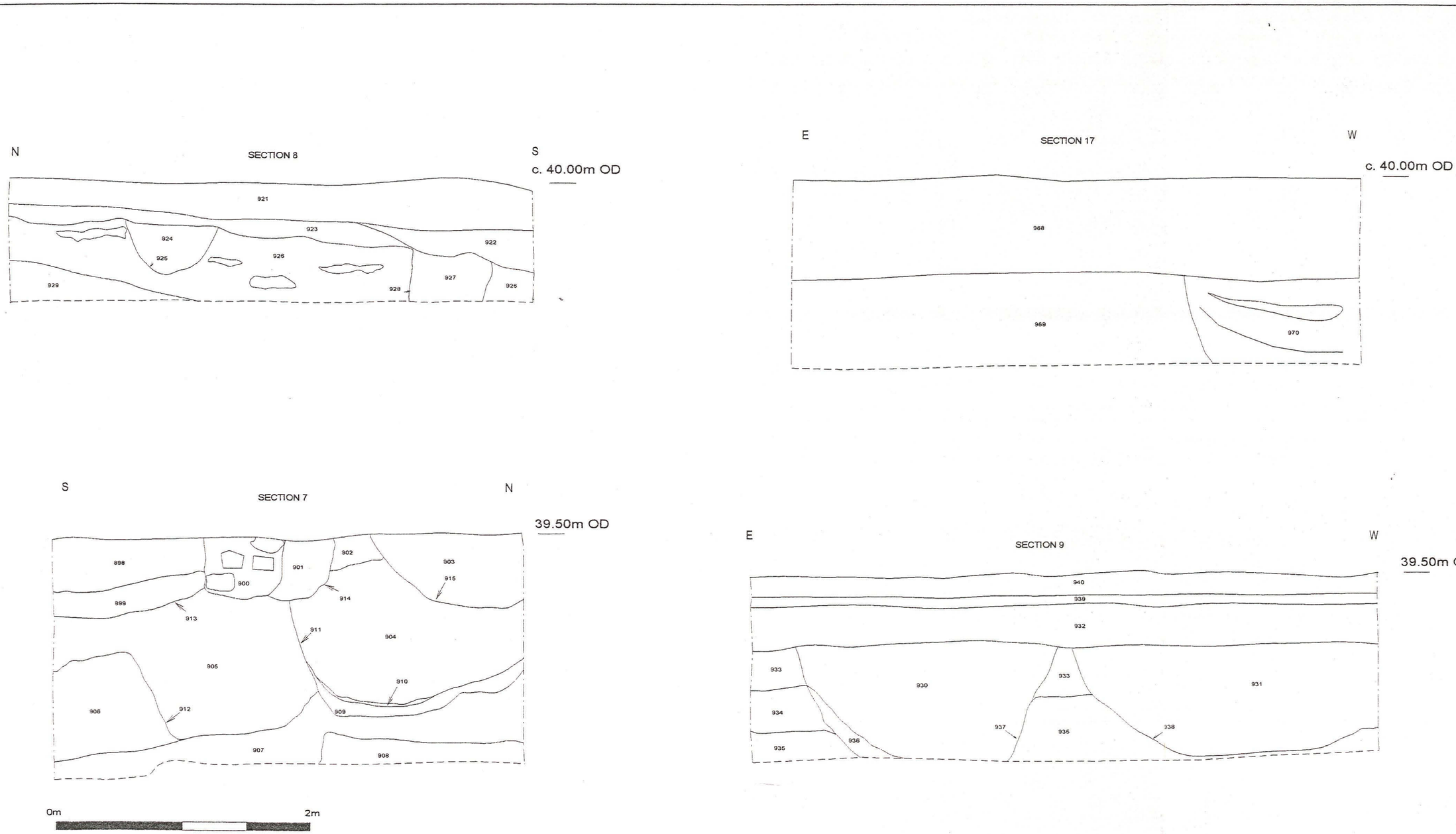


Fig. 5: Plot 1/2 - Sections 7-9 &17.

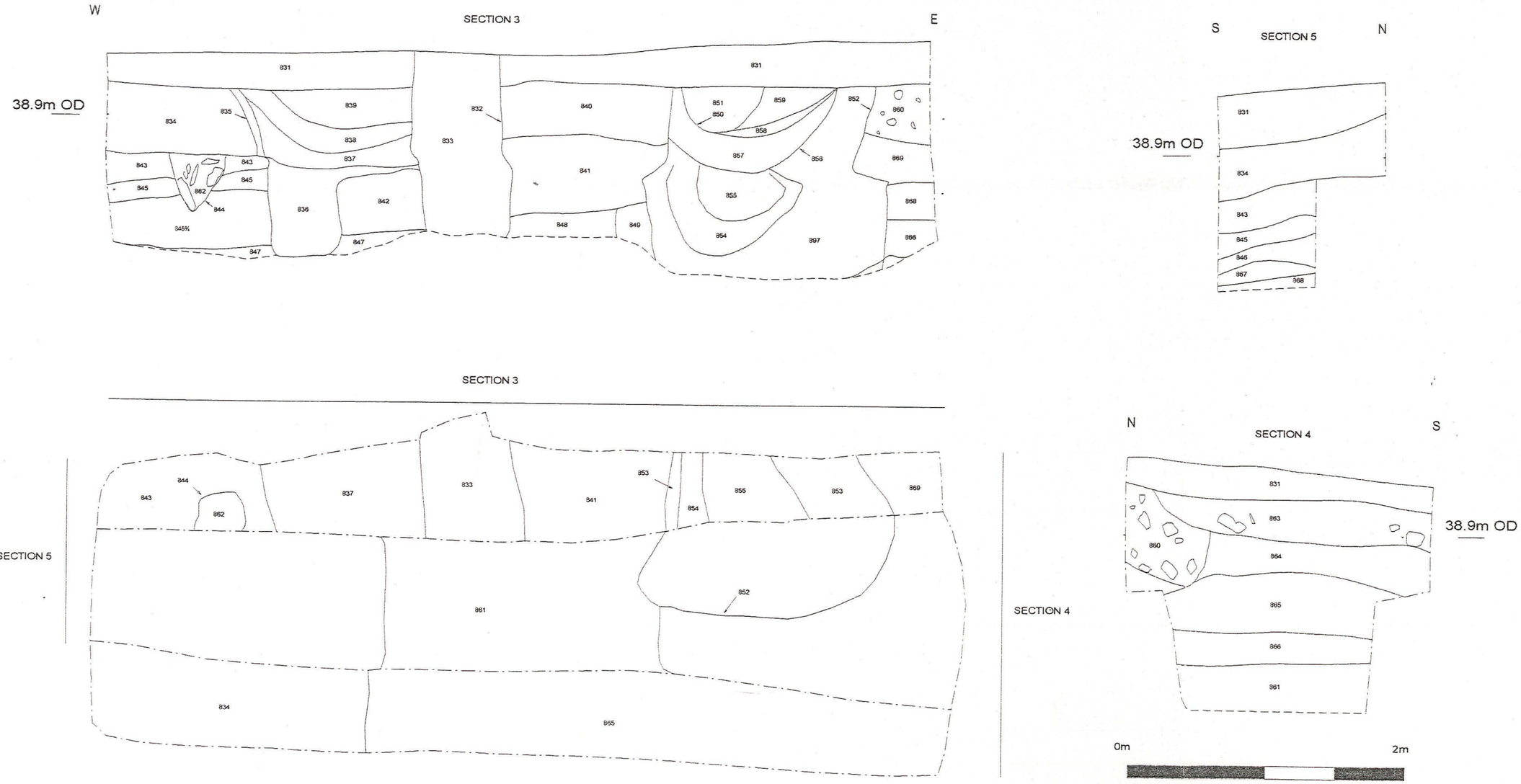


Fig. 6: Plot 1/2 – Plan 1, Sections 3-5.

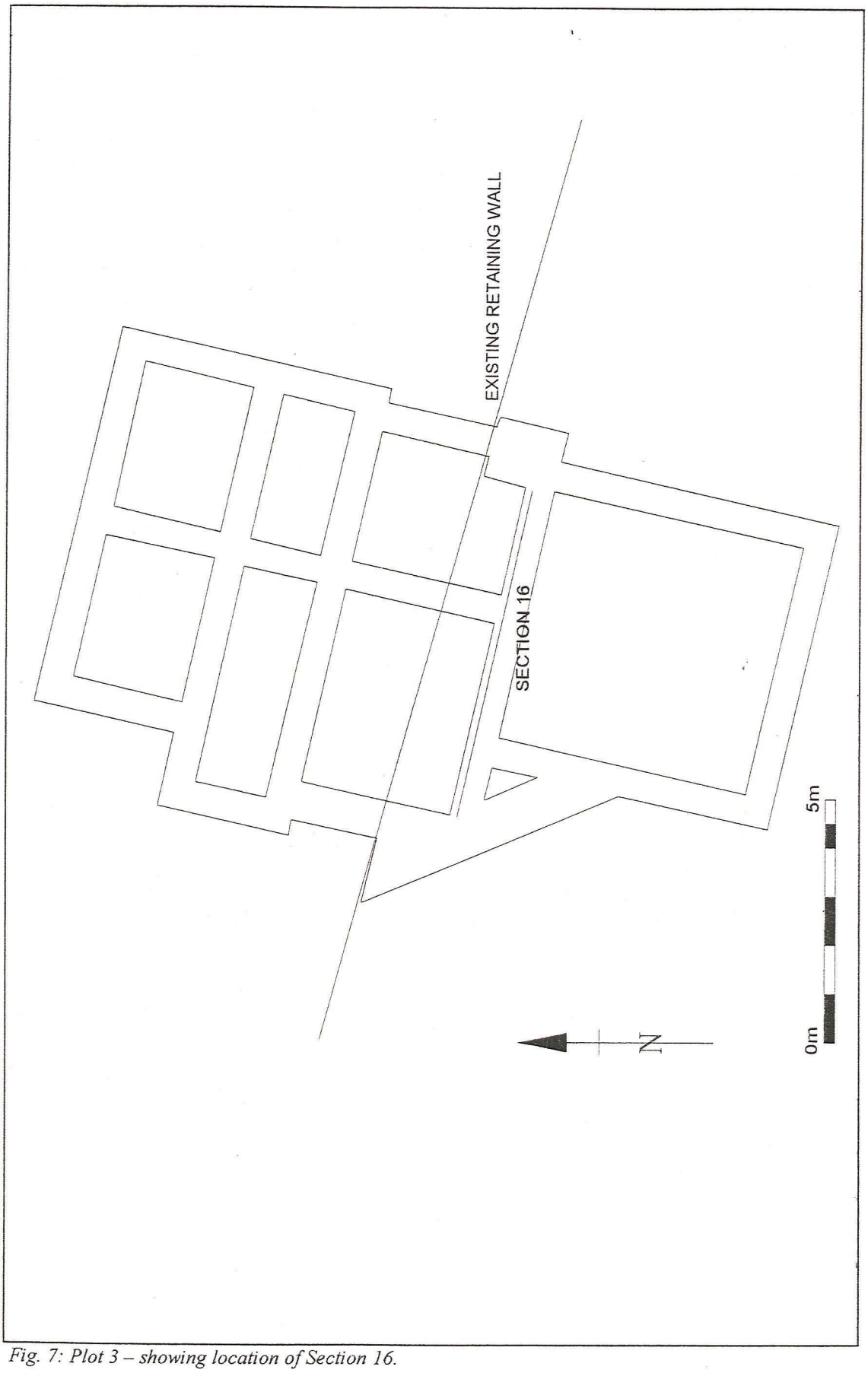


Fig. 7: Plot 3 – showing location of Section 16.

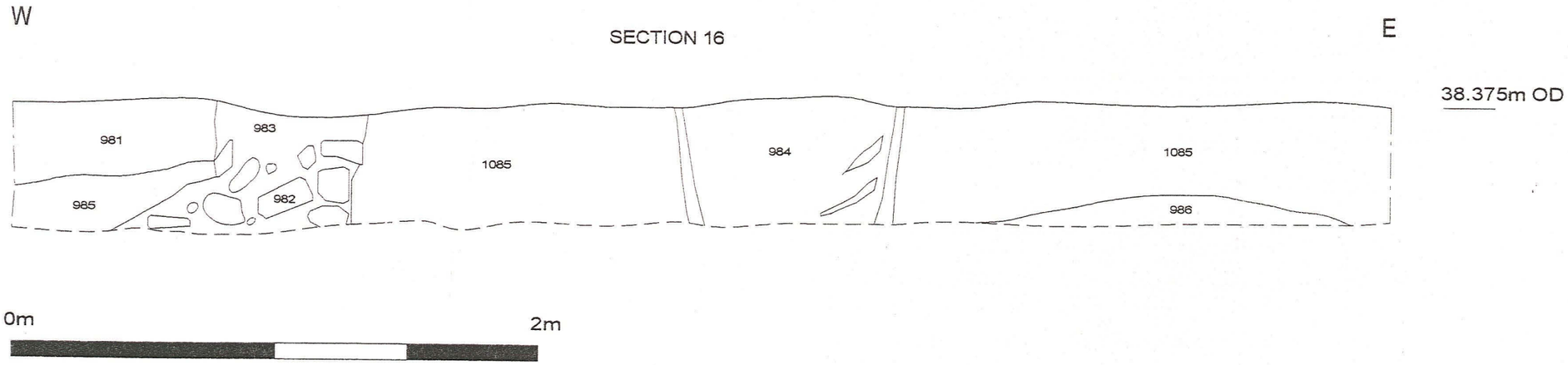


Fig. 8: Plot 3 – Section 16..

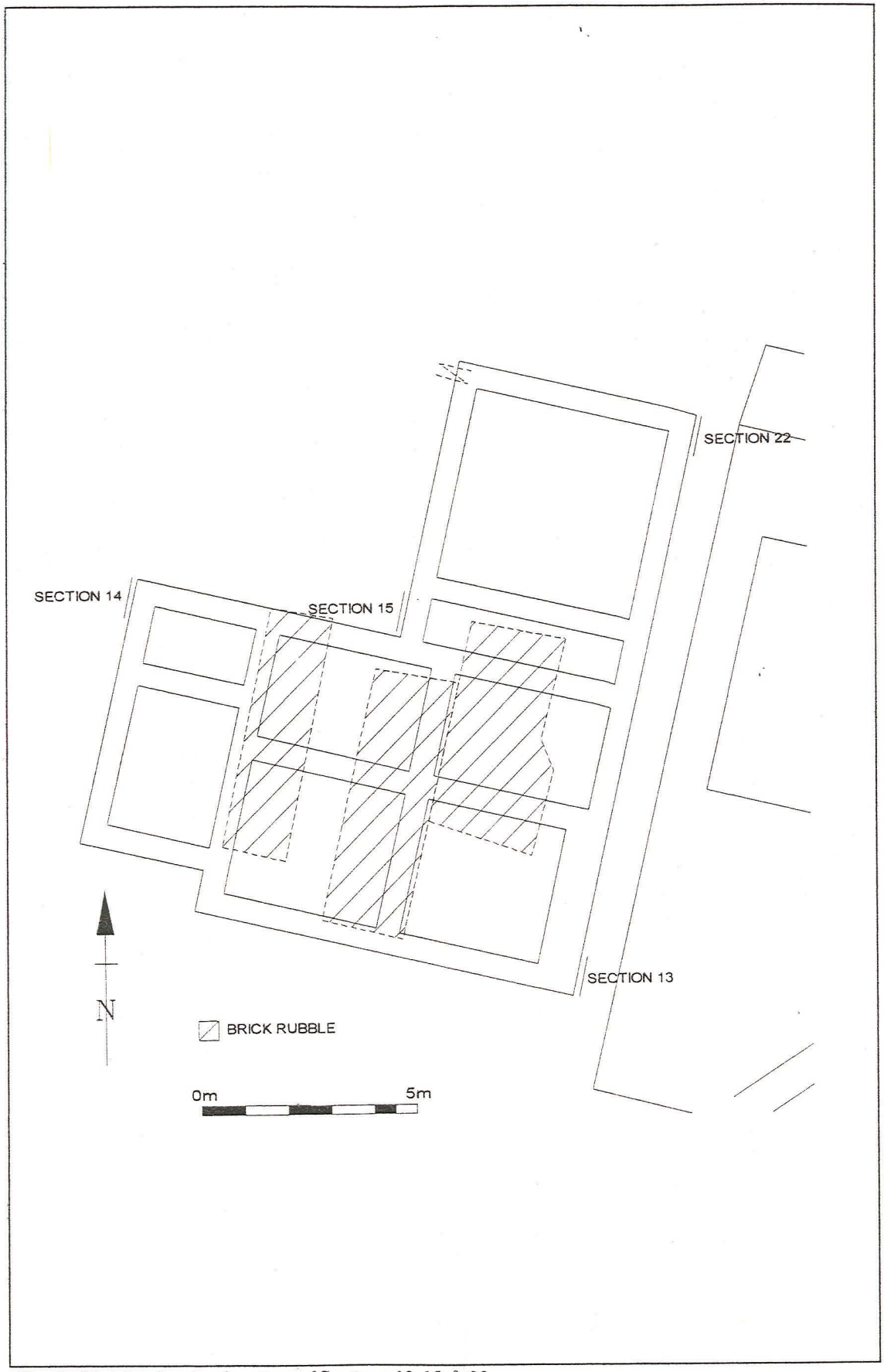


Fig. 9: Plot 4 - showing location of Sections 13-15 & 22..

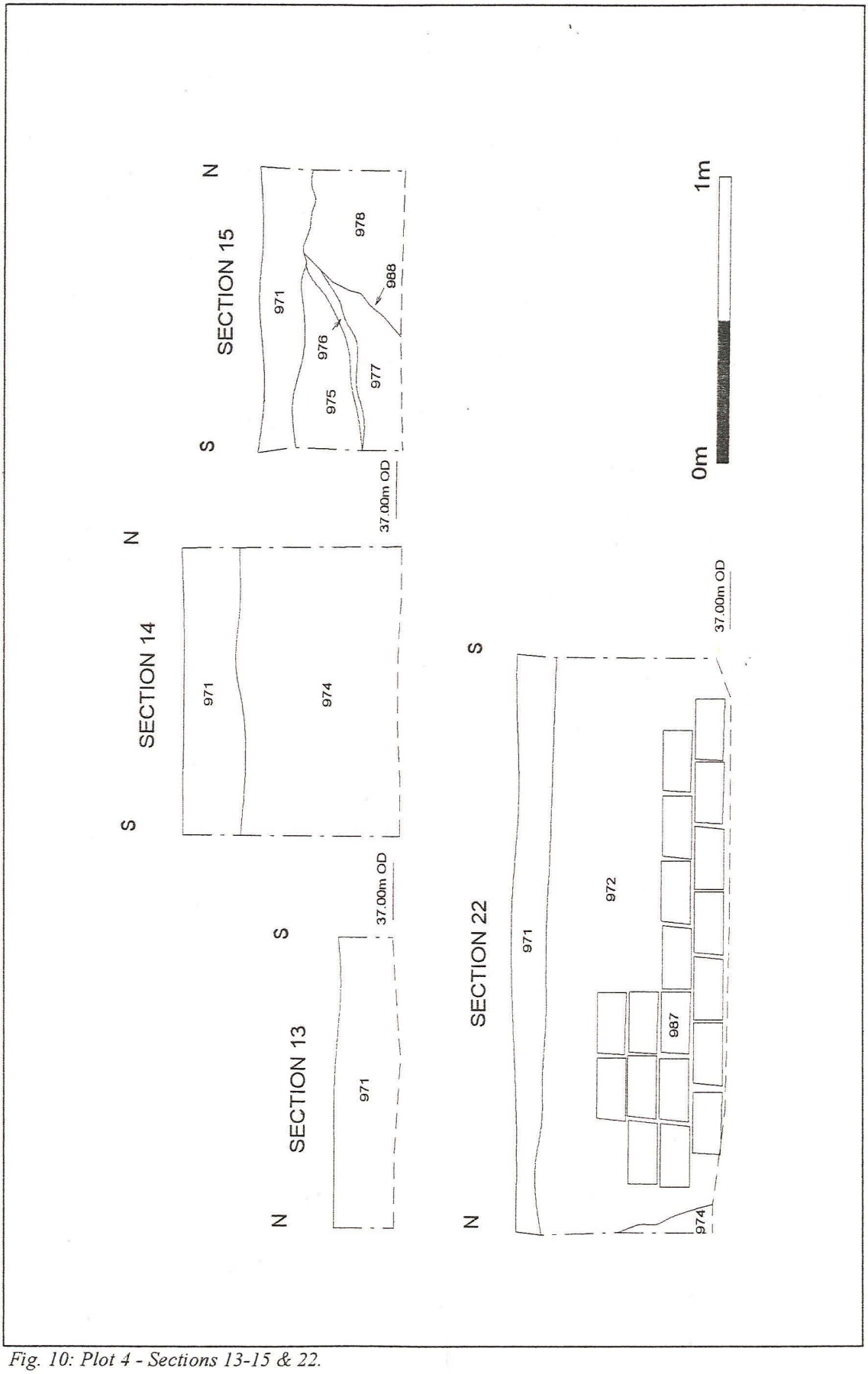


Fig. 10: Plot 4 - Sections 13-15 & 22.

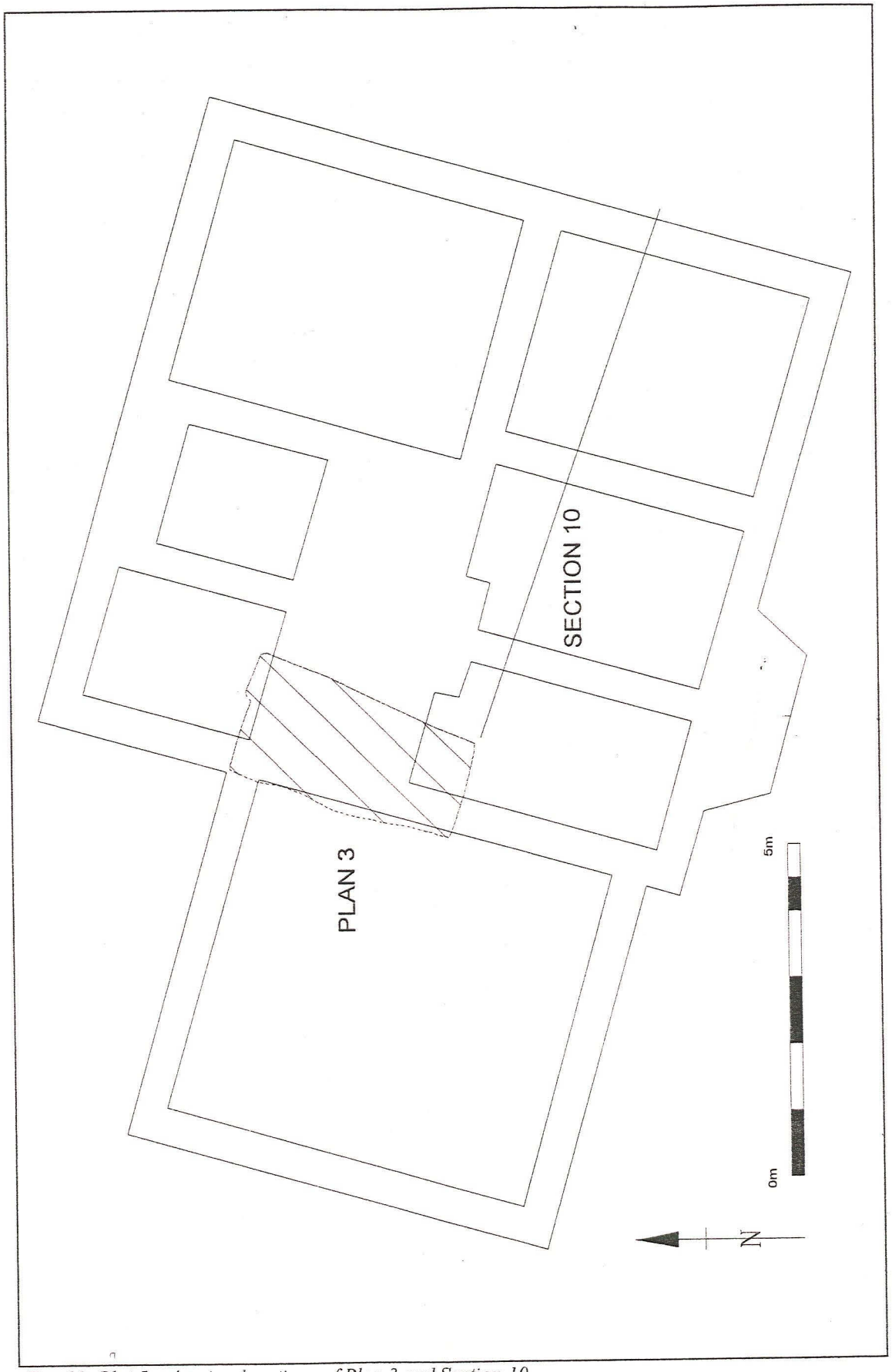
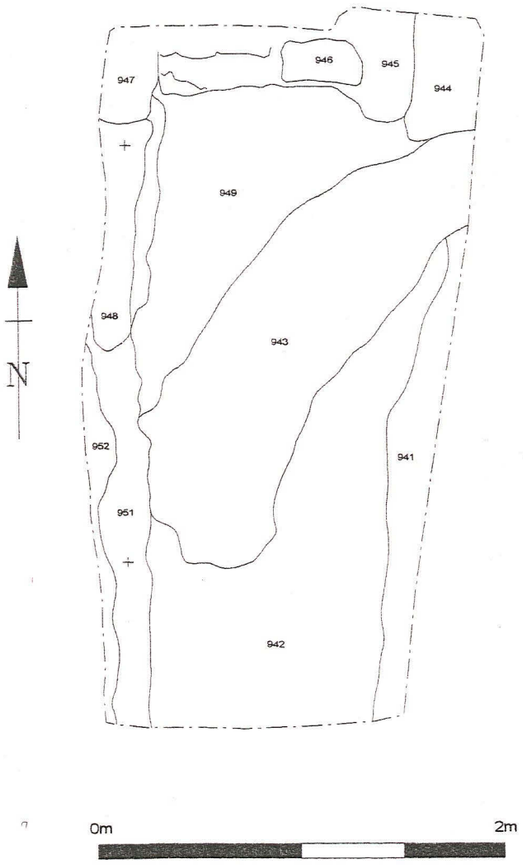


Fig. 11: Plot 5 - showing locations of Plan 3 and Section 10.

PLAN 3



SECTION 10

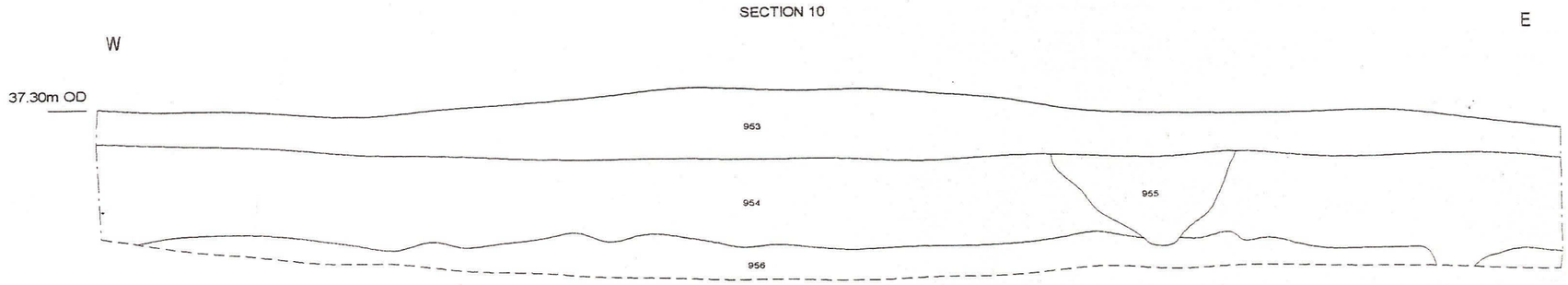


Fig. 12: Plot 5 – Plan 3 & Section 10.

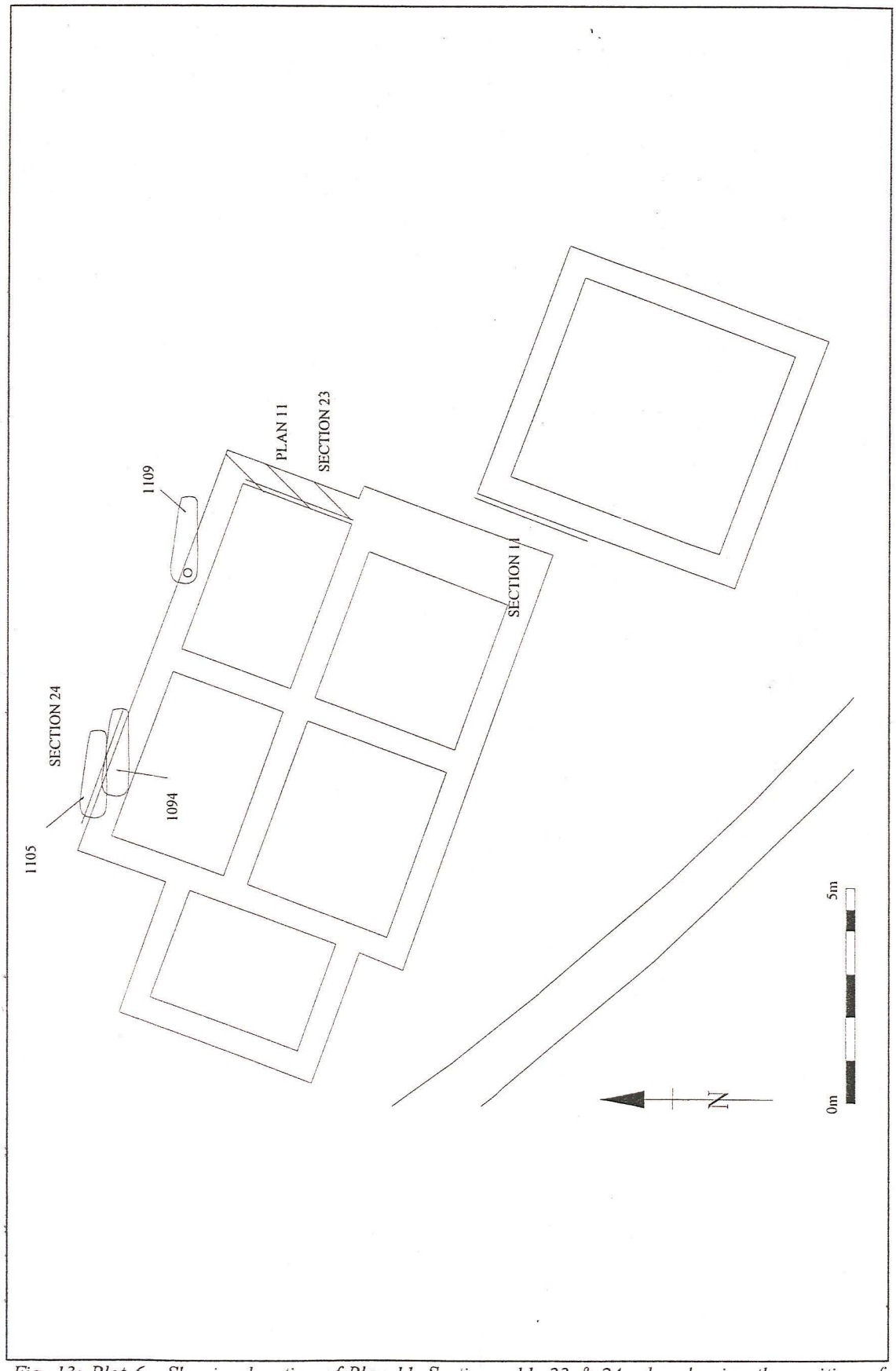


Fig. 13: Plot 6 - Showing location of Plan 11, Sections 11, 23 & 24, also showing the position of burials.

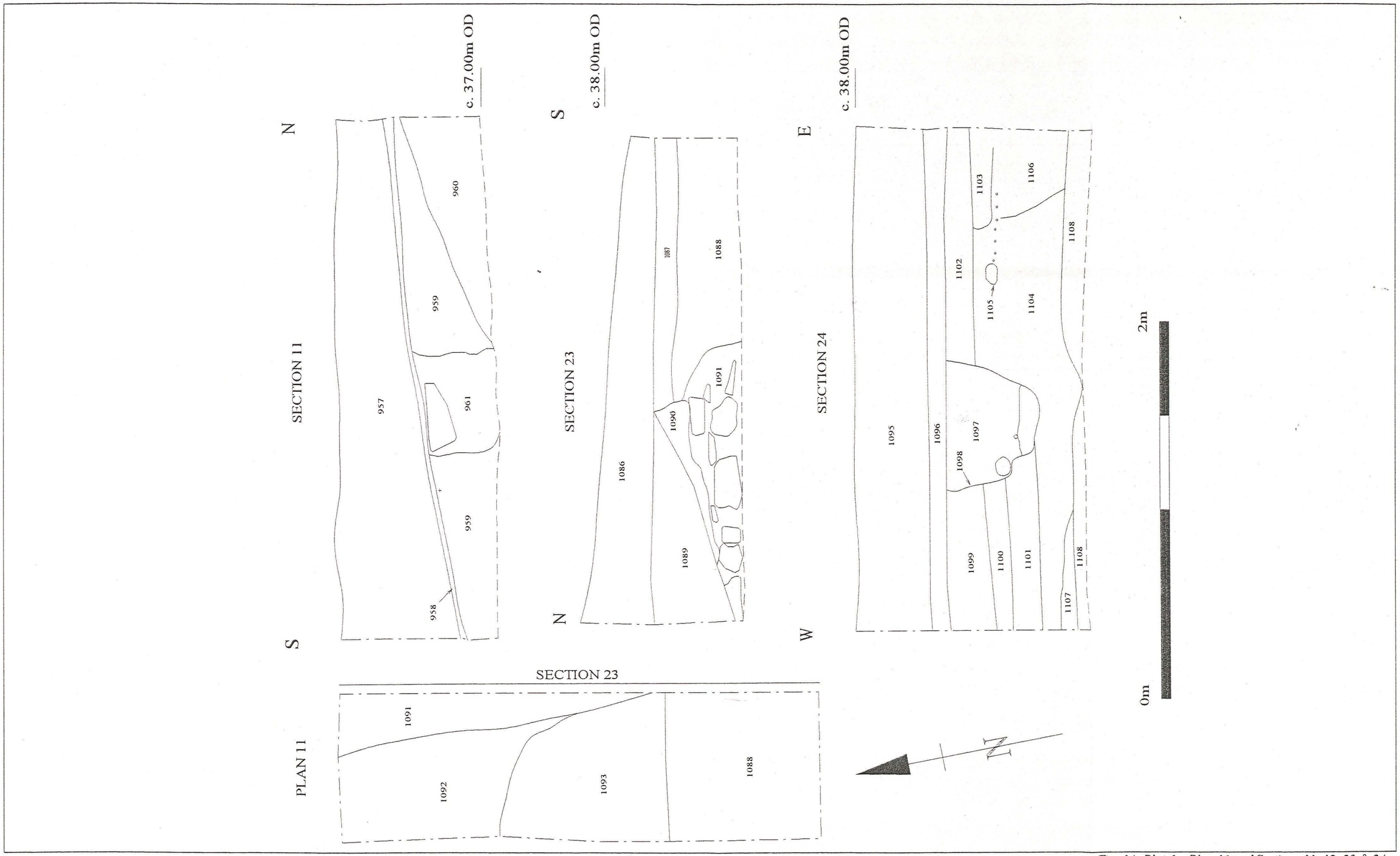


Fig. 14: Plot 6 – Plan 11 and Sections 11, 12, 23 & 24.

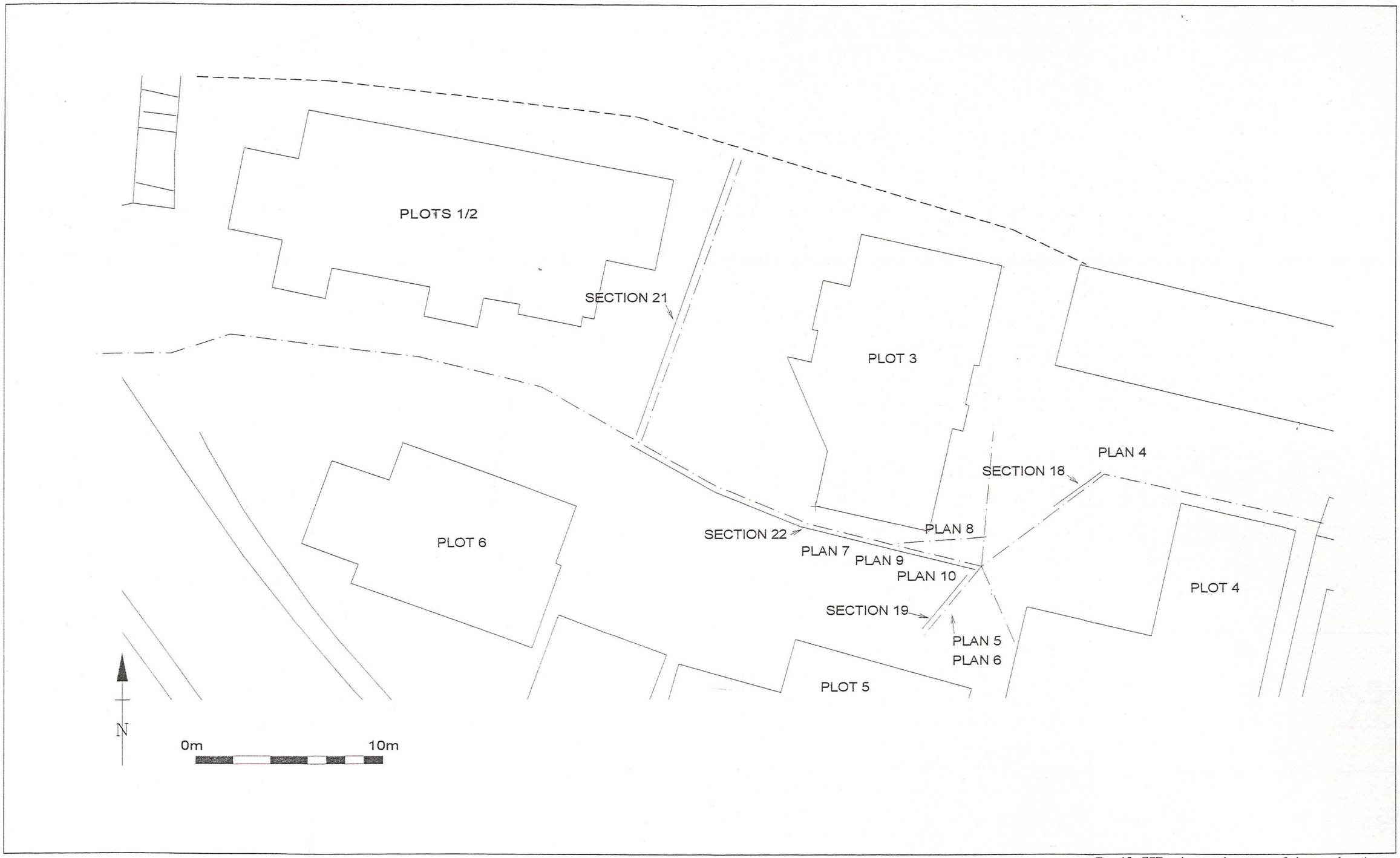


Fig. 15: CST – showing locations of plans and sections.

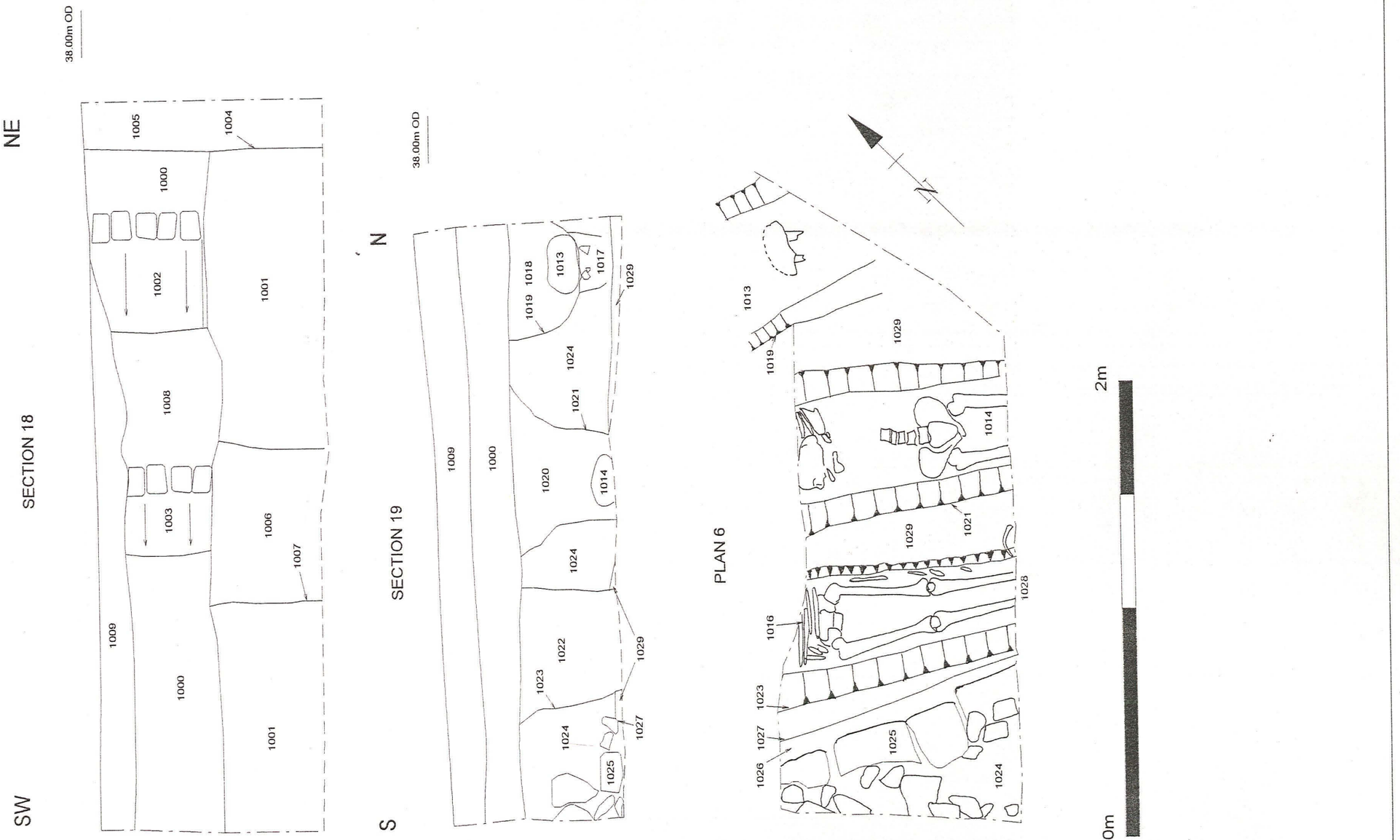
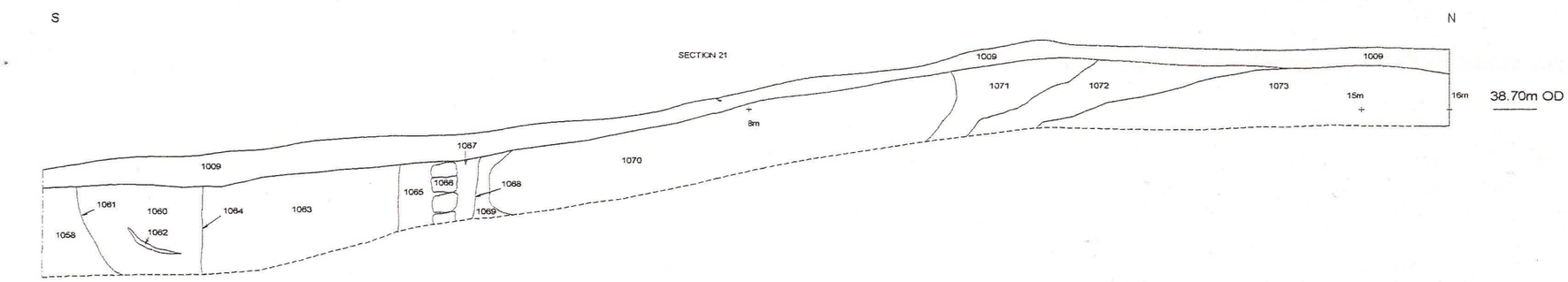


Fig. 16: CST - Plan 6 and Sections 18 & 19.



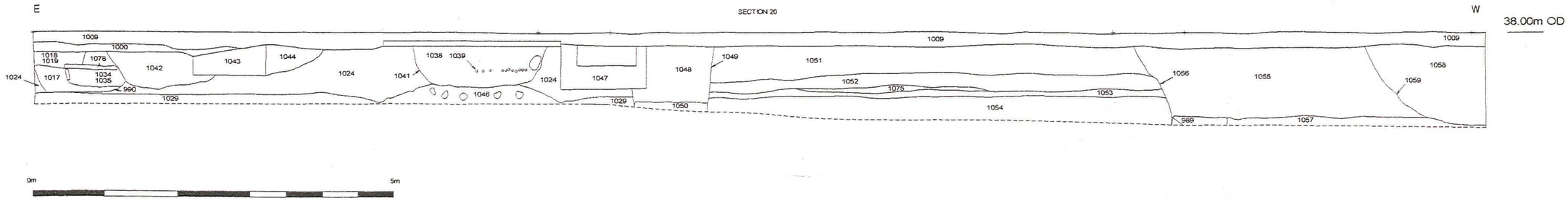


Fig. 17: CST – Sections 20 & 21.

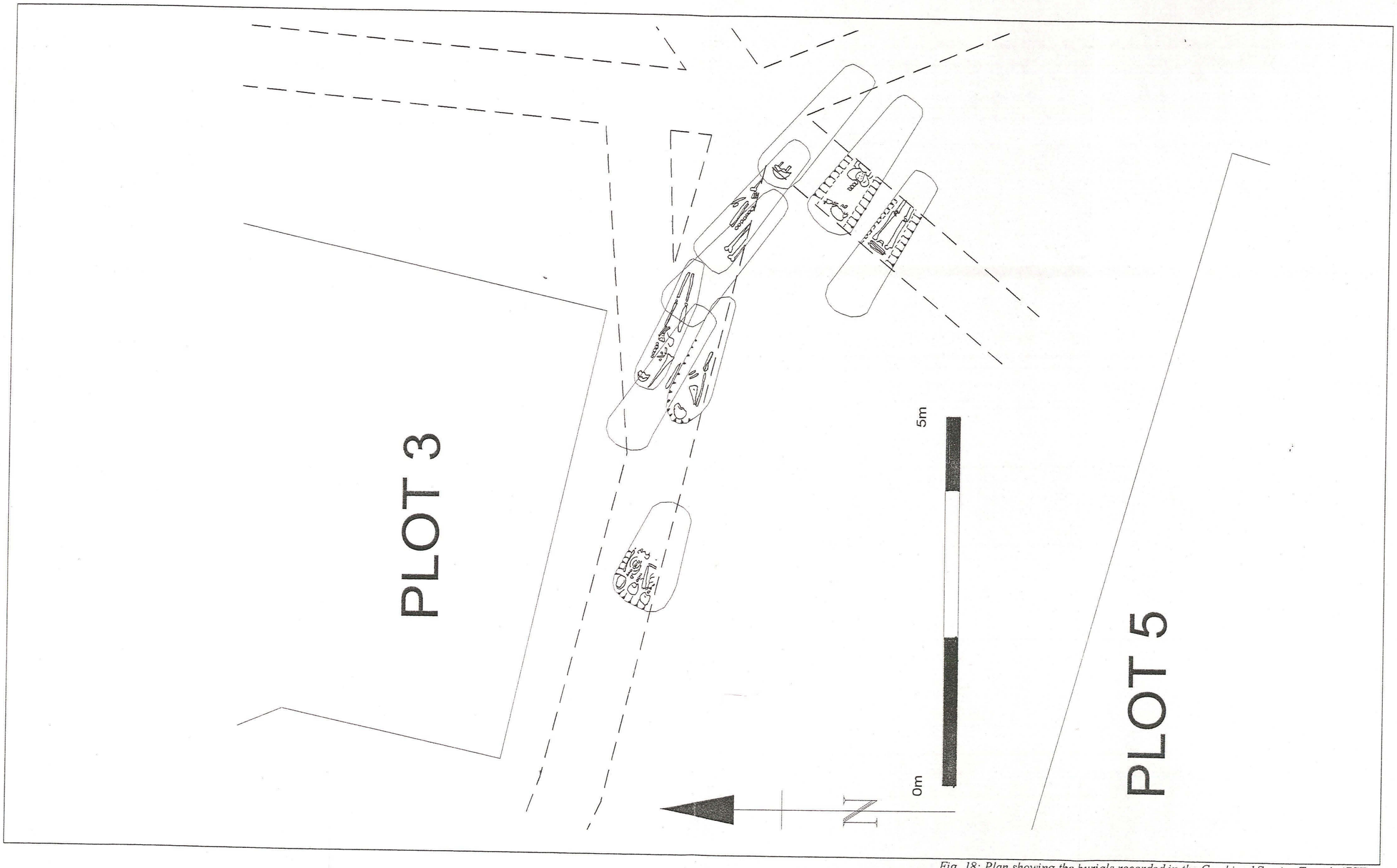


Fig. 18: Plan showing the burials recorded in the Combined Service Trench (CST).

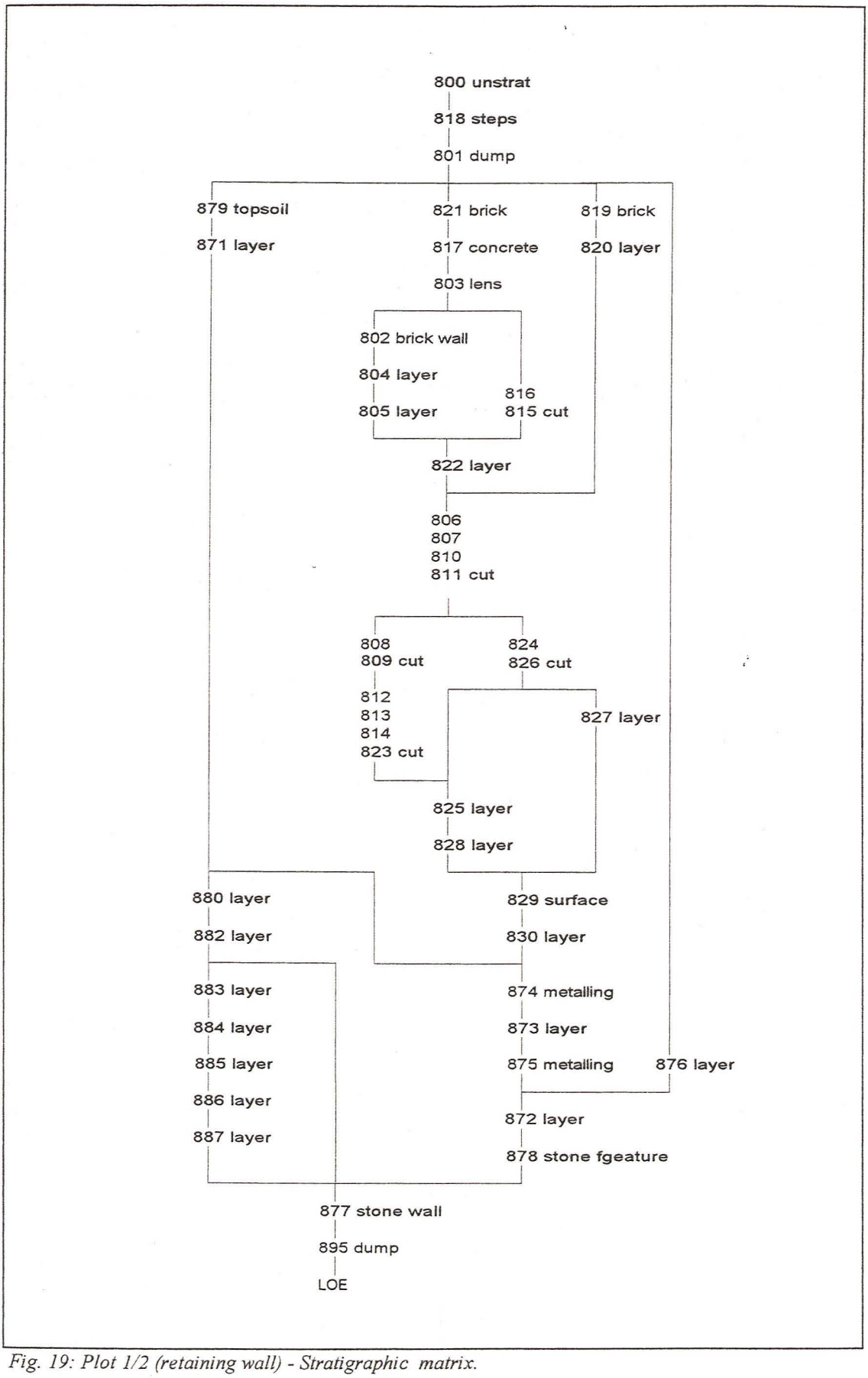


Fig. 19: Plot 1/2 (retaining wall) - Stratigraphic matrix.

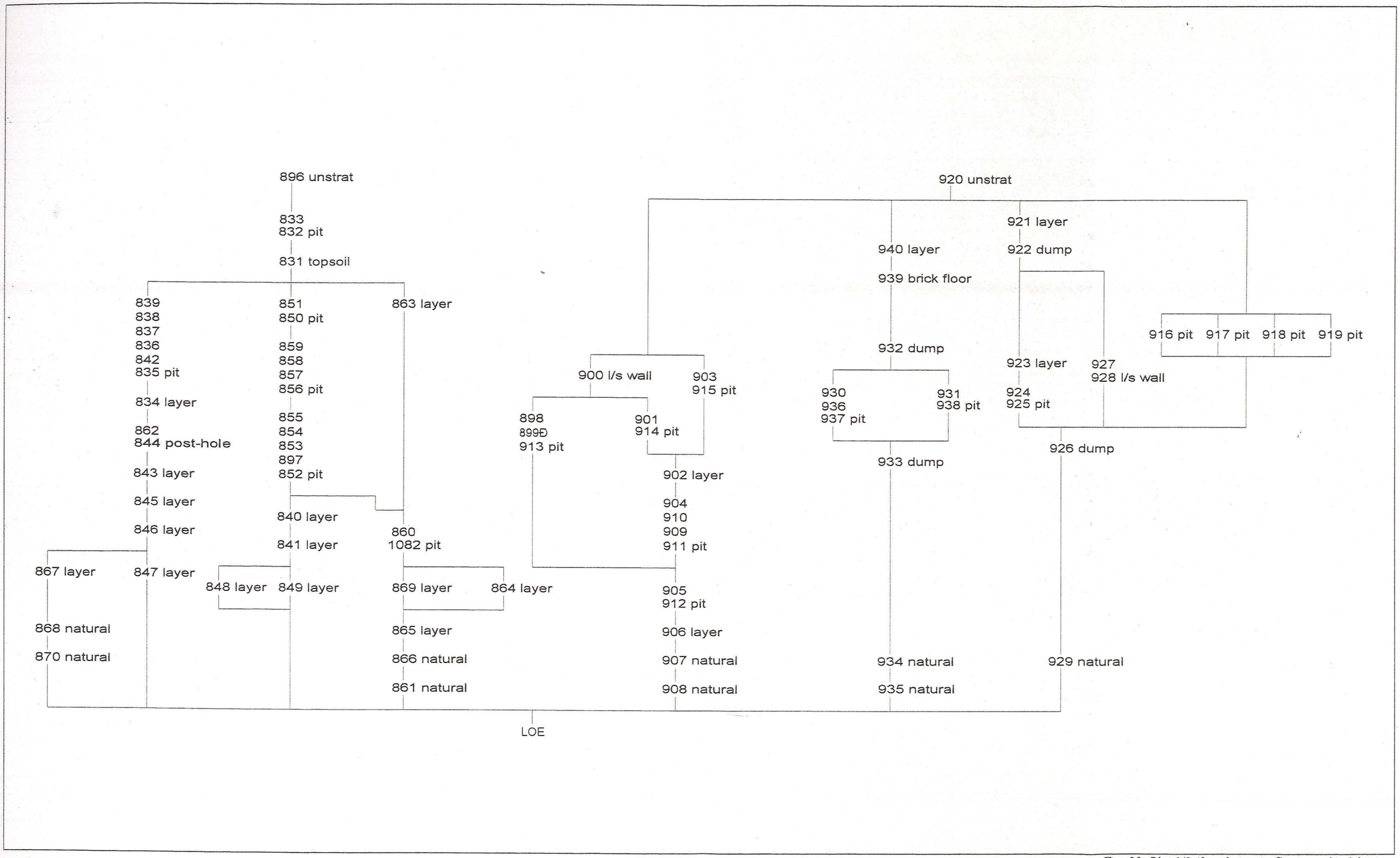


Fig. 20: Plot 1/2 (foundations) - Stratigraphic Matrix.

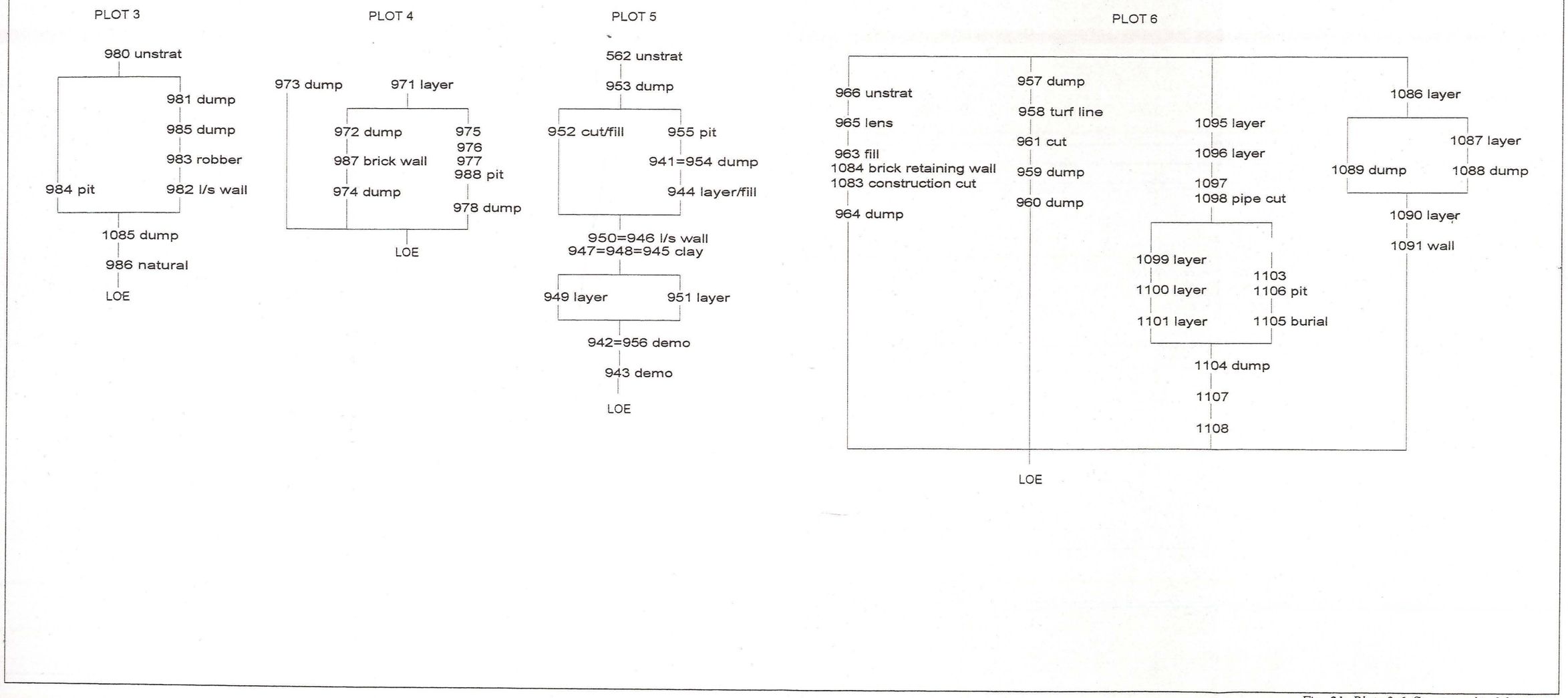


Fig. 21: Plots 3-6-Stratigraphic Matrices.

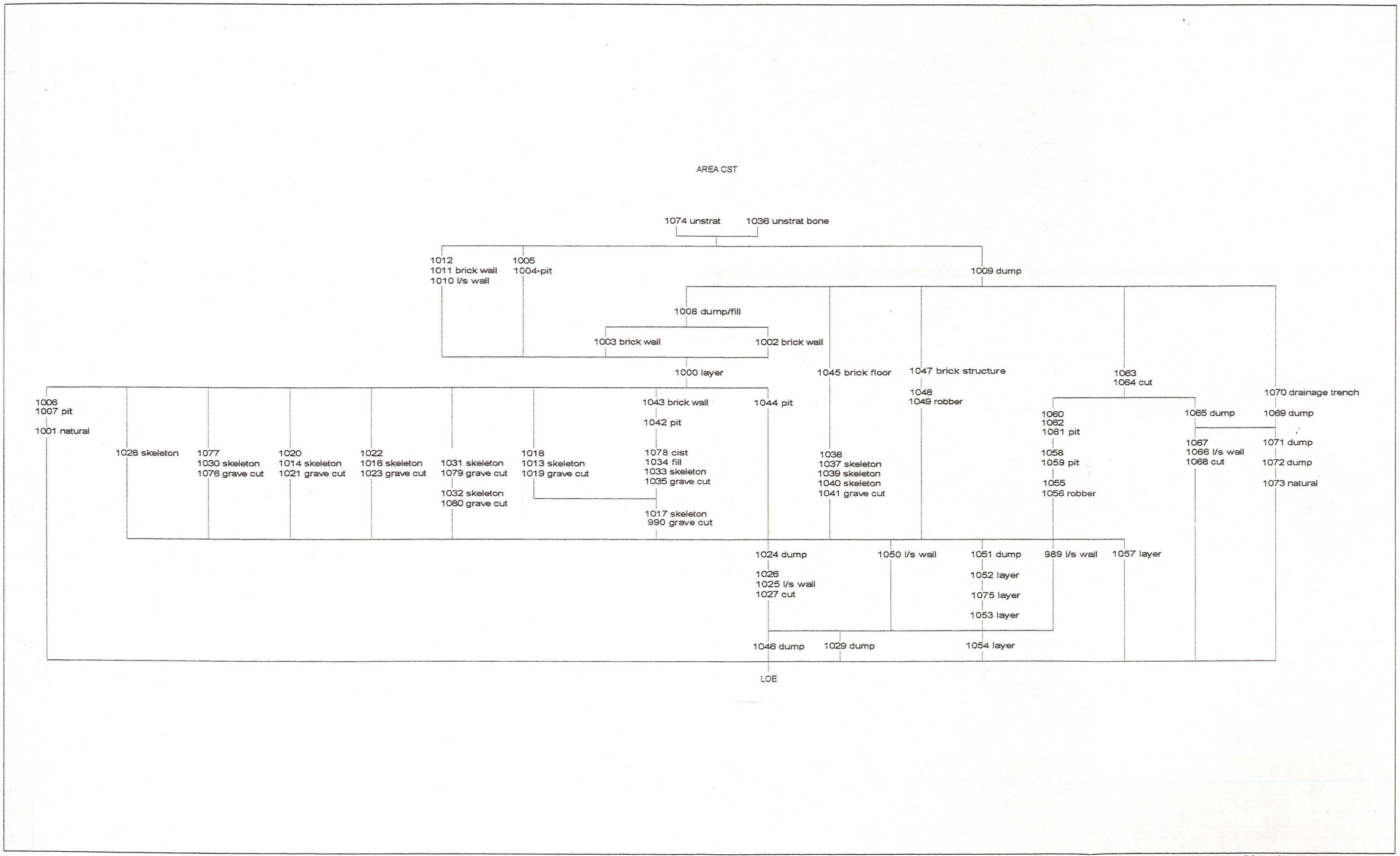


Fig. 22: CST – Stratigraphic Matrix.

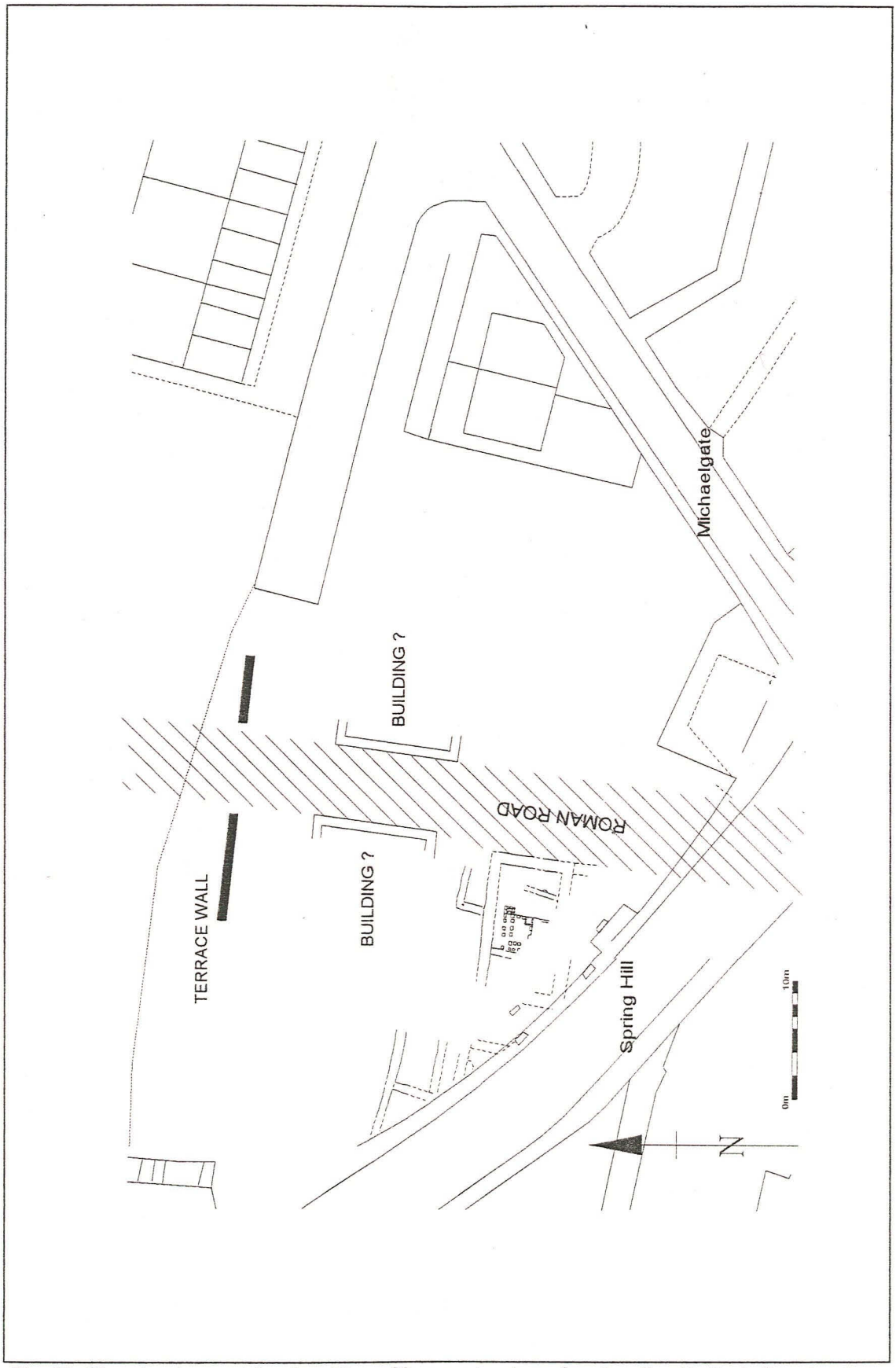


Fig. 23: Plan showing postulated position of Roman structures found on the site (including structures recorded during earlier interventions).

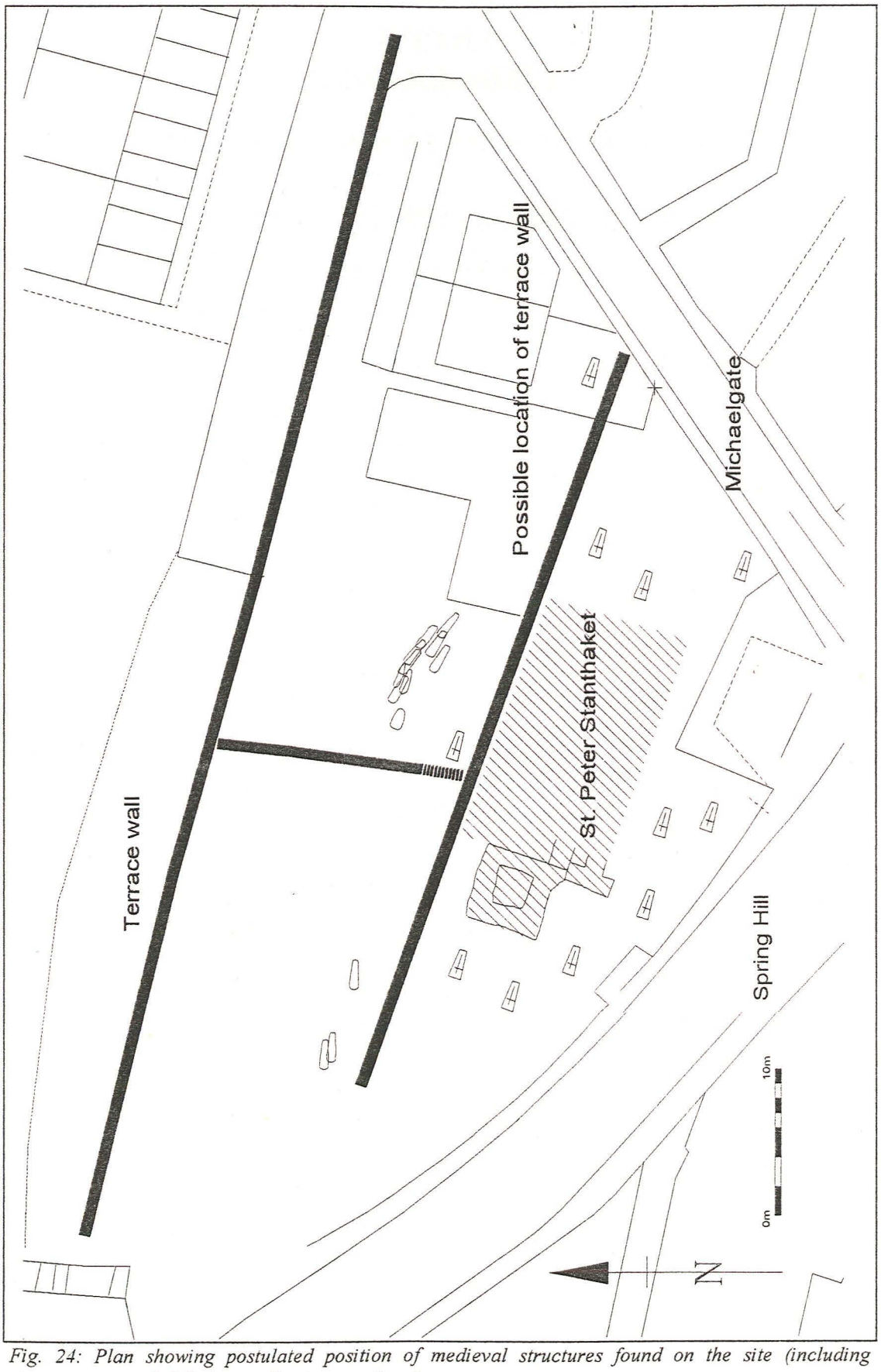


Fig. 24: Plan showing postulated position of medieval structures found on the site (including structures recorded during earlier interventions).

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

APPENDIX 1 - LHA NOTE & ARCHIVE DETAILS

LHA NOTE DETAILS

CLAU CODE: SPMC97

CLAU REPORT No.: 369

PLANNING APPLICATION NO.: n/a

FIELD OFFICER: Michael Jarvis

NGR: SK 9753 7163

CIVIL PARISH: Lincoln

SMR No.: -

DATE OF INTERVENTION: June 1997 - February 1998.

TYPE OF INTERVENTION: Watching Brief

UNDERTAKEN FOR: Foxby Court Developments Ltd

ARCHIVE DETAILS

PRESENT LOCATION: City of Lincoln Archaeology Unit, Charlotte House, The Lawn, Union Road, Lincoln, LN1 3BL.

FINAL LOCATION: The City and County Museum, Friars Lane, Lincoln.

MUSEUM ACCESSION No.: 134.97

ACCESSION DATE: -

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

APPENDIX 2 - CONTEXT SUMMARY

Context	*Trench*	*Brief Description*
800	PI	unstratified finds from NE corner of the site
801	P1	modern dump layer
802	P1	modern brick wall/foundation
803	P1	black ash bedding for 817
804	P1	dump layer
805	P1	mortar layer/lens
806	P1	dump layer
807	P1	fill/dump
808	P1	fill of 809
809	P1	cut feature
810	P1	fill/dump
811	P1	mortar layer/lens
812	P1	fill/dump
813	P1	mortar layer/lens
814	P1	fill/dump
815	P1	cut feature
816	P1	fill of 815
817	P1	concrete floor
818	P1	Gibraltar Hill steps
819	P1	brick floor/surface
820	P1	bedding for 819
821	P1	brick feature
822	P1	layer
823	P1	cut feature
824	P1	layer/fill
825	P1	layer
826	P1	cut feature
827	P1	layer
828	P1	layer
829	P1	layer/surface
830	P1	layer
831	P1	modern topsoil
832	P1	cut for trial trench
833	P1	fill of trial trench
834	P1	layer
835	P1	pit cut
836	P1	fill of 835
837	P1	fill of 835
838	P1	fill of 835
839	P1	fill of 835
840	P1	layer
841	P1	layer

842	P1	layer
843	P1	layer
844	P1	cut
845	P1	layer
846	P1	layer
847	P1	layer
848	P1	layer
849	P1	cessy material
850	P1	cut
851	P1	fill of 850
852	P1	pit cut
853	P1	fill of 852
854	P1	fill of 852?
855	P1	fill of 852?
856	P1	cut
857	P1	fill of 856
858	P1	fill of 856
859	P1	fill of 856
860	P1	layer
861	P1	natural clay
862	P1	fill of 844
863	P1	layer
864	P1	layer
865	P1	layer
866	P1	layer
867	P1	layer
868	P1	layer
869	P1	layer
870	P1	layer - undisturbed natural
871	P1	layer/dump
872	P1	layer/dump
873	P1	layer/dump
874	P1	metalled surface
875	P1	metalled surface
876	P1	large l/s block
877	P1	possible east-west wall
878	P1	l/s concentration/feature
879	P1	topsoil/dump layer
880	P1	dump layer
881	P1	dump layer/lens
882	P1	dump layer/lens
883	P1	dump layer/lens
884	P1	dump layer/lens
885	P1	dump layer
886	P1	dump layer
887	P1	dump/lens
888	P1	dump/lens
889	P1	stone fill
890	P1	poss. cut feature
891	P1	dump/layer
892	P1	dump/layer
893	P1	lens/dump
894	P1	dump layer
895	P1	dump layer

896	P1	unstratified find from trench
897	P1	fill of 852
898	P1	fill of 913
899	P1	fill of 913
900	P1	wall
901	P1	fill of 914
902	P1	layer
903	P1	fill of 915
904	P1	fill of 911
905	P1	fill of 912
906	P1	layer/dump
907	P1	natural brash/clay
908	P1	natural clay
909	P1	organic primary fill of 911
910	P1	charcoal secondary fill of 911
911	P1	pit cut
912	P1	pit cut
913	P1	pit cut
914	P1	pit/construction cut
915	P1	pit cut
916	P1	pit cut/fill
917	P1	pit fill
918	P1	pit fill
919	P1	pit fill
920	P1	unstratified finds from Plot 1/2
921	P1	layer
922	P1	layer
923	P1	layer
924	P1	fill of pit 925
925	P1	pit cut
926	P1	dump layer
927	P1	e-w wall/stone foundations
928	P1	construction cut for wall 927
929	P1	natural clay
930	P1	fill of pit 937
931	P1	fill of pit 938
932	P1	layer
933	P1	layer
934	P1	layer
935	P1	natural clay
936	P1	primary fill of pit 937
937	P1	pit cut
938	P1	pit cut
938	P1	brick surface
940	P1	layer
941	P5	layer
942	P5	layer
943	P5	demolition/fill
944	P5	layer/grave fill
945	P5	layer - structural
946	P5	structure
947	P5	clay - structural
948	P5	layer - structural
949	P5	layer

950	P5	structure
951	P5	layer/fill
952	P5	layer - modern
953	P5	layer - modern
954	P5	layer/dump
955	P5	pit fill - modern
956	P5	layer/demolition
957	P6	layer - modern
958	P6	buried topsoil/turf-line
959	P6	layer/dump
960	P6	layer
961	P6	modern pit fill
962	P5	unstratified finds from area of Plot 5
963	E	infill - construction cut for boundary wall
964	E	dump
965	E	layer - modern
966	E	unstratified finds from trial pit at site entrance
967	P1	unstratified finds from north of site (bank)
968	P1	dump
969	P1	natural clay
970	P1	pit fill
971	P4	topsoil for Plot 4
972	P4	layer
973	P4	layer
974	P4	layer
975	P4	fill
976	P4	fill
977	P4	fill
978	P4	layer
979	P1	unstratified finds from timber wall extension
980	P3	unstratified find from plot 3
981	P3	layer
982	P3	N-S L/S wall
983	P3	robber trench fill
984	P3	pit fill
985	P3	redeposited natural
986	P3	natural clay
987	P4	n/s brick wall
988	P4	pit cut
989	CST	n/s limestone wall/foundations
990	CST	grave cut - burial 1017
991	CST	grave fill - cut 1079
992	CST	grave fill - cut 1080
993	CST	grave fill - cut 990
994		NOT USED
995		NOT USED
996		NOT USED
997		NOT USED
998		NOT USED
999		NOT USED
1000	CST	layer
1001	CST	natural clay
1002	CST	brick wall
1003	CST	brick wall

1004	CST	it cut
1005	CST	fill
1006	CST	layer/dump
1007	CST	rectilinear cut
1008	CST	layer/fill
1009	CST	limestone hard-core
1010	CST	n-s, limestone wall
1011	CST	brick wall
1012	CST	brick infill
1013	CST	skeleton
1014	CST	skeleton
1015	CST	unstratified from CTS northern end
1016	CST	skeleton
1017	CST	skeleton
1018	CST	grave fill
1019	CST	grave cut
1020	CST	grave fill
1021	CST	grave cut
1022	CST	grave fill
1023	CST	grave cut
1024	CST	dump - poss. graveyard
1025	CST	e-w limestone wall
1026	CST	construction cut fill
1027	CST	construction cut for wall 1025
1028	CST	human remains - seen in section only and not investigate
1029	CST	layer/dump
1030	CST	skeleton
1031	CST	skeleton
1032	CST	skeleton
1033	CST	skeleton in cist
1034	CST	fill of grave cut 1035
1035	CST	grave cut
1036	CST	unstratified bone from CST
1037	CST	skeleton in 1041
1038	CST	fill of 1041
1039	CST	skeleton in 1041
1040	CST	skeleton on 1041
1041	CST	grave cut
1042	CST	modern fill
1043	CST	brick wall
1044	CST	modern fill
1045	CST	brick floor
1046	CST	dump deposit - Roman
1047	CST	brick structure
1048	CST	robber fill
1049	CST	robber cut
1050	CST	n-s limestone wall
1051	CST	layer/dump
1052	CST	layer
1053	CST	layer
1054	CST	layer - as 1029??
1055	CST	fill
1056	CST	robber cut
1057	CST	layer

1058	CST	fill of pit 1059
1059	CST	large pit cut
1060	CST	pit fill
1061	CST	pit cut
1062	CST	pit fill - lens
1063	CST	fill of modern trench - poss. archaeological
1064	CST	cut for 1063
1065	CST	layer/dump
1066	CST	e-w limestone wall
1067	CST	construction cut fill
1068	CST	construction cut for wall 1066
1069	CST	layer/dump
1070	CST	drainage trench infill
1071	CST	layer/dump
1072	CST	rubble layer
1073	CST	natural clay
1074	CST	unstratified finds from main CST
1075	CST	fill of grave 1076
1076	CST	grave cut - burial 1030
1077	CST	fill of grave 1076
1078	CST	limestone 'cist' for skeleton 1033
1079	CST	grave cut for skeleton 1031
1080	CST	grave cut for skeleton 1032
1081	P1	pit cut - fills 807 & 811
1082	P1	pit cut - fill 860
1083	E	construction cut for existing boundary wall 1084
1084	E	Spring Hill boundary wall
1085	P3	dump deposit
1086	P6	recent dump deposit
1087	P6	layer
1088	P6	layer
1089	P6	layer
1090	P6	layer
1091	P6	limestone wall
1092	P6	layer
1093	P6	layer
1094	P6	skeleton
1095	P6	recent dump deposit
1096	P6	recent deposit
1097	P6	fill
1098	P6	pipe cut - fill 1098
1099	P6	late dump
1100	P6	layer
1101	P6	layer - possible graveyard deposit
1102	P6	layer
1103	P6	layer
1104	P6	layer - possible graveyard deposit
1105	P6	skeleton
1106	P6	layer
1107	P6	layer
1108	P6	layer
1109	P6	skeleton - not removed
1110	P6	unstrat from NE corner of Plot 6
1111	P6	unstrat from machining/cleaning NE corner of Plot 6

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

APPENDIX 3 - LIST OF FINDS

FINDS DISCUSSION

Roman Pottery *by Barbara Precious*

Introduction and Dating

The excavations at SPMC produced a small assemblage of Roman pottery consisting of 165 sherds. There are only four contexts with more than ten sherds, the largest being Context [1015] with 41 sherds (see *Roman Pot Archive: Dates*). The majority produced less than five sherds of mainly, undiagnostic pottery. Consequently the date ranges are broad.

Despite the paucity of diagnostic material there is sufficient evidence from the Roman contexts to suggest that there was occupation on the site from the later 1st century, as attested by sherds of South Gaulish samian and legionary-type wares such as LEG and PINK. 2nd century wares are represented by a few sherds and there is a single sherd which may be 4th century in date. The majority, however, fall within a 3rd century date range, with an emphasis on pottery of early to mid 3rd century date.

The dating for the pottery from the post-Roman layers is similar to that from the Roman contexts but with a greater emphasis on wares of mid and mid to late 3rd century. There are a few sherds which extend from the later 3rd to the 4th centuries. Context [1015], the largest group of pottery, is dated to the very late 4th century, although there are also a few sherds of earlier wares such as PINK and Central Gaulish samian.

Table 1: Date ranges as a percentage of the total sherd count

Sherds	*%age*	*Date-range*
4	2.42%	L1-E2
2	1.21%	L1M2
1	0.61%	2C
2	1.21%	M2+
2	1.21%	ML2
8	4.85%	L2-E3
16	9.70%	EM3
4	2.42%	3
4	2.42%	3?
3	1.82%	3+
2	1.21%	ML3
4	2.42%	L3-4
1	0.61%	L3-4?
1	0.61%	4?
1	0.61%	L1-M2/POSTRO
2	1.21%	ML2/POSTRO
3	1.82%	2+/POSTRO
3	1.82%	EM3/POSTRO

17	10.30%	M3/POSTRO
5	3.03%	M3/POSTRO?
2	1.21%	M3+/POSTRO
11	6.67%	ML3/POSTRO?
12	7.27%	L3/POSTRO
3	1.82%	L3+/POSTRO
2	1.21%	3+/POSTRO
6	3.64%	L3-E4/POSTRO
2	1.21%	L3-4/POSTRO
41	24.85%	VL4/POSTRO
1	0.61%	4/POSTRO
165	**100.00%**	**TOTAL**

Condition

On the whole the dating from SPMC is very similar to that of SPMB, but with a slightly more evidence for early occupation from SPMC. The condition of the material from the two sites is also similar, with contexts from SPMC consisting of mainly fresh, and in the case of Context [1074], large fresh sherds (see *Roman Pot Archive: The Site Archive*).

The Assemblage

Although there are a few anomalies, on the whole the Roman fabrics represented from SPMC are almost the same as those from SPMB in terms of percentages of the total assemblage (see Tables 2 & 3, below).

Table 2: The function of the Roman pottery as a percentage of sherd count

Sherds	***%age***	***Function***
40	24.24%	-
6	3.64%	A
14	10.91%	DR
16	9.70%	K
6	3.64%	LH
3	1.82%	M
5	3.03%	S
54	32.73%	TK
17	10.31%	TW
165	**100.00%**	**TOTAL**

In common with most sites from the city there is a high proportion of greywares, including types manufactured at the Swanpool kilns (GREY & LCOA), which were probably used as either kitchen (K) or table to kitchen vessels (TK). Other wares used for this function were oxidised products from the Swanpool kilns (SPOX) and, from further afield, black-burnished wares of probable Dorset origin. Definitive kitchen wares are represented by greyware cooking pots and shell-tempered Dales-type ware (DWSH). Examples of mortaria, also used in the kitchen, are rare and were either locally made (MOLO) or imported from the Mancetter-Hartshill area (MOMH). Storage vessels are represented by a few large greyware jars, and a rare example of a greyware strainer, were also probably used in the kitchen.

Liquid holders (LH), are represented by a two early flagons (PINK), a late flagon from the Nene Valley, and a few late Roman narrow-necked greyware jars. Drinking vessels (DR) appear to be well-represented, but these are fine vessels which tend to break into small fragments. Apart from two examples of cups in Central Gaulish samian this group consists of colour-coated beakers manufactured in the Nene Valley.

Table wares (TW) consist of a few, probably locally made fine, greywares, a single colour-coated dish from the Nene Valley, and three fragments of parchment ware, but they are mainly represented by fine, red-gloss, samian ware imported from Central Gaul. Most of the samian wares are standard plain forms but there are three examples of finer, mould-decorated bowls, one of which is from South Gaul. Other imported wares consist of five sherds of amphorae (A) from Southern Spain containing olive oil and a single sherd from a wine amphorae from South Gaul. The presence of imported wares suggests a site of some status, and the percentage of samian as a whole, almost 8%, compares well with other relatively high-status sites in the city.

Table 3: The Roman fabrics as a percentage of the total sherd count

Sherds	***%age***	***Fabrics***
3	1.82%	BB1
1	0.61%	CRSA?
5	3.03%	DR20
9	5.45%	DWSH
1	0.61%	GAU4
2	1.21%	GFIN
95	57.58%	GREY
1	0.61%	IASHD?
3	1.82%	LCOA
1	0.61%	LEG
2	1.21%	MOLO
1	0.61%	MOMH
16	9.70%	NVCC
3	1.82%	OX
1	0.61%	OXWS
3	1.82%	PARC
2	1.21%	PINK
12	7.27%	SAMCG
1	0.61%	SAMSG
1	0.61%	SHEL
2	1.21%	SPOX
165	**100.00%**	**TOTAL**

Potential and Further Work

The site is clearly one of some status as demonstrated by the presence of imported wares, and should be incorporated into an overall study of the topography of this area as it provides evidence for both early and very late Roman occupation in this part of the city.

Post-Roman and Later Pottery *By Jane Young*

The site produced a total of 170 post-Roman sherds dating from the Late Saxon to the early modern period. The material indicates continual use of the site from the 10th to the 19/20th centuries with increased numbers of sherds representing the mid-late 11th and the early to mid 13th centuries. Most of the material comprises typical domestic cooking and storage vessels, mainly jars, bowls and jugs. A few unusual forms were found and these include a post-medieval pipkin in a fine white fabric, with a copper green glaze on the outside of the vessel and a yellow-green glaze internally. No imported pottery was recovered, but this is perhaps to be expected in such a small sample.

THE SITE ARCHIVE

Animal Bone

Context	*Count*	*Type*	*Comments*
800	9	ANBN	3 TEETH
813	2	ANBN	-
814	7	ANBN	-
836	6	ANBN	-
839	5	ANBN	-
841	2	ANBN	-
843	1	ANBN	-
853	1	ANBN	-
854	4	ANBN	-
857	2	ANBN	-
872	4	ANBN	1 TOOTH
875	2	ANBN	-
885	12	ANBN	1 TOOTH
891	3	ANBN	-
892	2	ANBN	-
895	1	ANBN	-
896	3	ANBN	-
897	2	ANBN	-
904	3	ANBN	-
917	15	ANBN	-
918	10	ANBN	-
920	5	ANBN	1 TOOTH
931	1	ANBN	-
932	1	ANBN	-
942	2	ANBN	-
943	11	ANBN	-
944	5	HUBN	-
949	2	ANBN	-
960	1	ANBN	-
962	10	ANBN	-
962	3	HUBN	-
964	27	ANBN	-
967	11	ANBN	-
978	3	ANBN	-
984	12	ANBN	-
985	1	ANBN	TOOTH
991	1	ANBN	-
1013	11	HUBN	SKULL FRAGS
1014	150	HUBN	-
1015	79	ANBN	UNSTRAT
1015	319	HUBN	UNSTRAT
1016	1	ANBN	-
1016	84	HUBN	-
1017	107	HUBN	-
1020	2	ANBN	-
1022	8	ANBN	-
1028	1	ANBN	-
1028	13	HUBN	-
1029	4	ANBN	-

1030	381	HUBN	-
1031	59	HUBN	-
1032	95	HUBN	-
1033	49	HUBN	-
1034	1	ANBN	-
1036	2	ANBN	UNSTRAT
1036	60	HUBN	UNSTRAT
1037	170	HUBN	-
1038	1	ANBN	-
1039	147	HUBN	-
1040	212	HUBN	-
1046	3	ANBN	-
1053	6	ANBN	-
1055	4	ANBN	-
1057	1	ANBN	-
1058	1	-	ANBN?
1074	11	ANBN	-
1076	1	ANBN	-
1110	24	ANBN	-
1110	12	HUBN	-
1111	9	ANBN	-
1111	7	HUBN	-

Bulk Finds

Context	*Name*	*Count*	*Comments*
11	WIND	1	PMED;16-17C?
13	CTPS	1	PMED;L17-L18;DIS
13	BOTT	1	MOD;L19-E20
13	OGLA	1	PMED;17-18C?;BOTT/FLAS?
13	NAIL	4	PMED-MOD LATEST

Registered Finds

Context	*Finds No.*	*Material*	*Name*	*Vessel*
848	1	IRON	-	X2 (=1) NAIL?
895	2	GLAS	-	ROM?
848	3	GLAS	VESS	-
871	4	STON	MLDG	LST
920	5	ANTL	WAST	SAWN
966	6	STON	HONE	NRAG
942	7	COPP	-	COIN? ROM?
949	8	STON	QUER	LAVA
967	9	CERA	DISC	TILE WHOLE
1022	10	CERA	DISC	TILE ABRA
1022	11	COPP	COIN	ROM;M4-L4
1054	12	GLAS	VESS	EROM-ROM;1-2;;DISH/BOWL?
980	13	BONE	BALL	-
1110	14	BONE	COMB	LSAX?/EMED?;;DEC PLATE

Post-Roman Pottery Archive: SPMC97 Horizon Dating

Context	*earliest horizon*	*Latest horizon*	*Probable horizon*	*Date range*
800	MH4	MH4	MH4	early to early/mid 13th
804	ASH11	MH3	-	11-12th
806	MH2	MH4	-	12th
807	MH7	PMH3	-	14-16th
810	MH1	MH10	-	12-15th
813	MH10	PMH4	-	15-17th
814	MH4	MH10	-	13-15th
816	MH1	MH10	-	12-15th
824	MH6	MH9	-	14-15th
830	MH4	MH10	MH4-MH5	13th
834	ASH7	ASH11	-	10th
836	ASH11	MH3	-	11-12th
841	R	R	-	Roman
842	R	R	-	Roman
843	R	R	-	Roman
846	R	R	-	Roman
848	R	R	-	Roman
849	R	R	-	Roman
853	R	R	-	Roman
854	ASH9	MH3	-	10-12th
855	R	R	-	Roman
860	R	R	-	Roman
871	MH4	MH6	-	13th
872	MH2	MH4	-	12th
874	MH4	MH9	-	13-15th
875	MH6	MH9	-	14-15th
879	MH10	PMH2	-	15-16th
881	MH4	MH6	-	13th
882	MH4	MH6	-	13th
891	R	R	-	Roman
892	MH4	MH6	-	13th
894	ASH7	ASH11	-	10th
895	ASH7	ASH11	-	10th
896	MH4	MH6	-	13th
897	ASH11	MH3	-	11-12th
904	ASH11	MH3	-	11-12th
905	ASH7	ASH11	-	10th
917	ASH14	MH3	-	late 11-12th
918	ASH12	MH3	ASH12-MH1	11- early 12th
920	MH4 OR PMH3	MH4 OR PMH4	-	13th or 16-17th
930	ASH11	ASH13	ASH11	late 10th
931	ASH7	ASH11	-	10th
932	ASH7	ASH11	-	10th
949	MH3	MH4	-	late 12th
956	MH5	MH7	-	13-14th
960	PMH4	PMH4	-	early-mid 17th
962	R	R	-	Roman
964	EMH	EMH	-	19-20th
967	R	R	-	Roman
970	R	R	-	Roman
978	MH4	MH6	-	13th

979	R	R	-	Roman
984	ASH11	MH3	-	11-12th
985	R	R	-	Roman
1015	ASH13	MH1	-	11-12th
1020	ASH12	MH2	-	11-12th
1022	ASH7	ASH11	-	10th
1029	ASH7 OR R	ASH11 OR R	-	10th or Roman
1038	ASH12	MH3	-	11-12th
1046	R	R	-	Roman
1053	R	R	-	Roman
1054	R	R	-	Roman
1055	R	R	-	Roman
1057	ASH12 OR R	MH3 OR R	-	11-12th or Roman
1058	R	R	-	Roman
1074	ASH12 OR MH4	MH3 OR MH10	-	11-12th or med
	OR R	OR R		or Roman
1075	ASH13	MH3	-	11-12th
1076	ASH11	MH3	-	11-12th

Post-Roman Pottery Archive: SPMC97 The Site Archive

Context	*Ware*	*Sherds*	*Form*	*Comments*
800	LOCC	1	JUG/PIT	-
800	LSW2	1	JUG	-
800	LSW2	1	JUG	-
800	LSW2	1	JUG	-
800	LSW2	1	JUG	-
800	LSW2	1	JUG	INT DEP
800	LSW2	1	JUG	JINT RIM
800	LSW2	1	MINIATURE VESS	LHJ
800	LSW2	1	PIPKIN	HANDLE
800	LSW2	2	JUG	-
800	NOTG	2	JUG;LARGE	POCKED MOTTLED GLZE
800	NOTS	1	JAR	BASE
800	POTT	1	?	INT SOOT
800	R	1	-	-
800	SNLS	1	JAR	-
800	THET	1	PITCHER	HANDLE;THU EDGES;FABRIC T
800	TORK	1	JAR	-
804	LFS	1	BOWL	BS
806	EMX	1	JUG	FABRIC C
807	HUM	1	JUG	BASE;THU
810	MEDX	1	JAR/JUG	OXID FABRIC;BLACK EXT SURFS
813	BOU	1	JUG	BASE;LOW FIRED
814	POTT	1	?	BASE;THICK INT SOOT
816	MEDX	1	JUG	BASE;UNGLZE;SOOT; COARSE QUARTZ FABRIC, DARK GREY
824	LSW3	1	JUG	BS
830	LSW1	2	JUG	BASE
830	LSW1/2	1	JUG	BS
830	POTT	1	COOK	BS
830	R	1	-	-

834	LSH	1	JAR	SOOT;FABRIC B
836	LFS	1	?	SOOT INT & EXT
836	LFS	1	JAR	SOOT
841	R	1	-	-
842	R	2	-	-
843	R	2	-	-
846	R	1	-	-
848	R	3	-	-
849	R	1	-	-
853	R	2	-	-
854	ST	1	JAR	UNGLZE;SOOT;10TH-12TH
855	R	1	-	-
860	R	1	-	-
871	LOCC	2	JUG/PIT	-
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	1	JUG	BS
871	LSW2	2	JUG	BS
871	LSW2	2	JUG	BS
871	LSW2	4	JUG	BS
871	LSW2/3	1	JUG	BS
871	LSW2/3	1	JUG	BS
871	LSW2/3	1	JUG	BS
871	LSW2/3	1	JUG	BS
871	LSWA	1	JUG	BASE
871	LSWA	1	JUG	BASE
871	LSWA	1	JUG	NECK;CU SPL GLZE
871	R	3	-	-
872	LFS	1	BOWL	BASE;SOOT
872	LFS	1	BOWL	BS
872	LFS	1	JAR	EVERC RIM;SCRAP
872	LKT	1	JAR	-
872	LKT	1	JAR	-
872	LSW1	1	JUG/PIT	BS
872	R	4	-	-
872	SNLS	1	JAR	BS
872	SNLS	1	JAR	BS;SOOT
872	SNLS	1	JAR	BS;SOOT
872	SNLS	1	JAR	BS;SOOT
872	TORK	1	JAR	BS;SOOT
874	LSW2/3	1	?	TINY FRAG;NO GLZE;? CUT OUTS
874	ST	1	JAR/PIT	GLZE;L11/12TH
875	LSW2/3	1	JUG	HANDLE
875	LSW3	1	JUG	BS
875	LSWA	1	JAR	BASE;SOOT;12TH?
879	LSW2	1	JUG	STRIP DEC
879	LSW3	1	PIPKIN	BASE;V. THICK
879	LSW4	2	JUG	FABRIC C
881	LSW2	1	PIPKIN	BS
882	LSW2	2	PIPKIN	BS;SOOT

891	R	1	-	-
892	LFS	1	?	BS;SOOT
892	LSH	1	JAR	BASE;SOOT
892	LSPLS	1	JAR	BS;??? ID;BLACK EXT & INT SURF;
				OR ROMAN
892	LSW2	1	JUG	BS
892	LSWA	1	JUG	BS;INT DEP;SPL GLZE
892	SNLS	1	JAR	BS
894	LSH	1	JAR	BS;?ID;SOOT
895	LSH	1	JAR	FABRIC A
895	R	3	-	-
896	LFS	1	BOWL	SOOT
896	LFS	2	JAR	INT & EXT SOOT
896	LKT	1	JAR	SOOT
896	LSW2	1	JUG	BS
896	R	13	-	-
897	LFS	1	JAR	SOOT;INT DEP
897	R	1	-	-
904	LFS	1	?	BS
904	LKT	1	JAR;SMALL	EVERB1 RIM
904	LSLOC	1	PITCHER	FABRIC B?;EVERB2 RIM
905	LKT	1	?	-
905	R	1	-	-
917	LFS	1	JAR	BASE;SOOT;INT DEP
917	LFS	1	JAR	BS
917	ST	1	JAR/PIT	GLZE;11/12TH
917	ST	1	JAR/PIT	GLZE;L11/12TH
918	LFS	5	JAR	THIN EVERC RIM
920	LFS	1	JAR;WIDE	BASE;SOOT;INT DEP
920	LFS	1	BOWL;LARGE	UPR RIM
920	LFS	1	JAR	RIM;THIN EVERC;SOOT
920	LSH	1	JAR	SOOT
920	LSW1/2	1	JAR	BASE;SOOT
920	LSW1/2	1	JAR	BS;SOOT
920	LSW1/2	1	JUG	BS
920	LSW1/2	1	JUG	NECK;CORD
920	LSWA	1	JUG	BASE;SPL GLZE
920	PBIC	1	PIPKIN	LHJ;SOLID HANDLE WITH CORE HOLE
920	POTT	1	COOK	SOOT
920	R	6	-	-
920	SNLS	1	BOWL?	BASE
920	SNLS	1	LSJ/PIT	THU STRIP;SOOT
920	ST	1	JAR/PIT	GLZE;L11/12TH
920	TOY	1	JUG	THICK THU BASE;?? ID
930	LKT	1	JAR	EVERA3 RIM;SOOT
930	SNLS	2	JAR	PRESSED RIM;OXID FABRIC;INC WAVY DEC
931	LKT	2	JAR	BASE;SOOT;INT DEP
931	LSH	1	JAR	FABRIC E
931	R	1	-	-
932	LKT	1	JAR	-
932	R	1	-	-
949	LSW1	1	JUG/PIT	INT DEP

949	LSWA	1	JUG	LIP;JINT
949	R	1	-	-
956	MEDX	1	JUG	?ID ??TOY;WHITE SLIP;GLZE SPOTS
956	TOY	1	SMALL FORM	?ID
960	LSW2	1	JUG	CORD
960	NSP	1	JUG/PIT	-
960	NSP	1	JUG/PIT	COMB WAVY DEC
960	SLIP	1	DISH	DEC;DUTCH OR LOCAL
962	R	1	-	-
964	BL	1	JAR	17/18TH
964	LSTON	1	BOTTLE	RIM
964	NSP	1	JUG;SMALL	EARLY
964	R	1	-	-
967	R	14	-	-
970	R	2	-	-
978	LSW2	1	JUG	FE BOW DEC
978	POTT	1	COOKPOT	BS
978	R	2	-	-
978	SNLS	1	JAR	BASE
979	R	4	-	-
984	LFS	1	JAR	-
984	LFS	1	JAR	-
985	R	2	-	-
1015	LFS	1	-	SCRAP
1015	LFS	1	JAR	BS
1015	LFS	1	JAR	BS
1015	LFS	1	JAR	EVERB RIM
1015	LFS	1	JAR	HOOKED RIM
1015	LKT	1	JAR	BS
1015	LKT	1	JAR	BS
1015	R	42	-	-
1015	ST	1	JAR/PITCHER	GLZE;L11/12TH
1020	LFS	1	?	-
1020	LFS	1	?	-
1020	LKT	1	?	-
1020	R	4	-	-
1020	ST	1	JAR/PITCHER	GLZE;11/12TH
1022	LKT	1	JAR	BS
1022	R	2	-	-
1029	LKT	1	JAR	BS
1029	R	14	-	-
1038	LFS	1	JAR	EVERC RIM
1038	LKT	1	JAR	BASE
1038	LSH	1	?	BS
1038	R	1	-	-
1046	R	1	-	-
1053	R	8	-	-
1054	R	2	-	-
1055	R	2	-	-
1057	LFS	1	?	-
1057	LFS	1	JAR	BS
1057	R	5	-	-
1058	R	1	-	-
1074	LFS	1	BOWL;LARGE	ROLLED RIM

1074	LFS	1	BOWL?	BASE
1074	POTT	1	?	BS;? EARLY
1074	R	11	-	-
1075	ST	1	JAR/PITCHER	GLZE;L11/12TH
1076	LFS	1	?	SCRAP

Key to Ware codes

BL	BLACKWARE
BOU	BOURNE; FABRIC D
EMX	EARLY MEDIEVAL NON-LOCAL FABRICS
HUM	HUMBERWARE
LFS	LINCOLN FINE-SHELLED WARE
LKT	LINCOLN KILN-TYPE WARE
LOCC	LOCAL SPLASHED WARE
LSH	LINCOLN SHELLY WARE
LSLOC	LATE SAXON LOCAL FABRICS
LSPLS	LIGHT-BODIED LSLS WARE
LSTON	LATE STONEWARES
LSWA	GLAZED LINCOLN WARE; FABRIC A
LSW1	GLAZED LINCOLN WARE
LSW1/2	LSW1 OR LSW2
LSW2	GLAZED LINCOLN WARE
LSW2/3	LSW2 OR LSW3
LSW3	GLAZED LINCOLN WARE
LSW4	GLAZED LINCOLN WARE
	MEDLOC MEDIEVAL LOCAL FABRICS
MEDX	MEDIEVAL NON-LOCAL FABRICS
NOTG	NOTTINGHAM GREEN GLAZED WARE
NOTS	NOTTINGHAM WARE
NSP	NOTTINGHAM SPLASHED GLAZED WARE
PBIC	LIGHT-BODIED BICHROME FABRICS
PORC	PORCELAIN (GENERAL)
POTT	POTTERHANWORTH WARE
R	ROMAN
SLIP	SLIPWARE (GENERAL)
SNLS	SAXO-NORMAN LINCOLN SANDY WARE
ST	STAMFORD WARE
THET	THETFORD OR THETFORD-TYPE WARE
TORK	TORKSEY WARE
TOY	TOYNTON WARE; KILN 1 6W(ROSES)

Roman Pottery Archive: Dates

Context	*Date*	*Comments*
800	L1-M2/POSTRO	
830	ML2/POSTRO	
841	3?	V. SMALL GRP
842	L3-4	
843	L3-4	
846	3+	
848	3	
849	3+	
853	EM3	
855	3	
860	3+	
871	2+/POSTRO	
872	M3/POSTRO	
891	3	
895	EM3/POSTRO	
896	M3/POSTRO	MOST FRESH
897	4/POSTRO	
905	L3-4/POSTRO	
920	L3-E4/POSTRO	MOST FRESH
931	L3-4/POSTRO	
932	ML2/POSTRO	SAM ONLY
949	3+/POSTRO	
962	4?	
964	L3+/POSTRO	
967	EM3	MIX DATES SOM 2C POT
970	L1M2	DR20 ONLY
978	L3+/POSTRO	
979	L1-E2	
985	ML2	L1 SAMIAN
1015	ML4/POSTRO	MIX DATES 1SH EROM
1020	L3/POSTRO	
1022	M3+/POSTRO	
1029	L3/POSTRO	MOST FRESH
1038	3+/POSTRO	
1046	2C	
1053	L2-E3	MOST FRESH
1054	M2+	
1055	ML3	
1057	M3/POSTRO?	MIX DATES LEG POT
1058	L3-4?	
1074	ML3/POSTRO?	MOST LGE FRESH SHS

Roman Pottery Archive: SPMC97 The Site Archive

Context	*Fabric*	*Form*	*Decoration Code*	*Vessels*	*Comments*	*Join*	*Sherds*
800	GREY	J	RLIN?	-	BS	-	1
830	SAMCG	33	-	-	RIM FRAG ABR	-	1
841	GAU4	A	-	-	FLAKE	-	1
841	OX	-	-	-	BS	-	1

841	GREY	-	-	-	BSS	-	2
842	GREY	-	-	-	SCRAP	-	1
842	GREY	DPR	-	-	RIM GIRTH SPOOL	-	1
843	DWSH	-	-	-	BS	-	1
843	GREY	J	ROUJ	-	BS	-	1
846	PARC	J?	-	-	BS	-	1
848	GREY	-	-	-	BSS	-	2
848	GREY	BFL	-	-	RIM GIRTH	-	-
849	CRSA?	-	-	-	BS CF VRW	-	1
853	NVCC	BK	-	-	BS EFAB	-	1
853	GREY	-	-	-	SCRAP	-	1
855	GREY	-	-	-	BS	-	1
860	GREY	-	-	-	BS SPOOLISH	-	1
871	GREY	-	-	-	BSS SOME BURNT	-	3
872	GREY	-	-	-	BSS	-	2
872	GREY	BWM	-	-	RIM-SHLDR	-	1
872	NVCC	BK	-	-	BS EFAB	-	1
891	GREY	-	-	-	BS	-	1
895	GREY	-	-	-	BSS	-	2
895	NVCC	BK	BAS	-	BS EFAB	-	1
896	GREY	JBL	BIA	-	BS LGE SH	-	1
896	GREY	J?	-	1?	BSS	-	4
896	GREY	JEV	-	-	RIM SHLDR	-	1
896	GREY	-	-	-	BS VBURNT	-	1
896	GREY	STR	-	-	BASE VABR INT	-	1
896	DR20	A	-	-	BS LFAB	-	1
896	DWSH	JCUR	-	-	RIM	-	1
896	GREY	DPR	-	-	RIM SPOOLISH	-	1
896	NVCC	BK	-	-	BS EFAB	-	1
896	SAMCG	33?	-	-	BS	-	1
897	LCOA	JL	-	-	BASAL BS THICK	-	1
905	GREY	BD	-	-	BASE STRING SPOOL	-	1
920	SPOX	B38	-	1	RIM BASE	-	2
920	GREY	JCR	-	-	RIM SPOOLISH	-	1
920	GREY	J	-	-	BASE	-	1
920	GREY	JCUR	-	-	RIM SPOOLISH	-	1
920	SAMCG	D	-	-	FLAKE	-	1
931	GREY	JL	-	-	BASE SPOOL	-	1
932	SAMCG	D	-	-	SCRAP	-	1
949	GREY	-	-	-	BS	-	1
962	GREY	-	-	-	BS COARSE ABR	-	1
964	GREY	DPR	-	-	RIM-GIRTH	-	1
967	NVCC	F	-	-	HANDLE EFAB	-	1
967	MOLO	M	-	-	BASE BURNT ON EDGE	-	1
967	DR20	A	-	-	BS LFAB	-	1
967	OX?	J	-	-	BS GREY CORE	-	1
967	OXWS	F	-	-	BS NECK	-	1
967	GREY	B	-	1	BSS ABR	-	3
967	GREY	-	-	-	BS LT GREY	-	1
967	GREY	JL	INC;LA	-	BS ABR	-	1
967	GREY	JNN	-	-	RIM	-	1
967	GREY	BFL	BIAP	-	RIM GIRTH	-	1

967	GREY	BTR?	BIAP	-	RIM BASE PROF ALMOST BFL	-	1
967	GFIN	B	-	-	FTRG BASE	-	1
970	DR20	A	-	-	BSS EFAB	-	2
978	GREY	JL	-	-	BS COARSE VABR	-	1
978	GREY	J	-	-	BASE ABR	-	1
979	GREY	JBKEV	-	1	RIM BS SHLDR FINER FAB NOT LEG	-	2
979	PINK	F?	-	-	BS VABR	-	1
979	GREY	J	RLIN	-	BS	-	1
985	GREY	BFL	BIAP	-	RIM GIRTH FRESH	-	1
985	SAMSG	37	-	-	RIM GIRTH FRESHIS	-	1
1015	GREY	-	-	-	BSS SMALL SHS	-	15
1015	DWSH	JDLS	-	1?	RIM FRAG BSS	-	4
1015	SHEL	-	-	-	BS FINE GREY	-	1
1015	LCOA	-	-	-	BS BURNT	-	1
1015	PINK?	-	-	-	BS LEG FAB RES	-	1
1015	LCOA	JDLS	-	-	RIM VABR	-	1
1015	OX	-	-	-	FLAKE CBM?	-	1
1015	NVCC	DPR	-	-	RIM ABR	-	1
1015	NVCC	BK	-	-	BS EFAB	-	1
1015	NVCC	BK	ROUZ	2	BSS EFAB	-	2
1015	NVCC	BK	BAD	-	BS EFAB	-	1
1015	NVCC	BK	PA	-	BS WHT PA WHT FAB	-	1
1015	SAMCG	-	-	-	BS VABR	-	1
1015	SAMCG	37	-	-	BS FRESH	-	1
1015	GREY	CP	LA	-	BS	-	1
1015	DWSH	DPR	-	-	RIM FRAG FINE THIN WALL	-	1
1015	GREY	DPR	-	-	RIM FRAG	-	1
1015	GREY	DPR	-	-	RIM	-	1
1015	GREY	DPR	BIAP	-	RIM-GIRTH	-	1
1015	GREY	DGR	-	-	RIM-GIRTH	-	1
1015	GREY	JEV	-	1	RIM FRAG BS AS IN	1020	2
1015	GREY	BKPH?	BAD	-	BS FRESH	-	1
1020	GREY	DPR	BIAP	-	RIM BASE PROF	-	1
1020	NVCC	BK	-	-	BS EFAB	-	1
1020	GREY	J	-	-	BS AS IN	1015	1
1020	BB1	BD	-	-	BS BURNT	-	1
1022	DWSH	-	-	-	BS ABR	-	1
1022	GREY	-	-	-	BS ABR	-	1
1029	GREY	-	-	-	BSS	-	-
1029	GREY	CP	LA	2	BSS	-	2
1029	PARC	J?	-	1	BSS	-	2
1029	NVCC	BK	ROUZ	-	BS	-	1
1029	GREY	BD	-	-	BASE ABR	-	1
1029	GREY	B	BIAP	-	BS	-	1
1029	SAMCG	37	-	-	RIM OVOLO FRESH	-	1
1038	GREY	-	-	-	FLAKE	-	1
1046	DR20	A	-	-	BS 2C FAB?	-	1

1053	GREY	BFL	BIAP	-	RIM GIRTH ABR	-	1
1053	GREY	CP	LA	-	BS	-	1
1053	GREY	CP	LA	-	RIM	-	1
1053	IASHD?	JCUR	-	-	RIM FRAG	-	1
1053	SAMCG	33	-	-	RIM FRESH	-	1
1053	SAMCG	31?	-	1	FTRG BS FRESH	-	2
1053	GFIN	BD	-	-	BASE FRAG	-	1
1054	GREY	JBK	-	-	BS FINE THIN WALL	-	1
1054	MOLO	M	-	-	BS VABR	-	1
1055	NVCC	BK	-	-	BASE LFAB	-	1
1055	GREY	BD	-	-	BS	-	1
1057	BB1	BFL	-	-	RIM GIRTH NOT DORSET	-	1
1057	GREY	BD	-	-	BASE	-	1
1057	DWSH	J	-	-	BS BURNT WATER BOIL DEPOS	-	1
1057	LEG	J	RUST?	-	BS FRESH	-	1
1057	NVCC	BK	BASC	-	BS FRESH EFAB	-	1
1058	GREY	J	-	-	BS SPOOLISH	-	1
1074	GREY	-	-	-	BSS BASE	-	3
1074	GREY	CP	-	-	RIM SHLDR	-	1
1074	GREY	JCUR	-	-	RIM THICK	-	1
1074	GREY	J	BIA	-	BS	-	1
1074	NVCC	BK	-	-	BS LFAB	-	1
1074	MOMH	M	-	-	BASE	-	1
1074	BB1	DPR	BIAP	-	RIM BASE PROF	-	1
1074	SAMCG	-	-	-	FLAKE	-	1
1074	SAMCG	31	-	-	BASE	-	1

Key to Ware Codes

BB1	REDUCED - BLACK BURNISHED 1
CRSA	OXID - LATER SANDY USUALLY CREAMISH TO LIGHT RED-BROWN
DR20	AMPH - DR20 AMPHORAE
DWSH	SHELL - LATER SHELL TEMPERED; DALES WARE; LID-SEATED JARS ETC.
GAU4	AMPH - GAULOISE 4
GFIN	REDUCED - MISCELLANEOUS FINE GREY WARES
GREY	REDUCED - MISCELLANEOUS GREY WARES
IASHD?	SHELL - SHELL TEMPERED HARDER ?ROMAN
LCOA	REDUCED - LATE COARSE PEBBLY FABRIC; DOUBLE LID-SEATED JARS ETC.
LEG	REDUCED - 'LEGIONARY' TYPE CREAM/LIGHT GREY
MOLO	MORT - LOCAL MORTARIA
MOMH	MORT - MANCETTER-HARTSHILL MORTARIA
NVCC	FINE - NENE VALLEY COLOUR-COATED
OX	OXID - MISCELLANEOUS OXIDIZED WARES
OXWS	OXID - OXIDIZED WITH WHITE SLIP
PARC	OXID - PARCHMENT; CREAM PAINTED RED; UNKNOWN SOURCE/S
PINK	OXID - PINK MICACEOUS FLAGONS ETC.
SAMCG	SAMIAN - CENTRAL GAULISH
SAMSG	SAMIAN - SOUTH GAULISH
SHEL	SHELL - MISCELLANEOUS UNDIFFERENTIATED SHELL-TEMPERED
SPOX	OXID - SWANPOOL OXIDIZED WARES

Tile/Building Material

Context	*Form*	*Count*	*Weight*	*Sub-form*	*Fabric*	*Comments*
800	GPNR	1	70	-	-	CU GLAZE SCAR M12-E13C?
800	PNRDISC	2	115	1-7	-	-
804	BRKDISC	5	150	-	-	MORTAR
804	PANTDISC	5	205	-	-	CORNERX1
806	GPNR	1	15	-	-	CU GLAZE M12-E13C?
806	PNR	1	145	-	-	SHALE/CLAY IN FABRIC
806	PNRDISC	3	170	1-7	-	1+MORTAR
807	PNRDISC	4	80	-	-	SAME TILE CORNER MORTAR M12-E13C?
807	PNRDISC	5	235	1-7	-	1XBURNT? MORTAR
814	GRID	1	65	-	-	VENT? CU GLAZE APPL STRIP SOOT INT + OVER BREAK
814	NIBDISC	3	125	2C	-	SAME TILE
814	PNRDISC	3	200	1-7	-	MORTAR
822	PNRDISC	2	60	1-7	-	-
822	TILE	1	25	-	-	ROM IMBRX/PMED PANT?
824	PNRDISC	2	45	1-7	-	-
830	PNRDISC	2	5	-	-	-
834	PNRDISC	1	5	-	-	-
841	BRKDISC	1	20	-	-	-
841	IMBRX	1	105	-	-	VITR SURFACE (PMED PANT?)
841	PNRDISC	1	5	1-7	-	-
842	PNRDISC	1	10	-	-	-
845	TILE	2	265	-	-	SAME TILE UNDERFIRED PEG OR ROM? POSS 12-13C
846	RTILDISC	3	45	-	-	SAME TILE
848	PNRDISC	3	10	1-7	-	-
849	PNRDISC	1	5	-	-	-
853	IMBRXDISC	2	70	-	-	-
871	RBRKDISC	2	690	-	-	-
871	PNR	1	75	-	-	SHALE/CLAY IN FABRIC
871	PNRDISC	3	135	-	-	CORNERX1
872	PNRDISC	2	10	-	-	-
873	NIBDISC	1	80	7?	-	-
874	BOX	1	40	-	-	COMBED
874	PNRDISC	2	15	1-7	-	-
875	RTILDISC	1	50	-	-	-
875	TEGDISC	1	10	-	-	-
875	PNRDISC	2	10	1-7	-	-
879	PNRDISC	5	375	1-7	-	CORNERX2 1+MORTAR OVER BREAK
880	NIB	1	60	2-3	-	MLDED NIB GONE WRONG! MORTAR
881	PNRDISC	2	20	-	2	-

882	PNR	4	115	1-7	-	SAME TILE CRAPPY FABRIC
885	STILE	2	35	ROOF	-	LST
891	RTILDISC	1	30	-	-	-
895	BOX	1	20	-	-	COMBED MORTAR
896	BOX	1	35	-	-	COMBED
896	BOX	1	150	-	-	COMBED PERF
896	RBRKDISC	1	255	-	-	-
896	TEGDISC	2	610	-	-	MORTAR
896	PANT	1	160	-	-	SOOTED BLACK GLAZE? EARLY?
896	TILE	1	110	-	-	ROM IMBRX/MED RID
896	TILE	1	200	-	-	ROM IMBRX/PMED PANT
904	RTILDISC	1	35	-	-	-
905	BOX	1	268	-	-	COMBED CUTOUT
905	RBRKDISC	1	500	-	-	MORTAR
905	RTILDISC	4	250	-	-	-
905	TEGDISC	2	205	-	-	-
918	RTILDISC	1	55	-	-	-
918	TEGDISC	1	250	-	-	-
918	PNRDISC	2	75	1-7	-	-
920	IMBRXDISC	1	35	-	-	-
920	RBRKDISC	2	585	-	-	-
920	RTILDISC	1	305	-	-	-
920	TEGDISC	2	855	-	-	-
920	GPNR	1	65	-	-	CU GLAZE M12-E13C?
920	STILE	1	152	-	LST	SLAB? 23MM THK
931	RBRKDISC	1	245	-	-	VITR
931	RTILDISC	1	130	-	-	VITR
942	PNRDISC	3	210	1-7	-	SAME TILE MORTAR
942	PNRDISC	1	10	1-7	-	-
943	RBRKDISC	1	65	-	-	-
943	TEGDISC	1	315	-	-	-
943	PNR	2	185	-	-	SAME TILE
943	PNRDISC	6	820	1-7	-	CORNERX1 MORTARX5
943	NIBDISC	1	20	-	-	-
943	TILE	1	200	-	-	ROM IMBRX/PMED RID?
943	PLAS	1	13	-	-	PAINT
949	PNRDISC	2	150	1-7	-	-
954	NIB	1	120	4	-	-
954	PNRDISC	3	210	1-7	-	MORTARX1
956	NIB	1	70	2	-	POORLY MOULDED/ABRA
956	NIB	1	80	2	-	-
956	PNRDISC	2	55	1-7	-	SAME TILE MORTAR
956	PNRDISC	4	130	1-7	-	-
960	RTILDISC	2	35	-	-	-
960	PNRDISC	3	100	1-7	-	-
964	PNRDISC	1	5	-	-	-
967	TEGDISC	335	0	-	-	-
978	RTILDISC	1	75	-	-	-
978	STILE	1	18	ROOF?	LST	-

979	TEGDISC	1	425	-	-	-
979	BRK	1	315	-	-	WHITE FABRIC
1015	STESS	1	28	-	LST	-
1022	IMBRXDISC	1	10	-	-	-
1022	PNRDISC	1	5	-	-	ROM/LMED-PMED?
1028	RTILDISC	1	25	-	-	-
1029	IMBRXDISC	1	50	-	-	-
1046	TEGDISC	3	270	-	-	SAME TILE VITR
1046	RTIL	1	465	-	-	VITR + SLAG (FAS)
1046	RTIL	1	240	-	-	POST-FIRE PERF
1046	IMBRXDISC	1	40	-	-	-
1046	RTILDISC	5	460	-	-	-
1053	RBRK	1	155	-	-	-
1053	RBRKDISC	2	50	-	-	1XVITR?
1053	RTILDISC	1	15	-	-	-
1053	IMBRXDISC	1	10	-	-	-
1054	RBRK	1	140	-	-	VITR + SLAG (FAS)
1054	RTILDISC	1	55	-	-	-
1055	RTIL	1	40	-	-	PAWPRINT?
1055	RTILDISC	1	5	-	-	-
1057	TEGDISC	1	40	-	-	MORTAR
1057	RTILDISC	1	100	-	-	MORTAR
1058	RTILDISC	3	30	-	-	-
1058	RBRKDISC	1	20	-	-	-
1074	TEGDISC	4	840	-	-	2XVITR 1XMORTAR
1074	RTILDISC	1	70	-	-	-
1074	IMBRXDISC	1	85	-	-	-
1074	-	1	969	-	-	MOD;20;CONCRETE SILL/LINTEL

Key to Form codes

BOX	ROMAN BOX OR FLUE TILE	PRN	UNGLAZED UNDIAGNOSTIC ROOF TILE
BRK	MEDIEVAL/POST-MEDIEVAL BRICK	PRNDISC	DISCARDED UNGLAZED UNDIAGNOSTIC ROOFING TILE
BRKDISC	DISCARDED MEDIEVAL/POST-MEDIEVAL BRICK	RBRK	ROMAN BRICK
GPNR	GLAZED PEG/NIB/RIDGE TILE	RBRKDISC	DISCARDED ROMAN BRICK
GRID	GLAZED RIDGE TILE	RTIL	UNDIAGNOSTIC ROMAN TILE
	LOUVER CERAMIC ROOF LOUVE	RTILDISC	DISCARDED UNDIAGNOSTIC ROMAN TILE
IMBRX	ROMAN IMBREX	STESS	STONE TESSERA
IMBRXDISC	DISCARDED ROMAN IMBREX	STILE	STONE ROOF TILE
NIB	UNGLAZED NIB TILE	TEGDISC	DISCARDED ROMAN TEGULA TILE
NIBDISC	DISCARDED UNGLAZED NIB TILE	TILE	TILE FABRIC MED OR ROMAN
PANT	PANTILE		
PLAS	WALL PLASTER		

RESIDENTIAL DEVELOPMENT, MICHAELGATE, LINCOLN, LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

APPENDIX 4 – REPORT ON THE HUMAN REMAINS

Report on human remains excavated from land between Spring Hill and Michaelgate, Lincoln (SPMB/C97)

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Contents

List of Tables

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1. Introduction and summary of material

The human skeletal remains under study were excavated in two phases during 1997 from the site of a proposed housing development in Lincoln, situated between Spring Hill and Michaelgate. Previous work during 1983 had shown the church of St. Peter Stanthaket, founded in the 11th century, and its associated cemetery to be within the development area. The limits of this burial ground were further defined by the City of Lincoln Archaeology Unit in 1997. A total of 26 contexts containing human bone were examined, from both discrete burials and unstratified contexts from trenches 3-7 and the Combined Service Trench (C.S.T.) shown in figure 1. Two contexts (1110 and 1111) from Plot 6 contained unstratified material, and one (1036) elements recovered from the spoil heap, for which insufficient stratigraphic data existed to enable them to be assigned to a trench; this material was treated separately. A total of 12 discrete burials, including two juveniles, had been noted by the excavators, many of which were incomplete due to modern truncations and the limits of excavation.

2. Methodology

2.1 Preservation

The preservation of remains was assessed by examining the percentage of each individual present in a context, and scored as following: >75% excellent (grade 1), 75% good (grade 2), <50% fair (grade 3), <30% poor (grade 4), <10% very poor (grade 5).

2.2 Minimum number of individuals (MNI)

The minimum number of individuals was calculated for each separate area of excavation, using firstly the maximum number of repeated skeletal elements and then taking into account age and sex estimates to allow elements which could not come from the same individual on these grounds to be determined.

2.3 Determination of sex

Where possible, the documented differences in pelvic and cranial morphology were used as the primary indicators of sex, as these give an accuracy of 95% and 85% respectively (Smith 1980, cited in Miles 1989). Both pelvic and cranial observations were based on Buikstra and Ubelaker (eds.)(1994 p.16-21). For each individual burial, as many methods of determining sex were utilised as the surviving remains would allow.

2.4 Age at death estimation

All recorded individuals and appropriate separate elements, such as pelvic fragments, were aged using several methods. For juvenile remains, epiphyseal fusion and dental eruption were used (Ubelaker 1989, Brothwell 1981). Pubic symphyseal changes were recorded according to the standards developed by Todd (1921) and expanded by Brooks and Suchey (1990), (Suchey-Brooks casts of pubic symphyses), making use of both drawn comparisons (Buikstra and Ubelaker (eds.) 1994) and three.- dimensional casts. The Kent University colour photographic standards were applied to the auricular surface (Lovejoy et al 1985), and the system of determining cranial suture closure developed by Meindl and Lovejoy (1985) to complete crania. Due to the good

preservation of dental enamel, tooth wear advancement using Brothwell's (1981) standards was frequently the only method available, despite the limitations in applying this method to the assemblage as rate of wear is subject to a number of factors such as the coarseness of the diet and strength of the individual's teeth and jaws. Fragmentation of the assemblage prevented the use of sternal rib end ageing methods.

Once as many assessments of age had been made as possible, University of Bradford standard age categories were used to group together the adult data into three divisions: young (17-25 years), mid (26-45 years) and mature (over 46 years). For subadult remains the term juvenile (unfused epiphyses and incompletely developed permanent dentition) was used.

2.5 Estimation of stature

Maximum lengths of all complete long bones were taken using an osteometric board. Calculations were made using formulae outlined by Trotter (1970) for a total of four individuals, two males and two females.

2.6 Metrical and non-metrical analysis

Cranial and post-cranial measurements were taken using descriptions from Bass (1987). Non-metric variations, suggested to be an indicator of possible genetic relationships between individuals in an assemblage (though this is still under discussion, Saunders 1989) were also examined using Berry and Berry (1967) for the cranium and Finnegan (1978) for post-cranial elements.

2.7 Palaeopathology

Each context was carefully examined and any abnormalities recorded using conventional terms. Calculations of percentage frequency were made using the number of teeth present for dental disease and by individuals within each context for skeletal pathology unless otherwise stated. Suspected pathological lesions, of the skeleton and dentition, were recorded using Roberts and Manchester (1995) and Ortner and Putschar (1981) as the primary sources.

3. Physical anthropology

3.1 Preservation

The condition of the cortical bone was generally good, but the nature of the excavation had led to separation of articulated remains and fragmentation of skeletal elements. The results in the table below are compiled by context and do not, therefore, take into account burials which were spread over several contexts as it was not possible to associate all remains with a good degree of certainty.

Table 1: Preservation.

PRESERVATION	NUMBER OF CONTEXTS
Grade 1: Excellent	0
Grade 2: Good	4
Grade 3: Fair	5
Grade 4: Poor	4
Grade 5: Very poor	13

The preservation of the assemblage can be seen to range from good to very poor, with 50% of the assemblage at the poorer end due to the fragmentation of individuals (often recovered from more than one context), truncation by machinery, and the presence of disarticulated material from spoil.

3.2 Minimum Number of Individuals

The minimum number of individuals present in each context is outlined in the catalogue and gives a total of 43 individuals. Owing to the unstratified and fragmentary nature of the remains, it was not possible to separate much of the material into discrete burials. However, the excavation trenches were set at some distance from each other, and it appeared unlikely that any individual would have been recovered from more than one trench. Minimum numbers were therefore calculated for each trench, as well as for the unstratified material in contexts 1036, 1110 and 1111. Using numbers of elements alone, and based on the maximum number of repeatable elements (in the case of the two largest assemblages, the proximal left femur), the minimum numbers are as follows (Table 2).

Table 2: Minimum number of individuals based on skeletal elements.

TRENCH	CONTEXTS	M.N.I.
3	301, 302	2
4	403, 409	2
5	944, 962	4
6	600, 602, 608	3
7	702	2
C.S.T	1013-1017, 1028, 1030-1033, 1037, 1039, 1040	8
Unstrat.	1036, 1110, 1111	4
Total		25

Once sex and age determination are taken into account the minimum for the material recovered from the C.S.T. and unstratified material increases slightly, as shown in

Table 3. Context 1028, from the C.S.T., contained the remains of a young female but, although no skeletal elements were repeated, slight morphological differences between the right and left petrous temporal indicated that the elements might be from separate individuals. The resulting total, if this is indeed the case, is given in brackets in the table below. The assemblage as a whole can be seen to represent a minimum of 21 adults (7 males, 6/7 females and 8 unsexed individuals) and 10 juveniles.

Table 3: Minimum number of individuals based on age and sex data.

TRENCH	CONTEXTS	JUVENILE	M/?M	F/?F	?SEX	TOTAL
3	301, 302	1	-	1	-	2
4	403, 409	1	-	1	-	2
plot 5	944, 962	-	-	-	1	1
6	600, 602, 608	1	-	1	1	3
7	702	1	-	-	1	2
C.S.T.	1013-1017, 1028, 1030-1033, 1037, 1039, 1040	5	5	2 (?3)	4	16
Unstrat.	1036, 1110, 1111	1	2	1	1	5
Total		10	7	6	8	31

3.3 Determination of sex

As already stated, there were a minimum of 7 males, 6 or possibly 7 females and 8 adults who could not be assigned a sex. Data from all individual contexts is displayed in the following table. There were nine contexts containing male or probable male remains and seven female or probable female assemblages. Fifteen contexts contained adult skeletal elements for which sex estimates could not be established. Using the minimum number of sexable adult remains, the demographic structure of this assemblage is therefore 56% male and 44% female.

Table 4: Adult sex estimates by context.

CONTEXT	?SEX	?M	M	?F	F	TOTAL
301					1	1
302	1					1
403					1	1
600				1		1
602				1		1
608	1					1
702	1					1
944	1					1
962	1					1
1013		1				1
1014	1		1			2
1015	1				1	2
1016			1			1
1017	1					1
1028				1		1
1030	1		1			2
1031	1		1			2
1032			1			1
1033	1					1
1036	1			1		2
1037	1					1
1039			1			1
1110	1	1				2
1111	1	1				2
Total	15	3	6	4	3	31

3.4 Age at death

The minimum number of adults within each age category is outlined by context in Table 5. Due to fragmentation, different ageing methods were employed as appropriate to the elements present, and the accuracy of the age estimates varies accordingly. A total of 6 young, 6 mid and 2 mature adults were noted, as well as seven sets of remains which could be aged only as adult (epiphyseal fusion complete). The age distribution of remains which could be assigned to a category is therefore 43% each for young and mid adults, and 14% for mature adults.

Table 5: Adult ages.

TRENCH	CONTEXT	YOUNG	MID	MATURE	ADULT	TOTAL
3	301, 302	-	-	1	-	1
4	403, 409	-	1	-	-	1
plot 5	944, 962	-	-	-	1	1
6	600, 602, 608	1	-	-	1	2
7	702	-	-	-	1	1
C.S.T.	1013-1017, 1028, 1030-1033, 1037, 1039, 1040	5	3	1	2	11
Unstrat.	1036, 1110, 1111	-	2	-	2	4
	Total	6	6	2	7	21

The juvenile remains represented individuals of <3 years (409), c. 5 yrs (1040), 4.5-6.5 yrs (1016), c. 8 yrs (302), <14 yrs (301)(1111), <15 yrs (702)(1015), 16-17 yrs (1030), together with fragmentary remains for which age could not be estimated (602).

3.5 Estimation of stature

It was only possible to estimate the stature of four individuals, two males and two females. The accuracy of these estimates varies depending on the skeletal element used, with the femur and tibia together providing the best information. The results were as follows.

Table 6: Stature estimates.

CONTEXT	AGE AND SEX	BONE MEASURED	STATURE (CM)
301	F, Mature adult	R. tibia	163.6 +/- 3.66 (c. 5'5")
403	F, Mid-adult	L. femur and tibia	161.6 +/- 3.55 (c. 5'4")
1030	M, Young adult	L. femur	173.3 +/- 3.27 (c. 5'8")
1039	M, Mature adult	L. humerus	176.4 +/- 4.05 (c. 5'9")

The sample size is too small from which to draw any significant conclusions, but males can be seen to be slightly taller than the females, and both lie within the expected range for a Medieval population (Lilley *et al* 1994).

3.6 Metrical variation

Cranial indices have been used to establish population affinities (Bass 1987), whilst those for post-cranial elements are thought to be largely related to muscle activity (Townsley 1946, Brothwell 1981). Fragmentation prevented most cranial and many post-cranial measurements from being obtained. The sample size for cranial measurements was too small (three contexts) to allow comparisons of material to be made. Fourteen contexts had post-cranial remains which were complete enough to enable measurements to be taken. The resulting data are shown in Table 15. Sufficient femoral measurements were obtained to allow calculations of the index of platymeria, or flattening of the proximal femoral shaft, which is most common in earlier humans (Brothwell 1981). The results of calculations of this index are shown below (Table 7).

Table 7: Platymeria

CONTEXT	RIGHT FEMUR	LEFT FEMUR
301	-	70.1
403	-	84.5
1014	72.0	76.6
1015	72.1	73.5
1016	80.5	78.3
1017	-	76.7
1030	81.4	74.8
1031	86.6	-
1111	74.1	-
n	6	7
mean	77.8	76.4

Of the nine individuals represented, 8 (89%) were platymeric (having an index below 84.9) and this was slightly more pronounced in the left than the right femora, as is frequently the case (Brothwell 1981). The mean value for males was 80.1 (range 72.0 -86.6) for the right femur and 76.6 (range 74.8 - 78.3) for the left femur, and for females 76.0 for the left femur (range 73.5-84.5). Only one female right femur was measured, and two of the individuals represented were of indeterminate sex. The majority of the individuals from Pennell Street, Lincoln (Boghi and Boylston 1997) were also found to be platymeric, ranging from 81% of the female right femora to 100% of the female left femora. Mean values from previous medieval cemetery sites in the city had similarly platymeric mean values for both males and females (Boylston and Roberts 1995).

Platycnemia, an index of the amount of transverse flattening of the tibia, could be established for eight individuals (3 male, 2 females and 3 unsexed) from seven contexts (Table 8). The mean values for this sample are similar to those obtained from the population at Pennell Street (Boghi and Boylston 1997), but slightly higher than those established for other previously excavated sites in Lincoln (Boylston and Roberts 1995).

Table 8: Platycnemia

CONTEXT	RIGHT TIBIA	LEFT TIBIA
301	80.3	70.3
1015	73.8	79.5
1016	-	91.9
1031	-	79.4
1032	71.8	72.0
1033	70.7	62.8
1036	-	69.7
n	4	7
mean	74.2	75.1

3.7 Non-metric traits

Ten contexts showed non-metrical variations (7 cranial and 6 post-cranial) which are outlined below (Table 9), separated by area of excavation. Two individuals had retained metopic sutures, but these were from separate areas of the site (and different excavation seasons) and therefore could not be associated archaeologically. The presence of squatting facets is as likely to be due to biomechanical stresses as to genetic clustering. There are a number of problems in interpreting the significance of non-metric traits. The cause of such variation, effect of sexual dimorphism and age related change are not fully understood and it is possible that clusters of traits may be as much due to shared environmental circumstances as to common genes (Saunders 1989). Inter-observer error and the problems of comparison of individuals displaying single and bilateral traits, create difficulties in interpreting patterns within populations. The frequency within a sample may also be underestimated if the material is, as in the case of this assemblage, poorly preserved (Saunders 1989). With this material, the small sample size and disarticulated nature of much of the assemblage prevented "family" groupings being established within the site.

Table 9: Non-metric traits by context.

AREA	CONTEXT	CRANIAL	POST-CRANIAL
3	301	Metopic suture	Medial and lateral squatting facets (r. tibia).
4	403	Parietal foramen, accessory supraorbital foramen, bridging of supraorbital notch, zygomaticofacial foramen.	Medial squatting facet (l. tibia), double anterior calcaneal facet (bilateral).
C.S.T.	1013	Mastoid foramen extrasutural.	
	1014	Bridging of supraorbital notch	Plaque (bilateral)
	1015		Septal aperture (r. humerus), acromial articular facets (2x l. scapulae), double anterior calcaneal facet (l. calcaneus).
	1028	Metopic suture, zygomaticofacial foramen.	
	1030	Highest nuchal line, palatine tori, Parietal foramen	
	1031		Medial squatting facet (l. tibia), double anterior talar facet (l. talus)
	1033		Double anterior talar facet (r. talus).
	1039	Parietal foramen (r. parietal), mastoid foramen extrasutural, accessory supraorbital foramen.	

3.8 Palaeopathology

3.8.1 Congenital abnormalities

Only one individual in the assemblage displayed any congenital skeletal abnormalities (32.3%). The sacral canal of the young adult male from context 1016 was open along the length of the element, indicating spina bifida occulta. It is unlikely that this would have caused the individual any problems during life (Roberts and Manchester 1995).

3.8.2 Dental pathology

Dentitions from 12 contexts were recorded, representing 13 individuals, ten adult and three juvenile burials. Many fragments of the mandible and maxilla had not been recovered. Out of a possible 320 adult teeth, the sockets of only 145 were present (45.3%). The three juvenile dental arcades were complete, showing evidence of a total of 78 teeth, including two mixed dentitions (deciduous and permanent). Numbers of teeth lost ante-mortem and post-mortem, and showing evidence of caries and abscesses, are outlined in the tables below (10 and 11). Four adults had lost teeth ante-mortem, and two of these were mature individuals, whilst the other two could only be aged as adult. Three adult dentitions displayed carious lesions in a total of 7 teeth (6.7% of the teeth present), and in two, abscesses at the root apex, one of which was associated with a carious lesion and the other with extreme dental wear. Abscesses therefore affected 0.9% of the total tooth positions examined (145 adult and 78 juvenile). When compared to a list of ten Medieval sites (Roberts and Manchester 1995 p. 49), the caries rate falls at the lower end of the range (from 4.4% at Jarrow to 12.1% for the later phase of the cemetery at Fishergate, York). Percentage prevalence of abscesses was even lower compared with other medieval populations (Roberts and Manchester 1995 p. 52). No dental caries was present in the juvenile teeth.

Table 10: Dental disease prevalence in adult dentitions.

CONTEXT	TEETH PRESENT	TEETH LOST AM	TEETH LOST PM	CARIES	ABSCESS
301	3	1	0	0	0
403	28	0	2	0	1
962	2	0	3	1	0
1014	12	0	3	4	1
1015	7	0	1	0	0
1028	6	0	1	0	0
1030	23	0	6	0	0
1039	23	8	1	2	0
1110	0	2	13	0	0
Total	104	11	30	7	2

Table 11: Dental disease prevalence in juvenile dentitions.

CONTEXT	TEETH PRESENT	TEETH LOST AM	TEETH LOST PM	CARIES	ABCESS
302	20	1	5	0	0
1037	28	0	0	0	0
1040	16	0	8	0	0
Total	64	1	13	0	0

Calculus deposits were noted on the teeth of 8 adults and two juveniles or a total of 86 teeth from adults (82.7% of the teeth present) and 18 from juveniles (28.1%). Calculus build up varied from flecks to heavy deposits, details of which can be found in the catalogue. Only two individuals (15.4%) showed evidence of enamel hypoplasia, although it is possible that heavy calculus deposits could have masked irregularity in the enamel of some teeth. The individuals affected were a mature adult male from 1039, with a single pit on the right maxillary second incisor, and a juvenile of 12-13.5 years at death (1037) with hypoplastic lines on mandibular and maxillary incisors, premolars and first molars, indicating periods of systemic stress during dental development (Roberts and Manchester 1995).

3.8.3 Metabolic disease

Two juveniles aged 12-13.5 years and 5 years at death (from contexts 1037 and 1040 respectively) and one mid-adult female (context 403) had what is accepted currently to be an indication of childhood iron deficiency anaemia in the form of porosity of the orbit: cribra orbitalia (Stuart-Macadam 1991). The adult displayed the most severe porosity (stage 3, Buikstra and Ubelaker (eds.) 1994), whilst that of the juveniles was less severe. None of the orbital lesions had been active at the time of death. These cases represent 20% of the minimum number of juveniles. A total of 18 orbits were observed: 5 juvenile and 13 adult. Such iron deficiency anaemia may result from dietary deficiency, excessive blood loss, chronic disease or parasitic infection, the latter of which is likely to have been a major contributor in past populations (Roberts and Manchester 1995).

3.8.4 Circulatory disease

Three contexts contained elements which showed indications of circulatory disturbance in the form of osteochondritis dissecans. In this condition, the blood supply to a small area of the joint surface is disturbed, leading to the detachment of a piece of cartilage and/or bone, which may later become re-attached or become resorbed. This can lead to instability or immobility of the joint, with joint locking resulting in more serve cases (Pappas 1981). The young adult of undetermined sex in context 608 had a pitted lesion in the centre of the distal articulation of the left humerus consistent with this condition. Two further contexts (1033, an unsexed adult and 1039, a male mature adult) had similar pitted lesions on the proximal articular surface of the first metatarsals, and proximal surface of a first proximal phalanx respectively.

3.8.5 Joint disease

Evidence of joint diseases was seen in a number of contexts, consisting of porosity and osteophyte formation. However, none was particularly severe and there was no evidence of osteoarthritis. Most of the joint disease was found in extraspinal skeletal elements, and its location is summarised below (Table 12). Further details can be found in the catalogue.

Table 12: Extraspinal joint disease.

CONTEXT	ELEMENT	PATHOLOGY
403	Clavicles, femora, humeri	Porosity and /or osteophytes.
702	Left clavicle, acromial end	Enthesophyte formation.
962	Left clavicle, sternal end.	Porosity.
1014	6 left, 3 right rib heads. Right glenoid, sternal clavicles.	Porosity and osteophytes. Porosity.
1015	Rib heads. Clavicles, acromial end, sacrum. Right tibial tuberosity.	Porosity and osteophytes. Porosity. Osteophytic spurring.
1017	2 rib heads. Olecranon processes.	Porosity and osteophytes. Osteophytic spurring.
1030	Distal sternum. Posterior calcanei.	Macroporosity. Osteophytes.
1031	Left acetabulum.	Porosity and slight osteophytes.
1033	Right radial tuberosity.	Porosity.
1036	Humeri, distal shaft.	Osteophytes.
1039	Proximal left humerus, radial tuberosity, distal right first foot phalanx.	Osteophytes.

Six contexts (403, 1014, 1017, 1030, 1036 and 1039) had indications of spinal joint disease (table 13).

Table 13: Spinal joint disease.

CONTEXT	AGE/SEX	SCHMORL'S NODES	POROSITY	OSTEOPHYTES
403	F, Mid adult	T11 & 12	T1-3, 11 &12.	T1-3, 11&12, L1-5
1014	M, Mid adult	L2-5	T12, L1 & L3-5	C5, T12, L2-5
1017	?Sex, Mid adult	-	T10-12, L3	T9-12, L2-5
1030	M, Young adult	T9 & 12	-	T6-12
1036	?F, Mid adult	T8, 10 & 12	T7, 8, 10-12	T7, 8, 10-12
1039	M, Mature adult	-	C2, 3 &7	C2, 3 &7
Total vertebrae affected	Cervical	-	3	4
	Thoracic	7	13	22
	Lumbar	4	5	13

In addition, there were four contexts which contained pieces of calcified thyroid cartilage: 1014, 1017, 1030, and 1039. Such pathological change may occur in individuals with D.I.S.H. (Rogers *et al* 1987), a condition related to dietary factors, which predominates in older men. This leads to the formation of extraspinal osteophytes, which were found in all four individuals, one of which was a mature male (1039) and two mid-adult (one male, 1014 and one unsexed, 1017). However, the spinal changes were not consistent with this condition which leads to the formation of extensive spinal osteophytes concentrated on the right side of the vertebral column, eventually leading to ankylosis of the spine (Rogers *et al* 1987). It is equally possible that calcification is the result of normal ageing processes, and three of the four cases involved mid-mature adults, the thyroid cartilage in the fourth (1030) not being directly associated with an individual.

3.8.6 Infectious disease

Four of the 25 contexts (16%) contained skeletal elements which showed new bone formation as a result of non-specific infection. Woven bone was present on a radial shaft fragment in context 702. The juvenile left humerus (16-17 years at death) in context 1030 had woven bone formation at the distal end, possibly associated with a sharp edged lytic lesion on the medial border of the bicipital groove, and the adult from the same context had porous new bone formation on the sternal clavicles. The presence of early stage bone formation indicates that the infection was still active at the time of death. Context 1040 contained the remains of a juvenile of circa 5 years at death who had suffered from maxillary sinusitis, as shown by lamellar bone formation in the right paranasal sinus. A comparison of medieval rural and urban populations (Lewis *et al* 1995) showed the latter to have 55% of individuals affected by this condition, though it is unusual to find it in such a young individual (Lewis pers. comm.). While the cemetery was in use, Lincoln was a busy market town housing upwards of 6000 people, and such infections could have been exacerbated by crowded living conditions and poor air quality (Roberts and Manchester 1995).

Contexts 301, 403, 1015 and 1031 contained individuals with considerable new bone formation due to osteitis of the shaft of the tibiae and fibulae, possibly consistent with a treponemal infection such as syphilis (Roberts and Manchester 1995). Differential diagnoses include a non-specific infection of the lower legs due to soft tissue injury such as that caused by a blow to the shins, especially if the individual had an

underlying condition, such as scurvy, which leads to weakening of the blood vessels (Roberts and Manchester 1995). The individuals affected represent 13.8% of the population. Three of the four individuals (301, 1015 and 1031) had both woven and lamellar bone, indicating repeated periods of response to infection, with infection active at the time of death. However, without the presence of cranial lesions a definite diagnosis cannot be made (and none was present) though the inferior margins of the nasal aperture of 403 did appear smooth and remodelled. This change could also be indicative of leprosy, though no changes to the bones of the hands or feet were seen to support such a diagnosis.

3.8.7 Neoplastic disease

A possible benign osteoma was noted on the left parietal of the unsexed adult in context 1030.

3.8.8 Trauma

There were no significant examples of bony trauma in the sample. However, the cranial bones, or the right parietals of a male mid-adult from context 1014, and of a mature adult male from 1039, both had small well-healed compression fractures, most likely the result of an accidental blow to the head. A further two skeletons displayed bony changes consistent with response to soft tissue trauma. Context 962 had a small spur of bone projecting from the right linea aspera, and 1032 had a lytic lesion in the area of attachment for m. biceps.

3.8.9 Other abnormalities

In addition to the pathological changes outlined in 4.1-4.8 the infant remains in context 409 had irregular bone formation adjacent to the suture on a right parietal fragment. A nodule of smooth new bone was present on the right endocranial surface of the adult ?female frontal fragment in context 600, and concentric rings of bone were present on the parietals of the adult remains in context 702, adjacent to the sagittal suture.

4. Summary

The sample under study consisted of a minimum of 21 adults (7 males, 6/7 females and 8 unsexed individuals) and 10 juveniles. Preservation and recovery of elements varied from good to very poor, and much of the material was disarticulated and commingled during excavation. A total of 6 young, 6 mid, and 2 mature adults were noted, as well as seven sets of remains which could be aged only as adult (epiphyseal fusion complete). The juvenile remains represented individuals of <3 years to 16-17 yrs, together with fragmentary remains for which age could not be estimated. Rates of antemortem tooth loss and caries were low compared with other medieval cemetery populations (Roberts and Manchester 1995 p.49), being similar to those of previously examined populations from Lincoln (Boghi and Boylston 1997, Boylston and Roberts 1995). Only one individual in the assemblage displayed any congenital skeletal abnormalities. Two juveniles and one mid-adult female had indications of iron deficiency anaemia. Extraspinal and spinal joint degeneration were present, but none of the examples was severe. Pieces of calcified thyroid cartilage from three individuals could be the result of D.I.S.H., but a definite diagnosis could not be given in the absence of vertebral osteophytes and other extraspinal calcifications. Four of

the 25 contexts (16%) contained skeletal elements which showed new bone formation as the result of non-specific infection. Four others contained individuals with considerable new bone formation possibly consistent with a treponemal infection such as syphilis (13.8% of the population). A possible benign osteoma was noted. There were two individuals with small well-healed compression fractures and a further two skeletons displayed bony changes consistent with the response to soft tissue trauma. Three contexts contained elements which showed indications of circulatory disturbance in the form of osteochondritis dissecans.

5. Discussion and conclusions

The excavators had noted the presence of a group grave containing contexts 1037, 1039 and 1040 and suggested a possible family interment. No non-metrical data could be found to support this, but the demography of the group, consisting of two juveniles of c. 13 years and c. 5 years at death, and a mature adult male, does not preclude the possibility. However, other explanations should be considered. In times of epidemics, unrelated individuals may be buried together (Daniell 1997) and such illness will tend to attack the most vulnerable members of society, often the old and the very young (Roberts and Manchester 1995). Unrelated individuals may also be buried together as an expedient measure as it is easier to dig one grave than three, and a young child could easily be fitted into the grave of an adult. For the population examined , platymeria, platycnemia and stature calculations all fell within those expected of a medieval population (Boghi and Boylston 1997, Boylston and Roberts 1995). Unfortunately no family groupings could be established with the use of non-metric traits, and the small sample and disturbed nature of much of the material prevented distribution patterns of age or sexes within the cemetery from being established. Caries rates were low, lesions being seen in seven of the teeth present (6.7%) but the number of teeth lost post mortem may have artificially reduced this figure. The prevalence of calculus in the sample is slightly higher than that at Pennell Street (Boghi and Boylston 1997), 82.7% as opposed to 78.6%, though this is likely to be a reflection of the small sample size.

The assemblage investigated appears typical of the population of medieval Lincoln, comparing closely to results from previously examined material (Boylston and Roberts 1995, Boghi and Boylston 1997).The demographic structure shows the presence of adults of both sexes, at a proportion of roughly half as many juveniles as adult remains. The presence of possible indications of treponemal disease is potentially interesting. Such infections are generally believed not to have existed in Europe prior to 1492, although there are now some cases which suggest that this was not true (Roberts 1994), it would suggest that these burials are more likely to date from the later period of the graveyard, after its lease to private individuals c. 1461 (Trimble 1997). Caution should be exercised with all conclusions, however, as the small sample size and fragmentation of material prevents significant conclusions from being drawn on disease prevalence.

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SPMB/C 97 Catalogue

SPMB97 Context 301

2 individuals

F, Mature adult **Juvenile <14 yrs**

Stature: 163.61 +/- 3.66 cm (R. tibia)

Preservation: Grade 4, Poor

Cranial fragments, right and left femora, right tibia and fibula, left proximal tibia and fibula, right rib head, fragment of proximal left femur, right juvenile humerus shaft.

Additional material: 3 fragments of non-human bone.

Dentition:

```
- X      ---------------------------------
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
-------------------------------------------------
```

Non-metric traits:

Metopic suture, medial and lateral squatting facets on right tibia (left distal tibia missing) in adult remains.

Dental pathology:

Flecks of calculus on lingual surface of all present right maxillary teeth and heavy calculus on buccal surfaces.

Skeletal pathology:

Lamella bone formation on lateral shaft of left proximal tibia. Small amount of mixed bone formation on posterior and medial shaft. Severe lamella bone formation n medial shaft of left proximal fibula and small amount on lateral shaft.

SPMB97 Context 302

2 individuals

?Sex, Adult **Juvenile c. 8 yrs**

Stature: Not possible, long bones fragmentary/absent.

Preservation: Grade 5, Very poor

Fragment of right clavicle (adult). Parts of juvenile cranium and mandible.

Additional material: One fragment of non-human bone.

Dentition:

```
U E       E      X 2E /       / U
 8 7 6 E D C 2 1 A B C D E 6 7 8
   7 6 E D C B A A B C D E 6 7
   U  5U        /    / /3U      U
```

Non-metric traits: None in juvenile cranium, adult remains too fragmentary.

Dental pathology: Flecks of calculus on the buccal surfaces of maxillary right central incisor (permanent) and mandibular left M1, and lingual surface of mandibular right central incisor (deciduous).

Skeletal pathology: None.

SPMB97 Context 403

1 individual

F, Mid-adult

Stature: 161.6 +/- 3.55 cm (L. femur and tibia).

Preservation: Grade 2, Good

Cranium complete but fragmentary, parts of right and left humerii, clavicles, radii and ulnae present, fragments of right and left scapulae. Unsided hand phalanges and rib fragments, vertebrae (C3 and 4 and T4-8 missing). Parts of pelvis and sacrum, right and left tibiae and fibulae. Right and left femora (right proximal end absent), right and left tarsals, right metatarsals.
Additional material: 9 fragments of non-human bone.
Dentition:

---
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
/ /

Non-metric traits: Parietal foramen, bridging of supraorbital notch and accessory supraorbital foramen and medial tibial squatting facet present on left side. Zygomaticofacial foramen and double anterior calcaneal facet present bilaterally.
Dental pathology: Slight maxillary and medium mandibular periodontal disease. Flecks of calculus on buccal surface of maxillary right 2-6 and left 2-7, and mandibular right 3-6 and left 4-6. Medium calculus on buccal surface of central maxillary incisors and left mandibular canine, and on lingual surface of right mandibular M1 and M2 Heavy deposits on buccal surfaces of right mandibular incisors and lingual surface of right central incisor. Slight calculus on mesial and distal surface of left maxillary M3. Right and left mandibular M1 heavily worn exposing pulp cavities and leading to the formation of an abscess at the root apex of the right tooth, draining externally.
Skeletal pathology: T1-3 show joint degeneration, T11 and 12 Schmorl's nodes in superior body. Cribra orbitalia (stage 3) . Degenerative joint disease (porosity and/or osteophytes) in right and left clavicles, femora and humerii. Pitted lesion on anterior articulation of left talus. Moderate to severe degeneration of the articular surfaces of right tarsals. Lamella bone formation on shaft of left and right tibiae and fibulae, more severe on right. Possible treponeamal infection. Inferior margins of nasal aperture smooth and remodelled.

SPMB97 Context 409
1 individual
Infant, < 3 yrs
Preservation: Grade 5, Very poor
Cranial fragments (mostly parietal), two rib heads, one left and one right, three thoracic neural arches.
Additional material: 1 non-human bone.
Skeletal pathology: Irregular bone growth, porous and disorganised, adjacent to suture.

SPMB97 Context 600
2 individuals
Infant **?F, Adult**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 5, Very poor
Infant rib, adult cranial and long bone fragments, three rib shafts.
Additional material: None
Skeletal pathology: Nodule of bone on right endocranial surface of frontal bone.

SPMB97 Context 602

2 individuals

?F, Adult **Juvenile**

Stature: Not possible, long bones fragmentary/absent.

Preservation: Grade 5, Very poor

Adult cranial fragments, right and left distal humerii, rib fragments and right tibia. Juvenile thoracic vertebra fragment.

Additional material: Two non-human bone fragments (including bird).

Non-metric traits: None present.

Skeletal pathology: Ethesophyte formation on right and left distal humerii. Slight porosity of left costal facet of T1. Woven bone formation on radial shaft fragment.

SPMB97 Context 608

1 individual

?Sex, Young adult

Stature: Not possible, long bones fragmentary/absent.

Preservation: Grade 5, Very poor

Left humeral shaft, and right distal fibula fragment.

Skeletal pathology: Pitted lesion in centre of distal condyle (anterior surface). ?Osteochondritis dissecans?

SPMB97 Context 702

2 individuals

?Sex, Adult **Juvenile <15 yrs**

Stature: Not possible, long bones fragmentary/absent.

Preservation: Grade 5, Very poor

Cranial fragment, left clavicle, left scapula fragment, right humerus shaft fragment, radial shaft fragment. Left distal femur and tibia, L1 and 2, right metatarsal, femoral shaft fragments. Juvenile right metacarpal I and III, proximal phalanges, fibula proximal shaft fragment.

Additional material: None

Non-metric traits: No appropriate elements present.

Skeletal pathology: Concentric rings of new bone growth adjacent to sagittal suture on right and left parietal. Woven bone formation on radial shaft fragment. Slight enthesophyte formation on left acromial clavicle.

SPMC97 Context 944

1 individual

?Sex, Adult

Stature: Not possible, long bones absent.

Preservation: Grade 5, Very poor

Four cranial fragments.

Additional material: None

Pathology: None

SPMC97 Context 962

1 individual

?Sex, Young adult
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 5, Very poor
Cranial fragments, left mandibular fragment, left clavicle, right proximal radius, right pelvic and femoral fragments.
Additional material: None

Dentition:

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
/ / /

Non-metric traits: No appropriate elements present.
Dental pathology: Slight calculus on lingual surface of left mandibular M2. Small carious lesion on buccal surface of right mandibular M3.
Skeletal pathology: Spur of bone projecting from right linea aspera, inferior to nutrient foramen. Porosity at sternal end of left clavicle.

SPMC97 Context 1110
2 individuals
?M, Adult **?Sex, Adult**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 5, Very poor
Mandibular fragments, right femoral shaft fragment, right metatarsal IV and V, tibial shaft fragment (second individual).
Additional material: Four fragments of non-human bone.
Dentition:

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
X
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
/ / X / /

Non-metric traits: No appropriate elements present.
Dental pathology: No teeth present.
Skeletal pathology: None.

SPMC97 Context 1111
3 individuals
?M, Adult **?Sex, Adult** **Juvenile <14 yrs**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 5, Very poor
Right humeral shaft fragment, right and left proximal femora, left tibial shaft fragment, right femoral head (second individual), juvenile left first metatarsal.
Additional material: 1 fragment of non-human bone.
Non-metric traits: None.
Pathology: No pathological change.

SPMC97 Context 1013
1 individual (rest of elements in 1015)

?M, Adult
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 4, Poor
Cranial fragments.
Additional material: None
Non-metric traits: Mastoid foramen extrasutral on right.
Skeletal pathology: No pathological change.

SPMC97 Context 1014
2 individuals
M, Mid-adult **?Sex, Adult**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 2, Good
Cranium, mandible absent, clavicles, right and left ribs (fragmentary), right scapula, fragmentary, right radius, left ulnae, distal end missing, right mc V, left mc I, IV and V. Right and left pelvis, C1-5, C7, T12-L5, sacrum, right and left proximal femora, left distal femur.
Additional material: 14 non-human fragments, left greater trochanter, left ischium and left scapula fragment.
Dentition:
/ / / --
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Non-metric traits: Bridging of supraorbital notch and plaque, both bilateral.
Dental pathology: Buccal calculus deposits on all teeth, heaviest on maxillary right lateral incisor. Medium periodontal disease, left maxilla and considerable periodontal disease on right maxilla. Small carious lesions on mesial surface of maxillary M2 and right maxillary M3, and distal surface of left maxillary M1 and right maxillary M3. Medium carious lesion on left maxillary PM2 and right maxillary M1. Large carious lesions on M1, left M2 and right PM2. Internally draining abscess at root apex of right maxillary PM2 and M1.
Skeletal pathology: 2 pieces of calcified thyroid cartilage, calcified costal cartilage. Possible well healed compression fracture of right parietal. Slight degeneration f six left and three right rib heads. Porosity of right glenoid, left and right sternal clavicles. Spinal degenerative joint disease T12-L5, linear Schmorl's nodes L2-5.

SPMC97 Context 1015
3 individuals
F, Young adult **?Sex, Mid-adult** **Juvenile <15 yrs**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 3, Fair
Cranial fragments, right and left clavicles, plus right and left (x2) clavicle fragments, 2x left first rib, sternal fragments, right and left humerii, left humeral shaft, left humeral head, right proximal humeral shaft, right and left radii and ulnae (broken), rib fragments. Left mc II and III, III and IV, left carpals (incomplete), right mc II-IV, I, III-V, right carpals (incomplete). T11- L5, T11 and T12, T1-6, C1 and 2, vertebral fragments. Right and left pelvic fragments, sacral fragments, right and left femoral (proximal right and distal left missing), right patella, right tibia, right distal fibula,

right tibia and fibula fragments, left tibia (proximal end missing), left talus, right mt III.
Additional material: 11 fragments of non-human bone, 1 non-human rib, 1 non-human vertebral body, 1 non-human tooth.
Dentition:

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Non-metric traits: Septal aperture, right humerus, two left scapulae with acromial articular facets, double anterior calcaneal facet, left calcaneus.
Dental pathology: Slight periodontal disease, left mandible. Flecks of calculus on buccal surface of left mandibular 4, 5 and 7 and lingual surface of 4-6, slight on buccal surface of 2 and 6 and lingual surface of 7, and medium calculus on buccal surface of 3 and 8 and lingual surface of 2 and 3. Heavy calculus on lingual surface of left mandibular M3.
Skeletal pathology: Degeneration of rib heads, porosity of acromial articulation of right and left clavicle. Lytic lesion on distal gladiolus fragment. Porosity on sacrum, degenerative changes to pubic symphysis. Degeneration of vertebrae (osteophytes and porosity. Spurring of right tibial tuberosity. Left tibia, lamella bone formation on medial shaft and distal third of lateral shaft leading to thickening of cortex. Right fibula, woven and lamella bone on medial surface leading to thickening of cortex. Possible treponeamal infection.

SPMC97 Context 1016
2 individuals
M, Young adult **Juvenile 4.5-6.5 yrs**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 3, Fair
Right distal humerus, right and left radii and ulnae, right and left carpals and metacarpals (some right carpals and mc II missing). Right and left pelvis, femora, patellae, tibiae and fibulae. L2-5, sacrum.
Additional material: 4 non-human fragments, 1 non-human tooth. Juvenile right radius and ulna.
Non-metric traits: None
Skeletal pathology: Spina bifida occulta. No pathological change in juvenile remains.

SPMC97 Context 1017
1 individual
?Sex, Mid-adult
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 3, Fair
Right and left ulnae, left radius, left metacarpals, six left carpals, right mc I, fragmentary ribs, 21 unsided phalanges, T9-L5, fragments of sacrum and left pelvis, left femur (distal end missing), left patella. Rest of skeleton beyond limits of excavation.
Additional material: 1 non-human fragment, 1 non-human rib.
Non-metric traits: None.

Skeletal pathology: Slight osteophyte formation in vertebrae, most sever on T11 costal facets. Two ribs heads with signs of joint degeneration. Right and left ulnae, osteophytic spurring of olecranon process. Piece of calcified cartilage, probably thyroid.

SPMC97 Context 1028

1 individual (NB: may be 2 as temporal fragments have some differences suggesting they may not be a pair)

?F, Young adult

Stature: Not possible, long bones absent.

Preservation: Grade 5, Very poor.

Cranial fragments only.

Additional material: 1 fragment of non-human bone.

Dentition:

```
--          / ----------
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
-------------------------------------------------
```

Non-metric traits: Metopic suture and zygomaticofacial foramen present.

Dental pathology: Slight periodontal disease in right maxilla. large carious lesion in left maxillary M1 which has left only the buccal root as a peg and lead to the formation of an externally draining abscess.

Skeletal pathology: None.

SPMC97 Context 1030

3 individuals

M, Young adult **?Sex, Adult** **Juvenile 16-17 yrs**

Stature: 173.3 +/- 3.27 cm (left femur of Young adult Male).

Preservation: Grade 3, Fair (second adult, poor)

Cranial fragments, right and left clavicles, right and left scapulae fragments, right proximal humerus, left distal radius, fragmentary ribs and sternum, 3 hand phalanges. Fragmentary vertebrae, C1-4, T1 and 2, T5-11, L3-5. Fragments of right pelvis, left pelvis and sacrum, femora (right proximal end absent), fibulae, patellae, right tibia, right and left calcanei (left distal end missing). Proximal third of left femur (second individual). Juvenile cranial fragments, scapulae fragments, humerii, sternum, left clavicle, right ilium and ischium, right radius and ulna, distal ends absent.

Additional material: 4 fragments of non-human bone, 1 tooth.

Dentition:

```
            / / / / / ---------
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
                    /
```

Non-metric traits: Highest nuchal line, parietal foramen and palatine tori present.

Dental pathology: Slight periodontal disease in mandible and right maxilla. Slight calculus on buccal surfaces of right maxillary incisors and lingual surface of right maxillary molars. Flecks on buccal surface of right maxillary molars and pre-molars and right mandibular 3-6 , and lingual surface of right mandibular 1-6. Medium calculus on buccal surface of right mandibular lateral incisor and left mandibular 2-7, and lingual surface of right mandibular M2 and M3 and left mandibular incisors.

Heavy calculus on buccal surface of mandibular central incisors and lingual surface of left mandibular M2.
Skeletal pathology: Nodule of irregular bone formation on left parietal, oval lesion on inferior border of right mandible. Macroporosity on distal sternum, Porous new bone on sternal clavicles. Smooth round lesion in right glenoid fossa. Three pieces of calcified thyroid cartilage. Osteophytes on right and left posterior calcaneii Schmorl's nodes in T9, 11, 12 and L3. Juvenile left humerus with woven bone formation at distal end and sharp edged lytic lesion on the medial border of the bicipital groove.

SPMC97 Context 1031
2 individuals
M, Mature adult **?Sex, Young adult**
Stature: Not possible, long bones fragmentary/absent.
Preservation: Grade 5, Very poor
Proximal right ulna, distal left radius, three right carpals, left mc I-IV, one rib fragment, 7 phalanges, fragments of right and left pelvis and sacrum, right proximal and left distal femora, left tibia and fibula (proximal ends absent), right tibial shaft, left calcanues, right cuboid., longbone fragments.
Additional material: Left femur (young adult), 5 fragments of non-human bone.
Non-metric traits: Medial tibial squatting facet and double anterior talar facet present on left side of mature adult.
Skeletal pathology: Left and right tibiae and fibulae with considerable lamella and some woven bone formation indicative of osteitis, possibly due to a treponeamal infection. Joint degeneration of left acetabulum.

Cranial and Post-cranial measurements

	CONTEXT	MEASUREMENT (MM)
Symphysis height	403	25.1
	1030	33.8
	1039	37.5
Max. alveolar length	1039	68.5
Palatal length	1039	54.0
Palatal breadth	1039	39.0
Bigonial breadth	403	93.3
	1039	87.0
Acsending ramus breadth	403	34.4
	1039	49.0

Table 14: Cranial measurements.

	301		403		608		1014		1015		1016		1017		1030		1031		1032		1033		1036		1039		1111	
	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
ClL1		-		-		-		-		-		-		-		-		-		-		-		-		160		-
HuL1		-		-		58.9		-		-		-		-		-		-		-		-		293		344		-
HHD		-		38.7		-		-		40.6		-		-		-		-		-		-		39.7		52.0		-
HuE1		-		-		-		-		-		64.1		-		-		-		-		-		55.9		55.8		68.5		-
RaL1		-		-		-		-		-		-		-		-		-		-		-		-		-		-
UlL1		-		-		-		-		-		-		-		-		-		-		-		-		-		-
FeL1		-		430		-		-		-		-		-		470		-		-		-		-		-		-
FeL2		-		426		-		-		-		-		-		460		-		-		-		-		-		-
FHD1		-		40.3		-	47.5	48.5		40.5		50.0		46.1		50.6	50.5	43.2		-		-		-		-		53.0
FeD1		25.6		25.0		-	26.5	26.8	24.6	25.0	27.7	26.7		25.0	26.2	26.4	29.0	-		-		-		-		-	27.8	-
FeD2		36.5		29.6		-	36.8	35.0	34.1	34.0	34.4	34.1		32.6	32.2	35.3	33.5	-		-		-		-		-	37.5	-
FeE1	73.5	72.9	72.6	69.8		-		-	69.0	-	85.0	-		-	82.7	81.0		83.0		-		-		-		-		-
TiL1	352	-	360	350		-		-		-		-		-		-		-		-		-		-		-		-
TiD1	32.0	32.7	33.4	32.1		-		-	36.3	33.7		27.2		-		-		34.0	37.6	37.1	36.8	39.0		33.0		-		-
TiD2	25.7	23.0	25.0	23.4		-		-	26.8	26.8		25.0		-		-		27.0	27.0	26.9	26.0	24.5		23.3		-		-
TiE1	46.0	-		-		-		-	79.5	-	78.5	77.7		-		-		-		-		78.0		-		-		-
Glenoid		-		-		-		-	35.7	35.6		-		-	40.9	-		-		-		-		-		-		-
FiL1		-		-		-		-		-		-		-		-		-		-		-		-		-		-

Table 15: Post-cranial measurements