An Archaeological Excavation at the site of St. John the Baptist's Hospital, Mill Farm, Lutterworth, Leicestershire (SK 547 840)

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For: Hallam Land Management

Date: September 2002

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Report No. 2002/135

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Summary

An archaeological evaluation and excavation was undertaken, by ULAS, on behalf of Hallam Land Management, at the site of Mill Farm, Lutterworth, the former site of the medieval hospital of St. John the Baptist. Previous evaluations had identified the site of the old mill, a cemetery and some undated cobble surfaces. The 2001 evaluation and excavation targeted the main areas of proposed development, which had not yet been explored by the previous evaluations – around Mill Farm House itself and to the south-east within an area of concrete, and areas of known archaeological potential which had previously been evaluated, incorporating a medieval cemetery, cobbled surfaces and the old mill site. The excavations revealed a substantial medieval cemetery and cobble structures possibly associated with either the 13th-16th century hospital or the 17th-century mansion house, both of which are known historically to have occupied this site.

1. Introduction

ULAS was commissioned by Hallam Land Management to conduct an archaeological evaluation and excavation at the site of Mill Farm, Lutterworth, the former site of the medieval hospital of St John the Baptist (SP 547 840).

The site consists of an area of *c*.2.0 ha and lies approximately 21 km south of Leicester in Lutterworth parish in Harborough District (SP 547 840, Fig. 1). Situated to the south of the historic core of Lutterworth (SMR Ref. 58SW.AE), it includes the historic sites of the hospital of St. John the Baptist (SMR Ref. 58SW.AW) and Spital Mills (SMR Ref. 58SWAL), an area that is recognised as having a high archaeological potential.

An archaeological evaluation, by trial trenching, undertaken in 1996 by ULAS (Gossip 1996), had previously demonstrated that archaeological deposits of significant value were indeed preserved at the site. These included a concentration of human burials to the south of the farmhouse, cobble surfaces in the south of the site (beyond the graves) and evidence of activity associated with the 18th-19th century 'Spital Mill' in the north and north-east of the site. Also in the vicinity, on land immediately to the south and west of Mill Farm an archaeological evaluation was undertaken in 1992. This revealed 13th-century closes, probably representing paddocks, gardens or orchards, a possible medieval house platform and 13th-century sand quarry pits (Cooper, 1992).

The results of the 1996 field evaluation identified three areas of archaeological potential which would be affected by the development proposals and therefore requiring full excavation (Fig. 2; areas 1A (mill site), area 1B (south-east of the mill) and area 2A (hospital/cemetery site)). It also identified an area to the east that could not be evaluated at the time due to the presence of farm buildings and concrete slabs (Fig. 2;

Area 2B). A 'brief' was subsequently prepared for this work by ULAS on behalf of Hallam Land Management and agreed with the Leicestershire County Planning Archaeologist, in her capacity as archaeological adviser to the planning authority.

The open area excavation was to be targeted on the areas of known archaeological importance, as determined by the earlier evaluation (Gossip 1996); these comprised an area of a medieval grave yard, containing twenty two graves to the south of the farmhouse (Area 2A), substantial cobble built structural remains beyond (Area 2A) and the site of 'Spital Mill' (Area 1A) in the north east of the site.

During summer 2001, the strategy of trial trenching and open area excavation was implemented in accordance with the brief although it then emerged that the former farmhouse and grounds had been incorporated into the development area (Fig. 2; Area 2C). In order to ensure that this area was assessed, two further trial trenches were examined in the accessible areas around the farmhouse with the agreement of the Assistant Planning Archaeologist. In addition, the open area excavation of Area 2A showed that the archaeological deposits were more extensive than previously supposed and continued up to the concrete rafting of Area 2B. Area 2A was therefore extended to include these deposits.

The following report details the progress and findings of the trial trenching and excavations, undertaken by University of Leicester Archaeological Services between July and August of 2001.

2. Geology and Topography

The building of Mill Farm lies at a height of approximately 111 m O.D. on a probable river terrace, with lower ground to the north adjacent to the River Swift and slightly higher ground to the south.

Underlying geology consists of glacial boulder clay and river-deposited gravels in the south of the site, and alluvial clays in the north. A raised area of natural gravel forms the south west corner of the site (Geological Survey of Great Britain Sheet 170, (Market Harborough).

3. Historical Background *by Simon Chapman & Paul Courtney*

Lutterworth was a rural manor in Domesday Book (1, f.236) held by Mainou the Breton. By 1139 it was held by the Verdon family, from the 14th century by the Ferrers of Groby and from the 16th century by the Greys of Bradgate (Nichols, iv, 249-50). Lutterworth was granted a market charter in 1214 though there is no indication of burgage tenure (Hilton 1954, 175 and 177). In 1563 Lutterworth had 106 households and Leland in the 1530s noted it as 'scant half so bigge as Lughborow' (Smith 1956, 167; Leland, i, 19). However, Lutterworth, though small, thrived as a local market town in the 16th and 17th centuries serving its immediate hinterland, an area mostly enclosed by the end of the 17th century (Goodacre 1994).

3.1 The Hospital of St. John the Baptist

(SMR ref. 58SW AW (NGR: SP 546 839)

The definitive historical account of the hospital of 'St. John the Baptist and St. Anthony' is that given by Richard McKinley (1954, 42-4) in the *Victoria County History* and most of what follows is derived from his account (see also Nichols, 4i, 259-62). The hospital was built in or shortly before 1219, during the reign of King John, probably by a member of the Verdon family, on land known locally as the 'Warren'. The officials who produced the chantry certificates of 1546 believed Nicholas Verdon to have been the founder of the hospital, and state that the hospital was intended to house a priest, 6 poor men and give hospitality to poor travellers (Thompson 1910, 496). In the early 14th century, Bishop Dalderby of Lincoln drew up rules for the hospital based on the Augustinian order and ordered that no women should be admitted as sisters without the bishop's permission. An altar dedicated to St. Mary in the hospital church is recorded in 1350. In 1329 the Hospital possessed lands at Gilmorton, and at other times at Cotesbach, Shawell and Bitteswell. In a papal letter dated to 1436, the hospital was said to 'have had no brethren for 50 years, on account of the diminution of its fruits' (Clay 1909, 225). The pope therefore decreed that the mastership of the hospital could be held with any other benefice.

It thus seems clear that by the end of the 14th century the hospital had ceased to operate as such and only served henceforth as a source of income for those it was bestowed upon. However, the master did have to distribute £4 in alms every year. In 1534 the 'mansion' house and demesne land were being leased for £8 to Richard Wingfield, who did not occupy it, and the two watermills were leased for another £8 to John Wright (Nichols, 4i, 262). The hospital's net yearly income in 1546 was £33-7s-4d, mainly from lands in Leicestershire, Warwickshire and Northamptonshire and the lease of the two mills. At this date the 'houses' and the chapel were said to be greatly in decay and in ruins (Thompson 1910, 496-8). The house survived the Dissolution and masters were presented up to 1676. In 1556 there was said to be no poor in the hospital, such that no hospitality was kept 'there were noe pore men within the same Hospytal remaynyng or inhabiting; and the house, with the chapel, greatly in decaye and ruyne' (quoted in Clay 1909, 225). This situation probably applied to the whole of the 16th and 17th centuries. The lands were eventually purchased by the Faunt family, former leasees, from the crown during the reign of Henry VIII (Nichols 1807, 260).

3.1.1 Medieval Hospitals

There is little doubt that independent hospitals were established in Saxon times, with King Athelstan's foundation of the great hospital of St. Peter at York and his connection with other similar institutions at Bath and Malmesbury (Godfrey 1955, 16). This was the first of a long line of Royal foundations, the last, in medieval times, being that of the Savoy, London founded by Henry VII. Other hospitals were founded by the church, as at Canterbury *c.*1089 by Archbishop Lanfranc; Norwich in 1246 by Bishop Suffield; and St.Cross, Winchester in 1136 by Henry de Blois (Godfrey 1955, 17). Some hospitals were even founded as gifts by wealthy landowners, as was the case of the 'isolation hospital' for Lepers founded by Roger de Mowbray (1138) at Burton Lazars, Leicestershire (Brown 1996, 31), and Trinity Hospital), Leicester founded by Henry Earl of Lancaster in 1331.

The medieval hospital arose out of the belief that the sick and suffering could purge their sins on Earth through prayer and confession, while their material needs were being satisfied by the hospital.

> *'But the old and grey, who are helpless and needy, and pregnant women unable to work, the blind and the bedridden, and those who are crippled, and all the patient poor who accept God's will, such as lepers and pilgrims and sometimes men who have been robbed or tricked by evildoers, and have lost all their goods as a result, or who have fallen into poverty because of fire or flood: out of love of their humility Our Lord has granted all such people, who suffer these tribulations meekly and without complaint, that they may undergo their penance and purgatory here on earth.'*
>
> Translation of William Langland, Piers Plowman, C Passus IX quoted in Rawcliffe (1999, 1)

A ruling of the 4th Lateran Council threatened excommunication of any medical practitioner who treated anyone who had not first made a full confession (quoted in Rawcliffe 1999, 103). There was a perceived link between sin and ill health;

> *'a sickness of the body may sometimes be the result of sin…so we by this present decree order and strictly command physicians of the body, when they are called to the sick, to warn and persuade them first of all to call in physicians of the soul so that after their spiritual health has been seen to they may respond better to medicine for their bodies: for when the cause ceases so does the effect'*
>
> (decree of the 4th Lateran Council of 1215, quoted in Rawcliffe 1999, 7)

Those with material wealth were, however, not turned away;

> *'And no one shall be a proprietor, but if any one have any property, he shall resign it to the warden or master before seven days . . . otherwise he shall be excommunicated . . . But if it shall be found that any one has died with property, his body shall be cast out from Christian burial, and shall be buried elsewhere, his property being thrown upon him by the brethren, saying, 'Thy money perish with thee''.*
>
> (Rule of St.John's Nottingham quoted in Clay 1909, 133).

The length of stay of any particular inmate appears to have been flexible and based on the need of the individual. At St. Giles, Norwich (from which substantial records survive), between 1479-1503, thirteen long-term inmates were recorded as 'paupers lying in bed', of which two stayed for *c*.6 yrs, one for *c*.4 yrs, one for *c*.3 yrs, two for *c*.2 yrs and the rest between *c*. 6 weeks - 11 months (Rawcliffe 1999, 166). In addition to inmates there may have been an outpatients facility, again St. Giles bears record to a few deserving cases in need simply of an overnight shelter and a halfpenny's worth of food. Certainly, as at the Savoy hospital, London, a hierarchy of need was established;

'*first priority was to the sick and moribund (other than lepers), then to the halt, blind and decrepit, thirdly to the truly destitute and last to poor but otherwise able-bodied men looking for accommodation'*
(quoted from a source in the Bodleian Library by Rawcliffe 1999, 169).

Actual medical attention for the sick may not have been that common, and where it was present was rudimentary to say the least. The tradition of employing barbers as surgeons (simply because they possessed the sharpest blades in town) is certainly documented in the records of some of the larger hospitals such as St. Giles, Norwich (Norwich City Records 24A –Archive of the Great Hospital- quoted in Rawcliffe 1999, 159) though the nature of the surgery undertaken may have been little more than a bloodletting and a good shave and haircut. More qualified surgeons, some of whom may have trained at Oxford or Cambridge did exist before the 16th century, though most would have had Royal appointments or have been employed exclusively by the wealthy, doubtless few would have tended the poor. Uroscopy (examination of urine), leeching (for bloodletting) and herbalism (using produce from the infirmarer's garden) were the mainstays of medical intervention at institutions such as St. John's.

Most medieval hospitals were intended to provide both spiritual and material benefit to their inmates, and as such were usually run by religious bodies, if not by monastic orders. The Order of St. Lazarus, which had its origin in Jerusalem, for example, administered several leper hospitals including that at Burton Lazars, Leicestershire. As such, the architectural design of medieval hospital complexes usually reflected this dual purpose. The plan usually centred on a large hall called the 'infirmary hall', which provided bed space for inmates in its aisles and a large central area for hospital staff to go about their daily duties. At the eastern end of the infirmary hall would usually be a chapel. Such a plan can be seen in most monastic infirmaries, as at Christ Church, Canterbury, and also in independent hospitals such as St. Mary's, Chichester (early 13th century) and Trinity Hospital, Leicester

As well as a chapel and infirmary hall, a medieval hospital required a whole suite of buildings to sustain its daily requirements. There would have been store houses (for meat, grain, fuel and building materials), stables and cart houses, facilities for malting, brewing, baking, cooking and butchery. Archaeological investigations have demonstrated that hospital precincts were frequently enclosed in perimeter walls, or were fenced into discrete courtyards (Cullum 1993, 14-17, Thomas, Sloane & Phillpotts 1997, 86, 101), in particular the domestic spaces, especially the kitchens, were generally kept separate from the infirmary and chapel areas so as to preserve their sanctity (Rawcliffe 1999, 55).

Hospitals with landholdings used these as a means by which to boost revenue. St. Giles, Norwich is recorded as having produced 'apples, pears, leeks, garlic, onions, hemp, madder and honey' (Norwich City Records 24A –Archive of the Great Hospital- quoted in Rawcliffe 1999, 53). St. John's, Lutterworth took this sideline one step further and managed and/or leased up to three local mills, and farm land in various locations outside of its immediate precinct, so much so as to have generated an annual revenue in excess of the local parish church of St. Mary's. Much of this revenue may

have taken the form of produce such as wheat, rye, barley, oats etc. paid either as rents by tenants or as donated as gifts by landed gentry and the mercantile elite.

The Newarke Hospital, Leicester, was founded by Henry Earl of Lancaster in 1331 and dedicated to the Annunciation of the Blessed Virgin Mary. It had one of the longest infirmary halls in England (*c.*66m long), and was built for the provision of 50 poor men. The structure and intake was enlarged by Henry's son to incorporate a collegiate church with a dean and twelve canons, twelve vicars, three clerks, six choristers and ten nurses, by which time it could provide for fifty poor men and fifty poor women (Godfrey 1955, 30). It was reconstituted in the 17th century when it was renamed Trinity hospital.

Much grander hospitals were later established on a massive scale. A classic example of this can be seen at the Hospital of the Savoy, London, founded by Henry VII in 1517, which was planned around a great cruciform structure with a lantern over the crossing, and incorporated a grave yard and part of the old Savoy palace, where a master and four chaplains provided accommodation for one hundred poor (Godfrey 1955,38).

Burial grounds

At St. Giles Hospital, Norwich, the burial ground was situated to the north east of the infirmary chapel. Certainly at St. Giles, the hospital's master (Walter Suffield) attracted additional revenue by offering patrons the right to be buried there (Rawcliffe 1999, 49), usually a little distance from the poor that died at the hospital, whose burials were doubtless more modest. Various disputes between hospital and parish church over rights to bury the dead are historically documented; the hospital of St. John's, Nottingham encountered great hostility from local priests over burial rights, while the canons of St. Mary's, Bishopsgate eventually agreed to compensate the local parish church for lost revenues to keep the peace (Rawcliffe 1999, 49). Such disputes doubtlessly arose as a result of the mortuary fee payable to the priest for each parochial burial.

3.2 Spital Mansion

The Coles had a seat at 'The Spittal' in 1631. In an Indenture of Lease and Release of 1693 Colonel William Cole, a Royalist veteran of the English Civil War was mentioned as living at the 'Spittal', the site of the old Hospital. A subsequent mansion house appears to have been built, possibly using building materials from the Hospital (Dyson 1913, 60). Nichols describes this as 'a much later building than the fashion of those times'. Cole owned the Spittal Estate and its two water mills. After this, the estate passed into the ownership of the Shuttleworth family, who owned it at the time of the 1758 mill dispute.

3.3 Spital Mills

(SMR ref: 58SW AL (NGR: SP 5458 8401 & SP 5456 8492).
In 1631, the spital mills, formerly belonging to St. John's Hospital, comprised two water corn mills, one windmill and one maltmill, (Nichols 1807, 260); a mill in Misterton parish is also mentioned in the Domesday Book (Ashton 1977, 87-88). In the reign of Henry VIII the mills were part of the St. John's Hospital property leased to the Faunts (Marriot 1870, 61). In 1577, possession of the two water corn mills went to the

crown when the Hospital was dissolved (Nichols 1807, 259-262). It has been suggested that this may be the mill mentioned under Misterton in the Domesday Book (Ashton 1977, 87-8). Many disputes took place with Lodge Mill. In 1758 the monopolies of both sets of mills was abolished. Spital Mill ceased working in the 1890s with the building of the Great Central Railway, which cut off the feeder channel from the River Swift. Ordnance Survey records say the buildings (SP 5458 8401) were of 18th/19th-century red brick and surviving photographs confirm this (plate 1). These were inhabited until fairly recently and were probably finally demolished around 20 years ago (Mr Burton, former tenant, pers. comm.). Bent says a subscription windmill was built *c*.1800-10 and that a windmill at Lutterworth is mentioned in 1316, in Farnham's Village Notes. The windmill (SP 5456 8492) was burnt down around 1910.

Rubble and human bones, possibly from the hospital's graveyard, were apparently found in the 1890s during the construction of what is now the A4303 (Dyson 1913, 18). By this time, however, no structural remains of either the hospital or the mansion house survived above ground.

4 Aims and Objectives

4.1 Academic Aims

Within the East Midlands region, most modern controlled excavation has focussed on the larger religious houses – abbeys and priories – and our understanding of the layout, appearance and chronology of smaller establishments such as hospitals is severely limited. Within Leicestershire, the only upstanding remains of hospitals today are Trinity Hospital in Leicester, founded by Henry earl of Lancaster and Rothley Temple, originally a preceptory of the Knights Templars, but transferred to the Hospitallers after the suppression. Neither has seen any extensive modern excavation or architectural survey. The location of the hospitaller site of Old Dalby is not known for certain (although survey has identified a possible candidate) and although the leper hospital of Burton Lazars was excavated in 1913, the exact location of these trenches is now unclear (Lewis 2001). Hence, the redevelopment of Mill farm, Lutterworth represented a rare opportunity to investigate an important medieval site, albeit one which has seen serious truncation by later activity.

The specific site-based academic priorities established at the outset of the excavation were as follows:

- Characterise the spatial layout of the medieval hospital buildings and associated cemetery within their landscape setting, and how this changed over time.
- Characterise the diet, health, social status and living conditions of the inhabitants of the hospital through excavation and analysis of burials within the cemetery and through analysis of environmental samples from associated deposits.
- Establish a chronological framework for the site through excavation and analysis of artefactual data.
- Examine evidence for a medieval precursor to the 18th-19th century Spital Mill
- Clarify the nature of 16th-17th century occupation on the site following the demise of the hospital.

4.2 Site Objectives

The principal objectives of the project were to:

- Clarify the boundaries of the identified area of archaeological potential with additional trenches (further site 'evaluation').
- Clarify the nature, extent, date, state of preservation and importance of archaeological deposits within the area of potential through topsoil stripping and cleaning of exposed subsoil ('topsoil strip').
- Mitigate the effects of potential damage to buried archaeological deposits from the development proposals within the area of high potential through controlled archaeological excavation and recording. Archaeological features are to be sampled sufficiently to establish their extent, date, quality, character, form and potential including environmental data to enable the project research aims (below) to be addressed ('area excavation'.
- Mitigate the effects of potential damage to buried archaeological deposits from the development proposals in areas of low potential through archaeological monitoring of groundworks and recording of significant archaeological features (the 'watching brief').

5 Methodology

Topsoil and interface layers were removed using a 360° tracked excavator, fitted with a 2m toothless ditching bucket, under archaeological supervision. The depth of initial excavation was either to the depth required by the development or to the interface with archaeological deposits, whichever was reached first.

Areas of archaeological interest were hand cleaned, and the locations of deposits recorded in plan (drawn at 1:20 scale) and section (drawn at 1:10 scale), and plotted in 3D in relation to the Ordnance Survey Datum (using a Topcon GTS-212 Electronic Distance Measurer (EDM) linked to a Psion hand held data logger). All archaeological features were either half sectioned or excavated in plan (in the case of graves) for the retrieval of finds (for dating), environmental samples, and to aid the understanding of site stratigraphy and feature function. All excavated features were recorded in drawn plans and sections, and full written and photographic records were made at all stages of the excavation process.

All procedures adhered to standard guidelines, recorded in the *ULAS Field Manual*, and the Institute of Field *Archaeologists Standard and Guidance for Archaeological Excavations.*

6 Evaluation Trenches *by Vicki Priest*

The following text details the archaeological findings of the evaluation trenches in Areas 2B and 2C (Fig. 2). Some of the trenches were excavated in two parts due to the depth and instability of the deposits making a total of ten trenches; where this occurs the trenches have been labelled a and b. Each archaeological deposit was assigned a unique context number during field excavation; these numbers are referred to in the following text. On the figures, cuts are shown in square brackets and other contexts in normal brackets. A full list of archaeological contexts for the evaluation trenches is reproduced in Appendix I.

6.1 Results

Trench 1 (Figs 3 & 4)

Trench 1 was situated immediately to the south of the farmhouse to assess the possibility that the cemetery identified during the previous evaluations to the south of the house (Area 2A), might extend northwards (Fig. 3). The topsoil was removed to reveal a light orange-brown sandy gravel (probably natural). The ground dropped to the west and a darker band of loose soil was visible at this end of the trench (73). This appears to be part of a large quarry pit located to the south-west of the house. To the east, the trench contained a number of small irregular features. These included a land drain (61) and several small, shallow irregular blobs ((62), (64), (67), (68), (70), (71), (72)). These features all comprised a similar light brown fill with occasional charcoal flecks. Apart from a nib tile fragment and a modern brick fragment from the top of Context 60, no finds were recorded from any of these and they are interpreted as either natural features or modern features associated with garden landscaping. Context (63) was a small shallow rounded pit with charcoal flecks that may be modern. Context (60) was a small pit/post hole containing animal bone fragments. There were also two linear bands of badly decayed mortar ((65) and (66)). Context (66) turned out to be very shallow, although (65) was more substantial (*c.* 0.4m deep with a rounded base) and contained a fragment of nib tile and two modern brick fragments. These features are most likely associated with the house or outbuildings in the garden.

In the centre of the trench was a rectangular pit, *c.* 1.5 x 1m wide and approximately 1m deep (Fig. 3; (92). It had virtually straight sides and a flat base. The upper fill of the pit (Figure 4; (69)) comprised a light grey-brown silty clay sand. Beneath this was an orange and grey plastic clay (98) with a silty clay sand fill around the sides at the base (99). A single sherd of 14th-century brown-glazed pot was recovered from this context. The eastern side of the pit was revetted all the way to the base with a wall constructed of cobbles (306). A number of loose cobbles were recovered from the fill of the pit. Excavation of the pit revealed it was cutting a skeleton (Fig. 3; Sk 17) in an east-west grave cut (308). Only the head and upper body were still remaining and it appears that the lower part of the body had been removed during the excavation of the pit.

Trench 2 (Fig. 3)

Trench two was located in the garden to the west of the house on land that was dropping away to the west. The topsoil was a maximum of 0.3m deep and revealed a light yellow-brown sandy gravel. This layer appeared to be disturbed and given that the

trench lies within the dip to the west of the house, it is probably part of the quarry identified in trench one ((73)). Three features were identified in this layer. Context (83) was a very irregular brown silty sand patch. Context (85) had a similar fill. Both were quite shallow and are probably redeposited layers associated with the quarry. Context (84) was a dark and loosely compacted circular feature, probably modern and associated with garden landscaping. A ploughscrape was visible running north-west – south-east across the trench.

The areas to the north and east of the house were impossible to evaluate due to the presence of a steep slope to the north and extremely low electric cables to the north and east preventing access on health and safety grounds.

Trench 3a and 3b (Figs 2 & 5)

Trenches 3a and 3b were located in the far south-east corner of the site on concrete rafting (Fig. 2). The concrete and gravel make-up layers (Fig. 5; (327) & (328)) were approximately 0.25-0.3m thick. Beneath this was a thick layer of orange and dark grey clay (330), to a depth of approximately 1.5m in both trenches. In trench 3a to the east, a dark greeny-grey clay (329), appeared to be overlying the orange and dark grey clay. These clay layers appear to be waterlain deposits. Excavation was stopped at a depth of 1.5m due to health and safety considerations.

Trench 4a and 4b (Figs 2 & 6)

Trenches 4a and 4b were located on a separate area of concrete to the south of trenches 3a and 3b (Fig. 2). Immediately beneath the concrete was a thick layer (up to 0.5m deep in trench 4a and up to 0.8m deep in trench 4b) of building debris comprising grey redeposited clay with modern brick and concrete fragments (332). Beneath this in both trenches was a thick layer of green-grey and black slimy clay (333). This was excavated to a maximum depth of 1.7m deep where excavation was stopped due to Health and Safety considerations.

Trench 5 (Figs 2, 7 & 8)

Trench 5 was located on the concrete next to an old brick barn (Fig. 2). Beneath the concrete slab, at either end of the trench, was a layer of dark clay (Fig. 8: (335)), containing building debris similar to context (332) in trenches 4a - b and 6a – b but with a lot of mortar fragments and occasional cobbles. In the centre of the trench was disturbed brown sandy clay (336), with lenses of charcoal and containing brick and modern glass fragments indicating it may be a modern demolition layer. This overlay several areas of cobbling, all very disturbed but with some potential structures (Figs. 7 & 8). Covering the cobbles was a loosely compacted mid brown sandy clay (Fig. 8; (337).

To the west of the trench was a linear (north-east – south-west) cobble structure (Fig. 7: (256)). There was no apparent bonding material and this feature appears to be the footings and collapsed rubble of a demolished cobble-built wall. A number of medieval tile fragments were recovered from the cobbles along with slate fragments. The tiles appear to be within the wall and are likely to represent the use of already-demolished building materials rather than *in situ* flooring.

There were three other potential structures to the east of context (256). Context (253) in the north section probably represents the footings of a second wall. Just two courses of cobbles were still visible making it impossible to know the exact orientation. A band of linear cobbles (254), lay to the west; again there was no bonding material visible and these may be the remnants of another wall parallel with (256). To the south and east were disturbed cobbles (255), around some of which was a yellowish clay that may represent bonding material. It is difficult to ascertain whether the cobbles are a disturbed layer or just tumble from either (254) or (253).

Trench 6a and T6b (Figs 2 & 9)

The stratigraphy of trenches 6a and 6b was very similar to that found in trenches 4a and 4b to the south, with concrete (Fig. 9: (331)) overlying up to 0.8m of modern building rubble and debris (332). Beneath this was a mid grey-brown silty plastic clay deposit (334) – presumably water lain. This was excavated to a depth of 1.7m without reaching the base of the layer.

Trench 7 (Figs 2 and 10)

Trench seven was located in an area of scrub undergrowth (Fig. 2). The topsoil at the south-east end of the trench appeared to be disturbed and loose and was up to 0.56m deep overlying natural orange-brown sandy clay. At the north-west end, however, the topsoil was much shallower (0.15m deep) and overlay a disturbed area of loose cobbles (Fig. 10: (237)). There appeared to have been a large bonfire in the area and the cobbles were mixed with a lot of modern debris including iron, brick and glass. However, there were some patches of more compacted small pebbles and this may represent a disturbed surface.

6.2 Discussion

6.2.1 Mill Farm House (Trench 1 and 2)

The quarry at the west end of trench 1 was later seen to be a substantial quarry pit running southwards. Given the disturbed nature of the deposits in trench 2 and the fact that this part of the garden lies within a dip that runs across the west face of the house (west of the concrete path) and through trench 1 marking the edge of the quarry there, it seems likely that the deposits recorded in this trench are redeposited and disturbed quarry backfill or else later features perhaps associated with the house. Most of the shallow features recorded in the eastern part of trench one are likely to be either natural features or else associated with the garden landscaping or the house.

The pit in the centre of trench 1, with the cobbled wall, is undated. Although cobbles were used for building in this area for a long period of time the feature is obviously later than the skeleton whose grave it cuts – probably significantly later, as it seems unlikely that the builders would have dug through a grave had they been aware of its existence. Although a sherd of 14th-century pottery was recovered from the pit this may have come from the grave that it cuts. The function of the pit is also unknown. If the wall was built as a revetment it suggests that the eastern side was perhaps unstable or needed repairing and that the pit needed to be kept open. Alternatively the pit may have been

built against a pre-existing structure although there was no evidence for the continuation of the wall beyond the edge of the pit.

The skeleton is likely to be related to the cemetery thought to be associated with the medieval hospital to the south of the house, suggesting that it stretched at least this far north and possibly continues beneath the house.

6.2.2 Concrete Area (Trenches 3 – 7)

Trenches 3, 4 and 6 all encountered deep deposits of clay apparently water lain. An early photograph of the site from the main road shows a pond here and it may be that this area was waterlogged. The colour and smell from deposits in trenches 3 and 4 suggests fairly recent deposits – perhaps backfill of the existing pond.

Trenches 7 and 5 both encountered cobbling. There were no real structures uncovered in trench 7 but cobbling was found in this area during the previous trenching and although disturbed, may be part of a bigger structure such as a yard or other type of surface.

The cobbles in trench 5 appear to indicate structures to the north of the barn with at least two parallel walls. The fact that there is no real evidence for bonding material together with the depth of the feature (approximately 0.6m below the concrete surface) suggests foundations. There was mortar present in the demolition layer above, which may have come from the now demolished walls. The medieval tiles thought to have been used as part of the wall make-up suggests that they may be post Dissolution, perhaps utilising the demolished buildings from the hospital.

7 Open Area Excavation

The following text details the archaeological findings of the open area excavations concentrated on areas 1A (mill site) and 2A/2B (hospital/cemetery site), (Fig. 2). Each archaeological deposit was assigned a unique context number during field excavation; these numbers are referred to in parentheses in the following text. A full list of archaeological contexts is reproduced in Appendix I.

7.1 Introduction

Both areas subjected to open area excavation were chosen by virtue of their high archaeological potential, as demonstrated by trial trenching during evaluations in 1996 (Gossip 1996).

Both areas were cleared of surface undergrowth (which was extremely dense in area 1a) and topsoil stripped using a 360° tracked excavator, fitted with a 2m toothless ditching bucket. The archaeological interface, and the underlying natural substrata were identified directly below topsoil. Some of the underlying more modern deposits were also removed in Area 1a.

7.2 Area 1a. The Mill Site

7.2.1 Previous work

Two trenches (O and P) had been located in area 1A by the previous evaluation (Fig. 2). Trench P recorded only spreads of modern deposits, probably demolition debris from the post medieval mill buildings. Trench O however recorded a number of structural remains mainly late 19th-early 20th century in date along with several cobbled surfaces and waterlogged areas. Several trenches to the east of the immediate area located waterlogged deposits probably associated with the mill pond (Fig 2, Trenches J-M) and a wall in Trench N was identified as part of the mill race seen on the 1886 OS map (Gossip 1996). The general impression of the deposits recorded in Area 1A was that they represented the demolition and remnants of the post-medieval mill buildings dating to the 19th-20th centuries. A few sherds of 12th-13th century pottery, however, suggested that there could possibly be earlier deposits beneath the post medieval debris.

7.2.2 Results (Fig. 11)

Area 1A lies very close to the river and much of the excavated area, especially the east end, remained under water throughout the excavations. In addition, the field boundaries to either side placed constraints on the width of the trench.

A number of structural remains were recorded once the tarmac and rubble had been removed. Along the north side of the area just in front of the field boundary was what appeared to be stone foundations (101). The stones were very compressed with tarmac lying immediately over the top of them and are probably part of a make-up surface for the tarmac that overlay this area. Several later drains ran across the whole site, cutting through all the other deposits. These are most likely to be associated with the later post -medieval building. The east end of the area encountered the same brick walls seen in the 1996 evaluation trench (102). These appear to be related to a relatively modern building (late 19th/early 20th century) probably part of an outbuilding associated with the post-medieval mill.

Along the south side of the excavation lay a fine metalled surface (111) sloping gently to the north. In the south-east corner was an area of cobbles with edging stones where it met the metalling (122). Patches of similar metalled surfaces were also recorded to the north and west (103, 107), and within the 1996 evaluation trench (191) and it seems likely that these formed a continuous surface across the area. Two wooden posts were also recorded in this area. Where the metalled surface no longer survived, lay mixed grey and brown clays containing brick rubble and post-medieval/modern pottery (Plate 3). These deposits and the metalled surface were probably disturbed during the demolition of the mill buildings. Sections excavated through the surface of (111), showed a mixed grey and brown clay layer (0.15m thick) above a thick black peaty layer below the water level. No further structural deposits were visible beneath the metalled surface.

Parts of two brick buildings were noted to the west. (114) was approximately 2.5m x 2.5m and contained a curved wall along the northern edge beneath the stone foundations (101). Two brick walls were visible to the east and west although the south wall had been disturbed by a later drain. The curved nature of the northern wall suggests it may

have been the top of a culvert. Building (126) to the south appeared to be more modern with a concreted interior and may have been a foundation for a small building. East of this, the rounded top of a large brick culvert was visible (112), structured to become progressively smaller in diameter presumably to maintain the rate of water flow.

A large millstone was uncovered immediately beneath the debris in the centre of the excavation. This was obviously not *in situ* but had probably been left there after demolition of the buildings (Fig. 11). It appeared to be made up of several fragments of stone bound together by iron bands (Plate 2) and was very similar to the remains of a millstone recovered in the south-west corner of the 1996 evaluation trench (Fig. 2). These millstones appear to be made with French *burr* stone and are consistent with a 19th-century date (Gossip 1996, 8). At the far west of the trench, a further area of coarse metalling was visible (121). This area was later machined deeper to show this surface running as far as the modern drain to the east and lying beneath the water level. This may be the same surface identified by the 1996 evaluation trench (212/213) lying beneath the fine metalled surface.

Finds from this area include large amounts of post medieval modern debris associated with the buildings approximately 25 years ago.

7.2.3 Discussion

The Spital Mills were recorded in 1631 as two corn mills, a windmill and malt mill formerly having belonged to St. John's Hospital (Marsden 1996), although the location of these mills in unknown. Certainly the buildings in Area 1 (shown on early OS maps) were of 18th – 19th century date and only demolished 25 years ago (Marsden 1996). The remains uncovered during the excavation of Area 1A appear to be mainly related to these post-medieval buildings. The only deposits earlier than the fine metalled surface that appears to have covered most of the area, is the coarser metalled surface that lies below this. Although this earlier surface is interpreted as the same deposit as (191), thought to be associated with medieval pottery from the 1996 evaluations, there was no evidence for any medieval deposits from the 2001 excavations. Given the waterlogged deposits recorded in the deep sections and the general high water level during the excavations it seems unlikely that deeper, earlier deposits lie beneath those recorded.

The brick culvert (112) lines up with the side of road drain to the north and is probably a storm drain. Several late 19th/early 20th century photographs of the mill buildings show a stream running out from a culvert in roughly the right location (Plate 1). Based on the location of this culvert, the main buildings almost certainly lie further west and possibly south of the excavation area and have probably been destroyed by subsequent recent road improvements. The structures and surfaces recorded during the excavation are therefore more likely to represent exterior yards and outbuildings.

Interestingly the same photograph (Plate 1) shows two millstones approximately the same size as those recorded during excavations, on display in front of the house rather than in use.

7.3 Area 2A, The Cemetery

7.3.1 The cemetery

A total of twenty-two (22) articulated burials form the basis of the following analysis. The majority of these were fairly intact, others, however, had suffered from subsequent truncation by later features (primarily by sand and gravel quarrying) and had thus lost skeletal parts. The majority of the skeletons were concentrated in a fairly small area immediately south of the farmhouse with just the one burial recorded in Trench 01 during the evaluations outside from the main group (Fig. 12). All graves were orientated the same way (west-east).

7.3.2 The burials

The following text catalogues the findings of each of the inhumation graves under their unique contextual code: **Sk**, (**) [**]** = skeleton number, grave fill context, cut number. Further details of the skeletal findings are reproduced in the osteology report (Section 9.1), along with the methodology used in the determination of the results.

Sk1, (2) [3]
(Figs 13 - 14)
Male ♂ aged 45-50 yrs.
This grave had been previously identified, but not excavated, during the 1996 evaluation of the site (Gossip 1996). The grave cut [3] contained a light yellow-brown gravel-rich clay fill (2) which when removed revealed a grave dug 0.32m into natural sandy clays. The base of the grave (at 112.2m OD) contained a single articulated adult male skeleton. The skeleton was incomplete due to truncation, at the western end, by a large sand and gravel quarry pit [7], and was thus missing its head, shoulders and upper right arm. The body was laid extended and supine (on its back), and was aligned west-east, with its head to the west in accordance with Christian tradition. Both arms and legs were fully outstretched, though the left arm was slightly bent at the elbow, both hands were placed over their respective hips. The fill of the grave contained some tile fragments, but these were not closely associated with the body.

Sk2, [1]
(Figs 13 - 14)
Male ♂ Adult (specific age indeterminate).
This grave had been previously identified, and excavated, during the 1996 evaluation of the site, the skeleton was revealed during evaluation (recorded as Sk1, Gossip 1996) but was not lifted, was backfilled and left *in situ*. The grave cut [1] was re-excavated during the open area excavations in 2001, to reveal a sub-rectangular grave dug 0.2m into natural sandy clays. The base of the grave (at 112.59m OD) contained a single articulated adult male skeleton. The skeleton was incomplete due to truncation, at the western end, by a large sand and gravel quarry pit [7], and due to trench collapse subsequent to evaluation in 1996. More of the skeleton was observed during the evaluation (parts shown as grey in Fig. 14) than during the excavation (parts shown in black in figure 14). At the time of excavation only the lower legs remained *in situ*, other parts were retrieved from areas of adjacent trench collapse, but some uncertainty over provenance remains. The body was laid extended and supine, lying slightly on its

right side and with a slight bend at the waist; it was aligned west-east, with its head to west. The legs were outstretched and slightly bent to the right side, the right arm was flexed at the elbow with the hand resting on the left hip, the right arm was outstretched with the hand resting in the middle of the pelvis.

Sk3, (4) [5[
(Figs 13 - 14)
Male ♂ Adult (specific age indeterminate).
This grave had been previously identified, but not excavated, during the 1996 evaluation of the site (Gossip 1996). The grave cut [5] contained a pale grey-brown gravel-rich clay fill (4) which when removed revealed a grave dug 0.2m into natural sandy clays. The base of the grave (at 112.54m OD) contained a mixed group of human bones. Lying directly on the base of the grave was a pair of articulated lower leg bones of an adult male; the upper part of the body had been truncated by the sand and gravel quarry pit [7]. The legs were laid out in a supine position and in an west-east alignment with the feet facing east. Deposited on top of these articulated bones was a jumble of disarticulated/charnel bones. These included a right pelvic fragment, a fragmented skull and mandible, a right scapular, several ribs, fragments of a right ulnar, some finger bones and a shaft fragment of a right tibia. Some of the bones included in this jumbled deposit could not have come from the articulated skeleton below (e.g. the additional tibia is duplicated). It seems likely that these bones represent the remains of at least one additional individual, perhaps one whose grave was disturbed during the process of interring, Sk3 (Sk8, (18) [9], immediately south of this grave seems a likely candidate). As is often the case, even today, the bones of the disinterred are included in the backfill of fresh graves.

Sk4, (8) [9]
(Figs 13 - 14)
Male ♂ aged 45-50 yrs.
This grave had been previously identified, but not excavated, during the 1996 evaluation of the site (Gossip 1996). The grave cut [9] contained a mid grey-brown gravel-rich clay fill (8) which when removed revealed a grave dug 0.25m into natural sandy clays. The base of the grave (at 112.6m OD) contained the lower half (legs and pelvis) of a single articulated adult male skeleton. The skeleton was incomplete due to truncation, at the western end, by a large sand and gravel quarry pit [7], and was thus missing its head, arms and torso. The body was lain extended and supine, and was aligned west-east. Both legs were fully outstretched. The right leg showed slight evidence of having rolled post deposition and the left patella (knee cap) had been displaced down toward the left shin (possibly as a result of animal disturbance). The fingers of the right hand were resting over the right hip, giving some indication of the position of the missing upper body.

Sk5, (14) [15]
(Figs 13 - 14)
Unsexable juvenile aged 15-20 yrs.
The grave cut [15] contained a mid orange-brown silty-clay fill (14) which when removed revealed a grave dug just 0.05m into natural sandy clays. The base of the grave (at 112.66m OD) contained a complete single articulated skeleton of a juvenile. Due to its extremely shallow depth of cut (immediately below the topsoil) the bones of the skeleton had suffered from considerable root action from the dense foliage above, and as a result the bones were in a fairly fragmented state. The body was laid extended and supine, and unusually was aligned inverted, with its head at the *east* end of the grave, contrary to Christian tradition. A small pit [17] truncated the left side of the hip, thus the left side of the pelvis and the upper left thigh were missing.

Sk6, (10) [11]
(Figs 13 - 14)
Male ♂ Adult (specific age indeterminate).
The grave cut [11] contained a mid orange-brown gravel-rich clay fill (10) which when removed revealed a grave dug 0.2m into natural sandy clays. The base of the grave (at 112.42m OD) contained the lower half (legs, pelvis and lower arms) of a single articulated adult male skeleton. The skeleton was incomplete due to truncation, at the western end, by a large sand and gravel quarry pit [7] and was thus missing its head, upper arms and torso. The body was laid extended and supine, and was aligned west-east, with its feet to the east. Both legs were fully outstretched. The arms were flexed at the elbows with both hands placed together in the middle of the pelvis.

Sk7, (12) [13]
(Figs 13 & 15)
Male ♂ Adult (specific age indeterminate).
The grave cut [13] contained a mid orange-brown gravel-rich clay fill (12) which when removed revealed a grave dug 0.1m into natural sandy clays. The base of the grave (at 112.42m OD) contained the lower half (legs, pelvis and lower arms) of a single articulated adult male skeleton. The skeleton was incomplete due to truncation, at the

western end, by a large sand and gravel quarry pit [7] and was thus missing its head, upper arms and torso. The body was laid extended and supine, and was aligned west-east, with its feet to the east. Both legs were fully outstretched. The right arm was flexed at the elbow and the hand was resting on the right hip. The left arm, however, was fully extended by the side, with the hand next to the left upper leg.

Sk8, (18) [19]
(Figs 13 & 15)
Unsexable adult (specific age indeterminate).
The grave cut [19] contained a mid orange-brown gravel-rich clay fill (context 18) which when removed revealed a grave dug 0.11m into natural sandy clays. The base of the grave (at 112.53m OD) contained the legs only of a single articulated unsexable adult skeleton. The skeleton was incomplete due to truncation, at its west end, by a large sand and gravel quarry pit [7], which removed the upper body, and by an adjacent grave [cut 5], which appears to have partially removed the left leg. The body was laid extended and supine, and was aligned west-east, with its feet to the east. Both legs were fully outstretched. Several disturbed/redeposited bones were also included in the backfill of this grave, as was also the case in the grave that truncated its northern side. It is possible that the redeposited bones found with Sk3 came from this earlier grave.

Sk9, (22) [23]
(Figs 13 & 15)
Male ♂ aged 40-50 yrs.
The grave cut [23] contained a mid orange-brown gravel-rich sandy clay fill (22) which when removed revealed a grave dug 0.25m into natural sandy clays. The eastern end of the grave cut truncated an earlier ditch [21]. The base of the grave (at 112.43m OD) contained the complete articulated skeleton of an adult male. The body was laid extended and supine, and was aligned west-east, with its feet to the east end. Both legs were fully outstretched. The right arm was flexed at the elbow with the hand resting in the middle of the pelvis, while the left arm was flexed with the hand resting over the right elbow.

Sk10, (31) [32]
(Figs 13 & 15)
Male ♂ aged 40-50 yrs.
The grave cut [32] contained a mid orange-brown silty-clay fill (31) which when removed revealed a grave dug 0.25m into natural sandy clays. The base of the grave (at 112.38m OD) contained the near complete articulated skeleton of an adult male. The western end of the grave had been truncated by the sand and gravel quarry pit [7], and Trench B, which had removed the skull. The body was laid extended and supine, and was aligned west-east, with its head to the west. Both legs were fully outstretched. Both arms were flexed at the elbow; the right hand lay over the middle of the pelvis, while the left rested on the fore-arm of the right arm.

Sk11, (24) [25]
(Figs 13 & 15)
Male ♂ aged 45-55 yrs.
The grave cut [25] contained a mid orange-brown silty-gravely-clay fill (24) which when removed revealed a grave dug 0.3m into natural sandy clays. The base of the grave (at 112.5m OD) contained the complete articulated skeleton of an adult male. The body was lain extended and supine, slightly tilting on its left side, and was aligned west-east, with its head to the west. Both legs were fully extended. Both arms were flexed at the elbow, with the forearms crossing over the left side of the pelvis (with the right arm over the left), the left hand lay in the middle of the pelvis while the right rested on the left hip.

Sk12, (34) [35]
(Figs 13 & 15)
Unsexable adult (specific age indeterminate).
The grave cut [35] contained a dark yellowish-brown silty-gravely-clay fill (34) which when removed revealed a grave dug just 0.1m into natural sandy clays. The base of the grave (at 112.58m OD) contained the partial articulated skeleton of an adult of undetermined sex. The western end of the grave had been truncated by the sand and gravel quarry [7], and T. B, which removed the upper body from just above the pelvis. The body was laid extended and supine, and was aligned west-east, with its feet to the east. Both legs were fully extended. It appears that the hands were placed over the middle of the pelvis.

Sk13, (36) [37]
(Figs 13 & 16)
Male ♂ aged 40-50 yrs.
The grave cut [37] contained a mid grey-brown sandy clay fill (36) which when removed revealed a grave dug 0.3m into natural sandy clays. The base of the grave (at 112.31m OD) contained the complete articulated skeleton of an adult male. The body was laid extended and supine, and was aligned west-east, with its head to the west. Both legs were fully extended. Both arms were fully extended and resting on the base of the grave, by the sides of the skeleton. Several ankle-bones (tarsals) had been displaced, and were located by the knee and by the pelvis, presumably due to animal disturbance.

Sk14, (38) [39]
(Figs 13 & 16)
Male ♂ aged 45-50 yrs.
The grave cut [39] contained a mid orange-brown gravely silty clay fill (38) which when removed revealed a grave dug 0.32m into natural sandy clays. The base of the grave (at 112.23m OD) contained the complete articulated skeleton of an adult male. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay slightly on its left side, both legs were fully extended, and both arms were flexed at the elbows and placed over the middle of the pelvis with the hands together. The backfill of the grave contained tile fragments (see Section 9.2).

Sk15, (46) [47]
(Figs 13 & 16)
Male ♂ Adult (specific age indeterminate).
The grave cut [47] contained a mid orange-brown gravely-silty-clay fill (46) which when removed revealed a grave dug 0.16m into natural sandy clays. The base of the grave (at 111.91m OD) contained a complete yet heavily eroded articulated skeleton of an adult male. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay face up, both legs were fully extended, and both arms were flexed at the elbows the hands placed together over the chest. The backfill of the grave contained tile and brick fragments (see Section 9.2).

Sk16, (86) [87]
(Figs 13 & 16, Plate 4)
Male ♂ aged 35-45 yrs.
Small Finds = SF.1 Buckle (shroud pin).
The grave cut [87] contained a mid-brown silty-sandy-clay fill (86) which when removed revealed a grave dug 0.1m into natural sand. The base of the grave (at 112.02m OD) contained a complete yet heavily eroded articulated skeleton of an adult male. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay face up, both legs were fully extended, and both arms were extended and by the sides of the skeleton. A bronze penannular style buckle/shroud pin (Section 9.5, small find no.1) was placed on the left hip (Plate 4), possibly once attached to a shroud, as was common practice during this period. Some animal bone was recovered from the backfill of this grave (see Section 9.6).

Sk17, (307) [308]
(Figs 13 & 16)
Female ♀ aged 30-40 yrs.
The grave cut [context 308] contained a mid orange-brown silty-sandy-clay fill (context 307) which when removed revealed a grave dug 0.1m into natural sandy clay. The base of the grave (at 110.32m OD) contained the upper half of an adult female skeleton. The lower half of the body, from the waist down, had been truncated by a later pit [cut 92]. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay on a slight tilt toward the right side, and the arms were extended and by the sides of the skeleton.

Sk18, (200) [201]
(Figs 13 & 16)
Male ♂ aged 60+ yrs.
The grave cut [201] contained a mid grey-brown silty-sandy-clay fill (200) which when removed revealed a grave dug 0.2m into natural sand. The base of the grave (at 112.12m OD) contained a complete articulated skeleton of an adult male. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay face-up both legs were extended with the knees slightly drawn together, possibly indicating ties around the knees holding a shroud in place. Both arms were extended and close against the sides of the skeleton. Some animal bone was recovered from the backfill of the grave (see Section 9.6).

Sk19, (207) [208]
(Figs 13 & 17)
Male ♂ aged 40-50 yrs.
The grave cut [208] contained a mid grey-brown sandy-clay-gravel fill (207) which when removed revealed a grave dug 0.1m into natural sandy clays. The base of the grave (at 111.3m OD) contained a near complete articulated skeleton of an adult male. Bone preservation was fairly poor, and as a result several bones were entirely missing. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay face up, both legs were extended (though part of the lower left leg was missing), the left arm was missing (due to erosion or truncation) while the right upper arm lay by the side of the individual (the lower arm was missing).

Sk20, (213) [214]
(Figs 13 & 17, Plate 5)
Male ♂ aged 55-65 yrs.
The grave cut [214] contained a mid grey-brown sandy-gravely-clay fill (213) which when removed revealed a grave dug 0.57m into natural sandy clays. The skeleton was located laying on a grave base at (at 111.57m OD), though it was clear that this was not the base of the grave cut (as no natural sub-stratum was seen). The grave contained a near complete articulated skeleton of an adult male. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay on its right side, both legs were extended (though the lower legs were missing), and both arms lay by the sides of the individual. A significant collection of decorated/glazed medieval floor tiles (Sections 8.2, 8.5, Small Finds 7-13) were clustered around the pelvis and legs of the skeleton, in some cases laying directly below the body almost touching the bone (Plate 5).

Continued excavation of the fill of this grave revealed that Sk20 was merely the upper occupant of a 'double-decker' grave. A further 0.4m of grave fill had to be removed below the first skeleton to reveal the second/lower occupant Sk22 (see below).

Sk21, (209) [210]
(Figs 13 & 17)
Male ♂ Adult (specific age indeterminate).
The grave cut [210] contained a mid orange-brown sandy-silty-clay fill (209) which when removed revealed a grave dug 0.1m into natural sandy clays. The grave base (at 111.38m OD) contained the upper half of an adult male skeleton. The skeleton was truncated below the pelvis by a later feature. The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay on its back, the surviving fragment of upper left leg indicated that the legs were probably extended, while the right arm was flexed with the hand resting on the upper abdomen, the left arm is less complete showing only the upper arm which lay on the grave base by the side of the individual. The fill of this grave contained tile fragments (Section 9.2).

Sk22, (213) [214]
(Figs 13 & 17, Plate 6)
Male ♂ aged 50-60 yrs.
Continued excavation below Sk20 (see above), within the common grave cut [214] revealed a second/lower burial *c*.0.40m below the first. The base of the grave (at 111.36m OD) contained an adult male skeleton, and clear evidence that it was once held within a wooden coffin (Plate 6). The body was laid extended and supine and was aligned west-east, with its head to the west. The head lay face up, both legs were extended, the right arm was flexed with the hand resting on the middle of the pelvis, while the left arm was extended and by the side of the individual. In cross section a dark brown organic stain was seen to project *c*.0.2m perpendicular to the base of the grave, directly next to left leg. A similar stain was also noted across the entire base of the grave, below which were pure natural sands, in association with twenty-three (23) iron rivets (Section 9.5, Small Finds 14-35). It is almost certain that these organic stains and rivets represent a degraded wooden coffin, the only one of its kind observed on this site. It is also possible that the assemblage of medieval floor tiles around the legs of Sk20 above may have been left as a defining boundary to the lower interment, i.e. a marker to ensure that the lower burial was not later disturbed by the inclusion of a second interment.

7.3.3 Other deposits

Besides the burials, the main feature in the cemetery area was a large quarry along the west side of Area 2a (Fig. 13 [7]). A trial section was excavated through the edge showing it to slope steeply to the west. The disturbed area sloping west recorded in T01 appeared to be the northern edge of this quarry, and both trenches A and B of the 1996 evaluations also identified part of the quarry (Gossip 1996, 10). A further area of disturbed ground along the fence line to the east may also be related to it. None of the late 19th/early 20th century OS maps show a quarry in this area and it would appear to be a relatively modern feature. Two other linear features thought to be relatively modern were also recorded in this area. Both [75] and [82]/[80] were shown to be cutting through earlier features. The fill of feature [75] contained fragments of mortar, brick, bottle glass and rubble along with a sherd of medieval green glaze pottery (approximately 14th – 15th century), a fragment of medieval monochrome tile, several fragments of nib tile and a piece of post medieval/modern brick (Section 9.2), and appears to be the robbed out footings of a wall. It seems likely that the earlier pottery and tile are residual, disturbed from earlier features. The double ditch [80]/[82] contained a very sandy orange fill similar to that of the quarry and may be a trench associated with it. Trench R in the 1996 evaluations (Gossip, 1996, 14) identified two possible quarry pits containing post-medieval pottery and brick. These are likely to be related to [75] and [82]/[80].

Several linear features cut by the modern features were visible. One of these ditches [21] ran approximately north-south (Fig. 13). The profile was of a broad but shallow ditch (approx 0.15m deep) and it appeared to be cut by and therefore predate Sk9. The other linear ditches and gullies (Fig. 13; [41], [204]) all contained similar fills. Substantial amounts of unstratified broken brick and tile were found in this area and these may represent structural activity of some kind. A fragment of medieval inlaid tile,

some bone fragments and fragment of nib tile were recovered from gully [204] (Section 9.2).

A small group of pits was recorded at the north-west of the cemetery (Fig 13; [57], [45], [59], [78], [51], [49]). Pits [45] and [78] seem to be recent and may be related to the main quarry. The others were originally thought to be parts of graves but excavation showed them to be devoid of bone or finds. The exception was pit [49] that contained a sherd of 14th century pot, a medieval nib tile fragment, a curved fragment of tile and a piece of tessera probably medieval in date (Section 9.2).

A second group of features were recorded to the to south (Fig. 13 [222], [220], [94], [302], [89], [91], [216]. Pit [89] was a sub-rectangular pit that appeared to be backfilled with building debris. Finds from the fill include 6 fragments of brick, 2 fragments of nib tile, a monochrome tile fragment, two inlaid tiles, 7 sherds of pottery ranging from the 14th – 18th century and several sherds of bottle glass (Sections 8.2 and 8.7). This pit appears to be the same pit as one seen in Trench B (Gossip, Context 134/135 – Fig, 4)). The only sherd of Roman pottery from the site was also recovered from this feature (Section 9.2). The remaining features comprised fairly nondescript pits of unknown function. A fragment of 13th-century pottery was recovered from [91] and a fragment of nib tile from [94] and [89] (Section 9.2).

7.3.4 Discussion

The skeletons appear to form a cohesive group within a relatively restricted area. There does appear to be some grouping within the burials although the obvious truncation by later features and the proximity of the bones to the surface means that there may have been other graves in the excavation area now removed. The quarry and associated modern pits have obviously truncated the cemetery and its precise extent is unknown. However, rubble and human bones were apparently found in the 1890s during the construction of what is now the A4303 (Dyson 1913, 18) suggesting that both the cemetery and the buildings extended further to west. No graves were seen south of Sk12 and Sk18 and it seems likely that this is the southern extent of the cemetery. The skeleton furthest north is Sk 17 but this lies some way (approximately 10m) from its nearest neighbour. However as the rest of the area around the house has not been archaeologically surveyed it is possible that there are more graves in this northern area.

The only real dating evidence for the burials is the presence of the buckle on the hip of Sk16 (Plate 4). This is thought to date to *c*.1350-1400 (see Section 9.5). However, worn tile fragments are present in the fill of graves Sk1, Sk3, Sk14, Sk15, Sk20. These appear to date to the early 14th century and, given their worn and broken (and occasionally reused) appearance, provide a *terminus post quem* probably around the mid to later 14th century (Section 9.2).

The double burial may be later in date; besides having a different tradition (with the earlier burial contained within a coffin), the earlier burial also appeared to have been deliberately backfilled with a number of medieval tiles, perhaps marking its location and depth (Plate 5). These tiles are 14th century in date (see Section 9.2), and presumably had fallen out of use prior to the burial. The date of the foundation of the cemetery therefore remains unknown, although it seems clear that burials continue into

the 14th century. It therefore seems likely that this cemetery is associated with the Hospital of St. John and St. Anthony, dating from 1219 through to the late 14th century.

Only one grave contained a skeleton where the sex was unable to be determined. Of the remainder, all but one were male; this supports the historical reference of the early 14th century in which Bishop Dalderby of Lincoln drew up rules for the hospital based on the Augustinian order and ordered that no women should be admitted as sisters without the bishop's permission. One might also suggest that few women were permitted admittance to the hospital as residents, or at least were not given burial in the hospital's cemetery (Section 9.1). It is, however, worth remembering that only a small percentage of the hospital cemetery was available for excavation, and even this had been truncated by the intrusion of several sand and gravel quarry pits. It remains possible, therefore, that the cemetery may have been zoned, with the females being buried in a different area to that excavated. That females and juveniles were sometimes interred is certainly proven by the presence of Sk17 (female) and Sk5 (juvenile).

All the bodies were oriented west-east with the head at the west end in the Christian tradition except for the unsexed juvenile (Sk5) whose head lay to the east end. This may simply have been a mistake – if the bodies were wrapped in shrouds it may have been difficult to tell the head from the feet. There is only a small amount of intercutting of the graves suggesting that markers of some kind were used to locate burials.

There was a single linear feature possibly predating the cemetery (it appeared to be cut by Sk9). There is no dating evidence for the gully and whether it predates the cemetery or just that particular burial remains unknown. Many of the non-grave features appeared to be relatively recent and several of the pits seemed to be related to the quarry. The quarry itself is undated, but obviously postdates the cemetery as disarticulated bones were found within it from where it had cut through and disturbed graves. Other features contained mortar, brick and other building debris and are likely to be related to the current farm house – perhaps the remnants of old outbuildings.

Given the proximity of the graves to the surface (often visible in the topsoil) and the fact that the two groups of pits appeared in an area with no skeletons, these could possibly be graves where bones have been removed by erosion or by the quarrying, although it seems unlikely that all traces of human bone could have been dispersed. Alternatively they could be related to the structural ditches/gullies to the east. Trench B (Gossip 1996, 10) also recorded a number of pits of unknown function with pottery ranging from the 12/13th to the 18th century. Given the presence of mixed finds from the pits (tile and brick etc.), it seems most likely that they represent later features backfilled with rubbish from demolition.

The amount of building material in the area suggests there may have been a post-medieval building in the vicinity that was subsequently destroyed, the remnants being mixed with demolition debris from the nearby hospital site and becoming backfill for later features. This may possibly be related to the post-medieval Spital Mansion mentioned by Dyson in 1913 possibly built using the materials from the hospital (see Section 3.2).

7.3.4 The Population

The individuals represented in the cemetery of St. John's, Lutterworth were likely to be residents as well as hospital staff and clergy. Most are male of average height, with preponderance to heavier muscularity in the legs, perhaps suggesting the use of the feet as the primary form of transport. The ages at death observed in this population may be considered as normal if the findings of larger cemeteries such as St. Helen on the Walls (Dawes & Magilton 1980) and St. Nicholas Shambles, London (White 1988) are anything to go by. The specific causes of death in each of the instances detailed above are, however, unobtainable from the given evidence. Since relatively few diseases and traumas leave their mark on the skeleton the potential for studying dry bone assemblages, such as this, to identify cause is very low.

Diet was typically coarse for the period, (high levels of dental attrition were noted in all cases but especially the over 40s). Such high levels were common prior the mid 17th century when flour sieving, for the removal of grinding grit was introduced. There are low levels of decay, calculus and periodontal disease represented. The low instances of calculus may equally have resulted from a low carbohydrate diet.

The population showed no signs of chronic disease nor excessive trauma. The only pathologies noted during analysis were those linked with old age. Minor trauma was noted in several cases, but all of these could be explained simply as accidental damage inflicted during the course of a normal life.

7.4 Area 2A/2B The Structural Remains

7.4.1 Introduction

The excavation of area 2A revealed a number of metalled/cobbled surfaces to the south-east and south of the cemetery area. Some of these had been very truncated and eroded by modern disturbance and appeared to continue to the east. The area to the east was therefore machined in order to ascertain the extent of the buildings. Again there was a great deal of truncation, mainly from a trackway running north-west through the site and a large tank/loading bay cutting into the raised area to the west (Fig. 12).

7.4.2 Metalled surface/trackway (Fig 12)

A fine compact metalled surface (202/224) was uncovered along the southern edge of the area (Fig 12 (a)). This comprised mainly small pebbles set into a compact sandy clay. The surface appeared to be truncated to the west where the ground started to slope away to the quarry and also to the north where a modern farm track had disturbed the surface. There were several patches of metalling where larger cobbles had been used but these appeared to be mainly random and may be repair works to the surface. Two sections were excavated through an area of the metalling but there were no visible structures or archaeological stratigraphy underneath the surface. Several brick walls visible where the metalled surface met the trackway to the south-east appeared fairly modern and may represent the remnants of old outbuildings in the area.

Within the cobbled surface were five possible post-pads – with large flat cobbles sat on the metalled surface within a darker matrix. There was no regularity to these and it is possible that they could represent temporary structures or fencing of some kind.

A number of finds were recovered from the cleaning of the metalled surface (202/224). These include a late medieval (1375-1550) jug handle, several fragments of medieval tile/brick including two sherds of green glaze ridge tile dated to the 13th century or later; sherds of later medieval pottery (14th – 16th century) plus pottery from the 17th century and a clay pipe fragment (Section 9.2). Unfortunately the lack of material from within or beneath the surface and the generally disturbed nature of the site makes it hard to say much about the date of the metalling.

A similar metalled surface, although with larger pebbles/cobbles, was visible to the east (Fig 12 (b)). This is the same disturbed cobbled area first noted in Trench 07 and the area was very truncated and many of the cobbles were loose. However, patches of smaller more compact pebbles were noted and a patch of good metalling was recorded to the north. It is possible that this represents the same surface as (a). Pottery from the cleaning layer over this includes pottery from the 12th and 13th centuries as well as fragments from the 15th-16th centuries (Section 9.2).

Trench D of the 1996 evaluations (Fig 2) encountered a ditch to the west (outside the excavation area). This recorded a small sub-circular pit with three sherds of 15th-16th century pottery and to the east of this, patches of possible metalling and a linear spread of cobbles. The cobbles were interpreted as the base of dry-stone wall (Gossip 1996, 10-11). Other features contained post-medieval pottery and were probably associated with the quarry. The 'dry-stone wall' would have been at the western edge of the metalled surface. This suggests that there may have been other features to the west that have been destroyed by the quarry. Trench C also recovered part of an undated cobbled surface immediately below topsoil. Although no surface was found in this area during the later excavations, the land has been disturbed since 1996 and the exposed surface may have been destroyed. This would extend the trackway north of the modern farm track – perhaps a trackway leading to the cemetery.

7.4.3 Cobble building & walls (Figs 12 and 18)

A cobble structure was uncovered to the south-east of the cemetery area (Fig 12 (c)). This measured approximately 10m x 15m wide but was truncated on the north by a loading bay/tank that cut into the deposits, and the trackways to the east and south. The structure comprised a tumbled wall along the west side and a cobbled surface set into the natural clay deposits, sloping to the east with a raised marked pathway across the middle.

The wall along the west side (Fig. 18; (233), (258)) comprised two to three courses of cobbles set in a red-brown sandy-clay matrix but with mortar visible, especially on the upper surface, and appears to be the foundations of a wall. The cobbles facing west had been faced to present a flat uniform surface (Plate 8). The cut for this wall was also clearly visible (Plate 7). Debris and large cobbles behind suggested that the upper wall had tumbled eastwards. The wall and the structure appeared to tail off to the south possibly truncated by the modern farm trackway. Beneath wall (258), there appeared to

be a gully running slightly off the line of the wall cut. It is possible that this might be an earlier feature – possibly an earlier wall or fence line.

The cobbled surface (33) lay to the east of the wall, sloping quite steeply to the north-east (Fig. 18). A fine metalled surface (65) was visible immediately behind the wall; this seemed to run beneath the cobbles (33) in places. It also appeared to run partly beneath the wall (258) although this could be due to later extensions or repairs to part of the wall (the wall is wider here than elsewhere). It is possible that there is a different surface lying immediately behind the wall that could be earlier than the cobbled surface.

Approximately 1.5m from wall (233)/(258) was a raised mounded pathway within the surface demarcated by a number of larger cobbles (Figure 18; Plate 9). Excavation of a slot through this raised area showed it to have been constructed using smaller cobbles and pebbles in clay. Further east, large cobbles had been set beneath the surface where it sloped away, possibly used to anchor the surface into the sloping ground. Slates had also been used to pack inbetween the cobbles.

There was a sub rectangular cut (Figure 18 (43)) of unknown function truncating both the cobbled surface and the wall. In addition four small, shallow post holes (242-245) containing cobbles possibly used as post packing were recorded. These formed a roughly square shape outside the later cut. Two similar post holes (246-7) were recorded to the south. It is possible these may have supported a roof or shelter against the wall.

The cleaning layer above the structure produced a number of finds including mainly 12th – 13th century pottery and medieval tile with a few fragments of 14th and 16th century pottery. A few tile fragments and pottery dating from the 12th – 14th centuries were recovered from the matrix of the cobbles (Section 9.2). Cut (43) produced pottery from the 13th – 16th centuries.

To the south, lay several features outside the area of the cobbles, including three post-holes ((238), [248], [250]), a gully (249) and a patch of clay along with a large number of slate fragments. In addition several cobbles were laid lengthways as if defining other areas. It is possible that these represent other structural deposits; unfortunately this area was badly truncated by the farm trackway. No finds were recovered from these features.

Two later cuts through the cobble surface (Fig 18; (252) and (279)) were visible to the east along with one possible earlier feature (276) that appeared to be running beneath the cobble surface and contained fragments of 13th-century pottery (Section 9.2).

A linear trench with rounded ends (236) appeared to be cutting the cobbles to the south (Plate 12). Excavation through this showed a rounded ditch, approximately 0.9m deep and 1.5m wide with cobbles and mortar fragments in the base – possibly a wall foundation. The pottery and tile from this cut are generally 15th-17th century in date although a few fragments of 13th-century pottery and medieval tile fragments were also recovered (Section 9.2).

7.4.4 Other features (Fig 12 e and f)

A wall (288) running south-east/north-west was encountered at the north side of Area 2b (Fig 12 (e); Plate 11), with a later ditch running along the north side of it (289). Unlike the cobble structure, this wall contained several sandstone blocks. Finds from the cleaning of the wall included late medieval pottery and tile (14th-16th century), as well as post-medieval pottery (Section 9.2).

A spread of cobbles was recorded to the south (f), on approximately the same orientation as the wall, truncated by the loading bay (Figure 19). This appeared to be a tumbled wall (290), 3 – 4 cobbles deep and not mortared (Plate 13). Like wall (288) this contained sandstone fragments within it. There was also a ditch, this time to the south of the wall (321), which was *c.* 1.5m wide and 0.5m deep with sloping sides and a rounded base. Its relationship with the wall remained uncertain as the wall sat right on the edge of the top of the ditch (Plate 13). Cleaning of the wall produced late medieval pottery and tile as well as later material (15th-18th century). The finds from the ditch were mainly tile fragments. A linear gully was visible cut into the top of the ditch at a different angle containing a wooden post and fragments of bone, glass and post-medieval brick/tile (Section 9.2).

A number of pits and gullies recorded in the northern part of area 2b appear to be mainly modern disturbance with many containing animal burials.

7.4.5 Discussion

The accurate dating of the structures and associated features is difficult because of the lack of finds from secure stratified deposits – most of the material comes from the top of surfaces and walls, and may include later intrusive material. The pottery is mainly from the 12th to the 13th or early 14th centuries, with floor and nib tile, dating to the first half of the 14th century. Of the identifiable earlier features, the gully beneath the wall and the pebble surface beneath the cobbles are probably only slightly earlier. Neither of these produced finds. Gully [276] that also runs beneath the cobbles produced several sherds of 13th-century Stanion Lyveden ware. This suggests that the cobble structure falls within the 13th – 14th century date range but that there may be earlier (11th-13th century) activity on site. The metalled surface produced a similar date range for the finds as the cobble structure and it seems likely that these were constructed around the same period.

Later features include the linear slot through the cobble surface (284) containing pottery dating from the later 14th to 16th century, and cut (43) with 13th-15th century pottery. It is possible that these later features may represent additions or repairs to the existing structure. Even if the hospital itself fell out of use by the late 14th century, activity may have continued on the site. In 1534 the 'mansion' house, demesne land and the two watermills were being leased out, and by 1546 the house and chapel were said to be greatly in decay and in ruins (Thompson 1910, 496-8).

The two walls ((290) and (288)) and other structures to the east of the site appear from the finds to be slightly later in date – possibly post-medieval rather than medieval.

These structures appear to be constructed slightly differently, containing sandstone blocks in the wall make-up. The suggested walls in Trench 05 contain medieval tiles as part of the make-up suggesting these might also be later in date perhaps utilising some of the fabric from the earlier structures. The Hospital was in decline by 1435-6 and dissolved after 1577 (Marsden, 1996, 2) and it may be that the building materials were used for other structures. Dyson in 1913 mentions a post-medieval house built using building materials from the hospital (Marsden, 1996, 3).

The function of the cobble structures remains unknown. The only wall in area 2A appears to run for some way and is more likely to be a boundary wall – perhaps for the cemetery rather than a building, although the faced cobbles suggest that its appearance was of some consequence to the builders. The slope and raised walkway of the cobble surface suggest that this may be a yard with covered shelters rather than the interior of a building – perhaps an outbuilding associated with the cemetery or the hospital with the metalled surface forming a road/trackway of some kind. Rubble and human bones were apparently found in the 1890s during road construction (Marsden 1996, 3) and given the truncation of the site particularly by the quarry and the main roads to the south and west, substantial buildings could have existed close by.

In addition the 1996 evaluations to the east recorded possible cobble structures in Trenches Ei, Eii, F, (along with a sherd of 13th-century pottery), G (which also contained postholes and a linear ditch), and S. Trench I recorded a parallel ditch & gully with 12th and 13th century pottery. Although the cobble structures could be dry stone walling of any date, they could also represent other buildings/structures associated with the hospital.

8 Conclusions

The deposits found during excavation in Area 2A appear to represent the cemetery and medieval buildings associated with the Hospital of St John the Baptist. The pottery from the site is typical of this area of the country and suggests that although there is activity in the vicinity from the 11th century onwards, the main activity on site is during the 13th to mid-16th centuries (Section 9.2). This ties in with the proposed dates for the cemetery, and the documentary evidence for the hospital being founded in 1219 and falling out of use during the late 14th century with the spital mills and mansion house being leased out during the 16th century.

Although none of the main buildings appear to be represented here, the ceramic finds suggests that they were relatively close by. The range and type of pottery suggests the presence of a communal establishment of some status. The medieval ridge, floor, and nib tiles are further evidence of a substantial building or buildings in the vicinity associated with a religious community, and it seems likely that these would be associated with the Hospital of St John the Baptist. As well as the usual buildings (chapel, infirmary etc.), hospital would have required a whole host of other more domestic buildings such as storehouses, animal barns, kitchens and areas for food preparation. These buildings were often kept separate from the infirmary and chapel areas to preserve their sanctity (Section 3.2). The structures at St. John's Lutterworth

could therefore represent one of any number of associated hospital buildings. It may be that the main buildings were destroyed along with the remnants of the cemetery during the construction of the roads to the south and west.

The animal bones from the site suggest that domesticated animals including cattle, sheep and occasionally pigs that were exploited for food. The presence of fish is consistent with a higher status site or religious houses (Section 9.6). Chickens, geese, and rabbit bones were also recovered and may have been part of the food resource.

St. John's Hospital, Lutterworth managed and/or leased up to three local mills, and farm land in various locations outside of its immediate precinct, so much so as to have generated an annual revenue in excess of the local parish church of St. Mary's (Section 3.1.2). None of the excavated remains at the mill site at Lutterworth, however, appears to be medieval in date, and it would seem that the medieval Spital Mills of St John's were either destroyed by subsequent development or are located elsewhere.

9 Specialist Reports

9.1 The Human Remains *by Simon Chapman*

9.1.1 Introduction

The human remains that form the basis of the following report were excavated from a cemetery associated with the medieval Hospital of St. John the Baptist, Lutterworth, Leicestershire. The excavation was carried out by University of Leicester Archaeological Services (ULAS), as part of a mitigation strategy, prior to the development of the site. Initial evaluation work was undertaken in July 1996 (Gossip 1997), and excavations were undertaken between July -August 2001. Human remains from both phases of archaeological investigation were analysed as part of the current investigation.

Contexts suffixed with*	e.g. 171*	denote 1996 evaluation
Contexts written plain	e.g. 308	denote 2001 excavation

Excavation demonstrated the presence of human remains in twenty-six conspicuous archaeological contexts. Of these twenty-two occupied well defined inhumation graves (Table 1), each containing articulated human skeletons, while four contexts were found to contain disarticulated/charnel remains (Appendix III; tables 10 - 24)

Table 1 Burial contexts.

Skeleton (Sk) no.	Grave cut	Grave fill, context
1	3	2
2	1	
3	4	5
4	9	8
5	15	14
6	11	10
7	13	12
8	19	18
9	23	22
10	32	31
11	25	24
12	35	34
13	37	36
14	39	38
15	47	46
16	87	86
17	308	307
18	201	200
19	208	207
20	214	213
21	210	209
22	214	213

Table 2 The charnel bone.

Cut	Context	Feature type
7	6	Quarry pit
171*	193*	Quarry pit
5	4	Grave backfill
	194*	u/s
47	46	Grave Backfill

The inhumation graves were found mostly to contain a single skeleton, represented by varying quantities of surviving bony elements. The only exception to this rule was the presence of charnel bone within the backfills of graves 5 and 47, suggesting that bone disturbed in antiquity during the process of digging new graves, was re-interred in the backfills of subsequent graves. The remaining charnel bone was excavated from sand/gravel quarry pits (contexts 7 and 171*), and from various unstratified contexts on the site (Appendix III).

9.1.2 Methodology

The osteological analysis of the human remains from St. John's Hospital was carried out, by the author, at the University of Leicester's bone laboratory, between February-March 2002. The analysis followed standard accepted methodologies employed in studies of this nature, as described by Bass (1987), Brothwell (1981), Ubelaker (1989) and as advocated by the Workshop of European Anthropologists (1980).

A metrical record of all of the bones present was compiled (Appendix V). Where possible broken bones were fitted back together for the purpose of measuring, though this only occurred in instances where the joins were very close and inaccuracy was deemed to be negligible. These measurements were used in the diagnosis of sex, stature, build and skeletal form.

The criteria on which each individual was aged depended largely on the nature of the bones available. Where possible a range of criteria were employed, the several results obtained being combined to produce an *average* (most likely) age for the individual. Skeletal methods based on bone maturation, in terms of linear growth (Sundick 1978 & Fazekas & Kósa 1978) and stages of ossification (Brothwell 1981 & White 1991) were employed alongside dental methods, which assessed stages of tooth development and subsequent wear (Miles 1963), in the assignation of age to the individuals represented.

Sex determination was similarly based upon various criteria, an average being accepted wherever possible. The most reliable criteria, based upon cranial and pelvic morphology and long-bone head dimensions, afforded greatest weight. Classification of sexes was based upon levels of diagnostic certainty (Male-male-indeterminate-female-female).

The occurrence of certain non-metric/discontinuous skeletal traits (as described by the likes of Finnegan (1978) and Berry & Berry (1967) were also recorded. Such traits are a common feature in all skeletal populations; these are usually non-pathological variations in skeletal morphology, believed to have a basic genetic origin. As such it is suspected that kinship links may be made on the strength of reoccurring traits in associated individuals.

Estimations of living stature were calculated whenever the relevant bones were available for measuring. In the presence of a complete femur no other metrics were sought (since these are believed to yield the most accurate estimation of stature). However, whenever a femur was not available, or was broken/incomplete, alternative complete long-bone measurements were sought, ideally using estimations of stature

obtained from the measurements of several long-bones. Calculations were based upon the standard regression equations described by Trotter and Gleser (1952 & 1958).

Diagnosis and discussion of trauma and pathological conditions takes place whenever such conditions are identified on the bones. Classification of such conditions follows accepted works by the likes of Mann & Murphy (1990), Ortner & Putschar (1981), Rogers & Waldron (1995) and Steinbock (1976).

9.1.3 Bone condition and representation

All bony remains were carefully washed (using fine brushes and lukewarm water) and fully air dried prior to the onset of full analysis.

The condition of the bone, as represented in this assemblage was generally of a good nature, in terms of both bone representation and of its physical preservation. Bone/body part representation has been expressed in terms of a percentage of the former skeleton (table. 3). Physical preservation has been recorded (table 3) according to its relative condition. Classifications are as follows;

V.poor - Highly fragmented bone displaying advanced signs of decomposition
Poor - Bone may show considerable fragmentation and/or decomposition (not as severe as above)
Fair - Bone may display occasional fragmentation or decomposition (perhaps not both, nor effecting all bones present).
Good - Bone displaying very little evidence of neither fragmentation or decomposition
Excellent - Bone in perfect condition , unfragmented and displaying no signs of decomposition

Condition of bone was fairly consistent throughout the assemblage, with most bones falling into the fair-good categories.

Although many of the individual bones were broken (due to taphonomic factors) many could still be refitted for metrical analysis, due to very clean breaks. In instances where bones could not be refitted no metrical analysis has been carried out, and in some cases this has limited the sex, stature and build diagnosis of fragmented individuals.

Most bones were strong and retained well preserved sub-periosteal and cortical layers ideal for the diagnosis of pathological conditions and non-metric traits. The most critical factor in determining the quality of preservation of the bone appears to have been the nature of the soil immediately surrounding them. The only two very poorly preserved skeletons (Sk15 & Sk16) both lay directly upon gravel-rich sand at the base of the grave, the high acidity of such soil most likely being responsible for the accelerated diagenesis of the bone. Contact with sand and gravel also appeared to have the effect of partly mineralising the bone, making it deep brown in colour and heavy. By contrast, the better surviving skeletons were all buried in a silty (less acidic) environment, and appeared pale in colour and comparatively light in weight.

Table 3 Bone representation and preservation.

Skeleton (Sk) no.	% present	Preservation	Bone Colour	Soil type (at grave bottom)
1	75	good	bright yellowish brown	silty gravel
2	30	fair	bright orange brown	silty gravel
3	20	fair	pale yellowish brown	silty gravel
4	25	good	mid yellowish brown	silty gravel
5	90	fair	mid greyish orange	silty gravel
6	40	fair	bright yellowish brown	silty gravel
7	30	fair	dark orange brown	silty gravel
8	15	poor	bright orange brown	silty gravel
9	98	excellent	pale yellowish brown	silty gravel
10	90	good	pale yellowish brown	silty gravel
11	98	good	bright yellowish brown	silty gravel
12	25	poor	mid greyish brown	silty gravel
13	98	fair	dark orange brown	silty gravel
14	98	good	bright yellowish brown	silty gravel
15	80	v.poor	dark orange brown	sand/gravel, bone has partly mineralised and is heavy
16	50	v.poor	dark grey-brown	sand/gravel
17	50	good	pale yellowish grey	silty gravel
18	98	good	mid grey-brown	silty gravel
19	85	fair	mid orange brown	silty gravel
20	90	good	pale yellow brown	silty gravel
21	60	poor	pale yellowish brown	silty gravel
22	95	good	deep red brown	sand/gravel, bone has partly mineralised and is heavy

Age and sex is unlikely to have had any marked effect on the rate bone diagenesis (Walker et al. 1988). This is indeed born-out by the good preservation observed in the fragile juvenile bones of Sk 5, the only juvenile identified, and of the only female identified in the group, Sk 17. Differential preservation of these under-represented groups should not be used as a factor in their absence.

Full skeletal inventories were recorded for each skeleton, these took the form of pro-former osteology sheets, which are stored with the site archive. For visual representations of each skeleton, illustrating bones present for analysis, the reader is referred to the grave plans included in the main text.

9.1.4 Results

Minimum Number of Individuals (MNI)

Based upon the number of discrete inhumations and the total numbers of certain charnel bone elements, it can be said that the St. John's hospital assemblage represents the remains of a minimum number of twenty-five separate individuals. This is based upon the fact that twenty-two individual graves were identified and a minimum of six individuals were represented by the loose charnel remains.

Recurrence of charnel elements:

6 x Left proximal femora	=	minimum of six (6) individuals
6 x Right distal tibiae	=	minimum of six (6) individuals

Since three of the skeletons within discrete graves had their left proximal femur missing, and three had their distal right tibia missing, and could feasibly be the former

owners of the missing parts, we can only raise the MNI by three (3) by including the charnel bone. **MNI = 25**

Age/Sex

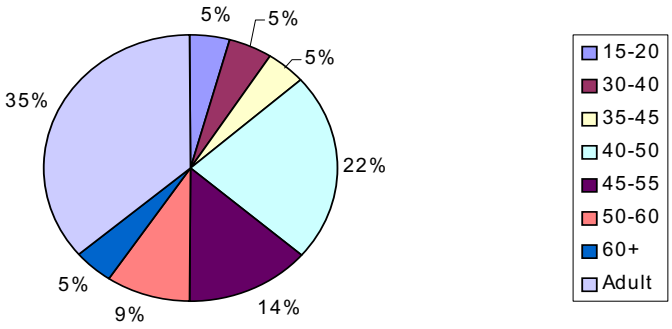
Sex determination of each conspicuous skeleton was generally based upon at least two or three different criteria. This was regarded as more accurate than single criterion techniques. Only in instances where at least two different sexing techniques were in agreement was the individual assigned a definite, 'M or F', sex. In instances where less reliable techniques had to be used, or when only one technique was possible (due to fragmentation) the individual has been regarded as less certain, i.e. 'm or f'. Individuals for whom no sexing technique could be used have had to be regarded as unsexable.

The fairly good overall preservation of the surviving remains (table 3) has meant that 86% of the conspicuous individuals could be sexed with a high level of certainty. Of the remaining 14% unsexed individuals, one was a juvenile (which are not sexable).

Table 4 Age and Sex distribution.

Skeleton (Sk) no.	Age	Sex
1	45-50	M
2	Adult	M
3	Adult	M
4	45-50	M
5	15-20	?
6	Adult	M
7	Adult	M
8	Adult	?
9	40-50	M
10	40-50	M
11	45-55	M
12	Adult	?
13	40-50	M
14	45-50	M
15	Adult	M
16	35-45	M
17	30-40	F
18	60+	M
19	40-50	M
20	55-65	M
21	Adult	M
22	50-60	M

Chart 1. Age distribution among the inhumed skeletons.



Assignation of individual age at death was possible in fourteen of the twenty-two inhumed skeletons.

Non-metrical variants (NMV's)

Non-metric variations are classified as any variation in the skeletal form that deviates from the statistical 'norm'. These variations are different from pathological lesions in that they do not arise as a result of disease and thus are usually asymptomatic. Most people would not even know they if they had one. The term non-metric is merely an umbrella classification for all skeletal variants that cannot be easily measured. These

traits are believed to arise from a basic genetic origin, or in some cases may be attributed to an interruption of the normal embryological development of the skeleton, and as such are often used in studies of family groups as evidence of shared kinship. Numerous studies have been undertaken into NMV's and their relative incidence, though they remain little understood. Classifications of MNV's used here are taken from Finnegan (1978), Berry & Berry (1967) and Brothwell (1981.90-100).

Table 5 NMV's present in the inhumation skeletons.

Skeleton (Sk) no.	NMV's present
1	sacralised L6 L & R. femoral plaque L & R. anterior calcaneal facet double
2	L & R. femoral plaque L & R. 3rd trochanters
6	L. femoral plaque L & R. medial talar facet
7	L & R anterior calcaneal facet double L & R. medial talar facet
8	L & R anterior calcaneal facet double
9	L. lambdoid ossicle coronal ossicle small palatine tourus R. supraorbital foramen complete L. supraorbital foramen notch L & R. mandibular tori L & R anterior calcaneal facet double
11	L & R. supraorbital foramen notch
13	L & R. parietal foramen R. supraorbital foramen complete L. supraorbital foramen notch
14	ossicle at lambda L. supraorbital foramen complete spina bifida occulta (complete sacral)
20	L. lambdoid ossicle L & R. parietal foramen L & R. supraorbital foramen complete
21	L & R. 3rd trochanters L & R anterior calcaneal facet double
22	ossicle at lambda L & R. 3rd trochanters L & R tibial squatting facets L & R. calcaneal facets absent spina bifida occulta (complete sacral)

Anthropometrics

A major element of the current study was to create a metrical record of all the surviving bony elements, in this manner preserving, as an archive, the most useful information derivable from the skeletal remains for both the current and for potential future studies. A full record of craniometric and post-cranial metrics are reproduced in Appendix V along with a description of the standard shorthand codes/biometric symbols used (Appendix IV using Brothwell 1981, 77-89 and Bass 1987, 70-80).

Craniometry

Of the thirteen skeletons that retained cranial elements craniometry was only possible in eight instances. Of these eight only six were sufficiently complete and in tact for the

calculation of a cranial/cephalic index (Appendix IV). The cranial index gives a numeric value and a corresponding name for the 'cranial type', based on shape, of the skull under examination.

Table 6 Cranial index: values and types (all mentioned are of males)

Sk number	Cranial Index	Cranial Type
9	79.5	mesocrany – average or medium head
11	76.6	mesocrany – average or medium head
13	76.5	mesocrany – average or medium head
14	81.7	brachycrany – broad or rounded head
20	89.5	hyperbrachycrany – very broad head
22	83.3	brachycrany – broad or rounded head

Range	76.5 - 89.5	
Mean	81.2	Brachycrany – broad or rounded head

Due to the fact that cranial index, and indeed other cranial values (Appendix IV) could only be calculated in a small percentage of the population it is not possible to draw very meaningful conclusions from craniometric data. It is, however, interesting that the two individuals (Sk's 20 & 22) buried together in the same grave (grave cut 214) had the broadest and second broadest heads, respectively, in the entire assemblage. The possibility of a familial connection between these two individuals therefore has some craniometric support. No other connections between individuals with similar facial traits could be identified in the assemblage.

Platymeria and Platycnemia

The measurable anterio-posterior and transverse diameters of both the femora and tibiae were used to calculate the *meric* and *cnemic* indicies, respectively (FeD_1 x 100 ÷ FeD_2 / TiD_2 x 100 ÷ TiD_1). These indices express the degree of anterio-posterior and transverse flattening of the femur and tibia, respectively. These measurements were obtainable from twenty-nine femora and twenty-nine tibiae. Full details are reproduced in Appendix V.

Platymeric index ranged from:

left femur 56.3 – 115.1 (platymeric – stenomeric) with a mean of 85.19 (eurymeric)
right femur 73.9 – 117.5 (platymeric – stenomeric) with a mean of 86.2 (eurymeric)

As is commonly the case (Brothwell 1981.89) platymeria was generally more pronounced in the left femur.

Platycnemic index ranged from:

left tibia 63 – 80.3 (mesocnemic – eurycnemic) with a mean of 70.7 (eurycnemic)
right tibia 63 – 77.7 (mesocnemic – eurycnemic) with a mean of 69.4 (mesocnemic)

The values for each of these indices gave an indication of the degrees of anterio-posterior flattening of the proximal end of femora and transverse flattening of the proximal end of tibiae. The reasons for the different shapes encountered in these bones is not fully understood, yet connections with occupation, some pathological conditions

(inc. Osteoarthritis and Osteoporosis), diet and vitamin deficiency and geography have long been debated (Townsley 1946); (Cameron 1934); (Buxton 1938); (Andermann 1976);(Lovejoy, Burstein & Heiple 1976).

Build

Build was interpreted visually, based upon the size and prominence of ossified muscular attachments (insertions), and on the overall size, robusticity and density of individual bones. In a sliding scale the bones of a lightly-built individual (say a small female who undertook very little physical work during her lifetime) would appear gracile, light and smooth, while the bones of a heavily-built individual (say a large male who undertook constant manual labour during his lifetime) would appear large, robust, heavy and craggy.

Table 7 Skeletal build.

Skeleton (Sk) no.	Build
1	medium
2	medium, large on femurs
3	medium
4	medium
5	very light
6	medium
7	light
8	medium
9	light, medium of femurs
10	heavy
11	heavy
12	light
13	light
14	medium
15	light
16	medium
17	light
18	medium
19	medium
20	medium, heavy on femurs
21	light
22	light

As can be seen from table 7, the majority of individuals were of medium build, these representing 'normal' or average build and lifestyle. Light build was, however, observed in eight (8) individuals, the lightest being a juvenile (Sk5) and one other of a female (Sk17). The remaining lightly-built individuals, all males, may represent a section of the community who lived fairly sedentary lives, who were not routinely involved in hard labour (e.g. clergy or hospital staff). Two individuals, Sk10 and Sk11, and to a lesser extent on Sk2 and Sk10 (which bore large muscular attachments on the legs only) appear to represent more physically robust individuals, perhaps members of the labouring classes.

Stature

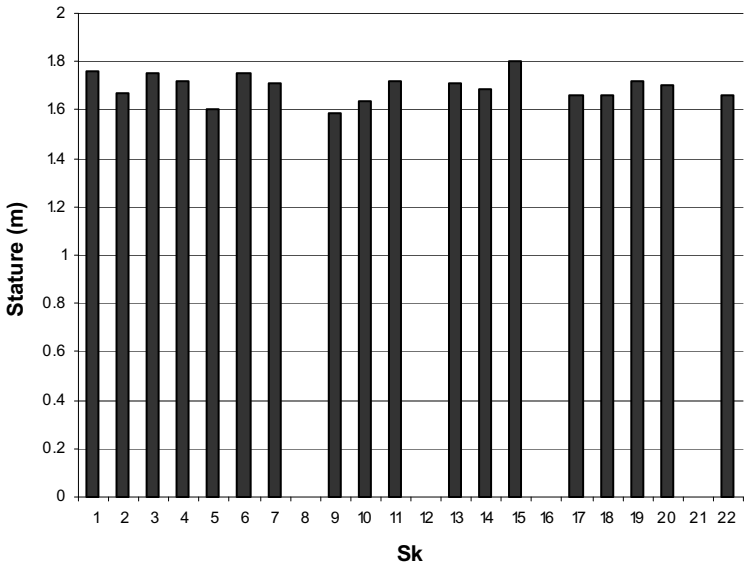
A calculation of living stature, using the formulae described by Trotter and Gleser (1952 &1958), was attempted for each sexed individual with at least one well-preserved long-bone. Calculations were based upon the length of the left femur wherever possible, but

when this was not present (or was broken) other long-bones were used (R.femur, tibia, humerus, fibular, radius, ulnar in that order). In this manner an estimated living stature could be calculated for eighteen (18) of the twenty-two (22) inhumed individuals.

Table 8 Estimated statures (♂ = male; ♀ = female; ? = unsexed)

Skeleton (Sk) no.	Stature (m)
1	1.76
2 ♂	1.67
3 ♂	1.75
4 ♂	1.72
5 ?	1.6
6 ♂	1.75
7 ♂	1.71
8 ?	unsexed
9 ♂	1.59
10 ♂	1.64
11 ♂	1.72
12 ?	unsexed
13 ♂	1.71
14 ♂	1.69
15 ♂	1.8
16 ?	frag
17 ♀	1.66
18 ♂	1.66
19 ♂	1.72
20 ♂	1.7
21 ♂	frag
22 ♂	1.66

Chart 2. Estimated statures of the Lutterworth skeletons.



As can be seen in table 8 the mean statures observed in the Lutterworth population are broadly comparable to other medieval groups and slightly smaller than modern populations. The range of stature observed (Table 9) is also within the normal bounds of this period. This reflects 'normal' developmental growth patterns associated with adequate nutritional conditions for the period. The slight increase in average stature in modern populations can be attributed to better nutrition in recent years, the range in stature, however, remains fairly constant.

Table 9 Mean statures observed among the Lutterworth skeletons compared with individuals from other sites of similar date, and of modern day.

Location	Period	Sample size	Mean male stature (m)	Mean female stature (m)
St. John's, Lutterworth	**13-15th**	**17**	**1.7**	**1.66**
St. Helen, Aldwark, York (Dawes & Magilton 1980)	10th-16th	724	169.3	157.5
Abingdon, Oxfordshire (Wakeley 1995)	m edieval	750	170	-
Wharram Percy DMV (Bothwell 1971)	medieval	large	168	-
St.Leonards, Hythe, Kent (Parsons 1908)	medieval	large	170.2	157.4
Austin Friars, Leicester (Stirland 1981)	medieval	13	177.8	157.5
Rothwell charnel house, Northamptonshire (Parsons 1910)	medieval	large		-
St. Nocholas Shambles, London (White 1988)	11-12th	94	172.75	157.5
Modern (Office of Population Census & Surveys 1981)	Modern		173.8	1.61

Pathology

Although the majority of human disease, and indeed trauma, affect only the soft tissues of the victim (rarely causing death), and are consequently very rarely preserved in archaeological specimens, there are certain conditions that leave an indelible mark on the human skeleton. Diseases infecting the skeleton will usually initiate an osteoblastic (bone growth) or an osteoclastic (bone resorption) reaction within living bone cells, similar reactions are commonly observed also as a result of mechanical stress and trauma (if the individual survives).

The following pathological conditions were observed in the skeletons from Lutterworth;

Degenerative disease/arthropathies

Degenerative joint disease (arthropathy) is the most commonly observed skeletal disease in both modern and archaeological material. Most such conditions arise as a result of normal prolonged use of the joints over a long life-span, however, repetitive occupational use of a particular joint may lead to early onset. Traumatic damage to a joint may also lead to early onset arthropathies. The joint disease observed among the Lutterworth skeletons can be classified according to several types:

Osteophytosis: growths of new bone called osteophytes which arise around the margins of joints, these may vary in size according to severity. This condition is extremely common in all skeletal populations, becoming more common with the advancement of age. Most individuals over the age of 50 yrs will show some sign of osteophytosis.

Osteoarthritis: Primarily caused by the wear and tear of joints through continuous use due to occupation or advanced age. Arises as a result of the loss of joint cartilage, eventually leading to friction between the articulating bones. Unlike in osteophytosis, the condition is erosive (rather than proliferative) and affects the

joints articular surface rather than its margins. May be seen as surface pitting of the joint surface in its early stages.

Eburnation: This is a manifestation of osteoarthritis which causes an area of dense polished bone as a result of bone on bone friction following the degeneration of the joints cartilage.

Schmorl's Nodes: A Schmorl's node is a crater like depression occurring either on the anterior or posterior surface, mostly toward the dorsal side, of vertebral bodies. These are caused by herniation or prolapse of intervertebral disk tissue, forming ectopic deposits of nucleus pulposus material in the neighbouring vertebral bodies. These are most common in the lumbar and lower thoracic regions of the human spine (Resnick & Niwayama 1978). It has been suggested (Schmorl & Junghanns 1971) that trauma and or strenuous activity, especially in adolescence, and metabolic and degenerative disorders may contribute to the formation of these lesions. In archaeological samples such as Fishergate (Stroud & Kemp 1993.214), and St. Nicholas Shambles (White 1988) a tendency for a greater presence in males has been noticed (at Fishergate occurring in 62% of the male spines and 42% of the female). Also, that nodes have a greater tendency to affect the inferior surface of spines is widely documented.

DISH: Diffuse Idiopathic Skeletal Hyperostosis, characterised by the ossification of the anterior longitudinal spinal ligament. Proliferative new bone growth on the vertebral column has sometimes been likened to the flowing of candle-wax (Rogers & Waldron 1995.49) which flows down the right side of the vertebral column (the left side is restricted by the presence of the pulsating descending aorta). Is more common in males of advanced age, and is sometimes associated with diabetes and obesity.

Degenerative disease/arthropathies in the Lutterworth population:

Sk1 Minor eburnation on left and right distal 1st metatarsals
Minor osteophytosis on margins of T10-L5 vertebrae (all of the recovered vertebrae)
Small Schmorl'snodes on superior and inferior surfaces of T10-L5

Sk2 Severe osteophytosis on margins of L1-5 (all of the vertebrae recovered) (Plate 16).

Sk3 Osteophytosis and eburnation of left synovial knee joint.

Sk9 Eburnation and osteoarthritic pitting of sternal ends of left and right clavicles (Plate 18).
Medium to severe marginal osteophytosis of C3-7 and T8-L5 vertebrae
Small Schmorl's nodes on superior surfaces of T7-8 vertebrae
Eburnation and osteophytosis on left and right distal 3rd metacarpals (Plate 17)

Sk10 Medium marginal osteophytosis of T1-L5 vertebrae
Severe eburnation and osteopytsosis of left and right synovial knee joints (affecting femur, tibia and patellae), (Plate 15).

Sk11 Ankylosed T11-12 vertebrae (Plate 19).
Medium marginal osteophytosis on T11-L5 vertebrae

Sk13 Medium marginal osteophytosis of T2-L5 vertebrae
Minor Schmorl's nodes in mid thoracic vertebrae (Plate 35).

Sk14 Osteoarthritic pitting on inferior bodies of cervical vertebrae
Osteoarthritic pitting on thoracic vertebral bodies
Severe marginal osteophytosis on L1-5 vertebrae

Sk18 DISH, *Diffuse Idiopathic Skeletal Hyperostosis* (Plate 14).
Osteophytosis and eburnation of sternal ends of left and right clavicles
Fusion of some ribs to sternum
Ankylosed C3-4 and T7-12 vertebrae
Severe marginal osteophytosis on L1-5 vertebrae
Osteophytosis on distal right radius
Severe eburnation and osteopytsosis of right synovial knee joint (affecting femur and tibia)
Osteophytosis on lateral and intermediate right foot cuneforms
Minor osteoarthritic pitting of proximal right metatarsal

Sk19 Schmorl's nodes on superior and inferior surfaces of T6-L5 vertebrae (Plate 20).
Medium marginal osteophytosis on all lumbar vertebrae

Sk20 Small Schmorl's node on T12 vertebrae

Sk21 Minor osteoarthritic pitting on inferior surface of L4 vertebrae

Sk22 Minor Schmorl's nodes on inferior surfaces of mid thoracic vertebrae

Unsurprisingly, degenerative arthropathy was mostly present in the older members of the population. No skeleton with a skeletal age of less than 45yrs showed any signs of arthropathy. Interestingly, five individuals (Sk's 6, 7, 8, 12, 15) for whom an estimation of age at death could not be determined, similarly showed no signs of degenerative disease. It is possible, therefore, that these un-aged individuals were also below the age of 45yrs.

The distribution and nature of the degenerative disease observed in the three individuals detailed above, suggests nothing more than normal joint deterioration arising from the natural joint response to prolonged daily wear and tear (Rogers & Waldron 1995.33).

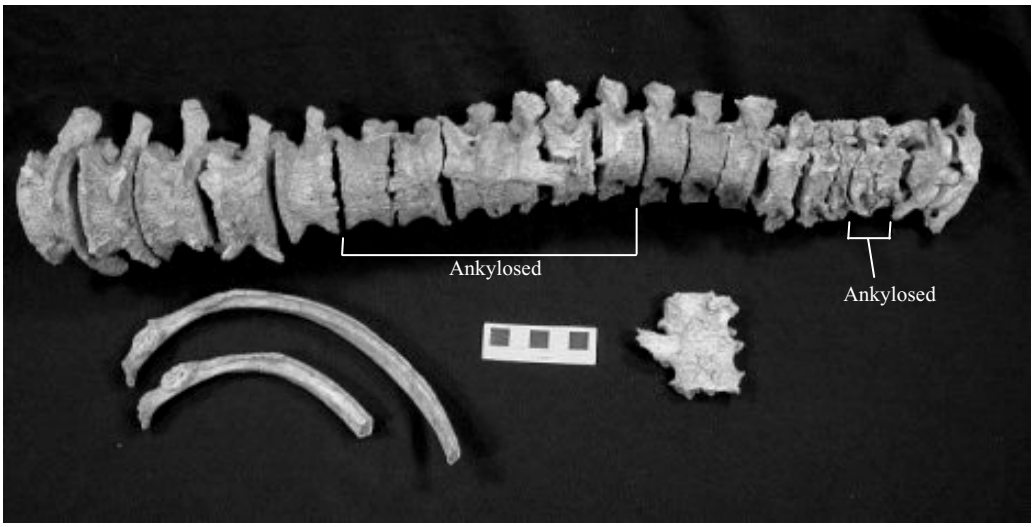


Plate 14. Sk18, spine, displaying DISH and osteoarthritis.

Plate 15. Sk10, eburnation and osteoarthritis on left knee.

Plate 16. Sk2, osteophytosis on L1-5 vertebrae.

Plate 17. Sk9, eburnation / osteoarthritis on left & right metacarpals.

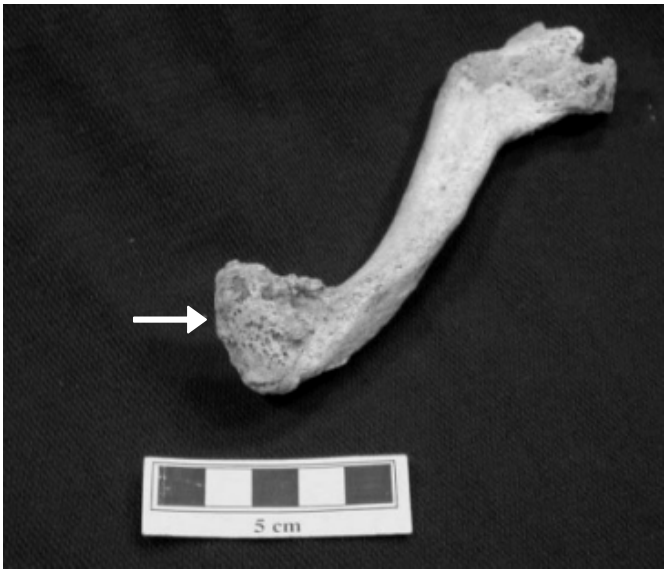


Plate 18. Sk9, eburnation on sternal clavicle.

Plate 19. Sk11, ankylosed vertebrae T11-12 + 13, osteophytosis.

Plate 20 Sk19, Schmorl's nodes in thoracic and lumbar vertebrae.

Enthesophytes and Exostoses

Similar to osteophytes in appearance, but do not always appear at joints. Enthesophytes arise at the site of a tendon insertion or *enthesis.* They arise from repeated trauma to tendons through repeated muscular exertion. Other osteophyte like growths may be simply ossified haematomas (bleeds) more correctly known as exostoses, arising from damage to muscle through strain or injury. Both of these bony growths are frequently used in the identification and interpretation of occupational stress and injury (Dutour 1986).

Enthesophytes and Exostoses in the Lutterworth population:

Sk1 Enthesophyte on the proximal lateral left tibia, pos indicative of a torn muscular insertion of the *Tibialis Anterior* or *Extensor Digitorum* muscle.

Sk2 Enthesophyte on *Soleal* (popliteal) line of both left and right tibiae, suggests well developed/strained *Popliteus* muscle (flexor and medial rotator of tibia).

Sk3 Enthesophyte on right diatal first metatarsal.

Sk6 Enthesophyte on distal left fibula

Sk9 Enthesophyte on *Soleal* (popliteal) line of left tibiae, suggests well developed/strained *Popliteus* muscle (flexor and medial rotator of tibia)

Sk10 Large muscular insertion on deltoid tuberosity of left and right humeri
Osteoblastic reaction on Left and right metatarsal shafts (pos. marching fractures), (Plate 21).
Enthesophyte on inferior calcaneal spur

Sk11 Large muscular insertion of left and right radial tuberosity
Enthesophyte on left 3rd proximal finger phalanx (Plate 22).
Enthesophyte on distal right fibula

Sk13 Enthesophyte on distal left fibula

Sk14 Enthesophyte on inferior articular facet of axis vertebrae

Sk18 Enthesophyte along linear asperi of right femur (Plate 24).
Enthesophyte on distal left and right tibiae and fibulae

Sk20 Enthesophyte along linear asperi

Sk21 Enthesophyte on left sacral ala (Plate 23)

For most such lesions of the bone it is difficult and often inappropriate to hypothesise about probable causes for this remodelling, especially since they may be part of a greater clinical picture to which the palaeopathologist is rarely privy (due to the decomposition of the soft tissues). However, by far the majority of enthesophytes and exostoses present in the Lutterworth population occur on the bones of the legs; especially the lateral tibia surface and medial fibula surface (Sk's 6, 11, 13, 18), reflecting damage to the interosseous membrane (Mann 1990.121); the proximal tibia (Sk's 1, 2, 9), indicative of torn muscular insertions of the *Tibialis Anterior,* Extensor *Digitorum* and *Popliteus muscle*; the linear asperi of the femora (Sk's 18, 20); and the tarsals and metatarsals of the feet (Sk's 3, 10). All such bony growths are consistent with a population used to using their legs as their primary form of transportation. The strain of heavy loads and the risk of twisting injuries on uneven ground would have added to the strain. The other occurrences detailed above may simply be attributed to heavy use of the arms and hands in the case of Sk10, Sk11, and perhaps a traumatic injury to the pelvic region of Sk21.

Plate 21. Sk10, osteoblastic reaction / marching fractures on left and right metatarsals.

Plate 22. Sk11, enthesophyte on 3rd proximal left finger phalanx.

Plate 23. Sk21, exostosis on left sacral ala.

Plate 24. Sk18, exostosis on linear asperi of the left femur .

Congenital

Congential variations of skeletal form commence during fetal development and become manifest at birth or shortly after. They can vary in severity from very minor asymptomatic deviations from 'normal' development, to conditions that threaten the life of the individual. Congenital malformations can be classified as either total failure of development, partial development, over development or abnormal development. They can arise from a variety of different factors, from environmental influence (viruses, drugs, radiation etc.) on the mother, to the hereditary constitution of the fetus (Roberts & Manchester 1995.32). Some congenital skeletal variations may overlap into the realms of NMV's (non-metrical variations) as described previously. Such, often asymptomatic, variations, including spina bifida occulta, lumbar sacrilisation, and supernumary (additional) vertebrae are often merely regarded as NMV's. However, since these *can* result in associated clinical symptoms (Chapman 1997) they have been regarded here as congenital malformations.

Congential conditions in the Lutterworth population:

Sk1 Sacralised supernumary L6 vertebrae (Plate 25).

Sk5 Malformation of distal right humerus.
Sk6 Spina bifida occulta (complete sacral), (Plate 28).
Sk9 Sacralised supernumary L6 vertebrae, (Plate 26.
Sk14 Spina bifida occulta (complete sacral)
Sk22 Spina bifida occulta (complete sacral) and open arch of L5 vertebrae, (Plate 27).

Sacralised L6 Vertebrae
The incidence of two cases of supernumerary (additional) lumbar vertebrae, was observed in Sk's 1 and 9. In each of these cases a fully sacralised (fused to sacrum) 6th lumbar vertebrae was observed. Ordinarily the spinal column is made up of 24 mobile vertebrae (7 cervical, 12 Thoracic and 5 Lumbar) and a fused element or 'sacrum' at its base, however, occasionally this number can be altered by the presence, or absence of one or more of these elements. Bergman (1984.197) states that *'numerical increases in the elements of the vertebral column probably do not occur'*, but that additions to groups (cervical, thoracic etc.) may occur through *'a reduction in the number of vertebrae of an adjacent group'*, with the *total* number of elements remaining unchanged. This notion is also supported by Boyduk and Twomey (1991.143). Clearly, since Sk 9 has its full compliment of 24 moveable vertebrae *plus* an additional 6th Lumbar, this belief must be challenged. However, since this L6 is fully sacralised it cannot be regarded as a 25th moveable element. In the case of Sk 1, on the other hand, it is uncertain whether the L6 has not been created by a reduction in the number of thoracic vertebrae, since these were not fully recovered.

The development of a 6th lumbar vertebrae probably began very early on in life as an anomaly in embryonic development (Muller et al 1986 & Moore & Persaud 1993), however, although such anomalies border between congenital deformity or non-metric trait, they are not usually considered to be clinically relevant, unless, as Boyduk and Twomey (1991.143) have stated, *'injury is superimposed'*. At St. John's, Lutterworth,

nonetheless, one must suggest that the condition may have lead to some discomfort, since in both cases the lower spine has become 'unstable', leading to sacral asymmetry, Schmorl's nodes and osteophytosis, as has been observed elsewhere (Chapman1997).

Miles (1989.47) has quite rightly stated that reliable diagnosis of supernumerary vertebrae can only be made if complete spines are available for analysis, whereby all vertebral elements can be totalled. Under these circumstances only Sk 9 can be deemed to be correctly diagnosed. While Sk 1 can only be regarded as having an 'additional' fused lumbar element. Bergman (1984.197) has recorded *any* numerical variation in the spine in only 2-11% of any given population. A medieval cemetery site in Abingdon, Oxfordshire (Wakely 1995) recorded sacralised L6's in 3% of the population (4 in 139), this figure also being attested in modern populations (Moore & Persaud 1993.360). Given the rarity of this condition, some credence should be given to the possibility that Sk's 9 and 1, from the Lutterworth population, may have been related, since these skeletal variations tend to be hereditary.

Spina bifida occulta

Three cases of spina bifida occulta, the mildest form of the often fatal condition 'Spina bifida' were diagnosed in the Lutterworth population. This affected Sk's 6, 14 and 22. Spina bifida manifests itself as a hiatus in the closure of the vertebral column, leaving the delicate spinal chord unprotected by its bony casing, and in extreme cases exposed at the body surface. Such extreme exposure is often incompatible with life (even with modern surgical techniques) due to vulnerability to injury and infection, in antiquity complete Spina bifida would have certainly lead to perinatal death. Spina bifida is said to affect *c*.1 in 400 live births and have a strong genetic origin. Spina bifida occulta, on the other hand, is more common (affecting *c*.2.7% of ancient skeletal populations (Brothwell & Powers 1968) and is far less serious, in most cases being completely asymptomatic and un-noticed by the sufferer. The 'occulta' form appears as a small section of incompletely closed spinal column, usually affecting the sacrum (as in the case of Sk's 6 &14), though can occur as openings in the neural arches at any point of the spinal column (as in Sk 22).

Metabolic and Endocrine Disease

Metabolic disease are often used as indicators of 'stress' during the life of the individual, since they represent an individuals adaptive response to stresses inflicted upon the body during its developmental years. Stresses may take the form of vitamin or mineral deficiencies such as Iron (causing aenemia), calcium (may cause osteoporosis), vitamin C (causing scurvey), vitamin D (causing rickets) etc. However, the finding of a skeleton displaying such conditions should not be regarded as 'victims' of these conditions, since the bone response to the deficiency is a survival mechanism, not a failure. The true 'victims' of metabolic disorders are those that became so physiologically stressed that they died before the bone changes could be implemented.

Plate 25. Sk1, sacralised supernumary L6 veretebrae.

Plate 26. Sk9, sacralised supernumary L6 vertebrae, + osteophytosis on L5.

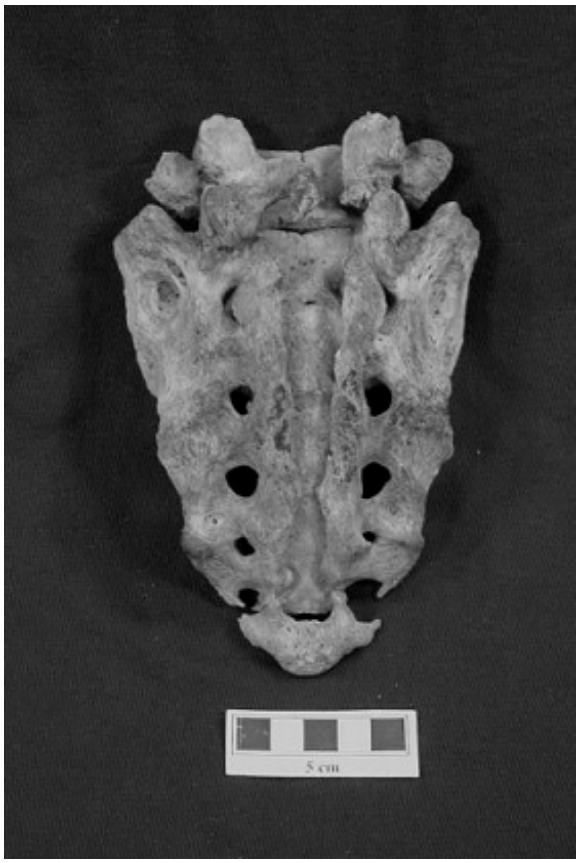


Plate 27. Sk22, spinabifida occulta, on sacrum and L5.

Plate 28. Sk6, spinabifida occulta.

Rickets

Three cases of probable rickets were identified among the skeletons from St. John's, Lutterworth. This affected one articulated skeleton, Sk 20, and two individuals (Plate 29) whose graves had been disturbed in antiquity and whose bones were recovered from the sand/gravel pit (context 6). In each of these cases the most pronounced affect of vitamin D deficiency was displayed in the warpage of the femurs.

Rickets is a systemic disease normally associated with a deficiency of vitamin D in early childhood. During growth the organic element of bone (osteoid) must be mineralised and made strong so as to support the increasing bulk of the body. Vitamin D is an essential factor in bone mineralisation, it is converted in the liver and under the skin, in sunlight, to form the active compounds of this process. If the body does not take in a sufficient amount of vitamin D to support this process, through nutritional inadequacy (lack of fresh dairy products and fish oils) and/or the lack of sunlight, then the growing bones will become under-mineralised and will thus have a tendency to bend under the increasing weight of the body. The onset of rickets is most common between the ages of six months and two years (Ortner and Putschar 1981.274), the period most associated with the weaning phase of infancy. Before weaning the child would presumably have been fortified with vitamin D through the intake of mothers milk. The condition was particularly common during the industrial revolution of the 18th -19th centuries, when labourers and their families were subjected to poor diets and insufficient sunlight (Hess 1929), and often from a very early age.

In all of the cases identified at St. John's the femurs show signs of having healed in adulthood, through a subsequent deposition of osteoid on the concavity of the bone (mostly along the *linea aspera*).

Plate 29. Rickets on two right femurs from sand/gravel quarry pit (context 6).

Cribra Orbitalia

Cribra orbitalia was observed within the left orbit of Sk11. This is a common condition in many ancient populations, manifesting itself as a pitting on the bone within the orbits (eye sockets). The condition is often associated with a similar pitting of the parietal bones of the skull (known as porotic hyperostosis, see below), though this was not present in this case.

It is believed that the main cause of cribra orbitalia is nutritional deficiency, in particular of chronic iron-deficiency aenemia. Anaemia itself is caused by a reduction (in number and/or quality) of blood haemoglobin below normally acceptable levels, which in turn leads to hyperplasia (increase) of bone marrow in an attempt to produce more red blood cells. That the condition is caused by iron deficiency is clear, but it is often difficult to determine the cause of the iron deficiency itself since this may arise as a result of a large blood-loss, parasitic infection, nutritional deficiency, disease etc. Hyperplasia of bone marrow has a two-fold affect on bone, firstly it causes a destruction of the outer table of compact bone, through the development of porotic lesions (in the orbits and on the cranial vault), and secondly an expansion of the middle layer of bone or diplöe (Stuart-Macadam 1991.101). The osteological manifestation of this condition is predominant in juveniles, probably due to the increased nutritional demands associated with childhood growth and development. When observed in older adults, as in this case, it is more than likely that the lesions reflect a period of childhood aenemia. Indeed the severity of the porotic lesions can be seen to lessen with the advancing age of the person, i.e. gradually healing over time (Nathan & Haas 1966), in the case of Sk11 the lesions being very faint.

Porotic Hyperostosis

One fragment of cranial vault (Plate 30) from a disturbed context (context 194*) showed signs of porotic hyperostosis, manifest as pits/porotic lesions on the vault of the skull. The cause is believed to be the same as cribra orbitalia (described above).

Plate 30. Porotic hyperosrosis on cranial vault fragment from unstratified context 194*.

Fracture/Trauma

Sk 9 2x Fractured (well healed) left ribs, (Plate 31 & 33).
Fractured (healed, misaligned) left medial 4th hand phalanx (Plate 34)
Sk13 Compressed fracture of L1 vertebrae (Plate 35).

Fractures in human bone material can be of two varieties, either healed, the result of minor accidental injury, or unhealed, as a result of far more serious and fatal injuries. Once a fracture has been sustained, and if the individual survives the trauma, the cells of the bones endosteum and periosteum react in such a way as to repair the break. They do this through the secretion of new bone tissue and enzymes which promote the deposition of salts, which, combined with coagulated tissue fluids, creates a fibrous wrapping around the break. The fibrous wrapping is then fortified by collagen fibres and the broken bones begin to reunite. This so called 'periosteal reaction' or 'callus' is easily recognised in palaeopathological samples by its coarse granular appearance.

Four fractures were identified among the skeletal remains from St. John's, Lutterworth, each of these representing fairly mild accidental fractures. Skeleton 9 bore three fractures, two left rib fractures and a left medial finger phalanx, each of which had fully healed (albeit somewhat misaligned in the case of the finger). Sk 13 displayed a slightly more serious injury in the form of a compressed fracture of the 1st lumbar vertebrae, caused by a downward force impacting on the vertebrae. Compression or crush fractures of this nature are often associated with an underlying weakness of the bone, possibly osteoporosis.

Plate 31. Sk9, fractured left rib, fully healed.

Plate 32. Context 194*, fractured right fibula, fully healed.

Plate 33. Sk9 , left rib fracture, fully healed.

Plate 34. Sk9, fractured left finger phalanx, misaligned but fully healed.

Plate 35. Sk13, compressed fracture of first lumbar vertebrae (top) & Schmorl's node (bottom) on lower thoracic vertebrae.

Dental Pathology

Human teeth, by virtue of their almost indestructible enamel shell are usually very well preserved in grave deposits, frequently, as Zivanovic (1982.205) states, *'these are the only surviving trace of the skeleton' and* as such have become the subject of considerable palaopathological consideration. Since human teeth are used throughout the life of an individual, not just for the chewing of food but often in occupational activities also, as described by the likes of Harthansen, Meldgaard & Nordqvist (1991.82-88), they can tell the palaeopathologist a great deal about the experiences of past populations. Details on the nature and quality of diet, hygiene, occupation, growth and development, age and disease are all regularly derived from detailed studies of human teeth.

Dental remains from a total of twelve individuals survived from St. John's, Lutterworth with a total of 203 tooth positions (including empty sockets) and 186 individual teeth being represented.

Dental attrition was noticed on every individual examined, with the severity increasing with the advancement of age, and as such this has been utilized in the determination of age (see above). Subsequently the most severe cases of dental attrition were seen in the over 40's age group.

A total of twenty teeth were lost during the life of the individual, this representing an ante-mortem loss rate of 10.15%.

Four teeth bore carious lesions (dental cavities), this representing a 7.44% incidence in the 186 teeth present for analysis. Both occlusal (on tooth top) and interproximal (on tooth side) caries were represented from three (3) discrete individuals (Sk's 13, 17 & 22).

Peridontal disease, an infection of the alveolar bone and the soft tissues of the mouth, was apparent in three individuals from St. John's, Lutterworth (Sk's 18, 20 & 22), these representing 25% of the jaws present for analysis. The condition is recognised by the recession of the alveolar bone from around the base of the teeth (Plate 36), which in the most extreme cases can lead to the loosening and eventual loss of teeth. The most severe cases of peridontal disease were noticed again in the older age group.

Plate 36. Sk20, periodontal disease and medium calculus.

Plate 37 Sk11, dental abscess.

Alveolar abscesses occurred in 16% of the jaws examined (2 cases out of 12 dentition's), occurring in the region of the right mandibular 1st molar of Sk11 (Plate 37) and the left maxiliary 3rd premolar of Sk 14. Generally such abscesses occur as the result of an infection of the tooth socket. Having first gained entry to the socket, by way of severe caries, dental attrition or as the result of a trauma, the infection leads to the build up of puss around the root of the tooth, alveolar bone is then absorbed so as to create an exit for the escape of this puss. These points of access, known as 'fistulae' are clearly visible on dry bone. The fistulae observed in Sk's 11 and 14 opened toward the buccal side (towards the cheek).

Only in three cases did dentitions show signs of childhood growth-disruptive stresses, seen on the canines and incisors of Sk's 16, 17 and of a disturbed mandible from context 6 (the sand/gravel quarry pit). These took the form of so called enamel hypoplasia's, recognised through the appearance of horizontal grooves of thinned enamel around the circumference of a tooth. These grooves, developed during the period of enamel formation (from birth to 13 years), represent periods of childhood stresses, such as nutritional deficiencies (Huss-Ashmore et al 1982), vitamin D deficiency, hypoparathyroidism and exantematous fevers (Lukacs 1989.267) during which times tooth enamel cannot develop fully.

Oral hygiene appears to have been fair. Considering that teeth would have been rarely cleaned, certainly by today's standards, the minimal presence of dental calculus (present, but very light in four cases, medium in one),

9.1.5 Discussion

It has been the intention of the current report to catalogue and attempt to interpret the metrical and observational data retrievable from the analysis of the human remains from St. John's, Lutterworth.

The most apparent finding from this analysis was the over representation of adult males from the cemetery of St. John's, this supports the historical reference of the early 14th century in which Bishop Dalderby of Lincoln drew up rules for the hospital based on the Augustinian order and ordered that no women should be admitted as sisters without the bishop's permission. One might also suggest that few women were permitted admittance to the hospital as residents, or at least were not given burial in the hospitals cemetery.

It is, however, worth remembering that only a small percentage of the hospital cemetery was available for excavation, and even this had been truncated by the intrusion of several sand and gravel quarry pits. It remains possible, therefore, that the cemetery may have been zoned, with the females being buried in a different area to that excavated. That females and juveniles were sometimes interred is certainly proven by the presence of Sk's 17 (female) and 5 (juvenile).

The individuals represented in this cemetery were of average height, compared with other larger contemporary populations. Variations in skeletal build among the males of this group, from light to heavy build, and with a preponderance to heavier muscularity in the legs, seem consistent with the character of the site. One might suppose that both residents (poor people who have laboured hard during their lives) and hospital staff and clergy (whose occupations would have been less physically demanding) are represented in this assemblage of bone. As has previously been stated, the strong muscularity of the legs of several of these individuals could simply reflect the use of the feet as the primary form of transport, especially if we are to suppose that many residents of the hospital may have been itinerants.

Diet was typically coarse for the period, being reflected in the high levels of dental attrition observed in all individuals present (especially severe in the over 40's). Such high levels of dental attrition were the norm prior to the introduction of flour sieving, for the removal of grinding grit, in the mid 17th century. Dental hygiene, however, was fair. The population exhibits low levels of decay, calculus (tartar) and periodontal disease, despite the apparently normal rates of ante-mortem tooth loss. Low levels of calculus throughout the population may equally have resulted from a low carbohydrate diet.

The population showed no signs of chronic disease nor excessive trauma. The only pathologies noted during analysis were those linked with old age (Osteoarthritis). Minor trauma was noted in several cases, but all of these could be explained simply as accidental damage inflicted during the course of a normal life.

The ages at death observed in this population may be considered as normal if the findings of larger cemeteries such as St Helen on the walls (Dawes & Magilton 1980) and St. Nicholas Shambles, London (White 1988) is anything to go by. The specific causes of death in each of the instances detailed above are, however, unobtainable from the given evidence. Since relatively few diseases and traumas leave their mark on the skeleton, the potential for studying dry bone assemblages such as this, to identify cause, is very low.

*9.2 **The Ceramic Finds** by Deborah Sawday.*

The ceramic finds were examined and catalogued by Deborah Sawday. A full list of ceramic finds is available in Appendix VI

9.2.1 Pottery and ridge tile

Evaluation trenches

Just three sherds of pottery were recovered from the evaluations. A single sherd of 14th-century Chilvers Coton Ware with brown glaze was recovered from the pit (92), in trench 01 and two sherds of 14th- to 16th-century Midland Purple ware from the wall foundations (256) in trench 05. The same structure (256) contained four fragments of inlaid medieval floor tile including two with identifiable designs, three sherds of monochrome tile and a sherd of nib roof tile. As these all appear to be within the fabric of the structure they probably represent reused materials from an already demolished site.

Context (60) in trench 01 contained a fragment of nib tile and a fragment of brick, while context (65) in the same trench also contained a fragment of nib tile and two fragments of brick.

Open area excavations

The evaluations and excavation in 1996 and 2001 produced one sherd, 15 grams, of Roman Derbyshire ware, 179 sherds of medieval and later pottery, weighing 5182 grams (tables 10 & 11) and thirteen fragments of medieval ridge tile, weighing 464 grams. This material was examined under a binocular microscope and catalogued with reference to the ULAS fabric and form series, (Allin 1981), (Davies and Sawday 1999), (Woodland 1981).

A significant quantity of tile was also recovered from the excavations: - 71 pieces of floor tile, including four complete inlaid tiles; 435 fragments of nib tile, weighing 55.646 kg and four fragments, 886 grams, of curved roof tile. All this material was also catalogued with reference to the ULAS fabric series (*ibid*, 1999). Thirty seven pieces of brick and one clay pipe bowl and eight clay pipe stems, were also recorded.

Table 10 The medieval and later pottery site totals by fabric, sherd numbers and weight (grams).

Fabric	Common Name	Sherd Nos.	Weight (grams)	Average Sherd weight
Early Medieval				
PM	Potters Marston	7	105	15.0
LY	Stanion Lyveden type ware	8	33	4.1
CO2	Coventry ware 2	1	20	20.0
SP	Splashed ware	1	14	14.0
Sub Total		**17**	**172**	**10.1**
Medieval				
CC1	Chilvers Coton ware 1	15	115	7.6
CC2	Chilvers Coton ware 2	8	256	32.0
CC5	Chilvers Coton ware 5	1	7	7.0
CO1	Coventry ware 1	1	8	8.0
BR2	Brill/Boarstall type ware 2	2	24	12.0
MS2	Medieval Sandy ware 2	1	23	23.0
MS	Medieval Sandy ware	2	8	4.0
Sub Total		**30**	**441**	**14.7**
Later Medieval/Early Post Medieval				
MP1	Midland Purple ware 1	43	2631	61.1
MP2	Midland Purple ware 2	11	447	**40.6**
TG/TG2	Surrey Whiteware/type ware	8	91	11.3
CW2	Cistercian ware 2	23	203	8.8
CW/MB	Cistercian/Midland Blackware	1	3	3.0
MY	Midland Yellow	4	57	14.2
EA1	Earthenware 1	2	145	72.5
EA7	Slipware	1	5	5.0
EA11	Tin Glazed Earthenware	1	10	10.0
MA2/3	Martincamp type II/III	6	260	43.3
RH	Rhenish Stoneware	3	31	10.3
Sub Total		**103**	**3883**	**37.6**
Post Medieval/Modern				
EA/PO	Earthenware/Porcelain	25	635	25.4
SW	Stoneware	4	46	11.5
Sub Total		**29**	**681**	**23.4**
TOTALS		**179**	**5182**	

Table 11 The relative proportions of early medieval and later pottery by sherd numbers and weight (grams).

	Sherd Nos.	**%**	**Weight (grams)**	**%**	**Average Sherd weight (grams)**
Early Medieval	17	9.4	172	3.3	10.1
Medieval	30	16.7	441	8.5	14.7
Later Medieval/ Post Medieval	103	57.4	3883	74.9	37.6
Post Medieval/ Modern	29	16.2	681	13.1	23.4
TOTALS	**179**	**99.7**	**5182**	**99.8**	

The Site Record (Table 12)

In Area 2A, the fills (90) and (98) of the pits [91] and [92], contained single sherds of medieval pottery, in fabrics CC1 and CC2, dating to the 13th and 14th centuries. The gully, [276] and the surface (299), the latter in Area 2B, both produced fragments of the same vessel dated to the 13th century in Stanion Lyveden type ware. The rest of the pottery dating from the 12th to the 13th or early 14th centuries is apparently residual in later contexts. Floor and nib tile, dating to the first half of the 14th century, and brick and clay pipes were also recovered from many of these contexts (see below). At least some of this latter material is thought to be intrusive.

Unfortunately, not a great deal of pottery was directly associated with the building in Area 2A. Joining fragments of Martincamp stoneware dating from the 16th century were found in the fills of the wall trenches [261] and [284], together with Rhenish stoneware of the same date, and the late medieval Midland Purple ware fabric MP1, dating from the later 14th or 15th centuries, 14th century floor tile, and a fragment of late medieval or early post-medieval brick. The floor of the building, the cobbles, context (33), contained two sherds, (7 grams) in Potters Marston and a fine Chilvers Coton or Nottingham ware, both with a terminal date in the 13th century, together with fragments of later medieval floor tile, nib tile, brick and an intrusive clay pipe stem probably dating to the mid or late 17th century.

The pit [42] which cut through the cobbles, context (33), contained 13th century Chilvers Coton and a possible fragment of Coventry D ware (Redknap and Perry 1996), together with a piece of Surrey Whiteware or type ware dating from circa 1400, and a cup handle in Cistercian ware dating from circa 1475. Forty eight fragments of nib tile, one in a Midland Purple ware, were also recovered from this context. The metalled surface, contexts (202) and (224) possibly associated with the building, produced four fragments of 13th or, possibly, 14th century ridge tile, floor tile, and thirty eight sherds of pottery, including large pieces of late medieval Midland Purple and Cistercian ware, two fragments of Midland Yellow ware, dating from circa 1500 and a tiny sherd, weighing 5 grams, of what may be intrusive Slipware, thought to date from the mid 17th century. Three pieces of brick, part of a curved roof tile and another, possibly intrusive fragment, a clay pipe stem, were found in the same contexts.

A cup base in Surrey Whiteware or type ware in the layer (326) above the pit [42], joined with a sherd from the 'cleaning' layer (325) which lay above the cobbles (33) noted above. Layer (325) included quantities of medieval and later medieval pottery and eight fragments of 13th and 14th century ridge tile, floor tile, brick and a possible fragment of Rhenish stoneware dating to the 16th or 17th century.

Other later medieval or early post-medieval contexts in Area 2A included the ditch [76] where a tiny fragment of Surrey Whiteware or type ware occurred, together with medieval floor and roof tile, and a small piece of brick. Medieval and later pottery and fragments of medieval floor tile and/or nib tile also occurred in the quarry or pit, [76] and the pit [49]. The latest material from the fill of the pit [89] comprised part of a 17th century vessel in the tin glazed earthenware, EA11, and sherds of Red Stoneware, probably dating from the mid or late 18th century. Brick thought to date from the late 17th or early 18th century was also found in this context.

In area 2B, the layer (324), contained residual 13th-century pottery as well as Surrey Whiteware, or type ware, and Cistercian ware, and nib tile, whilst the wall trench [298] contained late medieval Midland Purple ware and a jar rim in the post-medieval earthenware EA2, perhaps of post-medieval rather than modern date, as well as floor and nib tile. Another post-medieval or modern context was the wall, (290), which, together with residual medieval pottery and nib tile, contained later material, including a tin-glazed hollow-ware fragment, probably dating to the 18th or early 19th century and a clay pipe bowl dating from the mid to late 17th century.

The Pottery and Ridge Tile Record

The general range of medieval pottery and ridge tile fabrics present is typical of this part of the county, and reflects the essentially local nature of pottery production and distribution during this period. Thus the presence of the Warwickshire Coventry and Chilvers Coton wares - the latter including the fine Midland Purple ware fabric MP1 – is not surprising. The coarser Midland Purple ware fabric MP2, the Cistercian ware fabric CW2, and the early post-medieval Midland Yellow ware, are thought to originate from Ticknall in Derbyshire. However, bearing in mind the proximity of Lutterworth to the village of Potters Marston, the site of another major early medieval pottery industry, (Davies and Sawday 1999), the relative dearth of Potters Marston ware compared to the contemporary Stanion Lyveden wares, which are also present in almost equal quantities, is somewhat unexpected but may simply reflect the small size of the sample, only fifteen sherds in all. The Stanion Lyveden wares originate from a series of small scale pottery industries based in the Rockingham Forest area of Northamptonshire (Foard 1991). All these pottery sources lie with an approximate 30 miles radius of the site.

That this may have been a relatively high status site during the Middle Ages is suggested by the two fragments which have tentatively identified as Brill Boarstall type ware from Buckinghamshire (McCarthy and Brooks 1988, 292-294) in context (325) above the cobbles (33) associated with the building in Area 2A. This pottery is not often found in Leicester and the county, and may here represent an item of personal baggage rather than a traded ware, whilst the Surrey Whitewares or type wares (Pearce and Vince 1988) are also not commonly found in any quantity in the county. The ridge tile must also have come from a relatively high status building. Interesting all twelve fragments were from contexts (224) and (325), and hence directly associated with the structure in Area 2A.

The vessel forms also are also not typical of the rubbish normally associated with domestic occupation in the medieval period. A spout with applied clay decoration in Chilvers Coton ware, from the layer (324) in area 2B, may be part of an aquamanile or a knight jug - a rare find. The presence of a mortar and a possible skillet, both in the Midland Purple fabric MP1, from (325) and the wall trench [261], is also unusual. These two vessel forms and the several cisterns in Midland Purple ware, and the quantities of jugs and cups in Cistercian ware and the Surrey Whitewares noted above, also hints at the presence of a communal establishment in the vicinity.

The Martincamp flask, associated with the same structure as the above, which dates to the 16th, or possibly the 17th century, is another uncommon find. The presence of three

sherds of Rhenish stoneware and of a 17th century tin glazed earthenware vessel is also of note.

Conclusions

The proportions of the wares present and the relatively high average sherd weights, (table 10) is evidence of activity on the site from the 11th or 12th century, with that activity becoming more intense during the 13th century, and peaking in the later medieval period, from the 14th to the mid 16th century.

The later medieval levels were truncated, presumably, by the construction of modern agricultural buildings and of the A426 Rugby Road, if not by the building of the post-medieval manor (Dyson 1913, 17, 60), which is thought to have been in the vicinity of the excavation site, and by the Spital Mill to the north.

The range of wares, including the regional and continental imports, and the type of vessel forms, including fine tablewares and specialised cooking wares, hints at the presence of a communal establishment of some status. The medieval ridge, floor, and nib tiles are further evidence of substantial building or buildings in the vicinity associated with a religious community. Thus, it seems likely that, the structure in Area 2A, which apparently had a terminal date in the 16th or 17th century, may have formed one of a sequence of buildings originally associated with the Hospital of St John the Baptist, whose foundations were laid out in 1218 (Dyson 1913, 17).

Table 12 The post Roman pottery and ridge tile from Areas 2A and 2B, by fabric sherd/fragment nos. and weight (grams).

AREA 2A	**POT**				**2A POT TOTALS**	**AREA 2B POT**		**2B POT TOTALS**	**POT TOTALS**	**2A RIDGE TILE**
	Pits/Quarry [7] [42] [49] [89] [91] [92] [261] [284]	Ditch/gully [76] [276]	Surfaces/ Cleaning (33) (202) (223) (224) (325) (326)	wall trenches [261] [284]		Wall/ Structure [298] (256) (290)	Surface/ Layer (299) (324)			Surfaces/ Cleaning (224) (325)
Early Medieval/Medieval										
PM			2/11		2/11				2/11	
LY		5/25			5/25		2/3	2/3	7/28	
CO2							1/20	1/20	1/20	3/216
CC1	1/10		4/19		5/29		5/53	5/53	10/82	9/210
CC2	7/234		1/22		8/256				8/256	
CC5	1/7				1/7				1/7	
CO1	1/8				1/8				1/8	
BR2			2/24		2/24				2/24	
MS2			1/23		1/23				1/23	
MS				2/8	2/8				2/8	
Later Medieval/Early Post Medieval										
MP1	7/67		13/1223	6/440	26/1730	14/741		14/741	40/2471	
MP2	3/172		1/70		4/242	2/20		2/20	6/262	
TG/TG2	1/13	1/3	6/75		8/91				8/91	
CW/MB	1/10		21/178		22/188	1/3	1/15	2/18	24/206	
MY			2/35		2/35				2/35	
EA1						2/145		2/145	2/145	
EA7			1/5		1/5				1/5	
EA11	1/10				1/10	1/15		1/15	2/25	
MA2/3				6/260	6/260				6/260	
RH	1/15		1/6	1/10	3/31				3/31	
Modern										
EA/SW	4/7		2/343		6/350	2/80		2/80	8/430	
TOTALS	**28/553**	**6/28**	**57/2034**	**15/718**	**106/3333**	**22/1004**	**9/91**	**31/1095**	**137/4428**	**12/416**

Table 13 The floor tile by fabric and fragment numbers from Area 2A (* denotes a complete tile).

Area 2A	**Inlaid Floor Tile**					**Monochrome Floor Tiles**					
Fabric	Pits [89] [206] [216] [284]	Graves [3] [5] [39] [47] [214]	Surfaces (224) (325)	Walls/ Structures [261] (236) (256) [298]	U/S	Graves [214]	Walls/ Structure [261] (256) [298]	Cleaning (325) (326) (300)?	Ditch (76)	Pit (48) [89] [216] [284]	Surfaces (224) (325)
CC2 – Chilvers Coton ware 2	14	4* + 3	4	8	2	2* + 3	12	5	1	7	5

Table 14 The nib tile by fabric and fragment numbers from Areas 2A and 2B.

Area 2A							**Area 2B**	
Fabric	Pits [7] [17] [44] [49] [89] [94] [206] [216]	Graves [3] [39]	Surfaces (33) (224) (223)	Ditch/ Gully[76] [204] [261]	Walls/ Structures [257] [288]	Cleaning Layers (324) (325)	Walls [290]	Ditch [320]
CC2 – Chilvers Coton ware 2	235	3	131	34	13	92	11	9
MP1 – Midland Purple ware 1	1							

9.2.2 The medieval floor tile (Tables 13 and 15)

Inlaid Tile

All the floor tiles are in Chilvers Coton ware 2 – fabric C at Chilvers Coton – where it is dated to the 14th and 15th centuries (Mayes and Scott 1984, 40-41, table 13). The inlaid tiles generally have a pink body over which the transparent lead glaze has fired to a golden brown and to a pale yellow over the inlaid cream clay. The monochrome tiles tend to have a darker red fabric, perhaps due to the use of a slightly more iron rich clay for the body or to slightly different firing conditions in the kiln. This, and the addition of iron oxides to the glaze of the latter may explain why they have a dark greenish, reddish or brownish black glaze. The method of manufacture of these hand made tiles at the kiln site has already been described elsewhere, (Eames 1984).

No keys were found on the underside of the tiles found here or on those examined by Eames from Chilvers Coton (Eames 1984, 173), although keys were noted by the excavators on some of the tiles recovered from the tile kiln (Mayes and Scott 1984, fig.116).

Table 15 The inlaid floor tile – concordance of designs.

Context	Fragment Nos	Chilvers Coton	Chatwin	Whitcomb	Eames	Comments
[89] pit	1	29				Fleur-de-lys
[214] grave	4 complete	4	23.1	39	1595	Arms of Beauchamp
[261] grave	1	4		39	1595	As above
[216] pit	1	7	20.1 variant	127	1405	Zodiac – the ram
(224) cobble surface	1	31		78	1809 ?variant	?part of a 4 tile design of a lion
(224)	1					Illustration 1
(234) cobble structure	1	37 reverse		Under mirror Image of 72b		Illustration 2, part of a 16 tile design, formalised foliage
(234)	1	1	23.8	66	?1562	Heraldic, ?related to Astley family
(325) above cobbles	1	36		95	2787	Rosettes and foliage
U/S	2		41.13 variant			Illustration 3

Whilst many of the inlaid tiles are broken the condition of the upper surface of thirteen of the tiles varies between good and worn. However, in three cases the tiles are much more worn and most of the glaze has gone leaving only traces of the inlay. Six more tile fragments and two triangular tiles are very worn and show little evidence of glaze and none of inlay, but these have been grouped with the above because they share the same characteristics in terms of dimensions and fabric.

The dimensions of the tiles, which vary between 112 to 120 mm square, and between 20 to 27 mm thick, are also comparable to other tiles from the kiln site, notably those at Ulverscroft. The kiln material itself was made up of over-fired or under-fired wasters of varying sizes, (Eames 1984, 173, 177).

Most of the designs, (table 6), could be paralleled with the Group 1 tiles from kiln 29, site 10 at Chilvers Coton, Nuneaton (Mayes and Scott 1984, table 3), (Eames 1984, figs.121-124). The identifiable tiles include a fragment from context (234) (illustration 2), which is the reverse of Chilvers Coton design number 37 (*ibid* 1984) and part of a sixteen tile design, and would have belonged below the mirror image of Whitcomb tile number 72b (Whitcomb 1956).

A further two designs were similar but could not be exactly paralleled with those from the Chilvers Coton tile kiln. One was the Arms of Beauchamp, four complete tiles in this design were found in the grave [214] and another fragment in the wall foundation trench [261]. This heraldic design has, however, already been identified at Ulverscroft Priory as coming from Chilvers Coton (Eames 1980, 1595), (possibly 1596 in Mayes and Scott 1984) and is also known at Nuneaton Church (Whitcomb 1956, 39).

The remaining tile, which could not be exactly paralleled, is from the pit [216], and is the top right hand corner of a zodiac tile, a ram in a circle. The design is similar, but not identical to, a tile from St Mary's Hall, Coventry (Chatwin 1940, 20.1), (Whitcomb 1956, 127). The tile was too fragmentary to be able to compare it with the equally fragmentary design from Chilvers Coton (Eames 1984, fig.121.7). However, although more than one tiler is known to have made this design (*ibid*, 177), the Chilvers Coton design has also been identified at Ulverscroft Priory (Eames 1980, Design No. 1405, Catalogue nos. 2679-2681.

Only two of the surviving designs could not be identified at all, from context (224) and area 2A U/S, and both are illustrated here, (illustrations 1 and 3).

As noted above, these tiles, although also in fabric CC2, are characterised by a dark red body and a dark, almost black, glaze. They probably accounted for the remains of about twenty tiles in all, but also included a unique piece with a white slip under the glaze from (256). Two complete tiles were recovered, one from the grave [214] and another from an unstratified context. A tile fragment from context (288) had shallow inlay impressions from a stamp, although no clear pattern was discernible, and the tile may have been used as a practice piece, it was clearly not considered a second, and had been glazed in the normal way. As with the inlaid floor tiles, stacking evidence appeared on all surfaces - the top, sides and underneath of the tiles. Although there are fewer complete examples, the monochrome tiles appear to be approximately the same size in plan as the incised tiles, but generally are a little thicker, ranging between 20 and 32 mm compared to 20 and 27 mm for the inlaid tiles.

One incomplete tile, possibly a narrow rectangle, from (48), has traces of glaze on edges, but no evidence of glaze on the upper surface. Another rectangular floor tile, made from a square tile broken in half, from (224), has a pale body – more akin to the inlaid floor tiles - but was apparently glazed black. Two joining triangles, also made out of a square tile broken in two, were recovered from the grave [214]. Few other joins were visible, save between contexts (76) and (256).

Conclusions

The inlaid Chilvers Coton Group 1 tiles, from Site 10, Kiln 29, are derived from designs used on the Westminster-Chertsey-Surrey group and in Wessex from the second half of the 13th century. Designs 34 and 37 included the formalised stiff-leaf foliage that was typical of these

southern styles. The evidence suggests that at least one tiler moved from Chertsey to Halesowen in the last decade of the 13th century, whilst links have also been found between Halesowen and the Stoke kiln at Coventry, and the Chilvers Coton kilns. This derivation for the designs and the design of the tiles themselves suggests a date after 1300, in the earlier 14th century, certainly before the Black Death of *circa* 1348, for their production (Eames 1984, 173-179, figs.121-124, table 4). It seems likely that the monochrome tiles, whose distribution across the site, albeit in residual contexts, was similar to that of the inlaid tiles also share a similar date range.

In terms of the significance or otherwise of the patterns on the tiles, the only identifiable heraldic design present, those of the Arms of Beauchamp were, together with that of de Warren and Despenser, among those most commonly used in medieval tile design. None of them can be taken to indicate any connection between the families concerned, either with the kiln, or the site where tiles were laid (Eames 1984, 177).

Most of the Lutterworth tiles were worn suggesting a significant period of use as floor tiles, though none was found *in situ*. Some of the upper surfaces and broken edges of the tiles showed traces of mortar and had clearly been re-used. All were residual in later contexts, (table 4) – but are evidence of the former existence of an ecclesiastical building nearby.

The tiles provide a terminus *post quem* in the mid or later 14th century at the earliest – bearing in mind that the tiles were all worn - for the fills of graves [3], [5], [39], [47] and [214], which all contained complete or fragments of floor tiles. At least some of the tiles, notably in grave [214] which produced four complete tiles inlaid with the Arms of Beauchamp and two monochrome tiles, one of which had been scored diagonally and broken in half to form two triangles after firing, appear to have been placed intentionally in the graves.

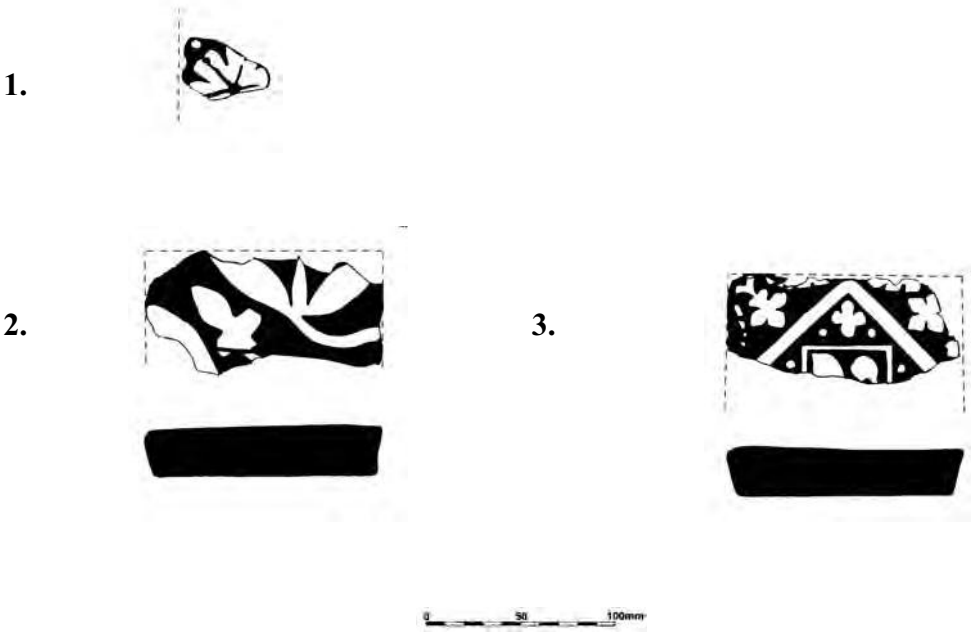


Figure 20: The Inlaid Floor Tile Illustrations drawn by M. Hawkes. Scale 1:4

Illus No.	Fabric	Frag. Nos.	Context	Comments
1	CCC	1	(224)	Not paralleled
2	CC2	1	(234)	Part of a 16 tile pattern, this tile would have belonged under the mirror image of tile no. Whitcomb 72b (Whitcomb 1956)
3	CC2	2	U/S	A variant on the design of a tile known at Kenilworth, Chatwin fig.41.13, (Chatwin 1940).

9.2.3 The nib tile (Table 14)

All the nib tile were in fabric C, as at the tile kiln, site 3 10, kiln 29, at Chilvers Coton (Mayes and Scott 1984). Unfortunately, no complete tiles were found, but eight varied between approximately 160 and 180 mm wide, and these and others were between 11 and 20 mm thick. Four variants in the central nib were recorded, but there was no evidence for any peg holes, unlike examples from Chilvers Coton (*ibid)* 1984, table 3, fig.116), and Nuneaton Priory, which also produced nib tiles in Chilvers Coton fabric C, although tiles with peg holes were in the minority (Andrews and Quant 1984, 71). It seems likely that these tiles and the four fragments of curved tile, also in fabric C, are contemporary with the inlaid floor tiles, and like them were all found in residual contexts.

9.2.4 The brick (Table 16)

The fabric of the bricks is a mix of red and white clays. The bricks are all hand made and moulded, with creased and sanded sides, and the upper surface trimmed or fettled off. Those examples recovered from the graves and the structure and associated surfaces in Area 2A, were all extremely fragmentary with few measurable dimensions. However, one fragment from the structure [261] was approximately 1 ½ inches thick, and another, from the surface (224) measured between 2 ¼ and 3/8 inches thick. Two other fragments from (325) had evidence of glaze on two surfaces. All these bricks are quite possibly late medieval or early post-medieval in date, save one fragment from the topsoil (223), which was in a coarser fabric and much more highly fired, and is thought to be post-medieval or modern.

The dimensions of the more complete examples of the remaining bricks, which were nearly all recovered from the pit [89], and which measure 4 ½ by 2 ¼ by approximately 9 inches, suggests a date in the late 17th or early 18th century for this group. Interestingly, the bricks from the 18th or 19th century brick barn on the site, which were recorded by Anne Diks in February 2001, measured between 9 ¼ by 4 ¾ by 2 ¾ and 9 ½ by 4 3/10 by 2 ½ inches.

Table 16 The brick, by fragment numbers, from Area 2A.

Area 2A					
Fabric	Graves [5] [47] [214]	Pits [45] [89]	Surfaces (33) (223) (224) (325)	Ditch [76]	Wall Trench [261]
EA – Unclassified Earthenware	4	22	6	1	1

9.2.5 The clay pipe

The single bowl, from context (290), is dated to the mid or late 17th century at Coventry (Muldoon 1979). Whilst the spur is not typical of the 'Midlands spur type' found in Leicester from *c.*1650 until the end of the 17th century, the bowl is only half milled on the side facing the smoker, a characteristic which is found also on bowls from Leicester (Higgins 1999, 215, fig.98.1-8).

9.3 The Mortar and Plaster *by Anthony Gnanaratnam*

Generally the material consisted of a light yellow-brown sand-lime mortar, with often large chunks of unmixed lime. The mortar also contained moderate fragments of charcoal. The plasters were a light grey, lighter in weight suggesting that they contained less mineral aggregate. The possibility of organic inclusions such as mud, clay or dung is also a likely. Given the limited value of the assemblage no chemical analysis of the mortars and plasters was carried out. A full list of the Mortar and Plaster is available in Appendix VII.

The plaster recovered from context (43) could be in an assemblage of 13th-century date, and is likely to include whitewashed or painted plaster fragments and a coarse mortar. Similarly early plaster and with paint traces was recovered from context 283.

Plaster was recovered from context (325), which included a fragment of polychrome plaster with a red line on an off white, pale yellow background.

Mortar was also recovered from an undated pit (context 300) and a 17th- to 18th-century pit (context 89). The mortar includes fragments with cobble impressions. This is of interest given the local tradition of cobble (or ducky stone) built structures.

The assemblage was very small but does suggest the presence of structures in the vicinity of site. The painted fragments seem to consist mainly of lime white wash, which has either been stained yellow (in post-deposition) or have had ochre added to the lime wash. Although one piece had a fragmentary design, simple lime-wash was seen as adequate decoration in even very high status buildings in the medieval period (Salzman 1952, 156-7).

9.4 The Slate *by Anthony Gnanaratnam*

This small assemblage of slate was of limited value partly due to its small size. The slate was roughly evenly divided between blue-grey coarse Swithland slate and a greenish, finely laminated slate, almost certainly from Charnwood. This latter is first seen in material recovered from pit fill (43) of probable 13th- to 15th-century date and is also present in context (325). Although little can be deduced from the slates themselves, they may indicate the presence of a slate roofed building/s in the medieval or later medieval period. A full list of slate from the excavations is available in Appendix VII.

*9.5 **The Small Finds** by Nicholas J. Cooper*

9.5.1 Objects of copper alloy and lead

Five objects of copper alloy and one of lead were retrieved from the excavations and are catalogued below. Small find numbers 2 to 5 are unstratified and of post-medieval date. Of the two stratified objects the belt buckle (sfno.1) from burial sk16 (86) is the most diagnostic. Plain circular buckle frames were probably attached directly to leather straps rather than having a buckle plate between, although this has only been demonstrated in one example from London where the strap survives (Egan and Pritchard 1991, 57, and fig.37.39). The example here is paralleled most closely by an example from London, (Egan and Pritchard 1991, 57, and fig.36.36), where the raised grip on the upper surface of the pin close to its loop is in the form of an animal head rather than the simpler transverse grooving here. The London example dates to ceramic phase 11 *c*.1350-1400, which appears to be the typical date range for circular buckles of this size. The function of the very small sheet cylinder or tube fragment is unknown. A full list of copper alloy and lead objects is available in Appendix VIII.

9.5.2 Objects of iron

Approximately 30 nails were retrieved from the fill of grave SK20 (213) together with attached deposits of mineralised wood, and presumably represent the remnants of a coffin. In most cases the shanks of each were incomplete. When complete or near complete examples were retrieved, the maximum lengths were between 55 and 60mm, which is typical. A wood specialist might be able to identify the species from the mineralised deposits.

In addition to the coffin nails and fragment of iron blade perhaps from a knife and indications of its handle were recovered (Sfno 6). The object was unstratified over the cobbles (202). The rivet was hollowed at each end and appeared to secure an organic (probably wooden) handle. Again a specialist may be able to identify the species. The date is likely to be post-medieval or modern, though it is too fragmentary for close parallels to be found. A full list of iron objects is available in Appendix VIII.

*9.6 **The Animal Bone** by J. Browning*

9.6.1 Introduction and Methods

A small faunal assemblage was recovered during excavations at Mill Farm, Lutterworth, in Spring 2002. The excavations uncovered remains relating to a medieval hospital and cemetery, which was dissolved in the 16th century. Several post-medieval and modern features, including a backfilled quarry, were also identified, relating to later use of the site. A total of 312 animal bone fragments were retrieved during hand excavation of sections through cut features and through cleaning and excavation of layered deposits. The material was generally fairly well-preserved and in good condition. Bones were identified with reference to the comparative skeletal material held by the School of Archaeology and Ancient History at Leicester University. Where possible, species, anatomy, completion and state of fusion were recorded for each fragment and the bones were examined for signs of butchery, burning and gnawing. The observations were recorded upon a computerised spreadsheet.

Dating of the material has tended to be suggestive rather than absolute and for the purposes of this report all bone that is likely to be derived from the hospital phase of the site (medieval) has been analysed as a group, with bone from later contexts considered separately.

9.6.2 Results

A variety of species were represented in the assemblage. Mammalian bones from cattle, sheep, pig, human, dog, rabbit, hare and rat were identified. The assemblage also contained goose and chicken, as well as a single rook/crow bone. Two fish bones were noted, one of which compares with salmon.

The majority of bone was recovered from deposits relating to the hospital phase of the site, as the table below demonstrates.

Phase	Total Fragments	Percentage
hospital	221	71
Later phases	91	29
Grand Total	*312*	*100*

Table 17 Quantity of bone in each phase

Bone from the hospital phase was recovered largely from deposits relating to the cobble layers, with some also deriving from pits and postholes. Only a small quantity of bone was recovered from grave backfills. Little of the bone appears to have been part of a primary deposit but rather incorporated into secondary deposits and layers. The largest quantity and variety of bone (42%) was recovered from excavations through the metalled surface and trackway (202/224). Sheep and cattle bones were most abundant but the remains of pig, dog, rabbit, hare, chicken, horse, rabbit, rat (cf black) and rook were also identified.

The table below shows the number of fragments recorded from features of each phase, with the relative proportions of each species expressed as a percentage of all identified bones. Just under 40% of the bone from the hospital phase was identifiable to species, a fairly typical percentage. An unusually high 55% of the later bone was identifiable. This was dominated by the main domesticates, with equal numbers of sheep and cattle and far lower occurrence of pig.

Phase	cattle	sheep	pig	chicken	rook	dog	horse	goose	hare	human	rat	rabbit	fish	bird	oxsize	shsize.	unident	Total
Hospital	26	23	7	11	1	1	2	2		8	1	1	2	4	38	61	33	221
% of identified bone	*31*	*27*	*8*	*13*	*1*	*1*	*2*	*2*		*9*	*1*	*1*	*2*					*100*
Later	16	16	6	4			2		5			1		3	8	12	18	91
% of identified bone	*32*	*32*	*12*	*8*			*4*		*10*			*2*						*100*
Total fragments	42	39	13	15	1	1	4	2	5	8	1	2	2	7	46	73	51	312

Table 18 Species representation by phase.

No distinct bone group or unusual absences were observed within the assemblage. Most anatomical parts for the most numerous species, sheep and cattle, are represented, including limb bones, vertebrae and cranium. Chicken is represented mainly by limb bones. Too few bones were recovered from the other species to be able to assess their significance. The comments below refer only to the hospital phase unless otherwise stated.

Age at death

There were few mandibles and epiphyses in the assemblage, so it is not possible to make detailed comment on the age profiles of the animals deposited at the site. All but one chicken bones in the hospital phase were recovered from context 236, representing a minimum of 2 birds. It is interesting that most are unfused, suggesting that the birds had died/been killed before the age of 6 months, based on estimated dates of longbone fusion (Silver 1969, 300). Context 236 also yielded the only goose bones on the site. Approximate age for the main domesticates followed the figures given by Silver (1969). Of 14 sheep epiphyses, only 2 were unfused and all of the early fusing bones were fused. Only 2 sheep mandibles were present, both still retaining deciduous teeth (4th premolar), suggesting that the animals were less than 40 months according to 18th century comparisons (Silver, 1969, 297). Only 2 unfused cattle bones were recovered (of 8 epiphyses fusing after birth) and all of the bones fusing under 24 months were fused. A cattle mandible from the hospital phase still retained the deciduous 4th molar and another from context 98 was at a similar developmental phase, suggesting that the animals were younger than 3 years (after Silver 1969, 296). Only 4 epiphyses were recovered from pig, two fused and two unfused, which suggests simply that not all pigs at the site were skeletally mature.

Butchery and Burning

Very little burnt bone was identified in the assemblage. There were two instances from the hospital phase, both the partial burning of a long bone. These are possibly indicative of a cooking method such as roasting, where part of the bone may have been exposed to the fire. There were 11 bones that appeared to show signs of butchery, all belonging to cattle or sheep. There are a mixture of chop and cut marks, consistent with primary butchery as well as the preparation of the carcass for consumption. In addition, there are a few instances of bones apparently having been deliberately split, probably to facilitate marrow extraction. The butchered bones almost all derive from contexts 224 and 236.

General Comments

The assemblage was small in size but fairly well preserved and not heavily fragmented, compared with many Leicestershire assemblages. However, few of the bones derive from well dated, sealed deposits and it is quite likely that they are largely residual, having been incorporated along with other refuse. Most of the bones were recovered from features

belonging to the hospital phase, with considerably fewer recovered from later features, although the number of identifiable fragments were similar.

The vast majority of bones probably derive from animals that were exploited for food. Cattle and sheep bones are the most numerous and with cattle probably contributing the most to the diet due to their greater meat yield. The bones of pig are far less numerous; a pattern is common to most medieval sites (Grant 1988, 158). The presence of fish in an assemblage is often associated with higher status sites or religious houses (Grant 1988, 170) and therefore accords with the medieval hospital function of the site. It is likely that the smaller creatures, such as chicken and goose, were raised on site and those that were not were probably obtained from the market of the adjacent settlement of Lutterworth. The hare (later phases) and rabbit bones (hospital) may have been part of the food resource or may have been intrusive. Horse remains are few and distributed widely and their deposition probably has little significance. A single dog bone was recovered, probably incorporated along with other household rubbish. The presence of black rat in the hospital phase probably represents the remains of an animal scavenging around rubbish heaps. Human bones were recovered through sieving of grave fill 213 and a possible human bone was recovered from the pit fill 93, which may have been residual.

*9.7 **The Glass** by D. Sawday*

Most of the thirty-one pieces of glass recovered during the excavations was very fragmentary, and none could be definitely attributed to the medieval period. Two opaque pieces of fragmented & decomposed glass along with many more tiny fragments from the cobble area is possibly medieval window glass. The rest is mainly bottle glass. The few identifiable pieces of bottle glass appear to date from the later 17th or 18th centuries. A full list of glass is available in Appendix VIII.

10 Archive

The Archive consists of site notes and drawings, colour slides and monochrome prints, and finds, and will be held by the Leicestershire Sites and Monuments Record under the accession number XA 84.2001.

11 Publication

A version of the summary (above) will be published in *Transactions of the Leicestershire Archaeological and Historical Society* in due course.

12 Acknowledgements

Work on site was undertaken by the authors Simon Chapman and Vicki Priest, with the assistance of Sandy Bush, Keith Johnson, Mathew Parker, Siobahn Brocklehurst, Roger Kipling, Andy Hyam, Michael Derrick and Anthony Gnanaratnam (all from ULAS). The project was managed by Richard Buckley. We should like to thank Hallam Management for funding the project and in particular, Bill Warden, for his considerable support, assistance and encouragement during all phases of the work.

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Appendix I

Full list of site contexts

Find Types:
P = Pot
T = Tile
S = Slate
M = Mortar
B = Brick
G = Glass
A = Animal Bone
H = Human Bone

2001 Excavation contexts
2001 Evaluation contexts

Context	Cut	Below	Area	Type	Type	Finds
1	1	Sk 2	2A	Grave	Skeleton 2: Grave cut (fill removed during 1996 evaluation)	
2	3	2	2A	Grave	Skeleton 1: Fill of grave, light yellowish brown gravely clay	H, T, B
3	3	Sk1	2A	Grave	Skeleton 1: Cut of grave	
4	5	-	2A	Grave	Skeleton 3: Fill of grave, compact mid yellowish brown gravely clay	H, T
5	5	Sk3	2A	Grave	Skeleton 3: Grave cut	
6	7	-	2A	Modern quarry	Fill of quarry pit, yellowish brown sandy clay	
7	7	6	2A	Modern quarry	Cut of quarry pit	
8	9	-	2A	Grave	Skeleton 4: Fill of grave, mid grey brown gravely clay	H
9	9	Sk4	2A	Grave	Skeleton 4: Grave cut	
10	11	-	2A	Grave	Skeleton 6: Fill of grave, compact mid orange brown clay silt	H
11	11	Sk6	2A	Grave	Skeleton 6: Grave cut	
12	13	-	2A	Grave	Skeleton 7: Fill of grave, mid orange brown clay silt and gravel	H
13	13	Sk7	2A	Grave	Skeleton 7: Grave cut	
14	15	-	2A	Grave	Skeleton 5: Fill of grave, mid orange brown compact clay silt	H
15	15	Sk5	2A	Grave	Skeleton 5: Grave cut	
16	17	-	2A	Pit	Fill of Pit	T, A
17	17	16	2A	Pit	Cut of pit	
18	19	-	2A	Grave	Skeleton 8: Fill of grave, mid orange brown gravel rich silt	H
19	19	Sk8	2A	Grave	Skeleton 8: Grave cut	
20	21	-	2A	Ditch	Fill of ditch, loose mid brown sandy silt	
21	21	20	2A	Ditch	Cut of ditch	
22	23	-	2A	Grave	Skeleton 9: Fill of grave, mid orange brown sandy silt and gravel	H
23	23	Sk9	2A	Grave	Skeleton 9: Grave cut	
24	25	-	2A	Grave	Skeleton 11: Fill of grave, mid grey brown silty sandy gravel	H
25	25	Sk11	2A	Grave	Skeleton 11: Grave cut	
26	7	6	2A	Quarry	Fill of quarry pit, grey brown sandy clay layer	B, T
27	7	6/26	2A	Quarry	Fill of quarry pit, loose orange brown gravel rich silt	
28	7	27	2A	Quarry	Fill of quarry pit, mid brown gravel rich silt	
29	7	28	2A	Quarry	Fill of quarry pit, loose orange brown silty gravel	
30	7	27	2A	Quarry	Fill of quarry pit, yellowish brown silty gravel	S, M, P, T
31	32	-	2A	Grave	Skeleton 10: Fill of grave, mid orange brown silty clay	H
32	32	Sk10	2A	Grave	Skeleton 10: Grave cut	
33	-	-	2A	Surface	Cobbled surface to south-east	P, T, B, A, G
34	35	Sk12	2A	Grave	Skeleton 12: Fill of grave, mid yellow brown sandy gravel	H
35	35	34	2A	Grave	Skeleton 12: Grave cut	
36	37	-	2A	Grave	Skeleton 13: Fill of grave, mid grey brown sandy silt-	H
37	37	Sk13	2A	Grave	Skeleton 13: Grave cut	
38	39	-	2A	Grave	Skeleton 14: Fill of grave, mid orange brown slay gravel	H, T
39	39	Sk14	2A	Grave	Skeleton 14: Grave cut	
40	41	-	2A	Ditch	Fill of ditch, pale brown sandy silt common pebble, friable	
41	41	4400	2A	Ditch	Cut of ditch	

42	42	-	2A	Later cut?	Cut through cobbled surface	
43	42	42	2A	Later cut?	Fill of cut through cobbled surface, mid grey brown sandy silt, mortar fleck + brick/tile	S, M, P, T, A
44	45	-	2A	Pit	Fill of pit, gravel rich sandy silt	T, B
45	45	44	2A	Pit	Cut of pit	
46	47	-	2A	Grave	Skeleton 15: Fill of grave, very stony silty sandy gravel	H, T , B
47	47	Sk15	2A	Grave	Skeleton 15: Grave cut	
48	49	-	2A	Pit	Fill of pit, mid grey brown sandy clay	T
49	49	48	2A	Pit	Cut of pit	
50	51	-	2A	Pit	Fill of pit, mid grey brown silty clay	
51	51	50	2A	Pit	Cut of pit	
52	52	-	2A	Modern trackway	Cut of modern trackway	
53	52	-	2A	Modern trackway	Fill of modern trackway, grey angular gravels and pebble	
54	54	-	2A	Wall?	Cut for possible wall?	
55	54	-	2A	Wall?	Fill for possible wall?	
56	57	-	2A	Pit	Fill of pit, mid grey brown sandy silt/gravel	
57	57	56	2A	Pit	Cut of pit	
58	59	-	2A	Pit	Fill of pit, compact dark orange brown sandy gravel	
59	59	58	2A	Pit	Cut of pit	
60	96		T01	Pit	Grey-brown ash and charcoal patch, Modern feature associated with the house/garden	B, T, A
61	-		T01	Land drain	North-south dark linear band, land drain	
62	-		T01	Pit/post-hole	Small patch of light-brown sand and gravel, natural feature?	
63	-		T01	Pit/post-hole	Rounded pit with charcoal flecks, post-hole? Probably modern	
64	-		T01	Footings	Decayed patch of limestone, natural feature?	
65	97		T01	Footings	Badly decayed linear patch of mortar, old foundations associated with house/garden?	B, T, A
66	-		T01	Pit	Badly decayed linear patch of mortar, old foundations associated with house/garden?	
67	-		T01	Pit/post-hole	Orange silty sand patch, natural feature?	
68	-		T01	Pit/post-hole	Orange silty sand patch, natural feature?	
69	92		T01	Pit/post-hole	Fill of large pit with cobble revetment , upper fill of pit 92	
70	95		T01	Pit/post-hole	Oval patch of mid brown silty sand and gravel, shallow modern feature associated with garden?	
71	-		T01	Pit/post-hole	Very shallow rounded patch of mid brown silty sand and gravel, shallow modern feature associated with garden?	
72	-		T01	Pit/post-hole	Rounded patch of mid brown silty sand and gravel, shallow modern feature associated with garden?	
73	-		T01	Quarry	Large redeposited area of soil , part of a large quarry pit	
74	-		T01	Pit	Fill of pit	
75	76	-	2A	Ditch	Cut of ditch	P
76	76	75	2A	Ditch	Fill of ditch, mid brown silty clay	P, B, T, A, G, M
77	78	-	2A	Pit	Fill of pit, compact dark grey brown gravely sand	
78	78	77	2A	Pit	Cut of pit	
79	80	-	2A	Ditch	Fill of ditch, compact orange brown sandy clay + charcoal and pebble	
80	80	79	2A	Ditch	Cut of ditch	
81	82	-	2A	Ditch?	Fill of possible ditch, compact orange brown sandy clay, occ. charcoal and pebble	
82	82	81	2A	Trench?	Cut of possible trench	
83			T02		Irregular patch of brown sand , natural? Part of quarry pit?	
84			T02		Round dark shallow pit , shallow modern feature associated with garden?	
85			T02		Rounded patch of brown sand, natural? Part of quarry pit?	
86	87	-	2A	Grave	Fill of possible grave, mid brown sandy silt	SF1, A
87	87	86	2A	Grave	Cut of possible grave	
88	89	-	2A	Pit	Fill of pit, orange brown silty clay some stone /pebble	A, G, B, T, S, M, P
89	89	88	2A	Pit	Cut of pit	S, M, T, B, A, G
90	91	-	2A	Pit	Fill of pit, very dark silty clay inc. charcoal/coal flecks	P, A, B

91	91	90	2A	Pit	Cut of pit	
92	92	99	T01	Pit	Cut for cobble lined pit, Revetted pit later in date than skeleton 17	
93	94		2A	Pit	Fill of pit, dark grey brown compact gravely clay	T, A
94	94	93	2A	Pit	Cut of pit	
95	70	70	T01	Pit	Flat bottomed shallow cut for 71, shallow modern feature associated with garden?	
96	60	60	T01	Pit/post-hole	Rounded cut for 63, post-hole? associated with house/garden?	A
97	65	65	T01	Pit/post-hole	V-shaped cut for 65, old foundations associated with house/garden?	
98	92	69	T01	Pit	Orange and grey plastic clay, middle fill of pit 92	P, A
99	92	98	T01	Pit	Silty clay sand, basal fill of pit 92	S
100	100		1A	Drainage	Drainage runs - service cut containing brown ceramic pipes	
101	-	tarmac	1A	Hardcore	Unmortared stone hardcore for tarmac surface	B, T
102	-	-	1A	Building	Brick building (standing and visible above ground level)	
103	-	104	1A	Metalled surface	Metalled surface at North-east end of trench	P, T
104	-	101	1A	Layer	Mixed dark clay deposit	
105	-	103	1A	Layer	Mixed clay and ashy deposits, very dark grey brown silty clay	B, T, M, P
106	-	111	1A	Layer	Clay deposits (mixed)	B, T
107	-	-	1A	Metalled surface	Metalled surface (same as 111)	
108	108	-	1A	Post	Circular cut for post 119	
109	109	-	1A	Post	Fill of cut 108 (Post), loose mid orange brown gravely clay	
110	-	105	1A	Layer	Black peaty deposit	
111	-	122	1A	Metalled surface	Metalled sloping surface to south of site.	
112	117	topsoil	1A	Culvert	Brick built culvert. Tear/oval shaped with reductions in brick to the north.	B, S
113	-	101	1A	Building	Infill of Brick building 114 (later deposit)	P
114	-	101	1A	Building	Brick walls (E, W and S) of building (cellar/pit?)	
115	-	101	1A	Layer	Mixed gravelly deposits to NW of site	
116	-	topsoil	1A	Building/platform	Brick building/platform to SW of site	
117	117	topsoil	1A	Culvert	Cut for brick culvert 112	
118	117	topsoil	1A	Culvert	Orange gravelly fill of cut 117	
119	108	-	1A	Post	Rounded wooden post.	
120	-	121	1A	Layer	Brown silty deposit to SW of site	B, T
121	-	-	1A	Metalled surface	Metalled surface to W of site	
122	-	topsoil	1A	Cobble surface	Large rounded cobbles forming a surface	
123	-	topsoil	1A	Millstone	Millstone	
124	-	101	1A	Building	Northern wall of structure 114 - appears slightly curved with bricks across the top.	
125	-	116	1A	Building	Concrete footings for building 116	
126	-	-	1A	Building/platform	Infill/ flooring of 116	
127	-	121	1A	Cobbled surface	Lower linear band of cobbles	
128-199					NOT USED	
200	201	-	2A	Grave	Skeleton 18: Fill of grave, mid grey brown silty clay + common pebble	H, A
201	201	Sk18	2A	Grave	Skeleton 18: Grave cut	
202	-	topsoil	2A	Metalled surface	Same as 224	S, P, T, A
203	204	-	2A	Gully	Fill of gully, mid grey brown sandy silt	T
204	204	203	2A	Gully	Cut of gully	
205	206	-	2A	Pit	Fill of pit, loose yellowish brown sandy clay	T, B
206	206	205	2A	Pit	Cut of pit	
207	208	-	2A	Grave	Fill of grave, mid grey brown silty sandy clay inc. rounded pebbles. contains Skeleton 19.	H
208	208	Sk19	2A	Grave	Cut of grave	
209	210	-	2A	Grave	Fill of grave, mid orange brown sandy silty clay	T
210	210	Sk21	2A	Grave	Cut of grave	
211	212	-	2A	Pit	Fill of small pit, light grey browns sandy gravel	
212	212	211	2A	Pit	Cut of small pit	
213	214	-	2A	Grave	Fill of grave, mid grey brown silty sand & pebble. Contains Sk's 20 & 22	FS's 7-35 H, M, T, B, A

214	214	Sk20	2A	Grave	Cut of grave	
215	216	55	2A	Pit	Fill of elongated pit, mid brown clayey sand inc.pebble & cobble	T, A
216	216	215	2A	Pit	Cut of elongated pit	
217	218	55	2A	Post-hole	Fill of post-hole, mid grey brown silty sand inc.pebble	
218	218	217	2A	Post-hole	Cut of post-hole	
219	220	55	2A	Pit	Fill of irregular pit, mid brown silty sand compact	
220	220	219	2A	Pit	Cut of irregular pit	
221	222	-	2A	Pit	Fill of irregular pit, mid orange brown silty sand inc. pebble	
222	222	221	2A	Pit	Cut of irregular pit	
223	-	topsoil	2A	Surface	Large cobbles overlying metalled surface 224	P, T, B, A
224	-	223	2A	Surface	Metalled surface to south of site, cobble and pebble	P, A, T, B, S, M, G
225	-	topsoil	2A	Surface	Large cobbles within metalled surface 224	P, A
226	226	topsoil	2A	Post-hole	Cut of post-hole	
227	226	topsoil	2A	Post-hole	Fill of post-hole, mid orange brown silty clay lots of pebble	
228	226	topsoil	2A	Post-hole	Fill of post-hole, dark grey brown silty sand	
229	-	topsoil	2A	Post-pad	Post-pad	
230	-	topsoil	2A	Post-pad	Post-pad	
231	-	topsoil	2A	Post-pad	Post-pad	
232	-	topsoil	2A	Post-pad	Post-pad	
233	257	topsoil	2A	Wall	West wall of cobble building - North end	
234	-	-	T05	Structure?	Cobble structure	SF 36, T
235	42	topsoil	2A	Cut	Fill of cut through cobbles, mid grey brown silty clay, common pebble	T, B
236	261	-	2A	Trench/pit	Dark fill of linear trench for wall	P, A, T, S, B
237	-	-	T07	Surface	Disturbed cobble layer, part of larger cobble structure – yard?	
238	-	-	2A	Post-hole	Fill of post-pad containing large flatish stones	
239	-	-	2A	Post-hole	Fill of post-hole, dark grey brown silty clay, loose with occ. pebble	
240	-	-	2A	Post-hole	Fill of post-hole, mid orange brown sandy silt occ. pebble	
241	-	-	2A	Gully	Fill of gully, mid grey brown sandy clay common stone at surface	
242	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
243	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
244	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
245	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
246	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
247	-	topsoil	2A	Post-pad	Post-pad, on top of 33	
248	-	239	2A	Post-hole	Cut of post-hole	
249	-	241	2A	Gully	Cut of gully	
250	-	240	2A	Post-hole	Cut of post-hole	
251	251	topsoil	2A	Modern trench	Cut of modern trench	
252	251	topsoil	2A	Modern trench	Fill of modern trench, ashy black deposit	
253	-	-	T05	Wall?	2 courses of cobbles, foundations of cobble wall?	
254	-	-	T05	Wall?	Linear band of cobbles, foundations of cobble wall?	
255	-	-	T05	Wall?	Disturbed cobbles, collapse from cobble wall?	
256	-	-	T05	Structure?	Disturbed cobble wall, north-south cobble wall?	P, T
257	257	-	2A	Wall	Cut for west wall of cobble building	
258	257	-	2A	Wall	West wall of building to south of cut 42	T
259	259	257	2A	Gully	Cut of gully beneath wall 258	
260	259	257	2A	Gully	Fill of gully beneath wall 258, mid grey brown silty clay	
261	261	236	2A	Pit/trench	Cut of pit	
262	-		2A	Wall	Rubble wall, 5-10cm rubble	
263	264	225	2A	Gully	Fill of gully/linear feature, mid light grey brown silty clay compacted	
264	264	263	2A	Gully	Cut of gully/linear feature	
265	-	33	2A	Surface	Metalled surface beneath 33	

266	-	265	2A	Surface	Matrix of metalled surface 265	
267	-	-	2A	Build-up	Build-up layer	
268	-	33	2A	Surface	Matrix of cobble layer 33	
269	257		2A	Wall	Fill of cut 257 for wall, mid orange brown silty clay	
270	-	224	2A	Wall	Possible wall beneath metalled surface 224	T
271	-	309	2A	Footings	Cobble footings below floor surface 33, pos part of drain or cobble retainers for floor surface	
272	-	309	2A	Footings	Cobble footings below floor surface 33, pos part of drain or cobble retainers for floor surface	
273	-	309	2A	Footings	cobble layer	
274	274	33	2A	Ditch ?	Cut of gully/pit running under cobbles	
275	274	33	2A	Ditch ?	Fill of gully/pit running under cobbles, mid brown sandy silty clay with orange sandy mottling	
276	276	277	2A	Gully	Cut of gully	P
277	276	-	2A	Gully	Fill of gully, mid orange brown sandy clay	P
278	278	279	2A	Pit	Cut of pit within cut 281	
279	278	-	2A	Pit	Fill of pit, mid brown clayey sandy silt, occ. pebble	P
280	278	-	2A	Mod. Pit/ph	Dark fill of pit/ph, dark grey brown sandy silt + charcoal & wood	P, T, B, G
281	281	-	2A	Pit	Cut of pit	
282	284	261	2A	Pit/trench	Darker fill of linear pit/trench, mid orange brown clayey silt + medium cobbles	P, T, A, M
283	284	282	2A	Pit/trench	Mortary fill of linear pit/trench, friable light orange brown silty sand	P, T, A, M, S
284	284	283	2A	Pit/trench	Cut of linear pit/trench	T, A
285	-	266	2A	Layer	Rough cobble/gravel layer	
286	-	topsoil	2A	Tumble	Tumble from wall 233/258 onto cobble floor	T, B, M
287	284	236	2A	Footings	Foundation stones of wall? in base of pos wall trench.	
288	298	297	2B	Wall	Wall running east-west,	P, T
289	297	-	2B	Mod. Ditch	Modern ditch running east-west next to wall 289	P, T, B, G
290	-	-	2B	Wall	Cobble wall running east-west	P, B, T, G
291	-	-	2B	Wall	Wall running north-south	
292	-	291	2B	Wall	Mortar spread for wall 291	
293	-	295	2B	Wall?	Possible cont. of wall 233/291	
294	-	295	2B	Wall?	Mortar associated with 293?	
295	295	296	2B	Modern dump	Cut of bottle dump	
296	295	-	2B	Modern dump	Fill of bottle dump	B, T, G, A
297	297	289	2B	Mod. Ditch	Modern ditch running east-west next to wall 289	
298	298	288	2B	Wall	Wall footings cut, running east-west, contains stone footings 288	
299	-	-	2B	Surface	Patchy metalled surface	P
300	89	88	2A	Pit	Lower fill of pit, building debris, inc.mortar	A, G, B, T, M
301	302	-	2A	Pit	Fill of pit, mid brown silty clay, occ. pebble	A, B, S
302	302	301	2A	Pit	Cut of pit	
303	92		T01	Pit	Fill of pit	
304	305	-	2A	Wall	Fill of wall cut	
305	305	304	2A	Wall	Cut for wall	
306	-		T01	Wall	Cobbled wall, east wall of pit 92	M
307	308		T01	Grave	Fill of grave cut for SK 17, Orange-brown sand,	H
308	308	Sk17	T01	Grave	Sloping rounded cut for skeleton, east-west grave cut for SK 17	
309	-	33	2A	Build-up	Gravel build-up under walkway, mid brown sandy clay	
310	311	-	2A	Post-hole	Fill of post-hole, black sandy clay	
311	311	310	2A	Post-hole	Cut of post-hole	
312	313	-	2B	Pit	Fill of pit, mid grey compact sandy clay	
313	313	312	2B	Pit	Cut of pit	
314	315		2B	Gully	Fill of gully, mid grey brown sandy clay, loose, pos. modern	A
315	314	314	2B	Gully	Cut of gully, N-S aligned	
316	317	-	2B	Pit	Fill of pit, orange brown sandy silt	A
317	317	316	2B	Pit	Cut of pit	

318	319	-	2B	Pit	Fill of pit, mid grey clay silt	
319	319	318	2B	Pit	Cut of pit	
320	320	-	2B	Dich	Cut of ditch	
321	320	-	2B	Dich	Fill of ditch, mid brown sticky sandy clay	B, T, A, S
322	322	-	2B	Gully/ditch	Cut of modern ditch/gully	
323	322	-	2B	Gully/ditch	Fill of modern ditch/gully, mid brown silty clay	A, B, T, G
324	-	topsoil	2B	mod. disturbed cobbles	Disturbed cobbles around T07	P, B, T, A
325	-	topsoil	2A		Clearance layer over cobbles 33	S, M, P, T, B, A, G
326	-	topsoil	2B		Clearance layer over context 43	P, T
327	-	-	T.3a T.3b		Concrete	
328	-	327	T.3a T.3b		Modern gravel make-up for concrete slab 327	
329	-	328	T.3a		Green-grey clay, Slurry/backfill pond deposit?	
330	-		T.3a T.3b		Dark grey and orange clay , Alluvial/pond deposit?	
331	-		T.4a & b T.6a & b, T5		Concrete , Make-up for concrete slab 327	
332	-	331	T.4a & b T.6a & b		Dark redeposited clay , brick and concrete rubble, modern building debris – from demolition of buildings	
333	-	332	T.4a & b		Green-grey slimy clay, slurry/backfill pond or alluvial deposit?	
334	-	332	T.6a & b		Grey-brown silty sandy clay, alluvial deposit.	
335	-	331	T.5		Dark redeposited clay, brick and concrete rubble with mortar frags., building debris – from demolition of buildings and disturbance of foundations	
336	-	331	T.5		Dark redeposited clay, with modern debris, building debris	
337	-		T.5		Loosely compacted mid-brown sandy clay build-up over cobbles	
338			2A	Quarry pit	Sand & gravel quarry pit	
339			2A	Pit	Modern	
340			2A	Pit	Modern	
341			2A	Pit	Modern	
342			2A	Post-hole	Modern	
343			2A	Pit	Modern	
344			2A	Pig Burial	Modern	
345			2A	Post-hole	Modern	
346			2A	Pit	Modern	
347			2A	Quarry pit	Sand & gravel quarry pit	

Appendix II

Full list of small finds.

Small Find	Context	Area	Type	Date
1	86	2A	Cu alloy, shroud buckle	1350-1400
2	U/S	2A	Cu alloy, button	
3	U/S	2A	Cu alloy, coin/token	
4	U/S	2A	Lead button	
5	U/S	2A	Cu alloy strip	
6	U/S	2A	Fe , unidentified lump	
7	213	2A	Ceramic patterned floor tile	14th century
8	213	2A	Ceramic patterned floor tile	14th century
9	213	2A	Ceramic patterned floor tile	14th century
10	213	2A	Ceramic patterned floor tile	14th century
11	213	2A	Ceramic patterned floor tile	14th century
12	213	2A	Ceramic patterned floor tile	14th century
13	213	2A	Ceramic patterned floor tile	14th century
14	213	2A	Fe rivet, from prob. coffin	medieval
15	213	2A	Fe rivet, from prob. coffin	medieval
16	213	2A	Fe rivet, from prob. coffin	medieval
17	213	2A	Fe rivet, from prob. coffin	medieval
18	213	2A	Fe rivet, from prob. coffin	medieval
19	213	2A	Fe rivet, from prob. coffin	medieval
20	213	2A	Fe rivet, from prob. coffin	medieval
21	213	2A	Fe rivet, from prob. coffin	medieval
22	213	2A	Fe rivet, from prob. coffin	medieval
23	213	2A	Fe rivet, from prob. coffin	medieval
24	213	2A	Fe rivet, from prob. coffin	medieval
25	213	2A	Fe rivet, from prob. coffin	medieval
26	213	2A	Fe rivet, from prob. coffin	medieval
27	213	2A	Fe rivet, from prob. coffin	medieval
28	213	2A	Fe rivet, from prob. coffin	medieval
29	213	2A	Fe rivet, from prob. coffin	medieval
30	213	2A	Fe rivet, from prob. coffin	medieval
31	213	2A	Fe rivet, from prob. coffin	medieval
32	213	2A	Fe rivet, from prob. coffin	medieval
33	213	2A	Fe rivet, from prob. coffin	medieval
34	213	2A	Fe rivet, from prob. coffin	medieval
35	213	2A	Fe rivet, from prob. coffin	medieval
36	234	T.05	Ceramic patterned floor tile	14th century

Appendix III

Catalogue of Human Charnel bone recovered from site.

Key	
P	= proximal
S	= shaft
D	= distal
	= 1996 Evaluation

Table 10. Crania

no./context	Frag.	Sex	Age	Pathology	Notes
1 (2a u/s)	L. temporal	M	?		
2 (6)	L frontal/orbit	m	Adult		
3-4 (6)	vault frag.	?	?		
5 (6)	vault frag.	?	?		
6 (193) T.b	Frontal/orbits	M	mature ?		pachonian corpuscles (small)
7 (193) T.b	Occipital	M	?		
8-22 (193) T.b	Vault frags.	?	?		
23 (193) T.b	r. temporal	m	?		large mastoid proc.
24 (193) T.b	l.temporal	m	?		large mastoid proc.
25 (193) T.b	l.zygomatic	?	?		
26-38 (193) T.b	vault frags.	?	?		
39 (193) T.b	vault frag.	?	?	porotic hyperostosis	
40 (193) T.b	occipital frag.	m	?		
41 (193) T.b	r.temporal	m	?		
42 (4)	*c*. complete/broken	m ?	mature ?		pachonian corpuscles (medium), large orbital ridge and large mastoid proc.'s
43-45 (u/s c.sk19)	Vault frags	?	?		

Table 11. Mandibles

no./context	Teeth	ZZ	H_1	M_2H		M_2		Sex	Age	Pathology
				L	R	L	R			
1 (6)	* 7 6 5 4 3 2 * 1 2 3 4 * * *	43.9	31.3	27	28.1	10.48	10.51	M	45-50	minimal calculus, several hypoplasias, congenital M3
2 T.b u/s			26.7					f	?	
3 (4)	8 * 6 5 * * * * * * 3 4 5 6 * 8	49.9		28.2	24.4	14.1	15.1	M	45-50	exostosis on l.condyle

Table 12. Clavicles

no./context	Left			Right			Sex	Age
	P	S	D	P	S	D		
1 (193) T.b				x			?	< 25 yrs

Table 13. Scapulae

no./context	Left	Right	Notes	Sex	Age
1 (6)		x	lateral border only	?	Adult
2 (4)	x		frag.	?	?
3	x			?	Adult
4 (u/s T.b c.sk1)		x	frag. only	?	?

Table 14. Humeri

no./context	Left			Right			HuL_1	HHD	HuE_1	Sex	Age
	I	S	D	P	S	D					
1 (6)				x				48.7		M	Adult
2 (6)				x				46			Adult
3 (6)					x	x			66		Adult
4 (6)					x	x			63.2		Adult
5 T.b u/s		x								?	?
6 T.b u/s					x					?	?
7 (u/s c.sk2)	x	x	x				325	47.8			Adult
8 (u/s c.sk2)				x				42.1			Adult
9 (u/s c.sk19)	x	x	x				359	53.8	65.7		Adult
10 (u/s c.sk19)	x	x	x				336	47.8	61.2		Adult
11 (u/s c.sk19)	x							49.7			Adult
12 (u/s T.b c.sk1)						x			73.6		Adult

Table 15. Radii

no./context	Left			Right			RaL_1	Pathology	Sex	Age
	P	S	D	P	S	D				
1 (2a u/s)		x	x							Adult
2 (6)				x	x	x	244			Adult
3 (6)		x	x							Adult
4 (6)						x				Adult
5 (193) T.b		x								
6 (194) T.b					x					
7 (T.a u/s)	x							exotosis on radial tuberosity	m (large)	Adult
8 (u/s c.sk2)	x	x	x				240			Adult
9 (u/s c.sk2)						x				Adult
10 (u/s c.sk19)				x	x					Adult

Table 16. Ulnae

no./context	Left			Right			U_1L_1	Phys.L	min circ.	Sex	Age
	P	S	D	P	S	D					
1 (6)				x	x	x	258	235	44	?	Adult
2 (194) T.b				x						?	Adult
3 (193) T.b	x	x								?	Adult
4 (4)				x						?	?
5 (u/s c.sk19)			x						45.7	?	Adult
6 (u/s T.b c.sk1)				x	x						Adult

Carpals

1 (u/s T.b) right triquetral

Table 17. Metacarpals

no./context	Left					Right					notes
	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th	
1 (2a u/s)										x	50.04mm
2 (2a u/s)							x d				distal frag.
3 (193) T.b									x		58.6mm
4 (4)				x							56.1mm
5 (u/s c.sk2)		x									24.2 mm

Phalanges

1 (4) unsided proximal

2 (u/s c.sk2) unsided proximal

Table 18. Vertebrae

no./context	Atlas	Axis	Cervical	Thoracic	Lumbar
1 (2a u/s)				x	
2 (2a u/s)					x
3 (6)		x			
4 (T.b u/s)	x				
5-10 (4)				x	
11-12 (u/s c.sk2)				x	
13-15 (u/s T.b c.sk1)				x	

Table 19. Sacra

no./context	Height	Breadth	Sex	Age
1 (6)	125		f??	adult
2 (4)		114		

Ribs

1 (6)
2-4 (193) T.b
5-18 (4) unsided fragments
19-26 (u/s c.sk2)
27-32 (u/s T.b) unsided frags.
33-40 (u/s T.b c.sk1) unsided frags.

Manubrium

1 (T.b u/s)

Table 20. Tibiae

no./context	Left			Right			TiL_1	TiD_1	TiD_2	T_1E_1	Pathology	Sex	Age	Notes
	P	S	D	P	S	D								
1 (2a u/s)					x	x					exostosis at distal margins		Adult	very water weathered
2 (2a u/s)				x						76.7			Adult	
3 (2a u/s)		x						34.4	26.9				Adult	
4 (2a u/s)					x	x		33	28.3				Adult	
5 (6)	x	x						32.6	23	69.8			Adult	
6 (6)				x	x			34.7	23.8	73.8			Adult	
7 (6)					x			34.9	24.5				Adult	
8 (6)					x	x						f??	?	slender
9 (194) T.b					x							?	?	
10 (T.b u/s)				x	x			37.8	26.5	82.5			Adult	
11 (T.b u/s)		x						36.1	26				?	
12 (T.b u/s)					x								?	
13 (T.b u/s)					x	x							Adult	
14 (T.a u/s)	x	x						35.4	30.06	82			Adult	
15 (4)					x							?	?	
16 (46)				x								?	Juvenile	unfused epiphysis in grave [47] with sk15
17 (u/s c.sk19)				x	x	x	394	42.4	29.5	76.7			Adult	
18 (u/s c.sk19)						x							Adult	
19 (u/s T.b)	x									73.4				

Patellae

1 (u.s T.b) left

Table 21. Pelves

no./context	Left	Right	Breadth	Pathology	Sex	Age	Notes
1 (6)		x			F	Adult	2x frags. inc notch , articular surface & acetabulum
2 (6)	x				M	Adult	
3 (6)		x	158		M	Adult	
4 (T.a u/s)		x		exostosis on iscial tuberosity and iliac crest.	m	Adult	ilial frag. of well muscled individual
5 (4)		x	165		F	Adult	near complete inominate, missing pubis
6 (4)	x				?	Adult	articular surface frag. only
7 (4)	x				?	?	iscial tuberosity only
8 (u/s c.sk19)					M	40-45yrs	right pubis

Table 22. Femora

no./context	Left			Right			FeL_1	FeL_2	FeD_1	FeD_2	FHD_1	FeD_3	FeD_4	FeE_1	Pathology	Age	Sex
	P	S	D	P	S	D											
1 (2a u/s)			x											72.1		Adult	
2 (2a u/s)				x	x				26.6	29.5						Adult	
3 (2a u/s)	x								22	27.2	40					Adult	
4 (2a u/s)		x														Adult	
5 (2a u/s)					x	x										Adult	
6 (2a u/s)	x	x							23.4	35.3						Adult	
7 (2a u/s)					x											Adult	
8 (6)	x	x							30.04	39.1	49.3	37.1	31.5		severe rickets, well muscled	Adult	
9 (6)				x	x	x	464	461	27.7	30.02	46.5	29.4	27.8	77.7	2 x joining frags.		
10 (6)	x	x							27.2	32.2	46.4	29.9	28.2		minor rickets	Adult	
11 (6)				x	x				29	33.1	46.2					Adult	
12 (6)				x	x				28	30.01	45.2					Adult	
13 (6)	x	x							28.9	32.2	46.5					Adult	
14 (6)		x													slender		
15 (6)					x										v.robust		Male
16 (194) T.b		x														?	
17 (193) T.b					x	x								85.5		Adult	
18(T.b u/s)		x														?	?
19 (T.b u/s)					x											?	?
20 (T.a u/s)	x								32.7	33.2							
21 (T.a u/s)					x												
22 (u/s c.sk19)		x														?	?
23 (u/s T.b)				x							46.8					Adult	
24 (u/s T.b)						x										Adult	

Table 23. Fibulae

no./context	Left			Right			Pathology	Sex	Age
	P	S	D	P	S	D			
1 (194) T.b						x	healed fracture	?	?
2 (T.b u/s)				x				?	?
3 (4)			x					?	?
4 (u/s c.sk19)			x					?	?

Table 24. Metatarsals

no./context	Left					Right				
	1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th
1 (2a u/s)			x							
2 (u/s c.sk19)						x				
3 (u/s c.sk19)							x			
4 (u/s c.sk19)									x	

Phalanges

1 (4) unsided medial

Appendix IV

Human Anthropometrics

Descriprions of metric shorthands/biometric symbols used in Human Bone analysis.

1) Post-Cranial Metrics

Femora

FeL_1	Maximum length
FeL2	Oblique/Physiological length
FeD_1	Minimum anterior-posterior diameter (below the lesser trochanter)
FeD_2	Minimum transverse diameter
FHD_1	Maximum head diameter
FeD3	Anterior-posterior diameter at the midshaft
FeD_4	Transverse diameter at the midshaft
FeE_1	Bicondular width

Tibiae

TiL_1	Maximum length
TiD_1	Minimum anterior-posterior diameter (at nutrient foramen)
TiD_2	Minimum anterior-posterior diameter (at nutrient foramen)
T_1E_1	Bicondular width

Fibula

FiL_1	Maximum length

Humeri

HUL_1	Maximum length
HHD	Maximum head diameter
HUE_1	Epicondular width
min. circ	minimum circumference

Radii

RaL1	Maximum length

Ulnae

U1L1	Maximum length
Phys.L	
min.circ	

Clavicle

Clav.L	Maximum length of clavicle

Sacra

SH	Maximum sacral height
SB	Maximum sacral breadth

Scapulae

Scap.B	Max breadth from spinal axis to dorsal border of glenoid fossa
Spine.L	Length from acromion process to spinal axis
Glenoid.L	Maximum length of Glenoid cavity
Scap.L	Maximum length

Pelves

Pelv.H	Maximum pelvic height (length) from iscial tuberosity to iliac crest
Pelv.B	Maximum pelvic breadth ftom anterior-superior iliac spine to the posterior-superior iliac spine

2) Cranial Metrics

L	Glabella-occipital length
B	Maximum Bi-Parietal breadth
B^1	Minimum frontal breadth
H	Basion-Bregma height
LB	Basion-Nasion length
S_1	Nasion-Bregma Arc
S_2	Bregma-Lambda Arc
S_3	Lambda-Opisthion Arc.
T^1	Transverse Bregmatic Arc
$S^1{}_1$	Nasion-Bregma Chord

S^1_2	Bregma-Lambda Chord
S^1_3	Lambda-Opisthion Chord
G^1H	Nasion-Alveolare length
GL	Basion-Alveolare length
GB	Facial breadth
G_2	Palate breadth (between 2nd molars)
G^1_3	Palate length
J	Maximum Zygomatic breadth
0_1	Orbital breadth (left and right)
0_2	Orbital height (left and right)
FL	Foraminal length
FB	Foraminal breadth
NB	Nasal breadth (between left & right Alare)
HN	Nasal height (Nasospinale-Nasion)
OB	Least inter orbital breadth
Biast.B	Biaster breadth (left and right)
W1	Bi-condular width
CyL	Condyle length (left and right)
RB^1	Least Ramus breadth (left and right)
H_1	Sagittal height of mandible
ZZ	Mental foramen breadth
CrCr	Coronal breadth
GoGo	Bi-Gonial breadth
ML	Maximum projection of mandible
CrH	Coronid height (left and right)
M_2H	Mandibular height at 2nd molar (left and right)
M_2	Mandibular breadth at 2nd molar (left and right)
Mast.L	Mastoid length Asterion-Mastoidale (left and right)
HT	Total facial height (Gnathion-Nasion, with jaw articulated)

Most of the measurements described above are illustrated in pictorial form in either Brothwell. (1981.77-87) or Bass (1987.70-80).

3) Skeletal Indices

Platymeria

$$\frac{FeD_1 \times 100}{FeD_2}$$

Range:	
latymeric	< 84.9
Eurymeric	85-99.9
Stenomeric	> 100

Platycnemia

$$\frac{TiD_2 \times 100}{TiD_1}$$

Range:	
Hyperplatycnemic	< 54.9
Platymeric	55-62
Mesocnemic	63-69.9
Eurycnemic	> 70

Femoral Robusticity

$$\frac{FeD3 + FeD4 \times 100}{FeL2}$$

Humeral Robusticity

$$\frac{min.circ \times 100}{HuL1}$$

Radiohumeral Index

$$\frac{RaL1 \times 100}{HuL1}$$

Caliber Index

$$\frac{min.circ \times 100}{Phys.L}$$

Scapular Index

$$\frac{scap.B \times 100}{scapL}$$

Claviculohumeral Index

$$\frac{\text{max. clav.L} \times 100}{\text{HuL1}}$$

Sacral Index

$$\frac{\text{SB} \times 100}{\text{SH}}$$

Cranial Index

Expressing, as a percentage, the length of the skull to the breadth of the skull, evolutionary speaking human skulls have become more Brachycephalic since early fossil hominids.

$$\frac{\text{B} \times 100}{\text{L}}$$

Range:	
Dolichocephaly	< 74.9 (Narrow/long)
Mesocephaly	75-79.9 (Average)
Brachycephaly	80-84.0 (Broad/Round)
Hyperbrachycephaly	>84 (Very broad)

Length-Height index

Expressing the length-height of a skull as a percentage.

$$\frac{\text{H} \times 100}{\text{L}}$$

Range:	
Chamaecrany	< 69.9 (Low skull)
Orthocrany	70-74.9 (Average)
Hypsicrany	> 75 (High skull)

Breadth-Height index

Expressing the breadth to height ratio of a skull as a percentage

$$\frac{\text{H} \times 100}{\text{B}}$$

Range:	
Tapeinocrany	< 91.9 (Low skull)
Metriocrany	92-97.9 (Average)
Acrocrany	> 98 (High skull)

Mean Basion-Height index

Gives a value to cranial height. After Stewart (1965)

$$\frac{\text{H} \times 100}{\frac{\text{L}+\text{B}}{2}}$$

Range:	
Low	< 78.9
Medium	79-85.9
High	>86

Fronto-Parietal index

Expresses the minimum breadth of the frontal bone in relation to the maximum breadth of the vault. After Bass (1987.74)

$$\frac{\text{B}^{1} \times 100}{\text{B}}$$

Range:	
Stenometopic	< 65.9 (Narrow)
Metrimetopic	66-69.9 (Average)
Eurymetopic	>70 (Broad)

Upper Facial index

Gives a value to the relation between facial height and facial breadth

$$\frac{\text{G}^{1}\text{H} \times 100}{\text{J}}$$

Range:	
Hypereuryeny	< 44.9 (Very broad face)
Euryeny	45-49.9 (Wide face)
Meseny	50-54.9 (Average)
Lepteny	55-59.9 (slender face)
Hyperlepten	> 60 (Very slender face)

Nasal index

Expresses the relation of breadth to height of the nasal aperture. After Bass (1987.76)

$$\frac{\text{NB} \times 100}{\text{NH}}$$

Range:	
Leptorrhiny	< 47.9 (Narrow nasal aperture)
Mesorrhiny	48-52.9 (Average aperture)

	Platyrrhiny	53 (Broad nasal aperture)

Orbital index
Expresses the relation between the height to breadth of the orbits. After Bass (1987.77)

$\frac{0_1 \times 100}{0_2}$	*Range:*	
	Charnaeconchy	82.9 (Wide orbits)
	mesochonchy	83-89 (average)
	Hypsochonchy	>89 (Narrow orbits)

Palatal Breadth index
Expresses the ratio of the internal measurements of the palate. After Bass (1987.79)

$\frac{G_2 \times 100}{G^1_3}$	*Range:*	
	Leptostaphyline	<79.9
	Mesostaphyline	80-84.9
	Brachystaphyline	>85

Appendix V

Skeletal Metrics/Indices

Descriptions of all metrics/indices recorded have been published by Bass (1987) and Brothwell (1981), the biometric codes used are those employed by these authors.

Cranial Metrics.

Sk	Age	Sex	L	B	B^1	H	LB	S_1	S_2	S_3	T_1	S^1_1	S^1_2	S^1_3	G^1H	GL	GB	G_2	G^1_3	J	O_1		O_2	FL	FB	NB	HN	IOB	W1	CyL		RB^1		H_1	ZZ	CrCr	GoGo	ML	CrH		M_3H		M_2		Mas.L	
																					L	R	L							L	R	L	R						L	R	L	R	L	R	L	R
1	45-50	M																																											
2	Adult	M																																											
3	Adult	M																																										
4	45-50	M																																										
5	15-20	?																																										
6	Adult	M																																										
7	Adult	M																																										
8	Adult	?																																										
9	40-50	M	190	151	101.4	142	114	134	135	117	220	116	122	95	-	-	-	30	56.1	-	-	-	-	34	27.2	-	-	28.3	-	-	-	35.7	35.1	30	45	96.8	104.2	-	63.3	62	23.6	18	16.1	17.8		
10	40-50	M																																											
11	45-55	M	184	141	98.2	136	103	125	110	130	225	111	105	110	71.4	104	-	31.8	54.6	-	36.3	36.6	31.1	37.4	35.3	24.8	-	23.8	123	-	-	-	-	32.4	43.4	-	-	-	67	66.9	23.7	31	15.7	16.3		
12	Adult	?																																											
13	40-50	M	187	143	99.4	134	98	135	136	115	170	117	114	99										32.8	30.1			26.5	117.8	21	19	35.2	34.5		46.1	102.8	100.7	98	81.5	74.4	27.7	21.6	15.4	16.2	45.8	38.7
14	45-50	M	180	147					140				121					36.9	50.1					35.2	26.4	22.5	52.9			20.1		31.5	32		47.4				73.4	73.5	28.1	25.5	12	11.4		
15	Adult	M																																											
16	35-45	M																																											
17	30-40	F																											123.1	18.6	18.1	27.6	28.4	31.7	42.2	102.4	94	94	52	53.8	24.2	21.3	12.4	13		
18	60+	M		149						113				110															122	19.4	18.4	32.6	31.3	27.3	42.6	92.6	100.3	104	54.6	56.9	25.9	27.7	13.1	11.8		
19	40-50	M																																											
20	55-65	M	172	154	98.6	-	-	130	120	115	222	114	109	95														25				34.1	32.8	27.7	50.1		100.1		66.1	-	24.5	24.5	16	14.7		
21	Adult	M																																											
22	50-60	M	180	150	103	139	98	130	120	125	240	115	107	104			99	39.4	46.3	130	37.3			35.7	27.8			29.1	139	22.7				32.4	45.4	109.7	101.7	110	59.6		24.9	27.8	14.8	14.5		
Male Range			172 - 180	151 - 141	98.2 - 103	134 - 142	98 - 114	130 - 135	110 - 140	113 - 130	170 - 240	111 - 117	105 - 121	95 - 110	71.4	104	99	30 - 36.9	46.3 - 56.1	130	36.3 - 37.3	36.6	31.1	32.8 - 37.4	26.4 - 35.3	22.5 - 24.8	52.9	23.8 - 29.1	105 - 123.1	18.6 - 22.7	18.1 - 19	27.6 - 35.7	28.4 - 35.1	27.3 - 32.4	42.2 - 50.1	92.6 - 109.7	94 - 104.2	94 - 110	52 - 81.5	53.8 - 74.4	23.6 - 28.1	18 - 31	12 - 16.1	110.4 - 16.2	45.8	38.7
Male Mean			182.2	147.9	100.1	137.8	103	130.8	126.8	119.2	215.4	114.6	113	102.2	71.4	104	99	34.5	51.8	130	36.8	36.6	31.1	35	29.4	23.7	52.9	26.5	125	20.36	18.5	32.8	32.4	30.3	45.3	100.9	100.2	101.5		64.7	25.3	24.7	14.4	14.5	45.8	38.7

Cranial Indices

Sk	Cranial		Length-height		Breadth-height		Mean basion-height		Fronto-parietal		Total facial		Upper Facial		Nasal		Orbital		Palatal	
	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9	79.5	mesocrany	74.7	orthocrany	94	metriocrany	83.3	medium	71.4	eurymetopic									53.5	leptostaphyline
10																				
11	76.6	mesocrany	73.9	orthocrany	96.5	metriocrany	83.7	medium	69.6	metrimetopic							116.7	hypsichonchy	58.2	leptostaphyline
12																				
13	76.5	mesocrany	71.7	orthocrany	93.7	metriocrany	81.2	medium	69.5	metrimetopic										
14	81.7	brachycrany																	73.7	leptostaphyline
15																				
16																				
17																				
18																				
19																				
20	89.5	hyperbrachycrany							64	metrimetopic										
21																				
22	83.3	brachycrany	77.2	orthocrany	96.6	metriocrany	82.2	medium	68.7	metrimetopic									85.1	brachystaphyline
Male Range	76.5 - 89.5		71.7 – 77.2		93.7 – 96.6		81.2 – 83.7		64 – 71.4								116.7		53.5 – 85.1	
Male Mean	81.2	brachycrany	74.4	orthocrany	95.2	metriocrany	82.6	medium	68.64	metrimetopic							116.7	hypsichonchy	67.6	leptostaphyline

Post-Cranial Metrics.

Sk	Age	Sex	Stature (m)	Femur														Tibia								Fibula		Humerus								Raduus		Ulnar						Clavicle		Sacrum	
				FeL_1		FeL_2		FeD_1		FeD_2		FHD_1		FeD_3		FeD_4		FeE_1		TiL_1		TiD_1		TiD_2		T_1E_1		FiL_1		HuL_1		HHD		HuE_1		H.circ		RaL_1		U_1L_1		Phys.L		U.circ		clav.L		Sac. H	Sac. B
				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	R	L	R	L	R	L	R	L	R	L	R	L	R		
1	45-50	M	1.77	479	467	478	475	31.3	31.4	34.3	35.8	52.6	53	31.4	30.09	30.07	30	88.8	88.1	403		36.1		26.5		80				347		49		73		74			261										
2	Adult	M	1.67	438	437	434	432	32.2	31.4	34.7	35.4	47.2	47.5		30		31.4	77.4	78.3			38.3	38.4	24.8	25.6	76.9	76.8																						114
3	Adult	M	1.75															79.3	76.4		385	35.2	35.4	22.8	21.7	77.6	74.1																						
4	45-50	M	1.72	447	447	445	444	27.2	27.4	48.3	36.2	50.01	50.01	31.4	31.4	31.5	29.6	85.8			384		37.1		24.9	79.4	78.1																						
5	15-20	?			423		421		25.4		32.5		40		23.9		25.8		69.1																													
6	Adult	M	1.75	474	466	471	464	27.2	28	35.5	37.2	48.1	48.3	32.4	32	29.6	30	82	82.3	375	365	37.9	40	27.7	27.4	76	77.4																						
7	Adult	M	1.73	454	448	449	445	30.04	27.8	30	35.8	46.2	47	26.2	26	27.2	28.7	79.9	80	385		31.1		21.9		76	74.3																						
8	Adult	?									26.2		32.6																																		
9	40-50	M	1.59	401	407	397	405	26.4	27.4	35.2	37.1		47.8	29.5	28.9	30	30.1	79.5		318	324	32.5	33.2	26.1	25.8		75.5	317			302		44.9		65.7		76	220	227	245	248	215	220	42	43				
10	40-50	M	1.67	426				34.5		32.7		47.4	48.6	33.8		27.5		79.3		364		37.3	38	25.4	26.1	75.4				302		45.3		64.5		74								46					
11	45-55	M	1.72	462	460	460	458	27.1	28.8	36.5	34.7	49.7	50.06	30	32	30.1	30		82.1	374	375	35.5	38.7	26.4	27.1	76.1	76.9			335		49.7		66.6	66.7	75.8	82.5	254	254	274	272	240	240	44.5	45	150	148	120	110
12	Adult	?						28.5	27.3	29.4	31				29		25.1		80		339		32.7		23.2		75.2																				
13	40-50	M	1.71	456	454	452	450	26.3	39.5	34.8	33.6	44.4	44.1	32.5	32.7	27.4	27.5	79	79.2	364	369	34.5	35.1	25.4	24.8	72.2	73.5		364		337	44.2	43.4	57.8	60	72	77	249	246	264	262	232	235	43	43		148	121	115
14	45-50	M	1.69	447	454	446	445	27.4	27.4	32.5	32	49.5	50.03	30	30	29.6	28.2	78.1	78	352		35.3	34	25.7	24	74.8	73			319		50.1	50	70	68.2	75	74	236	238	258	257	230	228	44	45	148	148		
15	Adult	M	1.8					28.5	26.7	36.1	35.6		>52.1	31.6	31.5	31.5	30.1						36.1		27.4															280		245		42				
16	35-45	M											>47									35.7		25.4																						
17	30-40	F	1.66																											323	327	40.1	40.1	60	60.1	65	60										
18	60+	M	1.66	435	434	430	430	38.9	30.09	33.8	34.1	48.3	47.4	35.7	31.4	28.2	29	80.06	80	346	350	36.8	37.8	32.2	23.8	77.8	76.2			323	331	48.1	48.9	60.1	58.5	70	76	239	243	258		227		40	44	149	144	124	113
19	40-50	M	1.72					29.3	29.4	36.8	35.9	49.8	49.4	30.1	31	31.1	32.6	85.6			375	33.7	36	25.8	25.6	77.4	78.8				327		49.6		65		78.5									144.5		
20	55-65	M	1.7	449	444	447	439	30.09	29.9	33.6	33.5	48.9	48.4	34	33.6	34.6	30	80.4	80			38.1	36.9	23.5	24.1	73.8				328	330	48.7	50	61.5	64.1	71.7	73.8	235	234	255	258	230	225	38.3	39				
21	Adult	M						29.6	32.1	33.5	33.3	48	46.9																				44.1			66	66									149			118.2
22	50-60	M	1.66	435	434	435	433	27.5	28.2	29.8	28.4	46.8	>47.5	29.7	28.8	26.4	25	79.6	80	345	346	33.4	35.9	24.2	26.4	75.1	76.2	333	335																	117.8	116.3
Male Range			1.59 - 1.8	401 - 479	467 - 407	397 - 478	405 - 475	26.3 - 28.9	26.7 - 39.5	29.8 - 48.3	28.4 - 37.2	44.4 - 52.6	44.1 - 53	26.2 - 35.7	26 - 33.6	26.4 - 34.6	25 - 32.6	77.4 - 88.8	76.4 - 88.1	318 - 403	324 - 385	31.1 - 38.3	33.2 - 40	21.9 - 32.2	21.7 - 27.4	72.2 - 80	73 - 78.8	317 - 333	335 - 364	302 - 347	302 - 337	44.2 - 50.1	44.1 - 50	57.8 - 73	58.5 - 68.2	66 - 75.8	66 - 82.5	220 - 254	227 - 261	245 - 274	248 - 280	215 - 240	220 - 245	38.3 - 44.5	39 - 47	148 - 150	144 - 148	117.8 - 124	110 - 118.2
Male Mean			1.71	446.4	446	445.3	443.3	29.6	31.6	34.8	34.6	48.4	48.5	31.3	30.7	29.6	29.4	81	80.4	362.6	363.6	35.4	36.6	23.9	25.3	76.3	75.9	325	349.5	325.6	325.4	47.9	47.3	64.8	56.3	72.3	75.5	238.8	243.3	259	262.8	229	232.2	42	43.8	149	175.4	120.7	114.4
Female Range			1.66																											323	327	40.1	40.1	60	60.1	65	60										
Female Mean			1.66																																											

Post-cranial Indices

Sk	Platymeric		Robusticity (fem)		Platycnemic		Robusticity (hum)		Radiohumeral		Caliber		Scapular		Claviculohumeral		Ischim-pubis		Sacral
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	
1	91.3 eury	87.7 eury	12.8	12.6	73.4 eury		21.3												
2					64.8 meso	66.6 meso													
3					64.8 meso	61.3 meso													
4	56.3 platy	75.7 platy	26.2			67.1 meso													
5																			
6	76.7 platy	75.3 platy	13.1	13.3	73.1 eury	68.5 meso													
7	100.1 steno	77.7 platy	11.9	12.3	70.4 eury														
8																			
9	75 platy	73.9 platy	14.7	14.4	80.3 eury	77.7 eury		25.2		75.2	19.5	19.5							
10	105.5 steno				68.1 meso	68.7 meso	24.5												
11	74.2 platy	82.9 platy	13	13.5	74.4 eury	70 eury	22.6		75.8		18.5	16.5			44.8				91.66
12						70.9 eury													
13	75.6 platy	117.5 steno	13.3	13.4	73.6 eury	70.7 eury		22.8		72.9	18.5	18.3				43.9			95
14	84.3 platy	85.6 eury	13.4	13.1	72.8 eury	70.6 eury	23.5		73.9		19.1	19.7							
15	78.9 platy	75 platy				75.9 eury													
16																			
17							20.1	18.4											
18	115.1 steno	88.2 eury	14.7	14	63 meso	63 meso	21.7	23	73.9	73.4	18				46.1	43.5			
19	76.5 platy	81.9 platy			76.5 eury	71.1 eury		24											
20	89.5 eury	89.3 eury	15.3	14.5	61.8 platy	65.3 meso	21.9	22.4	71.6	70.9	16.7	17.3							
21	86.6 eury	96.4 eury																	
22	92.3 eury	99.3 eury	12.9	12.4	72.5 eury	73.5 eury													98.7
Male Range	56.3-115.1	73.9-117.5	11.9-26.2	12.4-14.5	63-80.3	63-77.7	20.1-24.5	18.4-25.2	71.6-75.8	70.9-75.2	16.7-19.5	17.3-19.5			44.8-46.1	43.5-43.9			91.66-98.7
Male Mean	85.19 eury	86.2 eury	14.6	13.35	70.7 eury	69.4 meso	22.2	22.6	73.8	73.1	18.38	18.26			45.45	43.7			95.12

Appendix VI

Catalogue of pottery, tile, and brick

by D. Sawday

Site/Parish: Mill Farm, Lutterworth, Leics Accession No/ Doc Ref: XA84 2001/lutterworth1 Material: pottery, floor tile, brick & clay pipe Site Type: ? Medieval or later hospital/cemetery	Submitter: V. Priest/S. Chapman Identifier: D. Sawday Date of Id: October 2001 Method of Recovery: excavation

Key to the Pottery, Tile and Brick fabrics

Fabric	Common Name	Approx. Date Range
Medieval		
CC2	Chilvers Coton ware 2	1200-1475
Later Medieval/ Early Post Medieval		
MP1	Midland Purple ware 1	1375-1550
MP2	Midland Purple ware 2	1375-1550
Post Medieval/ Modern		
EA/PO	Earthenware/ Porcelain	Modern

POTTERY	Roman				
Context	Area/ Trench	Fabric/ware	Sherd nos.	Wght Grams	Comments
(89) [89] pit	2A	DW	1	15	
POTTERY	Post Roman				
(30) [7] quarry	2A	MP1	1	12	Glaze spots ext. late med, *c.*1375-1550
(33) cobbles	2A	PM	1	3	12th-13th C.
(33)	2A	CC1	1	4	Possibly a Nottingham product, very fine fabric, *c.*1250
(43) [42] cut thro' cobbles	2A	?CO1	1	8	Highly fired green glazed sherd, 13th C.
(43)	2A	CC1	1	7	Cp/stj rim, 13th C.
(43)	2A	TG2	1	13	?cup, green glaze ext, *c.* 1400+.
(43)	2A	CW2	1	10	Underfired, small cup handle fragment, *c.* 1475-1550
(48) [49] pit	2A	CC2	1	210	Internally glazed vessel, probably a bowl, dark red fabric, but not underfired Midland Purple, *c.*14th C.
(76) [76] ditch	2A	TG?	1	3	Glossy green glaze int & ext, pink/reddish yellow core, pos. Oxford fabric BC, 14th – 15th C., 'Abingdon – Tudor Green type' (Haldon and Mellor 1977, table 1). Abingdon is also a find spot for the distribution of Coarse Border ware, a subdivision of the Surrey whitewares (Pearce and Vince 1988, 9, table 3), *c.*1400+

(89) [89] pit	2A	CC2	5	17	Probably all same vessel, 14th C.
(89)	2A	MP1	6	55	Some underfired, late med., *c.*1375-1550
(89)	2A	MP2	3	172	Wide mouthed bowl with simple bevelled rim, similar forms appear in the late 15th C. at Chilvers Coton (Mayes and Scott 1984, fig.86.713, table 1).
(89)	2A	EA3	1	5	*c.*1650-1780
(89)	2A	SW6	3	2	Underfired, mid 18th C.+
(89)	2A	RH	1	15	?Frechen/Cologne jug, or possible English stoneware, 16th - 17th C.+
(89)	2A	EA11	1	10	Maroon bands on a white tin glaze background, similar from London or Bristol dated to the 17th C. (Fox and Barton 1986, fig.57.11).
(90) [91] pit	2A	CC1	1	10	Handle from small vessel – eg., cup/posset pot, 13th C.
(98) [92] pit	T.1	CC2	1	7	Brown glaze, 14th C.
(103) surface	1A	EA10	3	8	Modern
(105) layer	1A	EA2	1	14	Post med/modern
(105)	1A	EA10	3	10	Modern
(113) infill of building	1A	SW5	1	44	Modern shallow bowl/dish profile
(202) =(224)	1A	MP1	1	31	Jug strap handle, late med *c.*1375-1550
(202)	2A	EA7	1	5	Wheel thrown hollow ware vessel with applied iron rich clay decoration firing yellow under glaze, ?Staffs, mid 17th C.
(223) surface,	2A	EA2	1	55	Post med/modern
(224) below (223), above metalled surface	2A	MP1	3	132	Underfired, red bodied, includes a fragment of a wide mouthed bowl or pancheon rim, traces of glaze on exterior, similar at the Austin Friars, Leicester, in fabric Pxviii, a less highly fired version of Midland Purple, (Woodland 1981, fig.36.55, 127), from phase 7A, dated from the 15th C., (Mellor and Pearce 1981, 35-36). Similar vessels appear in contexts dated to the later 14th or 15th C. at Chilvers Coton, (Mayes and Scott 1984, fig.74.281, fig.90.874-875, table 1)
(224)	2A	MP1	6	978	Includes two joining sherds, lower half of a cistern, with triple thumbed handle base and evidence of a finger smeared bung hole, glaze splashes on ext. Smilar all narrow bodied cistern with bung holes appear at Chilvers Coton from the later 15th C., though without clear evidence of thumbing, (Mayes and Scott 1984, fig.42.282 –283, table 1).
(224)	2A	MP2	5	185	Two cistern rims, one ext diam., *c.*160mm, both sooted ext., similar to rims in fabric pxviii, from phase 7A and later at the Austin Friars, Leicester, (Woodland 1981, fig.37.158, [with evidence of Cistercian ware on the base], and fig.40.197), and a strap handle from a cistern or jug, late med *c.*1375-1550.
(224)	2A	CW2	4	72	Joining sherds, underfired, glazed, glazed

					upper body ext., traces int., part of a straight sided vessel, possibly a narrow/cylindrical jug (Woodland 1981, fig.43.223), but no evidence of decoration, *c.* 1475-1550.
(224)	2A	CW2	2	39	?jug neck with rounded shoulder and handle (no cordon at rim), glazed int., and ext, *c.* 1475-1550.
(224)	2A	CW2	11	55	Min. of four small vessels, probably cups, one with handle, probably similar to small handled cups with short rim, one splayed base diam *c.*, 52mm (Woodland 1981, fig.41.207, fig.43.258), but not decorated, *c.* 1475-1550.
(224)	2A	CW2	3	7	Includes min. of two cup fragments with a belled rim, diameter *c.*88mm (Woodland 1981, fig.37.169), rim also paralleled at Chilvers Coton (Mayes and Scott 1984, fig. 108.241), *c.* 1475-1550.
(224)	2A	MY	2	35	Joining fragments, *c.* 1500- *c.*1725.
(236) [261] linear wall trench	2A	MP1	3	345	Underfired cistern base with finger smeared bung hole, joining sherds, late med *c.*1375-1550
(236)	2A	MP1	2	85	Underfired ?bowl rim, traces of glaze amd sooting ext, sim rim from a skillet in phase 9A at the Austin Friars, in Midland Purple fabric pxix, dated from *c.*1400, (Woodland 1981, fig.43.255, 127)
(236)	2A	RH	1	10	?Frechen/Cologne - ?16th/17th c.
(236)	2A	MA2/3	5	250	Flask, with splash of ash glaze (Hurst 1986, 103, fig.47) – which suggests this is a continental import and not a Ticknall copy! 16th or pos. 17th C.
(256) structure	T.5	MP1	1	17	late med *c.*1375-1550
(256)	T.5	MP2	1	5	late med *c.*1375-1550
(277) [276] gully	2A	LY	5	25	All same vessel, sooted ext, = (299), 13th C.
(280) [278] pit	2A	EA2	1	15	Post med/modern
(282) [284] wall trench	2A	MP1	1	10	Transitional into EA1, ?16th C.
(283) [284]	2A	MS	2	8	13th C.+
(283)	2A	MA2/3	1	10	Joins (236)
(288) [298] e-w wall	2B	MP1	5	406	Joining sherds from cistern base, no stacking evidence underneath, late med *c.*1375-1550
(288)	2B	EA2	1	58	Jar rim, post med/modern
(290) e-w wall	2B	MP1	6	283	Underfired, includes a jar rim, & 4 joining sherds, one sherd possibly CC2 but highly fired. ? late med *c.*1375-1550.
(290)	2B	MP1	2	35	Highly fired, late med *c.*1375-1550
(290)	2B	MP2	1	15	Highly fired, late med *c.*1375-1550
(290)	2B	CW/ MB	1	3	Upight rim, *c.*1475-1750
(290)	2B	EA1	2	145	Jar rim, *c.*1500+
(290)	2B	EA2	1	22	Post med/modern
(290)	2B	EA11	1	15	hollow ware vessel, ?18th or early 19th C.
(299)	2B	LY	2	3	Sooted ext, same as (277), 13th C.

surface					
(299)	2B	CC1	2	8	Green gl ext, 13th C.
(324) layer	2B	CO2	1	20	With large ?metasediment inclusions, pos iron ore, mid 12th C.
(324)	2B	CC1	1	35	Coarse fabric, glazed jug body with vertical applied iron rich clay strip with finger tip decoration, 13th C.
(324)	2B	CC1	1	5	Green glazed, 13th C.
(324)	2B	?CC1	1	5	?spout fragment decorated with applied iron rich clay, and possibly also white clay under green glaze. Constriction in spout and narrowness of hole suggest that the fragment may, alternatively be part of applied decoration on an aquamanile, knight jug, or something similar, or even a knob from a ridge tile crest (Allin 1981, fig.17.16-17), 13th C.
(324)	2B	CW2	1	15	Glaze under small ?cup base suggest this is CW and not MB *c.*1475-1550.
(325) cleaning over (33)	2B	PM	1	8	12th –13th C.
(325)	2B	CC1	3	15	All highly fired, everted, cooking pot/storage jar rim, 13th –14th C.
(325)	2B	CC2	1	22	14th C.
(325)	2B	?BR2	2	24	Joining, fine fabric, iron rich clay smeared over ext. not typical of Chilvers Coton, 13th –14th C.
(325)	2B	MS2	1	23	13th – 14th C.
(325)	2B	MP1	2	35	?simple upright bowl rim, late med *c.*1375-1550
(325)	2B	MP1	1	47	Unusually thick bodied wall, *c.*13mm, possibly a mortar, late med *c.*1375-1550
(325)	2B	MP2	1	70	Cistern rim with cut out above dowelled strap handle base, late med *c.*1375-1550
(325)	2B	CW2	1	5	Cup handle, *c.*1475-1550
(325)	2B	TG	5	57	joining frags., cup base and internally glazed body with external stacking evidence, ?Oxford or Chilvers Coton 'Tudor Green type' or 'Surrey Whiteware type', c 1400+
(325)	2B	?RH	1	6	Salt glazed int and ext, white/light grey fabric, ?traces of white slip, small hollow ware body, ?jug, possibly a 16th or 17th C. continental import
(325)	2B	EA2	1	288	Profile wide mouthed bowl, post med/modern
(326) cleaning over (43)	2B	TG	1	18	Cup base joins (325), *c.*1400+
U/S		EA10	1	5	Modern
U/S		PO	1	5	Modern
RIDGE TILE					
(224)	2A	CC1	1	14	Traces of green glaze, 13th C+.
(224)	2A	CO2	3	216	Joining, not glazed, ?13th C.
(325)	2A	CC1	5	125	Green glaze, all same tile, looped crest, dated *c.*1300 or slightly later (Allin 1981, figs.16.9 and 17.18 , 59), similar at Chilvers

					Coton where kilns dated *c.* 1300 (Mayes and Scott 1984, fig.114.site 2 kiln 2b, table 2).
(325)	2A	CC1	1	16	Dark green glaze suggests could be Nottingham product, but seems unlikely, 13th C+
(325)	2A	CC1	2	55	Joining, mortar on top & underneath tile. Very dark green glaze suggests Nottingham as above, 13th C.+.

Chatwin 1940 – during first half 14th c. both 6 ½ in, and smaller tiles were being used, after which the size of tile found in Warwickshire was generally 4 ½ to 4 ¾ in. (p.10)

Design Refs: C=Chatwin 1940, E=Eames 1980, M&S=Eames in Mayes & Scott 1984, W=Whitcomb 1956
Dimensions: 'portrait' where applicable – width, height, thickness
Shape: S- Square; T – Triangular; R – Rectangular
Bev: - Bevel – angle in degrees

MEDIEVAL FLOOR TILE

INLAID	Pink Body							
Context	Area/ trench	Fabric	Design No.	Max. Dim. (mm)	Shape	frag nos.	Bev	Comments
(88) [89] pit	2A	CC2	M&S29	22-24	S	1	10	Top left hand corner, brown glaze worn away
(213) [214] <7> grave	2A	CC2	M&S4 W39 E1595	118x120x20-22	S	1 tile	10	Complete. Some wear. Glaze reduced dark brown. Stacking evidence on top and underneath. Arms of Beauchamp, known at Nuneaton church, 14th C. heraldic (Whitcomb 1956). Same tile from Chilvers Coton found at Ulverscroft Priory (Eames 1980 Catalogue Number 2638 and 2639). At Austin Friars a similar tile), W37, thought to come from Nottingham (Lucas 1981, table 13.)
(213) <8>	2A	CC2	M&S4 W39 E1595	120x117x23-24	S	1 tile	10	Complete. Some wear. Arms etc as above. Stacking evidence on top and on sides.
(213) <9>	2A	CC2	M&S4 W39 E1595	112x115x23-25	S	1 tile	10	Complete. Arms etc as above. Some wear.
(213) <10>	2A	CC2	M&S4 W.39 E1595	117x120x20-22	S	1 tile	10	Complete. Arms etc as above. Some wear. Stacking evidence on top and sides
(215) [216] pit	2A	CC2	E.1405 W.127 M&S.7 C.20.1	20-25	S	1 frag.	3	Top left hand corner. Zodiac tile, ram in circle, 14th C Too little tile present to compare design details with

			variant					the tile from Chilvers Coton, and more than one tiler was making this design in the Midlands (Eames in Mayes and Scott 1984, 177). The tile is not identical to that published from Coventy, St Mary's Hall, and Nottingham, (Chatwin 1940) but there is no reason why this should not be a Chilvers Coton product, and the Chilvers Coton design has identified at Ulverscroft Priory–(Eames 1980, Catalogue Numbers 2679-2681). Fabric and glaze fine .
(224) above metalled surface	2A	CC2	M&S31 W78 E1809 ?variant	25	S	1 frag	5	Bottom right hand corner. Similar Chilvers Coton design found at Ulverscroft Priory (Eames 1980, Catalogue Number 7802).
(224)	2A	CC2		-	?	1 frag	-	Decorated, leaf or flower and small circle, not paralelled, ILLUSTRATION 1
(234)	T.5	CC2	M&S37 reverse	25	S	1 frag	15	Left hand third of tile. Would have formed part of 16 tile pattern, and would have belonged under the mirror image of W72b. ILLUSTRATION 2
(234)	T.5	CC2	M&S.1 C23.8 W.66 E.1562	20	S	1 frag	15	Corner, brown glaze worn away Eames 1562 ?related to Astley. Stacking evidence underneath.
(236) [261] linear wall tench	2A	CC2	W39 E1595	22-27	S	1 frag	15	Top right hand corner. Same design as tile from [214] above
(256)	T.5	CC2	M&S.1 C23.8 W.66 E.1562	20	S	1 frag	15	Corner, brown glaze worn away Eames 1562 ?related to Astley. Stacking evidence underneath.
(256)	T.5	CC2	M&S37 reverse	25	S	1 frag	15	Left hand third of tile. Would have formed part of 16 tile pattern, and would have belonged under the mirror image of W72b.
(236)	2A	CC2	-	117x23	S	3	-	Worn, some ev of inlay, one tile, joining frags
(256) ?structure	T.5	CC2	-	20-22	S	1	10	All glaze worn away, but traces of white inlay remain
(256)	T.5	CC2	-	22-23	S?	1	10	Very worn but traces of inlay as above
(325) cleaning	2A	CC2	W95 M&S36	27	S	1	12	Corner. Quatrefoil band, with small quatrefoils and

over (33)			E2787					rosettes, Whitcomb noted that, as here, the Causeway Lane, Leicester tile & the unprovenenced one from Rutland show a crack in the stamp, whilst one from Northants does not. The cracked stamp is also found at the Chilvers Coton kilns, where dated from the early 14th C. (Eames in Mayes and Scott 1981, 184).
U/S (around skeleton strip 3, nw of area around SK2 eval trench B)		CC2	C.41.13 variant	23	S	2		2 joining frags representing approximately one third of tile – exact pattern not parallelled, similar at Kenilworth. ILLUSTRATION 3
?INLAID								
(88) [89]	2A	CC2	-	30	S	2	10	One tile, worn, no trace of inlay
(205) [206]	2A	CC2			?S	6	-	
(236) [261]	2A	CC2	-	120x23-28	S	1		Worn, no trace of inlay
(283) [284]	2A	CC2	-	-	?S	4	-	Tiny frags. Prob all same tile
(288) [298]	2A	CC2	-	*c.*27	S?	1	12	Worn, no trace of inlay
(325)	2A	CC2	-	*c.*30	S	3		Worn, no trace of inlay, min. one tile
MONO-CHROME	Pink Body							
(213) <13> [214]	2A	CC2		113x84 x23-28	T	2	15	Two triangular tiles, one complete, stacking evidence under one tile, both very worn
MONO-CHROME	Red Body							
(33)	2A	CC2	-	27-32	S?	1	10	Dark reddish brown glazee, mortar across break suggest re-use
(76) [76]	2A	CC2		20-23	S	1	10	Worn upper surface, traces of mortar on upper surface suggesting re-use, dark green glaze on edge, joins (256)
(88) [89]	2A	CC2	-	23-30	S?	2	12	Transparent lead glaze firing golden brown over buff body, worn min 1 tile
(213) [214] grave <11>	2A	CC2	-	116x11 6x23-30	S	1 tile	10	Complete, whole covered in dark olive or grey black glaze, stacking evidence on top, sandy white clay, CC1, adhered to one edge, with glaze run firing yellow over white body, worn
(213) <12>	2A	CC2	-	27	T	1	22	Whole covered in dark olive or grey black glaze, triangle made by cutting tile in half

								and transversely and beaking after firing, joins <14>.
(213) <14>	2A	CC2	-	213x27	T	1	22	Joins <12>
(215) [216]	2A	CC2	-	23-27	S?	1	10	Whole covered in dark brown glaze.
(224)	2B	CC2	-	60x20-22	R	1		Pale pink body, trace of dark brown black glaze on top
(224)	2B	CC2	-	-	?	2	-	Both fragments with dark green/black glaze, one very worn
(236) [261]	2A	CC2	-	120x24-27	S	1	20	Worn greenish black glaze
(236)	2A	CC2	-	24	S	1	-	Greenish black glaze
(236)	2A	CC2	-	115x28	S	1	20	Worn greenish black glaze
(236)	2A	CC2	-	25	S	1	-	Very worn, black glaze traces visible
(236)	2A	CC2		25-28	?	1	-	Fragment, dark greenish black glaze
(236)	2A	CC2	-	24	?	1	-	Surface pushed down at corner, probably accidental.
(256)	T.5	CC2	-	113x27	S	1	15	Whole tile is covered with a white slip under a lead glaze, firing greenish yellow (Eames in Mayes and Scott 1984, 179-180), highly fired partially reduced tile, going into MP1
(256)	T.5	CC2	-	112x25-27	S	1	15	Brownish black glaze, stacking evidence on edge
(256)	T.5	CC2		20-23	S	2	10	Worn upper surface with traces of mortar above glaze, dark green glaze on edge, joins (76)
(283) [284]	2A	CC2	-	23-27	?	1	10	Very worn, black glaze trace
(283)	2A	CC2	-	-	?	1	-	Worn, greenish black glaze
(288) [298]	2B	CC2	-	56x113 x26-28	R	1	10	Tile made from square cut in half longitudionally and broken into a rectangle after firing. Traces of impressed decoration. Whole covered in dark olive or grey black glaze, with some reddish black tints!
(288)	2B	CC2	-	27-30	S	1	10	Worn, traces of dark brown.black glaze
(300) [89]	2A	CC2	-	-	?	1	-	Worn fragment, traces of dark brown glazer
(325)	2A	CC2	-	30	?	2	15	Dark brown/green glaze, 1 tile
(325)	2A	CC2	-	30	?	1	20	Worn dark green glaze
(325)	2A	CC2	-	-	?	1	-	Traces of dark green glaze
(326)	2B	CC2	-	28	?	1	15	Dark brown/black glaze
U/S		CC2	-	110x112x25	S	1	20	Complete, dark brown glaze, surface worn and chipped edges
MOSAIC								
(48) [49]	2A	CC2	-	23 wide	?R	1	-	Narrow ?rectangle, worn, traces of dark brown or olive

								glaze on the cut edge

NIB TILE									
Context	Area/ Trench	Fabric	Frag Nos	Wght grams	Thick Ness mm	Width mm	Lngth grams	Nib type	Comments
(2) [3]	2A	CC2	2	88					Glaze like over fired silica on edge
(16) [17]	2A	CC2	5	284					
(30)	2A	CC2	7	430		166		1 type 2	Spot of brown glaze on one frag
(33)	2A	CC2	12	1028					
(38) [39]	2A	CC2	1	122	15-17				
(43) [44]	2A	CC2	47	5656	12-20			2 type 2 1 type 3	
(43)	2A	MP1	1	114	18				Over fired
(48) [49]	2A	CC2	7	1464					Mortar both sides
(60)	T.1	CC2	1	32					
(60) [96]	T.1	CC2	1	32					
(65) [97]	T.1	CC2	1	290	16			1 type 1	
(76) [76]	2A	?CC2	3	348	16			1 type 3	Slight mix of red & white clay, nib just a ledge of clay, mortar on both sides
(88)	2A	CC2	40	4175				1 not id	Thick mortar both sides
(89) [89]	2A	CC2	34	1354					Tiny frags
(93) [94]	2A	CC2	1	44					
(103)	2A	CC2	1	6					
(202)=(224)	2A	CC2	12	1511	11-18			?1 type 1	
(203) [204]	2A	CC2	2	294					
(205) [206]	2A	CC2	23	910				1 type 1	
(209) [210]	2A	CC2	3	337	15				
(215) [216]	2A	CC2	3	997	12-13	171		1 type 4	Half tile with nib
(223)	2A	CC2	18	1306					
(224)	2A	CC2	3	454				3 type 1	
(224)	2A	CC2	1	146				1 type 2	
(224)	2A	CC2	1	236				1 type 3	
(224)	2A	CC2	5	679				5 not id	
(224)	2A	CC2	18	1652				1 not id	
(224)	2A	CC2	61	6020					
(234)	T.05	CC2	4	100	15-18				
(236) [261]	2A	CC2	7	1890					
(236)	2A	CC2	1	198					Lead glaze spots on smooth surface
(236)	2A	CC2	1	268					Mortar on smooth surface
(236)	2A	CC2	18	2545					

(236)	2A	CC2	2	482	14-18			2 type 1	
(256)	T.5	CC2	4	100	15-18				
(258) [257]	2A	CC2	5	250					
(282) [284]	2A	CC2	5	476					Mortar on smooth surfaces
(282)	2A	CC2	9	832					A few with some mortar on both surfaces
(283) [284]	2A	CC2	1	280				1 not id	
(283)	2A	CC2	26	2212					Mortar on all surfaces
(283)	2A	CC2	1	232					Glaze spot on smooth side
(284) [284]	2A	CC2	1	66				1 type 1	Mortar on 3 sides, ?re-used
(284)	2A	CC2	1	96				1 type 2	
(284)		CC2	9	806					Highly fired tile has glazed look
(288) [298]	2A	CC2	8	869					
(290)	2B	CC2	1	182	17	180 (est)		1 type 2	Sim in width to type 4 tile, but nib bigger
(290)	2B	CC2	10	1132					
(300) [89]	2A	CC2	1	542	13	160		1 type 3	Mortar on rough side
(300)	2A	CC2	2	230				2 type 2	Very roughly made
(300)	2A	CC2	2	264	13	165		1 type 4	Joining
(300)	2A	CC2	1	282				1 not id	
(300)	2A	CC2	5	1062					
(300)	2A	CC2	2	508					Heavy mortar encrustation
(301) [302]	2A	CC2	2	14					
(321) [320]	2B	CC2	9	650					Smearing near nib
(324)	2B	CC2	2	396				1 not id (pos. type 3)	
(325)	2A	CC2	11	678					
(325)	2A	CC2	7	1200	17	165			1 frag with glaze spots & mortar on smooth surface & green glaze on edge, this & all other frags also have traces of charcoal on rough side
(325)	2A	CC2	1	380	16	170 est.		1 type 2	Mortar all over smooth surface, incl. nib. Type series
(325)	2A	CC2	1	66	13			1? type 4	

(325)	2A	CC2	18	1926					
(325)	2A	CC2	20	1598					
(325)	2A	CC2	11	1750	18				
(325)	2A	CC2	12	544					
(326)	2B	CC2	1	456	17-18	170 est		1 type 1	Type series
(326)	2B	CC2	8	1000					?above (43) [42]
CURVED TILE									
(48) [49]	2A	CC2	1	128	14				Rough side underneath on inner curve
(224)	2A	CC2	1	146	15-16				As above, traces of sooting on smooth upper surface
(236) [261]	2A	CC2	1	134	14				As above with traces of sooting
(284)	2A	CC2	1	478	20				As above with traces of sooting, and mortar on interior. Curve assymetrical, not circular in plan

BRICK					
Context	Area/ Trench	Fabric	Frag Nos.	dimensions	Comments
(4) [5]	2A	EA	1		
(33)	2A	EA	1		
(44) [45]	2A	EA	1	2 ¼	
(44)	2A	EA	4		
(46) [47]	2A	EA	2		
(60)	T.1	EA	1	2 1/8	
(65)	T.1	EA	1	2	
(65)	T.1	EA	1	2 1/8	
(76)	2A	EA	1	2 3/8	
(88) [89]	2A	EA	1	2	
(88)	2A	EA	1	2 1/8	
(88)	2A	EA	1	4 3/8 x 2	
(88)	2A	EA	4		
(88) + (89)	2A	EA	2	4 1/8 x 2	Joining
(89)	2A	EA	4		
(213) [214]	2A	EA	1	1 7/8	
(223)	2A	EA	1		Reduced grey/black, ?blue brick
(224)	2A	EA	1	2 3/8	
(224)	2A	EA	2		
(236) [261]	2A	EA	1	1 5/8	
(300) [89]	2A	EA	1	4 ½ x 2 ¼ x Approx 9”	Complete, moulded, fettled upper surface
(300)	2A	EA	1		Very abraded soft fabric, similar to medieval Coventry fabric CO2
(300)	2A	EA	1	4 ¼ x 2 ¼	
(300)	2A	EA	1	4 3/8 x 2 1/8	
(325)	2A	EA	2		Glazed appearance, possibly through an excess of sand and heat

CLAY PIPE				
Context	Area/ Trench	Stem Frag	Bowl Nos.	Comments
(33)	2A	1		
(224)	2A	1		
(290)	2A	3		
(290)	2A		1	Bowl, half milled facing smoker, with illegible stamp under spur, bowl parallelled mid – late 17th C. at Coventry, (Muldoon 1979, fig.6.30a-30b, fig.7.34-35).
U/S above cobbles		1		
U/S overburden, Mill site		2		

Appendix VII

The mortar and slate finds.

Mortar Finds

Cont	Weight (g)	Frags.	Comments
30	40	1	
43	625	7	Light yellow mortar, pebble impressions Pale yellow sandy lime plaster Pale grey lime plaster, relatively little aggregate Pale grey sandy lime plaster, with white paint
88	375	2	Cobble impressions on reverse
89	2325	32	
105	20	1	
213	340	12	Flat prob.wall plaster
224	35	2	Pale grey sandy lime plaster Pale grey sandy lime plaster
283	625	8	Light yellow lime plaster, stained/light yellow brown paint traces Pale grey sandy lime plaster, very pale grey paint traces Pale grey sandy lime plaster
300	950	2	Cobble impressions Mortar with pebble impressions
325	555	19	Painted, 1 frag, yellow background with red line 4.5mm wide, with traces of whitewash over the top Pale grey sandy lime plaster Pale grey sandy lime plaster Pale grey Pale grey sandy lime plaster, with white paint sandy lime plaster, with white paint Pale grey, lime plaster, with paint traces (white wash/ traces of dirt or ochre) little tracs of aggregate
330	40	1	Pale grey sandy lime plaster, with white paint/whitewash
Total	**5930**	**87**	

Slate Finds

Context	Weight (g)	Frags.	Comments
U/S	140	1	H9mm, 12mm thick
30	20	1	
43	405	7	H8mm, 8mm thick
88	1340	2	Could rubble rather than roof tile
89	12	2	H7.5mm 12mm thick H8mm
224	180	5	H8mm 15m thick
236	10	1	
283	283	30	
301	50	1	H14mm, 8mm thick greenish
321	190	1	
325	2685	13	Burnt? H8mm8mm thick (torched both sides) green H6.5mm, H9mm 7m thick green, frag 9mm thick green
Total	**5315**	**64**	

H = diameter of hole

Appendix VIII

The metal objects

Copper Alloy and Lead objects

Sfno.	Context	Material	Type	Description
1	86	Cu Alloy	Belt Buckle	Plain circular frame. Ridged grip on upper surface of pin. Diam. 47mm.
2	US	Cu Alloy	Button	Solid cast plano-convex with integral loop. Diam. 14mm
3	US	Cu Alloy	Token	V.Worn. obv and rev illegible. Diam.22mm
4	US	Lead	Button?	Square sheet with scalloped edges. Four central perfs. Max.width 28mm
5	USover202	Cu Alloy	Strip	Tapering sheet fragment. Edges torn or cut. Length 60mm. Width 7mm
-	236	Cu Alloy	tube	Sheet rolled into tube. Incomplete. Length 12mm. Diam.2mm

Iron objects

Sfno.	Context	Material	Type	Description
6	USover202	Iron	Blade and part handle	Blade frag with copper alloy rivet and mineralised (?)wood deposits adhering. Length 45mm
14	213	Iron	Nail	Head and part shank
15	213	Iron	Nail	Head and part shank. Min.wood
16	213	Iron	Nail	Head and part shank. Min.wood
17	213	Iron	Nail	Head and part shank. Min.wood
18	213	Iron	Nail	Head and part shank. Min.wood
19	213	Iron	Nail	Head and most of shank. Leng. 50mm
20	213	Iron	Nail	Head and part shank. Min.wood
21	213	Iron	Nail	Head and part shank. Min.wood
22	213	Iron	Nail	Shank only. Min.wood deposit
23	213	Iron	Nail	Shank only. Min.wood deposit
24	213	Iron	Nail	Shank only. Min.wood deposit
25	213	Iron	Nails	Two shank frags. Min. wood dep.
26	213	Iron	Nail	Shank fragment.
27	213	Iron	Nail	Head and most of shank
28	213	Iron	Nail	Shank frag with min.wood deposit
29	213	Iron	Nail	Head and part shank. Min.wood
30	213	Iron	Nail	Shank frag with min.wood deposit
31	213	Iron	Nail	Head and part shank. Min.wood
32	213	Iron	Nail	Head and part shank. Min.wood
33	213	Iron	Nail	Head and most of shank. Min.wood
34	213	Iron	Nail	Head and part shank. Min.wood
35	213	Iron	Nail	Near complete. Length 54mm
36	213	Iron	Nails	1 x complete. Length 60mm
-	213	Iron	Nails	5 x fragments

Appendix IX

The Glass finds

Site/Parish: Mill Farm, Lutterworth, Leics.	Submitter: V. Priest
Accession No/ Doc Ref: XA84 2001/lutterworth3	Identifier: D. Sawday
Material: glass	Date of Id: 29.8.02
Site Type: medieval hospital & cemetery	Method of Recovery: excavation

context	Frag nos.	comments
33 cobbles	2+	Very fragmented & decomposed, two opaque pieces *circa* 3 to 4 mm thick, many more tiny fragments. No surviving edges, but possibly medieval window glass.
76 [76] ditch	1	5 mm thick, green bottle glass
88 [89] pit	1	3 to 4 mm thick, green bottle glass
89 [89]	8	1 to 1.5 mm thick, green vessel glass
300 [89]	2	5 to 12 mm thick, dark green/brown bottle glass
300 [89]	4	3 to 3.5 mm thick, green bottle glass, lip, string rim, neck & shoulder survive, ?first half of the 18th C.
224 surface	1	2 mm thick, clear light green ?decorative glass, post medieval or modern.
280 [278] pit	1	4 to 6 mm thick, brown/green opaque/green bottle glass
280	1	3 to 7 mm thick, dark green, bottle glass.
280	1	1 mm thick, light green, ?modern window glass
290 e.w. wall	3	1 mm thick, light green, laminated, post medieval or modern ?vessel glass
325	1	1.5 mm thick, opaque, flat
325	1	4 to 9 mm thick, dark green, base of bottle with kick up & pontil mark, although very incomplete, onion or mallet shape suggests a date of *circa* 1680 – *circa* 1735 when cylindrical shaped bodies began to be developed, (Banks 1997, 23, fig.4.2).
U/S	1	Dark green, bottle base fragment, *circa* 8 mm thick, ?18th C.
U/S	1	Golden brown, 3 mm thick blown vessel glass, post medieval or modern.
U/S	2	Modern ?milk bottle with moulded letter ‘F’ or ‘E’.

Appendix X

Catalogue of animal bone from excavations at Lutterworth (2002)

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
1	224	1	horse	radius	almost complete	95	f	f					proximal ulna missing
2	224	1	cattle	metatarsal	complete	100	f	f					modern chip from proximal end.
3	224	1	sheep	femur	patellar area	10		f		p			possibly chopped
4	224	1	oxsize	thoracic	part of spine missing	80							
5	321	1	cattle	metacarpal	almost complete	90	f	f					some damage around distal
6	236	1	sheep	scapula	distal part of blade missing	75		f		p			possible cut mark on ventral neck of bone
7	236	1	sheep	pelvis	almost complete	90	f						refitted from 2 fragments
8	236	1	sheep	metatarsal	distal half	50		u					
9	236	2	oxsize	ribs	almost complete								1 refitted from 2 frags.
10	236	1	pig	ulna	complete	100	u	u					juvenile
11	236	9	shsize	ribs	fragments								
12	236	1	unidentified	fragment	shaft								
13	236	1	sheep	radius	almost complete	95	f	f					ulna shaft fused to shaft, damage at proximal end
14	86	3	unidentified	fragment									
15	86	1	sheep	metacarpal	proximal shaft 75%	75	f						
16	314	12	unidentified	fragment									
17	314	1	pig	canine	almost complete								lower. Outside curve 14cm
18	314	1	pig	mandible	tooth row fragment							p2, p3, p4	
19	314	2	cattle	ribs	shaft fragments								
20	314	1	unidentified	fragments	fragments								
21	224	1	oxsize	rib	shaft fragments								
22	224	1	cattle	phalange 1	complete	100	f	f					
23	224	1	oxsize	thoracic	spine only	20							
24	224	1	cattle	radius	prximal shaft 25%	25	f						not complete enough to measure
25	76	1	cattle	scapula	prox blade fragment	15							
26	76	1	unidentified	fragment									
27	300	1	oxsize	rib	shaft fragment								

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
28	300	1	unidentified	fragment									
29	43	1	pig	humerus	distal shaft 20%	20		f					
30	43	1	oxsize	rib	shaft fragment								
31	236	1	cattle	radius	proximal shaft 75%	75	f						
32	236	1	cattle	mandible	tooth row	75						p3, p4 dm4, m1 erupting	
33	98	1	horse	femur	distal shaft 20%	20		f					refitted from 5 fragments
34	98	1	sheep	radius	20% mid shaft	20							
35	98	1	oxsize	shaft fragment									
36	98	1	pig	mandible	tooth row & ramus	80						p3, p4 dm4=L , m1=c,	
37	98	1	cattle	mandible	complete	98						p3 erupting, p4=a, dm4=a	
38	98	1	brown hare	humerus	complete	100	u	f					
39	30	1	pig	pelvis	acetabulum & 60%	60		f					refitted from 3 fragments
40	30	1	shsize	shaft fragment									
41	202	1	cattle	cranium	lower orbit								
42	202	1	oxsize	shaft fragment									
43	202	1	sheep	pelvis	acetabulum & 60%	60		f					
44	202	1	oxsize	scapula	shaft fragment								
45	202	1	oxsize	rib	shaft fragment								
46	202	2	shsize	rib	shaft fragments								
47	202	2	oxsize	mandible	shaft fragments								
48	202	4	shsize	shaft fragment									
49	202	1	dog	calcaneum	almost complete	95	f						
50	202	1	cattle	calcaneum	shaft & articulation						y		gnawing damage around articulation
51	202	1	shsize	metapodial	proximal shaft fragment	10	f						
52	202	1	sheep	metatarsal	mid shaft fragment								
53	202	1	sheep	radius	proximal & 80%	80%	f						large
54	202	1	unidentifiable	cranial	fragment								
55	325	1	horse	metapodial	proximal & 70%	70	f						
56	325	1	cattle	metacarpal	distal shaft 30%			f					
57	325	1	sheep	metacarpal	proximal shaft 80%	80	f						
58	325	1	sheep	humerus	prximal articulation missing	90		f					
59	325	1	sheep	radius	complete	100	f	u					

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
60	325	1	sheep	humerus	distal shaft 25%	25		f					
61	224	1	pig	metacarpal	almost complete	90	f	u					
62	224	1	oxsize	longbone	shaft fragment								
63	224	1	shsize	rib	shaft fragment								
64	224	1	sheep	radius	almost complete	95	f	u					
65	224	1	oxsize	thoracic	spine only	20				y			chop
66	224	1	sheep	horncore	tip & shaft								
67	224	1	cattle	tibia	distal shaft 40%	40		u		y			possible cut mark
68	224	1	cattle	cranium	basisphenoid	5							
69	88	1	horse	calcaneum	articulation and part of shaft								
70	88	1	sheep	humerus	distal shaft 25%	25		f	y				patch of burning on medial cranial surface.
71	33 cleaning	1	sheep	metacarpal	complete	100	f	f			y		some damage, possible gnawing at distal end
72	33 cleaning	2	unidentified	fragments									
73	33 cleaning	1	oxsize	rib	shaft fragment								
74	33 cleaning	1	pig	humerus	medial epicondyle	10							
75	33 cleaning	1	cattle	femur	distal shaft 60%	60							
76	33 cleaning	1	sheep	humerus	distal shaft 60%	60							
77	33 cleaning	1	shsize	vertebra	fragment	15							
78	33 cleaning	1	sheep	radius	complete	100	f	u					
79	325	1	shsize	shaft fragment									
80	325	1	sheep	pelvis	acetabulum & ischium	40		f					poss same bone as below
81	325	1	sheep	pelvis	illial crest	20							
82	200	1	cattle	lumbar	body	70				y			chopped
83	224	8	shsize	rib	shaft fragments								
84	224	6	oxsize		shaft fragments								
85	224	7	shsize		shaft fragments								
86	224	1	sheep	mandible	diastema	20						n	immature
87	224	1	rabbit	humerus	distal shaft 15%	1500%		f					
88	224	1	sheep	hyoid	almost complete	90							
89	224	1	cattle	femur	supraconylar fossa	5							shaft frag only
90	224	1	pig	ulna	articulation and part of shaft	40					y		possibly subjected to gnawing
91	223	4	oxsize	longbone	shaft fragments								

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
92	223	2	shsize	rib	shaft fragment								
93	223	1	sheep	molar	almost complete								upper molar
94	223	1	oxsize	thoracic	spine only								
95	223	1	oxsize	fragment									
96	223	1	oxsize	cervical fragment									
97	325	2	shsize	rib	shaft fragments								
98	325	1	pig	incisor	complete								lower
99	325	1	oxsize	shaft fragment									
100	325	1	sheep	metatarsal	proximal shaft 40%	40	f						
101	93	1	cattle	phalange 1	proximal shaft 30%	40	f						refitted from 2 fragments - fresh breakage
102	93	1	sheep	molar	almost complete	90							upper m1/m2
103	93	1	human?	femur	head	5							femoral head only. Uncertain id.
104	236	1	shsize	thoracic	spine only	20							
105	236	1	cattle	atlas	fragment	25				y			possibly chopped obliquely
106	236	2	shsize	longbone	fragment								
107	236	3	unidentified	fragments									
108	236	11	shsize	rib	shaft fragments								
109	236	14	shsize	rib	fragments								
110	301	2	oxsize	shaft fragment									
111	301	4	shsize	shaft fragment									
112	301	1	sheep	femur	mid shaft fragment	30							
113	301	1	sheep	tibia	distal shaft 40%	40							
114	224	1	unidentified	shaft fragment									
115	224	1	sheep	scapula	distal shaft 50%	50		f					
116	224	1	sheep	tibia	mid shaft fragment	70							
117	224	1	cattle	radius	mid shaft fragment	30				y			deliberate splintering esp on medial side
118	224	1	cattle	femur	lesser trochanter	20					y		trochanter bears numerous tooth indentations.
119	236	1	shsize	longbone	shaft fragment	20							
120	236	1	shsize	rib	fragment	20							
121	236	1	oxsize	longbone	shaft fragment								
122	236	1	cattle	atlas	fragment	10							fragment of cranial side
123	283	1	oxsize	rib	shaft fragment	10							

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
124	283	1	cattle	horncore	mid shaft fragment	30?							
125	224	1	oxsize	scapula	blade fragment	10							
126	224	1	oxsize	longbone	mid shaft fragment					y			deliberately split/chopped for marrow extraction?
127	224	1	cattle	pelvis	acetabulum & pubis	10							
128	224	1	shsize	rib	shaft fragment	40							large
129	224	1	cattle	femur	patellar epiphysis	5		u		y			poss chopped
130	236	1	shsize	longbone	shaft fragment								
131	236	1	sheep	tibia	mid shaft fragment	20							
132	283	1	shsize	rib	shaft fragment	15				y			heavy cut marks
133	325	1	shsize	rib	shaft fragment	10							
134	325	1	unidentified	fragment									
135	33	1	unidentified	fragment									
136	60	1	oxsize	longbone	shaft fragment	5							
137	16	1	bird	longbone	shaft fragment	10							
138	284	1	shsize	longbone	mid shaft fragment	30							
139	236	2	shsize	rib	shaft fragment								
140	236	1	shsize	longbone	shaft fragment								
141	236	1	shsize	rib	shaft fragment	30				y			cut marks on lateral surface
142	236	1	sheep	mandible	diastema & tooth row	40					p3, p4 & dm4-c-d	y	
143	236	1	sheep	cranium	upper orbit								
144	224	1	cattle	mandible	diastema & tooth row	40					p3, p4 dm4=c	y	
145	224	1	cattle	tooth	fragment								
146	224	5	unidentified	fragment									
147	224	1	oxsize	cranium	fragment								
148	224	1	oxsize	rib	shaft fragment								
149	224	1	shsize	rib	shaft fragment								
150	224	1	oxsize	thoracic	dorsal fragment	30							
151	282	3	sheep	lumbar	almost complete								appear to have been articulated
152	215	1	cattle	metacarpal	distal shaft 20%	20%		f					fresh breaks
153	215	1	oxsize	longbone	shaft fragment								
154	215	3	oxsize	cranium	fragment								
155	215	1	cattle	cranium	maxilla								

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
156	215	1	cattle	cranium	premaxilla								
157	283	6	cattle	horncore	fragments								prob same bone
158	283	1	oxsize	shaft fragment									
159	325	1	cattle	pelvis	ischium	20				y			caudal side of obdurator foramen. Chopped
160	325	1	cattle	femur	distal shaft 25%	25		f		y			chopped through articulation
161	89	1	sheep	radius	proximal shaft 90%	90	f						
162	236	1	cattle	cranium	upper orbit and frontal								young and with stub of horncore
163	236	1	shsize	longbone	mid shaft fragment	40				y			1 heavy cut mark and 2 fine cut marks
164	236	1	shsize	cervical fragment	fragment	50							
165	224	1	shsize	rib	shaft fragment								
166	224	1	bird	longbone	shaft fragment								
167	224	1	pig	tooth	complete	95						premolar	
168	236	1	shsize	rib	shaft fragment								
169	236	1	oxsize	hyoid	fragment	40							
170	millsite	1	rabbit	humerus	distal shaft 40%	40		f					
171	millsite	1	cattle	scapula	shaft only					y			butchered slice. Sawn. Prob modern.
172	224	1	chicken	ulna	complete	100	f	f					refitted from 2 fragments
173	224	1	chickensize	longbone	shaft fragment								
174	236	1	fish (cf salmon)	vertebra	abdominal								
175	202	1	oxsize	cranium	frontal								young very porous
176	236	1	fish	bone	fragments								
177	98	1	hare	radius	complete	100	f	u					
178	98	3	hare?	rib	almost complete								
179	224	1	corvus (cf rook)	coracoid	complete	100	f						
180	224	1	rattus cf black	humerus	almost complete	95	u	f					not conclusively black also similar to brown rat
181	224	2	unidentified	fragments									
182	224	1	pig	metapodial	proximal shaft	20	f		y				slightly 'glassy' appearance on proximal end
183	76	1	sheep	radius	proximal shaft	25	f						
184	236	1	goose	tarsometatarsus	complete	100	u	f					young bird slightly smaller than ref. goose
185	236 sp2	1	chicken	humerus	almost complete	90		u					
186	236 sp2	1	chicken	humerus	complete	100	u	u					
187	236 sp2	1	chicken	ulna	almost complete	90	u						

Record	Context	Frags	Species	Bone	Part	%	P	D	Bu	Ch	Gn	Teeth	Notes
188	236 sp2	1	chicken	ulna	complete	100	u	u					
189	236 sp2	1	chicken	femur	80% distal shaft	80							immature
190	236 sp2	1	chicken	ulna	complete	100							
191	236 sp2	1	chicken	coracoid	50% present	50							
192	236 sp2	1	pig	femur	75% distal shaft	75		u					
193	236 sp2	1	goose	tibiotarsus	shaft fragment	25							
194	236 sp2	1	chicken	femur	proximal shaft	40							slightly larger than ref. Chicken
195	213	1	human	incisor	complete	100							
196	213	6	human	cranium	fragments								not fully examined
197	224	1	cattle	cranium	interior fragment								bone beneath basisphenoid (deep within skull)
198	65	1	unidentified	carpal/tarsal	complete	100							
199	98	1	bird	fircula	60% complete	60							poss immature chicken-sized
200	236 sp2	1	chicken	femur	shaft fragment	40							
201	236	1	chicken?	femur	complete	100	u	u					possibly twin to the one above
202	236 sp2	2	bird	longbone	shaft fragment								
203	98	1	chicken	tibiotarsus	complete	100	u	u					
204	98	1	chicken	tibiotarsus	proximal shaft	50	u						possibly pairs with bone above
205	98	1	chicken	ulna	complete	100	u	u					
206	98	1	chicken	femur	almost complete	90		u					
207	98	1	bird	longbone	complete	100							poss phalange
		312											

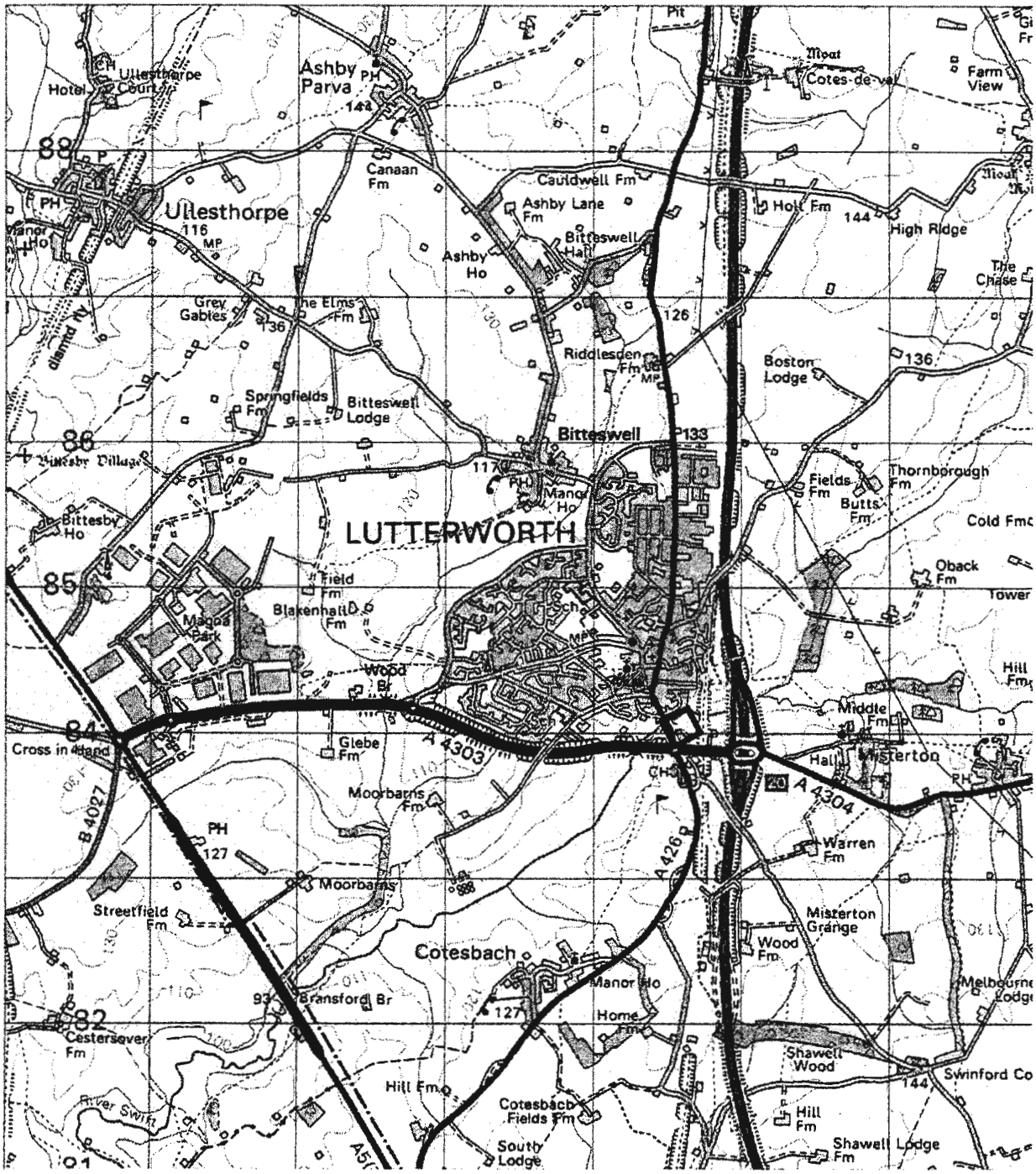

Figure 1. Location of site at Lutterworth (outlined). Scale 1:50,000.

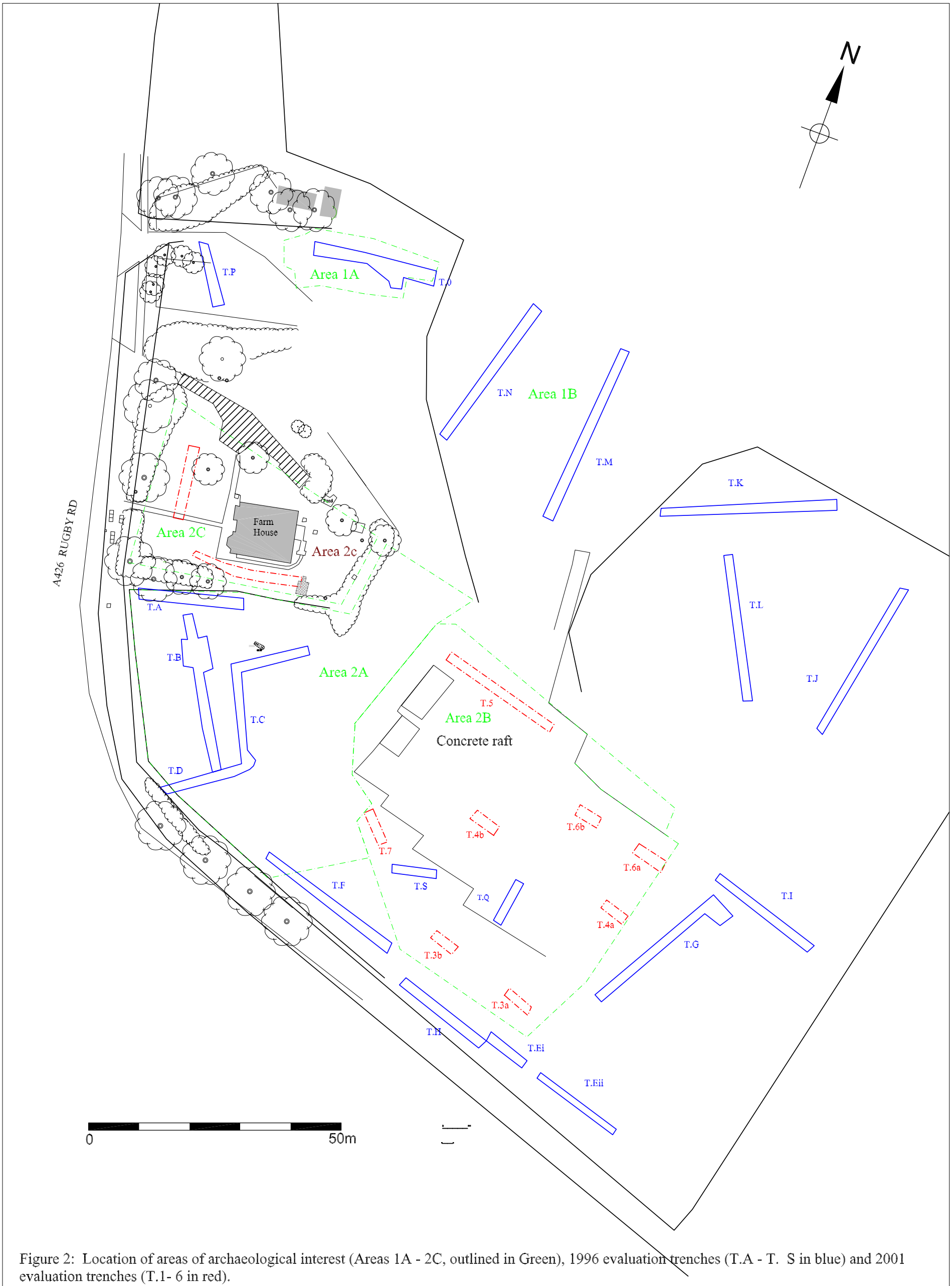

Figure 2: Location of areas of archaeological interest (Areas 1A - 2C, outlined in Green), 1996 evaluation trenches (T.A - T. S in blue) and 2001 evaluation trenches (T.1- 6 in red).
Scale 1:750

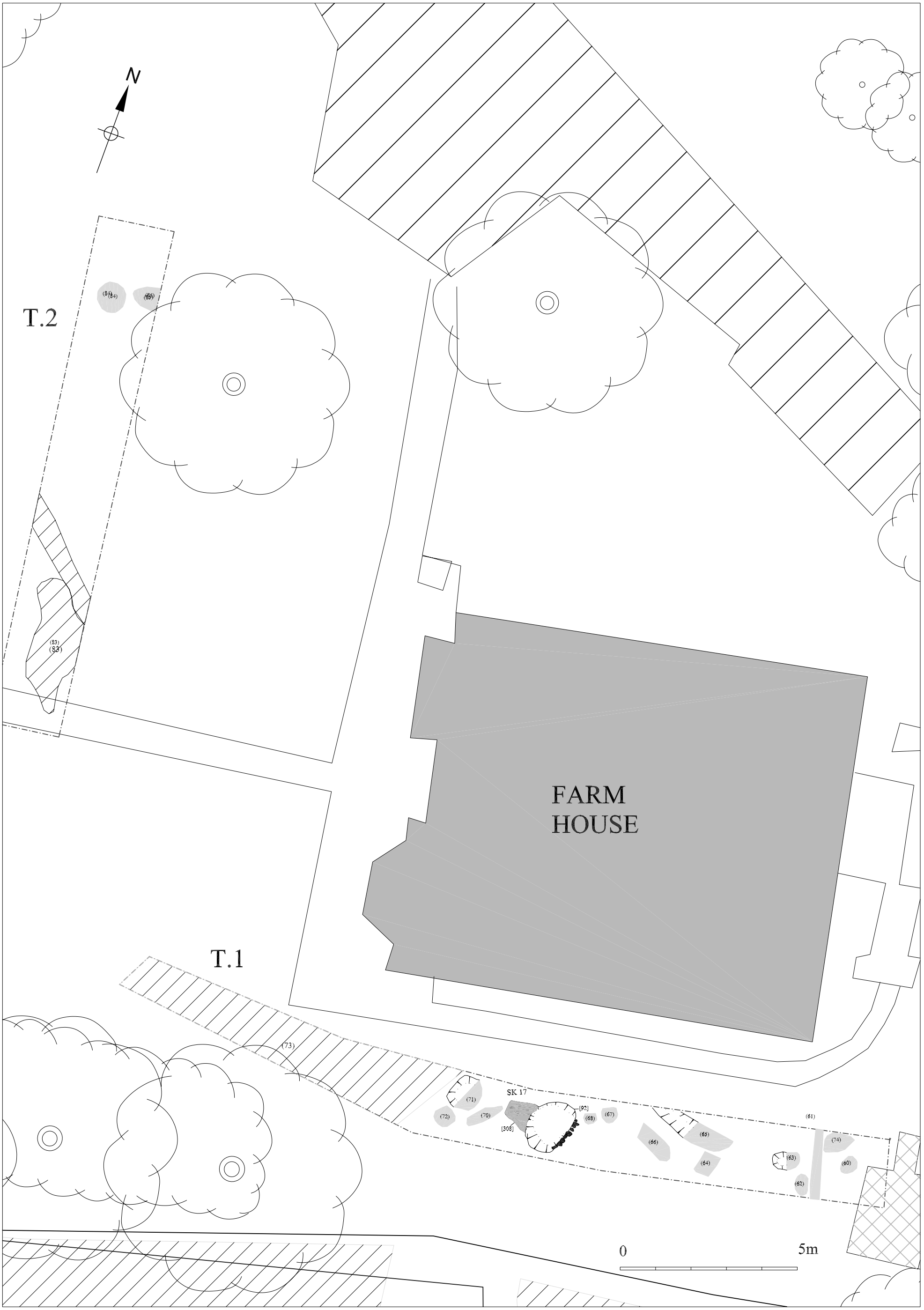

Figure 3: Plan of T1 and T2. Scale 1:100

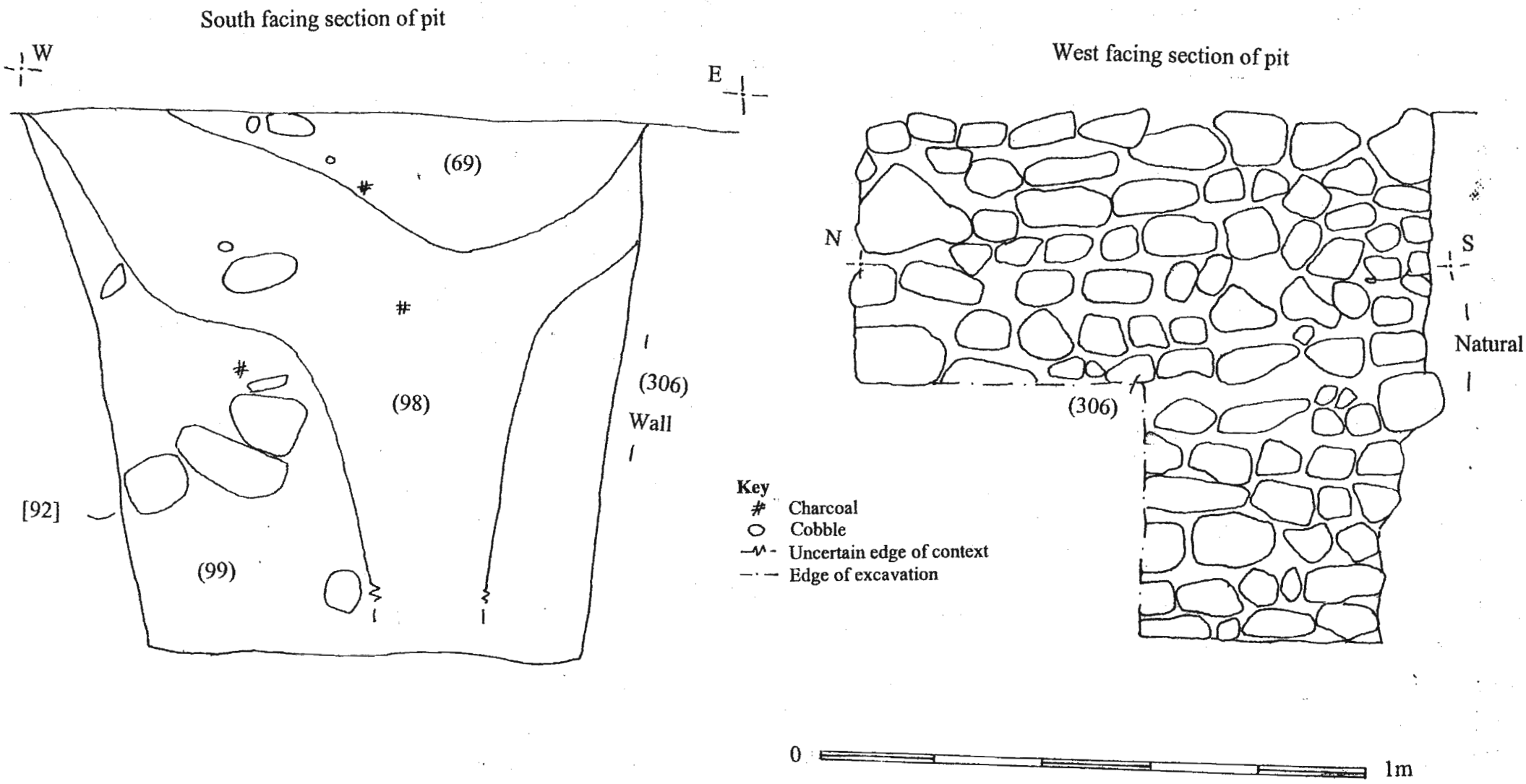

Figure 4 T.1: south and west facing sections through pit 92. Scale 1:10

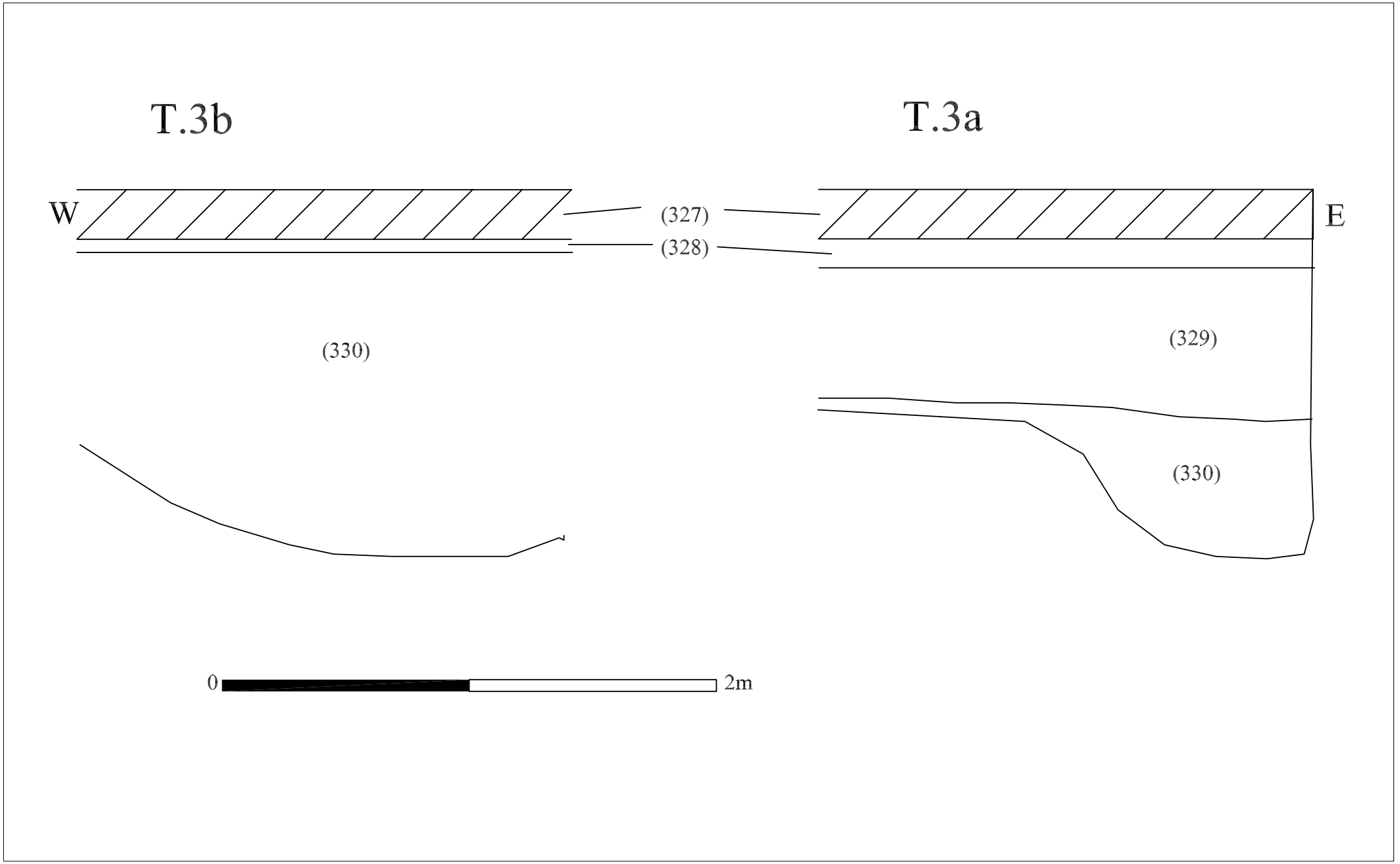

Figure 5 South facing sketch sections of T.3a and T.3b. Scale 1:20

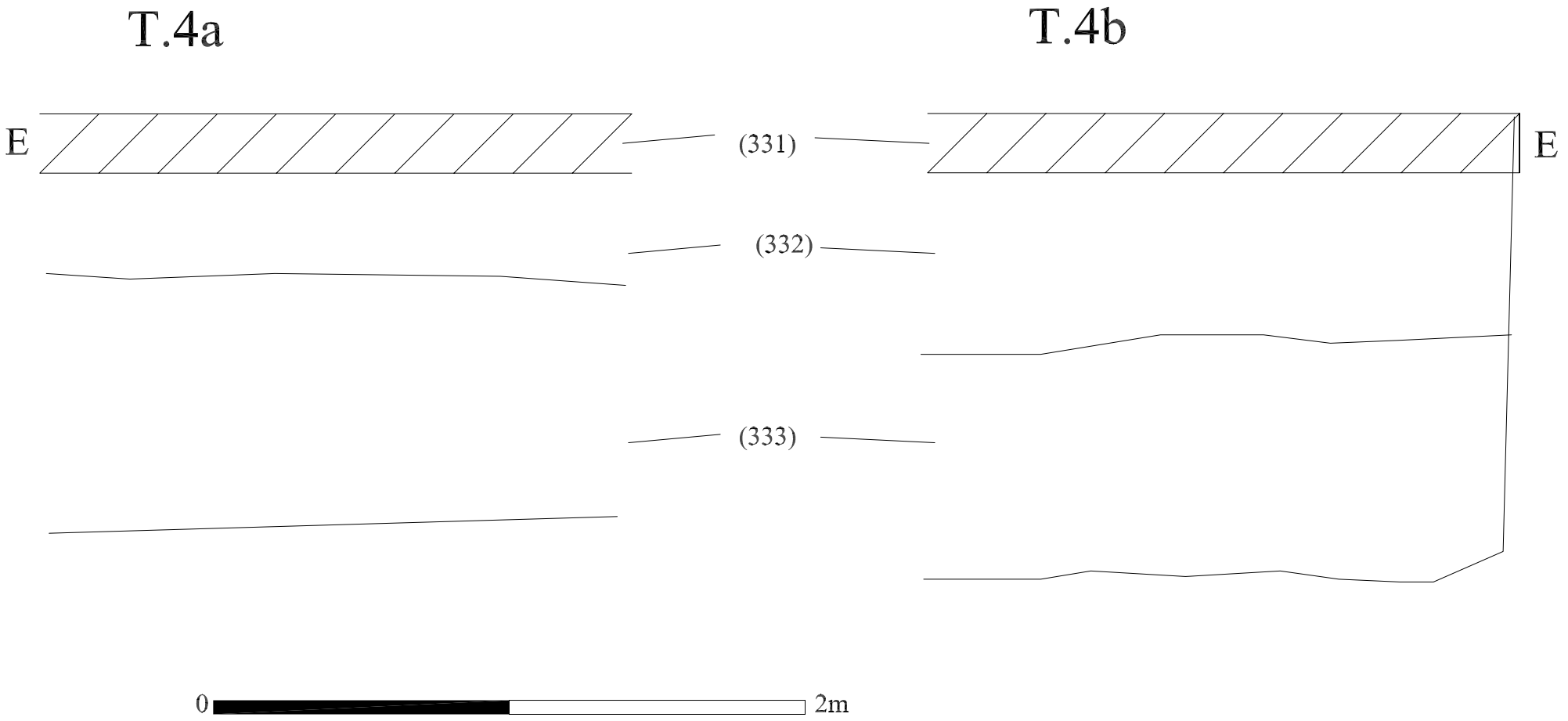

Figure 6 North facing sketch sections of T.4a and T.4b. Scale 1:20

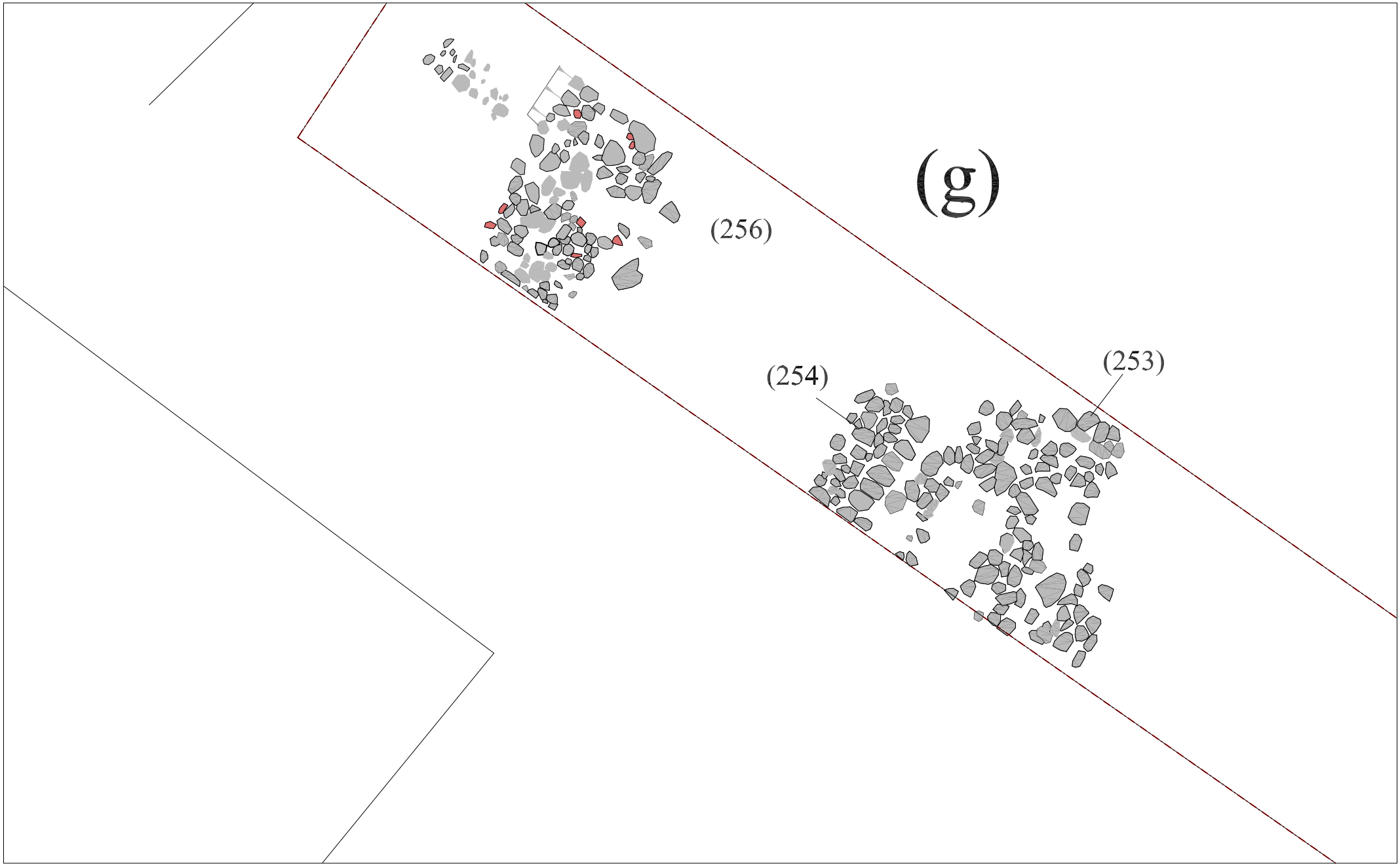

Figure 7 West end of T.5 showing cobble structures. Scale 1:50

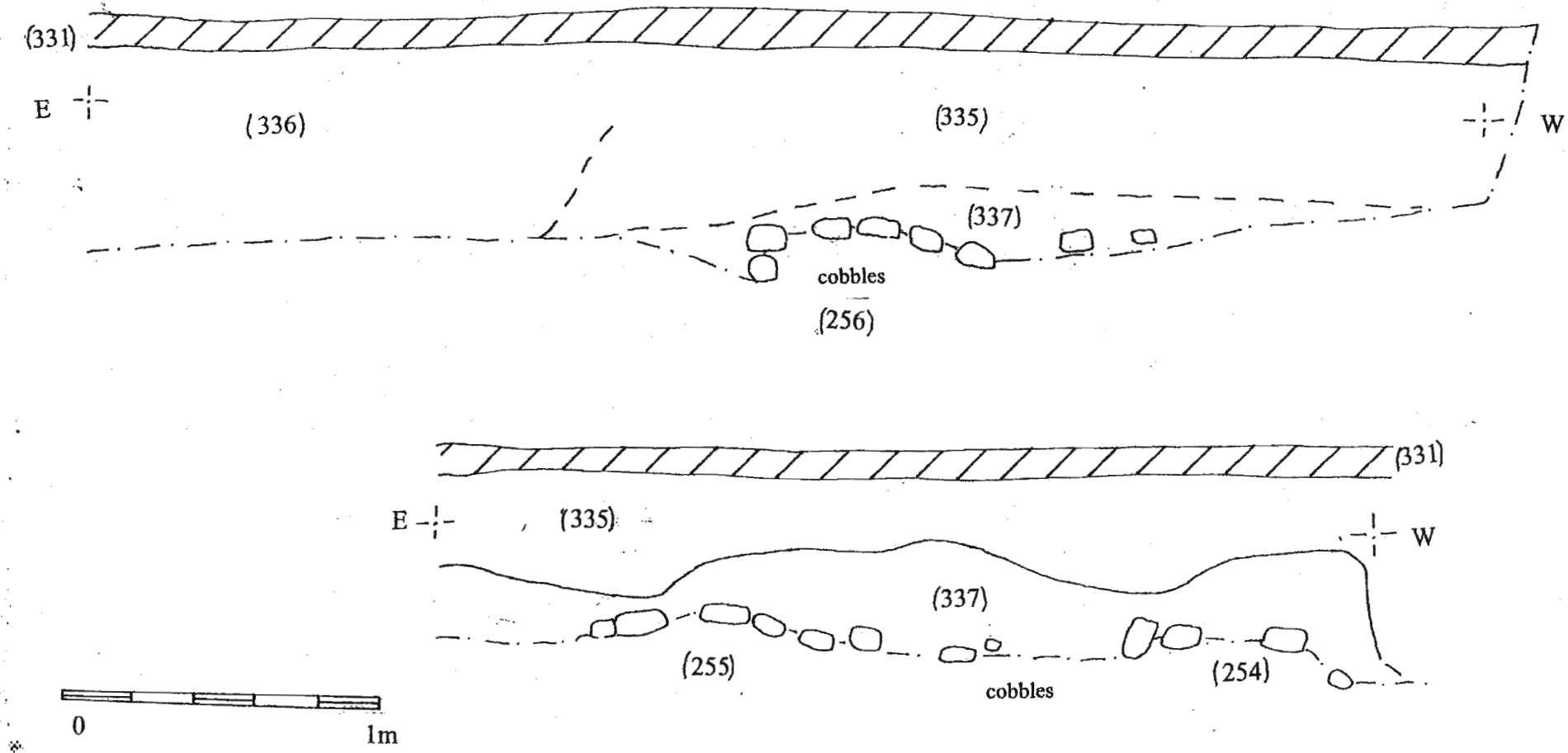

Figure 8 T. 5 North facing section of trench. Scale 1:20

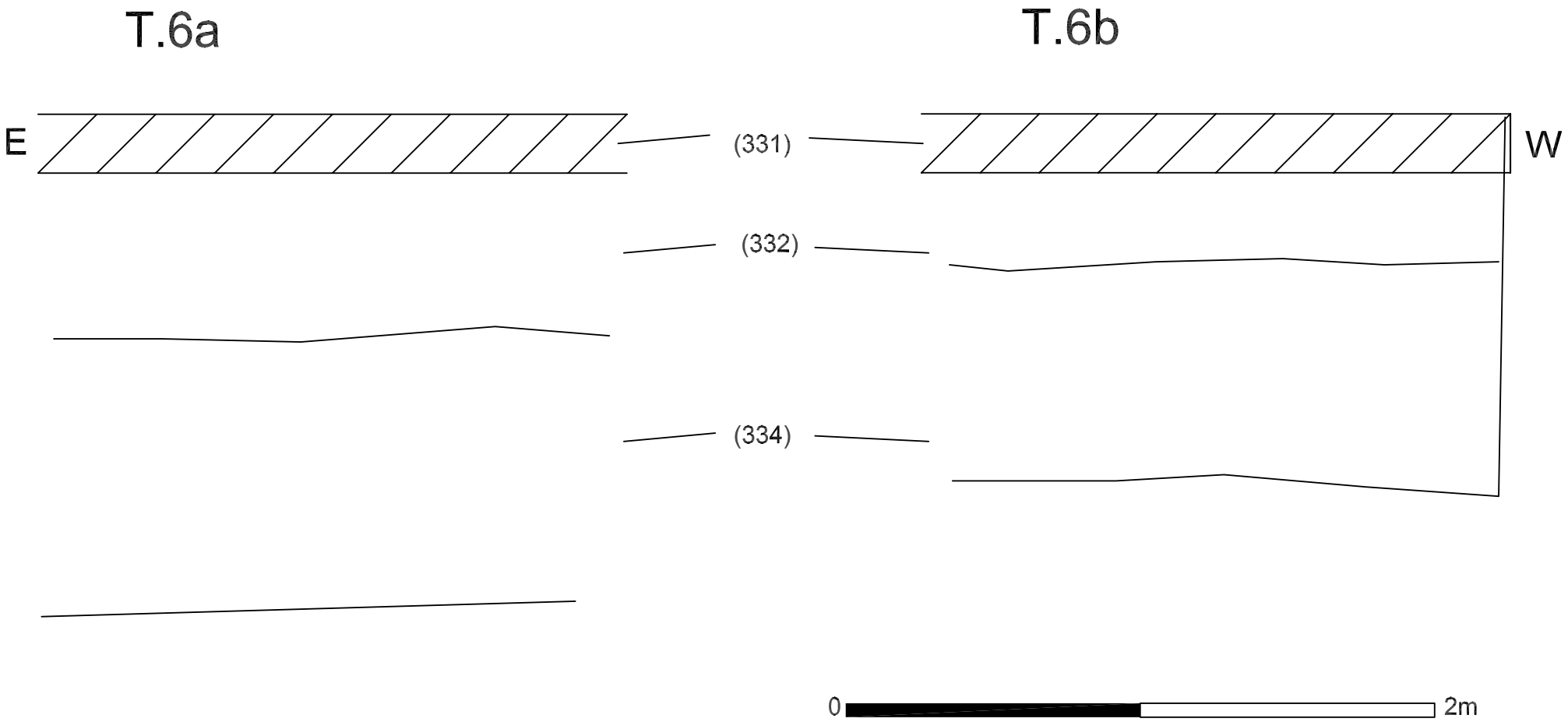

Figure 9 South facing sketch sections of T.6a and T.6b. Scale 1:20

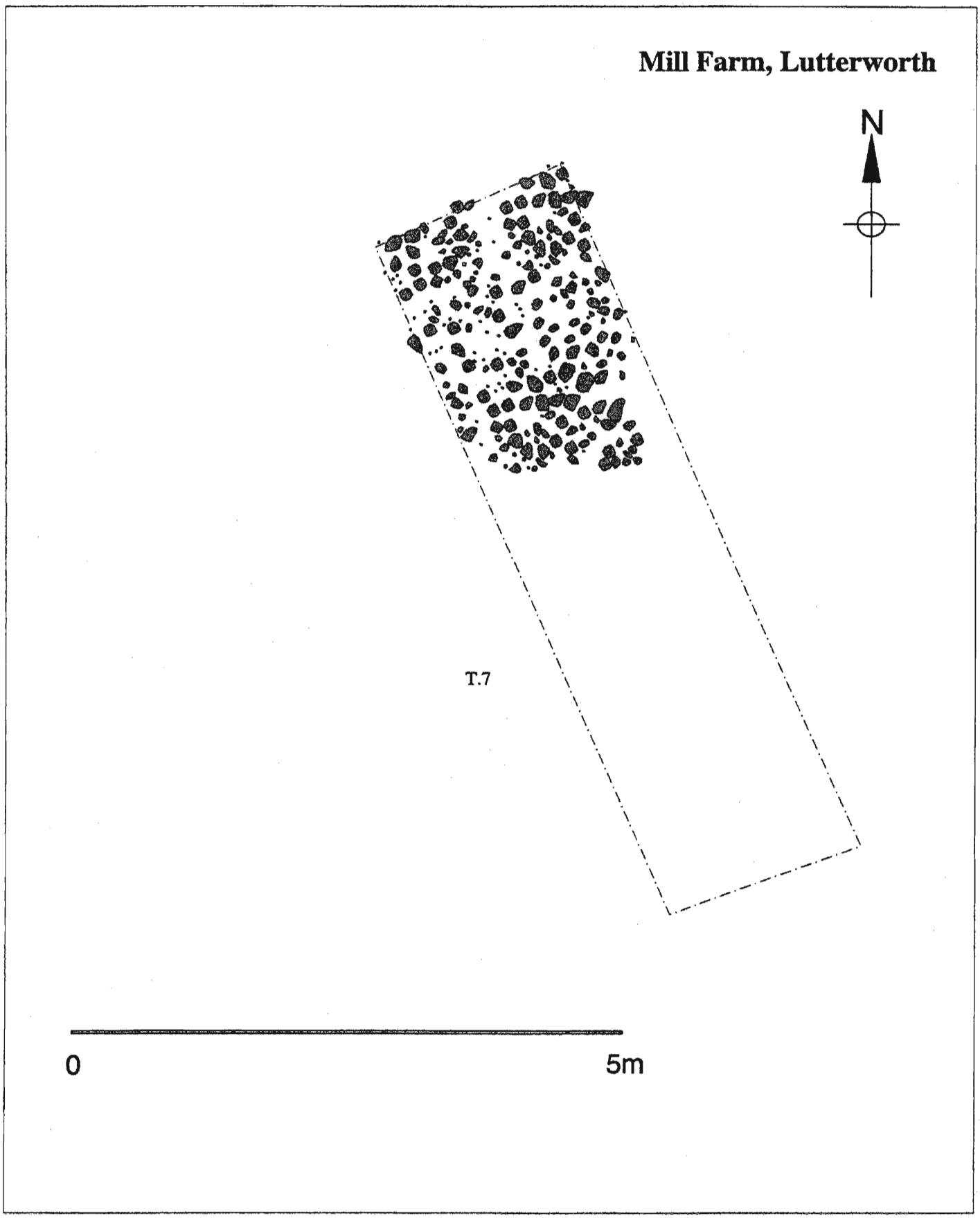

Figure 10. T.7 Plan of trench. Scale 1:50

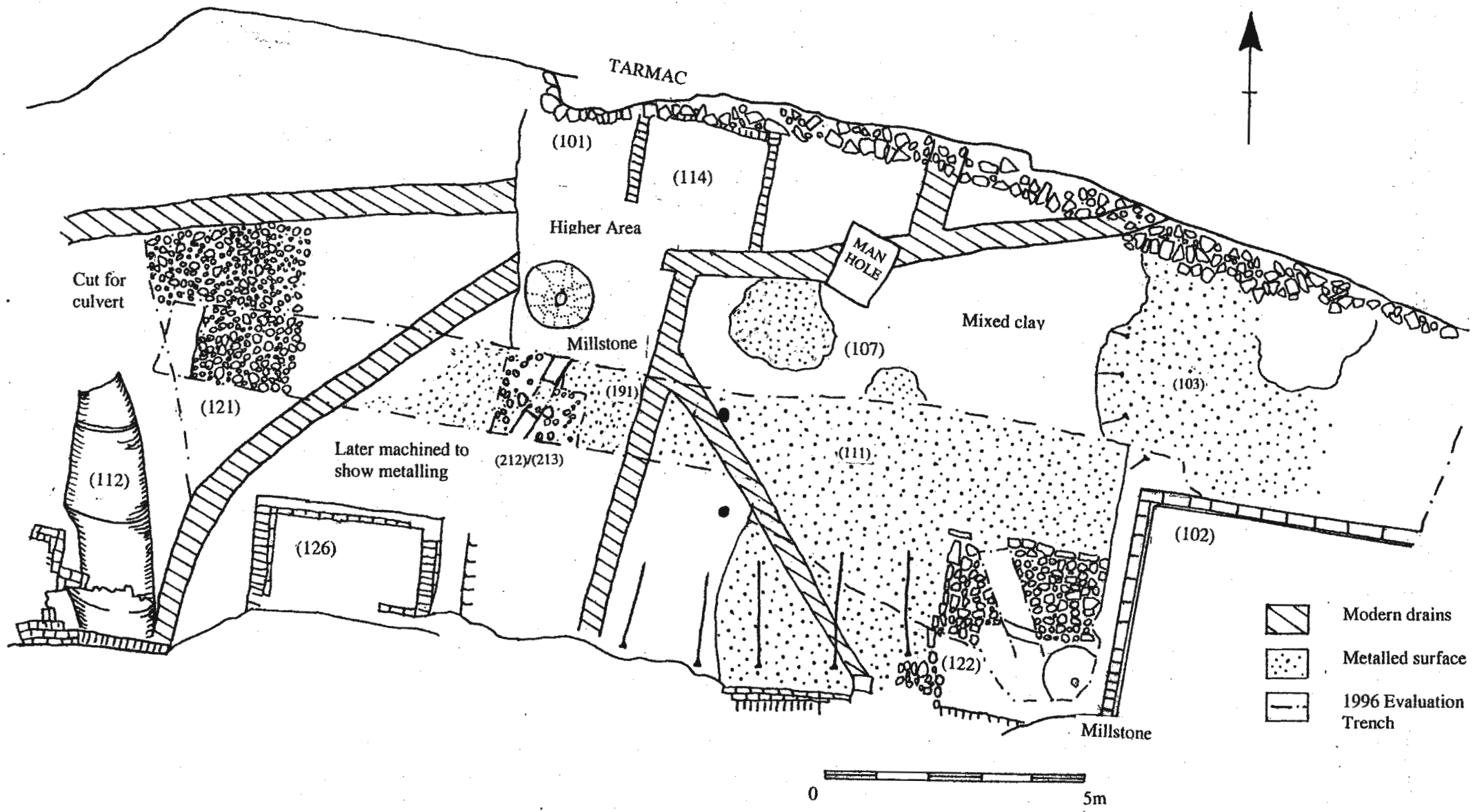

Figure 11 Plan of excavated area 1A. Scale 1:100

Figure 12 Plan of Areas 2A and 2B showing archaeological deposits. Scale 1:200.

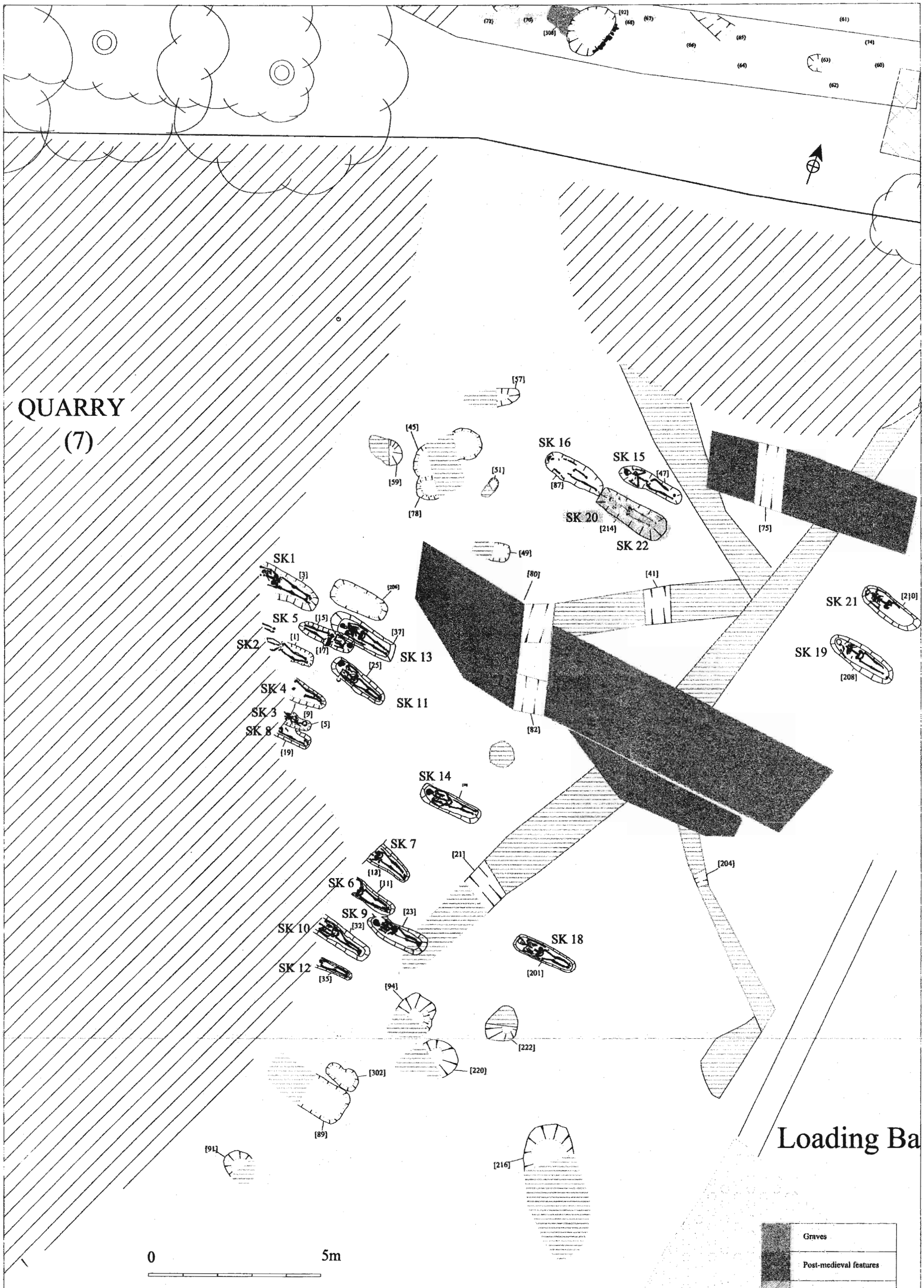

Figure 13 Plan of Area 2A showing archaeological deposits. Scale 1:100.

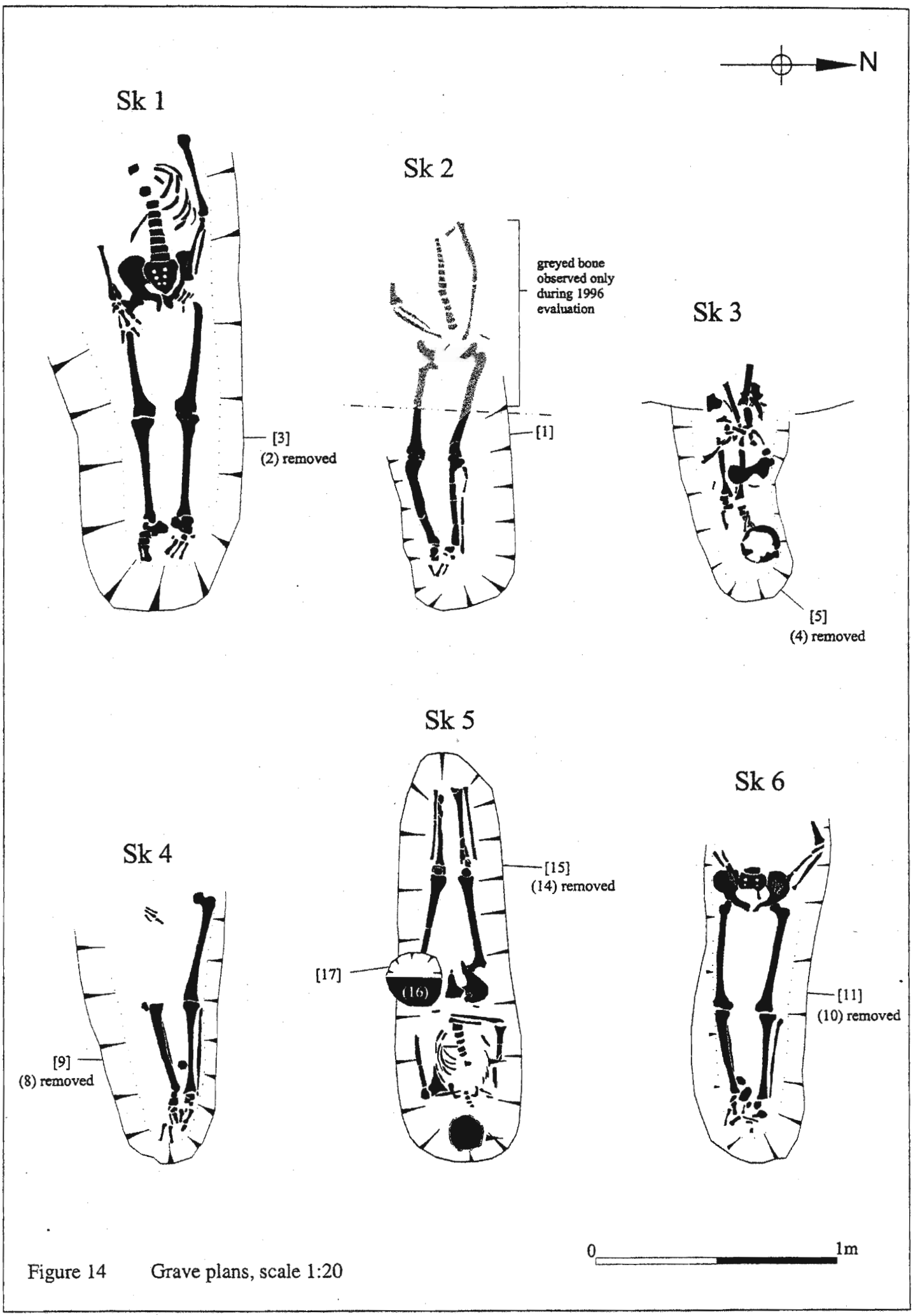

Figure 14 Grave plans, scale 1:20

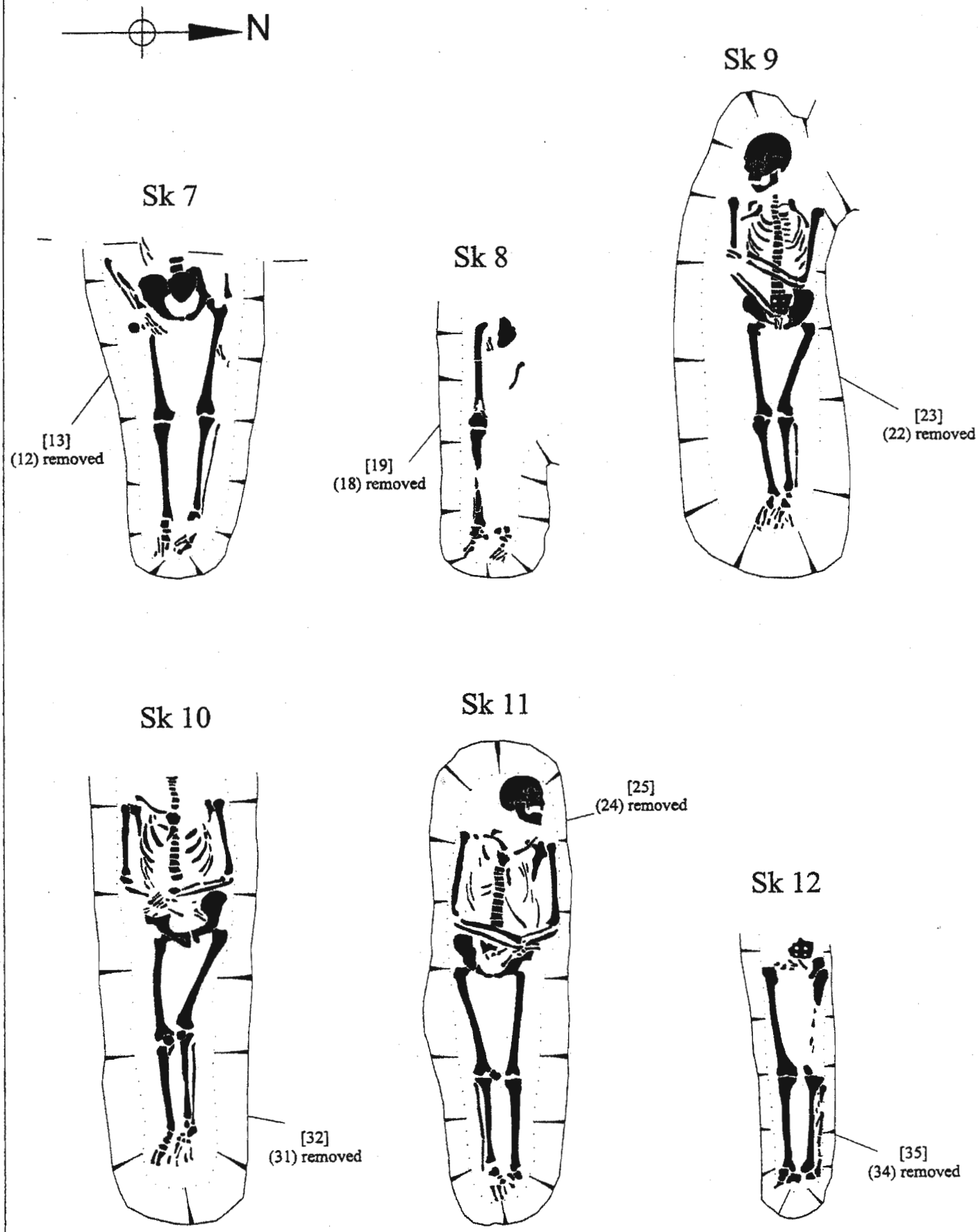

Figure 15 Grave plans, scale 1:20

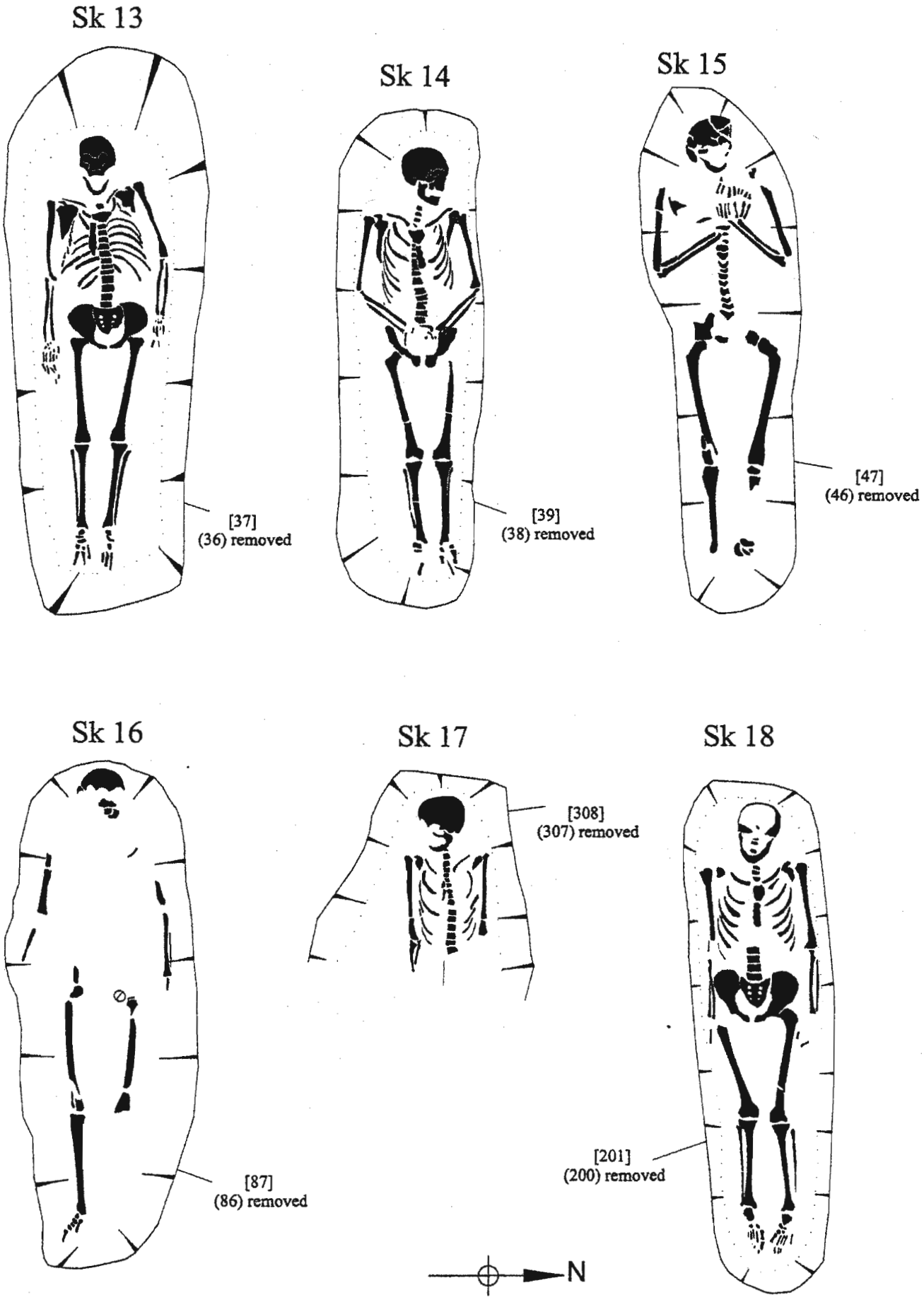

Figure 16 Grave plans, scale 1:20

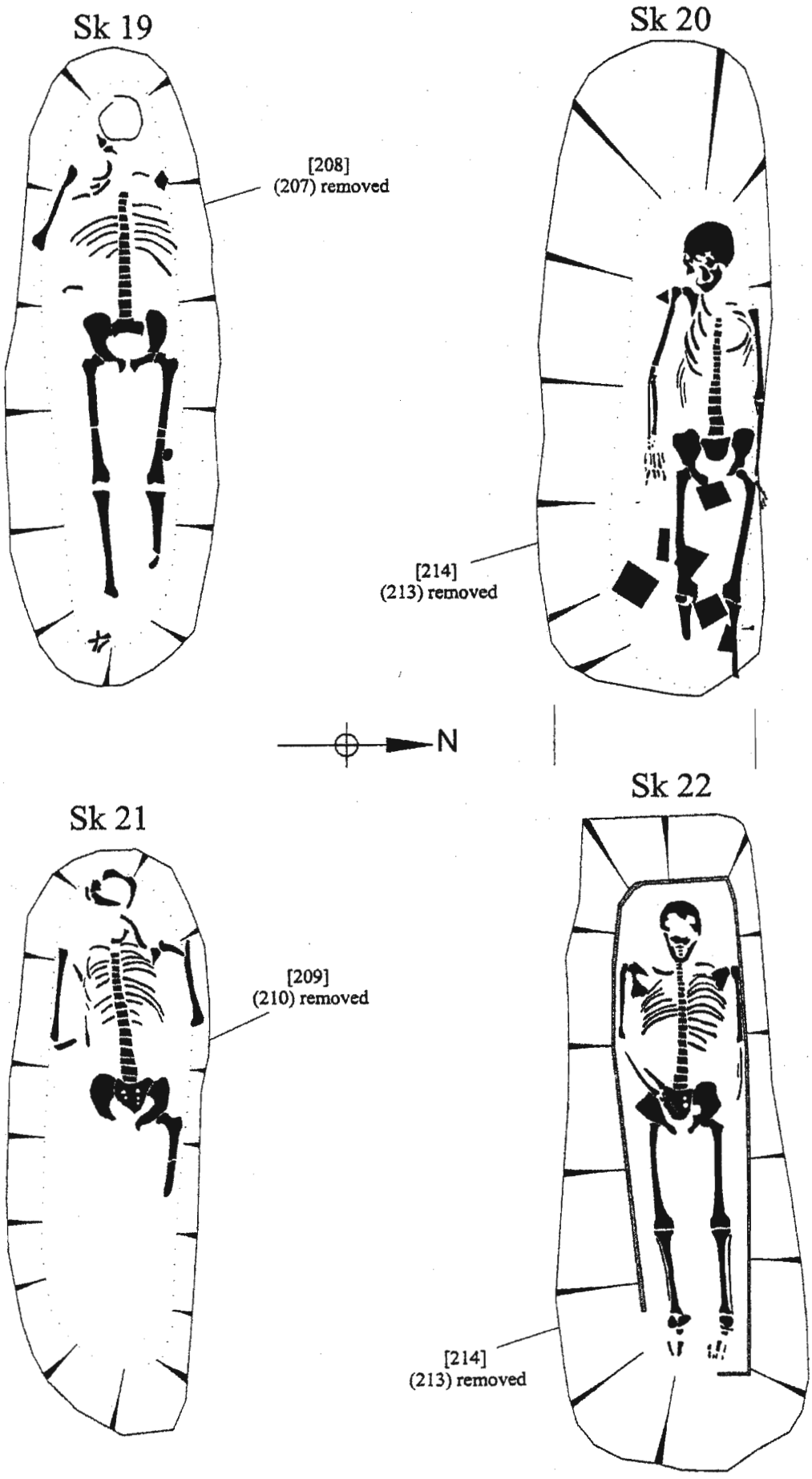

Figure 17 Grave plans, scale 1:20

Figure 18 Detailed plan of cobbled structure. Scale 1:50

Figure 19 Plan of cobbles. Scale 1:50

Plate 1 Photograph of the 19th century Mill buildings looking south. Note the brick culvert and the two millstones either side of the door of the middle building. Date *c.* 1892

Plate 2 19th/20th century Millstone found during the 2001 excavations.

Plate 3 Area 1A looking east. Mixed deposits beneath the metalled surface. Metalled surface (111) lies at the far right.

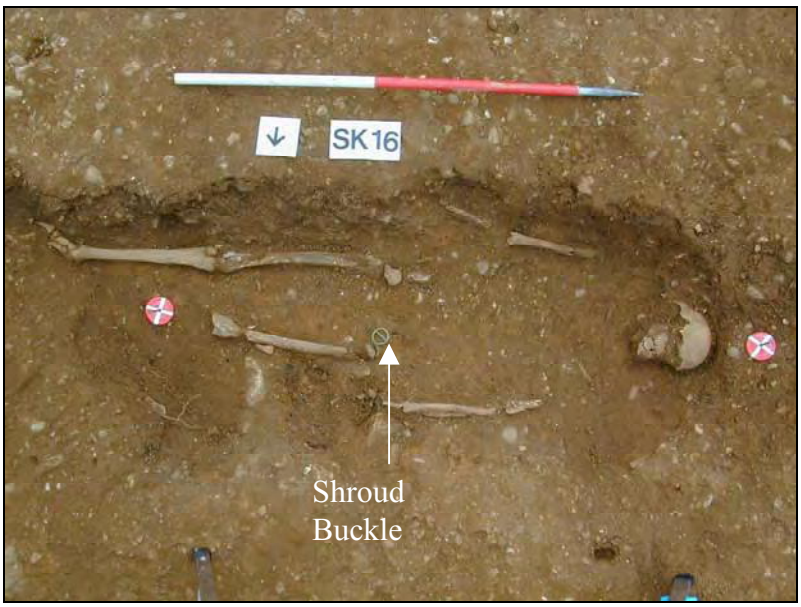

Plate 4: SK16 with shroud buckle lying on left hip.

Plate 5: SK20 with decorated floor tiles in the fill.

Plate 6: SK22 below SK20 with remnants of coffin

Plate 7: West wall of cobble structure (258) showing wall cut

Plate 8: West wall of cobble structure (233) showing faced cobbles.

Plate 9: Section through the raised pathway running north-south. Post-hole (247) is visible behind the ranging pole.

Plate 10:
Cut through the cobbles & wall (43).

Plate 11 Photograph of wall (288) looking west

Plate 12 Ditch (236) looking west

Plate 13 Wall (290) & ditch (321) being excavated