TRIAL EXCAVATIONS

AT

MALMO ROAD, HULL

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SUMMARY

Trial excavations by Humberside Archaeology Unit, commissioned by Hull City Council as part of an archaeological evaluation of plot 105b, Sutton Fields Industrial Estate, recorded features of Romano-British, medieval and post-medieval date. Boundary ditches, postholes, timber slots, pits and a cobbled track, represent buildings, enclosures and associated features from a Romano-British settlement dating from the 2nd century AD to the late 4th or early 5th centuries AD. This has provided further evidence of the density of Romano-British settlement in the lower Hull valley and corroborated theories concerning the existence of a Roman "small town" or linear settlement focussed on the River Hull, at a crossing-point for the Roman road leading east from Brough. Following the end of Romano-British settlement at Malmo Road, there were no signs of occupation on the site until the medieval period. Ditches, pits and structural features, containing pottery assemblages from the 12th to 15th centuries, suggest that the settlement site, presumably a farm, had lain either on the site or close-by. Several features of post-medieval date, including a track and hedge-line, have been linked to Worlds End farm, which occupied the site until the early years of this century.

INTRODUCTION

This report presents the findings of trial excavations by the Humberside Archaeology Unit during May and June 1992 (Site Code MAR 92) on plot 105b, Sutton Fields Industrial Estate, Hull, this being the southern part of the area of land lying between Malmo Road and Narvik Road, centred on National Grid Reference TA 0913 3233 (see Fig. 1). Funding for the work came from the landowners, Hull City Council.

The site lies on the north bank of the River Hull, approximately 1km northwest of Stoneferry and 3km southwest of the village of Sutton. Interest in the site first arose as a result of the chance discovery of quantities of Romano-British and medieval pottery from the upcast of trenches dug alongside the estate roads. In 1990, watching briefs during development of the plots of land to the west of plot 105b, revealed a complex system of Romano-British ditches and features with later medieval intrusions (Tibbles 1990). It was therefore recommended to the landowners, Hull City Council, that they commission geophysical surveys of the remaining undeveloped plots. The surveys indicated the likely existence of settlement features. The survey of plot 105b, commissioned in February 1991 (MAP 1991), revealed a number of potential features extending across the whole site, including the suggestion of a sub-rectangular enclosure in the eastern part of the site with sides in excess of 40 m. In the centre, a number of features, possibly ditches, appeared to intersect, suggesting more than one phase of activity. Because of development interest, it was decided to undertake trial excavations in order to confirm and assess the results of the survey.

HISTORICAL BACKGROUND

While it is clear from these excavations that the area was settled extensively during the Roman and medieval periods, there are no historical records surviving from those periods for the land in question, though medieval occupation of the area can be inferred from later sources.

On the east bank of the River Hull, north of Stoneferry and southwest of Sutton, were three areas referred to as 'Ancient Enclosures' (Blashill 1894). These tracts of land were enclosed well before the 1768 enclosures of the West Carr, and are inferred by Blashill to be of "early medieval" date. The most northerly of these three areas, that containing the present site, lay approximately 300m north of Stoneferry and directly south of and adjoining the southern boundary of the medieval lands known as Nuttles.

Though at present an open, rubbish strewn field, the site was formerly part of a farm known as Worlds End. The farm buildings lay just west of, and partially within, the present site boundaries, and some of the post-medieval features recorded during the excavations could be related to this relatively recent phase of land-use. Cartographic evidence has proved useful in following its history. Information has been taken from five 19th and early 20th century maps of the area: Blashill's map of 1856; Ordnance Survey 1" composite map of 1850; the 1893 Ordnance Survey 6" map; Fryer's 6" map of 1906; and the 1919 Ordnance Survey 6" map. All but the last of these maps show the farm, with buildings situated at the southern end of a track or roadway. The latest map shows only the boundary, consisting of an open ditch, which had run along the eastern side of the track and the farmyard, and this suggests that the farm buildings had been demolished and the area converted to pasture, presumably part of a larger farm nearby. The land was incorporated into the Sutton Fields Industrial Estate in 1983.

PREVIOUS ARCHAEOLOGICAL WORK

Within the immediate vicinity of Malmo Road there have been several finds of pottery, animal bones and features of Romano-British and medieval dates.

In July 1989, a machine-excavated trench, 400m long, was cut to the north of Malmo Road. Examination of the excavated spoil uncovered 28 sherds of 2nd century Romano-British pottery, daub and calcified bone. No features were observed in the trench sections, although the pottery sherds were found within a blue-grey silty clay. At least three vessels are likely to be represented by seven rim sherds, one being hand-made (Sites and Monuments Record No. 12045; reported in Tibbles 1990).

Trenches excavated by Hull City Council along either side of Malmo and Narvik Roads in 1989 produced not only a large assembly of Romano-British pottery but at least 26 separate ditches on various alignments, primarily at the southern end of Narvik Road. The bulk of the pottery recovered was of Romano-British date, ranging from the 2nd to the 4th century AD, whilst the remainder dated from the 13th to the 15th centuries. These discoveries prompted instigation of an archaeological watching brief during construction of the adjacent Orvec factory in Malmo Road (Tibbles 1990). A complex sequence of boundary and irrigation ditches with pits and associated features was recorded, with artefacts indicating that they represented part of a Romano-British settlement occupied from the 2nd to 4th centuries AD. Some evidence of medieval occupation was also recovered. A watching brief on land immediately north of this, however, revealed little structural or artefactual evidence (Tibbles 1991).

During the clearance of the topsoil prior to development on the east side of Narvik Road (Post Office sorting office), the area was examined for archaeological evidence. At least three east-west aligned ditches were found continuing westwards under Narvik Road and eastwards under the remaining spoil heaps. The pottery recovered was primarily post-medieval, with only four medieval sherds (Humberware). A number of 13th-century pottery sherds were found within "black organic matter" immediately to the north of Malmo Road in 1977 (SMR No. 8723).

Slightly further afield, there are two important Romano-British settlement sites close to the River Hull with which parallels can be drawn. Both are situated on the west bank of the river within a relatively short distance of Malmo Road (see Fig. 1). In 1964, large quantities of 2nd-4th century Romano-British pottery were discovered by J Bartlett of Hull Museums during the excavation of a sewage farm at Haworth Hall (TA 0088 3336), approximately 1km north of Malmo Road (Didsbury 1990b). However, no information was collected regarding ditches or other features which may have been cut through by the foundation trenches. At Greylees Avenue (TA 0081 3341), approximately 1.5km north of Malmo Road, two ditches were exposed during building work in 1984. One of these was excavated by D Crowther and P Didsbury, both then at Hull Museums (Crowther and Didsbury 1984). The Roman pottery that was recovered dated from the late 1st century to the 4th century AD. Other finds included animal bone, building materials, including a combed flue tile fragment, a glass bangle and a silver spoon.

THE EXCAVATION

Methodology

The trial excavations were carried out over two and a half weeks in May and June 1992, with a team of seven staff from the Humberside Archaeology Unit. Topsoil was stripped from the trenches by mechanical excavator and the exposed subsoil cleaned by hand to expose the existence of archaeological features. The underlying natural deposits consisted of marine alluvium (clays) into which the features had been cut. Dry weather throughout most of the period on site hampered the identification of features, and their excavation; on exposure to the sun the deposits, which were predominantly clay, became bleached of colour, dried out, and cracked. Occasional showers and spraying eased the problem to some degree, and ultimately all features were successfully recorded.

Nine trenches were opened, labelled 1-9, in positions determined by the results of the geophysical survey or earlier fieldwork. The standard Humberside Archaeology Unit recording procedure was used throughout; each identified feature was allocated a context number with written descriptions recorded on *pro forma* sheets and plans and sections drawn on punched film sheets. Finds recovered from each feature were labelled accordingly and finds of special interest were allocated an individual Recorded Find (RF) number (a full list of RFs appears in APPENDIX). Samples were taken from the fills of features which appeared most likely to contain surviving biological remains, for subsequent analysis (see THE BIOLOGICAL EVIDENCE, below).

The features will be described by trench, with accompanying figures. The dating of pottery from particular features is taken from information supplied by Peter Didsbury, the Unit pottery specialist, who has included a general discussion of the whole assemblage (see *The Pottery*, in THE FINDS).

The records and finds of this excavation will ultimately reside in Hull Museums and Art Galleries.

Trench 1

(Fig. 3)

The most dominant, and possibly one of the earliest, features within the trench was a 3.6m wide and 1.1m deep east-west aligned boundary ditch (152). Sections through the ditch revealed it had a 'U'-shaped profile with a relatively flat base. The lower fills (153 and 154) were predominantly grey silty clays suggesting a natural silting, as opposed to the later fills (70 and 178), clay and ash deposits with high burnt daub contents, which may have derived from deliberate infilling by dumping. Pottery recovered from the fills suggest a 3rd-4th century date.

Within a relatively short period the infilled ditch was cut by a shallow northeast-southwest aligned ditch 121 (fill 122) at the western end of the trench. Following disuse of this ditch, it was cut into by a large rectangular flat bottomed pit 102, measuring 1.2m by 1.0m, and 0.48m deep, of unknown function. Its fills (103 and 106) were predominantly silty clay and sand, respectively. It is possible that the pit may be associated with a postpit (123), 0.33m wide and 0.22m deep, on its northern edge. This feature still contained

its original post-packing surrounding a circular, 'V'-profiled, post-socket (126/130). The posthole cut through the fills of both earlier ditches and though the post-packing was cut by a later ditch, the post could have remained in use.

In the later 4th century, a shallow ditch (25) formed a re-establishment of the original boundary ditch (152), running along the northern edge of the earlier feature (Plate 1). The western end of this latest ditch terminated in a rectangular 'nipple' shape (see Plate 5), whereas the eastern end was continued beyond the eastern excavation edge. Sections through the ditch showed shallow sides and a nearly flat base. The fill (26) comprised a fairly homogenous silty clay throughout the ditch, with an occasional deliberate dump of black ash and daub fragments (204), identified as tipped from the northern side of the ditch. One of these fragments of daub retained the impression of a rectangular timber, reflecting its original use as a structural element. A vertical sided, flat bottomed slot (134), 0.22m wide and 0.30m deep, was recorded in the base of the ditch at a point approximately 6m from its western end. It probably continued further east and west, and could represent the position of a beam which had provided foundation for a timber structure such as a bridge across the ditch, or a palisade or fence.

Shallow posthole 71, 0.42m by 0.23m, and 0.12m deep, lay on the southern edge of ditch 25. It may have been associated with posthole 130 and/or a series of postholes (183, 187 & 189) visible only in the western section face. These may have formed a timber structure, perhaps a fence associated with the ditch.

A 0.2m-deep layer of mid brown loamy clay, 30, ran the full length of the east-west arm of the trench and sealed all the above Romano-British features. It did not extend any great distance up the north-south arm of the trench, and was probably confined to the slightly lower area of ground above the large east-west ditches. It is not clear whether this material was deliberately dumped or had accumulated naturally, though dating of pottery recovered from it suggests that the layer was deposited after *c.*330-340 AD.

At the eastern end of the east-west trench arm, a single northeast-southwest aligned ditch (28) ran diagonally across the trench, cutting through layer 30, and the earlier ditches 152 and 25 (Plate 3). Sections showed that it was 2.10m wide, 0.93m deep and had a 'U'-shaped profile. The fill (29) was a homogenous grey silty clay, and mid-4th century Romano-British and 12th-15th century medieval pottery were present, along with animal bone and shell.

The north-south trench arm contained a network of ditches, gullies, slots and pits. At the northern end of the trench, two irregularly-shaped pits (35 and 51), and a northwest-southeast aligned gully (33), intersected. Pit 35 contained pottery of mid-3rd century date, whilst gully 33 and pit 51 contained pottery later than mid-4th century in date.

Slots or gullies 64 and 66 were two parallel, near identical, linear features, each east-west aligned and truncated at their western ends by a later pit. They measured 1.02m by 0.24m and 0.09m deep, and 1.20m by 0.25m and 0.08m deep, respectively. Animal bone and undatable Romano-British pottery were recovered from their fills. Both features may be contemporary with gully 33 as they ran on similar alignments.

South of these features were two shallow, east-west aligned, ditches or gullies, 128 and 20. Feature 20 contained a number of articulated animal skeletons within a grey brown loamy fill (21), along with Romano-British pottery of late

4th century date. It was cut on its northwestern edge by a later pit. On its southern edge a second shallow linear feature, 128, had been cut on the same alignment, creating a shallow ridge between the two features. No dating evidence was retrieved from its fill (129).

Two pits of medieval date were recorded, each cutting earlier, Romano-British, features. Pit 86 was a vertical sided 1.24m deep, flat bottomed pit. Its overall exposed width was 1.69m, and it continued beyond the western excavation edge. The fill (87) was a homogenous dark grey silty-clay containing 12-15th century medieval pottery and a few late 4th century Romano-British sherds, incorporated when earlier features had been disturbed. Pit 52, a short distance to the north, was the smaller of the two pits, measuring 0.95m in diameter and 0.70m deep (Plate 2). The vertical sides led to a nearly flat base, cutting two earlier features (64 and 66) on its eastern side. The latest pottery recovered from its fill was of 12th century date, with a few 4th century sherds.

Trench 2

(Fig. 4)

The earliest features exposed within this trench, to judge by the pottery recovered from their fills, were of late 2nd or 3rd century date, while the latest dated to the 12-15th centuries.

The southernmost cut feature, ditch 68, ran across the north-south arm of the trench, continuing beyond both section edges. It was 2.15m wide and 0.5m deep, with a shallow 'U'-shaped profile and a flat base. A homogenous fill of greenish, grey-brown silty clay (69) would indicate that the ditch filled by natural silting, as very little occupational debris was recovered. Pottery dating suggests a late 2nd or 3rd century date.

North of ditch 68 was an east-west aligned feature (99) with shallow sloping sides and a flat base, 0.44m wide and 0.10m deep. It continued beyond the western section edge. Pottery recovered from its fill (100) was of possible 2nd-early 3rd century date. Sherds recovered from this feature and from features 6 and 13 (see below) were identified as having come from the same vessel; the other two features were later in date, and had presumably incorporated early material following the disturbance of earlier features. A short distance further north was shallow gully 57, 3.9m long, 0.46m wide and 0.15m deep. It extended west from the eastern section edge, terminating in a rounded end. Burnt clay and charcoal deposits within its clay fill (58) may suggest that the feature had originally contained structural elements of a building destroyed by fire. A large rim sherd of a carinated jar suggests a late 2nd or early 3rd century date.

Cutting feature 57 was a 0.44m wide, and 0.16m deep, gully-like feature (108), which projected into the trench for approximately 0.87m. Its edges were slightly irregular in shape, and it had gently sloping sides and a flat base. Its clay fill (109) contained pottery of late 2nd or early 3rd century date.

An irregularly-shaped pit, 59, located in the northeastern corner of the trench, was difficult to define due to the dryness of the soil. It was approximately 0.9m in diameter and 0.98m deep. The fill, 60, was a hard grey clay which produced pottery of 2nd to early 3rd century date. It is possible, therefore, that this feature was contemporary with 57, 68 and 108.

To the west of feature 57, a similar shallow gully or slot (55) projected 1.8m into the trench on an northeast-southwest alignment. Its overall width was 0.64m and it had a depth of 0.12m. The northern butt end was only roughly defined due to the dryness of the ground. A hard grey clay fill (56) produced seven sherds of pottery dating from the 2nd to the mid/late 4th century.

At the western end of the trench was a north-south aligned ditch, with a 'V'-shaped profile (6), 2m wide and 0.8m deep. The fill (7), a grey-brown loam, may have represented a combination of naturally deposited material and occupational debris. Pottery dating suggests a date after AD 330/340 for its infilling.

In the northwest corner of the trench, a shallow east-west slot 119 cut into the fill of ditch 6, and extended west beyond the section face. It was at least 0.5m long by 0.44m wide and was 0.28m deep. A single undated sherd of Romano-British pottery was recovered from its fill (120), along with fragments of animal bone.

South of 119, and adjacent to 6, was a feature 117. Its western and southern limits lay outside of the excavation area, and though it had been badly disturbed by animal activity, it was possible to make out the remains of a slightly rounded base and vertical sides. It measured at least 0.75m long by at least 0.48m wide and was 0.28m deep. Animal bone was recovered from the fill, but no pottery.

At the southern end of the trench was 54, a 0.15m-thick layer of cobbles set in clay (Plate 4). This was approximately 3m wide and ran northeast-southwest across the full width of the trench. This feature has been interpreted as a trackway and it was observed again some distance to the east where trenches dug to raise mounds around the boundaries of the field had disturbed a similar deposit of stones. A representative sample of the large smooth cobbles of varying size which constituted the trackway were retained for petrological identification. They are part of a suite of stone types common to the Quaternary till deposits of the Holderness coast and NE Lincolnshire (M Pedley, *pers. comm.*). It is possible that such cobbles may have been collected "locally"; alternatively they may have arrived as ships' ballast and been put to a secondary use as road metalling. Pottery later than AD 330/40, and quantities of animal bone, were recovered from within the clay surrounding the stones. Although the track does not share an alignment with any features from this trench, it does align with the major boundary ditch 152, and its recut 25, in Trench 1, suggesting a degree of contemporaneity. It is interesting to note that the trackway lay between the river and what is assumed to have been the southern boundary ditch of the settlement.

A layer of greenish-grey silty clay (49), 0.18m-0.20m thick, covered most of the north-south trench arm, sealing ditch 68 and the trackway. It contained animal bone, tile and pottery of mid to late 4th century date. This layer was in turn sealed by another, 50, a firm grey-brown silty clay, 0.15m thick. It extended beyond the southern end of the trench but ended just beyond the approximate northern edge of ditch 69. Tile, animal bone and 4th-century pottery were recovered from it. A single sherd of 13th-14th century Coarse Sandy ware from within this layer can safely be regarded as intrusive from the topsoil which directly overlay the layer in several places.

A group of features of medieval date lay east of ditch 6 and west of slot 55. The most prominent was a vertically-sided ditch (13), 1.80m wide and 0.40m deep, extending beyond the north and south trench edges. Its base was

relatively flat with slight undulations and depressions and it contained a light grey clay (14). Pottery from the fill was of 12th-14th century date, with some residual Romano-British wares, and fragments of animal bone was also recovered. A circular pit (37), 0.75m in diameter and 0.40m deep, had been cut into fill 14. The sides were almost vertical, joining a flat base and the fill (38) was a dark brown silty clay with heavily burnt clay and charcoal inclusions. The latest pottery recovered was of 13th-15th century date.

Immediately west of feature 13 were two rectangular features, 3 and 15. They were aligned NNE-SSW, and continued beyond the north, and south, trench edges, respectively. Slot 3 had near vertical sides and a flat, irregular base. Its maximum recorded dimensions were 1.6m in length, 0.73m wide and 0.32m deep. The fill (4) was a distinctive dark grey-brown humic material with daub and burnt clay inclusions which contained 12th-14th century medieval pottery and the usual residual Romano-British wares. The southerly of the two slots, 15, was 0.8m long, 0.5m wide and 0.45m deep, and had vertical sides and a flat base. The fill (16) was near identical to fill 4, but did not contain any dating evidence. The profile and linearity of these two features makes it likely that they had originally contained structural elements of some sort, perhaps beams supporting the timber uprights of a building or boundary marker.

These medieval features were sealed by a 0.16m deep layer of dark grey silty clay (12) containing flints, pebbles, burnt clay and pottery. The pottery recovered was predominantly of a 14th-15th century date.

Trench 3

(Fig. 5)

This trench was located in an area which was apparently free of geophysical anomalies, to determine if it was, in fact, devoid of archaeological features. Two features were observed within the trench, cutting into the natural clays.

At the eastern end of the trench, ditch 84 ran diagonally across the trench. It was 0.75m wide and 0.36m deep, with a 'U'-shaped profile. Pottery of 4th-century date was recovered from the silty fill (85), along with animal bone and a large fragment of combed flue tile.

A 1.15m-wide shallow linear feature (82), 0.16m deep, ran the length of the trench, continuing beyond the eastern and western section edges. The dark grey-black fill (83) contained 13-14th century medieval pottery and fragments of modern tile. A continuation of this feature was observed in Trench 6 to the west, and it is suggested that it marks the line of a relatively modern hedge-line associated with the occupation of the nearby Worlds End farm.

Trench 4

(Fig. 5)

The earliest layer in this trench was a light brown clay (114), which ran along the full length of the trench, and which was probably natural marine alluvium.

At the southern end of the trench were the remains of two parallel low clay banks (115 and 116). Both had gently sloping sides, were approximately 0.8m wide, and survived to a height of approximately 0.3m. They were roughly NW-SE aligned and, having been formed from clay 114, were totally devoid of finds. A silty grey clay, 113, had collected on the northern side of the banks to a depth of 0.20m, and was possibly the result of flooding. Animal bone, Romano-British and 12th-15th century pottery was recovered from this layer.

Directly above 113, and extending across the whole trench, was a silty clay layer, 0.25m thick (112). It contained 13th-15th century pottery, animal bone and baked clay fragments. Above this, at 0.3m below the present ground surface, was trackway 111, 0.84m wide, with a maximum thickness of 0.18m at its centre, running across the trench on a roughly east-west alignment. It was constructed from relatively modern building debris and included chalk, coal and pantile fragments. The northwestern continuation of the track was visible in the site perimeter trenches to the north of Trench 6. The trackway was on the same alignment as the hedge line in Trenches 3 and 6 is therefore assumed to be contemporary.

In the south-east corner of the trench, a deep *sondage* was excavated by machine to a depth of 2.2m (0.96m OD) below the present ground surface, to examine the depth and nature of the 'natural' clay 114. It was found to overlie a black organic silty material (140), which was at least 0.60m deep, presumed to represent river silting of some antiquity. The sondage lay approximately 37m north of the present river channel.

Trench 5

(Fig. 5)

This trench was positioned to locate and assess a north-south aligned linear anomaly on the geophysical survey, though other features were encountered.

The earliest feature was ditch 163. It was cut to east and west by later features and was at least 1.6m wide and 0.4m deep, though most of its southern side lay outside of the trench. The north side sloped relatively steeply down to a flat base. The brown clay fill (162) contained pottery of a 2nd or 3rd century date.

A narrow curving gully (146) cut into the fill of ditch 163 along its northern edge; it ran on a similar alignment, and was cut by the same features to east and west. It was 0.4m wide and 0.2m deep, with 45° sloping sides merging into a rounded base. Fill 147 was a dark grey-brown-black organic loam with evenly distributed inclusions of bone, burnt clay, charcoal and pottery. Pottery recovered included sherds which suggest a 4th century date.

Cutting the western ends of the above two features, was feature 10. Though only a 3.8m length of one side was observed running next to the southern edge of the trench, it is assumed to have been another ditch, at least 1m wide. Maximum depth within the trench was 0.12m, though it appeared to deepened markedly further south. Pottery recovered from the fill (11) was at least 3rd century in date.

At the eastern end of the trench, a 3m wide and 0.6m deep ditch (148), ran the full width of the trench, and this is assumed to have been the feature detected by geophysical survey. Its sides were relatively steep, sloping to a fairly even base. No dating evidence or occupation debris was recovered from its grey-brown silty clay fill (149), implying that the ditch had been allowed to fill up naturally rather than through deliberate infilling. It post-dated ditch 146, and must therefore be of at least 4th century date.

A discontinuous layer of dark brown-grey sandy clay (32) extended over much of the trench, sealing most of the above features, though it did not extend sufficiently far east to have a relationship with ditch 148. It was similar in character to layer 30 in Trench 1, and pottery recovered suggests a date post *c.*AD 330/340.

Trench 6

(Fig. 6)

This trench lay west of the area covered by the geophysical survey, and was positioned with the intention of further exposing features which had first been observed in the perimeter trenches.

Ditch 9 ran roughly east-west across the trench at its northern end, and may represent a continuation of a major ditch recorded during a watching brief on the west side of Malmo Road (Tibbles 1990). A 2.1m length was recorded, 1.6m wide and 0.75m deep, with a 'U'-shaped profile. The lower fills (23) consisted of silty clays whilst one of the upper fills (8) consisted of a greenish-yellow gritty material, possibly an industrial waste, which appeared thicker on the southern side of the ditch suggesting that the material had been dumped from that direction. Mid 3rd century Romano-British pottery and animal bone was retrieved from the fills.

Approximately 0.5m to the south, a second ditch (78) ran across the trench on a WNW-ESE alignment. The ditch was 'U'-shaped in profile, 1.7m wide and 0.6m deep, containing three distinctive fills. The lowest fill (101) was a 0.18m deep layer of grey-black, ashy silt containing charcoal, burnt clay, slag, animal bone and pottery of 2nd to early 3rd century date. Sealing this was a 0.35m deep layer of orange-grey silty clay (206), which contained no dating evidence. The upper fill (77) was a yellowish-green ashy material, similar to 8 (fill of ditch 9), with large amounts of burnt clay and slag. Pottery recovered was of late 3rd to early 4th century date. Pit 47 cut into the fill of ditch 78. It was irregular in shape, measuring 0.5m in width and 0.3m in depth. The sides sloped gently to an undulating base. No dating evidence was retrieved from its brown-grey clay fill (48).

Feature 143 lay in the south-east corner of the trench. Only one side lay within the excavated area trench was partially visible, and it was not clear if this was a linear feature, such as a ditch, or a pit. Maximum recorded dimensions were as follows: 1.50m long, 0.7m wide and 0.55m deep. The base of the feature was not observed and the single side sloped fairly gently. The fill (144) was a dark brown ashy clay containing a high percentage of mortar, charcoal, chalk and possible brick fragments. Only two sherds of pottery were recovered, dating from the 3rd or 4th century.

Cutting the southern edge of ditch 9, and the northern edge of pit 47, was ditch 45, 1.9m wide and 0.8m deep, running east-west across the trench. It had near vertical sides and a flat base. The lowest fill (61) was a 0.25m deep layer of brown clay mixed with grey silty clay, representing natural clay which had slipped or slumped back into the ditch soon after its excavation, in combination with occupation deposits. Animal bone, medieval pottery of 14th/15th century date, and residual 2nd/3rd Romano-British pottery, were recovered. The upper fill (46) was a grey-brown silty clay containing numerous shells and animal bone. Pottery recovered was predominantly of 14th or 15th century date.

Feature 79 was judged to be the latest in the trench. This shallow, linear feature was 1.5m wide and 0.17m deep, with sides which sloped gradually into an uneven base. The fill (80), a brown sandy clay, was found to contain 18 sherds of 3rd century Romano-British pottery, though this was in company with relatively modern brick fragments; the pottery presumably derived from the disturbance of adjacent Romano-British features. The form, alignment and material indicates that this was the western continuation of the feature interpreted as a hedge-line in Trench 3.

Trench 7

(Fig. 6)

This trench was positioned in the north-west corner of the site with the aim of intercepting a large linear anomaly on the geophysical survey. A series of Romano-British dumps, cut by a later medieval ditch at the eastern end of the trench, were recorded.

Overlying the natural clay was a 0.20m deep layer of brown-grey silty clay with lenses of dark grey black silty clay (151). Animal bone, oyster shell, and late 2nd to 3rd century pottery, were recovered from within it. Layer 90 sealed 151 and covered the western area of the trench to a depth of 0.25m. It comprised a firm orange-brown clay containing animal bone, chalk pebbles and pottery of at least 4th century date. This was in turn overlain by a similar material, a 0.30m deep layer of orange-brown clay (63), and in places the two deposits were not distinguishable. Layer 63 contained pottery of late 2nd or early 3rd century date. While the earliest layer (151) might represent occupation debris, it is more likely that all three layers are part of a single episode of dumping carried out some time in the 4th century, to make-up and level the ground, utilising material derived from various sources, and therefore incorporating both earlier and contemporary dating material.

At the eastern end of the trench, a 2.70m wide and 0.75m deep ditch (205) cut through these Romano-British dumps. The fill, a grey-brown silty clay (62), contained 12th-15th century pottery sherds, and brick and tile fragments. The earliest Romano-British deposit (151) appears to have slumped down the side of this later ditch shortly after it had been dug, presumably because this earlier material was less compact than the overlying clays. Ditch 205 is assumed to be the feature detected by the geophysical survey.

Trench 8

(Fig. 7)

This trench was positioned to ascertain the form and alignment of ditches observed in the perimeter trenches at the southern end of Narvik Road, two years previously (Tibbles 1990).

No cut features were, however, observed, with the exception of a modern land drain (94) and a north-south aligned, 0.16m wide, square-sectioned, linear feature (92) running parallel to it. A similar feature was observed during the watching brief to the west of Malmo Road and was probably of relatively modern origin.

The surface of the underlying clay exhibited clear variations, and a section was cut by machine to ascertain if any of these variations were anthropogenic in origin. The section revealed that a light grey/brown clay (96) was overlain by a chalk-flecked brown clay (91) which merged into a pure brown clay (93), but all these deposits were apparently natural in origin. A further distinction, at first taken to mark an archaeological feature, and consequently assigned a context number, was 98, a pure grey clay, though this was found to be another natural variation. A small amount of pottery, the latest of which was 12th or 13th century in date, was recovered from the interface between topsoil and the clays.

Trench 9

(Fig. 7)

Positioned in an area where no geophysical anomalies were particularly clear, this trench revealed several intercutting ditches of Romano-British and medieval dates.

The easternmost ditch (136) was 'V'-shaped in profile, at least 2.35m wide and 0.56m deep. Within the grey-brown sandy clay fill (137) was a single mortaria sherd of possible 3rd century date.

Immediately to the west, and cutting the western edge of ditch 136, was a steep-sided ditch with a rounded base (138). Its overall width was 1.32m with a depth of 0.4m. A rectangular stake-hole, 0.04m wide and 0.1m deep, cut into the natural clay close to the centre of the base; this may have held wattle fencing or a stake which retained a plank to reinforce the ditch side. Presumably following its disuse, the ditch was the reciplent of domestic rubbish from a nearby settlement during the 12th or 13th centuries; the grey silty clay fill (139), with much charcoal, contained large sherds of pottery dating from the second half of the 12th, and into the 13th, centuries, including fragments of cooking pots and two jugs.

At the western end of the trench, a shallow ditch (157), 'U'-shaped in profile and at least 1.40m wide and 0.48m deep, continued beyond the western excavation edge. It contained a fill of orange-brown clay (158). Its eastern side was cut by a narrower feature, 159, 0.48m wide and 0.27m deep, with steeply sloping sides and a near flat base. Its fill was a light brown clay (160). Neither feature contained dating evidence, though both were earlier than ditch 138.

THE FINDS

The Pottery

Peter Didsbury

Just over 2000 sherds of pottery, weighing some 30.6 kgs, were recovered from the excavations, approximately 75% of the total coming from stratified contexts. A detailed quantification of the material is held in the site archive, which also contains a descriptive assessment of the pottery types found in each context, with their approximate dates.

The majority of pottery from stratified contexts dates to the Romano-British period, more specifically to the (later) 3rd and 4th centuries AD. There are also valuable groups which probably indicate 12th-century occupation nearby, as much as a century and a half before the Edwardian foundation of the present city of Hull. Unstratified pottery points to considerable activity resulting in ceramic deposition in the 13th to 15th centuries, but little in the post-medieval and modern periods. The reasons for this may be connected with changes in the local agricultural regime.

Much of the Roman pottery may be attributed to the late industries of East Yorkshire, particularly that which flourished in the Holme on Spalding Moor area from the mid 3rd century onwards. Its products would have arrived on site either by road, perhaps via the regional administrative capital and market at Brough, or by water transport using the River Humber. Pottery was also obtained from the more distant production centres, particularly from Crambeck, near Castle Howard, which supplied a range of distinctive kitchen-wares including red painted bowls and *mortaria* (mixing-bowls). Distribution of these products could well have involved shipment down the River Hull, and they may thus have been supplied direct to the settlement of which the Malmo Road site forms part. These wares, along with so called 'Huntcliffe' jars, also probably from North Yorkshire, form the latest recognisable pottery types in this part of Roman Britain. Some of the Crambeck products can be confidently dated to after *c.* AD 370 and may indicate that the settlement continued into the first quarter of the 5th century AD, after which time the Romano-British industries ceased to function.

The pottery is very similar in composition to the latest material recovered from excavations at Greylees Avenue, Hull in 1984 (Crowther and Didsbury 1985). At the latter site, which lies on the opposite bank of the Hull a little further upstream, there was a greater chronological range, however, with good stratified groups of pottery belonging to at least as early as the middle of the 2nd century, as well as unstratified material of the later 1st. This chronological range is also apparent in the material from other Hull bank sites, notably the collections from Hull Museums' rescue excavations at Haworth Hall in the 1960's and from amateur fieldwalking at Marsden's Landing in 1990. There are small amounts of pottery at Malmo Road, mainly of North Lincolnshire types, which indicate some level of activity in the 2nd and early 3rd centuries, but it would appear that the most vigorous phase of occupation there belongs to the later 3rd and 4th centuries, before which the site may have formed a less intensively utilised area of the larger settlement.

It has become increasingly evident in the last few years that there was extensive Romano-British settlement of both banks of the River Hull in the north of the area occupied by the present city, stretching from the city

boundary for as much as 1 km downstream. The present author has considered this settlement in detail else-where (Didsbury 1988, 1990a, 1990b). To summarise it briefly, evidence from Greylees Avenue suggests that the area may have begun to be settled within two generations of the Roman conquest of Northern Britain in AD 71 and was occupied until the end of the Roman Period. The nature of this occupation is still uncertain, but it may be that it should be compared to the linear settlements which grew up along the Roman roads in the region, for example at Shiptonthorpe and Hibaldstow, and which are now designated "small towns". The settlement *may* have grown up around a river crossing carrying a road from Brough into Holderness, and would have been suitably placed for handling river traffic connecting the East Yorkshire hinterland with the national and international trading networks which utilise the Humber.

The importance of these new findings for our understanding of this region in the Roman period cannot be underestimated, and the fact that part of the city of Hull can now be shown to have been settled a full millennium earlier than once thought should be possessed of considerable local interest. A major part of the evidence for this settlement consists of the pottery assemblages from sites along the River Hull, none of which have yet been published. Taken together, they have the potential to illustrate the pottery supply to this part of south-east Yorkshire for almost the whole of the Roman period, and it may also be expected that detailed study would put the chronology of "Roman Hull" on a firm footing as well as elucidating the settlement's range of contacts and aspects of its economy. For all these reasons it is strongly recommended that the pottery from Malmo Road should be brought to full publication, either by itself or as part of a wider study of the Roman pottery from Hull sites.

The Ironwork

Lisa Wastling

Twenty-four artifacts of iron were recovered from the site, fourteen stratified and ten from the topsoil. Much of the iron was in a poor state of preservation, possibly from periodic flooding from the river in the past.

The ironwork can be divided into four groups: Romano-British; medieval; Romano-British/medieval; and, unstratified. A catalogue of all iron Registered Finds follows a discussion of the material from each of these groups.

Romano-British:

The majority of the material can be classified as structural ironwork, including 3 nails, 2 possible bolts, 2 holdfasts (RFs 18 and 27) and an 'L'-shaped staple. An iron point (RF 21), with a shaft too wide for a nail, may fit within this category. The nails had square- or rectangular-sectioned shafts, diamond or oval shaped heads, and may have functioned as carpentry nails. The holdfasts would have been used to join two pieces of timber together when nails were not sufficient. The 'L'-shaped staple may be associated with a drop hinge or door fitting. Little discussion is warranted by the two bolts (RF 8 and RF 12), as they are both incomplete and heavily encrusted with corrosion products. X-ray of one heavily corroded object (RF 36) from the large boundary ditch in Trench 1, revealed it to be the remains of part of a snaffle-bit, a horse-fitting used from the Iron Age through into the Roman period, and beyond. This object has undergone conservation treatment.

Two more objects were retrieved which were indeterminate in form, due to corrosion products.

Medieval:

Only one iron small find was retrieved from a medieval context (RF 28), but due to corrosion products the form is indeterminate.

Romano-British/medieval:

A number of contexts contained both medieval and Romano-British material as either residual or intrusive elements. These contexts produced two small finds: a small socketed ferrule (RF 24) and a holdfast (RF 20), neither of which can be prescribed a specific period.

Unstratified:

These artefacts were recovered during the removal of topsoil by machine. Five of these were nails, whilst the remainder included a T-clamp (RF 24), a common form of structural ironwork in the Roman period, with a number of different functions such as attaching box-tiles to walls (Manning 1985). Other unstratified finds were an L-shaped object (RF 1), possibly Roman, and various fragments of sheet iron.

Given the rural nature of the site in the past, more evidence of agricultural tools and harness fittings might have been expected, though this may reflect the small areas excavated. Their presence is, however, attested to by the number of whetstones found (see *Objects of Stone*). These may have been used to keep such tools sharp.

Catalogue

1 Point. Incomplete. rectangular shaft section.
Incomplete length 46mm. Width 11mm. Thickness 11mm
RF 21 Context 36. Trench 1. Mid 3rd century.

2 Nail. Encrusted. rectangular sectioned shaft and diamond shaped head.
Length 63mm. Width ?? Head size 17mm x 13mm
RF 17 Context 41. Trench 1. 3rd-4th century.

3 Nail. Incomplete. Slightly encrusted. square sectioned shaft with diamond/sub oval head.
Incomplete length 22mm. Shaft width 8mm. Head size 20 mm x 14mm.
RF 20. Context 21. Trench 1. 3rd-4th century.

4 Iron object in two fragments. Encrusted with little solid iron core present.
Sizes 18mm x 11mm x 3mm. 11mm x 9mm x 3mm
RF 15. Context 41. Trench 1. 3rd-4th century

5 Iron object, heavily encrusted, with bulb at one end. Possibly a bolt.
Length 33mm. Width 20mm. Thickness 9mm.
RF 16. Context 41. Trench 1. 3rd-4th century

6 Holdfast. Heavily encrusted with corrosion products obscuring the form. possibly square sectioned shaft.
Length 33mm
RF 27. Context 46. Trench 6. 3-4th or 14-15th century

7 Iron object. Heavily encrusted. Form indeterminate.
Length 18mm. Width 18mm. Thickness 18mm.
RF 28. Context 62. Trench 7. 3-4th or 12-15th century

8 L-shaped/curved object, D-shaped in section, indeterminate form.
Length 35mm. Width 10mm. Thickness 9mm.
RF 40. Context 131. Trench 1. 3rd-4th century.

9 Snaffle bit fragment. Heavily encrusted. One possibly oval link ring with fragmentary link bar.
Ring 72mm by 55mm, bar 68mm long.
RF 36. Context 25/152. Trench 1. 3rd-4th century.

10 Holdfast with square rove and square sectioned shaft.
Length 32mm. Shaft width 6mm. Length of rove 16mm. Width of rove 15mm.
RF 18. Context 53. Trench 1. 4th or 12th century.

11 Object, encrusted, form indeterminate due to corrosion. Possibly L-shaped.
Length 55mm. Width 10mm. Thickness 10mm.
RF 22. Context 7. Trench 2. Early-mid 4th century

12 Nail with head missing. Square sectioned shaft bent two thirds along its length.
Length 28mm. Shaft width 6mm.
RF 23. Context 53. Trench 1. Mid 4th or 12th century.

13 Sheet metal. Two fragments, both originating from same object. Both with mineralised organic material adhering to one side.
Frag 1. 43mm x 30mm x 1mm. Frag 2. 33mm x 25mm x 1mm.
RF 10. Context 4. Trench 2. 4th or 12-13th century.

14 Ferrule? socketed, shaft circular in section.
Length 37mm. Shaft diameter 9mm.
RF 24. Context 29. Trench 1. 4th or 12-13th century.

15 Bolt. Heavily encrusted, shaft missing, rectangular head.
Length 18mm. Head size 42mm x 36mm x 10mm.
RF 8. Context 34. 4th century.

16 Sheet iron fragment. Heavily encrusted and flaking.
Length 64mm. Width 40mm. Thickness 7mm.
RF 2. Context 1.

17 Screw. Modern.

Length 33mm.
RF 3. Context 1. Trench 4.

18 Nail, encrusted and slightly bent, incomplete.
Length 28mm. Width 4mm.
RF 4. Context 1. Trench 4.

19 Nail. Heavily encrusted, square shaft and round head.
Length 41mm. Thickness 8mm. Head diameter 7mm.
RF 5. Context 1. Trench 4.

20 Object. Form indeterminate, contained within a dense mass of corrosion products. Roughly triangular in shape.
Lengths of sides. 67mm x 65mm x 58mm. Thickness 22mm.
RF 11. Context 1. Trench 1.

21 Nail. heavily encrusted with square shaft.
Length 44mm. Width 21mm. Thickness 13mm.
RF 12. Context 1. Trench 1.

22 Nail, encrusted, with sub-oval head and square shaft. point missing.
Length 28mm. Width 10mm. Head size 24mm x 18mm.
RF 13. Context 1. Trench 1.

23 T-clamp with rectangular sectioned shaft. Incomplete.
Length 80mm. Head size 30mm x 13mm.
RF 41. Context 1. Unstratified.

24 L-shaped object, heavily encrusted. Possibly an L-shaped staple associated with a drop hinge door fitting.
Length of arms: 55mm & 33mm. Widths 10mm & 18mm. Thickness 7mm.
RF 1. Context 1. Trench 1.

Objects of stone

Lisa Wastling

Six stone objects were recovered from the excavations, of which five were from stratified contexts. Four of the objects were identified as whetstones; two of mica-schist, one of sandstone, and one of Quartzarenite. The mica-schists were probably acquired locally from the Quaternary deposits of the Holderness coast and the sandstone from the central/south Pennine area, although a location for the Quartzarenite has not yet been found. These whetstones would have been used to sharpen knives, agricultural implements and other tools.

One whetstone comes from a dated Roman context (RF 31), one from a context containing both Roman and medieval material (RF 26), one from a late 4th century ditch (RF 30), and one was unstratified (RF 7). The unstratified example is not sufficiently diagnostic to allow it to be assigned to a particular period. date.

A possible stone ard tip (RF 38), made of sublithic sandstone, was recovered from layer 30 in Trench 1. This would originally have been attached to an ard or simple plough, and would have been in use before the Iron Age (Rees 1981). This example, however, came from a layer containing late Romano-Britsih material, and must therefore have been residual.

A circular chalk object (RF 25) was recovered from a late 3rd century ditch and may be either a crude loom weight, or perhaps more likely, a thatch net weight or a net sinker. A similar object was found at the Roman fort at South Shields, though it is only half the size (Allason-Jones and Miket, 1984).

Two flint fragments are also included. Both are prehistoric in date, but one was residual in a context of Romano-British date.

Catalogue

Identification of the stone types is courtesy of Dr M Pedley, School of Geography and Earth Resources, University of Hull.

1 Whetstone. Calcareous Sandstone, tapered. Oval in section, abraded breaks at both ends.
Incomplete length 61mm. Width 18mm-22mm. Thickness 11mm-13mm.
RF 31. Context 151. Trench 7. 2nd-early 3rd century

2 Whetstone. Muscorite mica schist. Broken at one end and tapering towards the break. Rectangular in section. Wear roughly even on all four sides.
Incomplete length 52mm. Width 18mm. Thickness 15mm.
RF 26. Context 113. Trench 4. 2nd-3rd/12-13th cent.

3 Whetstone. Quartzite. Incomplete. both ends with abraded breaks. Rectangular in section.
Incomplete length 39mm. Width 30mm. Thickness 27mm.
RF 30. Context 149. Trench 5. 4th century.

4 Fishnet weight/loom weight? chalk, disc shaped with central, hourglass-shaped hole, bored from both sides. Signs of manufacture visible on surfaces.
Diameter 83mm. Thickness 36mm. Hole diameter 15-30mm.
RF 25. Context 161. Trench 1. 4th century?

5 Ard tip? Poorly sorted sublithic sandstone, with pointed tip and oval sectioned butt end.

Length 101mm. Width 9-44mm. Thickness 9-29mm
RF 38. Context 30. Trench 1. Iron Age/4th century.

6 Whetstone. Muscorite mica schist. Worn to a wedge shape with a pointed end.
Incomplete length 105mm. Width 42mm. Thickness 6-12mm
RF 7. Context 1. Trench 7. RB/Medieval?

7 Waste flint fragment showing evidence of working.
Length 20mm. Width 12mm. Thickness 9mm.
RF 19. Context 36. Trench 1. Late 3rd-early 4th.

8 Waste nodular flint, part of which still contains cortex, showing evidence of primary and secondary working. Muitiple chipping at the pointed end may indicate its use as a hammer stone.
RF 37. Context 1.

Object of shale

Lisa Wastling

1 Finger ring or bead, annular in shape and oval in section at one side, D shaped at the other, fissured, incomplete.
Width 6mm. Thickness 4.5mm. Diameter (external) 26mm.
RF 32. Context 184. Trench 1. Early 4th century.

Object of lead

Lisa Wastling

1 Sheet fragment, patinated, bent back on itself approximately half way along its length.
Length 48mm Width 25mm Thickness 4mm
RF 6. Context 1. Trench 2

Object of copper-alloy

Lisa Wastling

1 Looped and rivet strip, patinated of delicate manufacture, probably a strap fitting from a buckle plate.
Incomplete length 13mm. Width 4mm. Thickness 2mm.
RF 9. Context 16. Trench 2. 12th-14th century

Ceramic object

Lisa Wastling

1 Spindle whorl, disc shaped with a central hole drilled from both sides. Manufactured from a sherd of coarse pottery.
Diameter 40mm. Thickness 9mm. Hole diameter 11mm.
RF 29. Context 77. Trench 6. 3rd-early 4th century.

Glass

Lisa Wastling

1 Vessel glass fragment, mineralised inner surface, very abraded, concave, bluish-green.
Length 29mm. Max width 23mm Thickness 4mm.
RF 33. Context 8. Trench 6. Late 3rd-4th century.

2 Sheet glass fragment, heavily mineralised, fragile, too fine to be window glass. Corrosion products prevent determination of colour.
Length 18mm. Width 13mm. Thickness <1mm.
RF 34. Context 8. Trench 6. Late 3rd-4th century.

Objects of bone

Lisa Wastling

1 (Fig. 8, Plates 6A and B) End blown flute, manufactured from a sheep tibla, the upper half of which has not survived. The front of the instrument has three approximately circular finger holes and on the rear, one thumb hole, but there may have been other hole on the missing part. The holes appear to have been bored out and finished by knife; below the uppermost hole the bore has left a small impression. The outer surface of the bone has been trimmed and smoothed to enable easier playing, though some butchery marks are still present. The third finger hole begins 16mm up from the base of the flute, the gap between the second and third hole is 12mm, and between the first and second is 21mm. The thumb hole is 38mm up from the base. Diameters of the holes are respectively 3.5mm, 4mm and 4.5mm, the thumb hole being 5mm.

Incomplete length 63mm. Width 13mm. Thickness 12mm.
RF 14 Context 1 Trench 7 12/13th century?

2 Worked object, roughly cut and peg shaped, possibly either unfinished or an off-cut, sub-oval in section.
Length 61mm Width 9mm. Thickness 7mm-3mm.
RF 35 Context 1 Trench 1

Brick and tile

John Tibbles and Tony German

Romano-British material was identified from 26 contexts and medieval/post medieval material from 14 contexts. The remaining contexts produced evidence of tile and brick which was too small for positive identification.

Dominating the Romano-British material were fragments of *tegulae* (flat roof tile with flanges) in two different fabrics, a soft orange sandy fabric with few inclusions, and a hard deep reddish-purple fabric with the occasional pebble inclusion, and they survived in varying states of preservation ranging from exceptionally poor to excellent. Lesser quantities of *imbrices* (curved roof tile), brick, and *tubuli* (box flue-tile), were also present. Much of the material displayed evidence of burning (contexts 7, 32, 46, 50, 85, 113, 122, 133 and 161), which may have occurred during use, in the case of those building materials which derived from heating systems (*eg* hypocausts), or through accidental fire damage before or after disuse; at least two fragments display burning on broken edges. Two of the *tegula* fragments showed an exceptionally smooth underside, possibly from wear, which suggests that the tiles may have been inverted and had secondary use as floor tiles. No brick or tile displayed any makers stamp, graffiti or nail holes.

One large fragment of Romano-British brick (context 89), measuring 140mm x 105mm x 40mm, had been used as a chopping or slicing block. One flat surface displayed several knife slicing or chopping marks with a single deeper indentation. The indentations had clearly been made whilst the brick was 'green' (unfired) and was therefore possibly used during the manufacturing process for the cutting or trimming of other products. It was subsequently fired and is assumed to have been used for its intended purpose.

To construct a roof of *tegulae* would have been a long and expensive undertaking. At Beaufort Park villa it was estimated that approximately 1100 tiles would be needed to cover its roof of 114m^2 (Brodribb 1987, 12). The large quantity of Romano-British building material from Malmo Road suggests the nearby presence of a substantial building or buildings, with tile roofs and under-floor heating, usually found within high status buildings. Similar material was recently found at Beck View Road, Grovehill, Beverley (Tibbles forthcoming) and may have been produced at the same place as the Malmo Road material; both sites lie close to the River Hull, and while local production cannot be ruled out, the materials could have been transported, via the river, from a significant distance.

The bulk of the medieval and post-medieval material consisted of brick and flat roof tile fragments with smaller quantities of pantile, ridge tile, and land drain. Four fragments of unidentified wasters were also recovered.

Table 1: Brick and tile, by context (RB = Romano-British, un. = unidentified, frag = fragment)

Context	Description
1 (trench 1)	*tegulae*
1 (trench 3)	medieval brick
1 (trench 4)	medieval tile, pantile
1 (trench 5)	RB brick and *tegula*
1 (trench 6)	*tegulae*
1	*tegulae*
4	*tegulae*
7	RB brick, burnt *tegula*, flue-tile
11	un. waster
14	*tegula*, un. frags
18	un. frags
19	un. frags
21	un. frags
25/112	medieval roof tile
26	*tegulae*, medieval roof tile, un. frags
29	RB brick, flue-tile, medieval brick and tile, un. frags.
30	*tegula*, medieval tile, ridge tile, land drain
30/26	waster, un. frags
32	RB brick, *tegulae* (burnt)
34	*tegulae*, flue-tile, un. frags.
36	*tegulae*
44	un. frags
46	*tegulae* (burnt), medieval brick, land drain, un. frags
49	*tegulae*, waster, un. frags
50	*tegula* (burnt)
53	un. frags
54	*tegulae*
56	*tegulae*
61	medieval brick, un. frags
62	medieval brick and tile, un. frags
63	un. waster
77	un. frags
80	*tegulae*, imbrix, un. frags
82	medieval brick
83	medieval brick
85	*tegulae*, ridge/imbrex, flue-tile (burnt)
87	RB brick, *tegulae*, ridge tile
89	RB brick (initially used as chopping/slicing block)
103	RB brick and *tegulae*
112	medieval brick
113	medieval brick, ridge tile (burnt)
122	RB brick (burnt), un. frags
133	RB brick (burnt), *tegulae*
135	*tegulae*
139	Imbrices/ridge tile
144	medieval brick
147	*tegulae*
154	medieval roof tile (burnt)
161	*tegula* (burnt)
162	*tegulae*

Baked clay or daub

John Tibbles

Baked clay or daub was recovered from 36 contexts of both Roman and medieval dates. The upper fill of the re-cut boundary ditch in Trench 1 contained a large fragment of daub clearly displaying the impression of rectangular timber; this was presumably a structural timber around which the daub had been packed. Clay was used in the construction of sill walls, hearths, floors and ovens, though other than the above example, no fragments were sufficiently diagnostic to allow determination of their original functions.

Table 2: Baked clay or daub, presence and weight by context

Context	Weight
4	143g
8	475g
7	107g
11	4g
14	15g
16	16g
19	72g
21	21g
23	80g
25/152	34g
26	246g
29	50g
30	161g
32	67g
34	85g
36	29g
46	65g
54	15g
60	10g
62	82g
69	15g
77	165g
85	3g
89	34g
101	448g
103	25g
113	13g
118	26g
127	2g
132	60g
135	14g
139	12g
147	13g
149	39g
154	35g
204	-

Fuel residues and Fuel

John Tibbles

Residues:

The residues recovered were retrieved from Romano-British and medieval contexts and appeared to be of a similar composition: a light grey-green vesicular material. None of the material appeared to be metalworking slag and may be a fuel residue. No detailed examination of the material was undertaken but its presence and weight within each context were recorded.

Table 3: Fuel residues, presence by context and weight

Context	Weight
1 (Trench 5)	2g
8	7g
30	6g
46	9g
53	2g
62	11g
67	2g
77	52g
80	1g
87	15g
101	57g
122	40g
132	298g

Coal:

Unburnt coal fragments were recovered from both Roman and medieval contexts, suggesting that coal was an alternative fuel to wood. It could have been transported to the site via the river.

Table 4: Coal, presence by context and weight

Context	Description	Weight
11	Coal and cinder	5g
29	Coal	2g
30	Coal	1g
34	Coal	50g
41	Coal	18g
62	Coal	8g

Shell

John Tibbles

Oyster shells were prevalent throughout most contexts on the site, of both Romano-British and medieval date. Shells varied in size between 32mm-90mm in diameter with equal proportions of both upper and lower valves represented. No further work was undertaken with the material apart from registering their presence within the contexts.

Clay pipes

John Tibbles

Only five fragments of clay pipe were recovered, all from within the topsoil. The assemblage consisted of undecorated or marked stem fragments. A single fragment displayed a pale-green varnish or lacquer towards the tip of the stem.

THE BIOLOGICAL EVIDENCE

John Carrott, Michael Dainton, Keith Dobney, Allan Hall, Harry Kenward and Annie Milles (Environmental Archaeology Unit, University of York)

Introduction

A series of 20 samples from excavations at Malmo Road, Kingston-upon-Hull, were taken for analysis of animal and plant remains; a modest collection of animal bone was also available for examination.

The samples and results of the analyses

Subsamples of raw sediment were examined in the laboratory for plant and invertebrate animal remains. A 'rapid assessment' was carried out on six of the samples, selected as being the most promising for bioarchaeological analysis. From these, a 'test' subsample (Kenward *et al.* 1986) of 1 kg was taken and processed by paraffin flotation (Kenward *et al.* 1980) to extract insect remains. Plant remains were recorded from the flot from paraffin flotation and from the residue and washover. The remaining samples were described and their sedimentary characteristics recorded, but no further analysis was performed.

The analyses carried out on each sample, and the remains recovered, are described below, together with a laboratory description of the sediment. A brief archaeological description and/or interpretation of the context is given in brackets where available. Samples are described in context number order.

Context 4 [fill of medieval construction cut 3]

Sample 5: mid grey-brown, moist, crumbly (working plastic), somewhat heterogeneous, slightly silty clay with modern invertebrate fauna, modern roots/rootlets, patches of black organic detritus (perhaps rich in manganese dioxide) and orange flecks, and a single charred cereal grain fragment. This deposit looks very 'disturbed' and may have been under cultivation or exposed to other kinds of disturbance, perhaps in recent times.The 1 kg test subsample gave a flot barren of identifiable remains other than traces of charcoal, including short lengths of charred herbaceous stem less than 5 mm. (These resembled material seen in deposits of mid Anglian date from Flixborough, S. Humberside, but have yet to be identified.) Charred material was also present in small amounts in the small residue, again mostly herbaceous material, but with a few fragments of wood charcoal less than 5 mm. There was a single ?charred seed of *Atriplex* sp. and some fragments of charred organic material which may have been the interiors of very eroded charred cereal grains. Otherwise, the residue consisted of sand and stones to 10 mm.

Sample 169: light/mid, more or less orange-brown to blue-grey to black (locally), moist, stiff and crumbly (working plastic) clay with modern roots/rootlets and patches of black organic detritus (?with manganese staining). A barren flot was obtained from the test subsample of this sample, too; even charcoal was absent. There was a little charred plant material in the washover, however, which included short lengths of herbaceous stem material as in the other subsample from this context. For the rest, sand and stones made up the bulk of the residue, with a trace of coal and brick/tile less than 5 mm and a little very worn bone.

Context 8 [fill of medieval ditch 9]

Sample 17: varicoloured (mid yellowish-brown to mid grey), dry, brittle to crumbly, rather heterogeneous ash with modern roots/rootlets and lumps of mid orange-brown internally textured indurated clay; apparently a mixture of ash and burnt clay. Small black patches appear to be manganese dioxide or amorphous charcoal (evolution of oxygen when tested with hydrogen peroxide).

Context 16 [fill of medieval construction cut 15]

Sample 22: mid/dark grey-brown (mottled paler orange-brown on a mm-scale), just moist, stiff, becoming crumbly, working plastic clay with modern roots/rootlets, and very small brick/tile fragments.

Sample 175: mid/dark grey (locally orange-brown), moist, plastic clay with modern roots/rootlets and invertebrate burrows, a shell of the burrowing snail *Cecilioides acicula* (probably modern), orange flecks of ?brick/tile or burnt clay and black patches of ?manganese dioxide. There were a few scraps of charcoal in the minute flot, together with a single charred cereal grain (perhaps wheat) and a charred *Brassica rapa*. The small residue gave a modest washover of charred material, most of it unidentifiable, but with a few very worn cereal grains including some likely to be bread/club wheat (*Triticum aestivo-compactum*), a charred legume, perhaps pea (*Pisum*), two charred *Atriplex* sp. seeds, a charred ribwort (*Plantago lanceolata*) seed and a fragment of an uncharred chickweed (*Stellaria media*) seed. The rest of the residue consisted of sand and sand-sized concretions of finer sediment, with a little brick/tile to 5 mm, and a few stones to 15 mm.

Context 29 [fill of medieval ditch 28; cuts RB ditch 25]

Sample 40: mid grey-brown, moist, crumbly to stiff clay with modern roots/rootlets and invertebrate channels, traces of stones 2-20 mm, and some rotted fragments of snail shell. The flot from the test subsample was barren, and the residue consisted of sand and stones to 25 mm (including chalk and oolitic limestone), worn brick/tile to 15 mm and a little abraded bone to 25 mm.

Context 38 [fill of medieval pit 37]

Sample 39: mid/dark grey-brown, moist clay with traces of stones 6-20 mm and patches of paler clay and dull grey `sooty' material, and orange flecks (?burnt clay).

Context 46 [upper fill of medieval ditch 45]

Sample 172: mid grey-brown (locally with orange-brown patches), dry to moist, stiff to brittle to crumbly to plastic clay with modern roots/rootlets, traces of stones 2-20 mm (including chalk), very fragmentary snail shell and brick/tile.

Context 49 [layer sealing RB ditch 69]

Sample 173: light/mid orange-brown, locally mottled more yellowish, moist, stiff to crumbly to plastic clay with modern roots/rootlets, ?invertebrate burrows and traces of stones 2-20 mm, including chalk and flint.

Context 53 [fill of RB pit 52]

Sample 164: mid brown, dry, indurated to crumbly, slightly sandy clay with many modern roots/rootlets.

Context 61 [lower fill of medieval ditch 45]

Sample 171: a mixture of mid grey-brown and mid orange-brown, dry to moist, stiff and crumbly (working plastic) clay with modern roots/rootlets and traces of bone fragments >20 mm and snail shell.

Context 62 [fill of medieval ditch 205]

Sample 142: mid blue-grey/red-brown mottled (gleyed), moist, stiff, crumbly (working plastic) clay with common modern roots/rootlets and trace of bone >20 mm; strong indications of ancient/modern working by soil organisms.

Context 69 [fill of RB ditch 68, continuation of ditch 152]

Sample 167: mid grey-brown (locally more brown at mm-scale), moist, plastic and crumbly clay.

Context 87 [fill of medieval pit 86]

Sample 165: mid/dark grey-brown (mottled somewhat orange-brown), moist, crumbly (working plastic) clay with abundant modern roots/rootlets and invertebrate burrows, and traces of bone fragments >20 mm.

Context 101 [fill of RB ditch 78]

Sample 166: somewhat varicoloured (mid orange-brown to mid grey-brown to dark grey), moist, layered, crumbly (in parts) to stiff (in parts) clay with a high ash content, some modern root/rootlet fragments and traces of charcoal. A few grains of sand and a trace of charcoal <1 mm were all that was present in the flot from the test subsample; the residue consisted mostly of ?daub or burnt soil in amorphous lumps up to about 35 mm. There was a small fragment of pot to 15 mm, a trace of brick/tile to 5 mm and some black amorphous material which might be manganese dioxide or charcoal.

Context 135 [fill of RB timber slot 134]

Sample 107: mid grey-brown (with slight orange-brown mottling), moist, crumbly (rubbing plastic), somewhat calcareous silty clay, with traces of stones 2-6 mm, freshwater snails, shellfish fragments and brick/tile; apparently a waterlain deposit.

Context 137 [fill of RB ditch 136]

Sample 168: mid grey-brown (mottled more orange), nearly dry, crumbly to brittle clay with modern roots/rootlets, traces of stones 2-6 mm and charcoal.

Context 139 [fill of medieval ditch 138]

Sample 174: mid grey-brown and orange-brown, dry, brittle to stiff clay with abundant roots/rootlets, traces of stones 6-20 mm and burnt bone <20 mm.

Context 140 [lowermost material, exposed at 2.2 m (0.96 m OD)]

Sample 141: light/mid brown (internally reduced to dark grey-brown), moist, plastic fine sandy silty clay; clearly a waterlain deposit. A small amount was examined in a smear on a microscope slide and found to consist almost entirely of mineral material in the silt and clay grades, with a trace of possible organic debris of the same size. No diatoms, which would be characteristic of waterlain silts and clays, were observed. Of the six samples from which test subsamples were examined, this was the only one to yield insect remains, although they were rare in the very

small flot; a few further fossils were recovered from the residue during examination for plant remains and paraffin flotation appears to have been very inefficient. The beetles and bugs afforded evidence of aquatic deposition (there were four *Ochthebius* sp.), perhaps in an area of grazing land. The very small residue consisted of unidentifiable fine plant detritus (amongst which there was a half-achene of celery-leaved crowfoot, *Ranunculus sceleratus*, a fragment of an *Atriplex* sp. seed, a grass caryopsis and a very worn *Sphagnum* leaf (all preserved by waterlogging). Two unidentifiable snail shell fragments and a fragmentary shell of the catholic snail *Carychium* sp. complete the biota obtained from this subsample. The remainder of the residue consisted of ?root channel casts - tubular concretions of sediment up to about 20 mm.

Context 144 [fill of RB feature 143]
Sample 170: light/mid yellow-grey-brown, moist, very crumbly ashy clay with modern roots/rootlets and traces of stones 2-6 mm.

Context 178 [upper fill of RB ditch 152]
Sample 180: mid orange-brown, dry to moist, crumbly ('crisp') ash and burnt clay (with a gritty texture rubbing smooth).

Context 179 [lower fill of RB ditch 152]
Sample 181: mid grey-brown, moist, plastic to stiff clay with modern roots/rootlets, traces of stones 2-20 mm (including chalk), charcoal and ?fragments of snail shell.

Unfortunately, most of the deposits from this site were devoid of biological material preserved by 'waterlogging', although there were a few charred plant remains, mainly from the fills of two medieval construction cuts. A single deposit gave modest numbers of waterlogged invertebrate and plant remains, indicating deposition in water and perhaps the presence of grazing land in the vicinity.

The animal bones

A small assemblage of animal bones (only four standard sized boxes) was recovered from the excavations. Most of the assemblage (37 contexts) derived from the fills of ditches, pits and other features of presumed Romano-British date. The remainder (10 contexts) represented fills of ditches, pits and construction cuts of 12th/13th century date and the fill of a post-medieval feature.

A total of 1246 bone fragments were recovered, 481 (38.6%) identified to species. Of these, 408 identifiable and 1072 unidentifiable fragments came from Romano-British deposits, 68 and 169, respectively from general medieval contexts and only 5 fragments from post-medieval deposits.

Preservation of the assemblage appeared on the whole to fall between poor and fair with material from only two contexts (30 and 41) classified as having good preservation. A very large proportion of the assemblage showed extensive evidence of gnawing, mainly on the articular ends of long bones and this was consistent with the damage done by canids. This evidence implies that a large proportion of the animal bones were not incorporated into the deposits very

rapidly and thus were perhaps left lying around on the surface for some time prior to burial. Almost none of the material showed any evidence of burning or charring and a mere two fragments (from contexts 29 - horse; and 34 - cattle) showed any evidence of butchery.

All bone fragments were viewed and, where possible, identifications to species were made using comparative material at the Environmental Archaeology Unit. Measurements were taken using dial callipers, following von den Driesch (1976), but additional metapodial measurements followed Davis (1992). Recording of tooth eruption and attrition followed Grant (1983) and classification of epiphyseal fusion followed Silver (1969). In addition any distinctive butchery marks and signs of pathological lesions or injury were recorded in detail.

All notes and archive material pertaining to the bones are stored at the Environmental Archaeology Unit, University of York.

Species representation:

A limited range of species was recovered from the site (Table 5) and not surprisingly included the remains of major domestic mammals, i.e. cattle, sheep, pig, horse and dog. In addition, two possible red deer (*Cervus elaphus*) fragments were recovered from Romano-British deposits. A large proportion of the caprovid remains were identified as sheep whereas no positive identifications of goat were made. It is therefore assumed that the majority of those fragments identified only as caprovid were sheep.

All the bird remains recorded were from Romano-British features and included a single fragment of domestic fowl (*Gallus gallus* f. domestic), two fragments of duck, possibly mallard (*Anas platyrhynchos*), and a single fragment of goose (*Anser anser*). Apart from possible wild duck, the only other wild species present was a single proximal radius fragment, identified as cormorant (*Phalocrocorax carbo*).

However, since all material was obtained by hand collection, with no systematic recovery procedures undertaken on the site, small mammals, birds and fish remains would almost certainly have been missed. In addition, calculation of the relative frequencies of species is fraught with problems, since a recovery bias in favour of larger species and elements inevitably exists.

Sheep remains were by far the most common domestic animal, representing 78% (377 fragments) of the total identifiable fraction. Cattle made up 14.3% (69 fragments), pig 2.1% (10 fragments), horse 2.3% (11 fragments) and canid 0.6% (3 fragments). However the dominance of sheep was exaggerated by the presence of what appeared to be a dump of semi-articulated limbs in a single Romano-British ditch fill (context 21). Here were found a total of 248 identifiable fragments (76% of all caprovid remains from this period).

When regarding the number of unidentifiable fragments (Table 6) a similar frequency is observed, with sheep-sized fragments inflated by the presence of numerous rib and vertebral fragments from context 21. With such a small assemblage the quantification of species abundance is not very informative.

Little can be said about the representation of different carcass elements of the major domestic animals (Table 7). It would appear that the majority of cattle elements were represented in the assemblage although only very small numbers

of bones were present. Similarly most caprovid elements were represented, although there did appear to be a preponderance of forelimbs (i.e. radius and humerus fragments). Smaller elements such as phalanges and carpals may well have been under-represented because of the lack of systematic recovery techniques. This is made obvious when considering the semi-articulated sheep remains from context 21. Here soil matrix containing the bones was also collected and subsequently wet-sieved at the EAU, and as a result many more phalanges and carpals were recovered.

Age at death:

With such limited numbers of fragments, little detailed information is available on age at death of the domestic animals (Table 8). The largest group providing this information comprised the remains of sheep from Romano-British deposits and consisted of 103 epiphyseal fragments. Of these 58 (56.3%) were fused and 45 (43.7%) unfused. When breaking this information down into fusion categories, it is clear that the majority of caprovids (43%) were killed as sub-adults, between one and three years of age. No young lambs were present and a small proportion (approximately 17%) had reached maturity and probably represented adult breeding ewes. However the lack of systematic recovery, and the fact that juvenile bones are also less robust than adult fragments, may have resulted in younger animals being under-represented.

There were few cattle fragments for which ageing information was available. However, it would appear that neonatal, juvenile and adult individuals were all present. The few pig fragments indicated the presence of immature animals only.

Viewing the eruption and attrition rates of the few mandibles and isolated teeth provided little additional evidence, although more mature sheep were apparently represented (Table 9).

Special deposit (Context 21):

As has already been mentioned, most of the sheep remains (248) from the site were recovered from context 21. This deposit appeared to contain the semi-articulated remains of four to five individuals, all exclusively identified as sheep. Although again the greater part of the skeleton was represented, there appeared to be a preponderance of complete hind limbs with forelimbs appearing more fragmented. Only four mandible fragments were recovered and no horn-cores.

A number of elements from opposite sides of the body almost certainly belonged to the same individual and this suggests that these animals were buried whole or mostly complete, with ribs, vertebrae, skull and scapulae being more adversely affected by taphonomic processes. Most were immature and only one femur fragment showed any signs of possible butchery. The presence of large numbers of 'meat-bearing' bones suggests an explanation other than normal butchery or kitchen waste for the origin of these bones. Although no evidence of pathology was noted on any of these remains, they may represent the deliberate disposal of diseased animals or those that had already succumbed to some misfortune.

Biometry:

Table 10 lists the measurements taken during analysis and Table 11 shows withers height calculations for sheep from context 21. Cattle measurements are few in number but those that are available (Proximal-latero/medial width of metatarsal) suggest that values fall between the mid and upper range of size for Romano-British cattle recovered from a range of other sites (Noddle 1984; Rielly 1988; Grant 1984; Maltby 1979; Thawley 1982; Coy and Maltby 1983; Noddie, 1984; Gilchrist unpublished).

Sheep remains, although few in number, indicate the presence of rather small gracile individuals. Calculation of withers heights for complete metatarsals and comparisons of proximal breadth measurements for the same indicate that the sheep at Malmo Road are similar in size to other Romano-British and Roman material.

Discussion:

The absence of a large animal bone assemblage from Malmo Rd., coupled with the lack of systematic recovery procedures, renders the data collected of relatively low value. Assumptions about the relative frequencies of species or elements is difficult on so small an assemblage, so conclusions must be tentative. However the range and supposed relative frequencies species recovered is not unusual for a site of this period.

Limited age at death data indicate that most of the sheep were killed as sub-adults, as were perhaps the cattle. Biometrical analysis also showed that both sheep and cattle were of similar stature to other assemblages of this date, in particular that from excavations at North Cave, N. Humberside (Gilchrist, unpublished).

The remains of semi-articulated sheep from context 21 is interesting and suggests that whole or part animals were dumped without being butchered or utilised in any way and may well suggest the presence of diseased animals or perhaps a ritualistic deposit.

The site is similar to North Cave, and it has been suggested that small archaeological sites with ditched enclosures were utilised for stock-rearing (Dent 1983). Animal burials and 'special deposits' have also been noted at other sites in the region, i.e. Wetwang Slack, Garton Slack, Hayton, Langton, Rudston and Bleaklands Nook (Gilchrist, unpublished). A larger, more systematically recovered assemblage is needed before more detailed interpretation is possible.

Table 5: Total fragment counts per species for each period represented

Roman period. (A = fragment counts excluding special context 21,
B = fragment counts for context 21 only)

Species	A	B
Cattle (*Bos* f. domestic)	55	1
Sheep (*Ovis* f. domestic.)	9	248
Sheep/goat (*Ovis/Capra* sp.)	69	0
Pig (*Sus* f. domestic.)	8	0
Horse (*Equus* f. domestic)	8	0
?Deer (cf. *Cervus elaphus.*)	2	0
Dog (*Canis* f. domestic)	3	0
Domestic fowl (*Gallus* f. domestic)	1	0
Goose (*Anser anser*)	1	0
?Mallard (cf. *Anas platyrhynchos*)	2	0
?Cormorant (cf. *Phalacrocorax carbo*)	1	0
Total	159	249

Medieval period

Cattle (*Bos* f. domestic)	13
Sheep (*Ovis* f. domestic.)	2
Sheep/goat (*Ovis /Capra* .)	49
Pig (*Sus* f. domestic.)	2
Horse (*Equus* f. domestic)	2
Total	68

Post Medieval period

Horse (*Equus* f. domestic)	1

Table 6: Total unidentified fragments from each period

Roman period (A = number of fragments excluding context 21, B = number of fragments from context 21).

Fragment description	A	B
Cattle-sized shaft	57	0
Cattle-sized vertebra	5	0
Cattle-sized rib	20	0
Sheep-sized shaft	41	189
Sheep-sized vertebra	7	100
Sheep-sized rib	25	115
Unidentified	104	*
Total	259	404

* The only completely unidentifiable fragments from context 21 were numerous tiny (<1cm) flakes.

Medieval period

Cattle-sized shaft	12
Cattle-sized vertebra	1
Cattle-sized ribs	2
Sheep-sized shaft	23
Sheep-sized vertebra	10
Sheep-sized rib	4
Unidentified	49
Total	101

Post-medieval period

Unidentified	4

Table 7: Carcass components

Numbers in brackets are those obtained from context 21

Element	Cattle	Sheep	Sheep/ Goat	Pig	Horse
Horn core	0	0	1	-	-
Skull frags.	2	(20)	7	0	0
Loose max. teeth	7	(15)	24	1	1
Loose mand. teeth	4	(5)	9	0	2
Mandibles with teeth	4	(4)	8	3	0
Scapula	6	(5)	4	1	0
Humerus	4	2 (10)	12	0	1
Radius	5	2 (12)	13	1	2
Ulna	4	(4)	2	0	1
Carpals	2 (1)	(29)	1	1	1
Metacarpal	7	2 (8)	3	0	0
Innominate	3	(33)	5	0	0
Femur	1	(10)	3	0	1
Patella	0	(3)	0	0	0
Tibia	4	(10)	8	1	0
Calcaneum	1	(6)	1	2	0
Astragalus	2	2 (7)	1	0	1
Nav. cub.	2	(5)	0	0	0
Metatarsal	3	3 (9)	7	0	0
Phalange 1	3	(18)	6	0	0
Phalange 2	0	(9)	2	0	1
Phalange 3	2	(7)	1	0	1
Hyoid	1	0	0	0	0

Table 8: Epiphyseal fusion of cattle and caprovld bones

Cattle

	fused	unfused	% fused
Early	6	2	75
Int.	2	2	50
Late	-	2	0

Key

Early fuslng bones - Scapula (glenoid cavity) dlstal humerus, proximal radius, phalanges 1+2
Intermediate fusing - distal metacarpal, distal metatarsal, dlstal tibla, tuber calcis.
Late fusing - Proxlmal humerus, distal radlus, olecranon tuberosity, proximal and distal femur, proximal tibla.

Sheep/goat

	fused	unfused	% fused
Early	20	0	100
Int. 1	17	12	58.6
Int. 2	16	13	55.2
Late	5	24	17.2

Key

Early fusing - Scapula (glenoid cavity) proximal radius, distal humerus.
Intermediate fusing 1- phalanges 1+2, distal metacarpal.
Intermediate fusing 2 - distal tibla, distal metatarsal, olecranon tuberosity, proximal femur, tuber calcis.
Late fusing - distal radius, proximal humerus, distal femur, proximal tibla.

Table 9: Tooth wear stages of major domesticates (after Grant, 1982)

1 Cattle

	dp_4	P_4	$M_{1/2}$	M_3
erupting	–	–	–	1
a	–	–	–	–
b	–	–	1	–
c	1	–	1	–
d	–	–	1	–
e	–	–	1	–
f	–	–	–	–
g	1	–	–	–
h	–	–	1	–
j	–	–	–	–
k	1	–	–	–
l	–	–	–	–
m	–	–	–	–
n	–	–	–	–

2 Sheep/goat

	dp_4	P_4	$M_{1/2}$	M_3
a	–	–	–	1
b	–	–	–	–
c	–	–	1	1
d	–	1	–	–
e	–	–	–	1
f	–	–	2	3
g	2	3	–	10
h	–	–	–	–
j	1	–	–	–
k	1	–	–	–
l	–	–	–	–
m	–	–	–	–
n	–	–	–	–

3 Pig

	dp_4	P_4	$M_{1/2}$	M_3
erupting	–	–	–	1
a	–	–	–	–
b	–	–	1	–
c	–	–	1	1
d	–	–	1	–
e	–	–	2	–
f	–	–	–	–
g	–	–	–	–
h	–	–	–	–
i	–	–	–	–
j	–	–	–	1
k	–	–	–	–
l	–	–	–	–
m	–	–	–	–
n	–	–	–	–

Table 10: Biometry archive (after von den Driesch 1976)
(Numerical codings for metapodials after Davis 1992)
(For horn cores: GD = greatest diameter, MD = minimum diameter)

Cattle

Metacarpal

Context	Bp	Dp
54	50.02	30.82

Metatarsal

Context	Bp	Dp	GLl	b	4	5	6
23	51.60	48.08	-	-	-	-	-
7	41.78	35.54	≈200	21.62	19.20	26.36	24.72

Sheep/goat

Horn core

Context	GD	MD
7	33.62	20.50

Humerus

Context	Bp	Bd	BT
77	29.24	-	-
49	-	32.00	-
41	-	27.96	-
26	-	28.66	27.28
7	-	25.90	25.74
21	-	27.38	26.64
21	-	27.76	26.40
21	-	28.00	26.58

Radius

Context	Bp	Bd	BFp	BFd
21	29.02	-	25.70	-
21	-	27.60	-	25.70
21	-	27.26	-	23.74

Metacarpal

Context	Gl	Bp	Dp	Bd	SD	1	2	4	5
77	-	19.92	14.00	-	-	-	-	-	-
21	-	20.90	15.40	-	-	-	-	-	-
21	114.7	20.81	15.28	23.92	13.62	9.52	14.08	10.08	14.41
21	-	24.32	17.16	-	-	-	-	-	-

Tibia

Context	Bd	Dd
21	25.20	19.96
21	24.44	18.60
21	24.42	18.64

Astragalus

Context	GLl	GLm
87	28.58	26.50
53	26.82	26.50
21	25.96	23.36
21	29.98	24.46
21	27.10	26.04
21	27.96	27.64
21	25.22	-
21	-	23.66
21	27.68	25.60

Calcaneum

Context	GL	GB
21	47.38	17.58
21	51.80	18.38
21	50.00	16.60
21	50.40	16.20

Metatarsal

Context	GL	Bp	Dp	Bd	SD	1	2	4	5
77	-	18.12	17.80	-	-	-	-	-	-
29	-	-	-	29.00	-	-	-	9.52	14.60
21	132.5	20.32	19.96	23.16	12.38	9.90	16.00	9.24	15.16
21	129.7	18.72	19.50	-	12.8	9.34	14.42	-	-
21	-	-	-	24.24	12.12	10.56	16.54	9.70	15.72
21	130.2	20.13	19.80	-	-	-	-	10.10	15.80
21	130.4	18.64	19.60	-	12.36	9.44	14.52	-	-
21	128.0	19.34	18.48	23.24	-	9.58	15.24	9.06	14.20

Pig

Metacarpal 4

Context	Bp
118	12.98

Horse

Humerus

Context	Bd
85	67.00

Phalange 2

Context	GL	Bp
29	42.70	47.42

Table 11: Withers heights of sheep (measurements in centimetres)

	Number	Range	Inferred Mean height range	Inferred height
Metacarpal	1	11.47	-	55.5
Metatarsals	5	12.80-13.25	57.7-59.8	58.7

CONCLUSIONS

The previous geophysical survey (MAP 1991) suggested that the whole of plot 105b had archaeological potential, though while it has allowed the position of a few features to be predicted and subsequently confirmed by excavation, the results of the survey were, in general, difficult to interpret; the low and comparitively uniform magnetic response of the site is likely to have been caused by the similar geochemical properties exhibited by the natural clay subsoil and the material infilling the archaeological features. Whereas on other sites it has, to a certain degree, been possible to determine the sequence of features, and their layout, through a combination of geophysical survey and trial excavation, this has not been possible here. In terms of evaluating the extent, condition and depth of any surviving archaeology, however, the work has been very succesful; it is clear that over much of the site there are well-preserved archaeological deposits, 0.15-0.2m below the present ground level, and surviving to a depth of up to 1.5m (1.13m OD) within some features.

The greatest concentration of archaeological features appears to be in the central and western parts of the plot, as shown by Trenches 1, 2, 6 and 9, though there do appear to be isolated groups of features to the north of the cobbled track recorded in Trench 2 (and in the eastern perimeter trench), such as the group of ditches recorded immediately adjacent to Narvik Road in 1990 (reported in Tibbles 1990), though these did not extend as far west as Trench 8. While there were no trenches excavated in the extreme south-eastern corner of the site, due to the proximity of a live sewer, the impression is, on the basis of Trench 4 and the geophysical survey, that there are fewer features in that area.

The trial excavations were limited to nine relatively small trenches. Consequently, any attempt to interpret features beyond a basic level, or reconstruct the layout of the site through time, is conditioned by the small size of the sample which has been investigated. It has, however, proved possible to draw some general conclusions as to the character of past occupation on the site through assessment of the form of the excavated features and study of the artefacts contained within them, particularly the pottery.

The majority of the archaeological features seem to have belonged to a Romano-British settlement, established sometime in the 2nd century AD, and which continued to be occupied until the early 5th century AD. The highest proportion were features dated to the late 3rd to mid 4th centuries, implying that occupation was at its most intensive then, after which the settlement began to fall into decline. The excavated features have been interpreted as boundary ditches, structural slots, post-holes, drains and pits, and are taken to represent evidence for buildings and enclosures. A substantial cobbled trackway ran parallel to some of the boundary ditches; it was traced for some distance across the site and presumably served to link this settlement with others nearby.

The range of features and finds would not conflict with an interpretation of the site as a rural settlement. However, recent research by Peter Didsbury (see his discussion in the pottery report, above) has highlighted the density of Romano-British settlement along both banks of the River Hull in the northern part of the city of Hull. He has proposed the existence of a small Roman town, rather like the linear settlements which formed along Roman roads, though here focussed on the river, perhaps at the point where the road running east from the Roman town at Brough crossed into Holderness. Such settlements took the form of several adjacent ditched enclosures, each containing buildings and

backyard areas, and would not necessarily be regarded as "urban" in the modern sense. The settlement at Malmo Road may therefore have been one element of such a larger unit. "Roman Hull" would have been "suitably placed for handling river traffic connecting the East Yorkshire hinterland with the national and international trading networks which utilise the Humber". The brick and tile recovered from the site, unless derived from ballast, indicates that at least one substantial building existed within the immediate vicinity, and there is evidence of underfloor and wall heating systems. Such a building or buildings would not have been out of place in a small Roman town, though the possibility that the building materials derived from a nearby villa cannot be discounted.

Following the disuse of the Romano-British settlement at Malmo Road, there were no signs of occupation on the site until the medieval period. Ditches, pits and structural features, containing pottery assemblages from the 12th to 15th centuries, suggest that occupation had taken place either on the site or close-by. The deep pits probably served for the extraction of clay for building purposes, as well as for the disposal of rubbish, and indicate that the settlement itself lay no great distance away. It is not inconceivable that it was a medieval precursor of Worlds End farm.

Despite the limitations of the evidence, as discussed above, it is clear that this site is extremely important in both local and regional terms. Principally, it provides further evidence of the dense Romano-British occupation of the lower Hull valley, further corroborating theories pertaining to the existence of a small Roman town there, but in addition, medieval occupation has been identified as much as a century and a half before the foundation of Hull itself.

ACKNOWLEDGMENTS

The work was commissioned by Hull City Council, through their Economic Development and Property Department, and particular thanks must be extended to them.

Humberside Archaeology Unit arrangements for the project were the work of Ed Dennison, Sites and Monuments Officer, and the excavations were set up by Ken Steedman. Administrative support was provided by Zena Ahmed and Mike Endall.

The excavations were supervised by John Tibbles, with a team comprising of Kath Crooks, Andrew Desforges, John Farrimond, Tony German, Phil Lings and Lisa Wastling, while Louise Tibbles volunteered her services. Photographs were taken by Tony German and John Tibbles. The text of this report was prepared by John Tibbles, with contributions from Ken Steedman, Peter Didsbury, Kath Crooks, Tony German, Lisa Wastling and the staff of The Environmental Archaeology Unit, University of York. Dr Martin Pedley, of the School of Geography and Earth Resources, University of Hull, undertook petrological identification of stone artefacts and samples from the site. Illustrations are the work of John Marshall and Kath Crooks.

RECOMMENDATIONS

These trial excavations, in combination with geophysical survey, have demonstrated the nature and extent of archaeological deposits on the site, and their importance in local and regional terms. In particular, the features have been shown to lie only a short distance below the present ground surface, which has obvious implications for the impact which any future development might have in this plot (or in plot 105a, to the north); even the relatively shallow trenches dug for creation of the mounds around the present site boundaries have disturbed archaeological features. It is therefore recommended that, due to the condition and importance of the archaeological deposits over most of the plot, development should, if possible, be avoided, or if this is not possible, any construction should either be undertaken in such a way as to avoid disturbance of underlying archaeological deposits, or should be preceded by archaeological recording and publication. Where the density of features is shown to be less in specific areas, then construction work may be possible if monitored.

With reference to the present development proposals, which relate to only a portion of plot 105b, involving an area of *c.*3560m^2 in the south-eastern corner (Drawing No. 4/6240/1-10), the slightly lower density of features is such that a possible mitigation strategy would allow construction work to proceed. Such a strategy would involve: avoidance of the area of the Romano-British track and any features to the north of it by minimising ground disturbance in a 15m-wide strip along the northern side of the proposed development, careful monitoring of any construction work on the remainder of the area by archaeological contractors (a watching brief), and ensuring that this work is followed by production of a report for publication. If construction in the aforementioned strip cannot be avoided, then full archaeological excavation will be necessary.

Publication of the results of these trial excavations and any subsequent work, in both academic and more popular forms, must be considered desirable in terms of the considerable public interest which would be generated by them.

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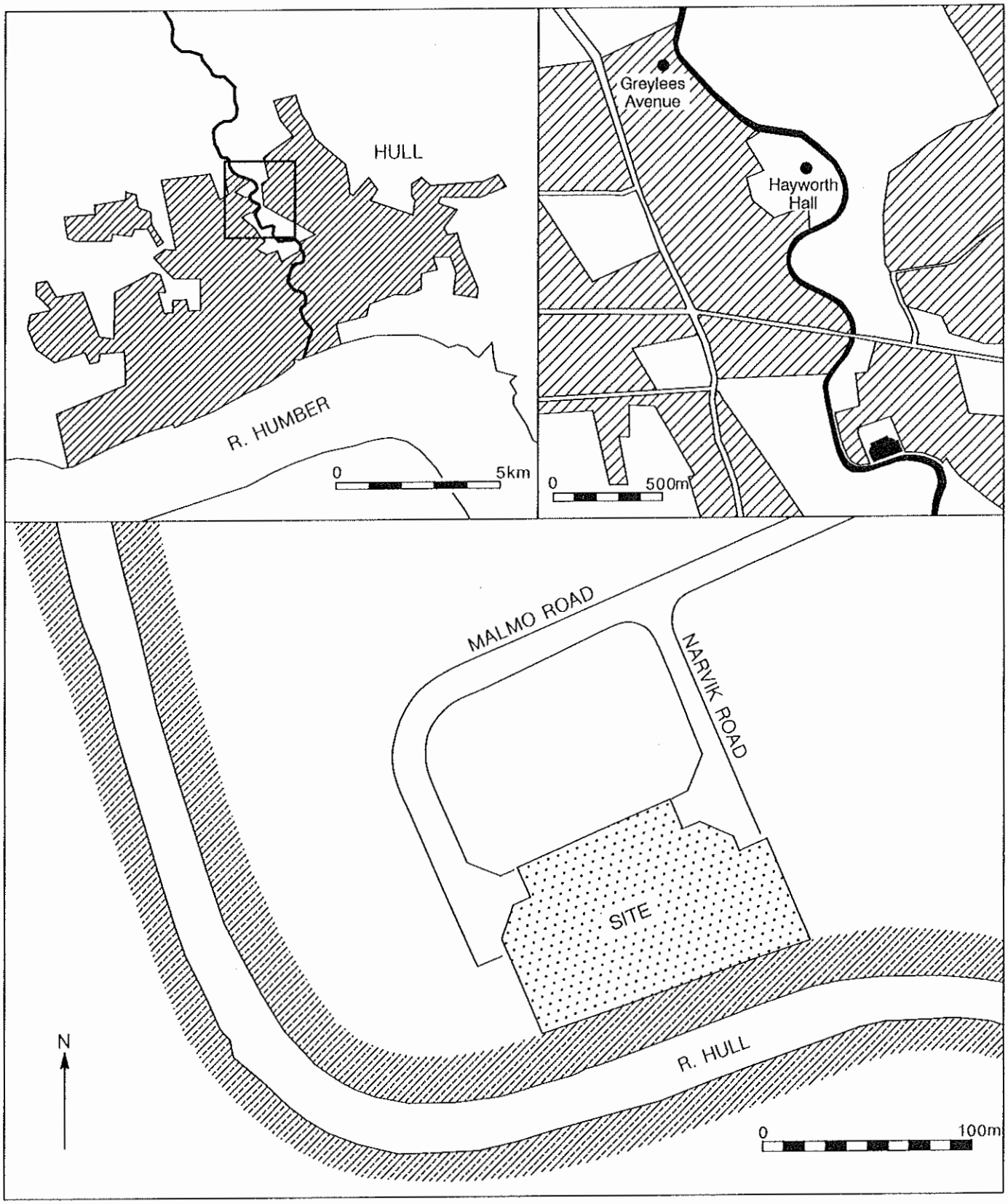


Fig. 1 Site Location Plans

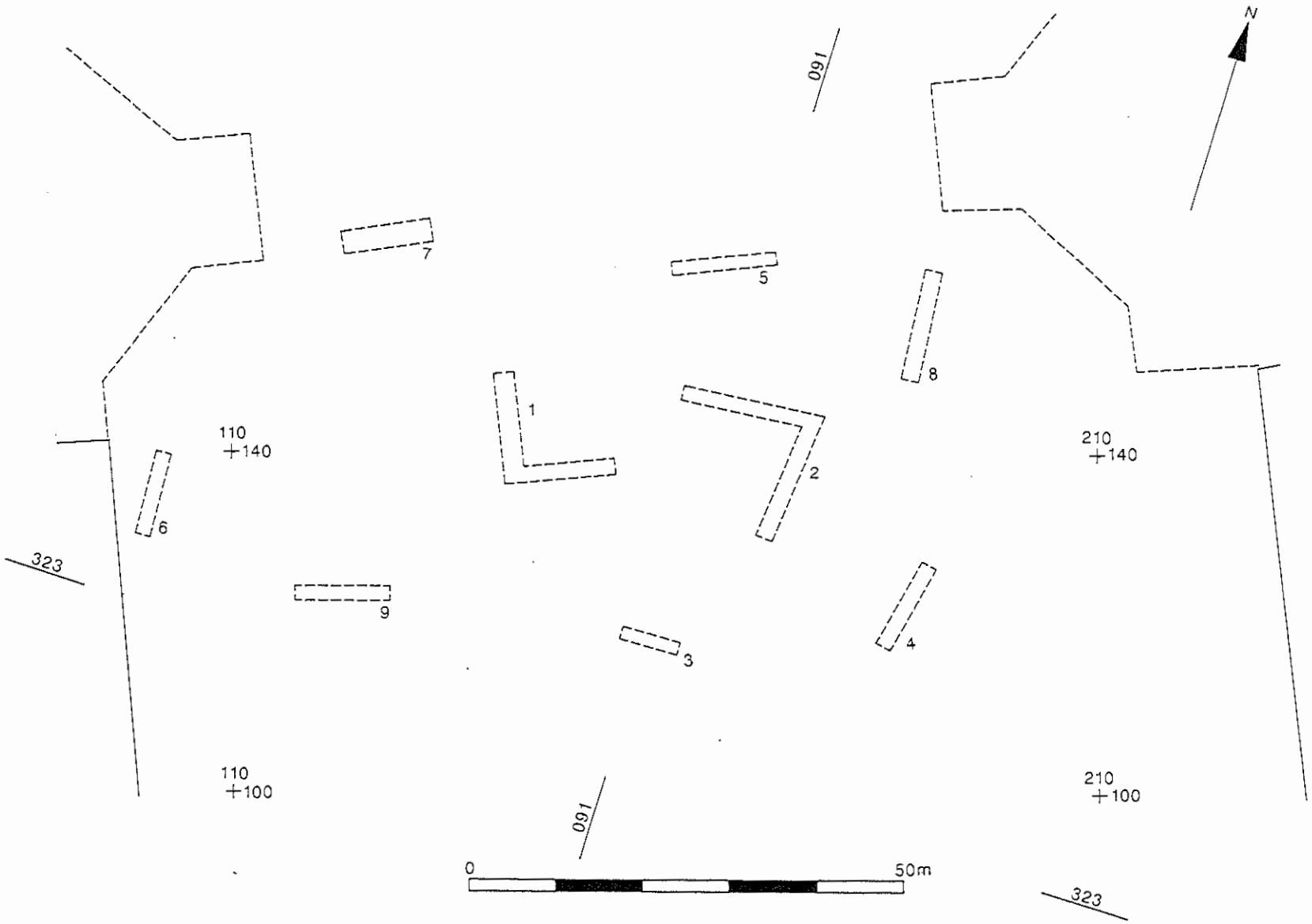


Fig. 2 Site Plan: Excavation Trenches and Site Grid. O.S. Grid co-ordinates also included.

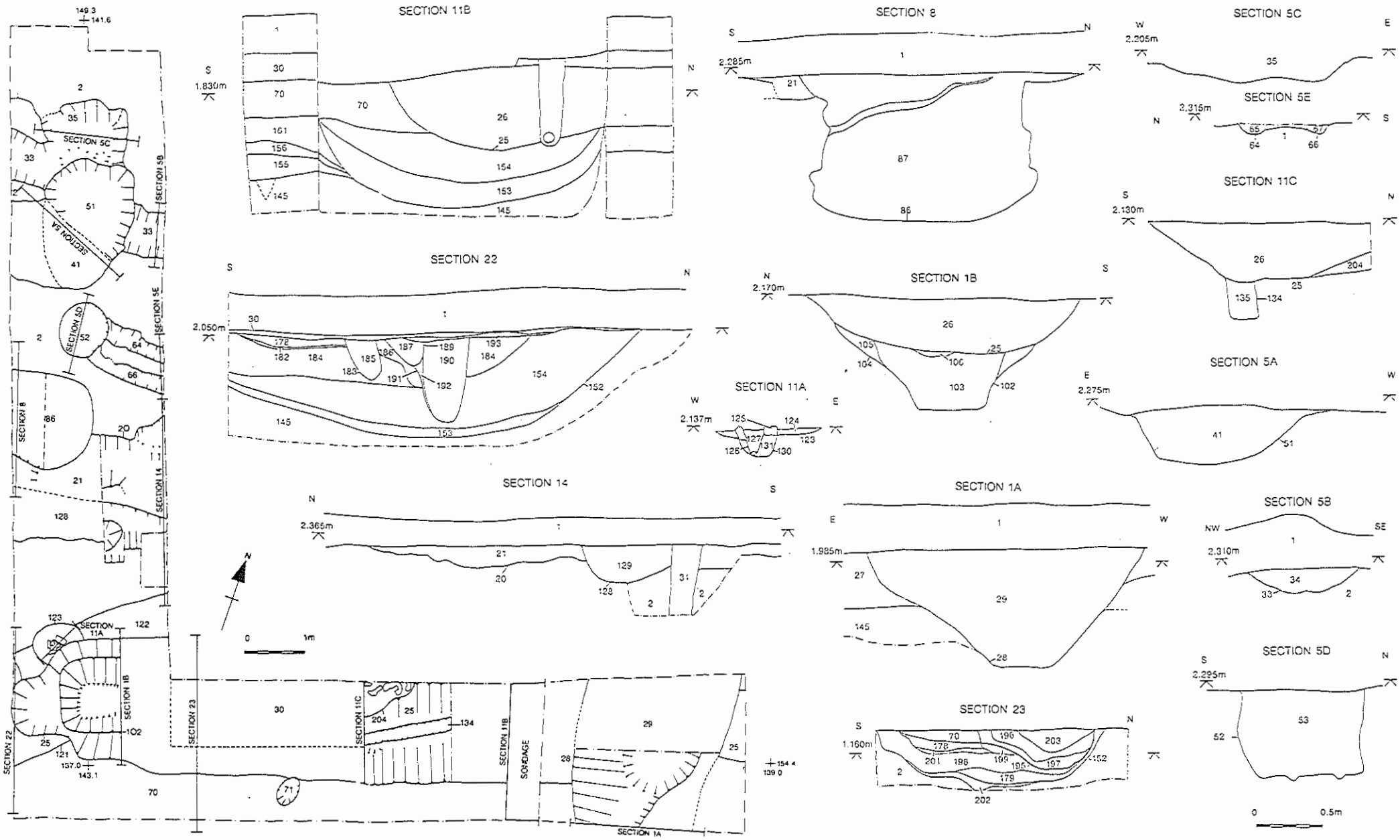


Fig. 3 Trench 1. The excavated features in plan and section.

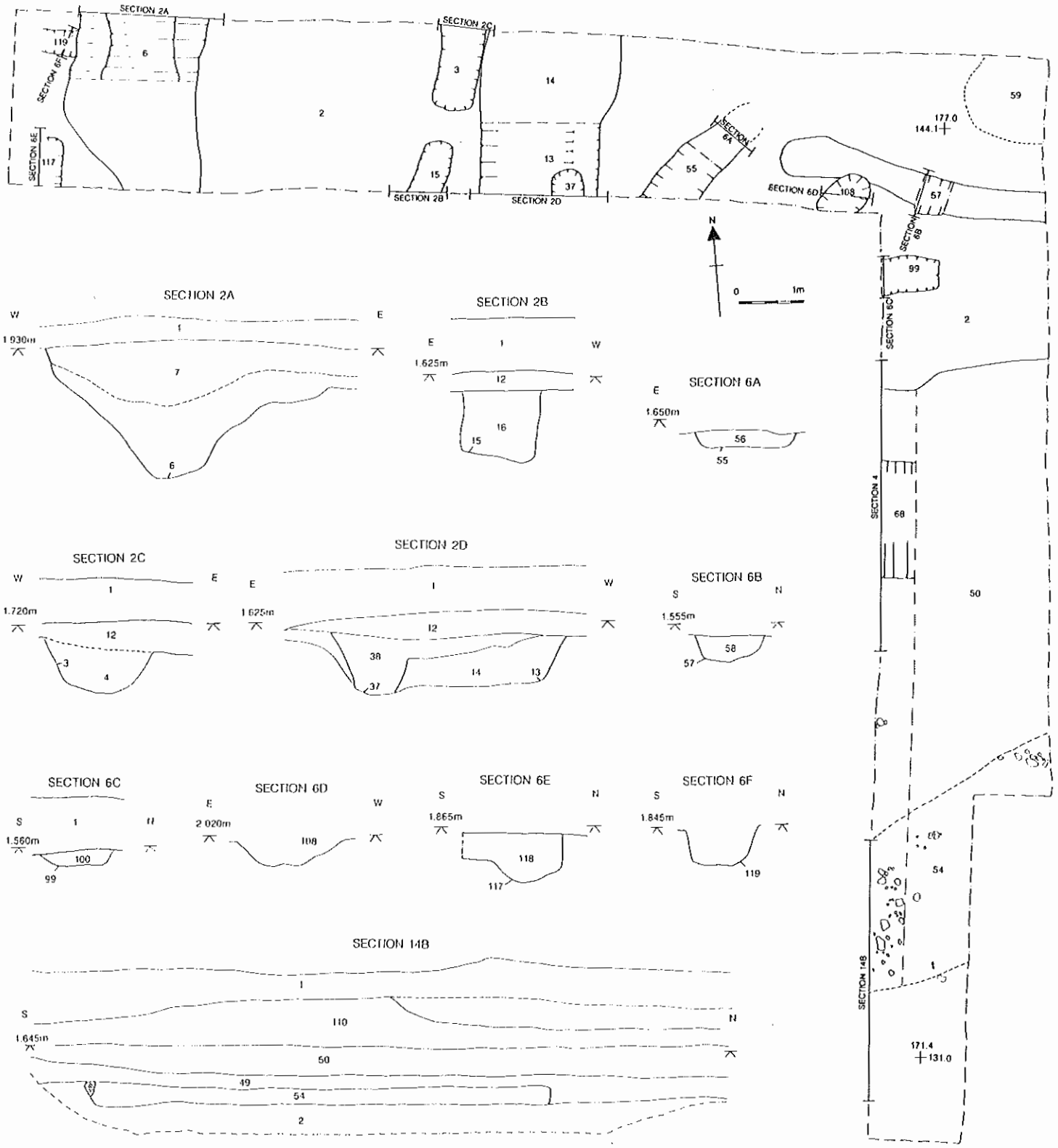


Fig. 4 Trench 2 The excavated features in plan and section.

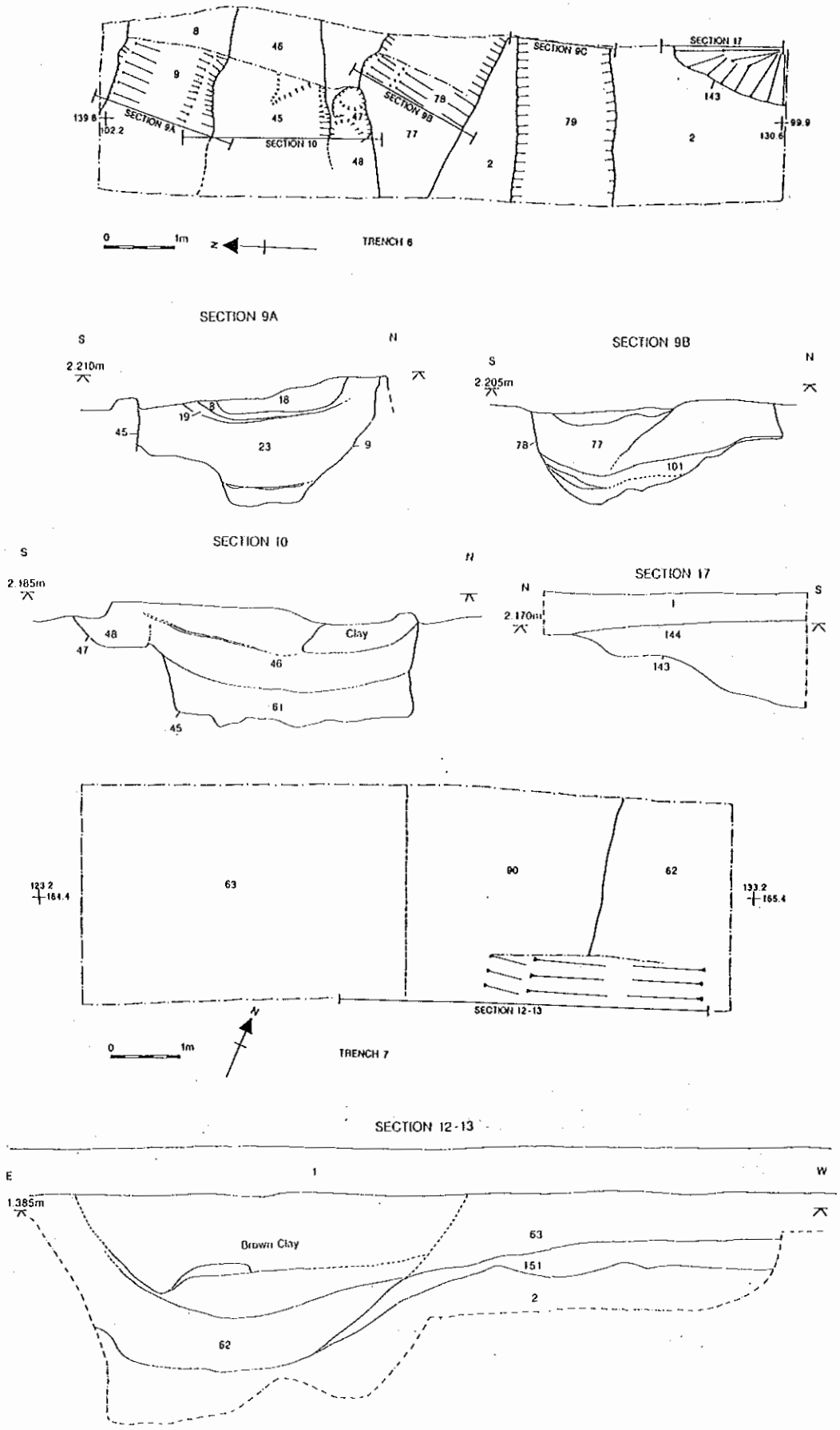


Fig.6 Trenches 6, 7 The excavated features in plan and section.

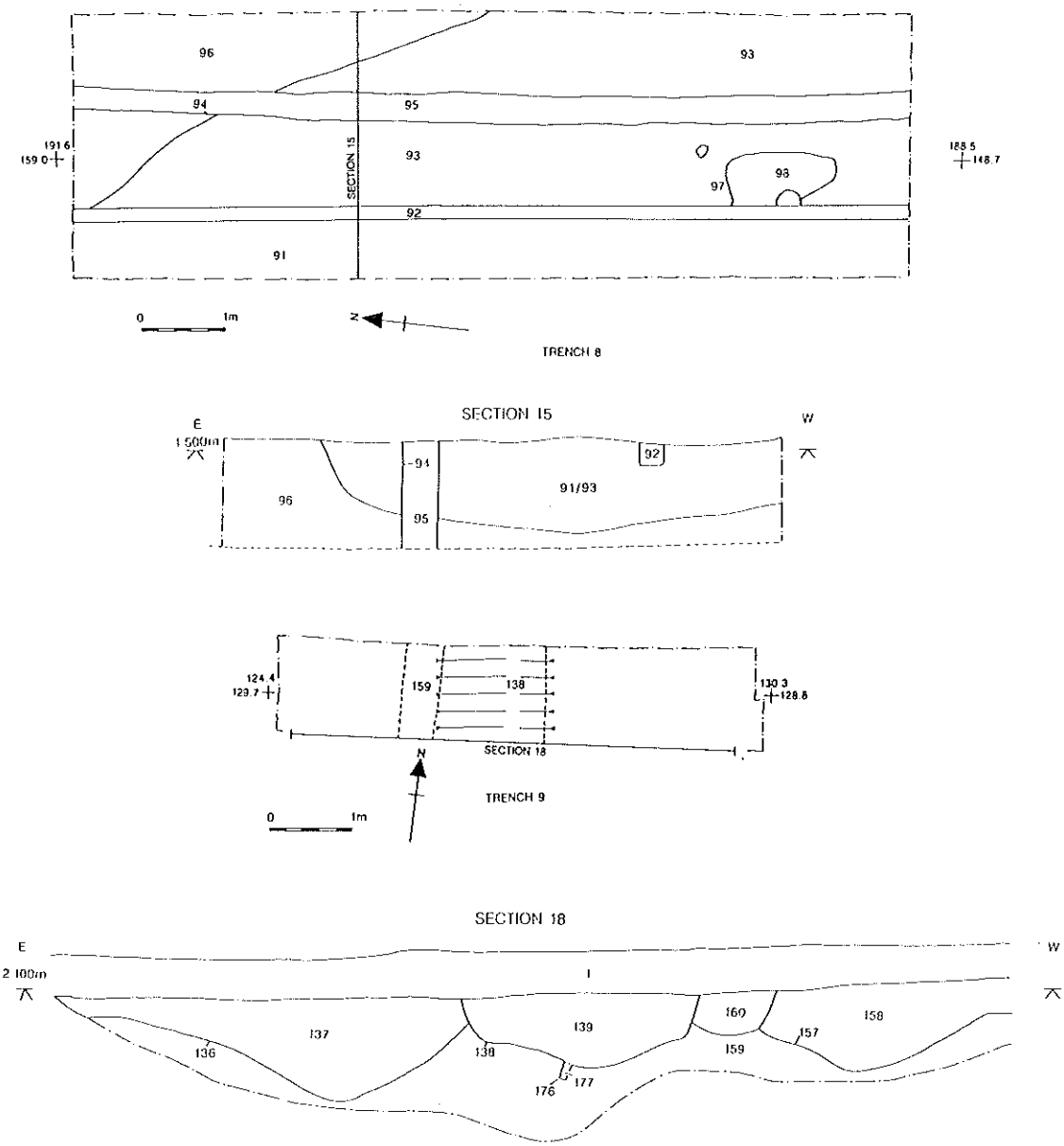


Fig. 7 Trenches 8, 9 The excavated features in plan and section.

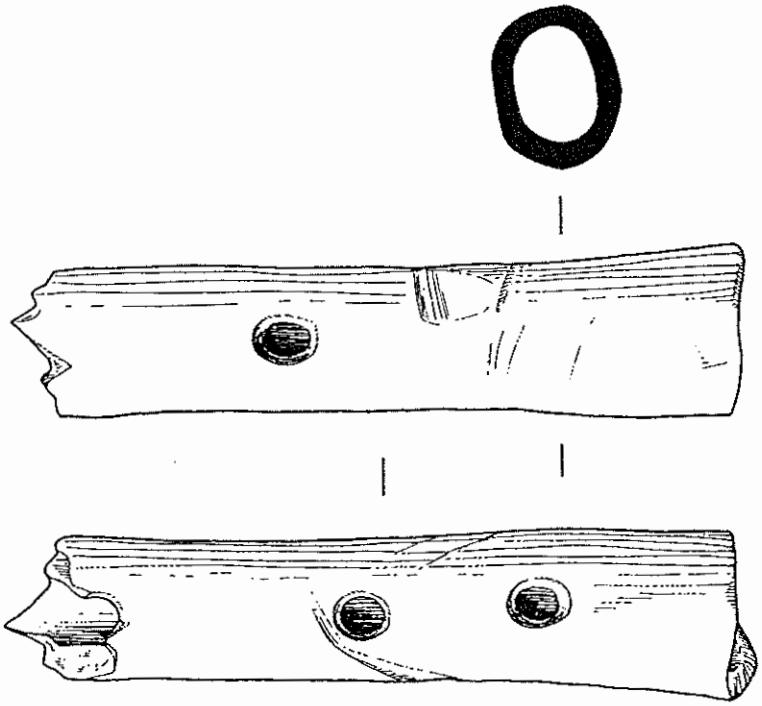


Fig. 8 Bone Flute/Flageolet.

Plate 1. East-West aligned arm of Trench 1, showing recut Ditch 25 and sealing layer 30. one metre scale.

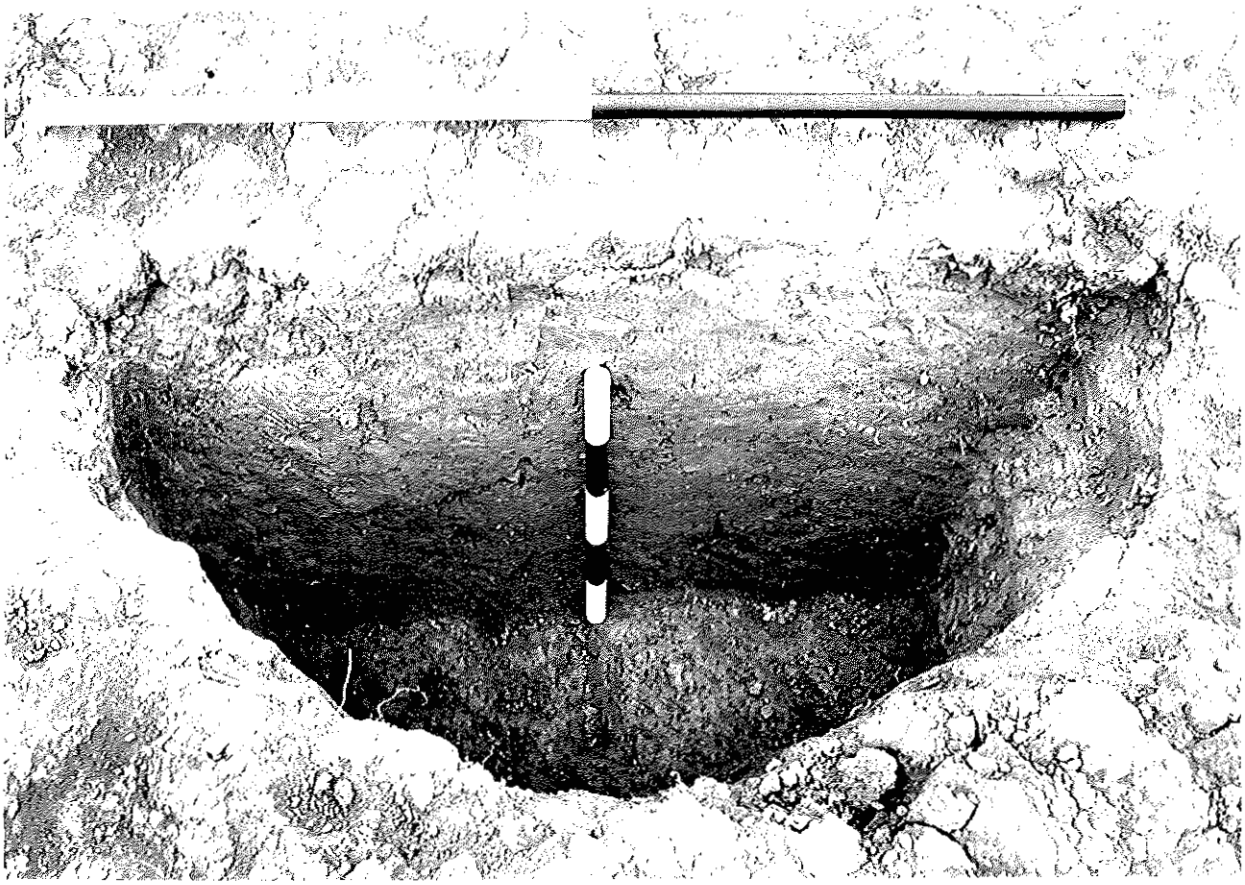


Plate 2. Medieval Pit 53. Trench 1. one metre and a half scale.

Plate 3. Medieval Ditch 28. Trench 1. one metre scale.

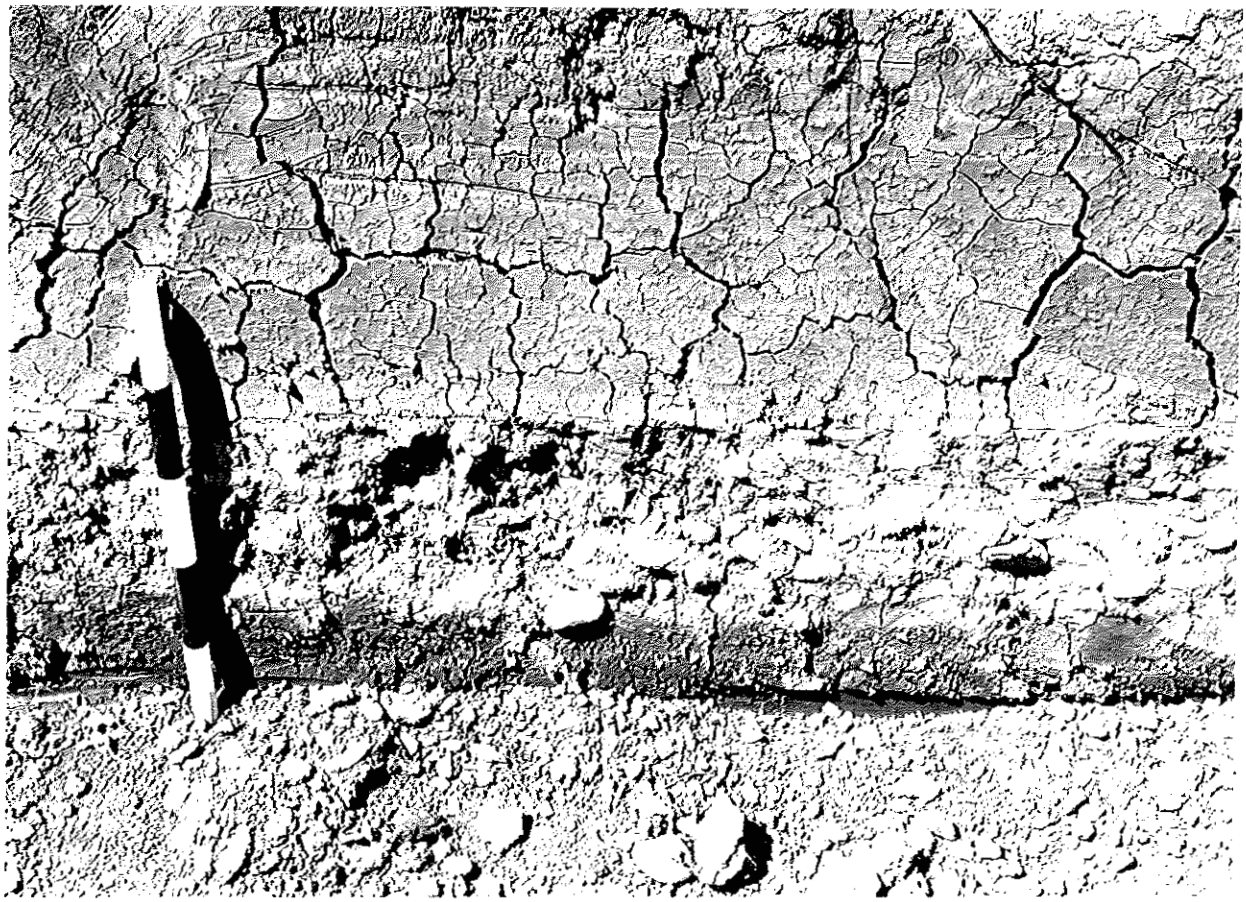
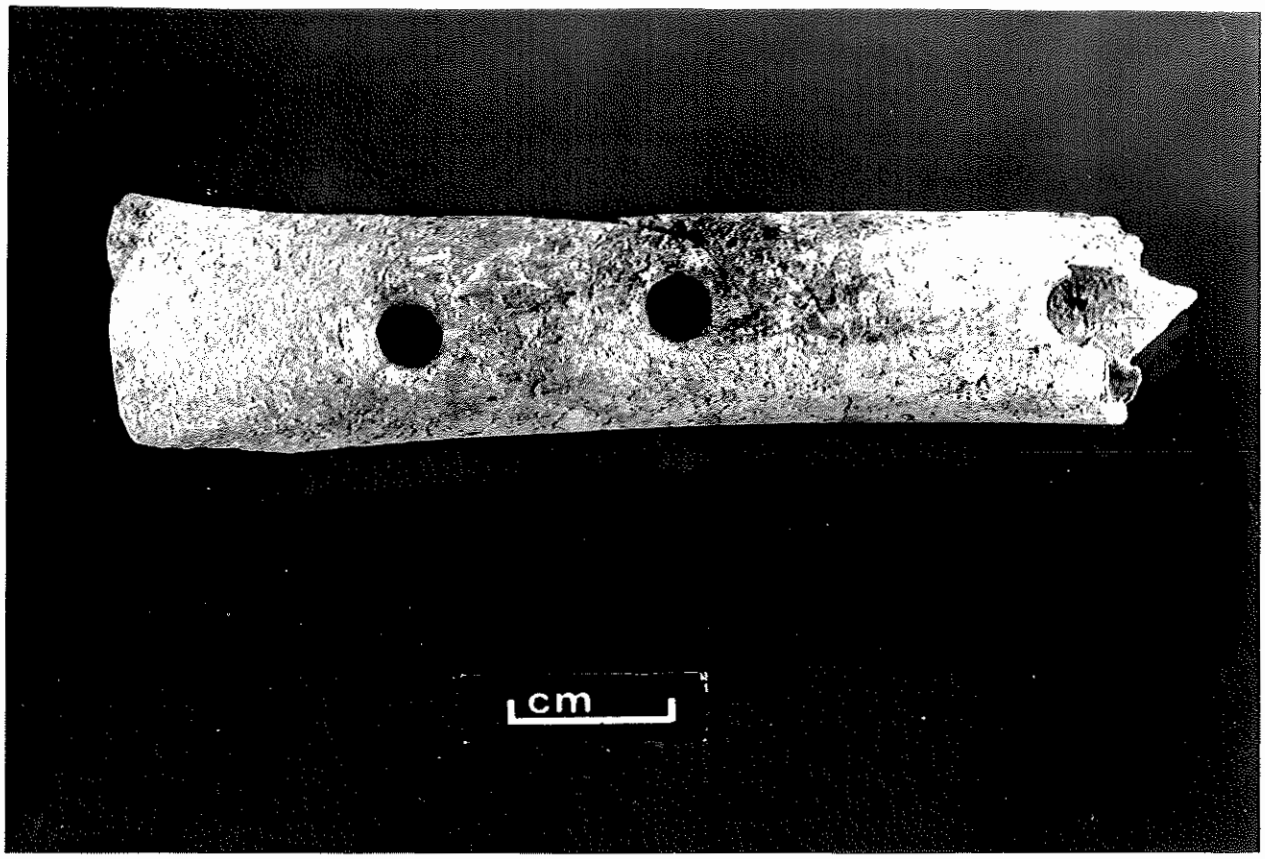
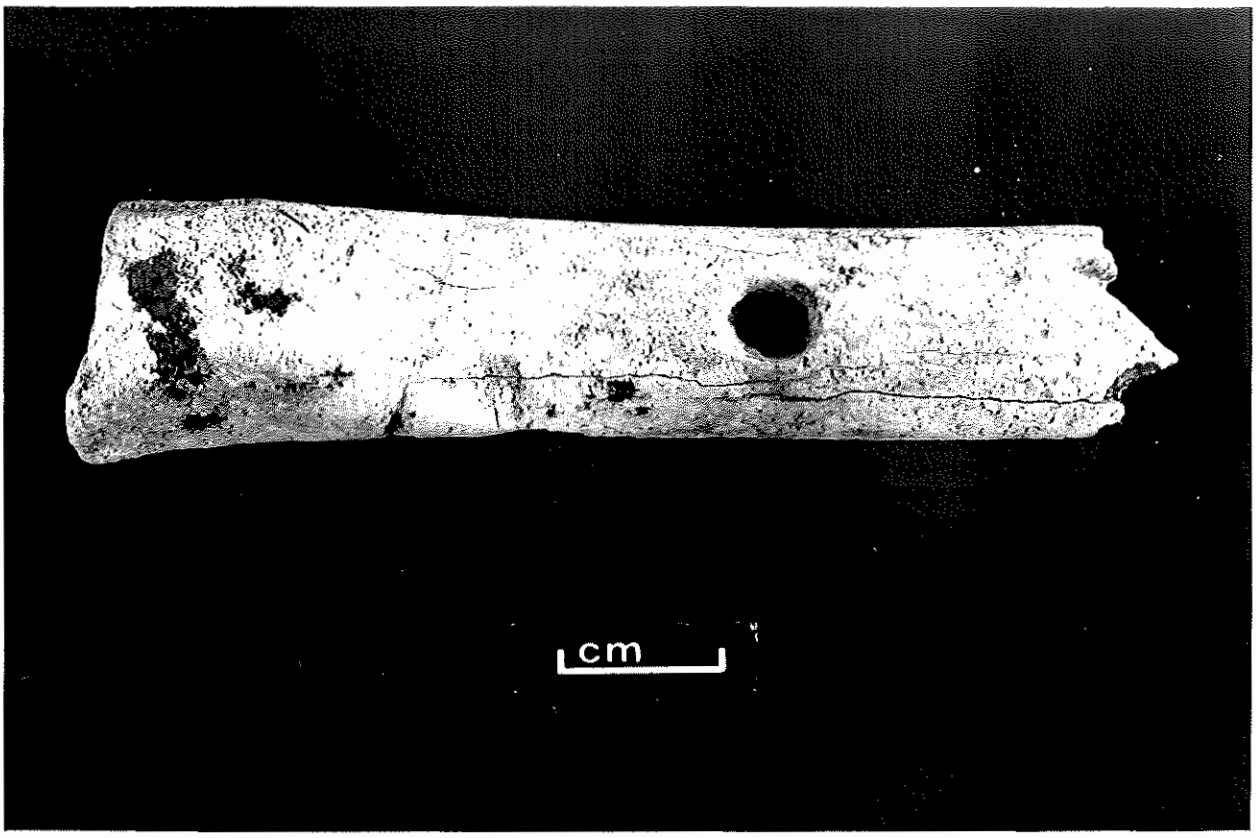


Plate 4. Trackway 54. Trench 2. half metre scale.

Plate 5. Western terminal of recut Ditch 25. Trench 1.





Plates 6A & 6B. Bone Flute/Flageolet.