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EXCAVATIONS AT GARFORTH, WEST YORKSHIRE

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Excavations at Aberford Road, Garforth, revealed evidence of Romano-British activity spanning the second to fourth centuries AD. Industry was represented by a large area of infilled quarry, whilst evidence of settlement and agriculture took the form of field system, corn driers, a trackway and post built structures. In addition to the two post built structures a stone built apsidal building containing a corm drier, with parallels at villa sites in the region, was recorded. A sunken-featured building dated to the mid fifth to early sixth century provided evidence of sub-Roman occupation of the site and may indicate continued occupation of the site from the Roman to sub-Roman periods. A corn drier constructed over the infilled sunken-featured building provided a date in the eleventh century indicating use of the site in the early Medieval period.

INTRODUCTION

The excavation site at Garforth (SE 420 340) was situated immediately to the south-east of the A642 Aberford Road at 85m OD, on the west facing slope of a gentle north-south ridge (Figure 1). The excavations, covering an area of roughly 7500m², were carried out in accordance with a brief issued by West Yorkshire Archaeology Service as a condition of planning consent for the development of the site. This condition was imposed following evaluation of the site by West Yorkshire Archaeological Service who located a series of rock-cut ditches and the remains of a stone founded building (WYAS 1998). The excavations were carried out during May and June 1998 by Gifford and Partners Ltd on behalf of Barratt Leeds, who funded the fieldwork, post-excavation analysis and publication.

GEOLOGICAL BACKGROUND

The Garforth site is situated upon magnesian limestone, which is Permian in date (British Geological Survey Sheet 70). This limestone forms a well drained landscape with a cover of brown calcareous soil, which in places can be as thin as 250mm. Coal measures, which underlie the magnesian limestone, outcrop to the east of Garforth and have been exploited at least as early as the Roman period (Faull and Moorhouse 1981, 47).

ARCHAEOLOGICAL BACKGROUND

The site lies in an area rich in archaeology of all periods, especially the Iron Age and Romano-British periods. The site lies 1km to the west of a Roman road (Margery 28b) which linked Doncaster (*Danum*) to the settlement at Tadcaster (*Calcaria*) via the fort at Castleford (*Lagentium*), which protected the crossing of the River Aire (Margery 1973, 415). Although the site itself was overgrown, comprising scrubland with small tress and bushes, the fields immediately to the east of the site have produced extensive cropmarks. These cropmarks largely consist of a series of sub-rectangular and D-shaped enclosures associated with trackways and field systems. These features remain largely undated, but those that have been excavated date to the Iron Age and Romano-British periods. Some also include later features,

such as the Anglo-Saxon *Grubenhäus* excavated at the multi-phase Romano-British enclosure complex at Site 27 on the A1-M1 Link Road excavations, situated 500m north-east of the Garforth site (WYAS 1997).

The evaluation carried out by West Yorkshire Archaeology Service on the site revealed rock-cut-ditches between 0.2 and 0.8m deep and the footings of a limestone wall. Thirty-five sherds of Romano-British pottery dating to the third / fourth centuries AD were recovered along with twelve fragments of tile and a quantity of animal bone. The excavators interpreted the site as being 'of major significance both in terms of Romano-British archaeology and in terms of an enhanced degree of survival of archaeological features' (WYAS 1998, section 6.6).

METHODOLOGY

In accordance with the brief issued by West Yorkshire Archaeological Services, the site was stripped, using 360° tracked excavators, to the top of archaeological horizons or bed rock. Thereafter, excavation continued by hand with site meetings held with the project monitors to discuss the most appropriate excavation strategy.

THE RESULTS OF THE EXCAVATION

Phasing of the Garforth site was made difficult by the lack of datable finds in many features. The phasing offered below (Figure 3) is based mainly on the pottery evidence, where the pottery was securely stratified and in an un-abraded condition (i.e. was not thought to be re-deposited). The phasing is also based on the alignment and positioning of features, especially where there were no closely dateable finds, or the where dateable finds were thought to have been re-deposited.

PHASE 1: Mid-Second Century AD

A stone quarry (125) occupied an area of 800m² and was situated at the western end of the site (Figure 2). The cut for this quarry was up to 2.3m in depth, and generally vertically sided, although some sections were found to have stepped sides. It is not certain whether this stepping was deliberate, to aid access and egress to the quarry, or merely a function of the horizontally bedded magnesian limestone. It was not possible to determine the date at which quarrying began, or its duration, as the only dating evidence came from the infilling of the quarry with limestone rubble. It is also not known whether the quarry was the result of one or more phases of activity.

A quantity of pottery recovered from the various fills of the quarry has been assigned to the second century AD. A total of 25% of all mortaria sherds and 85% of the samian recovered from the entire site came from the fills of the quarry. The fills also contained a large quantity of Romano-British tile and brick. This evidence would suggest the presence of a building of some status in the vicinity.

Ditch 118 ran north-east from the southern edge of the site for 24m and where excavated it was found to be to be U-sectioned, between 0.9m and 1.45m wide and 0.54m in depth. The single fill of silt and infrequent limestone fragments suggested natural siltation. One sherd of second to fourth century pottery and several fragments of animal bone were recovered from the fill. The ditch stopped short of the edge of the quarry cut (125), the alignment being

continued by ditch 143, which was 0.8m wide and 0.35m deep. The single fill was apparently the result of natural siltation and contained five sherds of Romano-British ceramic tile and several fragments of animal bone. Ditch 143 was also sealed by layer 144 which contained one sherd of fifth / sixth century pottery, as well as two sherds of Romano-British pottery. As the two ditches respect the quarry, which would have presumably been open or only partially backfilled when the ditches were dug, they have been assigned to Phase 1.

Ditch 141 ran parallel to ditch 143 and was of similar dimensions but in contrast its fill appeared to have been the result of deliberate backfilling. There was no direct relationship between these ditches, but they were both cut by a short length of ditch (145) at their north-eastern terminii. Ditch 145 contained a single fill which was probably the result of natural siltation and cut undated ditch 139 which ran south-east across the northern part of the site. Ditch 139 (Figure 4) was 0.9m wide and 0.45m deep and seemed to have originally been cut for a length of 42m, with the alignment continued after a gap of 1.2m by ditch 149 which was undated but earlier than Phase 2 structure 486. At some time ditches 139 and 149 were joined together which may indicate that they were open at the same time, the fills of both ditches were apparently the result of natural siltation. Further south-east, after a gap of 5m, the alignment was continued by ditch 400 which ran for 27m up to the eastern edge of the site. Ditch 400, which cut pit 403, was wider than 139 and 149 (at 1.55m wide) but of a similar depth of 0.45m (Figure 4). The ditch was re-cut during Phase 2 as a shallower feature. A possible trackway was formed by ditch 75, which ran parallel with ditch 137 *c.* 3.5m apart for a distance of 32m. Ditch 75 (Figure 4) was of smaller dimensions than 137 (being 0.6m wide and 0.19m deep) and another small section of ditch (74), 4.75m in length, ran parallel to the end of ditch 75. Ditch 74 was undated but had been cut by posthole 72 which contained one sherd of undiagnostic Romano-British pottery. All three of these ditches cut undated ditch 127 which ran from the southern edge of the site due north for 72m. Ditch 127 was 0.6m wide and 0.34m deep and contained a single fill, which was the result of siltation processes. It would be safe to assume that this ditch was completely infilled when ditches 139 and 75 were dug, otherwise the entrance to the trackway would have been blocked. At its northern end ditch 127 was cut by Phase 2 pit 64. The trackway and ditches 149 and 400 would appear to be contemporary. Together these ditches appear to form part of an enclosure system and on the basis of their alignments, have been assigned to Phase 1.

A short length of ditch (419) 0.56m wide and 0.2m deep ran for 4.5m south-west from the gap between ditches 149 and 400. A heavily truncated length of ditch (405) ran for 27m across the eastern end of the site and was 0.8m wide and 0.2m deep. The ditch had apparently been deliberately filled as indicated by the presence of large fragments of limestone. Two undated lengths of ditches were recorded immediately to the south of ditch 400 - ditches 413 and 416 – which were 0.6 wide, but heavily truncated at 0.1m deep. These would also, on the basis of their alignment, belong to the Phase 1 field system

Although undated, it is tempting to assign ditch 161 to Phase 1 on the basis of its alignment, forming another element of a larger enclosure system. Ditch 16 ran south-east for 44m before turning 90° to the north-west where it ran for a further 5m up to the edge of the site. The ditch was 0.94 wide and 0.22m deep and the single fill, the result of siltation, contained a small quantity of animal bone. Ditches 167 and 159 followed a similar alignment to ditch 161 and they may be contemporary with it. The remnant of a heavily truncated ditch (163), 1.2m in length and 0.5m wide, joined ditches 161 and 157. The alignment of ditches 167 and 159 was followed to the northwest by ditch 169 which ran for 10.1m and was 0.9m wide and 0.5m deep. The single fill, which contained no finds appeared to be the result of siltation. At is

south-eastern end, ditch 169 cut Phase 1 ditch 118, showing it to be earlier. If this is the case then 167 and 159 may also be earlier.

Two other ditches within the site were assigned to Phase 1. Ditch 151 was 5.4m in length and ran in a north-east / south-west direction. It had a shallow U-section, 0.2m deep and 0.85m wide and the single fill, apparently the result of natural siltation, contained one sherd of samian and two pieces of a sandstone gaming board. Ditch 153 began 2.8m north-east of ditch 151 and lay on the same alignment for 7m to the edge of the site. This ditch was very similar in profile to ditch 151 and was only slightly deeper at 0.3m. The single fill contained a high proportion of large limestone fragments and pebbles of other rock types, and in contrast to ditch 151 had been deliberately backfilled. One sherd of samian and a sherd of ceramic tile were recovered from the fill. Two undated ditches (56, 113) partly mirrored the alignments of Phase 1 ditches 151 and 153, with both sets of ditches respecting the same 'entrance'. Ditches 56 and 113 were 0.6m wide and 0.16m deep and their single fills were the result of natural siltation.

Oven 100 was situated 4.5m north of ditch 75 and cut ditch 127. It was 'keyhole'-shaped in plan, 2.1m in length and 0.3m deep. The bowl of the oven was 0.73m in diameter and the rock-cut edges exhibited evidence of heating. This feature may have been a corn drying oven, but no evidence of charred grain was noted. The single fill of the oven (5) contained three sherds of pottery, one of which date to the mid to late-second century. Fragments of fired clay, which may have originated from the superstructure of the oven, were also recovered.

PHASE 2: Fourth Century AD

Five features associated with thermal processing can be shown to date to this phase of activity. A possible furnace, 177 (Figure 5), consisted of an oval pit joined to a U-sectioned channel cut into the infilled quarry. The channel began at the base of the pit, 0.5m in depth, and sloped upwards along its length of 2.2m to a depth of 0.25m. At this point cut 180 truncated the channel, which was of unknown date or function. No evidence of a superstructure was noted, but there was a small quantity of burnt clay lining in the base of the pit. Five sherds of fourth century pottery, two sherds of ceramic tile and a fragment of a hone (small find 5) were recovered from the main fill. Feature 122, another possible furnace, was also cut into the infilled quarry. The furnace was sub-rectangular in plan, 2.02m in length, 1.21m at its widest point and 0.58m deep. The feature had retained some of its baked clay and heat fractured-stone lining. Fourth century pottery was also recovered from the main fill.

Corn drier 58 (Figure 6) was located near the northern edge of the site. The drier consisted of a circular rock-cut pit 1.15m in diameter and 0.4 deep, with a flue channel 1m in length and 0.5m wide. The rock-cut edges of this flue exhibited evidence of burning. The main fill of the corn drier contained three sherds of mid to late-fourth century pottery, one sherd of ceramic tile, and a quantity of charred grain. The grain was comprised of barley (*Hordeum vulgare*) and wheat (*Triticum* sp).

A possible corn drier (427) was situated 10m to the south of corn drier 58. Corn drier 427 was roughly cruciform in plan, with a depth of 0.2m and had been heavily truncated, which severely limited its potential for palaeoenvironmental sampling. The single fill contained heat-fractured stone and one sherd of fourth century pottery, although due to the truncated nature of the feature the presence of this pottery, and therefore the phasing of the feature should be treated be some suspicion.

A crescent-shaped feature, 8m in length and 1.3m deep, was cut into the infilled quarry (210). This feature contained four fills, the basal fill consisted of a thin layer of naturally accumulated silt-clay, whilst the others were deliberate tips of crushed limestone and coal fragments. The very lowest two fills (256 and 257) contained mid-second to third century pottery. The layer immediately above these contained fourth century pottery and the skeleton of an immature pig. The upper layer contained eight sherds of fourth century pottery and one sherd of pottery dated to the fifth / sixth century. Understanding the stratigraphy of this feature was made difficult as the infilled quarry appeared to contain several of these pits, many of which cut each other, which suggests that some of the pottery may have been re-deposited. The function of the feature, apart from that of a rubbish pit, is unknown.

Feature 64 was circular in plan, 0.9m in diameter and 0.45m deep with near-vertical sides. It was situated at the northern end of undated ditch 127, which it cut. The base of the feature had been lined with stone blocks and part of a quernstone, which may have been packing for a post. The fairly uniform fill of the feature contained four sherds of fourth century pottery, three sherds of undiagnostic ceramic building material, and one third of a quernstone (small find 1, Figure 15). If this feature was a posthole may have formed a pair with feature 65, which was 1.1m in diameter but only 0.2m deep. No pottery was found within feature 65, although its single fill did contain four sherds of Romano-British ceramic tile. Feature 80, 10m to the south-east of feature 64, was of similar dimensions. The fill of the feature, apparently the result of deliberate backfilling, contained 41 sherds of a fourth century cooking pot and the front leg of a goat.

Two possible postholes (182 and 183) were cut into the infilled quarry immediately to the north-east of feature 210 (Figure 6). Posthole 182 was 0.56m in diameter and 1m deep and had been cut through tips of coal fragments (184 and 187) and soil (186 and 188) which had been deposited at the north-eastern end of a shallow depression in the infilled quarry, in the manner discussed above in relation to feature 210. The lower fill was found to contain the part skeleton of a raven. Posthole 183 was of a similar diameter to 183 but of unknown depth. The removal of the posts and immediate backfilling of this depression would account for the fact that fill 89 was recorded within and above the postholes. Ten sherds of late-fourth century pottery were recovered from the fill.

An irregular cut (203), up to 0.4m deep, had been made into the quarry infill at the eastern corner of the quarry, using the edge of the quarry for one of its sides (Figure 10a). The lowest fill of this feature was a surface of orange clay, which lay on natural limestone from which an almost complete dog skeleton was recovered along with late-fourth century pottery. The main fill of cut 203 (126) contained six sherds of fourth century pottery and a substantial amount of animal bone. The function of the feature is not apparent, interpretation being made more difficult as it had been truncated on its south-eastern side by cut 124 (the Phase 3 sunken-featured building) and by modern pit on its northern side (Figure 10c).

Structure 486 (Figure 7) consisted of one course of roughly shaped limestone blocks forming the wall foundations for a rectangular structure with an apsidal western end. The structure was 12m long and 5.6 metres wide and had been built directly on top of ditch 149. The wall foundations seemed fairly insubstantial and may have been constructed to support dwarf walls and a timber superstructure. The structure had been constructed over ditch 149, presumably to allow ease of excavation of the flue for corn dryer 456, discussed below.

The corn drier 456 (Figure 7) was contained within the eastern end of the structure. The corn drier consisted of a rectangular stone-built structure 3.24m long and 4.75m wide. One course

of stone survived to a height of 0.12m and was founded on magnesian limestone bedrock with irregularities in the bedrock levelled with a red silt-clay. The four walls of the corn drier were not bonded together but simply butted against one another. The stone from which the drier was constructed had been shaped only on the external faces and is presumably re-used stone from structure 486. An L-shaped flue (481), 0.65m deep and 0.6m wide, fed heat to the corn drier and a large number of charred cereal grains were recovered from the fill of this flue (mainly comprised of wheat (*Triticum* Sp)).

Also situated within structure 486 (Figure 7) was *c.* 60% of an, originally, rectangular stone trough set, in a sub-rectangular cut (482). This sandstone trough was 0.53m wide, 0.25m deep and 0.5m in length. The well shaped hollow was also rectangular with sloping sides and flat bottom, measuring 0.22m in length, 0.25m in width and 0.17m in depth. While the upper surfaces were very smooth, the concealed surfaces were covered in tool marks between 10mm and 20mm wide, the result of the shaping of the object. As well as being of unknown function, it is also uncertain whether this trough was contemporary with or later than Structure 486. The stone used in the construction of structure 486 may have come from the quarry to the west and although assigned to Phase 2 may be contemporary with the quarry. The only dating evidence for structure 486 came from fourth century pottery recovered from collapse or demolition layers overlying the wall foundations and the presumption that the ditch on which it was constructed belonged to Phase 1.

PHASE 3A: Fifth / Sixth Century AD

One ditch was datable to this period. Ditch 120 ran north-west to south-east for 43m across the southern portion of the site, cutting ditch 118 (Figure 4). The ditch was 0.97m wide and 0.20m deep with a single fill, which was the result of natural siltation. Six sherds of fourth century pottery were recovered from this fill, together with three sherds of fifth / sixth century pottery.

A layer of crushed limestone and soil (454), which lay directly over Phase 2 pit 450 and was situated 10m north of structure 486, was found to contain sixteen sherds of fifth / sixth century pottery. Into this layer a post hole (471) had been cut which contained two sherds of fifth / sixth century pottery. As shown Figure 9 ditch 461 also cuts layer 454. L-shaped ditch 444, of similar dimensions to 461, may be contemporary with it and form a small enclosure or foundation trenches for a structure, possibly linked with postholes 471, 469, 463, and 465. A small section of curving ditch (448) crossed ditch 444 but it was not possible to ascertain the relationship between the two.

Cut 124 represents another structure that may be assigned to this phase. The sub-rectangular cut, 0.7m deep, forms the western half of the features shown on Figure 10b. The feature was cut into the quarry infill on two sides, utilised the quarry edge for its southern edge and cut the fill of cut 203 on its eastern edge, where a large gritstone doorjamb was used as a 'wall'. This door jamb was a substantial piece of masonry, 1.4m long and 0.3m square and must have come from an earlier substantial building. It also exhibited several grooves that have been interpreted as the result of blade sharpening. Postholes had been cut into the floor of the feature at the southern and northern ends. Both were sub-rectangular and around *c.* 0.25m in diameter. It was not possible to fully excavate either posthole, but they were in excess of 0.4m deep. The lowest fill of 124 consisted of a floor layer of packed orange clay (171) 0.2 metres deep covering the entire area of the base of the cut.

This feature is interpreted as a sunken-featured building, or *Grübenhäus* , the posts at either end supporting the ridge pole of the roof. The hollow left after abandonment of the structure was filled by two deliberate episodes of refuse dumping. The lower of the two main fills (123) contained ten sherds of fifth / sixth century pottery, one sherd of Romano-British pottery, a spindle whorl in a fabric similar to the fifth / sixth century pottery and a large quantity of animal bone. The upper fill (109) contained fifty-two sherds of fifth / sixth century pottery, six sherds of Romano-British pottery and twelve small sherds of ceramic tile. Fill 109 also contained a large quantity of animal bone, some of which was submitted for radiocarbon dating. Due to multiple interceptions on the correlation curve the dates produced, to 1 sigma, were AD265 to AD290 and AD325 to AD615 (Beta-137068). However, due to the overwhelming amount of fifth / sixth century pottery from this feature and the small amount of earlier material we can arguably narrow the date range to between AD450 – 615 for the post-abandonment filling of the cut. Unfortunately there is no way of discerning the length of time between the abandonment of the sunken-featured building and the inclusion of fill 109, or indeed whether there is any link between the building and the pottery and bone from fill 109.

PHASE 3B: Tenth – Eleventh Century AD

Overlying the sunken-featured building was a stone lined corn drying oven 1.6m in diameter which had been cut into fill 109 (Figure 11). Remains of the carbonised wattle frame onto which the clay oven would have been built were recorded and a large quantity of charred cereal was collected. The cereal grains were found to be cultivated oats (*Avena sativa)* with a small quantity of barley (*Hordeum vulgare*) and occasional weed seeds. A sample of the cereal grains produced a radiocarbon date, to 1 sigma, of AD970 to AD1160 (Beta-137069). Although this is the only feature date to this phase, it is possible that some of the undated features, discussed below, are contemporary with this drying oven.

UNPHASED

Two pits were undated, mainly occurring at the eastern end of the site, the largest of which was 373 at 1.4m in diameter and 0.7m deep. The pits contained fills that were the result of siltation processes, which may indicate that this area of the excavation site was abandoned or little used when the pits fell out of use - presumably open pits would have been a hazard in a heavily used area and would have been backfilled. Pit 54, which was 2.6m in diameter and 1.1m deep, was situated at the south-western terminus of ditch 151 and in contrast to the other pits, had been deliberately backfilled using large blocks of limestone, leaving a shallow depression (Figure 12). The upper fill contained a number of horse skull fragments, whilst the lower fill contained a number of cattle skull fragments.

To the east of the infilled quarry, two parallel rows of postholes were recorded (43, 42, 50, 45 etc.). The postholes were generally 0.7m wide and 0.3m deep and it is very likely that they represent a timber building of at least 15m in length and 6m in width. There were no finds associated with any of the twenty postholes in this group. The proximity of this building to the quarry edge makes it unlikely that they are contemporary, although this cannot be completely discounted. The building could be interpreted as either an aisled barn or a timber hall. Although unphased, it would be tempting to place this structure in Phase 1 due to its alignment with ditches 143 and 118.

A rectangular structure measuring, 7m by 4m, was situated at the north-eastern end of the site and was represented by a group of well defined post holes (368, 348, 366, 350, 378, 380, 392,

342, 354, and 346). No evidence of internal features was found. As shown on Figure 2 it is only possible to reconstruct *c.* 65% of the structure. The only dating evidence came in the form of one sherd of undiagnostic Romano-British pottery from posthole 392.

DISCUSSION

The only elements datable to the early phase of the site were the quarry, two ditches and an oven. The presence of the quarry invites the obvious question of 'what was the stone for ?'. If this stone was used for building, the large amounts of *tegula, imbrex*, box tile and brick, along with the stone doorjamb, suggest a substantial structure somewhere in the vicinity. This is supported by the presence of mortaria, samian and other fine wares from the fills of the quarry. A *sestertius* of Commodus dating to 186AD also suggests the presence of people who were, at least to a degree, integrated into the Roman economy during the late second century (Shotter pers. com.). It is possible that the building, or buildings, may have been located under the now heavily built up area that comprises the town of Garforth, immediately to the south-west of the site. The limestone may also have been used for the production of lime mortars and plasters for use on or off site. Products of lime, or any other goods for that matter, may have been transported via the Roman road 1km to the east of the site.

During the Iron Age West Yorkshire was part of the territory of the *Brigantes*, who later became a client group of the Romans. The presence of a fairly substantial Late Iron Age and Early Roman period population is borne out by the density of settlement evidence for that period. There has also been the suggestion that the major settlement of *Cambodunum*, which is recorded in the Antonine Itinerary, may have been located in this area of West Yorkshire (Faull and Moorhouse 1981, 207). Given this background it would be expected that high status Romanised agricultural settlements and 'estates' would develop, particularly on the fertile soils of the area. Evidence for field systems and at least one oven, alongside the presence of butchered animal bone, indicates agricultural activity on the Garforth site, although it is not possible to discern the scale of this activity.

There is no indication of the point in time at which this phase ended, or why. However, there does seem to be a break in activity from the late second century until the early years of the fourth century, as attested by the pottery present on site. Where investigated, the quarry had been infilled in a piecemeal fashion with various tips of limestone fragments, soil and coal-rich debris.

Although only one ditch has been assigned to the second phase of activity on the site, there does appear to have been an increase in activity. The quarry must have become completely infilled at this time as features such as oven 177 and furnace 122 were cut into it. Cereal processing activity increased during this phase indicated by the presence of corn driers 58 and 427, as well as the corn drier inserted into structure 486. Abundant charred cereal grains from these features indicate that wheat and barley were the main crops.

Structural evidence was evident during the second phase of activity. Postholes, such as 182 and 183, which were cut into the infilled quarry, appear to have been intended to hold fairly substantial posts for an unknown building or buildings. Structure 486 is unusual, but not without parallels, as a similar building was excavated at the Roman villa at Beadlam, Yorkshire (Neal 1996, 137). This building was of similar dimensions to the Garforth structure and both had apses at their western ends. The example at Beadlam was interpreted as a shrine. Another building within the Beadlam complex had a fourth century corn drier inserted into a

The archaeological and textual background to the period between the close of the Roman period in Britain and the following two centuries, has been discussed in detail by Cleary (1989), Higham (1992) and more recently Snyder (1998). There is archaeological evidence for continuity from the late-Roman period to the fifth and sixth centuries from sites such as Orton Hall Farm (Mackreth 1996) and West Stowe (West 1985). The hand-made pottery, dated to the fifth and sixth centuries from Orton Hall Farm, in particular, is broadly similar to that dated to Phase 3 at Garforth (also dated to the late fifth / sixth century). It would seem logical that after the withdrawal of the Roman military from Britain other activities continued, albeit in a modified form. Communication routes and pottery production would have been disrupted leading to more localised forms of production. The type of building represented by the sunken featured structure 124 is traditionally thought of as Anglo-Saxon. However, if the dating of the abandonment of the building is correct, from AD450-615 it would have been constructed within the native British Kingdom of Elmet. Recent aerial surveys carried out in Yorkshire have indicated the presence of rectangular 'pits' measuring *c.* 6m x 4m, within what were previously thought of as Iron Age and Romano-British enclosures. It has been suggested that these may be sunken featured buildings (Stoertz 1997, 76).

The kingdom of Elmet is thought to have been centred on this area of West Yorkshire. It is also possible that the as yet undated system of dykes to the north of the site date to this period (Wilmott, 1993). If this was the case then it would mirror the situation at Silchester, Hampshire, as suggested by Snyder (1998, 156) where the series of earthworks surrounding the town created a 'Saxon-free zone' during the fifth and sixth centuries.

The presence of a corn drying oven dated to the tenth or eleventh century extends the occupation and agricultural activities at the Garforth site by several hundred years. The presence of large amounts of charred oats within the oven indicates a shift in the type of crop being grown. This change may have been caused by cultural factors, or may be an indication of a colder wetter climate during the end of the first millennia AD and the beginning of the second millennia AD. Unfortunately there is a scarcity of palaeoenvironmental data for this period with which to answer questions regarding climate change (Dark 2000, 168). No other features were dated to tenth or eleventh centuries which would suggest there was a break in occupation of the site between the sixth and tenth centuries.

THE POTTERY

By D J Garner

Roman coarse wares

The excavation produced a small but significant assemblage of coarse ware pottery with fragments of over 117 vessels identified. Most rims and some decorated sherds are illustrated in order to complement the illustrated assemblage from the published Dalton Parlours site (Wrathmell and Nicholson, 1990). Wherever possible the sources of pottery have been identified. This information is summarised in two tables (Tables 1 and 2a, 2b, and 2c below), which show the minimum number of vessels present in each period from any particular source (Table 1) and the same information as a percentage of all vessels within the period (Tables 2a, 2b and 2c).

TABLES 1 AND 2

LOCAL SELF COLOURED FABRICS

Oxidised wares (Fabrics 065, 067, and 068)

The source for these wares remains uncertain, but all three fabrics are characterised as being iron rich, sandy, and with occasional inclusions of calcite. Fabric 065 was distinguished by small red/brown iron rich inclusions; Fabric 067 had a characteristic thick black core; and fabric 068 had abundant black sand temper. No specific vessel forms could be distinguished in these fabrics and it assumed that they are all derived from relatively local sources.

Reduced wares (Fabrics 066 and 074)

Fabric 066 was a grey sandy ware that is almost certainly the product of the Throlam industry, whilst fabric 074 is of uncertain source, possibly being derived from the East Yorkshire area.

OTHER FABRICS

Black Burnished ware I (Fabrics 050 and 051)

Two possible sources for this material have been identified, both are detailed in the National Roman Fabric Reference Collection. The first source is south-east Dorset *DOR BB I* (Tomber and Dore 1998, 127), while the second possibility is Rossington Bridge *ROS BB I* (Tomber and Dore 1998, 202). The main distinction between these two sources is the lack of the characteristic shale inclusions in the Rossington Bridge wares. Production at Rossington Bridge is also thought to be limited to the Antonine period.

Crambeck Fabrics

Parchment ware (Fabric 053)
Detailed in the NRFRC as being used for a range of bowls, dishes, and mortaria *CRA PA* (Tomber and Dore 1998, 196).

Reduced ware (Fabric 052)
Detailed in the NRFRC as being distinguished by a very pale core in contrast to dark grey surfaces *CRA RE* (Tomber and Dore 1998, 197).

Red ware (Fabric 054)
Detailed in the NRFRC as being *CRA* (Tomber and Dore, 1998 197).

Huntcliffe ware (Fabric 061)

Thought to be sourced to the East Yorkshire area, though no kiln sites are known. It is detailed in the NRFRC as being characterised by abundant angular grains of calcite *HUN CG* (Tomber and Dore 1998, 201).

Dales Shelly ware (Fabric 055)

Thought to have been produced in North Lincolnshire, though no kiln sites have been excavated. It is detailed in the NRFRC as being characterised by inclusions of abundant ill sorted fossil shell *DAL SH* (Tomber and Dore 1998, 157).

Derbyshire ware (Fabric 056)

Kiln sites have been identified to the north of Derby. It is detailed in the NRFRC as being best described as 'goose-flesh petrified' *DER CO* (Tomber and Dore 1998, 125).

Lower Nene Valley ware (Fabric 058)

This fabric is defined in the NRFRC as three wares: Colour coated ware *LNV CC*; Parchment ware *LNV PA*; and white ware *LNV WH* (Tomber and Dore 1998, 117-119). The first of these wares is certainly represented at the Garforth site in both white and orange fabrics.

Verulamium White ware (Fabric 060)

This fabric is defined in the NRFRC as a cream or off-white fabric *VER WH* (Tomber and Dore, 1998, 154).

Black Burnished ware II (Fabric 075)

Several possible sources for this fabric are identified in the NRFRC including Essex and Kent. However, only one sherd was assigned this classification at Aberford road and whether it is truly BB 2 must be treated with some suspicion.

Social and economic implications

The coarse pottery assemblage seems remarkably lacking in finewares and in particular beakers. The general lack of late-second to mid-third century material also distorts the picture. The assemblage appears to represent an area of low social status and where subsistence or kitchen-related activities dominate. The only finewares which appear in any quantity are those from the Nene Valley kilns and even these are mainly later coarser wares in which colour-coated kitchen wares play an important part. The kitchen-oriented pattern is unusual in the general lack of amphorae.

Phase 1: Second to mid-third century

There is very little coarse pottery from this period on the site and little which is closely datable. The majority of the illustrateable and more closely dateable pieces are also derived from later fourth century contexts and are therefore residual in nature. There are too few pieces to make meaningful comments on sources.

Phase 2: Late-third to fourth century

The majority of the coarse pottery came from this period and included some closely dateable pieces within a date range of *c.* AD 370-400+; a fourth century date for the collection would be acceptable.

The Catalogue (Figures 15-16)

Context 8

1. Huntcliffe type jar in a dark grey calcite gritted fabric. Corder type 209 *c.* AD 360-400.

Context 89

2. Flanged bowl in a light grey Crambeck fabric, with internal wavy line *c.* AD 370-400+.

3. Jar in a light grey fabric.

Context 90

4. Jar/cooking pot in BBI fabric. Late-third to mid-fourth century.

5. Huntcliffe type jar in a dark grey calcite gritted fabric. Corder type 88 *c.* AD 340-400.

Context 211

6. Huntcliffe type jar in a dark grey calcite gritted fabric *c.* AD 360-400.

Context 212

7. Huntcliffe type jar in a dark grey calcite gritted fabric. Corder type 166 *c.* AD 360-400.

8. Flanged bowl in a medium grey fabric. Fourth century.

9. Huntcliffe type jar in a dark grey calcite gritted fabric. Body sherd with incised wavy line decoration.

10. Huntcliffe type jar in a dark grey calcite gritted fabric. Fourth century.

Context 223

11. Base sherd to a jar in a dark grey calcite gritted fabric.

12. Flanged bowl. Nene valley ware vessel with a red colour coat. Fourth century.

Context 255

13. Flanged bowl in a BBI fabric.

Context 257

14. Jar/cooking pot in a Derbyshire ware fabric.

Context 292

15. Huntcliffe type jar in a dark grey calcite gritted fabric.

16. Jar/cooking pot in a local grey ware fabric.

Context 324

17. A Crambeck grey ware bowl.

18. A cheese mould in a local grey ware fabric.

Context 326

19. Dales ware jar.

20. A jar/cooking pot in a Crambeck grey ware fabric.

Context 335

21. A base sherd from a colander in a local grey ware fabric.

THE MORTARIA

A total of 25 sherds of mortaria were recovered from the excavations, representing a maximum of 17 vessels. In date range they vary from the early Antonine period to the late fourth century, but there are two distinct groups that can broadly be allocated to periods 1 and 2. The first group comprises a maximum of 6 vessels: 2 from Rossington Bridge; 2 from Mancetter-Hartshill; 1 from the Nene Valley; and an imported vessel from Lower Germany that was actually derived from a period 2 context. This first group points to usage of mortaria on the site between the mid second and early third centuries, followed by a complete absence of mortaria usage until the early fourth century. The period 2 group contained a maximum of 11 vessels: 5 from Mancetter-Hartshill; 3 in Crambeck parchment ware; and 3 abraded probably residual vessels including a possible Nene Valley product and 2 in a Rossington Bridge fabric. This second group included one Crambeck wall-sided mortaria of late fourth century date, which compares well with the date range on some of the coarseware vessels. The trend would seem to suggest that products of the Mancetter-Hartshill industry remained important throughout the sites history, with the products of more local production sites like Rossington Bridge and Crambeck occurring in almost equal quantities.

The Catalogue (Figure 14)

PHASE 1

Context 246

1. Flanged mortaria with a beaded and rolled rim, in a hard sandy orange Rossington Bridge fabric. Part of the spout is present and both surfaces have traces of a cream slip. The trituration grits comprise worn pieces of white and translucent quartz and red/black iron silicate. The form is generally dated c.110-150 A.D., but as the production centre is dated to the Antonine period a date of c.140-150 A.D. is suggested (Tyers, 1996, 130).

Context 315

2. A beaded and flanged mortaria in a Mancetter-Hartshill fabric. The trituration gı comprise pieces of dark grey and red/brown iron ore. The form is ascribed a date rar of c.160-220 A.D.

PHASE 2

Context 126

3. Wall sided mortaria in a Crambeck parchment ware. The trituration grits are pieces black iron silicate. The form and production centre suggest a date of c.370-400 A.D

Context 232

4. A beaded and flanged mortaria in an orange Rossington Bridge fabric. The triturat grits comprise pieces of quartz, brown sandstone and haematite. The form wc suggest a late Antonine date, probably c.180-200 A.D.

Context 255

5. Hammerhead mortaria with a reeded flange, in a Crambeck parchment ware fal The form is fourth century but pre-370 A.D.

Context 275

6. A hammerhead mortaria with a reeded flange, in a Mancetter-hartshill fabric. trituration grits comprise pieces of dark grey and red/brown iron ore, and the surf are showing signs of lamination. The form is dateable to c.320-370 A.D.

Context 292

7. A beaded and flanged mortaria in a hard granular cream fabric. The trituration comprise tiny quartz particles reminiscent of very coarse sand paper. There are tı of a dark red colour coat/slip on the interior surface of the vessel. This is probab import from the Rhineland dateable to c.150-250 A.D.

Context 135

8. Hammerhead mortaria in a Mancetter-Hartshill fabric. The trituration grits are p of dark grey and red/brown iron ore. The form suggests a date range of c.28(A.D.

Phase 3: Post-Roman Pottery

The collection of Post-Roman pottery was not large, weighing 962g. The quantity reco could be affected by the possibility that important areas of Anglo-Saxon occupatio outside the excavation site. Although the pottery found is crucial for the chronology of 3, its quantity does not justify an exhaustive discussion of near parallels for both forı decoration. The catalogues from West Stow (West, 1985) and Mucking (Hamerow, 199 the main parallels that have been used.

As the assemblage represents a rather unexplored class of material for West Yorkshire, the main fabric types were sent for petrological analysis at Southampton University, the intention being to provide reference data for future work. Every sherd displayed signs of having been coil-made and competently fired to a hard state.

Fabric 150 Hand-made black fumed sandy fabric with abundant white mica. Frequent angular quartz temper (upto 3mm); rare iron rich fragments (up to 1mm); and angular calcite grits (up to 2mm).

Fabric 151 Hand-made black fumed sandy fabric with abundant white mica and grass tempering. Frequent angular quartz temper (up to 3mm); rare iron rich fragments (up to 1mm); and angular calcite grits (up to 2mm).

Fabric 152 Hand-made oxidised pale orange pink sandy fabric with abundant white mica. Frequent angular quartz temper (up to 3mm); rare iron rich fragments (up to 1mm); and angular calcite grits (up to 2mm).

Fabric 153 Hand-made black fumed sandy fabric with abundant white mica. Frequent angular quartz temper (up to 3mm); frequent angular calcite grits (2mm); and rare iron rich fragments (up to 1mm).

Two broad categories of surface finish are of note - smoothing or burnishing of either or both surfaces of a vessel; and deliberate roughening or rustication of the outer surface by the application of a coarse slip (*chlickung*). These methods of treating the surfaces of pottery vessels have a long history and wide distribution in Germanic regions on the continent, beginning in the Late La Tene and Early Roman Iron Age (von Uslar 1938, 34). Indeed Von Uslar considered these surface treatments not as diagnostic in themselves, but rather defined by the forms on which they are found. At Mucking rustication was found to be restricted to the lower halves of relatively large vessels which were generally well made and often carefully burnished on the interior and down to the shoulder on the exterior. This supports the argument that deliberate roughening was primarily to facilitate the handling of slippery containers or large storage vessels (Hamerow 1993, 35).

Only three sherds of pottery exhibited evidence of decoration and two of these were probably derived from the same vessel. Both styles involved the use of stamped designs in conjunction with line and groove decoration, which Myres suggested was the primary decorative style of the fifth century (Myres 1969, 30-1). The two types of stamp used were arranged according to Briscoe's pottery stamp classification (1983): the first was a simple open circle motif; and the second was a cruciform circle stamp.

Due to the fragmentary nature of the assemblage it was often hard to distinguish between what may have been a jar or a bowl, added to which very little evidence for base form was present. Using the pottery dendrogram and form glossary adopted at Mucking (Hamerow, 1993, 39-40), it is possible to suggest that the simple profile forms belong to bowls (Figure 14, nos 1 and 3) while the complex profile forms may belong to either bowl or jar vessels (Figure 14, nos 2, 6 and 9). Only one vessel reconstruction was attempted, being that of a globular curved profile bowl with a rounded base (Figure 14 no 6). The decorated body sherds (Figure 14 nos 4 and 5) both exhibited signs of reaching corner points on the vessel wall implying that they were derived from biconical jars. The single lugged vessel (Figure 14 no 8) was almost certainly derived from a bowl designed for suspension, at Mucking these vessels

usually had a foot-ring or splayed base for added stability and are dated to the sixth or seventh century (Hamerow 1993, 41).

The type series from Mucking indicates several developments in pottery form that may be compared to the assemblage from Garforth. The earlier fifth century pottery is dominated by carinated bowl and biconical jar forms, which by the seventh century are no longer in production. The early vessels also have a tendency to have a distinctly hollow neck in contrast to the shorter and more upright necks of the straight-sided ovoid forms, which did not come into their own until the seventh century (Hamerow 1993, 42-40). The Garforth assemblage has no confirmed carinated bowl forms, though two biconical jar forms may be present from the *Grubenhaus* (fill 109), which also produced a standard radiometric date of Cal AD 325-615 (BETA-137068). Furthermore, no straight-sided ovoid forms were identified which suggests that the pottery was of a more fifth or sixth century character.

The nearest comparable published assemblage to the Garforth material was derived from two *Grubenhaus* excavated at Wharram Percy, *c.* 25 miles to the north-east. Stamped wares were present in the Wharram group including an example of a cruciform circle stamp (Milne and Richards 1992, Figure 16.10) and most of the forms present at Garforth are represented at Wharram, including an example of a lugged bowl (Milne and Richards 1992, Figure 18.31). The dating of the assemblage from Wharram was uncertain, though a sherd of Tating-type ware and a French coin suggested an eighth century date (Milne and Richards 1992, 36) and this may serve to demonstrate relatively long-lived traditions of Post-Roman pottery production in the region.

Given the small number of vessels represented in the Garforth assemblage no detailed analysis of the relationship between pottery form and function was undertaken. Moreover the destruction of floor levels on the site would make the micro-distributional analysis needed to define activity areas impossible. Residue analysis might prove more useful, although this is not currently done on a commercial basis and could not be undertaken within the parameters of this report. The material from Garforth could therefore form part of a larger research programme.

Catalogue (figure 17)

Context 90

1. A splay sided bowl. Hand-made black fumed sandy matrix.

Context 109

2. A globular jar. Hand-made black fumed sandy matrix, internal surface has imprints of straw/grass tempering that is not visible in cross section (sherd no. 155).

3. A splay sided bowl. Hand-made black fumed sandy matrix, both surfaces have evidence of straw/grass tempering (sherd no.122).

4. A body sherd to a biconical jar. Hand-made black fumed sandy matrix. The external surface has a band of circular cruciform stamped decoration (sherd no.118).

5. A body sherd to a biconical jar. Hand-made black fumed sandy matrix. The external surface has two bands of single circle stamped decoration (sherd nos 116-117).

Context 123

6. A globular bowl with a rounded base. Hand-made black fumed sandy matrix, both surfaces have evidence of straw/grass tempering (sherd nos 182-184).

7. A circular spindle whorl/loom weight. Hand-made black fumed sandy matrix, with a central perforation.

Context 454

8. A hanging bowl with upright lugged and perforated handle(s). Hand-made black fumed sandy fabric (sherd no.s 582-5).

Context 470

9. An everted rim jar, possibly biconical in form. Hand-made black fumed sandy matrix. (sherd no.s 591-2).

THE PLANT REMAINS
By E Pearson

Charred plant remains were recovered by flotation of 10 litre samples with both flots and residues retained upon 500 μ mesh. Both flots and residues were sorted for their plant remains. Identification was by comparison with modern reference material.

Context 479, sample 7: Romano-British corn dryer
This sample contained abundant cereal grains and spelt wheat chaff (glume bases and spikelet forks). The majority of the cereal grains were badly popped and warped, although a number were identified as wheat (*Triticum* sp), spelt wheat (*Triticum spelta* type) and emmer wheat (*Triticum dicoccum* type). The large proportion of spelt wheat glume bases, however, suggest that the majority of the unidentified cereal grains derive from a spelt wheat crop. Both grain and chaff are abundant, with the proportion of glume bases to grain (based on an estimate of grain quantity) approximately equal. Cereal chaff has long been used to fuel fires, particularly corn dryers (Reynolds and Langley 1979), so its abundance within the flue of a corn dryer is not surprising. However, charred cereal grain is also plentiful and may derive from mixing of fuel waste from the flue and grain from the drying chamber, perhaps when the structure collapsed. Moreover, as grain survives fire better than chaff, the chaff waste is probably under represented.

The uncharred root and possible cereal straw fragments are likely to have survived as a result of damp or waterlogged conditions within a ditch underlying the structure.

Context 251, sample 4: late Saxon to early medieval corn dryer

This sample produced a large flot (1500mls) dominated by well preserved oat grains, on some of which, fragments of hull were attached. It is difficult to distinguish between the grains of the cultivated species (*Avena sativa*) and wild oat (*Avena fatua*). However, in this sample the large quantity of grain dominating the assemblage in a corn dryer context suggests that this is a cultivated crop. The presence of a lemma base with a round irregular scar, characteristic of cultivated oat, was also noted. A small number of barley (*Hordeum vulgare*) grains, occasional weed seeds (predominately unidentified grass grains), common vetch (*Vicia sativa*) and a small number of molluscs were also noted. This sample, therefore, essentially represents a fully cleaned grain product.

The previous assessment (Pearson 1998) demonstrated exceptionally well preserved charred cereal crop remains in a number of other samples. Occasional fragments of burnt animal bone, mollusc remains and organic plant remains preserved by waterlogging were also recorded (see Tables 4 and 5).

Context 059, sample 1: Romano-British corn dryer
This sample was rich in charred cereal grain, including barley (*Hordeum vulgare*) and wheat (*Triticum* sp). The wheat grains were generally poorly preserved, making identification of species difficult, whereas a significant proportion of the barley grains was well preserved. This assemblage may therefore represent two different drying episodes. The appearance and condition of occasional mollusc remains suggest they may be modern contaminants. A small number of uncharred seed remains are likely to be have been preserved by anaerobic conditions but may, like the mollusc remains, result from later contamination.

Context 095, sample 2: Romano-British corn dryer
This sample consisted of a large 10 litre and smaller 2 litre sample. Charred cereal grains were abundant in both, but were more so in the smaller sample. Barley grains were predominant, in association with occasional wheat and oat (*Avena* sp) grains. These were present in association with a small quantity of wheat chaff and weed seeds, including sheep's sorrel (*Rumex acetosella* agg) and goosefoot/orache *(Chenopodium/Atriplex* sp). Preservation of these remains was moderate to good.

Context 193, sample 3: Romano-British kiln or hearth
Only a small quantity of poorly preserved cereal grain was found in this context in association with abundant charcoal and clinker fragments. The charcoal fragments were considered to be too small and badly preserved to allow identification.

Context 99, sample 5: Romano-British hearth
No identifiable remains were found, the flot being made up entirely of fine charcoal fragments.

Context 453, sample 6: Romano-British pit
An abundance of wheat grains was present in this sample, which (because of the generally poor preservation) were difficult to identify to species. However, occasional chaff fragments (glume bases) of spelt wheat (*Triticum spelta*) were recognised. The majority of the cereal grain may therefore derive from this crop.

DISCUSSION

Abundant charred cereal crop waste has been identified in five contexts. The condition of the material was variable, but includes well preserved assemblages that allowed identification of crop types in use on this site. Mostly these are residues of corn drying activities, with use of barley, spelt wheat and oat crops indicated. The two samples identified in detail (corn dryers 251 and 479) represent single unmixed crops, whereas two other corn dryers (contexts 059 and 095) indicate mixed crops or residues from different drying episodes. Too few weed seed remains were identifiable to allow interpretation of the conditions under which the crops were cultivated.

The quantity of oat recovered from one corn dryer (251) demonstrates large scale processing of a single crop, perhaps parching of the cleaned grain prior to storage or milling. Although oat was not generally the main cereal used for bread making, it would have been used in pottage, and possibly for animal feed. Oat thrives well in cool, moist climates (Zohary and Hopf 1993), and in such areas is likely to have been favoured over wheat. The crop may therefore have been grown under similar conditions.

Although these structures are interpreted as corn dryers, it should be noted that they may have been multi-funtional. Evidence from many similar structures shows that they have been used for malting grain. Although no evidence for malting (such as germinated grain) was found from these samples, the use of these structures for this purpose at some time cannot be ruled out. Indeed, Reynolds and Langley (1979) through their experiments with reconstructed corn dryers have questioned their efficiency for corn drying and also suggest their use as malting kilns.

Nevertheless. it is likely, because of the abundance of cereal grain present within corn drying contexts, that this settlement was a significant cereal crop producer. The excavator has also identified it as a relatively high status rural site.

There is some evidence from the environmental samples that charcoal and naturally occurring coal would have been used as fuel for kilns and other fires. The remains from the kiln or heath (193) and hearth (99) may represent residues from industrial activities.

Comparison with other regional and national sites

The largest volume of published work on comparable assemblages in northern England is the work by van der Veen on sites of Iron Age to Roman date in north-eastern England (van der Veen 1992). As a result of this extensive work, sites could be divided into two main groups showing different farming regimes. Small scale subsistence production of emmer wheat and barley was associated mainly with small Iron Age hillforts. However, large scale production or arable expansion, cultivating spelt wheat and barley, was associated mainly with sub-rectangular enclosures in the coastal lowlands. The samples of Romano-British date from Garforth appear to be similar to the latter case. The quantity of charred grain in corn drying contexts suggests large scale processing, and the cultivation of spelt wheat over emmer wheat is demonstrated in one case. However, the information from the weed species was too poor to provide much information on the cultivation regime.

Little archaeological information in the region is available on late Saxon farming regimes for comparison with the late Saxon evidence (context 251) from this site. However, it is noticeable that an abundance of oat and rye is more common during Saxon and medieval

periods from the author's point of view. These are both crops which are more tolerant of poorer soils and wetter climates than other cereal crops, and may mark the expansion of farming onto more marginal land at this time. At Stafford, West Midlands, oat grains were abundant in both Saxon and medieval periods, one oven being dominated by oat and barley (Moffett 1987). At Deansway, Worcester (Moffett forthcoming) oat and rye were identified as definite crops by the late Saxon period, and were the most abundant cereals in samples of this date.

Environmental samples from corn dryers of Romano-British date elsewhere have demonstrated their use as malting kilns. Two examples are samples rich in cereal grain (spelt wheat) which had uniformly germinated, at Mucking, Essex (van der Veen 1982) and at Bancroft Roman Villa (Pearson and Robinson 1994).

The recovery of well preserved charred plant assemblages from contexts such as corn dryers, where they have been preserved *in situ* is valuable for research into crop husbandry practices. Frequently these remains are recovered from deposits of mixed refuse, particularly in ditches, where there may have been redeposition from other parts of the site. Although charred plant remains have been studied from several large excavations of the Romano-British period nationally, there are still aspects of regional and local variation in crop husbandry regimes that require further study. Carruthers (1993) states that synthetic work by van der Veen (1991) has demonstrated the complexity of this part of the economy. Van der Veen puts forward a hypothesis that the differences observed in agricultural regimes between two local areas may be linked to social differences between local communities.

TABLES 3,4 AND 5

THE ANIMAL BONE
By D Jaques

The current excavations revealed deposits which were assigned to five groups: Phase 1 (mid 2nd Century); Phase 2 (4th Century); Phase 3 (5/6th Century); Romano-British; and undated.

Phase 1 deposits were mostly associated with a large stone quarry, which occupied 800 m^2 of the site. The bulk of the vertebrate remains from this phase were recovered from fills within the quarry.

A number of features including ditches, pits, corn driers and ovens, and their fills, were assigned to Phase 2.

Phase 3 deposits were mostly associated with a feature interpreted as a sunken-featured building or *grubenhäus*.

The fourth group (Romano-British) includes deposits which could not be more tightly dated. Mostly this and the undated category are made up of contexts representing fills of ditches, features notoriously difficult to date.

All vertebrate remains from Phase 1, 2 and 3 deposits, and most from broadly dated Romano-British ones, were recorded in detail. Whilst material from a number of the undated contexts

was not considered worth recording, notes were made on fragments from eleven of these deposits.

In total, vertebrate remains from sixty deposits were recorded, either fully or in note form. The whole assemblage amounted to 1955 fragments, of which 695 were identified to species (Table 7). It must be noted, however, that this total includes material from a number of so-called 'special deposits', including three part skeletons. These are discussed below.

TABLE 7

PRESERVATION

Phase 1

Bone was recovered from nine deposits, all of which were described as dumps, backfills or accumulations associated with the quarry. Preservation of the vertebrate remains was rather variable, both within and between contexts. On the whole, most fragments were reasonably well preserved but each deposit contained varying proportions of fragments which were rather battered in appearance or had eroded cortical surfaces. Root etching and/or chemical erosion was noted on a few fragments. An almost complete horse hind leg (from femur to phalanx 2) was identified from Context 287. With the exception of the horse tibia, all the elements were extremely well preserved. The tibia, however, was slightly darker in colour and its surface was extensively damaged by chemical erosion. This seemed rather unusual as the leg was probably deposited into the ground as a complete limb, and it suggests disturbance after original deposition.

Phase 2

Seven of the 21 contexts from this phase were fills of an unusual crescent shaped feature that had been cut into the infilled quarry. Most of the fragments from this feature were well preserved, with only a few bones from Contexts 226 and 255 being rather battered in appearance. The rest of the assemblage from Phase 2, with the exception of material from Contexts 182 and 198, was rather variably preserved. In particular, bones from Contexts 223 and 477 were very eroded and rounded, with much evidence of chemical erosion on the cortical surface of the bones. These more poorly preserved assemblages may contain reworked or redeposited material.

Phase 3

Phase 3 deposits produced similar variation in preservation. Whilst colour was mainly fawn, preservation ranged from 'good' to very poor. Material from Context 121 appeared very poorly preserved and the surfaces of the bone were badly eroded by chemical action. Archaeological evidence suggests that this deposit (ditch fill) accumulated through natural silting and the preservation of the bones indeed suggests that they lay exposed for a period of time before being gradually covered over. A similar interpretation can be proposed for the poor preservation encountered for the bones from Context 339. On the contrary, material from the deposits (Contexts 109, 123 and 124) within the *grubenhäus* was quite well preserved, but one context (109) did include a small component of slightly battered fragments.

Romano-British

These deposits, mostly ditch fills, produced fragments showing a similar range of preservation to that discussed for Phases 1, 2 and 3. A single ditch fill (Context 326) contained four fragments of a human femur, possibly an indication of reworked material.

Overall, it is clear (and not unexpected) that where ditches or pits were deliberately filled in, preservation of bone is better than where deposits have gradually formed over a period of time.

Extensive fresh breakage was recorded throughout the assemblages, presumably occurring through excavation due to the brittle condition of much of the bone. This damage has undoubtedly precluded identification to species of some bones and, in certain cases, prevented measurements being taken, thus limiting the data sets.

SPECIES REPRESENTATION AND RELATIVE ABUNDANCE OF MAJOR DOMESTICATES

The whole assemblage from Garforth is quite small and, although numbers of fragments amount to 1955, almost 65% of this material could not be identified to species. Additionally, total fragment counts are biased by the presence of a number of part skeletons and articulated limbs. With these considerations in mind, the relative importance of different species at different periods in time is difficult to determine from such a small assemblage.

Since most of the remains are, therefore, of limited interpretative value, the following comments regarding species representation can only be tentative.

It is apparent from the total fragment counts in Tables 8 and 10 that, once the so-called special deposits are excluded, cattle remains predominate throughout all the represented periods. This is corroborated when one takes the large mammal fraction (assumed to be mainly cattle) into consideration. This component forms more than 60% (in phase 2 over 80%; see Table 4) of the unidentified fraction, again suggesting that cattle are the most commonly represented species. Caprovid and pig remains are considerably less numerous and individually constitute between 11 and 18% of the identified fragments (Tables 8 and 10).

Calculations of the minimum number of individuals (MNI) reduce the abundance of cattle (Table 11) in all phases but cattle still form the bulk of the assemblage. MNI calculations suggest that pigs are more abundant than caprovids in Phase 3, but this can only be a tentative conclusion bearing in mind the assemblage size.

The range of species present, other than the major domesticates, was quite limited. However, the lack of sieved material inevitably creates a bias towards denser and more robust fragments thereby increasing the representation of larger taxa and elements. This is quite evident from the paucity of bird remains recovered from the site (Table 7). Only single fragments of chicken and crow/rook *(Corvus corone* L./*Corvus frugilegus* L.) were identified, with numbers of birds only increased by the presence of the part skeleton of a raven (*Corvus corax* L.) in post hole 182 (Phase 2).

Goat remains, probably representing a single individual, were identified from Context 11 (fill of pit 80 - Romano-British). Medium-sized mammal fragments from this deposit included

vertebra and rib fragments, which may also be goat. Unfortunately these elements have no distinguishing morphological characteristics, which could be used to differentiate between sheep and goat. A pig mandible was the only other fragment recovered from this deposit.

Small quantities of horse remains were identified from each phase. However, 12 fragments, from a total of 79, represent an almost complete hind leg from Context 287 (Phase 1), whilst a further 55 fragments from undated Context 96 are freshly broken fragments from a single skull. Their relative importance is difficult to assess, bearing in mind that their utilisation and subsequent disposal could have been very different to that of cattle and caprovids.

A part skeleton of a dog (Context 198, Phase 2) represents the only dated canid remains, although a single mandibular tooth (M1) was identified from Context 144 (undated layer). The skeleton represented a small, but stocky and rather squat individual, whose leg bones, particularly the humerii and tibiae, were very bowed. Shoulder heights of 339, 342 and 341 mm were calculated from the greatest length measurements of the dog's tibia, radius and humerus, indicating a small 'lap' dog-sized individual, not uncommon in the Roman period. No skull or mandibles were recovered. The presence of an *os penis* indicates that this dog was male.

The bulk of the assemblage from Garforth, not surprisingly, represents the remains of domestic mammals, numbers of fragments of wild species being minimal. Red deer (*Cervus elaphus* L.) was recorded from Phases 1 and 3, whilst roe deer fragments were recovered from Phases 2 and 3. All of the red deer fragments from Phase 1 were antler, and included a burr and brow tine from Context 125 and seven antler fragments, some showing evidence of working, from Context 292. Evidence for the importation of antlers could be provided by a single large burr which had been shed 'naturally'. Equally the presence of a pedicle and attached frontal bone (with antler removed post-mortem) could suggest local hunting. Deer from Phase 2 deposits included a roe deer scapula, also indicative of local exploitation, and a sliver of antler (probably red deer) which may be waste from some craft activity. The three cervid bones from Phase 3 were all post-cranial elements and included a red deer astragalus and a tibia, both representing the same single individual.

TABLES 8, 9, 10 AND 11

CARCASS REPRESENTATION

Skeletal element representation for major domestic species was attempted, but the small size of the assemblage and the variability of the preservation makes only limited interpretation possible.

Examination of the skeletal element representation for cattle from all three phases shows that non-meat-bearing elements predominate, lower limb elements (i.e. metapodials, astragali, calcanei and phalanges), mandibles and isolated teeth being the most numerous (Table 13). However, a range of elements is represented, including both major (scapula, humerus, pelvis and femur) and minor (radius, ulna and tibia) meat-bearing elements, and it must be borne in mind that the bulk of the unidentified large mammal fraction was composed of shaft fragments. These fragments may represent the additional meat-bearing elements absent from the identified remains. The large and medium-sized mammal categories for Phase 3 deposits also included many more rib and shaft fragments than the earlier phases, which suggests that a larger proportion of waste from that the early Saxon period may be domestic or occupation refuse.

Caprovid and pig remains were too few for any meaningful conclusions to be drawn concerning body part representation.

Evidence for butchery was recorded and these records can be seen in Table 12 . There was no evidence for the systematic butchery seen in 4th century deposits at Lincoln (Dobney *et al.* 1996).

TABLE 12, TABLE 13

AGE-AT-DEATH OF THE MAJOR DOMESTICATES

Cattle

Dental attrition for cattle was restricted to data from a small number of mandibles and isolated teeth. The data suggest that in all three phases cattle reached maturity before being slaughtered and that most of the cattle could be assigned to the general age categories of adult or elderly suggested by O'Connor (1988).

Fusion data, although rather scarce, corroborate this general pattern, most bones being fused.

Caprovids

Tooth wear stages for caprovids reflect a similar pattern to that seen for cattle. Following Payne (1973), it appears that most individuals were probably between two and three years old when they were killed, with only a few individuals falling into older age ranges. Most of the teeth whose score could not be fitted into one of these discrete age categories could be classified as adult. No differences could be seen between phases.

Most of the caprovid skeletal elements present were fused but were too few to provide any detailed information.

Pig

Both mandible wear stage and epiphyseal fusion data were extremely limited for all phases. Mandibles and isolated teeth represented both adult and immature individuals, whilst half of the post cranial fragments (discounting the part skeleton) were fused and half were not. Little interpretation can be drawn from such limited data.

BIOMETRY

An archive of all measurement taken can be found in the appendix. There were insufficient measurable fragments within each date group for meaningful conclusions to be drawn.

However, it was possible to calculate withers heights for cattle from Phase 1. These show a range from 1071.6 to 1205.5 mm (Table 14), with a mean of 1118.2 mm. Cattle metapodials from 2nd to 3rd century deposits in York produced a similar mean height of 1114 mm, whilst those from 3rd Century deposits in Carlisle (Stallibrass 1993) were slightly smaller. The animals represented here are slightly smaller than those found in 3rd and 4th century deposits at Lincoln (Dobney *et al.* 1996), where analysis of these and other measurements suggested

the presence of larger individuals, which may have been imported from the European mainland. Two shoulder height values obtained from bones from Phase 3 (5-6th Century) deposits (Table 8) showed no increase in size over earlier ones, although the sample is too small for any conclusive interpretations to be made.

A number of horse withers heights (see Table 15) were estimated from greatest lengths or greatest lateral lengths of six complete elements (three of which were phalanges). These indicated the presence of ponies ranging in height (when converted into 'hands') from 13 to 14.2 hh (1308 to 1443.4 mm). Estimations for two of the individuals from Roman deposits at Garforth (1365.4 and 1345.4 mm) were close to the mean of 1373 mm calculated by Johnstone (1996) for Roman horses in Northern Europe, whilst a single individual (1443.4 mm) fell in the upper range of values for the same period. It must be noted, however, that two different heights (13.2 and 14.1 hh) were calculated from bones (from Context 287, Phase 1) believed to represent the same individual.

TABLES 14 AND 15

ANIMAL BURIALS AND 'SPECIAL DEPOSITS'

Material from a number of deposits was identified during the assessment as individual burials and/or so-called 'special deposits'. These types of deposits were not noted from the early Saxon period (Phase 3).

The hind leg of a horse, associated with a cow skull, was recovered from the fill (Context 287) of a pit within the quarry. Similar articulated horse legs have been recovered from sites of Iron Age and Roman date at Ashville, Oxfordshire (Wilson 1978), Dragonby, Lincolnshire (Harman 1996) and from 'Field 8' on the Lutton to Huntingdon pipeline corridor (Carrott *et al.* 1997). At the latter site, it was suggested that knife marks on the first phalanx and dog gnawing represented skinning or butchery waste rather than a ritual deposit. At Garforth, there was no evidence of butchery and perhaps its association with a cattle skull may indeed suggest that it is ritual in nature, although other cattle and large-sized mammal fragments representing food waste were also present.

From Context 198, Phase 2, an almost complete dog skeleton was recovered (see description above). Most of this individual was present, with the exception of the skull, mandibles and the small bones such as carpals, tarsals and phalanges, which may have been missed during excavation. There was no evidence to suggest how this dog died. A few other fragments of bone were present within this deposit. Context 198 was described by the excavator as a clayfill/surface, with large limestone blocks embedded within it as a support for wall 202/203. It is possible that the dog may represent a 'foundation deposit'.

Two of the fills (Contexts 212 and 225) of pit/ditch 210 produced the skeleton of an immature pig. Again, there was no evidence to indicate the cause of death, nor were any butchery marks evident. Both of the fills appeared to have been deliberately dumped into the pit (210) and both contained large stones and limestone blocks. At Danebury (Grant 1984) many of the complete skeletons had quite clearly been laid at the base of pits, but, this does not appear to have occurred in the present case. Possibly this individual died of natural causes and was unceremoniously dumped into the pit.

Another unusual assemblage was the part skeleton of a raven recovered from a flat-bottomed post-hole 182. Parts of both the left and right wings, and the left leg (plus the right femur) were identified, along with a small fragment of the sternum and one side of the furcula. The furcula appeared to have broken at the top (just as one would expect if one had pulled the wishbone of a chicken), but during life, and the break, instead of healing properly, had developed a false joint. No knife marks were noted on the bones.

Part and complete skeletons of ravens were found abundantly at Danebury (Coy 1984), and it has been suggested that ravens, together with horses and dogs, were preferentially chosen for inclusion in pits as 'ritual deposits' (Cunliffe (1995). Luff (1996) also considers ravens to be of great significance in Celtic religion and Wait (1985) has suggested that ravens may have been kept as pets or at least semi-domesticated because of their ritual symbolism. However, ravens are known as scavengers, particularly of carrion, and occur commonly on archaeological sites of all periods. It is, therefore, possible that the part skeleton at Garforth was naturally incorporated into the deposit.

The fill of pit 80 (Romano-British) contained most of the front leg of a goat. Unidentified vertebra and rib fragments probably belonged to the same individual. Goats have long been associated with ritual activity in the Roman period and the site of a Romano-Celtic shrine at Uley, Gloucestershire produced a large assemblage of animal bones, dominated by the remains of goats believed to have been ritually sacrificed (Levitan 1993). The goat bones at Garforth, however, were extremely poorly preserved and the excavator suggested that the pit had gradually silted up naturally rather than been deliberately backfilled. This perhaps throws some doubt on the interpretation of this part skeleton as a 'special deposit'.

An undated pit fill (Context 96) produced many freshly broken fragments which were identified as part of a horse skull, whilst the upper fill (Context 55) of this feature contained cattle skull fragments. Pit 54 was located at the south-western terminus of Ditch 151 and, in contrast to some of the other pits in the eastern corner of the site , had been deliberately backfilled using large blocks of limestone. This perhaps suggests that these deposits are atypical, and that the skulls were deliberately, and perhaps ritually, placed within the pit. This form of deposit, particularly with the deliberate positioning of two animals together, frequently occurred at Danebury (Grant 1984).

DISCUSSION

The animal bone assemblage from the Romano-British and early Saxon site at Garforth was too small to provide anything other than a very tentative interpretation of the economy at the site. A number of factors, including the small size of the assemblage, the lack of a sieved assemblage, and the poor preservation of the material observed within certain deposits, all make it extremely difficult to ascertain the relative importance of the main domesticates through time. The small numbers of fragments may also be a consequence of the nature of the site, which, in Phase 1, must have been rather more industrial in character. why?

However, the vertebrate remains suggest that cattle were the most numerous species throughout all the represented phases. The range of elements present for cattle (including the large mammal category) appears to indicate that the bulk of the material was a mixture of waste, including both butchery and domestic refuse. This implies that all stages of production and consumption were being carried out. Differences between the Roman deposits and those

of early Saxon date were negligible, but the later did include a slightly larger proportion of domestic occupation waste. Caprovids and pigs were also utilised, but not to any great extent, and only very small numbers of horse remains were recovered, with little evidence for butchery. It seems unlikely that horses formed a significant part of the diet at Garforth, if they were eaten at all.

The utilisation of wild resources is indicated by the presence of both roe and red deer. Antler fragments from Phase 1 could indicate importation or collection of raw material for the manufacture of artefacts, or exploitation of local resources by hunting. Most of the other cervid fragments from Phases 2 and 3 are post-cranial elements, which tends to suggest that hunting was undertaken in the vicinity and that occasionally venison was included in the diet.

Birds do not feature large in this assemblage, but their fragile nature and the adverse preservational conditions within some deposits do not favour their survival.

Several groups of bones have been tentatively identified as ritual from Roman and undated contexts. Articulated skeletons, animal skulls and limbs (particularly of horses), have been found at numerous other sites of Iron Age and Roman date, and have, as a result of their deposition or association with other finds, been regarded as ritual in nature. The most notable site for such deposits is the Iron Age hillfort of Danebury in Hampshire (Grant 1984). There is much debate about the definition and recognition of such deposits (Hill 1996; Wilson 1992; 1996) and indeed it is difficult conclusively to identify a group of bones as having ritual or special significance. Those from Garforth may represent ritual deposition as they fit some of the criteria discussed by Grant (1984), but, without detailed information regarding the other artefacts recovered from the features, interpretation can only be tentative. These groups of bones were, however, only identified from Roman deposits (with the exception of pit 54), and not from the early Saxon material, which lends support to their being of ritual significance. Although no evidence for occupation of the site in the Iron Age was identified, the 'special deposits' do suggest a continuity of native/Celtic traditions into the Roman period (Dobney in press).

The small size of the animal bone assemblage from Garforth precludes any detailed conclusions being drawn about the economy of the site. However, the vertebrate remains have illuminated some aspects of the possible ritual practices and cultural identity of the inhabitants at Garforth during the Romano-British period.

THE ROMAN COINS

By D Shotter

Three Roman coins were recovered, all from unstratified contexts:

1. Sf. 15 Æ Sestertius, Commodus

   Obv. M COMMODVS ANT P FELIX AVG BRIT

   Rev. FEL AVG [P M TR P XI IMP VII COS V P P] S C

   RIC 466 Moderately worn AD 186

2. Sf. 25 Æ Radiate copy, Victorinus

Obv. IMP C VICTORINVS P F AVG

Rev. SALVS AVG

RIC 67 Little worn AD 269-71

3. Sf. 35 Æ Radiate copy, Tetricus I

Obv. [IMP C TETRICVS P F AVG]

Rev. [FIDES MILITVM]?

RIC 68 (?) Very worn AD 271-3

RIC: Mattingly H. *et al*, The Roman Imperial Coinage, London 1923 -

Although little of significance can be usefully read into a group of three coins, the appearance of coinage on an agricultural site, which was not evidently of the 'villa'-type, is itself worthy of notice - particularly if the present excavation-site did not contain the bulk of the 'domestic quarters'. This indicates that the owners were, to a degree at least, integrated into the mainstream of the Romano-British economy. Further, the chronological range of the coins is itself reasonably 'standard', suggesting activity between the later second century and the early years of the fourth.

THE SMALL FINDS

By A Thompson

The finds recovered from the Garforth excavation are catalogued below by material category. The condition of each find was assessed and the appropriate conservation measures taken. Iron objects were x-rayed to aid identification Each catalogue entry is formatted with the catalogue number, context number, small find number (if issued at time of excavation), phase and, if applicable, a figure reference number.

Stone

1. Context 6, Phase 2 (Figure 18.1)
   Romano-British flat quern of gritstone (millstone grit). Fragment of upper stone. Diam. 480mm. From the fill of pit 64.

2. Context 225, Phase 2.
   Romano-British flat quern of gritstone. Fragment with grinding and upper surfaces finely pecked. Diam. 490mm.

3. Context 125, Phase 1 (Figure 18.2)
   Gaming board fragment with five complete 'squares' surviving, each 32 x 23mm. Gritstone. Length 162mm. From quarry fill under grubenhaus.

4. Context 212, Phase 2 (Figure 18.3)
Hone fragment of rectangular section. Gritstone. Length 90mm.

5. Context 179, Phase 2.
Hone fragment of sub-cicular section. Gritstone. Length 67mm. From the fill of an oven or furnace, the presence of a hone suggests probably a furnace.

6. Unstratified.
Hone fragment of void section. Gritstone. Length 77mm.

7. Context 109, Phase 3 (Figure 18.4).
Ironstone triangular 'mould' which creates a tear-drop shaped, flat backed metal object. Possibly a mould for lead weights. XRF analysis of interior surface only detected iron, from the stone itself and there is some doubt whether the object could withstand the thermal shock of having molten metal poured into it (McDonald pers. Comm.) Length 50mm. From the upper fill of the grubenhaus.

Bone

8. Context 315, Phase 1 (Figure 18.5)
Polished hair pin with circular-sectioned shank, conical head and grooves cut below the head to form a series of collars, one of which is decorated with diagonal incisions. Incomplete. Length 35mm. Type A2.2 (Greep 1995, 1116-17) and found from the first to mid-third century (AD 40-200/250). Recovered from a deposit cut into the quarry attributed to phase 1 activity, so pin of mid/late second century origin.

Copper Alloy

9. Context 306, SF45, Unphased (Figure 18.6)
Complete globular-headed stud with square-sectioned shank. Length 27mm.

10. Context 269, Modern.
Complete modern military pin with crown surmounting a wheel and garland. Length 59mm. From the fill of a modern posthole.

11. Context 340, Phase 1-2.
Tiny fragments from the fill of pit 338.

Iron

12. Context 218, Phase 2.
Traingular-shaped bar of rectangular section, tapering to a blunt point. Chisel or punch. Length 124mm.

13. Context 428, Phase 2.
Square-sectioned bar tapering to a point. Awl. Length 96mm.

14. Context 212, Phase 2.
L-shaped hinge fragment, of square section. Length 80mm.

15. Context 333, Phase 2.
L-shaped hinge fragment, of rectangular section. Length 47mm.

16. Context 135, Phase 3.
Sheet, possibly a blade fragment. Length 42mm. From lower fill of ditch 120.

17. Context 340, Phase 1-2.
Flat ovoid headed nail with square-sectioned shank. Length 54mm.

18. Context 292, Phase 2.
2 headless nails with square-sectioned shanks, lengths 47 and 64mm. Flat ovoid headed nail with square-sectioned shank, length 64mm and bar of square section, length 52mm (possibly an awl or chisel).

19. Context 89, Phase 2.
Cone headed nail with rectangular-sectioned shank. Length 72mm. Also a nail shank of ovoid section, length .....

20. Context 175, Phase 2.
Nail fragment. Length 32mm.

21. Context 225, Phase 2.
Brad. Length 43mm.

22. Context 326, Phase 2.
Flat ovoid headed nail with square-sectioned shank. Length 50mm.

23. Context 477, Phase 2.
Two flat, ovoid headed nails with square-sectioned shanks. Lengths 43 and 46mm.

24. Context 129, Phase 3.
Flat ovoid headed nail with square-sectioned shank. Length 25mm.

25. Context 63, Modern.
Fragments including a possible nail, length 59mm and nail head, length 34mm. From the fill of a modern posthole.

DISCUSSION

Table 16 Summarises the small finds recovered. The majority of finds fall under the category of iron, particularly nails, which is as expected from a settlement site, requiring nails for fixing timbers in the construction of structures. Indeed all of the finds reflect the domestic nature of the site with quernstones, a gaming board, hairpin, tools and fixings for furniture structures. The hones, mould (possibly for lead weights for nets) and chisels/punches/awls reflect inhabitants who were perhaps largely self-sufficient in being able to work metal/leather and create/repair the tools required for agriculture and manufacture.

The majority of the small finds (14 out of 25) were recovered from Phase 2 contexts and are therefore dated to the fourth century. These include the two quernstones, stone with masons mark, hone, chisel, awl, two hinges and eight nails. The earlier, phase 1, material (of mid-late

second century date) comprised the gaming board, bone hairpin, a nail and tiny copper alloy fragments. The later, phase 3, material (of fifth-sixth century date) comprised the mould, possible blade fragment and a nail.

TABLE 16

	6	63	89	109	125	129	135	175	179	212	218	225	269	292	306	315	326	333	340	428	477	u/s	Total
Quern	1											1											2
Stone				1	1				1	1												1	5
Bone																1							1
Cua													1		1				1				3
Fe		1	1			1	1	1		1	1	1		1			1	1	1	1	1		14
Total	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	2	1	1	1	25

Table 16. Summary of Small Finds

CONCLUSIONS

The excavation at Garforth has identified part of a Romano-British, late fifth to sixth century, and late-Anglo-Saxon agricultural landscape, with implications of continuity between the Late Roman and Post Roman periods. In addition to supporting and expanding on the findings of the earlier evaluation, the excavation has further demonstrated the archaeological potential of this area of West Yorkshire.

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Table 1. Coarse Pottery – Minimum Number of Vessels
Totals by Phase and Source

Fabric	Phase 1	Phase 2	Phase 3	Totals
050	-	3	-	3
051	-	2	-	2
052	-	28	1	29
053	-	-	2	29
054	-	2	-	2
055	1	4	-	5
056	1	1	-	2
058	-	-	1	1
060	-	1	-	1
061	-	25	6	31
066	1	-	-	1
067	2	-	-	2
150	-	-	5	5
151	-	-	3	3
Totals	9	89	19	117

Table 2a.
Coarse Ware Pottery by Source and Sherd Count
Phase 1

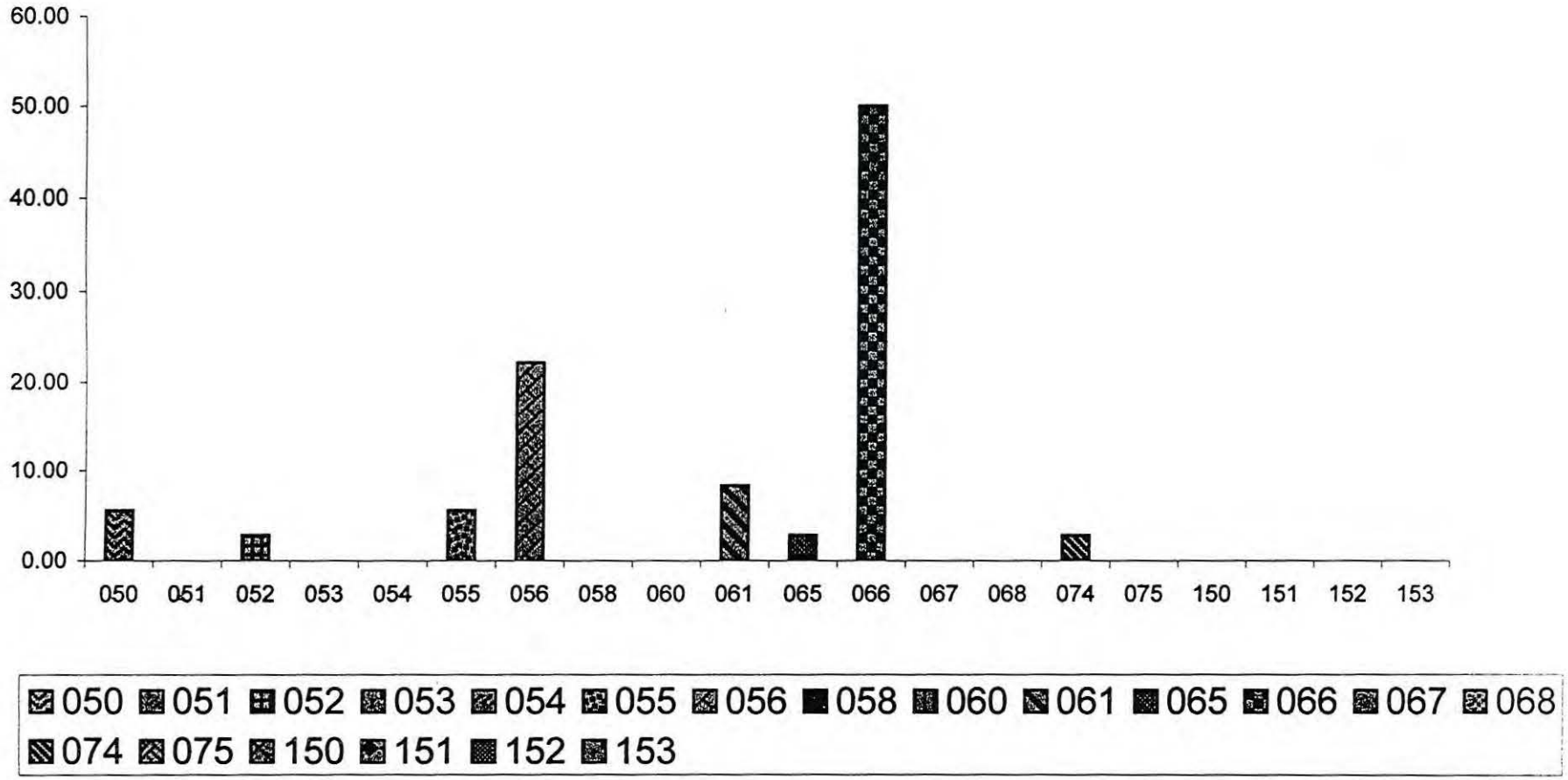


Table 2c.
Coarse Ware Pottery by Source and Sherd Count
Phase 3

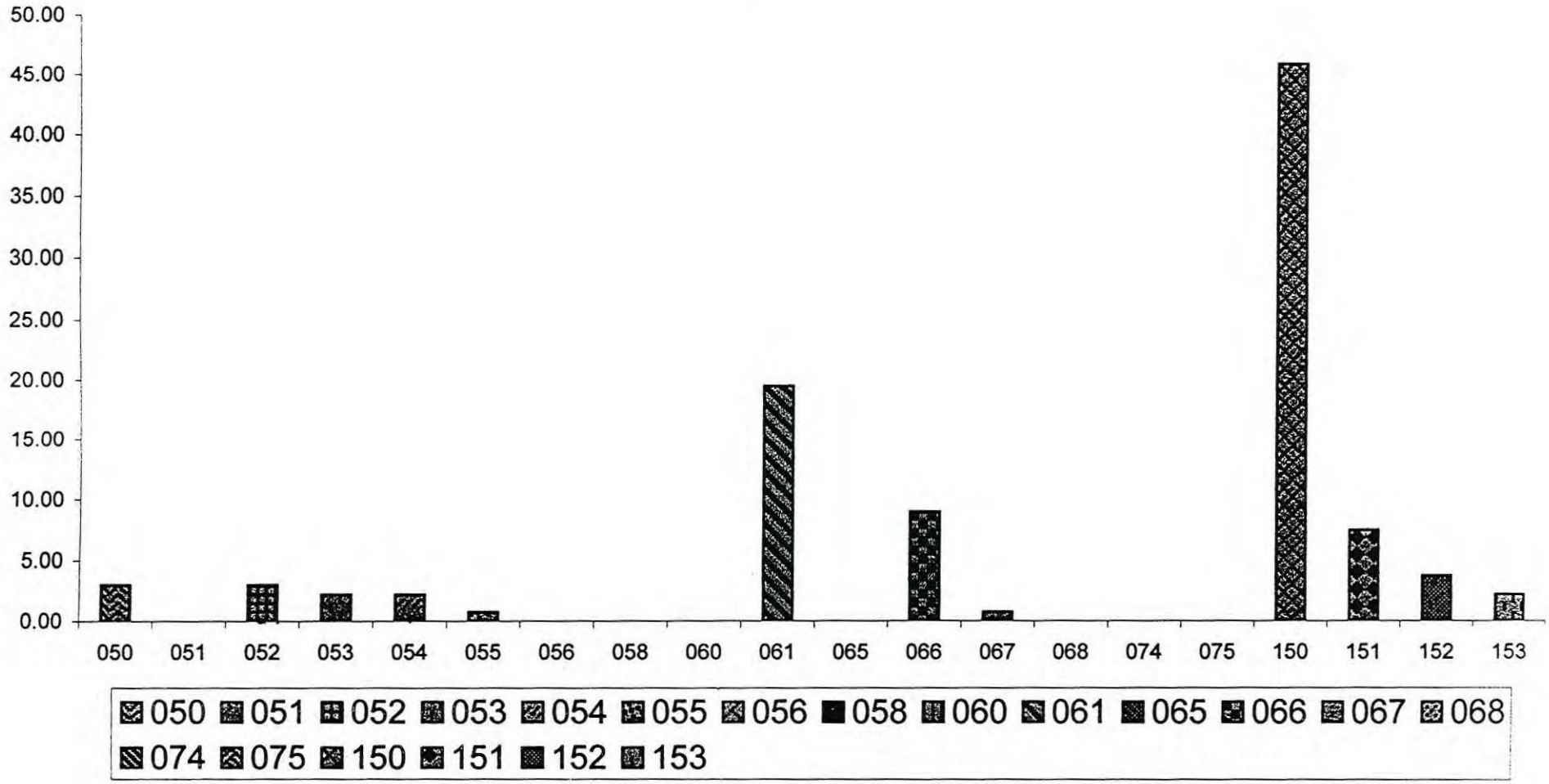


Table 2b.
Coarse Ware Pottery by Source and Sherd Count
Phase 2

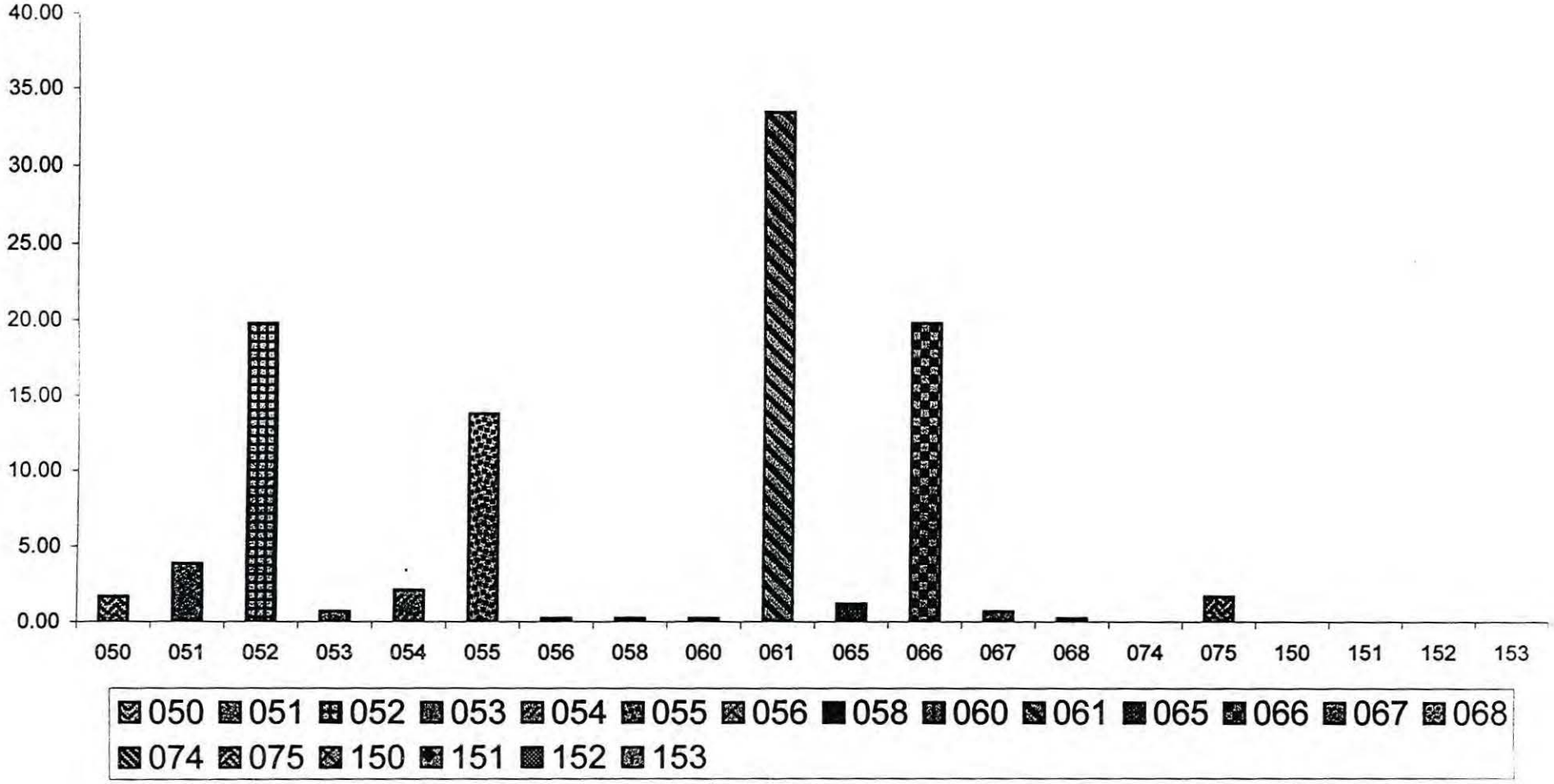


Table 3 Garforth: List of environmental samples

Context	Sample	Type	Period	Sample size (l)	Volume sieved (l)	Vol residue (ml)	Vol flot (ml)
59	1	corn dryer	Romano-British	10	10	2400	50
95	2	corn dryer	Romano-British	10	10	2400	100
95	2	corn dryer	Romano-British	2	2	100	200
193	3	kiln	Romano-British	2	2	300	300
251	4	corn dryer	Saxon/E med	10	10	600	1500
99	5	hearth	Romano-British	0.4	0.4	0	100
453	6	pit	Romano-British	10	10	700	50
479	7	corn dryer	Romano-British	10	10	400	150

Table 4 Garforth: Summary of remains from environmental samples

Context	Sample	Type	large mammal	mollusc	charred plant	waterlog plant	Comment
59	1	corn dryer		occ	abt	occ	
95	2	corn dryer	occ		mod-abt		
95	2	corn dryer			abt	occ	
193	3	kiln			occ		
251	4	corn dryer		occ	abt		large flot - oat grains
99	5	hearth					
453	6	pit	occ		abt		
479	7	floor		occ	abt	abt	

Table 5 Garforth: Plant remains from selected samples

Botanical name	Family	Common name	Habitat	251	479
Charred plant remains					
Triticum dicoccum type grain	Gramineae	emmer wheat	F		3
Triticum spelta type grain	Gramineae	spelt wheat	F		13
Triticum spelta glume base	Gramineae	spelt wheat	F		214
Triticum spelta rachis	Gramineae	spelt wheat	F		72
Triticum spelta spikelet fork	Gramineae	spelt wheat	F		11
Triticum dicoccum/spelta grain	Gramineae	emmer/spelt wheat	F		17
Triticum dicoccum/spelta glume base	Gramineae	emmer/spelt wheat	F		580
Triticum dicoccum/spelta spikelet fork	Gramineae	emmer/spelt wheat	F		70
Triticum sp grain	Gramineae	wheat	F		74
Hordeum vulgare (hulled, straight)	Gramineae	barley	F	8	
cf *Hordeum vulgare*	Gramineae	barley	F		3
Cereal sp indet grain	Gramineae	cereal	A	2	300 (E)
Avena sativa grain	Gramineae	cultivated oat	AF	1006	
Avena cf *sativa* glume	Gramineae	oat	AF	2 + frags	
Avena sp grain	Gramineae	oat	AF		2
Gramineae spp indet grain	Gramineae	grasses	AF	300 (E)	46
Vicia/Lathyrus sp	Leguminosae	vetch/vetchling/pea	A	15	
cf *Vicia/Lathyrus* sp	Leguminosae	vetch/vetchling/pea	A		
Sambucus nigra	Caprifoliacaeae	elderberry	BC		1
unidentified (?*Linum* sp)	unidentified			4	
Waterlogged plant remains					
Fumaria sp	Fumariaceae	fumitory	AB		+
fine rooty fragments					+++

Key:
A= cultivated ground
B = disturbed ground
C = woodlands, hedgerows, scrub etc
D = grasslands, meadows, and heathland
E = Aquatic/wet habitats
F = cultivar

+ = 1-10
++ = 11-50
+++ = 51-100
++++ = 100+
(E) = Estimate including fragments

Table 7. Total fragment counts for the hand-collected vertebrate remains from Garforth, West Yorkshire (fragment counts include skeletons).

Species		**phase 1**	**phase 2**	**phase 3**	**R/B**	**undated**	**Total**
Canis f. domestic	dog	-	106	-	-	1	107
Equus f. domestic	horse	14	4	4	2	55	79
Sus f. domestic	pig	7	183	15	2	2	209
Cervid	deer	1	1	-	-	-	2
Cervus elaphus L.	red deer	8	-	2	-	-	10
Capreolus capreolus (L.)	roe deer	-	1	1	-	-	2
cf. *Capreolus capreolus* (L.)	roe deer	-	-	-	-	1	1
Bos f. domestic	cattle	49	44	65	5	16	179
cf. *Bos* f. domestic	?cow	-	-	-	-	37	37
Caprovid	sheep/goat	7	10	12	3	3	35
Capra f. domestic	goat	-	-	-	9	-	9
Ovis f. domestic	sheep	1	-	2	-	1	4
Homo sapiens	human	-	-	-	4	-	4
Gallus f. domestic	chicken	1	-	-	-	-	1
Corvus corone L./*Corvus frugilegus* L.	crow/rook	1	-	-	-	-	1
Corvus corax L.	raven	-	14	-	-	1	15
Sub-total		*89*	*363*	*101*	*25*	*117*	*695*
Large mammal		194	167	381	77	37	856
Medium-sized mammal 1		36	31	121	36	11	235
Medium-sized mammal 2		2	1	-	-	-	3
Unidentified		54	1	96	1	14	166
Sub-total		*286*	*200*	*598*	*114*	*62*	*1260*
Total		**375**	**563**	**699**	**139**	**179**	**1955**

Table 8. Total fragment counts and frequencies for identified vertebrate remains from Phases 1, 2, and 3 (excluding skeletons and complete limbs) from Garforth, West Yorkshire.

Species		**phase 1**	**%**	**phase 2**	**%**	**phase 3**	**%**
Equus f. domestic	horse	2	3	4	6	4	4
Sus f. domestic	pig	7	9	12	17	15	15
Cervid	deer	1	1	1	1	-	0
Cervus elaphus L.	red deer	8	10	-	0	2	2
Capreolus capreolus (L.)	roe deer	-	0	1	1	1	1
Bos f. domestic	cattle	49	64	44	61	65	64
Caprovid	sheep/goat	7	9	10	14	12	12
Ovis f. domestic	sheep	1	1	-	0	2	2
Gallus f. domestic	chicken	1	1	-	0	-	0
Corvus corone L./Corvus frugilegus L.	crow/rook	1	1	-	0	-	0
Total		**77**		**72**		**101**	

Table 9. Total fragment counts and frequencies for unidentified categories from Garforth, West Yorkshire.Key: R/B = Romano-British.

Species group	**Phase 1**	**%**	**Phase 2**	**%**	**Phase 3**	**%**	**R/B**	**%**
Large mammal	194	68	167	84	381	64	77	68
Medium mammal 1	36	13	31	16	121	20	36	32
Unidentified	54	19	1	1	96	16	1	1
Total	284		199		598		114	

Table 10. Total fragment counts and frequencies for major domesticates from Phases 1, 2 and 3, from Garforth, West Yorkshire.

Species		**Phase 1**	**%**	**Phase 2**	**%**	**Phase 3**	**%**
Bos domestic	f. cattle	49	77	44	67	65	69
Caprovid	sheep/goat	8	13	10	15	14	15
Sus domestic	f. pig	7	11	12	18	15	16

Table 11. Minimum number of individuals (MNI) for main domesticates from Phases 1, 2 and 3, from Garforth, West Yorkshire.

Species		Phase 1	%	Phase 2	%	Phase 3	%
Bos f. domestic	cattle	6	60	4	50	5	62.5
Caprovid	sheep/goat	3	30	2	25	1	12.5
Sus f. domestic	pig	1	10	2	25	2	25

Table 12 Butchery records

Zones: These follow the scheme outlined in Dobney and Rielly (1988). Butchery key: ch = chop; chs = chops; ?ch = ?chop; kn = knifemark; kns = knifemarks; ?kn = ?knifemarks; sp = split. Bone id. = the unique number given to each identifiable bone.

Phase	**Context**	**Bone id.**	**Species**	**Element**	**Butchery**	**Zone**	**Notes**
1000AD	249	176	cattle	mandible	ch	34	chop removing most of both of zones 3 and 4
1000AD	249	176	cattle	mandible	ch	45	chop across 4 and 5 just below condyle on lateral aspect
phase 1	125	54	cattle	humerus	ch	78	
phase 1	125	56	cattle	mandible	ch	2	
phase 1	125	61	cattle	metatarsal	ch	78	
phase 1	125	61	cattle	metatarsal	kns	34	knifemarks across the condyles
phase 1	125	61	cattle	metatarsal	kns	78	series of knifemarks across the posterior surface just above the distal condyles
phase 1	292	216	cattle	metatarsal	ch	56	chopped around shaft to separate from rest of bone
phase 1	292	217	cattle	metatarsal	sp	1256	chopped through articulation and through shaft
phase 1	292	221	cattle	pelvis	ch	2	
phase 1	315	255	cattle	pelvis	ch	3	
phase 1	292	212	cattle	radius	ch	25	
phase 1	318	265	cattle	scapula	ch	2	chops on glenoid (articular surface) and one on edge
phase 1	318	265	cattle	scapula	chs	4	little chop marks at base of spine and bottom of spine chopped
phase 1	292	213	cattle	tibia	ch	9X	
phase 1	292	232	red deer	antler	ch	pedicle	chop into pedicle, possibly also rest of antler chopped off, but too eroded to tell

Phase	Context	Bone id.	Species	Element	Butchery	Zone	Notes
phase 1	292	233	red deer	antler	chs	burr, antler	burr shed but chopped all around the side of it. Brow tine has slivers taken off it towards its base
phase 1	315	264	sheep/ goat	mandible	ch	12	
phase 2	179	128	cattle	mandible	ch	35	
phase 2	179	129	cattle	mandible	ch	3	
phase 2	212	140	cattle	mandible	ch	36	
phase 2	212	140	cattle	mandible	ch	45	
phase 2	226	148	cattle	mandible	ch	1	
phase 2	477	273	cattle	metacarpal	sp	26	
phase 2	179	124	cattle	metatarsal	?kn	5678	possible set of knifemarks horizontally across bone, but several down the shaft. Confused by dog gnawing. Seen both sides of bone
phase 2	179	124	cattle	metatarsal	kns	56	series of knifemarks running round the bone just below proximal articulation ?skinning
phase 2	182	165	cattle	metatarsal	ch	56	heavily chopped around shaft
phase 2	275	207	cattle	pelvis	ch	7X	
phase 2	129	122	cattle	radius	ch	25	heavily chopped in zone 5 and 2 - mostly just below articular surface
phase 2	129	122	cattle	radius	chs	57	chops damaging shaft
phase 2	179	127	cattle	scapula	ch	5	
phase 2	182	164	cattle	scapula	sp	25	split through glenoid
phase 2	255	178	cattle	scapula	ch	1	chop through tuber scapulae which has been mainly removed
phase 2	255	178	cattle	scapula	ch	357	
phase 2	255	178	cattle	scapula	chs	4	chops at base of spine and along spine
phase 2	255	179	cattle	scapula	ch	123	chop through tuber scapulae and also zones 2 an 3
phase 2	257	209	horse	radius	?ch	E	ulna possibly chopped off
phase 2	179	131	pig	mandible	ch	1	
phase 2	275	208	pig	pelvis	ch	2	lateral surface - shallow chop
phase 2	275	208	pig	pelvis	kns	8Y	
phase 2	255	186	roe deer	scapula	kns	57	series of knifemarks down side of blade
phase 3	109	11	cattle	horncore	ch	12	sawn/chopped from rest of skull
phase 3	109	5	cattle	mandible	ch	35	
phase 3	109	5	cattle	mandible	ch	5	
phase 3	109	6	cattle	mandible	ch	35	
phase 3	109	7	cattle	mandible	ch	35	
phase 3	109	7	cattle	mandible	ch	4	
phase 3	109	7	cattle	mandible	kns	5	knifemarks down lateral aspect of zone 5 - just below condyle
phase 3	109	8	cattle	mandible	ch	3	
phase 3	109	24	cattle	metacarpal	ch	56	
phase 3	109	25	cattle	metacarpal	ch	56	
phase 3	109	26	cattle	metapodial	ch	47	possibly split down shaft
phase 3	109	20	cattle	metatarsal	ch	78	across shaft
phase 3	109	21	cattle	metatarsal	ch	78	
phase 3	109	30	cattle	pelvis	ch	46	
phase 3	109	30	cattle	pelvis	ch	5	
phase 3	109	30	cattle	pelvis	ch	8	

Phase	Context	Bone id.	Species	Element	Butchery	Zone	Notes
phase 3	109	17	cattle	radius	sp	57	not chopped through articulation but below, split down shaft
phase 3	109	18	cattle	radius	ch	15	chopped down edge of proximal articulation
phase 3	124	78	cattle	radius	ch	5	
phase 3	124	77	cattle	scapula	ch	123	chopped across and down
phase 3	109	14	cattle	tibia	ch	9X	chopped across and down shaft
phase 3	109	15	cattle	tibia	ch	X	chopped across shaft
phase 3	109	16	cattle	tibia	ch	X	chopped into shaft
phase 3	109	29	cattle	ulna	ch	CD	
phase 3	124	111	pig	humerus	ch	78	across shaft
phase 3	109	44	pig	mandible	ch	36	
phase 3	109	33	red deer	tibia	ch	X	
phase 3	124	108	sheep/ goat	pelvis	ch	5	shallow chop in 5
phase 3	124	106	sheep/ goat	ulna	ch	F	
undated	273	295	cattle	mandible	ch	36	condyle chopped off
undated	29	299	cattle	metatarsal	ch	78	
undated	299	304	cattle	pelvis	ch	12	third part (zone 3) of acet chopped off
undated	144	283	cattle	radius	chs	67	series of chops in shaft
undated	144	282	cattle	scapula	ch	35	
undated	144	282	cattle	scapula	ch	4	base of spine and some spine removal
undated	299	305	cattle	scapula	ch	45	
undated	44	310	roe deer	pelvis	ch	5	
undated	44	310	roe deer	pelvis	chs	8	series of 'nicks' down zone 8

Table 13. Fragment and MNI counts showing skeletal element representation for cattle from Phases 1,2 and 3, from Garforth, West Yorkshire.

	Phase 1		Phase 2		Phase 3	
Element	**MNI**	**Total frag. count**	**MNI**	**Total frag. count**	**MNI**	**Total frag. count**
Horncore	-	-	1	1	2	3
Mandible	1	3	2	7	5	13
mandibular teeth	5	11	4	5	4	10
Scapula	3	3	2	4	2	2
Humerus	1	2	-	-	1	1
Radius	2	2	2	3	2	3
Ulna	1	1	1	1	2	2
metacarpal	3	4	4	6	2	4
Pelvis	3	3	1	2	2	2
Femur	1	2	1	1	1	1
Tibia	1	1	1	1	2	4
astragalus	1	1	3	4	2	3
calcaneum	-	-	2	2	1	1

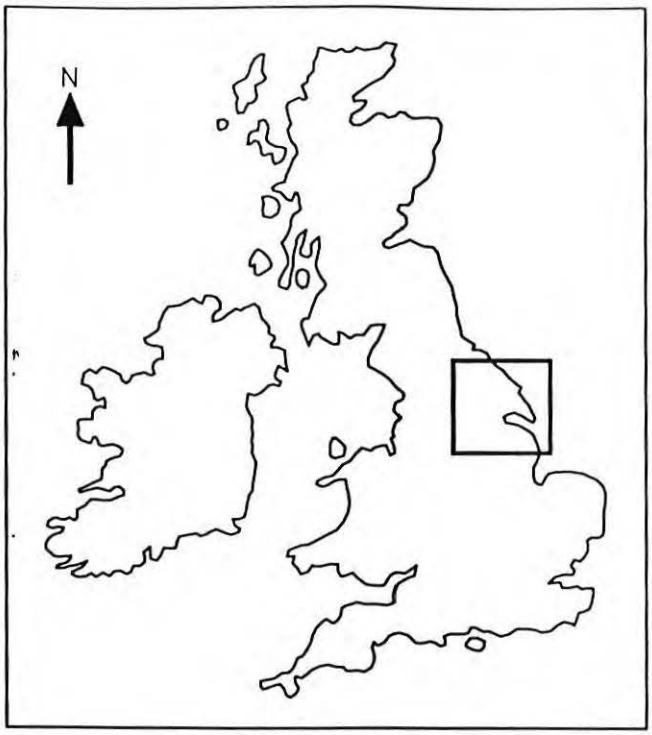
metatarsal	6	10	2	4	2	4
metapodial	1	1	1	1	1	1
Phalanx 1	1	4	1	1	1	8
Phalanx 2	1	1	-	-	1	2
Phalanx 3	-	-	1	1	1	1

Table 14. Withers height estimates for cattle from Garforth, West Yorkshire.

Phase	Species	Element	Greatest length (mm)	Withers height (mm)
Phase 1	cow	humerus	231.50	1104.26
Phase 1	cow	metacarpal	185.7	1136.48
Phase 1	cow	metacarpal	175.1	1071.61
Phase 1	cow	metatarsal	221.2	1205.54
Phase 1	cow	metatarsal	196.9	1073.11
Phase 3	cow	metacarpal	192	1174.73
Phase 3	cow	metatarsal	191	1041.06

Table 15. Withers height estimates for horses from Garforth, West Yorkshire (Withers height for horses is expressed in hands (hh), where 1 h = 4 in = 101.6 mm). Key: Meas = measurement used to calculate withers height.

Phase	**Species**	**Element**	**Meas (mm)**	**Withers height (hh)**
phase 1	horse	metatarsal	270.8	14.1
phase 1	horse	phalanx 1	83.7	13.2
phase 2	horse	radius	310	13.1
phase 3	horse	metatarsal	245.4	13
phase 3	horse	phalanx 1	82.6	13.2
phase 3	horse	phalanx 1	88.8	14



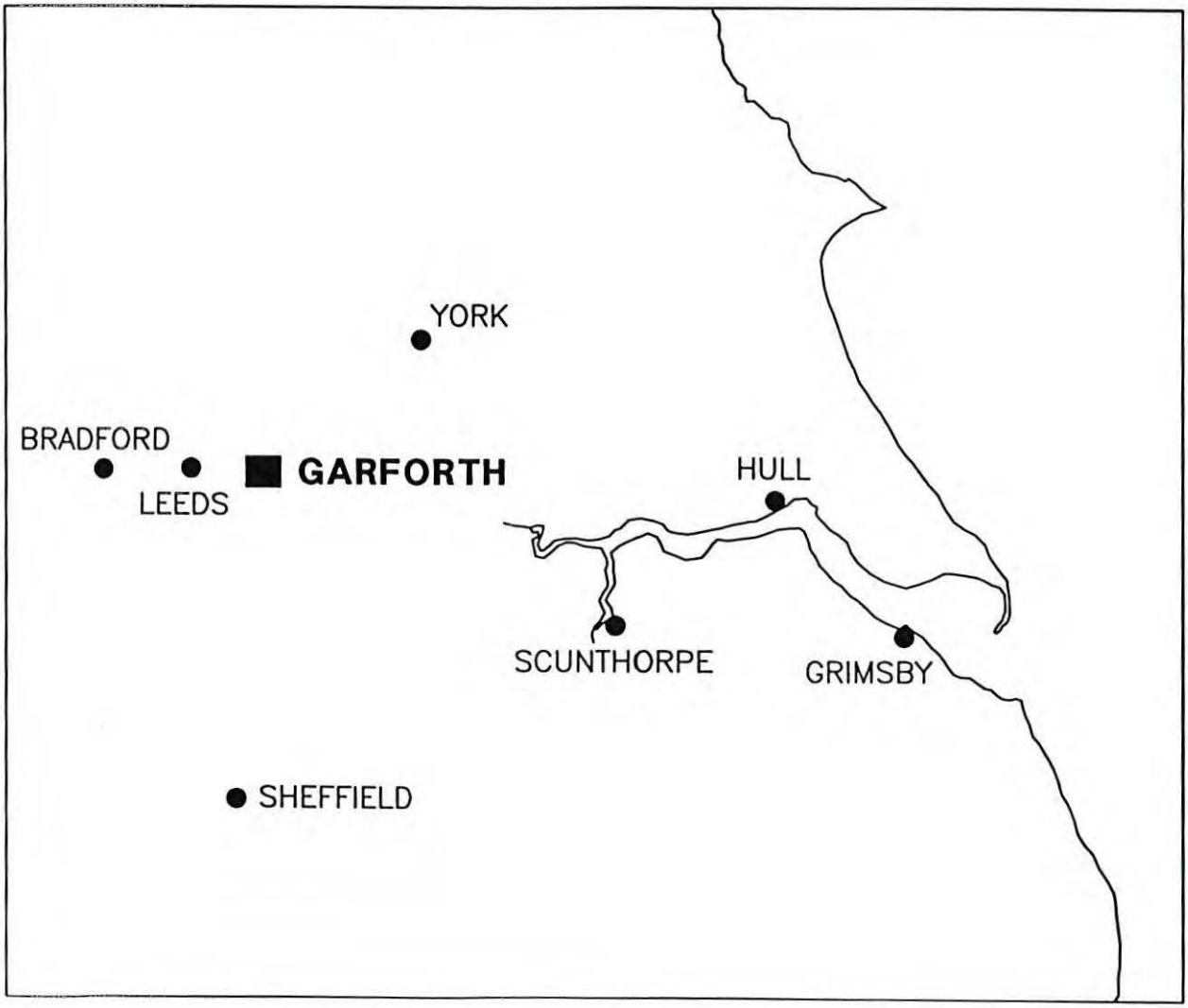


Figure Nos.	Title	Scale
1	SITE LOCATION MAPS	N.T.S.

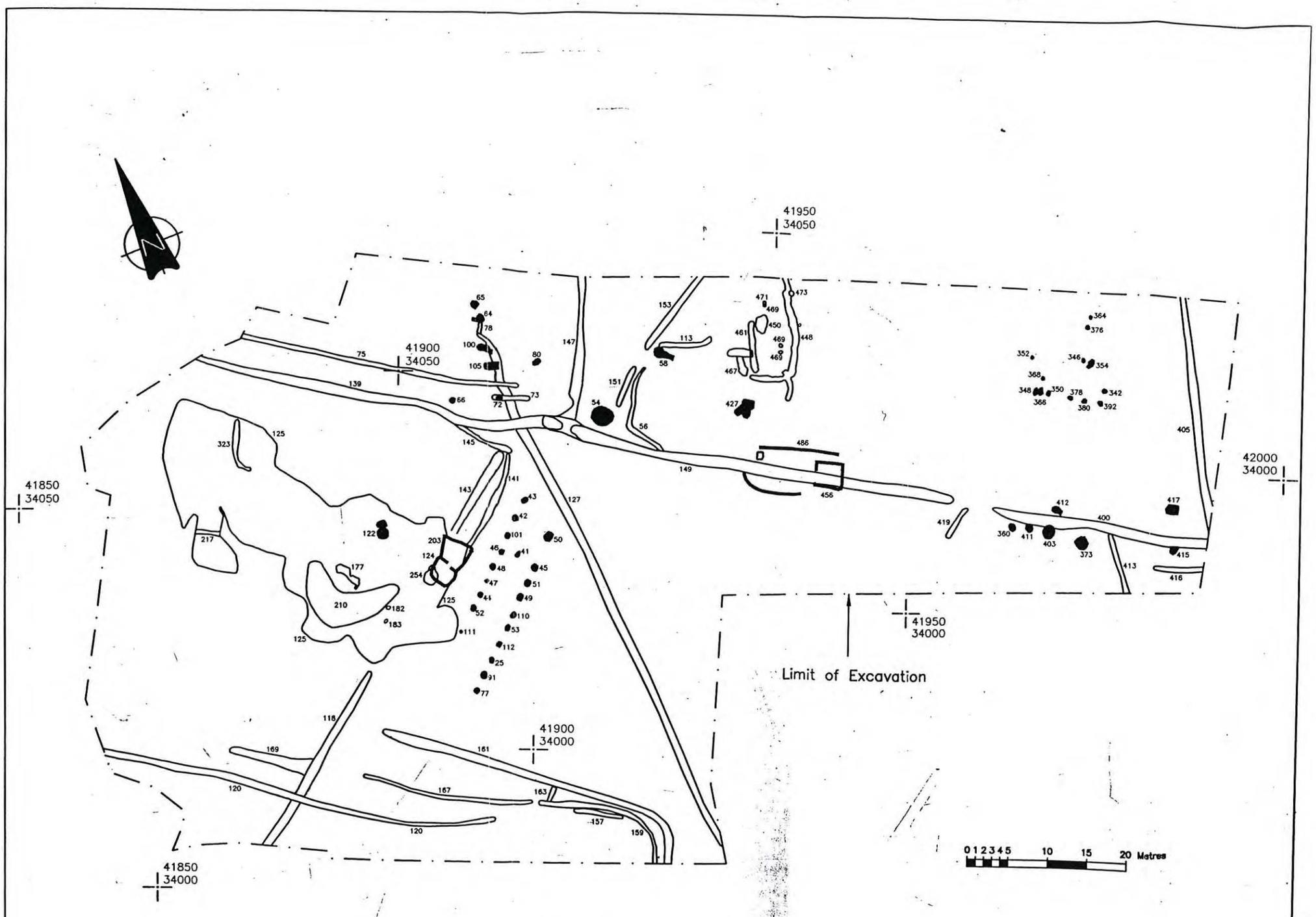
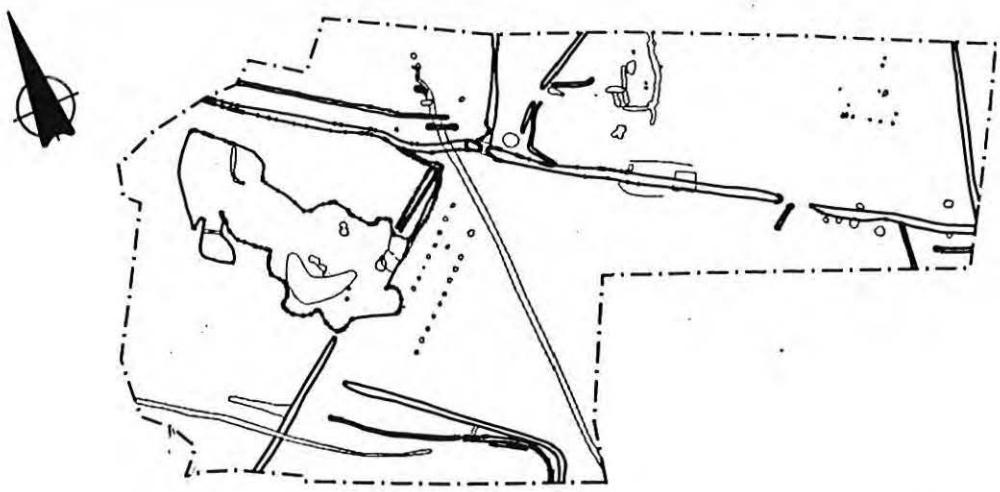
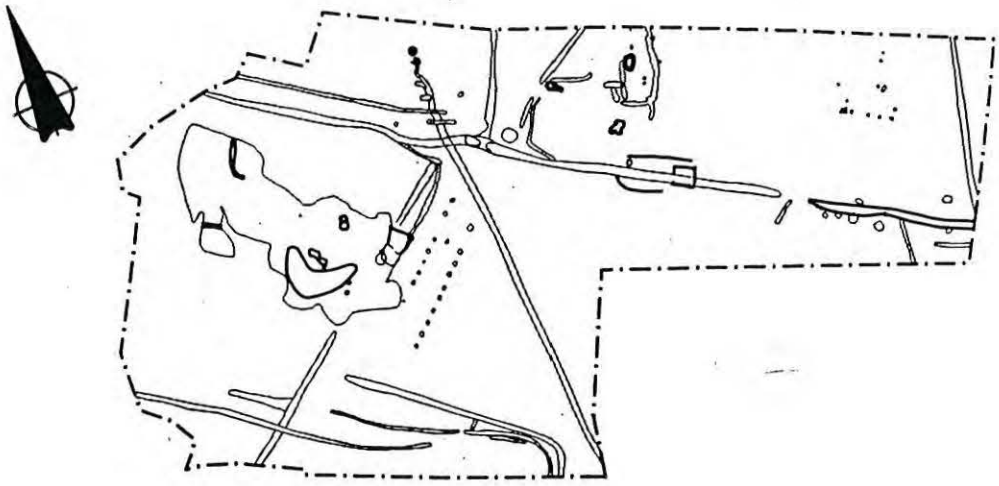


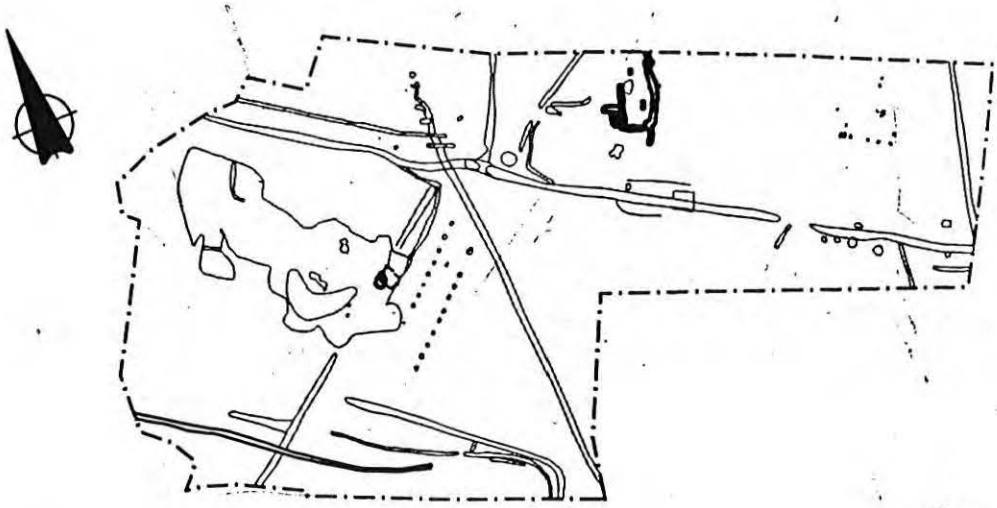
FIGURE 2 – SITE PLAN (ALL PHASES)



PHASE 1



PHASE 2



PHASE 3a & b

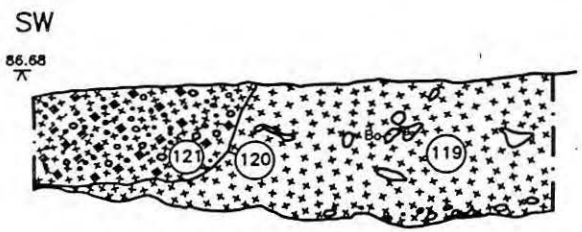
KEY

-·-·- Limit of Excavation

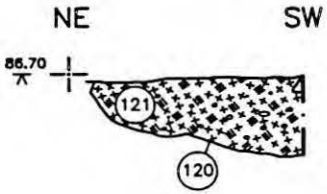
0 5 10 20 30 40 50Metres

Figure Nos.	Title	Scale
3	PHASE PLANS	1:1250

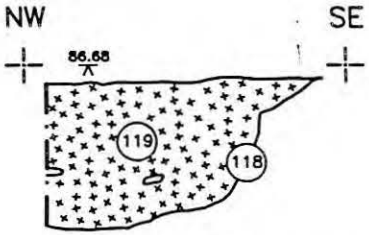
A4



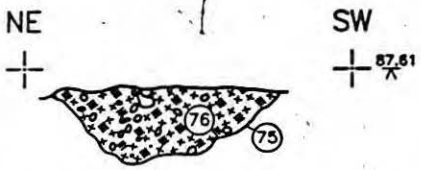
SOUTH EAST FACING SECTION OF CUT 118



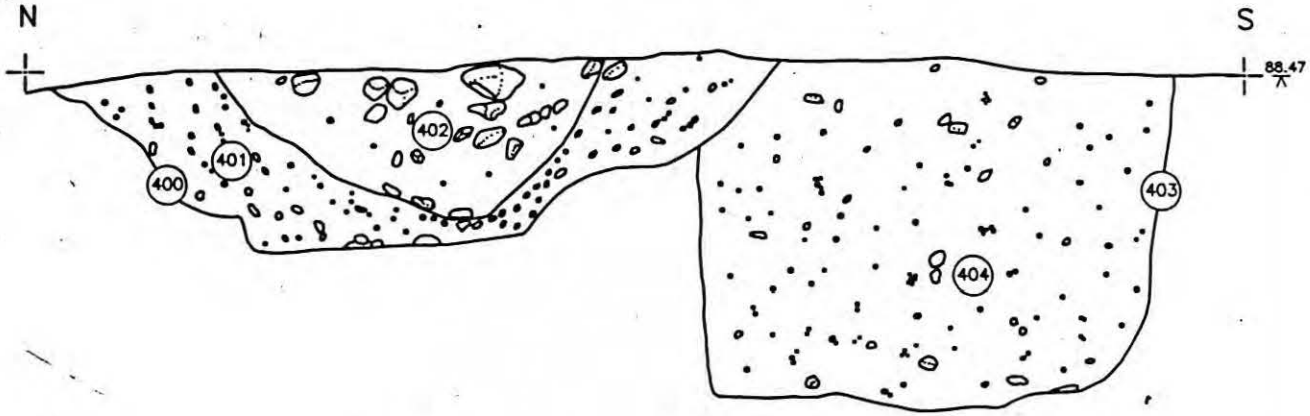
NORTH WEST FACING SECTION OF CUT 120



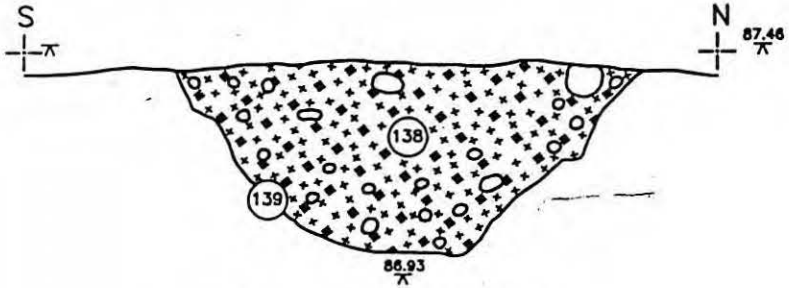
SOUTH WEST FACING SECTION OF CUT 118



NORTH WEST FACING SECTION OF CUT 75



WEST FACING SECTION OF CUTS 400 AND 403



EAST FACING SECTION OF CUT 139

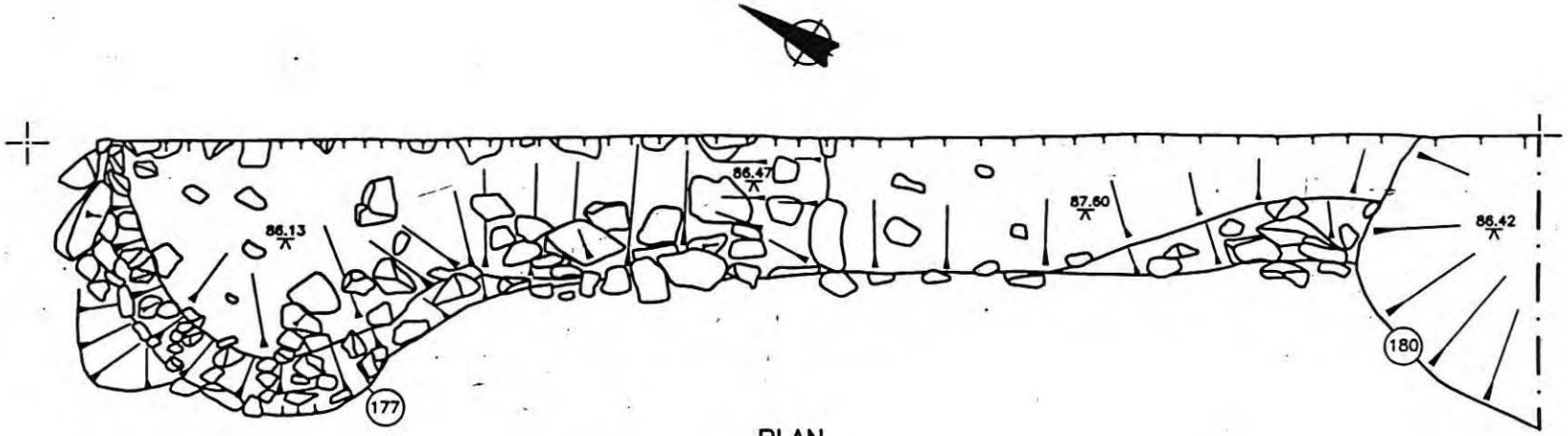
KEY

- Limit of excavation
- Clay
- Silt
- Bo Animal bone
- Coal

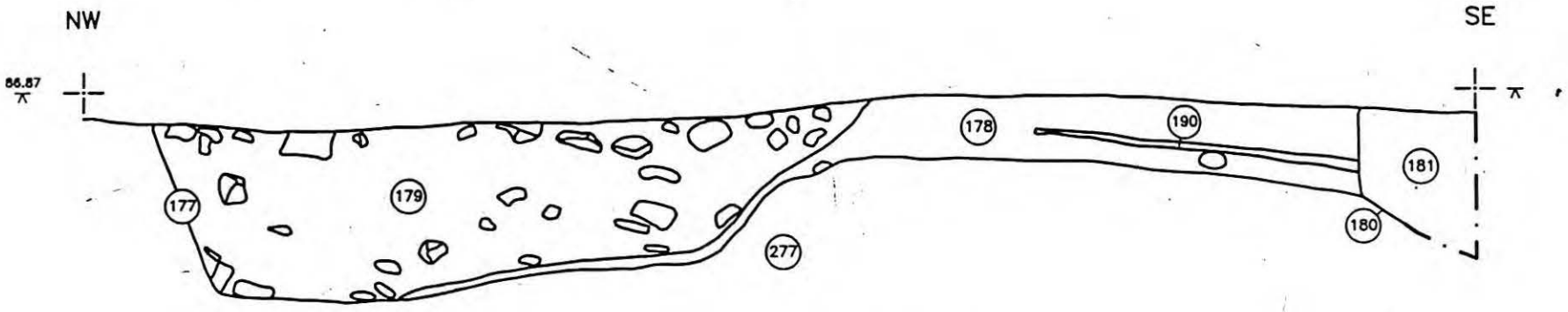
All levels are at metres above Ordnance Datum

0 0.5 1 Metre

Figure No. 4	Title SECTION DRAWINGS	Scale 1:20



PLAN



SOUTH WEST FACING SECTION

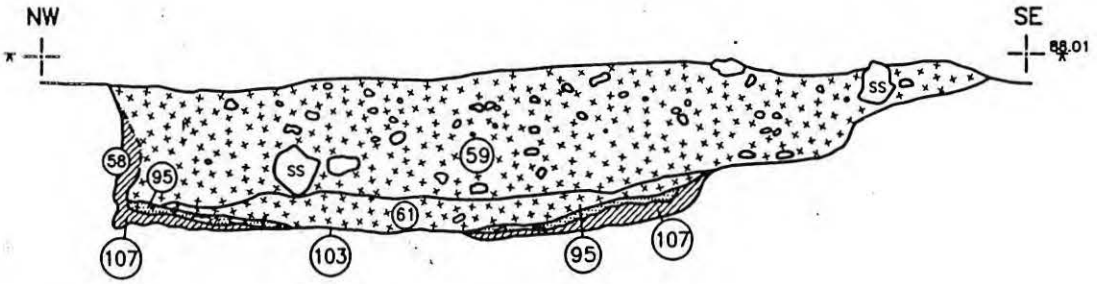
KEY

— · — Limit of excavation

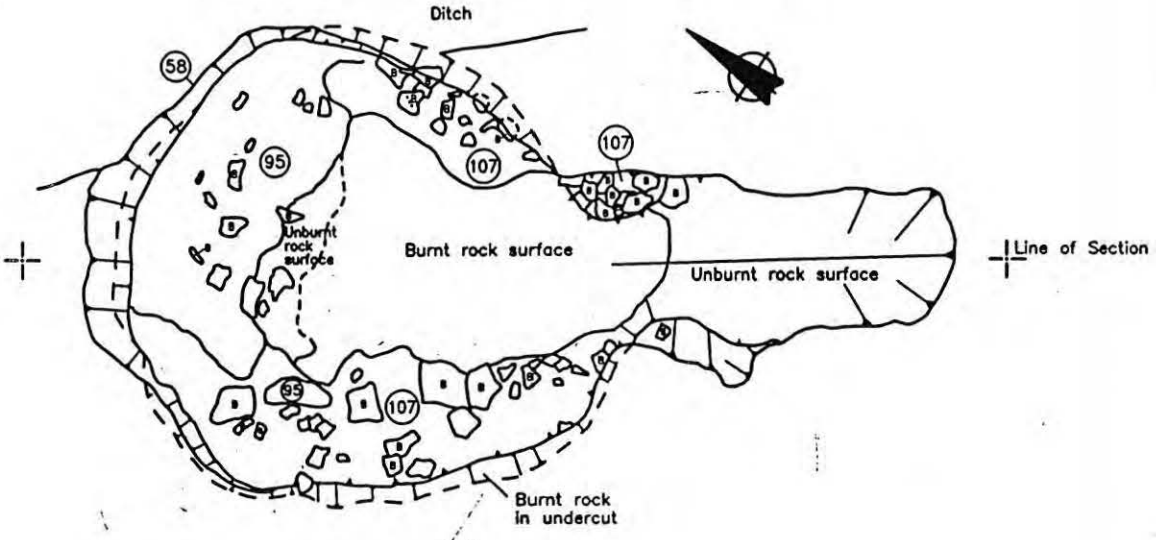
All levels are at metres above Ordnance Datum

0 0.5 1 Metre

Figure No. 5	Title PHASE 2 ROMANO–BRITISH OVEN	Scale 1:20



SOUTH WEST FACING SECTION



PLAN

KEY

Ash/Charcoal

Burnt Rock

Silt

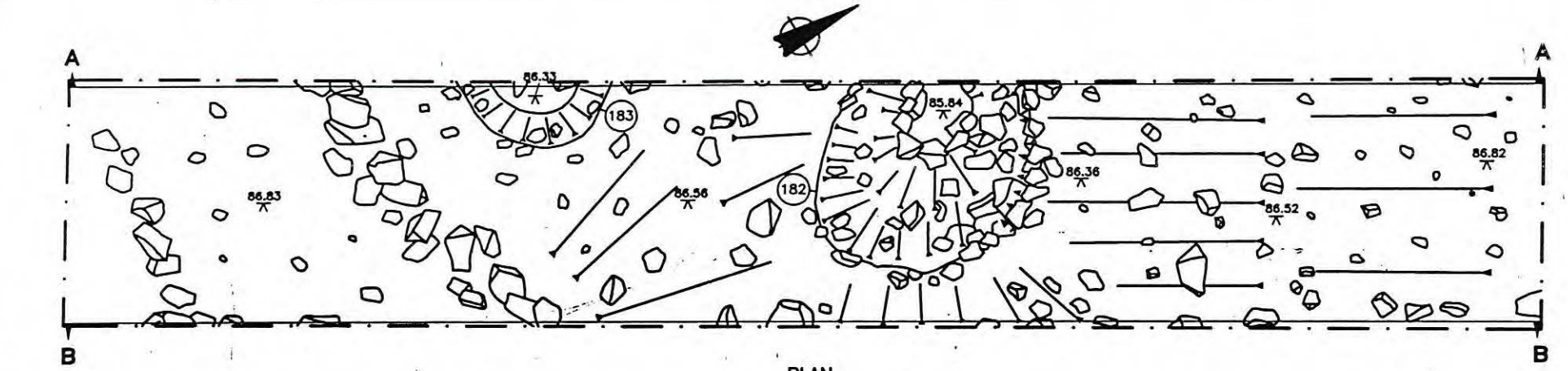
B Burnt Rock

SS Sandstone

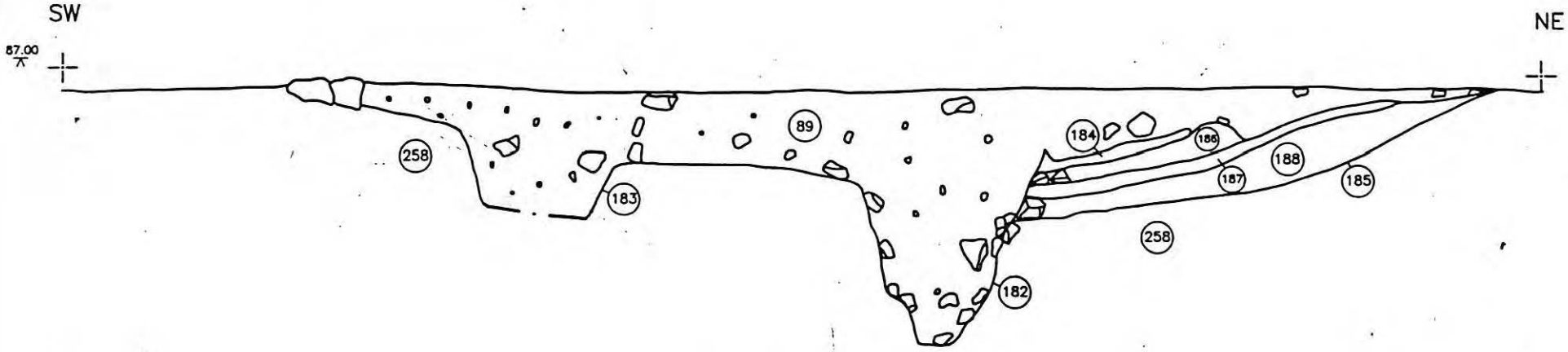
0 0.5 1 Metre

All levels are at metres above Ordnance Datum

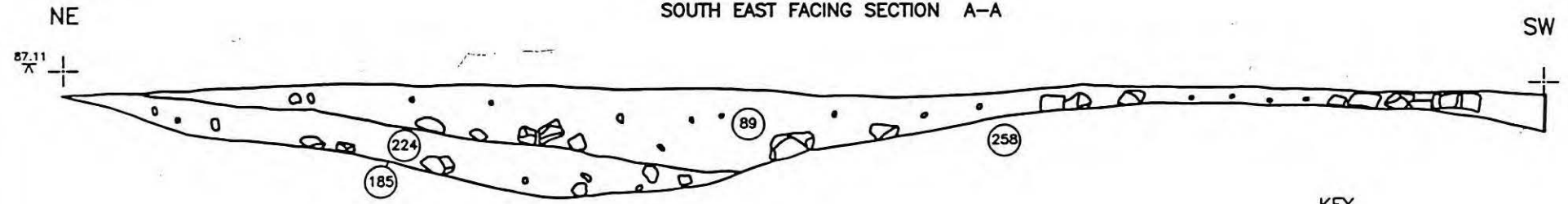
Figure Nos.	Title	Scale
6	PHASE 2 ROMANO-BRITISH CORN DRIER	1:20



PLAN



SOUTH EAST FACING SECTION A–A



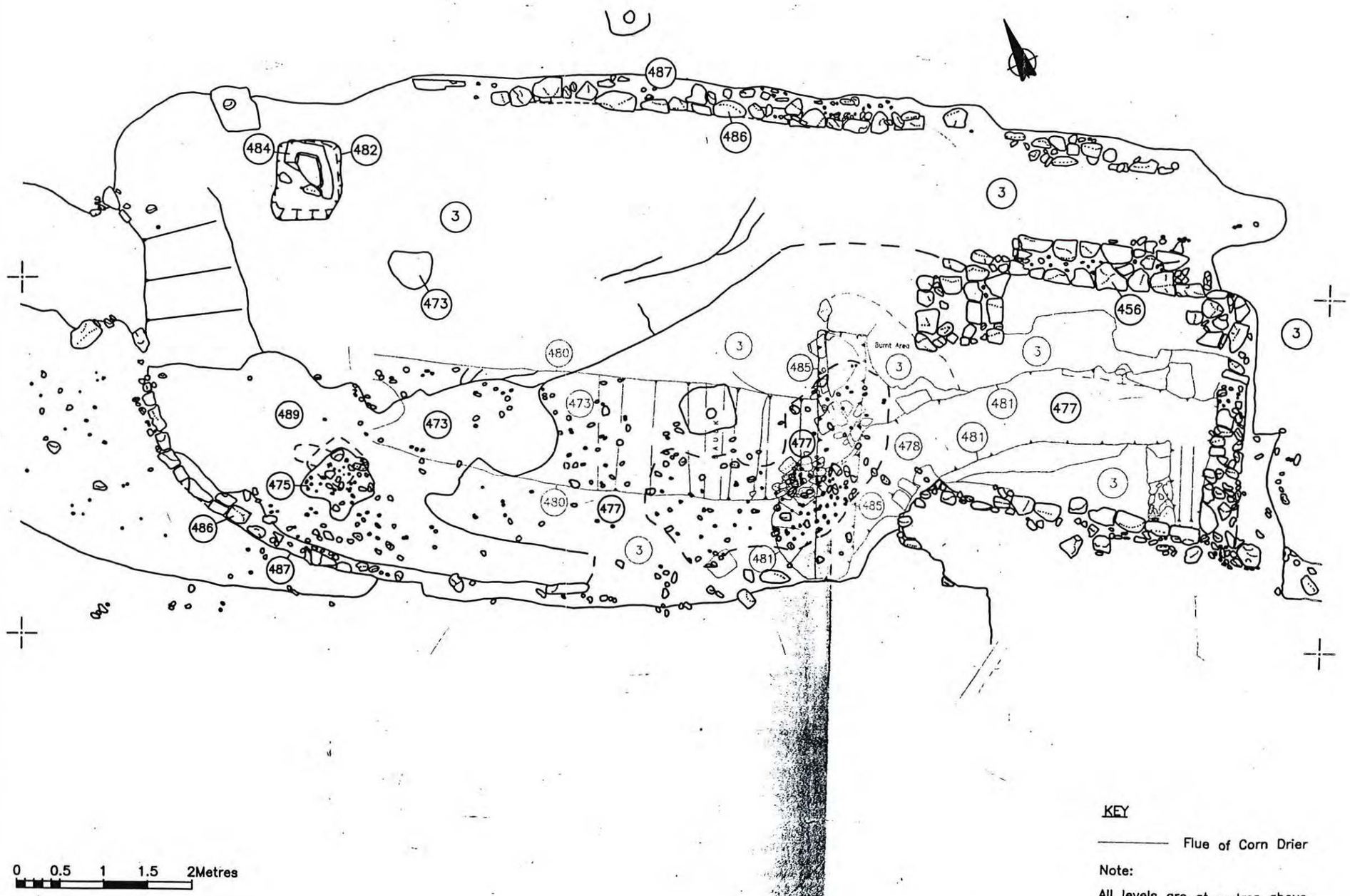
NORTH WEST FACING SECTION B–B

0 0.5 1 1.5 2Metres

KEY

All levels are at metres above Ordnance Datum

Figure No. 7	Title PHASE 2 PLAN AND SECTION DRAWINGS OF POSTHOLES	Scale 1:50



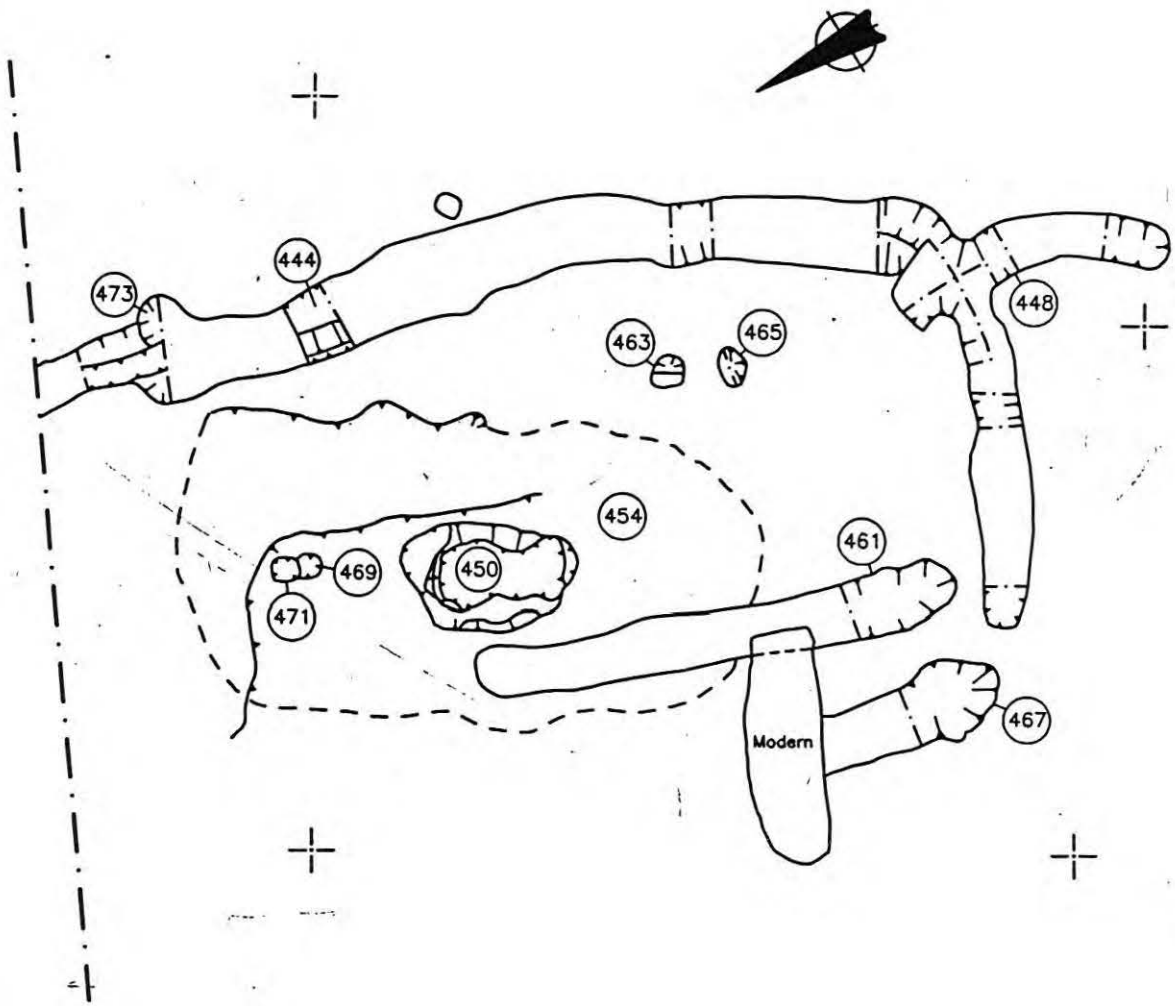
KEY

Flue of Corn Drier

Note:

All levels are at metres above Ordnance Datum

Figure Nos.	Title	Scale
8	PHASE 2 STRUCTURE – CONTEXTS 486 AND 456	1:50

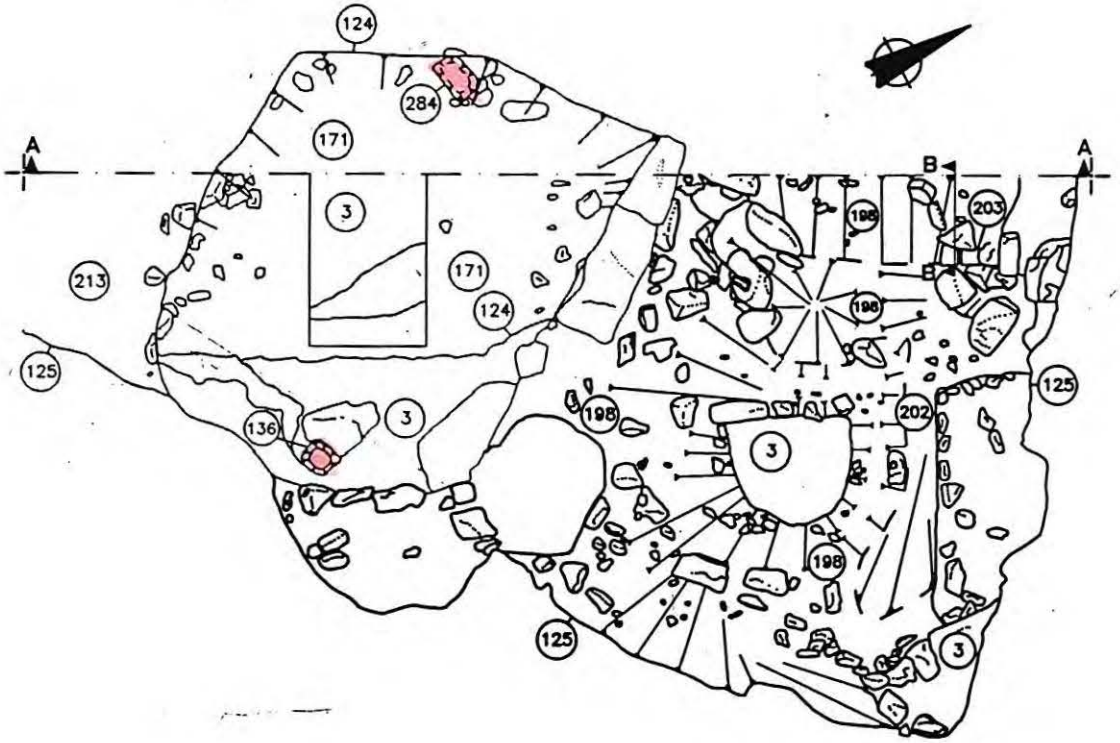


0 1 2 3 4Metres

KEY

— · — Limit of excavation

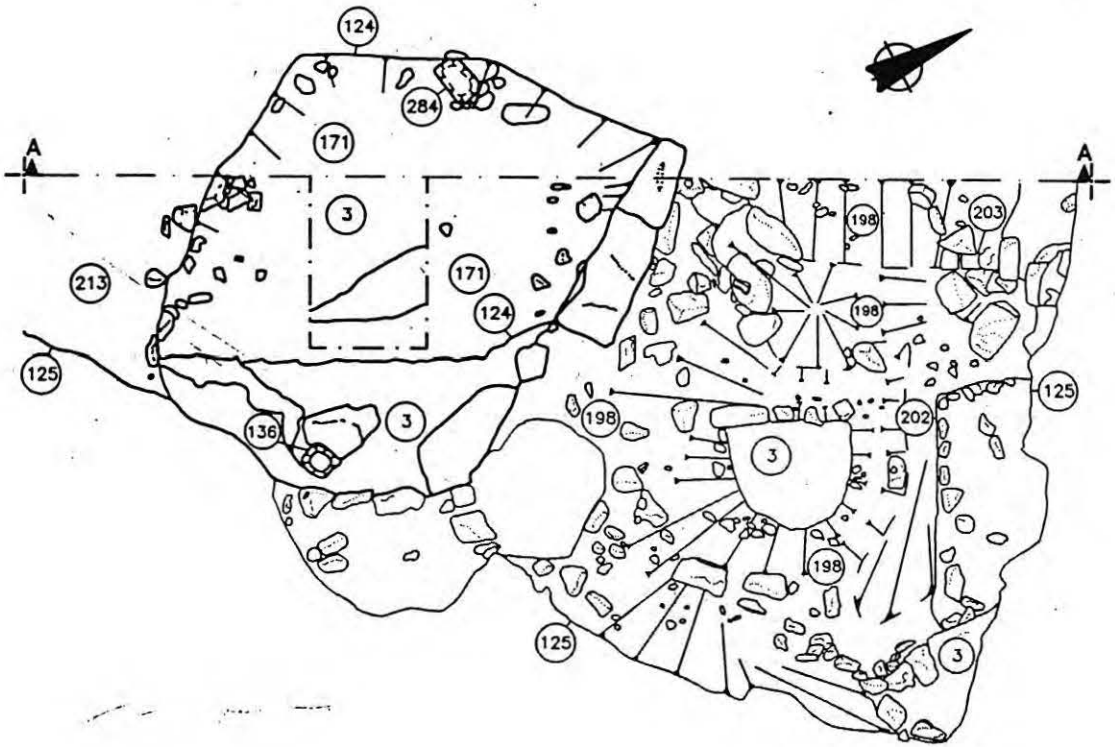
Figure No. 9	Title PHASE 3 FEATURES	Scale 1:100



0 0.5 1 1.5 2Metres

Note:
For section drawings see Figure 10c

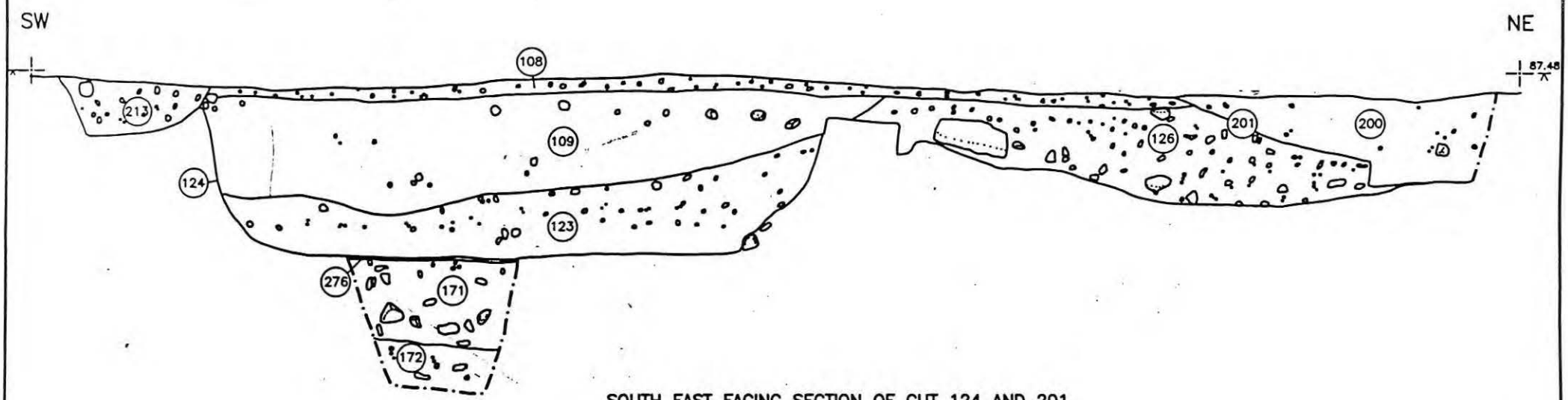
Figure No.	Title	Scale
10a	PHASE 2 – FEATURE 203	1:50



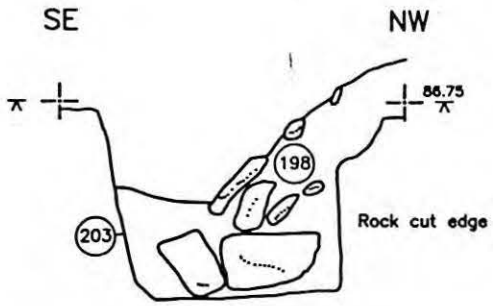
0 0.5 1 1.5 2Metres

Note:
For section drawing see Figure 10c

Figure No.	Title	Scale
10b	PHASE 3 – SUNKEN–FEATURED BUILDING	1:50



SOUTH EAST FACING SECTION OF CUT 124 AND 201
A – A



NORTH EAST FACING SECTION OF CUT 203
B – B

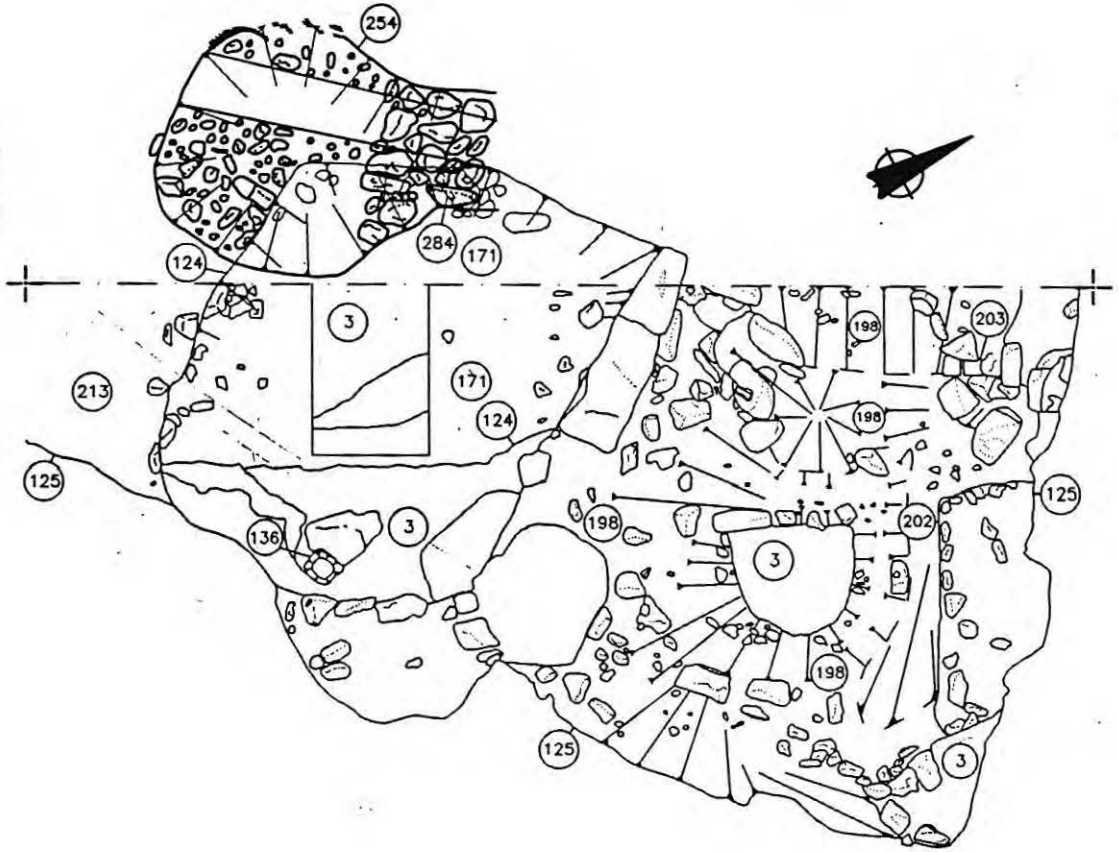
0 0.5 1 Metre

KEY

Note:
For location of section drawings see Figure 10a

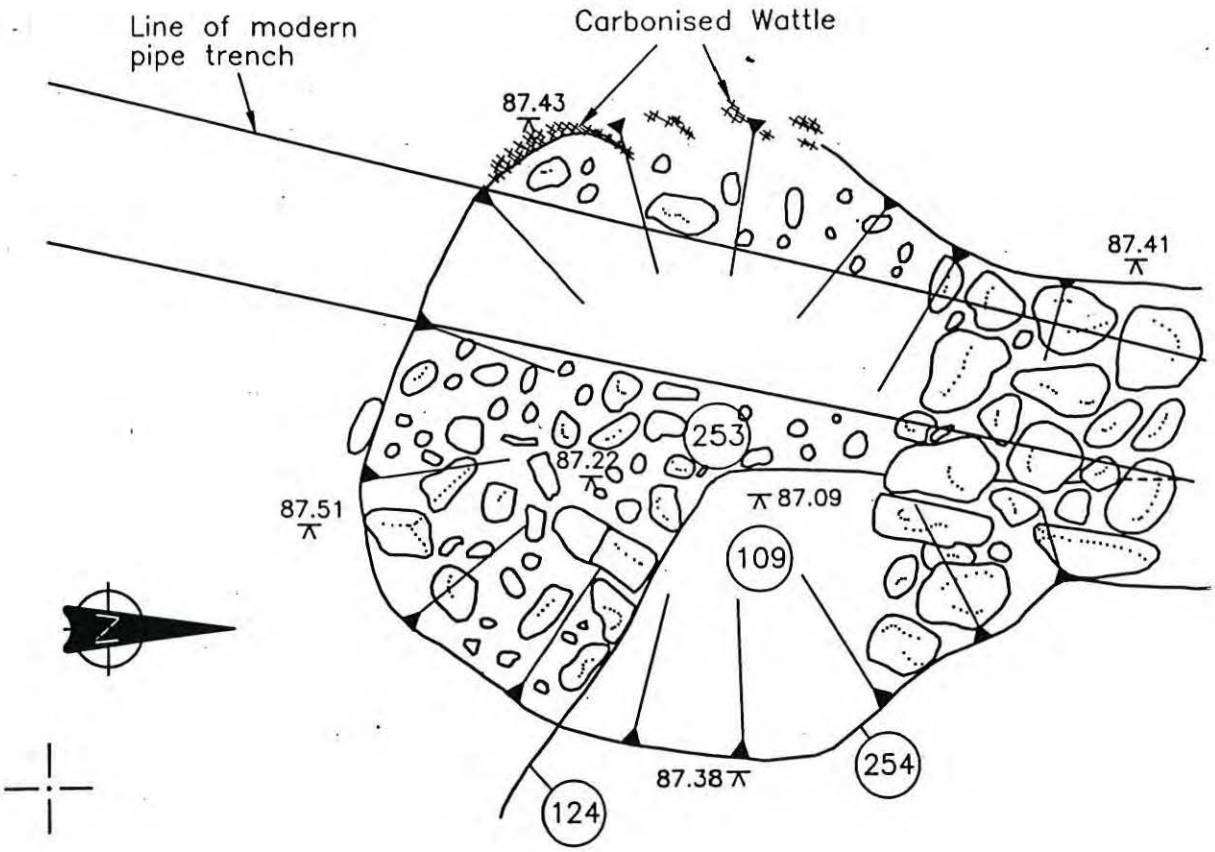
All levels are at metres above Ordnance Datum

Figure No. 10c	Title PHASE 3 – SECTION DRAWINGS THROUGH SUNKEN–FEATURED BUILDING	Scale 1:25

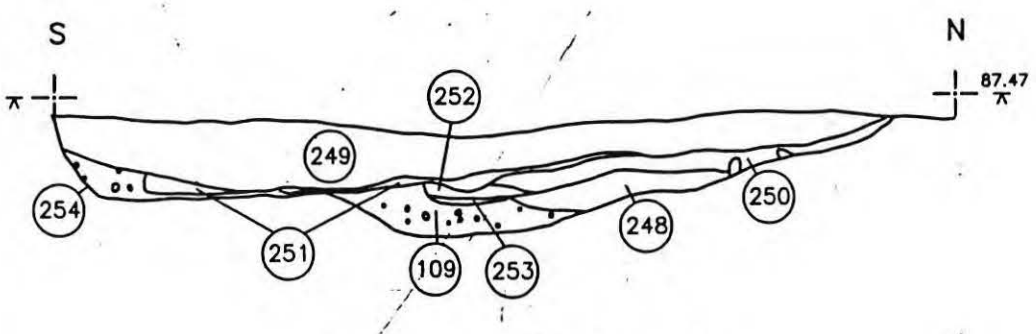


0 0.5 1 1.5 2Metres

Figure No.	Title	Scale
10d	PHASE 3 – CORN DRIER IN RELATION TO SUNKEN–FEATURED BUILDING	1:50



PLAN

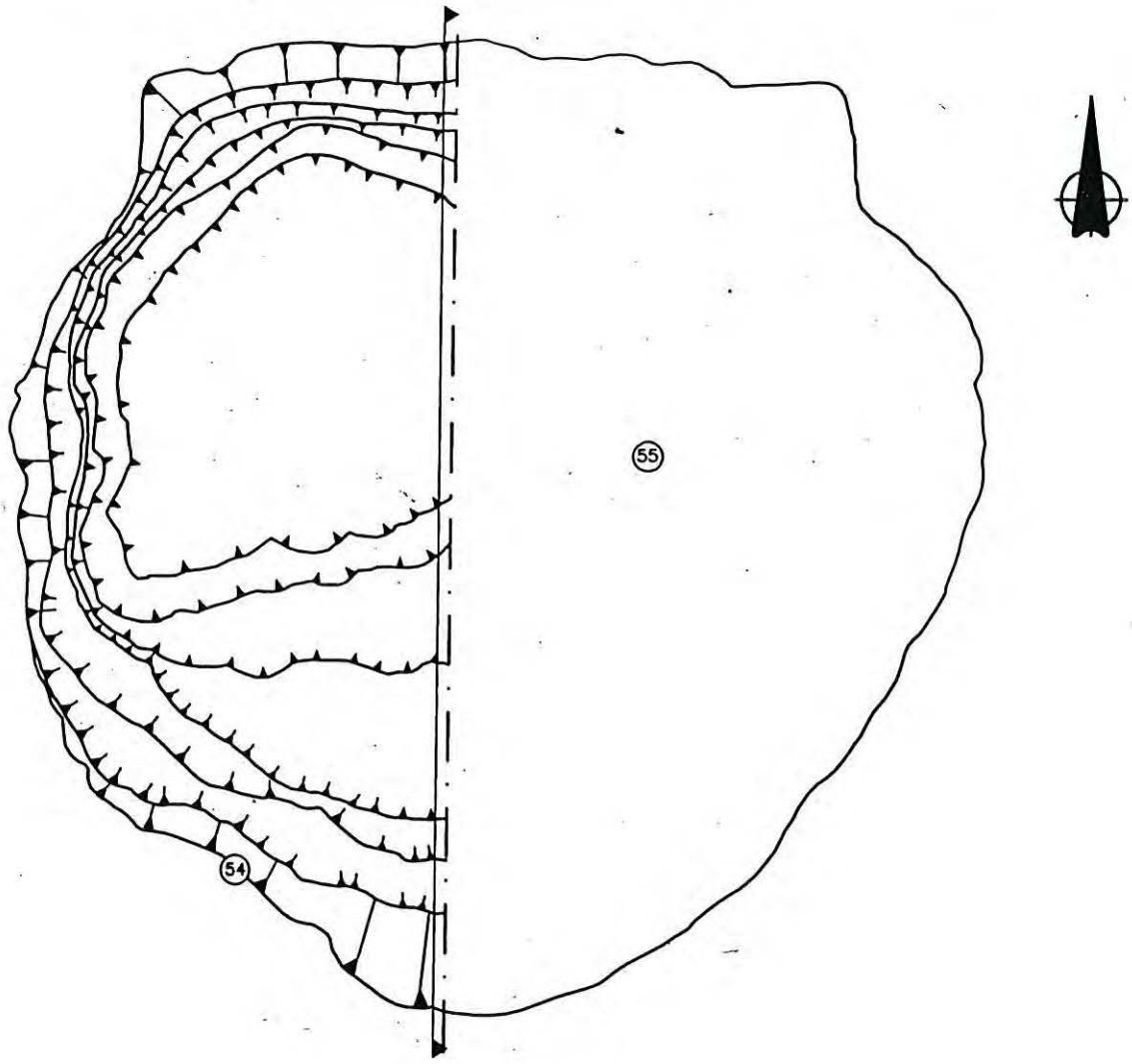


EAST FACING SECTION

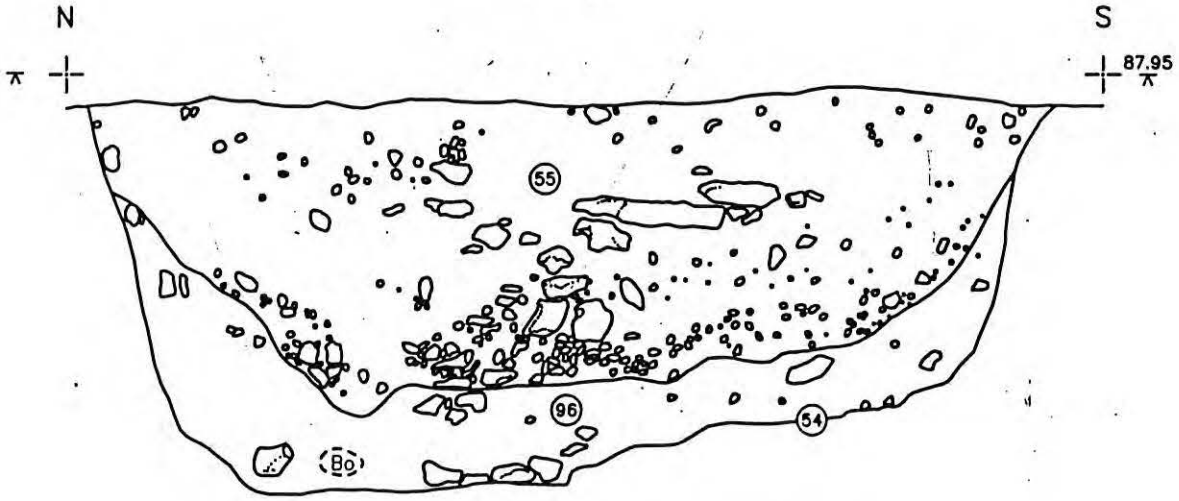
0 0.5 1Metre

Note:
All levels are at metres above Ordnance Datum

Figure Nos.	Title	Scale
11	PLAN AND SECTION OF 10th CENTURY CORN DRIER	1:20



PLAN



WEST FACING SECTION OF CUT 54

KEY

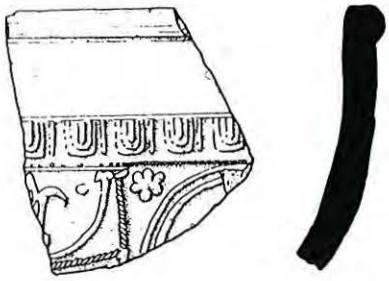
— · — · — Limit of excavation

Bo Bone

All levels are at metres above Ordnance Datum

0 0.5 1Metre

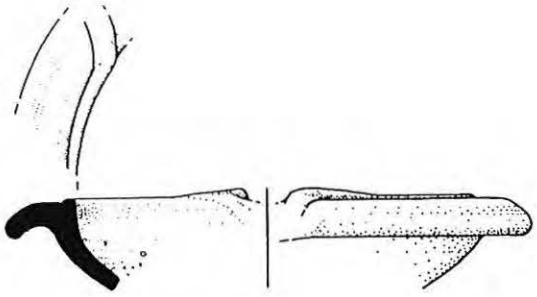
Figure Nos.	Title	Scale
12	PLAN AND SECTION OF PIT – CONTEXT 54	1:20



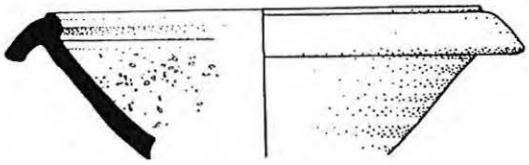
No.1 Scale 1:2

No.2 Scale 1:2

FIGURE 13 - PHASE 1 SAMIAN WARE

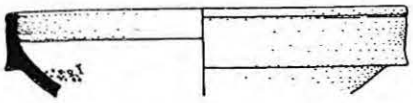


No. 1



No. 2

PHASE 1



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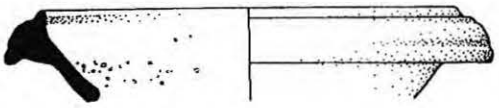

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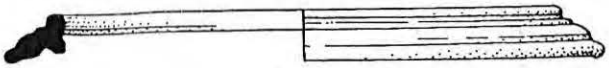

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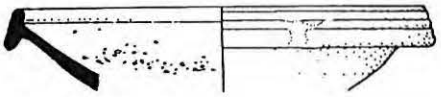

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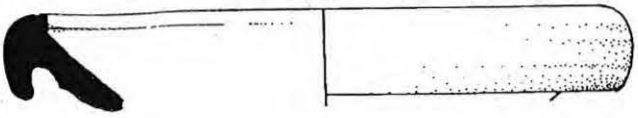
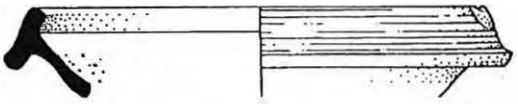


No. 7

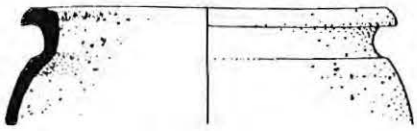


No. 8

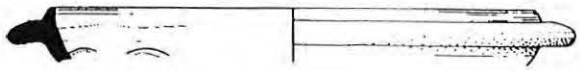
PHASE 2

FIGURE 14 - ROMAN MORTERIA

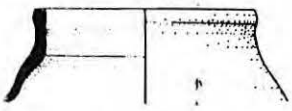
Scale 1:4



No.1

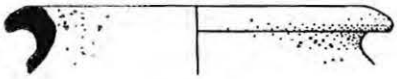


No.2



No.3

No. 4



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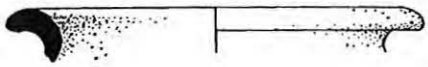

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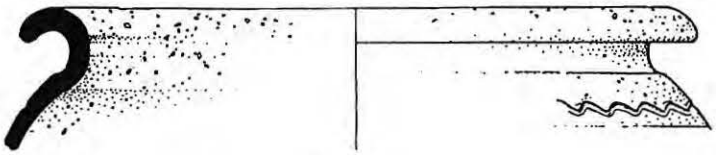

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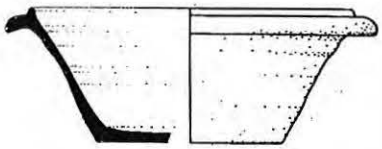
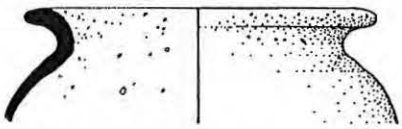


No.8

No.9



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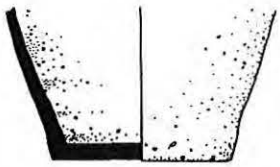

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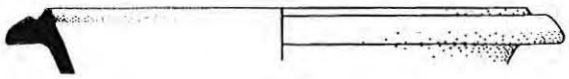

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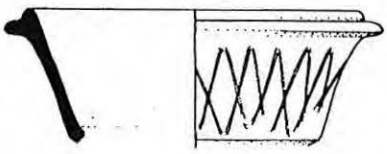
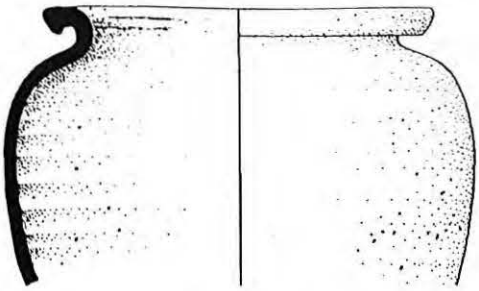


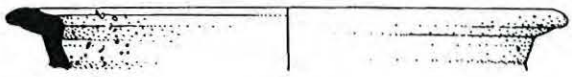
No.13

FIGURE 15 - PHASE 2 ROMAN COARSEWARE Sheet 1 of 2

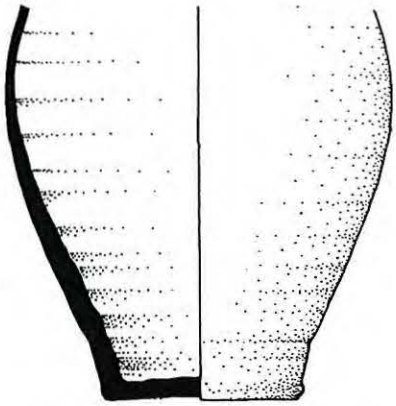
Scale 1:4



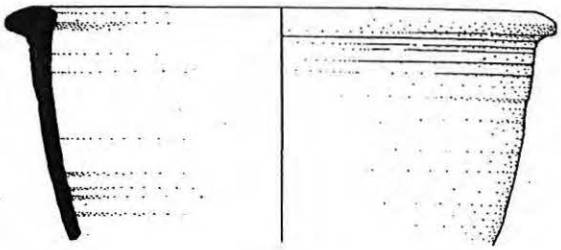
No. 14



No. 15



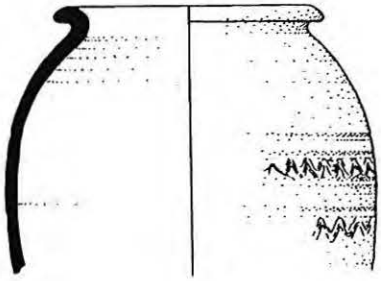
No. 16



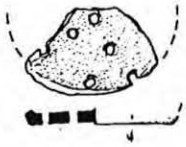
No. 17

No. 18

No. 19



No. 20



No. 21

FIGURE 16 - PHASE 2 ROMAN COARSEWARE Sheet 2 of 2

Scale 1:4

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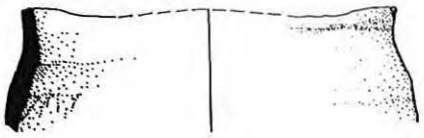

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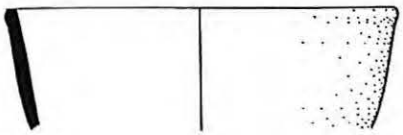
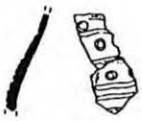
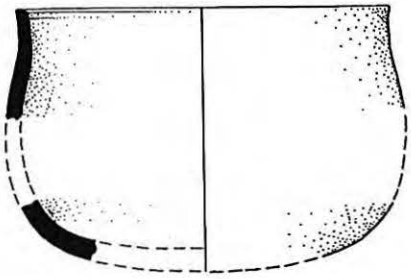


No. 3

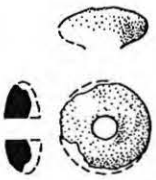
No. 4



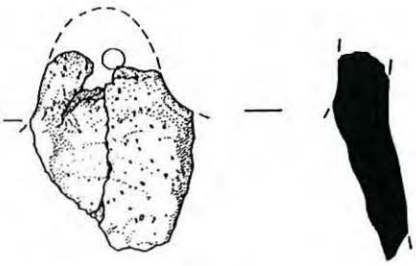
No. 5



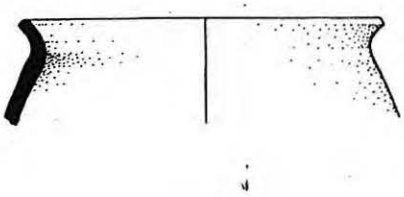
No. 6



No. 7

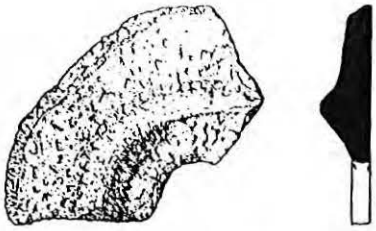


No. 8

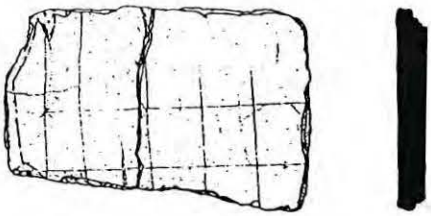


No. 9

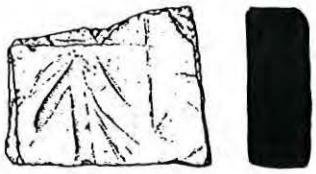
FIGURE 17 - PHASE 3 ANGLO SAXON POTTERY
Scale 1:4



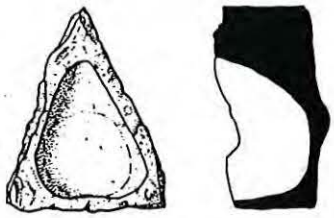
No.1 Scale 1:8



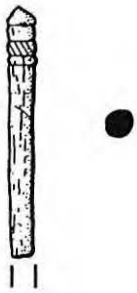
No.2 Scale 1:4



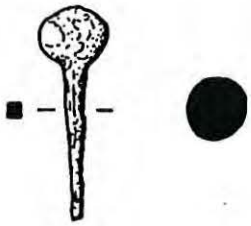
No.3 Scale 1:4



No.4 Scale 1:2



No.5 Scale 1:1



No.6 Scale 1:1

FIGURE 18