LINDSEY ARCHAEOLOGICAL SERVICES
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EXCAVATION OF A LATE IRON AGE/ROMANO-BRITISH SETTLEMENT
at
MILL DROVE BOURNE

NGR: TF1030 2125
(LCNCC Museum Archive Accession No. 5.94)

for

M. Parker and Sons Ltd

April 1995

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The Excavation of a Late Iron Age/Romano-British Settlement at Mill Drove, Bourne

Summary

Residential development on the north-east edge of Bourne has provided an opportunity to examine the nature of a Fen-edge settlement close to the Car Dyke in south Lincolnshire, first identified as a substantial Romano-British settlement by the Fenland Survey (Hayes and Lane 1992, 136) .

Excavations defined a large and complex arrangement of enclosure ditches, gullies, pits and post-holes dating to the Iron Age and Romano-British periods. Two distinct areas of ditched enclosures were located, at the north and south ends of the plot, c.80-90m apart, probably belonging to the same settlement complex.

A multi-phase ditch found in Area B at the south end of the development site was first dug in the Middle Iron Age. The centre of a Late Iron Age/Early Roman settlement was sited on the rising ground at, and almost certainly beyond, the northern end of the site. The corner of an enclosure and domestic occupation deposits were defined in Area A, with the multi-phase ditch in Area B defining the outer boundary of this later settlement.

After a break in occupation during the 2nd-century AD there occurred a major realignment of the site when a rectilinear enclosure complex was laid out, probably for the control of livestock. This almost certainly related to the development of a Late Roman settlement, possibly a small villa complex, located to the north of the assessment plot. There was no evidence to suggest that this settlement complex continued beyond the Roman period.

Medieval and/or post-medieval plough furrows were present in both excavation areas, orientated E-W, slight traces of which have been observed in oblique sunlight on the ground surface. These furrows contained post-medieval pottery and clay pipe fragments, as well as residual Iron Age and Roman pottery.

INTRODUCTION

In August 1994 Lindsey Archaeological Services was commissioned by M. Parker and Sons Ltd. to undertake archaeological excavations to the north of Mill Drove, Bourne, TF 1030 2125 (SMR No. 34835), before residential development of the four hectare site (planning application no. SK 0266/92/12, amended no. SK 0270/92/12). This was carried out in accordance with the requirements of the Brief prepared by the South Kesteven Community Archaeologist in June 1994 (Appendix 10).

Preliminary assessment of the site was undertaken by Naomi Field for LAS in January 1994 comprising a desk top study, systematic field walking across the site and a magnetometer survey, carried out by Geophysical Surveys of Bradford (Figs. 2 and 3) (See Field 1994) .

An archaeological evaluation of fourteen machine dug trenches was carried out by Jess Tipper for LAS in March 1994 in order to define the extent, date and nature of the archaeological deposits. The results of this work have been discussed in Tipper 1994.

The excavation described in this report was undertaken by Jess Tipper on behalf of LAS and the whole project was coordinated under the direction of Naomi Field. The project was carried out in co-operation with John Samuels Archaeological Consultants, who were acting on behalf of the developer M. Parker and Sons.

The project has been conducted with reference to guidelines set out in the *Management of Archaeological Projects* (English Heritage 1991); *Standard and Guidance for Archaeological Desk-Based Assessments* (Institute of Field Archaeologists, 1993, revised 1994); *Standard and Guidance for Archaeological Field Evaluations* (Institute of Field Archaeologists, 1993, revised 1994); *Draft Standard and Guidance for Archaeological Excavations* (Institute of Field Archaeologists, 1994).

Topography and Geology

The site is situated on rising ground above the Fen edge at TF 1030 2125, c.6-8 m above sea level (Fig. 1). The site is crossed by the OD 7.5 m contour, defining the edge of the Fenland region, with land sloping gradually away to the south and east: the southern area of excavations, Area B, is c.0.9 m below the level of the northern end, Area A. The site is located on the very edge of the Lincolnshire Fens, under 1 km to the Fen edge in the Roman period, closer during the Iron Age. At no point during the period under discussion was the site enveloped by the sea.

The western site boundary, formerly the line of the Great Northern Railway Bourne to Sleaford Branch, is marked by a recent housing development. The land on the east falls away, beyond the field boundary, to the Roman Car Dyke, c.110 m due east and at a height of c.6.3 m OD (Pl. 1). The modern field boundary takes its alignment from the Dyke, orientated N-S.

The local geology consists of sand and gravel fluvio-glacial drift deposits. Gravel extraction in and close to the assessment plot, during the last hundred years, is indicated by a small gravel pit in the south-west corner, marked on the 1906 OS map. Evidence for this was uncovered by the evaluation excavation (Trench 12).

FIELDWORK

Two areas of the development site were excavated and recorded, based on the evaluation results, in a programme of archaeological investigation lasting four weeks in August and early September, 1994. Mechanical topsoil stripping of the site to a depth of c.0.3m was undertaken using a 5 foot dyking bucket and supervised by an archaeologist. Both areas were cleaned by hand after the machine stripping. All features revealed were planned and excavated, concentrating on points of intersection in an attempt to understand stratigraphic relationships. A high priority was given to the retrieval of diagnostic material to enable dating of the phases.

No surviving occupation surfaces were visible, and had almost certainly been previously destroyed by cultivation. Plough furrows, orientated E-W, relicts of the medieval ridge and furrow strip system of farming, truncated and obscured the earlier archaeological features and have almost certainly destroyed shallow features. A local resident informed us that the ridge and furrow was ploughed out in 1946. Evidence of the furrows was found in both excavation areas. Recent deep ploughing has caused further damage particularly in Area B. Only features cut into the subsoil have survived; the uppermost parts of shallow features were almost certainly destroyed previous to topsoil stripping and their original dimensions must be assumed to have been greater.

There was generally a poor state of preservation of environmental data across the site. Only the large sub-linear ditch in Area B contained deposits sealed below the water level. Unfortunately, this feature was incompletely excavated; no preserved organic residues were encountered during excavation and no samples were taken for further analysis.

Archaeological deposits were assigned context numbers for recording purposes, which are referred to in the text and on the illustrations (see Appendix 7). Context numbers 20-122 were used during the evaluation in March 1994 and are referred to in this report where features have been linked to those discovered in the larger-scale excavations. Context numbers 200-312 were assigned in Area A and numbers 400-534 in Area B.

All measurements of features were taken from the surface of the subsoil after stripping.

The two excavation areas are discussed separately for ease of reference but this division does appear represent a spatial differentiation in occupation.

Area A (Fig. 4)

A rectangular trench c.20 x 10 m, was positioned alongside the southern edge of evaluation Trench 1 at the north end of the site, aligned ESE-WNW (Pls. 2 ,3).

Medieval and Later Activity

Area A was truncated by two E-W medieval furrows **200** and **202**, shallow linear features with undulating V-shaped profiles, 2.5-3m apart, 3.75 and 4.25m wide x 0.2m deep (Pl. 4). These were removed to reveal a complex series of intersecting ditches, gullies and pits (Pls. 2, 3). Excavation showed that the archaeology was far more complex than the magnetometer survey had suggested (as is often the case) and proved difficult due to the density of intercutting features, necessitating near complete excavation in order to understand their relationships.

It is possible that a shallow gully **45**, parallel to the furrows and c.3.75m north of **200**, related to the medieval agriculture. It was traced for 9.5m and shown to cut the intersection of ditches **205** and **230**.

Late Iron Age/Roman Conquest Period

Ditches and Gullies

The south-west corner of a Late Iron Age/Early Roman enclosure, with multiple replacements, was defined by ditches **305** and **306** in its earliest and ditches **230** and **211** in its latest phase (Pl. 5). This enclosure was not clearly defined by the magnetometry, masked by the intensity of the magnetic anomalies and density of archaeological features.

The ditches were probably kept open for drainage and, being cut into the sand and gravel subsoil, would have silted rapidly without constant maintenance. The ditch cleaning and recutting episodes need not have been widely separated in time, as shown by the pottery of Late Iron Age/Conquest tradition found in several of its phases of use.

The shallow V-shaped ditch **306** was traced for c.4.75m between ditches **230** and **205** but it may have continued northwards as **258**. Ditch **305**, traced for a further 4.25m eastwards, is almost certainly a continuation of **306** forming the southern limit of the enclosure. It was recut and truncated by **276** along its north side.

Ditch **306** had been recut on the same alignment by V-shaped ditch **308** along its north side, which was traced for c.4.25m between ditches **230** and **205**. A single sherd of Roman pottery in the fill was possibly intrusive given the extensive truncation which has taken place.

The V-shaped ditch **276** was defined E- W for c.1.5m. It had been cut through to the east by ditch **211** and to the west by **230**. The cutting of ditch **230** destroyed the stratigraphic relationship between ditches **305** and **276** with gully **278**. This gully diverged N-S from the corner of the enclosure for c.1.5m before its truncation by pit **303**. It did not continue south of pit **254**. Its terminal could have been destroyed by pits **303** and **254** or pit **303** may have represented this terminal (Pl. 6). The upper fill of gully **278** contained a single Late Iron Age/Conquest period coarse shell-tempered sherd. This was sealed by layer **310** (see below).

The north side of ditch **276** was cut by V-shaped gully **252** which contained a single Late Iron Age medium shell-tempered sherd.

Gully **252**, c.0.5m to the north of **276**, was traced E-W for c.2.8m, between ditch **211** to its east and ditch **230** to the west. It had silted up before being dug into by a grave **299**, containing a baby (Burial 1; Fig. 5; Pls. 7 and 8). A medium shell-tempered sherd of Late Iron Age/Conquest period pottery was found in the grave fill. The infant was aged between 0-2 months old at death, was laid supine with the head facing west (Appendix 5). The legs were flexed in opposite directions, suggesting that the body may have been dumped, or even crammed, in the pit without particular care. The burial had been cut through by the later ditch **230**, removing the right lower arm and front/right side of the skull (Pl. 8).

Layers **215** and **310**, covering an area c.5m in diameter, overlay and sealed the enclosure ditches **306** and **308**. **215**, a mixed spread of grey-brown sandy clay loam c.0.25m thick, containing mid-late 1st-century AD pottery, overlay **310**, a sandy clay loam 0.20m thick, which contained Late Iron Age/Roman sherds. These were probably disturbed deposits of mixed material from the ditch recuts, possibly gathered in a hollow/ depression over the silted up ditches.

Layer **215** appeared to be cut through by **230**, a flat based U-shaped ditch, which was defined for c.7m aligned NW-SE. Joining pottery sherds were found in the ditch, layer **215** and layer **62** (evaluation trench 1).

Ditch **230** formed the latest phase of the enclosure, recutting ditch **308** on a similar alignment. It also cut through **276** and **278** at its southern end and grave **299** (Fig. 5; Pls. 5, 7). **259**, possibly forming the terminal to gully **51/256** was also truncated by this ditch. The fill of ditch **230** appeared to have accumulated by a combination of natural silting processes, such as soil erosion and slippage, and by the deliberate dumping of material. This may have occurred rapidly given the sherd-links between layers **232** and **233**. Differential accumulation was shown by the occurrence of silting layers in the deeper central section of the ditch which did not continue throughout its length.

The largest quantity of pottery in Area A (81 sherds) came from ditch **230**. The primary silting in the base of the ditch **235**, contained two mid-late 1st-century AD sherds, the latest dated pottery in the lowest stratigraphic layer of the ditch. The recovery of two vessels from ditch **230**, one almost certainly complete on deposition, is unusual and may represent a single depositional event. A complete handmade ovoid jar of Late Iron/Conquest period fine shell-tempered fabric was recovered from layer **251** (Pls. 9, 10). Layer **234**, near the southern end of ditch **230**, contained medium shell-tempered sherds and was probably the same layer as **251** (the ditch was excavated in two sections under different context numbers). A handmade ovoid vessel (27

sherds) in fine shell-tempered fabric was obtained from layer **62** during the evaluation, which was possibly the same deposit as the upper layer **231**, which contained two sherds of a medium shell-tempered vessel.

Ditch **211** was orientated parallel to, but cutting, ditch **276** and gully **252** and defined for a minimum of 3m (Pl. 11). The ditch terminated with a butt-end at its western end, adjacent to the southern termination of ditch **230**. Ditch **211** probably formed the south side of the enclosure with **230**. It was 1m in depth, had a U-shaped profile with steeply sloping sides. Pottery from the fills of the ditch dated from the Late Iron Age to mid 1st century AD and included a rim sherd of wheel thrown burnished beaker.

The enclosure defined by ditches **230** and **211** may have been contemporary with Enclosure 2, defined during the evaluation excavation (Fig. 3). Ditch **70**, the eastern limit of Enclosure 2, contained pottery dating to the mid-late 1st-century AD (Tipper 1994, 3).

A V-shaped gully **256**, aligned NW-SE, was defined for c.5m being cut through by ditch **230** at its eastern end and gully **47** at the western edge of the trench. It contained a single mid-late 1st-century AD sherd. Two sherds of Late Iron Age/Roman pottery were recovered from the same gully during the evaluation (context **51**). The gully did not continue east of ditch **230** and a butt-ended terminal **259**, truncated by **230**, may relate to it. A shallow gully **63** was defined in the north-east corner of the excavations and may have formed the continuation of **259** after a break of c.2.5m, possibly for an entrance. Alternatively, **256** could relate to gully **252**.

A V-shaped gully **47** (originally located in the evaluation Trench 1) was defined for c.4m in the north-west corner of the trench, aligned E-W. A single sherd of Mid/Late Iron Age pottery was recovered from its fill.

Table 1 Dimensions of ditches and gullies recorded in Area A

No.	length	width	depth	(metres)
47	4	0.7	0.3	
211	3	1.6	1	
230	7	1.55	0.96	
252	2.8	0.45	0.17	
256	5	0.4	0.2	
259	0.9	0.35	0.2	
276	1.5	1	0.4	
278	1.5	0.7	0.3	
305	4.25	0.9	0.35	
306	4.75	1.3	0.2	
308	4.25	0.75	0.2	

Pits

Ditch **211** had been cut by a substantial pit **261**, aligned N-S with an undulating steep-sided profile (Fig. 6; Pl. 12). Six layers were distinguished in the fill, a primary layer **262**, contained a single Late Iron Age coarse shell-tempered sherd. **263** contained shell-tempered pottery, **266** a moulded and polished fragment of baked clay. The upper fill **267** contained a 4th-century AD sherd which, given the absence of other Late Roman material from the pit and truncation by furrow **200**, is probably a later intrusion.

A small sub-oval shaped pit **294** cut through layers **215** and **310** and contained no artefacts. It was possibly recut after the deposition of layer **296**. This pit was cut through on its south-eastern side by a sub-rectangular shaped pit **254** (Pl. 13). The lower fill **271** contained Late Iron Age/Roman pottery and a baked clay loomweight fragment. On the edge of pit **254** layer **271** was cut by a small post-hole **269**, 0.3m in diameter. This was overlain by silty clay loam **268**, containing Late Iron Age/mid 1st-century AD pottery. On its north side, pit **254** cut a sub-circular shaped pit **303** from which was recovered a lump of Iron Age slag, probably associated with smithing.

Pit **254** had been cut by pit/slot **313**, seen in the section but not clearly distinguished during excavation. The Late Iron Age/Roman sherds from the upper layer **255** could have originated from the upper layer of pit **254**.

There was no evidence for the primary function of these pits, which could have performed a wide range of storage or other functions. The material found in them may well have had no association with their original use and can be seen as secondary refuse. Butchery waste from cattle (skull, vertebrate and foot bones) dominates the faunal sample from these pits (Appendix 4). Given that the centre of occupation probably lies to the north of the excavated site, it is suggested that butchery waste was specifically buried in discrete pits, and possibly the butchery of animals took place, close to the edge of the site. The disposal of this waste may have been spatially differentiated from other discarded material and stands in contrast to the ditches which received a more general range of debris including waste from cooking. Rackham suggests that the difference may be chronological but it is difficult to make fine chronological divisions from the pottery assemblage.

Table 2 Dimensions of pits recorded in Area A

No.	length	width	depth (metres)
261	2	1	1.15
294	1.94	1.4	0.45
254	1.5	1.3	0.55
303	0.6d		0.1
313	1	0.9	0.5

Structures 1 and 2

Two ring gullies located south of, and outside, the enclosure probably represented the remains of circular structures (Pls. 14, 15).

Structure 1 was defined by a shallow sub-circular gully **209**, approximately 5.5-6 m in diameter, the southern half of which lay outside the excavation area. It contained two Late Iron Age sherds indicating that the structure was broadly contemporary with the other features in Area A. There was no evidence for post-holes in the base of the gully nor in section. There was no evidence of stake/post-holes or pits within the interior of Structure 1, which had been truncated by furrow **202**. All evidence of occupation surfaces within and around both ring gullies had been previously destroyed.

The break in the ring gully on its western side is probably the result of truncation by the later furrow, but the possibility of an entrance cannot be ruled out. The break could relate to the shallow pit complex **312**, which merged indistinguishably with **209**. **312** was little more than a shallow sub-rectangular shaped pit/scoop but had almost certainly been severely eroded. The ring gully was unbroken around its eastern side, where it has been shown the entrances of round houses predominate (Oswald 1991).

Structure 1 was cut on its north side by a shallow slot/gully **213**, aligned N-S, and terminating in a butt end as it cut the ring gully (Pl. 17). The relationship of **213** with the pit and ditch complex to the north could not be established.

Structure 2 was situated 2m north-east of Structure 1, parallel to the enclosure ditch c.3m to its north. Only one third of the sub-circular ring gully **207** was defined in the excavation area and its diameter was estimated at c.7m. It contained two sherds of Roman pottery. Fragments of lightly fired clay, possibly daub, were also found and are probably the result of accidental firing.

No post-settings were apparent in the gully base but the remains of an inner ring of three sub-circular post-holes **222**, **224**, **226**, and possibly a fourth including **218**, were defined around the inner edge of **207**. These measured c.0.25-0.30m in diameter and survived to a depth of 0.26m (max). Their size was not suggestive of load-bearing posts, to carry a ring beam which would take the thrust of the roof, and might more easily be seen as evidence for fence-posts. However, it should be remembered that truncation was considerable.

Ring gully **207** was cut by a shallow sub-rectangular shaped pit **216**, 1.4m long (Pl. 18). Lightly fired clay fragments in its fill could possibly have been residual from the gully fill. **207** was also apparently cut by a shallow pit/post-hole **218** which contained sherds of a Late Iron Age handmade ovoid vessel in fine shell-tempered fabric.

The relationship between ring gully **207** and pit **220** (Pl. 19), located within its interior, was not established. Its upper fill **221** contained a single sherd of Roman pottery. The pit, was similar in size and shape to pits **216** and **228** (Pl. 20) forming a pit cluster.

Neither ring gully had been recut and there is a possibility that one replaced the other. Two other curving lengths of gully to their west, **285** and **289**, may indicate the remains of possible related structures or fence lines. From its junction with ditch **205**, gully **285** was defined for c.9.5m, its central section removed by furrow **200**, curving gently SE-NW, until it petered out south of gully **45**. It cut through a shallow pit/ possible gully **287** running under the western baulk of Area A.

The relationship between gully **285** and **289**, c.1.5m to its east, could not be established, but it seems likely that one replaced the other. **289** was defined for c.9m until it was truncated at both ends by **205**. It could not be defined to the east of ditch **205**. The gully had also been truncated by furrow **200** but it is just possible that **292**, a shallow pit/scoop formed an entrance facing westwards.

Gully **289** was obscured by a shallow spread of dark brown sandy clay loam **291** within a slight depression, c.0.05m deep, which extended over an area c.3 x 4m. This spread was possibly the last remnant of surviving occupation surfaces, destroyed by later activity.

The ring gullies can be interpreted as foundation trenches to the carry the load-bearing posts of a structure, but there was no evidence for foundation posts set within them, or to hold non-load-bearing wattle walls, the roof being supported by internal posts. Alternatively, they could have been eaves-drip gullies, acting as sumps to drain surface water from a post-hole structure. However, the post-holes on the inside edge of **207** were insubstantial.

The relationship between the ring gullies and the other features in Area A could not be established. Pits **261** and **254** probably relate to activity to the north of Area A, as has already been discussed. On spatial grounds it might be suggested that they were contemporary with the enclosure ditch c.3 m to their north: they were aligned roughly parallel to the southern limit of the enclosure.

The ring gullies were not necessarily domestic dwellings. They were actually small compared to other excavated examples (although few are recorded in Lincolnshire) The smallest ring gully at Wakerley, Northants, measured 7m in diameter (Hut 6, Iron Age Phase II), which is the same size as the largest at Mill Drove (Jackson and Ambrose 1978, 133). The ring gullies were not defined by magnetometry and, given the small area that was excavated, it is possible that others existed at the north end of the site. No such structures were defined in Area B, which was altogether very different in character.

The structures could have functioned as subsidiary buildings and annexes for storage, working areas, or hay ricks, outside a domestic enclosure. Unfortunately, there were no surviving occupation surfaces to aid with interpretation. They could have formed animal pens or possibly even wintering sheds. The pens need not have been roofed. At Claydon Pike in the Upper Thames region, shallow circular gullies ranging in diameter from 3-9m, were thought to define stalling areas for animals (Allen, Miles and Palmer 1984, 91).

There is a clear fall off in the intensity of activity between Area A and the multi-phase ditch in Area B (see below). It is suggested that the central area of the site, within the outer boundary, formed an unenclosed area for livestock management with stalling areas located on the edge of the domestic activity situated to the north of Area A.

Later Roman Activity

The latest phase of activity in Area A, and probably across the whole site, was represented by ditch **205**. This ditch cut through the corner of the earlier enclosure after ditch **230** had silted up (Fig. 7; Pl. 21). Ditch **205** (Pl. 22) cut NE-SW across Area A and was clearly defined by magnetometry as an intense magnetic anomaly. There was no evidence to suggest that the ditch had been recut. The same ditch was cross-sectioned in Trench 5 of the evaluation as **F20**, where it was suggested that it defined the boundary between Enclosures 3 and 4 (Fig. 3;Tipper 1994, 5).

The realignment of the enclosure layout occurred after a break in activity lasting over a century, associated with the development of a Late Roman settlement, a probable villa complex, immediately north of the site (see below). The fill of ditch **205, 206**, contained fragments of a late 1st/early 2nd-century AD stamped mortarium from the Verulamium area (the joining sherd from **F55**, Trench 1, probably belongs to ditch **205**, which was not defined during the evaluation). **F20** contained a fragment of Nene Valley mortarium as well as Nene Valley red and grey ware sherds, dating to the late 3rd/4th centuries.

A fragment of late 2nd/mid-late 4th century comb patterned box flue-tile (shelly fabric) was recovered from fill **206** (Appendix 2). F20 contained two fragments of box flue-tile, one of which had comb patterning. A fragment of comb patterned box flue-tile from ditch **F34** in evaluation Trench 6, as well as its rectilinear alignment defined by magnetometry, is strong evidence to suggest contemporaneity with **205/F20**.

The extent and nature of activity associated with these ditches is difficult to assess but none of the other features excavated in Area A, with the exception of the upper layer **267** in pit **261**, (see above) contained contemporary material. The lack of internal features suggests that the enclosure complex may have served to manage livestock.

The Central Zone of the Site
The gap of c.80-90m between the northern and southern complexes, Areas A and B, probably represents a real lack of activity and reflects the spatial arrangement of the settlement. This has been shown by both magnetometry and evaluation excavation (Tipper 1994). Furthermore, field walking defined two concentrations of material, in the northern and southern thirds of the assessment plot. Two parallel linear magnetic anomalies in the central area, aligned north-south, could define a trackway connecting the two ends of the site.

Plough damage was evident across the site, and had probably destroyed very shallow features and any occupation surfaces. It is possible that drainage ditches could have been removed in the central zone: the linear magnetic anomalies suddenly fade out. This could be a consequence of differential destruction of features in the central zone but it seems unlikely given the survival of deposits at the same level in Area B and on the rising ground in Area A.

Area B (Fig. 8)
A trench 20 x 20m square was excavated at the southern end of the site, aligned NW-SE. It was centred on the large multi-phase ditch, and terminal, which curved gently ENE-W across the southern third of the site (Pls. 23, 24). It had been identified by magnetometry and was also defined in Trench 13 during the evaluation. The evaluation excavation showed that this ditch represented a multi-phase boundary on the same alignment which contained the earliest evidence of occupation on the site (Tipper 1994, 2-3).

Medieval and Later Activity
Area B was particularly affected by modern plough damage with furrow marks scoring the subsoil after the removal of the topsoil. A modern pipe trench (unexcavated), probably a drain pipe cut N-S across the area.

Three medieval plough furrows, **414**, **415** and **514**, orientated E-W and 3.5-5m apart, obscured earlier archaeological remains in Area B and had probably destroyed shallow features. They were c.2.5-3.8m wide x 0.2m deep, with shallow V-shaped profiles. Following the time consuming removal of the furrows by hand in Area A, removal of the furrows was limited to small areas positioned to obtain the plan of the main ditch and terminal and the post-hole lines.

A shallow circular pit **523** located in the south-east corner of Area B, was possibly a modern feature but contained no finds.

Middle-Late Iron Age Activity
A small collection of Middle Iron Age pottery concentrated in Area B indicates the likely presence of Middle Iron Age activity at the southern end of the site or in the close vicinity, which pre-dated the Late Iron Age/Early Roman complexes at the northern end of the site (Appendix 1). Ditch **403** (Fig. 10) was the earliest cut of the multi-phase ditch and was sealed by layer **406**,

which contained a small quantity of Middle Iron Age pottery (see below). Residual Middle Iron Age sherds were also contained within later recuts of the ditch.

Ditch **417** was defined for 5m to the south of the ditch terminal complex, aligned N-S, and had clearly been cut by it (Pl. 25). **417** almost certainly relates to ditch **418**, cut by the ditch terminal on its north-eastern side. **418** was defined for 4m aligned NE-SW (Pl. 26). A few sherds, possibly Late Iron Age, were retrieved from layer **423**.

The alignment of **417/418** suggests that they formed one ditch, curving NE-S, giving a total length of 16m across the east side of Area B. This ditch was poorly defined by magnetometry because of an insufficient magnetic susceptibility contrast between the ditch fill and the surrounding subsoil. Its signal was also masked by the intensity of the magnetic anomaly for the ditch terminal.

Ditch **418** could possibly relate to **535**, defined by magnetometry and visible at the southern end of evaluation Trench 11. This trench was re-machined in August 1994 to remove a subsoil of light brown sandy clay loam, c.0.1m thick, masking the archaeological features, and which also overlay features in the north-east corner of Area B (Pl. 27). However, **535**, which was unexcavated and not clearly defined by the stripping, more probably related to the continuation of ditch **452**, after a break for the possible entrance, leaving the continuation of **418** undefined.

Ditch **417/418** did not form the eastern limit of Enclosure 1, as defined by magnetometry extending southwards from the multi-phase ditch (see below; Tipper 1994, 2-3). This must lie outside the excavation area: the magnetometry indicated a gap of c.5-6m between the ditch terminal and the N-S ditch of Enclosure 1.

Multi-phase Ditch

A large ditch with multiple recuts, 5.2m in total width (extending to 6.6m in Tr.13) x 1.6m at its greatest depth, was defined as an intense magnetic anomaly and by excavation (Pl. 28), curving gently for c.75m ENE-W from a ditch terminal **444** at its eastern end (Pls. 29, 30).

The ditch appeared to terminate c.10m west of the modern NE-SW pipe trench, and before the disturbance caused by the former railway track-bed. This could have been caused by gravel quarrying visible in evaluation Trench 12. There was a slight indication of magnetic anomalies curving north-west, possibly indicating the line of a bank and/or disturbed ditch. Alternatively, the ditch may have been interrupted, possibly to form another entrance, or it may only have been a short south facing ditch.

The eastern ditch **535** (see above) seemed to fade out towards the Fen edge, with **401**, on the magnetometer survey c.54m east of the ditch terminal **444**.

The ditch may terminate towards the Fen edge. However, **535** is a much less intense magnetic anomaly than ditch **452** which could be the result of decreasing magnetic susceptibility towards the eastern side of the site. This might explain the significant difference in magnetic anomalies between ditch terminal **444** and the opposing entrance terminal, c.4m to its east. This would require further investigation but it might become apparent during the Watching Brief stage.

A 1 m wide section was excavated across the ditch in Area B (Fig. 10). The earliest phase was represented by a flat based V-shaped ditch **403**, 2m wide (min) x c.0.9m deep. This was possibly recut to a depth of 0.7 m at the interface below layer **406**. Neither layers **404** or **405** contained any finds. However, **406** contained five sherds of Middle Iron Age pottery. This is important as it represented the only feature containing stratified pottery of this date and, assuming that they were not residual, ditch **403**, below **406**, represents a Middle Iron boundary ditch, which was recut on a similar alignment during the Late Iron Age on at least nine occasions.

Ditch **403** was cut through on its north side by a large V-shaped ditch **452**, c.4m wide x 1.6m deep. **452** contained slumped and weathered layers of silty sand **488** and **489** in its base, neither of which contained any pottery. Layer **490** may have well have related to this first phase of **452**. A recut at the interface above **489** contained a mid 1st-century AD sherd in the primary silting **491**, which might be considered intrusive given the lack of other material of this date.

The ditch was recut by a steep sided, flat based channel **495** to the original depth of cut **452**, 1.6m deep x 0.6m wide (min). It is not clear whether this recut was dug before or after the recut containing **491** because the relationship between the two was removed by a later recutting above its fill **496** containing **497**, **498** and **499**. **499** contained four possibly Late Iron Age sherds.

The later recuts were insubstantial, shallow ditches not exceeding 0.5m in depth. Layer **499** was recut by a shallower and wider ditch, 1.9m wide (min) x c.0.5m deep, containing numerous layers of silting. This may have been redefined on a number of occasions. A primary silting layer **500** contained a single Mid/Late Iron Age sherd and **505** contained fourteen sherds dating to the Middle Iron Age. This was then redefined on a much smaller scale by a V-shaped ditch **510**, 0.9m wide x 0.4m deep. Fourteen sherds dated to the Middle Iron Age were recovered from fill **511**.

The final stages of this multi-phase ditch saw a progression of two shallow recuts and movement of the boundary southwards, first by **408**, 0.5m deep x 1.7m wide (min) containing Mid/Late Iron Age pottery, and the final recut **411**, 0.35m deep x 1.2m wide (min) located over the south side of the first ditch cut **403**, containing two Roman sherds.

The collection of Middle Iron Age pottery from the later recuts of this multi-phase ditch, in particular layers **505** and **511**, raises an interesting question about the source of this redeposited material, which could possibly come from earlier ditch deposits or from a disturbed context/source in the near vicinity.

It is difficult to relate the layers defined in this ditch section and those shown in the ditch terminal to the east. It is possible that ditch cut **403** correlates to terminal **527** and **452** with **444**. However, this relationship might not be straightforward and later recuts in the ditch terminal are not apparent. The same problem arises in linking the ditch section with the evaluation excavation in Trench 13, c.30m to its west which was excavated to the level of the water table at c.0.7m below topsoil surface (Tipper 1994, 2-3). Ditch **403** probably relates to **F94**, whose upper fill **122** contained Early/Late Iron Age pottery. Ditch **452** may be comparable to **113**. The presence of localised silting, recutting and depositing of material, which might vary functionally with distance from the entrance or activity areas must be acknowledged, and perhaps more importantly the possible differences in categorisation and meaning ascribed to deposition in different parts of the ditch.

Ditch Terminal

The ditch terminal was clearly defined by magnetometry and excavation, and approximated to a sub-rectangular shape aligned N-S having a steep-sided probably U-shaped profile, 8.7m long x c.6.5m wide; its minimum depth to the water level being 2m (Pls. 29, 30). Complete excavation of a section across the terminal could not be completed due to a lack of time and safety concerns. Two main phases were defined by excavation. **527**, 2.6m wide (min) x 1.2m deep (deep), had been substantially truncated on its northern side by ditch cut **444**. The single surviving layer of dark brown sandy clay loam **528**, after truncation, contained three Late Iron Age sherds and a few pieces of fired clay/daub.

Ditch terminal **444** measured 7.6m long x c.6.5m wide x 2m deep (min). No recutting episodes were immediately obvious during excavation: the numerous recuts defined in the ditch section could not be distinguished in the ditch terminal. It is possible that recut **444** removed the evidence of earlier recuts. The size of the terminal might have facilitated a long period of use without the need for cleaning/ recutting. However, suggestions could possibly be made for recuts at the interfaces below layers **530** and **529**.

Seventeen separate layers were defined during rapid excavation of the terminal, suggesting a combination of gradual silting and dumping. Gradual silting was suggested particularly up the northern side of the terminal, for example, **532**, **531** and **513**. Preferential silting on the northern side of the terminal might indicate that the earth from the ditch terminal construction may have been dumped on the northern edge, probably to form a bank, now levelled. This was further suggested by the two post-hole lines along the northern side of the ditch (see below).

Dumping of material in the terminal was suggested, for example, by layer **487**, which contained two Mid/Late Iron Age shell-tempered sherds; **486**, **447**, containing Iron Age/Roman sherds and a possible loom weight fragment; and **446**, which contained a few Late Iron Age/Roman sherds.

Layer **487**, towards the base of ditch terminal **444** contained a collection of unworked flints which had been slightly heated. Three, probably originally intact, cattle skulls were recovered from the same layer. These might indicate that primary butchery was taking place near the ditch. However, Rackham notes the possible 'ritual' significance of these skulls, given their occurrence in similar features at other sites (Appendix 4) and in comparison to the rest of the site, they seem to stand out as different from the 'norm'.

It has been suggested that the placing of material in particular deposits, and the resulting patterning of faunal remains in the archaeological record, must be seen as part of a symbolic system (Parker-Pearson forthcoming). Analysis of pit and ditch deposits in Iron Age Wessex has shown that these were highly structured, while a minority of deposits were shown to be exceptional, raising the suggestion of ritual deposits. It is suggested that these deposits were the result of periodic rituals, through feasts and sacrifices, which explicitly drew upon and reproduced the structuring principles of daily life (Hill 1993).

Post-hole Lines

Two post-hole lines were defined alongside the northern edge of the sub-linear ditch, and parallel with it (Pl. 31).

A first line c.0.5 m to the north of ditch cut **452**, was defined for 11m, but was obscured by furrow **415**. The line consisted of evenly spaced post-holes c.0.5m apart. They were oval-circular in shape, with an average diameter of 0.25-0.3m and 0.15m depth. There was no evidence of post impressions or post-packing. The post-hole line appeared to terminate c.2m west of the ditch terminal, with post-hole **521**, indicating that they were possibly contemporary. They could, however, relate to ditch **403**, c.3m south of the line. Post-holes F100 and F102 defined in evaluation Trench 13 (Tipper 1994, 3) were probably part of the same line.

A second line of post-holes was defined for 8m, c.3m north of the first and roughly parallel with it. The average size of these was slightly larger than the first line, measuring c.0.35-0.4m in diameter x 0.15m deep, which may explain why they were more widely spaced, lying 0.5-1.1m apart. This post-hole line did not continue east of a shallow oblong-shaped slot **430**, located c.3m east of and in line with post-hole **465**. This slot is located c.0.4m north of the north-west corner of the ditch terminal, which almost certainly marked the termination of the post-hole line.

There was no dating evidence from either post-hole line and no stratigraphic relationships between them and other features. Their close proximity to the multi-phase ditch strongly suggests that they were contemporary but it is not possible to identify the phase/s to which they belonged. One post-line could have been a replacement for the other but it is felt that they may have been complementary to each other, forming a unified arrangement. They may have been free standing but it is more probable that they were either set within or acted as a revetment for a bank along the northern edge of the ditch. The post-lines would have supported and stabilised material removed during the digging of ditch. At the same time, the bank material would have provided a firm foundation to stabilise a possible palisade.

Post-holes to the north of the two lines might have been the remains of two further, less complete, post-hole rows, or possibly even a structure/s alongside the palisade/rampart. Post-holes **467**, **469**, **471** and **473** could form a row c.1.5m to the north of the second line; post-holes **475**, **477**, **483** and **485**, with pit/post-hole **479/481**, may form a fourth row c.1.2m to the north of the third. **481** contained a single Late Iron Age sherd, the only dating evidence from all the post-holes. Three post-holes south of ditch **401**, **517**, **518** and **519**, may have been contemporary; further post-holes were probably masked by furrow **514**.

These post-holes could relate to a sub-rectangular pit **440**, immediately to their east, aligned E-W and parallel to the main ditch (Pl. 32). This pit may have been contemporary with the ditch terminal complex. Two sherds of pottery were found in its fill, **443**, one of possible Late Iron Age date. The relationship of a circular post-hole **520** in the south-west corner of this pit could not be established.

A possible track/droveway was delimited by ditch **401**, running c.11.5m to the north of, and parallel with, the multi-phase ditch (Pl. 33). It had an estimated width of c.7.5m, allowing for a possible associated bank. Ditch **401** was defined for 55m by magnetometry, but with a possible break opposite the entrance in the multi-phase ditch, and for 7m in the north-west corner of Area B. Both the layers in its fill, **526** and **402**, contained five Mid/Late Iron Age sherds. Ditch **401** may be contemporary with an early phase of the multi-phase ditch but there were no recuts apparent in its fill.

Roman Activity

Excavation in the evaluation Trench 13 recovered a fragment of Roman roller-stamped box flue-tile from the final phase of recutting of the multi-phase ditch **F111**. This ditch also contained residual Middle Iron Age pottery. It was suggested that it formed the northern side of a sub-rectangular enclosure, defined by magnetometry (Tipper 1994, 2-3). No evidence was found by the excavation to confirm or contradict this suggestion which still remains plausible.

Unfortunately, the excavation failed to locate the eastern ditch of this enclosure, which must lie immediately south-east of Area B. Furthermore, no internal features were investigated other than pit **523** (see above). However, only the northern edge of the enclosure was exposed in Area B.

The line of the multi-phase ditch may still have been visible and was possibly convenient for reuse. The function of this ditch must have been transformed as it changed physically from a substantial outer boundary of the earlier settlement to a small drainage ditch with an enclosure extending southwards from it. The rectilinear form of the enclosure and the fragment of flue-tile indicate that it was contemporary with the later Romano-British enclosure complex at the northern end of the site. It is suggested that the enclosure could be an outer enclosure of the Late Roman settlement situated beyond the northern end of the site (see below).

DISCUSSION

The Fenland Project has shown that the Fen margins were densely inhabited during the Iron Age and Roman periods, containing numerous irregular nucleated enclosures (Hayes and Lane 1992). However, few excavations of these recently identified sites have taken place in Lincolnshire. Therefore, the excavation at Mill Drove was particularly important as it has enabled the investigation of a Fen edge site showing evidence for both Roman and pre-Roman occupation.

It is suggested that the multi-phase ditch, recut **452** in particular, with a possible palisaded bank along its north side, formed the outer, possibly interrupted, boundary enclosing a Late Iron Age settlement sited on rising ground above the Fen edge. The ditch terminal defined an entrance into this settlement.

The size of ditch **452** may indicate that its primary role was defensive. It is comparable in both size and shape to the outer ditch of the low lying Middle Iron Age enclosure at Tattershall Thorpe (5 m wide x 1.45 m deep) (Chowne, Girling and Greig 1986). At Tattershall Thorpe it was suggested that the enclosure may have functioned as a defended livestock corral for animals reared and grazed in the Fens which would have deterred rustlers and/or predators. The ditch at Mill Drove may well have been a ditch of containment, to keep livestock within the open zone below the habitation area as much as to keep predators out. It would have provided drainage to the low lying area below the site, an important factor as shown by the mass of drainage ditch recuts in Area A and those observed during the evaluation excavation.

Only two phases of the ditch, recuts **452** and **495**, could possibly be seen as having a defensive function. It is almost certainly over simplistic to attribute a single and fixed meaning to the feature. It is necessary to explore what motives lay behind the sudden expansion in its size, which could possibly be attributed to a period of insecurity before shrinking in size. However, further work would be needed to establish whether or not the ditch is interrupted, which would significantly affect any interpretation of defensive use.

Beyond the straightforward functional view, the ditch can be seen as an inward expression of communality by its inhabitants and, at the same time, as an outward manifestation of that group to the wider community in a marginal Fen edge location. The settlement was in a prime location for accessing the abundant resources of both the Fen and Fen edge but at the same time it occupied a marginal and liminal zone on the threshold between land and water.

The southern edge of the settlement core was defined in Area A. The absence of features in the central area of the site, between the southern and northern complexes, indicates that this unenclosed area could have enabled the control and management of livestock within the outer boundary.

The distribution of pottery indicates a clear distinction between the two excavation areas. The pottery from the northern end of the site was a more mixed assemblage. The finer shell-tempered wares were concentrated in Area A. Coarse shell-tempered fabrics dominated the pottery in Area B; this may be chronological with perhaps a trend towards finer domestic wares over time, which would indicate a shift in occupation from the southern to the northern end of the site (Appendix 1). Over 90% of the Roman material came from Area A. Roman fine ware sherds included a Verulamium region mortarium, terra nigra, Gallo-Belgic white ware and Nene Valley colour-coated ware.

The more mixed assemblage of fine table wares at the northern end of the site could have been deposited in features closer to the centre of domestic activity in both the Late Iron Age/Early Roman and Late Roman phases of occupation. Area B, outside the settlement boundary in the Late Iron Age and on the periphery of the Late Roman settlement, had a greater distribution of coarse wares, which can be seen as the result of different activities taking place, possibly manuring of the enclosures, particularly during the Roman period.

The faunal sample from the excavations was small and consisted mainly of the domestic species cattle, horse, sheep, pig and dog. Single bones of chicken, goose, duck, and wild hare and red deer were also identified. Rackham suggests that there is some evidence to indicate a change in the animal husbandry in terms of the species and slaughter pattern between the Iron Age and Roman samples, although the quantity of material is very small (Appendix 4).

The Iron Age material consisted predominately of juvenile and immature cattle bred for meat and, of lesser importance, mixed husbandry for sheep. In the Early Roman period there was a change in emphasis with the importance of sheep increasing substantially. There is evidence of increasing size of sheep, which could indicate new stock, selective breeding or improved husbandry and management. While declining in importance as a whole, there was a greater number of fully adult cattle present in the Roman period,

possibly reflecting a change from a mixed husbandry to a more structured one.

There is limited evidence for both weaving and spinning on the site. The fired and baked clay recovered from the excavations is unusual in its variety and range of clay treatments but small in quantity (Appendix 3). These consisted mainly of loomweight and wedged fragments of baked clay, including a moulded and possibly polished piece from pit **261**, layer **266**, which could be from some internal feature. The distribution of the fired clay fragments reflects the evidence of activity concentrated at the northern end of the site; two thirds came from contexts in Area A. Nevertheless, loomweight fragments were recovered from the ditch terminal **444** in Area B.

A single chalk spindle whorl was recovered on the surface of layer **511** in ditch recut **510** of the multi-phase ditch in Area B and provides the only evidence for spinning on the site (Pl. 34). A bone awl from the upper layer **231** in enclosure ditch **230** provides evidence of leather working (Pl. 35).

Two pieces of iron slag were found. The piece of Iron Age slag from pit **303** (Area A) was probably associated with smithing (Appendix 3). Three pieces of fired clay/brick/tile were possibly associated with an industrial practice involving salt. It is suggested that clay with a higher quartz content could have been part of a minor structure such as an oven.

The Fenland Project field walking survey immediately to the north of the excavations recovered tiles, hypocaust fragments and limestone rubble (SMR 34142) which "litter the area" (Hayes and Lane 1992. 136). The pottery suggested occupation throughout the Roman period but particularly during the late 3rd-4th centuries (SMR 34134), continuing into the Early Saxon period but shifting location to the north-west of the assessment plot (SMR 34137) (Fig. 1).

The excavation highlights a fundamental problem concerning the representation of sites by field survey. It should not be assumed that all sites of all periods will be equally represented and defined by field walking. No evidence for Iron Age activity was recovered by the Fenland Survey either in the assessment plot or to the north of it. Moreover, field walking by LAS produced late 3rd-4th century AD pottery but failed to produce Iron Age material (Field 1994). The material which was picked up had been severely abraded indicating that the more friable Iron Age material had not survived because of intensive agricultural activity, but possibly also because it is less easy to spot on the ground during field walking. In contrast, of the 396 sherds recovered from the excavation only 15% could be viewed as being of probable Roman date.

The structural evidence from the 1994 fieldwork consisted of over thirty pieces of Roman tile and brick, ten fragments of Roman flue-tile and a few lumps of limestone building rubble. The excavation further suggested that an extensive Late Romano-British settlement with at least a moderate stone

building, indicative of a villa, was centred immediately to the north of the assessment plot. It was probably central to the rectilinear enclosure complex defined by magnetometry and excavation (ditch **205/20** in Area A and **F111** in Area B), which was laid out, probably in a single phase during the 3rd-century after about a century's break of occupation on the site. These are interpreted as outer enclosures, probably for livestock management, given the apparent lack of internal features in Area A. The site was realigned and the space was closely bounded and re-organised.

The development of the Late Roman settlement, on the edge of a local market centre at Bourne, fits in with the now standard pattern of development across lowland Britain, which saw an economic shift away from urban centres to secondary centres, and a growth of Late Roman rural complexes (Millett 1990).

The Mill Drove settlement complex is sandwiched on the Fen edge in a highly organised landscape (close to both the Iron Age and Roman coastlines) between the Car Dyke c.110 m to its east and the junction between the 1st-century AD King Street, heading north to Lincoln and south to Great Casterton, a branch to the north-west, Long Hollow, connecting Bourne with the Ermine Street to the south of Ancaster, just over 0.5 km to its west (Fig. 1). It was situated on stable land, suited for stock rearing, and close to the Fen edge for exploiting its resources and utilising the changing foreshore environment. Although salterns have been identified for both periods in the immediate vicinity, they were situated in the salt-marsh to the east of Bourne (Lane 1988) and no evidence has been discovered for salt production at the site, during either the Iron Age or Romano-British periods .

The Mill Drove site is one of a number of Iron Age sites close to the Fen edge between South Kyme and Bourne, which appear to reflect the later course of the Roman Car Dyke (Simmons 1980). This relationship is primarily topographical, occurring along the rising ground above the Fen edge. The Car Dyke, probably of late 1st/early 2nd-century AD date, follows the OD 7.5 m contour, which straddles the site, along the eastern edge of the limestone escarpment, and along the Fen edge.

The route of the Car Dyke makes a kink in its linear alignment for c.2 km between the north-eastern edge of Bourne and Dyke, which is not obviously related to the changing topography. This alignment could be significant and may have been constructed to respect the existing settlement and avoid the destruction of the Mill Drove site, which would have occurred if the Car Dyke had taken the direct route. However, around the same time the settlement at Mill drove came to an end and was not re-occupied until the 3rd-century.

Once thought to have been an artificial canal and major waterway for shipping grain to the military north from an Imperial estate encompassing the Fen region, it is now generally accepted that the Car Dyke in Lincolnshire was part of an elaborate drainage system (Simmons 1979). Nevertheless, this does not lessen the feat of engineering and monumental scale of the Dyke's

construction across eastern England, nor the radical change in the landscape of the region which it brought about.

A drainage system centred on the Car Dyke, combined with a receding coastline during the period, could have produced well drained fertile land for intensive farming, for exploitation from sites in the near vicinity. The Dyke would also have acted as a means for transporting produce, on a small scale, to local markets.

Why was there a break in occupation of the Mill Drove site between the late 1st and 3rd centuries? It is possible that the provision of fertile farmland to the east of the Car Dyke enabled the movement/migration of the settlement eastwards. Re-occupation of a deserted site might indicate retreat from coastal resurgence or, alternatively, a densely occupied landscape close to the market centre at Bourne in the Late Roman period.

Acknowledgements
Lindsey Archaeological Services are grateful to M. Parker and Sons Ltd for their assistance in the use of a mechanical excavator, pump and site facilities. Thanks are due to Maggi Darling and David Knight who identified the pottery; Jane Cowgill who examined the fired clay; Rick Kemp who looked at the tile; Sue Ensor who identified the human bone; and to James Rackham for identification of the animal bone. The excavation team were Adnan Baysal, Adrian Burton, Sue Ensor, Neil Herbert, Mick McDaid, Steve Page, Rob Schofield and Katy Whitaker.

A full paper and photographic archive has been prepared and will be deposited with the City and County Museum, Lincoln.

Jess Tipper and Naomi Field
March 1995

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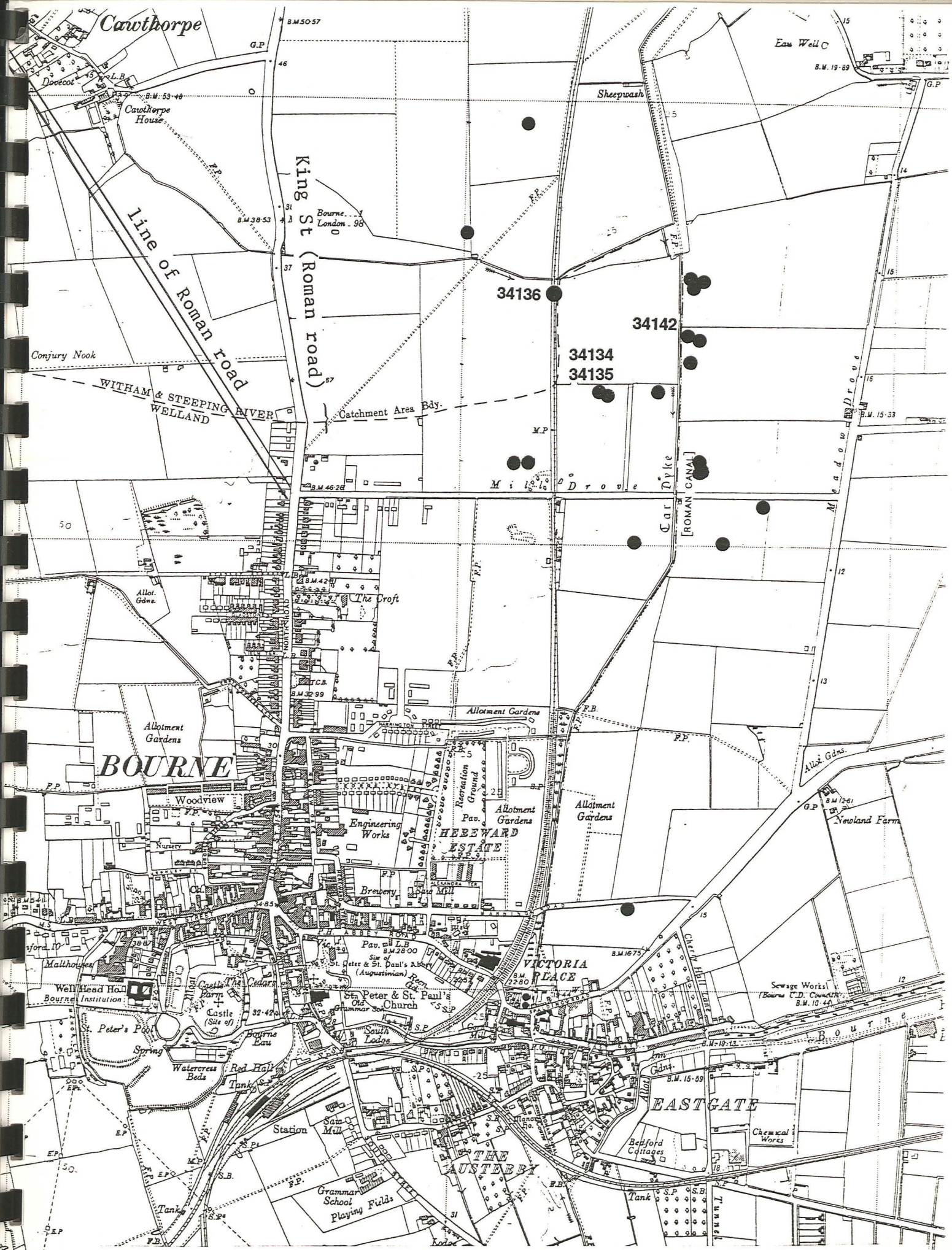


Fig. 1. Mill Drove, Bourne. Site location showing known archaeological remains. Reproduced from the 1951 OS 1:10560 scale map with permission of the Controller of HMSO, Crown copyright. Licence no. AL50424A.

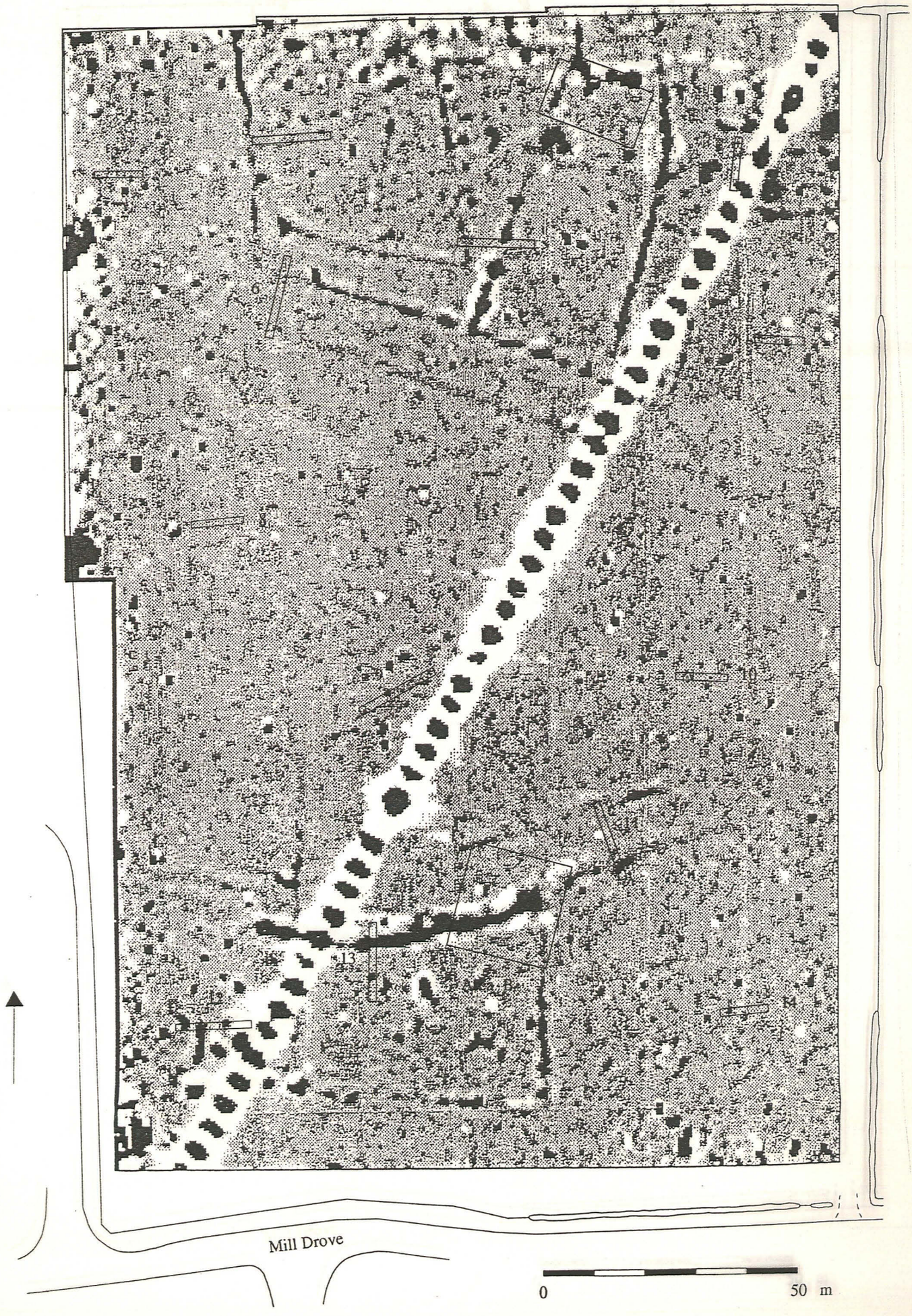


Fig. 2. Random dot density plot of magnetometer survey (Geophysical Surveys of Bradford) and trench locations (M.Clark). Scale 1:1000.

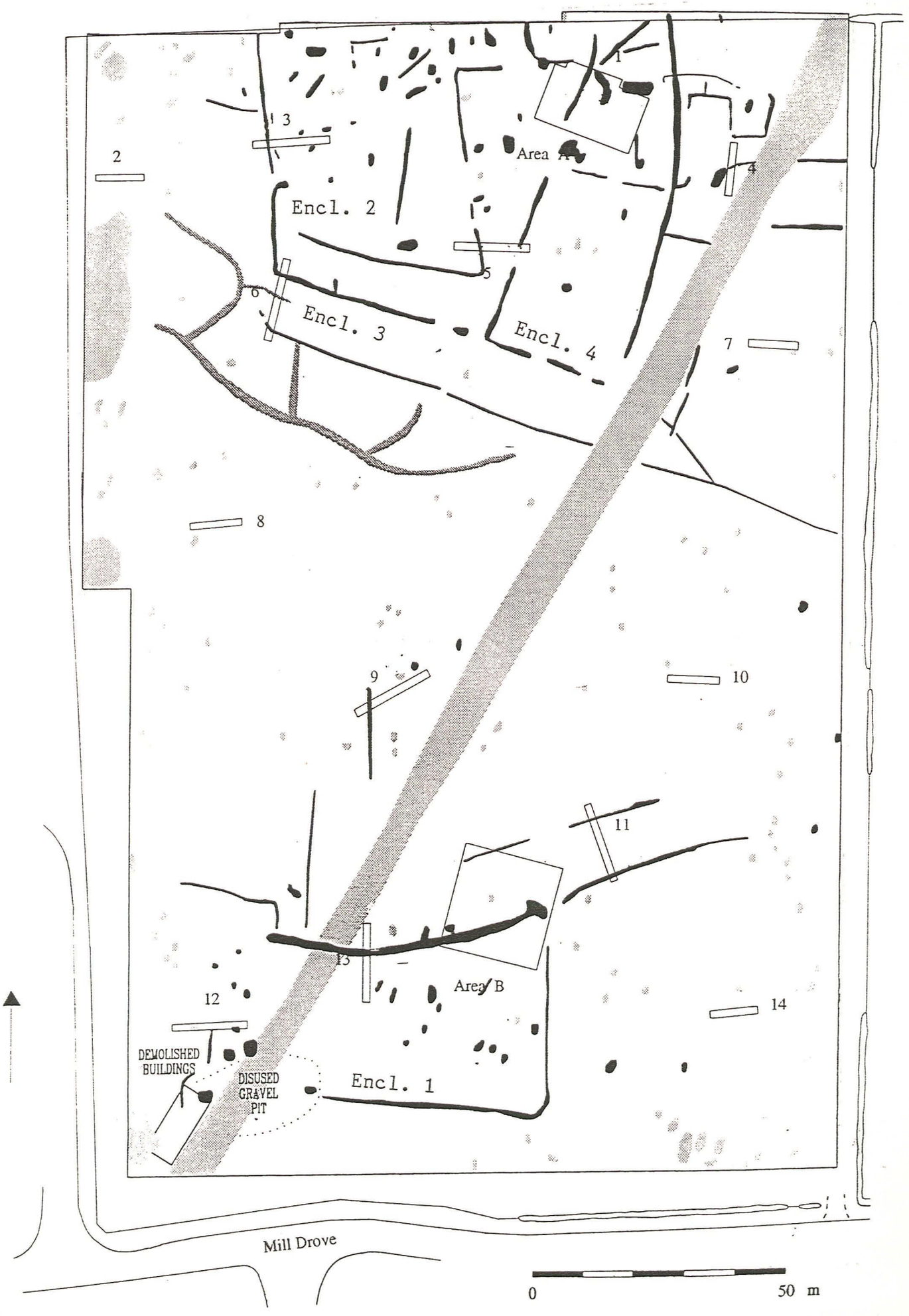


Fig. 3. Interpretation of magnetometer survey (Geophysical Surveys of Bradford) and trench locations (M.Clark). Scale 1:1000.

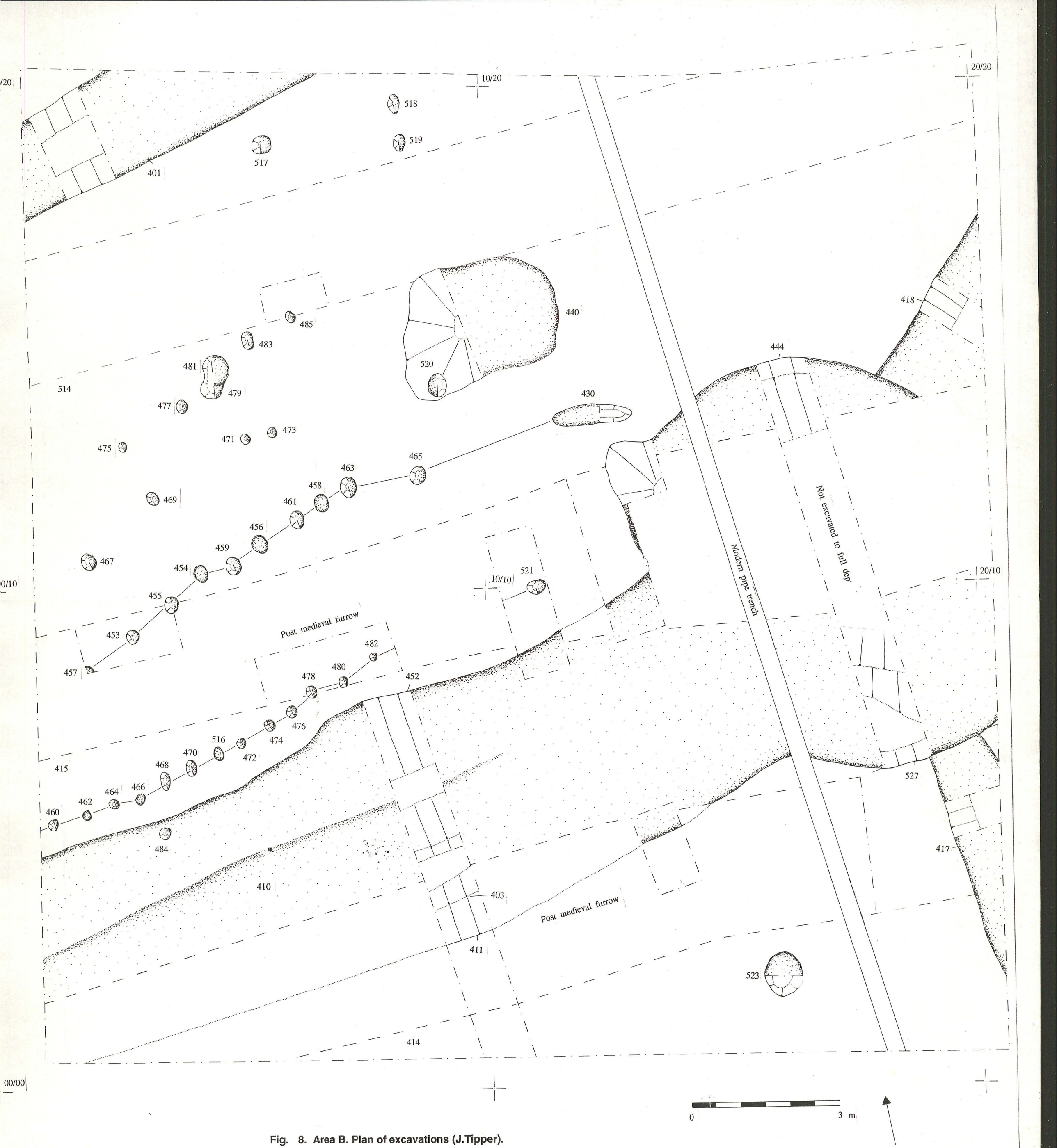


Fig. 8. Area B. Plan of excavations (J.Tipper).

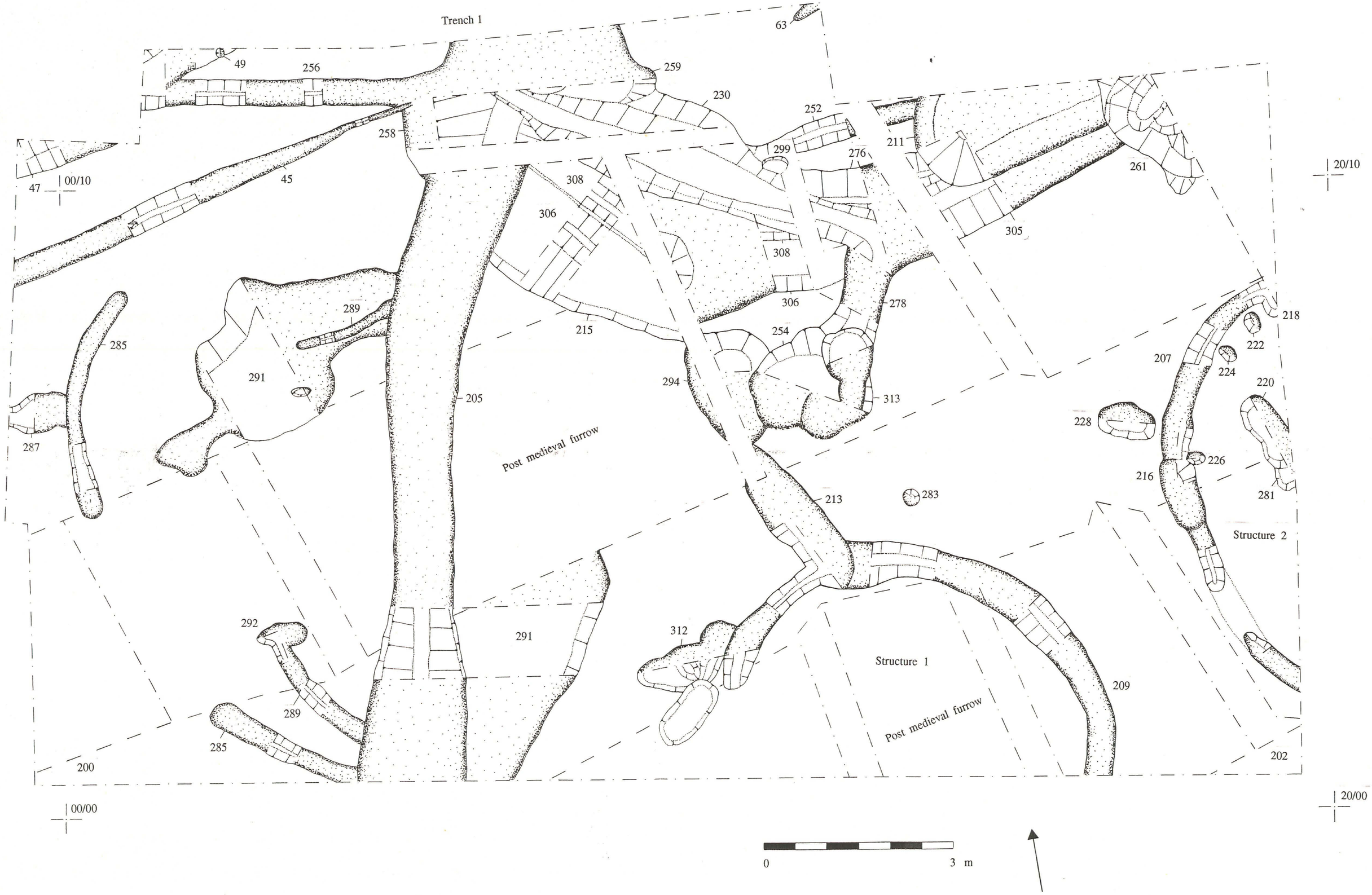


Fig. 4. Area A. Plan of excavations (J.Tipper).

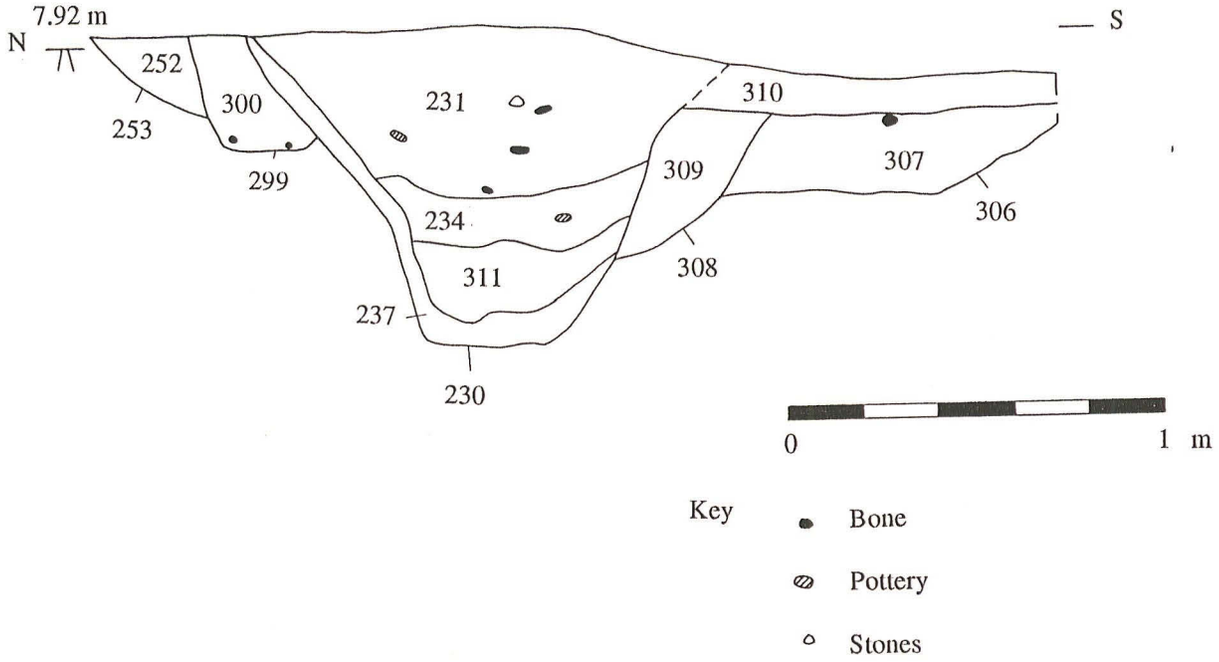


Fig. 5. Section showing Ditch 230 cutting Ditch 306 and Burial 1 (299), cutting earlier ditches 253 and 306 (J.Tipper).

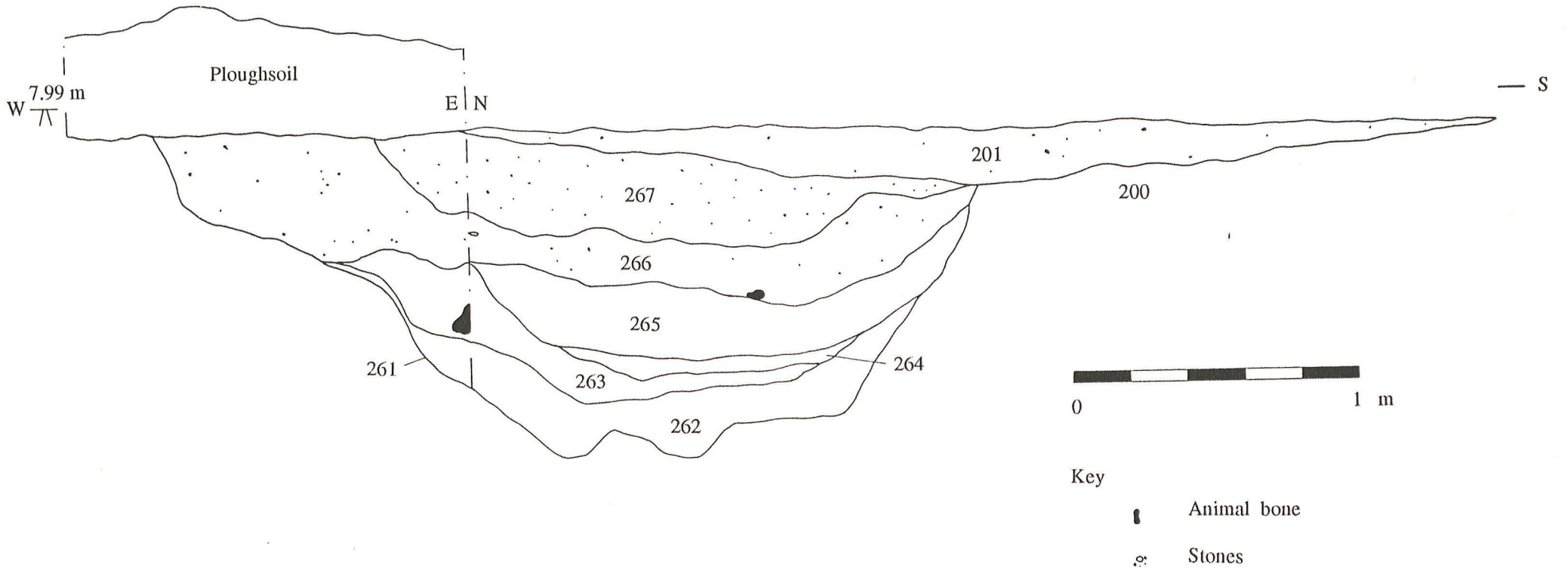


Fig. 6. Pit 261 section showing truncation by plough furrow 200 (J.Tipper).

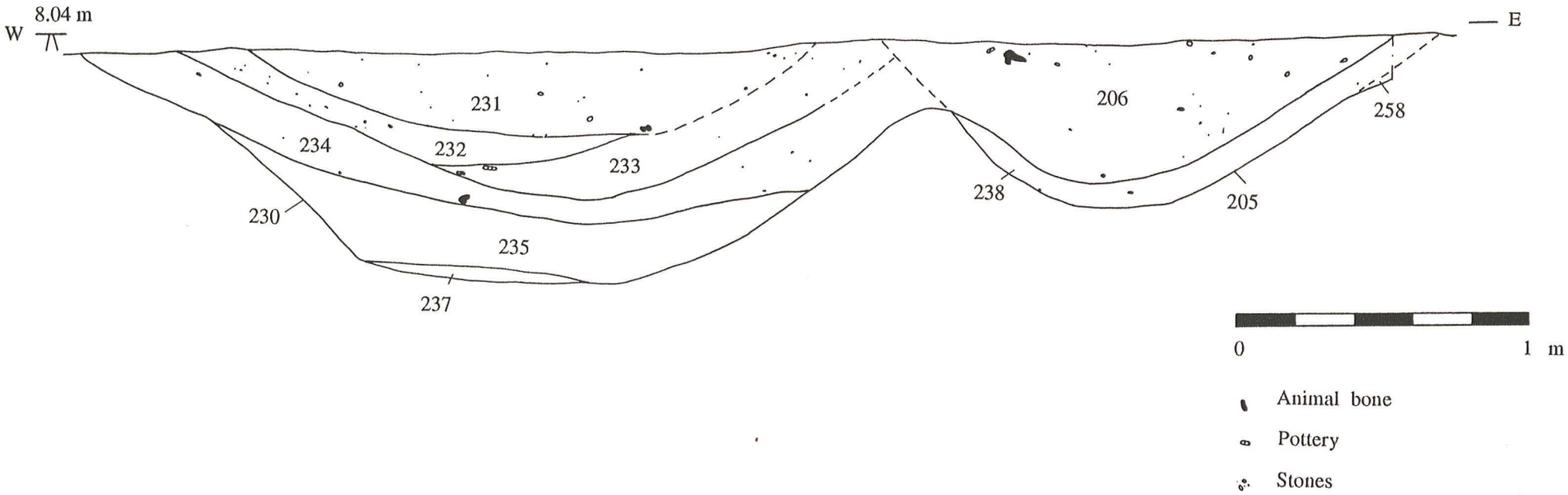


Fig. 7. Section showing Ditch 230 cut by Ditch 205 (J.Tipper).

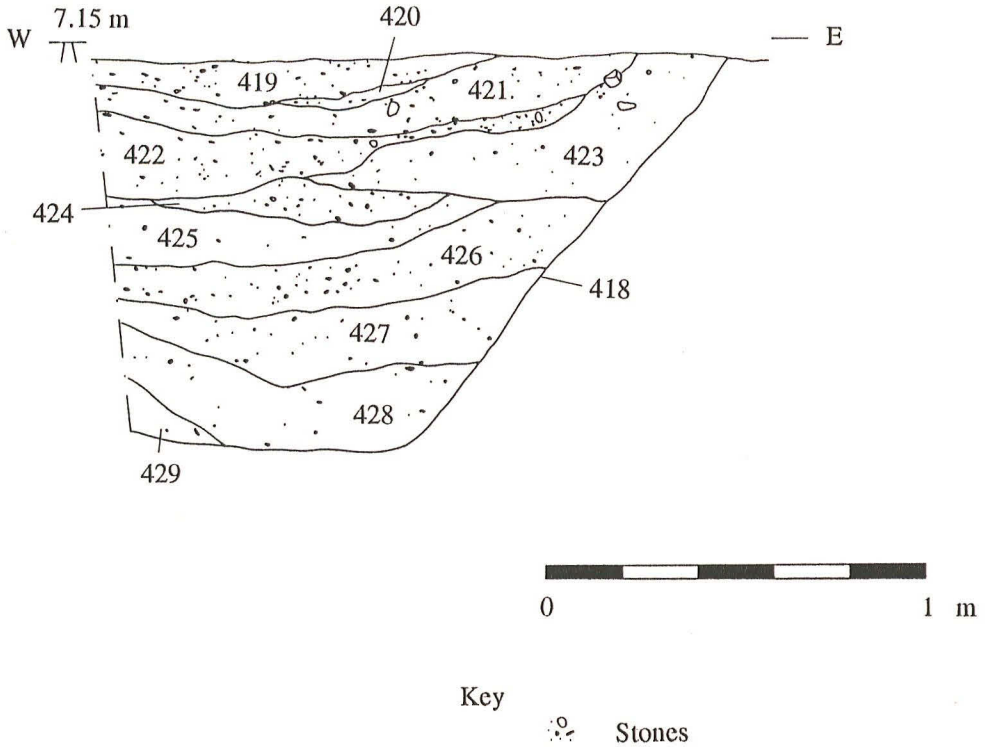


Fig. 9. Ditch 418. Half section (J.Tipper).

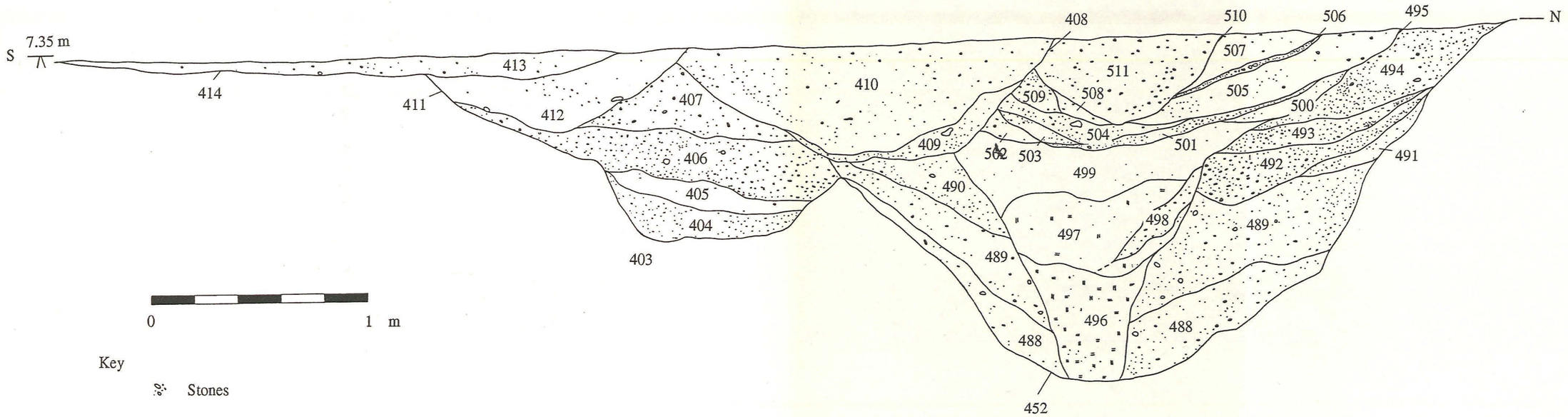


Fig. 10. Section showing multi-phase ditch 403, 452 and later recuts (J.Tipper).

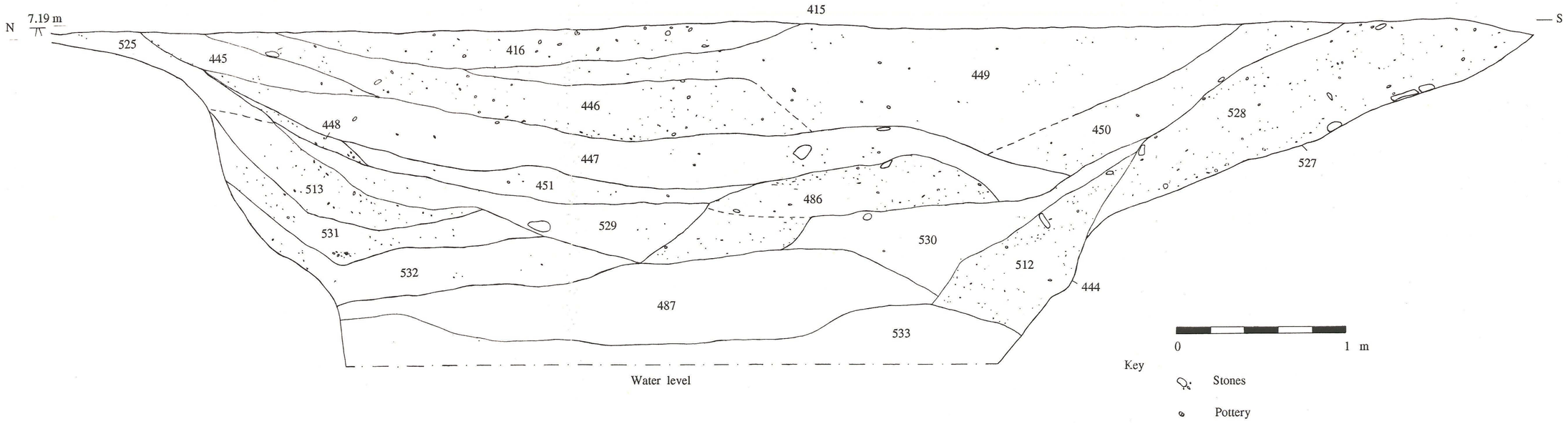


Fig. 11. Section showing ditch terminal 444, 527 (J.Tipper).

Pl. 1 General view from Car Dyke across to the Mill Drove site. Scale 2 m.

Pl. 2 Area A, after removal of medieval plough furrows (looking west). Scale 2 m.

Pl. 3 Area A, after excavation (looking west). Scale 2 m.

Pl. 4 Section across furrow 200. Scale 2 m.

Pl. 5 Ditch 230, south-west corner of enclosure (looking north-west). Scale 2 m.

Pl. 6 Pit 303. Scale 0.5m.

Pl. 7 Ditch 230. Section showing truncation of ditches (306), (308) and Burial 1 . Scale 1 m.

Pl. 8 Burial 1. Scale 0.2 m.

Pl. 9 Complete Late Iron Age jar found in fill of ditch 230. Scale 1m.

Pl. 10 Reconstructed Late Iron Age from 230. Scale 0.2m

Pl. 11 Ditch 211 looking east. Scale 2 m.

Pl. 12 Section across pit 261. Scale 1 m.

Pl. 13 Section across pit 254. Scale 2 m.

Pl. 14 Ring gullies 209 and 207 prior to excavation. Scale 2 m.

Pl. 15 Ring gullies 209 and 207 after excavation. Scale 2 m.

Pl. 16 Ring gully 209. Scale 0.5 m.

Pl. 17 Pit 213 cutting ring gully 209. Scale 1m.

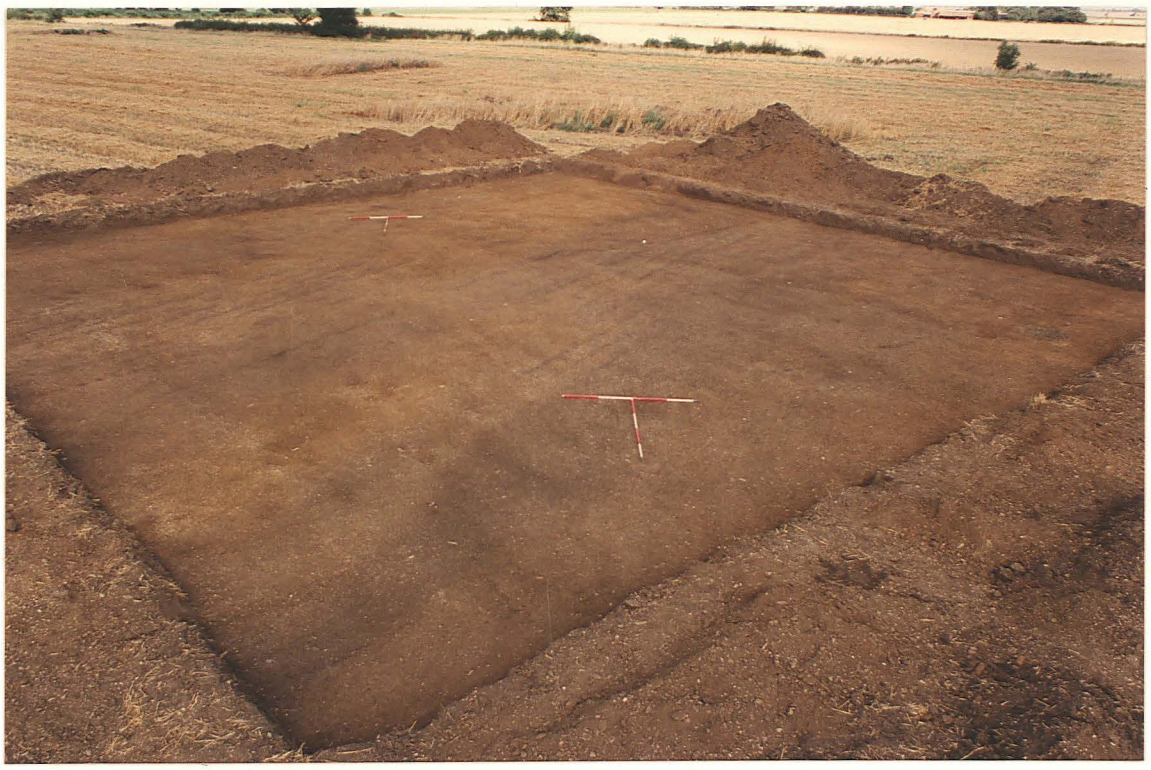
Pl. 18 Pit 216 looking west, with posthole 226 below. Scale 1m.

Pl. 19 Section across pit 220 looking east. Scale 1 m.

Pl. 20 Section across pit 228 looking north. Scale 1m.

Pl. 21 Section showing truncation of 230 by ditch 205. Scale 2 m.

Pl. 22 Section across ditch 205. Scale 2 m.



Pl. 23 Area B, prior to excavation looking north-east. Scale 2 m.

Pl. 24 Area B, after excavation looking north-east. Scale 2 m.

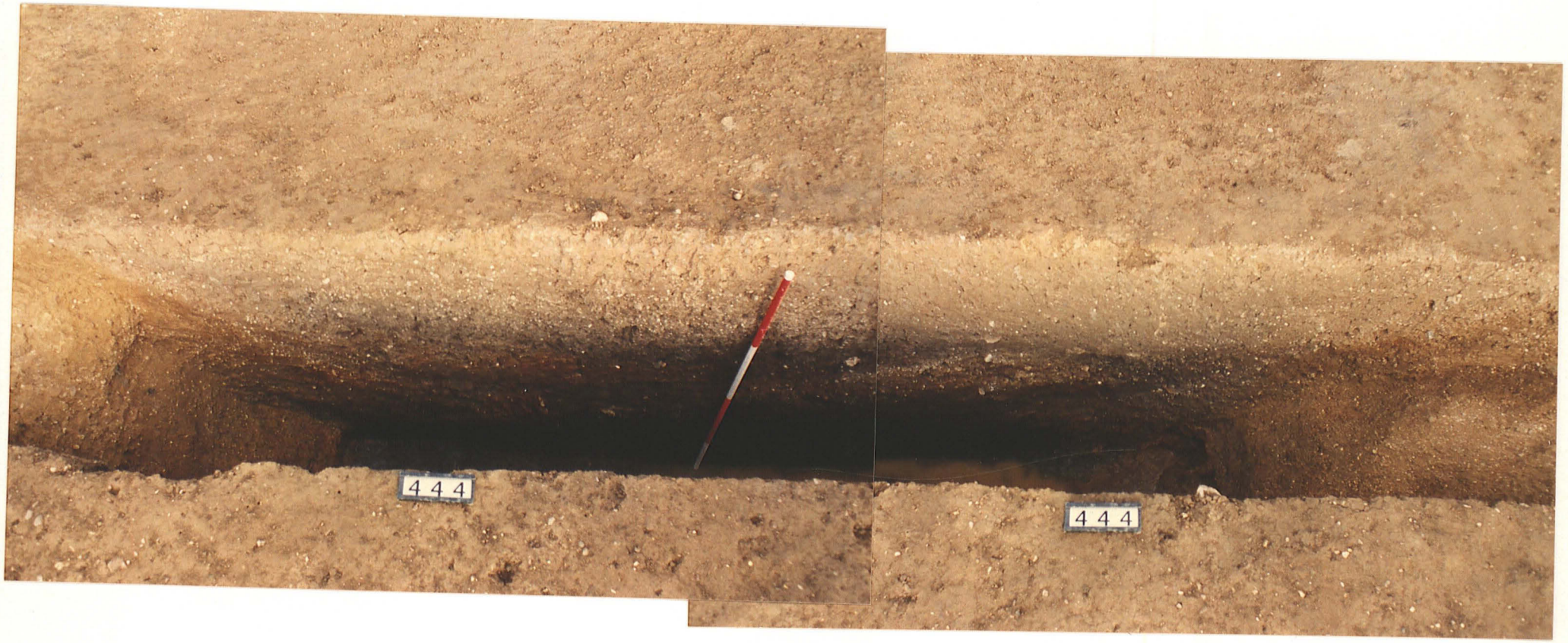
Pl. 25 Ditch 417 half section, looking south. Scale 1 m.

Pl. 26 Ditch 418 half section, looking south-west. Scale 1 m.

Pl. 27 Trench 11, after stripping looking north. Scale 2 m.

Pl. 28 Multi-phase ditch section east facing. Scale 2 m.

Pl. 29 Section across ditch terminal looking north. Scale 2 m.



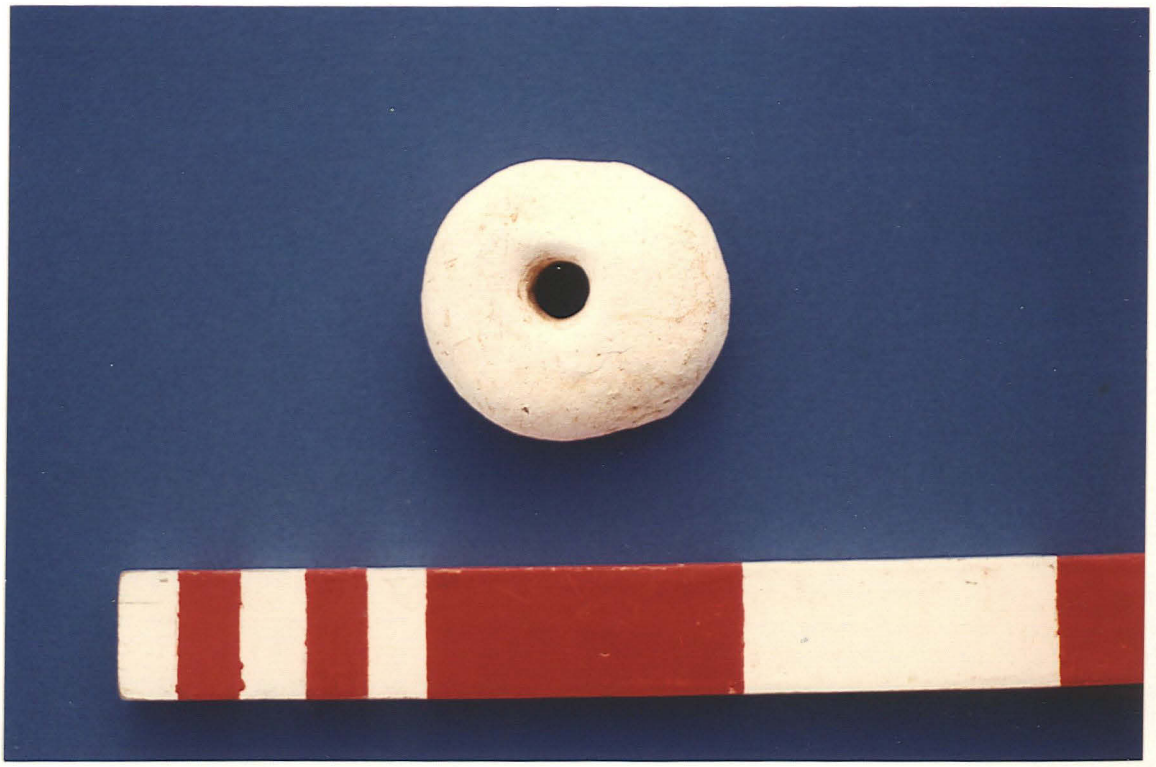
Pl. 30 Section across ditch terminal facing west . Scale 2 m.

Pl. 31 Line of postholes north of ditch looking east. Scale 2m.

Pl. 32 Section across pit 440, containing posthole 520 (r.). Scale 2m.

Pl. 33 Ditch 401 looking west. Scale 1m.

Pl. 34 Chalk spindle whorl from top of ditch 410. Scale 5cm intervals (small scale divisions 1cm).



Pl. 35 Bone awl from top of ditch 210. Scale 5cm intervals (small scale divisions 1cm).

APPENDIX 1

THE IRON AGE AND ROMAN POTTERY
M.J. DARLING AND D. KNIGHT

INTRODUCTION

A total of 577 sherds (12.047kg) was obtained during excavation, mostly dating from the Late Iron Age and post-Conquest periods. Some later intrusions were recovered from the tops of features, while later Roman vessels, extending to the later 3rd to 4th centuries, were obtained from plough furrows; the latter sherds may have derived from the spreading of night-soil, manuring or other activities associated with the major Roman site, overlapping and extending north of the excavated area, which was recorded by Hayes and Lane (1992, 136, fig.82: BOU 11, 25, 26, 30). Fragments of abraded shell-tempered combed flue-tile of probably late Roman date also occurred.

The bulk of the pottery derived from Areas A and B (324 sherds; 8.733kg). An additional 72 sherds (1kg) were obtained from evaluation trenches 4 and 5, in the northern part of the field, and from trench 13, adjacent to Area B. If the pottery from the plough furrows and general cleaning after machining is excluded, the quantity available for study is 396 sherds (9.733kg), as below:

Area/Trench	Sherds	%	grams	%
A	180	45.45	6244	64.15
A4	27	6.82	390	4.01
A5	20	5.05	300	3.08
B	144	36.36	2489	25.57
B13	25	6.31	310	3.18
Totals	**396**	**100**	**9733**	**100**

Area A

The largest quantity of pottery came from the latest phase enclosure ditch 230 (81 sherds). There were joining sherds from this ditch to the spread 215 which was cut by the ditch. The only other links were within the ditch layers, joins between 232 and 233, and sherds of the same vessel in 232 and 235.

21 sherds came from 211, a separate part of the same late enclosure ditch (although some may be from disturbed upper layers) and 21 sherds were found in ditch 205, the boundary between enclosures 3 and 4. Pit 254 produced 15 sherds, while the 3 sherds from pit 313, cut by 254, may derive from 254, as there were sherds of the same vessel in both.

Area B

The largest single group of sherds came from 444 (63 sherds), while the complex of successive ditches, 403 produced a total of 64 sherds. The only sherd link was between sherds of the same vessel in successive layers of ditch 495.

A basic archive has been prepared for all of the above pottery in the archive format of the City of Lincoln Archaeology Unit, based on the minimum archive agreed by the Study Group for Roman Pottery (MD), supplemented by a more extensive archive for the Late Iron Age/ Romano-British shell-tempered wares (DK). Details of these records are available in archive.

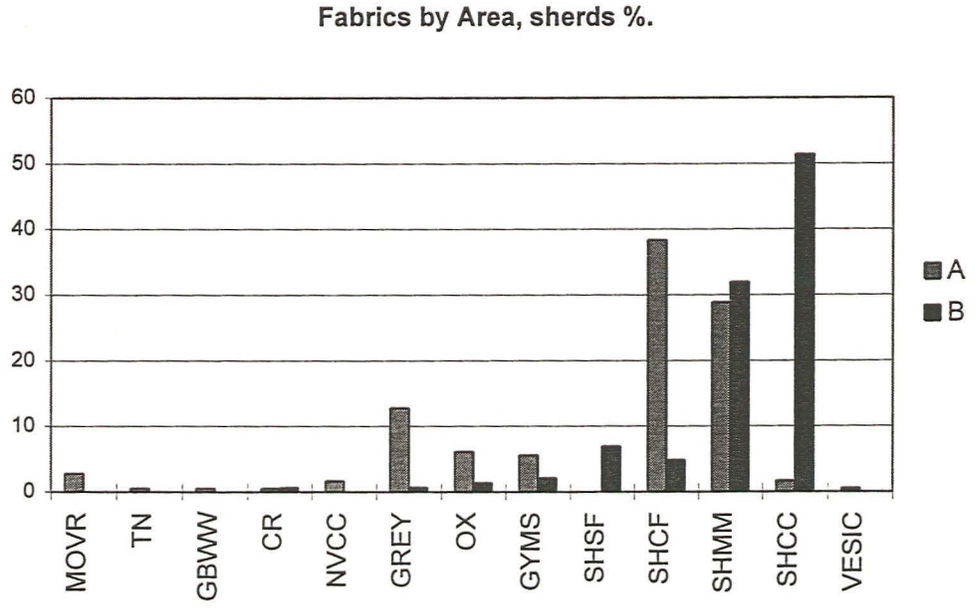
FABRICS

The fabrics from the site as a whole, including the upper disturbed strata, are summmarised in the following table (details of the distribution of fabrics by excavation area is in the appendix):

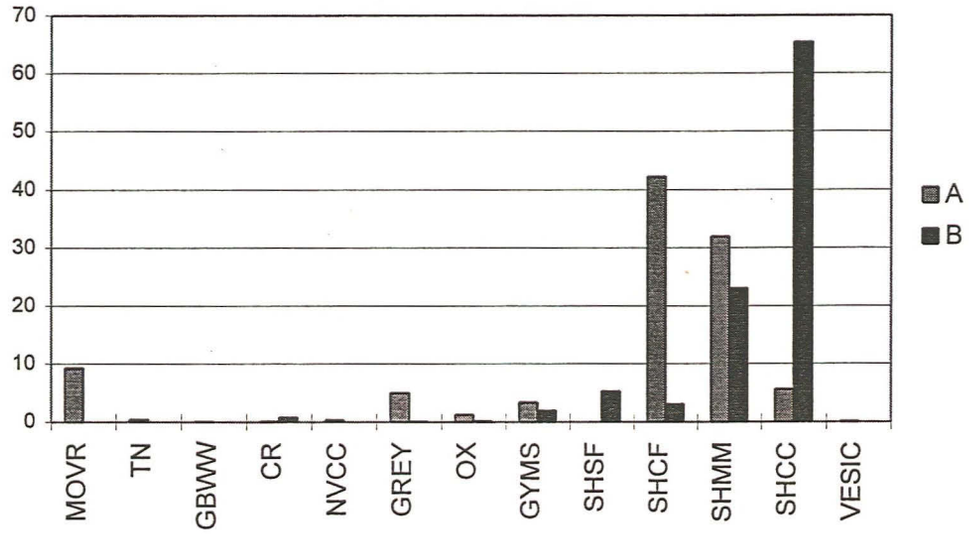
Fabric	Shs	%	grams	%
SAMCG	1	*	3	*
MOVR	5	*	581	4.82
MONV	2	*	33	*
AMPH	1	*	5	*
TN	1	*	28	*
GBWW	2	*	14	*
CR	2	*	27	*
OX	26	4.50	207	1.72
NVCC	43	7.45	456	3.78
NVGW	5	*	101	*
GREY	144	24.96	1636	13.58
GYMS	14	2.43	273	2.27
VESIC	2	*	10	*
SHSF	15	2.60	189	1.57
SHCF	84	14.56	2985	24.78
SHMM	133	23.05	2932	24.34
SHCC	88	15.25	2431	20.18
Total	**577**	**100**	**12047**	**100**

(* = under 1%)

When analysed between Areas A and B, it is apparent that the two assemblages are strongly divergent, as is shown by the histograms below.



Fabrics by Area, weight %.



These show the pottery from Area A to be a more mixed assemblage, including fabrics only represented there, as Verulamium Region mortaria, terra nigra, Gallo-Belgic white ware and Nene Valley colour-coated ware. The only samian from the site, a single Central Gaulish sherd, probably from the base of a Dr 31 bowl, came from a furrow in Area A, with a sherd from a Nene Valley mortarium (another from trench 5, SW of A). The probable amphora sherd came from trench 4, immediately east of Area A. A further contrast between Areas A and B is the variation in the proportions of fine and coarse shelly fabrics. The finer shell-tempered fabrics comprise a much higher proportion of the assemblage in Area A, while the coarser fabrics dominate in Area B. This may be of chronological significance, given the bias of Roman finewares towards the northern part of the site, and might imply a trend towards finer shell-tempered fabrics over time.

Only 49 sherds (15%), 45 from Area A, could be viewed as probably of Roman date. These included a single Verulamium region mortarium (5 sherds), two sherds of cream fabric, one certainly from a flagon, a sherd from a Gallo-Belgic white ware butt beaker (a further sherd came from the disturbed pottery), a terra nigra platter rim, three stray Nene Valley colour-coated sherds (others from disturbed layers), grey and oxidized sherds, some of the latter almost certainly intrusive and of post-Roman date from the local post-medieval Bourne kilns (the very fine fabrics are difficult to identify clearly in their fragmentary and abraded condition).

To this total may perhaps be added rare sherds from wheel-thrown vessels in a grey fabric with minimal very sparse shell inclusions (GYMS), together with sherds in a distinctive vesicular fabric (VESIC) with fine subrounded quartz and possible grog and limestone fragments and numerous small holes; thin sectioning is recommended to clarify the range of inclusions in this fabric group. Of the GYMS fabric, only 3 sherds came from Area B (2 body sherds from ditch 444, and a cordoned bowl rim from ditch 452, where it was considered to be intrusive). The remaining 11 sherds came from Area A, the identifiable forms all showing derivation from the belgic tradition. The two VESIC sherds derive from pit 211 in Area A (243), and from a furrow. One of these, from 211, appears to be a girth fragment from a burnished round-shouldered bowl of the belgic tradition, and could date from either side of the Conquest.

IRON AGE/ ROMAN SHELL-TEMPERED FABRICS

The remaining 85% of the pottery is shell-tempered, and in most cases could fall either side of the Conquest. It has been divided into four groups on the basis of variations in the frequency and size of the shell inclusions, employing the following conventions.
Quantity: rare below 3%: sparse 3-10%: moderate 11-25%: common 26-40%.
Modal size: fine up to 0.25mm: medium 0.25 to 1.00mm: coarse 1.00 to 3.00mm: very coarse over 3.00mm.

SHSF - sparse fine shell
The shell inclusions are of sparse to moderate frequency, generally well-sorted, sub-angular and of low sphericity. The shell is fine to medium in size. Rare inclusions of rounded fine quartz, probably naturally occurring in the clay, are seen, together with infrequent inclusions of sub-angular, medium to coarse red ironstone.

All sherds, where identifiable, derived from handmade vessels. The only identifiable form was obtained from context 487: a plain handmade neckless and possibly ovoid form with a flattened direct rim.

SHCF - common fine shell
Shell inclusions are common in this fabric; the pieces are fairly well-sorted, sub-angular and low in spericity. The shell is fine to medium in size. A rare amount of fine rounded quartz is also seen.

Most sherds derive from plain vessels of uncertain form, and only rarely can it be established whether they were made by hand or wheel-thrown. Most of the body sherds are thick, suggesting derivation from large vessels. Examples survive of two handmade neckless ovoid jars with well formed externally rounded rims from ditch 230, one with a flat base, and another probably handmade neckless ovoid vessel with a flattened pinched-out rim from post-hole/pit 219. Part of a neckless ovoid vessel from pit 261, with an externally rounded rim demarcated below by a pronounced groove (approximating to a bead form), may have been wheel-thrown. A handmade neckless ovoid vessel with an externally rounded rim and a shallow irregular groove encircling the vessel above the girth, complete except for the base, was obtained from context 62 (joining with a sherd from 215). Two joining sherds from contexts 232 and 233 derive from a vessel with a rounded rim and, below this, a wide (*c.* 1cm) shallow recess. Other rim types, represented only by vessels of uncertain form, include flattened direct rims and rounded everted rims.

SHMM - moderate medium shell
A moderate amount of shell is apparent in this fabric. The inclusions are moderately well-sorted, sub-rounded or sub-angular and low in sphericity. The shell is medium to coarse in size. There are also rare inclusions of well-sorted and well-rounded quartz, probably natural, and very rare pieces of sub-angular or angular and medium to coarse red ironstone.

Most sherds again derive from plain vessels of uncertain form. Both handmade and wheel-thrown vessels are represented, although it should be emphasised that only rarely can the method of manufacture be established beyond doubt (*e.g.* wheelthrown burnished ellipsoid beaker with finely moulded rounded rim from 243: *cf.* Hawkes and Hull, 1943, pl.LII.249E).

Included in this group are several vessels possessing strong typological affinities with ceramic types which in this region are especially characteristic of the Middle Iron Age (dated broadly from the fifth to earlier first centuries BC). Notable amongst these is a sherd from an upright-necked vessel with a pronounced rounded girth and a flattened rim, thickened externally; traces of burnising survive, together with incised lattice decoration on the shoulder. This sherd was obtained from 400, during cleaning after machining in Area B. The decoration appears to be without parallel in Lincolnshire, but is reminiscent of some of the La Tene inspired patterns

on later Iron Age vessels from Weekley, Northants (Jackson and Dix, 1986-7, figs 34-6). A flaked rim from a necked vessel with a row of tooled or possibly finger-nail incisions along the lip was recovered from ditch 510 (context 511). Comparable decoration is characteristic of Middle Iron Age assemblages in the region, notably on the nearby site at Market Deeping (Knight, in prep.), although this style of ornament does continue in use into the latest phase of the Iron Age. Four sherds preserve brushing on the outer face (from 255, 409, 410), while one sherd preserves evidence of deep scoring (from 505): both styles of surface treatment are characteristic of Middle Iron Age assemblages, but appear to have continued in use in this region into the Late Iron Age.

Vessel forms can only rarely be established, but the emphasis seems to have been firmly upon neckless ovoid and related forms, with a variety of rim forms (including rims of externally rounded, flattened direct, rounded direct, square-sectioned, everted tapered, or flattened pinched-out form: from 62, 122, 231, 253, 310, 410, 445, 505). One vessel, from 410, with an upright neck and a flattened pinched-out rim, is reminiscent of belgic necked bowls, while several sherds preserving upright or concave necks could derive from similar forms. We should note finally a variety of rim forms which are preserved only on fragments from vessels of uncertain form, notably internally channelled rims (406) and triangular rims (447); bases, where they survive, are invariably flat.

SHCC - common coarse shell
This fabric contains a common quantity of poorly sorted sub-angular shell, of low sphericity. The shell is coarse to very coarse in size. The fabric also contains rare well sorted and rounded fine quartz.

Few of the forms of vessels manufactured in this very coarse fabric may be determined, with the exception of a neckless ovoid vessel with a flattened pinched-out rim from 447, and occasional flat base and neck fragments. All vessels were handmade, wherever the method of manufacture may be determined with certainty. Most of the examples of scoring occur on vessels of this fabric group (16 sherds; from contexts 112 [trench 13] and 406, 505, 511, 512 and 528 [Area B]). The scoring is generally random, but a lattice pattern may occasionally be discerned; the latter only occurs, however, on small sherds, and the overall pattern may be considerably less regular. One large body sherd with a random scratched pattern was also recorded (from 512); this stands out from the collection of deeply scored sherds, but is unquestionably related to the scored ware tradition.

Temper/ Clay Sources

The shell inclusions in these fabrics are clearly seen, and in some cases the type of fossil shell, a colony of bryozoa with a net-like appearance, is readily identifiable. This site lies about 4km from Jurassic clays, particularly the Great Oolite which is known to contain this type of fossil shell (Allen 1991, 5). Thin sections of the fabrics would provide more detailed information on the shell content, but it seems likely that these clays were the source for the included material - and perhaps for the clay itself.

Comparable shell inclusions are found in Saxon Maxey ware, first identified at Raunds, from later Iron Age sites recorded in south Lincolnshire as part of the Fenland Survey (Hayes and Lane, 1992) and from Roman sites at Stainfield and near Peterborough. The later Roman kilns at Bourne do not seem to use the same clay beds, and it is significant pehaps that none of the products of these kilns occurred at Mill Drove.

DISCUSSION

MIDDLE IRON AGE CERAMIC ELEMENTS

The presence of a small number of scored ware sherds, together with one vessel with incised decoration along the lip and another highly unusual vessel with rectilinear incised decoration

on the shoulder, raises the possibility of an early phase of Iron Age activity, preceding the main period of activity in the Late Iron Age and Romano-British periods. It may be significant that these sherds concentrate in Area B, which it has been noted above is distinguished also by a rarity of Roman fine wares and a higher frequency of coarse shelly wares. There must be a strong possibility, therefore, of a Middle Iron Age origin for the site towards the south of the excavated area. The date of this activity cannot be fixed closely on the basis of the associated pottery, and on present evidence we can suggest only a general time bracket from the fifth to earlier first centuries BC. No ceramic elements which imply Early Iron Age or earlier activity were obtained.

LATE IRON AGE/ ROMANO-BRITISH SHELL-TEMPERED WARES

None of the undoubted Roman vessels from the site relate to cooking, and it must be assumed that some at least of the shell-tempered vessels completed the normal assemblage and are of similar date. As noted above, the finer shell-tempered wares are concentrated in Area A, together with the Roman fine wares, suggesting perhaps a trend towards finer domestic wares over time.

The shell-tempered wares are dominated by plain vessels, either handmade or wheel thrown, and almost invariably of neckless ovoid or related from. A wide range of rim forms may be identified, adding variety to what is otherwise a remarkably homogeneous collection. Handmade ovoid and related forms are common components of Middle Iron Age assemblages throughout the East Midlands, and continue in widespread use into the Late Iron Age (though increasingly wheelmade, and embellished in the later period with a richer range of finely moulded rims). Extensive parallels may be drawn with other Late Iron Age assemblages in the region, notably Market Deeping, but many forms are likely to have continued into post-Conquest times.

ROMAN POTTERY

The distribution of Roman pottery, some of which can be dated to the period of the Roman conquest, is strongly biased to Area A, with sherds also from the evaluation trenches 4 and 5. There are only seven sherds from Area B of post-Iron Age date, two of which are probably from the Medieval kilns at Bourne. The other sherds consist of a cordoned bowl of late La Tene type from ditch 452 in GYMS, two body sherds of GYMS fabric from ditch 444, and a CR flagon body sherd from the same ditch 444. All the rest of the Roman pottery derives from Area A and evaluation trenches in the same area of the field.

There are four particularly important Roman vessels (discounting the samian from the disturbed furrow).

1. The flake from an amphora has a distinctive fabric with volcanic inclusions, typical of the Campanian area of Italy. The type of amphora cannot be determined but this is almost certainly a 1st century wine amphora. The possibility that it was a Dressel 1 cannot be discounted although it is more probably from a Dressel 2-4 (from evaluation trench 4).

2. The terra nigra platter rim is of Camulodunum type 2, probably 2B, and is one of the earliest types, normally pre-conquest according to Hull (Hawkes and Hull 1947, 216, Pl.XLIX), and now generally regarded as a Tiberian to Claudian type (pers. comm. Valery Rigby, British Museum). Copies of the type were common at Camulodunum over a long date range (from ditch 230).

3. The Gallo-Belgic white ware and two sherds probably from a butt beaker provide further interesting evidence of imports. These cannot be closely dated, and could have arrived pre-conquest or later (from ditch 205 and furrow 200).

4. The stamped mortarium from the potters in the Verulamium area is broadly dated to the

early 2nd century, c AD100-140. The potter has not yet been identified from the stamp, and such identification may enable a closer dating. While these notably fresh sherds (nearly 50% of the rim survived) come from upper layers, they do not fit with the pottery from the disturbed contexts, and must therefore have a strong bearing on the date of the earliest Roman occupation. The other sherds from the same contexts were all body sherds, but included some grey fabric vessels which might have a similar dating. Joining sherds came from 56 and 206, fills of the central north-south ditch 205.

Added to this evidence are the two sherds from cream flagons, differing fabrics, and the vessel types in GYMS, VESIC and GREY, some of the latter having the occasional speck of shell. The late La Tene belgic tradition is clear, but not necessarily early, and could fit a mid or later 1st century date. Some types which emerged in the later 1st century are known to continue into the early 2nd century. Particularly notable is the vessel with flattened carination (Lincoln type B334), devolved from belgic types (from ditch 230); this type becomes a common Roman vessel type in this area with an exceptionally long-life and widespread manufacture. Although similar vessels occur on LIA sites, no examples typologically close to this vessel have been traced. It has been suggested that the earliest examples have a squatter profile as here. A Flavian date has been suggested for these vessels, solely on the evidence from old excavations at sites such as Brough or Langton in Yorkshire. Its appearance further south could be appreciably earlier. While these do not occur in the legionary fortress at Lincoln, and are generally a later arrival, the influence of the army on the nature of the pottery supply may account for this. The fabric is close to that of the fragment of pedestal base (from pit 254) which has the occasional speck of shell.

The grey sherds include two joining fragments with rouletted decoration in a zone, demarcated at least on one side by a groove; these are possibly from a butt or globular beaker, dating any time from the Conquest to the later 1st century. The same context (pit 211) has a body sherd probably from a closed vessel with a clear shoulder below the neck with very faint lattice decoration; the fabric fits with the earlier material.

While much of this pottery could date to the Conquest period, some of the types present continue through the 1st century, and possibly into the early part of the 2nd century. The crucial vessel here is the Verulamium region mortarium, and its early 2nd-century date and the fresh nature of the sherds suggests occupation continued to this period.

FINAL REMARKS

The key interest of the ceramic assemblage, it is suggested, lies in two main areas.

First, the ceramic contrasts which have been drawn between areas A and B suggest a shift in the focus of settlement from south to north from the later Iron Age to Roman periods. This compares interestingly with the results of fieldwalking as part of the Fenland Survey, which demonstrated a major Roman focus mainly to the north of the excavated area, with extensive pottery, limestone building rubble and tiles, including hypocaust fragments. Later Roman types have been recorded, but the emphasis apppears to be firmly upon the earlier Roman period - suggesting perhaps further drift of the settlement focus in the Roman period.

Secondly, the mixture of Roman and shell-tempered pottery in Area A provides strong evidence for the continuity of the Iron Age tradition of shell-tempered pottery into the post-Conquest period. The latter poses serious obstacles to the dating of the pottery, except in the case of certain diagnostic types (e.g. Iron Age scored ware). It provides, however, a case example of continuity - and a warning against the temptation to compartmentalise too readily pottery of this as yet poorly understood transition period into 'Iron Age' and 'Roman'.

Margaret J Darling, City of Lincoln Archaeology Unit.
David Knight, Trent and Peak Archaeological Trust.
4 April 1995.

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APPENDIX

Distribution of fabrics by excavation area.

Fabric	Sherds	%age	grams	%age
Area A				
MOVR	5	2.78	581	9.30
TN	1	0.56	28	0.45
GBWW	1	0.56	3	0.05
CR	1	0.56	6	0.10
NVCC	3	1.67	25	0.40
GREY	23	12.78	316	5.06
OX	11	6.11	79	1.26
GYMS	10	5.56	211	3.38
SHCF	69	38.34	2638	42.24
SHMM	52	28.89	1998	32.00
SHCC	3	1.67	353	5.65
VESIC	1	0.56	6	0.10
Totals	**180**	**100.04**	**6244**	**99.99**
Trench A4				
AMPH	1	3.70	5	1.28
GREY	17	62.96	210	53.85
OX	2	7.41	9	2.31
SHSF	4	14.81	49	12.56
SHCF	1	3.70	10	2.56
SHMM	1	3.70	30	7.69
SHCC	1	3.70	77	19.74
Totals	**27**	**99.98**	**390**	**99.99**
Trench A5				
MONV	1	5.00	14	4.67
NVCC	2	10.00	22	7.33
NVGW	3	15.00	58	19.33
GREY	9	45.00	121	40.33
SHMM	2	10.00	19	6.33
SHEL	3	15.00	66	22.00
Totals	**20**	**100.00**	**300**	**99.99**
Area B				
CR	1	0.69	21	0.84
GREY	1	0.69	3	0.12
OX	2	1.39	4	0.16
GYMS	3	2.08	49	1.97
SHSF	10	6.94	133	5.34
SHCF	7	4.86	77	3.09
SHMM	46	31.94	574	23.06
SHCC	74	51.39	1628	65.41
Totals	**144**	**99.98**	**2489**	**99.99**
Trench B13				
SHCF	4	16.00	126	40.65
SHMM	16	64.00	106	34.19
SHCC	5	20.00	78	25.16
Totals	**25**	**100**	**310**	**100**

bmd94 Summary

F	Category	Description	Cxt	Shs	Wt	Date
EVALUATION TRENCHES: Total 113 sherds						
Trench 3						
66	ditch	ditch fill above 74	67	0	0	MODERN
Trench 4						
26	ditch	fill of 26	27	1	35	1?
28	pit	upper fill	29	11	99	LIA/RO
38	ditch	fill of 38 Enclosure	39	13	223	ML1
77	hollow	fill of 77 linear 7cm deep	78	2	33	1-2?
Trench 5						
20	ditch	fill of 20 = 205	21	15	249	L3-4
70	ditch	fill of 70	71	5	51	ML1
**********						
AREA A Total 303 sherds						
NW CORNER						
47	ditch	fill of 47	48	1	12	MLIA
256	gully	fill of 256	257	1	16	ML1
51	ditch	fill of 51 = 256	52	2	61	LIA/RO
CENTRAL N-S DITCH 14 shs						
55	ditch	fill of 55 N-S trench = ?205	56	7	274	L1?
205	ditch	Upper fill of 205	206	12	467	L1?
205	ditch	lower fill of 205	238	2	62	ML1
STRUCTURE 2						
207	ditch	fill of 207	208	2	2	RO
218	pit/posthole	fill of 218	219	4	171	LIA
220	pit	upper fill of 220	221	1	5	RO
STRUCTURE 1						
209	ditch	fill 0f 209	210	2	40	LIA?
NORTH-EAST AREA						
211	pit	fill of 211	242	4	93	ML1
211	pit	fill of 211	243	7	66	LIA/RO
211	pit	pit PROBABLY EITHER TOP OR MIS-NUM.	211	2	35	3/PMED
211	pit	upper fill of 211	212	8	92	ML1
261	pit	fill of 261	262	1	314	LIA?
261	pit	fill of 261	263	2	296	LIA?
261	pit	fill of 261	267	3	25	4
CENTRAL AND NORTH						
61	ditch	fill of 61; below 85 = 230	62	32	1531	LIA
230	ditch	fill of 230	232	3	111	ML1
230	ditch	fill of 230	233	7	185	M1
230	ditch	fill of 230	234	3	32	LIA?
230	ditch	fill of 230	235	2	96	ML1
230	ditch	fill of 230	251	25	856	LIA
230	ditch	fill of 230	273	1	2	LIA?
230	ditch	upper fill of 230	231	8	206	ML1
252	cut gully	fill of 252	253	1	20	MLIA
278	pit/slot	fill of 278	279	1	10	LIA?
299	grave cut	fill of 299	300	1	26	LIA

308	ditch	fill of 308	309	1	8	RO
313		fill of 313	255	3	170	LIA?
215	layer/spread	layer/spread	215	10	276	ML1
254	pit	fill of 254	268	10	524	LIA-M1
254	pit	fill of 254	271	5	43	LIA?
310	Layer	Layer	310	4	45	LIA/RO
SOUTH-WEST						
285	ditch	ring ditch	285	1	39	LIA?
291	spread	spread	291	1	33	LIA?
UPPER LAYERS						
200	furrow	fill of 200	201	124	1708	L3-4/PMED
202	furrow	fill of 202	203	40	431	L3-4/PMED

****

Trench 13 Southern Enclosure adjacent to SW AREA B						
94	ditch	fill of 94; above 106; below 107	122	16	188	MLIA
107	ditch	fill of 107; above 109; below 111	110	2	41	MLIA
111	ditch	fill of 111	112	7	81	MIA
AREA B						
COMPLEX OF DITCHES ETC. (see section)						
403	ditch	fill of 403	406	5	335	MIA
452	ditch	fill of 452 ?intrusive	491	5	57	M1
495	ditch	fill of 495	499	4	34	LIA?
495	ditch	fill of 495	500	1	30	MLIA
495	ditch	fill of 495	505	14	197	MIA
510	ditch	fill of 510	511	14	139	MIA
408	ditch	fill of 408	410	14	173	MLIA
408	ditch	lower fill of 408	409	5	63	MLIA
411	ditch	fill of 411	412	2	4	RO
LARGEST GROUP						
East large feature						
444	ditch	fill of 444	445	5	79	MLIA
444	ditch	fill of 444	446	5	73	LIA/RO
444	ditch	fill of 444	447	29	736	LIA/RO
444	ditch	fill of 444	450	1	8	LIA?
444	ditch	fill of 444	451	15	144	LIA/RO
444	ditch	fill of 444	487	2	73	MLIA
444	ditch	fill of 444	512	6	193	MIA?
OTHER DITCHES						
North-west						
401	ditch	lower fill of 401	526	4	54	MLIA
401	ditch	upper fill of 401	402	1	2	MLIA
East						
418	ditch	fill of 418	423	3	23	LIA?
South-east						

527	ditch	fill of 527	528	3	42	LIA?
OTHER CUT FEATURES						
Central						
440	pit	fill of 440	443	4	19	LIA?
To west of 440						
481	posthole	posthole	481	2	11	LIA?
TOP LAYERS						
400	layer	general cleaning after machine	400	4	95	MIA/PMED
416	furrow	same as 416	534	13	80	LIA/RO

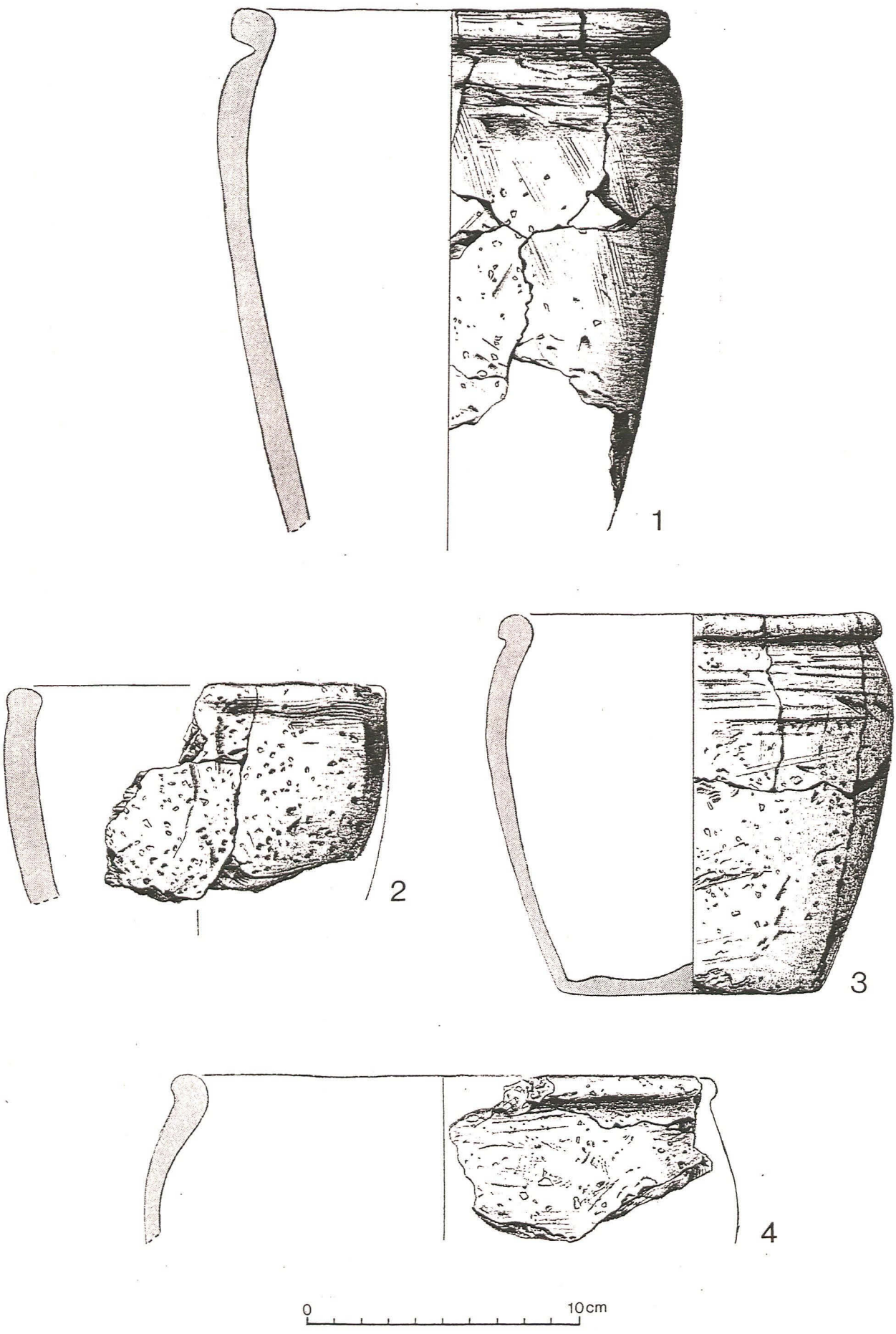

Fig. 1 Iron Age pottery from the excavations, contexts in brackets. 1 (215 and 62; 2 (219); 3 (251); 4 (231). J. Goddard.

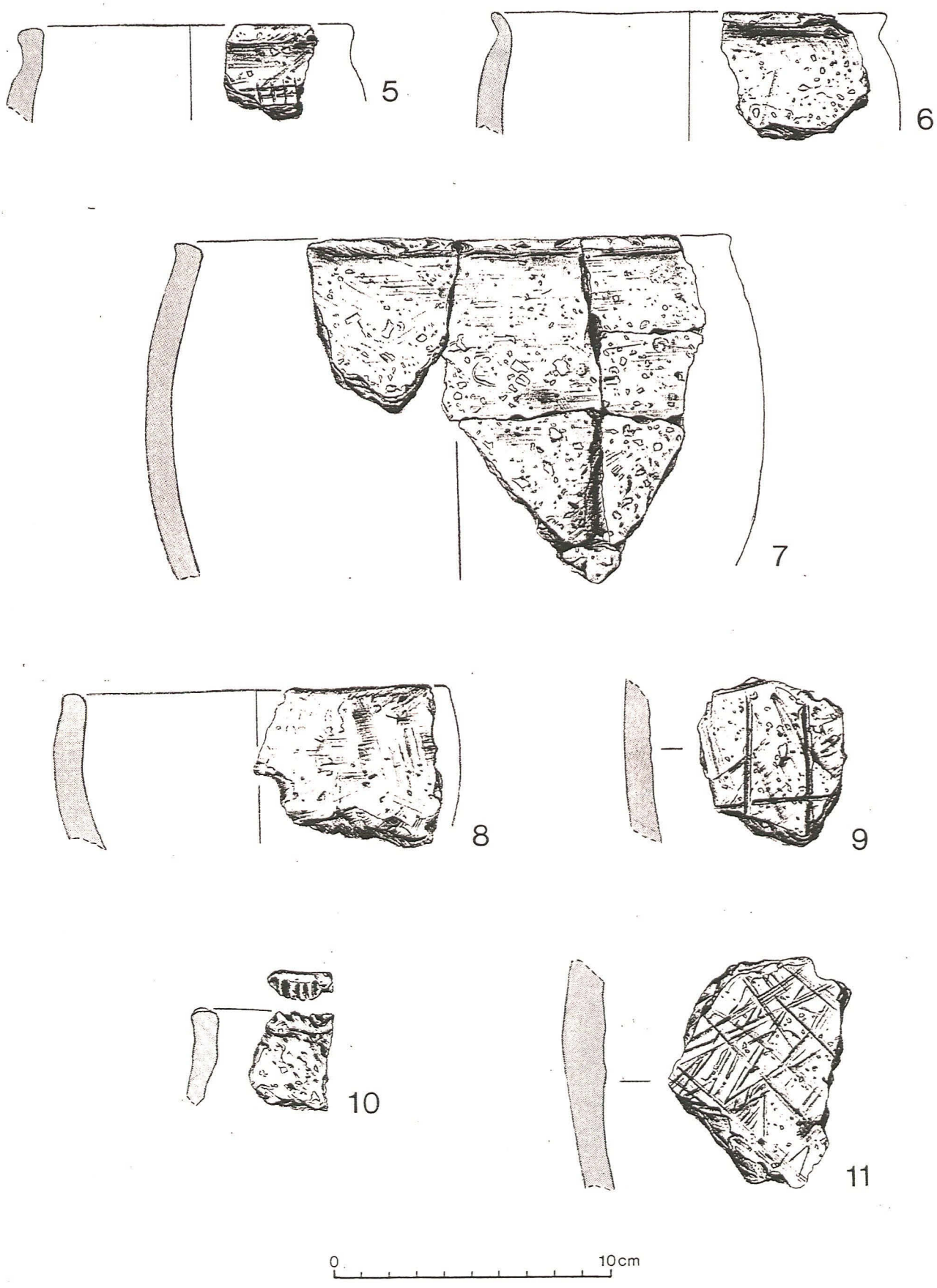

Fig. 2 Iron Age pottery from the excavations, contexts in brackets. 5 (400); 6 (445); 7 (447); 8 (487); 9-11 (511). J. Goddard.

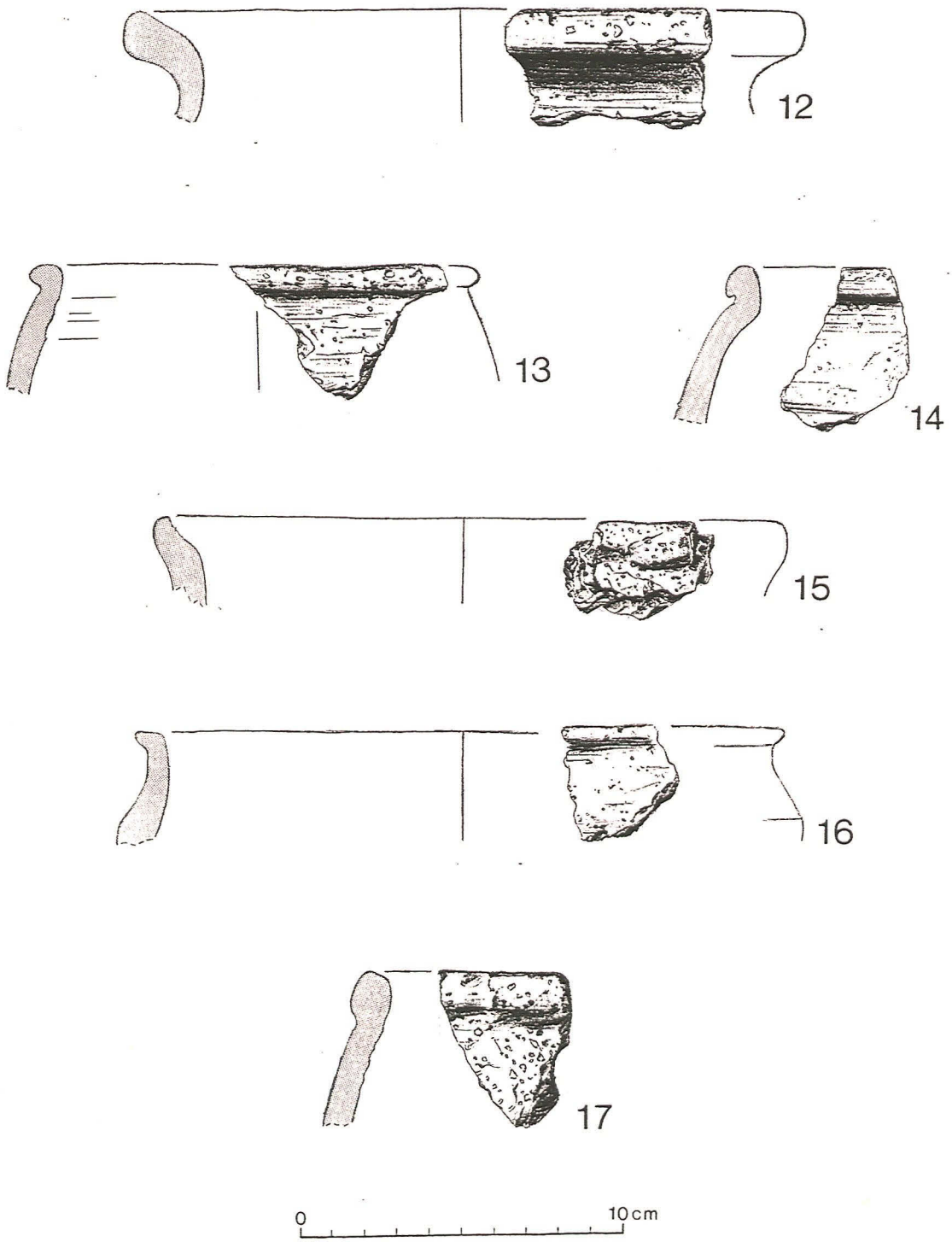

Fig. 3 Iron Age pottery from the excavations, contexts in brackets. 12 (21); 13 (243); 14 (263); 15 (406); 16 (410); 17 (445). J. Goddard.

BMD94: Report on the Ceramic Building Materials

Richard Kemp

CLAU 03.4.95

1. Introduction

Sixty-three pieces of Ceramic building material were recovered from the site. These were examined and recorded at basic CLAU archive level (form type by sherd count and weight, with note of diagnostic sub-form) using CLAU classification.

2. Overall Chronology and Source

All of the tile other than one piece of brick appears to be of Romano-British origin. Thirty-seven of these pieces are of an undiagnostic nature. The remaining tiles can be attributed to sixteen pieces of box/flue, four pieces of *imbrex*, one *tegula* (tile) and one piece of medieval/post-medieval brick. Of the ten fragments of box/flue tile, one piece is plain, eight have indented grooving which was done with either a metal, wood or bone comb, but the tenth fragment of box/flue tile is important. Although only fragmentary, this tile shows signs of a Roller-printed relief pattern possibly of Group 8, "Addenda", (Lowther 1948 p33). This tile die is not of a familiar type and could possibly be a an addition to those already recorded from this grouping, thus the finding of this Roller-printed relief tile and the possibility of a new die type make this an exciting discovery. The period of manufacture of these relief patterned tiles is somewhat obscure but a date of late 1st to mid second century is suggested (Lowther 1948 p10) with no evidence of their use later than the early 3rd century.

3. Fabric

The fabrics of the Romano-British tiles show under binocular examination at least two main variations in type. One of these is an orangey/red sandy type with quartz inclusions; the other is shell-tempered. The source and production for the shell-tempered tiles is most probably (though not necessarily) of a local nature, the local clays having a calcareous content (thin-sectioning of this material would enable to differentiate it from non-local types). The earliest occurrence of Romano-British shell-tempered tile from sites within the city of Lincoln are mainly from late 3rd to mid to late 4th century deposits (Kemp & Vince forthcoming), although evidence from other sites (e.g.Harrold in Bedfordshire) suggests a date of late 2nd to the mid 4th century (Brown 1994). These tiles were in all probability from a nearby house or villa.

Lowther, A W G 1948 *A Study of the Patterns on Roman Flue-Tiles and their distribution. Research papers of the Surrey Archaeol Soc No.1,* 10 & 33

Kemp, R.J., and Vince, A.G., in preparation. *The petrology of tile from Lincoln*

Brown, A., 1994. A Romano-British Shell-Gritted Pottery and Tile Manufacturing Site at Harrold, Bedfordshire, *Bedfords Archaeol 21,* 19-107

APPENDIX 3

The Fired Clay and the Slag

The fired clay and slag were examined by Jane Cowgill and the following report has been prepared from her notes.

The Slag

Only two pieces of slag were found during the excavations. The piece from 304 is typical of Iron Age slag, being light grey in colour, bubbly and light in weight. It is probably associated with smithing.

Fired and Baked Clay

A total of 40 pieces of fired and baked clay were recovered from the site, 3 during the evaluation and 37 during the larger scale excavations. The material was unusually varied in fabric. It is difficult to say whether the range results from a thorough collection policy on site, good site conditions for survival or if it truly reflects a significantly more varied activity than usually found on Iron Age sites. The small number of pieces retrieved limits confident interpretation of the material.

The fired and baked clay varies in preparation treatments but the pieces may all derive from the same clay source. 16 of the fragments had a high sand (quartz) content but this sub-group showed a considerable diversity. These pieces may have been structural in function, either being used as daub (although they lack organic tempers characteristic of daub) or could have been part of a smaller structure such as an oven.

Only 5 pieces from the collection contain wattle impressions. The impressions are disorganised in character and do not appear to represent a wicker type structure.

Some of the material recovered was low-fired and probably represents accidental firing. The clays in these pieces had a high natural iron content. The fired and partially fired pieces came from various parts of the site and need not necessarily be interpreted as daub, although one concentration was found in the ring gully 207.

Three pieces of fired clay, weighing 84g. have fired patches of a pink-purple hue. These have been associated elsewhere with industrial practices involving salt.

20 pieces have been identified as possible loomweight fragments (Fig. 1.1 and 2). They have been made from well prepared wedged clay, although some large inclusions are present. There is a noticeable lack of perforations (but see Fig. 1.1).

A single piece of fired clay from pit 266 appears to be moulded and possibly polished (Fig. 1.3). It is of unknown function.

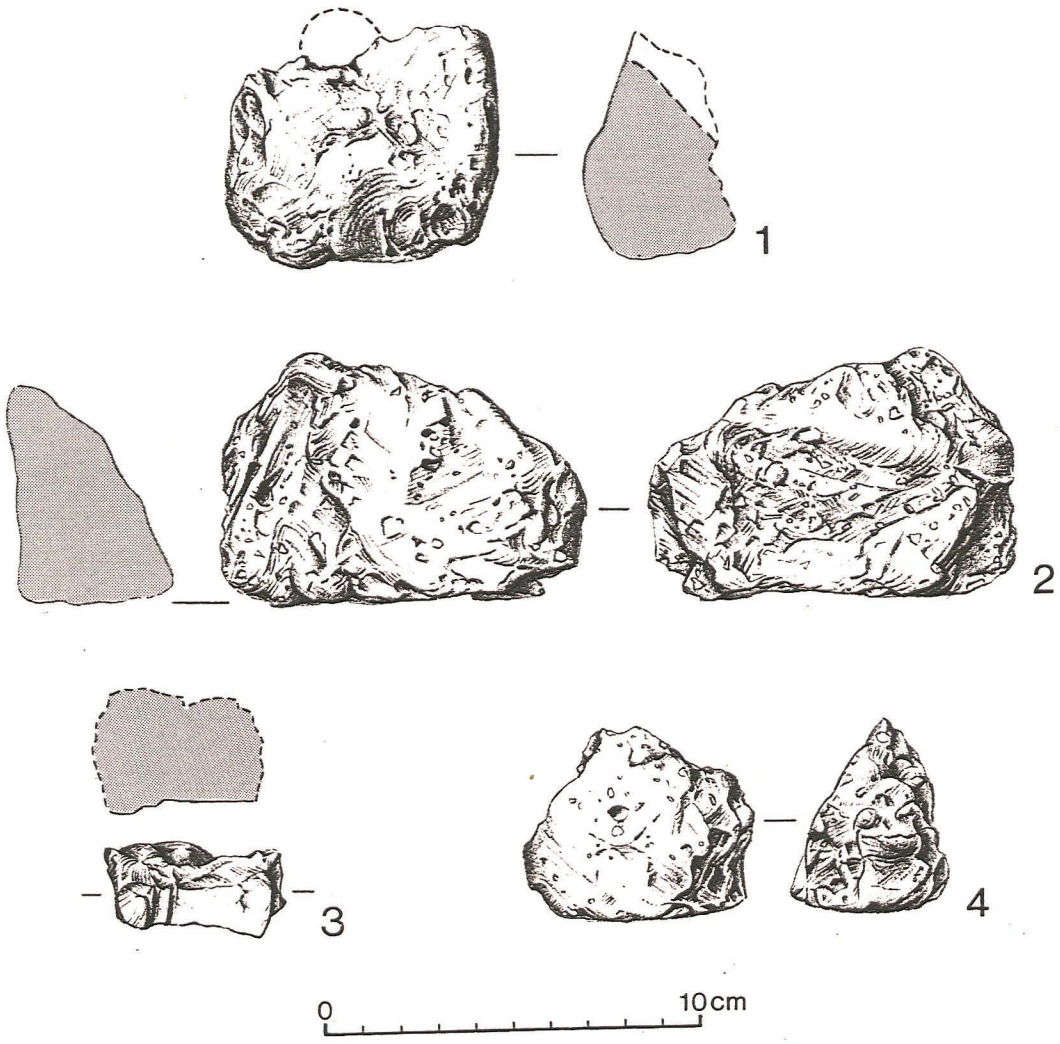

Fig. 1 Fired clay from the excavations, contexts in brackets. 1 (39); 2 (112); 3 (266); 4 (451). J. Goddard.

Bourne, Mill Drove BMD94

Animal bone report

A sample of 1069 animal bones was collected from the evaluation and excavation phases of archaeological work at Mill Drove. The sample is mainly comprised of material of Late Iron Age and Roman date. For the purposes of the analyses it has been broadly phased by reference to the archaeological stratigraphy and ceramics into the following groups:
group 1 - middle Iron age
group 2 - mid-late Iron age
group 3 - late Iron age
group 4 - late Iron age - early Roman
group 5 - early Roman
group 6 - later Roman
group 7 - medieval furrows.

[The contexts assigned to each group are listed in Appendix 1]

The sample sizes are small so in the analyses below groups 1 and 2 have been treated as Iron Age and groups 3-5 are probably largely 1st century AD and have been treated as late Iron Age and early Roman. The last group, 7, is likely to comprise material derived from the earlier groups, and there is little indication of medieval or post-medieval animal bone in this small group.
The majority of groups 1 and 2 derives from Area B, and that of groups 3 to 5 from Area A.

The material was identified by comparison with modern reference skeletons and catalogued according to the key appended to the Archive catalogue (Appendix 2). Selected measurements were taken (see Appendix 3) in an effort to register trends in animal size from the Iron age to Roman periods.

The sample is small and the analyses are therefore limited. The conclusions should be viewed within this limitation.

Results

The animals identified are limited, comprising mainly the domestic species cattle, horse, sheep, pig and dog. Single bones of chicken, goose (possibly domestic) and duck were identified and single bones of hare and red deer. A substantial proportion of the material was not identified (mainly ribs, vertebrae and long bone fragements) and has been assigned to 'cattle size' and 'sheep size' categories. Almost all of the identified bone elements assigned to these categories can be treated as cattle and sheep respectively since the vertebrae and ribs of the alternatives, horse and pig, are readily identified and none of the bones were assignable to goat and only a single bone to red deer, the other alternatives to sheep and cattle. These have therefore been included in the analyses. Although many bones have been catalogued as 'sheep or goat' the complete absence of identifiable goat bones suggests that all the ovicaprid material is sheep. It is treated as such in the tables and analyses below.

The frequency of the different bone elements of cattle and sheep have been analysed but the sample size does not permit a

quantitative study (Tables 4 and 5). The pit fills of groups 3-5 show a lack of the major meat bearing limb bones of cattle by comparison with the ditchfills of groups 1-2 and 3-5. Skull, vertebrae and foot bones predominate in this small sample and may reflect primary butchery waste being dumped in the pits while the rest of the site, particularly the ditches, receive a more general range of debris including waste from cooking. This pattern is not evident among the sheep bones whose element frequency appears to reflect robusticity and survival potential with mandibles, radial, metapodial and tibia shafts being the most frequent fragments. 487, mid-late Iron age, is one of the few contexts deserving individual mention. This context lies at the base of the ditch terminal 444 and includes three probably originally intact cattle skulls. The placing of such 'bone groups' in ditch terminals is recorded from a number of sites and believed to be significant (ritual!) rather than incidental. It could alternatively indicate proximity to a site of primary butchery with the heads being discarded into the ditch.

Despite the small sample size there is evidence for differences between the Iron age and Roman samples. In Table 1 the frequency of the fragments of each species are tabulated by group. In groups 1 and 2 cattle bones are substantially more common than those of sheep, as are the cattle size fragments in comparison to those of sheep size. In contrast in the late Iron age to early Roman groups (3-5) bones of cattle and sheep are equally abundant. Subsequent groups are too small for comment. Just in case these differences could be attributed to the distribution of context types excavated in each period (ie species differences depending upon whether the bones were excavated from ditches, pits or layers) the analysis was conducted by feature type. The majority of the bones from groups 1 and 2 derive from ditch fills in Area B, the majority from groups 3-5 from ditchfills in Area A, although a proportion of the bone comes from pitfills. While it is possible that the differences in species abundance are related to disposal practices and other factors that lead to differential distribution of cattle and sheep bones in the features the fact that the groups 3-5 ditchfills and pitfills both show a higher sheep count relative to cattle than in the earlier groups suggests that the differences may be chronological rather than spatial or taphonomic (Table 2). This would suggest a change in emphasis between the Iron age and early Roman period with the importance of sheep in the settlements diet and presumably husbandry increasing substantially.

Horse bones are found in small numbers throughout the groups. There is no evidence of butchery on the bones and most are less fragmented than either the sheep or cattle bones. Three bones were complete enough to calculate their withers height (height at the top of the shoulder). A tibia from group 4 (1.37m or 13.2 hands), a radius from group 5 (1.4m or 13.3 hands) and a metacarpus from group 7 (1.16m or 11.2 hands). The horse bones are comparatively common in the Roman levels.

The Iron age data is unfortunately insufficient for comparison of the slaughter patterns of the sheep and cattle with those of the later groups. It is not therefore possible to consider the husbandry of these species and any changes. The ageing data is nevertheless presented in Tables 6-9 and shows the presence of bones deriving from animals of a number of different age groups.

It was noted during cataloguing that most of the sheep on the site were very small boned animals. In an effort to establish whether there may have been any stock introductions associated with the Roman occupation at the site selected measurements were taken from both sheep and cattle bones. Fragmentation was fairly high so the most frequent measurements were those of the midshaft in sheep long bones. The main problem with this analysis is the sample size which precludes any certain conclusions and the possible presence of juveniles. Nevertheless there are indications among all the data that larger individuals occur in later groups, up until the late Roman period (Fig.1). This is partly confused by the number of juveniles and immature animals but may indicate either new stock, selective breeding or improved husbandry and management in the early Roman period. The occurrence of small examples in group 7, the plough furrows, suggests that these contexts contain earlier Iron age and Roman bones that have been reworked by the ploughing. The smaller sample of measured cattle bones is even less conclusive and although the largest individuals occur in group 5 the ranges overlap considerably.

Interpretation

Unfortunately the sample sizes are rather limited and it would be a mistake to try and take the interpretation of these assemblages too far. For this reason, also, there are no comparative discussions with other contemporary sites.

In the Iron age cattle constitute the most important element of the husbandry. Juvenile and immature animals are being slaughtered. Animals of this age are likely to have been bred for meat, not surviving long enough to be breeding or dairy animals, or trained for traction. Old animals (perhaps as old as 15 years) are also present. The sheep are small boned animals with a low adult live weight, probably of little more than 20kg. They may have been half as common as cattle and as such constitute a small proportion of the total meat consumed on the site. Although there are no lambs in the sample and a number of animals are being killed while still immature and also some adults the sample is extremely small and cannot be used with any confidence. The relative absence of bones of calves and lambs in the sample may reflect loss through scavenging since dog bones are present and extensive evidence of chewing was noted on a proportion of the bone fragments. Pig bones, largely from immature animals, occur with the least frequency, but may have contributed almost as much to the diet as the sheep because of their greater individual weight. While the red deer bone suggests hunting this cannot be seen as a significant element in the animal economy of the site. Horses were present but only two bones permit little comment.

In the late Iron age to early Roman period there is evidence of a shift in the focus of husbandry. Sheep become relatively more important and may have exceeded in number the cattle being husbanded (Table 3). Furthermore, although immature as well as adult sheep were slaughtered a number of adult jaws in group 5 suggest that wool may have been an important product of the husbandry. Nevertheless none of the sheep represented appear to have survived to old age since considerable further wear could have occurred on their teeth. The cattle are relatively less important in the Roman period although still contributing the majority of the

meat. Few immature bones are indicated by the epiphyseal data and only two jaws still carry deciduous teeth. Pig continue to contribute to the diet of the settlement and horse bones are more common than in the Iron age sample, with light riding ponies of between 13 and 14 hands occuring in groups 4 and 5.

These interpretations are in the nature of hypotheses and are barely sustained by the limited data from the site. However they do pose some interesting patterns and it is important that further and larger collections are obtained from Iron age and Roman sites in Lincolnshire to test them. There is considerable potential for sites in the county to illustrate any change in the agricultural economy of the late Iron age with the advent of Roman control and markets.

Summary

The animal bone collection is comprised largely of material dated to the Late Iron age and early Roman periods. There is evidence of a change in the animal husbandry in terms of the relative importance of the sheep and cattle between the Iron age and the early Roman period. The apparent increase in sheep appears to run contrary to the traditional view (King 1978) that cattle increase in importance during the Roman period, but geographical factors or taphonomic problems might be responsible for this pattern. There are indications of patterns of disposal on the site with primary butchery waste being dumped in pits while the ditches surrounding the settlements receive a more mixed assemblage of bones except for the terminal in Area B where the bone might be interpreted as a 'ritual' deposit or primary butchery waste.

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D.James Rackham
29 April 1995

Bourne, Mill Drove

Table 1
The number of bone fragments of each species and classification group in the sample

Species	group	1	2	1/2	3	4	5	6	7
Horse		2			2	6	15	3	7
Cattle		24	42	9	34	34	65	16	24
Sheep		14	11	1	25	38	60	4	13
Pig		3	5	1	9	7	17	2	9
Dog			3				1		
Red deer		1							
Hare							1		
Chicken		1							
Duck sp.									
Goose sp.							1		
Cattle size, unid.		17	42	3	46	75	84	15	15
Sheep size, unid.		7	12	2	41	54	41	5	17
Unidentified		5			1	1	16		20

(group 1=M Iron Age; 2=M-L Iron Age; 3=L Iron Age; 4=L Iron Age/Early Roman;
5=Early Roman; 6=Later Roman; 7=Medieval furrows)

Table 2
The number of bone fragments of the major species and classification groups in the main feature types in groups 1 and 2, and 3, 4 and 5

	groups 1/2 ditchfills	group 3,4 & 5 pitfills	group 3,4 & 5 ditchfills
Horse	1	1	21
Cattle	58	16	92
Sheep	19	22	86
Pig	7	10	9
Cattle size	53	56	113
Sheep size	14	55	52

Table 3
The minimum number of animals present in each group for the major species in the sample (based on the most frequent zone, irrespective of side).

group	1	2	3	4	5	6	7
Horse				1	1		1
Cattle	1	2	2	2	3	3	3
Sheep	1	1	2	3	6	1	2
Pig	1	1	2	1	1	1	1

Table 4
The number of fragments of each bone of cattle (ca) and cattle size (csz) in each group

Bone	Cattle	CSZ	ca	csz	ca	csz	ca	csz	ca	csz	ca	csz	Tot.
Group	1		2		3		4		5		6		
Skull	4		4		4	2	2		7	17			
Horn core					1		1						
Maxilla			1						1				
Mandible	6		3		4		6		4		4		
Mandibular teeth	2		4				2		1		1		
Maxillary teeth	2		1		2		2		5				
Cervical vertebrae			1	3	1	1		2	1	1			
Thoracic v.	1					4		5		6		2	
Lumbar v.		1		1	1	2		5		4			
Sacrum					1				1				
Vertebrae, indet				1				2		3			
Ribs		7		15		20		30		34		7	
Costal cartilage						1		2		2			
Scapula	1	1	2	1	2	2	2		3	1	1	1	
Humerus	1		1						4				
Radius			3		2		1		4		1		
Ulna													
Carpal					1								
Metacarpus			3		1		2		9				
Phalanx 1	1		2		1		1		2		1		
Phalanx 2					2				1				
Phalanx 3							1						
Innominate	2		2		1		1	2	6	1	6		
Femur	1		3		5		2		1				
Patella									1				
Tibia		1	5	1	3		6		5				
Astragalus	1						1		2				
Calcaneum									1				
Metatarsus	2		6		2		4		6		1		
Metapodial			1										
Long bone indet.		6		18		5		22		10		4	
Unidentifiable		1		2		9		5		5		1	

Table 5
The number of fragments of each bone of sheep (sh) and sheep size (ssz) in each group

Bone	Sheep	SSZ	sh	ssz	sh	ssz	sh	ssz	sh	ssz	sh	ssz	Tot.
Group	1		2		3		4		5		6		
Skull					3			4	2				
Horn core													
Maxilla									1				
Mandible	2		4		4		6		15		1		
Mandibular teeth	5		1		1		2		2		1		
Maxillary teeth			1						4				
Cervical vertebrae									2				
Thoracic v.				1		1				1			
Lumbar v.						2				1			
Sacrum													
Vertebrae, indet													
Ribs		3		2		13		29		21		3	
Costal cartilage								1					
Scapula					3		1	1	2				
Humerus	1						1		3				
Radius	1		1		6		4		5				
Ulna					1		1		1				
Carpal													
Metacarpus			3		2		4		4				
Phalanx 1									1				
Phalanx 2													
Phalanx 3													
Phalanx indet													
Innominate								2	1				
Femur						1	4		1	2			
Patella													
Tibia	2				4	2	11		7	3			
Astragalus									1				
Calcaneum									1		1		
Metatarsus	3		1		1		4		6		1		
Metapodial													
Long bone indet.		2		8		11		10		12		2	
Unidentifiable		2		1		11		7		1			

Table 6
Number of unfused, just fused or fused epiphyses of cattle
The epiphyses are arranged in their approximate order of fusion in life

	Iron Age groups 1 and 2			LIA/EROM and later groups 3 to 5		
	unf	j.fus.	fus.	unf.	j.fus.	fus.
Scapula tuberosity						2
Acetabular symphysis	1		1		1	1
Radius, proximal			2			2
Humerus, distal						1
Phalanx 2, proximal						2
Phalanx 1, proximal		1	1			3
Tibia, distal	1	1		1		2
Metacarpus, distal						2
Metatarsus, distal	2		2	2		2
Calcaneum, proximal	1					
Femur, proximal	1			1		1
Radius, distal	1					1
Humerus, proximal						
Tibia, proximal			1	1		2
Femur, distal					1	
Ulna, proximal & distal						
Vertebrae, anterior	2		2	10	2	6
Vertebrae, posterior	2		2	11		2

Table 7
Cattle Tooth eruption and wear on the mandibular teeth (method after Grant 1982)

Age	Groups 1 & 2						Groups 3-5					
	f	g	h	I	J	K	f	g	h	I	J	K
imm.									12	11	7	0
											10	
	F	G	H	I	J	K	F	G	H	I	J	K
sub-ad.					11						11	5
				14								8
adult						8						
						12				15	14	10
									11	16	15	
					16	15						
						16						

f-deciduous premolar 2; g-deciduous premolar 3; h-deciduous premolar 4; I-molar 1; J-molar 2; K-molar 3;
F-premolar 2; G-premolar 3; H-premolar 4.
+ - present.
imm. = immature; sub-ad. = sub-adult

Table 8
Number of unfused, just fused or fused epiphyses of sheep
The epiphyses are arranged in their approximate order of fusion in life

	LIA & EROM groups 3 to 5		
	unf.	j.fus.	fus.
Humerus, distal			2
Radius, proximal			4
Scapula tuberosity			1
Acetabular symphysis	1		
Phalanx 2, proximal			
Phalanx 1, proximal			1
Tibia, distal	3		3
Metacarpus, distal			
Metatarsus, distal			1
Femur, proximal	1	1	
Calcaneum, proximal			1
Femur, distal		1	
Tibia, proximal			1
Radius, distal	1		2
Humerus, proximal			
Ulna, proximal & distal	1		
Vertebrae, anterior	1	1	
Vertebrae, posterior	2		

Table 9
Sheep Tooth eruption and wear on the mandibular teeth (method after Grant 1982)

Age	Groups 1 & 2						Groups 3-5					
	f	g	h	I	J	K	f	g	h	I	J	K
juv.							+	+	11	8	2	
									12	7		
							+	+	12	8	2	
									13			
imm.				12	8						8	
					8				15	12	9	2
										12	9	2
									16	12	10	3
											10	
	F	G	H	I	J	K	F	G	H	I	J	K
sub-ad.					11	6			4	12	10	3
												7
												8
adult				14	10			+	10	14	12	10
							+	+	11	12	12	11
						12		+	12	13	12	12
								+	12	13	12	12
			13	15								

f-deciduous premolar 2; g-deciduous premolar 3; h-deciduous premolar 4; I-molar 1; J-molar 2; K-molar 3;
F-premolar 2; G-premolar 3; H-premolar 4.
+ - present.
juv. =juvenile; imm. =immature; sub-ad. =sub-adult

Appendix 1

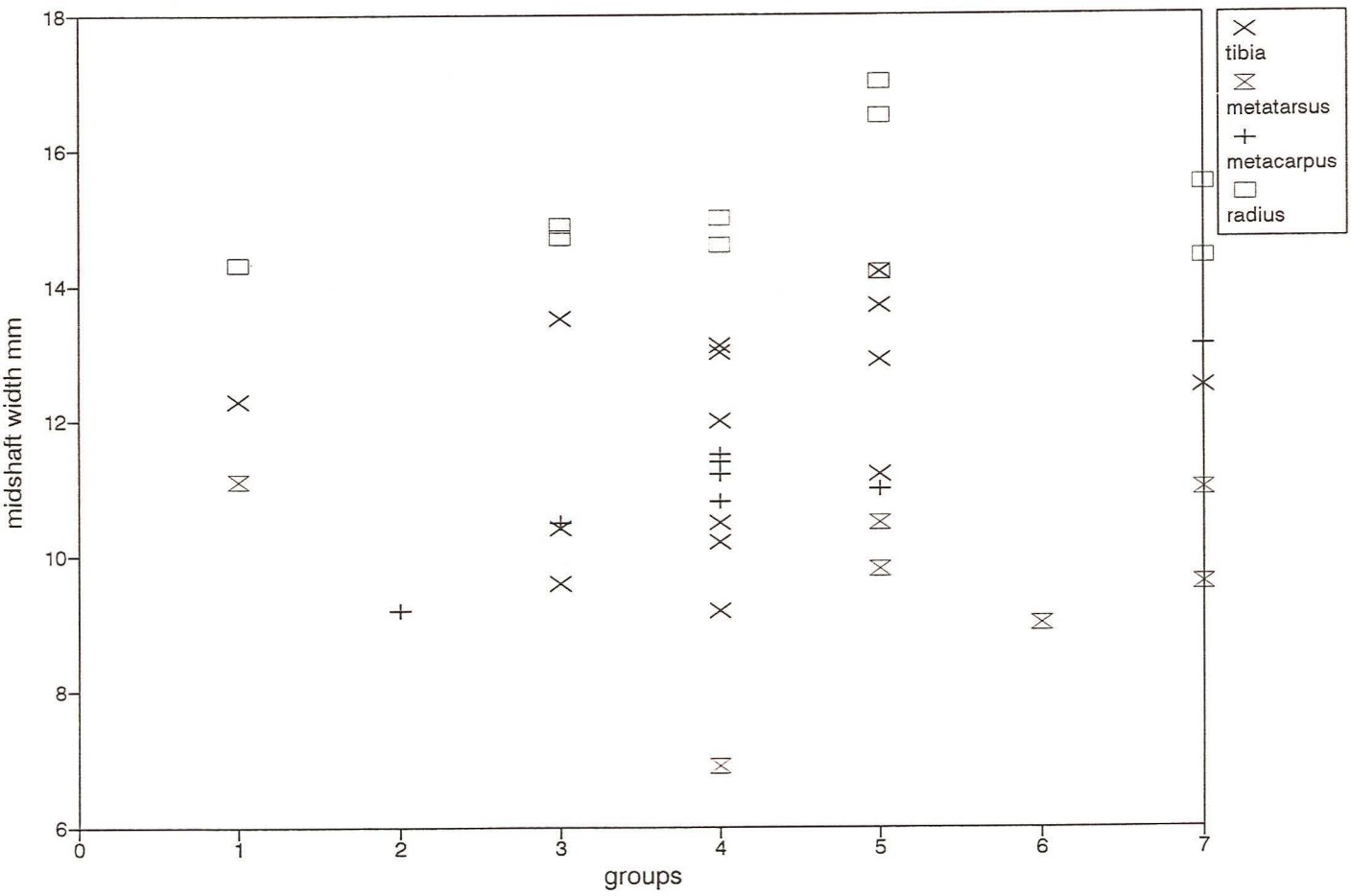
Contexts assigned to groups

group 1 - middle Iron age (5th-1st cent BC)
group 2 - middle-late Iron age (?2nd cent. BC - 1st AD)
group 3 - late Iron age (1st cent BC - early 1st cent AD
group 4 - late Iron age/early Roman (mid 1st cent AD)
group 5 - early Roman (mid 1st- late 1st cent.)
group 6 - later Roman (3rd-4th century)
group 7 - material from the medieval furrows.

1	2	3	4	5	6	7
112	48	62	29	39	21	201
406	110	210	52	56	208	203
505	253	234	243	71	217	204
511	402	251	244	206	266	400
512	409	262	268	212	267	515
	410	263	310	215	309	534
	445	264	446	231	412	
	487	271	447	232		
	500	273	451	233		
		285		235		
		291		237		
		300		238		
		423		242		
		450		247		
		481		249		
		528				

Phases 1-2	3-4	3 or later - 304
115	270	later than 4 - 416
428	278	6 or later - 413
496	513	no info - 67, 85, 89, 117, 240
499		

Midshaft measurements on Sheep bones
arranged by group



APPENDIX 5

Human Remains
S. Ensor

Burial 1 (Context 300)
(Home Office Licence for the Removal of Human Remains No. 21448, issued 26.08.94)

Age and Palaeopathology
The skeleton was assessed for age at death, and evidence of disease in life. The individual was between 0-2 months old at death (Maresh 1955). There was no evidence for disease.

Length of femoral diaphysis: 8cm
= 0-2 months (M 7.2-9.6cm; F 7.8-9.7cm)

Condition: Fair-good. Relatively complete. Skull fragmented.

Reference
Maresh, M. 1955. 'Linear growth of long bones of extremities from infancy through adolescence', *American Journal of Diseases of Children,* Vol. 89, 725-742.

MILL DROVE, BOURNE.
FLINT ASSEMBLAGE

I.P. Brooks

Ten flint artefacts were recovered during the course of excavations at Mill Drove, Bourne. They were all from features dating from later periods and are therefore all residual. Because of the low numbers of artefacts involved they will be described separately.

1) Context 71. A hollow side scraper produced by inverse, short, scaled, semi-abrupt retouch on the right, distal edge (Inizan *et al* 1992). The tool was produced on a semi-translucent dusky yellowish brown (10 YR 2/2) (Goddard *et al* 1948) flint. Length 30 mm, width 32 mm, thickness 7 mm, weight 6.1g

2) Context 201. A fragment of a bladelet core on a worn pebble, probably from a till . At least six bladelet removals from an unprepared platform. The raw material is a dark yellowish brown (10 YR 3/2) translucent flint with a worn, very thin (less than 1 mm) cortex. Length 30 mm, width 53 mm, thickness 16 mm, weight 20.2 g

3) Context 201 A secondary flake (with partly corticated dorsal surface) on moderate brown (5 YR 3/4) translucent flint with a thin (less than 1 mm), worn cortex. Length 25 mm, width 21 mm, thickness 5 mm weight 2.8 g.

4) Context 201. A tertiary flake (with uncorticated dorsal surface) on a moderate brown (5 YR 3/4) semi-translucent flint. Length 31 mm, width 13 mm, thickness 3 mm, weight 1.9 g

5) Context 203. A secondary flake on a moderate brown (5 YR 4/4) translucent flint with very thin (less than 1 mm), worn cortex. Length 16 mm, width 16 mm, thickness 3 mm, weight 1.3 g

6) Context 203. An irregularly worked lump on a semi-translucent dusky yellowish brown flint (10 YR 2/2) with a worn, very thin (less than 1 mm) cortex. Length 22 mm, width 22 mm, thickness 10 mm, weight 8.8 g

7) Context 240. A secondary flake on a dusky yellowish brown (10 YR 2/2) translucent flint with a thin (less than 1 mm) worn cortex. Length 20 mm, width 12 mm, thickness 5 mm, weight 0.9 g.

8) Context 255, Small find number 13. A side end scraper with direct, long, sub-parallel, semi-abrupt removals on the left edge and distal end. The form and style of retouch may suggest an Early to Middle Bronze Age date for this tool. The tool was produced on a pebble fragment of dark yellowish brown (10 YR 4/2) opaque flint. Length 26 mm, width 20 mm, thickness 11 mm, weight 7.2 g.

9) Context 273. The proximal section of a broken tertiary flake. The flake is patinated to a mottled grey colour. Length 28 mm, width 14 m, thickness 7 mm, weight 2 5 g

10) Context 400. An end scraper with a slightly nosed working edge produced by direct, short, scaled, semi-abrupt removals on the distal end. The tool was produced on a secondary flake of dusky yellowish brown (10 YR 2/2) translucent flint with a thin (less than 1 mm) worn cortex. Length 23 mm, width 23 mm, thickness 6 mm, weight 3.4 g

The collection of flint from Mill Drove, Bourne would appear to be a collection of residual items with a broad date range in the Late Neolithic and Bronze Age The raw material used for the tools would appear to be small pebble flint with worn cortex typical of the local till deposits.

REFERENCES

Inizan, M. -L., Roche, H. and Tixier, J. (1992) *Technology of Knapped Stone*. Meudon: C.R.E.P.

Goddard, E.N., Trask, P.D., De Ford, R.K., Rove, O.N., Singewald, J.T. and Overbeck, R.M. (1948) *Rock Color Chart* Geological Society of America, Boulder USA

BOURNE MILL DROVE (BMD 94) CONTEXT LIST

EVALUATION TRENCHES					
20	c	20	ditch	NE-SW V-shaped	5
21	f	20	ditch	fill of 20	5
22	c	22	posthole	posthole	5
23	f	20	ditch	same as 21	5
24	c	24	field drain	modern drain	4
25	f	24	field drain	fill of 24, incl plastic pipe	4
26	c	26	ditch	ditch	4
27	f	26	ditch	fill of 26	4
28	c	28	pit	ditch	4
29	f	28	pit	upper fill	4
30	c	30	ditch	NE-SW	2
31	f	30	ditch	fill of 30	2
32	c	32	posthole	posthole	6
33	f	32	posthole	fill of 32	6
34	c	34	ditch	E-W v-shaped	6
35	f	34	ditch	upper fill of 34	6
36	c	36	ditch	E-W v-shaped	6
37	f	36	ditch	fill of 36	6
38	c	38	ditch	E-W v-shaped	4
39	f	38	ditch	fill of 38	4
40	c	40	ditch	ditch	4
41	f	40	ditch	fill of 40	4
42	f	28	ditch	lower fill of 40	4
43	c	30	posthole	posthole	2
44	f	30	posthole	fill of 43	2
45	c	45	slot	WSW-ENE slot	1
46	f	45	slot	fill of 45	1
47	c	47	ditch	NE-SW v-shaped	1
48	f	47	ditch	fill of 47	1
49	c	49	posthole	posthole	1
50	f	49	posthole	fill of 49	1
51	c	51	ditch	WNW-ESE, = 256	1
52	f	51	ditch	fill of 51, = 257	1
53	c	53	slot	N-S, cuts 58	1
54	f	53	slot	fill of 53	1
55	c	55	ditch	N-S, cuts 52,58,60	1
56	f	55	ditch	fill of 55	1
57	c	57	ditch	WNW-ESE	1
58	f	57	ditch	fill of 57	1
59	c	59	ditch	ditch terminal, cuts 85	1
60	f	59	ditch	fill of 59	1
61	c	61	ditch	SE-NW	1
62	f	61	ditch	fill of 61, below 85	1
63	c	63	ditch	terminal,= 51,57,59,	1
64	f	63	ditch	fill of 63=52,58,60	1
65	f	71	pit	lower fill, below 80	5
66	c	66	ditch	ditch N-S	3
67	f	66	ditch	ditch fill above 74	3
68	c	68	slot	slot ? cuts 70	5
69	f	68	slot	fill of 68	5
70	c	70	ditch	ditch, cuts 73	5
71	f	70	ditch	fill of 70	5
72	c	72	ditch	ditch cut by 70	5
73	f	72	ditch	fill of 72	5
74	f	66	ditch	fill below 67	3
75	c	75	posthole	posthole	4
76	f	75	posthole	posthole	4
77	c	77	hollow	shallow ditch?	4

BOURNE MILL DROVE (BMD 94) CONTEXT LIST

78	f	77	hollow	fill of 77	4
79	c	79	pit	pit	5
80	f	79	pit	pit fill above 65	5
81	c	81	posthole	posthole	3
82	f	81	posthole	fill of 81	3
83	c	83	pit	pit	3
84	f	83	pit	fill of 83	3
85	f	61	ditch	fill of 61, above 62, below 59	1
86	c	86	gully	gully	7
87	f	86	gully	fill of 86	7
88	f	34	ditch	fill of 34, above 89, below 35	6
89	f	34	ditch	fill of 34, below 89	6
90	c	90	pit?	quarry pit?	12
91	f	90	pit?	fill of 90	12
92	c	92	furrow?	furrow?	13
93	f	92	furrow?	furrow?	13
94	c	94	ditch	ditch	13
95	f	95	ditch	fill of 94, below 106	13
96	c	96	posthole	posthole	6
97	f	96	posthole	fill of 96	6
98	c	98	posthole	posthole	5
99	f	98	posthole	fill of 98	5
100	c	100	posthole	posthole	13
101	f	100	posthole	fill of 100	13
102	c	102	posthole	posthole	13
103	f	102	posthole	fill of 102	13
104	c	104	posthole	posthole	13
105	f	104	posthole	fill of 104	13
106	f	94	ditch	fill of 94, above 95, below 122	13
107	c	107	ditch	ditch, cuts 122,116	13
108	f	107	ditch	fill of 107, below 109	13
109	f	107	ditch	fill of 107, above 108, below 110	13
110	f	107	ditch	fill of 107, above 109, below 111	13
111	c	111	ditch	ditch, cuts 110	13
112	f	111	ditch	fill of 111	13
113	c	113	ditch	ditch	13
114	f	113	ditch	fill of 113, below 115	13
115	f	113	ditch	fill of 113, above 114, below 116	13
116	f	113	ditch	fill of 113, above 115, below 117	13
117	f	113	ditch	fill of 113, above 116, below 118	13
118	f	113	ditch	fill of 113, above 117, below 110	13
119	c	119	posthole	posthole	13
120	f	119	posthole	fill of 119, below 94	13
121			VOID		
122	f	94	ditch	fill of 94, above 106, below 107	13
AREA A					
200	c	200	furrow	NE-SW	
201	f	200	furrow	fill of 200	
202	c	202	furrow	NE-SW	
203	f	202	furrow	fill of 202	
204	f	305	furrow	fill of 305	
205	c	205	ditch	N-S	
206	f	205	ditch	Upper fill of 205	
207	c	207	ditch	ring ditch	
208	f	207	ditch	fill of 207	
209	c	209	ditch	ring ditch	
210	f	209	ditch	fill 0f 209	
211	c	211	pit	pit	

BOURNE MILL DROVE (BMD 94) CONTEXT LIST

212	f	211	pit	upper fill of 211	
213	c	213	pit slot	NW-SE	
214	f	213	pit slot	fill of 213	
215	L	215	layer/spread	layer/spread	
216	c	216	pit	pit	
217	f	216	pit	fill of 216	
218	c	218	pit/posthole	pit/posthole	
219	f	218	pit/posthole	fill of 218	
220	c	220	pit	pit	
221	f	220	pit	upper fill of 220	
222	c	222	posthole	posthole	
223	f	222	posthole	fill of 222	
224	c	224	posthole	posthole	
225	f	224	posthole	fill of 224	
226	c	226	posthole	posthole	
227	f	226	posthole	fill of 226	
228	c	228	cut pit	cut pit	
229	f	228	cut pit	fill of 228	
230	c	230	ditch	NW-SE	
231	f	230	ditch	upper fill of 230	
232	f	230	ditch	fill of 230	
233	f	230	ditch	fill of 230	
234	f	230	ditch	fill of 230	
235	f	230	ditch	fill of 230	
236	L	236	layer	natural overcut	
237	f	230	ditch	lower fill of 230	
238	f	205	ditch	lower fill of 205	
239	f	220	pit	fill of 220	
240	f	220	pit	lower fill of 220	
241	f	211	pit	fill of 211	
242	f	211	pit	fill of 211	
243	f	211	pit	fill of 211	
244	f	211	pit	lower fill of 211	
245	L	245	layer	topsoil	
246	L	246	layer	natural	
247	f	230	ditch	fill of 230	
248	f	230	ditch	fill of 230	
249	f	230	ditch	fill of 230	
250	f	230	ditch	fill of 230	
251	f	230	ditch	fill of 230	
252	c	252	cut gully	E-W	
253	f	252	cut gully	fill of 252	
254	c	254	pit	pit	
255	f	313		fill of 313	
256	c	256	gully	E-W, = 51	
257	f	256	gully	fill of 256, = 52	
258	S	258	spread	Spread - same as 310?	
259	c	259		Possible butt end of 256	
260	f	259		fill of 259	
261	c	261	pit	large pit	
262	f	261	pit	fill of 261	
263	f	261	pit	fill of 261	
264	f	261	pit	fill of 261	
265	f	261	pit	fill of 261	
266	f	261	pit	fill of 261	
267	f	261	pit	fill of 261	
268	f	254	pit	fill of 254	
269	c	269	posthole	posthole	
270	f	269	posthole	fill of 269	

BOURNE MILL DROVE (BMD 94) CONTEXT LIST

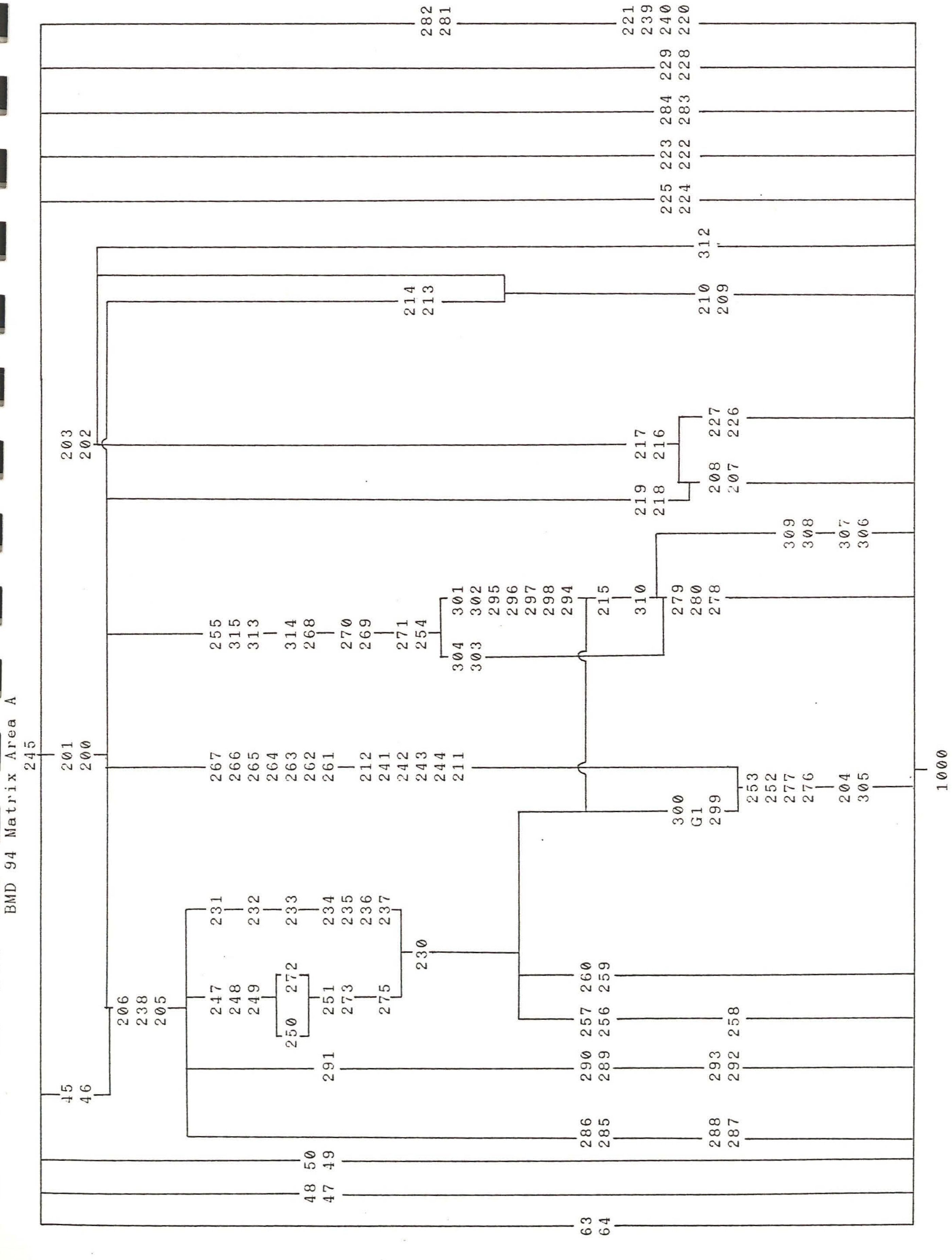
271	f	254	pit	fill of 254	
272	f	230	ditch	fill of 230	
273	f	230	ditch	fill of 230	
274	L	274	layer	overcut natural	
275	f	230	ditch	fill of 230	
276	c	276	ditch	E-W	
277	f	276	ditch	fill of 276	
278	c	278	pit/slot	cut pit/slot	
279	f	278	pit/slot	fill of 278	
280	f	278	pit/slot	fill of 278	
281	c	281	posthole	posthole	
282	f	281	posthole	fill of 281	
283	c	283	posthole	posthole	
284	f	283	posthole	fill of 283	
285	c	285	ditch	ring ditch	
286	f	285	ditch	fill of 285	
287	c	287	scoop	scoop	
288	f	287	scoop	fill of 287	
289	c	289	ditch	ring ditch	
290	f	289	ditch	fill of 289	
291	S	291	spread	spread	
292	c	292	posthole?	posthole?	
293	f	292	posthole?	fill of 292	
294	c	294	pit	pit	
295	f	294	pit	fill of 294	
296	f	294	pit	fill of 294	
297	f	294	pit	fill of 294	
298	f	294	pit	lower fill of 294	
299	c	299	grave cut	E-W	
300	f	299	grave cut	fill of 299	
301	f	294	pit	upper fill of 294	
302	f	294	pit	fill of 294	
303	c	303	pit	pit	
304	f	303	pit	fill of 303	
305	c	305	ditch	ring ditch Same as 306?	
306	c	306	ditch	ring ditch? Same as 305?	
307	f	306	ditch	fill of 306	
308	c	308	ditch	ring ditch same as 276?	
309	f	308	ditch	fill of 308	
310	L	310	Layer	Layer	
311	f	230	ditch	fill of 230	
312	S	312	spread	spread	
AREA B					
400	L	400	layer	general cleaning after machine	
401	c	401	ditch	NE-SW	
402	f	401	ditch	upper fill of 401	
403	c	403	ditch	NE-SW	
404	f	403	ditch	lower fill of 403	
405	f	403	ditch	fill of 403	
406	f	403	ditch	fill of 403	
407	f	403	ditch	fill of 403	
408	c	408	ditch	NE-SW	
409	f	408	ditch	lower fill of 408	
410	f	408	ditch	fill of 408	
411	c	411	ditch	NE-SW	
412	f	411	ditch	fill of 411	
413	f	414	ditch	fill of 414	
414	c	414	furrow	NE-SW	

BOURNE MILL DROVE (BMD 94) CONTEXT LIST

415	c	415	furrow	NE-SW	
416	f	415	furrow	fill of 415	
417	c	417	ditch	N-S	
418	c	418	ditch	NE-SW	
419	f	418	ditch	upper fill of 418	
420	f	418	ditch	fill of 418	
421	f	418	ditch	fill of 418	
422	f	418	ditch	fill of 418	
423	f	418	ditch	fill of 418	
424	f	418	ditch	fill of 418	
425	f	418	ditch	fill of 418	
426	f	418	ditch	fill of 418	
427	f	418	ditch	fill of 418	
428	f	418	ditch	fill of 418	
429	f	418	ditch	lower fill of 418	
430	c	430	slot	E-W	
431	f	430	slot	fill of 430	
432	f	417	ditch	upper fill of 417	
433	f	417	ditch	fill of 417	
434	f	417	ditch	fill of 417	
435	f	417	ditch	fill of 417	
436	f	417	ditch	fill of 417	
437	f	417	ditch	fill of 417	
438	f	417	ditch	fill of 417	
439	f	417	ditch	lower fill of 417	
440	c	440	pit	pit	
441	f	440	pit	upper fill of 440	
442	f	440	pit	fill of 440	
443	f	440	pit	fill of 440	
444	c	444	ditch	NE-SW Very large	
445	f	444	ditch	fill of 444	
446	f	444	ditch	fill of 444	
447	f	444	ditch	fill of 444	
448	f	444	ditch	fill of 444	
449	f	444	ditch	fill of 444	
450	f	444	ditch	fill of 444	
451	f	444	ditch	fill of 444	
452	c	452	ditch	NE-SW	
453	f	453	posthole	posthole	
454	f	454	posthole	posthole	
455	f	455	posthole	posthole	
456	f	456	posthole	posthole	
457	f	457	posthole	posthole	
458	f	458	posthole	posthole	
459	f	459	posthole	posthole	
460	f	460	posthole	posthole	
461	f	461	posthole	posthole	
462	f	462	posthole	posthole	
463	f	463	posthole	posthole	
464	f	464	posthole	posthole	
465	f	465	posthole	posthole	
466	f	466	posthole	posthole	
467	f	467	posthole	posthole	
468	f	468	posthole	posthole	
469	f	469	posthole	posthole	
470	f	470	posthole	posthole	
471	f	471	posthole	posthole	
472	f	472	posthole	posthole	
473	f	473	posthole	posthole	

474	f	474	posthole	posthole	
475	f	475	posthole	posthole	
476	f	476	posthole	posthole	
477	f	477	posthole	posthole	
478	f	478	posthole	posthole	
479	f	479	posthole	posthole	
480	f	480	posthole	posthole	
481	f	481	posthole	posthole	
482	f	482	posthole	posthole	
483	f	483	posthole	posthole	
484	f	484	posthole	posthole	
485	f	485	posthole	posthole	
486	f	444	ditch	fill of 444	
487	f	444	ditch	fill of 444	
488	f	452	ditch	fill of 452	
489	f	452	ditch	fill of 452	
490	f	452	ditch	fill of 452	
491	f	452	ditch	fill of 452	
492	f	452	ditch	fill of 452	
493	f	452	ditch	fill of 452	
494	f	452	ditch	fill of 452	
495	c	495	ditch	NE-SW V-Shaped	
496	f	495	ditch	lower fill of 495	
497	f	495	ditch	fill of 495	
498	f	495	ditch	fill of 495	
499	f	495	ditch	fill of 495	
500	f	495	ditch	fill of 495	
501	f	495	ditch	fill of 495	
502	f	495	ditch	fill of 495	
503	f	495	ditch	fill of 495	
504	f	495	ditch	fill of 495	
505	f	495	ditch	fill of 495	
506	f	495	ditch	fill of 495	
507	f	495	ditch	upper fill of 495	
508	f	495	ditch	fill of 495	
509	f	495	ditch	fill of 495	
510	c	510	ditch	NE-SW V-Shaped	
511	f	510	ditch	fill of 510	
512	f	444	ditch	fill of 444	
513	f	444	ditch	fill of 444	
514	c	514	furrow	NE-SW	
515	f	514	furrow	fill of 514	
516	f	516	posthole	posthole	
517	f	517	posthole	posthole	
518	f	518	posthole	posthole	
519	f	519	posthole	posthole	
520	f	520	posthole	posthole	
521	f	521	posthole	posthole	
522	f	440	pit	lower fill of 440	
523	c	523	ph/pit/scoop	circular posthole/pit/scoop?	
524	f	523	ph/pit/scoop	fill of 523	
525	f	444	ditch	fill of 444	
526	f	401	ditch	lower fill of 401	
527	c	527	ditch	NE/SW	
528	f	527	ditch	fill of 527	
529	f	444	ditch	fill of 444	
530	f	444	ditch	fill of 444	
531	f	444	ditch	fill of 444	
532	f	444	ditch	fill of 444	
533	f	444	ditch	lower fill of 444	
534	f	416	furrow	same as 416	

APPENDIX 8


BMD 94 Matrix Area A
282 281
221 239 240 220
229 228
284 283
223 222
225 224
312
214 213
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227 226
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208 207
309 308
307 306
255 315 313
314 268
270 269
271 254
301 302 295 296 297 298 294
304 303
215
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279 280 278
245
201 200
267 266 265 264 263 262 261
212 241 242 243 244 211
253 252 277 276
204 305
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300 G1 299
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234 235 236 237
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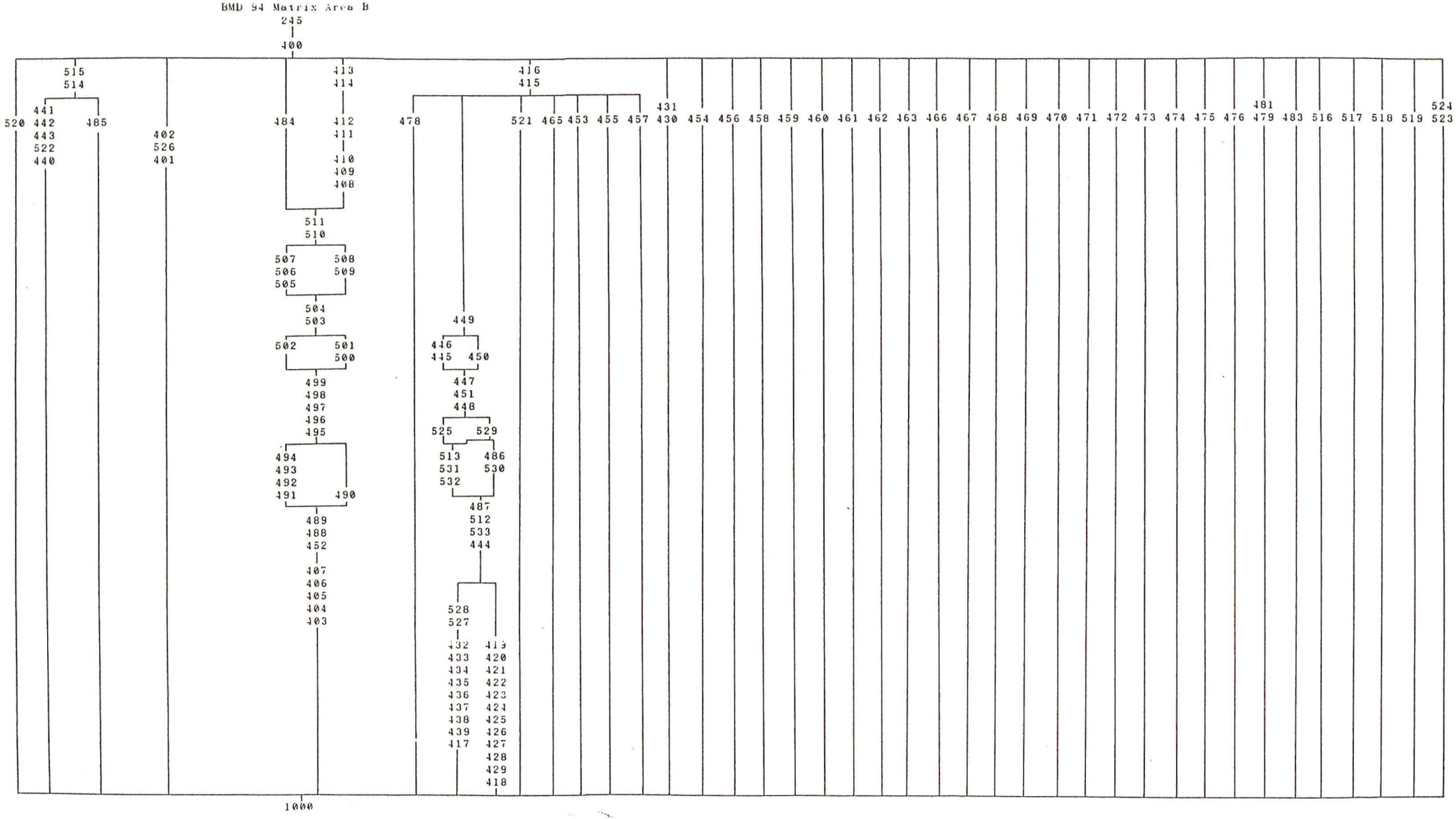
48 47
63 64

BMD 94 Matrix Area B



APPENDIX 9

Mill Drove Bourne (BMD 94) Accession No. 5.94
Contents of Site Archive

1. Desk Top Assessment
2. Evaluation report
3. Excavation report

Context sheets
1-122 Site evaluation March 1994
200-312 Area A excavation August 1994
400-534 Area B excavation August 1994

Photographs

LAS Film No.	No. of photos
94/4/20A-23A	4
94/6/26-28	3
94/13	38
94/14	36
94/18	36
94/51	37
94/53	36
94/54	35
94/55/2-23	22
M94/3/20-24	5
M95/1/00-1A	3
TOTAL	255

Site drawings
Assessment
Distribution of fieldwalking finds (fully numbered) Scale 1:1250
Contour survey of the field (scale 1:500) supplied by M. Parker and Sons
Trench location plan (1:500)

Evaluation 10 trench plans (1:20)
30 section drawings on 8 sheets (1:10 and 1:20)
Excavation 2 area plans (1:50); 1 trench plan (eval. trench 11)
77 section drawings on 10 sheets (1:10 and 1:20)

Finds drawings
Iron Age pottery
Roman pottery (archive only)
Fired clay

Specialists' reports

1. Iron Age and Roman pottery

Pottery identification list by feature
Pottery identification list by context
CLAU fabric codes
CLAU form codes
TPAT fabric codes

2. Tile

Identification list by context

3. Fired clay

Identification list by context

4. Animal Bone

Identification list by context
Measurement data

5. Small Finds

List of special finds
Conservation Laboratory record cards (held at Lincolnshire County Museums Lab, Lincoln)

6. Geophysical Survey

Survey data on disc, for use with Lincolnshire SMR GIS mapping.

ARCHAEOLOGICAL PROJECT BRIEF.

North of Mill Drove, Bourne.

1. SUMMARY

1.1 This document is the brief for archaeological work to be carried out on an area of development north of Mill Drove in Bourne, Lincolnshire.

It sets out the requirements for a detailed desk-top assessment and field evaluation of the area.

1.2 This brief should be used by archaeological contractors as the basis for the preparation of a detailed archaeological project specification. In response to this brief contractors will be expected to provide details of the proposed scheme of work, to include the anticipated working methods, timescales and staffing levels.

1.3 The detailed specifications will be submitted for approval to the Community Archaeologist of South Kesteven District Council. The client will be free to choose between those specifications which are considered to adequately satisfy this brief.

2. SITE LOCATION AND DESCRIPTION.

2.1 The development area is situated to the north east of the town of Bourne, in south west Lincolnshire, 11 miles north west of Peterborough.

2.2 The development site lies to the north of Mill Drove and is approx 10 acres in size. The centre of the development site lies at national grid reference TF103212.

3. PLANNING BACKGROUND.

The development proposed is a residential development and is awaiting planning permission from South Kesteven District Council.

Planning Applications SK 0266/92/12
SK 0270/92/12 amended.

4. ARCHAEOLOGICAL BACKGROUND.

4.1 The development area is situated within an area of intense archaeological activity.

4.2 Part of a substantial Romano-British settlement lies in the northern area of the site. This site was deiscovered by the English Heritage funded Fenland Survey project and is described in the publication East Anglian Archaeology 55 (1992):

> "the site represents one substantial settlement... clusters of limestone building rubble and tiles, including hypocaust fragments, litter the area. Dated pottery indicates the site was long lived and the early Saxon pottery hints at continuity."

4.3 Other Roman remains near to the site include the Car Dyke to the east of the proposed development. The Car Dyke is a large water course of probable Roman date. Excavation has indicated its original width to have been approximately 12 metres and its depth approx. 4 metres. A section of the Car Dyke has been designated a Schedules Ancient Monument just to the north of this proposed development (SAM 297).

4.4 Two linear cropmarks can be seen crossing the southern part of the application site, east to west, on RCHME aerial photograph SF1721-5.

4.5 Medieval pottery has been recovered from a number of locations nearby, including at NGR TF100208 and TF107210, and the find of a possible Saxon pot is reported from a gravel pit off Mill Drove at NGR TF10192114.

5. REQUIREMENT FOR WORK.

5.1 Prior to this scheme of development being undertaken a detailed desk top assessment and a field evaluation must be carried out. The desk-top assessment phase must be completed prior to the evaluation. Any adjustments to the brief for the evaluation should only be made after discussion with the Community Archaeologist of South Kesteven District Council. If any major archaeological discovery is made it is hoped that this will be accommodated within the scheme and preservation in situ be given due consideration.

5.2 The purpose of the archaeological evaluation should be to gather sufficient information to establish the presence/absence, extent, condition, character, quality and date of any archaeological deposits.

6. STAGE OF WORKS AND TECHNIQUES.

6.1 The archaeological evaluation must be preceded by a fully detailed desk-top assessment. This will indicate the presence of any archaeological constraint hitherto unidentified. As this detailed desk-top assessment will be followed by a field investigation of the sites identified and an evaluation of the threat to their survival in situ, the project specification must be sufficiently flexible.

6.2 The desk-top assessment should include an assessment of the site within both the local and regional context. It should highlight any particularly relevant research priorities which may be addressed by this project.

6.3 In order to ensure that all possible archaeological constraints are evaluated all secondary sources must be consulted as part of the desk-top assessment. Sources to be consulted should include:

6.3.1 Lincolnshire Sites and Monuments Record;

6.3.2 All Ordnance Survey maps;

6.3.3 Tithe, Enclosure Award and Parish maps (where appropriate);

6.3.4 Historical documents, particularly those held in Lincolnshire Archives Office;

6.3.5 Archaeological books and journals;

6.3.6 Unpublished reports and archives (where appropriate),particularly those of the South Kesteven Community Archaeologist;

6.3.7 Aerial photographs;

6.3.8 Any other sources deemed appropriate;

6.3.9 A visit to verify site conditions.

6.4 The specification will be expected to contain a reasoned discussion of field techniques selected, for the evaluation phase. The rejection of a particular technique must be explained. Consideration should be given to field-walking, site survey, geophysical survey and the observation of geotechnical test-pits (if appropriate) as well as the undertaking of archaeological test-pits as possible field evaluation techniques. When preparing the specification, account must be taken of the local geology, topography and land-use as it affects the feasibility of the various techniques.

6.5 The evaluation should also take into account environmental evidence and provide an assessment of the viability of such information should further archaeological work be carried out.

7. METHODS.

7.1 In consideration of methodology the following details should be given in the contractor's specification:

7.1.1 A projected timetable must be agreed for the various stages of work.

7.1.2 The staff structure and numbers must be detailed. This should include lists of specialists and their role in the project.

7.1.3 It is expected that all on-site work will be carried out in a way that complies with the relevant Health and Safety Legislation and that due consideration will be given to site security.

7.1.4 The techniques applied in field survey, if undertaken, must be described in full. These should include the conventions applied in earthwork survey presentation, the spacing of transects and presentation of statistical data from field walking and the plotting of aerial photographs.

7.2 Excavation is a potentially destructive technique and the specification should include a detailed reasoning behind the application of this technique. The following factors should be borne in mind:

7.2.1 the use of an appropriate machine with a wide, toothless ditching blade;

7.2.2 the supervision of all machine work by an archaeologist;

7.2.3 the machine should be used to remove topsoil down to the first archaeological horizon;

7.2.4 the most recent archaeological deposits are not necessarily the least important and this should be considered when determining the level to which the machining will be carried out;

7.2.5 when archaeological features are revealed by machine these will be cleaned by hand;

7.2.6 a representative sample of every archaeological feature must be excavated by hand (although the depth of surviving deposits must be determined, it is not expected that every trench will be excavated to natural);

7.2.8 any human remains encountered must be left in situ and only removed if absolutely necessary. The contractor must comply with all statutory consents and licences under the Disused Burial Grounds (Amendment) Act, 1981 or other Burial Acts regarding the exhumation and interment of human remains. It will also be necessary to comply with all reasonable requests of interested parties as to the method of removal, reinterment or disposal of the remains or associated items. Attempt must bemade at all times not to cause offence to any interested parties;

7.2.9 it is expected that an approved recording system will be used for all on-site and post-field work procedures.

8. MONITORING ARRANGEMENTS

8.1 The Community Archaeologist of South Kesteven District Council will provide a monitoring programme to ensure that fieldwork meets the specification. To facilitate this, she should be contacted at least one week prior to the commencement of the fieldwork.

9. REPORTING REQUIREMENTS

9.1 The final report must be produced in two stages. There must be a preliminary report of the desk-top assessment. This report must:

9.1.1 summarise all available information;

9.1.2 provide a comprehensive list of all sources consulted along with an explanation if sources detailed in paragraph 6.2 are not consulted;

9.1.3 outline all possible options for further work, including recommendations for alterations to the original evaluation specification.

9.2 The second stage shall be an evaluation report which should be a straight-forward account of the fieldwork carried out and should be produced within two months of the completion of the fieldwork phase. If this is not possible then the Community Archaeologist must be consulted at the earliest possible opportunity. The report should include:

9.2.1 plans of the trench layout and features therein;

9.2.2 tables summarising features and artefacts together with a full description and brief interpretation;

9.2.3 plans of actual and potential deposits;

9.2.4 a consideration of the importance of the findings on a local, regional and national basis;

9.2.5 a consideration of the evidence within the wider landscape setting;

9.2.6 a critical review of the effectiveness of the methodology;

9.2.7 recommendations for further work or aspects to be considered as part of the archaeological strategy to mitigate the impact of the development to be adopted by the developer.

9.3 A copy of the desk-top assessment and evaluation reports must be deposited with the South Kesteven Community Archaeologist and with the Lincolnshire Sites and Monuments Record and the Developer.

10. ARCHIVE DEPOSITION

10.1 Arrangements must be made with the land-owner(s) and/or the developers and the City and County Museum, Lincoln for the deposition of the object and paper archive. Preliminary discussion must take place prior to fieldwork commencing and the receiving museum must be named at the tender stage.

10.2 If the receiving museum is the City and County Museum, Lincoln then the archive should be produced in the form outlined in that Museum's document 'Conditions for the Acceptance of Project Archives' Document, see address below. The City and County Museum should be contacted at the earliest possible opportunity so that the full cost implications of the archive deposition can be taken into account.

11. PUBLICATION AND DISSEMINATION

11.1 The deposition of a copy of the report with the Lincolnshire Sites and Monuments Record and the South Kesteven Community Archaeologist will be deemed to put all the information into the public domain, unless a special request is made for confidentiality. If material is to be held in confidence a timescale must be agreed with the Community Archaeologist, but it is expected that this shall not exceed six months. A short note should be presented to the editor of Lincolnshire History and Archaeology and consideration be given to a full account being published in due course.

13. ADDITIONAL INFORMATION.

13.1 This document attempts to define the best practice expected of an archaeological evaluation but cannot fully anticipate the conditions that will be encountered as work progresses. However, changes to the approved programme of evaluation work are only to be made with the prior written approval of the Community Archaeologist.

13.2 Further contact addresses:

Mr M Parker
M Parker and Sons
St Johns Road
Spalding
Lincolnshire
PE11 1JX.

Mr T Page
City and County Museum
12, Friars Lane
Lincoln
LN2 5AL.

Ms R Waller
South Kesteven Community Archaeologist
Heritage Lincolnshire
28 Boston Road
Sleaford
Lincolnshire
NG34 7ET

Mr S Catney
Archaeological Officer
Lincolnshire County Council
12 Friars Lane
Lincoln
LN2 5AL

Brief set by Community Archaeologist, South Kesteven District Council. December 1993.

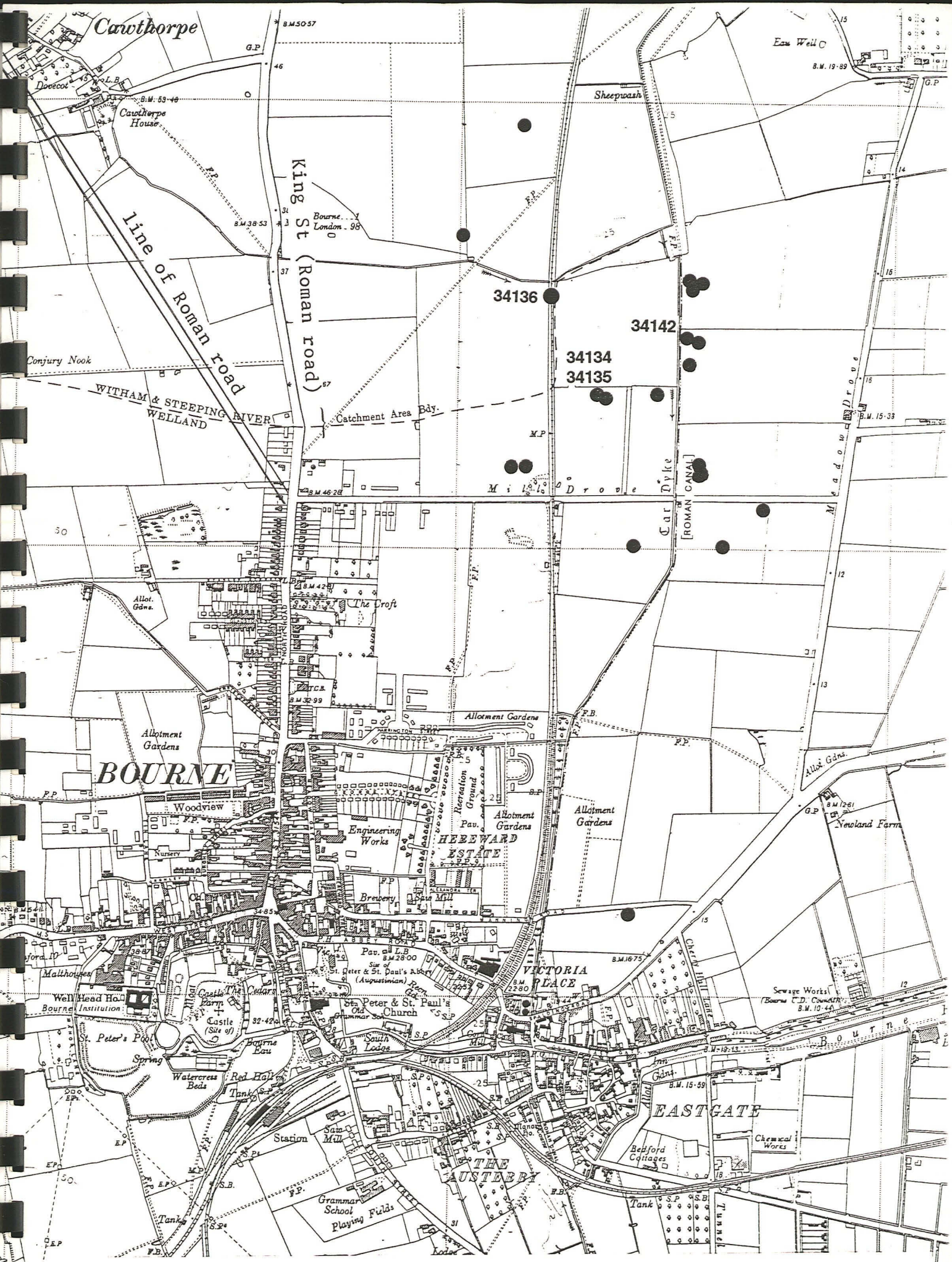


Fig. 1. Mill Drove, Bourne. Site location showing known archaeological remains. Reproduced from the 1951 OS 1:10560 scale map with permission of the Controller of HMSO, Crown copyright. Licence no. AL50424A.