An Investigation of Multi-Period Cropmarks at Manor farm, Harston

Cambridgeshire County Council

Rural Strategy

AN INVESTIGATION OF MULTI-PERIOD CROPMARKS AT MANOR FARM, HARSTON

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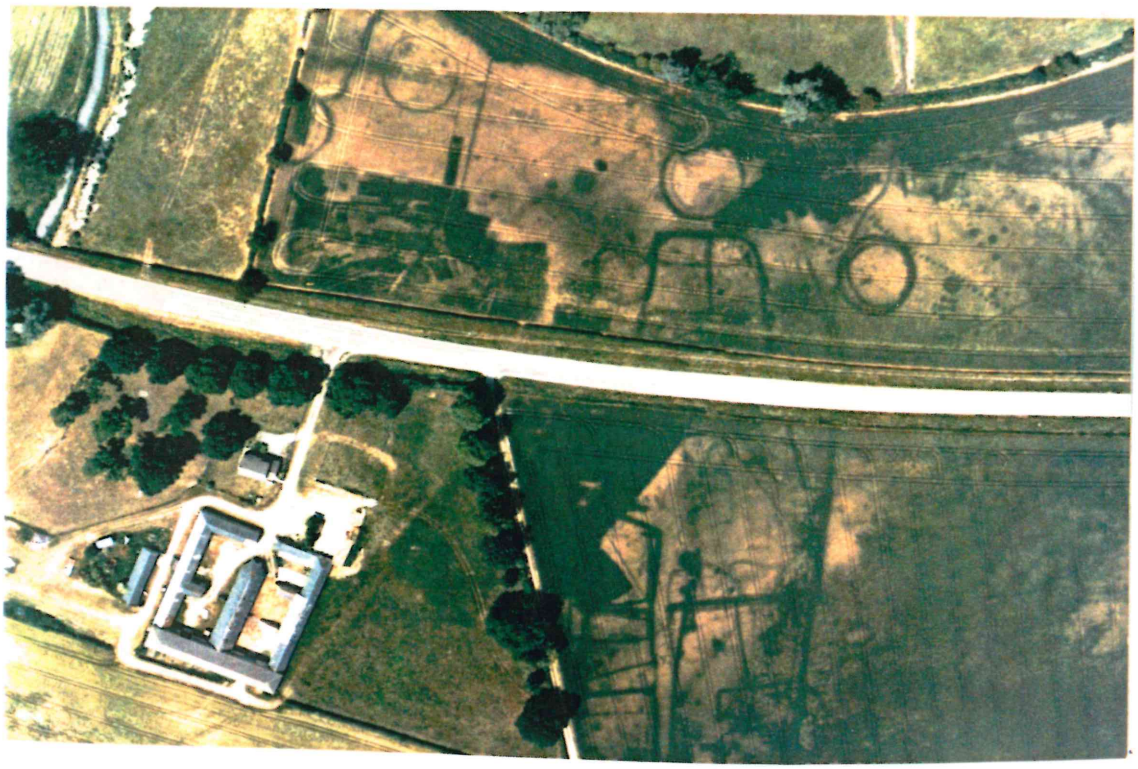

Report no. 54

Photograph by Rowland Parker

cambridgeshire archaeology

AN INVESTIGATION OF MULTI-PERIOD CROPMARKS AT MANOR FARM, HARSTON

(scheduled ancient monument: Cambs 215)

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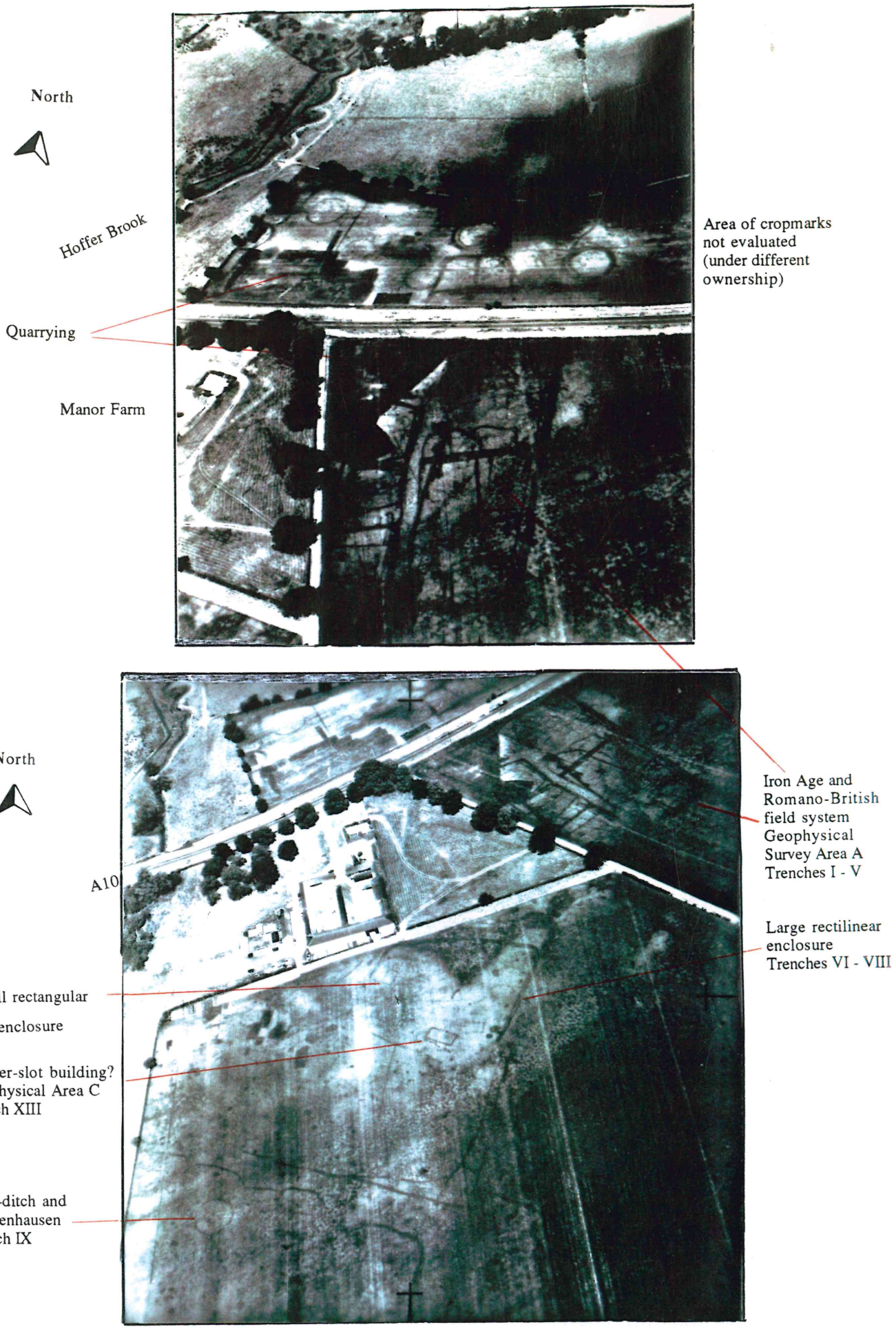

Figure 1 Aerial photographs showing cropmarks at Manor Farm

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SUMMARY

Field-work at Manor Farm, Harston, has shown that a cropmark complex scheduled as an ancient monument in 1978 retains substantial features immediately below shallow ploughsoil. Four main periods of occupation can be assigned: Bronze Age, 1st century AD, 4th century, and Anglo-Saxon. Apart from late Mesolithic and Neolithic flintwork found during fieldwalking, the earliest features are two Bronze Age ring-ditches, one containing cremated bone. A group of field ditches may also be a product of Bronze Age activity. Iron Age and Romano-British occupation can be seen from an extensive field system that contained two discrete assemblages. The earlier one dates to the 1st and 2nd centuries AD, when it appears that a reasonably wealthy community lived on the site with locally produced pottery in Late Iron Age tradition. There is little indication of activity in the immediate area during the 3rd century, but it was occupied again in the 4th century. The character of settlement in this period was different from that of earlier times with all pottery being imported to the area, and it is possible that this occupation continued into early Saxon times. The fourth main period of occupation was represented by the finding of a possible grubenhaus reusing the central part of a ring-ditch. Medieval and post-medieval land-use was recognised from fieldwalking finds and can be attributed to manuring, but does not seem related to specific features.

INTRODUCTION

Manor Farm, Harston has, until recently, been part of the Farms Estate of Cambridgeshire County Council. Fieldwork was undertaken at Manor Farm briefly in 1989 as part of an archaeological survey of the Estate, and more fully in 1991. Funding on both occasions was by English Heritage.

Aims of the project

Although cropmarks at the site had been evident for many years, existing preservation of archaeological features was an unknown quantity. The current work programme was put forward to assess the degree of destruction from present farming practices, and, in the light of this to recommend lasting protection, or descheduling of the monument.

Work in 1991 was the product of two research designs: i) "The Archaeology of the Cambridgeshire County Farms Estate" (Malim 1990) was a review of archaeological sites on County farmland with recommendations of how best to manage the archaeological resource. It highlighted sites vulnerable to ploughing that required further evaluation before informed management schemes could be proposed, and Manor Farm was one of these sites which had known archaeological potential but showed recent damage from agricultural activity; ii) Potential was recognised from cropmarks, but work in the region over the past few years had shown very variable quality in survival of cropmark sites, and even when very good and recent air photographic evidence existed, the location of these sites through field walking and trial trenching has proved elusive (French pers. comm.; Taylor 1977; Malim, Wait 1990). Thus this project forms part of a programme for evaluating cropmark sites in general to assess their degree of preservation in relation to different geological settings, and to examine which methods of archaeological investigation are most suited to these sites.

As a spur to these dual aims the County Council decided to sell Manor Farm, but was prepared to put a covenant on the sale requiring no further ploughing of the fields containing the scheduled monument provided that evidence was given for the archaeological importance of the site, and for demonstrable continuous damage by the plough.

Geological and topographical setting

The site lies in the valley of the Cam immediately east of the meandering path of Hoffer Brook. Natural geology of sands and gravels is confused where colluvial activity has spread chalky-marl deposits over the gravels from a chalk ridge bounding the area to the south. A similar chalk ridge runs west-east on the north side of the Cam. A relict stream-bed from Hoffer Brook was found in Trench XI and a buried soil could be seen in the western part of the assessment area (see Appendix I: soil report by C.French). Over much of the monument, however, ploughsoil c.0.2-0.3m thick came immediately onto the weathered subsoil into which archaeological features had been cut.

Background archaeological knowledge

No excavations had been carried out prior to this project, but the discovery by a Mr. Pape of a skeleton with bi-facially flaked flint knife had been reported from Manor Farm in 1961 (SMR). Unfortunately it has proved impossible to follow up this lead. The only Mr. Pape who currently lives locally has no knowledge of it and the Museum of Archaeology and Anthropology knows nothing about the find.

To the south, lynchets can be seen on Rowley's Hill, and a clunch pit here is reputed to have been used for extracting materials for construction of the barns at Manor Farm.

Two kilometres east, following the contour of the chalk ridge, 2nd-4th century Roman pottery kilns were discovered by J. Pullinger during construction of the M11 in 1977 (Pullinger 1981), and excavations of various Iron Age and Roman sites were conducted at Haslingfield (Pullinger 1981) and Shelford (Alexander et al 1975). Villas at Hoffer Brook, Foxton, and Shepreth have been investigated by Rowland Parker (unpublished).

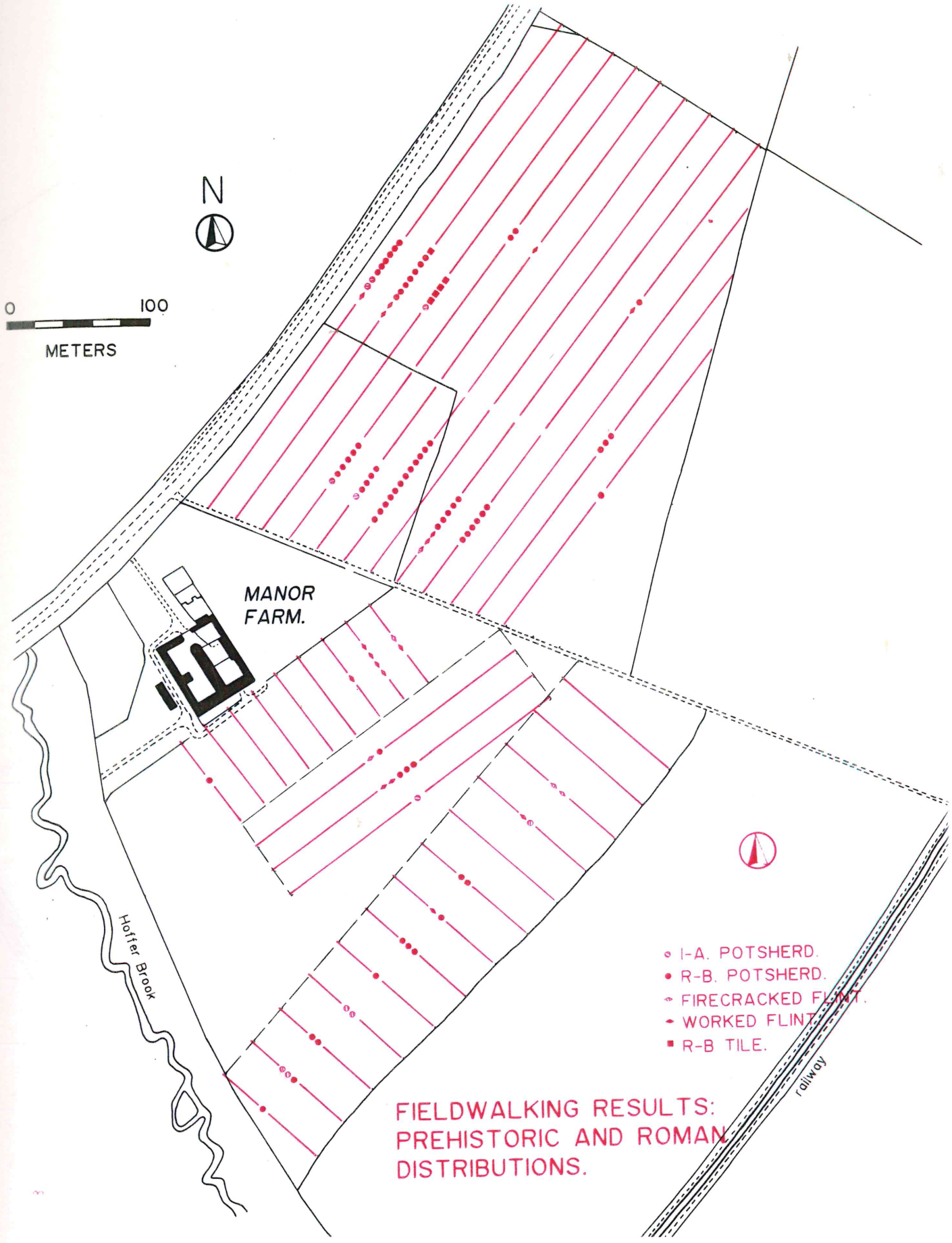


Figure 2 Fieldwalking results: prehistoric and Roman

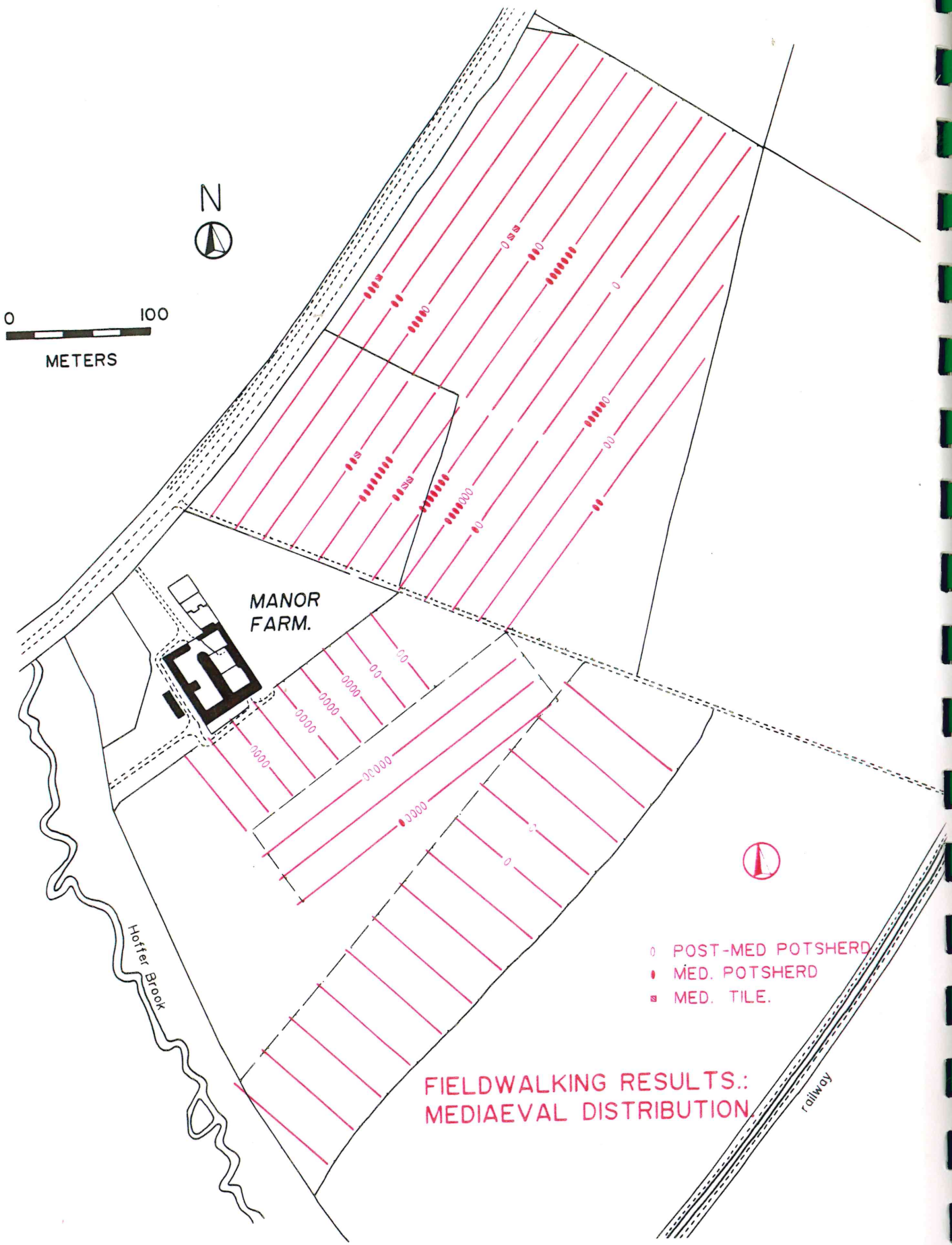


Figure 3 Fieldwalking results: medieval

METHODOLOGY

Air Photographs

Air photographs had been plotted by Rog Palmer during a Sites and Monuments Record enhancing programme by Cambridgeshire County Council as part of a Community Programme. They were digitised and rectified by means of a computer programme developed by him, and a remarkable degree of accuracy to within 1 or 2 metres has been achieved.

Features seen from the air (Fig. 1) are dominated by a pattern of rectilinear enclosures and trackways. Pit alignments and a major (boundary?) ditch are also apparent to the north-east, whilst at least two ring ditches can be seen immediately south of Manor Farm. In the field just north of the A10 a concentration of ring ditches can be seen, as well as a continuation of the field system under investigation. An area of quarrying is clearly visible at the junction of the A10 and farm track.

Interpretation

Professor St. Joseph (pers. comm.) interpreted the small enclosures and trackways east of Manor Farm as being ditches of a Roman field system, whilst features south of it comprised rectangular plans of foundation trenches for timber buildings, with smaller sub-square cropmarks resembling pits of grubenhausen. A cluster of small marks near Hoffer Brook may represent graves. In conclusion this area not only contains ring ditches but also substantial evidence of Anglo-Saxon settlement.

Fieldwalking

Initial fieldwalking was conducted as part of the County Farms Survey in 1989. The aims of this were merely to give approximate dating to the site, and to see whether fresh damage was occurring. Transects 20 metres apart were walked with collection units being the entire length of the transect. Visibility conditions were good and observations in the field were noted down at the time. Crop growth in the southern half of our study area made it impossible to complete the field-walking programme in 1989, but in 1991 this remaining part was walked following the procedure set out above, so that results would be comparable.

Results of this fieldwalking (Figs. 2 & 3) included Iron Age pottery on both sides of the farm track, some sherds being large with fresh breaks, which indicated recent plough disturbance. Roman pottery spread eastwards and northwards but largely stayed within the area of known cropmarks. However, a tile concentration, including examples of Roman date, was noted north of these. Iron Age and Roman pottery were also found in the southern part of the south field.

Medieval and post-medieval pottery was found spread evenly over the field east of Manor Farm, with a concentration of later post-Medieval sherds scattered immediately south of the farm buildings.

Two low banks were just visible in the east field, running perpendicular to the A10. These could be the remains of field boundaries.

Worked flints were sparse but do appear to show a concentration immediately east of Manor Farm.

Geophysical survey

Bradford Geophysical Surveys conducted a magnetometer survey of one hectare over concentrated cropmarks immediately north-east of Manor Farm, with two subsidiary areas of 1000 square metres each in the south field (areas A, B, and C respectively on figs. 4 & 5). This programme of work was designed to compare the evidence of air photographs with that from the magnetometer survey (for a fuller account see appendix IV). Areas A and C were later trenched to compare excavated results with those from geophysical surveying.

A magnetometer was chosen for the sake of rapidity of data collection, and as the best technique for looking at ditched features revealed by cropmarks. Maximum search depth of a magnetometer is estimated to be 1 metre, and generally it is not possible to give relative depths of features, or to phase them. Surveying on sands and gravels produces results of very variable quality, but results obtained at Manor Farm were good and clear.

Area A was selected to test geophysical results against an area full of known archaeological features seen as cropmarks. A major ditch on air photographs seemed to form a boundary between complex activity to the west and a large relatively empty area to the east. Geophysical plots in the field and in the final report proved unambiguous and illuminating. They enhanced our understanding of the cropmark pattern by adding some previously unseen features, and by producing a plan at greater detail and accuracy than that possible from air photographs. Chris Gaffney remarks on the low magnetic strength of the anomalies, which he suggested could have been due to physical erosion of the features, or else to considerable similarity between the subsoil and the fill of features cutting it. Cropmarks further east of the boundary ditch do not show, and on excavation they were not definitely identified, although there were some curious natural features in this area. If these cropmarks were real archaeological features, then their failure to show on the magnetometer survey or during excavation suggests that they may have been totally ploughed out since the air photograph was taken

Area B was selected to study part of the south field which was devoid of cropmarks. Slight anomalies were detected, perhaps pits, but there was little of archaeological interest here, which seemed to confirm aerial photographic evidence. However Trench XII adjacent to the survey area, contained ditches and pits. These were filled with deposits very similar to the chalky subsoil into which they were cut, thus perhaps explaining their ephemeral response to surveying and to aerial photography.

Area C was selected to look at a small rectangular enclosure, interpreted from air photographs as a possible Anglo-Saxon building (St. Joseph, pers. comm.). Features were plotted from the survey, but did not add greatly to the air photograph evidence. In contrast excavations revealed a complex pattern of pits, postholes, and ditches seen in Trench XIII.

Evaluation trenches (Figs. 4 and 21)

Twelve trenches (approximately 50m long) were orientated variously north-south or east-west, and positioned to effectively sample all major cropmark groups over the extent of the two fields under study. In addition one of these trenches examined an area devoid of cropmarks to see if such a blank area really denoted an absence of archaeological features. These original trenches were widened and supplemented at times to clarify specific problems that arose as a result of the geophysical survey or from the excavations.

Trenches I - V were set in the field north-east of Manor Farm. All ran north-south and were approximately 1.5m wide. They were positioned to examine the rectilinear field system composed of ditched enclosures, ditched trackways, and a presumed major boundary ditch. **Trench XIV** was a short supplementary cut crossing the major ditch at right angles, which allowed data to be rapidly gathered about this "boundary".

All trenches in the north field were dug after the magnetometer survey had been completed (see fig. 5).

Trenches VI - VIII investigated the large double ditched rectilinear enclosure immediately south-east of Manor Farm. **Trench XIII** was put in to supplement Trench VIII and to investigate the information provided by cropmarks and confirmed by magnetometer, that a small enclosure may be that of a building.

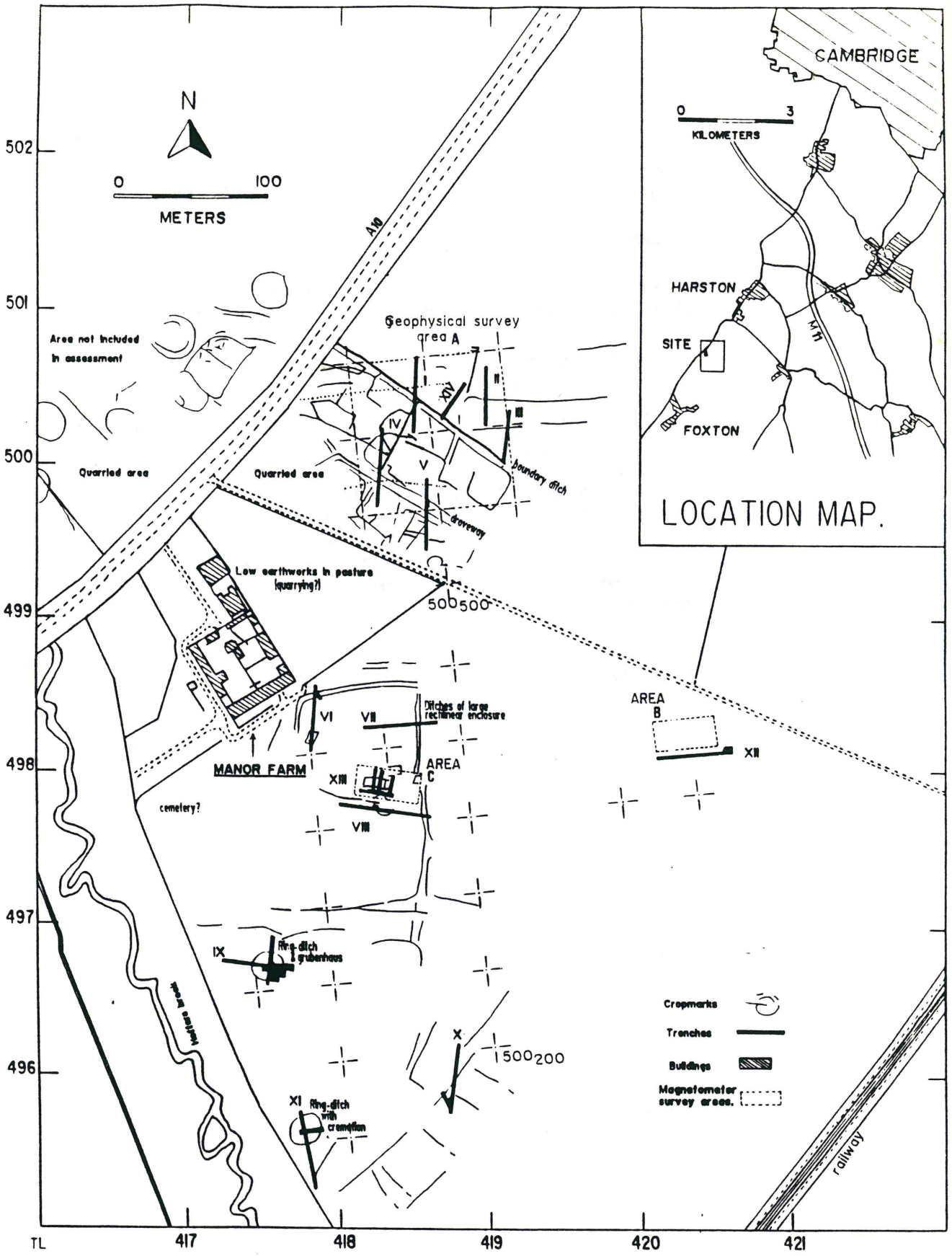
Trenches IX and XI were designed to cross ring ditches, enabling confirmation of these features as ploughed down barrows and locate any extant central burials.

Trench X was located to investigate ditches forming a disturbed pattern of enclosures which showed on air photographs in the south of our study area.

Trench XII ran east-west in an area apparently sterile of archaeological features, and was designed to check on this assumption.

All trenches uncovered archaeological features, and the initial surveying to establish the location of these trenches came to within a metre of where we wanted them. This accurate surveying enabled us to bi-sect cropmarks exactly, confirming the precision of air photograph plotting using the computer rectification programme designed by Rog Palmer. Virtually all features seen as cropmarks were found and identified in the trenches, plus many more.

Trenches were planned at 1:100 with rapid preliminary recording of features. A selection of these features were excavated to give information on the date and nature of archaeological remains.



HARSTON MANOR FARM 1991.

PLAN SHOWING CROPMARKS AND ASSESSMENT TRENCHES.

Figure 4 Location map and site plan showing cropmarks, areas surveyed with magnetometer, and position of archaeological assessment trenches

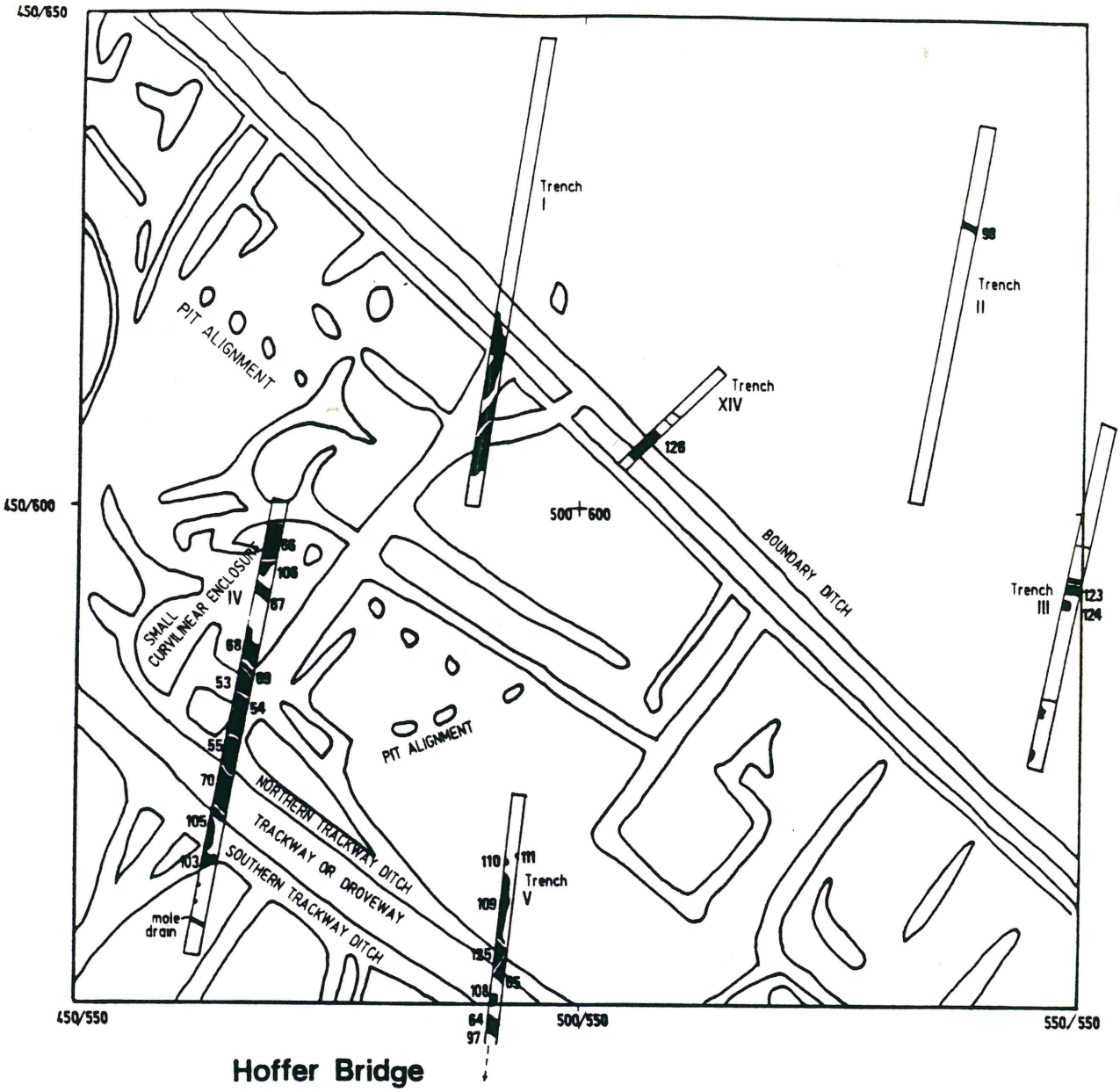


Figure 5 Interpretation of geophysical survey, with archaeological assessment trenches and features superimposed on the plan

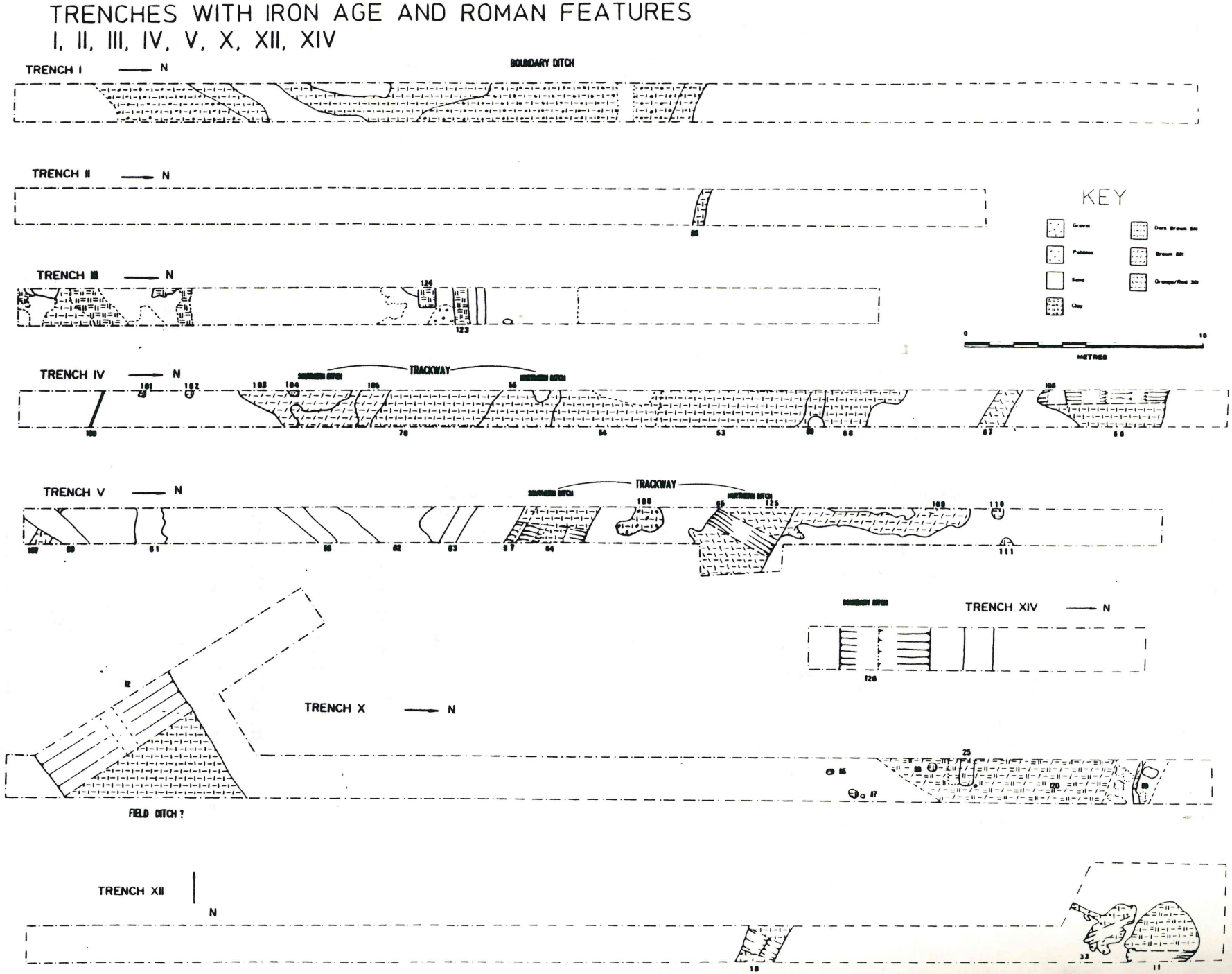


Figure 6 Trench plans: features mostly of Iron Age and Roman dates

RESULTS

Description of trenches (Figs. 4 - 15)

Trench I (Figs. 5 & 6) was 50m by 1.5m. It was orientated north-south, and was located to cross the northern perimeter of cropmark activity, examining a trackway with a large ditch on the north-eastern side which seemed to form a boundary between archaeologically active areas and apparently sterile areas.

The north part of the trench had natural gravels lying immediately beneath 0.3m of topsoil. Half-way down the trench a feature cut natural subsoil and further south of this there was much disturbance by bands of gravelly-silts diagonally criss-crossing the trench. None of these features were excavated, but it could be suggested that the northern most feature is that of the "boundary" ditch seen from air photographs. This feature was 3m wide and filled with dark brown silt and pebbles, gravel-silt, and a band of gravel on the south edge (see trench XIV for further details). Further south there was an area of gravelly-silt, which led onto a dark brown silt deposit with gravel bands, containing some fragments of bone and pottery. All this obvious disturbance could be the tops of ditches seen from air and magnetometer surveys.

Trench II (Figs. 5 & 6) was 40m long by 1.5m. It was orientated north-south and was positioned to examine an area largely devoid of cropmarks, apart from one tentative east-west ditch. No features were detected by magnetometer survey.

Topsoil was 0.26-0.28m deep before natural gravel was exposed. Only one feature cut this, a narrow gully 12m from the north end of the trench. It was 0.4m wide and had a dark brown silty-clay fill. No artefacts were found and it is possible that this was a natural feature, but it seems unlikely that such a slight feature caused a cropmark.

Trench III (Figs. 5 & 6) was 35m long by 1.5m. It was orientated north-south close to trench II and was designed to sample part of the possibly "sterile" area north-east of the cropmarks. Two tentative ditches running east-west had been spotted on air photographs, but magnetometer surveying revealed no features in this area.

Topsoil 0.15m deep at the south end thickened to 0.36m at the north. Gravel bedrock was interrupted by irregular (linear) chalk-marl filled features over much of the south end, which must be of natural origin. Two gulleys filled with dark brown clay were found half-way down the trench. These may have been archaeological features, but they had no associated artefacts. They were approximately 0.5m wide, but it is hard to imagine that they were responsible for even tentative cropmarks.

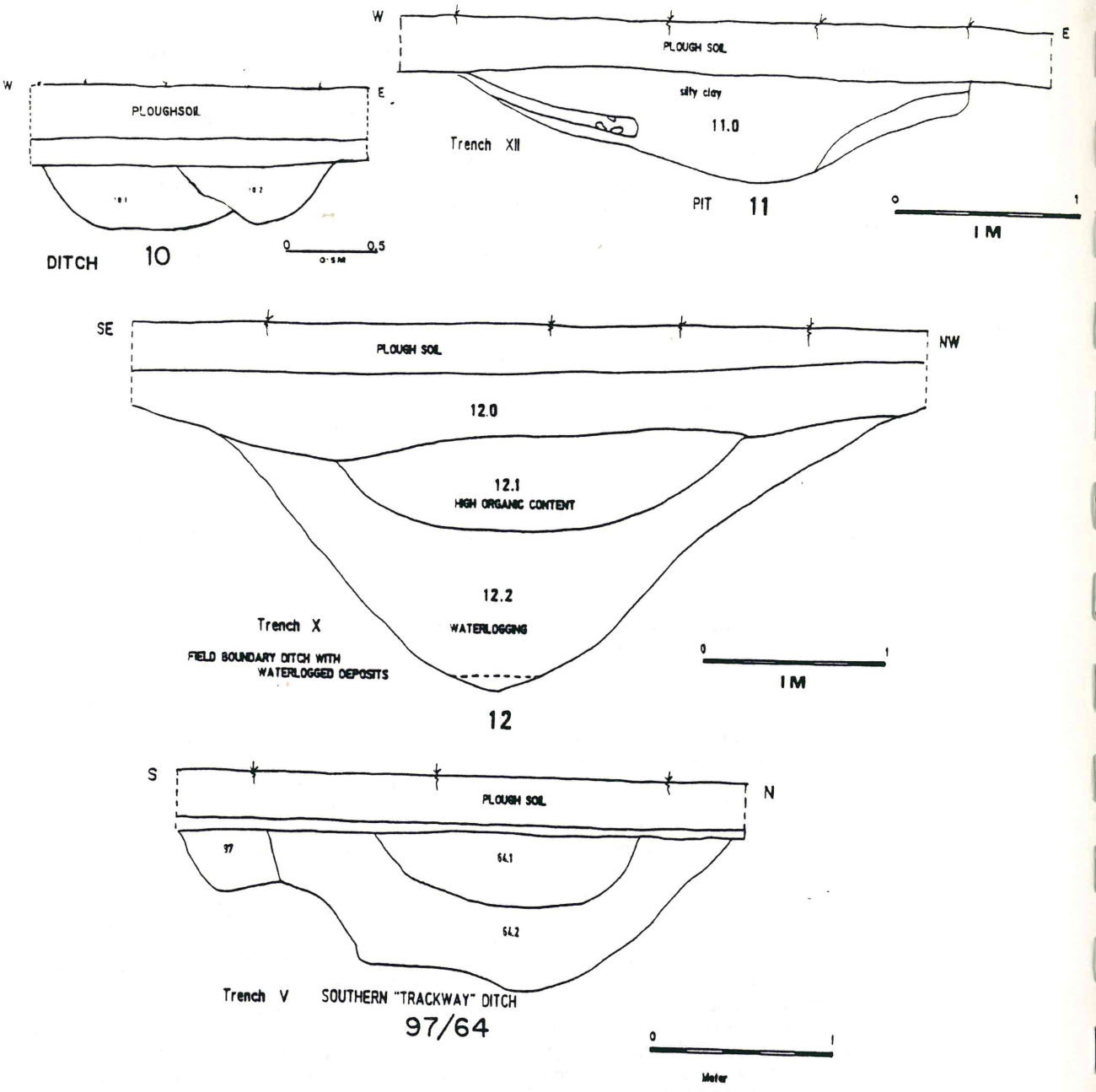
Trench IV (Figs. 5 & 6) was 50m long by 1.5m. It was orientated north-south and was laid out to cut a mass of enclosure ditches and a trackway seen on air photographs. The magnetometer plot also revealed a wealth of features in its path, mirroring those seen from cropmarks.

The trench had 0.3-0.35m of topsoil before archaeological features could be seen cutting the natural gravels. However, pottery and bone could be seen in the topsoil above many features, clearly indicating recent disturbance from ploughing. All ditches interpreted from the magnetometer survey can be correlated with features found during excavation.

At the north end of the trench a large ditch crossed east-west, and cut a mid-brown silty filled pit (106). This contained two sherds of Late Iron Age pottery. The **ditch (66)** (Fig. 8) had been filled by three distinct layers of silty-clay with flint inclusions. Pottery and animal bone were found in all layers, but only two sherds dating to the mid 2nd century AD were found in the basal layer, which filled a narrow straight-sided gulley. Above this the ditch widened to 4m and the middle fill contained seven sherds of Romano-British pottery, of which two pieces of Horningsea ware and one rim in Iron Age tradition. A piece of tegula was also found. The latest fill was found only in the centre of the ditch and had an odd group of sherds that appeared to be burnt. Dating of these was not precise, but they are definitely Romano-British and included a copy of a Samian foot-ring. A copper-alloy strip was also found. Thus ditch 66 can be given a late 2nd century date, and seems to be part of a curvilinear enclosure seen from air and magnetometer surveys.

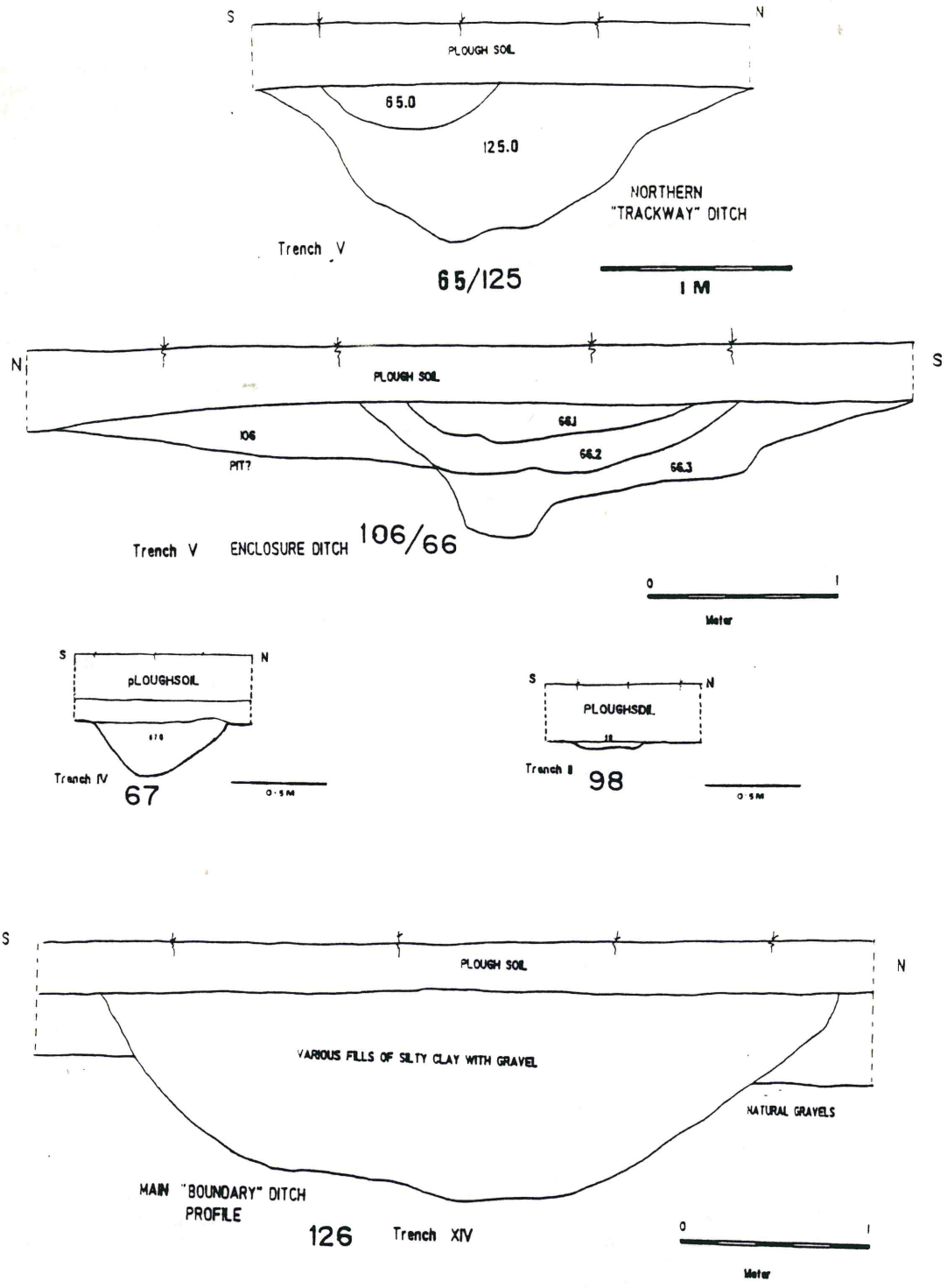
Close to this major ditch another a metre wide (67) (Fig. 8) was excavated. It had an orange-brown silty fill and contained some animal bones and Roman-British pottery.

Further south a complex of ditches cutting one another (features 68, 53, 55, 70, 105) seem to come at the right point for the trackway and its attendant ditches recognised by cropmarks and geophysical surveying.



SECTIONS THROUGH ROMAN DITCHES

Figure 7 Sections of Iron Age and Roman features



SECTIONS THROUGH ROMAN DITCHES

Figure 8 Sections of Iron Age and Roman features

Trench V (Figs. 5 & 6) was 46m long by 1.5m. It was orientated north-south and was positioned to cross trackway and enclosure ditches seen as cropmarks. Only the northern half of the trench entered the area surveyed by magnetometer, but large ditches on either side of the trackway appeared on the plot and were clearly identified in their correct positions during excavation of the trench.

Two postholes were found at the north end of the trench, with an uneven linear feature (109) stretching south from them. This was probably of natural origin, and it was cut by a major ditch (125), the northern side of a trackway. Two main phases could be seen, with **ditch 125** filled by an orange-brown silty clay with flint inclusions, containing Late Iron Age pottery and animal bones (Fig. 8). This ditch fill was recut by (65) which could be seen as a darker brown fill with less stone inclusions. Pottery from this was well abraded and not very diagnostic, but generally fitted into 1st-2nd century tradition, and there was one piece of Nene Valley colour-coated ware (2nd-3rd century AD). Total width of ditch 125 was 3m, and it had a U-shaped profile 0.9m deep. **Recut 65** was 0.80m wide by 0.20m deep.

The trackway was 5m wide, bordered to the south by **ditch 64,** 2.5m wide, and 0.8m deep with an uneven U-shaped profile (Fig. 7). Two distinct fills could be seen with the earlier one lighter and with a greater concentration of flints than the later one, a recut 1.4m wide and 0.4m deep. The lower fill contained a 1st-2nd century AD assemblage, and a fragment of possible kiln floor. The later fill contained a well-abraded assemblage of many different vessel types, including Belgic and Horningsea wares, flagon fragments, a shell-tempered sherd, and a piece of Terra Nigra platter. Roof tile fragments were also found. A light brown silty clay deposit (97) had been cut through on the south side of ditch 64 and this may be the line of another smaller and earlier ditch. This contained daub fragments, and an assemblage of Late Iron Age pottery in a great variety of styles and wares.

Several more gullies and ditches crossed the trench south of this trackway area, but none were excavated. However, sherds gathered from the surface of these features show a similar assemblage to that in the trackway ditches dating to 1st and 2nd centuries AD.

Gully 63 contained more kiln furniture fragments, and sherds of hand-made pot in Late Iron Age tradition. In addition there were fine wheel-made wares and terra rubra style rims. This assemblage seems to be solidly mid 1st century AD.

Ditch 62 contained a Terra Nigra platter rim, flagon sherds, and some possible Belgic wares, dating the top fill of this feature to late 1st century.

Gully 56 contained kiln furniture and Late Iron Age tradition pottery. This seems to be hand-made but includes fine ware with combed decoration, and Samian (including Dr.18/31), giving a 2nd century date to the final fills of this feature.

Features 60, 61, and 107 had no finds to date them.

Trench VI (Fig. 9) was 44m long by 1.5m. It was widened at its north end to examine in more detail a complex (multiphase) ditch. It was positioned to cross a small rectangular enclosure (a possible tinber-slot building), and a pair of parallel ditches that enclosed an area of 5000 square metres on three sides. No geophysical prospecting was undertaken, but all features were clearly visible as cropmarks. Topsoil varied in depth from 0.9m at the north end of the trench to 0.5m at the south, before natural sands and small gravels were encountered. However, below a plough horizon of 0.3m, archaeological deposits could be seen, with features cutting through a darkish brown silty clay thought to be a buried soil (see appendix I).

At the north end a considerable volume of apparently dumped soil lies over a ditch (9) that was recut several times. These distinct phases may account for its appearance as a pair of ditches on aerial photographs. **Ditch 9** can be reconstructed with the following sequence of events (Fig. 11):

i) A ditch (9.7), 0.4m wide, was cut through buried soil and natural gravel.

ii) This ditch was filled and capped by sands and gravels from a new ditch (9.3) cut immediately north of it. The new ditch was 1.2m wide and had a post-hole (9.6) cut into its southern side.

iii) Ditch 9.3 showed gravel slippage as a primary fill on its north side, and thereafter filled with a homogeneous reddish brown clayey-silt with frequent gravel and some charcoal inclusions, very similar to the fill of the first ditch.

iv) A third phase of ditch replaced the earlier ones when deposits filling ditch 9.3 were cut on the north side by a 2m wide ditch (9).

v) The new ditch had primary fills (9.1) of light brown sandy-silt. These were interrupted on the south side by a recut.

vi) This recut was found to be filled with two deposits; an intermittent grey brown sandy-silt (9.4) on its north side, but with the bulk of the fill being a browner colour (9.2). Animal bone, pottery, and charcoal were found in all these deposits, in addition to occasional gravels.

vii) A further phase recut the ditch through fills 9.1 and 9.2.

viii) This final phase of ditch had a slippage of gravel down its north side, whilst the secondary, and bulk, of fill (9.0) was composed of dark brown clayey-sand.

All ditch profiles were well-rounded U-shapes, which, combined with evidence of gravel slippage in some phases, strongly suggests that the ditches were left open over a long enough period for substantial erosion to occur. Pottery recovered from the fills was unimpressive, but Romano-British wares were apparent in the latest fills, with some Iron Age pottery being identified from 9.4. The size and abraded condition probably indicates that these sherds were residual.

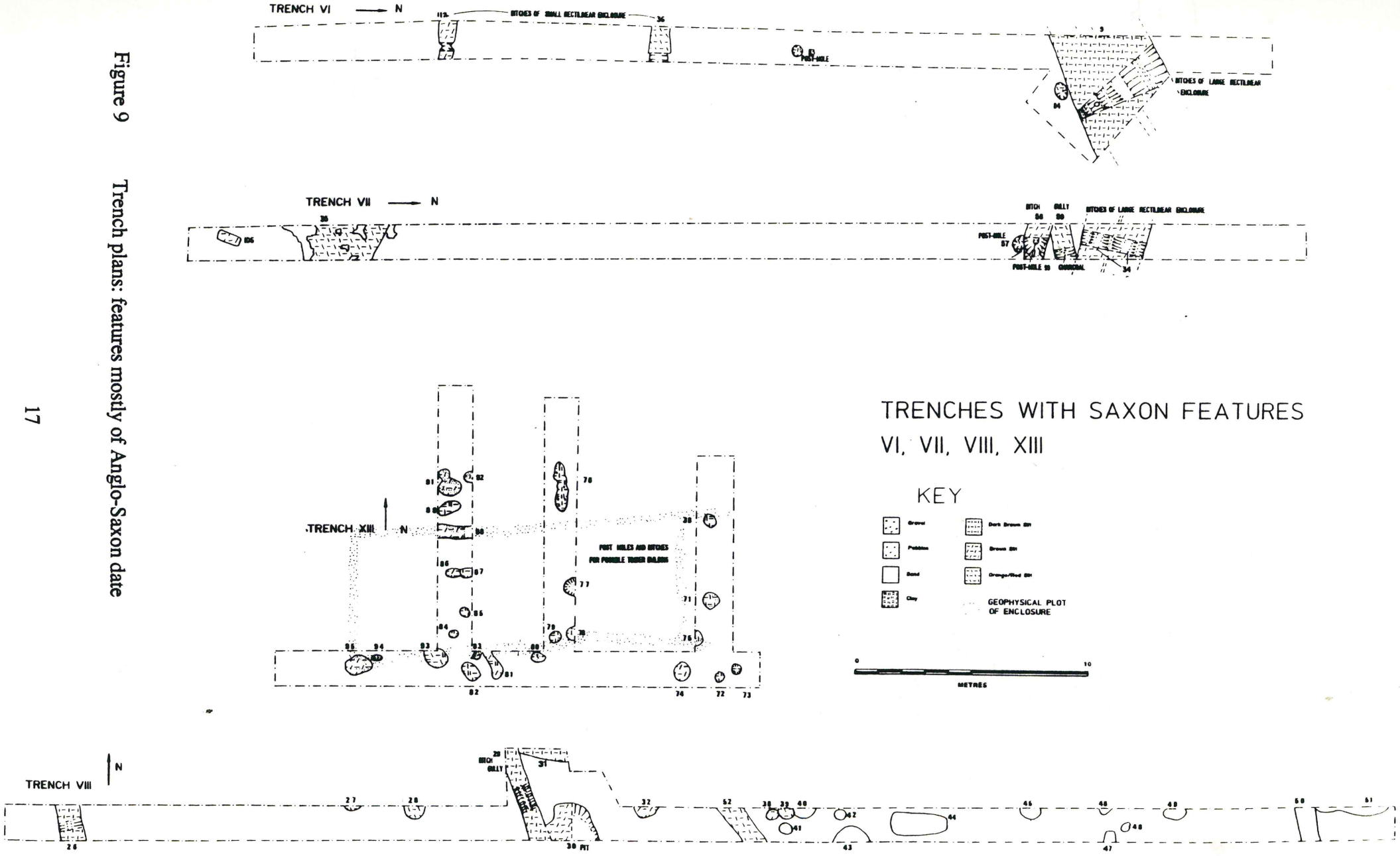


Figure 9 Trench plans: features mostly of Anglo-Saxon date

SAXON FEATURES
TRENCH VIII

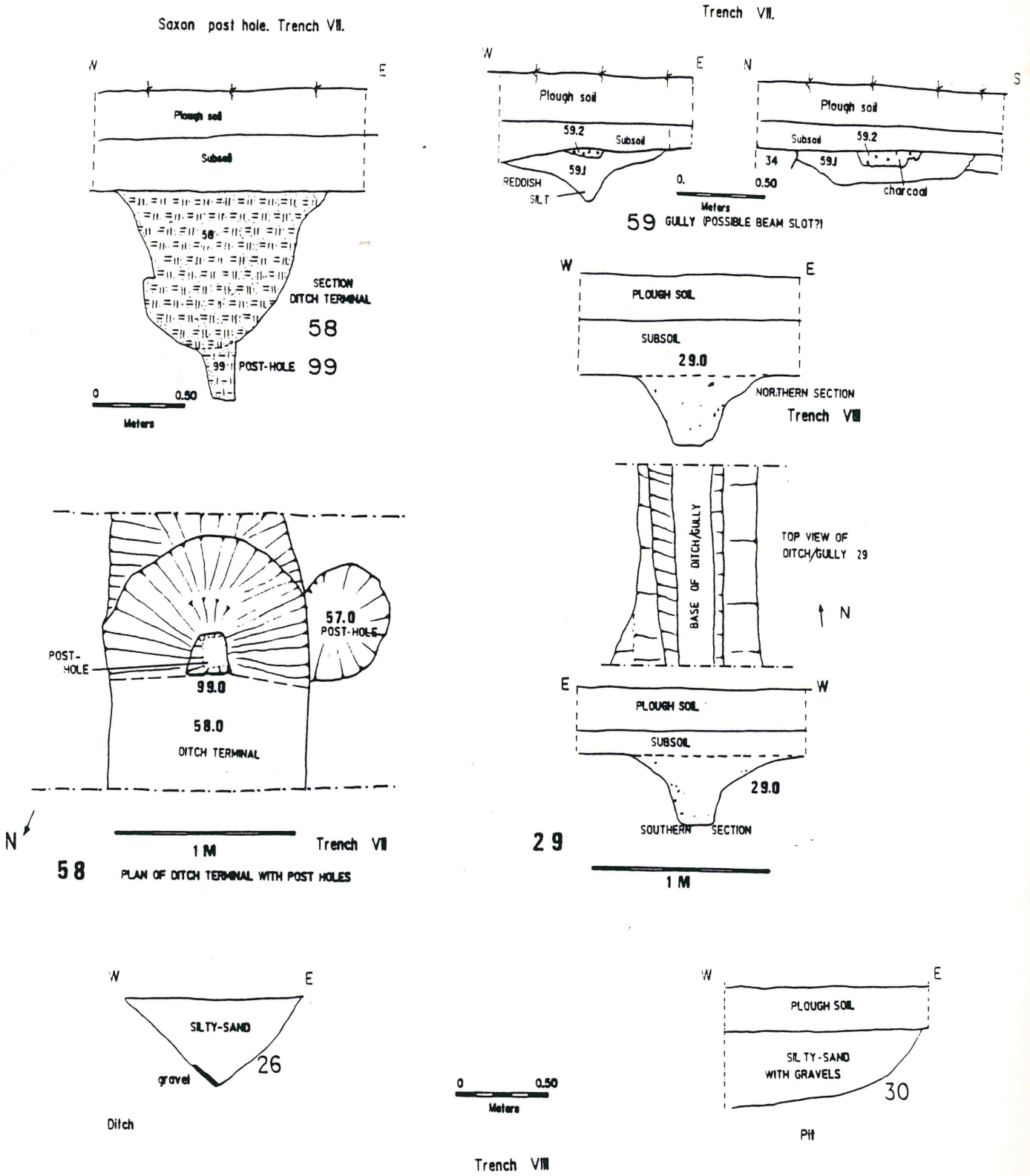


Figure 10 Sections and plans of Anglo-Saxon features

Further south in trench VI **ditches 36 and 112** are those that caused the cropmark of a small enclosure. They are 0.6m wide and filled with reddish brown sandy-silts with gravels. A small copper-alloy band was found in ditch 36.

The bases of two post-holes (113 and 114) were found cut into the natural. No packing was evident in their fills, but this would have been unnecessary to support a post set into sand and gravel. No pot, bone, or charcoal flecks were found in them.

Trench VII (Fig. 9) was 48m long by 1.5m wide. It was orientated east-west and located to section the eastern side of the double ditched "enclosure" discussed in trench VI. These ditches were found by excavation, and between 0.2-0.3m of ploughsoil lay over archaeological features, with a further 0.2m of subsoil until natural sand and gravel was found.

At the eastern end of the trench two ditches were found (34 and 58) (Figs. 10 & 11) which correspond to the double ditches revealed by cropmarks. A major recut in one ditch (34) can be seen, and there are also post-holes and shallow ditches clustered around.

Ditch 34 was almost 3m wide by 0.65m deep. There were two distinct cuts which contained exactly the same fills of brown silty loam with flint, chalk, and charcoal inclusions. In the section and during excavation no evidence showed which ditch cut the other, and it is possible that they were contemporary, although interpretation as a recut feature would seem to be more logical. Two out of three sherds of pottery found in this ditch have been identified as early Saxon.

Ditch 58 was 1.1m wide by 0.85m deep. It had a steep-sided U-shaped profile and was filled with a homogeneous sandy-silt with flints and occasional charcoal. A butt-end of the ditch was found during excavation and in this there was a **post-hole (99)** the base of which was 0.2m in diameter and continued at least 0.3m below the bottom of the ditch. It was filled with the same material as that in the ditch. A bone comb fragment of Anglo-Saxon type (illustrated Fig. 20) was found at the butt-end. Only two sherds of pot were found, one of which was chaff-tempered Anglo-Saxon, and the other a Romano-British body sherd.

Ditch 58 appears to have been cut by a small shallow pit (57) which may be associated with the post that filled 99, possibly as a pit containing a later supporting post. A shallow **gully (59)** (Fig. 10) is perhaps cut by ditch 58, because this gully runs diagonally across to ditch 34 which definitely cuts it, and so maybe was an earlier feature than the double ditches. No pottery was found in this gully, but a large area of burning was noted in it, suggesting wood burnt in situ.

Trench VIII (Fig. 9) was 60m long by 1.5m, except in the central section where it was widened to 4m to examine the junction of two ditches. It was orientated west-north-west by east-south-east and was positioned to cross the double ditches referred to above in trenches VI and VII. It was also designed to bi-sect a possible ring-ditch, plotted from cropmarks just to the west of the ditches. However it was not possible to match up any of the features revealed with those seen as cropmarks. Ploughsoil was 0.3m deep above archaeological layers.

A mass of probable post-holes, five small ditches or gullies, and at least two pits were found, but time allowed excavation of only a few features, the most interesting of which was **ditch/gully 29** (Fig. 10). This was steep-sided and flat bottomed, and thus seems not to have been eroded. It was 0.62m wide and 0.4m deep, and as such seems unlikely to have been a boundary ditch or designed for drainage, but may well have been a palisade trench. It cuts pit 30, and one sherd found in the fill was identified as a Romano-British base. It was met by another ditch (31) whose relationship to it was uncertain as it was unexcavated, but this second ditch had animal bone and 4th century pottery on the surface.

Pit 30 was a 0.4m deep sloping sided feature, from which no dating material was found. It was filled with a light brown silty loam, with small stones and some animal bone (Fig. 10).

Feature 28 had a 0.4m deep lop-sided U-shape, and was filled with a loose pebble-free reddish brown sandy-silt, which came down unto a hard white tightly packed deposit with small stones. It was possibly the butt-end of a small ditch, or a post-hole.

Ditch 26 (Fig. 10) was V-shaped 0.5m deep, and filled with a loose silty-sand, small stones and charcoal flecks. The post-holes and ditches in trench VIII are probably a continuation of those seen in more detail in trench XIII (see below).

SAXON FEATURES
TRENCHES VI, VII, XIII

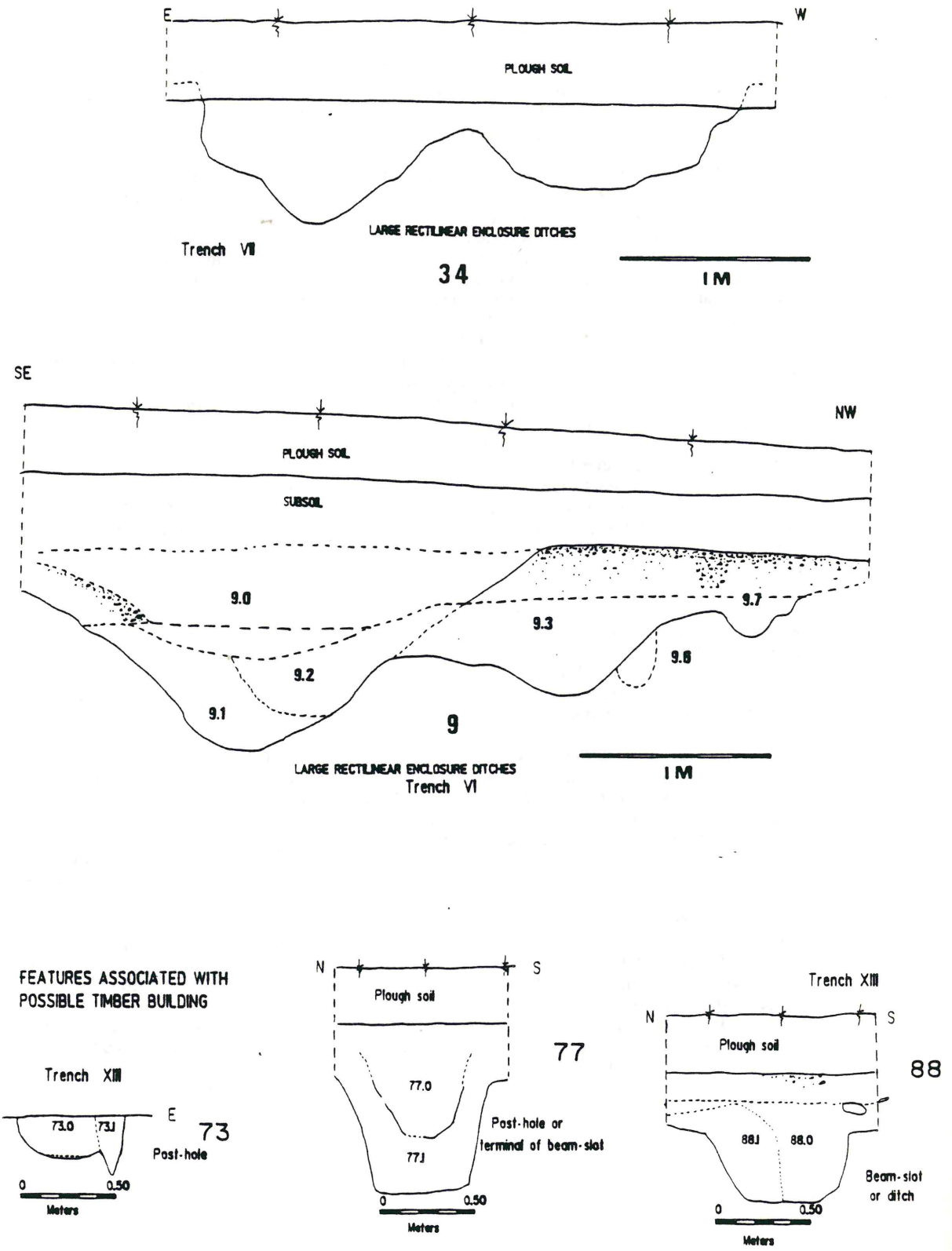


Figure 11 Sections of Anglo-Saxon features

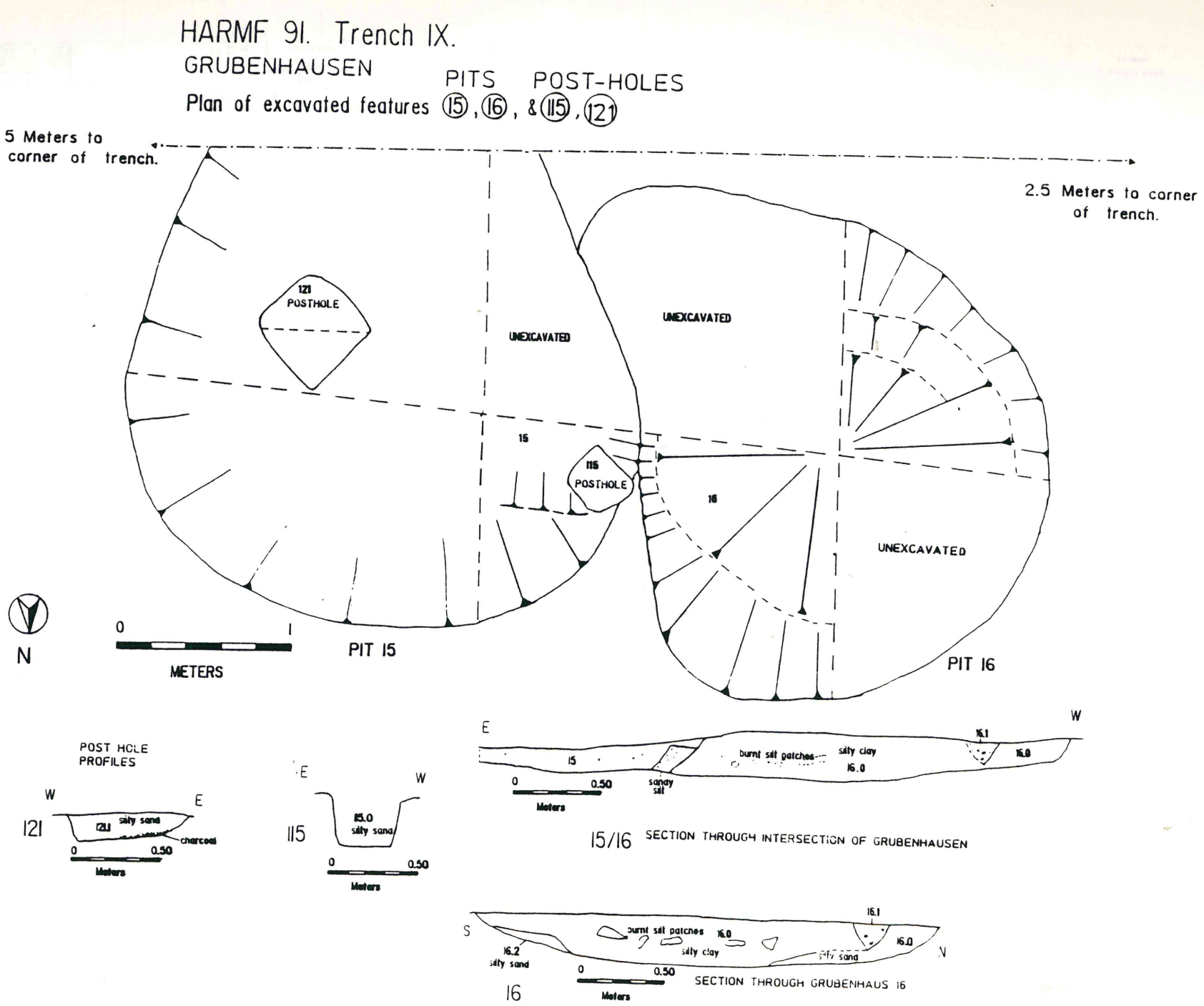


Figure 12 Plans and sections of Grubenhausen

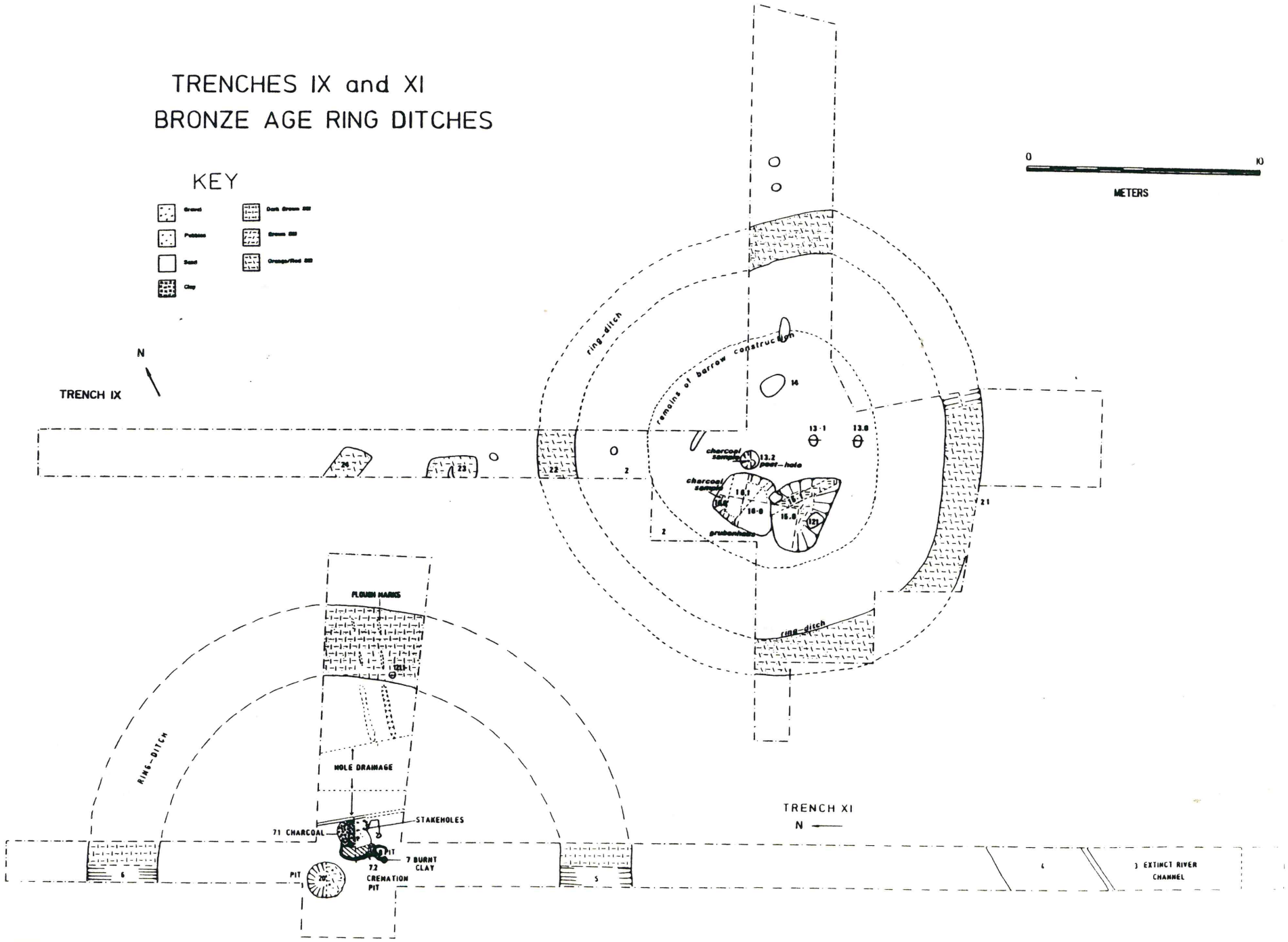


Figure 13 Trench plans: Bronze Age ring-ditches

Trench IX (Fig. 13) was 44m in length and was of variable width as large areas along its eastern end were opened up in order to examine the pattern of ditches and pits. It was orientated west-north-west by east-south-east and was designed to bi-sect a ring-ditch clearly seen as a cropmark, which was then verified by excavation. Only 0.1-0.15m of ploughsoil overlay archaeological levels.

Ditch 21 (Fig. 14) was a shallow sided V-shaped ring ditch 1.6m wide and 0.65 deep, which was found on the east, west (as ditch 22), north, and south sides of the trench. The fill was of a homogeneous reddish brown silty-sand with small gravel pebbles. Between this fill and natural gravel a thin band of redeposited gravel could be seen on the outer side of the ditch, possibly a primary fill of gravel slippage from the east. A gravel band was also found overlying half the ditch fill on its inner side, perhaps suggesting levelling of an inner bank or mound at a later date.

Overlying this filled ditch and the higher gravel band, and also sealing some of the features within the ring ditch, was a reddish brown sandy-silt with small stones and animal bones (see photograph in Fig. 15), very similar to the buried soil described in Appendix I. This could be the remains of a levelled-out barrow mound, or of an inner bank to the ring ditch. Although post-holes and several pits were sealed by this deposit, pit 15 appears not to have been; evidence was not conclusive, but it is likely that this pit was therefore cut through it.

The ring-ditch externally measured 19m diameter with a post-hole (13.2) just off-set at the centre. To the south of this two large pits (15, 16) were found (Fig. 12). As 15 cut 16 there is no doubt that they were of different date, with two distinctly different deposits filling them, and only in 15 were two post-holes found. These were at the east and west sides, and cut into the base of the ovoid pit. They were not of uniform depth or dimensions, with **post-hole 115** being square in profile and extending to 0.3m depth, whilst **post-hole 121** was much wider and shallower. **Pit 15** measured 2 x 3 metres, and was 0.15m deep. A fragment of Anglo-Saxon clay loom weight was found in the fill (Fig. 20), plus animal bone, and a small collection of pottery of probable Saxon date.

Pit 16 was also ovoid and measured 2 x 2.5 metres, but had been truncated along its longer axis by pit 15 (Fig. 16). It was 0.25m in depth, and its fill had a much greater charcoal content than pit 15. In the top 0.15m of this fill 8 large sherds of Saxon pottery were found plus a rim from a globular jar, but of particular interest was a Romano-Saxon sherd with cut stamp decoration of 4th/5th century date (Fig. 20). A curious clay spindle whorl appears to be Roman in fabric but with probable Saxon decoration on it, and this (as well as a lead spindle whorl) came from lower levels of the pit fill. A base of a Nene Valley colour coated beaker was found, which displayed evidence of having been ground down at the broken edges, for re-use after breakage. Pit 16 appeared to be sealed by the reddish-brown sandy-silt of the possible barrow mound, but it seems likely that in this instance the layer was redeposited when pit 15 was constructed.

Pits 15 and 16 were quartered, and opposing segments have been left intact for future research in pit 16, with a single quarter remaining in 15 (Fig. 16). Charcoal from the base of Pit 16 was identified as hazel/alder,and was sampled for carbon dating.

Three distinct **post-holes** in a line were found immediately north of the pits. One of these was virtually central to the ring-ditch, and the others spread east spaced at a 2 - 3 metre interval. Each contained a clearly visible vertical post-pipe (Fig. 14), slightly oval in shape (dimensions 0.2-0.3m). Two post-holes contained substantial amounts of charcoal in the post-pipe, and were extensively sampled for C14 dating. Oak was identified filling 13.1 and a roundwood stem identified in 13.0.

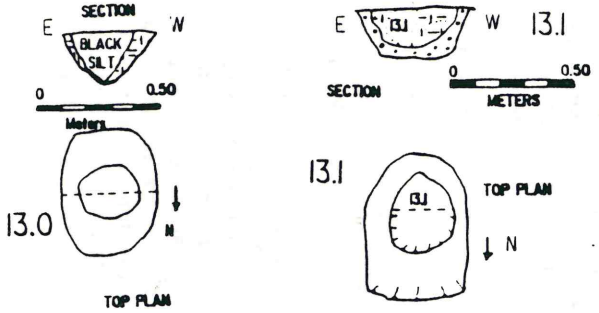
Two further post-holes or small pits were detected further north of this line, but still within the ring-ditch. However these features were not excavated.

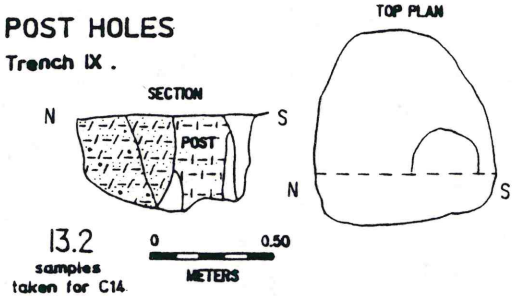
West of the ring-ditch two features were seen (23, 24) which were either the butt ends of ditches, or pits. These were not excavated.

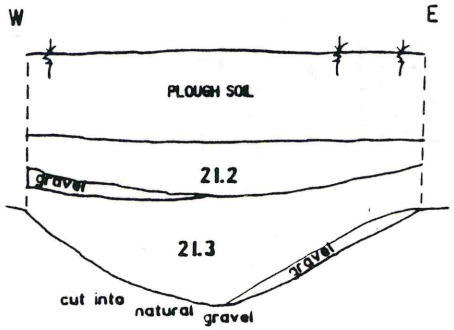
Trench X (Fig. 6) was 50m long by 1.5m wide, except at its southern end where it was necessary to widen it to examine a large ditch. It was orientated north-south and situated to cross an indistinct pattern of rectilinear ditched enclosures seen as cropmarks. One of these was identified as a deep and wide ditch (12) from excavation.

The trench had 0.2m of ploughsoil at the south end before it came down on to ditch 12, but at the north end there was 0.3m of topsoil (0.15m of ploughsoil and 0.15 of subsoil through which the features had been cut) before we came across chalky-marl natural. Several small post-holes and ditches were found at the north end, but were not excavated, and may have been truncated by ploughing. At the south end of the trench a 6.5m wide **ditch** was found (**12**) (Fig. 7) which contained 3 main fills, and had a V-shaped profile 1.7m deep. It was cut into sands and gravels and was water-logged at its base. Well-made Romano-British pottery was found throughout the fills, and kiln furniture or crucible fragments were found in primary and final fills. A mortarium of 4th century date (Much Hadham ware) was found in secondary fills, and sloe pips (prunus spinosa) were recovered from water-logged fills.

BRONZEAGE FEATURES

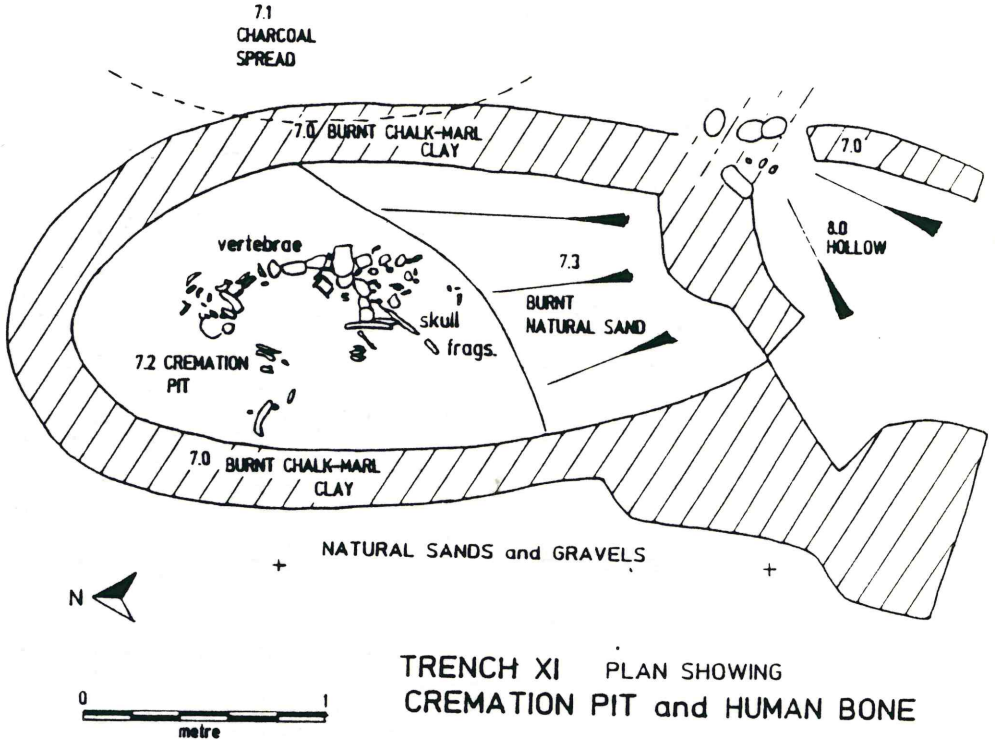




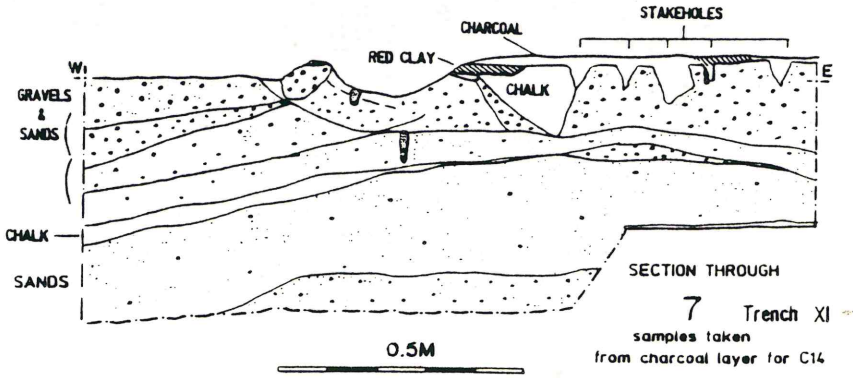


21 section through ring ditch Trench IX

Figure 14 Bronze Age features



TRENCH XI PLAN SHOWING
CREMATION PIT and HUMAN BONE



SECTION THROUGH
7 Trench XI
samples taken
from charcoal layer for C14

Trench XI (Fig. 13) was approximately 55m long by 1.5m wide, except around the centre of the ring-ditch where it was widened on both sides. It was orientated north-south and was located to investigate a ring-ditch seen from air photographs. This was found to be severely damaged by ploughing and mole-draining.

Only 0.15m of topsoil remained above the archaeological features and natural chalk marl, and all this zone was active ploughsoil. Consequently there was serious damage to features in the centre of the ring-ditch, and the ditches themselves were truncated.

At the northern end of the trench there was a circular area 17m in diameter, enclosed by a 3m wide ditch (see section in Fig. 15). This ring-ditch (total external diameter 23m) had a shallow U-shaped profile 0.8m deep. In the centre were two pits, associated with an area of **concentrated charcoal (7.1) and fire-hardened chalk (7.0)** (Figs. 14 and 16). Beneath the charcoal (identified as oak by Pete Murphy) there were many stake-holes, which appear to have burnt chalk-marl around them, thus preserving their form. Beneath this layer there was a series of sand and gravel lenses, which may be natural interleaving of the bed-rock.

The closest **pit** to this area (7) contained cremated human bone, representing remains of an adult (see appendix III). Fragments of bone from all major parts the skeleton were present, and the excavator recorded that the fragments appeared to have been deliberately arranged so that there was a pile of skull and finger bones at the south end, with vertabrae along the centre of the pit, whilst long-bone fragments predominated at the north end (Fig. 14). Pieces of skull from a younger individual were also found, although no post-cranial bones associated with this skeleton have been identified, and no artefacts were found with either burial. The pit was 0.25m deep and the upper edge of it had a layer of burnt chalk-marl spreading over the top of the sands and gravels. This layer of burnt natural extended beneath the charcoal area described above. As the burning does not extend over the bones, and the matrix in which they were found had no great quantity of charcoal, it suggests that the pit containing the bones was dug after the burning episode.

To the north-west of this pit another was found cut through the natural gravel (**Pit 20**). This contained no artefacts, bone or charcoal.

At the south end of the trench a meander of the river could be seen, filled with a deep deposit of marl and organic remains (see Appendix I). It is possible that it was water-filled and a contemporary channel when the ring-ditch was constructed.

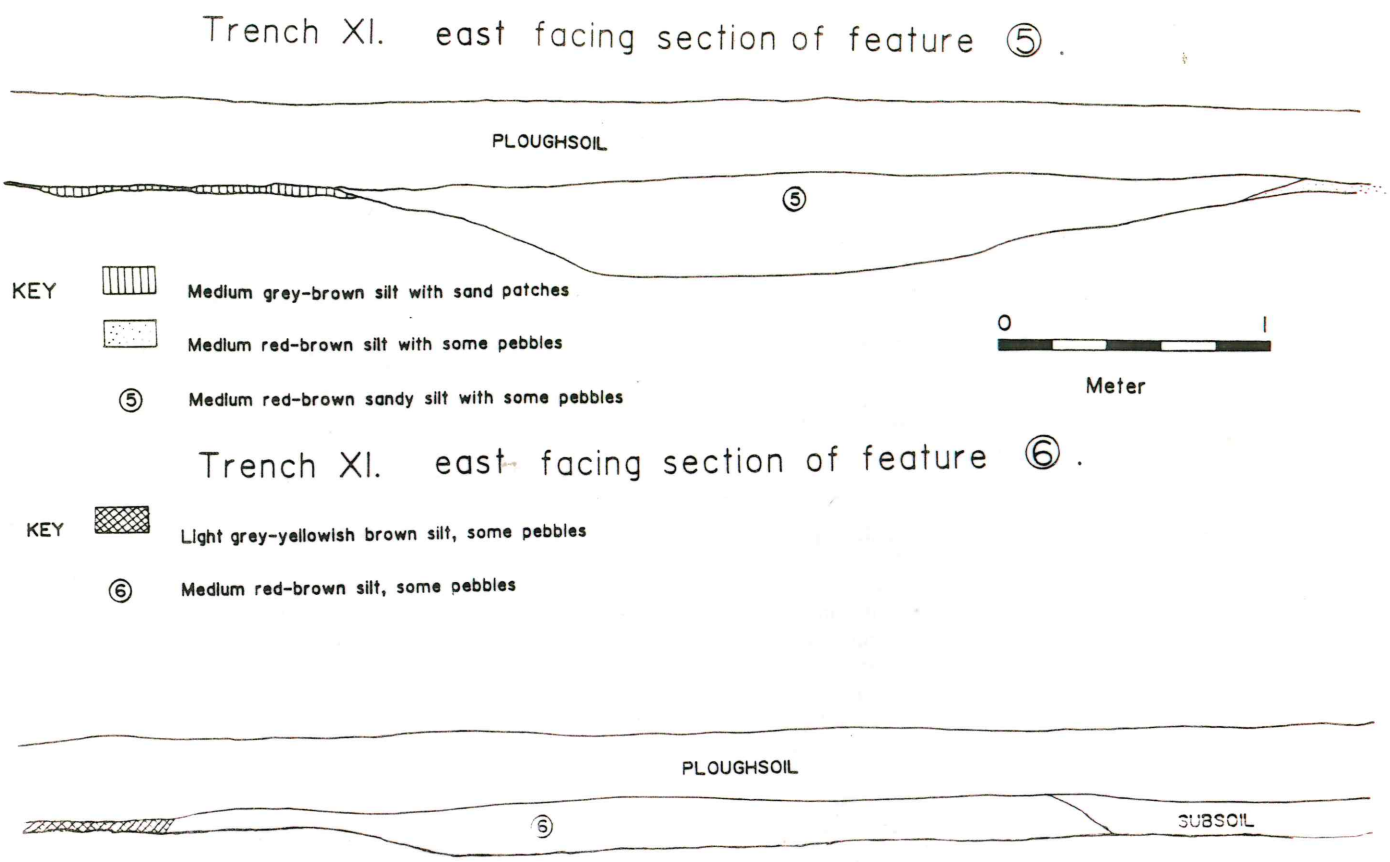
Trench XII (Fig. 6) was 50m long by 1.5m wide. It was orientated east-west and was positioned to sample an area that showed no archaeological activity from air photographs or from magnetometer survey to test whether this area was genuinely empty, or simply less responsive to these techniques. Topsoil was 0.5m deep over natural chalk-marl, into which archaeological features were cut.

Towards the east end of trench XII a ditch (10) ran north-south, and two **pits (33, 11)** were found (Fig. 7). **Ditch 10** had two distinct fills, with 10.2 being a later recut containing charcoal flecking. The primary fill (10.1) was a marl mixed with some organics, and it contained daub fragments, pot, and 8 pieces of Niedermendig lava, presumably from a quern. The pits were oval in shape and between 0.5-0.9m deep. They were both filled with a disturbed marly deposit, and pottery, bone, iron and glass fragments were found in them (Fig. 20).

Trench XIII (Fig. 9) was an E-shaped trench laid out with its backbone east-south-east by west-north-west and the three strokes stretching north. It was designed as an extension to trench VIII because cropmark evidence and geophysical plots showed an enclosure immediately north of it that suggested the possibility of structural details such as slots for a timber building and a chalk floor. The trench was 20m long, with 8m long northward strokes, and throughout remained 1.5m wide.

A mass of post-holes, gulleys and small ditches was apparent, but no coherent plan or occupation surface could be seen in the limited extent of the trench. A gully and two post-holes were excavated (Fig. 11). The only finds were two pieces of clay "floor" piece consisting of chalk marl, sun-dried, smoothed and finished.

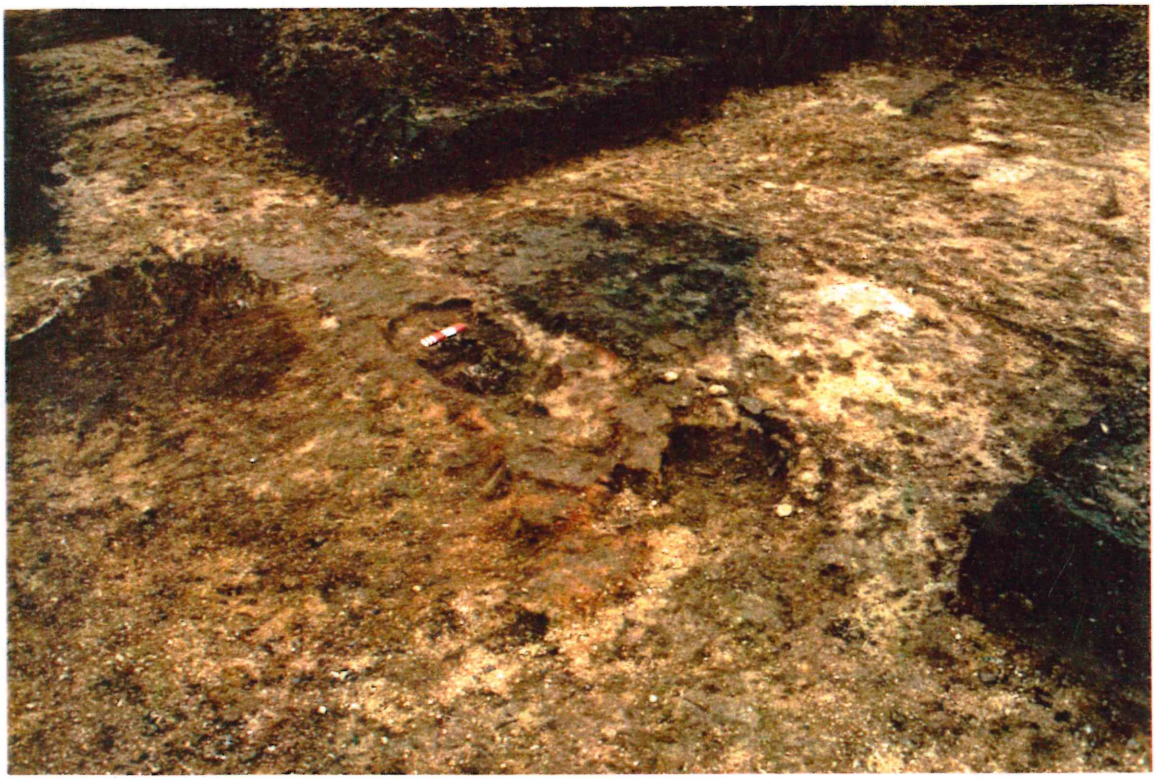
Trench XIV (Figs. 6 & 8) was a short trench (14m long) to section the major **"boundary" ditch** that could be seen as a cropmark. All other trenches in the north-eastern field met this ditch at an angle, and so trench XIV was designed to cut a true section perpendicular to it. As the section was cut by machine, pottery was not stratified, and a whole range of types came from this mixed bag. However the date range is small, and all sherds fit comfortably into the 1st century AD, with examples of local Terra Nigra among the assemblage. The ditch was 3.5m wide by 1m deep, containing a fairly homogeneous brown silty clay fill with much gravel inclusions.



by Ben Robinson

Figure 15 Section through ring-ditch in Trench XI
Aerial photograph of Trench IX showing ring-ditch and remains of barrow mound, with Grubenhausen cut into it (black patch)

Alison Taylor



by Simon Bray

Figure 16 *Top:* Centre of ring-ditch in Trench IX (from west). Grubenhaus pit 16 quartered in foreground, with pit 15 and internal post-holes (115 & 121) clearly seen beyond 16. The external post-holes (13.0, 13.1, 13.2) can just be seen running east from the group of people, ring-ditch 23 beyond, and in the distance is Rowley's Hill with lynchets showing as white bands.
Base: Centre of ring-ditch in Trench XI (from SSW). Note cremated bones in pit (7) with scale; immediately east of this can be seen the charcoal spread (7.1) covering stake-holes and fire-hardened chalk-marl (7.0). Mole-drains cut across the picture beyond this, and pit 20 can be seen north-west of the cremation.

Discussion

Bronze Age (Fig 17)

Bronze Age activity is represented by the two ring-ditches in trenches IX and XI, and possibly also by ditches filled with orange-brown sandy silts that were seen in several trenches both south and east of Manor Farm.

Barrows are known from hillsides around the area and Rowleys Hill itself may have been a place for burial, with cropmarks of ring-ditches visible on its north-eastern crest. Although Reaney mentions no derivation for the name "Rowley", Sylvia Beamon demonstrates the Scandinavian character of the name in her forthcoming book on Royston Cave (Beamon, forthcoming). There are Danish and Anglo-Saxon parallels which refer to the practice of cremation and mound building ("roiser", "roise" respectively) and further words which refer to funeral, sorrow, and repose ("raws", "reowes", "rowes" respectively), and it would seem likely that barrows or burial were associated with this prominent hill, thus giving it the name by which it is now known.

The barrow complex at Manor Farm, and in fields immediately north of it, fits the pattern of ring-ditches and round-barrows in the vicinity. Most are found on the surrounding chalk ridges and along river valleys, and it appears those at Manor Farm (with one or two outliers) form a discrete group of their own. As such they are distinct from the mass of South Cambridgeshire barrows and ring ditches hugging the line of chalk downlands running along the Icknield Way across the southern borders of the county from west-south-west to east-north-east. The date of these barrows is uncertain as few have been excavated, but generally they are assumed to be Bronze Age (Taylor 1981, p.111).

Presumably the ring-ditches (which were 19m and 23m in diameter, with ditches 1.6m and 3m wide and up to 0.8m deep) are the remains of barrows. This suggestion is supported by the cremation in trench XI. Considerable evidence of burning was apparent here, with a large area of charcoal spreading over a fire-hardened clay-marl deposit into which stakes had been set (see section in Fig. 14, and also Fig.16). Although cremation and burial occurred within the ring-ditch no vestige of a mound was seen here, whilst in trench IX the large pits found in the centre appear to be domestic in character and date to the Saxon period. However, in this case the pits appear to have cut through an orange-brown deposit that could have been part of a barrow mound (Fig. 15), and any burials that may once have been at the centre of the barrow would have been disturbed and removed during construction of the pits. The post-holes nearby are probably associated with the pits, but it is possible that their date is much earlier, and that they were structural features of the original barrow. Charcoal from the post-holes, and from the pits, will be carbon dated to clarify the situation. Carbon dates will also be sought from the cremated bone from trench XI, but if the state of the bone makes this impossible, then the associated charcoal deposit will be used for dating purposes. The dates will be undertaken by the Ancient Monuments Laboratory.

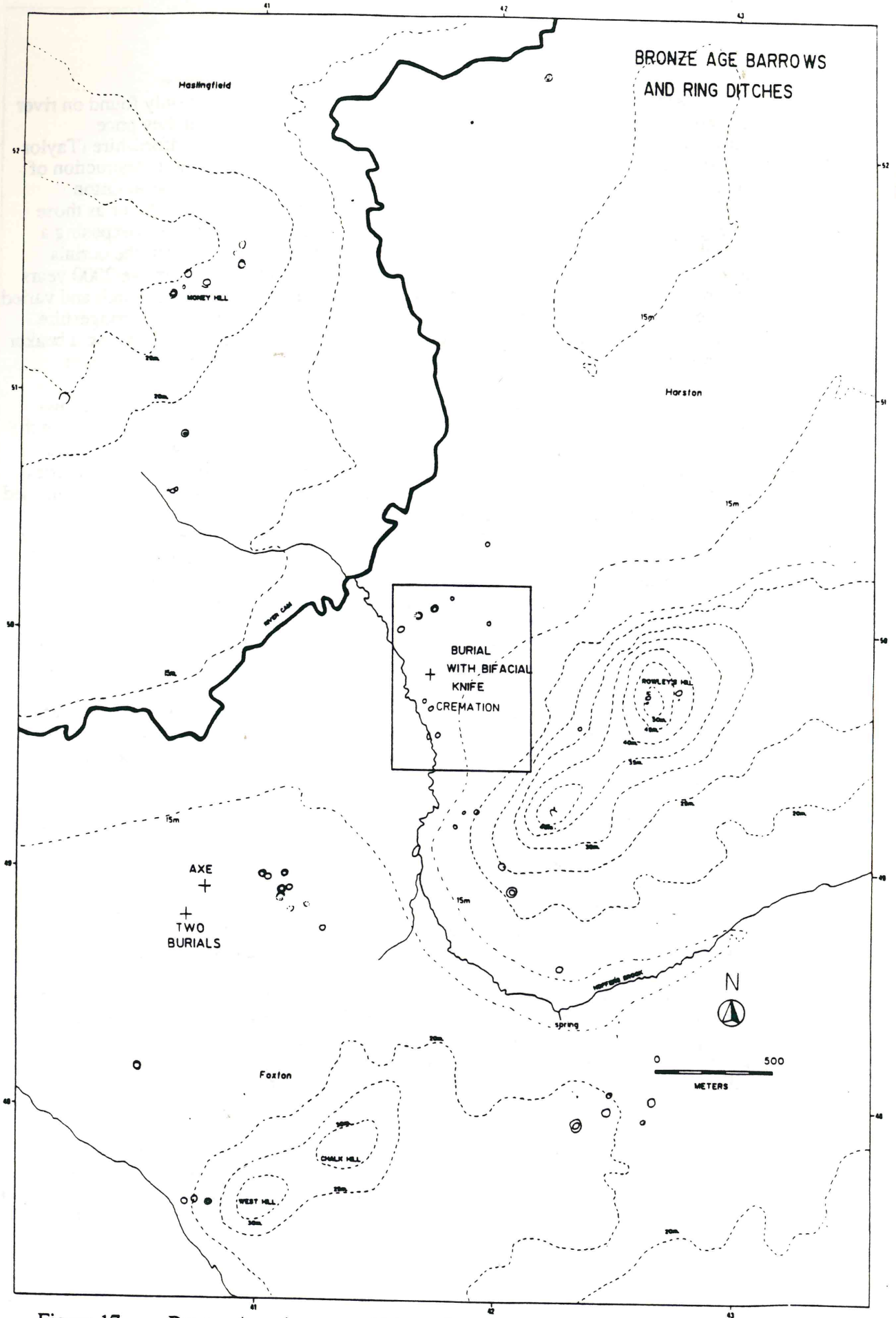


Figure 17 Bronze Age sites around Manor Farm, Harston (information from Sites and Monuments Record)

Ring-ditches where no mound has been recorded are commonly found on river gravels. Those that have been excavated sometimes show signs that they once surrounded low mounds (approximately 1m high) as at Roxton, Bedfordshire (Taylor 1985). Often they have been ploughed since Roman times, resulting in destruction of the earthwork. Occasionally they are still perceptible as low mounds as at Orton Longeville (Mackreth, forthcoming) and Fen Drayton (Fox 1923, p.198) or as those emerging in the fens near Over and Haddenham where peat shrinkage is exposing a complex pattern of barrows beside the Ouse (Hall, forthcoming). Often the burials surrounded by ring-ditches were not placed in pits deep enough to survive 2000 years of ploughing, and so have been lost, but where they are found they are as rich and varied in date as those from upstanding barrows. The finest example from Cambridgeshire comes from Barnack, where polished greenstone, gold and bronze objects, and a beaker accompanied an Early Bronze Age burial, now on display in the British Museum.

Conclusions reached at Roxton (Taylor 1985) were that, because of the low-lying terrain and loose, easily eroded nature of gravel there was no point in building the sort of steep, domed mound that dominated the skyline on chalk downland. Instead, more substantial ditches were dug in this easily excavated subsoil, thus limiting access to the 'sacred area' and leaving a distinctive 'earthwork' that were shown to be recognised landscape features for at least 1500 years. In Cambridgeshire, ring ditches are recognised in vast numbers from aerial photography along the Ouse and Nene valleys (Taylor 1981) and in smaller but still significant numbers along the Cam, Granta and tributaries such as Hoffers Brook. Use of land for burial at this time probably implies that it was not a habitation site but was treated as marginal land, perhaps for seasonal grazing in addition to mortuary practice.

Lynchets that can be seen on the hill have been attributed to medieval agriculture, but it is conceivable that they are much earlier in date, and may form part of a Bronze Age landscape, together with field ditches identified by our assessment trenches. However the ditches containing orange-brown fills that we assume belong to an early date, occasionally had Romano-British pot with them, and often the more obvious dark organic filled ditches of the 1st century AD followed the same line as these earlier ditches. Dating of these features must, therefore, remain tentative.

Iron Age and Roman period (Fig 18)

The field system seen clearly from aerial and geophysical surveying appears to be mainly 1st and 2nd centuries in date. Even though settlement extended well into Roman times, it retained its Iron Age character. There was still, for example, a preference for locally made pots which were often hand-made in Iron Age designs. No coins or jewellery were found. There was one fragment of a green glass urn (Fig. 19) and a few flagon and samian sherds, suggesting the impact of Romanisation was slight. This fits in well with other settlements revealed by cropmarks of this type, for example those excavated at Great Shelford (Alexander 1975), Haslingfield (Pullinger 1981), and Trumpington (Davidson and Curtis 1973). It contrasts with sites in the same area that are easily recognised from aerial photographs and surface finds as fully Romanised villas, for example the one just across the road from Manor Farm, in Foxton parish, (Wilkes 1978, 846) and another at Shepreth (Parker unpublished archive).

Manor Farm, therefore, fits into a picture of settlement in the Cam valley that began well before the Roman conquest. Most of the favourable river-side sites were intensively farmed with enclosed fields clustered around farmsteads, and with crops and farm animals that continued to form the basis of British agriculture until the agricultural revolution in the 18th century.

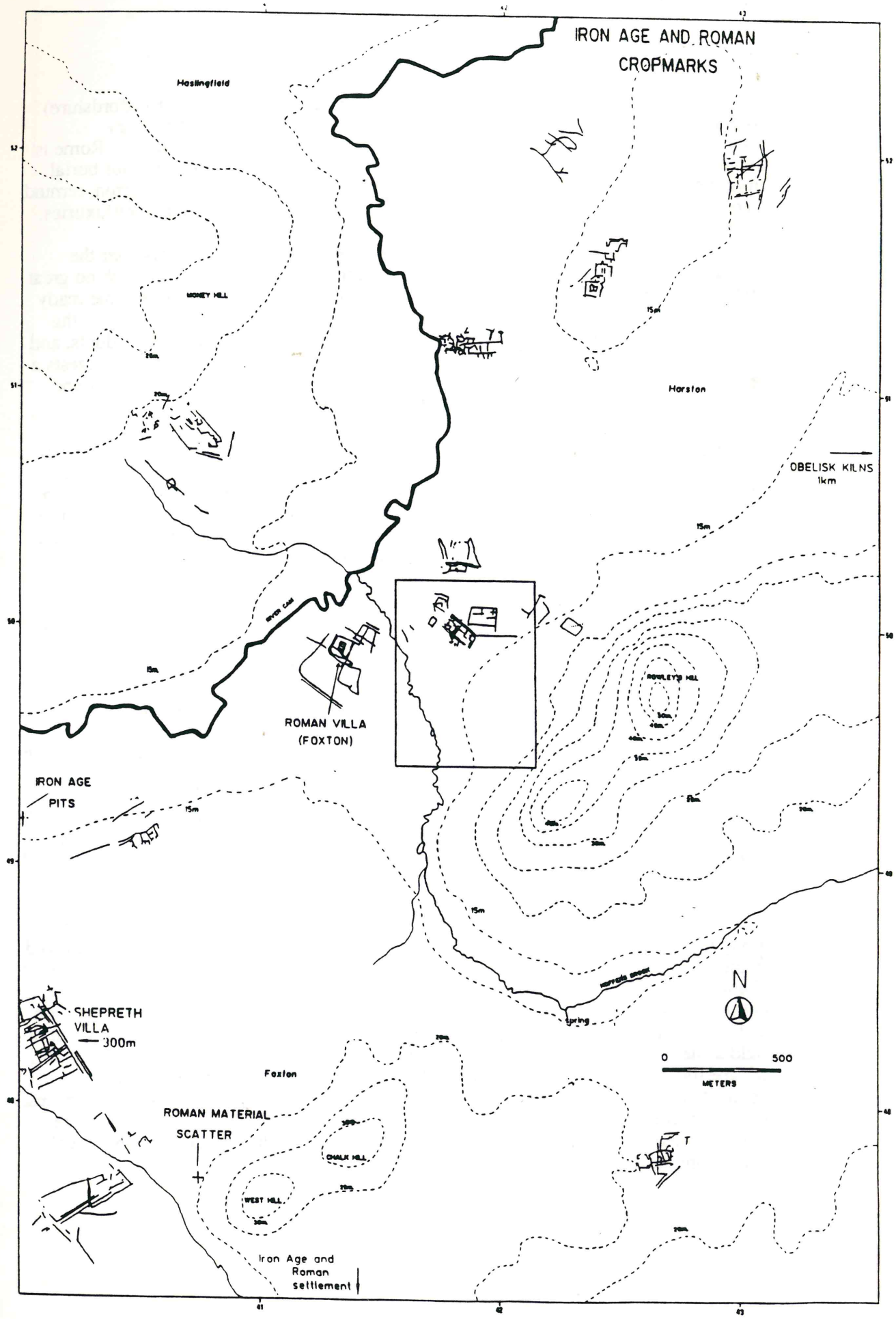


Figure 18 Iron Age and Roman sites around Manor Farm, Harston (information from Sites and Monuments Record)

Wandlebury, near Cambridge, or Arbury Banks (near Ashwell, Hertfordshire) were probably focal centres, giving some measure of organisation and military protection. Individual wealth held by chieftains who were already trading with Rome is demonstrated by artefacts such as the fire dogs from Barton and a rich warrior burial from Newnham Croft, Cambridge. Slave shackles of this date, also from Barton, remind us of one of the commodities chieftains could sell for Roman wine and other luxuries.

In this landscape there was little room or need for new settlements after the Roman conquest. Instead it seems that families continued to live and farm with no great upheaval. Towns such as Cambridge and Great Chesterford would have become ready markets for farm produce, and perhaps contributed to the growth of prosperity in the rural population evident in imported goods such as fine pottery and glass products, and in the establishment of villas by the 3rd century. At Manor Farm the pottery suggests a reasonably prosperous farming settlement, with a veneer of Romanisation. Floor and roof tile fragments seem to be associated with this phase.

The field system is orientated north-west/south-east with a major ditch to the east beyond which there appears to be virtually no activity, and a trackway represented by parallel ditches with a holloway, along which small rectilinear ditched enclosures were off-set. Assessment excavation alone gave insufficient evidence to assign definite dates to individual ditches, thus no fine phasing of the field system is possible, but it is clear that there are a number of episodes of ditch digging and recutting. The line of the trackway and the major ditch forming the eastern edge of the system appear to be respected throughout, and it is clear that this latter feature is a boundary ditch.

Pottery variety and fine-wares suggest contemporary settlement must be very close by, although no direct evidence of house-sites was found in the assessment area. Large post-pits are visible as cropmarks and geophysical anomalies. These are probably fence lines marking a major land boundary. Animal bone assemblages from the ditches are unremarkable with further study felt to be unnecessary (R. Luff pers. comm).

In conclusion it would appear that 1st-2nd century AD occupation is that of a well-ordered, prosperous farm with most of its pottery from local sources and occasional luxury imports such as moulded glass, and lava querns. It would fit well with the model of a mixed farming economy generally attributed to Late Iron Age communities in this zone, whose material evidence is well attested "In a belt of intensive settlement, both prehistoric and Roman, on the Rhee gravels from Shepreth to Harston, there are complexes of linked rectangular and sub-rectangular enclosures of various sizes, with tracks and enclosures for individual dwellings.... Enclosures in the valley of the Hoffer Brook, where a villa is known, are more disperse" (Wilkes 1978, p.58).

West of Manor Farm lies a villa which is part of a concentration of "settlements along the valley of the upper Cam and its tributaries" (Wilkes 1978, p.45). Fox believed in the existence of a road from Royston to Trumpington that would have passed through Harston (Fox 1923, p.172; p.231), and remarked on the likelihood of Iron Age continuity with minimal romanisation during the 1st century AD. Cropmark sites, such as Harston, are to be found along the valleys, and they conform to the regular lay-out of field systems and trackways, sometimes referred to as St. Ives type (Wilkes 178, p.38). Maybe the cropmarks at Manor Farm follow this pattern and could be directly connected with the villa, but dating for Hoffer's Brook villa is late 2nd and 3rd centuries, while that for Manor Farm is mainly 1st or 4th centuries. Thus it is possible they are unrelated and are simply part of the intensive settlement of the favourable light gravel soils found in river valleys such as the Ouse and Cam.

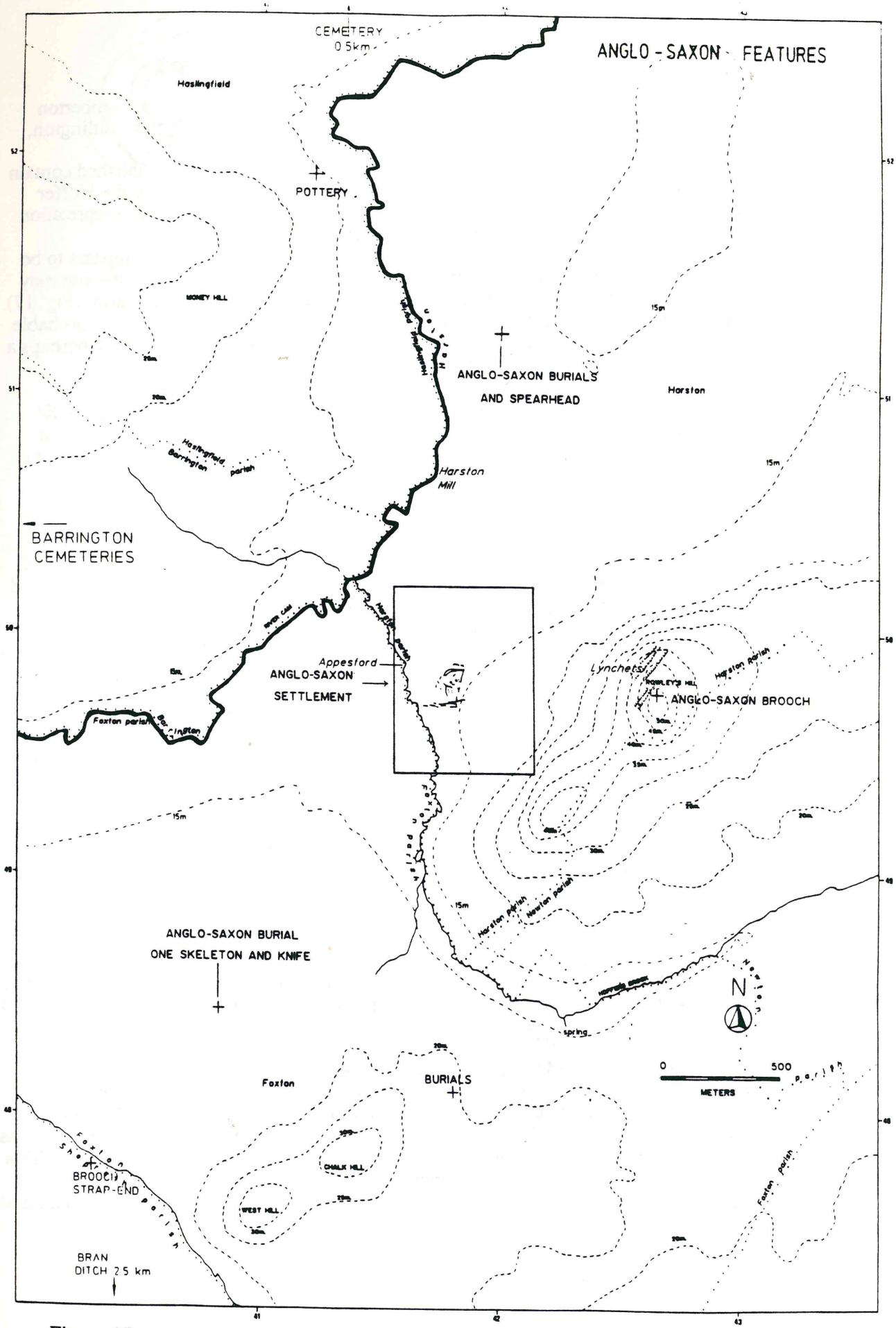


Figure 19 Anglo-Saxon sites around Manor Farm, Harston (information from Sites and Monuments Record)

Although, in the vicinity, villas are known from Bartlow, Bourne, Comberton Foxton, Gamlingay, Gt. Shelford, Guilden Morden, Haslingfield, Ickleton, Litlington, Shepreth, Whittlesford, and Wimpole, Wilkes points out that no villa in Cambridgeshire has been completely excavated.Those that have been published contain records that are largely incomplete, a situation unfortunately also true for the Hoffer Brook Farm (Foxton) villa, making it extremely difficult to attempt valid interpretation of inter-relationship with neighbouring field systems.
The later occupation (4th century) is of different character, as all pottery appears to be well-made imported wares from areas such as Oxfordshire. This reuse of the site may be associated with late use of the nearby villa, just north-west of Manor Farm (Fig. 17). There are no features that have purely 4th century pottery in them, and so it is probable that our site during this phase was peripheral to the main area of activity, with perhaps a manuring spread accounting for finds of this date.

An industrial aspect is shown by fired clay kiln furniture, and some possible crucible fragments. These may come from the 4th century, associated with a villa, or perhaps as an outlier for the kiln-site at Harston Obelisk (Britannia 9, 1978, p.445-8).

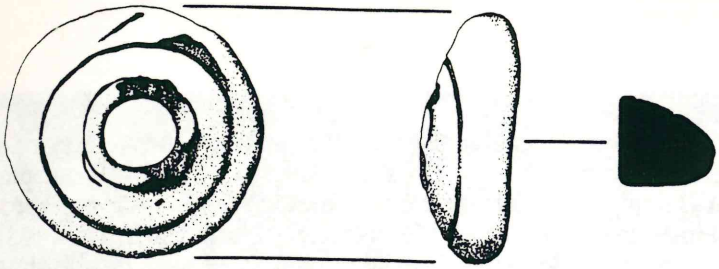
Anglo-Saxon period (Fig. 19)

Saxon domestic activity is clearly demonstrated with pits that contain early pottery, spindle whorls and loom weights, in the fill of a small grubenhaus (Trench IX, Figs. 12 and 16). Post-holes survive cut into the bedrock beneath one of these pits, and it is evident that the earlier pit was replaced by a later one immediately south of it. Although post-holes were not found in the earlier pit these may exist, but perhaps are situated beneath the unexcavated quarters, thus giving evidence that more than one phase of building is apparent. Re-used late Roman pottery was also found here, and butchered bone.

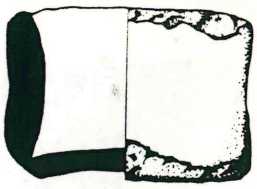
In addition, features such as post-holes and small ditched enclosures found in trenches VII, VIII and XIII, and the parallel ditches to north and east of this area, all have few sherds of Romano-British pot and it is suggested they are of Saxon date. A small fragment of bone comb of Saxon design was found in the terminal of one ditch in trench VII, and Saxon pottery was found in the parallel ditches that possibly form a large enclosure for the area in question. It seems very likely that the multitude and complexity of post-holes in trench XIII are structural, and the lack of Iron Age and Roman finds in this area and in trench VIII support a hypothetical Saxon date for all this activity.

Evidence of grubenhausen, sophisticated timber-frame buildings, and a possible cemetery identified from air photographs ---- in a location typical for an Anglo-Saxon burial ground (close to a stream, and near a parish boundary) ---- strongly suggests the presence of an important early Saxon settlement, and the 6th century gilt and garnet disc brooch with animal motif found on Rowley's Hill (Hutcheson 1965) further emphasises this.

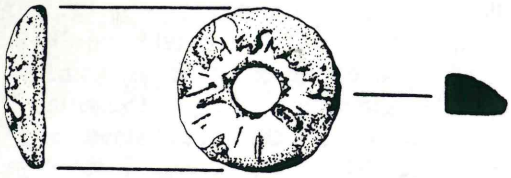
Saxon occupation in the area has been demonstrated in graphic detail by a wealth of cemeteries, and by the great dykes that barred passage to East Anglia. Cemeteries at Haslingfield and Barrington show a healthy and affluent early Anglo-Saxon society. Artefacts demonstrate contacts with Saxon areas of the Thames valley, as well as Anglian regions, and even with Scandinavia and the continental homelands. This mixture of styles and imports from distinct regions emphasises the frontier zone in which these people lived, as does also one of the great dykes (Bran Ditch) which ends at Foxton 1 km away.



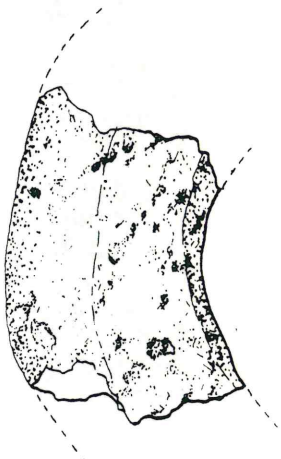
spindle-whorl (ceramic)
from grubenhaus 16 Trench IX



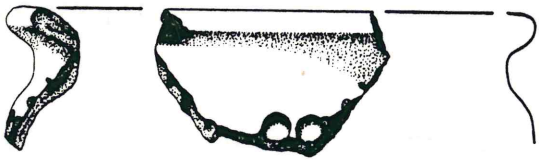
Nene valley beaker base
(reused) from grubenhaus 16
Trench IX



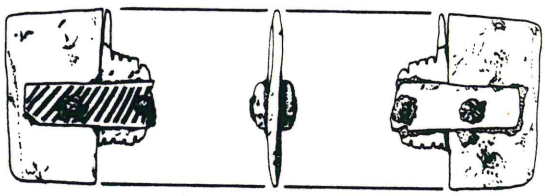
Lead weight/spindle-whorl
from grubenhaus 16 Trench IX



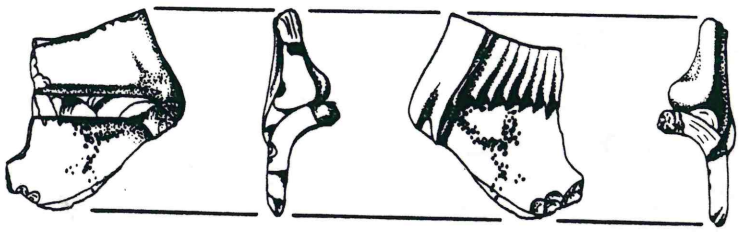
Fragment of Saxon
loomweight from
grubenhaus 15
Trench IX



Romano-Saxon sherd
from grubenhaus 16 Trench IX



Bone comb fragment (Saxon) from
ditch terminal 58 Trench VII



glass fragment (Roman) from Pit 11 Trench XII

Figure 20 Artefacts from various contexts

Southern Cambridgeshire is notable for both the quantity and quality of early Anglo-Saxon cemeteries, especially on light soils near rivers or brooks. Examples include 2 major sites at Barrington and at least one cemetery each in the parishes of Foxton, Grantchester, Haslingfield, Harston, Melbourn, Sawston, Little Shelford, (Meaney 1964), and Wimpole. Settlement evidence, however, despite thorough fieldwalking programmes at Barrington and Orwell by Cambridge Archaeological Field Group and Cambridgeshire County Council Archaeology Section (Kemp 1990, Malim 1990), remains elusive. One grubenhaus was excavated at Grantchester by J Alexander in 1971 (preliminary report 1972). It measured 3.1m x 1.75m and was 0.43m into gravel with a posthole on the 2 shorter sides. This compares with the dimensions of 3 x 2m at Harston. At Linton Great Chesterford Archaeology Group discovered a grubenhaus during construction of a gas pipeline in 1980 (interim report A.E. Collins 1980). This was 3m square x 0.42 deep, and had a post-hole placed centrally along the south-east side. T.C. Lethbridge also found 3 grubenhausen, which measured approximately 2.4 x 3m, at Waterbeach while excavating Car Dyke (Salzman 1938, 308-9), and most recently pipe-line work at Guilden Morden during the summer of 1991 led to the discovery of two 4.5m wide grubenhausen (Richmond, 1992). The extreme rarity of settlement evidence highlights the significance of the Manor Farm discovery.

Medieval Period

Medieval occupation was not clearly identified, but the name Manor Farm, and the proximity to a river crossing, strongly suggests settlement during this period. Intensive farming may be evident from lynchet creation on Rowleys Hill (Fig. 21), and from the fact that the site is not far from Harston Mill, an important enterprise from Domesday and throughout the Middle Ages.

Hoffer Bridge is probably the crossing place called Appesford that appears in various documentary forms from the 14th century onwards (Reaney 1943 p.85). It also functioned as a ford, serving a major route into Cambridge.

From aerial photographs (Fig. 1) it can be seen that quarrying at an indeterminate date has destroyed part of the Romano-British field system closest to the A10 and farm track, and that this quarrying extended into the paddock immediately north-east of Manor Farm, so forming the apparent earthworks there.

by Ben Robinson

by Tim Malim

Figure 21 Aerial photograph showing location of trenches, and view of Rowley's Hill with lynchets showing as white bands

CONCLUSIONS

Air photographic evidence from cropmarks originally identified archaeological features in the 1950s and '60s. Excavation by assessment trenching found these ditches to be extant and in a good state of preservation. However, modern agricultural activities were in the process of truncating most features, and in some cases severely damaging archaeological deposits. This destruction was not only from subsoil activities such as mole-draining, but also from conventional ploughing.

Overall it was clear that many features had little more than 0.2m of topsoil over them, with mole drains causing considerable damage to an even greater depth. This was especially true along the western edge of the southern field where maximum depth of topsoil above archaeological deposits was a mere 0.15m. A few more years of intense agricultural activity would have destroyed the remains of a Bronze Age barrow and its cremation altogether (see Trench XI).

Trenching in the north field confirmed the presence of features seen from air photographs and geophysical prospecting, but showed that these features derived from several phases. Concordance between the various types of evidence was good for trenches II, III, IV, and V, whilst trench I was inadequate in width and direction to show clearly the large boundary ditch and trackway expected; however, undefined features did occur in the right area of the trench for the trackway and boundary ditch. A full cross-profile of this ditch, plus evidence for a long duration of use, was obtained from trench XIV.

Assessment work in the south field also demonstrated that archaeological remains extended well beyond those features seen only from cropmarks, in apparently archaeologically "sterile" areas. In contrast cropmarks east of Manor Farm appeared to be bordered on the east by a single wide ditch, and assessment trenching proved in this case that the suggested edge to archaeological activity was a real one.

Magnetometer survey was successful, mirroring and supplementing information from air photographs, and producing a more detailed plot of features at a greater scale than that achieved from cropmarks. It is interesting to note that the magnetometer also failed to detect archaeological features in the areas that had no cropmarks, although excavation showed that ditches and pits did exist in the area adjacent to trench XII. The reason for this is probably the fact that the fills of these features were very similar in density and material to the surrounding chalk-marl natural.

Thus, in conclusion, on sands and gravels, detail was added to our knowledge of this cropmark site by surveying it with a magnetometer. It demonstrated that features were surviving in the subsoil, and suggested that physical erosion was occurring, presumably through plough damage. On chalky subsoil results were less satisfactory, and unfortunately, areas not susceptible to aerial photography also gave poor results by magnetometer.

Fieldwalking produced a thin scatter of finds of all periods, but nowhere was there a concentration that would have suggested a site of such variability beneath the ploughsoil, nor did the assemblage glaringly demonstrate active destruction of features. Indeed what was collected would often have been dismissed as the product of mere manuring spreads, and archaeologically not of great significance.

In conclusion the original interpretation and importance given to the site from cropmark evidence has been entirely vindicated and enhanced. The project also allowed a comparison between different techniques to assess the archaeological potential of the site, and it seems clear that proper evaluation can only come from excavation. Cropmarks provided an invaluable initial overview of the site, providing the morphological framework on which to hang a fuller interpretation. Even after 30 years of intensive farming the archaeological features seen from the air remained largely intact, although clearly under threat of extensive damage. Geophysical survey likewise demonstrated its use as a valuable tool in the field for giving accurate and reliable interpretation to subsurface features cut into gravel, but in contrast as a technique fieldwalking did not show that features were being severely damaged, and would not have demonstrated the presence of an archaeological site on such evidence alone.

The results from this two week assessment exercise clearly demonstrate the value of such a programme of works conducted at minimal cost. Although our limited evaluation does not give a complete picture of the function of the site, nor a detailed phasing of individual features within it, nevertheless broad outlines for these aspects have been achieved, enhancing our knowledge of the site for present research, and pointing the way for future work. Undoubtedly the main aims of the project have been successfully completed by clarifying the current condition of the monument, and by implementing a beneficial management scheme which assures long-term preservation. It is worth noting that Scheduled Ancient Monuments of similar character exist at Foxton (216), Fulbourn (95), Grantchester (74), Great Shelford (57 and 58), and Haslingfield (75). They are all currently under plough and are probably suffering damage comparable to that demonstrated at Manor Farm.

Acknowledgements

Thanks go to staff of the County Farms Estate and Property Portfolio who listened to the arguments presented by the County Archaeologist, and implemented the recommendations for sale of the farm with a covenant not permitting further ploughing of the land in order to protect archaeological deposits. Enthusiastic excavation was carried out by Simon Bray, Bob Edwards, Andrea Hoffmann, Steve Kemp, Will Morrison, Ben Robinson, and Alison Taylor, whilst Corinne Duhig, Charlie French, Gavin Lucas, and Morag Woudhuysen gave their specialist advice and information on human bones, soils, and pottery. Professor St. Joseph kindly explained his interpretation of the aerial photographs, and the team of Bradford Geophysical Surveys swiftly completed their successful prospecting in spite of sore heads. Alison Taylor coordinated strategy and funding, as well as suggesting useful local parallels for different periods of activity on site, whilst Nesta Rooke aided research by her familiarity with the Sites and Monument Record. Sylvia Beamon very kindly made available part of her research on Royston Cave to help us in tracing the etymology of Rowleys Hill. Lastly thanks go to Donald Bell, Richard Ozanne, and Stephen Williams for finishing some of the illustrations (otherwise drawn by Gavin Lucas and Ben Robinson), and to Don Coughlin and Kit Watson for typing-in and editing some of the more mundane text.

Note

The excavation programme of the field evaluation was carried out in just over two weeks. In retrospect it must be recognised that we tried to achieve too much whilst in the field. Had we been content with merely identifying features and plotting their depths below the plough soil, time would have been ample. However, in trying to excavate some of the more damaged features in order to record data that may otherwise have been lost, and in the need to gain a fuller chronology and feeling for the nature of the site, our recording was not as comprehensive as it could have been. This led to problems for post-excavation analysis and writing-up. Although considerable information has been added to our knowledge of the site, enhancing its importance and interest, our enthusiasm to extract as much useful data as possible in the time we had available ultimately led to insufficient cross referencing whilst in the field, and some lamentably poor recording resulting from this.

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Appendix I

FIELD SOILS ASSESSMENT

C.A.I.French

On site examination of the soil profiles visible in the archaeological assessment trenches revealed a generally consistent picture.

Present day ploughsoil (c. 0.2-0.3m thick) is a dark loam to silt loam with a high organic matter content. Over much of the assessment area the ploughsoil lies directly on the weathered subsoil. Nonetheless a buried soil is evident, particularly in the southwestern field, which survives to a thickness of c. 0.2-0.4m. This soil is an orange-brown sandy/silt loam containing scattered gravel pebbles, essentially the modal type of soil developed on lowland sand/gravel subsoils. The buried soil may be subject to some alluvial/colluvial aggradation and incorporation of soil material, especially in the area adjacent to the now relic stream channel in the southwestern corner of the assessment area.

The area immediately to the south of the farm buildings appears to have been built up deliberately by the dumping of topsoil. This additional soil material is up to 1 metre in thickness, and is composed of homogeneous sandy/silt loam material. One can only assume that this may have resulted from former building work or landscaping associated with the construction of the farm complex. This built up area extends no more than 50 metres to the south of the farm buildings.

The natural subsoil over the bulk of the assessment area is sand and gravel, although the southern most part of the area exhibits a chalk subsoil. The latter area is at the foot of adjacent chalk downland, and therefore may have been subject to colluvial erosion. The junction between the two subsoils was not observed in any of the assessment trenches.

There were three main sets of archaeological features visibly cutting the subsoil. On the gravel areas there were two types of feature infill: a reddish brown sandy loam with gravel, and a dark brown loam with flint gravel pebbles. There is every likelihood that these two distinct fills represent two distinct time periods of archaeological use. The third type of infill occurs on the chalk subsoil and consists of a light greyish brown silt containing small fragments of chalk.

The relic stream in the southwestern corner of the assessment area is infilled with an homogeneous grey silty clay loam, and is presumably part of a former meandering stream system.

Appendix II

POTTERY REPORT

Gavin Lucas

Summary

A total of 328 sherds were examined from which 25 different fabrics were identified using a hand lens (x8), the majority of which were latest Iron Age/early Romano-British; the rest were 4th century and early Pagan Saxon. These are listed below with the number of sherds and contexts from which they came. (All figure numbers/illustrations are shown separately at the end of this report)

FABRIC TYPES

Gallo-Belgic and early Romano-British fabrics

1. A very hard, close-textured blue-white fabric with a smooth pale blue-grey slip.
Type: imported Terra Nigra. This was represented by only 1 sherd, a large piece of base from a platter (probably CAM 2) with a corner of a makers stamp (illegible and not illustrated).
Context: **126** (A large ditch, and possible boundary).
Date: Probably pre-conquest (early 1st century Ad).

2. Soft grey fabric with buff margins and smooth grey surface, frequent moderate/fine mica and occasional fine/medium quartzite.
Type: local Terra Nigra. imitation, probably from the same kilns as a TN cup from King Hedges (Ette 1991).
This was represented by 3 adjoining sherds, from a shallow bowl (probably CAM 24). (see fig. 1.1).
Contexts: **62.1, 54** (Field system ditches; unexcavated; pottery from top of (truncated?) fills).
Date: Late 1st century (Flavian probably).

3. Quite hard, close-textured dark grey fabric with orange surface. Moderate medium/fine quartzite, moderate mica and occasional coarser inclusions of ironstone and white and grey quartzite/flint.
Type: This was represented by 1 sherd, from a large bowl with inbent, burnished rim (CAM 252/3). (see fig. 1.2).
Context: **126** (A large ditch, and possible boundary).
Date: Pre-Flavian (early/mid 1st century Ad)

4. A local fine fabric in four varieties according to the type of temper and firing conditions, used for wheel-made or wheel-finished vessels. The close similarity to the late Roman products of the Harston Obelisk kilns, and that these kilns were perhaps in operation much earlier and producing a much wider range of wares than indicated by the excavated kilns (Pullinger 1981), suggests a possible source for this fabric type.

4a. Quite soft, fine cream-pink fabric with no visible temper.
Type: This was represented by a sherd from a carinated bowl (see fig. 1.3), and one from a double fluted handle, probably from a flagon.
Contexts: **97.1** (Final fill of a "droveway" ditch cut by 64)
64.1 (Final fill of a "droveway" ditch)
Date: Probably mid 1st century Ad.

4b. Quite soft, cream-pink fabric with occasional fine multi-coloured quartzite and frequent fine calcite.
Type: 12 sherds from 64.2 which include the base of a beaker (see fig. 1.4); 1 sherd each from 56 and 62.1.
Contexts: **56** (Unexcavated ditch: collected from final fill)
62.1 (Unexcavated ditch: collected from final fill)
64.2 (Primary fill of "droveway" ditch)

4c. Quite soft, cream pink fabric with two sub-types on the basis of temper:
i) occasional medium/coarse multi coloured quartzite.
Type: 15 sherds in total from various contexts.
Contexts:
9.0 (last overall fill of double ditches)
60.1 (unexcavated rectilinear enclosure ditch)
62.1 (unexcavated ditch: collected from final fill)
63.1 (last fill of unexcavated ditch)
65,65.1 (last fills of 'droveway' ditch)
66.1 (last fill of curvilinear (stock?) enclosure)
126 (a large ditch, and possible boundary)

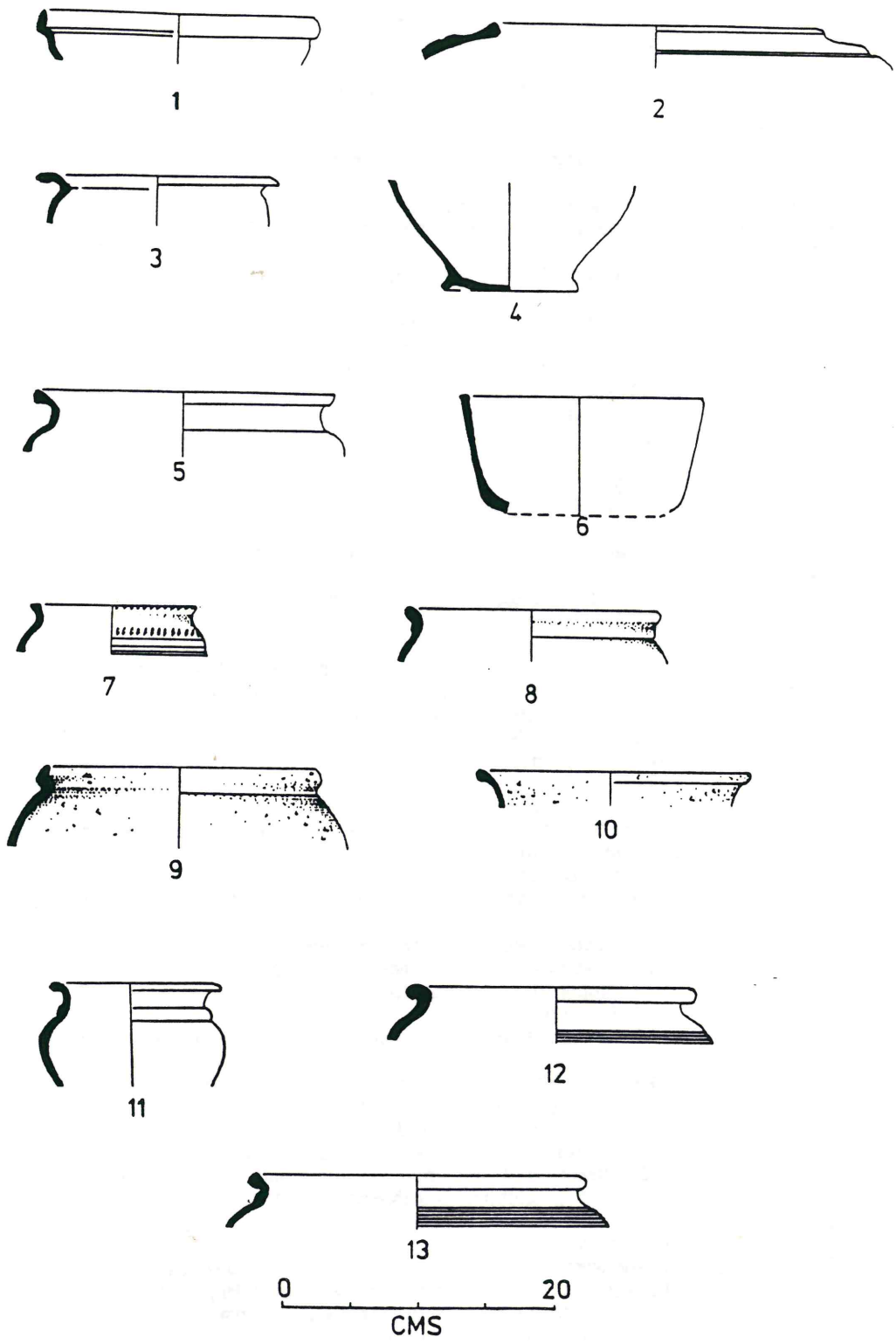
ii) abundant medium/coarse multi-coloured quartzite.
Type: 6 sherds from 64.2 including part of a straight-sided bowl, reminiscent of saucepan pot (see fig. 1.5);
9 sherds from 97.1 including rim of jar (see fig. 1.6);
6 sherds in various other contexts.
Contexts:
10.2 (recut of small field ditches)
62.1 (unexcavated ditch: collected from final fill)
64.1 (final fill of a 'droveway' ditch)
64.2 (primary fill of a 'droveway' ditch)
97.1 (final fill of a 'droveway' ditch cut by 64)
Date: Late Iron Age?

4d. Quite soft. pale grey (hint of green) fabric with occasional medium/coarse multi-coloured quartzite.
Type: 1 sherd from 29; 55; 60.1; 61.1; 126;
2 sherds from 7.2; 125;
3 sherds from 64.2 (primary fill of 'droveway' ditch)
Contexts:
7.2 (mole-drain)
29 (straight-sided gully; possible palisade ditch)
126 (boundary ditch)

5. Quite soft, orange-red fabric with brown, burnished surfaces; moderate dark grey and red coarse lumps of grog, sparse coarse mica, and occasional medium calcite, and/or quartzite.
Type: Local grog-tempered handmade ware. Total 8 sherds.
Contexts:
64.1,.2 (final fills of 'droveway' ditch)
67 (ditch from field system)
126 (large ditch: possible boundary)

6. Quite hard, dark grey/black gritty fabric with black (brown/red) surfaces and occasionally rilled with sparse mica and quartzite, with two sub-types on the basis of temper:
i) moderate medium/coarse quartzite.
Type: Local handmade ware, but probably wheel finished. Rim with vertical incisions and shoulder grooving (see fig. 1.7).
Contexts:
34 (ditch - of large rectilinear enclosure)
54 (field system ditches; unexcavated; pottery from top of (truncated?) fills)
56.1 (upper fill of unexcavated ditch)
61.1 (ditch or gulley)
62.1 (unexcavated ditch: collected from final fill) 63.1 (last fill of unexcavated ditch)
64.1 (final fill of a 'droveway' ditch)
64.2 (primary fill of 'droveway' ditch)
65.1 (last fill of 'droveway' ditch)
97.1 (final fill of a 'droveway' ditch cut by 64)
125 (latest fill of first 'droveway' ditch (late iron age group) (cut by 65)
126 (a large ditch and possible boundary)

ii) abundant coarse quartzite.
Type: Local handmade ware, but probaly wheel finished. Combed storage jar.
Contexts:
12 (general mix of fills from large field boundary ditch)
53 (wide ditch of small square enclosure-unexcavated)
55 (unexcavated 'droveway' ditch)
106 (first ditch cut for curvilinear ('stock') enclosure)
126 (a large ditch and possible boundary)



APPENDIX II FIG. 1

Appendix II Figure 1 Pottery illustrations 1.1 - 1.13

7. Quite soft, soapy grey-brown-orange fabric with some burnished surfaces. Two sub-types on the basis of temper: i) moderate medium/coarse calcite and occasional coarse quartzite.
Type: internally-ledged rim, illustrated, (see fig. 1.9).
Contexts: **9.4** (upcast from re-cut of a major (boundary?) ditch
63.1 (last fill of unexcavated ditch)
64.1 (final fill of a 'droveway' ditch)
66.1 (last fill of curvilinear enclosure)
97.1 (final fill of a 'droveway' ditch cut by 64)
Date: early/mid 1st century AD

ii) moderate/coarse quartzite and moderate medium/fine calcite.
Type: Local late Iron Age/early Romano-British calcite-gritted handmade ware.(see figs. 1.8, 1.10)
Contexts: **34** (ditch - of large rectilinear enclosure)
53 (wide ditch of small square enclosure - unexcavated)
56 (unexcavated ditch: collected from final fill)
58 (terminal of very large rectilinear enclosure)
64.1 (final fill of a 'droveway' ditch)
65 (last fills of 'droveway' ditch)
65.1 (last fill of 'droveway' ditch)
125 (latest fill of first 'droveway' ditch)
126 (a large ditch and possible boundary)
Date: Late Iron Age/Romano-British.

8. Hard close-textured red-brown fabric with grey core and black surface. Occasional medium quartzite.
Type: Wheel-finished local Belgic ware. Small-necked jar with shoulder cordon (see fig. 1.11).
Context: **97.1** (final fill of a 'droveway' ditch cut by 64)
Date: Belgic.

9. Hard gritty red-brown fabric with black surface, often burnished and rilled. Occasional moderate medium/coarse quartzite and occasional larger quartzite, moderate mica, and occasional coarse calcite.
Type: Wheel-finished local Belgic ware. Rilled jars (see figs. 1.12, 1.13)
Contexts: **12** (general mix of fills from large field boundary ditch)
56 (unexcavated ditch: collected from final fill)
56.1 (upper fill of unexcavated ditch)
60.1 (last fill of unexcavated rectilinear enclosure (?) ditch)
62.1 (unexcavated ditch: collected from final fill)
64.1 (final fill of a 'droveway' ditch)
66.1 (last fill of curvilinear (stock?) enclosure ditch)
70 (unexcavated ditch (?))
97.1 (final fill of a 'droveway' ditch cut by 64)
Date: Belgic.

10. Hard, close-textured gritty grey fabric with buff-brown burnished surfaces, moderate mica and occasional white and translucent quartzite grits.
Type: Local handmade ware
Context: **63.1** (last fill of unexcavated ditch)
Date: ?

11. Very friable, soft dark brown/black soapy fabric with brown surfaces and laminar fracture - sparse very fine mica and grass temper.
Type: Local handmade grass-tempered ware.
Context: **34** (ditch - (saxon?))
Date: (?) Early Saxon

12. Grey fabric with abundant medium/coarse quartzite and grass temper, and brown burnished exterior surface.
Type: Local handmade grass tempered ware.
Context: **58** (terminal of very large rectilinear enclosure - (saxon?)
Date: ? (Early Saxon?)

13. **Type:** South Gaulish Samian ware including drag 37.
Context: **56** (unexcavated ditch: collected from final fill)
56.1 (upper fill of unexcavated ditch)
65.1 (last fill of 'droveway' ditch)
Date: probably Flavian. - late 1st Century (Post Boudiccea)

14. Hard, close textured white/buff fabric with moderate very fine sand.
Type: ?
Context: **12** (general mix of fills from large field boundary ditch)
65 (last fills of 'droveway' ditch)
126 (a large ditch and possible boundary)
Date: ?

15. Hard, sandy fabric, sparse mica with 2 sub-types:
i) Grey sometimes with thin buff margin or orange core, moderate medium/fine sand and occasional flint and calcite with a black slip.
ii) Orange sometimes with grey core, abundant medium/coarse quartzite, occasional flint and calcite with a white slip
Type: Wheel finished coarse wares from the Horningsea kilns, combed storage jars (see figs. 2.1, 2.2, 2.3, 2.4)
Context:
i) **53** (wide ditch of small square enclosure - unexcavated)
55 (unexcavated 'droveway' ditch)
56 (unexcavated ditch: collected from final fill)
56.1 (upper fill of unexcavated ditch)
62.1 (unexcavated ditch: collected from final fill)
63.1 (last fill of unexcavated ditch)
64.1 (final fill of a 'droveway' ditch)
64.2 (primary fill of 'droveway' ditch)
66 (curvilinear (stock?) enclosure ditch)
66.2 (curvilinear (stock?) enclosure ditch)
97.1 (final fill of a 'droveway' ditch cut by 64)
ii) **10.1** (final fill of field ditch)
55 (unexcavated 'droveway' ditch)
56.1 (upper fill unexcavated ditch)
61.1 (ditch or gulley)
62.1 (unexcavated ditch: collected from final fill)
64.1 (final fill of a 'droveway' ditch)
64.2 (primary fill of a 'droveway' ditch)
Date: From 1st century AD

16. Fine, orange-buff fabric with a highly burnished/smooth surface-moderate fine/medium dark sand.
Type: Very fine non-local ware
Context: **64.1** (final fill of a 'droveway' ditch)
64.2 (primary fill of 'droveway' ditch)
97.1 (final fill of a 'droveway' ditch cut by 64)
Date: Early 1st century AD

17. Hard, close textured grey fabric with dark grey slip with occasional medium quartzite with white flecks.
Type: Wheelmade, Roman fine grey ware, perhaps from Nene Valley, though no distinctive sherds.
Context: **9.0** (last overall fill of double ditches)
56.1 (upper fill of unexcavated ditch)
64.2 (primary fill of 'droveway' ditch)
65 (last fills of 'droveway' ditch)
65.1 (last fill of 'droveway' ditch)
66.3 (curvilinear (stock?) enclosure ditch)
Date: ?

18. White fabric, grey slip.
Type: Nene Valley grey ware
Context: **70** (Fill of hollowed trackway - unexcavated)
Date: Production commenced in the early/mid 2nd century AD.

Later Roman fabrics

19. **Type:** Nene Valley Colour-coated ware (for description see Howe, Perrin & Mackreth 1981) (see fig 2.12)
Context: **12.1** (large field boundary ditch)
16 (pit - possible Grubenhaus)
31 (Ditch - unexcavated)
Date: 4th century

20. **Type:** Hadham Orange ware (for description see Going, forthcoming) (see figs. 2.5, 2.6, 2.7).
Context: **12.1** (last fill of large field boundary ditch)
12.2 (secondary fill of large field boundary ditch)
Date: 4th century

21. Very dark grey fabric with frequent very fine dark particles, moderate fine mica, and sometimes burnished (see fig. 2.8).
Type: Roman grey ware, probably from Hadham
Context: **12** (general mix of fills from large field boundary ditch)
Date: ?

22. **Type:** Harston red colour coated ware (for description see Pullinger 1981).
Context: **65** (last fills of 'droveway' ditch)
Date: 4th century

23. Hard grey fabric with abundant medium/coarse multi-coloured quartzite and occasional medium calcite (see fig. 2.9).
Type: Harston grey ware, square rimmed dish, wide mouthed jar.
Context: **11** (pit)
65 (last fills of 'droveway' ditch)
Date: ?

24. **Type:** Late shell tempered ware.
Context: **11** (pit)
65 (last fills of 'droveway' ditch)
Date: 4th century AD

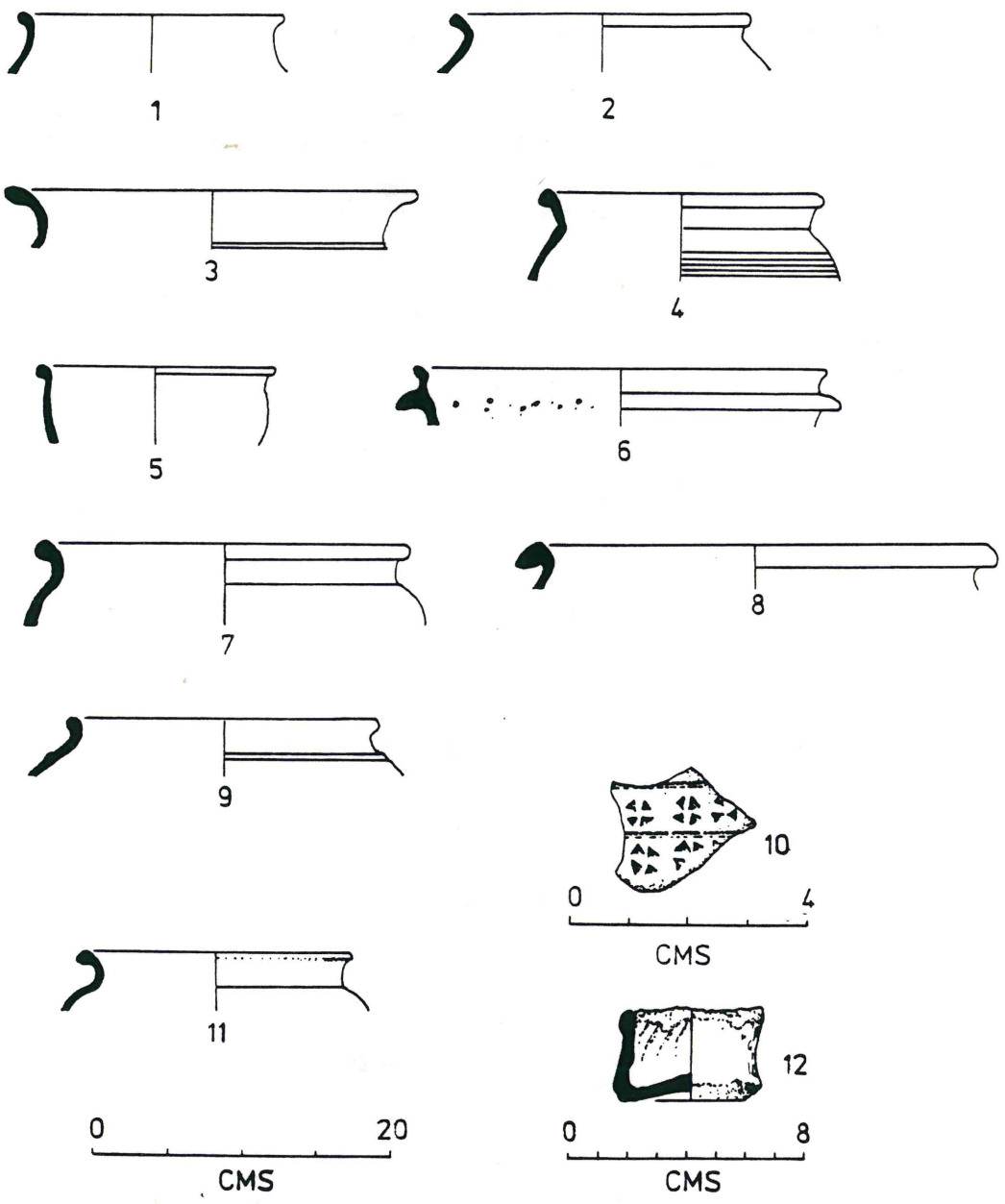
Saxon Fabrics

25. Hard buff-brown to black fabric with burnished surfaces, abundant medium/coarse quartzite and occasional angular flint and calcite.
Type: Handmade early Saxon ware, stamped and linear decoration (see figs. 2.10, 2.11).
Context: **15** (Pit - Grubenhaus)
15/16 (Pit - Junction of Grubenhausen)
16 (Pit - Grubenhaus)
34 (Ditch from large rectilinear enclosure)
Date: 5th/6th century AD

CONTEXTS BY DATE

All dates AD; where no sub-divisions of layers are given (e.g. 66.1, 66.2, 66.3, etc.) no appreciable difference in date is noted throughout the feature.

Early Romano-British	
Possibly early 1st century	125, 126
No later than 1st century	9, 10, 29, 34, 53, 54, 55, 56, 58, 60, 62, 63, 64, 65.1, 66, 67, 97, 106, 121
Possibly early 2nd century	70
Late Roman	
Probably later 4th century	11, 12, 31, 65.0 (mixed, and may have been disturbed)
Saxon	
Probably 5/6th centuries	15, 16



APPENDIX II FIG. 2

Appendix II Figure 2 Pottery illustrations 2.1 - 2.12

Discussion

The earlier fabrics show a large mix between coarse, very locally produced wares and finer wheel-made products such as samian, Terra Nigra and other local types such as Horningsea and (possibly) Harston. In general, one could put the date range in between the last decades of the 1st century BC and up to the beginning of the 2nd century AD. There seems to be no ceramic activity again until the 4th century with the typical later fine wares from the Nene Valley, Harston and Hadham. Continuity in the 5th and 6th century is notoriously difficult to affirm, but the occurrence of a re-used Nene Valley Beaker with early Pagan Saxon pottery in the Grubenhaus (16) is very suggestive, although more substantial concurrence of Roman and Saxon pottery would strengthen this (cf Heybridge, Essex - Drury & Wickenden 1982; also see Fulford 1979).

Although much of the 1st century pottery was probably made within the settlement associated with the site, apart from the obviously imported fabrics (eg. Samian, TN, and Horningsea), it is likely many others also came from further afield. The 4th century Obelisk kilns at Harston are less than a kilometre away from the cropmark site and the excavator intimated in the report that the kilns may have been more extensive than thought (Pullinger 1981), which might suggest also that they were also producing pottery much earlier. Another likely source is from the War Ditches in Cherry Hinton which was operative in the 1st century AD (Hartley 1960). Unfortunately, there remains a great deal of research still to be done on Romano-British pottery in Cambridgeshire before an adequate account can be given.

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Appendix III Human Bone report
Corinne Duhig (Cambridgeshire County Council Archaeology Section)

CREMATED MATERIAL FROM MANOR FARM, HARSTON, 1991

Trench XI

The trench was divided by the excavator into levels 7.1 and 7.2, but as it was found that shaft fragments refitted between levels, all this bone, including that recovered by wet sieving, has been considered as one unit.

The material is mostly white, but some fragments are patched with blue-grey and are porcelain-like in texture, indicating the presence of residual organic matter. The number of fragments and percentages are shown below:

Skeletal remains	*Number*	*%*
Skull	48	
Teeth	5	
Scapula	3	
Vertebrae	30	
Ribs	15	
Pelvis	10	
Humerus	6	
Ulna	1	
Radius	1	
Hand	2	
Femur	2	
Tibia	3	
Fibula	3	
Patella	1	
Foot	2	
Metacarpals/metatarsals	5	
Phalanges	6	
Total	**147**	**49**
Miscellaneous shaft	118	39
Total	**264**	**88**
Unidentified	36	12
Total	**300**	**100**

Total weight is 500gm, with an additional 120gm of fine flakes and dust.

Skeletal material was found from all major areas of the body: axial skeleton, pectoral and pelvic girdles, limbs and extremities. The presence of an adult individual is indicated by the fusion of epiphyses in a proximal humerus, a radius and a metacarpal, the closure of sutures in some of the skull fragments, and the form of the tooth roots. Marks of Pacchonian granulations on vault fragments lead to a tentative suggestion of someone of an age past early adulthood. However, a small petrous bone and some thin vault fragments with open sutures demonstrate that another, younger, individual is also present. The absence of any immature post-cranial bones suggest either that this person was a child only represented by a skull, or that he or she was a young adult whose long-bone epiphyses had just fused. The absence of duplication of post-cranial bone fragments and the low total weight favour the former interpretation.

It was not possible to establish the sex of either individual, nor were there any pathological indications.

A small bag of wet-sieved material from level 3.1 contained two fragments which may come from a child's skull, and a few other tiny fragments which are probably human.

Trench X

Six fragments of unburnt bone came from level 12.2, one of which is probably a piece of immature skull vault.

Trench IX

Three small rib fragments came from this trench. Two (number 115 and an unnumbered fragment) were brownish-grey in colour and apparently unburnt, the other (number 16) was charred almost black. None are clearly human: 115 might be, the other two are probably not.

REPORT ON GEOPHYSICAL SURVEY

Survey Number: 91/25

Site: Hoffer Bridge, Harston, Cambs

Date: February 1991

NGR: TL 4149

Location, topography, and geology:
The site is situated just east of the A10(T) between Harston and Foxton. The area of the survey is ploughed, and is on gravel soils near the River Cam.

Archaeology:
The site is a Scheduled Ancient Monument, consisting of ditches identified by aerial photography forming small rectangular enclosures contained within an area defined by large ditched boundaries. Outside of this specific area are other ditched enclosures, pit alignments and circular ditched features. The above features are thought to be part of an Iron Age and Roman settlement with attached field system. Field walking has produced pottery of the Iron Age, Roman, Medieval and Post Medieval periods. A small flint scatter was also found.

Aim of Survey:
To assist in a project aimed at understanding the state of preservation of the features giving rise to the cropmarks, in order to most effectively manage them in future.

Instrumentation:

Magnetometer: Geoscan FM36 with ST1 automatic trigger

Survey Method:
Magnetic readings are logged at 0.5m intervals along one axis (in 1.0m traverses, 800 readings per 20m x 20m grid) over the survey area. The data are then transferred to a Compaq SLT/286 and stored on 3.5" floppy discs. Field plots are produced on a portable Hewlett Packard Thinkjet. Further processing is carried out back at base on a Dell 386 linked to appropriate printers.

TECHNICAL AND DISPLAY INFORMATION

The following is a description of the equipment and display formats used in GEOPHYSICAL SURVEYS' reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of GEOPHYSICAL SURVEYS.

(1) Instrumentation

(a) Fluxgate Gradiometer

This instrument comprises two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor some 100-300mm from the ground surface. At each survey point, the difference in magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT) or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. If multiple readings are logged, then unless specified elsewhere in the report, it may be assumed that they are taken in the direction of grid north.

(b) Resistance meter

This measures the electrical resistance of the earth, using a system of four electrodes (two current, two potential). Depending on the arrangement of these electrodes, an exact measurement of a similar volume of earth may be acquired. In such a case the amount measured may be used to calculate the earth resistivity. Using a 'Twin-Probe' arrangement the terms 'resistance' and 'resistivity' may be interchanged. This arrangement involves the pairing of electrodes (one current and one potential), with one pair remaining in a fixed position whilst the other measures the resistivity variation across a fixed grid. Resistance is measured in ohms, whilst resistivity is measured in ohm-meters.

(c) Magnetic susceptibility

The instrument employed for measuring this culturally enhanced phenomenon is a laboratory based susceptibility bridge. Standard 50g soil samples are collected in the field.

(2) Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report only one type of display mode may be used, although where necessary a number of the options may be presented.

(a) X-Y Plot

This involves a line representation of the data. Each succesive row of data is equally incremented in the Y axis, to produce a 'stacked' profile effect. This display may incorporate a 'hidden-line removal' algorithm, which blocks out lines behind the major peaks and can aid interpretation.

(b) Dot-Density

In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum cut- off value will appear 'white', whilst any value above the maximum cut - off value will appear 'black'. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). When the contrast is equal to 1, then the scale between the two cut-off levels is linear. A C.F.>1 helps to enhance the higher readings. To assess lower than normal readings involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values represented by more dots. In either representation, each reading is allocated a unique area dependent on its position on the survey grid, within which the numbers of the dots is randomly placed.

(c) Contour

This display joins data points of an equal value by a contour line. Displays are either generated on the computer screen or plotted directly on a flat bed plotter / inkjet printer. The former will generate either colour or black and white copies depending on the printer used.

(d) 3-D Mesh

This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. Again, the output may be either colour or black and white. A hidden line option is occasionally used (see (a) above).

(e) Grey-Scale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots, the intensity increasing with value. This gives an appearance of a toned or grey scale.

(3) Interpretation

This is the most important part of the report and is based on a consideration of not only the display plots , but also a study of the raw data. It should be emphasised that the final interpretation is not based only on the diagrams reproduced in this report.

In some instances geological and pedological anomalies may arise which are impossible to distinguish from those normally associated with archaeological features - in all cases of doubt trial excavation work is recommended to ascertain the nature of the observed anomalies.

All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions.

Report on the Geophysical Survey at Hoffer Bridge, Harston, Cambridgeshire.

Introduction

The survey was commissioned by the Archaeology Section of Cambridgeshire County Council. It forms part of a project aimed at investigating cropmark sites and in particular the effects of plough damage on the features giving rise to these cropmarks. The analysis of the results of the evaluation will allow such sites to be more effectively managed in the future.

Results

Area A (Figures A1 - A6)

This was the largest of the areas investigated, being one hectare in size, and covering an area rich in cropmarks (Figure 1).

The results are clearly defined, but the magnetic strength of the anomalies is low. This may be due to two factors: first, little magnetic contrast between the fill of the features and the surrounding subsoil, or second, physical erosion of the feature.

The results can be compared with the existing crop mark evidence in Figure A6. It will be seen that additional features have been detected by the survey, although no evidence has been found for the cropmarks north of the major "boundary" ditch. Again, there are two possible reasons for the lack of features : first, the contrast between the fills and the subsoil may be less marked due to a lack of 'habitation' in this area compared to the major cropmark area, or second, the ditches may no longer exist, because of the result of ploughing.

Area B (Figure B1)

This small area has been found to contain few magnetic anomalies of archaeological interest, with the exception of one or two possible pits, marked "A" on Figure B1. There is, however, no archaeological context for these which makes their interpretation tenuous. The anomaly "B" is probably due to a large piece of iron.

Area C (Figure C1-C2)

This area contains cropmark evidence for several archaeological features (Figure 1). Elements of these have been detected magnetically, but at an even smaller magnitude than in Area A. In addition to the cropmark features, a linear anomaly running NE - SW can be seen in the data which may be a ditch.

Conclusions:

In general, the agreement between the AP and magnetic evidence is close. However, the geophysical survey at Hoffer Bridge has extended the number of features known from cropmarks, and has given some possible evidence for their state of preservation. The geophysical interpretation will allow an assessment of the accuracy with which the AP evidence was plotted.

Project Co-ordinator: S. Gaffney

Project Assistants: C. Gaffney, J. Gater and P Spoerry

Geophysical Surveys of Bradford

23 April 1991

Hoffer Bridge

Grid Location in Relation To Cropmarks

TL 4149 1 : 2500

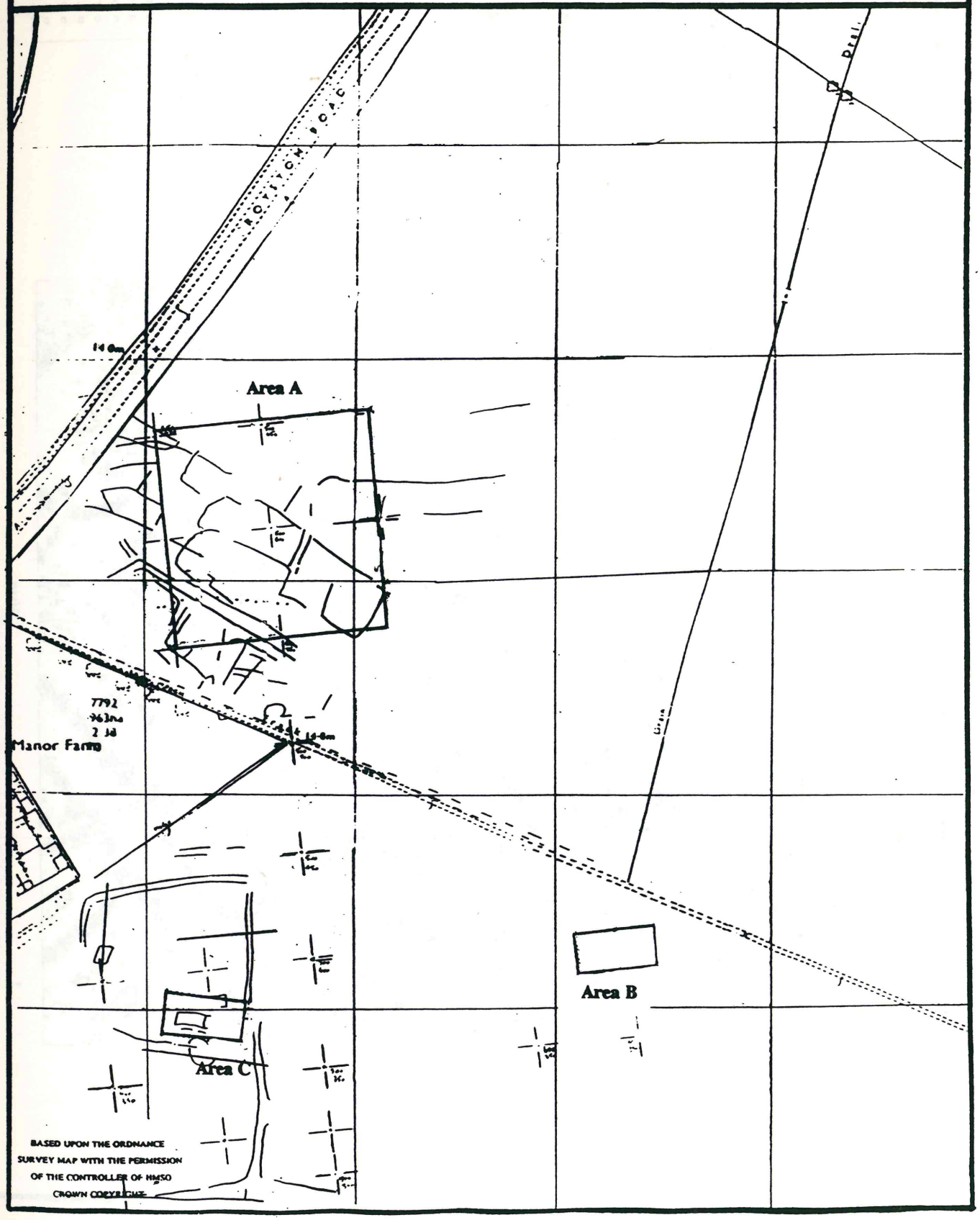
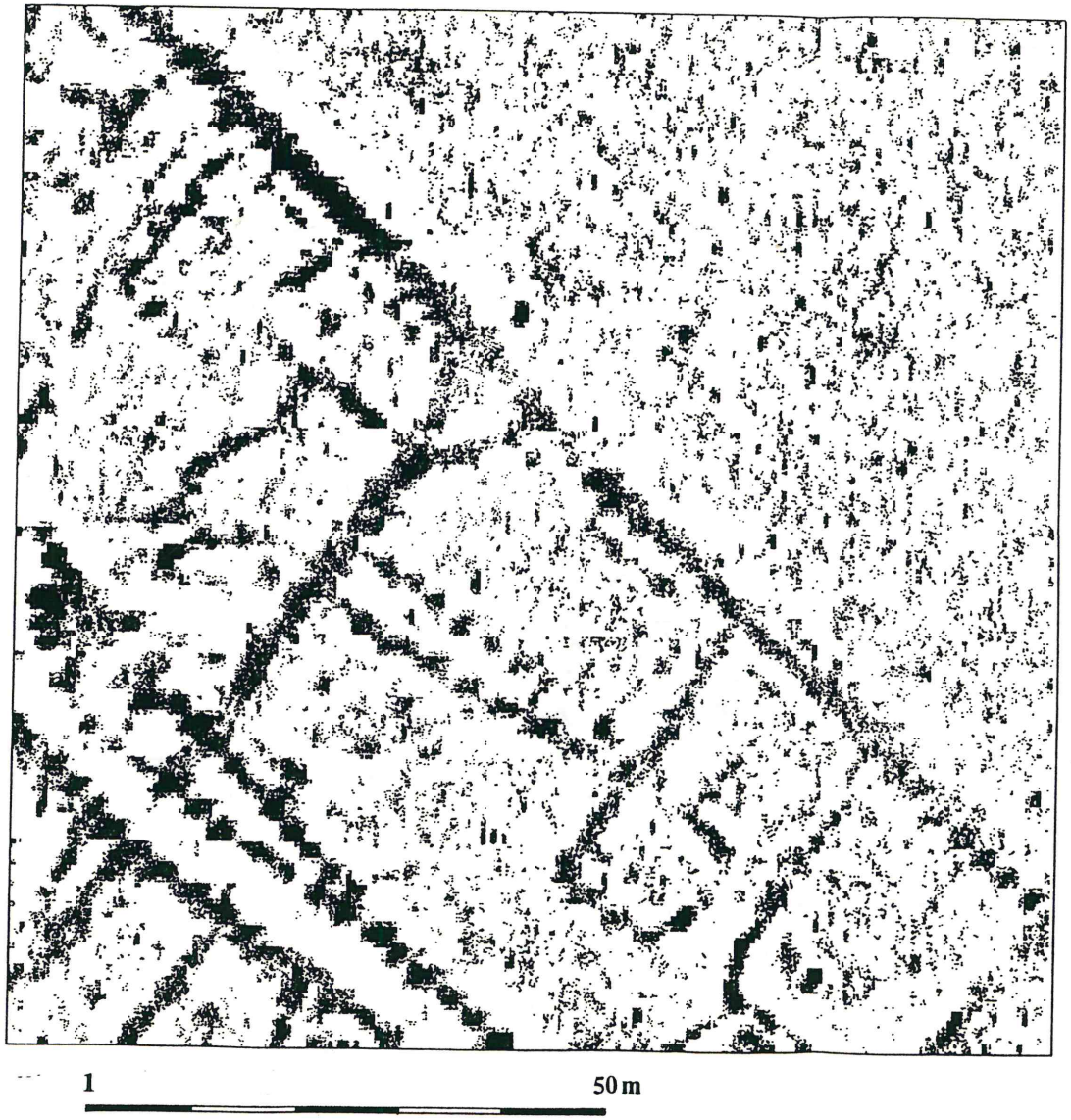


Figure 1



Hoffer Bridge

Harston

Area A

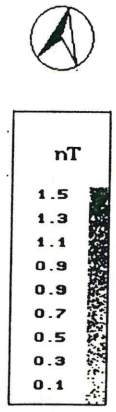
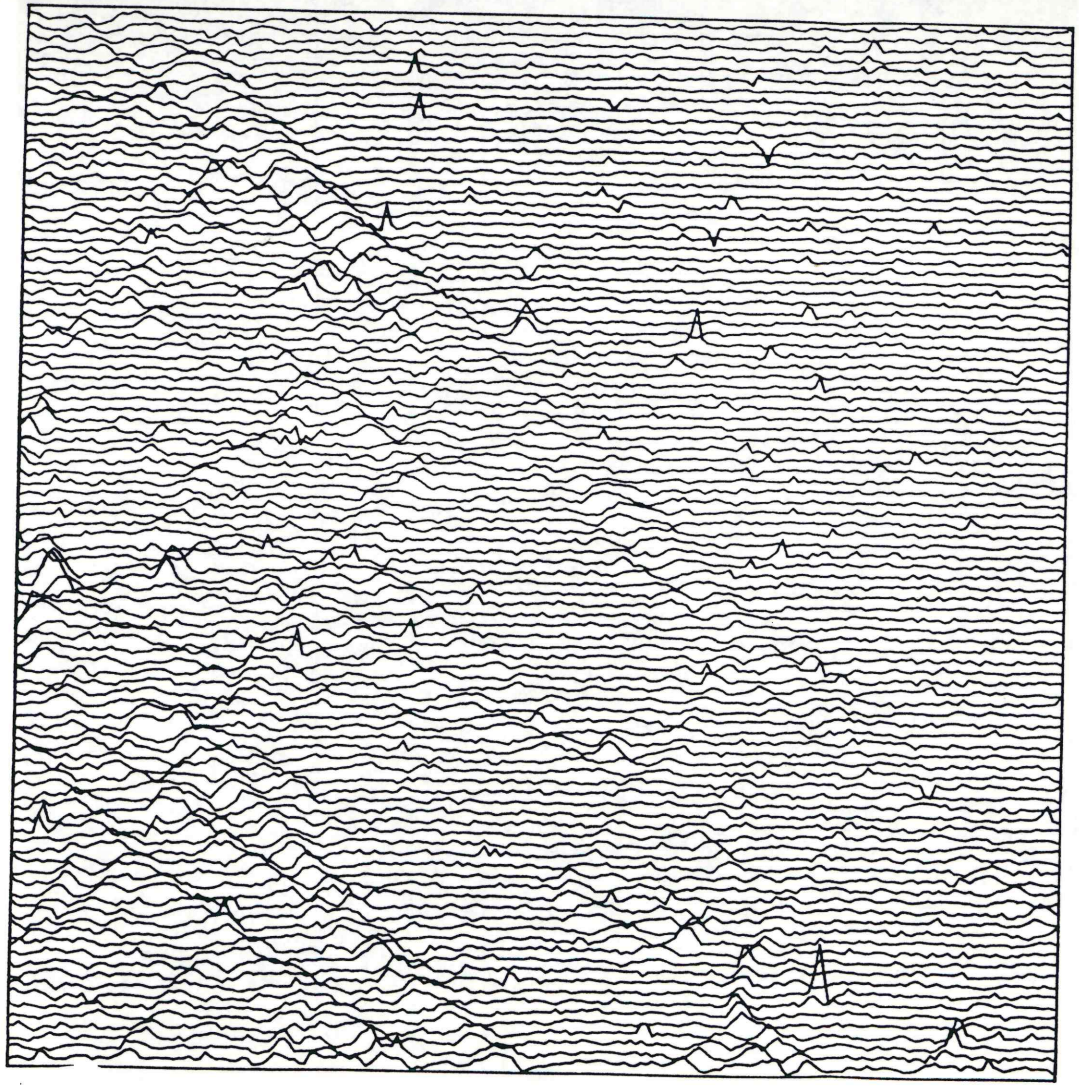


Figure A1



1 50 m

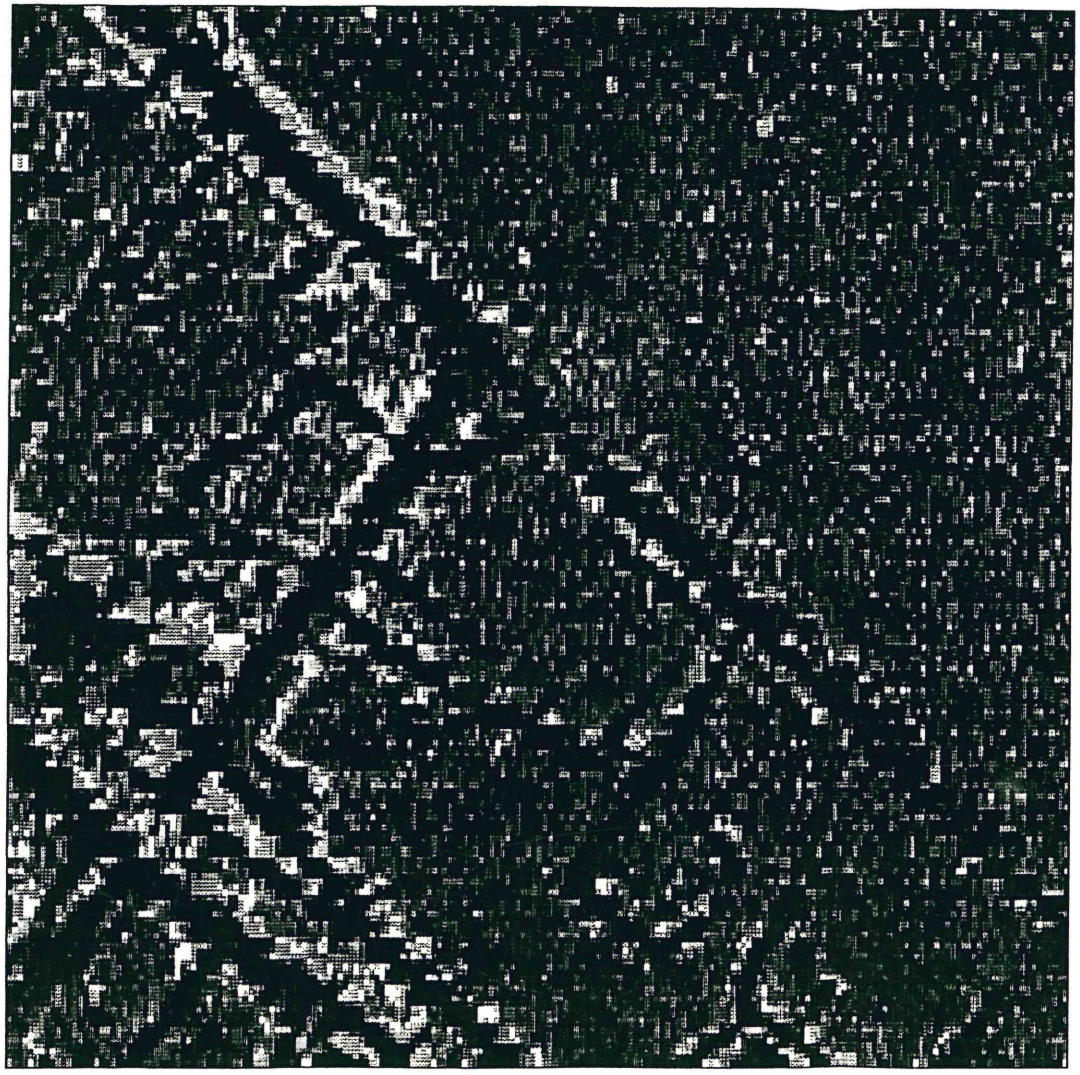
Hoffer Bridge

Harston

Area A

Vertical Scale - 5 nT/cm

Figure A2



Hoffer Bridge

Harston

Area A

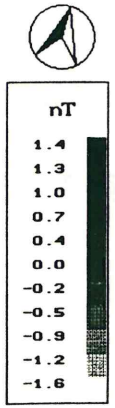
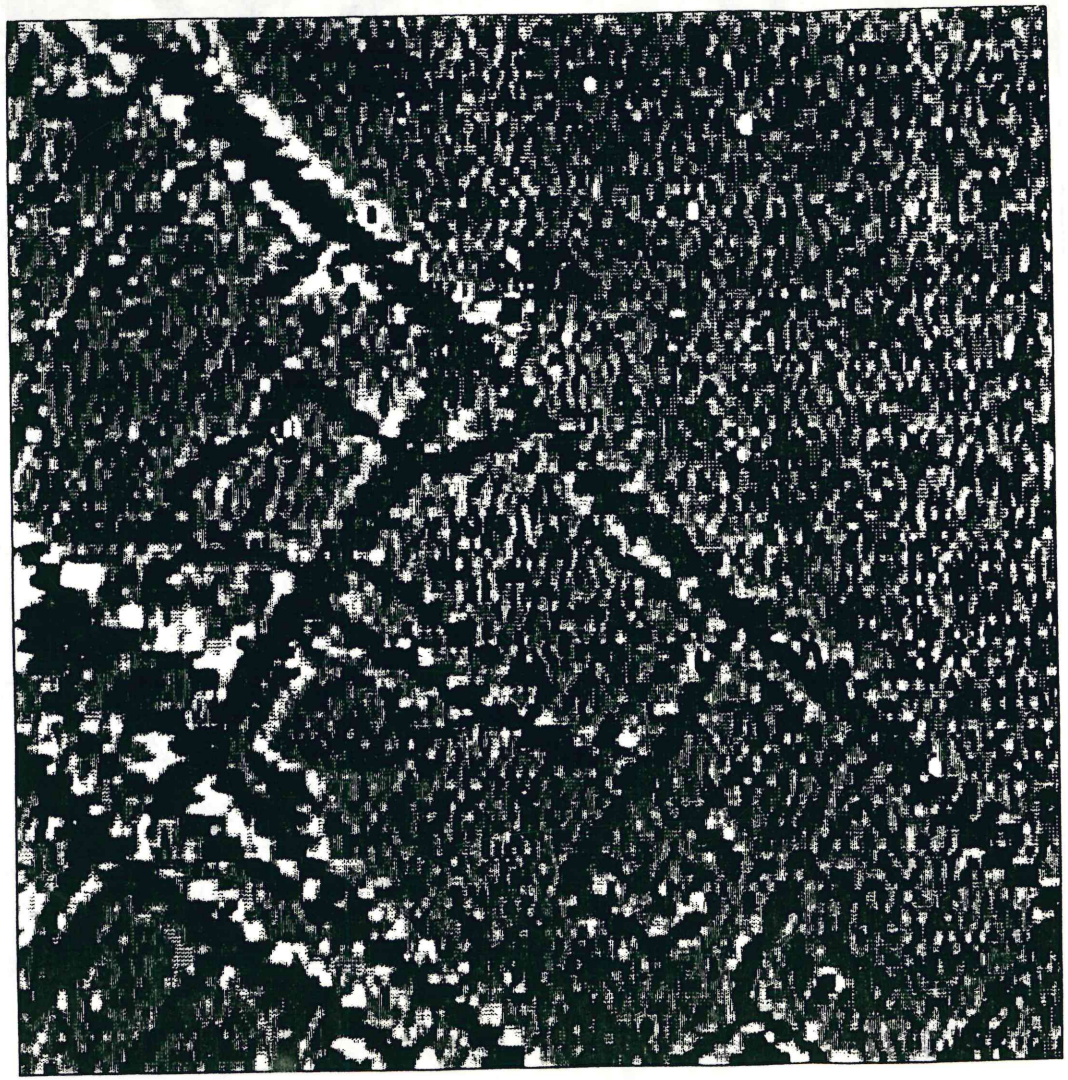


Figure A3



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Hoffer Bridge

Harston

Area A

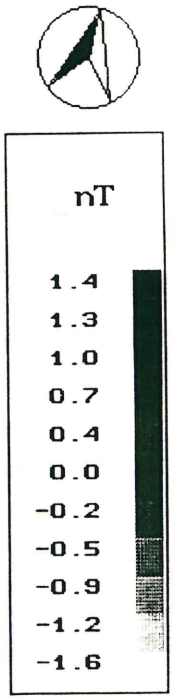


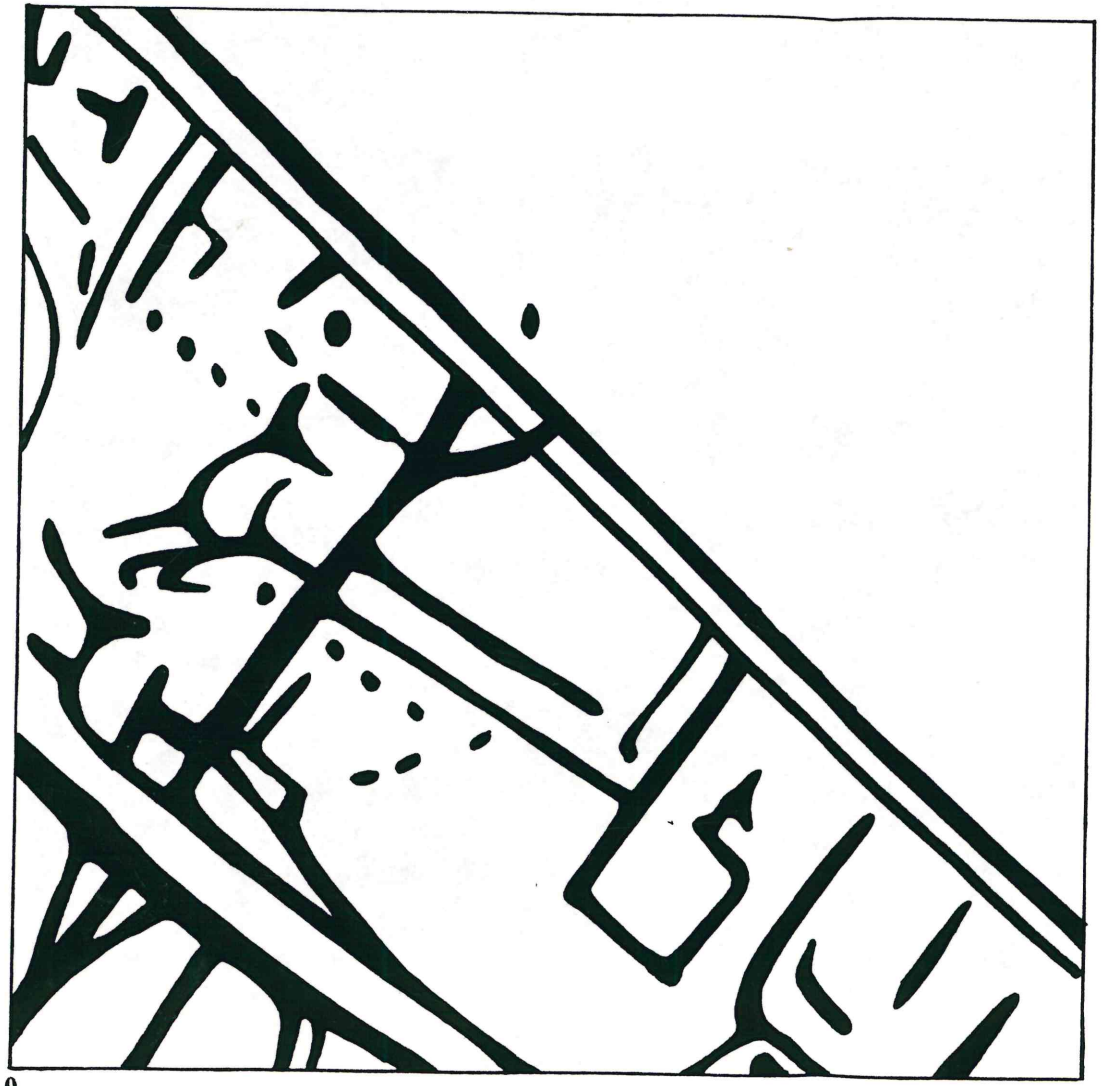
Figure A4

Hoffer Bridge

Harston

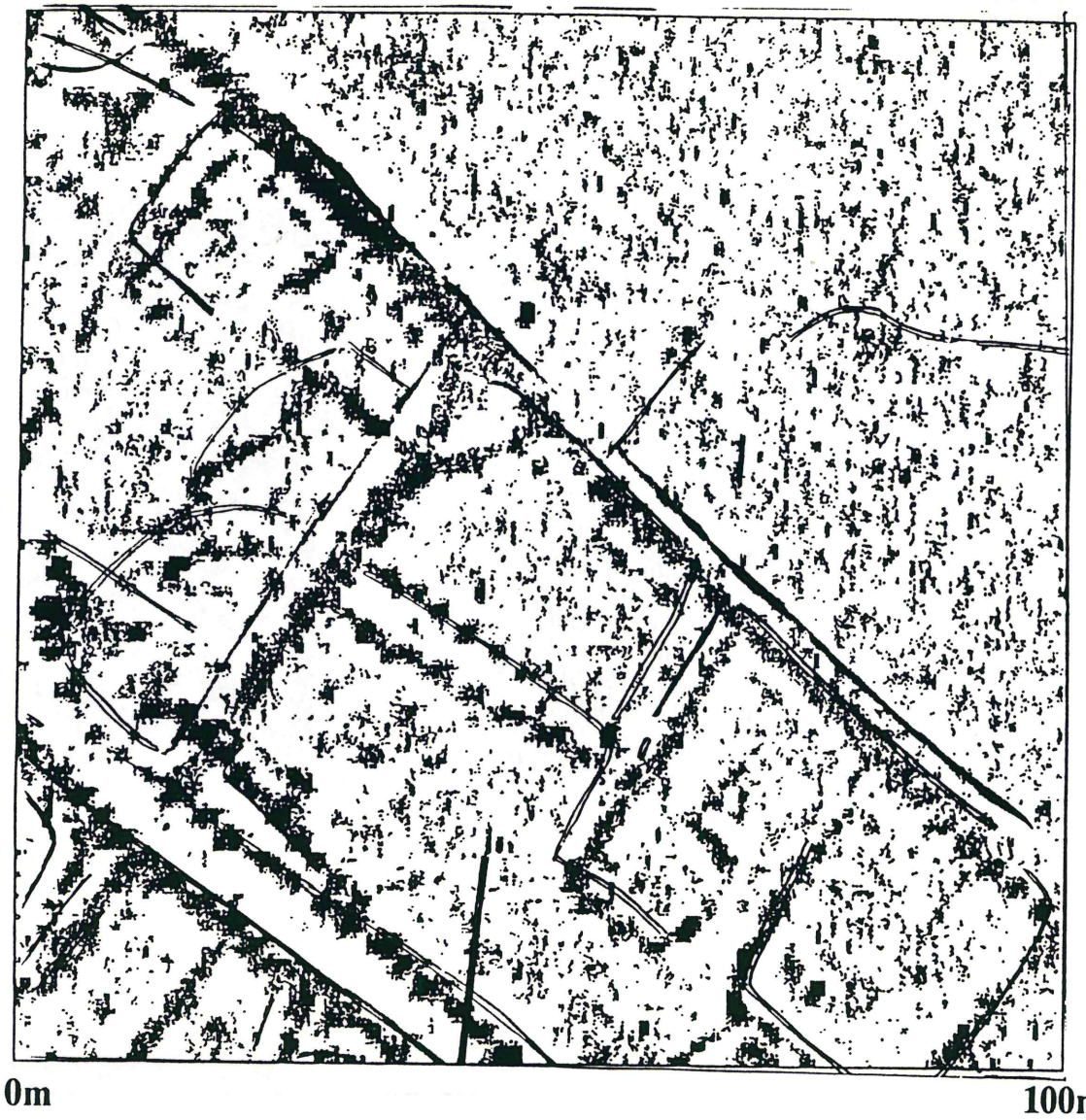
Interpretation Diagram

Area A



Probable ditch / pit

Figure A5



0m

100m

Hoffer Bridge

Harston

Area A with Cropmarks

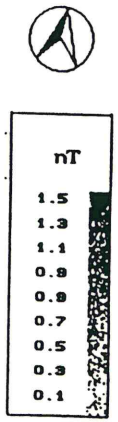
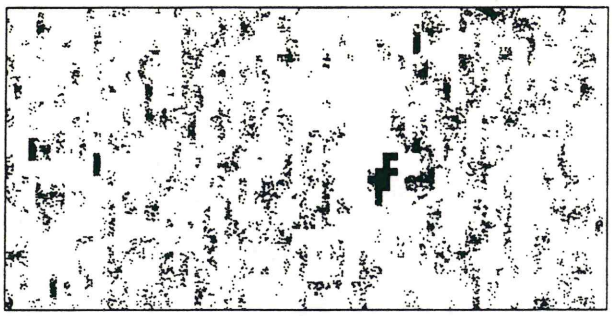


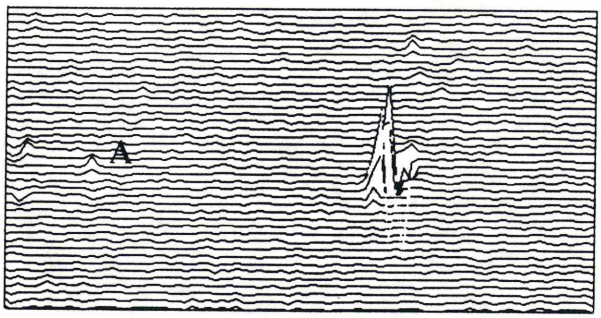
Figure A6

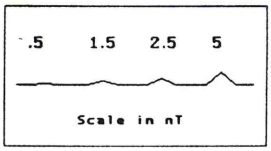
Hoffer Bridge

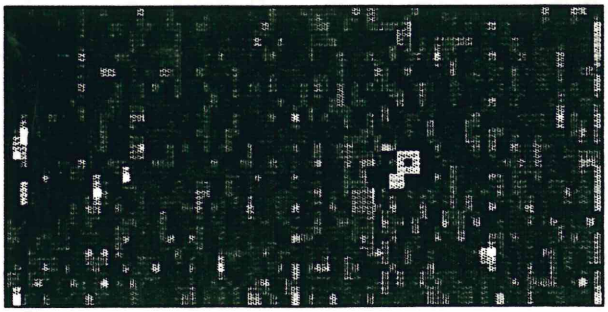
Harston

Area B









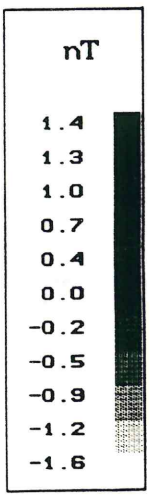


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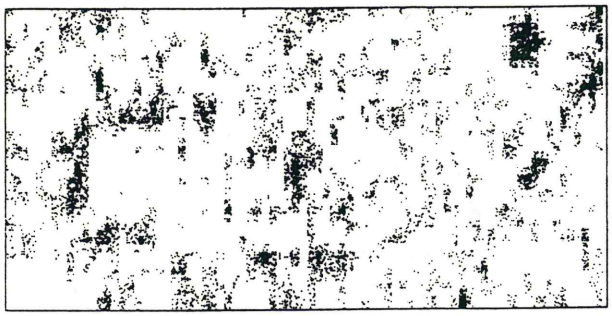
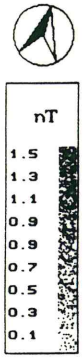
Figure B

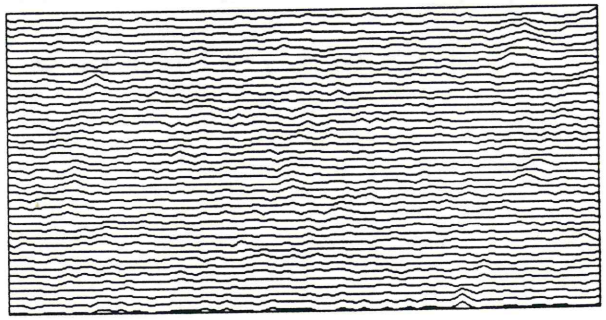
Hoffer Bridge

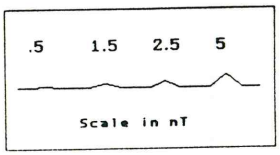
Harston

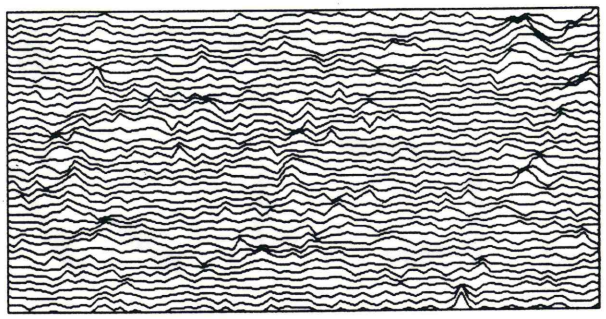
Area C

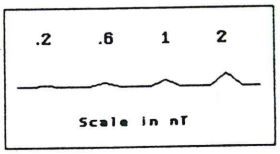


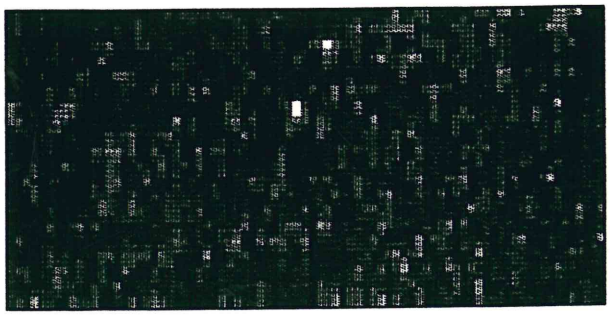


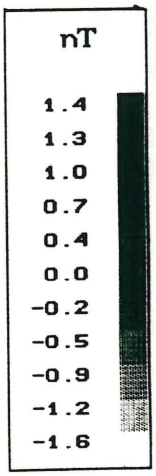












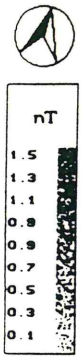
1:500

Figure C1

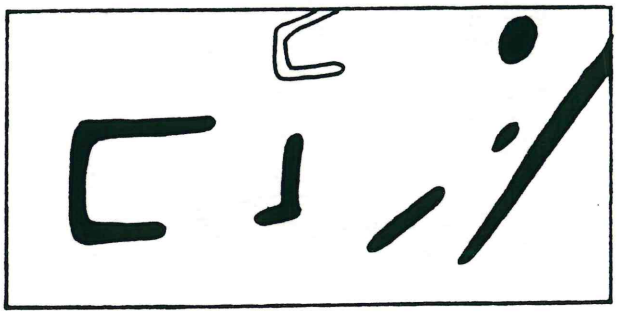
Hoffer Bridge

Harston

Area C



With overlay of Cropmarks



Interpretation

Probable ditch / pit

Possible ditch / pit

1:500

Figure C2