STEPPINGLEY TO AYLESBURY NATURAL GAS PIPELINE

ARCHAEOLOGICAL WATCHING BRIEF 1997

Volume 1: Report

Network Archaeology Ltd

for

Murphy Pipelines Ltd

on behalf of

Transco
(now part of National Grid)

Report No. 234
December 1999

revised and edited
March 2007

nationalgrid MURPHY network archaeology

STEPPINGLEY TO AYLESBURY

900mm HIGH PRESSURE NATURAL GAS PIPELINE

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SUMMARY

1.1 General

An archaeological watching brief was carried out during construction, in 1997, of the Transco gas pipeline between Steppingley in Bedfordshire and Aylesbury in Buckinghamshire. Thirty-eight archaeological sites were identified and investigated, either by area excavation or recording of sections exposed in the pipe-trench. These sites were distributed throughout the pipeline route, with eighteen in Buckinghamshire and twenty in Bedfordshire (Table 1).

The watching brief constituted one stage of a phased approach to archaeological mitigation. Previous stages had identified one site considered to warrant intrusive investigation in advance of construction: a dense concentration of Mesolithic and later flint between Tingrith and Flitwick. This site had been investigated by excavation of sample quadrats before the watching brief was carried out.

The watching brief provided further information about this Mesolithic site, and provided an opportunity for examining pollen sequences from alluvial deposits beneath the River Flit nearby; the results are a significant addition to knowledge of the development of the Quaternary environment in the area.

Four of the other identified sites were flint scatters, producing small quantities of Mesolithic, Neolithic or Bronze Age material. There were two other Bronze Age sites, one with a single feature containing substantial portions of a large pottery vessel, the other with features containing pottery, sealed by alluvial deposits.

One site yielding late Bronze Age or early Iron Age pottery and three sites with middle to late Iron Age pottery consisted of ditches or pits seen in the side of the pipe-trench and could not be fully characterised. Of the other sites similarly recorded, at least three more are considered to be potentially prehistoric.

The seven sites of Roman date included the three most extensive areas excavated. These three sites consisted largely of pits and ditches, but the range of recovered artefacts suggest that they included, or were close to, areas of settlement. The other Roman sites included two areas of quarry pits, and a section of a Roman road.

A small group of graves revealed by excavation of the pipe-trench proved to be of Anglo-Saxon date.

Of later periods, there was evidence of post-medieval brick making at one site, and remains of ridge-and-furrow ploughing in many parts of the route. Eleven of the sites recorded during pipe-trenching were undated.

Overall, the watching brief produced a large artefact assemblage with the potential to contribute significantly to the study of prehistoric and Roman ceramics in the region.

1.2 Results

Table 1 below provides a brief description of each site. Locations of the sites are indicated on Figure 2.

Site	Plot	Easting	Northing	Description	Period	Civil Parish
Buckinghamshire						
1	0/3	472200	218400	Ditches and pit	Roman	Westcott
2	0/6	472800	218200	Ditch	undated	Westcott
3	1/10	473600	218100	Linear features	undated	Waddesdon
4	2/15	475000	218300	Ditches	undated	Waddesdon

Site	Plot	Easting	Northing	Description	Period	Civil Parish
5	2/16	475200	218000	Ditches and pit	undated	Waddesdon
6	3/19	476200	217800	Linear features	undated	Waddesdon
7	3/23	476900	217300	Linear features, pits and posthole	Roman	Fleet Marston
8	3/23	477200	217200	Roman road	Roman	Fleet Marston
9	4/33	479700	217000	Linear features and pits	Iron Age Roman	Quarrendon
10	5/38	481554	217171	Single pit	undated	Weedon
11	5/49-50	483700	217200	Linear features and pits	Roman	Bierton with Broughton
12	6/54	484700	217200	Linear features, hearth, pit, layers	Prehistoric	Hulcott
13	6/63	486260	217780	Possible cremation urn	Bronze Age	Wingrave with Rowsham
14	6/63	486420	217860	Linear features	?Prehistoric	Wingrave with Rowsham
15	6/65	486810	218310	Ditches	LBA EIA	Wingrave with Rowsham
16	6/68-69	487380	218390	Ditches and pits	MLIA	Wingrave with Rowsham
17	7/71-72	488210	219360	Ditches	MLIA	Wingrave with Rowsham
18	8/79-80	489900	220800	Possible pits and ditches	MLIA	Mentmore
Bedfordshire						
19	10/96-97	492940	221780	Ditches and pits	BA	Billington
20	11/99	493600	221900	Pits	undated	Billington
21	11/101-102	494190	221950	Pits and linear features	BA-IA	Billington
22	13/113	496340	222580	Field system, possible settlement	Roman	Eaton Bray
23	13/114	496860	222660	Ditches	undated	Totternhoe
24	14/115-15/116	497100	222730	Ditches	undated	Totternhoe
25	16/121	497500	223100	Ditches	undated	Tilsworth
26	16/121	498000	223300	Ditches	undated	Tilsworth
27	16/123-124	498300	223600	Ditches	poss Roman	Tilsworth
28	16/125-126	498700	224000	Field system	Roman	Tilsworth
29	17/129	499200	225100	Ditches	undated	Chalgrave
30	17/131	498800	225700	Flint scatter	LBA	Chalgrave
31	17/134	498700	225900	Quarry pits	Roman	Chalgrave
32	18/141-142	498300	227700	Ditches	?Prehistoric	Chalgrave
33	19/143	498400	228200	Flint scatter	LN-BA	Toddington
34	20/154-155	500000	231000	Flint scatter	LN-BA	Toddington/Tingrith
35	20/155	500002	231200	Ditches, pits and brick waste	Postmed	Tingrith
36	20/156-158	500010	232000	Flint scatter	LN-BA	Tingrith
37	23/163-165	500165	233100	Flints scatter, natural features	Mesolithic	Flitwick
38	24/169	500012	233900	Three burials	mid Saxon	Flitwick

Table 1: Summary of Archaeological Sites

2 INTRODUCTION

Murphy Pipelines Ltd (MPL) constructed a 43km-long high pressure, natural gas pipeline for Transco in the spring and summer 1997, running from Steppingley Above Ground Installation (AGI) (TL 0100 3430) in Bedfordshire to Aylesbury AGI (SP 7155 1835) in Buckinghamshire (Fig. 1). Network Archaeology Ltd carried out archaeological evaluation and excavation of specific sites along the route of the pipeline, followed by a permanent-presence archaeological watching brief of the pipeline construction.

2.1 Scope of the Report

This report details the findings of area excavations of sites found in the watching brief on topsoil stripping, and more limited excavation and recording of features revealed during the watching brief on the excavation of the pipe-trench.

After introductory sections describing the pipeline route, the methods of investigation and the archaeological background of the area, the results of the watching brief and subsequent excavations are presented site by site. For the smaller sites, the recorded features are listed, the descriptions of these features being given in the gazetteer (Appendix 14). Fuller feature descriptions are given in the site reports for the larger sites. Results of the specialist analyses are have been incorporated into the discussions for each site. The full specialist reports are presented in Appendices 1 to 13.

2.2 Specification and Standards

All archaeological work was undertaken in accordance with Transco's general briefs for Field Evaluation, Excavation, Watching Brief and Archive and Publication (1997). In response to these briefs, Network Archaeology Ltd produced detailed Method Statements. The work conformed to the Institute of Field Archaeologist's (IFA) *Code of Conduct* (1997), *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (1997) and *Standard and Guidance for an Archaeological Watching Brief* (1994). The work was managed in accordance with the methods and practice described in *The Management of Archaeological Projects, second edition* (English Heritage, 1991).

Any comments regarding the need for further archaeological investigation are intended only as a guideline for future work, by any party, beyond the limits of the pipeline easement. Transco have satisfied all archaeological requirements, as set out in their general brief, within the limits of the construction site.

2.3 Project Background

British Gas plc carried out a feasibility study in 1994. This consisted of a search of the Sites and Monuments Records (SMRs) of the two counties. The geo-morphological study of the pipeline route listed archaeological constraints within the proposed pipeline corridor, taken from the Sites and Monuments records of the two counties. Staff from the archaeology unit of British Gas plc paid further visits to the county SMRs in 1995 and 1996, in order to review the proposed pipeline route.

Engineering Archaeological Services Ltd (EAS) conducted a pre-construction field survey of the proposed pipeline route in 1996. This involved a fieldwalking survey of the arable land, and magnetic scanning survey of pasture and other non-arable land. A significant flint scatter was found near Tingrith.

EAS excavated the site of the flint scatter at Tingrith between January and March 1997. This site is the largest concentration of Mesolithic activity along the Bedfordshire greensand ridge so far discovered.

Network Archaeology Ltd conducted the watching brief on pipeline construction, including area excavations of discovered sites, between April and July 1997.

2.4 Objectives

The general objectives of the fieldwork were to:

- gather sufficient information to establish the presence or absence, extent, condition, character, quality and date of archaeological remains along the pipeline route;
- recommend mitigation measures for preservation *in situ* of any archaeological deposits, where feasible;
- record all features of archaeological interest that would be damaged or destroyed during the construction of the pipeline;
- assess the overall archaeological value and importance of any archaeological sites.
- locate, recover, identify, and conserve as appropriate, any archaeological artefacts exposed during pipeline construction;
- locate, sample, interpret and record any archaeological deposits exposed during pipeline construction;
- submit for analysis samples of deposits with the potential to yield palaeo-environmental data.

3 THE PIPELINE CORRIDOR

3.1 Location and Topography

The northern end of the pipeline route is on relatively high ground, approximately 110m above Ordnance Datum (AOD). From Steppingley AGI, the route descends sharply over a sandstone outcrop, crosses the Westoning Brook and heads south towards Tingrith, where it crosses the M1 motorway. From here, it runs roughly south-south-east, across undulating land rising to 130m AOD, before descending to cross Clipstone Brook. South of the A505 Leighton Buzzard southern bypass, it follows the valleys of the Ouzel Brook and River Ouzel between Tilsworth and Rowsham villages, running in a roughly south easterly direction and skirting south of the high ground around Billington village.

Passing into Buckinghamshire and crossing the Grand Union Canal, the route then follows the northern side of the Thistle Brook. From Rowsham, the land drops away to around 70m AOD to the south of Weedon. The pipeline then continues westwards through an area of more subdued relief, following the line of the Aylesbury Vale and crossing several small tributaries of the Thame to the north of Aylesbury.

3.2 Geology, Soils and Landuse

The pipeline route is on Jurassic and Cretaceous rocks, overlain in places by drift deposits (Fig. 2). Generally, the solid strata dip to the south east with a slope of between one and five degrees, so that there are successively younger rocks towards the east. West Walton and Ampthill Clay formations overlie Oxford Clay at the Aylesbury end of the route. Further east, there are outcrops of Kimmeridge Clay between Rowsham and 2km west of Weedon, and Portland Beds in outcrops to the to the South of Rowsham and to the north of Hulcott. The area between Rowsham and Westoning is on Gault Clay and Upper Greensand, while the eastern end of the route, between Steppingley and Tingrith, is on Woburn Sands.

At the north-east end of the pipeline route, between Tebworth and Steppingley, the solid geology is covered by Boulder Clay. Glacial sands and gravels are found in isolated patches between Hockliff and Steppingley. Head, weathered and broken-up material derived from solid and drift formations, is found mainly at the upstream ends of valleys and in localised patches on gently sloping ground. There are bands of alluvium lies within the floodplain areas of the main river valleys and tributaries.

The soils of the Aylesbury Vale are seasonally waterlogged gleys of the Denchworth association (SSEW, 1983). Calcareous pelosols, of the Evesham group, have formed over the Gault, while brown earth soils, of the Frilford, Oxpasture and Milford associations, lie over the sands at the eastern end of the route.

Most of the land crossed by the pipeline is used for arable farming, although there is some permanent pasture, mostly in the floodplain areas. There is some forestry in the vicinity of the north eastern end of the pipeline route, on the Woburn Sands Formation.

4 METHODS

4.1 Pipeline Construction

There were twenty-four road crossings on the pipeline route, dividing it up into construction sections. These sections were numbered sequentially from the Aylesbury end of the pipeline, so Section 4, for instance, was the part of the route between Road Crossings 4 and 5. Each field crossed by the route was given a Plot number, also numbered in sequence from the western end. In this report, fields are referenced by both Construction Section and Plot number.

The pipeline was constructed within a 36m-wide, fenced easement, widened at obstacles such as road and river crossings. The width of the easement accommodated the different construction activities. An 8m-wide strip along the north side of the easement was used for the storage of stripped topsoil. Topsoil was stripped from the rest of the width. Adjacent to the topsoil heap, a 12m-wide strip formed a vehicle running track. The pipe sections were strung out and welded along the south of this. A 4m-wide area accommodated the pipe-trench, and a 12m-wide area on the south side of the easement was used for the storage of subsoil from the excavation of the pipe-trench.

Pre- and post-construction drainage was carried out along the full length of the pipeline. This involved the excavation of a single, continuous, drainage trench, approximately 0.5m deep and 0.2m to 0.3m wide along one edge of the easement. Plastic drainage pipes were placed in this trench which was then filled with coarse gravel.

Topsoil stripping of the easement took place in two phases. Initially, soil was removed from between a quarter and a half of the easement width using back-acting, excavators with smooth-faced ditching buckets. The soil from the rest of the working width was stripped by pushing it onto the topsoil stack using bulldozers.

Along much of the pipeline route, a subsoil layer was removed along the centre-line prior to the excavation of the pipe-trench, using back-acting excavators with toothed-buckets, forming a header trench 4m wide and between 0.15m and 0.40m deep.

Excavation of the pipe trench was mainly carried out by a Cleveland trenching machine, which has rotating cutting blades followed by a coulter which profiles the sides of the trench. The machine is unsuitable for soft ground or significant bends, and where these conditions were encountered, back-acting excavators with toothed ditching buckets were substituted. The pipe trench was generally 1m wide and 2m deep. The upper edges were battered back to a 45° angle, with only the lower trench having vertical sides. Bell pits, up to 6m wide and 4m deep, were excavated to allow tie-in welds between the welded-up sections of pipe.

In addition to the twenty-four road crossings, the pipe also crossed three railways, eleven existing gas pipelines, two oil pipelines, three main sewers, one water pipeline, one large underground telephone cable, three large tracks and the Grand Union Canal. These obstacles were negotiated using auger bores. This technique involves the excavation of an auger pit and a reception pit on either side of the obstruction, the dimensions of the pits dependant on the size of the obstacle, but generally about 5m wide and several metres deep, with auger pits being larger than reception pits.

4.2 Archaeological Methods and Mitigation Strategies

Minimal disruption to the construction schedule of MPL and Transco was achieved by integrating the archaeological work with the main phases of pipeline construction.

Pre- and post-construction drainage
Intermittent observation of drainage works was conducted in order to determine whether more a detailed investigation was required. The narrowness of the drainage trenches provided a very limited window of observation and their excavation did not warrant continuous monitoring.

Topsoil stripping
A permanent presence watching brief of this activity involved the examination of freshly stripped areas and spoil heaps for archaeological deposits and artefactual evidence. Where remains were found, an assessment of their significance was used as the basis for deciding on the need for further, more detailed archaeological investigations.

Detailed investigations included archaeological excavation and recording of deposits which could not be preserved *in situ*. The extent of each site was defined within the corridor, and temporarily fenced off to prevent vehicle access. Time limits for the excavation of each site were agreed with Transco. Extensive sites sometimes required the whole width of the corridor to be stripped. Wherever possible this was carried out using back-acting excavators but, because of time constraints, stripping using bulldozers sometimes had to be used. To allow construction to proceed without significant disruption, access for vehicles had to be provided while sites were being excavated. On some of the earlier sites, a strip of the ploughsoil layer was left, to protect the archaeological deposits from vehicle damage, but this was found to be unsatisfactory in poor weather conditions where the ground to become churned and rutted. On later sites, wooden bog mats were laid to form a temporary running track, and were found to be a more effective means of protection.

Pipe trench excavation
Permanent-presence monitoring was maintained on the excavation of the pipe-trench. All archaeological deposits and artefacts seen in section were recorded, although scope for excavation was limited at this stage.

4.3 Visibility of Archaeological Deposits

Visibility of archaeological remains depends on many factors, including machine type, depth of topsoil removal, weather conditions and geology. The topsoil stripping provided the best opportunity to see archaeological features, especially the removal of the first strip where back-acting excavators with smooth ditching buckets were used. This was therefore monitored closely, although the speed of construction activities sometime made this difficult, with plant stripping up to 1km of topsoil per day, often in more than one location.

The pipe-trench was dug by Cleveland machine and back acting excavators. The Cleveland machine left very clean sides to the trench except where there was heavy clay or wet ground conditions. In contrast, the back-acting excavators produced uneven trench sides, needing cleaning in order to increase archaeological visibility. Health and safety considerations restricted close examination of some archaeological deposits, and on very soft ground such as running sands and gravels, the trench sides had to be immediately battered back to prevent collapse, substantially diminishing archaeological visibility.

Archaeological deposits visible within the pipe-trench suffered from varying degrees of distortion of their profiles, depending on the angle at which they were cut. Rectification was required to ascertain their original forms.

4.4 Field Records

The project code for the Steppingley to Aylesbury pipeline is SAY 97. The museum accession number for Bedfordshire is LTNMG:1997/29 and for Buckinghamshire is AYBCM:1997.63.

Each site identified by the watching brief was originally numbered with its Construction Section and Plot number. This information was used by all artefact specialists, and appears in their specialist reports

in the appendices. Subsequently, site numbers 1-38 were allocated in place of the Section and Plot reference. Thus, the archaeological remains discovered within Section 19, Plot 145, have become Site 18. These new site numbers are used throughout this report.

All features and deposits were given a block of unique context numbers for recording purposes. Where possible, the numbers included the number of the construction section as their first digits. For example, ditch 1112 is in Construction Section 11 and pit 226 in Construction Section 2. For larger sites numbers greater than 2500 were allocated once the original block of 100 numbers had been used.

Representative samples of the archaeological features found during topsoil stripping were excavated, with special attention paid to those features in the area of the proposed pipe trench and running track. Records of all archaeological deposits and any significant natural deposits were made using NAL record sheets. The locations of deposits were recorded by total station theodolite.

Unstratified artefacts were collected, located on copies of the construction strip maps, and given a unique identifying number. Archaeological deposits found during trenching were located either by total station survey, or by relating drawn sections to pipe welds. The NGR and OD level of the welds were supplied by MPL surveyors at the end of the project.

Drawings included OS base plans, at an appropriate scale, showing the location of any excavation areas; excavation area plans, at 1:20, 1:50 or 1:100 scale, showing all archaeological and natural deposits; detailed plans at 1:20 scale of significant features; section drawings at 1:10 scale or 1:20 scale of all excavated features or features seen in trench sections; section drawings at 1:10 or 1:20 scale of representative sections showing any overlying site stratigraphy.

Colour and monochrome 35mm photographs were taken, including overall shots of each site, work in progress, overall pre-excavation shots and detailed feature shots. A suitable scale, context number and north arrow appeared in all photographs whenever possible.

5 ARCHAEOLOGICAL BACKGROUND

5.1 General

The density and distribution of archaeological remains in the region is heavily influenced by the underlying geological structure. Much of the pipeline route was on clays: Oxford, Ampthill and Kimmeridge at the western end; Gault at the foot of the Greensand Ridge and glacial head and tills in patches throughout, especially near the north-eastern end (Fig. 2). In these areas, it is noticeable that the present-day villages occupy higher land. This quite striking pattern clearly dates back to the Anglo-Saxon or early medieval settlement of the land, but the factors influencing the choice of prime locations no doubt operated in a similar way in earlier times. Variations in climate and sea level may have had some effect on the water table, but it is likely that the valley bottoms were poorly draining throughout the post-glacial period. This land, while suitable for pasture and meadow, would have been marginal for cultivation, perhaps only being settled and brought into arable use at times of heavy population pressures.

This is reflected in the pattern of known archaeological sites, although it must be borne in mind that there also tends to be a heavy bias towards existing settlements and their immediate surroundings in the distribution of recorded sites. Because of the need to avoid existing elements of the built environment, the preferred pipeline route tended to favour the lower lying land and, in doing so, avoided areas with a high density of known archaeological remains, even before route modifications adopted specifically to mitigate the archaeological impact of construction. Comparing the route with the county SMR maps, it is striking how many recorded sites lie some distance to the north or south, on rising ground, with far fewer in the immediate vicinity of the pipeline.

5.2 Early prehistoric

The evidence for pre-Iron Age activity is largely in the form of isolated finds. A multi-period flint scatter near Waddesdon Manor (Bucks PRN 2095) included Mesolithic material; a Bronze Age axe (Bucks PRN 0142) was also found in the same area. A Neolithic stone axe is recorded from south-east of Wingrave village, within 200m of the pipeline route.

Finds of worked flint become far more common as the route passes onto the Cretaceous rocks. The Gault clay and the chalk of the Chiltern Hills to the south-east would have provided ready sources of raw material, but the increase could also indicate that these areas of higher ground were being preferentially utilised in these earlier times. Palaeolithic flints have been recorded close to where the pipeline crosses the A505 Leighton Buzzard Bypass (Beds PRN 14697), and there are two areas close to the pipeline with Mesolithic scatters: the area north of the A505, towards Tilsworth and Chalgrove villages (Beds PRN 16262, 16263, 16264, 16266, 16261), and east of the M1 crossing, between Tingrith and Flitwick (Beds PRN 15844, 2765). The large scatter of Mesolithic flint found during fieldwalking and investigated prior to construction of the pipeline was in the same area.

Scatters of worked flint of a broadly Neolithic or Bronze Age technology or of relatively undiagnostic material have been recorded in the same areas (Beds PRN 7473, 15835, 16094, 16265, 16266, 16269), with occasional finds elsewhere along the pipeline route, for instance near Wingrave (Bucks PRN 4200) and in field-walked areas to the north of Aylesbury (Bucks PRN 2398, 4695, 5549). A Neolithic stone axe has also been found near Wingrave (Bucks PRN 1007) while recorded Bronze Age finds include an axe from Hulcott Manor Farm (Bucks PRN 0133) and a spearhead found in the Ouzel Brook to the south of Tilsworth (Beds PRN 2802).

5.3 Iron Age

The relative scarcity of recorded Iron Age remains from the area is partly a consequence of the general lack of modern development projects. The only recorded activity sites in the immediate vicinity of the pipeline were discovered, tellingly, during investigations of pipeline routes, an earlier gas pipeline connecting to the Aylesbury AGI (Bucks PRN 4013) and an oil pipeline crossing the mainline railway near Rowden Farm, Mentmore (Bucks PRN 5356). There are few cropmark sites, the rich agricultural soils of the Aylesbury Vale not being conducive to their formation, and those which are present on the sandier soils at the eastern end of the route are mostly undated. They almost certainly include unrecognised Iron Age remains. Pottery finds from the period have been recorded from a number of locations to the south of Tilsworth and Stanbridge (Beds PRN 16180, 16179, 16274).

5.4 Roman

The pipeline route crossed Watling Street (Beds PRN 5508), the modern A5, at the base of its descent from the Chilterns, south of Chalgrave, and the western end of the route was less than 800m north of Akeman Street (Bucks PRN 1050), another major element of the Roman Road system. The pipeline also crossed three possible minor roads. Two of these roads branch off Akeman Street near Fleet Marston, where extensive finds indicate the former presence of a significant settlement (Bucks PRN 1025, 5527, 0661). From here, the more westerly of the proposed routes (Bucks PRN 2034) corresponds to the course of the A41 Bicester Road for a short distance, but is then lost until it joins Church Lane, Pitchcott, 2km to the north of the pipe route. The easterly route (Bucks PRN 2035) is very speculative, being based on extrapolation from an alignment of field boundaries in Pitchcott and possible agger identified further to the north. The route of the third possible road (Bucks PRN 2991 169a) is marked by an alignment of field boundaries to the south of Wing, picking up the line of a possible agger to the west of the town and Stewkley Road to the north.

As with the Iron Age, the distribution of known Roman sites is very biased towards areas where modern development has occurred. Construction of an earlier gas pipelines produced spreads of Roman pottery (Bucks PRN 2546, 2547, 2548) to the east of Aylesbury AGI and east of Mentmore crossroads (Bucks PRN 4061). Evidence of Roman activity has also been found alongside the M1 (Beds PRN 16093, 15836). Unsurprisingly, Roman artefacts have been recovered in the course of systematic field-walking surveys where these have been carried out, especially on the northern side of Aylesbury.

5.5 Anglo-Saxon

On the east side of Watling Street, the pipeline turns north and crosses the course of another ancient route-way (Beds PRN 10843) between the Chilterns and the Aylesbury Vale and crossing the River Ouzel to the south of Leighton Buzzard. It is entirely likely that this track had prehistoric origins, but it was definitely in existence in the Anglo-Saxon period, when elements of it are mentioned in tenth century charters. Much of its course survives as trackways, field boundaries or parish boundaries. Although most of the villages along the route will have had their origins in this period, there is little tangible surviving evidence beyond occasional pottery finds.

5.6 Medieval

The pipeline passes close to a number of deserted or shrunken medieval villages, notably clustered in the Aylesbury Vale. Extensive earthworks survive at Quarrendon (Bucks PRN 0557), on the north side of the River Thame opposite Aylesbury, along with the remains of St Peter's Church. Another area of well preserved earthworks and part of a moat (Bucks PRN 0336) lie to the north of the pipeline in the same parish, near Whitesfield Farm. In the same area, surviving earthworks at Weedon (Bucks PRN 5041) show that the village was once larger than its present extent, while extensive earthworks to the east of lower Burston Farm are all that remains of Burston village (Bucks PRN 1040). Crafton, to the east of Wingrave, is now reduced to two farms and a large area of earthworks (Bucks PRN 1009) and only a single farm survives at Whaddon (Bucks PRN 0462), close to where the pipeline crosses beneath

the Grand Union Canal. Chalgrove village has areas of surviving earthworks (Beds PRN 760) and near the north-eastern end of the pipeline, traces of building foundations around Priestly Farm, Flitwick (Beds PRN 776), may also be the remains of a deserted village.

The pipeline also passes close to medieval manorial sites at Tingrith (Beds PRN 9500) and at Hulcott (Bucks PRN 003). Grove Priory (Beds PRN 0044) would perhaps have been a more significant influence on the landscape. This large monastic site to the south of Leighton Buzzard has been extensively excavated and has now been largely lost to quarrying.

Areas of ridge-and-furrow have been recorded in various places along the route, again concentrated towards the western end, associated with the deserted sites as well as with existing villages. In the sandier areas to the south of Tingrith, traces of medieval rabbit warrens may survive, their former presence revealed by recorded field names (Beds PRN 7006, 11265).

5.7 Post-medieval and modern

Quarrying for both gravel and clay for brick-making has left its mark on the landscape, especially in the Ouzel valley with a former brickworks near the point where the pipeline crosses the mainline railway (Bucks PRN 4766). Field names can also provide evidence of brick-making, as at Tingrith (Beds PRN 7360, 7361). Digging for coprolites, naturally occurring phosphate nodules used for fertiliser, is recorded near to the pipeline route near Stanbridge (Beds PRN 6785). Other recorded post-medieval remains are mostly buildings or sites of former buildings; windmill sites are particularly well represented with examples near Chalgrove (Beds PRN 3144, 3176, 11807), south of Wing (Bucks PRN 4301) and at Wingrave (Bucks PRN 1795). A moated site of an old cock-fighting pit at Warren Hill, south of Tingrith (Beds PRN 799) is a more unusual survival.

Of more recent developments, the construction of transport links have probably had the most significant effects on the landscape. The pipeline route crosses both the Grand Union Canal (PRN 4119) and the West Coast Mainline Railway to the south of Leighton Buzzard, as well as one other railway line and the lines of two dismantled railways: near Aylesbury AGI (Bucks PRN 4160) and south of Stanbridge (Beds PRN 2436). Towards its north-eastern end, it also crosses the M1 motorway.

6 RESULTS

6.1 General

A total of thirty-eight sites were recorded along the pipeline during the watching brief (Fig. 2). These ranged in type from solitary linear features to extensive, multi-period settlement and funerary sites. They also include significant artefact scatters with little or no accompanying archaeological features. The sites are numbered and described in geological sequence, starting from the western, Aylesbury, end of the pipeline.

Site 1: Roman ditches

Construction Section 0, Plot 3, SP 7220 1840

Introduction

Evidence from ditches and pits suggest that this was an area of agricultural activity on the periphery of a Roman domestic occupation site. The site was approximately 300m north-west of Lower Farm, Quainton and 1km north of Westcott village, at a height of about 79m AOD. A tributary of the River Ray passes 100m to the north (Fig. 3). The modern A41 Bicester road, less than 1km to the south, follows the line of Akeman Street Roman road. Four footpaths converge to the south-east of the site.

The geology of the area consists of pale grey calcareous mudstones of the Upper Oxford Clay formation, dark grey, silty mudstones of the West Walton formation and alluvium (BGS 1994). The land, though wet and clayey, is in arable use (CPM 1996).

Archaeology

The site was found during the watching brief on the topsoil stripping. A 50m-long area was cleaned by machine and investigated prior to trenching. Three ditches and at possible pit were recorded:

Ditch 009	Ditch 013	Ditch 007
?Pit 016	Surface finds 001-006	

All three ditches contained silty fills with relatively large quantities of Roman pottery sherds. The possible pit (016) contained dumped material including burnt clay and charcoal. The quantity of finds suggests that the site was very close to an area of settlement. The ditches presumably delimited plot boundaries associated with this settlement. They would have also served to drain this low lying, wet area: two of them, (009 and 013) ran in an east-to-west direction, parallel with the general direction of the nearby stream course, indicating that any water which accumulated would have flowed westwards in the same direction as the stream.

Dating

The 110 pottery sherds retrieved from the site ranged in date from the late first to the mid-third, or possibly fourth, centuries AD. The context assemblages tended to be of mixed date-ranges, implying that there was a high degree of residuality.

Ditch 013 appeared to cut Ditch 009. The pottery dates support this interpretation, with sherds from Ditch 009 dating to the late first to second centuries AD, and sherds from Ditch 013 dating to the second century or later (Fig. 52 no. 1). The third ditch (007) ran at a tangent to Ditches 009 and 013, and ended in line with the east terminal of Ditch 013, suggesting that the two may have been associated as part of the same field system. Third century pottery from the upper fill of Ditch 007 suggests that it was a later feature (Fig. 52 nos. 2 and 4), but this upper fill (008) may have been fill of a re-cut, and the result from maintenance of a ditch in prolonged use. It is therefore possible that Ditch 007 was contemporary with Ditch 013, but that Ditch 007 continued in use after Ditch 013 had silted up.

A number of sherd-joins between pottery from one of the unstratified contexts (003) and from the upper fill of Ditch 007 indicate that the ditch had been disturbed, either by recent ploughing or during topsoil stripping.

Site 2: Ditch, possibly Roman

Construction Section 0, Plot 6, SP 7280 1820

Introduction

This site consisted of a single ditch containing Roman finds. It was on fairly flat, low lying ground, at around 82m AOD, towards the west end of the Aylesbury Vale within the catchment area for tributaries to the River Ray. It was approximately 850m east of Site 1 and 25m west of the first road crossing on the pipeline route, that of the minor road to Quainton, which meets the A41 Bicester road just over 500m to the south, at Hall Farm (Fig. 4). At the point of the road crossing, the parish boundary between Westcott and Waddesdon runs along the Quainton road.

The supposed line of Akeman Street Roman road is approximately 800m to the south, beyond the A41, which elsewhere follows the same general course as the Roman road.

The geology of the area consists of a pale grey calcareous mudstone of the Upper Oxford Clay formation, a dark grey, silty mudstone of the West Walton formation and alluvium (BGS 1994). The soils are classified in the Denchworth association by the Soil Survey (SSEW 1983), stagnogleys prone to seasonal water-logging. The land is currently in arable use (CPM 1996).

Archaeology

Two Roman pottery sherds, probably dating to the second century or later were recovered during topsoil stripping, but no features were visible at this stage. During pipe-trenching, a single large ditch, aligned roughly south-west to north east, was recorded in section, sealed by a thin subsoil layer:

Undifferentiated subsoil layer 006
Ditch 018

Discussion

The primary fill of Ditch 018 (Fig. 4a) contained charcoal and a fairly large quantity of baked clay including two fragments of wall daub. This fill did not have the appearance of having been dumped, but was possibly derived from nearby domestic debris or a midden deposit. The upper fill of the ditch clearly resulted from silting. It contained four Roman pottery sherds which appeared to be residual, being highly abraded and undiagnostic. The exposed surface of the ditch produced red colour-coated pottery of mid-third century or later (Fig. 52 no. 3).

The two distinct fills imply an initial episode of ditch filling, incorporating domestic material, probably shortly after the ditch was first cut. The subsequent gradual silting, with a lack of anthropogenic material, perhaps followed the abandonment of the site, which therefore appears to have had a short life-span.

In the absence of any later dating evidence, it is perhaps reasonable to assume that the feature was of Roman date. There is a possibility that there were other associated features, not cut by the pipe-trench and masked by the superficial subsoil layer, but it is unlikely that any great density of features would have remained undetected. Being relatively isolated, the ditch is most likely to have been an agricultural feature, for drainage and land division, the small quantity of finds suggesting that it was some distance from any focus of activity. The relative lack of surface finds supports this view. The site is close to other Roman ditches at Site 1 but there is no evidence of a contemporary relationship between them.

Site 3: Ditches, Roman or later

Construction Section 1, Plot 10, SP 7360 1810

Introduction

The site consisted of eight linear features. A small amount of slag from two of the features provides evidence of metal-working in the area although not in the close vicinity of the site.

The site was 1km to the north of Waddesdon village and 300m to the north of Littleton Manor Farm House (Fig. 5). The land here is low lying, at around 84m AOD, and forms part of the catchment area for tributaries to the River Ray and the River Thame.

The underlying rocks were dark grey, silty mudstones of the West Walton Formation (BGS 1994) and the land was in arable use at the time the pipeline was constructed (CPM 1996).

Archaeology

The site was found during pipe-trenching. Eight ditches or gullies were recorded in section. These were overlain by a shallow agricultural subsoil layer:

Layer 103	Ditch 111	Re-cut 106
?Ditch 104	Ditch 113	Re-cut 119
Layer 108	Ditch 115	Gully 121
Ditch 109	Ditch 117	Gully 123

Discussion

Three of the ditches (123, 117, 115) were on parallel, north-east to south-west alignments and were evenly spaced, about 12m apart. One of these (117) had been re-cut as Ditch 119. A smaller feature (109) was also on a parallel alignment, but was more widely separated, 20m to the west of Ditch 115. Interposed between Ditch 115 and 109 were two ditches (111, 113) on an approximately north to south alignment. Further west again, Ditch 104 was aligned north-west to south-east, perpendicular to Ditches 115, 117 and 123. The section appeared to show that Ditch 104 had been re-cut (106) slightly to the east (Fig. 5b). The easternmost of the eight features (121) crossed the pipe-trench at a more oblique angle than the other north-east to south-west aligned features.

The fills of all the features appeared to have resulted largely from natural siltation. A single piece of slag and five very abraded, undiagnostic sherds of pottery, dated loosely to the Iron Age or the Roman period, were retrieved from one of the ditches (113). The poor condition of these finds would indicate that they were residual, but they nevertheless provide a *terminus post quem* for the feature. Gully 121 (Fig. 5a) also produced a small quantity of slag, and three of the other ditches features (104, 115, 117) contained anthropogenic material: charcoal and burnt clay.

The ditches may have had a similar use, since they were all of broadly similar form, dimensions, and orientation. If the ditches are contemporary, their close spatial relationship would be at odds with an interpretation as a system of field boundaries. On the heavy gleyed soils, water management for agriculture is a more likely purpose.

Slag

Analysis of the slag from Ditch 113 and Gully 121 suggested that it resulted from smithing rather than smelting. Both fragments were very abraded and had possibly been water rolled. As slag is not easily worn, the poor condition indicates that it had been redeposited, probably a number of times. It is therefore unlikely to have come from local iron working.

Site 4: Undated ditches

Construction Section 2, Plot 15, SP 750 183

Introduction

Eight parallel ditches, mostly on a regular spacing, were recorded in section in the pipe-trench (Fig. 6). The site was 150m north-west of Waddesdon sewage treatment works and around 1km north of the village. The Aylesbury to Claydon Junction railway runs along the northern boundary of the plot. The A41 Bicester road runs through the centre of Waddesdon with the probable line of Akeman Street Roman Road around 200m further south. A tributary of the River Thame passes 40m to the north of the site and the land is flat, at a height of approximately 78m AOD.

In this area, dark grey silty mudstones of the West Walton Formation are overlain by alluvium.

Archaeology

The site, found during trenching, spread for 65m along the pipe-trench. A humus-rich, silty clay subsoil sealed eight substantial, parallel ditches, all of which were re-cut:

Ditch 210	Re-cut 235	(Re-cut 237)
Ditch 212		(Re-cut 239)
Ditch 214	Re-cut 241	(Re-cut 243)
Ditch 216		(Re-cut 245)
Ditch 218		(Re-cut 247)
Ditch 220		(Re-cut 249)
Ditch 222		(Re-cut 251)
Ditch 224		(Re-cut 253)
Layer 255		

Discussion

The fills of the original ditches were all homogeneous blue silty clay with some calcareous inclusions. The re-cuts had brownish grey silty clay fills, almost devoid of inclusions.

Both types of fill are typical of those which have been deposited by slow moving water. The ditches probably silted gradually and were eventually abandoned after one or more episodes of cleaning out. They were then sealed by Layer 255, probably laid down by flooding.

The ditches were mostly spaced around 10m apart and were oriented almost exactly north to south. The profiles showed narrow slots in the concave bases of three of the ditches (210, 212, 214) and two of the re-cuts (241, 251) (Fig. 6a and b). A further three ditch sections (220, 222, 224) had less well defined base slots. It is unlikely that these slots would have been produced deliberately; rather they would have been a consequence of the way the ditches were dug, taking out a spade spit from the base and then profiling the sides.

These ditches were presumably dug to drain the low-lying waterlogged ground. That the ditches are all parallel probably implies that they were part of the same drainage system, though it is not possible to say if they were contemporary; the irregularities in spacing, and the evidence for re-cutting suggests that they may represent successive phases of maintenance and renewal.

The general absence of artefacts indicates that the ditches were probably not close to any settlement, and that they are unlikely to date from the later medieval or post-medieval periods, as manuring of fields commonly results in pottery being incorporated into the fills of features from these periods. The site is only 140m east of Site 3, and the location, feature- and fill-types, and spatial relationships at the two sites have striking similarities.

CAS 6296 ✓

Site 5: Undated ditches and pit

Construction Section 2, Plot 16, SP 7520 1800

Introduction

Three ditches and a pit were evidence of possible Roman agricultural activity (Fig. 7). The site was around 1km north-east of Waddesdon. The land was flat, at about 76m AOD, and would have been drained by a tributary stream of the River Thame, about 200m to the north, before the construction of the Aylesbury to Claydon Junction railway along the northern edge of the plot.

Dark grey silty mudstones of the West Walton Formation are overlain by alluvium (BGS 1994) in this area. The thin, clayey topsoil tended to be wet, and the field was laid to permanent grassland (CPM 1996).

Archaeology

Three ditches and a pit, widely spaced along 95m of the pipe trench, were recorded:

Ditch 208
Pit 226
Ditch 228
Ditch 230

Discussion

Two ditches (208, 230) each contained a single sherd of undiagnostic Roman pottery which was probably residual. The fills of all the features appeared to be formed by silting, and the small number of finds indicated a low level of human activity in the area. Evidently the site was located away from any settlement, and was probably agricultural.

The ditches displayed a number of similarities which indicated that they could be broadly contemporary. Their V-shaped profiles (Fig. 7a), suggested comparable usage. Ditches 228 and 230 ran parallel to each, approximately 20m apart, and were broadly similar. There was a much larger ditch (208) 70m to the west, possibly on a perpendicular alignment. All three ditches contained two fills: mid- to dark blue-grey silty clays with calcareous inclusions below mid- to dark greyish loamy clays. This would suggest that the three ditches underwent similar episodes of infilling. In such a wet, clayey locality, the ditches would have acted as drainage and may have also served as field boundaries.

The purpose of the Pit 226 is not clear. It contained a single fill of a similar description to the lower fills of the ditches (Fig. 7b). A single cutting flake of probable Neolithic or Bronze Age date was retrieved from the pit. Although relatively fresh, it is likely to be residual and cannot be used to date the feature with any confidence.

CAS 6297 ✓

Site 6: Post-medieval or early modern drainage ditches

Construction Section 3, Plot 19, SP 7620 1780

Introduction

Ten linear features were recorded in the pipe-trench (Fig. 8). Dating evidence suggests that these were post-medieval, possibly relating to the Aylesbury to Claydon Junction railway. The site lies just over 4km north-west of Aylesbury and approximately 1.5km north-east of Waddesdon. The nearest road follows the course of the Midshires Way, about 350m to the west of the site. Grey mudstones with sporadic bands of limestone nodules of the Ampthill Clay Formation are overlain by drift deposits of Head (BGS 1994). The land rises gently to the west, and is around 85m AOD. The wet and clayey soils are in arable use (CPM 1996).

Archaeology

Found during pipe-trenching, the site extended for over 500m. Ten linear features were recorded, on three different orientations:

Ditch 2532	Ditch 2542	Ditch 2545
Ditch 2534	Ditch 2540	Ditch 2551
Ditch 2536	Ditch 2544	Ditch 2554
Ditch 2538		

Discussion

Ditches 2534, 2538 and 2456 were parallel and closely spaced. There was another pair of ditches 100m to the east (2554, 2551) on a similar orientation while, to the west, another similar ditch (2542) was recorded on the south side of the railway. Three of these ditches (2538, 2551, 2554) contained possible post-medieval brick, tile and chalk rubble (Fig. 8a). Fragments of wood were found in Ditch 2538, which suggests a late date, although they may have resulted from recent root action.

A broad, shallow feature (2544), on a roughly east-west alignment, contained compacted chalk-rubble fills (Fig. 8b). It apparently re-cut an earlier, similar feature (2545). These could have been surfaces of track-ways, although the watching brief archaeologists felt that it was more likely that they were shallow drainage features. Two small ditches (1542, 2540) crossed the pipeline on very oblique parallel alignments. The more easterly (2542) had a brick, tile and chalk rubble in its fill.

These ditches are not obviously aligned with the modern pattern of field boundaries, and they presumably acted primarily as drains. The fact that they are in fields adjoining the railway is probably significant; construction of the railway would have disrupted the pre-existing water management regimes and was likely to have necessitated new drainage works. It is quite possible that at least some of these ditches are the result. The chalk rubble was probably deliberately incorporated into the fills. Chalk is foreign to this region; the nearest natural location being the Chilterns. It is only with the construction of the railway that transport of such bulky material would have been made relatively easy.

CAS 6298 ✓

Site 7: Roman ditches

Construction Section 3, Plot 23, SP 769 173

Introduction

The site was around 2km east of Waddesdon village. The western edge of the Plot 23 forms part of the parish boundary between Waddesdon and Fleet Marston, and the railway line from Aylesbury to Claydon Junction runs along the south side of the field (Fig. 9). Beyond Lower Fleetmarston Farm, 500m to the east, a small stream runs south to join the River Thame just to the west of Aylesbury, 3.5km to the south-east. The land, at about 75m AOD, rises gently to the west. A grey mudstone with sporadic bands of limestone nodules of the Ampthill Clay Formation underlies the area (BGS 1994) and the soils are typical stagnogleys of the Denchworth association in the Soil Survey classification (SSEW 1983).

Archaeology

The site, found during topsoil stripping, extended for 170m along the pipeline easement (Fig. 10). Fifteen ditches, fourteen gullies, eleven pits and a single posthole were recorded, together with a number of unstratified surface finds:

Ditch 311	Ditch 343	Gully 371
Gully 314	Pit 345	Gully 373
Gully 316	Pit 347	Pit 375
Gully 318	Pit 349	Ditch 377
Pit 320	Pit 351	Pit 382
Ditch 322	Ditch 353	Pit 384
Posthole 325	Gully 355	Gully 389
Gully 327	Gully 357	Gully 391
Ditch 331	Gully 359	Ditch 393
Ditch 333	Gully 361	Ditch 395
Pit 335	Pit 363	Ditch 399
Pit 337	Ditch 365	Unstratified surface finds 2508-2531
Ditch 339	Ditch 367	Ditch 2557
Gully 341	Gully 369	Ditch 2559

Discussion

The site was found during the watching brief on topsoil stripping. The construction programme was tightly constrained at this stage, and the site was excavated and recorded in eight days, from 7th to 14th April 1997, using a team of six archaeologists. This schedule allowed for excavation of only a sample of features; the ditches along the line of the pipe-trench and possible structural features towards the western end of the site being targeted.

It was very difficult to determine relationships between features: fills were hard to distinguish in the heavy clay soils especially in the fine, sunny weather conditions at the time. Together with the relatively small proportion of features which were excavated, this has meant that it is not possible to produce a phasing scheme for the site. Even within localised areas, it is difficult to be sure of the sequence of events.

Gully 365

The earliest-dated pottery from the site, first- to second-century material, came from Gully 365, a poorly characterised feature crossing the centre of the site on a south-west to north-east alignment. The eastern edge of this gully was cut by a larger and better defined linear feature (367) containing mid-second- to third-century pottery.

Gullies in the centre of the site

A number of other small gullies throughout the site seemed to be stratigraphically early features. Gully 316, at 0.26m deep one of the more substantial of these features, contained pottery dated to the mid-second century or later. A shallower gully to the east (318) seemed to be morphologically similar but the Roman pottery from it was undiagnostic. Both of these gullies were cut by another shallow gully (361) which was on a perpendicular alignment before turning through a right angle to the north. The section excavated through Gully 361 revealed a small pit (363) beneath it, which contained a near complete flanged bowl (Fig. 52 no. 6) of early to mid-second-century date as well as other pottery of similar date (Fig. 52 no. 13). A very shallow gully (355) could also be related to Gullies 316 and 318 but its relationship with Gully 361 could not be determined, and it produced no finds.

Gully 361 formed a T-junction with Gully 357, which was roughly parallel with Gully 318, and contained pottery dated to the second century or later. Both of these features crossed the line of a larger linear feature (322) running obliquely across the site for nearly 60m. The area where these features intersected was confused, but Gully 318 was recorded as being later than Ditch 322. The pottery suggests a similar second-century, or later, date for Ditch 322. The surface of this feature (2520) produced fourth-century sherds (Fig. 52 nos. 11 and 12).

At the northern limit of excavation, Ditch 322 appeared to turn to the south-west to continue as Ditch 333, which contained similarly dated finds. A further right-angled bend near the southern edge-of-site baulk formed the southern side (2518) of a three-sided rectangular enclosure 14m wide and just over 20m long.

Linear features towards the eastern end

Gully 327, which contained pottery possibly of third-century date, was on a similar alignment to Ditch 322, suggesting that the two features might have been contemporary. The relationships between this gully and the other features in this part of the site were all unclear and unresolved. Gullies 369 and 371 were both very small features. Gully 371 appeared to be stratigraphically early but produced a sherd of medieval pottery, possibly intrusive. Gully 389 (= 391), a slightly curving feature, may have been a continuation of Gully 327. The pottery finds from its fills were dated to the second century or later, and those from its eastward continuation (373) to the third century. Fragments of a glass vessel (SF 5279) from Gully 373, appear to be medieval, suggesting that this part of the ditch may have suffered from later disturbance.

Ditch 377, a substantial feature up to 0.87m deep, seemed to form a T-junction with Gullies 327 and 389 suggesting that they may have been contemporary, but again the relationships were very unclear. The two lower fills of Ditch 377 produced pottery dated to the second to third centuries AD (Fig. 52 no. 8), as well as a fragment of a glass vessel (SF 5280). The pottery from the upper fill of the ditch was mostly dated to the third century or later, but also included a medieval sherd, probably intrusive from plough disturbance. This ditch seemed to be form part of a larger rectilinear system, perhaps including Ditch 367, with several unexcavated linear features in the northern part of the site.

Ditch 395 ran very obliquely across the eastern end of the site for nearly 70m before apparently turning through a right angle to disappear beneath the northern edge-of-site baulk; it could have been part of the same rectilinear ditch system. The site plan shows it cut by Ditch 377, but this relationship was not investigated and has to be in doubt. The section excavated near its eastern end produced mid-second- to third-century pottery. The other excavated section, at the point where it intersected with Gully 391, was in a confused area with a small pit (382), seen only in section, removing any relationship between the two linear features.

Ditches 311 and 359

Ditch 311 was the largest of the features in the central part of the site, running in a slight arc across the southern part of the enclosure formed by Gullies 2517, 333 and 2518. A sondage excavated at its western end, at the point where it crossed Gully 333, failed to show the relationships clearly, and

Ditch 311 may have terminated in this region. Pottery finds indicated a mid-third- to fourth-century date for the ditch (Fig. 52 no. 14), implying that it belonged to a later phase than the smaller linear features. Confirmatory evidence for this late Roman date was provided by four metal detected coins recovered from the surface of the ditch (SFs 5243, 5244, 5245 and 5246). A small gully (314) along its northern edge was thought by the excavator to be a later feature although, once again, relationships were unclear.

At its eastern end, Ditch 311 may have turned to the north and continued as the rather less substantial Gully 359, or terminated just beyond its intersection with that feature. Gully 359 had two fills, the primary fill yielding pottery dated to the second century or later, while the upper fill had more closely dateable pottery from the late-third or fourth-centuries AD, as well as a Roman coin (SF 5036). A small pit or posthole (375), cut into the gully at the point where the section was excavated, produced third-century pottery.

Features at the western end of the site

An interrupted linear feature, just inside the southern edge-of-site baulk, appeared to have a number of short perpendicular branches, prompting speculation that these were foundation trenches for one or more rectangular structures. This seemed to be corroborated when excavation of one of them (343) showed that it had several flat limestone blocks in its base. Pottery characteristic of the mid-third to fourth centuries was retrieved from the fill of the feature in a mixed assemblage with earlier abraded sherds.

Gully 341 appeared in plan to be a counterpart to Gully 343, 12m to the west, but on excavation proved to be a shallow feature, barely 0.07m deep and with no sign of any stone footings. It produced a rim-sherd of a late first- to mid-second-century bowl (Fig. 52 no. 10). A group of small, rather irregular pits between these two features were shallow. Pit 384, the deepest at 0.23m contained possible third-century pottery, and was cut by the 0.08m deep Pit 345. Just over 1m to the east, Pit 349 was an isolated feature and produced pottery dating to the third century or later.

Two other pits to the west (2514 and 337) seemed to continue a line of features with Pit 384 and Gully 341. Mid-second- to third-century pottery from Pit 337 may suggest that this feature was of earlier date, but it is perhaps more likely that this material was residual. Another group of small, shallow pits (335, 347, 351), further west again, seemed to be fairly randomly disposed. Only one, Pit 335, produced any finds: undiagnostic Roman pottery sherds.

The western limit of the excavation site was marked by two parallel linear features, 6m apart. The more substantial of these two ditches (339), 0.48m deep, produced pottery dated from the second century or later while the rather more diagnostic material from the more westerly of the pair (353) was dated to the mid-second to fourth century.

Medieval features

One of the ditches (393) at the eastern end of the site produced thirteen sherds of medieval or early post-medieval pottery, together with a buckle, probably from a harness (SF 5040; Fig. 59 no. 32). This ditch, which could have formed part of a rectilinear system with unexcavated branches (2523, 2529) to the north, followed closely the line of the earlier Ditch 395. This might suggest that Ditch 395 was also of medieval date, but contained residual finds. Otherwise, it implies a long continuity of the basic pattern of drainage features in this landscape, with medieval ditches following the same alignment as their Roman predecessors. In section, it appeared that there may have been a second ditch (399), possibly a re-cut, to the south of Ditch 393, but a modern drain between these two ditches had largely destroyed any evidence of the relationship between them.

A regular 0.52m-deep stepped posthole (325) to the east of the centre of the site also contained medieval or early post-medieval pottery. Three unexcavated features in a line to the west of this feature appeared to be associated with it.

Unexcavated features

The short timescale for excavation imposed by the pipeline construction programme meant that many features were unexcavated. If the relationships of a long linear feature extending towards the western end of the site (2509 = 2513) with the gullies of the rectangular enclosure in the centre of the site had been elucidated, it might have helped to better understand the chronology of these features. Finds from the surface of this ditch included pottery dated to the third century or later (Fig. 52 nos. 7 and 9) and five coins (SFs 5235, 5236, 5237, 5238 and 5239), all probably of fourth century date. Similarly dated material was recovered from the surface of an unexcavated pit (2511) to the north (Fig. 52 no. 5). Ditch 2529 produced an undated tanged knife blade (SF 5289; Fig. 59 no. 23). Unstratified finds included two further Roman coins (SFs 5221 and 5222).

General

The limited excavation of the site and the difficulty determining relationships between features means that chronology of the site is very uncertain. The dating evidence perhaps indicates that the system of linear features had its origin around the turn of the first century AD, or perhaps slightly later. Initially, these features seem to have been small gullies, presumably for draining relatively small areas.

These gullies were generally cut no deeper than 0.20m into the subsoil and less than 0.50m below the modern ground surface. While it is impossible to determine the level of the ground surface in Roman times, it is unlikely that it was very much higher than it is at the present time, and it may even have been lower if there has been a build up of alluvial deposits in the intervening years. In any case, these gullies would have been rather insignificant features of the landscape and their construction would not have needed any very large investments of time and labour; they could have been fairly ephemeral, in use for a few seasons before silting up and ceasing to function.

The larger linear features seem to date from a rather later time, perhaps the end of the second or the early third century. With a lack of good stratigraphic data, there is a degree of speculation in this: it may be that, in at least some cases, the larger features have more closely dateable finds assemblages allowing them to be given, for instance, a third-century date rather than being dated more generally to the second century or later. The larger Roman ditches probably survived into the fourth century.

The medieval finds suggest that the ditch system was reinstated at this time, on a surprisingly similar alignment. To some extent, the alignment would be determined by the topography and natural drainage pattern, but its close correspondence to the earlier ditches perhaps indicates that these features survived as earthworks following their abandonment.

The linear features presumably acted as field drains, suggesting a largely agricultural landscape. The larger ditches may also have had a land demarcation function. The concentration of features in the centre of the site, and especially the apparent rectangular enclosure, suggests that this area was of more significance, and that there was a focus of activity nearby, perhaps on the rising ground to the south and west of the pipeline easement. The finds assemblages, though not especially rich, suggest that there was an area of domestic settlement nearby.

The evidence of possible structures, near the southern side of the site towards the western end, was inconclusive. Gully 343 was quite convincing as a beam-slot or foundation trench, but the other features which seemed to be associated were disappointingly shallow and ephemeral. There is always the possibility that more extensive remains were too shallow to survive truncation by ploughing, and the extent of these features beneath the southern edge-of-site baulk is unknown.

CAS 2034:00001

Site 8: Roman road

Construction Section 3, Plot 23, SP 772 172

Introduction

Evidence of a proposed Roman road was found. The site was 400m south of Lower Fleetmarston Farm, 3km north-west of the outskirts of Aylesbury, on low lying land at around 74m AOD. The underlying geology is Ampthill Clay with varying depths of alluvium. Though tending to be wet and difficult to work, the field is in arable use (CPM 1996). Site 7, interpreted a Roman settlement, was approximately 350m to the north-west (Fig 9).

Archaeology

The site was recorded during topsoil stripping. A layer of limestone fragments formed a linear feature running across the pipeline easement, bounded by ditches on either side:

Layer 2500	Layer 2502	Layer 2507
Ditch 2501	Ditch 2505	

Discussion

A section excavated through the features showed deposits was typical of a Roman road (Fig. 11). The earliest layer (2507), consisting of very mixed clay, appeared be a dumped deposit laid down to create a cambered base for the road surface. This clay was overlain by a layer of densely packed limestone fragments (2500) which thinned towards its edges, where the proportion of flint increased. Possible wheel ruts and potholes were evident along the upper surface of this layer.

The ditches (2501, 2505) ran parallel to either side of the road and would have acted as drainage for surface runoff. Silting of the ditches appears to have taken place while the road was in use: the west edge of Ditch 2501 cut the clay layer (2507) but appeared to underlie the road surface (2500). If this observation is correct, the road surface must have been constructed, replaced or repaired after the ditch was dug and had silted up.

Surprisingly, a single sherd of mid-twelfth- to late thirteenth-century pottery was recovered from the road surface (2500). This may have been intrusive, or it could signify that the road was in continual use from the Roman period into the medieval period. The latter is perhaps unlikely, as the lack of evidence for ditch cleaning suggests that use of the road was not prolonged.

A number of other finds were recovered from Plot 23. A late Roman bracelet (SF 5223; Fig. 58 no. 7), a fragment of knife blade (SF 5005; Fig. 59 no. 24), a shaft from some form of small tool (SF 5007; Fig. 59 no. 26), a small circular stud or shaft terminal (SF 5040; Fig. 58 no. 22) and a whetstone (SF 5314; Fig. 61 no. 38) may all have been contemporary with the road. A decorative plate with punched holes for mounting (SF 5224; Fig. 58 no. 8), however, is probably late medieval or post-medieval in date.

The Roman road was in the almost exact location where the proposed route of the Roman road (PRN 2034), running north-west from Akeman Street, the modern A41, was thought to intersect the pipeline easement.

CAS 6299/

Site 9: Roman quarry pits and ditches

Construction Section 4, Plot 33, SP 797 170

Introduction

Evidence of Roman activity, possibly quarrying for marl or clay, was found. The site was 2km north of Aylesbury and the same distance south-west of the village of Weedon. It was on sloping ground, at around 86m AOD, 200m east of a tributary of the River Thame (Fig. 12). Grey mudstone with sporadic bands of limestone nodules of the Kimmeridge Clay Formation (GBS 1994) underlay the site. In this locality, the ploughed soils are loamy over clay and tend to be wet throughout winter and early spring (CPM 1996).

Archaeology

The site was found during topsoil stripping and extended for at least 140m along the pipeline route. Twelve linear features, four of which were re-cut ditches, ten pits, two possible pits, a former field boundary and a hollow, probably of natural origin, were excavated:

Unstratified finds 403
Ditch 409
Ditch 411
Pit 414
Ditch 417
?Pit 419
Ditch 421
?Pit 423
Gully 425
Pit 427
Pit 429
Pit 431
Pit 433
Pit 435
Pit 437
Pit 439
Ditch 441
Fill of unexcavated feature 443
Fill of unexcavated feature 444
Fill of unexcavated feature 445
Re-cut ditch 446
Ditch 449
Ditch 453
Pit 454
Surface finds from unexcavated feature: pot 456
Surface finds from unexcavated feature: pot, fired clay 457
Surface finds from unexcavated feature: pot 458
Surface finds from unexcavated feature: pot 459
Surface finds from unexcavated feature: pot 460
Surface finds from unexcavated feature: pot 461
Surface finds from unexcavated feature: pot 462
Surface finds from unexcavated feature: pot 463
Ditch 468
Pit 470
Ditch 472
Gully 474
Ditch 476
Ditch 478
Gully 480

Discussion

Following topsoil stripping, the surface showed a confusing mass of features, indistinguishable from each other, and mostly found to be very shallow when excavated (Fig. 12). Because of the constraints of the construction timetable, it was not possible to investigate the whole width of the site, and excavation was concentrated within a strip 2m either side of the pipe centre-line. A policy of collecting artefacts from the surfaces of unexcavated features was employed in order to provide additional dating evidence for the site. Only finds embedded in the surface deposits of the features were collected but the nature of topsoil stripping, using heavy machinery, meant that their recorded provenance could not be guaranteed. However, the date range of these artefacts was generally in keeping with the more securely located finds. The artefact dates were also generally consistent with stratigraphic relationships, where these were available.

Dating

A single unstratified waste flake of probable Neolithic or Bronze Age date from the stripped surface and two sherds of late Bronze Age pottery from the fill (432) of Pit 431 indicate a low level of prehistoric activity at this site. Otherwise, the pottery, a total of 344 sherds, indicates an Iron Age to

fourth century date for the site, with most activity occurring between the late first and fourth centuries AD. Two of the sherds are of diagnostic late Iron Age date. Over half of the sherds were unstratified surface finds (context 403), some dating to the first or second centuries (Fig. 52 nos. 15 and 17) but also including most of the third- to fourth-century types.

There was insufficient data to confidently phase and date the site, but it was divided into three areas which seemed to be chronologically distinct. Area 1 consisted of two shallow ditches (409, 411), roughly oriented north-east to south-west, which defined the westernmost limits of the site. Finds from the smaller of the ditches (409) indicated an Iron Age to mid-first-century date.

Area 2 was the extensive area of intercutting pits. All the excavated examples (414, 419, 423, 417, 429, 431, 433, 435, 437, 439, 454 and 470) were shallow, none being more than 0.30m deep. There may have been a rectilinear pattern of ditches superimposed on this confusing area. Ditches 441 and 453 shared the same, roughly east to west, alignment and may well have been a single feature. Ditch 468, seen clearly only in the side of the pipe-trench, appeared to be perpendicular to these two ditches, and there was a suggestion of a right-angled return to Ditch 453, 30m to the west. The other fairly substantial ditch in this area (417), however, did not fit the pattern, being aligned south-west to north-east. A steep-sided gully (449) cut across the possible return of Ditch 453. Another, smaller, gully (425) ran into Ditch 453 close by, the relationship between the two features being unclear.

Finds from this area of the site mainly ranged from the first and second centuries AD (Fig. 52 nos. 16, 18 and 20), with some third-century finds (Fig. 52 no. 19). In several places, the ditches could be seen to be cut through pits, but no ditches were visibly cut by pits. Rather than a pit phase followed by a ditch phase, it seems more likely that ditches were dug following the progression of pit-digging across the site.

The east end of the site, Area 3, had a large ditch (472), around 0.80m deep, with shallower re-cuts (476, 478) on either side of it. Just to the east, another parallel ditch (474) and a smaller linear feature (480) had indistinguishable fills and the relationship between them could not be determined. Ditch 474 was the only one of these features which produced any finds: undiagnostic Roman pottery. These parallel ditches seemed to mark the eastern extent of the shallow pits, the undated deposits recorded beyond them gradually running out to the east, being no more than surface spreads of pale leached material rather than the fills of features.

Status and function

There were no obvious settlement features; the pit digging appears to have been a specialist activity. The pits were not deep enough for storage, and there was no evidence for *in situ* burning or industrial activity in them. Most probably, the pits were dug for clay or marl extraction. Rubbish disposal in two pits was probably a secondary use.

A significant amount of unstratified baked clay, 67% of the total for the site, is probable kiln furniture. In a number of cases, the stratified baked clay displayed evidence of incidental firing and may also have come from the walls of a kiln.

Dressed stones and large flint cobbles were found in a pit (470) dating to the second century. Such heavy material is unlikely to have been moved far from the site of its use, and its presence suggests that there was a stone structure nearby, indicating a moderately high status for the site. Burnt limestone and burnt soil deposits found within the same pit were probably hearth residues. Other material typical of domestic waste, pottery, bone and a quernstone fragment, were also recovered form this feature. A fragment of quern, thought likely to be of Roman date (SF 5009; Fig. 61 no. 36), was also retrieved from the machined surface, as was a coin (SF 5230) probably dating from between 364 and 378 AD. Two other unstratified metal finds (Fig. 58 nos. 16 and 17) are not readily dateable, but may also be of domestic origin.

Locally made wares form the bulk of the pottery assemblage, while comparatively small amounts of non-local pottery and imported fine wares indicate that the occupants of the site were of moderately high status. Most of the pottery performed a kitchen-to-table or a purely kitchen function, while storage and drinking vessels were also quite well represented. All five *mortaria* sherds from the site, all from unstratified layer 403, originated from the Oxfordshire kilns, indicating a consistent supply source for this type of bowl.

Green discolouration was noted in the fills of two pits (431, 439) and two ditches (440, 453). This may have been the result of some specialised function, but is more likely to be caused by reduced iron compounds formed in the presence of calcium, in poorly-drained anaerobic soil conditions.

Overall, the site seems to have been on the periphery of a fairly high status area of domestic occupation. The numerous pits were possibly for extraction of clay for ceramic production. The ditches were presumably for drainage, though it is possible that some, especially the deeper ones to the east and the large curved ditches towards the western end of the site, delimited the areas of pit digging.

CAS 5040.01

Site 10: Undated pit

Construction Section 5, Plot 39, SP 81554 17171

Introduction

A single pit was recorded in section. The site was 1km south of Weedon village and 300m east of the A413 Aylesbury to Buckingham road (Fig. 13). It was at a height of around 87m AOD, on wet and clayey soils lying over mudstones of the Kimmeridge Clay formation (BGS 1990).

Archaeology

A single pit-like feature masked by a subsoil layer was recorded during pipe-trenching:

Layer 500
?Pit 565

Discussion

Seen only in section in the pipe trench, Pit 565 was approximately 0.8m across and 0.7m deep, with fairly straight sides and a flattish, slightly undulating base (Fig. 13a). No artefacts were recovered from its fill of silty clay with flint and gravel inclusions and occasional charcoal flecks.

Without dating evidence, or detail of its shape in plan, it is difficult to interpret the feature: it could be a pit or a ditch terminus. The lack of finds perhaps implies that it was of agricultural use. The fill appeared to have formed by silting, suggesting that the feature was abandoned rather than deliberately backfilled.

CAS 6300 ✓

Site 11: Roman ditches and pits

Construction Section 5, Plots 49, 50, SP 837 172

Introduction

The site consisted of pits, ditches and gullies of Roman date. It was 1.5km north of Bierton village, and 1km west of the A418 Aylesbury to Wing road (Fig. 14). The land here drains towards the River Thame, 250m to the north, and is at around 80m AOD. Kimmeridge Clay mudstones underlie these two fields (BGS 1990), which are newly cultivated pasture with distinct ridge and furrow earthworks (CPM 1996).

Archaeology

The site was found during the watching brief on topsoil stripping. It consisted of twelve ditches and gullies, one possible ditch, one possible ditch re-cut, eight pits and a possible group of intercutting pits:

Unstratified finds 510
Unstratified finds 511
Ditch 516
Ditch 523
?Ditch 525
Gully 527
Gully 529
Pit 533
Pit 534
Layer 535
Gully 536
Surface finds 537
Surface finds 538
Surface finds 539
Surface finds 577
Surface finds 540
Surface finds 541
Surface finds 542
Pit 543
Gully 545
Gully 547
Pit 549
Pit 551
Ditch 553 (same as ditch 521) (?Re-cut 519)
Pit 557
Pit 559
Section 563
Ditch 567
?Pit 569
?Ditch 571
?Ditch 573
Section 575
Surface finds 578
Surface finds 579
Surface finds 580
Surface finds 581
Surface finds 582

Discussion

The site is not well dated as a high proportion of finds were residual. Sixteen struck flints were recovered from the stripped easement surface, some of which were residual within the top fills of features. These included scrapers and notched flakes dating to the late Neolithic or Bronze Age, a Mesolithic or early Neolithic notched flake and a single gun flint.

The pottery assemblage indicates that there were three phases of activity: early Roman; mid- to late Roman; and medieval or post-medieval. Most contexts had pottery of mixed date, indicating a high degree of re-deposition within the fills. Out of 286 Roman sherds, 130 were from contexts also containing medieval and post-medieval pottery.

Early Roman

Five sherds collected from the surface of the stripped easement (531) were of late Iron Age to mid- to late first-century date (Fig. 52 no. 23). A further five sherds from the site dated to the later first to early second centuries (Fig. 52 no. 22).

Mid- to late Roman

There was a higher level of activity in the third or fourth centuries, the bulk of the finds, including pottery (Fig. 52 nos. 21 and 24a) and twelve unstratified coins (SFs 5011, 5013, 5017, 5018, 5019,

5022, 5023, 5029, 5031, 5249, 5250 and 5257) dating to this period. Such a quantity of material is likely to have been generated by a small settlement site. The fact that much of this material was unstratified or was in contexts with later finds indicates that the settlement remains have since been heavily disturbed, presumably by agricultural activity.

The rarity of non-local and imported fine wares, and the predominance of locally produced Roman coarse wares, mainly in the form of utilitarian table to kitchen wares, suggests that Roman occupants of the site were of relatively low status. The assemblage, which includes a relatively high presence of *mortaria*, demonstrates a bias towards food preparation.

Other finds from the site all seem to provide evidence for domestic activity: a gaming counter made from a piece of re-used tile (SF 5027; Fig. 60 no. 35); a fragment of a glass vessel (SF 5283); eleven fired clay fragments, possibly of tile or kiln furniture; burnt pottery and burnt animal bone; and bones of cattle, sheep, horse and pig bones. All feature fills had accumulated by silting but most had anthropogenic components.

There was some evidence for metal-working having taken place on or near the site, with three fragments of copper alloy melt-waste and a single fragment of lead melt-waste collected from the surfaces of unexcavated features.

Agriculture was far more evident than settlement, and it is likely that the site was peripheral to the core settlement area. A number of ditches on the site formed a rectilinear pattern. The re-cut of one of these ditches (519) contained second- to fourth-century pottery, in contrast to the late first- to second-century material from the other components of this field system. This would suggest that maintenance of Ditch 519 continued after the other ditches had fallen into disuse. The section appears to show that Ditch 519 had not fully infilled by the time the ridge-and-furrow was created.

Medieval and post-medieval

Although nearly half the Roman pottery sherds were mixed with post-Roman pottery, only twenty-six medieval and post-medieval pottery sherds were recovered from the site, an indicator that post-Roman activities were not settlement related. The remains of furrows from ridge-and-furrow ploughing crossed the site, which had evidently been used for agriculture during the medieval or post-medieval periods. A fragment of an unidentified tool, possibly a drill bit (SF 5021; Fig. 59 no. 27), was recovered from the surface of Furrow 541.

Most of the pottery of these periods was unstratified, probably the result of medieval and post-medieval manuring. A single pottery sherd recovered from furrow (535) is a tentative indication that ridge-and-furrow ploughing was maintained well into the post-medieval period. A copper alloy ring with a hexagonal section (SF 5255; Fig. 58 no. 21) is possibly a curtain ring of relatively late date. A square-section nail shaft (SF 5296; Fig. 59 no. 28) was also included in the unstratified surface finds.

CAS 6301✓

Site 12 Bronze Age and Iron Age remains

Construction Section 6, Plot 54, SP 847 172

Introduction

Ditches and pits recorded in section in the pipe-trench provided evidence of late Bronze Age or early Iron Age and mid- to late Iron Age settlement. The site was 350m south of Rowsham Bridge and within 150m east of the A418 Aylesbury to Wing road (Fig. 15). The land here is flat, at around 80m AOD, and drained by the River Thame, 200m to the north. A clay and fine loam soil has developed over the Kimmeridge and Heartwell clays, and the land is permanent grassland used for dairying.

Archaeology

The site, which was found during pipe-trenching, stretched for 140m. Features recorded in section included a fire pit, a number of alluvial layers relating to a former stream course, and linear features, including a ditch re-cut:

Ditch 620	Layer 648	Layer 689
Ditch 623	Layer 649	Layer 690
?Pit 626	Layer 650	Layer 691
Gully 628	Layer 651	Layer 692
Gully 630	Layer 652	Layer 693
Pit 632	Layer 653	Layer 694
Ditch 634 (Recut ditch 636)	Layer 654	Layer 695
Ditch 639	Layer 655	Layer 696
Layer 642	Layer 686	Layer 697
Ditch 643	Layer 687	Layer 698
Fire pit 646	Layer 688	

Discussion

A single, unstratified waste flake of probable Neolithic or Bronze Age date was recovered from the stripped easement surface. Pottery dating indicated that activities at the site took place during at least two phases, the late Bronze Age to early Iron Age, and the mid- to late Iron Age.

Stream channel

Excavation of the pipe-trench exposed a former stream channel (Fig. 15a). Basal deposits of Kimmeridge clay (655) could be seen to be overlain by bands of *in situ* fluvio-glacial grits, gravels (654) and low energy deposited sands (653). Above these deposits were what appeared to be a solifluction deposit (650), the result of post-glacial weathering of the fluvio-glacial grits and gravels. At a later point, a stream course began to etch its way through the landscape, cutting through the soliflucted deposits, down to the fluvio-glacial grits and gravels which were moved, reworked and dumped by the stream as it migrated across a narrow floodplain, leaving old meanders behind.

A sequence of samples (687-693) was taken from one of the former stream channels. The two lowest layers (692, 693) appeared to be heavy, stony deposits which might have formed the base of the stream. These are likely to be reworked fluvio-glacial deposits, moved and dropped by high energy flow. Above these, Layer 691 was brushwood rich, with evidence of anaerobic decomposition, but little stagnation, suggesting that the layer had been deposited and sealed rapidly. It is unlikely that the brushwood could have accumulated in conditions where there was a strong flow of water, although aquatic mollusc species in Layer 691 and the two layers above it (689, 690) indicate that there was some current flow.

Some of the brushwood displayed man-made cut marks, and there was the sharpened end of a small stake. Radio-carbon dating of the wood showed it to be middle Bronze Age (radiocarbon age 3400 ± 60BP, calibrated (2σ) BC 1875-1805, BC 1795 to 1525). The modified brushwood may represent the

efforts of Bronze Age people to set traps for fish but, more likely, the branches accumulated naturally perhaps as a result of the breakage of branches overhanging the stream, or from small scale land clearance. The lack of corresponding charcoal rules out large scale clearance through burning.

A number of natural river channel or overbank spill sediments (690, 689, 688, 687) were deposited above Layer 691 during the Bronze Age and possibly later. However, in the upper channel fills (686-688) the molluscs are more consistent with marsh, ditch or pond habitats. The sequence of deposits appears to be fairly typical of the channel becoming gradually infilled, as the stream course migrated further east. This process could have taken several hundred years.

A naturally accumulated deposit (649) appeared to overlie the ground surface which related to the Bronze Age and Iron Age features located upslope to the south west of the stream. Charcoal in the deposit indicated that it had probably emanated from a settlement source, and as a result of wind and water erosion, had spread down slope into the former stream channel, which by this time had become stagnant and marshy. The time which had elapsed between the Bronze Age, the silting of the stream and the deposition of Layer 649, could have been hundreds of years (Rackham, J. pers comm.). It is therefore very possible that Layer 649 related to Iron Age settlement activities.

A fire pit (646) did not contain any dating material but underlay Layer 649 and is therefore earlier than the layer. The pit is at the northern end of the site with the Bronze Age features and is likely to be contemporary with them. The fire pit contained charred cereal grains, large legumes, very small quantities of charred chaff, charcoal and domestic mammal bone including sheep and pig, some burnt.

Late Bronze Age or early Iron Age
Pit 632 and a re-cut ditch (636) produced pottery of this date. Dating of the ditch re-cut provided a late Bronze Age *terminus anti quem* for Ditch 634. The re-cutting of the ditch indicates that it was in use over an extended period of time. It is likely that the site was used for agricultural purposes during this period, as there is no evidence to suggest settlement apart, possibly, for the fire pit (646) 40m to the north, which may have been contemporary.

Mollusc evidence from the stream channel indicates that the environment was made up of woodland, grassland, wet meadow and marsh. Evidence of overbank spill suggests there was periodic flooding from the nearby river. For agriculture to take place in this low lying area, a substantial drainage system was probably required. The ditch (634, re-cut 636) was quite large and possibly acted both as part of a drainage system and as a land boundary.

The mid- to late Iron Age
There were six east-to-west oriented ditches and a pit in the southern part of the site. The pit and three of the ditches contained pottery dated to the mid- to late Iron Age (Pit 626, Ditches 623, 620, 643). Ditch 639 was cut by Pit 626, proving that this ditch also dated to the mid- to late Iron Age or earlier. The two northernmost ditches (628, 630) were close to the Bronze Age remains; they contained no dating material but have been included in this phase because of their orientation indicated that they were more likely to be related to the Iron Age remains.

The fill of all the features appeared to have been the formed by siltation, but anthropogenic material, in particular charcoal, was seen in all but two of the ditches (628 and 630). A sample taken from one ditch (620) contained flint, fired earth, pottery and animal bone.

The profile of Gully 630 indicated that it could a beam slot. However, there were no other structural features, and no other features nearby which related to it. The three ditches (623, 639, 643) at the southern end of the site were very substantial, up to 3.45m wide (Fig. 15b and c). All showed signs of having been partially cleaned out. They were possibly the main boundaries and drainage ditches for the Iron Age settlement site, with Ditch 639 delimiting the western extent.

CAS 6302? ✓

Site 13: Bronze Age urn and Iron Age gully

Construction Section 6, Plot 63, SP 8637 1781

Introduction

A pit containing a middle Bronze Age urn and a small linear feature with Iron Age finds were recorded (Fig. 16). The site was north-east of Aylesbury, 1km east of Rowsham village and a similar distance north of the Thistle Brook. The land is at a height of about 93m AOD, rising towards Wingrave village to the north-east, and lies over on sandy micaceous marls of the Upper Greensand and dark Gault clays (BGS 1990). The soils tend to be calcareous, clayey and slowly permeable (SSEW 1983). The land is permanent grassland, used for dairying (CPM 1996).

Archaeology

The site, found during topsoil stripping, consisted of two features:

Pit 615
Gully 618

Discussion

Pit 615 was just large enough to contain a large, ovoid, flint gritted urn, and appeared to have been dug for this purpose. When excavated in the field, only the lower portion of the vessel appeared to remain. The soil matrix within the vessel was typical of deliberate back filling, probably in a single episode. Contrary to expectations, on excavation of the contents, no bone or calcium residues were found, and the purpose of the vessel is still unknown.

Many upper sherds, including some rim, had fallen inside the vessel, where they were protected, while the middle body sherds were dispersed and missing. It is possible that the urn was placed upright, in the pit and was then accidentally broken and deliberately backfilled. Later, perhaps medieval, ploughing may have removed more sherds. Machine stripping caused some further damage to the upper portions of the urn.

The urn (Fig. 50) incorporated characteristics typical of two different Bronze Age ceramic traditions. Fingertip-impressed cordon decoration found on the upper part of the vessel is typical of the Deveral-Rimbury tradition of the early third millennium BC, examples of which are already known in the area. However, a vertical fingertip-impressed cordon ran up to the rim. This is very rare and more commonly associated with the earlier Biconical Urn repertoire of southern Britain. Since the urn does not posses the biconical aspect of this series, and the decoration is far less complex, it may be an early to middle Bronze Age hybrid of the two traditions and could indicate a previously unknown pottery tradition in this area. The urn was found in apparent isolation, and no contemporary features were found nearby.

A single axe trimming flint flake of Mesolithic or Neolithic date was discovered within the fill of the Bronze Age urn (Fig. 49 no. 3). This is likely to have been residual, an isolated stray find incorporated into the backfill of the pit, but there is a possibility that it could have been deliberately placed in the vessel at the time of its deposition.

Gully 618 contained four sherds of pottery dated it to the mid- to late Iron Age, a reasonably high quantity of material for a limited sample of a small feature. The pottery suggests that there was Iron Age settlement activity fairly close to the site.

CAS 9596 ✓

Site 14: Possible prehistoric features

Construction Section 6, Plot 63, SP 8642 1786

Introduction

Late Neolithic or early Bronze Age pottery was retrieved from one of three recorded features. The site was north-east of Aylesbury, approximately 1km south of Wingrave, and just over 1km east of Rowsham (Fig. 16). The Thistle Brook flows 1km to the north. The land is at a height of around 94m AOD, on clayey slowly permeable soils over sandy micaceous marls of the Upper Greensand and dark Gault clays (BGS 1990). It is permanent grassland used for dairying (CPM 1996).

Archaeology

The site, found during pipe-trenching, consisted of two linear features and a hollow:

Linear hollow 657
Ditch 659
Gully 661

Discussion

A single base sherd of probable late Neolithic or early Bronze Age pottery was retrieved from the ditch (659). If it was not residual, the pottery provides a potential date for the ditch. The gully (661) cut the ditch and must have been from the same period or later. Both features were aligned in the same direction, but it is unlikely that the gully was a re-cut of the ditch because it was much smaller. The differences in scale may imply different uses, or simply the re-establishment of a boundary.

The fill of the ditch appeared to be deliberately dumped: it was uneven and contained a high density of anthropogenic material. A few fragments of pottery and bone, some burnt sediment, fire cracked pebbles, a single charred cereal grain and quantities of charcoal were found in a sample of the fill.

Little evidence for settlement activity was produced by the gully. The fill appeared to have accumulated by silting and was relatively clean, suggesting that any nearby settlement had been abandoned, or had migrated away by the time the gully fell out of use. Flint and burnt limestone inclusions tended to be concentrated more towards the west edge of the gully, where there appeared to be a spread of material identical to the fill extending outside the feature.

A 6m wide linear feature (657) in the same area extended beneath a modern trackway and contained post-medieval pottery in its upper fill.

CAS 6303

Site 15: Late Bronze Age or Iron Age ditches

Construction Section 6, Plot 65, SP 8681 1831

Introduction

Eight ditches were recorded in section, three of which produced late Bronze Age or early Iron Age pottery (Fig. 17). The site was north-east of Aylesbury, at the foot of a low lying hill at a height of about 95m AOD. The village of Wingrave lies further up the hill, 500m to the north. Clay soils, developed over sandy, micaceous marls and dark clays of the Selbornian Upper Greensand and Gault, underlay the site (BGS 1990). The clay soils were very intractable for one or two days after heavy rain. The land is permanent grassland used for dairying (CPM 1996).

Archaeology

Eight ditches were recorded during pipe-trenching, along a 180m length of the pipeline. One was re-cut:

Ditch 663	Ditch 671	Ditch 684
Ditch 665	Ditch 673	Ditch 677 (Re-cut 679)
Ditch 668	Ditch 675	

Discussion

Pottery dating to the late Bronze Age or early Iron Age was retrieved from three ditches (671, 675, 677). This dates activity at the site to the early first millennium BC. A single prehistoric waste flake recovered from Ditch 668, was probably residual. Three more ditches (665, 668, 673) were parallel to Ditch 671, suggesting that they may have been contemporary.

The ditches appeared to divide into two size groupings. The four on a common north-west to south-east orientation were larger, ranging in width from .9m to 4.5m (Fig. 17a), while the other four, on more irregular alignments ranged from 1.4m to 2.05m wide (Fig. 17b). Stepped profiles visible in most of the ditches, suggest that they may have been re-cut, and therefore in prolonged use. It was notable that all larger ditches had stepped profiles.

The fills of all the ditches appeared to have formed by silting. There were occasional charcoal flecks in all but two ditches, indicating anthropogenic activity, but at a relatively low level. Large flint nodules within the fills of five ditches (668, 671, 674, 679, 685) may have been knocked in by regular human or domestic animal activity, as they do not appear to have been deliberately dumped.

Furrows of medieval or post-medieval ridge-and furrow could be seen across the site.

CAS 6304 ✓

Site 16: Iron Age ditches

Construction Section 6, Plots 68, 69, SP 8738 1839

Introduction

Iron Age pits and ditches were recorded, and Late Bronze Age to earlier Iron Age pottery provided evidence of earlier activity. The site was north-east of Aylesbury and 150m to the east Lower Windmill Hill Farm on the minor road between Tring and Wingrave (Fig. 18). The land is at around 103m AOD, and rises to the north-west, towards Wingrave village. The underlying geological formations are Selbornian Upper Greensand and Gault (BGS 1990). The heavy soils can be difficult to work after rain, and the land is currently permanent grassland used for dairying (CPM 1996).

Archaeology

The site was found during pipe-trenching and extended for approximately 260m along the pipeline. It consisted of thirteen ditches, and six pits. Except for Ditch 742, each of the features contained a single fill:

Pit 708	?Ditch 722	Ditch 734
Pit 710	?Pit 724	Ditch 736
Pit 712	Ditch 726	Ditch 738
Pit 714	Ditch 728	Ditch 740
Ditch 716	Ditch 730	Ditch 742 (Re-cut 744)
Ditch 718	Ditch 732	Pit 720

Discussion

The pottery from Pit 714 and Ditch 718, at the southern end of the site, dated to the late Bronze Age to early Iron Age (Fig. 51 no. 7). Pottery of this date was also recovered from two other features, Pit 708 (Fig. 51 no. 6) and Ditch 716, mixed with later sherds. The fills of both of these features were homogeneous, suggesting that they accumulated slowly by silting. The early pottery was presumably surface material accidentally incorporated into the fill.

Pottery from a pit (712) and two ditches (726, 732) (Fig. 19a and b) provided evidence for mid- to late Iron Age activity (Fig. 51 no. 5). The southernmost of the three features (726) contained a large amount of dumped burnt clay and charcoal, probably the remains of a domestic oven. Ditch 733 also contained quite high quantities of burnt clay and charcoal, more likely to be re-deposited rather than primary dumping. This domestic debris suggests that there was an area of settlement close by, probably near the southern end of the site, in Plot 68. Finds of pottery, fired and baked clay, and animal bones were confined to this end of the site, as were the six recorded pits.

The gleyed fills of the six ditches in Plot 69 (734, 736, 738, 740, 742 and 744) (Fig. 19c and d) showed that they were deposited in water-logged conditions. The ditches were presumably dug for agricultural drainage: all were aligned roughly parallel to the slope of the ground. At the northern end of the site, Fill 746, of Ditch 742, included a concentration of flint pebbles along the eastern side of the feature (Fig. 19d). It was suggested by the excavators that this flint could have been the remains of a slighted bank, though deliberate dumping seems equally likely. There is little natural flint in the area, and its occurrence here suggests that it was being deliberately imported from the Chilterns, over 5km to the south. Its use in an apparently agricultural context suggests that the local population were vigorous in their efforts to modify and improve the landscape.

CAS 6305 ✓

Site 17: Bronze Age flint scatter and Iron Age ditches

Construction Section 7, Plots 71, 72, SP 8821 1936

Introduction

A concentration of Bronze Age flints was recorded, along with three ditches, one of which contained Neolithic or Bronze Age pottery along with later finds. The site was about 1km east of Wingrave village on quite steeply sloping ground, rising from around 100m to a ridge of high ground, at 127m AOD (Fig. 20). Mentmore Park lies about 2km further east, beyond the deserted medieval village of Crafton. Deep, slightly stony soils have developed over chalky Boulder Clay (BGS 1990), and the land is arable (CPM 1996).

Archaeology

The site, found during pipe-trenching, extended for 150m. Three layers, three ditches, one possibly re-cut, and a possible natural hollow were recorded:

Layer 704	?Re-cut ditch 755	Layer 761
Ditch 750	Ditch 757	Layer 762
Ditch 753	?Hollow 759	

Discussion

Thirty-two late Bronze Age flints were recovered during the surface stripping of the site (Layer 704). Of these, there is only one core and one primary flake, indicating that the bulk of the material is probably derived from settlement activities.

Ditches 753 and 755 were at the southern end of the site, over 100m from the other features. A significant amount of Neolithic or Bronze Age and mid- to late Iron Age pottery was recovered from Ditch 753, along with flint flakes and animal bone. The broad date range for the pottery indicates that at least some of it was residual. The fill of the ditch was homogeneous, apparently laid down by siltation, with no evidence of disturbance. In the side of the pipe-trench, Ditch 755 was seen to cut Ditch 753, and was probably a re-cut of the same feature (Fig. 20b). It contained late Iron Age pottery. Overall, the evidence seems to suggest that the ditch was originally cut in the mid- to late Iron Age, silted up with the incorporation of earlier material, and was re-cut in the late Iron Age. The ditches were small and unlikely to have been boundary markers; they were oriented along the contours of the hillside and were probably used for water management.

Two features were recorded near the southern side of Plot 72. Ditch 757 had a number of large stones within the fill, the only indication of possible human activity (Fig. 20a). Layer 761 sealed this ditch, but appeared continuous with the fill of the Feature 759 suggesting that this may have been a natural feature, despite its being on an apparently parallel alignment with Ditch 757.

A large ditch recorded to the west (750) was probably an old field boundary, as it aligned with an intersection of field boundaries to the south of the pipeline. It had a stepped profile, probably the result of weathering rather than an indication of re-cutting. Erosion patterns on the west side of the ditch suggested that there had been a bank on this side. Heavy oxidisation of the upper fill indicated a period of stabilisation during filling. The ditch was sealed by a layer (762), possibly of colluvial origin.

Site 18: Bronze Age cremation, Iron Age ditches and pits

CAS 6306 ✓

Construction Section 8, Plots 79, 80, SP 899 208

Introduction

The site consisted of a late Bronze Age cremation, with limited evidence of contemporary domestic activity, together with mid- to late Iron Age ditches and pits. It was approximately 1km to the north of Mentmore Park and a similar distance to the south-west of Ledburn village (Fig. 21). At approximately 95m AOD, the site was towards the foot of a gentle north-west facing slope. The underlying geological deposits are sandy micaceous marls of the Gault formation (BGS 1992). The slowly permeable, seasonally water-logged land is presently in arable use (CPM 1996).

Archaeology

The site, found during pipe-trenching, extended for over 400m. It consisted of six pit-like features, including a cremation pit; five ditches, two of which were re-cut; and a small stake-hole:

Pit 809	Stake-hole 820	Ditch 828 (Re-cut 830)
Ditch 811	Post-pit 822	Pit 832
Cremation Pit 813	Ditch 824	Pit 834
Ditch 816 (Re-cut 818)	Pit 826	Ditch 838

Discussion

Pit 813, relatively isolated at the western end of the site (Fig. 21a), contained cremated human bone and fragments of late Bronze Age pottery. There was no sign of *in situ* burning within the pit; there would presumably have been a pyre site somewhere close by. There was a ditch (816) to the east of the cremation pit which may have been a contemporary feature: if so, it could have marked the limit of a cemetery area. Ditch (816) had been re-cut, as Ditch 818, indicating prolonged use of the site.

Pottery from the three features (813, 816, 809) in the western half of the site dated to the late Bronze Age. The dateable features (811, 830, 822, 826) in the eastern half of the site were mid- to late Iron Age (Fig. 51 no. 8). One pit (822) also contained a possibly residual prehistoric waste flint flake.

Charcoal in all three of the late Bronze Age features may indicate settlement activity, although pyre material is an obvious alternative source. Samples taken from Pit 809 were found to contain typical domestic refuse, including small fragments of pottery, charcoal, charred seeds, animal bone, fired earth, burnt stone and flint, and fire-cracked pebbles. Fragments of sheep bone and snail shells suggested the pit was in grassland at the time it was filling, while the charred grains indicate cereal cultivation. Together, this evidence suggests that this was the site of a small, late Bronze Age farming settlement, with a funerary area on its periphery.

The greatest concentration of features was seen at the eastern end of the site, an area which pottery-dating placed in the mid- to late Iron Age. Both pits and ditches were present, perhaps suggesting the features were settlement-related rather than agricultural. One or more of the more substantial ditches (811, 828, 838) (Fig. 21b) could have formed part of an enclosure. The re-cut of one of the ditches (828) suggests prolonged use of the site. There was no evidence of buildings, although a single post-pit and a stake-hole were tenuous indications of a post-built structure or fence-line.

During the construction of the Southern Feeder pipeline, late Bronze Age and mid- to late Iron Age, as well as Roman settlement features, were found nearby, suggesting that the area was a favoured settlement location for several millennia.

Site 19: Old river channel and Bronze Age features

Construction Section 10, Plots 96, 97, SP 9294 2178

Introduction

Pits and ditches, in association with a former river course, are thought to be the associated with mid- to late Bronze Age activities at a settlement site probably located further upslope. The site is approximately 700m south-west of the village of Little Billington and is adjacent to the north bank of the River Ouzel (Fig. 22). The Grand Union Canal lies a little further to the south-west. The land is low lying, at around 84m AOD, within a gently undulating landscape. It is on chalky boulder clay covered by patches of alluvium (BGS 1992). The land is arable, on deep, wet and clayey soils (CPM 1996).

Archaeology

The site, found during pipe-trenching, extended for 560m. It consisted of seven possible ditches, five possible pits, and sequences of layers related a former river channel:

?Ditch 1009	Layer 1023	?Pit 1036
?Pit 1012	Layer 1024	Layer 1038
?Pit 1015	Layer 1025	Layer 1039
Layer 1017	Layer 1026	Layer 1040
Ditch 1018	?Ditch 1027	?Pit 1041
Layer 1020	?Ditch 1029	?Ditch 1043
Layer 1021	?Ditch 1031	Ditch 1045
Layer 1022	?Pit 1033	?Ditch 1047

Discussion

Former River Channel

The pipeline crossed old river channels, abandoned meanders of the River Ouzel, at three points. The channels appeared to cut through bands of fluvial gravels laid on top of Gault clay. This indicates that the channel was post-glacial, or perhaps broadly contemporary with the deposition of glacial gravels, having been carved by melt-waters at the end of the last ice age. At one point, there were bands of sorted fluvio-glacial gravels within a stream channel fill: reworked gravels deposits laid down on the river bed.

An organically rich sample (9012) was taken from low down in the sequence of channel fills (1023). A number of aquatic species known to prefer fresh, moving water were found within the sample, suggesting that slow moving water deposited a layer of decaying matter and river silts on the gravel bed.

Two clayey silt layers (1021 and 1022) were laid down on top of the organic-rich layer. These were typical of water borne deposits. The shell assemblages from samples (9010 and 9011) of these layers were dominated by aquatic snail shells, which suggested some current flow. However, other species were indicative of pond, ditch or marsh habitats and a low level of terrestrial snail species were suggestive of woodland and grassland habitats. The latter had probably been re-deposited in the river.

Low levels of charcoal in the samples indicated that human activity was probably taking place in the locality while the channel was still flowing. An organically rich, peaty layer (1020), which overlay layers 1021 and 1022, may represent a marshy area left after the river course had migrated away and the channel had mostly silted up.

The Bronze Age

Layers 1038, 1039 and 1040 could have formed from flooding episodes (Fig. 23b). A substantial amount of re-deposited mid- to late Bronze Age pottery was found in the uppermost of these three

layers (1038). This is strong evidence for settlement activity in the vicinity, before the river changed course and the old channel finally silting up.

Pit 1036 produced five sherds of mid- to late Bronze Age pottery. It was uncertain whether this pit cut the uppermost alluvial layer (1038) or whether the layer had spilt over into the pit. While the pottery may have been re-deposited, there were no later finds within the pit, and it is perhaps more likely the pit was dug during the middle or late Bronze Age.

Activities in the Bronze Age

The natural glacial gravel layer appears to be the surface on which human activities took place as all archaeological features on the site cut through these gravels. Although no other dateable finds were recovered, a number of features contained anthropogenic material, such as charcoal, indicating human activity in the vicinity.

It is notable that a series of flooding episodes resulted in the final infilling of the stream channel and covered the gravel surface, sealing all archaeological features, except for one ditch (1043), with alluvium (Layer 1017) (Fig. 23a). The area seems to have been largely abandoned when this river channel finally silted up. This happened no earlier than the mid- to late Bronze Age.

Ditch 1043 was not sealed by alluvium, perhaps because of its slightly elevated position above the flood zone (Fig. 23c). It is also possible that this feature is later than the flooding episodes and not related to the pits and ditches on the lower ground. All other ditches, including a modern field drain (1045), were oriented in roughly the same north-east to south-west direction, channelling water towards the former river course and the present day course of the Ouzel. Ditch 1043, on the other hand, was oriented roughly north-west to south-east. No finds were recovered but there were a number of large flints in the fill that are likely to have been deposited by human agency.

The fills of the features were predominantly clays or silty clays, typical of the natural geology of the area. They ranged from greyish-yellow to brownish grey, again typical of the natural alluvial deposits of the area.

All the pottery from the site, regardless of fabric type, was highly fired. It may have been re-fired, possibly within a bonfire, and the debris from this process, including broken pottery and charcoal, then dumped. This theory is not substantiated by the small quantity of charcoal found in alluvial layer 1038 although material in pit 1036 could result from dumped material which was then naturally re-deposited.

Economy

A small quantity of animal bone was recovered from Pit 1036 but provides little information about human activity and animal husbandry at the site. Mid- to late Bronze Age farmers might have found the land difficult to work, and it may only have been suitable for pasture; the drainage ditches would have made the land more tractable. Competition for land would probably not have been intense at the time, and marginal areas area unlikely to have been extensively worked. Curiously, the flooding episodes, which might have made the land less marginal, seem to have marked the end of prehistoric activity at the site.

Site 20: Undated pits

Construction Section 11, Plot 99, SP 93600 21900

Introduction

Two small pits containing burnt material were recorded in the side of the pipe-trench (Fig. 24). The site is less than 1km south-west of Billington village. The A4146 Hemel Hempstead to Milton Keynes road passes approximately 80m to the east of the site, and the River Ouzel, the county boundary between Buckinghamshire and Bedfordshire, lies approximately 400m to the south. The site is at around 93m AOD, sloping up to the north. It is on Gault clay (BGS 1992) and land is in arable use (CPM 1996).

Archaeology

Two pit-like features, found during trenching, were recorded in the southern side of the pipe trench, approximately 6m apart:

?Pit 1104
?Pit 1107

Discussion

The features were only seen in section, so their orientation and shape in plan are not known. Both contain two separated fills: the upper fills were relatively clean in both cases, while the lower fills were heterogeneous containing burnt material; limestone, flint and charcoal flecks and lumps (Fig 24a and b). There were no dateable artefacts from either feature. An unstratified flint core of Mesolithic or early Neolithic type was found in close proximity to the features (Fig. 49 no. 9).

Site 21: Prehistoric pits and ditches

Construction Section 11, Plots 101,102, SP 9419 2195

Introduction

Artefacts from pits and ditches provide evidence of repeated activity from the Neolithic to the late Iron Age. The findings may have been associated with settlement activity. The site is 500m south of Billington Village, at a height of 90m AOD. The River Ouzel passes 600m to the south, and the A4146 Hemel Hempstead to Milton Keynes road forms the eastern boundary of Plot 102 (Fig. 25). The underlying geological deposits are Gault mudstones (BGS 1992) and the land is in arable use (CPM 1996).

Archaeology

The site, found during pipe-trenching, consisted of four pits, a ditch and a gully, within a 30m length of the pipeline:

Pit 1110	Pit 1114	Pit 1119
Ditch 1112	Gully 1117	Pit 1121

Discussion

The taphonomy of the site was complex. Three phases were represented; early Neolithic, late Bronze Age and late Iron Age.

Early Neolithic

An unstratified Mesolithic or early Neolithic flint tool, a single sherd of a possible early Neolithic round-based bowl from Ditch 1112 (Fig. 51 no. 2), and four sherds of possible early Neolithic pottery from Pit 1114, were recovered. The Neolithic sherds in Pit 1114 were certainly residual as this pit also produces Bronze Age material; the finds from Ditch 1112 may also have been residual. Nevertheless, these finds indicate the presence of early Neolithic activity in the area.

Late Bronze Age

Considering the fragility and rarity of late Bronze Age pottery, a quite substantial amount was recovered from Pit 1114. A possible late Bronze Age flint core and two late Neolithic to late Bronze Age flint flakes were also recovered from this pit. The dating evidence suggests that the pit was dug in the late Bronze Age, perhaps disturbing Neolithic deposits.

Late Iron Age

There are several possible explanations for the thirteen sherds of late Bronze Age through to late Iron Age pottery recovered from Pit 1110. It is possible that the pit was dug during the late Bronze Age and that the Iron Age pottery is intrusive, resulting from later activity and disturbances. The most likely possibility is that the pit was dug during the late Iron Age, causing residual late Bronze Age pottery to be redeposited. A third possibility is that the pit was in continuous use from the late Bronze Age until the late Iron Age: however, had the site been in use for all of this period, a greater density of features and finds would have been expected.

All the features contained dark, loamy clay fills (Fig 25a and b). All had moderate charcoal contents, probably anthropogenic. Pits tend to be associated with settlement activity and the features were probably close to an area of settlement, if not actually within it. Repeated use of the locale indicates this was a favoured settlement location.

Site 22: Roman field system ditches and possible settlement

Construction Section 13, Plot 113, SP 9634 2258 (centre)

Introduction

This site was between Dunstable and Leighton Buzzard, in south Bedfordshire. It was approximately 400m, south of the A505 Leighton Buzzard southern bypass, and south-east of Stanbridgeford Sewage Works (Fig. 26). The land here is almost flat, at around 89m AOD, in the base of a small valley. The surrounding rolling countryside, at the foot of the Chilterns, undulates gently between 85m and 140m AOD.

The region is drained north-westwards by tributaries of the River Ouzel, which forms the county boundary with Buckinghamshire. These streams are fed from numerous springs on the sides of narrow valleys dissecting the steep Cretaceous chalk escarpments of the Chiltern uplands, which rise rapidly to over 200m AOD to the south-east. The channelled and culverted course of one of these streams, the Ouzel Brook, ran 200m to the north of the site, beyond the sewage works

The surrounding area is dotted with small towns and villages, mostly occupying the higher ground. Totternhoe and Eaton Bray are on spurs of the Chilterns to the south-east, while Stanbridge and Billington are on small hills to the north-west.

The underlying geology is grey mudstone of the Gault formation, although locally this is covered by isolated pockets of glacial till. A narrow band of alluvium extends either side of the Ouzel Brook, but the site was probably beyond its southern extent.

The local soils are deep, seasonally wet, calcareous clays and fine loamy clay soils, of the Evesham 3 association in the Soil Survey classification (SSEW, 1983). A borehole adjacent to the site recorded a 0.29m depth of dark brown calcareous clay ploughsoil to a depth over brown, slightly calcareous, slightly plastic subsoil, to 0.48m deep. Below this, pale grey, prominently mottled, very calcareous silty clay, probably weathered Gault, extended to 1.04m, overlying pale grey, mottled, firm, very calcareous silty Gault Clay (CPM 1996).

Background

The site, which extended for 200m along the pipeline, was found during topsoil stripping, when the first strip of the easement, by back-acting machines, was carried out. Normal practice would be to restrict access to the rest of the working width until agreement could be reached to use only back-acters to strip the full extent of the archaeological site. However, because of the constraints of the construction timetable, in this instance the contractors used bulldozers to remove most of the depth of the remaining ploughsoil, leaving a thin cushion of soil above the archaeology. This residual overburden was then removed the following day by a single back-acting machine under close archaeological supervision. The site was then cleaned by hand, apart from a 3m-wide temporary running track on the north side of the easement.

Because of the dry ground conditions and the compactness of the underlying clay, the use of bulldozers seems to have had little detrimental effect on the archaeological deposits, while saving up to two days stripping time, allowing an extra five to ten person days hand excavation work on site.

The time available for hand excavation was limited to two and a half weeks. A scale plan of the site was made, and as many deposits as possible were excavated in the available time. Initially attention focused upon the centre-line of the pipeline and the running track, before turning to other areas of the cleaned easement. This meant that deposits which were to be totally destroyed were recorded first but had the unfortunate side effect that the sample of deposits excavated did not cover the complete range across the whole site.

Subsequent monitoring of the pipe-trenching identified a number of outlying deposits at both the north-east and south-west ends of the site.

General

A number of south-west to north-east aligned ditches ran across the site, some having perpendicular returns (Fig. 27a, b and c). Towards the north-east end of the site, these formed a small rectilinear enclosure. Regularly spaced north-west to south-east oriented furrows, presumably from medieval ridge-and-furrow cultivation, extended across the whole site. Pits and postholes, which appeared to align with the ditches, suggested the presence of buildings. Other pits could have been result of quarrying or for waste disposal.

Throughout the life of the site, most of the features were oriented on the same rectilinear pattern. This could reflect the natural drainage patterns of the area, but it is more likely that it implies continuity in the development of the site, with later features fitting in to the existing pattern, maintaining the general outline and orientation of the site.

Some pre-Roman and post-Roman pottery was recovered, but the majority of pottery was Roman. The whole of the Roman period was represented by the artefact assemblage, with most of the material dating to the second or third centuries AD.

There was a considerable quantity of unstratified finds recovered from the stripped surface or from the stacked topsoil. These finds included the footring of a stamped samian ware cup (SF 5077; Fig. 57 no. 136), a tanged knife blade (SF 5057; Fig. 59 no. 25), a domed copper alloy boss (SF 5093; Fig. 58 no. 6), a small hollow tube of copper alloy sheet (SF 5157; Fig. 58 no. 11) and seven Roman coins (SFs 5049, 5052, 5055, 5067, 5069, 5214 and 5215).

Prehistoric

A single notched flint flake, possibly Mesolithic, was found in one of the sections (1364) excavated through the rectilinear enclosure at the north-east end of the site (Fig. 49 no. 14). The same context also produced late Bronze Age pottery, and an iron nail (SF 5163). Together with the stratigraphic relationships, this indicates that the ditch was dug in the second or third century AD.

Four flints dated to the late Neolithic or Bronze Age, a miscellaneous tool, a core and two flakes, were found on the topsoil stripped surface (unstratified context 1306) to the west of rectilinear enclosure. Four other flakes of the same broad date range were residual in later contexts (1319, 1371, 2735, 2778). A stone pounder (SF 5194) probably of Iron Age date was also recovered from the stripped surface (Fig. 49 no. 12).

Three residual sherds of late Bronze Age pottery were recovered from the site, one each from the secondary fill (2860) of a posthole or pit (2857) which cut an earlier pit containing Roman pottery; one of the sections (1364) through the rectilinear enclosure at the north-eastern end of the site; and one of the south-west to north-east oriented ditches (2755).

A number features in the centre of the site were not excavated because of the shortage of time. They generally had leached pale grey fills and included a number of small pits, small linear features and curvilinear gullies. These all seemed to be early in the stratigraphic sequence. Some may have been natural features, perhaps periglacial ice wedges, but as they were not investigated, the possibility that they were anthropogenic cannot be ruled out. Some of the curvilinear features in particular looked to be very like the remains, very truncated, of eaves-drip gullies of Iron Age roundhouses.

Residual Iron Age pottery was retrieved from several contexts. Grog tempered sherds from handmade, Belgic style cooking pots and from a large jar (Fig. 53 nos. 24b, 25 and 26) were retrieved from a re-cut (2928) of a first- to second-century AD ditch (2923) at the south western end of the site.

A flat fragment of a large, grog tempered jar (Fig. 54 no. 55) was recovered from the primary fill (2854) of Posthole 2852 towards the south western end of the site; this posthole was within the fill of one of the beam-slots (2848) in this part of the site, which contained pottery dating from the late first to second century AD. A simple, shell-tempered, handmade cooking pot (Fig. 55 no. 84) in the native tradition was found in a ditch terminal or small pit (2757) near the centre of the site; second-century pottery and a segment of a circular quern (SF 5107; Fig. 61 no. 37) were present in the primary fill (2759).

These finds of prehistoric material indicate a low background level of human exploitation of the landscape during these periods.

Roman

An extensive system of ditches and gullies was established by the early second century and seems to have been maintained and extended throughout the Roman period. Alignments of postholes and possible beam-slots provide evidence, not wholly convincing, of rectangular structures. Shallow remnants of curvilinear gullies were, perhaps, drip-gullies of earlier roundhouse structures. Distinctive pits, especially towards the western end of the site, seem to have been associated with an industrial use, possibly some form of metal-working.

Ditches

Nearly all of the components of the ditch system fitted a common rectilinear pattern, aligned north-north-west to south-south-east or west-south-west to east-north-east. In places, stratigraphic sequences indicated a number of separate phases of activity, but it was not possible to develop a phasing system encompassing the whole site. This is hardly surprising: the common alignment suggests broad continuity of use, with individual ditches being added, cleaned out or re-cut as necessary.

Gully 2704

Gully 2704 (sections 2704, 2740, 2898), crossing the centre of the site, produced pottery of late Iron Age to mid- to late first century date and was probably among the earliest of the recorded features, dating from before the overall rectilinear pattern became fully established. To the south, this gully became narrow and shallow, appearing to terminate in a group of intercutting features. Pit 2708 was cut by the gully and in turn cut Pit 2715. Neither yielded any artefacts, but if the recorded relationship with the gully was correct it provides an Iron Age to late first century AD *terminus ante quem* for the pits. These two pits were also cut by an extended oval feature, interpreted as a beam-slot (2706). There was no dating evidence from the beam-slot and its relationship with the gully could not be ascertained.

Ditches 2923 and 2776

At an early stage, two substantial ditches (2923 and 2776), 3.2m and 2.37m wide respectively, were established at the west end of the site. These ditches seem to have been contemporary and probably formed a right-angled corner at the south limit of excavation. Artefact dating indicates a first- to early second-century date (Fig. 53 no. 34; Fig. 55 no. 78) for the fills of the largest ditch, 2923, (Fig. 29a). It was re-cut or cleaned out (2928), probably not long after this date (Fig. 53 no. 35; Fig. 55 no. 72) and on two further occasions (2939 and 2932), the final fills yielding third to fourth century pottery (Fig. 54 no. 64; Fig. 55 no. 70).

Ditch 2776 may have been a re-cut of an earlier ditch (2803) and was itself cleaned out twice more (2782 and 2779) in the second century AD, with pottery finds (Fig. 55 nos. 80 and 81) indicating a final re-cut in the late third to fourth century AD (2777). A few fragments of heat-reddened stones within the fills of Ditch 2923 indicated that burnt material had been dumped into the ditch. Three iron objects were recovered from the fill of Re-cut 2779: a ring (SF 5115) and two probable nail fragments (SF 5116). Surface finds from above the ditch fills included first- to early second-century

(Fig. 55 no. 73) and fourth-century pottery (Fig. 55 no. 79), as well as seven late Roman coins (SFs 5044, 5046, 5050, 5051, 5054, 5062 and 5063).

Ditch 1391 and Bank 2710 (Fig. 29b)
Running parallel to Ditch 2776 and less than 5m to the south, Ditch 1391 was also a substantial feature, over 2m wide. A blanketing layer (2710) on its south side was interpreted as an up-cast bank, though the relationship between bank and ditch had been lost when the ditch was re-cut (1388). The bank was made up of a compacted mid-yellowish grey clay, containing 10% flint pebbles. The fill of ditch 1391 had a similar composition to the bank, consistent with the bank gradually eroding and slumping back into the ditch. Ditch 1391 produced late first- to second-century pottery, while pottery from the upper fill of ditch re-cut 1388 was dated mid- to late second century or later. The ditch also contained a fragment of a Roman glass vessel (SF 5282). Third-century pottery from the bank material could have been intrusive, or may indicate that the ditches were dug in the third century AD.

Ditches 2711, 2808 and 2827
Immediately to the south of Layer 2710 and also cut through it, Ditch 2711 was steep-sided with a distinctive V-shaped profile. Pottery from its fill dated to the second century or later. This feature probably continued to the east, parallel to Ditch 1391, but its fill could not be distinguished from Layer 2710 on the surface. To the west, Ditch 2808 was on the same alignment, but it had a rather different round-bottomed profile and probably turned south in a right-angled bend to continue as Ditch 2827. The region of this corner, and the intersection with Ditch 2711, had been disrupted by a furrow and two modern land-drains (2831) and the relationships between these features were not determined. A re-cut (2842) of Ditch 2808 was recorded: this had a more V-shaped profile and may have been a continuation of Ditch 2711. The re-cut contained late first- to second-century pottery, in its primary fill, and first- to third-century pottery in its secondary fill. A fourth-century coin (SF 5066) was recovered from the surface of the feature. Ditch 2827 produced Roman brick or tile, rather undiagnostic pottery of second-century date or later, and a fragment of a fourth-century glass vessel (SF 5281). Ditch 2808 was also cut by a small posthole-like feature (2845) containing second- or third-century pottery.

Gullies 2774, 2734 and 3052
Roughly parallel with Ditch 2827, and 12m to the east, Gully 2774 was a much smaller feature, barely 30cm wide, containing a small amount of second- to third-century pottery. It appeared to continue south, after as gap, as Gully 2734, which produced undiagnostic Roman pottery. The northern end of Gully 2774 was not excavated, but on the surface it appeared to run into Ditch 2711 after a right-angled turn to the west, the region where the two features intersected being obscured by a furrow. This part of the gully appeared to be continued to the east, after a small gap, as Gully 3052. This feature was not excavated, but second-century pottery was recovered from its surface (2994) and a fourth-century coin (SF 5070) from a spread of material (3064) overlying it. An irregular feature (2772) cutting Gully 2774 was possibly no more than a tree-throw hole but produced Roman pottery, brick and tile and fired clay.

Gully 2755
Another shallow gully (2755 = 2865, 2764, 3054) 8m to 11m to the south, was on a slightly different alignment to Gully 3052, being more nearly parallel to Ditch 2776. This was recorded as cutting both Ditch 2827 and Gully 2774, but neither of these intersections was excavated and the fills of all three features were similar, so their relationships may be in doubt. The small amount of pottery from Section 2755 was dated to the first to mid-second century, but could, of course, have been residual. This section also revealed a deeper feature (2757), perhaps an oval pit or a ditch terminus, cut into the gully. Pottery from the upper fill of this feature included samian-ware dating from AD 40 to 100, but the lower fill had rather later material, from the early to mid-second century (Fig. 53 no. 36). A copper alloy ring (SF 5071; Fig 58 no. 20) was found on the surface of the feature.

Perhaps of more significance, the relatively small sections excavated through this gully produced fifteen pieces of slag, weighing 386g and a fragment of a tuyere (SFs 5106, 5113). This material was unusual; it may have been smithing slag which had either undergone some extreme degradation process or been generated by some unusual smithing technique, or alternatively been the result of an unusual technique, perhaps of Iron Age rather than Roman technology. If so, it is tempting to link it to the remains of a curvilinear feature (2788), very reminiscent of a roundhouse drip gully, cut by Gully 2755. However, the excavated terminus (2770), possibly a continuation of the curvilinear beyond Furrow 2766, contained Roman pottery and tile in its fill. A small undated posthole (2768) nearby may have been a related feature.

Gully 1393

The eastern end of Gully 2755 was lost beneath Furrow 2766 but had it extended for a further 3m it would have formed a right-angled intersection with Gully 1393 (= 2742, 3062). This narrow, steep-sided linear feature contained pottery dated to the second century or later and cut Gully 2704, described above, at a very oblique angle. Its fill also contained a small lump of abraded, possibly water-rolled, smithing slag (SF 5303).

Ditch 2729 and Pits 2700, 2702, 2761

Gully 1393 appeared to run out to the south, close to the excavated right-angled corner of a more substantial linear feature (2729). The fills of this ditch produced considerable quantities of pottery, allowing them to be quite closely dated to the mid-third century (Fig. 53 nos. 39 and 40; Fig. 54 nos. 42, 53 and 58; Fig. 55 nos. 68, 69, 74 and 88). A very regular rectangular shallow slot (2761) in the base of the ditch was particularly rich in pottery (Fig. 53 nos. 38 and 41; Fig. 54 nos. 47 and 49), including some of early- to mid-second century date. This may have been an earlier feature truncated when the ditch was dug, but the occurrence of sherds in its fill re-fitting with those from the ditch fills (Fig. 53 nos. 39 and 40; Fig. 55 nos. 74 and 88) suggests that it was open at the same time as the ditch.

The south-eastern end of Ditch 2729 was partly covered by an unexcavated surface spread of material against the edge-of-site baulk. This obscured its relationship, if any, with a very regular linear feature (2702), which contained pottery dating from AD 120 to 200 (Fig. 54 nos. 62 and 63; Fig. 55 no. 85) and was thought to be a possible beam-slot. It was cut into an oval pit (2700), these features perhaps being associated with the small pits at the southern end of Gully 2704.

Ditches 2746, 1375

Ditch 2746 (= 1373, 3061, 3078) was around 13m west of Gully 1394. It seemed to align with Ditch 2704, which, together with its position in the stratigraphic sequence, suggests that it was an early feature. Pottery from its upper fill, however, dated from the second century or later. The eastern edge of Ditch 2746 was cut by a larger ditch (1375 = 3079) on the same alignment. This ditch, which had been re-cut as Ditch 1397, also contained pottery from the second century or later (fig. 55 no. 67). To the south, Ditch 1375 ended in a pit or bulbous terminus (1384). A re-cut (1398) within this feature was probably a continuation of Re-cut 1397. Pit 1384 contained pottery ranging in date from the first to third century or later, the earliest material coming, perversely, from the uppermost fill. An isolated remnant of another small linear feature (2749), containing undiagnostic Roman pottery, lay to the west of Ditch 2746 on a parallel alignment.

Ditch 1382, Gully 1368 and Features 1378, 1380, 1370

One of the few ditches on the site which did not fit in to the general alignment, Ditch 1382 cut Ditch 2746 near to the southern baulk. It was a shallower feature, its western end being lost in a confusion of unexcavated linear features and furrows. It contained mid-first- to early second-century pottery. Remnants of this small ditch may have extended further to the north-west, and included Features 1378 and 1380, though these were very irregular and are probably best interpreted, along with Feature 1370, as areas of tree-root disturbance. The pottery finds, late first- to second-century in Feature 1378 and mid-second-century or later in Feature 1380, were likely to have been residual. An

unexcavated linear feature (2997), seemingly cutting Feature 1378, had late first- to mid-second-century pottery on its surface (Fig. 54 no. 45; Fig. 55 no. 75).

A small but regular gully (1368) apparently cut by Ditch 1375 was on a perpendicular alignment to Ditch 1382. It contained rather undiagnostic late first- to second-century pottery.

Ditch 2726

A fairly substantial ditch (2726) was largely obscured on the surface by later furrows and plough-marks but it appeared to be on a parallel alignment with Ditch 2746, 12m to the west. Its lower three fills contained pottery consistently dated to the mid- to late-second century (Fig. 53 nos. 27, 30 and 37; Fig. 54 nos. 54, 60 and 61), while its upper fill may also have contained third-century sherds.

Ditches 2798 and 1320

Ditch 2798 (= 2724, 3070) was also partly obscured by a furrow (2719) but again seemed to be on a parallel alignment, at least in the southern part of the easement. It produced a range of pottery, dating from the late first to late third centuries (Fig. 53 no. 28; Fig. 55 no. 59) as well as a very small but almost complete Roman bracelet (SF 5078; Fig. 58 no. 12), a fragment of a bottle-like lead alloy vessel (SF 5094; Fig 60 no. 33) and piece of copper alloy wire, possibly the shaft of a pin (SF 5118; Fig. 58 no. 13). In its excavated section, the ditch appeared to be turning to the east and may have continued on a perpendicular alignment as Ditch 1320 (= 3063, 3007). A fibula brooch recovered from the surface of this ditch (SF 5098; Fig. 28 no. 2) is of a mid- to late first-century type.

Re-cuts were recorded in Sections 2724 and 1320 (2722 and 1323 respectively) but not in Section 2798. Mid- to late fourth-century pottery was recovered from the fills of Re-cut 1323 (Fig. 54 no. 48; Fig. 55 no. 83) implying that this was one of the latest Roman features on the site. Two ferrous objects were also recovered from this re-cut: a flat plate, possibly part of a part-made tool (SF 5285; Fig. 59 no. 29) and the remains of a hook attached to a rectangular plate (SF 5154; Fig. 59 no. 31). Unstratified finds from the surface of Ditch 2798 included a fourth-century coin (SF 5095) and an iron nail (SF 5187).

The region where Ditches 2798 and 1320 joined or intersected was particularly confusing. Two small gullies (2790 and 2792) appeared to be earlier features, containing late first- to early second-century, and early to middle second-century pottery respectively. Gully 2790 also produced an iron nail (SF 5124) and an iron strip (SF 5120). Gully 2792 cut an irregular shallow feature (2794 = 2796), possibly a tree-throw hole, and was itself cut by Gully 2790.

Gullies 1310, 1308, 1314 and 1362, Ditches 1335 and 1347

Gully 1310 was a small feature, perpendicular to, and cut by, Ditch 1320. Its excavated section produced pottery dated to the mid- to late first to second centuries (Fig. 53 no. 32). It cut a slightly sinuous and rather larger gully (1308 = 1331) which had late first- to early second-century finds. To the south, Gully 1312 = 1310 appeared to terminate at the point where it was cut by the corner of a rectilinear gully (1314) (Fig. 29d). Gully 1314 and its re-cut (1316), which contained early to mid-second-century pottery (Fig. 53 no. 31), appeared to continue as Gully 1362 and Re-cut 1364. These produced pottery dating to the late first to mid-second centuries, or later (Fig. 53 no. 29).

Ditch 1335, with its re-cut (1338), appeared to be a continuation of Gully 1314, but was a more substantial feature, and contained third-century pottery (Fig. 54 nos. 43 and 66; Fig 55 no. 76). At the point where it ran into the edge-of-site baulk, it appeared to intersect another fairly large ditch (1347), possibly forming a right-angled corner or T-junction. Pottery from Ditch 1347 was also probably of third-century date (Fig. 54 no. 51; Fig. 55 nos. 77 and 86).

Ditch 1318 (Fig. 29c)

The most easterly of the recorded features on the excavation site, Ditch 1318 and its re-cut (1352) were substantial features, and appeared to be of relatively late date, containing late third- to mid-

fourth-century pottery (Fig. 54 nos. 50, 52, 57 and 65; Fig. 55 nos. 71 and 87). Metal finds included a short section of chain (SF 5156: Fig. 58 no. 5), a square-headed nail (SF 5161; Fig. 58 no. 18) and a Roman coin (SF 5087). A feature (1351) along the western edge could have been the heavily truncated remains of an earlier shallower ditch and contained pottery dated to the second or third centuries. A deep, regular pit or large posthole (1355) was revealed in the base of the excavated section.

Together with Gullies 1362 and, 1314, and Ditches 1338 and 1347, this ditch appeared to form a fairly regular square enclosure, although it is not clear whether these features would have been in simultaneous existence. The northern and western sides were probably earlier features; the south and east sides may have been contemporary with them but re-cut as bigger features at a later date.

Fill Descriptions
Most of the ditches contained silty clay fills. In most cases, there were fairly low concentrations of artefacts, the result of accidental deposition rather than deliberate dumping. There was a similar pattern to the distribution of faunal remains, with most of the features yielding small quantities of cattle and sheep bone but with no particular concentrations. The earlier ditches tended to have very little charcoal, but there was rather more in the later ditches.

Overall, this implies that the fills generally formed by silting, but with a fairly high level of human activity taking place nearby. This would suggest that the ditches were associated with an agricultural landscape but were close to an area of settlement.

Rectilinear Arrangement of Pits and Postholes
A number of features near the western end of the site, north of Ditch 2776, could possibly have been the remains of a structure. Two rectangular pits, interpreted as beam-slots (2811 and 2848) (Fig. 29e) and a number of pits or postholes, including Features 2806, 2852, 2863 and 2881, seemed to form a rectilinear pattern, surrounding an area at least 10m by 9m, possibly with a central division. Unfortunately, because of the very tight construction schedule, most of the pits or postholes were not excavated.

The beam-slots were on a parallel orientation to Ditch 2776 and just over 1m north of it, and were separated by a gap of about 1.75m. They had similar dimensions and sub-rectangular shapes, with steep sides and flattish bases. The eastern end of Slot 2811 had been lost to an unexcavated ditch (2989) and a furrow (2995). Both of the beam-slots had postholes cut into their fills. Posthole 2806, in Slot 2811 had an upper fill of chalk blocks with no surrounding soil matrix. There was a similar posthole (2852) in Beam-slot 2848, but the remains of a post-pipe (2849) were also recorded within the fill of this slot. Slot 2811 and its posthole both contained sherds of undiagnostic Roman pottery. Posthole 2852 produced a small amount of pottery, dated to the late Iron Age to mid-first century AD (Fig. 54 no. 55) as well as mid- to late third-century material (Fig. 54 no. 56). Pottery from the fill of the beam-slot dated to the late first to second centuries or later. There was a single fragment of Roman tile from the post-pipe.

Feature 2863 continued the line of the beam-slots to the east. It was regular, steep-sided and circular, but at 1.15m diameter and 0.20m depth was rather large, and very shallow, to be a posthole and might be better interpreted as a small pit. Posthole 2881, smaller but equally shallow, was perhaps slightly more convincing as a posthole. With the two beam-slots, it formed a right-angled corner. Three unexcavated features continued in a line to the north, marking the western wall of the putative structure. The fills of the excavated postholes were pale greyish brown silts with orange mottling, generally similar to those of the beam-slots. Undiagnostic Roman pottery was recovered from the fill of Posthole 2881.

Postholes 2825, 2837 and 2839

Another grouping of features to the west could also have been the remnants of a structure. Postholes 2825 and 2837, 2m apart, formed a distinctive pair of features, both having near vertical sides and fills composed largely of blocks of chalk (Fig. 29g and h). Neither feature produced any dating evidence, but Posthole 2825 cut an ill-defined feature (2823), possibly another posthole or gully terminus, containing pottery dated to the late first to second centuries or later, and Posthole 2837 cut an ill-defined shallow feature (2834) which produced mid-second- to early third-century pottery. Posthole 2839 was rather shallower, and had a different appearance: less steep-sided and with a gravel-rich fill. It contained undiagnostic Roman pottery and was cut into Feature 2834. The three postholes together made an angle of rather more than 90°.

Gullies 2819 and 2987

The terminal of a small undated gully (2819) lay just to the north of Posthole 2825 (Fig. 29f). The northern end of this feature was lost beneath Furrow 3046 and two modern land-drains, but it may have had a right-angled return, emerging as the unexcavated Gully 2987. These two gullies seemed to be on a different alignment to all other features on the site.

Pit Cluster

A cluster of pits lay within the angle formed by ditches 2923 and 2776, west of the possible structural remains discussed above. Three of these pits (2875, 2965, 2977) had postholes or stake-holes cut into them suggesting that they were functionally related. Evidence of burning suggested some kind of industrial function for this region of the site, perhaps related to metal-working, although finds of slag were extremely sparse.

Pit 2875 (Fig. 28)

The largest pit (2875) was sub-rectangular in plan, its western side being obscured by a later furrow (2985). A substantial feature, 1.60m wide by 0.70m deep, it had a distinctive outline, having seven post holes (2900, 2902, 2904, 2906, 2908, 2910 and 2912) cut into its edge. In addition, there were four stake-holes cut into its base in a fairly regular rectangular pattern. The pit had four very distinct fills. The earliest (2962) was light grey and mid yellow clay, recorded as re-deposited natural sediment. The next deposit (2922) was a series of black charcoal and dark grey clay lenses interspersed with patches of yellow, redeposited natural clay. Over four hundred fragments of lava stone (SF 5147), an iron nail (SF 5141) and a concreted iron object (SF 5143) were recovered from this fill, along with early to middle second-century pottery. Above this, Deposit (2877) was composed almost entirely of fired clay, and contained a large lens of charcoal (2880). The latest deposit (2876) was a dark grey, compact clay. Finds from this deposit included twenty two fragments of lava stone (SFs: 5133, 5145 and 5146), three fragments of slag (SF 5134), six iron nails (SF 5135-5138, 5142 and 5144), an iron tack or piece of sheet (SF 5119) and a fragment of copper alloy rod or wire (SF 5118).

The seven postholes were mostly sub-rounded in plan, with vertical sides and either flattish or slightly concave bases. They ranged from 0.10m-0.30m in diameter, and 0.45m-0.63m in depth. The posthole fills were light grey silty clay with orange flecks, but the fill of Posthole 2900 was dark grey to black. The four stake-holes in the base were also sub-rounded in plan, with vertical sides and flattish or slightly concave bases. The stake-holes ranged from 0.11m-0.18m in diameter, and 0.15m-0.30m in depth.

Three samples (7001, 7003, 7004) were taken from the fills of the pit and one (7002) from Posthole 2900. Abundant charred grain and chaff was present in all of the samples, although the fired clay pit lining (sample 7001, deposit 2877) contained notably fewer grains and chaff than the other samples. Barley, some wheat and oats were identified.

Pits 2965, 2977, 2872, 2870

A much smaller, shallow, irregular oval feature (2965), 0.80m long, 0.55m wide and just 0.07m deep had five stake-holes (2967, 2969, 2971, 2973 & 2975) cut into its irregular and undulating base. The pit had a single dark grey clay fill (2966), similar to the uppermost fill of Pit 2875. The pit contained some second-century or later pot, burnt stone and fragments of fired clay. The stake-holes generally smaller than those in the base of Pit 2875, with diameters ranging between 0.05m-0.10m, and their depths between 0.05m-0.12m. Burnt flint fragments were found in Stake-hole 2973, and fired clay was recorded in Stake-hole 2975.

Pit 2977, immediately to the south-east, was slightly larger than Pit 2965, but otherwise very similar. It had two fills, the upper fill again similar to that of Pit 2875, while the lower fill was paler and cleaner. Pottery from the upper fill dated to the middle second to third centuries. It had two small stake-holes, no more than 0.07m deep, in its base.

Pits 2872 and 2870 were similar again, shallow oval features with dark greyish upper fills, but no stake-holes were noted in their bases. They appeared to be on perpendicular alignments, with Pit 2870 cutting the western end of Pit 2872. The dark upper fill of Pit 2872 yielded late first- to second-century pottery, as well as small quantities of animal bone and fragments of fired clay.

Pit 2941

East of these features was another shallow feature with stake-holes in its base: Pit 2941. This covered a large area, comparable in size to Pit 2875, but was very shallow and similar to Pits 2965 and 2977. Its western side had been truncated by Furrow 3045. Its dark upper fill contained pottery dating from the second century or later and it also produced a coin (SF 6047) possibly of third- or fourth-century date. The nine stake-holes in its base (2944, 2946, 2948, 2950, 2952, 2954, 2956, 2958, 2960) were between 0.05m and 0.15m across and up to 0.12m deep. All had similar clean silty fills.

Other features

Feature 2888 was recorded as a shallow pit, 2m or more across and 0.26m deep, but is more likely to have been a continuation of Furrow 3051, to the south of a confusing area resulting from similarity of fills of the furrow and Ditch 2808. Pit 2888 cut three earlier pits (2891, 2855 and 2893), erasing any relationships between them. Pits 2891 and 2893 were both approximately 0.50m deep; Pit 2855 was shallower, but had been cut on its eastern side by a posthole (2857) with traces of a post-pipe (2861) visible in section. The lowest fill of this posthole contained a single sherd of Bronze Age pottery, while Pit 2855 produced undiagnostic Roman pottery. A small feature (2896), seen only in section, was cut into the top of Pit 2888.

There were a few isolated small pits or postholes distributed across the site. Posthole 2963, near the western end of the site, was very shallow but had a regular outline and contained large stones, presumably the remains of post-packing. An equally shallow feature to the south-east of the possible structural remains, Posthole 2804 was a less convincing feature. Posthole 2883, near the centre of the site, was deeper, with vertical sides and had a possible post-pipe visible within its fills. Just to the west of Ditch 1318 at the eastern end of the site, Posthole 1344 was a small shallow feature, but contained a fragment of fired clay, possibly daub. Otherwise, none of these postholes produced any finds.

Two small postholes had stratigraphic relationships with other features, but were otherwise isolated. Posthole 2713 was and ill-defined shallow feature cut by Gully 2711. Posthole 2867, vertical-sided and with post-packing stones in its fill, was cut into the southern edge of Gully 2865. It was very close to the southern edge-of-site baulk and may have been related to other features beyond the easement.

Pit 2737, also to the south of Gully 2865, had a regular steep-sided profile, and contained abraded sherds of second- to third-century pottery. Pit 1341, immediately to the west of the possible square

enclosure at the eastern end of the site, was another regular, steep-sided feature and may have been a large posthole. It yielded undiagnostic Roman pottery. Pit 1366, 12m to the north-west and truncated by Furrow 3076, may have been a relatively early feature, containing pottery from the late first to early second centuries. A very truncated section of a shallow gully (1358 = 1360), 3m to the east, produced sherds dated to the second and the mid- to late third centuries (Fig. 55 no. 90). A small, poorly defined gully (1333) in the centre of the square enclosure produced no dating evidence.

Medieval

A regular pattern of shallow furrows, all on a north-west to south-east alignment and typically around 9m apart, covered the whole site. The regular spacing broke down in two places: only 5m separated Furrows 2991 and 3051, and Furrows 3003 and 2762. Up to 4m width of remnant ploughsoil was left in each furrow after topsoil stripping, obscuring approximately 20% of the subsoil surface. With two exceptions (2766 and 2762) the furrows were not excavated, although the depths of others were determined by small exploratory pits: none of these was deeper than 0.20m. Some of the furrows seemed to narrow or run out on the south side of the site, an effect of uneven topsoil stripping.

The furrows were stratigraphically the latest features on site, with the exception of modern land drains, which seem to have generally been installed in their bases, on the same alignment. Pottery finds from the furrows were all of Roman date (Fig. 53 no. 33; Fig. 54 nos. 44 and 46; Fig. 55 no. 82), but this is presumed to have been residual. A first- or second-century coin (SF 5059) was also recovered from Furrow 2985 and a mid-fourth-century one (SF 5065) from Furrow 3051. Post-Roman finds from the site are notably scarce. Only one medieval sherd was noted from the site, of a quartz-tempered fabric possibly of twelfth- to mid-thirteenth-century date, and a thirteenth- or fourteenth-century copper alloy buckle (SF 5097; Fig. 58 no. 4) may have come from the remnant of an unrecognised furrow cut into the fill of Ditch 1318. Despite this relative lack of dating evidence, the pattern of the furrows is very typical of medieval or early post-medieval ridge-and-furrow cultivation, and these features can be confidently ascribed to this period.

It is particularly noteworthy that the alignment of these furrows seems to follow the pattern of the Roman ditch system. This may be merely a reflection of the natural drainage pattern, but perhaps it indicates that the Roman ditches survived as earthworks, imposing their pattern on subsequent agricultural land management.

Discussion

The dateable artefacts from the site are overwhelmingly of Roman date. The date distributions seem to imply peaks of activity in the late first or early to mid-second centuries, and again in the third century, but this may perhaps merely reflect the periods when there were particularly diagnostic local pottery types. In any case, it seems likely that the earliest components of the ditch system were in place before the end of the first century, with larger ditches, such as Ditch 2776, being dug very soon after. The activity areas towards the west end of the site, around the possible structural elements and pit group centred on Pit 2875, seem to be of a relatively early phase, perhaps of the early to mid-second century. The larger elements of the ditch system seem to have been maintained into the late third or early fourth century, the focus of the site perhaps moving towards the eastern end, where Ditches 1318 and 1323 seem to have survived well into the fourth century.

The close spacing of the ditches provides difficulties in interpretation. Especially towards the west end of the site, the ditch-fills occupy over half of the area of the site, with only narrow strips of undisturbed ground between them. It may simply be that it was easier to re-cut ditches into fresh ground rather than clean out silted-up fills, so that only a proportion of the ditches were open and functional at any one time. However, many of the ditches showed signs of re-cutting and had finds with a quite wide date range, implying that they were maintained in use for much of the Roman period. If this was the case, then at least some of the closely spaced components of the system would have been contemporary with each other.

In this low-lying terrain, drainage and water management would almost certainly be a prerequisite of efficient agricultural production. This is emphasised by the analysis of the samples taken from the ditches. Aquatic fauna identified included water snails in Ditches 1391, 2923, 2776, stickleback and newt in Ditch 2776, water vole, amphibian bone and fish teeth in Ditch 2726. Taken together, these indicate that the ditches were water-filled, not merely on a seasonal basis, but probably permanently. The presence of freshwater mussels in Ditches 2923, 2776 and 2726 suggests that the water was flowing as these creatures cannot tolerate stagnant conditions.

Terrestrial snails from Ditches 1391, 2923 and Re-cut 2779 of Ditch 2776 are typical of species of damp, open grassland. Bones of snake from Re-cut 2779, and common vole and wood mouse from Ditch 2726 would also be consistent with this type of habitat.

As well as providing drainage, the larger ditches would have also acted as boundaries. Ditch 1318, for instance, marked the eastern extent of the site; land-use on either side of this feature was very different, with a much less highly managed landscape to the east of it. Ditch 2776, together with Ditch 2923, would have formed a notable feature of the landscape; it may also have formed a southern limit to the activity areas represented by the possible structural elements and the pit groups discussed below.

The picture which emerges is of wet, marshy land, made usable by an extensive system of closely packed drainage ditches and gullies. Presumably, the effort of digging and maintaining these ditches was offset by the agricultural productivity of the strips of land between the ditches. The environmental samples suggest that the land was largely used for cereal production: Ditch 1391 and its re-cut 1388, and Ditch 2726 produced charred cereal grains, with grains of barley wheat and oats, as well as chaff and weed seeds, being notably abundant in some of the processed samples.

Animals would presumably have grazed the land during fallow periods. The hand-collected animal bone assemblage suggested that both cattle and sheep were being exploited in the locality, cattle providing a more significant contribution to the diet.

Though few features provided large quantities of finds, overall the site was productive, the pottery assemblage being by far the largest of any of the sites on the pipeline. There were also a considerable number of unstratified finds from the stripped topsoil surface, especially metal finds, mostly recovered using metal detectors. These included sixteen coins, a brooch, finger ring and twelve other copper alloy objects and nine lead fragments.

Overall, these finds suggest a relatively prosperous local population, presumably living quite close by, or perhaps on the site itself if the putative structural remains have been correctly interpreted. A square or rectangular dwelling with an area of industrial activity on its south-western side, nestling in the corner formed by the two large ditches, presents a compelling picture of second-century domesticity, but it is debatable whether the land would have dry enough to allow permanent settlement. Perhaps the higher and drier land to the south-east would have been a more attractive location.

No convincing interpretation has been found for Pit 2875 and the shallower features associated with it. The fired clay layer in the base of the pit implies that it was used for some process involving heating, but this seems to be incompatible with the surrounding postholes and stake-holes in the base of the pit, unless the burning was merely the final act of destruction of the feature. The arrangement, with a deep, distinctively structured pit ringed by shallower features with the same distinctive dark fills, suggests some kind of work area. Metal-working would seem to be an obvious candidate, but only one piece of slag, probably residual, was identified in its fill, and material thought to be clinker is probably natural lava-stone. Until better characterised parallels can be found from other sites, this area is destined to remain an enigma.

Roman agricultural sites are relatively common, although a comparative lack of fieldwork in the area means that few are recorded in this part of Bedfordshire. Site 22 provides a rich, though fairly typical, example. As such, it adds considerably to knowledge of the local patterns of land exploitation and helps to provide a wider context for the centres of Roman settlement in the region.

Site 23: Undated ditches

Construction Section 13, Plot 114, SP 9686 2266

Introduction

Site 23 was about 2km north-west of Totternhoe and 500m east of Stanbridgeford sewage works A tributary of the Ouzel Brook passed approximately 100m north of the site (Fig. 30). The ground sloped gently up to the east, at around 94m AOD. The underlying geological deposits were of the Gault Clay Formation (BGS 1992). The soils are seasonally wet, calcareous clays with localised areas affected by groundwater from the Ouzel Brook and the land is in arable use (CPM 1996).

Archaeology

The site, which was found during pipe-trenching, consisted of two substantial, steep sided ditches:

Ditch 3029
Ditch 3033

Discussion

A lack of dating evidence means that the ditches cannot be related with any degree of certainty. However, both ran parallel, approximately 50m apart, on a north-west to south-east orientation, and shared some fill characteristics. Ditch 3029 contained three fills (Fig. 30a), while the deeper Ditch 3033 had seven fills (Fig. 30b).

The lowest four fills of Ditch 3033, were comparable with the primary fill of Ditch 3029. In Ditch 3033, the deposits were found to be waterlogged, and the fourth fill, 3037, was a silty clay showing signs of oxidisation. The primary fill of Ditch 3037 was an oxidised, gleyed clay indicative of cyclical water-logging and drying out, perhaps on a seasonal basis.

The second fill of Ditch 3029, an oxidised loamy clay, containing sands and frequent calcareous grits, was comparable with Fill 3036 of Ditch 3033, an oxidised clay-silt with coarse sand and bands of calcareous grit. These fills probably accumulated through natural siltation.

The upper fills of both ditches were oxidised, sandy loams, containing flint and calcareous grits. The mixed nature of these deposits suggested that they were not the result of silting but perhaps resulted from plough action pushing soil into the ditches; the upper fill of Ditch 3033 was spread out onto the ground surface around the ditch. Changes in the processes of infilling suggest that human activities in the area changed late in the history of the ditches, perhaps from animal husbandry to arable use. It is also possible that the banks of the ditches were demolished and pushed back into the ditches, but there is little evidence for material having been pushed in from one side.

Very friable fragments of shell-tempered pottery were noted in the fills of Ditch 3029, but their condition was such that they were too unstable to survive lifting. Shell tempered pottery was common in the region during the Iron Age and Roman periods.

These ditches were large features and must have involved a considerable investment of time and labour, especially in such heavy, sticky and waterlogged soils. It is therefore unlikely that they were constructed by farmers simply for dividing fields. More likely, they were territorial boundaries or major drainage channels, emptying into the Ouzel Brook to the north-west. Whatever their purpose, the need for the ditches declined quite rapidly as there was no evidence for any cleaning out or other maintenance.

Site 24: Undated ditches

Construction Sections 14, 15, Plots 115, 116, SP 9710 2273

Introduction

Six ditches and an old stream channel, sealed by a thin alluvial subsoil, were recorded in section (Fig. 31). The site was almost equidistant from Leighton Buzzard and Dunstable, and stretched either side of Stanbridge Road which, at the point the pipeline crossed, ran alongside a straightened part of a tributary of the Ouzel Brook. The ground, at just over 90m AOD, is beginning to rise up gently to the east, towards the Chiltern Hills. It is underlain by Gault mudstones (BGS 1992) and the land is in arable use (CPM 1996).

Archaeology

The site, which was found during pipe-trenching, extended for 160m, and consisted of a layer of alluvium sealing six ditches, and a possible former stream channel:

Ditch 1401	Ditch 1508	Natural Layer 1515
Ditch 1501	Ditch 1510	Natural Layer 1516
Ditch 1504	?Stream channel 1512	
Ditch 1506	Layer 1514	

Discussion

All features on this site cut into the local natural gravels and clays (1515 and 1516 respectively) and were sealed by a layer of alluvium (1514). All fills appeared to be derived from the natural clays, sands and gravels, and appeared to have accumulated by silting. The ditches were aligned roughly north to south, or north-west to south-east, and were fairly substantial, although not major, landscape features. Five of them contained single greyish yellow deposits, all of similar texture, consistency and natural inclusions (Fig. 31a).

Ditch 1501 contained two fills which had higher silt contents than the deposits of the other ditches. This ditch lay closest to the former stream course (1512), and may have acted as a trap for alluvial or aeolian deposition.

Primary weathering was evident in Ditches 1506, 1508, and 1510 especially on their easternmost sides and on the bases (Fig. 31b and c). Natural deposits appeared to have entered these ditches mainly from the south-east. This pattern of deposition, particularly in ditch 1508, suggested that there were ditch-banks along their south-east sides, and that eroded material from the banks had accumulated in the ditches.

An absence of gleying in any of the ditch fills indicates that they were above the water table, and relatively dry. This is surprising as the site was low lying, situated in the catchment area of a river channel, and sealed by a layer of alluvium. The ditches were probably wet, and probably acted as drains as well as delimiting a field system. The ditches may have been contemporary, but this is by no means certain.

Alluvium up to 0.6m thick (1514) sealed the site, presumably associated with the former stream (1512), now channelled into the roadside ditch. The courses of a number of streams in this area, most notably the Ouzel Brook, have been altered to follow the edges of fields, probably at the time of enclosure. There would have been little deposition of alluvium since that time. This would suggest that the features sealed by the alluvium date to the medieval period, or earlier. A single sherd of late Bronze Age pottery, from Ditch 1504, was the only dateable artefact retrieved. Though not sufficient to date the site, its presence indicates some late Bronze Age activity in the locality.

Site 25: Undated ditches and alluvial layers

Construction Section 16, Plot 121, SP 975 231

Introduction

Twelve ditches were recorded in section (Fig. 32). None produced dateable artefacts, but two phases were defined by stratigraphic relationships to the alluvial layers. The site was on the north side of Totternhoe village, approximately 1km south of Tilsworth Church and 200m north of the A505 Leighton Buzzard southern by-pass. The site lies alongside the former course of the Ouzel Brook, and is on flat land at around 90m AOD. It overlies the interface between the Gault and Upper Greensand Formations (BGS 1992), and thin alluvial layer covered much of the site. The soils are deep calcareous clays overlain by loam, stoneless and prone to water-logging over the alluvium.

Archaeology

The site, found during pipe-trenching, extended for 370m, and comprised twelve ditches, a possible ditch re-cut, two layers and two probable tree throws:

Ditch 3136	Ditch 3145	Tree throw 3159
Ditch 3138	Ditch 3147	Tree throw 3160
Alluvial layer 3140	Ditch 3150	Ditch 3161
Layer 3141	Ditch 3152	Ditch 3163
Layer 3142	?Ditch terminus 3154	Ditch 3166
Ditch re-cut 3143	Ditch 3156	

Discussion

The site lay in the flood plain of the Ouzel Brook and its tributaries. In such low lying, wet and poorly draining, clay soils, drainage ditches would have been necessary to allow cultivation of the land. The orientation of the ditches would have allowed water to drain into the Ouzel Brook. Surprisingly, however, gleying, was not noted in any of the ditch fills. The ditches may also have acted as minor boundaries.

Two phases were apparent, stratigraphically earlier and later than the deposition of an alluvial layer (3140). No dateable artefacts were recovered from the site.

Phase One

Eight ditches (3136, 3138, re-cut 3143, 3145, 3147, 3150, 3152, and 3154, 3161) (Fig. 32a and b) and two probable tree throws (3159, 3160) were sealed by the alluvial layer. One of the ditches (3138) was re-cut (3143) (Fig. 32a) and the stepped profiles of two others (3136 and 3154) suggest that they may also have been re-cut. The re-cutting of ditches indicates that they were being used and maintained over a prolonged period.

Phase Two

Two ditches (3156 and 3163) cut the alluvial layer (Fig. 32c). Ditch 3163 was re-cut, again suggesting prolonged use of the feature.

All the features, from both phases contained similar deposits of silty, clayey loams, apparently formed by silting. Ditches 3161 and 3163 showed signs of primary weathering. The lack of artefactual evidence indicates that these ditches were not close to an area of settlement, and were probably of agricultural use. It may also suggest that the ditches did not originate in a materially rich period, Roman, medieval or later, when pottery was particularly common.

Site 26: Undated ditches

Construction Section 16, Plot 121, SP 980 233

Introduction

Five ditches and an old stream channel were recorded (Fig. 26). The site is 2km west of Dunstable, 800m south of Tilsworth village, and south-east of Blackgrove and Stangrove Woods. The site is on fairly level ground, at around 92m AOD, in the small valley of the Ouzel Brook. A band of Upper Greensand underlies the site. (BGS 1992).

Archaeology

The site, which was discovered during pipe-trenching, extended for 270m and consisted of a former stream course, and five ditches, one of which (3169) was re-cut twice:

Ditch re-cut. 3167	Ditch 3173	Old stream course 3178
Ditch 3169	Ditch 3174	Ditch re-cut. 3171
Ditch 3176	Ditch 3181	Ditch 3163

Discussion

A lack of artefacts suggests that there was no settlement nearby and that the ditches were for agricultural purposes.

The upper fill (3180) of the former stream course (3178) extended over a wide area, sealing the surfaces of three ditches (3174, 3176, 3181) to the west. This shows that the stream was extant for a period after the ditches had become redundant, and would have been important to the function of these features. The parish boundary between Tilsworth and Totternhoe follows the sinuous line of this stream. The disappearance of the stream may have been very recent, perhaps dating from the construction of the Leighton Buzzard bypass.

Ditch Use

Four ditches (3169, 3173, 3176 and 3181) and the two re-cuts (3167 and 3171) of Ditch 3169 (Fig 33a) were oriented roughly north to south, while two ditches (3163 and 3174) were oriented north-west to south-east. None appear to have drained towards the known course of the former stream channel (3178), but the area today is criss-crossed by a number of small channels which, although altered, may have existed when the site was in use. The ditches may have been constructed to drain this low lying, wet, clayey ground into these stream channels. Alternatively, they may have been used for land division and possibly the enclosure of animals.

Dating

Two flints found on the stripped easement surface dated to the late Neolithic or Bronze Age, indicating some prehistoric activity in the locality. However, there were no stratified artefacts with which to date and phase the site. It is unlikely that the ditches were in use during the Roman, Medieval or later periods, as material of these materially rich periods would almost certainly have found their way onto the site.

The contemporaneity of the features is not known. The fills of the features were variable, but seemed to have been formed by silting from the natural clays, loams, sands, calcareous grits, and alluvial silts.

Site 27: Ditches, possibly Roman

Construction Section 16, Plots 123, 124, SP 983 236

Introduction

Four ditches, possibly components of an early Roman field system, were recorded (Fig. 34). The site was about 500m south-east of the village of Tilsworth and 300m north of the A505 Leighton Buzzard southern bypass. Natural drainage patterns have been altered by the construction of the bypass, but the site would have originally been just to the north of the Ouzel Brook. The land is flat, at around 94m AOD, and is in arable use (CPM 1996). It overlies Upper Greensand (BGS 1992).

Archaeology

The site, which was discovered during pipe-trenching, extended for 440m. Four ditches and three layers were recorded:

Ditch 3183	Ditch 3188	Layer 3199
Layer 3185	Layer 3190	
Ditch 3186	Ditch 3191	

Discussion

The four ditches were all on a roughly northwest to southeast orientation. A low density of finds, the silty appearance of their fills and the absence of any settlement features indicate that the site was probably agricultural, the ditches being part of a field system as well as serving as drains.

Layer 3185, which overlay Ditch 3183 at the southern end of the site, appeared to be an alluvial deposit associated with the former course of the Ouzel Brook (Fig. 34a). Ditches 3186 and 3188 were only 15m apart but it is unlikely that they formed a double ditch as there is no evidence for an embankment in between the two ditches; however Layer 3190 may be the remains of an embankment on the eastern side of Ditch 3188. If this interpretation is correct, the bank and ditch would have presented quite a major landscape feature.

The northern quarter of the site was covered by a layer (3199), up to 0.20m deep (Fig. 34b), containing unsorted and rounded flint gravels, evidence of movement and disturbance; the layer was interpreted as a remnant plough soil. This would imply that this area has had a longer history of arable use than the rest of the site.

Ditch 3183 contained a single sherd of pottery dated to the first to second centuries AD. The sherd was very fresh, which indicates that it was deposited in the ditch soon after breakage, and suggesting that the ditch was contemporary with the pottery. Two fragments of tile were recovered from Layer 3185. The fragments were small and abraded indicating that they had been re-deposited. Although their forms were unidentifiable, the fabrics were consistent with diagnostic Romano-British tiles from Site 28. No other ditches, or layers produced dateable material, but if the ditches are associated as part of a field system, they may all date to the early Roman period.

Site 28: Roman ditch system

Construction Section 16, Plots 125-126, SP 987 240

Introduction

Site 28 was 1km east of Tilsworth village and about the same distance west of the junction of the A505 Leighton Buzzard southern bypass with the A5(T). Beyond this point, the land rises sharply up the scarp face of the Chilterns, to the outskirts of Dunstable. A small brook crossed the site, along the boundary between the two plots, before joining the Ouzel Brook, which is channelled to form the roadside drain of the bypass and forms the southern boundary of these fields (Fig. 35).

The boundary between the two fields is at a height of 100m AOD, the land rising slightly to the north-east. The Iron Age hillfort of Maiden Bower, on the ridge to the south-east, is over 155m AOD, while on the other side of the valley, beyond Tilsworth village, the ground rises to 130m.

The underlying solid geology is Upper Greensand, over which deep, seasonally wet, calcareous, clay soils have developed (SSEW 1983). There are narrow strips of wetter soils towards the eastern end of the site (CPM 1996).

Archaeology

Thirty-two ditch sections were recorded, of which two (2611 and 2619) were probably of the same feature, and nine gully sections, two (2640 and 2642) belonging to a single feature. There were fifteen pits, including one (1657) which was re-cut (1659) and two (1666 and 1669) which were inter-cutting. An oven or kiln, a well and a single posthole were also recorded (Fig 36a and b).

In addition, fourteen furrows crossed the site, three of which had sections excavated (1637, 2674 and 2654) and a section of an addition one (1664) was recorded in the side of the pipe-trench. Three land drains, cutting other features, were also recorded.

The environmental evidence shows that the site occupied an area of calcareous grassland with some wetland and shaded habitats. All the ditches seem to have been wet throughout their depositional history showing that the area either had a high water table or was prone to flooding. Although there was a low-level of human activity in the vicinity prior to the first century AD, the site appears to have first come into permanent use around the time of the Roman Conquest. Romano-British activity appears to have ceased by the late second or early third centuries.

Residual prehistoric finds

Evidence for activity before the late Iron Age was mostly limited to stray finds of flint, at a density probably no greater than would be expected from the normal background distribution in this area. A hammer-stone from Ditch 2667 was probably of Mesolithic or early Neolithic date and another from Well 2601 may have been of a similar date. Late Neolithic or early Bronze Age flint included a hammer-stone in Gully 1631;, a plano-convex knife (Fig. 49 no. 2), scraper and core fragment, all from unstratified Context 1608; and hammer-stone from unstratified Context 2600. Well 2601 also produced a sherd of late Bronze Age or early Iron Age pottery (fig. 51 no. 2).

Phasing

There were few clear stratigraphic relationships recorded and time constraints did not allow for full excavation, but the pottery assemblage allows reasonably close dating of many of the features and a tentative phasing scheme has been proposed. This should, however, be regarded with caution and is open to considerable reinterpretation.

Phase 1: Early features

Several poorly dated features in the western and central part of the site appeared to be stratigraphically early, and were almost certainly of pre-Roman date. Activity of this date would have

provided a source for the residual Late Iron Age pottery found in a number of features across the site and as unstratified finds.

Curvilinear Gully 2611 (= 2619), at the western end of Plot 126, curved from the southern edge of excavation towards the boundary with Plot 125, becoming increasingly shallow and apparently running out just short of the boundary. It produced no dating evidence but contained relatively large quantities of cattle and horse bones as well as a few pieces of burnt flint. Further west, Gullies 1634 and 1674, separated by a small gap, together formed a similar curvilinear feature. Neither of these two gully sections produced dating evidence, or indeed any evidence of human activity.

An unexcavated curvilinear feature in the northern corner of Plot 125 also had a similar form in plan, but unstratified finds of undiagnostic Roman pottery from its surface (1639, 1640) provided little help in dating it.

A large oval pit (1669) 7m to the west of Gully 1674 contained late Iron Age to mid-first century pottery in its fill (Fig. 56 nos. 104 and 109) and may have been a contemporary feature. Similarly dated pottery residual in the fills of a number of linear features, notably Ditch 2667 and Furrow 2654, implies that there was also activity in the eastern half of the site at this time, but any associated features were erased by subsequent disturbance.

Phase 2: Large ditches and associated features

The earliest components of the rectilinear pattern of ditches may date to the late Iron Age, the material in their fills accumulating as they gradually silted up. At the west end of the site, Ditch 1650 was a substantial V-shaped feature, over 2.50m wide and 0.90m deep (Fig. 37e). Its sequence of fills indicated that it silted for some time before presumably falling out of use and being used for dumping domestic refuse, included pottery dating from the late Iron Age to the mid-first century AD (Fig. 56 no. 92) and ceramic building material.

The upper fill of Ditch 3193, lying to the west, was similar in appearance to the natural substrate and it was not recognised as a distinct feature when the topsoil was first stripped from the site. Recorded in section in the pipe-trench, this ditch could be seen to be a massive feature, 6.0m wide and over 2.0m deep (Fig. 37a). These dimensions, and the fact that all the fills appear to have been water-lain, prompted the suggestion that it could have been a natural watercourse, but the V-shaped profile argues strongly for it being an anthropogenic feature.

Its lowest fill was devoid of finds, but higher fills produced late Iron Age and mid- to late first-century pottery (Fig. 57 nos. 113 and 118), with second-century material in the upper fill. This sequence indicates that the ditch was open for a considerable period, and it is not surprising that such a large feature took a long time to silt up. The proximity of this ditch to Ditch 1650, approximately 1.80m to its east would be perplexing if they were contemporary features; they appear too close to have had a bank in between, and there is no obvious need for two large and closely set ditches. More likely, Ditch 3193 superseded Ditch 1650, perhaps being dug in the mid-first century when the earlier ditch seems to have been backfilled.

At the other end or the site, Ditch 2644 also seems to have been a relatively early feature, not least because its slightly oblique alignment suggests that it was dug before the general rectilinear pattern became established. Its upper fill (2645) contained mostly first-century pottery but with some which could have dated from the early second century; a considerable quantity of pottery was also retrieved from the surface of its fills (Fig. 56 nos. 106, 107, 110 and 111; Fig. 57 nos. 114, 122, 124 and 128). At its southern end, this ditch probably joined Ditch 2605, or an earlier ditch on the same alignment.

Further to the west, Ditch 2680 probably also dates from this period: it was cut by gully 2678, the secondary fill of which produced first-century pottery (Fig. 37c). Ditch 2680, which was 1.60m wide and 0.60m deep, contained bone, charcoal and undiagnostic pottery (Fig. 56 no. 108), and had a large

number of pebbles at the base of its secondary fill, presumably deliberately deposited following some initial silting. On the surface, the eastern end of this ditch seemed to terminate or turn to meet Ditch 2605, but this area was not excavated so the relationship here is not known.

To the west, Ditch 2680 ran into a confusing area of repeatedly re-cut features, but may originally have joined Ditch 3200. This very large ditch, up to 3.80m wide and approximately 2.0m deep with a V-shaped profile, produced middle to late first-century pottery (Fig. 37b). Though not as large as Ditch 3193, the similarities in form suggest that these two ditches may have originally formed opposite sides of a large enclosure, around 75m wide.

A number of features within this enclosed area could be contemporary with these large ditches. A steep-sided, almost circular pit (1691) towards the western end of the site contained relatively large quantities of pottery, dated to the mid- to late first century (Fig. 57 no. 119). Its secondary fill (1693) contained a wide range of domestic debris including charred plant remains, charcoal, pottery and animal bone. Of particular note were house mouse bones. This species, generally considered to have been accidentally introduced from the continental Europe in the Bronze Age or Iron Age, is strongly associated with human habitation, and its occurrence here implies that there was settlement close by.

Pit 1666, re-cutting Pit 1669, contained pottery dating to the mid-first century AD or later, and may also have been dug at this time.

Gully 1631 may have been a slightly later feature; finds indicated a late first- to early second-century date, but it was stratigraphically early, cutting Gully 1634 but being cut by Ditch 1629. This gully was on a different alignment to any other linear features, although it may have been associated with a very shallow feature (1654) to which it was perpendicular, the intersection between them being lost to a later furrow.

Pit 1657 may belong to this phase, its re-cut (1659) containing late first- to early second-century finds, including the smashed remains of several pottery vessels (Fig. 56 nos. 101a and 103; Fig. 57 no. 116). It cut the curvilinear Gully 1674, but was itself cut by Ditch 1618 to the north.

Phase 3: Development of the rectilinear field system

The elements of the rectilinear ditch system seem to have been established soon after. Finds from the fills were generally dated to the late first or early second centuries, suggesting that the ditches were originally dug well before the end of the first century AD.

At the east end of the site, Ditch 2605 survived to a width of 0.8m. Pottery finds indicated a late first- to early second-century date for its upper fill (2606) but as the lower fills appeared to have been the result of silting, it is possibly that this feature dates to an earlier phase. Two small, undated gullies (2626, 2634) may have run into it from the south, but this relationship had been erased by the later re-cut (2603).

Ditch 1611, in the eastern part of Plot 125, ran in a north-west direction from the southern limit of excavation before turning to the east, through an angle of greater than 90°, to run into the field boundary. Ditch 2616 continued on the same alignment in Plot 126. Both of these features produced pottery dated to the late first to early second centuries (Fig. 56 nos. 91, 102 and 105; Fig. 57 no. 135). The upper fill of Ditch 2616 appeared to have been a deliberate deposit and contained daub and fired clay fragments in addition to pottery. The west-facing section of the field boundary ditch was cleaned and recorded, but this proved to be complex, showing a series of features (1624, 1626, 1621) which may have been pits dug along the line of the ditch rather than continuations of the ditches on either side. Finds from these features were generally later, dated to the second or third centuries.

Also perhaps belonging to this phase, a small oven-like feature (1683) contained the remains of a single vessel dated to the late first to early second centuries. The presence of large quantities of fired

clay within its single fill suggested that this oven may have been a roofed structure, the roof having collapsed in use burying the pot within the charcoal remains of the fire.

Ditch 1629 seemed to be stratigraphically later than Ditch 1611, but turned a sharp corner, so that both parts of it were parallel to the parts of Ditch 1611. Eight sherds of pottery from its fill were dated to the late first or early second centuries but this material was fragmentary and worn, and may have been residual. This small ditch cut the remains of Oven 1683, and also Gullies 1674 and 1631. It enclosed Ditch 1618 which was similarly aligned and may have been broadly contemporary. The pottery finds from the terminal of Ditch 1618 were of a similar date (Fig. 56 nos. 97 and 98; Fig. 57 nos. 123 and 129) and included the extensive remains of a single smashed vessel.

A 3m-wide pit excavated to a depth of at least 2.20m (2601) at the eastern end of the site was interpreted as a well. Not surprisingly, it seems to have been open for some time. Organic material had accumulated in its lowest excavated fill, but the earliest dateable material came from a much higher fill (2621) and included first- and second-century pottery. Fill 2621 appeared to have been formed by silting and the wide range of dateable material within this fill could indicate the silting episode occurred considerably later than the pottery would suggest. Nonetheless, a relatively early date for the feature is likely and it is reasonable to suppose it could have been in use during period of peak activity on the site.

Two small pits (2608, 2628), close to Ditch 2644 and 15m west of Well 2601, may also belong with this phase, or earlier. These two features were distinctive and clearly had a common function; they were pebble-lined and contained burnt pottery and stone, along with evidence for water-logging or flooding (Fig. 36b, inset). Pit 2608 produced the larger quantity of pottery: 32 hand collected sherds and 12 smaller fragments retrieved from the sieved bulk soil samples. This material indicated a mid-first- to early second-century date.

Phase 4: Maintenance of ditch system
While some of the components of the ditch system seem to have gone out of use by the early second century, other elements were re-cut and maintained into the third century.

Ditch 2605 was re-cut to create a large ditch (2603). This re-cut appeared to turn southwards immediately east of Ditch 3200, although the original ditch may have continued eastward to join Ditch 3200. Re-cut 2603 produced pottery dated to the second century or later (Fig. 56 no. 96).

Ditch 2616 (see above) was of similar form, in plan, to Ditch 2605, although a much less substantial feature. This ditch was also re-cut although this probably occurred earlier, the fills of Re-cut 2613 containing relatively large quantities of pottery with a spread of dates, from the late first to the early to middle second centuries (Fig. 56 no. 94). A copper alloy hair pin (SF 6033; Fig. 58 no. 14) was also recovered.

Between these two rectilinear ditches, a bemusing plethora of ditches crossed the site, adjacent to, or partially re-cutting, Ditch 3200. Ditch 2667 was a fairly substantial feature nearly 2m wide and 0.75m deep, lying 6m to the west of Ditch 3200. It may have been at least partly contemporary with the larger ditch, forming a double-ditched boundary, or have been an early replacement for it. It probably went out of use at a fairly early date, as its fills contained first- to early second-century pottery (Fig. 57 no. 112), and similarly dated pottery was also retrieved from the machined surface of its upper fill (Fig. 57 no. 120).

Two small gullies were recorded as cutting Ditch 2667, and may have been cut by the ditches to the east, though these relationships were far from clear. Gully 2640 (= 2642) produced one sherd of late first- or early second-century pottery, while the less well characterised Gully 2683 had a single undiagnostic Roman sherd.

Immediately to the east, two ditches (2659 and 2656) were only clearly visible in section (Fig. 37d), their upper parts being truncated by a later furrow (2654). The secondary fill (2660) of Ditch 2659, apparently a deliberately dumped rubbish layer, produced late first- or early second-century material (Fig. 56 nos. 95 and 99). The lower fill (2661) was even more rubbish-rich, containing quantities of animal bone and a layer of organic staining at the top. Its relationship to Ditch 2667, which lay approximately 1m to the west, was unclear. Ditch 2656, which cut Ditch 2659, contained pottery of middle to late second- to early third-century date. The latest feature in this series, Furrow 2654, produced ten fresh-looking sherds of late first-century pottery, highlighting the risks of residual finds causing confusion in a phasing scheme which relies heavily on pottery dating. First- to early second-century pottery was recovered from the surface of a small unexcavated feature (3113), apparently on a perpendicular alignment to the other features in this area. This included a fragment with a maker's stamp (Fig. 57 no. 125).

On the eastern side of Ditch 3200, a similarly confusing series of features, recorded largely in section, seem to have included a re-cut linear feature crossing the width of the site with other ditches on a perpendicular alignment, crossing it or running into it. Ditch 2698 produced a fresh rim sherd from a second- or third-century pottery vessel from its upper fill, but this was almost certainly intrusive, as the feature is early in the stratigraphic sequence and was probably part of Ditch 3200, which otherwise contained only first-century pottery.

Ditch 2698 appears to have been replaced fairly rapidly by Ditch 2695 and the presence of domestic debris in the upper fill of the earlier feature would suggest it was deliberately backfilled, at least in part. Ditch 2695 produced mid-first- to early second-century pottery in its secondary fill (2696) (Fig. 56 no. 101b). As this ditch became defunct, it was replaced by Ditch 2693, slightly to the east. This in turn was re-cut by a shallower but broader ditch (2691) which also cut another shallow linear feature (2689), with a distinctive, gravel-rich fill (2690). Ditch 2693 contained late first- to second-century pottery (Fig. 56 no. 100; Fig. 57 no. 134) and Ditches 2689 and 2691 both contained pottery that gave a broad second-century date.

Approximately 10m further east of these features, Ditch 2688 had a slightly curving form in plan. This seemed to reflect the shape of the Features 2691 and 2689 and suggests that this ditch, which had no dating evidence, might have been contemporary with them. It could equally have been an earlier feature, associated perhaps with Ditches 2680 or 2644.

Phase 5: Abandonment

With few exceptions, the dateable finds from the site were no later than the mid-third century AD, suggesting that the site was abandoned around this time. In the western corner of Plot 126, layers of remnant subsoil were left after machining (2624, 2625) which yielded a considerable quantity of finds dated to the late second to mid-third centuries including pottery (Fig. 57 no. 121) and a coin (SF 6000). A second coin from the same layer (SF 6010) was probably of an earlier date. Many of the unstratified finds and residual finds in furrows were also of this relatively late date.

Phase 6: Subsequent agricultural use

The site was crossed by thirteen regularly spaced furrows (1637, 1664, 1646, 3130, 3125, 3038, 2674 = 2665, 2654, 3039, 3040, 3041, 3042, 3043), typically no more than 0.15m deep and with an average separation of just over 8m. Their appearance and spacing of is typical of the remains of medieval ridge-and-furrow ploughing regimes, but it was notable that none of the pottery discovered in the excavated sections was later than late second to early third centuries. This provides a *terminus ante quem* for the furrows but probably gives little indication of their true date. Only two medieval and post-medieval pottery fragments were discovered on the site as a whole along with a post-medieval jetton and a possible medieval buckle: all were surface finds. Land management during these periods seems not to have involved manuring or other activities that would result in the dispersion of domestic detritus; instead, ploughing would have incorporated pre-existing surface debris from the last period of intensive land use.

There was no indication of land use in the long period between the third century and the time that the furrows were established, presumed to be some time in the medieval period. Had the land reverted to scrub or woodland, a greater degree of root disturbance would have been expected. It is perhaps more likely that it became pasture or meadowland, still managed for livestock but relatively remote from any area of settlement.

As with most lowland agricultural sites, the fields was criss-crossed with nineteenth- and early twentieth-century ceramic land drains. Three of these (2652, 2676, 3044) were recorded where they cut earlier features.

Unphased

A number of poorly dated or undated discrete features were scattered throughout the site. Pit 1652, between ditches 1650 and 3193, produced one sherd of undiagnostic Roman pottery. A very shallow pit or truncated posthole (1680) between Ditches 1618 and 1629, also only yielded one undiagnostic Roman sherd, while Pit 1689 to the north-west had no finds. Pit 1676, which was cut by furrow and had a small posthole or stake-hole (1678) in its base, was similarly undated.

Towards the eastern end of Plot 126, Pit 2686 may have been a modern feature; its relationship with Furrow 3041 was unclear. Two other small shallow pits excavated in this part of the site (2631, 2636) produced no dating evidence. Posthole 3104 was revealed in the excavated section through Ditches 2695 and 2693 on the small ridge of ground between them, and may have been associated with either feature. Although there is no dating or stratigraphic evidence for Features 3104, 1676 and 2636, it seems likely that they were functional within the Roman period.

Relatively large quantities of unstratified finds were recovered from the stripped surface of Plots 125 (1608) and 126 (1609) and from machine cleaning of Plot 126 (2600). This material included pottery (Fig. 56 no. 91, Fig. 57 nos. 115, 117, 126, 127, 130, 131, 132, 133 and 137), coins (SFs 6003, 6005, 6020 and 6036) and other metal artefacts (Fig. 58 nos. 1, 9, 10, 15 and 19; Fig. 60 no. 34).

Discussion

The archaeological remains from the earlier phases fall within the transitional period of the Roman Conquest. The curvilinear features (3036 and 1634, 1674), possibly the remains of animal enclosures, appear to represent late pre-Roman agricultural and land management practices. The landscape became more clearly defined by the creation of major land divisions: Ditches 3193 and 3200. These and the smaller ditches (1611, 1650, 2644, 2605, 2680, 2689, 2698 and 2695) indicate the imposition of a more intensive land management programme.

The density of features and the quantity of finds implies that the site was very close to a settlement, probably a small farmstead, at this time. The ditches drained domestic cultivation plots and perhaps also defined and separated small paddocks and stock enclosures. The well (2601) and the oven (1683) would have presumably been used by the occupants of this farmstead. Domestic debris: animal bone, pottery and ceramic building material in numerous deposits, provide more evidence for the nearby presence of an occupied building.

Thirty-seven fragments of Roman ceramic building material were recovered from the site as a whole, including six tegulae and three bricks. This fairly modest assemblage, all probably made from locally produced material, indicates that there was a well-built building somewhere in the near vicinity, but clearly not immediately adjacent to the site. The lack of hypocaust material shows that the structure was probably not a particularly high status dwelling. However, the pottery includes imported Gaulish ware alongside pottery made in Essex, Oxfordshire and the Nene Valley, indicating a degree of sophistication and a taste for Roman material culture.

Whether the inhabitants were local, adopting Roman practices, or were immigrants from the Roman Empire is not known, but the proximity of Watling Street would have undoubtedly ensured sufficient potential for local residents to acquire both Roman goods and habits.

The quantities of animal bones found show that livestock was kept, or at least consumed. Cattle and sheep were both well represented, cattle probably contributing most to the diet. The cattle bone was generally robust from fairly large breeds, typical of Roman rather than Iron Age sites. Horse bones were also recorded, mostly from small animals probably used for riding rather than as draught animals.

There was some direct evidence for arable farming and crop processing. Rectilinear ditches and enclosures are often assumed to have defined stock enclosures, but they could also have separated vegetable or cereal plots, especially in a low-lying area such as this, where drainage would be necessary for successful cultivation. It might be better to picture the site as part of a domestic garth, used as a kitchen garden and for overnight and over-winter sheltering of stock, grazed in more remote pasture at other times.

Evidence for other activity is small. Oven 1683 seems most likely to have been for domestic cooking rather than any industrial function. Two pebble lined pits (2608, 2628) showed evidence of burning, but no function could be discerned. Some hammerscale was recovered from ditch 2603, indicating that a little metal-working had taken place.

The site underwent a great deal of change in the earlier phases, with enclosures being re-constructed, new ditches being dug and older ones being cleaned and re-cut. This flurry of activity diminished rapidly in the early second century perhaps because of a decline in the socio-economic status of the landholders or because the pattern of land division had stabilised by that date and radical alterations were not necessary. A changing focus of activity to another location within a larger estate is also a possibility. The site had fallen out of use by the end of the third century.

Site 29: Undated ditches

Construction Section 17, Plot 129, SP 992 251

Introduction

Three undated ditches were recorded, sealed by a layer of colluvium (Fig 38). The site was 1km south of the village of Tebworth and 300m east of Watling Street, the modern A5. The land here overlies the Upper Greensand formation, and is on the north side of a valley drained by the tributaries of the River Ouzel, sloping up to the north at a height of between 100m and 110m AOD.

Archaeology

The site was found during pipe-trenching and extended 70m. Three ditches were recorded, sealed by a layer of colluvium:

?Ditch 1715	Ditch 1722	Natural layer 1726
Ditch 1719	Layer 1725	Natural layer 1727

Discussion

Ditches 1715 and 1719 were on a parallel, south-west to north-east alignment, 40m apart. Ditch 1722 was aligned east to west, and would have intersected Ditch 1719 around 12m east of the pipe-trench. These alignments were all running down the slope of the hill, and the ditches would have been effective as drains, and probably also acted as field boundaries.

A lack of settlement features and artefacts within the ditches indicate that the site was agricultural. The primary fills of Ditches 1715 and 1719 were similar, being heavily loaded with gravel and calcareous grits, with no evidence of the fill components having been sorted (Fig. 38a). Human activities, such as ploughing or deliberate backfilling of bank material, can produce this type of pattern in a fill. The upper fills of Ditches 1715 and 1719 and the two fills of Ditch 1722 were very similar to one another, and appeared to have formed by silting, suggesting that the site had been abandoned during the time when they accumulated. The density and thickness of the gravels in Ditch 1715 indicate that there may have been a bank on the south-east side of the ditch.

All three ditches were covered by Layer 1725. This appeared to be colluvial, formed by accumulation of hillwash from the slope. The layer produced a single pottery sherd of Roman grey-ware, indicating that the episode of hillwash probably occurred during the Roman period or later. No artefacts were recovered from any of the ditches.

Site 30: Flint scatter

Construction Section 17, Plot 131, SP 988 257

Introduction

Sixteen struck flints, probably of late Bronze Age date, were recovered. The site was 1km south of Tebworth village, in the field to the east of Trinity Hall which fronts onto Watling Street, the modern A5. The northern end of the site crossed the spring-line, at about 120m AOD, of the Upper Greensand ridge (Fig. 39). Patches of chalky boulder clay (BGS 1992) produce narrow strips of contrasting sandy and loamy soils (CPM 1996).

Archaeology

Sixteen knapped flints were found during topsoil stripping, within a 420m stretch of the pipeline, the majority concentrated in a smaller area close to the natural spring-line.

Discussion

Analysis of the assemblage identified two tools, three small cores and eleven waste flakes, all probably dating to the late Bronze Age. Metrical analysis found that the distribution of flake size accorded with Bronze Age industries.

Only a minority of flints have thick, well preserved cortex. This is surprising considering that nearby, the chalk escarpments of the Chilterns offer a source of flint. It is likely that the material was obtained even more locally, perhaps from the Quaternary drift, terrace deposits of the River Ouzel, or from small patches of Head, Sand and Gravel, and Boulder Clay.

None of the flakes were broken, and a low to moderate wear on most of the assemblage indicates that since their deposition, there has been a low level of arable land use.

It is possible that the flint assemblage is the result of settlement activity, with any settlement-related features, such as pits and ditches, having been ploughed out of the thin, hilltop soils. However, it is more likely that the flints were lost or discarded by late Bronze Age farmers who lived and farmed locally. The presence of three derived cores indicates that local flint was subject to small scale, opportunistic utilisation.

Site 31: Quarry pits, possibly Roman

Construction Section 17, Plot 134, SP 987 259

Introduction

Twelve large pits, probably for quarrying sand, were recorded (Fig. 40). The site was approximately 1km south of Tebworth village and 300m east of Watling Street, the modern A5. The land slopes fairly gently down to the north-west and is at a height of around 118m AOD. It is near the spring-line of the Greensand ridge, and a small watercourse runs along the northern boundary of the field, approximately 20m beyond the northernmost pit. Quaternary deposits of Boulder Clay and glacial head underlie the site, mixed with shallow patches of glacial sands.

Archaeology

Twelve pits were found during pipe-trenching, within a 270m length of the pipeline:

?Quarry pit 1735	?Quarry pit 1747	Layer 1758
?Quarry pit 1738	? Quarry pit 1750	?Quarry pit 1756
?Quarry pit 1740	?Quarry pit 1752	Quarry pit 1760
Pit 1742	?Quarry pit 1754	Quarry pit 1764
?Quarry pit 1744		

Discussion

Two of the features, Pits 1735 and 1738, were isolated. The others formed three groups of intercutting pits. Individual pits ranged from 2m to 12m in width and 0.6m to 1.8m in depth. With the exception of Pit 1472, the pits were dug to the depth at which the natural sand deposits petered out, and the intercutting groups had little overlap, generally only the upper slopes of their sides intersecting. For these reasons, there is a fairly high degree of confidence in the interpretation of them as sand pits. However, re-cuts were recorded in some of the pits, which would argue for a different function: once a quarry pit becomes redundant there is no reason to return to it. Either the pits had another secondary use, or slumping of the coarse and friable sandy material through which the pits were cut created interfaces between fills which were misinterpreted as re-cuts.

The fills were generally mid- or dark greyish brown, loamy sands or sandy loams, but there were also clayey loams, yellow coarse sands and gravels, and brown-orange silty sands: combinations of material derived from the varied natural deposits of the area. Most of the fills could be explained as deliberate backfill to level the ground surface, slumps of material from the sides of the pits, or dumps of waste material from new quarry pits into older redundant holes. A few of the fills were clean and silty, indicating that they accumulated by natural processes. These silty layers were interspersed with more heterogeneous fills, indicating that backfilling was a haphazard process (Fig. 40a).

Fill 1771, of Pit 1760, was very different from the others on the site. It contained pieces of charcoal and Roman pottery, material typical of domestic waste, and appeared to be a secondary dump of midden material. This material may indicate that there was a settlement site nearby, or could have been merely the rubbish left behind each day by the quarry workers. Fills of the other pits yielded only small quantities of anthropogenic material: pre-Roman and Roman pottery and a small amount of horse and butchered cattle bone.

Twelve contexts contained dateable finds, but the dates did not always correlate with the stratigraphic sequence of the fills. Within two of the pit groupings (Pits 1740, 1742 & 1744, and Pits 1760 & 1764) pre-Roman pottery and Mesolithic and late Neolithic flints were found together, in contexts later than those containing Roman pottery. A metal object, interpreted as part of a medieval snaffle bit (SF 5267; Fig. 59 no. 30), was recovered from a context (1757) containing two late Neolithic or Bronze Age flints and pottery dating to the Iron Age and early Roman periods. The mixing and inversion of dateable finds is perhaps not surprising: quarrying activities would have created

considerable disturbance and the loose, sandy nature of the soils increases the potential for intrusive finds and for general mixing through erosion. None of the pottery sherds found at the site were fresh, an indication that they were probably residual.

A single Mesolithic flint and six late Neolithic or Bronze Age flints were recovered from the pits. All were from contexts which also contained later finds, but their presence indicates that there was some prehistoric activity at the site.

With the exception of the bit fragment, which may have been intrusive or misidentified, the finds were all Roman or earlier. The other evidence points to an early Roman date for the quarry pits. The site lies within 300m of the course of Watling Street, one of the main Roman roads radiating out from London, and it is tempting to imagine the site being exploited for make-up material for the construction or maintenance of that road. Pits of the size found would probably have accommodated very small scale working, no more than one or two workers digging at any one time. If the site made any significant contribution to construction of Watling Street, it might be expected to extend far beyond the area seen in the pipe-trench.

Site 32: Undated ditches

Construction Sections 18, 19, Plots 141, 142, SP 983 277

Introduction

Twenty ditches were seen in section, mostly regularly spaced. The site extended either side of the minor road running north-west from Tebworth village towards Watergate Farm (Fig. 41). The land here is at a height of around 109m AOD and rises quite sharply to the east. Clipstone Brook runs 200m to the west, forming the parish boundary between Chalgrave and Battlesden. Lying at the base of a slope, glacial Head has accumulated over the Cretaceous geological deposits.

Archaeology

The site was found during pipe-trenching. Twenty-six closely spaced ditches were recorded within approximately 290m of the pipeline route:

Ditch 1811	Ditch 1829	Ditch 1847
Ditch 1813	Ditch 1831	Ditch 1849
Ditch 1815	Ditch 1833	Ditch 1851
Ditch 1817	Ditch 1835	Ditch 1853
Ditch 1819	Ditch 1837	Ditch 1855
Ditch 1821	Ditch 1839	Ditch 1857
Ditch 1823	Ditch 1841	Ditch 1906
Ditch 1825	Ditch 1843	Ditch 1908
Ditch 1827	Ditch 1845	

Discussion

Three ditches (1819, 1837, and 1857) ran roughly from north-east to south-west (Fig. 41a and c), while the rest were oriented roughly east to west (Fig. 41b). Ditches 1818, 1837 and 1857 were evenly spaced, the two gaps between them both accommodating eight east to west oriented ditches.

All but two of the ditches contained silty clay fills which became more loamy towards the surface. Slight iron oxidation suggested that these fills had all experienced a degree of seasonal flooding. Occasional charcoal flecks within these fills may be an indication of human activity nearby.

Two ditches (1906 and 1908) were a little removed to the north, beyond the road crossing in Plot 142. These ditches were on slightly higher ground, and displayed no evidence of iron oxidation. Their loamy clay fills were similar to the upper fills of the ditches on the lower ground, and it is likely that loamy colluvium had washed down from the hillside into these ditches towards the end of their infilling. No finds were retrieved from any of the ditches.

The ditches ranged in depth from 0.29m to 0.93m, and were 0.70m to 1.54m wide. The ditches typically had broad, shallow, flat-based profiles, though some were narrower and V-shaped, with flat or narrowly concave bases. The more-or-less regularly spaced pattern strongly suggests that the ditches were all contemporary with each other.

The closeness of the ditches makes it unlikely that they acted as boundary ditches for small field plots, and they are mostly far too deep to have been components of a ridge-and-furrow system. Their layout and location, close to a stream and on the lower slopes of a hill, suggest that the ditches were 'drawing furrows' relating to a water meadow. Natural, seasonally flooded water meadows have been used since the prehistoric periods for the forced growing of grass as pasture and animal fodder. There are various forms of water meadow. The more elaborate ones, involved the carefully calculated construction of a main channel taking water from a nearby stream, minor channels, artificial ridges and a main drain, so that water flow was not restricted to valley floors, but could reach the lowest

slopes of valleys. This type of system was not in use until the late sixteenth, or early seventeenth century (Bucks County Museum 1997).

Late Bronze Age to late Iron Age pottery and three late Neolithic or Bronze Age flints were recovered from the surface of the stripped easement. The flints were probably accidental scatter from Site 33 nearby (see below).

A single sherd of late Bronze Age or early Iron Age pottery was recovered from Ditch 1847, and mid- to late Iron Age pottery was recovered from Ditch 1849, but as these fills appeared to have accumulated by natural silting, the sherds were probably residual. Even so, they show that this are was being settled and exploited in the late Bronze Age and at times throughout the Iron Age.

Some of the ditches were cut by ridge and furrow earthworks; evidence of arable agriculture in the late medieval and early post-medieval periods, and providing a *terminus anti quem* for the site.

Site 33: Flint scatter

Construction Section 19, Plot 143, (SP 984 282)

Introduction

A surface spread of worked flints extended across the south part of the field. The site was roughly 1.5km north of the villages of Hockliffe and Tebworth and 4km west of Toddington. Clipstone Brook runs along the western side of the field (Fig. 42). The land is at approximately 113m AOD and slopes up onto the Greensand ridge to the east. It is underlain by deposits of glacial Head with glacial sand and gravel (BGS 1992). The area crosses the spring-line and is permanently wet. The slope above is unstable (CPM 1996).

Archaeology

Twenty-seven knapped flints were found within a 300m stretch of the easement surface after topsoil stripping.

Discussion

Analysis of the assemblage identified three tools including a notched flake (Fig. 49 no. 8), four small cores and twenty waste flakes, all probably dating to the late Neolithic or Bronze Age. Certain flaking characteristics and the predominance of squat-shaped flakes indicate that most of the flakes are late Bronze Age. Metrical analysis found that the distribution of flake size accorded with Bronze Age industries.

None of the flints have thick, well preserved cortex, indicating that they are derived. This is surprising considering that the chalk escarpments of the Chilterns, only 3km away, offer a source of flint. It is likely that the material was obtained even more locally, perhaps from the Quaternary drift deposits. Over half of the flakes were broken, and a low to moderate wear on most of the assemblage indicates that there has been a high level of arable land use since their deposition.

The presence of four derived cores shows that local flint was subject to small scale, opportunistic utilisation and it is likely that the flints were lost or discarded by prehistoric farmers who lived and farmed locally. A less likely possibility is that the flint assemblage represents settlement activity, and that any former settlement features such as pits or ditches, have been ploughed out of the thin, hillside soils.

Site 34: Flint scatter

Construction Section 20, Plots 154 and 155 SP 999 310

Introduction

A flint scatter was recovered from the centre and north-east side of Plot 154, extending just over the field boundary into Plot 155 (Fig. 34). The site was 1km south of Tingrith village, near the base of a hillside ridge, at a height of around 110m AOD. The geology of the area is dominated by chalky boulder clay, interspersed with isolated patches of grey mudstone of the Gault Formation and glacial sand and gravel (BGS 1992).

Archaeology

Thirty-eight knapped flints were found after topsoil stripping, over a 450m stretch of the easement surface. Four residual flints were also found within a possible post-medieval deposit.

Discussion

Analysis of the assemblage identified seven tools: a late Mesolithic tranchet axe (SF 5251; Fig. 49 no. 11), two late Neolithic or Bronze Age scrapers (Fig. 49 no. 7), a late Neolithic or early Bronze Age scraper and a late Neolithic or Bronze Age cutting flake. There was also a late Neolithic or Bronze Age core, seventeen waste flakes and one shattered piece. Metrical analysis found that the distribution of flake size accorded with Bronze Age industries.

Few of the flints have thick, well preserved cortex, and it is likely that the material was obtained locally, from Quaternary drift deposits of Head, Boulder Clay and glacial sand and gravel. Only sixteen percent of the flakes were broken, and a low to moderate wear on most of the assemblage indicates that since their deposition, there has been a low level of arable land use.

A low level of possible local core procurement and roughing out, as well as possible finishing activities, is indicated by the range of artefact types. This coherent Late Neolithic or Bronze Age assemblage could signal the presence of a small, temporary, local settlement somewhere in the close vicinity. Most of the assemblage was found at the top of the hill, but other flints came from the surface of a layer of colluvium lower down. Hillwash could account for the downward spread of material, away from an area of settlement which has since been ploughed out.

Site 35: Post-medieval brick-making waste

Construction Section 20, Plot 155, SP 002 312

Introduction

Features and layers recorded in the pipe-trench, had fills rich in brick, probably of early post-medieval date. The site was 1km south of Tingrith village, and a similar distance west of the M1. It was on a low ridge, at a height of around 110m AOD. A small stream flowed about 100m to south of site (Fig. 44). The geology of the area is dominated by chalky boulder clay, interspersed with isolated patches of grey mudstone of the Gault Formation, and glacial sand and gravel (BGS 1992).

Archaeology

The site, found during pipe-trenching, extended for approximately 100m along the pipeline. It consisted of two ditches, two pits, a shallow depression and a colluvial layer:

Layer 2007	Ditch 2014	Natural layer 2017
Depression 2009	Colluvium layer 2015	Pit 2021
Ditch 2013	Natural layer 2016	Pit 2019

Discussion

Dumps of brick and burnt material were observed in the shallow depression (2009) and the two pits (2019 and 2021). The bricks were particularly densely packed within Pit 2019. Most of the bricks were early post-medieval, handmade wasters of a fairly uniform size, between 50mm and 55mm thick. They appeared to be rejects dumped close to a source of small-scale brick production, along with charcoal and kiln waste. It is possible that a brick-kiln was set up to deal with the needs of a single building project in the vicinity.

Occasional brick fragments from the layer of colluvium (2015), mainly towards the surface of the deposit, indicates that erosion of dumped brick deposits took place at a late stage in the deposition of this layer, probably at some point during the post-medieval period.

The two ditches (2013 and 2014) were parallel, and appeared to have undergone a process of silting, with some larger stones probably deposited as a result of human activity. Occasional ceramic building material fragments in Ditch 2013, indicate that it was contemporary with, or later than, the early post-medieval brick production. There was no evidence of gleying or iron oxidation to suggest that the ditches had been water-logged. The lack of artefacts within their fills, suggests that the ditches were remote from settlement and more likely to be relating to agricultural uses.

A stray flint find from the site, a late Neolithic or early Bronze Age end scraper (Fig. 49 no. 10), was possibly associated with Site 34, which extended into the western edge of Plot 155.

Site 36: Flint scatter

Construction Sections 20, 21, Plots 156 to 158, SP 010 320

Introduction

A scatter of flint was recovered, mostly of late Neolithic or Bronze Age date, but including three Mesolithic blades. The site was around 500m east of Tingrith, extending from just south of Long Lane to the crossing of the M1 motorway (Fig. 45). The southern part of the site is on the top of a spur of land, at about 110m AOD, while to the north the land slopes down to around 90m AOD at the motorway crossing. Fine to course sands of the Woburn Sands formation are exposed at the top of the ridge, but are overlain with glacial till lower down the slope (BGS, 1992). Deep, freely drained sandy loams have developed over the sands, with wet, clayey soils elsewhere. The land is in arable use (CPM, 1996).

Archaeology

Sixty-two flints were recovered from the surface of the pipeline easement following topsoil stripping. The site extended for about 900m along the pipeline.

Discussion

Analysis of the flint assemblage identified five tools, including a Bronze Age arrow head, (SF 5262; Fig. 49 no. 4). A possible Mesolithic core (Fig. 49 no. 5), seven late Neolithic or Bronze Age cores, forty-seven waste flakes, many of which were typical of the late Bronze Age, and three Mesolithic blades. Metrical analysis found that the distribution of flake size was typical of Bronze Age industries.

At least eighty-five percent of the assemblage is derived flint, probably obtained from Quaternary drift deposits of Head, Boulder Clay and glacial sand and gravel. Only seven percent of the flakes were broken and a low to moderate wear on most of the assemblage indicates that, since their deposition, there has been a low level of arable land use.

The range of artefact types indicates a low level of possible local core procurement and roughing out in the Late Neolithic or Bronze Age. These activities are not definitive evidence of a settlement site, although the flints may originate from ploughed out deposits relating to a settlement. Most of the cores came from one part of the scatter, indicating that there were intra-site activity areas. The three blades may be outliers of the extensive Mesolithic site to the north of the motorway crossing.

Site 37: Mesolithic flints and later prehistoric finds

Construction Section 23, Plots 163 to 165, TL 0165 3310

Introduction

A very extensive scatter of Mesolithic and later flint, several small pit-like features, one of which contained the remains of an Iron Age vessel, and a former river channel were recorded. The site was between Flitwick and Tingrith and extended north from the River Flit along the eastern side of Priestley Plantation (Fig. 46). The M1 motorway passes the far side of this wood, 500m to the west. The site is on a south-facing slope, the south end is around 74m AOD and the northern end at 90m AOD. Coarse sands of the Woburn Sands formation underlie the site (BGS 1992) producing well drained, coarse loamy and sandy soils (SSEW 1983).

Archaeology

The site was found during the pre-construction field survey by Engineering Archaeological Services (EAS) who subsequently excavated sample test-pits in advance of construction. An area covering a 280m length by 33m width of the pipeline easement was investigated. This was gridded out into 5m squares, and the whole area was then field-walked, with finds recorded by grid square. Using the results from this field-walking, thirty of these squares were selected, covering areas with high concentrations of surface flint, together with some comparison areas with lower concentrations. The selected 5m squares were divided into 1m squares, five of these, chosen at random, were excavated. The excavated 1m squares accounted for just under 2% of the total survey area.

The removed soil was passed successively through 13mm- and 6mm-mesh sieves, the flints retrieved from the two sieves being separately bagged. The dark grey topsoil was initially removed to reveal a pale sandy subsoil, very similar in appearance to the natural substrate but with signs of disturbance. A 100mm spit of this subsoil was also removed and sieved. In total, over 2000 pieces of worked flint were recovered, including pieces typical of both Mesolithic and late Neolithic or early Bronze Age technologies.

This phase of work is outside the scope of this report, but the specialist reports have been included, for information, as Appendices 15, and 16.

During the watching brief, two further areas of archaeology were investigated. A series of old river channel, were seen in the trench to the north of the present course of the River Flit. These were recorded and column samples taken for pollen analysis (Fig. 47). Results of the pollen analyses will form a separate report but are included, for information, in Appendix 17 of this report. Further north, just down-slope of the main Mesolithic flint concentration, five features interpreted as tree throw holes were recorded, one of which contained the remains of an Iron Age pottery vessel:

Layer 2305	Layer 2318	Layer 2325
?Pit or tree-throw 2306	Layer 2319	Stream channel 2323
?Tree-throw 2308	Layer 2320	Stream channel 2328
?Tree-throw 2310	Stream channel 2317	Layer 2329
?Tree-throw 2312	Layer 2324	Layer 2331
?Tree-throw 2314		

Discussion

The recorded features (2306, 2308, 2310, 2312 and 2314) are generally very irregular and are probably best interpreted as tree-throws although the possibility that some may be cut features cannot be ruled out (Fig 46a, b and c). In particular, Pit 2306 had a fairly regular V-shaped profile and was as clearly visible as the field boundary ditch at the south end of the plot. It is clear from the flint and pottery found in some of the features that human activity was taking place nearby. Evidence of activity in a tree-throw hole may not be too surprising: an uprooted tree with earth packing the gaps

between its roots, would offer an effective shelter, and prehistoric people may well have made temporary use of them, while exploiting this riverside location.

Channels 2317, 2323 and 2328 were clearly old meanders of the River Flit, a small tributary of the Ivel and Great Ouse. The upper fill of each channel was a peaty material, formed when the ground stabilised as the river moved away.

Twenty eight further flints were collected during the course of the watching brief. Four tools, six cores and eighteen waste flakes, were identified.

Fifty sherds of pottery, belonging to a single vessel, were found within the fill of one of the possible tree-throws (2314). The heavy rim and decoration of the pot were typical of Midlands scored ware, which dates to the middle Iron Age (Fig. 51 no. 4). The relatively fresh and unabraded nature of the pottery, and the fact that the sherds were all from the same vessel indicates that they were dumped either within, or very close to the tree throw, and that the hole filled fairly quickly after their deposition.

Three flints found within the same fill (2315) as the pottery included a single, residual, Mesolithic cutting flake (SF 5273) and two flints which were clearly later, and could well have been deposited together with the Iron Age pottery.

Site 38: Anglo-Saxon graves

Construction Section 24, Plot 169, TL 012 339

Introduction

At least three graves, probably of Anglo-Saxon date were uncovered during pipe-trenching. The site was around 2km west of Flitwick, and close to Warren Farm. Flitwick Plantation lies to the west of the field with the M1 motorway beyond (Fig. 48). The land rises to a low ridge just to the north of the site, which is at approximately 100m AOD, dipping increasingly steeply into the valley of the River Flit to the south. Glacial sands and gravels underlie the site (BGS 1992) producing coarse, loamy and sandy soil.

Archaeology

During pipe-trenching, three graves, a further possible grave, a possible ditch and a layer of colluvium were recorded:

:	Grave 2405	Grave 2410	?Grave 2412
	Grave 2409	?Ditch 2411	Layer 2413

Discussion

Following the exposure of a single grave (2405) in the pipe-trench section, a limited area of the easement, from the pipe trench section to the easement fence, was machine stripped to a depth of approximately 0.5m. The edges of the grave and a number of other features were revealed in plan.

The features were not visible in the surface after initial topsoil removal and it remains uncertain whether the features were covered by the layers of colluvium (2408) or whether they cut through them. It is possible that the features were dug during the deposition phase and were cut into the lower colluvial layers and sealed by the upper layers.

One grave (2405) in the pipe trench section was excavated (Fig. 48). The spoil tip was searched for the missing parts of the skeleton disturbed by the pipe-trench, and a large proportion of the skeleton was retrieved. Two other rectangular graves (2409, 2410) on the same alignment as the first were identified by fragments of human cranium visible in the stripped and cleaned surface. Another, similar but smaller feature (2412) could not be identified in this way, and could be interpreted as a child grave, a cremation pit or small pit. These features were not excavated: the overburden was reinstated and post-construction drainage was diverted away from the site to avoid further disturbance.

Two sherds of late Bronze Age to early Iron Age pottery were retrieved from the stripped easement surface (2414), and the surface of an unexcavated grave (2409). A small amount of mid- to late Iron Age pottery was also recovered from the easement surface and from the layer of colluvium (2408). , indicating background activity of these periods.

The skeleton (2407) in Grave 2405 of a male, 1.72m tall, aged between 35 and 45 at the time of death. A puncture wound to the head was thought to have been inflicted by intentional violence. The wound was not fully healed, and it was estimated that it was inflicted at least six to eight weeks before the man's death. The individual had also suffered a broken rib, an old wound which was well healed by the time of death, and a localised infection of the right tibia, which was also well healed. Considerable pain and inconvenience would also have been suffered by the man as a result of osteoarthritis in his vertebrae, pelvis and femurs, caused by mechanical wear.

No grave goods were found with the remains, although the neat way in which the skeleton was arranged indicates that the body was laid carefully in the grave, and that it may have been wrapped in a shroud, with the feet bound.

A sample of bone from Skeleton 2407 was submitted for radiocarbon analysis. This gave a Radiocarbon Age of 1210 ± 70 BP, which calibrates to AD 670 to AD 980 at the 2σ confidence level (RCD-3356, $\delta^{13}C$: -21.70 ‰). This puts it firmly in the Anglo-Saxon period. The early part of this date range would correspond to the period when this part of the country was becoming fully Christianised. The supine extended position of the body and the lack of grave goods would point to this being a Christian burial, but the north to south orientation is unusual.

Stray finds from elsewhere on the pipeline

The definition of a site use in this report has been broad, including isolated features and areas with above average densities of unstratified finds. During the watching brief, quantities of unstratified finds were recovered from most of the fields crossed by the pipeline route. include a flint core of possible Mesolithic date from Plot 55 (Fig. 49 no. 1), a flint knife with semi-invasive retouch from Plot 144 (Fig. 49 no. 6) and a notched flake from Plot 147 (Fig. 49 no. 13).

7 CONCLUSIONS

The watching brief and subsequent excavations have provided valuable information spanning a wide range of periods.

The investigations at Site 37 provided further information about the Mesolithic site investigated in advance of construction, helping to place it in its wider context, while the flint scatters recorded at Sites 30, 33, 34 and 36 contribute to an overall pattern of late Neolithic and Bronze Age activity in the area below the scarp slope of the Chilterns.

The Bronze Age vessel found at Site 13 suggests the possibility that there is a cremation cemetery in this area. Site 19, with Bronze Age pottery found in cut features sealed by alluvial deposits from the River Ouzel, was discovered at a late stage in construction process and engineering considerations precluded full investigation, but the exposure of these features in the side of the pipe-trench provided a tantalising glimpse of what might be an extensive and significant site.

The same is also true for the late Bronze Age or early Iron Age Site 15, and for the three middle to late Iron Age sites: Sites 16, 17 and 18. In each case, it is impossible to be sure if the recovered finds were coeval with the recorded features or were residual, but they certainly indicate that there was activity in those areas during the later prehistoric periods. Of the sites which were not well dated, three: Sites 12, 14 and 32, were thought to be of prehistoric date.

The construction programme allowed time for area excavations on those sites that were located during topsoil stripping, and these were better characterised. The surface left by construction topsoil stripping did not, over most of the route, afford good visibility of features because of remaining patches of topsoil or masking subsoil layers. As a result, it was mainly the readily visible artefact-rich sites that were identified at this stage, predominantly from the Roman period.

Of these, the most extensive was Site 22, which appeared to have been in the immediate neighbourhood of a small rural settlement occupied between the late first and early fourth centuries. Site 28, of a similar rural character, had a slightly earlier date range, falling out of use before the end of the third century. Three smaller Roman sites consisted largely of ditches, presumably delineating and draining agricultural plots. Site 7 had evidence of activity from the late first to the early fourth centuries, while finds from Site 11 are predominantly of third- or fourth-century date but with residual earlier material. Many of the finds from Site 1 were also residual, but indicate activity at this small site dated from the first to the late third or fourth centuries.

Two other broadly contemporary sites seem to have had specialist functions. Site 9, which produced relatively large quantities of pottery dating from the late Iron Age to the fourth century, had an extensive area of pits, probably for clay extraction. Site 31 also had quarry pits, probably of Roman date and perhaps associated with the construction and maintenance of Watling Street Roman road nearby. Site 8 provided confirmation of one of the postulated Roman roads (Bucks PRN 2034) running north from Fleet Marston. No visible remains were found at the site of the other proposed road in this area (Bucks PRN 2035), and its possible existence, based on the interpretation of features in the modern landscape, is highly questionable.

The discovery of the Anglo-Saxon cemetery at Site 38, close to the Steppingley end of the pipeline route, was entirely unexpected. Sites from this period, even cemetery sites, are rare in the region and this example must provide a valuable contribution to knowledge of their distribution.

Of later periods, there was evidence of post-medieval brick making at Site 35, and remains of ridge-and-furrow ploughing on many of the excavated sites. Eleven of the sites recorded during pipe-trenching had insufficient evidence to provide a date. The majority of these were groups of ditches.

These may have been field boundaries dating from the enclosure of the land which have since become redundant, although some at least are likely to be older, perhaps of Iron Age or Roman date.

Since the pipeline was constructed, in 1997, protocols for pre-construction archaeological surveys on major infrastructure projects have been refined and improved, and it is likely that many more of these sites would have been located at earlier stages of investigation if the pipeline had been constructed more recently. The value of gridded magnetometer surveys as compared with the earlier practice of scanning, for instance, has been amply demonstrated even where, as here, the soils are thought to be fairly unresponsive magnetically. An evaluation of the results of the geophysical survey undertaken as part of this project (Bartlett, 1997) contributed to this change in procedures.

However, there may be lessons still to be learned; even the best survey and evaluation methods have their limitations and archaeology will always spring surprises. The strategy of targeting excavation on a narrow strip along the pipe centreline was, in retrospect, probably not the best way of dealing with the limitations of time and resources. Even when constraints are severe, a more considered approach to sampling of features is likely to be more successful in maximising useful archaeological information.

With the benefit of hindsight, it is clear that the programme for post-excavation evaluation and analysis was unduly optimistic and did not take into account the delays and problems that are inevitable in a less than perfect world. As a result, the project became becalmed for long periods as key members of staff were redeployed to other, more immediately pressing work, and dissemination of the results has been a protracted process. Changes in the regulatory framework in the intervening years mean that archaeological work on gas pipelines now follows more closely the MAP2 model, and is both more tightly monitored and better resourced, so that delays of this kind, or at least of this duration, should not nowadays be allowed to occur. Nevertheless, external pressure to publish is a positive force to counter the competing day-to-day demands of tight construction schedules, and should be maintained and welcomed.

With these reservations, the watching brief overall was extremely successful, locating over thirty previously unrecognised areas of archaeological remains along the 43km length of the pipeline. Where these discoveries led to subsequent excavation, the sites were characterised, at least in part. A high proportion of the sites could not be fully investigated and many of these remain undated but their presence has been recorded. In most cases, the undated features are large ditches likely to extend beyond the pipeline easement, so will still be available for future investigation. With increasing development pressures in this part of the country, there are likely to be further linear infrastructure projects constructed in the future running close to, or alongside, the pipeline easement. The results of the watching brief will allow for a more informed mitigation strategy to be implemented for such future developments.

Perhaps the most important conclusion that can be drawn is that there appears to be a relative high density of archaeological sites throughout the area crossed by the pipeline. The findings suggest that the blank areas of the archaeological map, especially in the valleys of the Thame and Ouzel, are the result of the relative invisibility of sites rather than their absence. Many of the sites were partly or wholly masked by subsoil layers or by thin layers of alluvium, making them difficult to detect by non-invasive methods. This watching brief, along with other developments in the area, has contributed to an emerging picture of an archaeological resource far richer than was previously thought.

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Much of the text of this report was produced in 1998 and 1999 by Dave Bonner, but because of unforeseen delays, the reports on the three largest sites were not completed until later, Chris Turner, Karin Semmelmann and Catherine Holgate all contributing. Catherine Holgate also did a considerable amount of work on revising and editing the earlier versions of the text. The current version of the report was compiled by Richard Moore, in 2006 and early 2007.

Several illustrators were involved in the production of the figures. Nicky Smith co-ordinated the original drawing work, in the late 1990s and produced the site location plans and sections, and prehistoric pottery and registered finds drawings. The Roman and Iron Age pottery was drawn by Dave Hopkins and the flint by Bambi Stainton and Nicky Smith. More recently, Charlotte Bentley sorted out the many confusions over numbering that had arisen over the years. Illustrations that were still out-standing were completed by Dave Watt. Digitised plans of the larger sites were produced by Julian Sleap and Richard Moore.

FIGURES

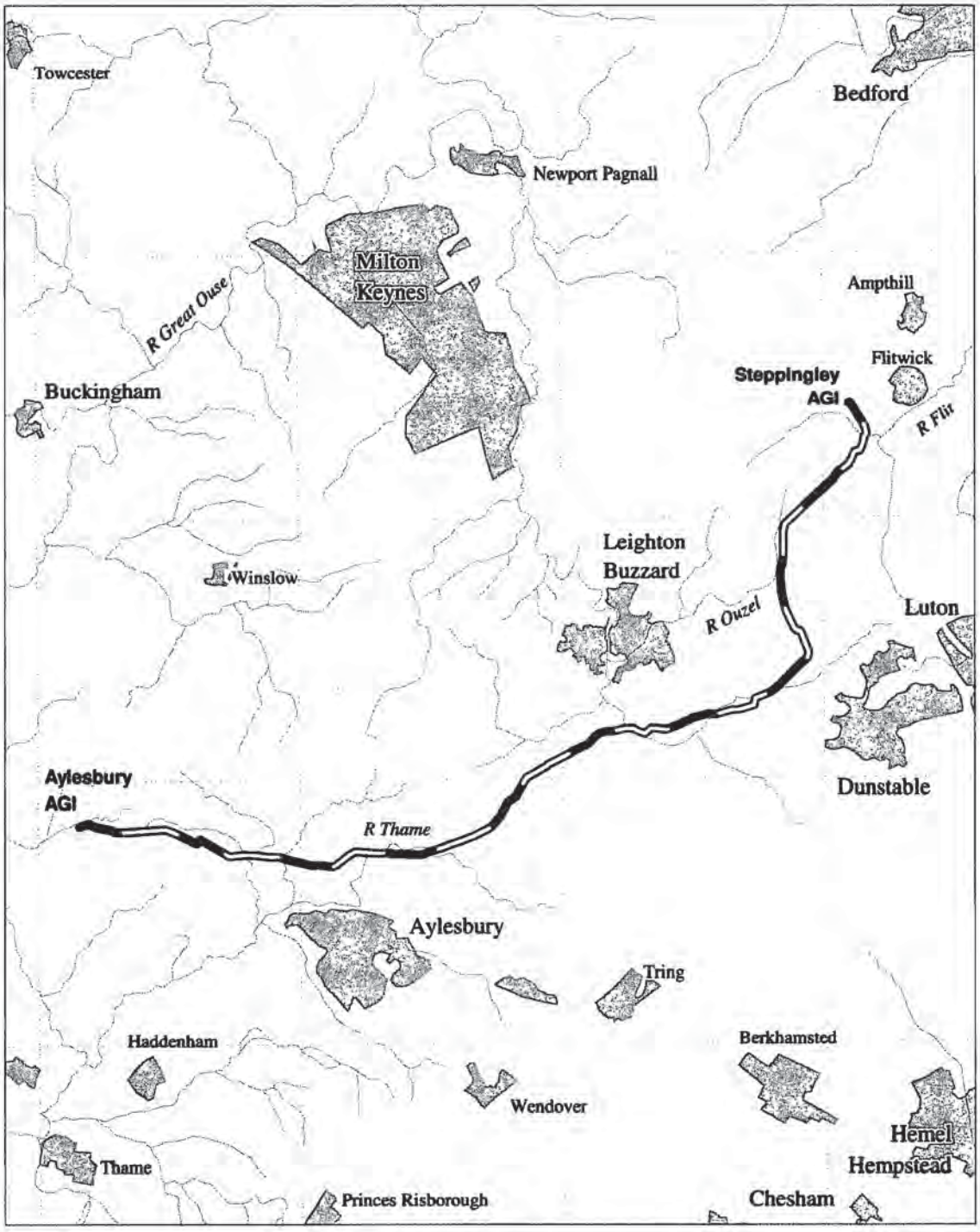


Figure 1: Location of the pipeline, scale 1:250 000

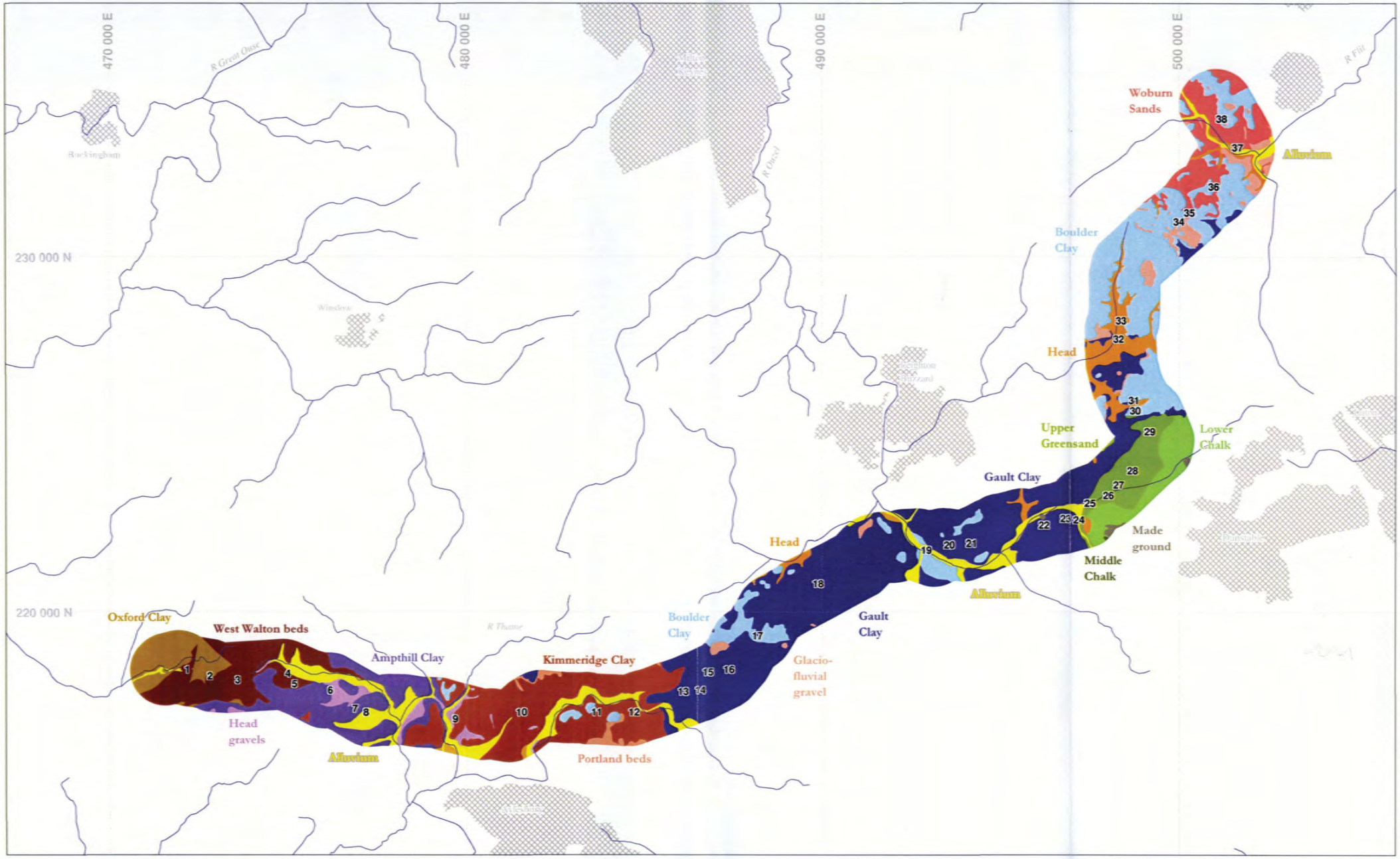


Figure 2: Surface geology of the pipeline route, with locations of sites numbered, scale 1:100 000.

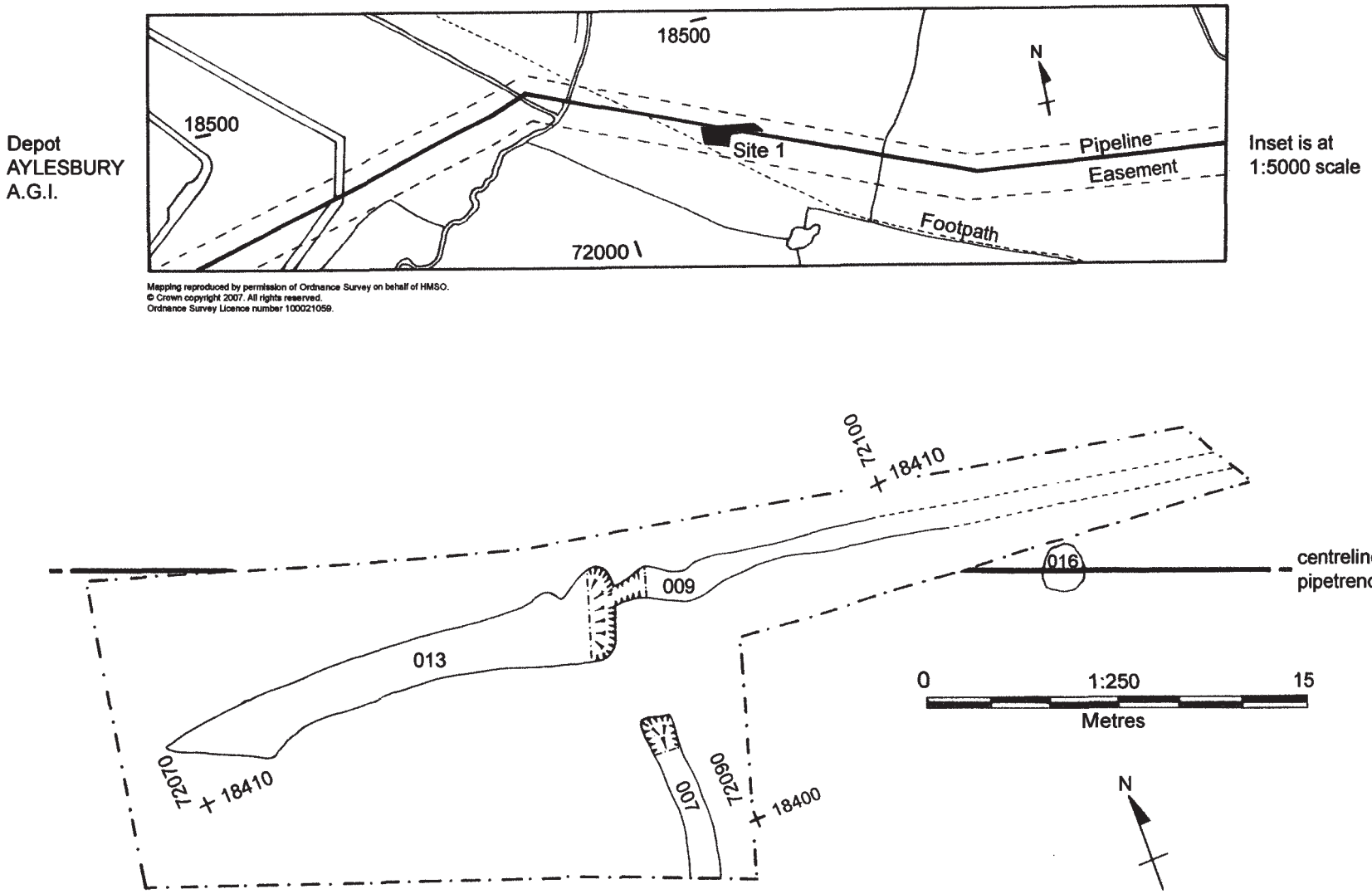


Figure 3: Site 1, Roman ditches, location and plan.

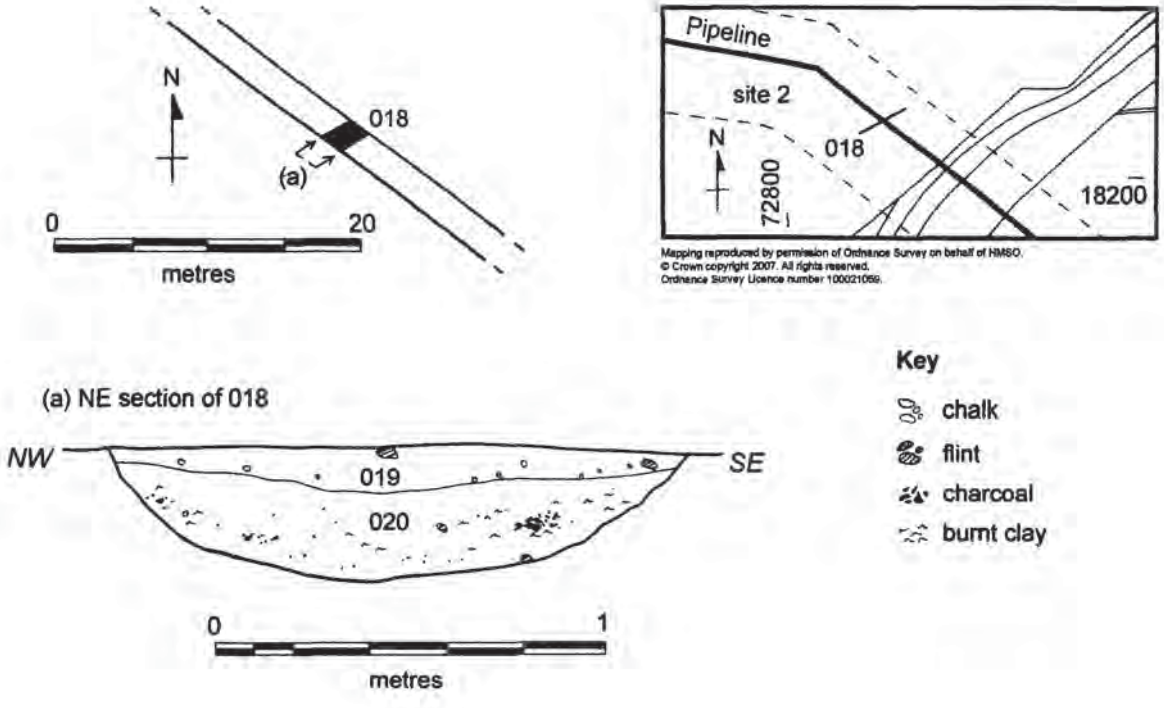


Figure 4: Site 2, Location and section.

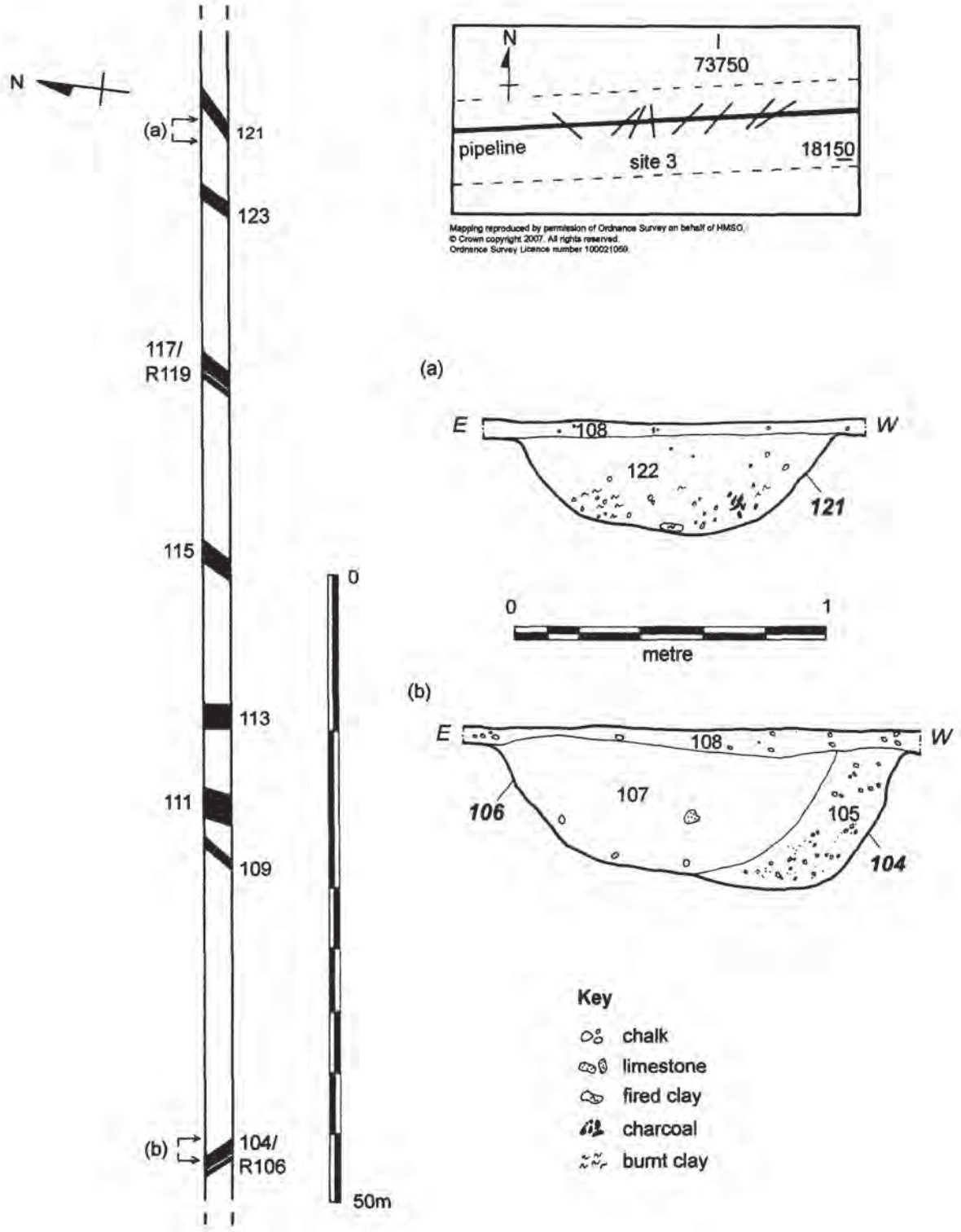


Figure 5: Site 3, Ditches, possibly Roman, locations and sections.

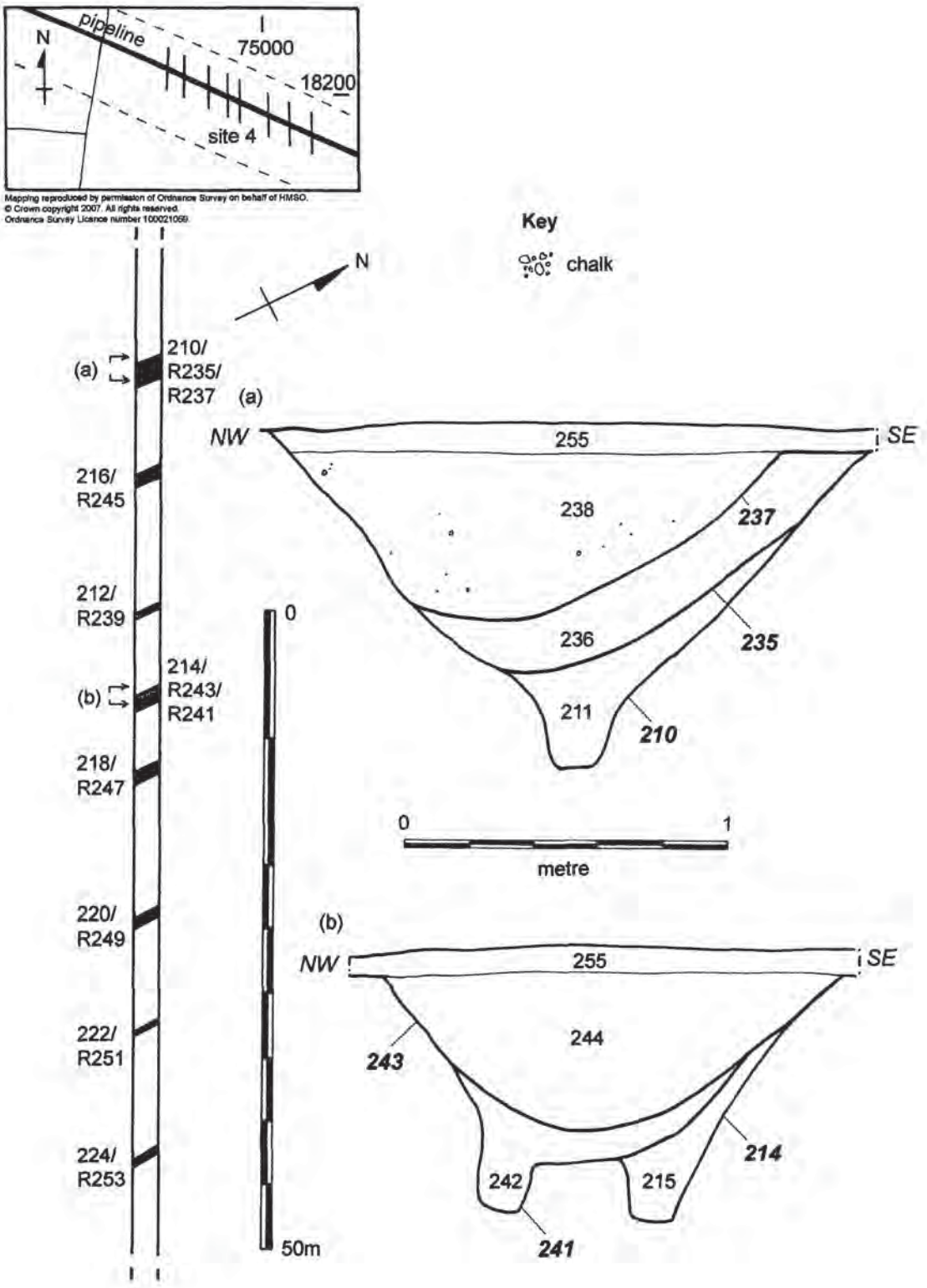


Figure 6: Site 4, Undated ditches, locations and sections

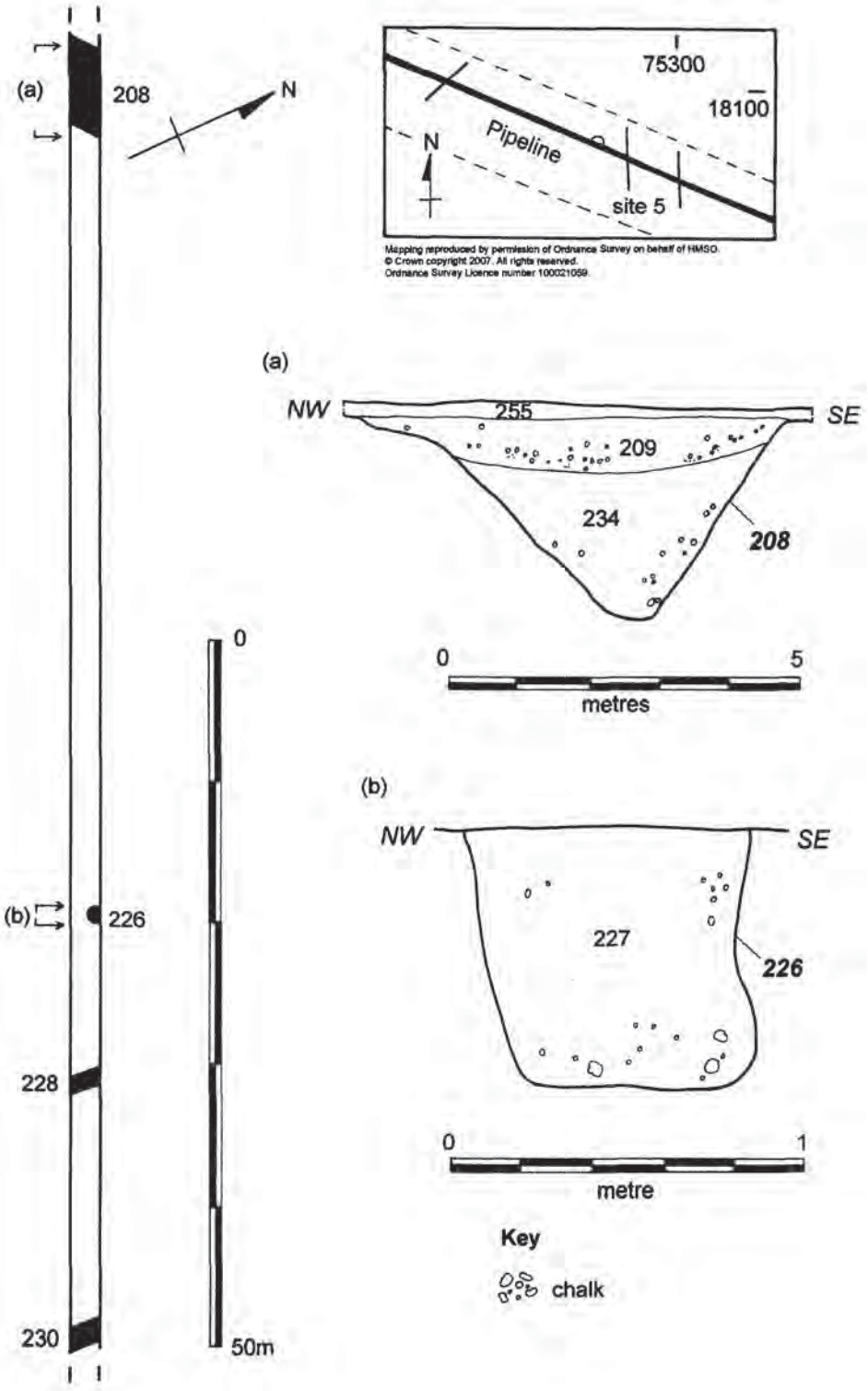


Figure 7: Site 5, Undated ditches and pit, locations and sections.

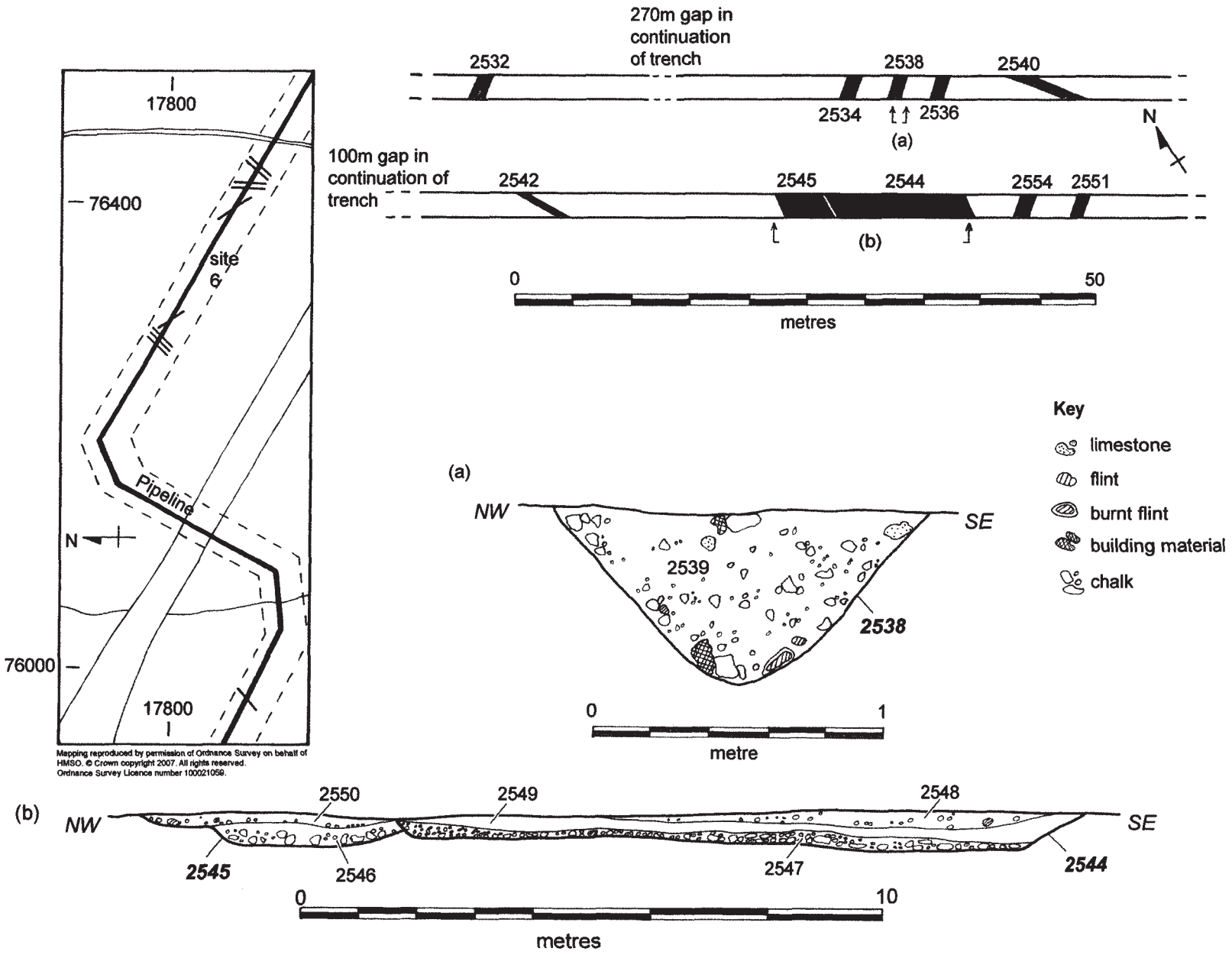
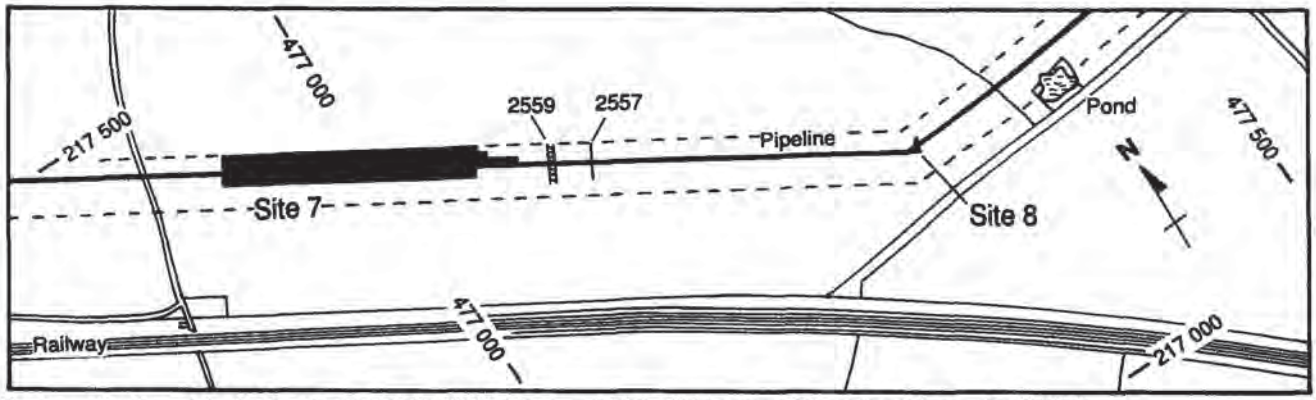


Figure 8: Site 6, Post-medieval or early modern ditches, locations and sections.



0 500m

Figure 9: Sites 7 and 8, Roman ditches and Roman Road, locations. scale 1:5000.

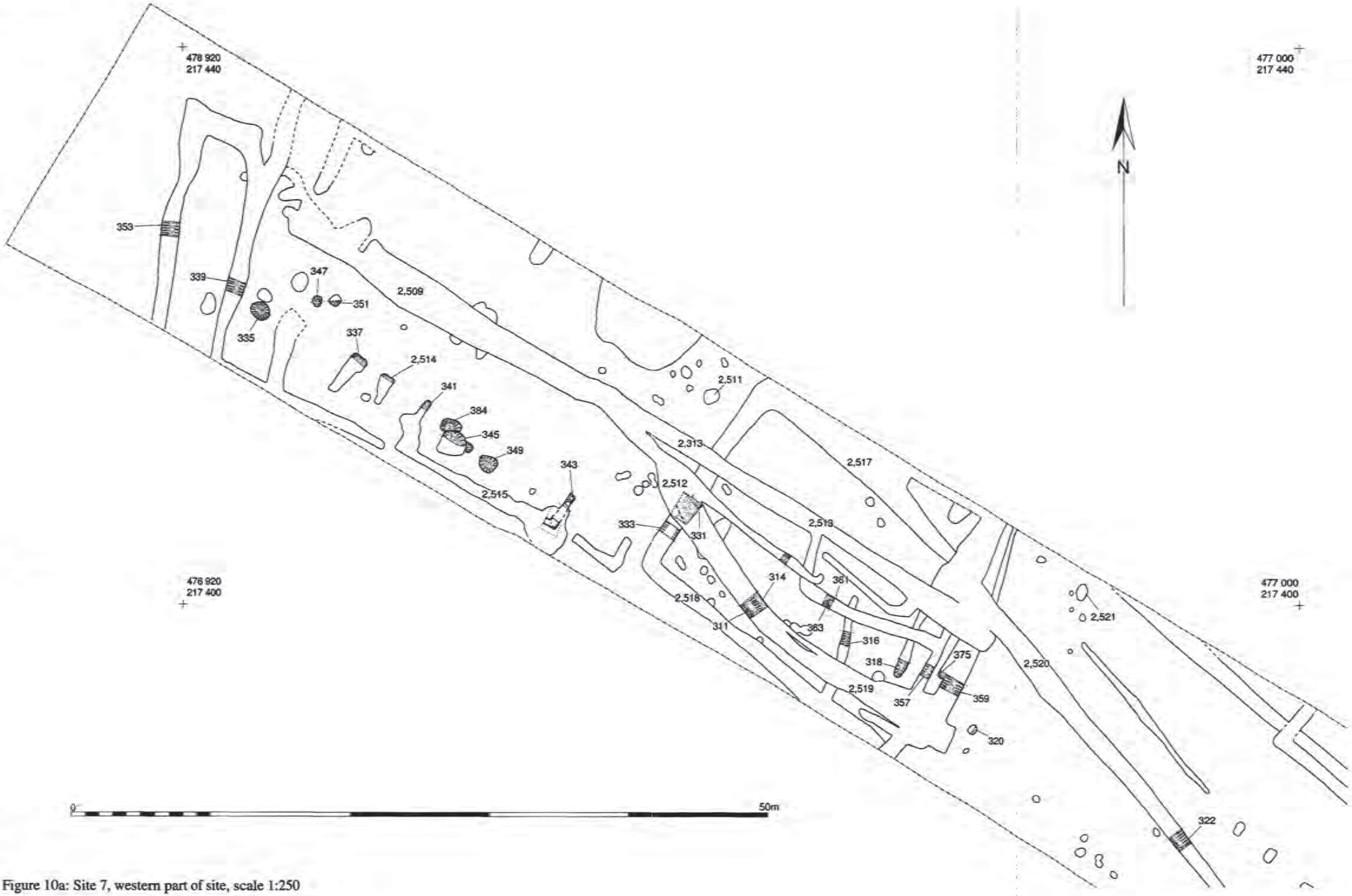


Figure 10a: Site 7, western part of site, scale 1:250

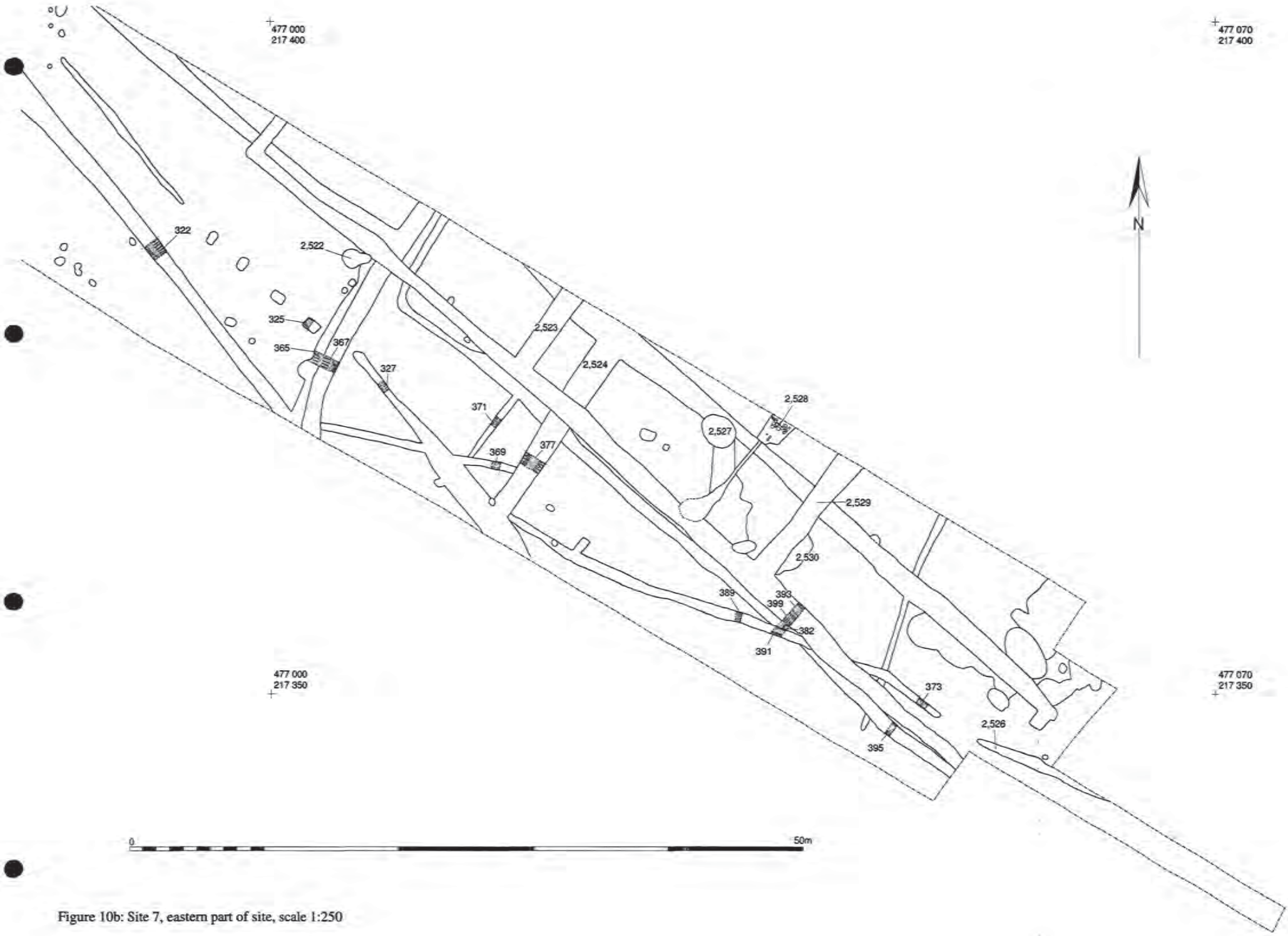


Figure 10b: Site 7, eastern part of site, scale 1:250

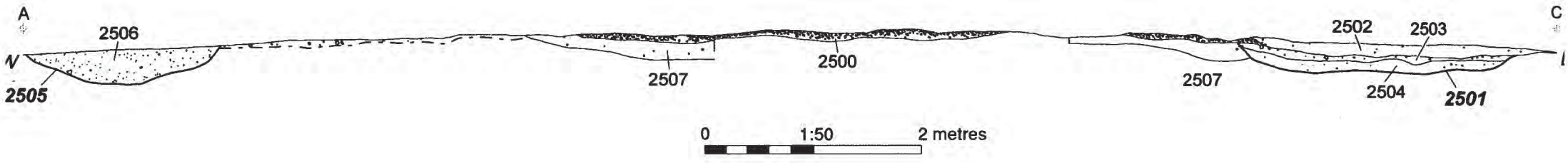
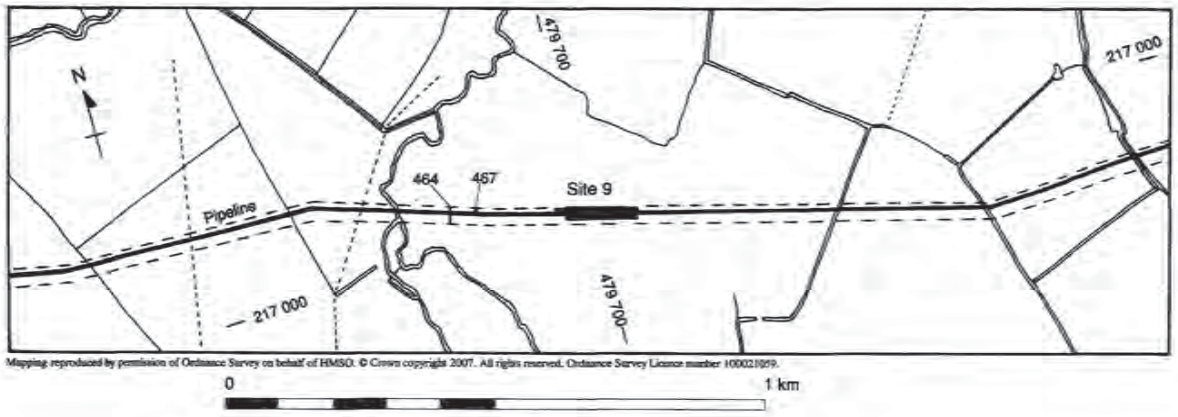


Figure 11: Site 8, Roman road, section.



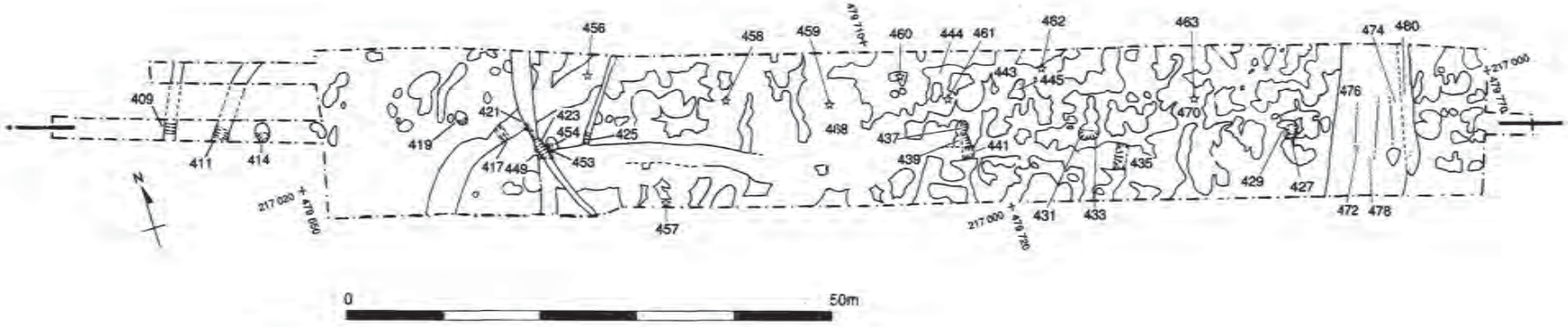


Figure 12: Location of Site 9 (scale 1:10 000) and plan of excavated features and unexcavated surface deposits (scale 1:500)

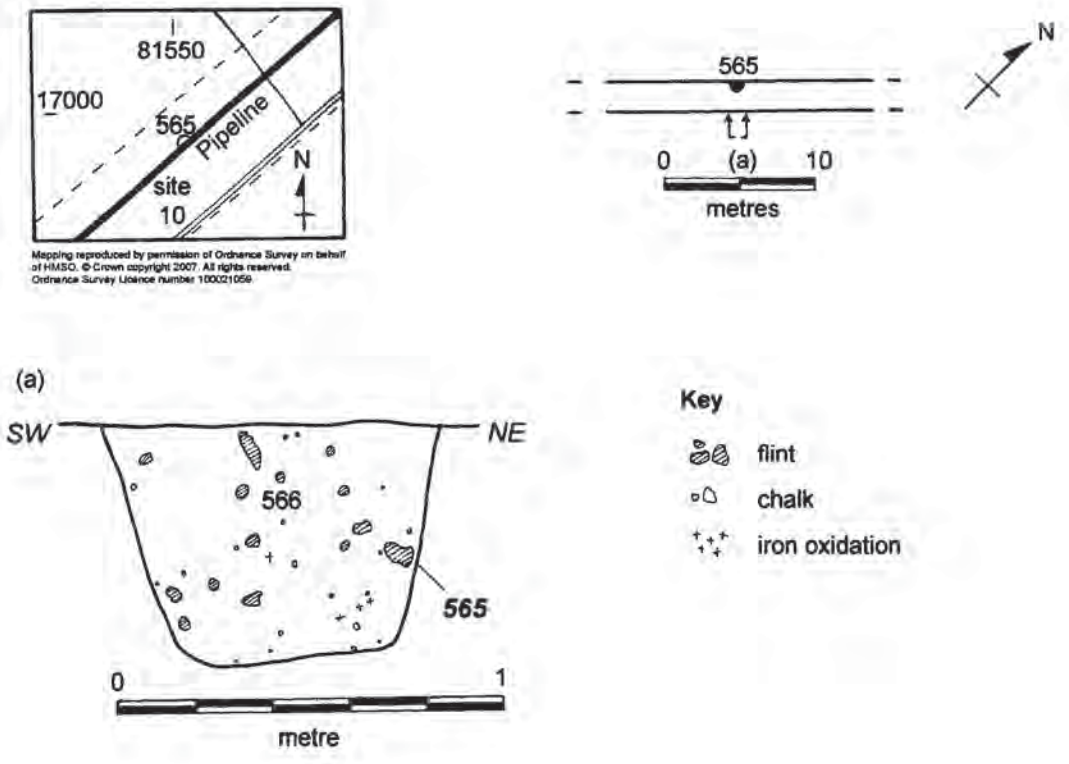
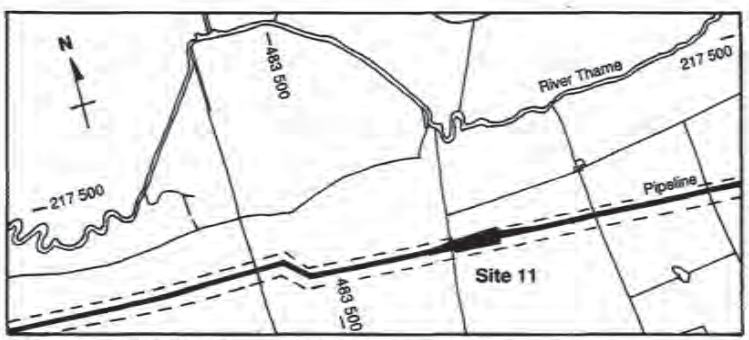
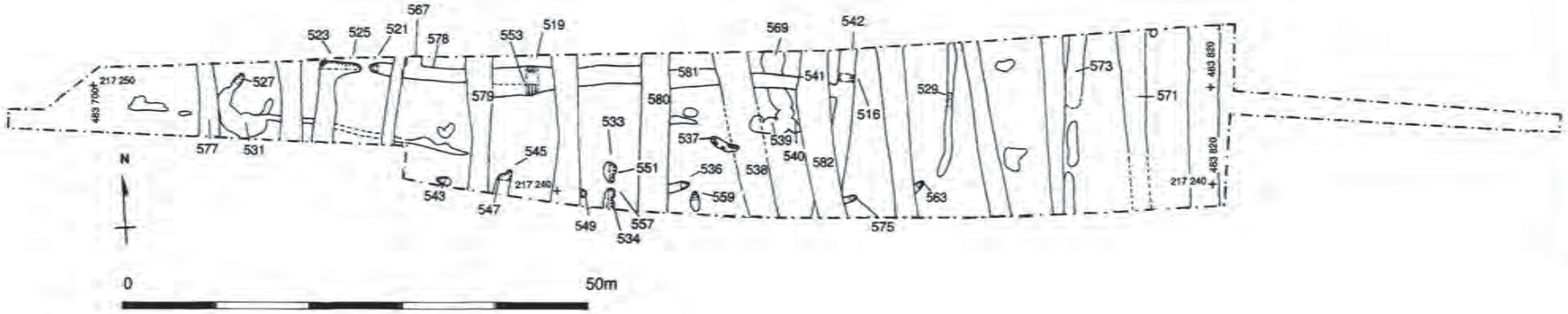


Figure 13: Site 10, Undated pit, locations and sections.



0 1 km



0 50m

Figure 14: Site 11 location (scale 1:10 000) and site plan (scale 1:500)

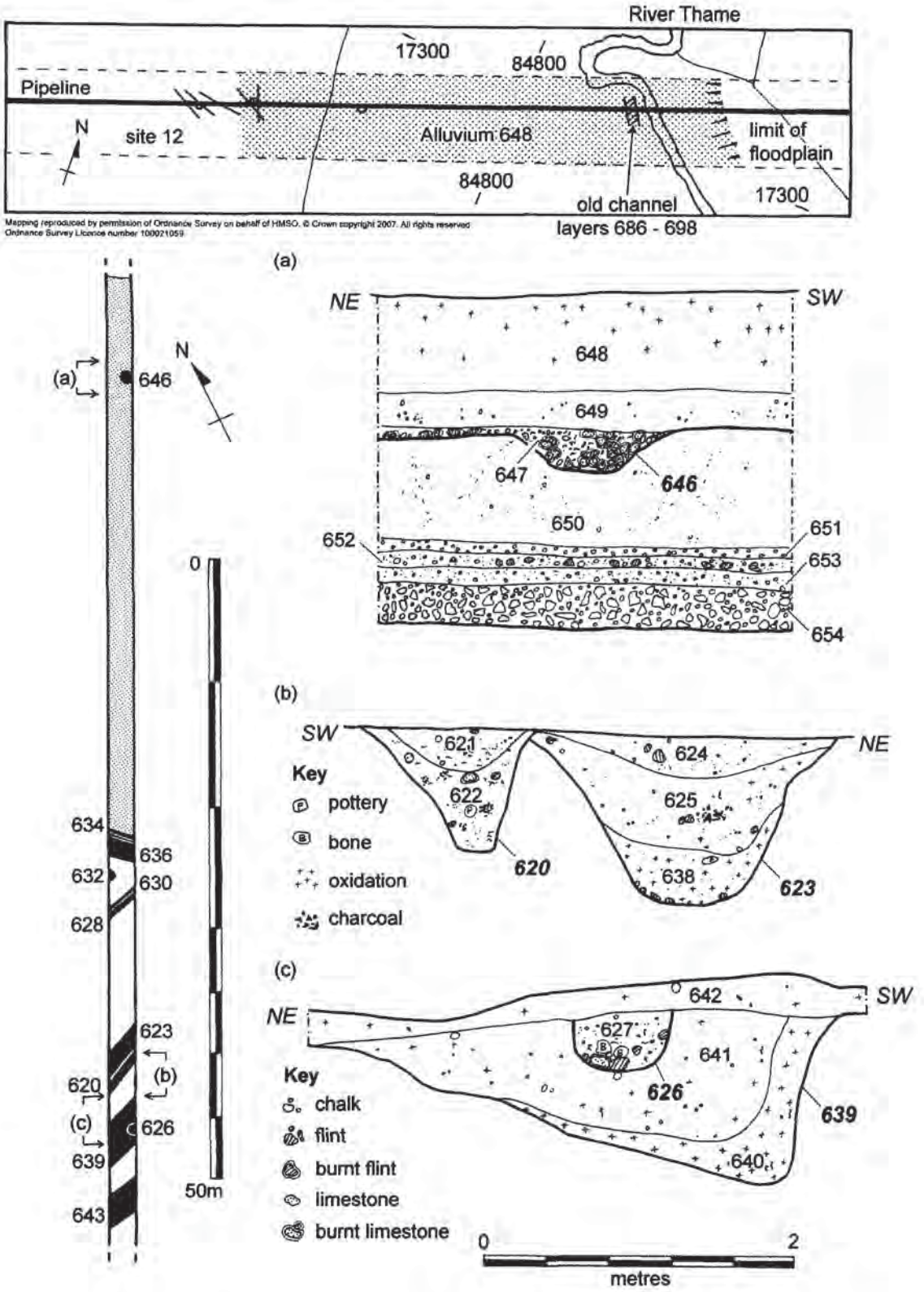


Figure 15: Site 12, Bronze Age and Iron Age remains, locations and sections.

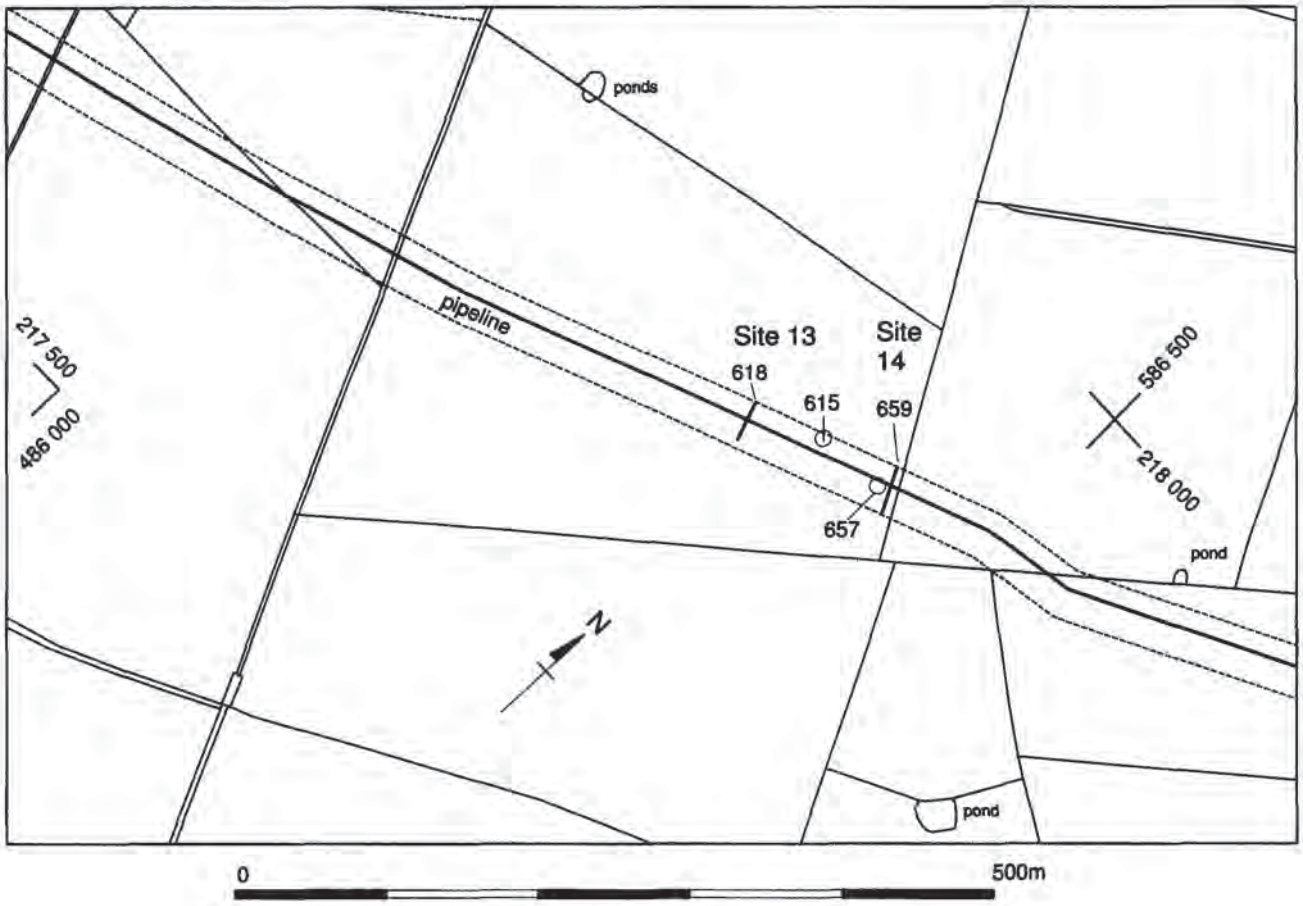


Figure 16: Location of Sites 13 and 14, Bronze Age urn and Iron Age and undated linear features, scale 1:5000.

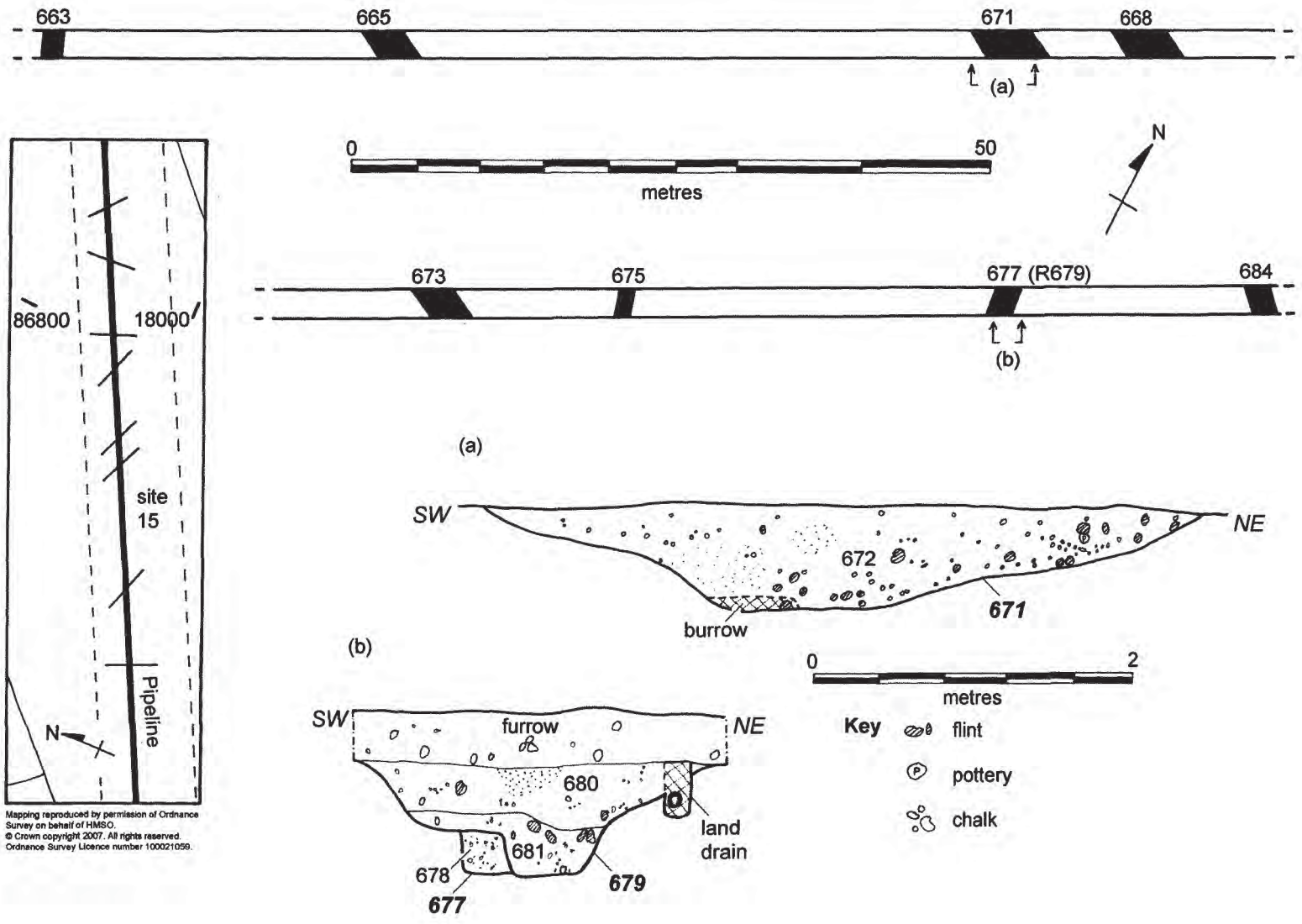


Figure 17: Site 15, Late Bronze Age or Iron Age ditches, locations and sections.

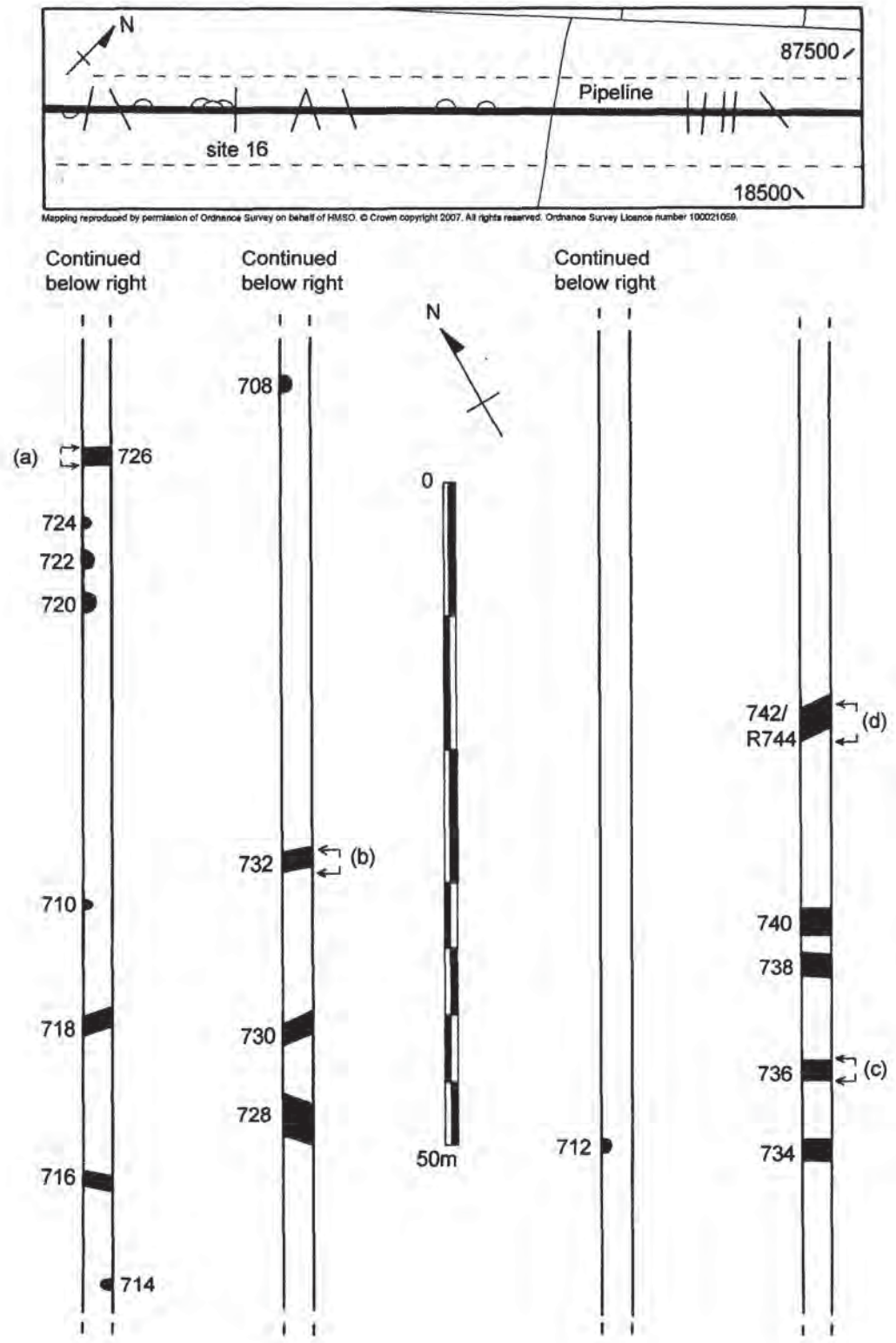


Figure 18: Site 16, Iron Age ditches, location.

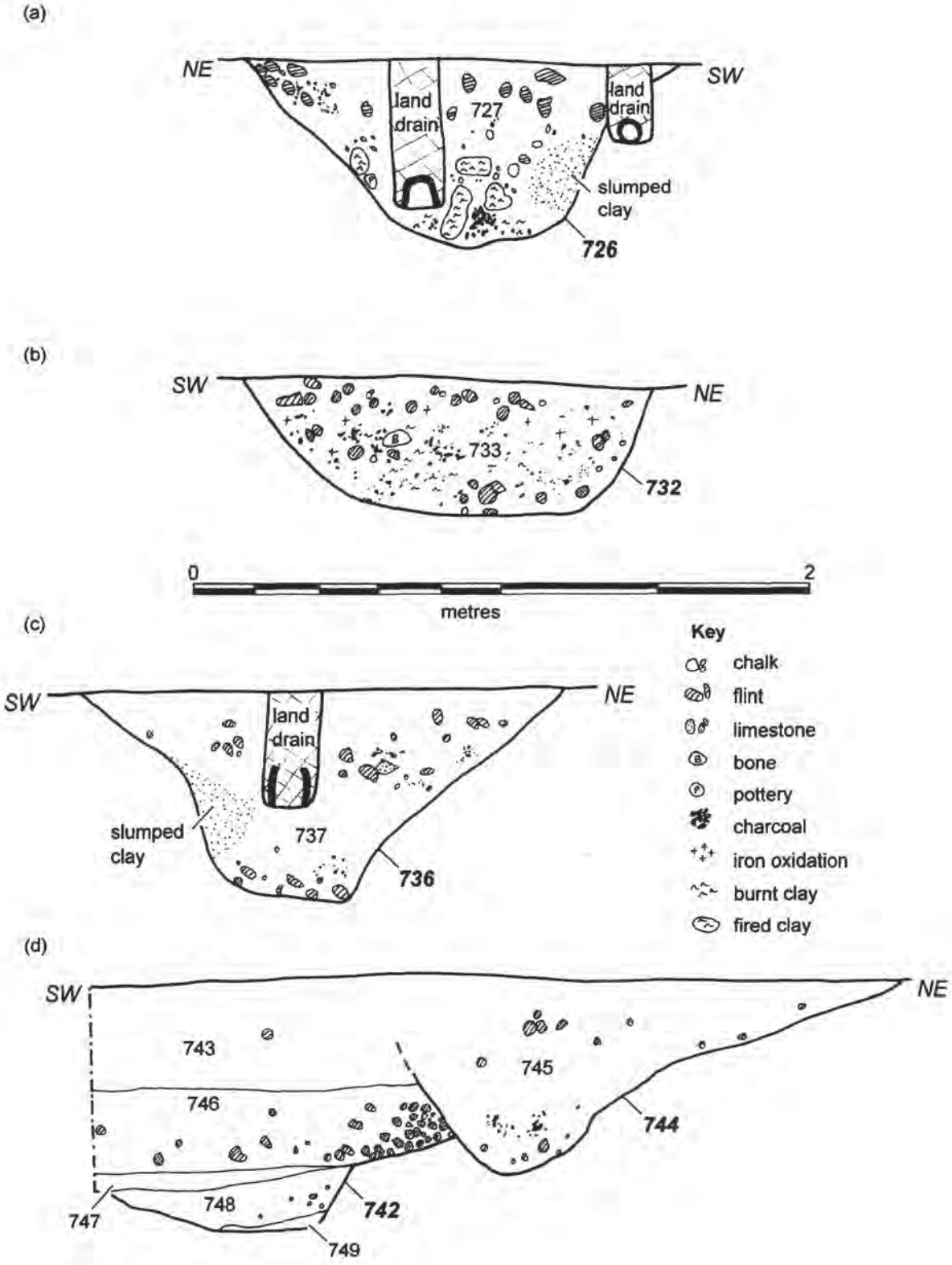


Figure 19: Site 16, Sections.

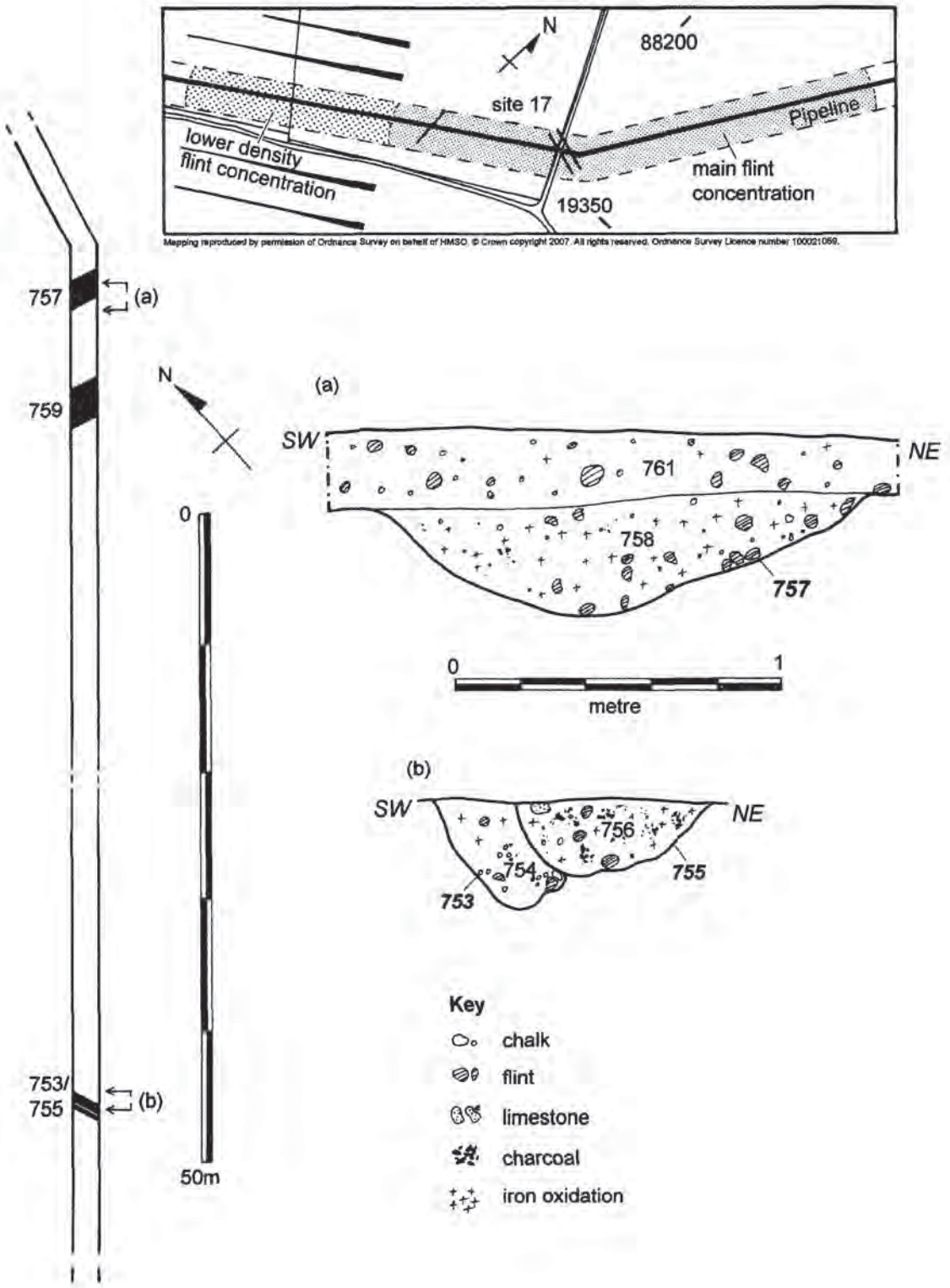


Figure 20: Site 17, Bronze Age flint scatter and Iron Age ditches, locations and sections.

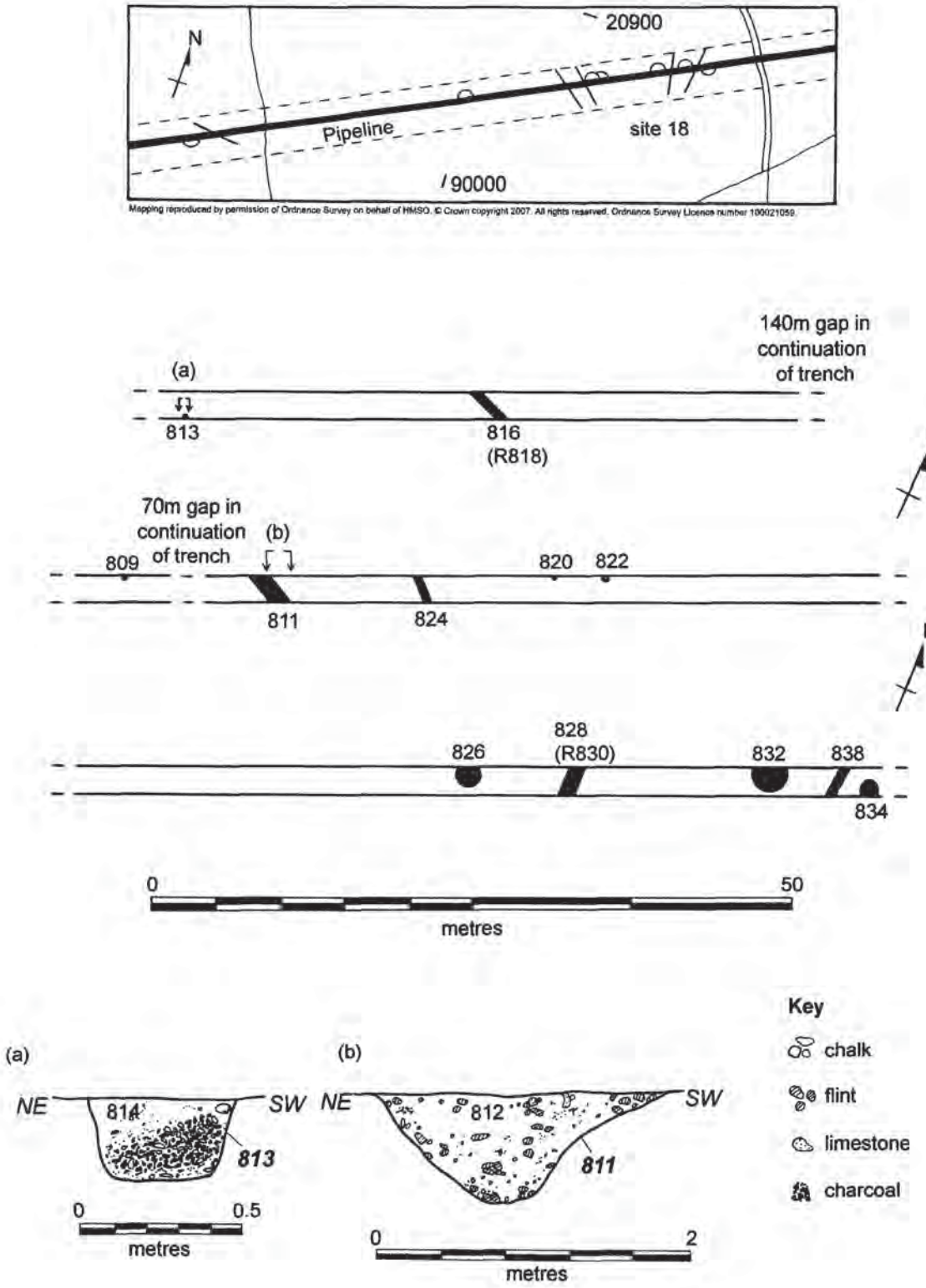


Figure 21: Site 18, Bronze Age cremation, Iron Age ditches and pits, location and sections.

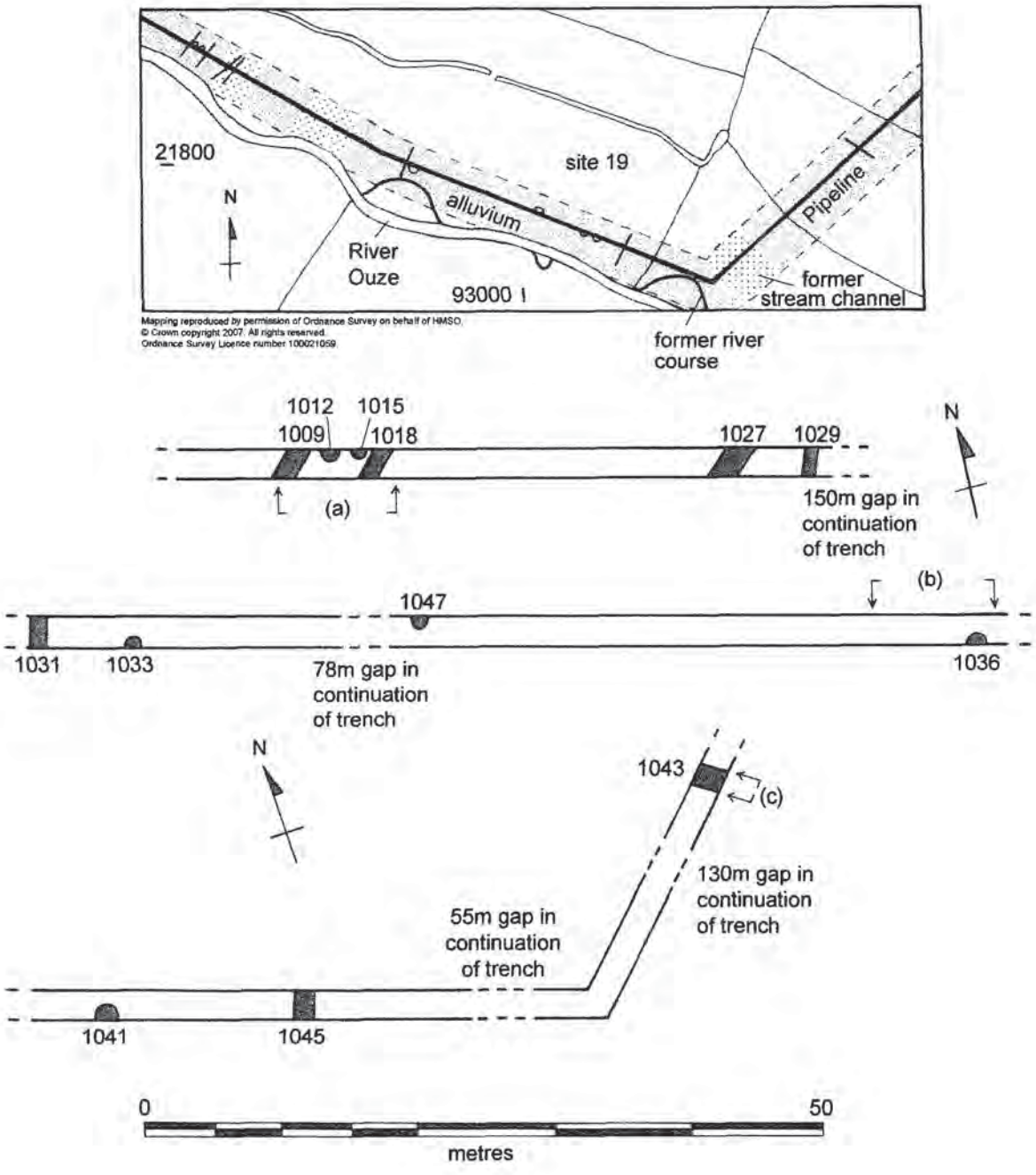


Figure 22: Site 19, old river channel and Bronze Age features, location.

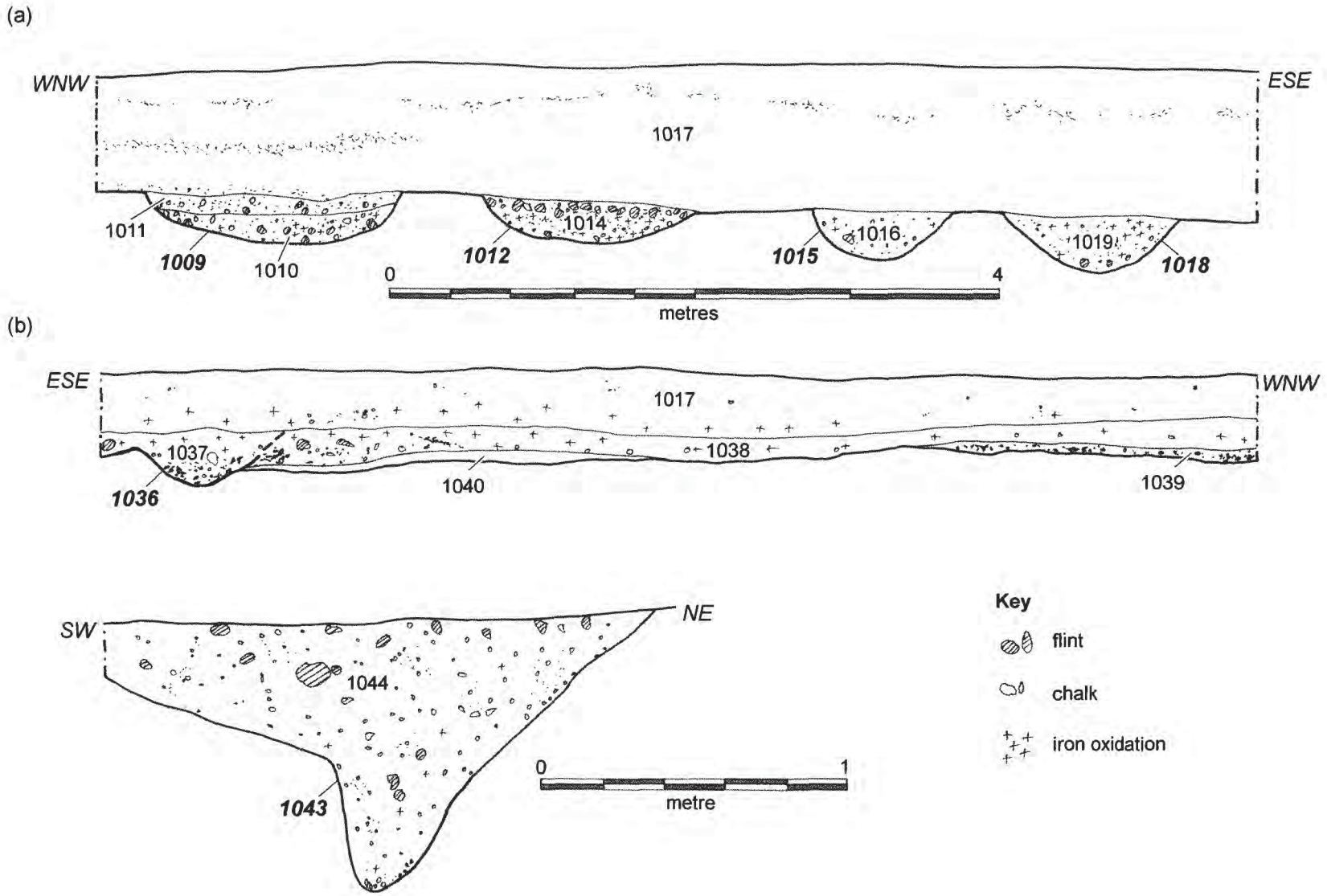


Figure 23: Site 19, Sections.

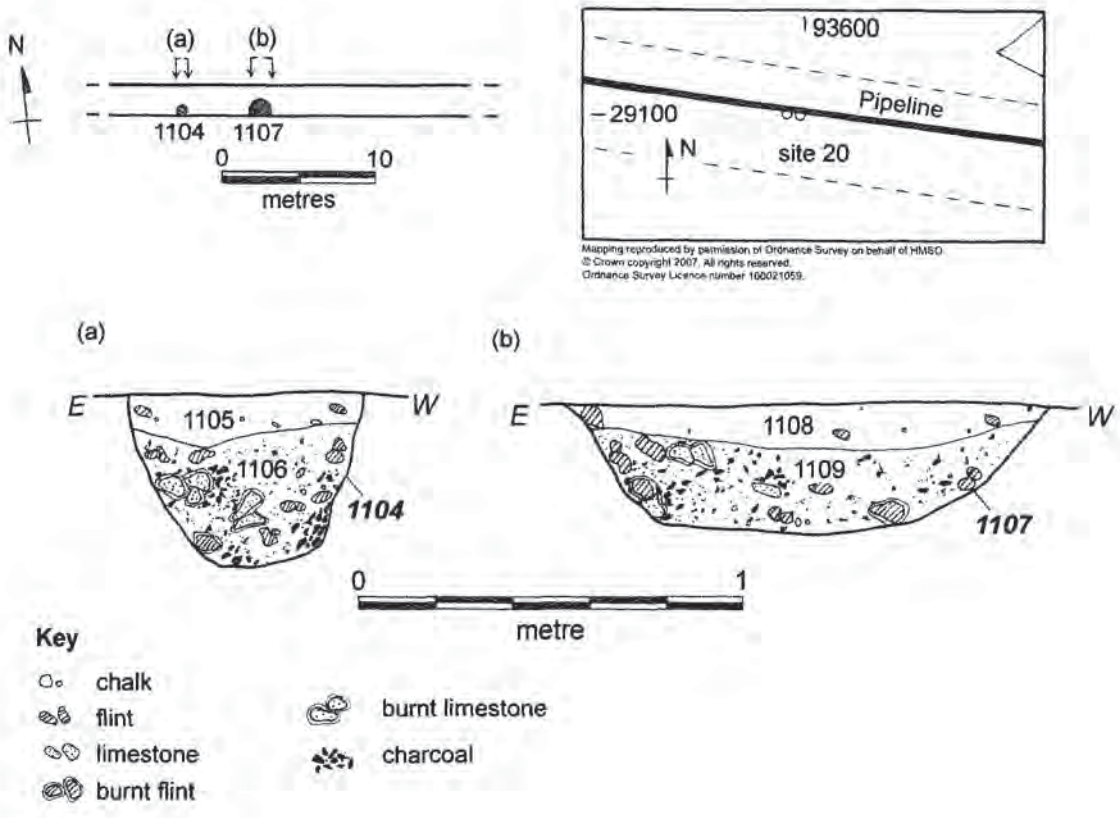
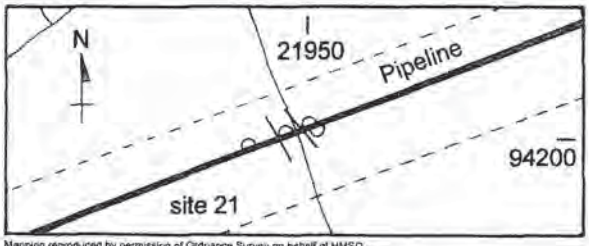
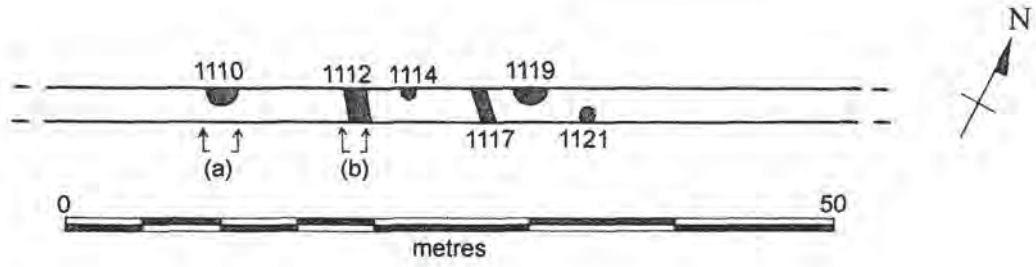
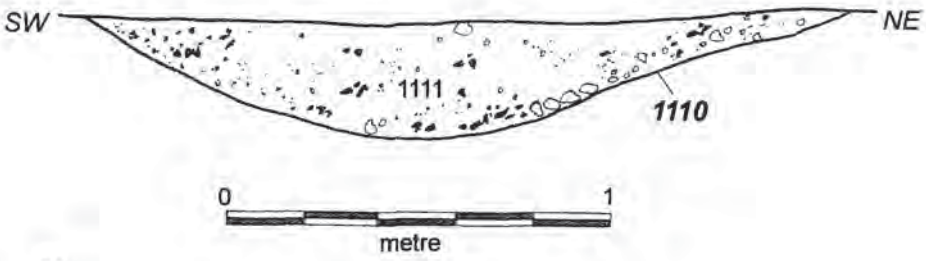


Figure 24: Site 20, Undated pits, location and sections.

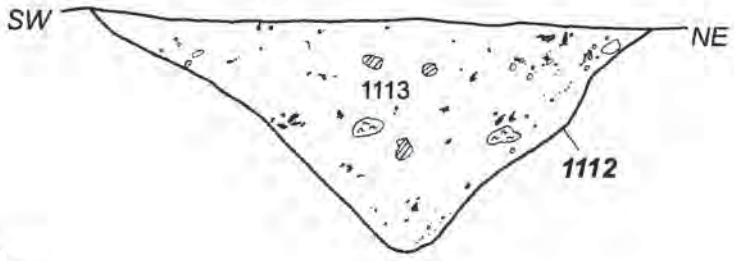




(a)



(b)



Key

chalk

flint

fired clay

charcoal

Figure 25: Site 21, Prehistoric pits and ditches, location and sections

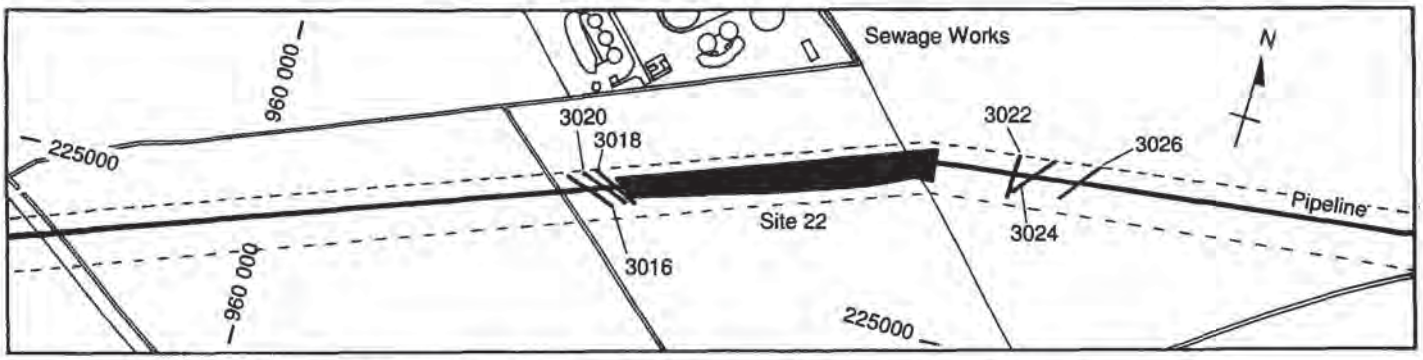


Figure 26: Site 22, Roman field system ditches and possible settlement, location, scale 1:5000.

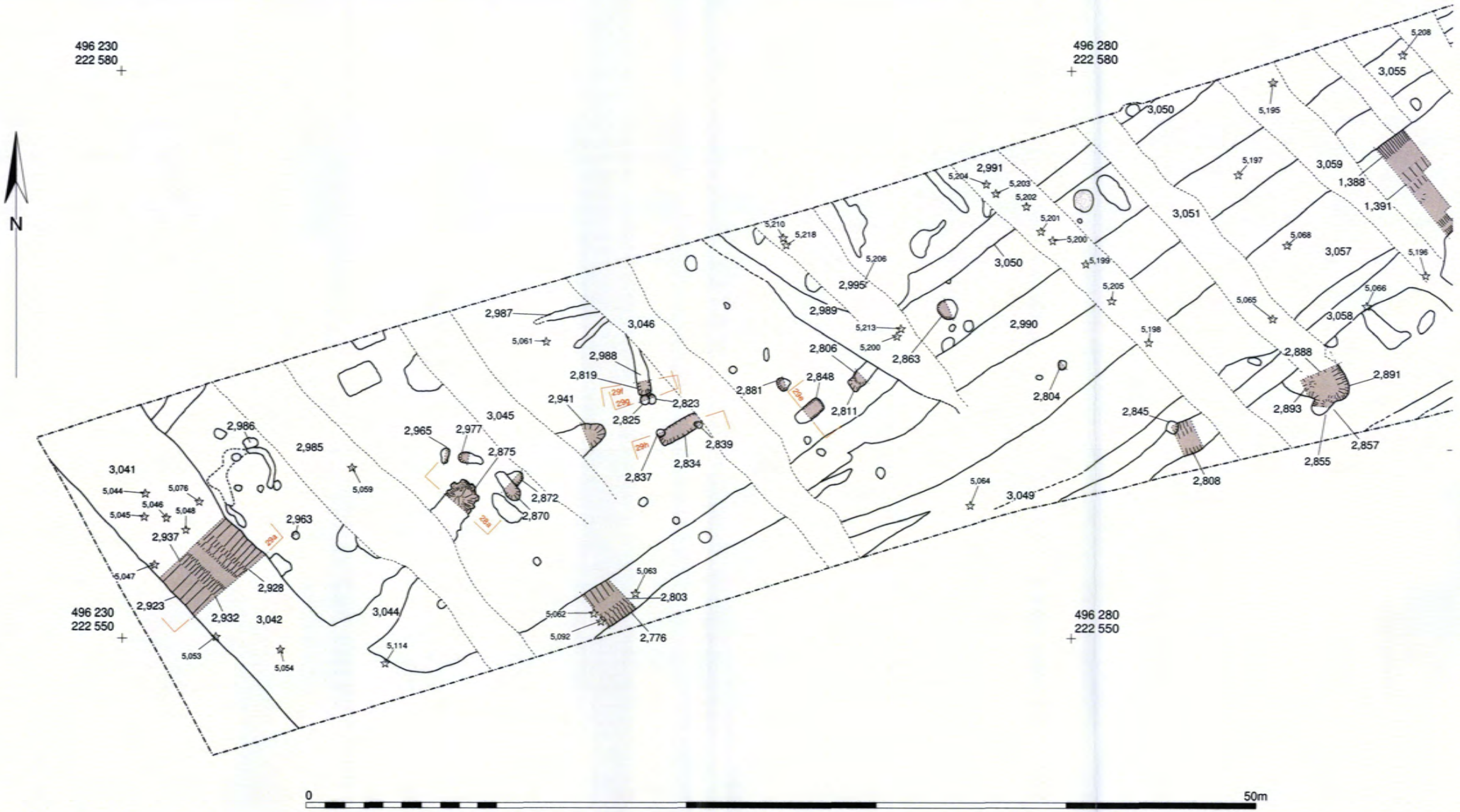


Figure 27a: Site 22, western part of site, plan of features, scale 1:200

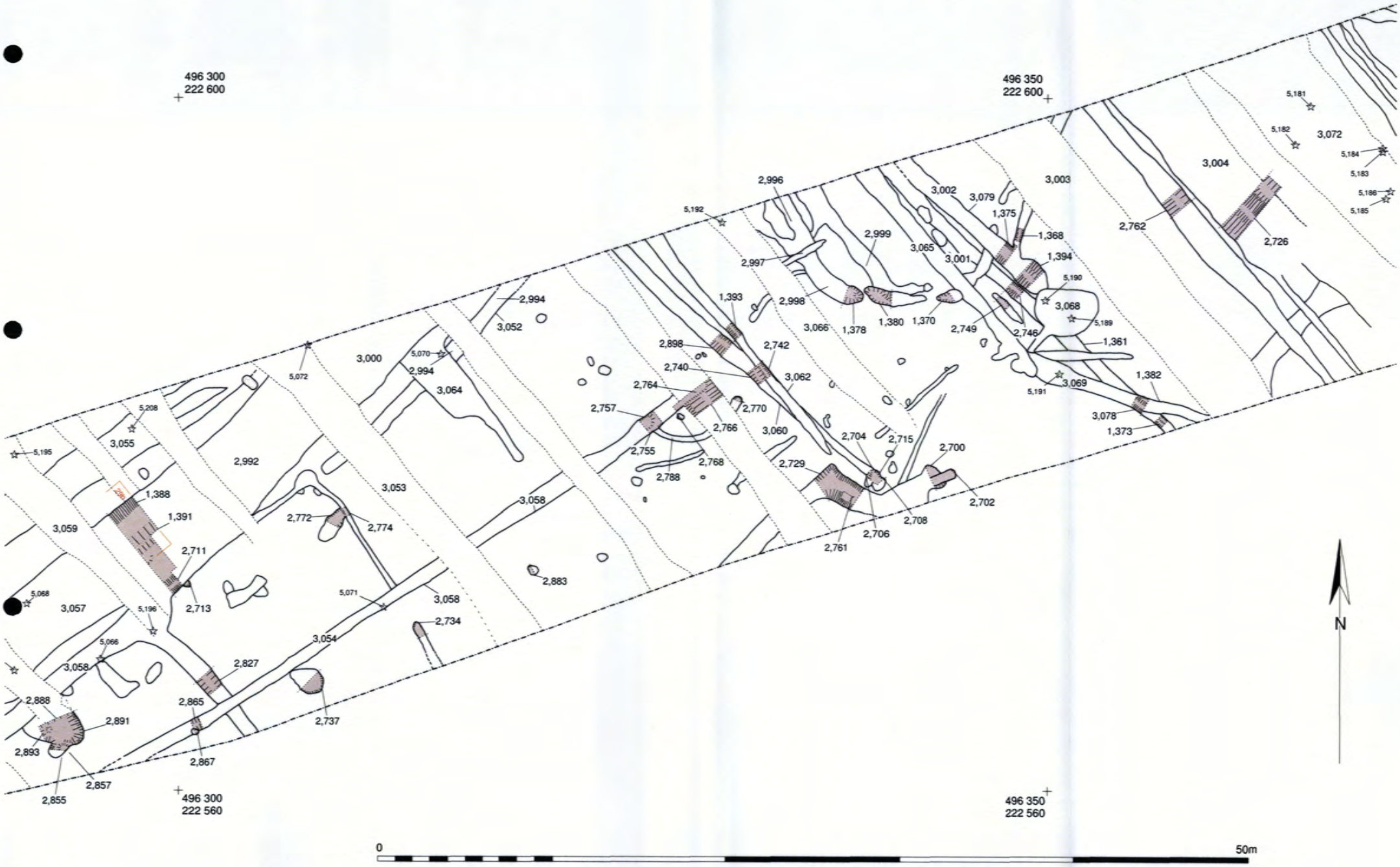


Figure 27b: Site 22, central part of site, plan of features, scale 1:200

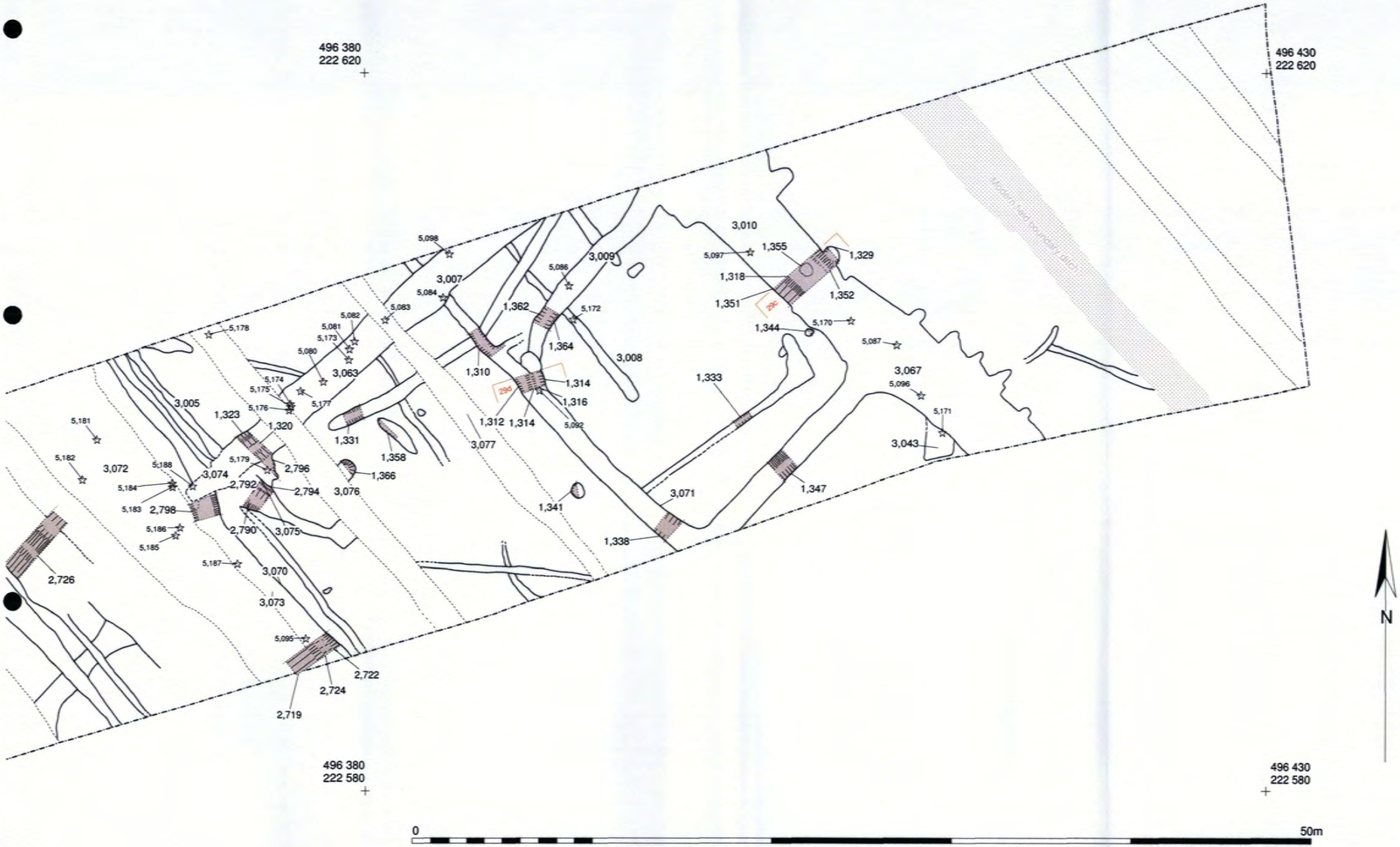
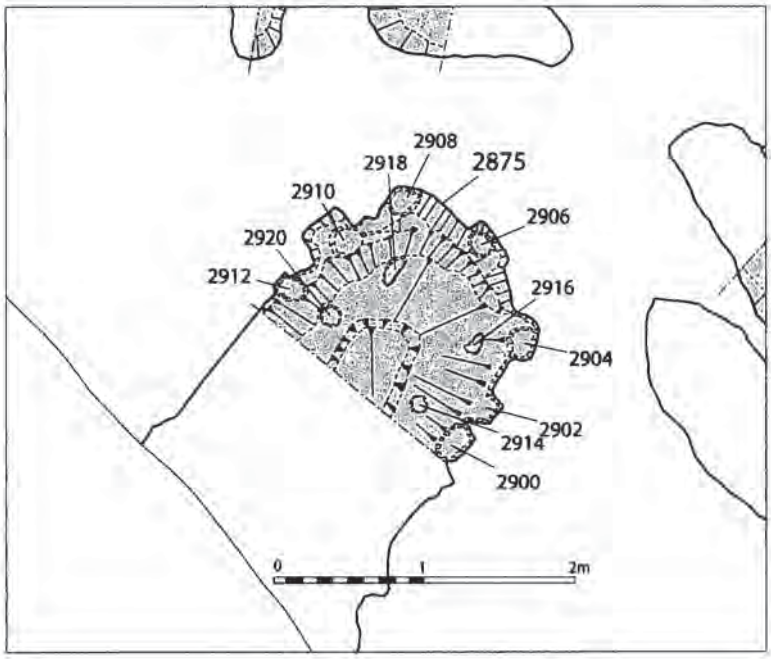


Figure 27c: Site 22, eastern part of site, plan of features, scale 1:200



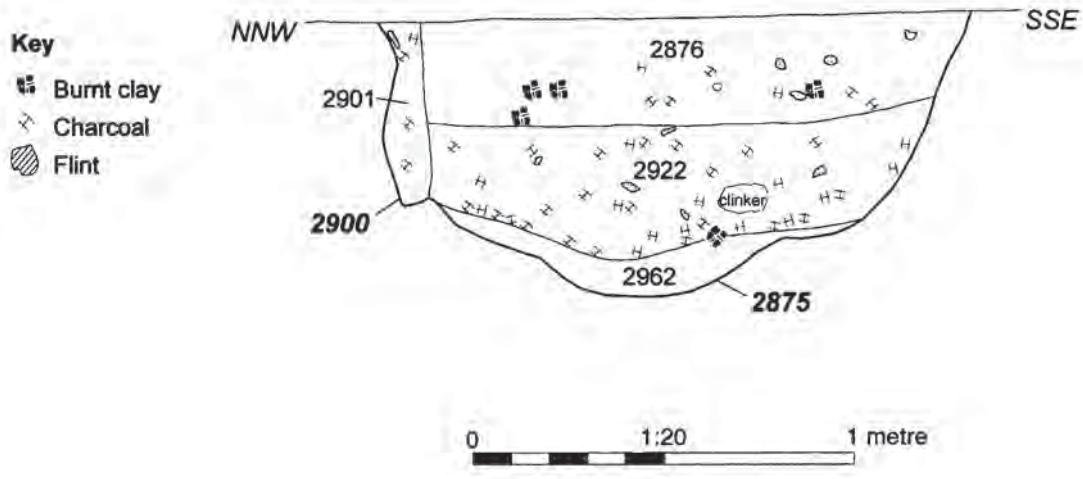


Figure 28: Site 22, Plan and section of Pit 2875

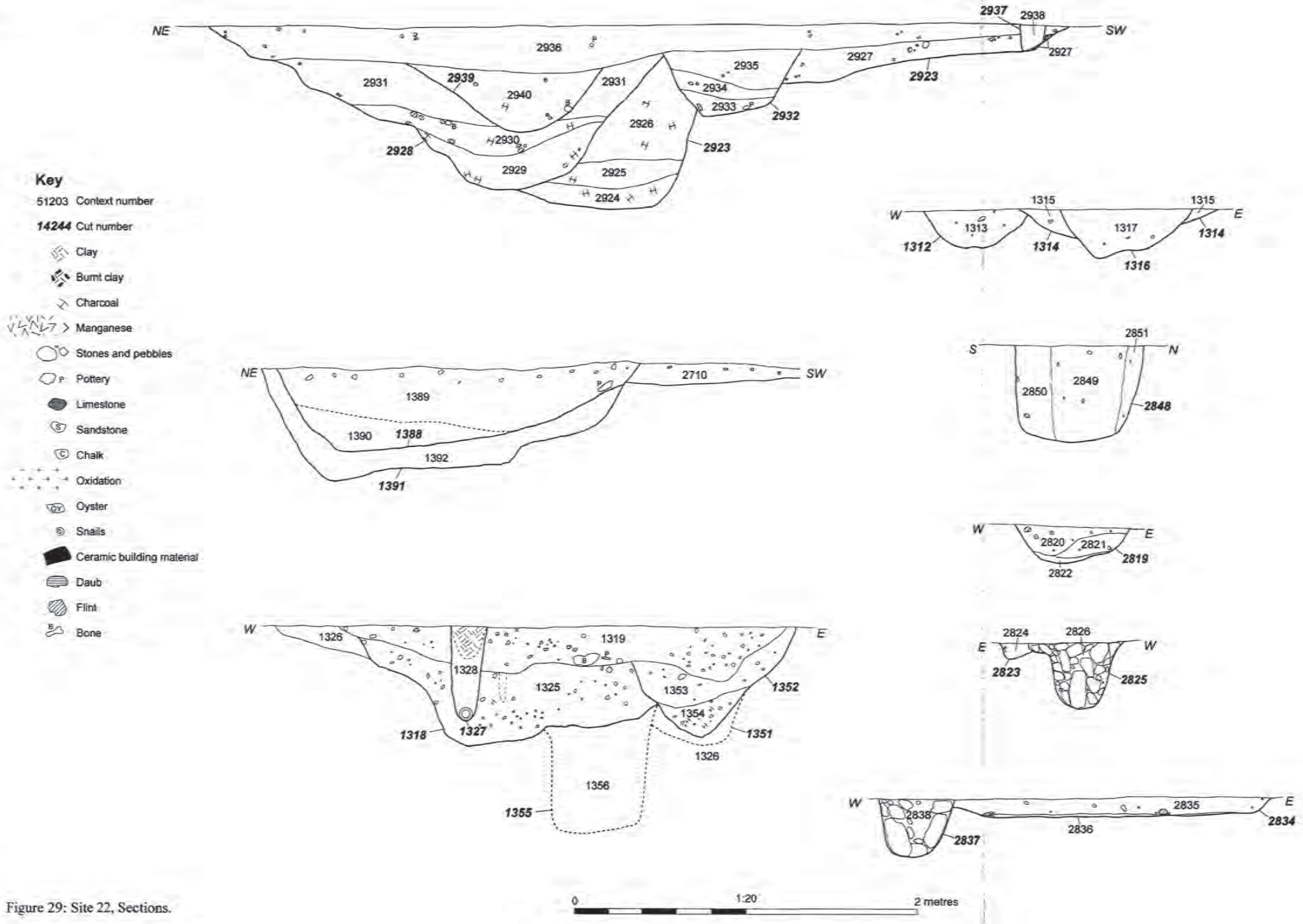


Figure 29: Site 22, Sections.

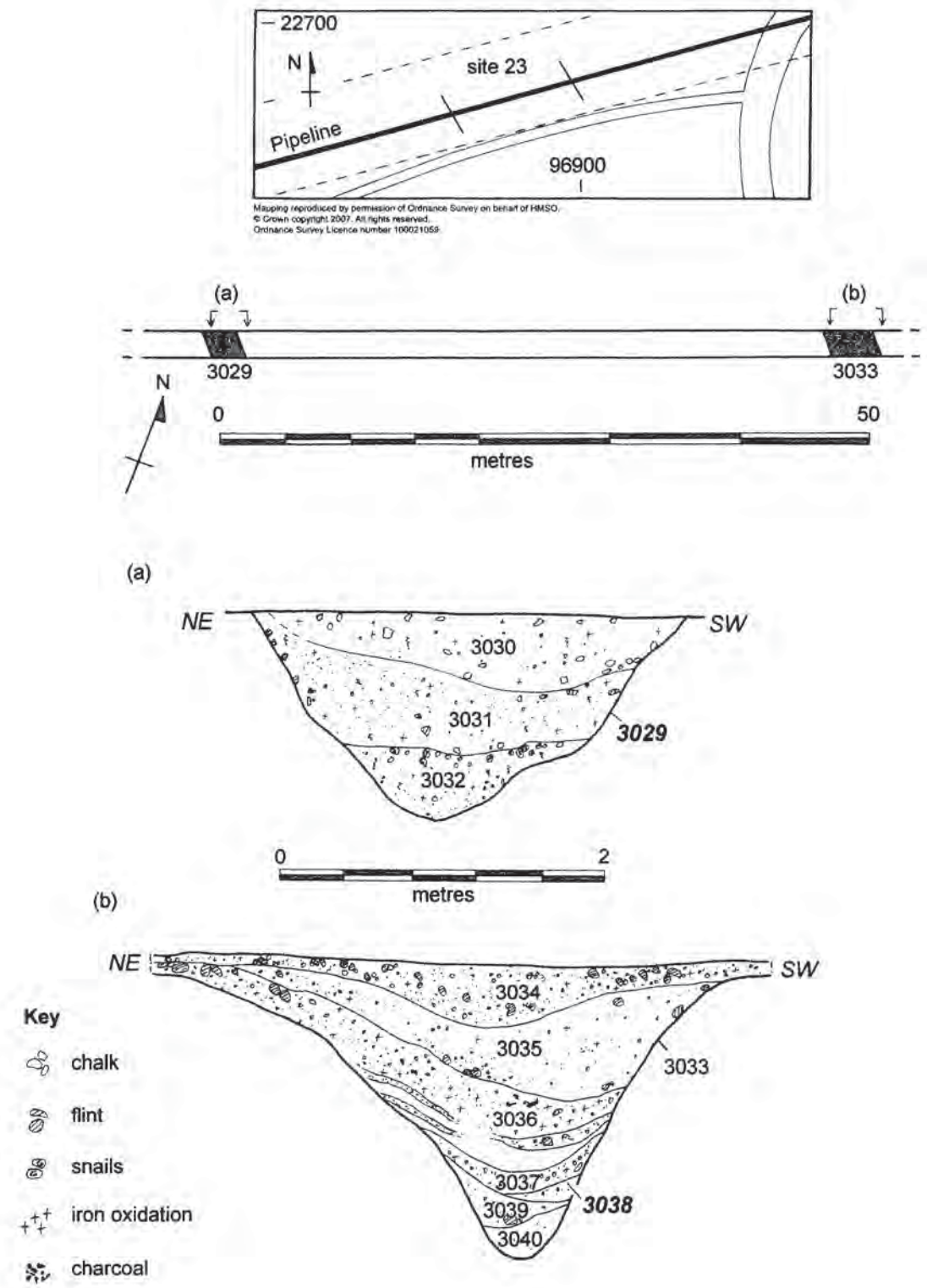


Figure 30: Site 23, Undated ditches, location and sections.

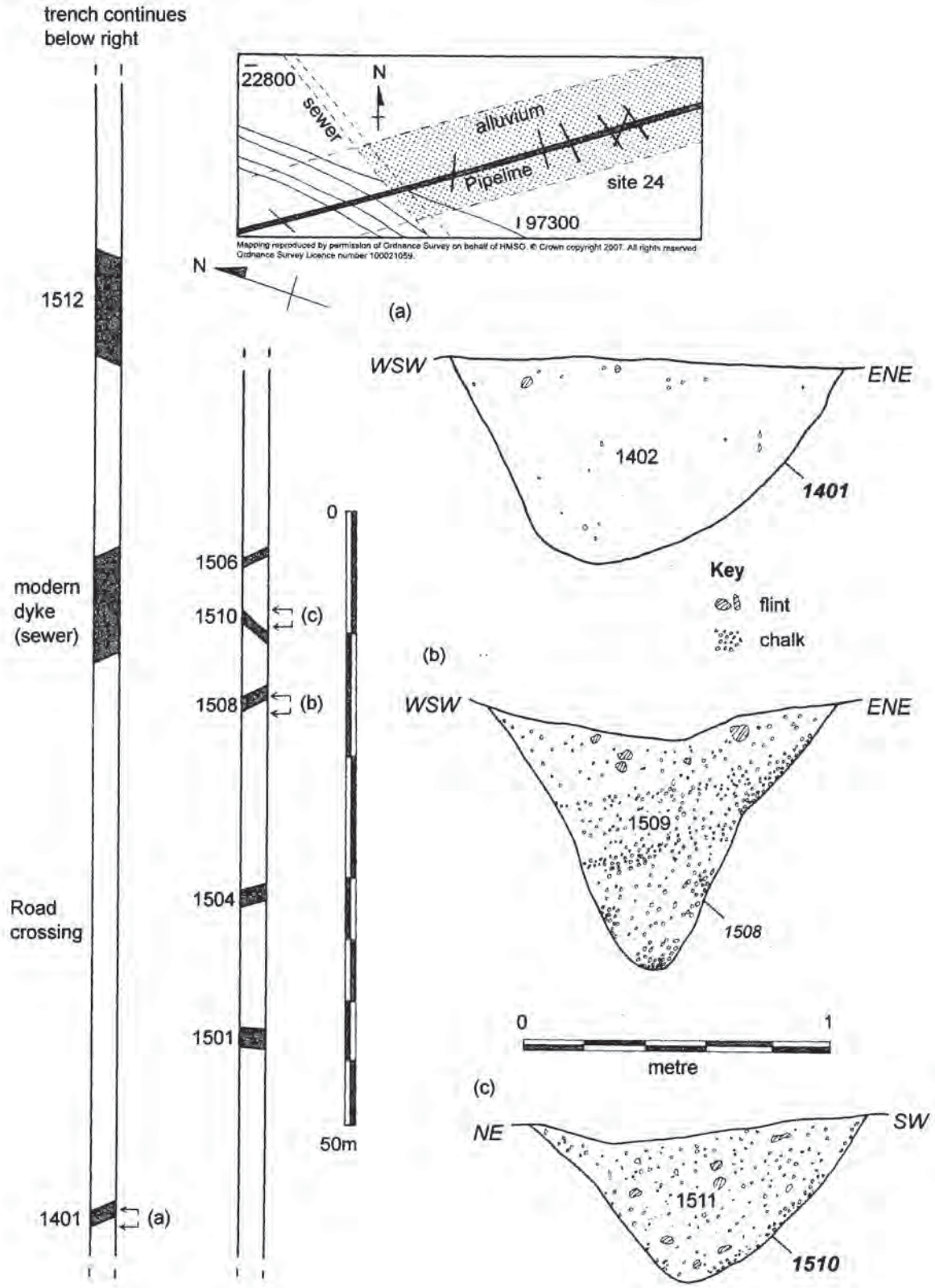


Figure 31: Site 24, Undated ditches, location and sections.

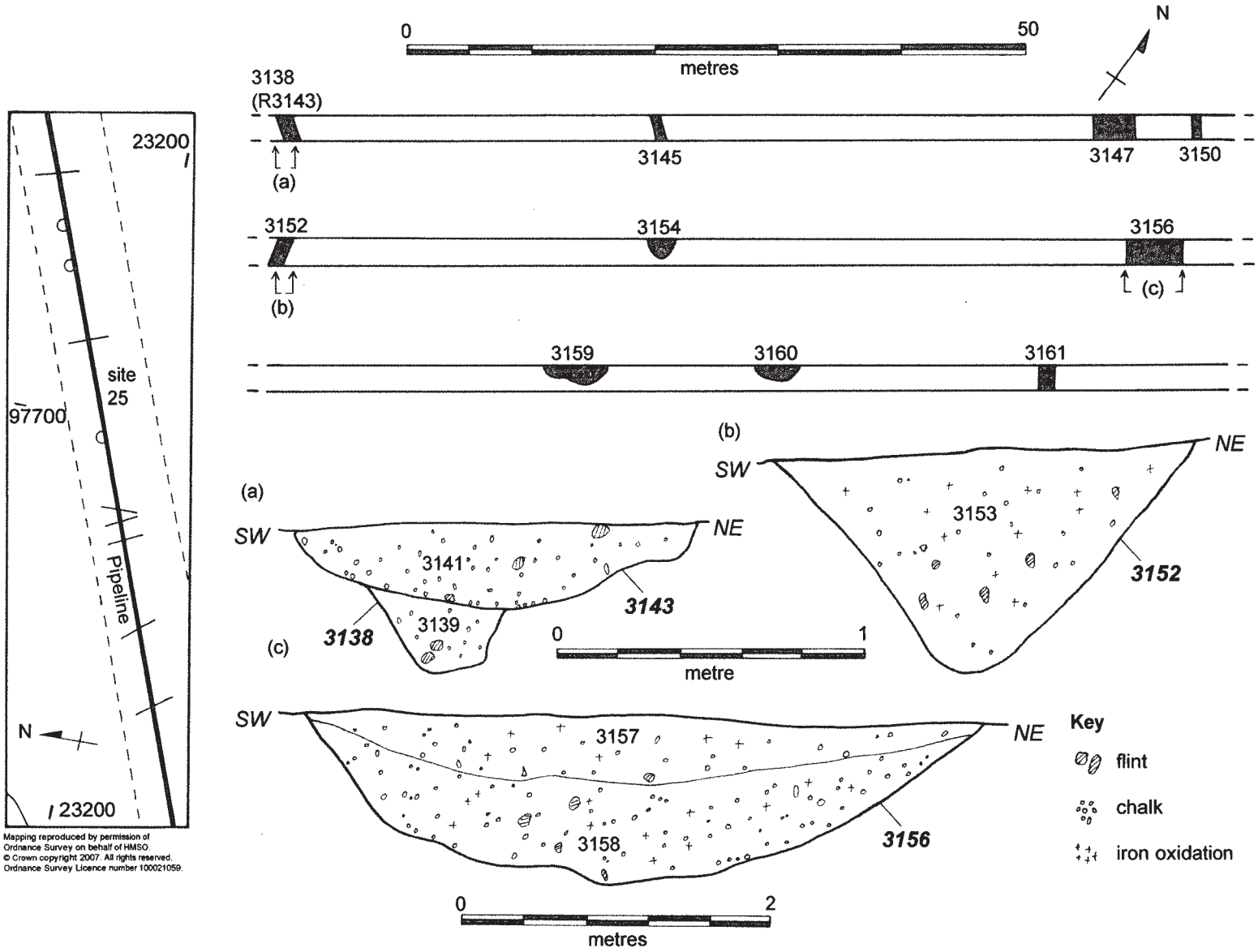


Figure 32: Site 25, Undated ditches and alluvial layers, location and sections.

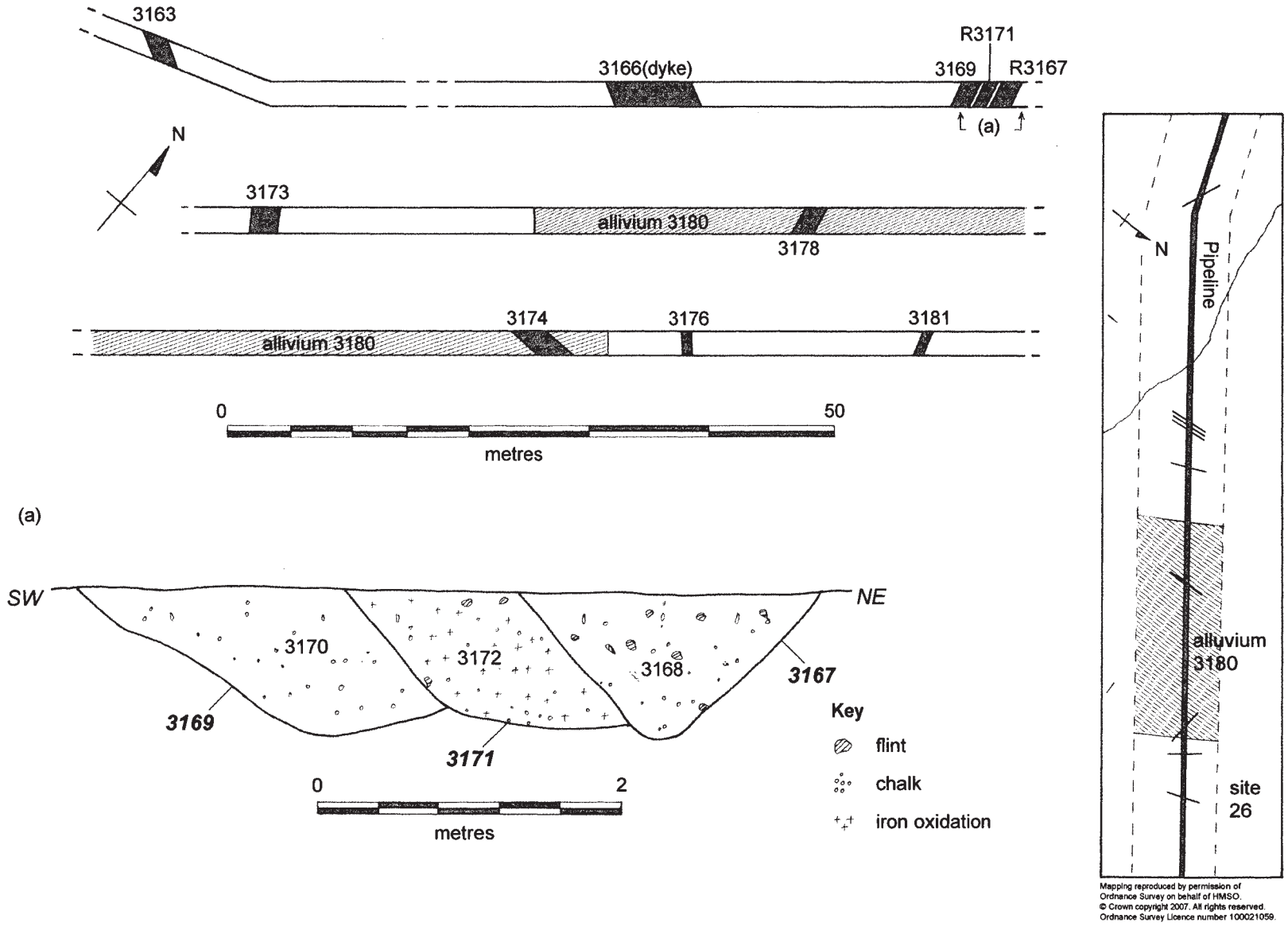


Figure 33: Site 26, Undated ditches, location and sections.

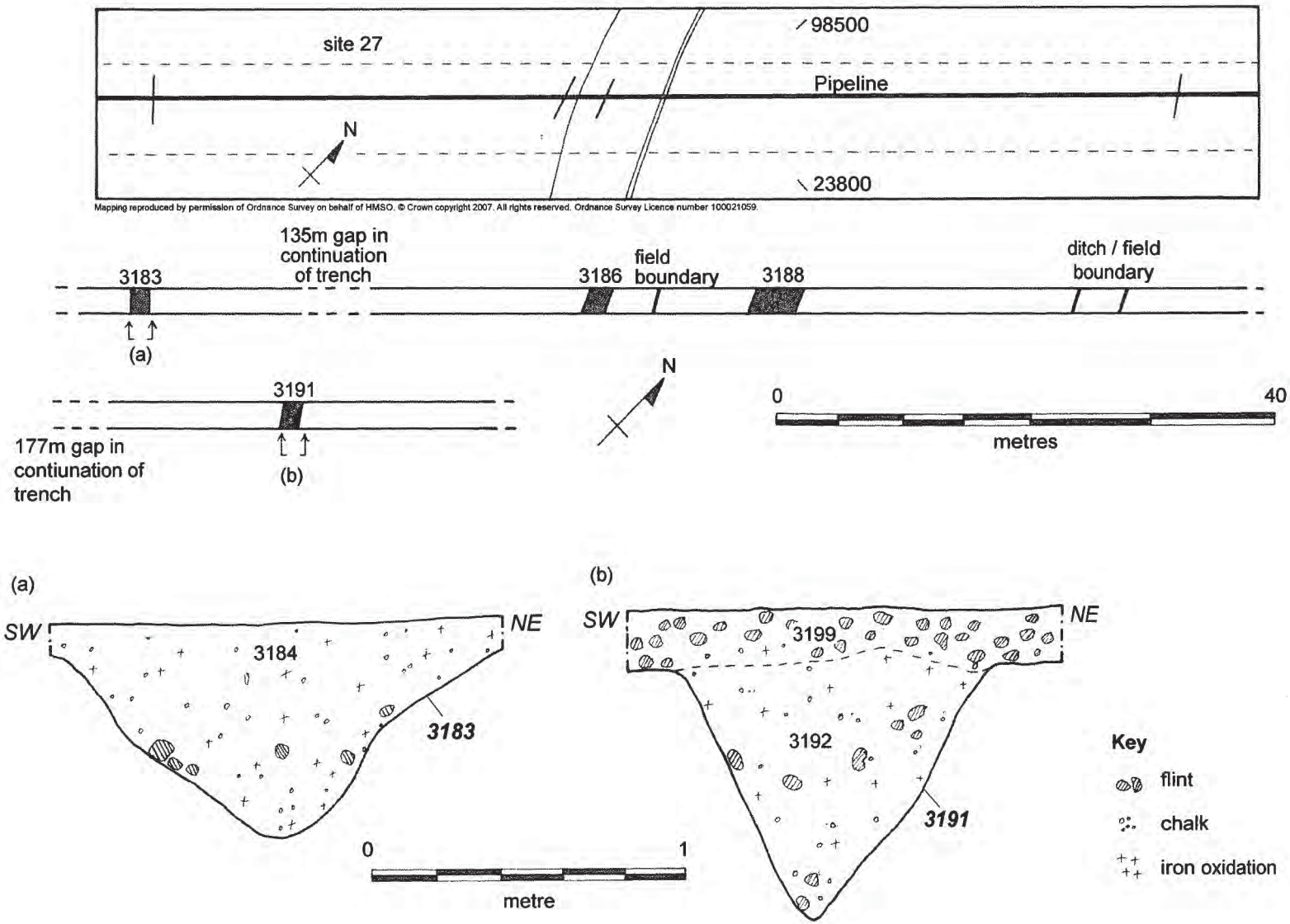


Figure 34: Site 27, Ditches, possibly Roman, location and sections.

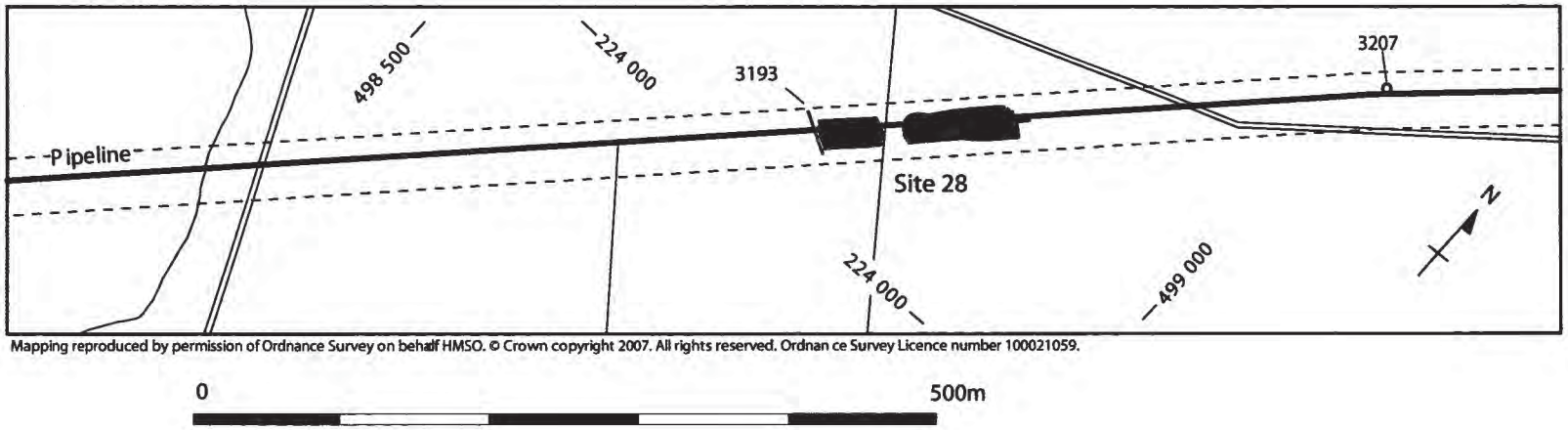


Figure 35: Site 28 location, scale 1:5000.

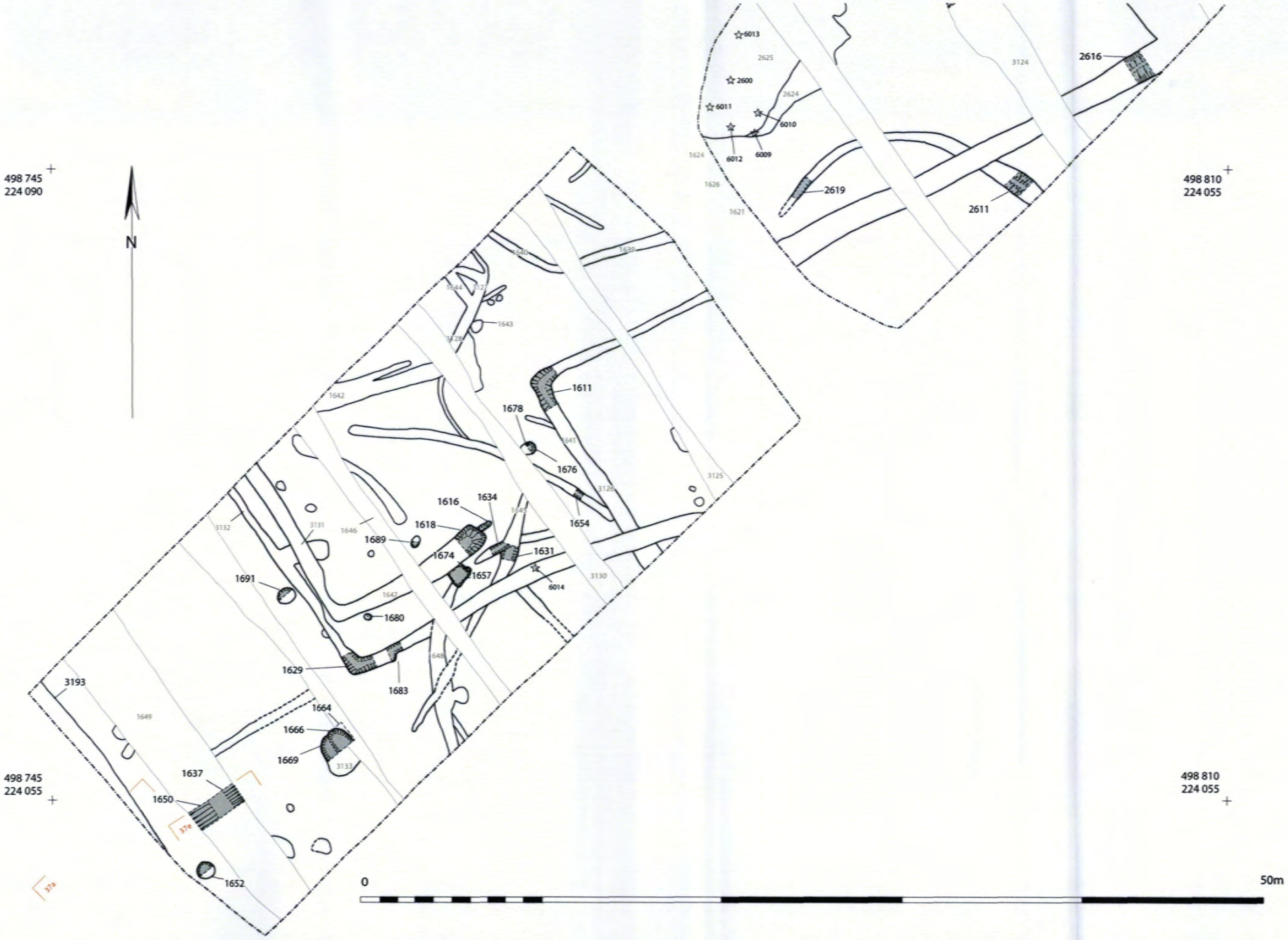
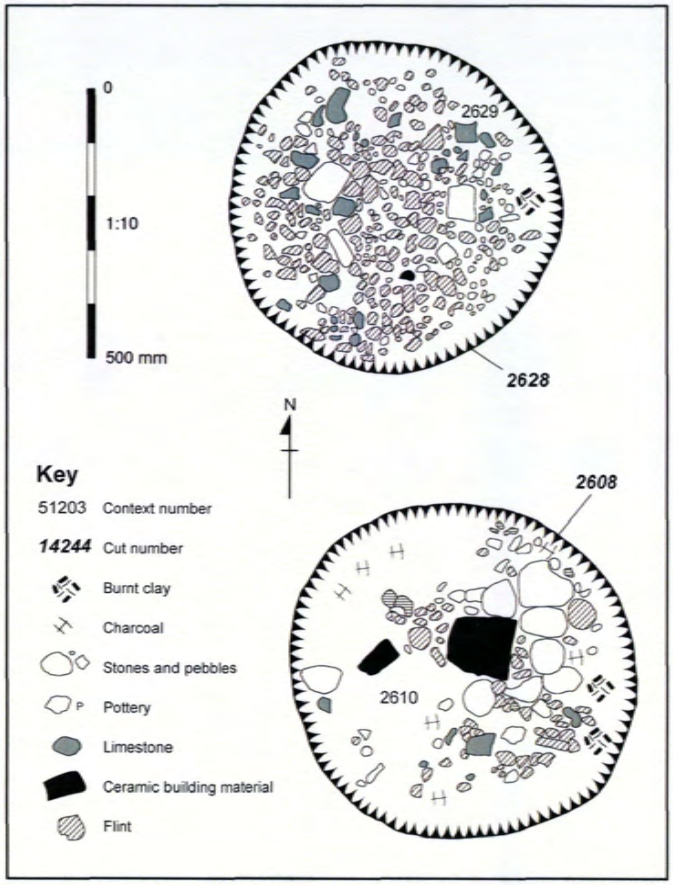


Figure 36a: Site 28, south-western part of the site, scale 1:200



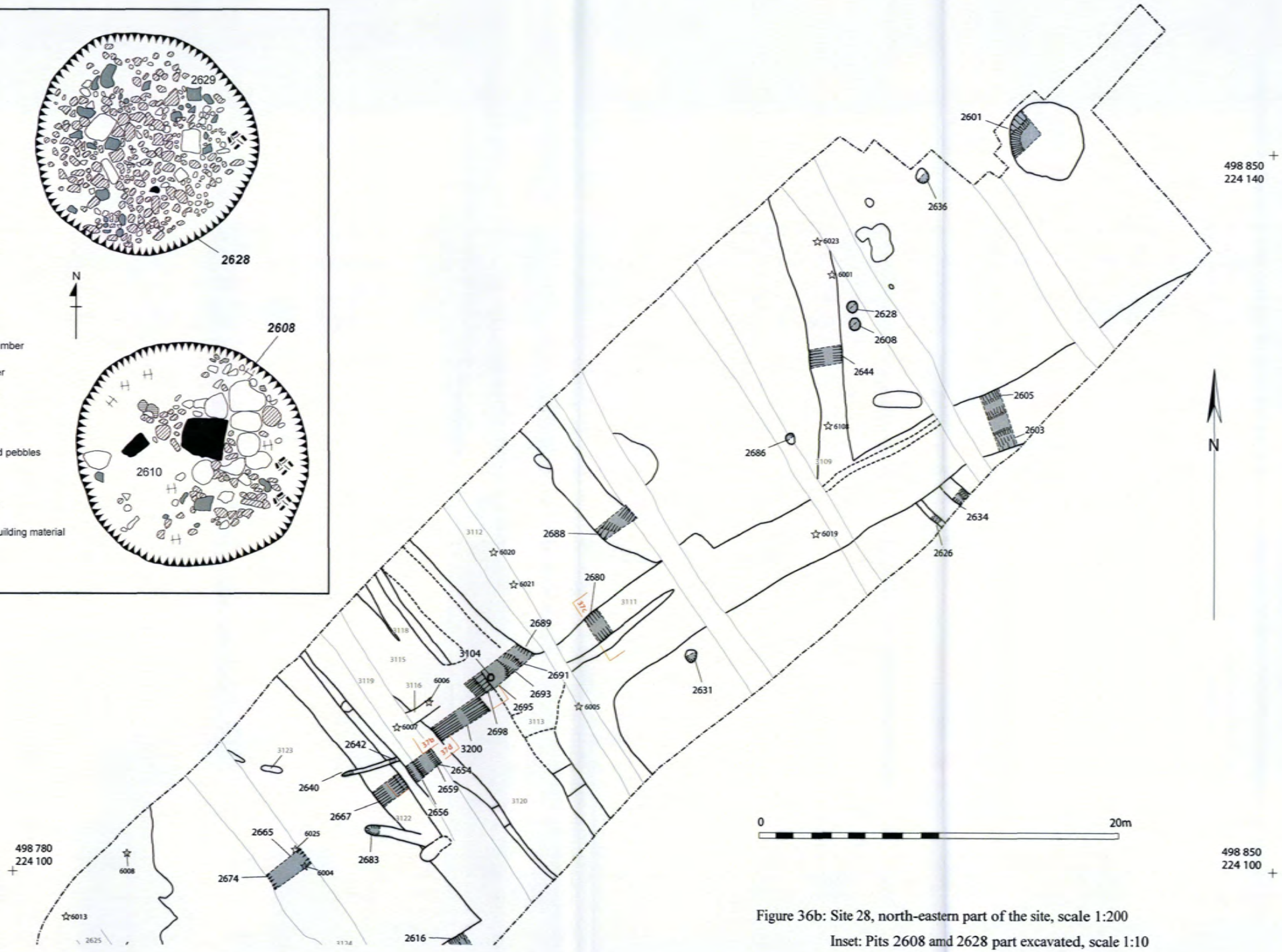


Figure 36b: Site 28, north-eastern part of the site, scale 1:200

Inset: Pits 2608 amd 2628 part excavated, scale 1:10

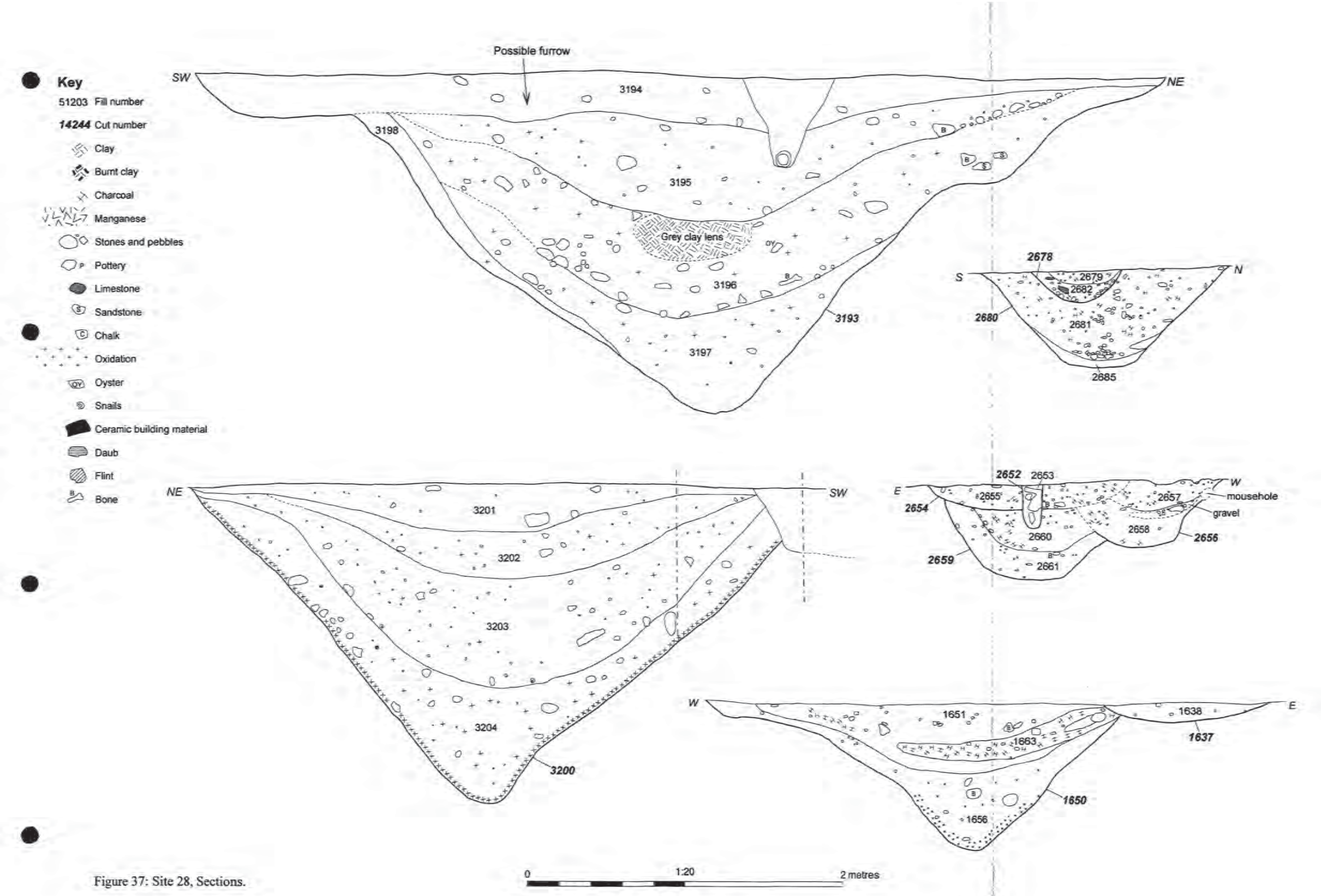


Figure 37: Site 28, Sections.

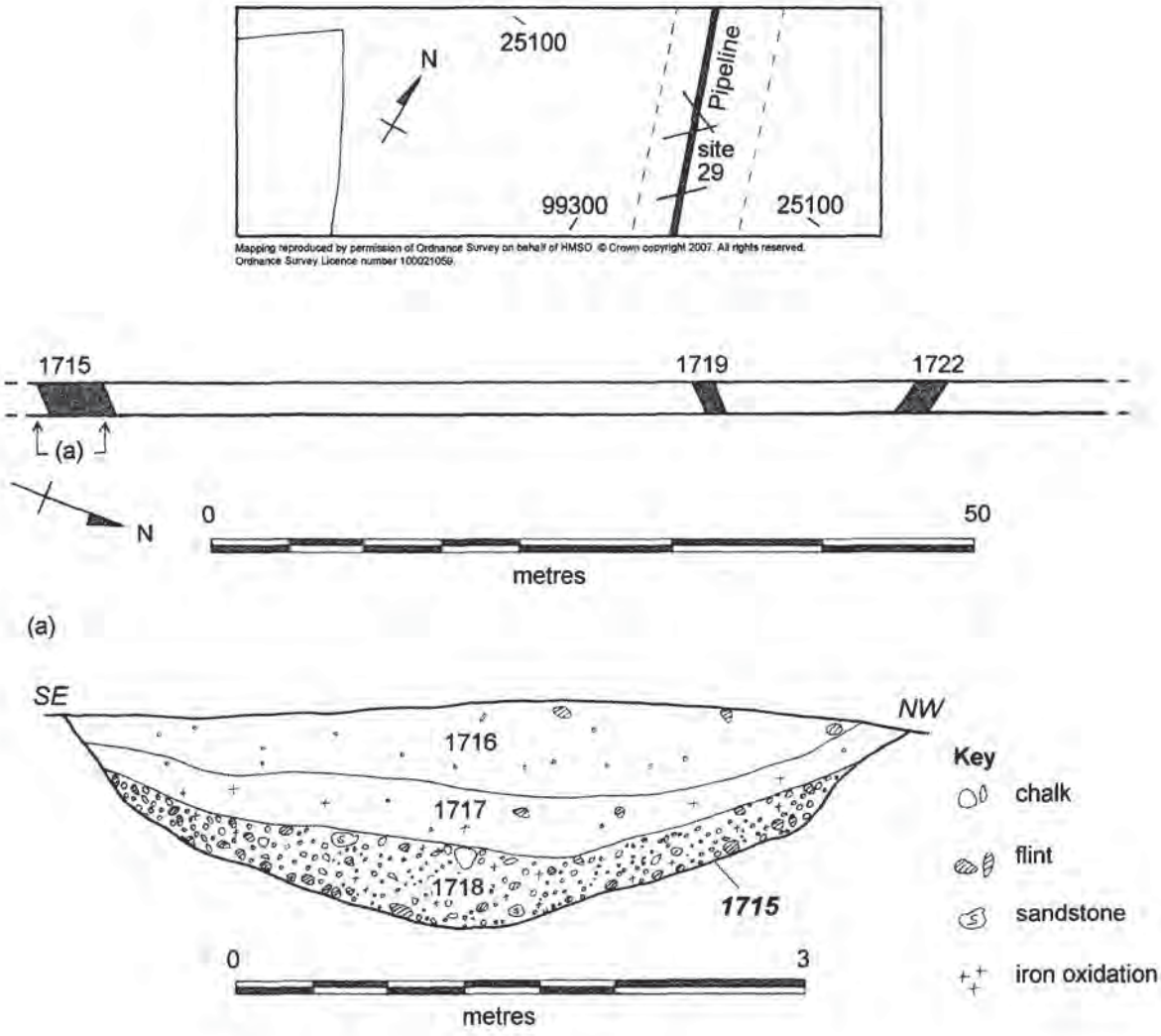


Figure 38: Site 29, Undated ditches, location and section.

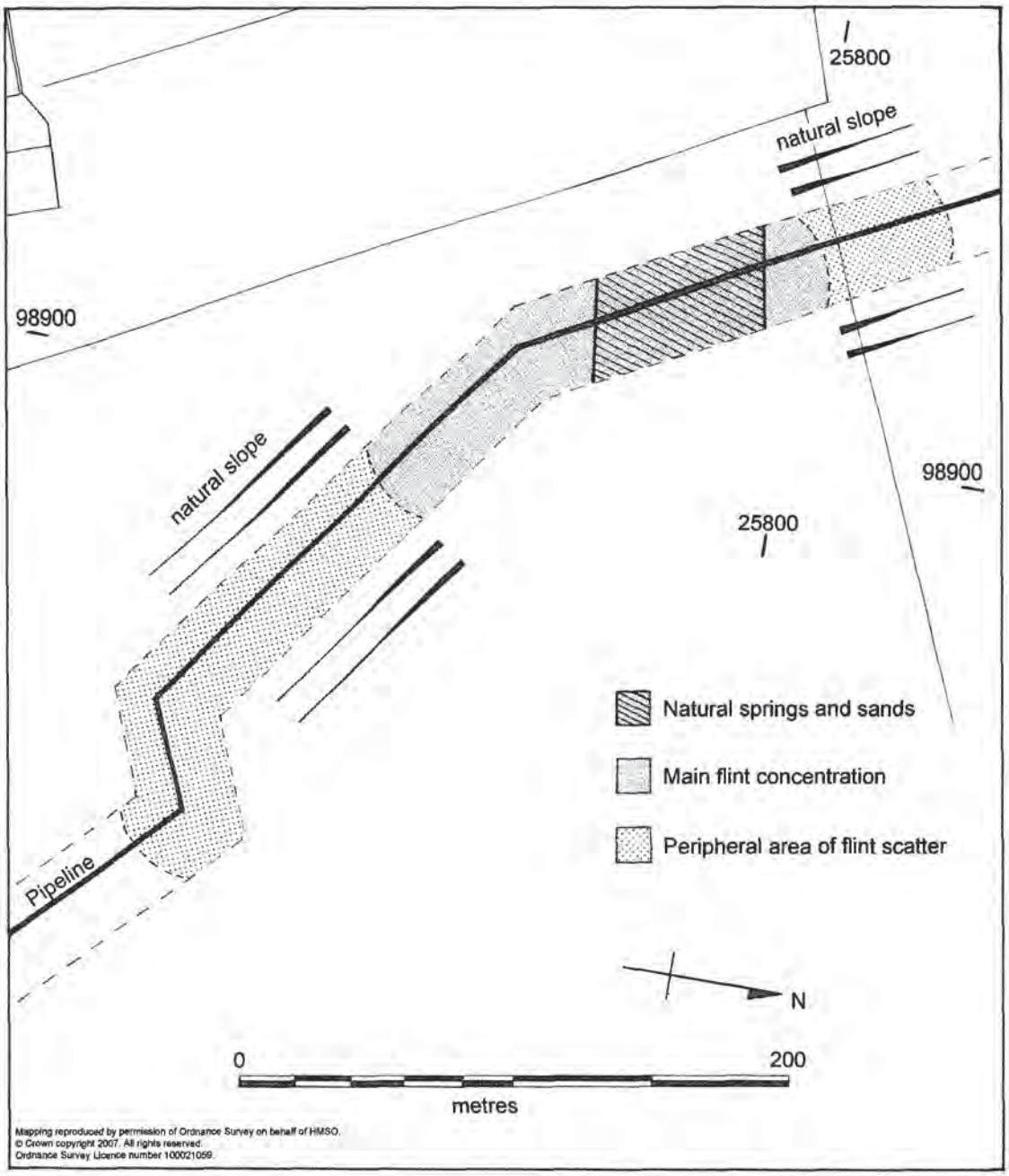


Figure 39: Site 30, Location.

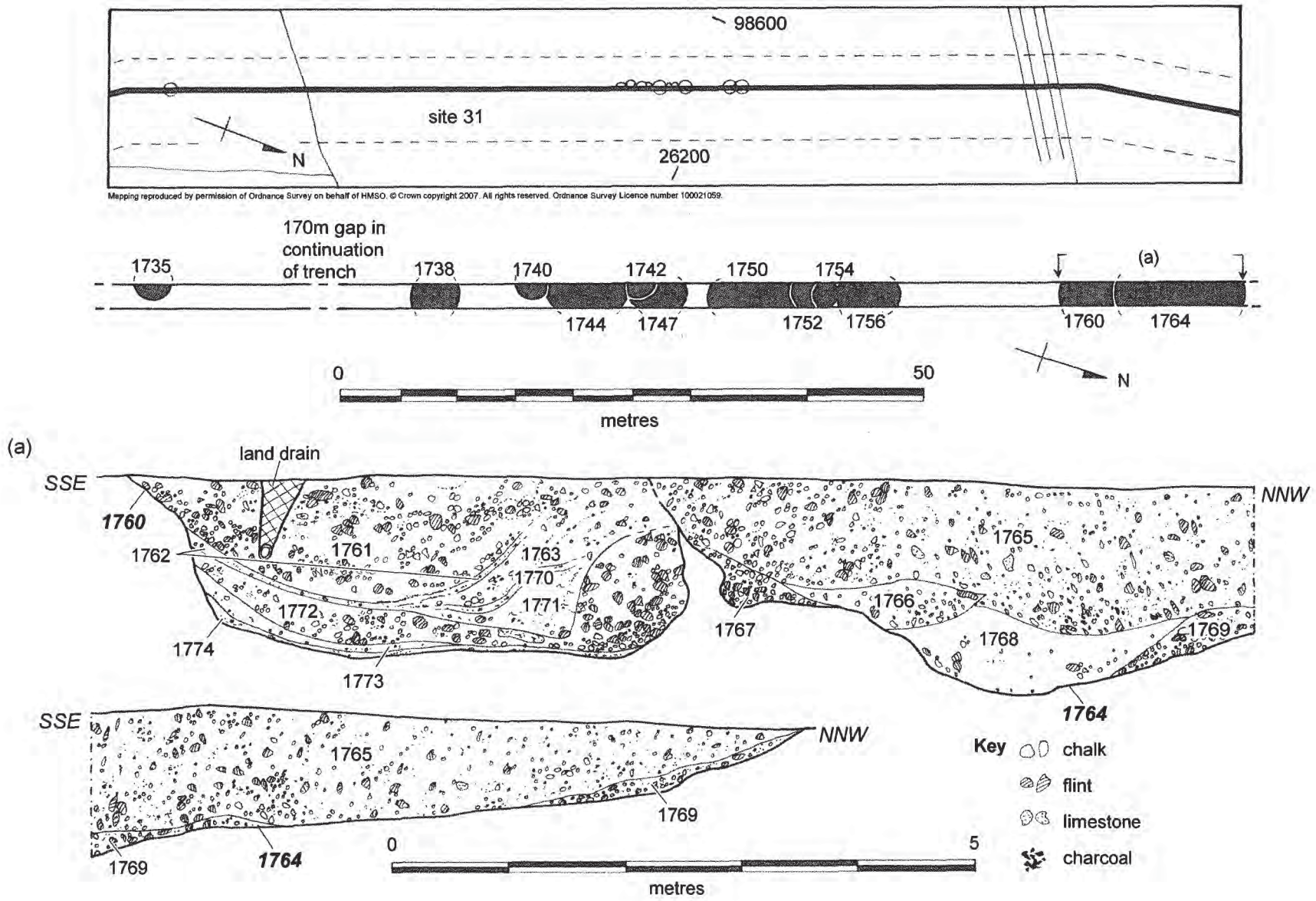


Figure 40: Site 31, Quarry pits, possibly Roman, location and sections.

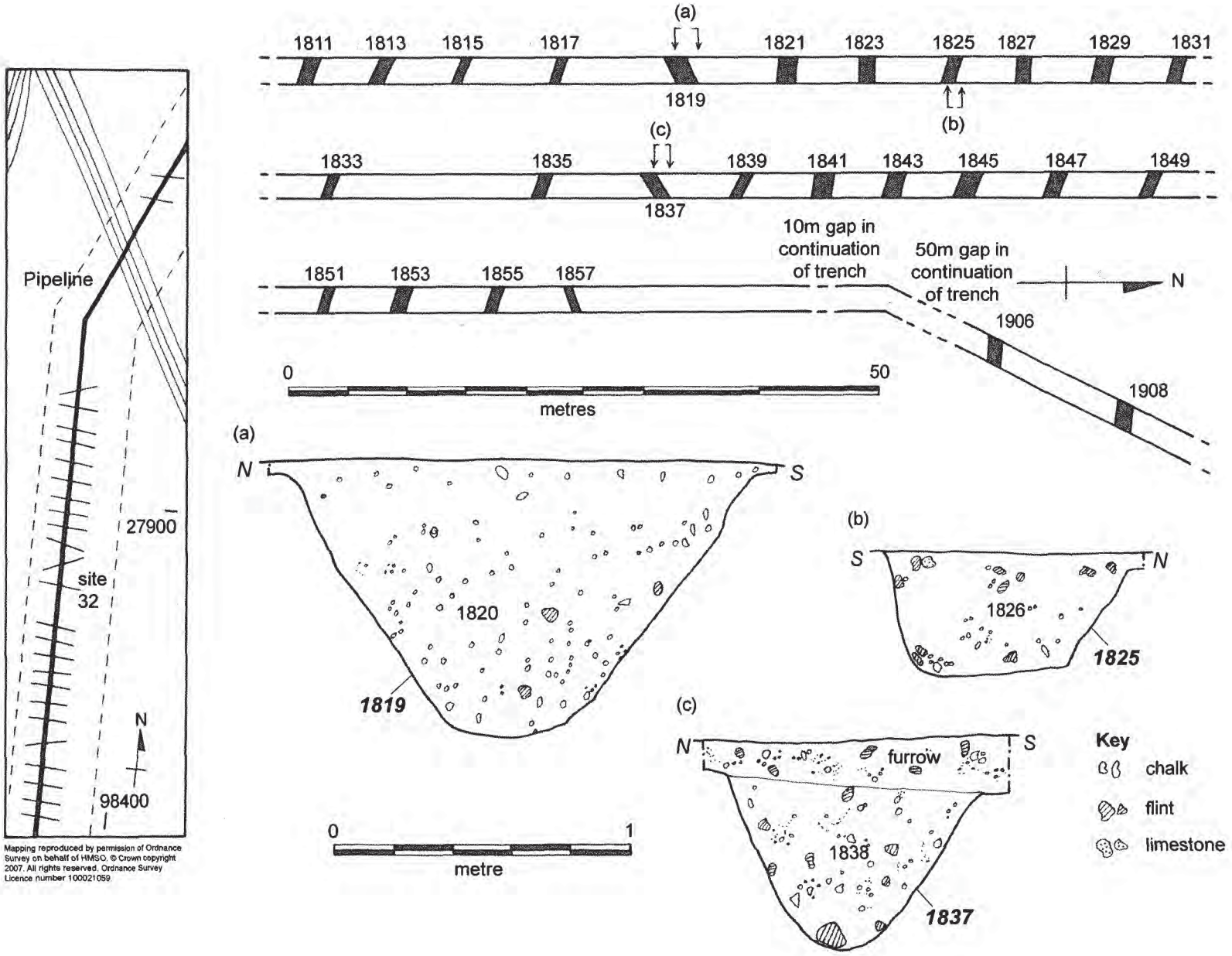


Figure 41: Site 32, Undated ditches, location and sections.

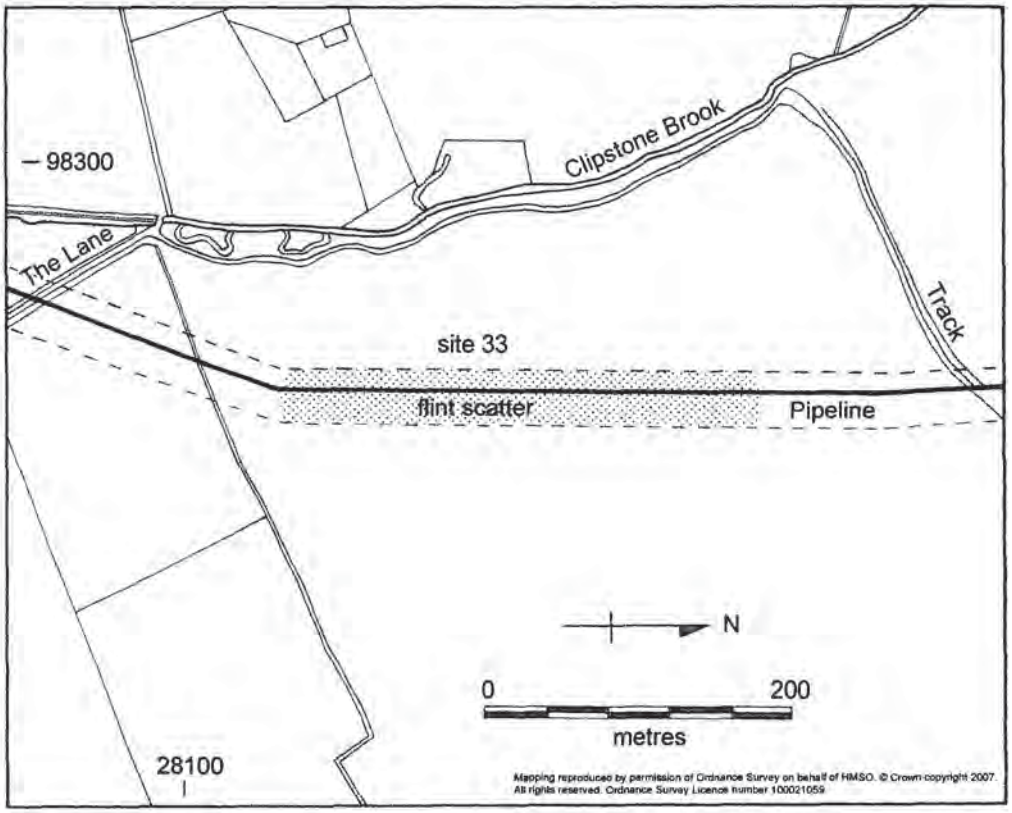


Figure 42: Site 33, Flint scatter, location.

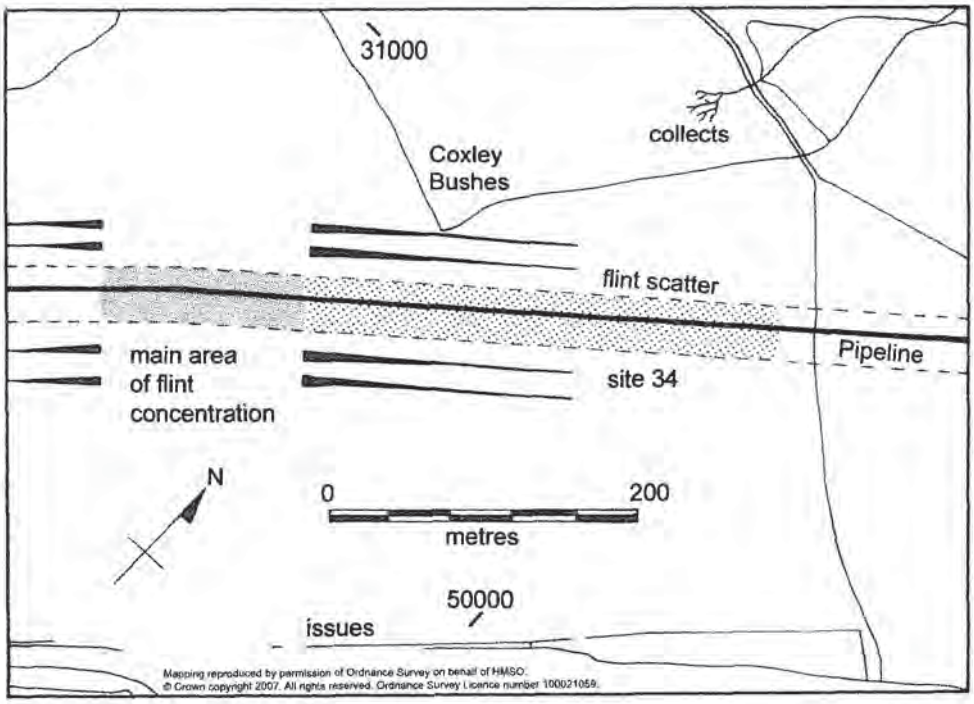


Figure 43: Site 34, Flint scatter, location.

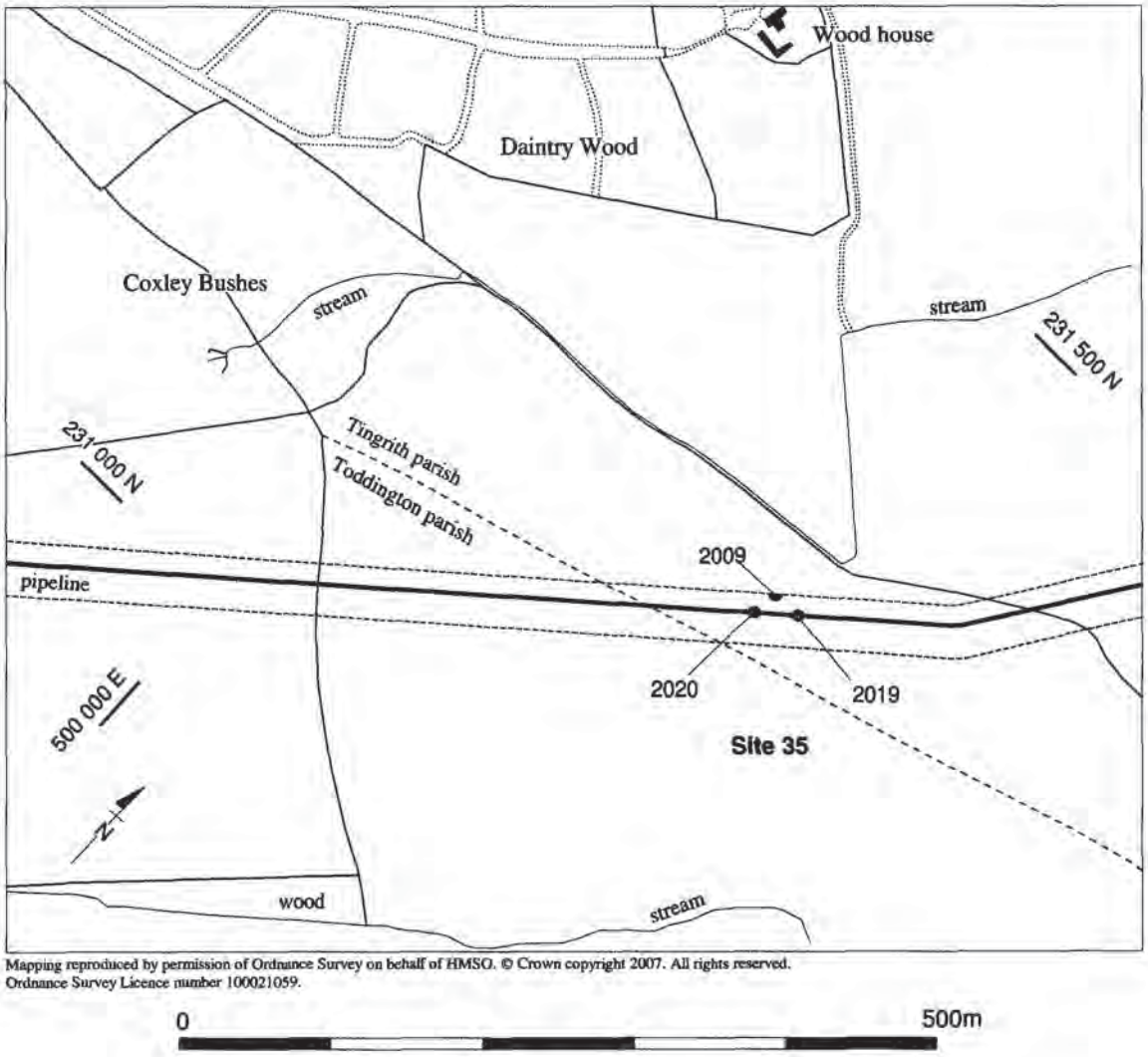
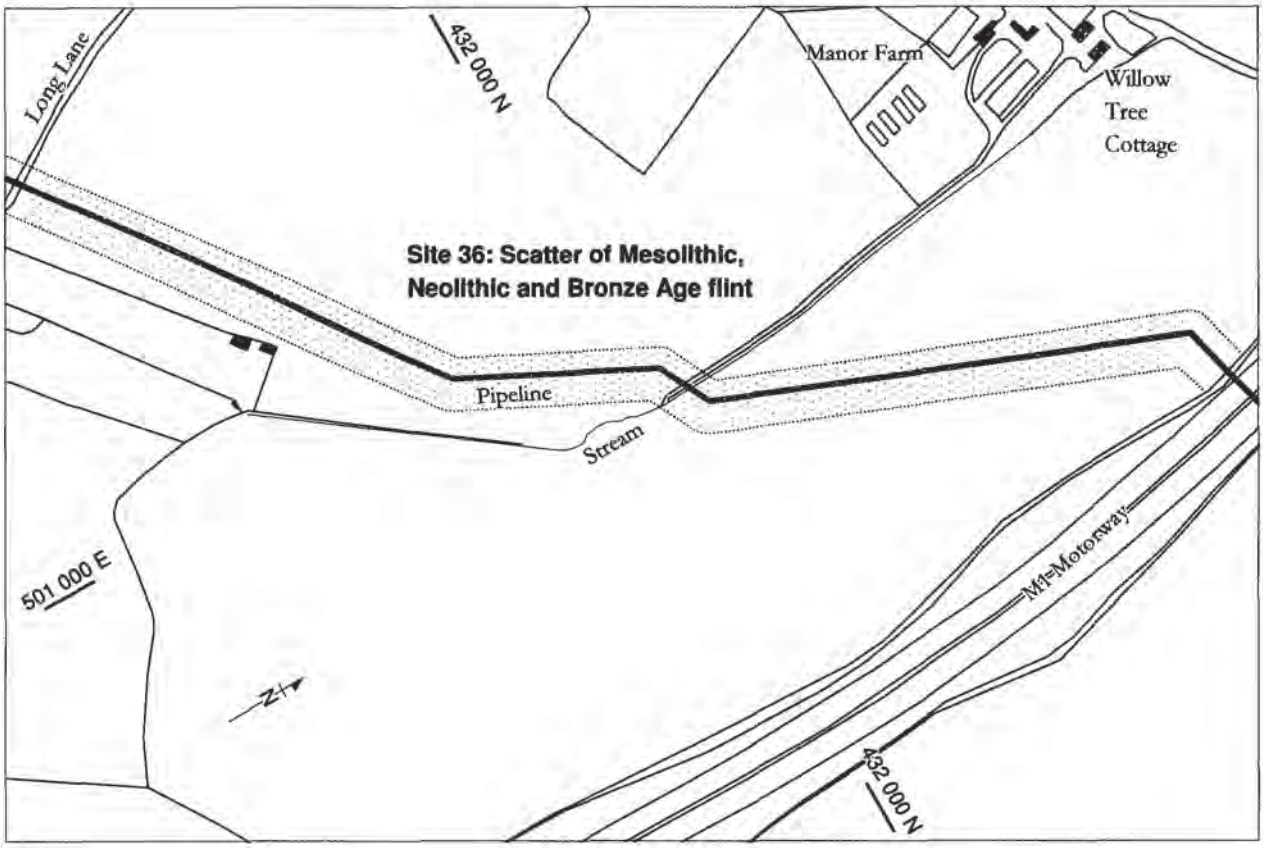


Figure 44: Site 35, post-medieval brick-making waste, location.



0 500m

Figure 45: Site 36, Flint scatter, location, scale 1:5000

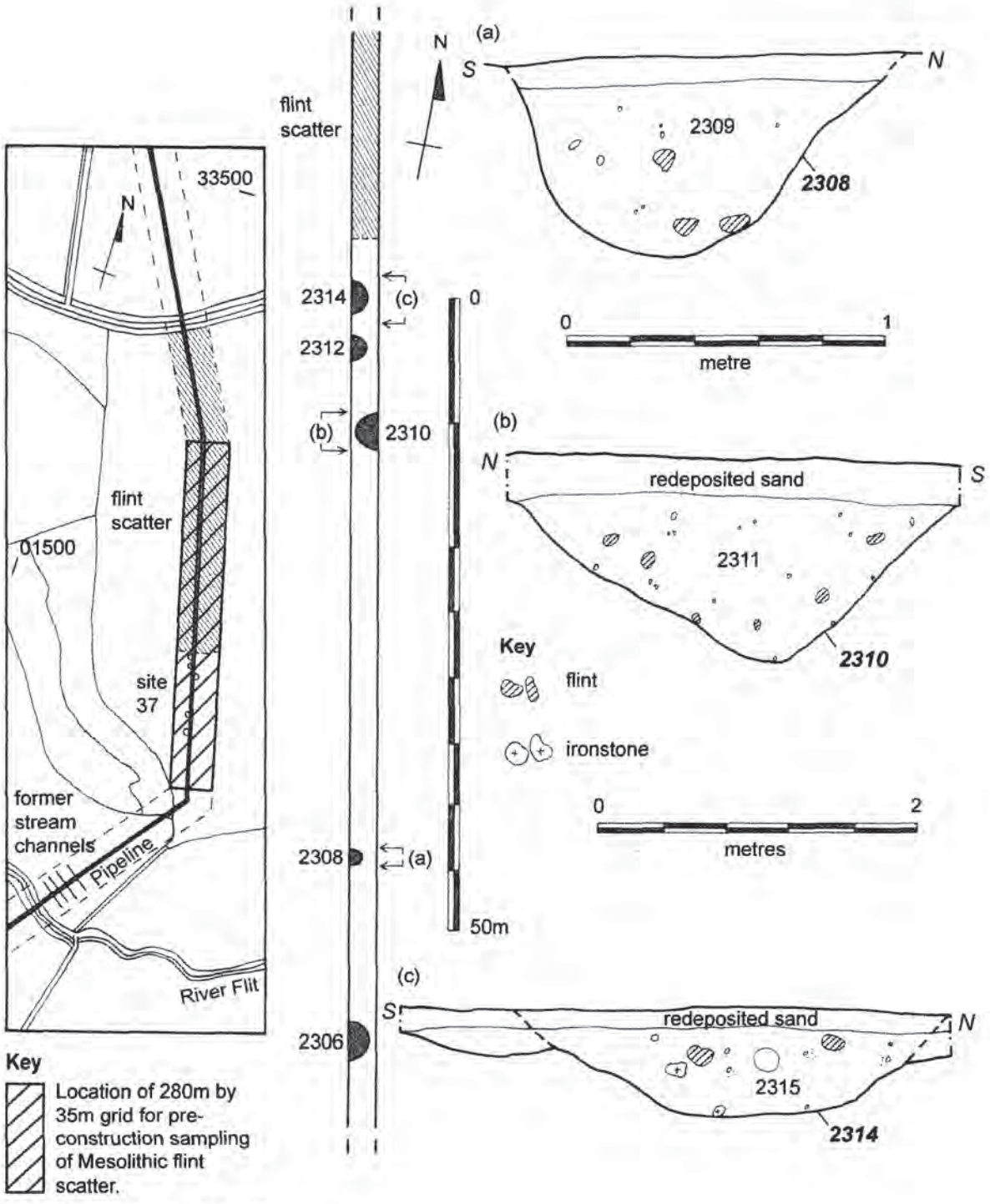


Figure 46: Site 37, Mesolithic flints and later prehistoric finds, location and sections.

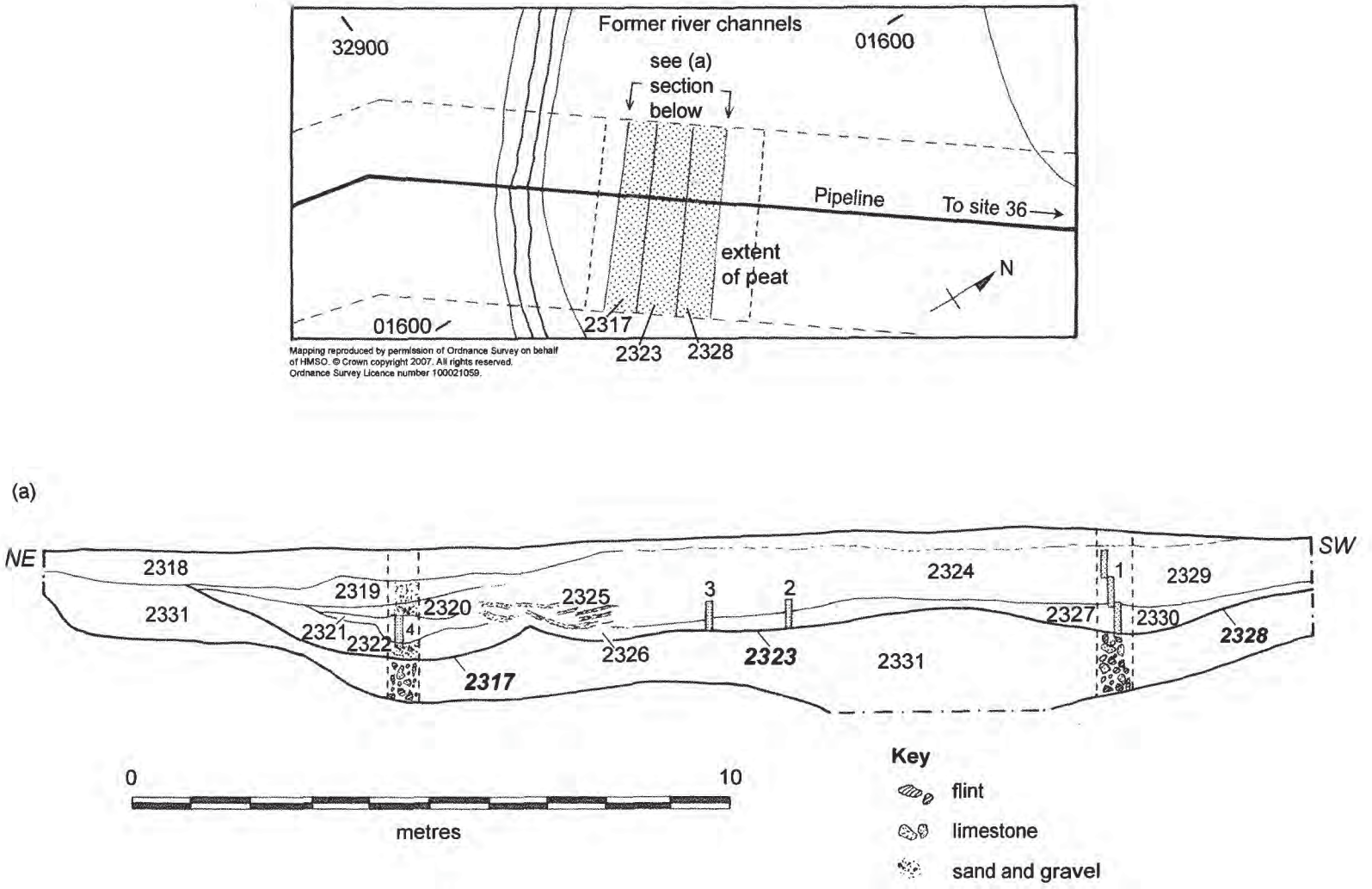
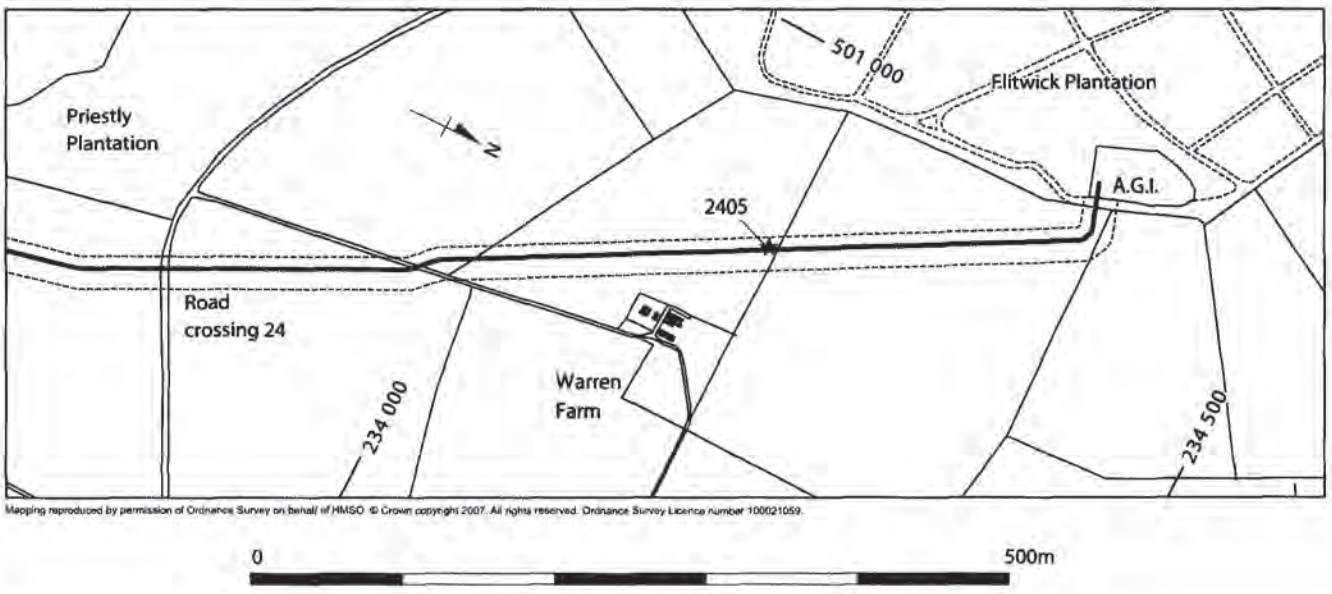
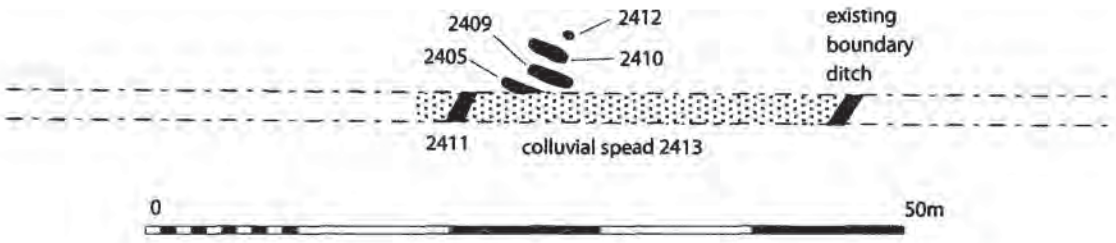


Figure 47: Site 37, Section through old stream channels, showing location of pollen samples 1 - 4.





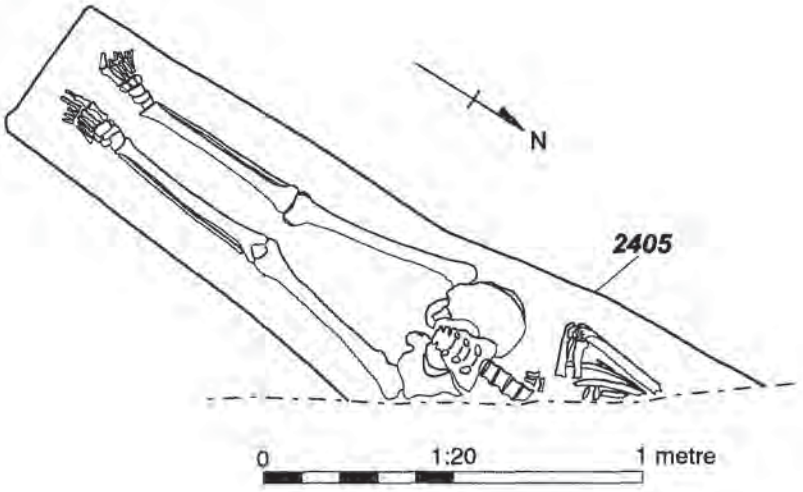


Figure 48: Site 38, Anglo-Saxon graves, location and detailed plan of grave 2405.

Dwg	Context	Site	Plot	Date	Description
1	601	-	55	?Meso	Core: 1 platform, medium exploitation; wt 10g.
2	1608	28	125	LN/EBA	Knife: plano-convex, invasive retouch, patinated.
3	617	13	63	Meso/Neo	Flake: tertiary, axe-trimming, patinated.
4	2101	36	158	BA	Arrowhead: barbed and tanged; SF 5262.
5	2008	36	156	Meso	Core: 2 opposing platforms, high exploitation, patinated; wt 54g.
6	1902	-	144	?EBA	Knife: semi-invasive retouch.
7	2006	34	154		Scraper: non-flake, heavy edge wear.
8	1901	33	143	LN/BA	Notched flake: two small ?notches, hard hammer production.
9	1100	20	99	Meso/EN	Core: 1 platform, medium exploitation, patinated; wt 156g.
10	2007	35	155	LN/EBA	End-scraper: semi-invasive retouch.
11	2007	34	155	Mesolithic	Tranchet axe: bifacial retouch, SF 5251.
12	1306	22	113	?IA	Pounder: coarse flaking, heavy use, SF 5194.
13	1905	-	147		Notched flake: heavy patination.
14	1365	22	113	?Meso	Notched flake: soft hammer.

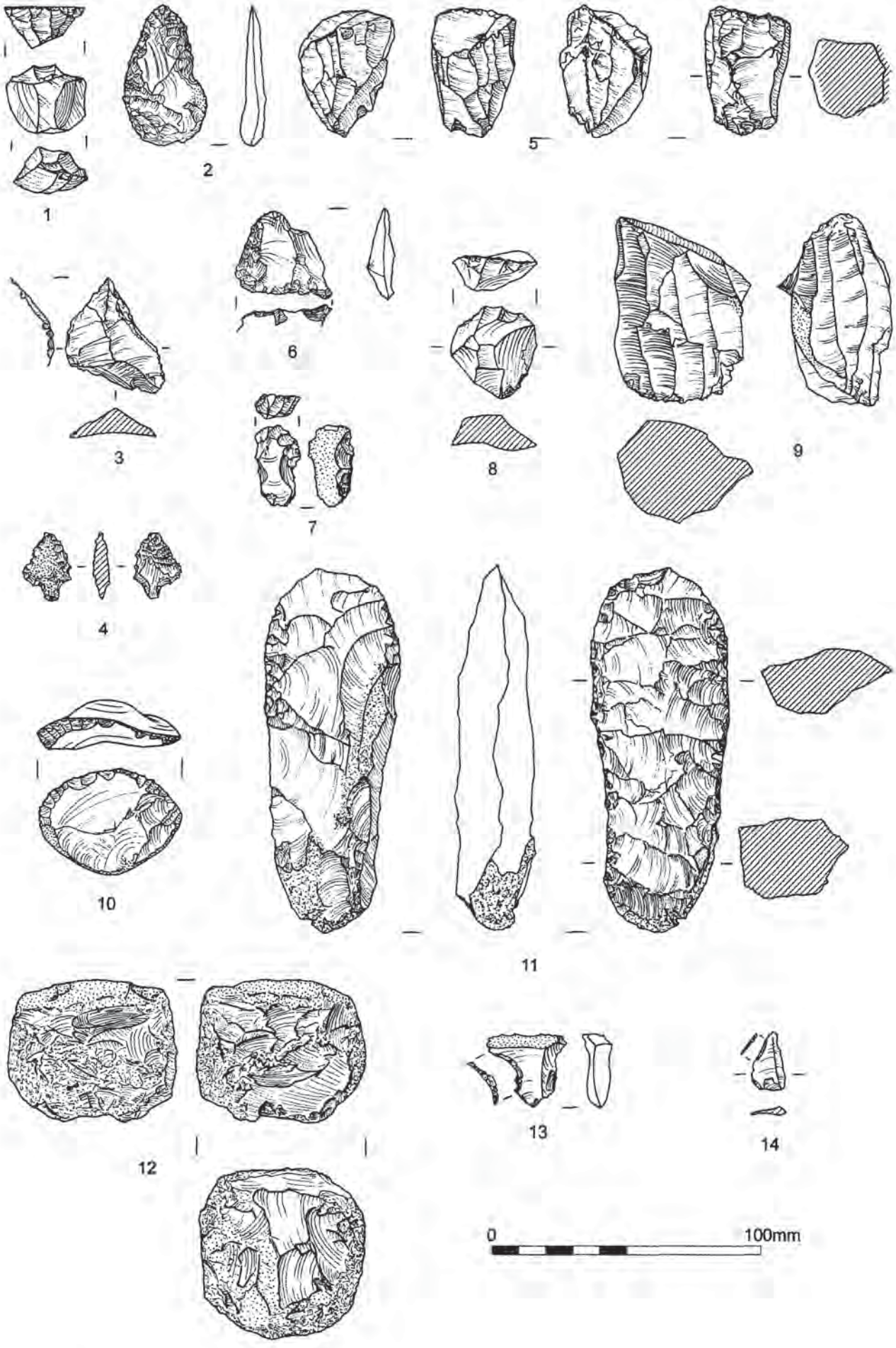


Figure 49: Flint.

Illustrated prehistoric pottery

Dwg	Context	Description
1	616	Early Bronze Age, possible Biconical Urn.
2	1113	Rim from probable Early Neolithic round based bowl.
3	2602	Late Bronze Age or early Iron Age, large rim sherd from a slack-shouldered jar.
4	2315	Middle to late Iron Age heavy-rimmed Midlands Scored ware vessel.
5	733	Late Iron Age, possible burnished bowl with combed decoration.
6	709	Late Iron Age comb-decorated sherds.
7	717	Late Iron Age comb-decorated sherds.
8	827	Late Iron Age, Belgic vessel.

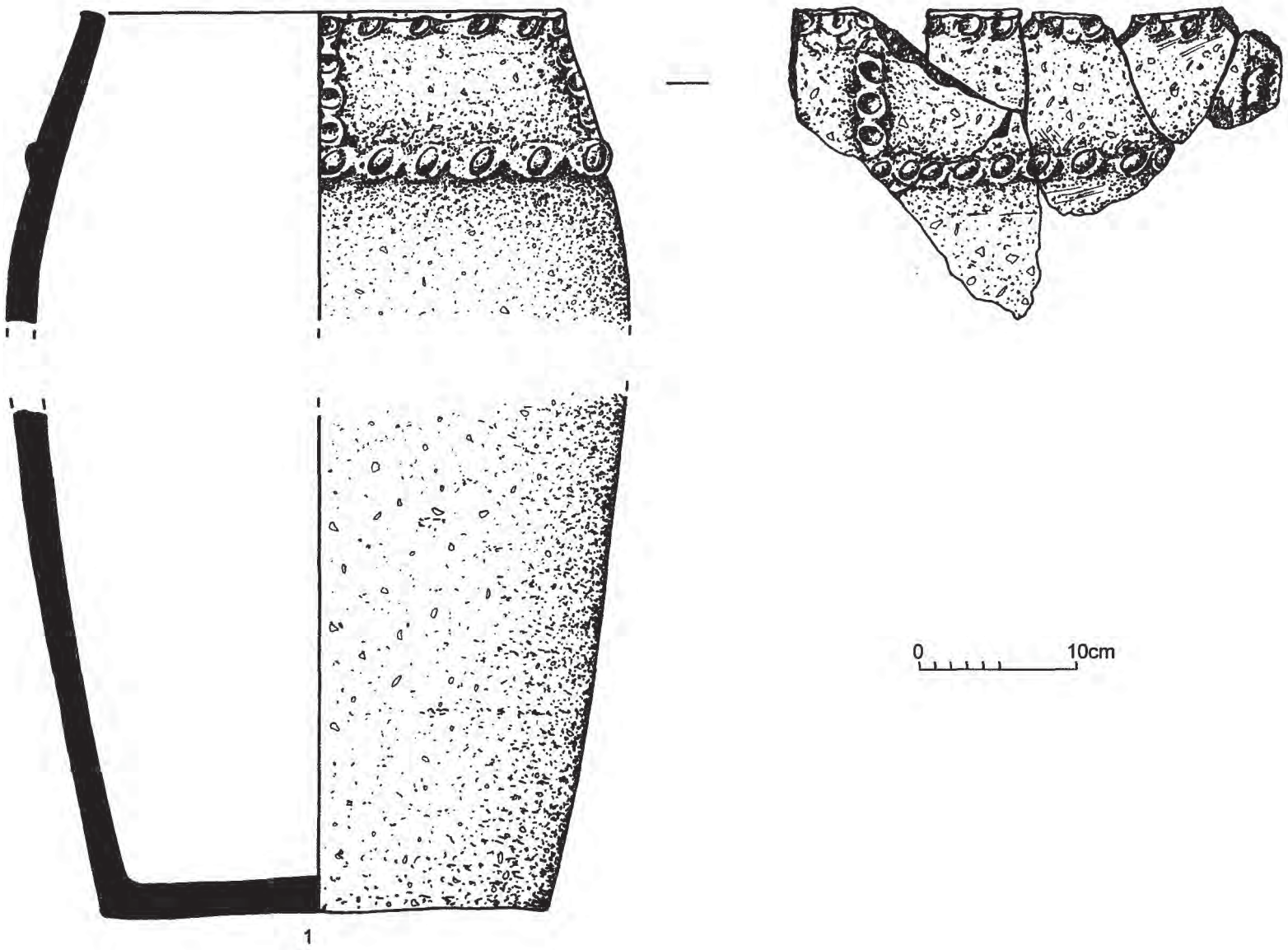


Figure 50: Prehistoric pottery, Bronze Age vessel from site 13.

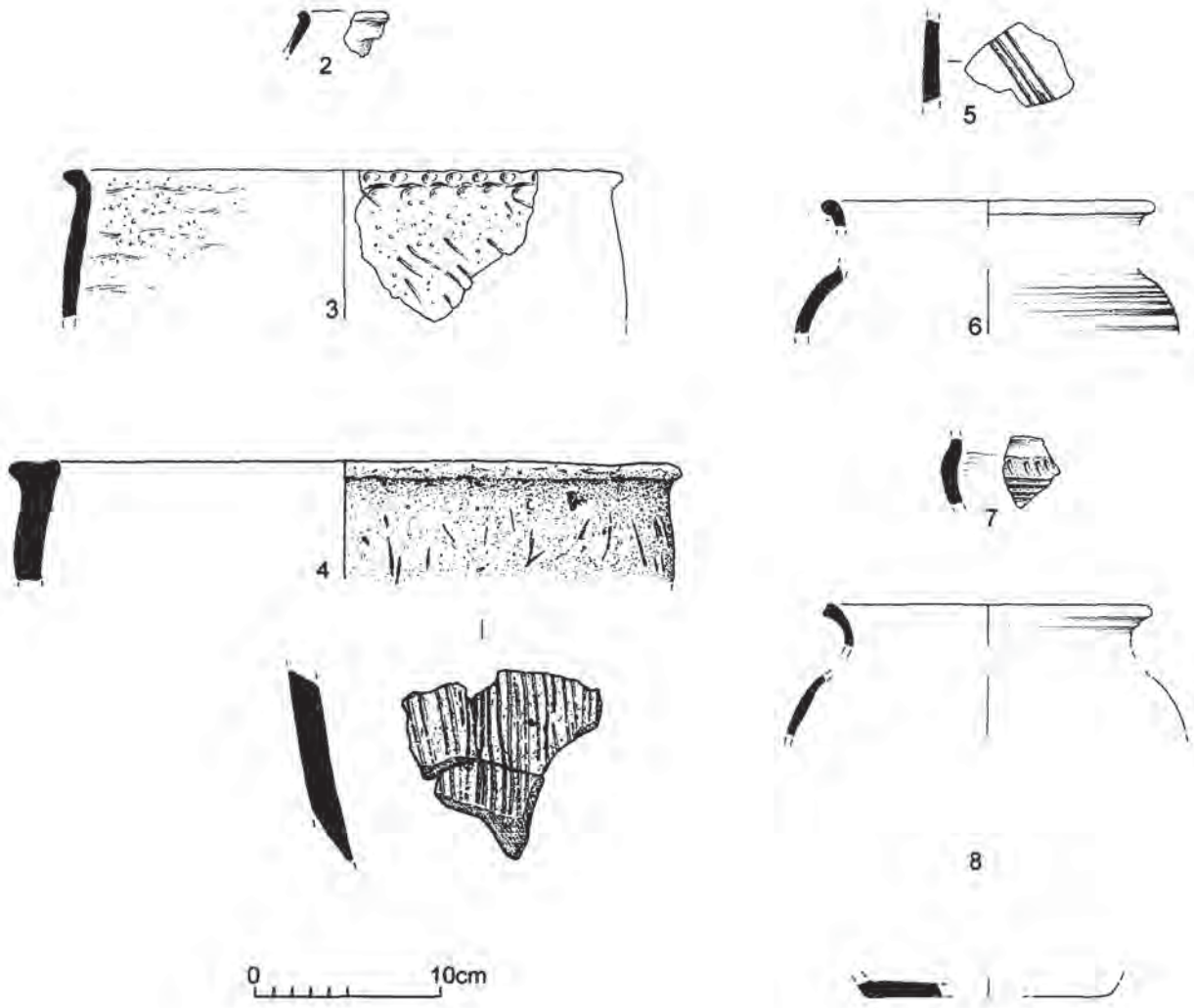


Figure 51: Prehistoric pottery.

Dwg no	Context	Fabric	Form	Description
1	11	ORAN	BCUR	A curved-rimmed wide-necked bowl in an orange fabric (Marney group 40) which is similar in style to Marney, 1989 fig 12 no 53, dated to the mid to late second century.
2	8	OX	JNN	A narrow necked jar in a granular, unsourced oxidised fabric with unusual, rectangular, stabbed decoration at the neck. No parallel has been located for this vessel which came from a context with pottery of mixed dates and dated by the latest sherd to the mid third century or later.
3	15	OXRC	B38	An Oxfordshire red colour-coated bowl in the style of samian form Dr38, dated from the mid third to the fourth century.
4	8	OXRC?	B35	In the same fabric as no 3, but the colour-coating has been completely destroyed by abrasion. The dish is in the style of samian form Dr35, and dated from the mid third to the fourth century.
5	2511	COAR	JUR	A jar with an undercut rim in a coarse quartz tempered fabric from a fourth century context and very similar to late fourth century jars noted at Portchester.
6	363	GREY	BFL	A near complete, flanged bowl with a groove beneath the rim in a fine, grey fabric with few inclusions from a context dated from the early to mid second century.
7	2509	GREY	BFBL	A bowl with a low-bead and flange in a grey ware fabric with fine angular quartz in a silty matrix from a mid to late fourth century context.
8	378	GROG	JS	A large grog-tempered storage jar from a third century or later context associated with post-Roman pottery.
9	2513	NVCC	FS	A Nene Valley colour-coated flask in a late fabric with cream painted decoration of mid third or later date.
10	342	OXGR	BCUR	A curved-rimmed, wide-necked bowl in an oxidised fabric with minimal grog-tempering, of probable later first to mid second century date.
11	2520	OXPA?	OPEN?	A probable Oxfordshire parchment open vessel with red painted decoration on the interior surface from a fourth century context.
12	2520	PIGR	JS	A narrow-necked storage jar in a soft, pink grog-tempered fabric (Marney group 2) paralleled in Marney, fig27 no 2, from a fourth century context.
13	364	SMSH	JCUR	A handmade jar with a simple curved rim and a low shoulder in South Midlands shell-tempered ware (Marney group 1), of probable second century date.
14	329	SMSH		A storage jar in South Midlands shell-tempered ware with an unusual decoration stabbed on the top of the rim from a fourth century context.
15	403	GROG		A ?handmade, grog-tempered plain-rimmed dish from a context dated from the later third to the fourth century but containing several examples of later first to second century wares. A similar vessel is illustrated in Marney, 1989 fig 34, no 14 where is it predominantly dated from the mid first to the early second century.
16	436	GYBN	CPN	A handmade, native style cooking pot with a slashed rim in a grey sandy fabric with distinctive brown surfaces identical in form to that illustrated in Marney, 1989, fig 34, no 2 which is in a shell and grog-tempered fabric, unstratified but likely to be of mid first to early second century date.
17	403	LOND		A fine greyware in a black silty fabric manufactured in the style of samian form Dr37 with a compass-scribed decoration and burnished surfaces. Virtually identical forms and fabrics have been noted in the Nene Valley (Howe et al, 1980, fig 2, no 23) where it is dated to the first quarter of the second century.
18	459	NAT	CPN	As 16 above, but in a coarse sandy, native tradition fabric.
19	461	NVGW	JWM	A wide-mouthed jar in Nene Valley greyware from a third century context.
20	432	PINK	BWM	A wide-mouthed bowl in a fine pink fabric (as Marney group 18), from a late first to second century context. The rim is similar to that illustrated in Marney, 1989, fig 43, no 8.
21	524	GREY?	BPR	A fine grey ware plain-rimmed bowl which has been heavily burnt of probable mid second to early third century date.

Dwg no	Context	Fabric	Form	Description
22	555	GROG	JS	A wheel-finished, large storage jar with a constricted neck in a grog-tempered fabric. The rim is very similar to that illustrated in Marney, 1989, fig 40, no 51 form the Caldecote kiln II, dated from the late first to the mid second century.
23	510	GROG	STR?	The base of a probably handmade jar which has been pierced after firing and may have served as a strainer from a context containing post-Roman wares. A similar vessel is noted in Marney, 1989 (fig 37, no 84) in a local Belgic grog-tempered fabric (group 46) of mid to late first century date.
24a	520	SMSH	DPR	A small, plain-rimmed dish in South Midlands shell-tempered ware with slight rilling on the exterior surface, similar to that illustrated in Marney, 1989, fig 26, no 39, which she suggests is largely fourth century in date.
24b	2930	BEGR	CPN	A handmade, cooking pot in the belgic style of Late Iron Age to early Roman date, but from a context broadly dated from the first to early second century, in a grog-tempered fabric.
25	2930	BEGR	CPN	As above.
26	2930	BEGR	JL	A large jar in the same fabric as above.
27	2753	GFIN	BKCOR	A wheelmade beaker with an everted rim and high shoulder with groups of barbotine dots arranged in a diamond pattern in a fine grey fabric. This vessel type is of Flavian date but from a context containing pottery of mixed date and dated by the latest sherds to the mid to late second century.
28	2787	GREY	JCHR	A greyware jar with a defined, channel rim from a context dated from the early to mid second century.
29	1363	GREY	JCHR	As above with a double channel rim.
30	2752	GREY	JCHR	As No 28 from a mid to late second century context.
31	1315	GREY	JCHR	As No 28 and paralleled in Marney, 1989, fig 39 no 25 from the Caldecote kilns.
32	1311	GREY	JCUR	A high-shouldered necked jar featuring a cordon at the neck with burnishing on the rim and at the base from a context dated from the mid to late first to the early second century.
33	3003	GREY	JCUR	A large example of the above with a low sloping shoulder from a context dated from the mid second to the early third century.
34	2926	GREY	JCUR	A greyware necked jar with a high, burnished shoulder from a context dated from the first to the early second century.
35	2930	GREY	JCUR	As above.
36	2759	GREY	JCUR	As No 33 , but lacking the burnishing from an early to mid second century context.
37	2753	GREY	JCUR	A necked jar with a cordon at the neck and a groove at the burnished shoulder in greyware from a mid to late second century context.
38	2760, 2761	GREY	JWM	Wide-mouthed jar/bowls, with high burnishing , from contexts dating from the early to mid third century, and similar to Marney, 1989 fig 30, no 4.
39	2731, 2732, 2760, 2761	GREY	BWM	Wide-mouthed jar/bowls, with high burnishing on Nos 38 and 39, from contexts dating from the early to mid third century, and similar to Marney, 1989 fig 30, no 4.
40	2731, 2732, 2760, 2761	GREY	BWM	Wide-mouthed jar/bowls, from contexts dating from the early to mid third century, and similar to Marney, 1989 fig 30, no 4.
41	2760	GREY	JL	A large jar with a grooved everted rim and grooves at the shoulder from a context dated from the early to mid third century.
42	2731	GREY	STR	The base of a which was pierced pre-firing and may have served as a strainer from a context dated to the mid third century.
43	1335	GREY	BEV	A small everted-rimmed jar which appears to have been handmade from a third century context.
44	3003	GREY	BFL	A deep flanged bowl from a context dated from the mid second to the early third century.
45	2997	GREY	BFL	A straight-sided flanged bowl from a contest dated from the later first to the mid second century.
46	1306, 3003	GREY	BFL	As No 44, above with burnishing on the edge of the rim.
47	2760	GREY	BG225	A round-rimmed, flanged bowl highly burnished on the exterior and interior in the style of wheel made black-burnished ware (BB2, Gillam type 225), from and early to mid third century context.

Dwg no	Context	Fabric	Form	Description
48	1321	GREY	BFL	A flat-rimmed bowl with vertical burnishing on the exterior from a context containing pottery of mixed dates and dated from the mid to late fourth century.
49	2760, 2761	GREY	BFBL	A bowls with a low bead and flanged rim from an early to mid third century context.
50	1325	GREY	BFBL	As above with a burnished interior and exterior.
51	1348	GREY	BFBL	As above.
52	1319	GREY	BFB	A bead and flanged bowl from a context dated from the later third to the fourth century.
53	2730	GREY	BFB	As above.
54	2752	GREY	DTR	A triangular-rimmed dish in the style of black-burnished ware 2 (BB2) with a burnished decoration of intersecting arcs from a context dated from the mid to late second century.
55	2854	GROG	JL	A flat fragment of a large grog-tempered jar with scored decoration of Late Iron Age date.
56	2854	GROG		As above with incised decoration as Marney, 1989, fig 5 no 13 where it is dated from the mid to late first century.
57	1319	GYBN	JEV	An unusual high-shoulder everted-rimmed jar with grooving at the shoulder from a context dated from the later third to the fourth century.
58	2730	GYBN	CPN	A rounded-rimmed cooking pot from a third century context.
59	2786	GYBN	JCHR	A channel-rimmed jar with a rounded rim and slight channelling from a context dated from the mid to late third century.
60	2753	GYBN	JCUR	A simple curved-rimmed jar with a prominent cordon at the neck and burnished at the rim and shoulder from a mid to late second century context.
61	2752, 2753	GYBN	JWM	A wide-mouthed jar with a twisted rim (probably a waster)
62	2702	GYBN	BRR	A reeded- rimmed bowl from a context dated from the early to mid second century.
63	2702	GYBN	BFL	A flanged bowl with burnishing beneath the rim, dated as above.
64	2933	GYBN	BFB	A bead and flanged bowl from a context dated from the later third to the fourth century.
65	1319	GYBN	BFBL	A low bead and flanged bowl, dated as above.
66	1335	GYBN	DPR	A plain-rimmed dish with burnishing on the exterior from a third century context.
67	2745	MORT		An unsourced mortarium (MORT) with a low bead and flange stamped with a makers mark inside a cartouche (unidentified) from a mid second to third century context.
68	2731	NVCC	BKFOF	Funnel rimmed, folded beakers in Nene Valley colour-coated ware of mid third century date.
69	2731	NVCC	BKFOF	Funnel rimmed, folded beakers in Nene Valley colour-coated ware of mid third century date.
70	2935	NVCC	JNN	A jar with a bi-furcated rim with rouletting at the lower edge from a fourth century context.
71	1319	NVCC	DPR	A plain-rimmed dish from a context dated from the later third to the fourth century.
72	2930	OX	FHOF	A crudely made flagon in the style of Hoffhiem flagons from a context dated from the first to early second century.
73	3011	OX	FHOF	Similar to above from a context dated from the early to mid second century.
74	2731, 2732, 2760	OX	FDR	A disc-rimmed flagon from contexts dated from the early to mid third century.
75	2997	OX	BKCOR	A cornice-rimmed beaker with rouletting on the low shoulder from a context dated from the later first to the mid second century.
76	1335	OX	BKCR	A curved-rimmed beaker with linear stabbed/combed rouletting delineated by grooved at the low shoulder from a third century context.
77	1348	OX JCHR		A channel-rimmed jar with rilling at the shoulder from a context dated from the early to mid third century.
78	2924	OX	BCUR	A curved-rimmed bowl with cordons and grooves at the shoulder from a context broadly dated from the first to second century.
79	2936	OX	BPR	An abraded example of a plain-rimmed bowl from a fourth century contex.
80	2777	OXPA	BCAR	A red-painted bowl in Oxfordshire Parchment ware (Young Type 24 -c AD 240 - 400) from a late third to fourth century context.

Dwg no	Context	Fabric	Form	Description
81	2777	OXRC	B38	A bowl in the style of samian form Dr38 which has been pierced after firing from a context dated from the later third to the fourth century.
82	2985	OXRC	B	An everted-rimmed bowl with demi-rosette, roller-stamped decoration from a mid fourth century context.
83	1321	PORD	JUR	A jar with an undercut rim in Portchester 'D' ware from a mid to late 4 th century context.
84	2758	SHEL	CPN	A simple, handmade cooking pot in native tradition in shell-tempered ware from a context dated from the Late Iron Age to, at least, the mid first century.
85	2702	SMSH	JEV	An everted-rimmed jar from an early to mid second century context.
86	1348	SMSH	JCHR	A fine, channel-rimmed jar with rilling at the shoulder with a pre-fired maker's mark below the rim. A similar example is noted in Marney, 1989 fig 24, no 6, where it is dated predominately to the second century.
87	1325	SMSH	JCUR	A curved-rimmed jar with a large cordon at the neck above a shoulder delineated by a groove from a context dated from the late second to the early third century.
88	2731, 2732, 2760, 2761	SMSH	JCUR	A simple curved-rimmed jar from contexts dated the early to mid third century.
89	2799	SMSH	JCUR	A jar with an upright curved rim delineated on the body with a series if grooved from a context dated from the later first to the second century.
90	1359	SMSH	BRR	A large reeded-rimmed bowl similar to Marney, 1989 fig 26, no 38, where the form is unprovenanced, but from a context dated here from the second to the fourth century.
91	1608	AMPH	A	An unsourced amphora with a bead lip and collared rim in a fine greyish-cream fabric from a context dated from the late second to the mid third century.
92	1663	BEGR	CPN	A bead rim jar with a slight channel on the interior rim, and diagonal slashed decoration on the exterior of the rim in a grog-tempered fabric from a mid to late first century deposit. The form is paralleled in Marney, 1989, fig 35 no 46.
93	2617	COAR	JCHR	An unusual channel-rimmed jar with a cordon at the neck in a coarse granular fabric from context dated from the first to second century.
94	2614	CR	BKEV	An everted-rimmed beaker with a high shoulder in a fine cream fabric from a layer dated from the later first to the early second century.
95	2660	GFIN	FS	A narrow-necked flask in a fine grey fabric with burnishing on the exterior and over the rim, and similar to Marney, 1989, fig 32 , no 45, form a late first to early second century context.
96	2622	GREY	JBKEV	An everted-rimmed beaker in a finer fabric, burnished on the exterior, from a first to second century context and similar to Marney, 1989, fig 31, no 24.
97	1620	GREY	JCHR	A finely tooled, channel-rimmed jar with a neat rim from a first to early second century context and similar to Manrey, 1989, fig 31, no 55 where it is dated from the mid first to early second century.
98	1620	GREY	JCHR	An almost complete profile of a channel-rimmed jar featuring a groove on the exterior of the rim from first to early second century context.
99	2660	GREY	JCUR	A simple curved-rimmed jar burnished on the exterior and over the lip from a late first to early second century context.
100	2694	GREY	JBR	A most unusual jar with a bead lip and acute shoulder delineated by a pronounced cordon from a late first to second century context.
101a	1660	GROG	BKBB	An almost complete profile of a fine butt-beaker with horizontal bands of vertical scored lines from a context dated from the late first to early second century and similar to Marney, fig 38, nos 15/16 from Caldecote kiln 1 where it is dated to the mid first century.

Dwg no	Context	Fabric	Form	Description
101b	2696	GROG	CPN	A bead-rimmed cooking pot with slashed diagonal decoration on the exterior of the rim from a mid first to early second century context and similar to Marney, 1989, fig 34, no 2 where it is in a grog and shell- tempered fabric.
102	1612	GROG	CPN	A tall-rimmed cooking pot with burnishing at the neck and over the rim from an early to mid second century context.
103	1660	GROG	JCHR	A channel-rimmed jar with a low sloping shoulder from a late first to early second century context and similar to Marney, 1989, fig 35, no 48 where it is dated from the mid first to early second century.
104	1671	GROG	JCUR	A narrow-necked, curved-rimmed jar with a cordon at the neck and a groove on the interior of the rim from a context dated from the Late Iron Age period into the mid first century AD.
105	1615	GROG	JNN	A narrow-necked jar with a large cordon at the neck and groove at the shoulder from a mid first to the early second century context and similar to Marney, 1989, fig 36 no 61 where it is given the same date-range.
106	2651	GROG	JNN	As above from a mid first century deposit.
107	2651	GROG	BEV	A small everted-rimmed bowl from a mid first century context and similar to Marney, 1989, fig 34, n0 17 where it is dated from the first to second century.
108	2679	GROG	BCHR	A channel-rimmed bowl with burnished lattice decoration towards the base from a first century deposit.
109	1671	GROG	J	A pedestal base from a Late Iron Age to mid first century deposit and similar to those from Caldecote kiln 1 (Marney, 1989, fig 38, nos 10-11).
110	2651	GROG		A fragment of a jar with scored decoration in the tradition of Late Iron Age pottery from a mid first century context.
111	2651	GRSH	CPN	A cooking pot with a slight groove on the interior lip and a hole pierced pre-firing at the neck in a grog and shell-tempered fabric from a mid first century deposit.
112	2668	GYBN	BKEV	A fragment of an everted-rimmed beaker from an context dated from the Late Iron Age period into the mid first century AD.
113	3197	GYBN	JCHR	A channel-rimmed jar with a neat rim from a context dated to the mid first century.
114	2651	GYBN	JCHR	As above with a thickened rim, similar to Marney, 1989 fig 31, no 36.
115	2600	GYBN	JCHR	As above from a context dated from the mid to late second to the early third century containing pottery of mixed dates.
116	1660	NAT	BKBB	The rim of a butt-beaker from a context dated from the later first to the early second century.
117	2600	NAT	CPN	A native tradition cooking pot from a context dated from the later second to early third century, but containing pottery of mixed date.
118	3196	NAT	J	Sherds from a handmade jar with rough, combed decoration from a context dated to the mid to late first century.
119	1692	NAT		A fragment from a narrow-necked vessel with combed decoration from a context dated to the mid to late first century. The decoration is paralleled in Marney, 1989, fig 38, no 15, where it is date to the mid first century.
120	3122	NAT		A sherd with roughly combed grooves from a context dated from the Late Iron Age period to the mid first century.
121	2625	NVCR	FDN	A disc-necked flagon in Nene Valley Cream ware from a probable mid third century deposit.
122	2651	OX	BKEV	A fragment from a ?handmade beaker with an everted rim from a context dated to the mid first century.
123	1620	OX	JCHR	A channel-rimmed jar with a bulbous rim from a context dated from the first to the early second century.
124	2651	OX	BLS	A lid-seated bowl with a curved rim a wide bulbous body from a context dated to the mid first century.
125	3116	OX		A fragment of a maker's stamp (unidentified) from a context containing later first to early second century pottery.
126	2600	SMSH	CPN	A simple-rimmed cooking pot from a context dated from the late second to the early third century, but containing other pottery of mixed date. It is similar to Marney, 1989, fig 24 no 2 where it is dated from the mid first to the early second century.
127	1608	SMSH	CPN	A cooking pot with a slight groove on the interior lip and diagonal slashed decoration on the exterior from a context dated from the mid to late third century, but containing pottery of mixed date. It is similar to Marney, 1989, fig 34 no 2.

Dwg no	Context	Fabric	Form	Description
128	2651	SMSH	JCHR	A channel-rimmed jar with a hole pierced before firing at the neck from a mid first century context and similar to Marney, 1989, fig 24, no 5 where it is dated from the first to the early second century.
129	1620	SMSH	JCHR	A channel-rimmed jar from a context dated from the first to the early second century.
130	2600	SMSH	JCHR	As above from a context containing pottery of mixed date but dated by the latest sherds from the mid to late second to the early third century. It is similar to Marney, 1989, fig 24, no 2 where it is dated to the first century.
131	1608	SMSH	JCHR	A multiple grooved, channel-rimmed jar from a mid to late third century deposit containing pottery of mixed date and similar to Marney, 1989, fig 24, no 7, where it is dated to the first century.
132	1608	SMSH	BTR	A flanged-rimmed bowl from the same context as the above, and similar to Marney, 1989, fig 26, no 33 where it is dated from the mid to late second century to the later third or fourth century.
133	2600	SMSH	BRR	A large, bead-rimmed bowl from a context dated from the mid to late second to the early third century with pottery of mixed date. It is similar to Marney, 1989, fig 26, no 36.
134	2694	SMSH	BRR	As above from a context dated to at least the mid second century.
135	1614	VRW	FHOF	A Hoffhiem flagon with a twisted handle, and the rim appears to have been scuffed during firing from a context dated to the pre-Flavian period.
136	1306	SAMCG		The footring of a probable cup in Central Gaulish samian ware with a potter's stamp (unidentified), from a context dated from the later third to the early fourth century containing pottery of mixed date, SF 5077.
137	1608	SAMCG		As above from a context dated to the mid to late third century, containing pottery of mixed date, SF 6014.

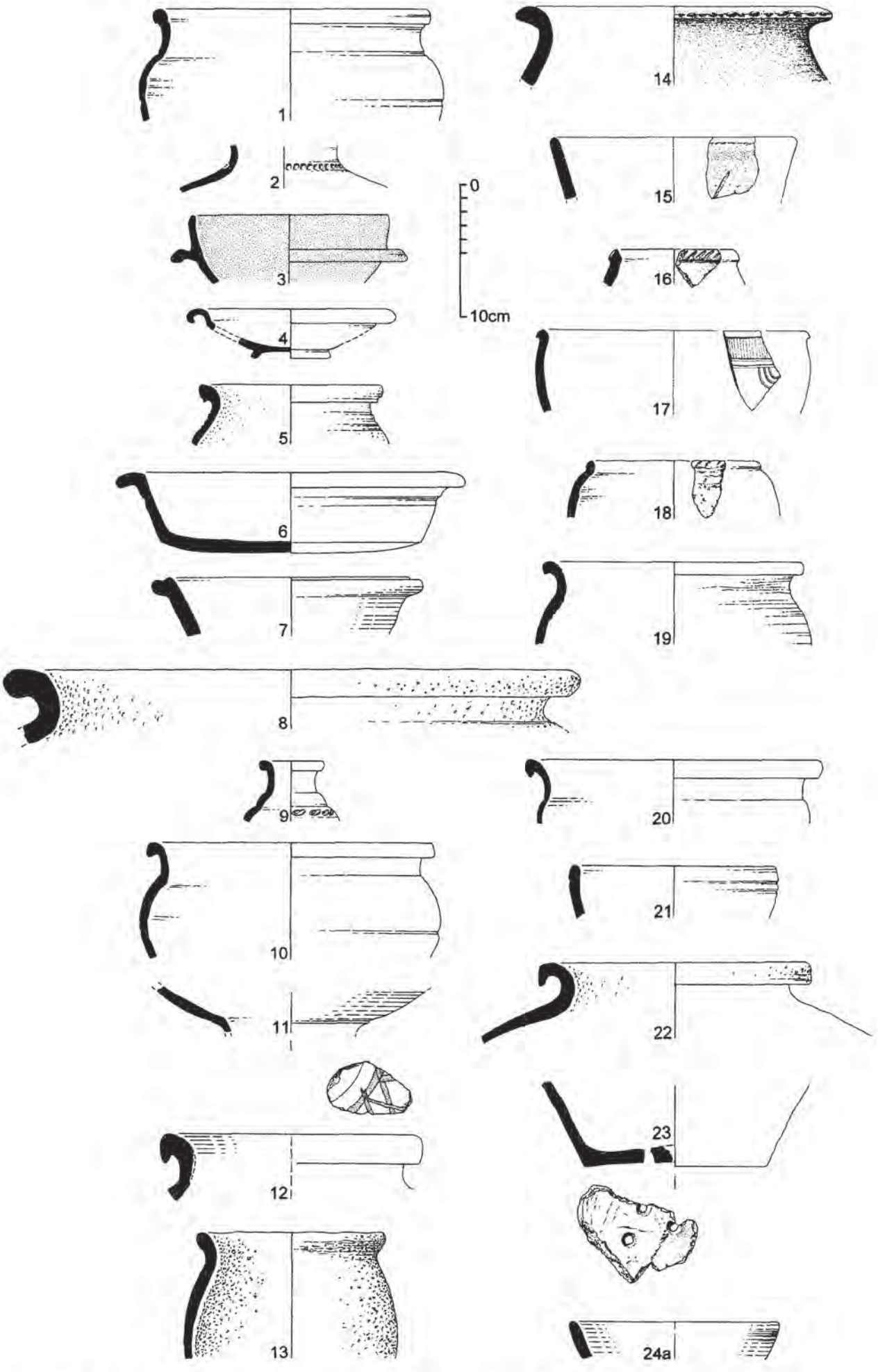


Figure 52: Roman and late Iron Age pottery, drawings 1 - 24a.

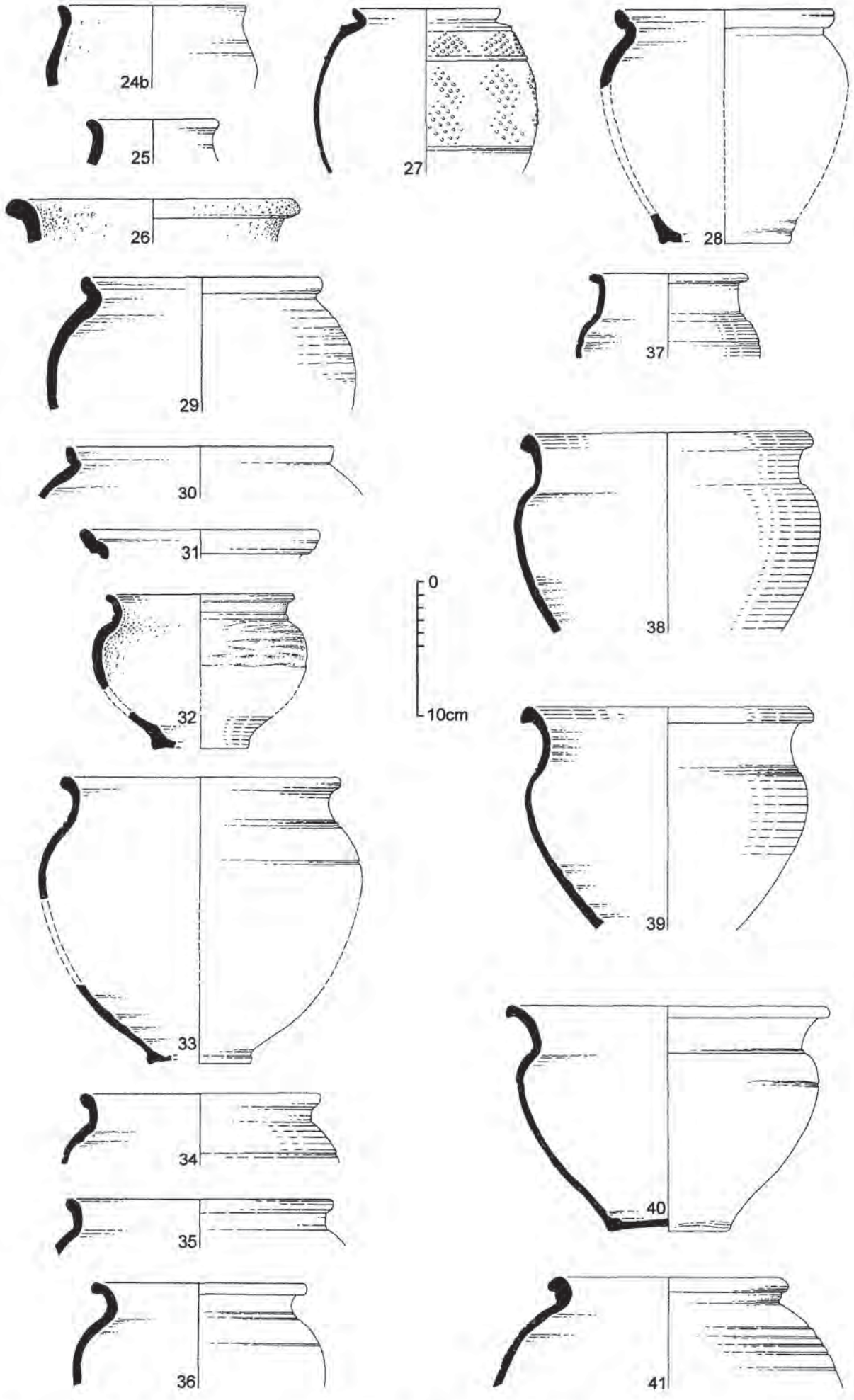


Figure 53: Roman and late Iron Age pottery, drawings 24b - 41.

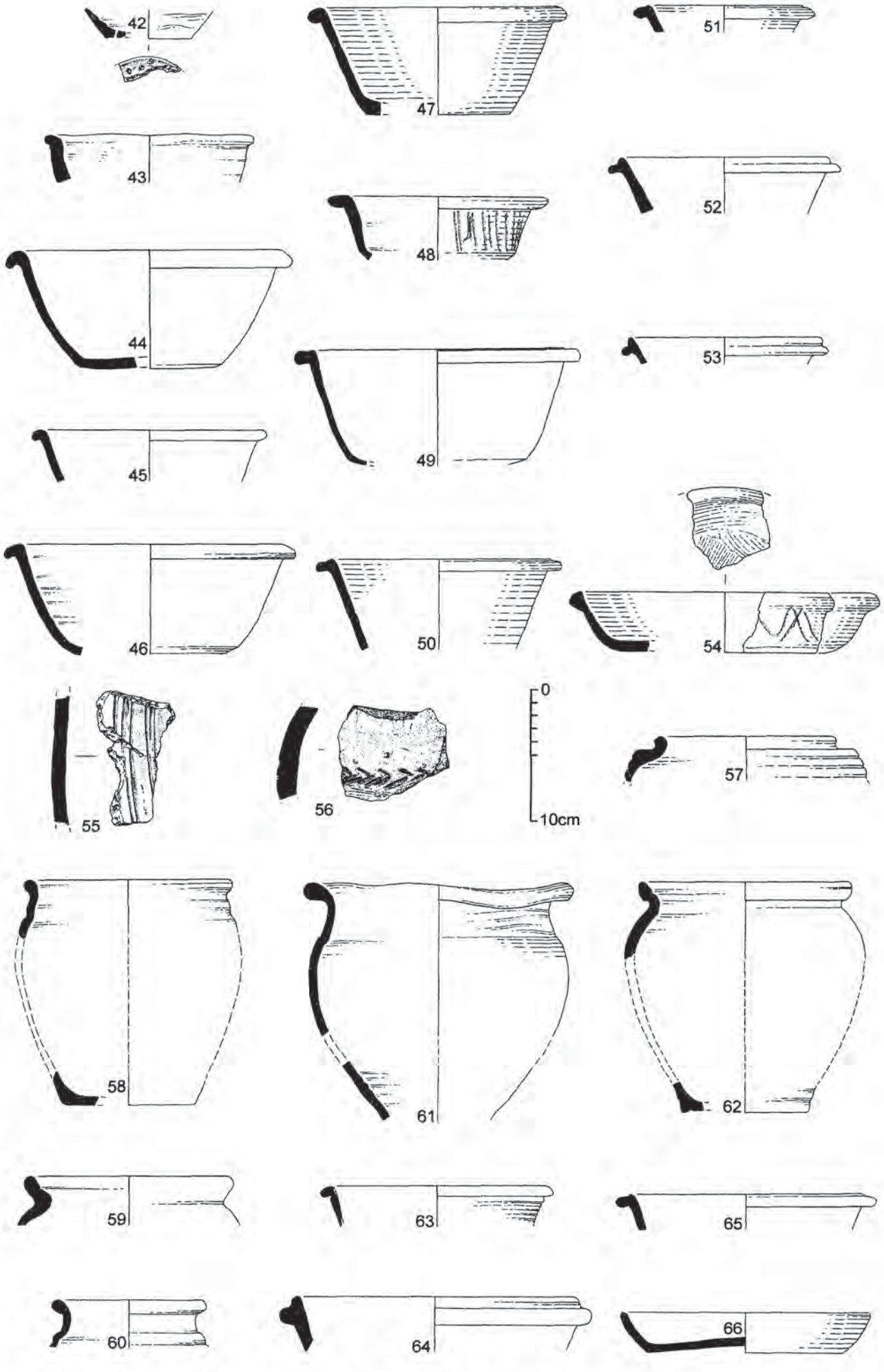


Figure 54: Roman and late Iron age pottery, drawings 42 - 66.

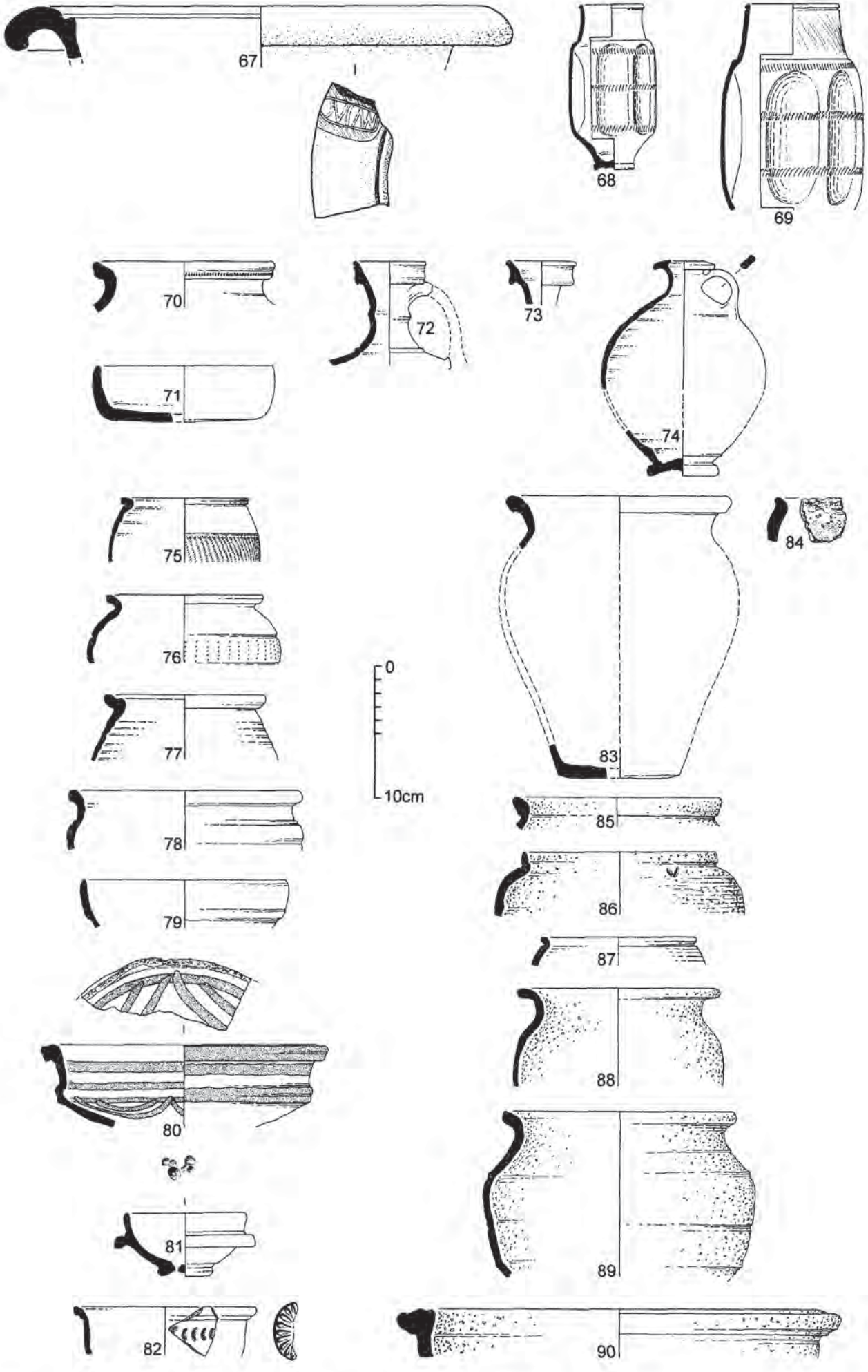


Figure 55: Roman and late Iron Age pottery, drawings 67 - 90.

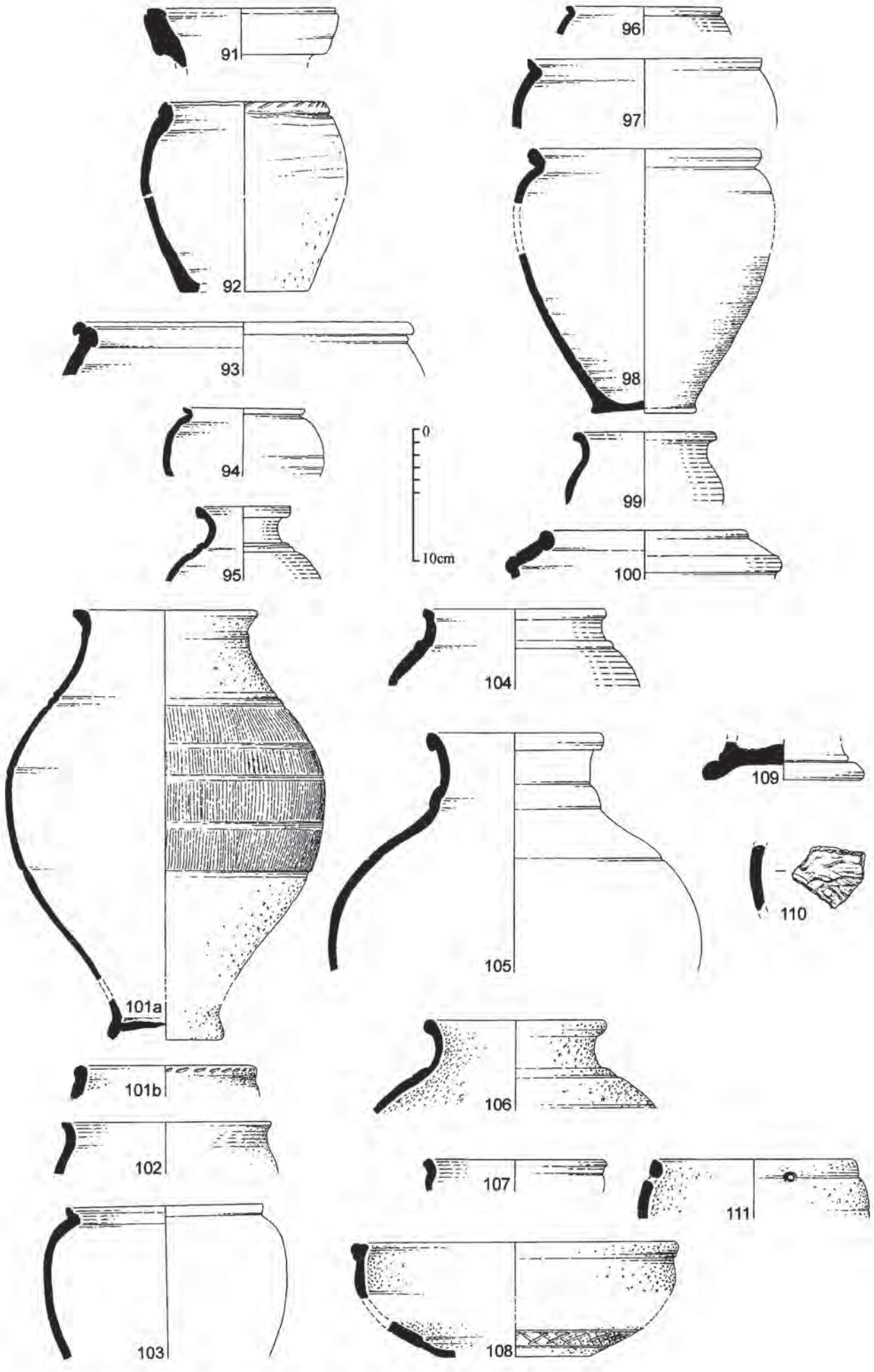


Figure 56: Roman and late Iron Age pottery, drawings 91 - 111.

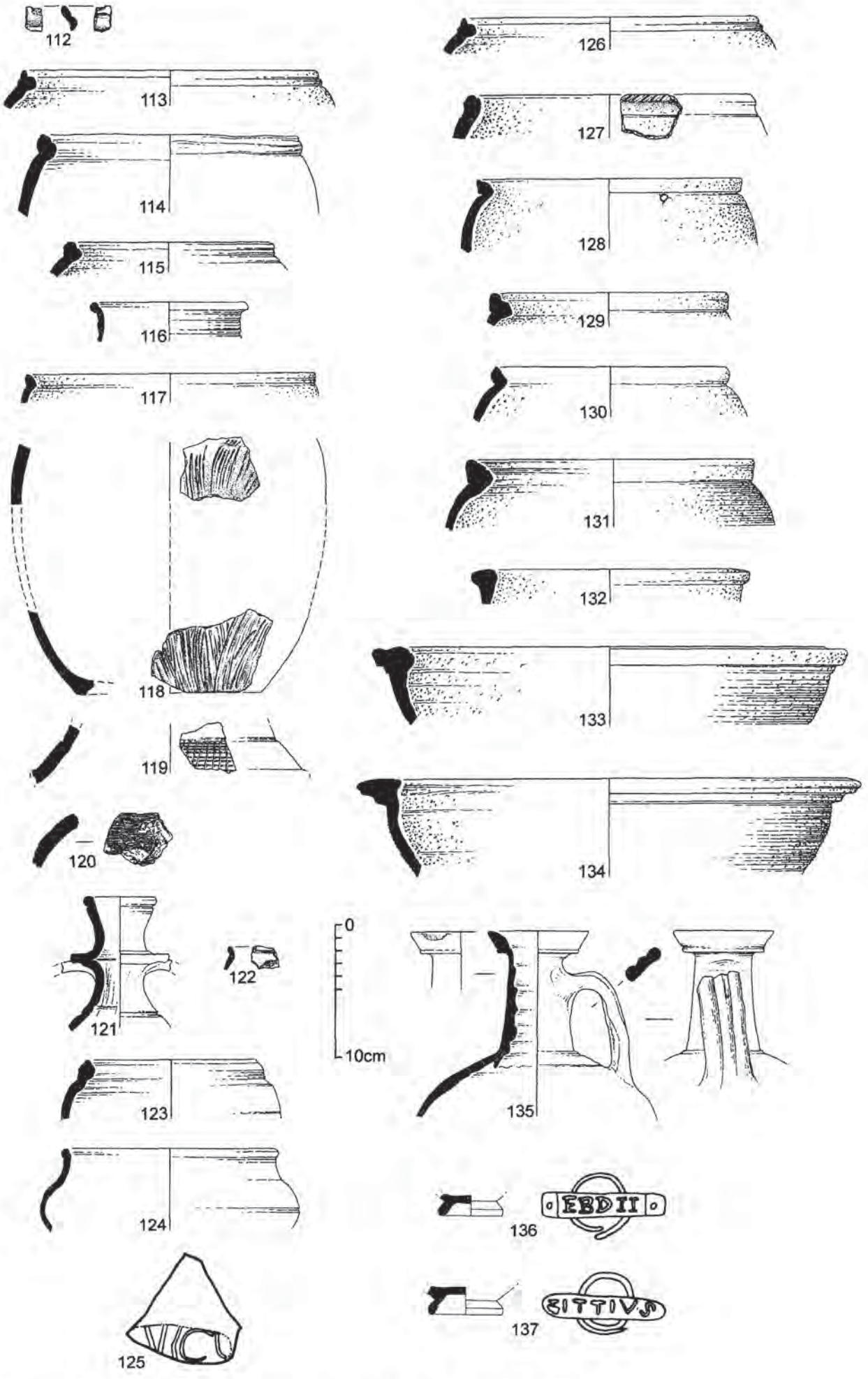


Figure 57: Roman and late Iron Age pottery, drawings 112 - 137.

Dwg	SF	Context	Material	Type	Description
1	6026	1609	Copper alloy	Brooch	Bilaterally sprung fibula brooch; three coils on each side; two side lugs in front of coils; Colchester brooch: first half of first century; spring of 7 coils; chord held by hook; plain bow; distorted; spring wrenched from wing on one side.
2	5098	3007	Copper alloy	Brooch	Fibula brooch; one incised line runs from the spring lengthways for 13 mm; pin and end of footplate missing; early Roman mid- to late firsts century; ?Colchester derivative; details of spring arrangement unclear.
3	5253	702	Copper alloy	Hook	Five arms radiating from a central hub, connected by a band which then joins an outer band of decoration; rectangular pierced plate above, small hook below; corroded, one tiny area of decoration missing otherwise complete; late medieval or post-medieval: 16th-17th century.
4	5097	3010	Copper alloy	Buckle	Fragment of oval buckle with series of moulding on front of frame; thirteenth or fourteenth century AD.
5	5156	1319	Copper alloy	Chain	Three links, each is larger at central point and termini; grooves and ridges running across the thickness; corroded, squashed out of shape.
6	5093	1306	Copper alloy	Boss	A boss or decorative plat; domed with central hole surrounded by a shallow circular recess; corroded but complete; outer convex surface ornamented with a series of four concentric circles (shallow, shown on x-ray).
7	5223	304	Copper alloy	Bracelet	Curving strip with decoration on outside of curve: incised line along length, hatches along edges, three horizontal grooves at one end, and possible similar decoration at other end; holes both ends; bracelet terminal; late Roman.
8	5224	304	Copper alloy	Plate	Decorative plate with punched holes for mounting; bevelled edges; corroded, bent, slightly worn; ?late medieval or post-medieval.
9	5256	1608	Copper alloy	Strap end	Flat; shield-shaped; rectangular hole off-centre parallel to straight side, 3 possible rivets in situ; corroded but complete; Unusually solid for a strap end: cast; rivets may be corrosion blisters.
10	6001	1609	Copper alloy	Mount	Decorative mount; rectangular, except that one short side bows inwards; incised geometrical design: central cross with four L shapes around to form a gapped rectangle; rivet in situ on back; possible hinged projection on one end suggests it might be a buckle plate: strap mount more likely to have two rivets; possibly late Roman, although incurved end might originally have held enamel; possible iron corrosion in the central recess; this would suggest medieval: if so, similar to cut-outs used on early combs, twelfth to early thirteenth century
11	5157	1306	Copper alloy	Sheet	Small rolled-up sheet, forming a hollow tube; both ends broken off.
12	5078	2786	Copper alloy	Bracelet	Shaft with round section, end finished with loop, other end broken with remains of similar loop; Roman bracelet, mostly complete; catch broken; outer edge of loop and remaining part of catch with decorative mouldings; straightened, too small for use on anyone but a very young child.
13	5118	2786	Copper alloy	?Wire	Pin-like; rounded shaft, tapering slightly; bent into a regular curve; ends broken; some corrosion; could be a small rod or piece of wire.
14	6033	2614	Copper alloy	Hair pin	Round shaft tapering; head divided from shaft by groove around circumference of shaft; rounded flat-topped head.
15	6046	1609	Copper alloy	Button	Plain domed head with broken looped shank.

Dwg	SF	Context	Material	Type	Description
16	5229	403	Copper alloy	Tack	Oval or diamond shaped head with at least four raised lines running parallel along the length; square tapering shaft; edges of head nicked and eroded and surface worn away; corroded, bent.
17	5232	403	Copper alloy	Screw	Domed head with raised line around base and hole in one side; shaft with screw thread; corroded, slightly worn.
18	5161	1319	Copper alloy	Nail	Flat rounded head; tapering square shaft; some corrosion.
19	6037	1609	Copper alloy	Buckle	Double looped buckle with chevron pattern decoration; corroded, worn, bent; late medieval??
20	5071	3054	Copper alloy	Ring	Corroded, complete.
21	5255	511	Copper alloy	Ring	Hexagonal section, irregular; possible curtain ring; complete; corroded.
22	5226	304	Copper alloy	Terminal	Circular; lip with groove, central prominent circular hub; reverse side has raised rectangular knob, or possible broken end of shaft; edges with two incised lines; probably a terminal; could well be Roman.
23	5289	2529	Iron	Knife	Blade with tang; corroded, slightly bent and broken off at both ends; cutting edge damaged; non-ferrous bands at junction of blade and tang: remains of shoulder plate or of solder for attachment for plate; scale tang with tubular non-ferrous rivet in situ within remaining perforation.
24	5005	304	Iron	Knife	Knife blade with whittle tang; incomplete; both ends missing, v corroded and worn.
25	5057	1306	Iron	Knife	Blade with whittle tang; corroded and bent; blade edge missing where bends and end of tang missing; probably Roman.
26	5007	304	Iron	?Tool	Long with rounded shaft, small point at thicker end divided from shaft by small horizontal groove, shaft then tapers; thin end may be broken; v corroded; possibly part of a stylus.
27	5021	541	Iron	?Tool	Tanged tool or punch; tapering head with square section tapering ?tang with roundish section; incomplete, v corroded, worn; possibly a drill bit.
28	5296	511	Iron	?Nail	Shaft with square section; head ?broken off at sides to give T-shape; shaft broken; corroded.
29	5285	1321	Iron	?Tool	Flat plate; one end with bevelled edge; other end tapers to a broken off tang; corroded and worn; perhaps a part-made object.
30	5267	1757	Iron	Hook/?Bit	Square shaft, flattened at one end and bent into a hook at the other; possible mouth-piece link of a medieval or post-medieval snaffle bit.
31	5154	1321	Iron	Hook	Rectangular plate with broken hook attached; corroded.
32	5040	394	Iron	Buckle	Rectangular with a flat pin; probably a harness buckle; corroded and slightly skewed.
33	5094	2786	Pewter	Vessel	Fragment of a vessel rim, narrow diameter and straight wall suggests bottle neck; corroded.
34	6035	1609	Lead	Weight	Round with slightly off-centre hole.
35	5027	579	Ceramic	Counter	Rounded fragment, flat on both sides; re-used Roman tile; incomplete with small break on edge, abraded and pitted.
36	5009	403	Stone	Quern	Gritstone; upper grinding stone with steep grinding angle, likely to be Roman (J Parkhouse); incomplete semicircular fragment, more than half missing

Dwg	SF	Context	Material	Type	Description
37	5107	2759	Stone	Quern	Segment of circular quern; upper grinding stone with steep grinding angle, likely to be Roman (J Parkhouse)
38	5314	304	Stone	Whetstone	Rectangular; broken at one end.

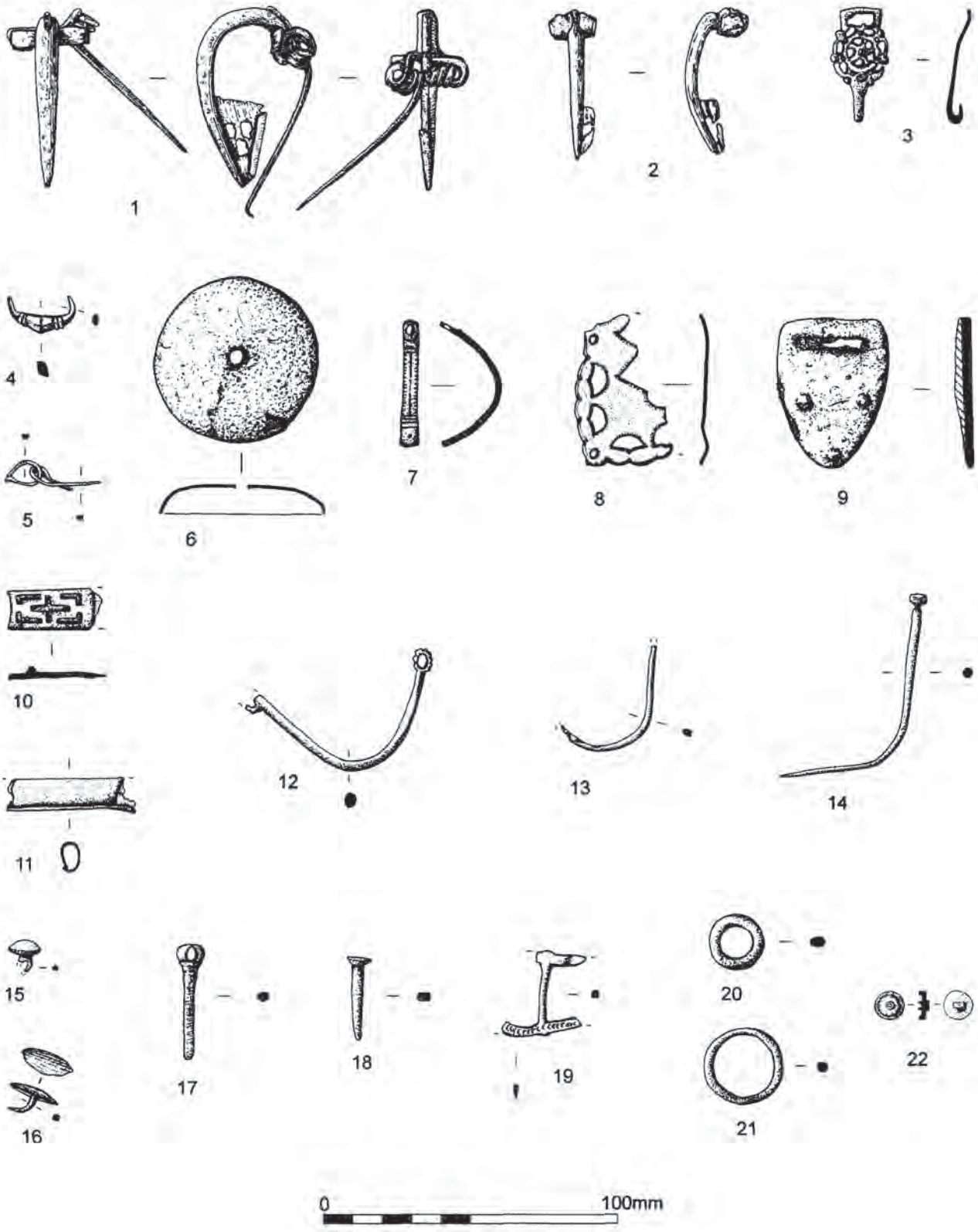


Figure 58: Registered finds, copper alloy objects.

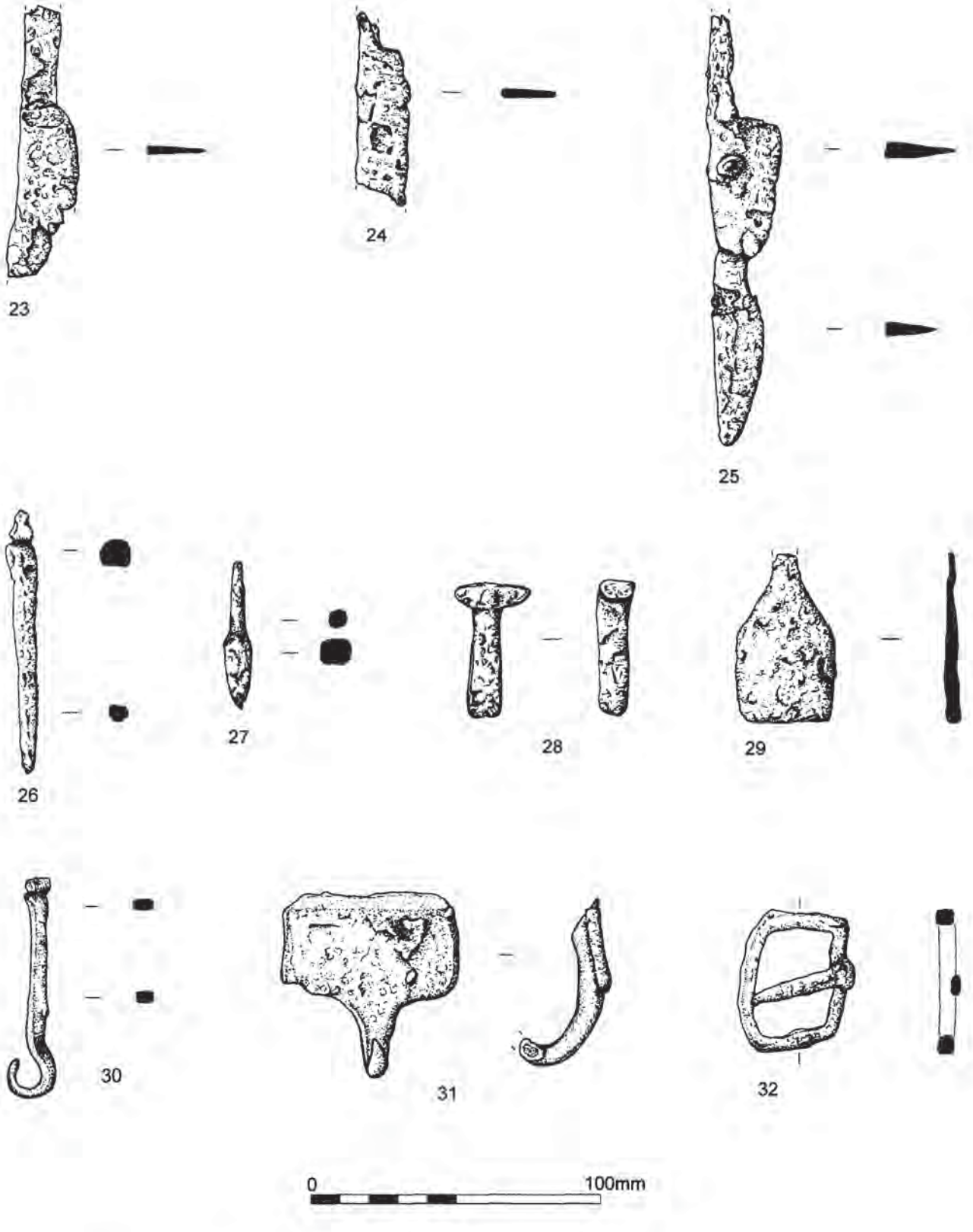


Figure 59: Registered finds, iron objects.

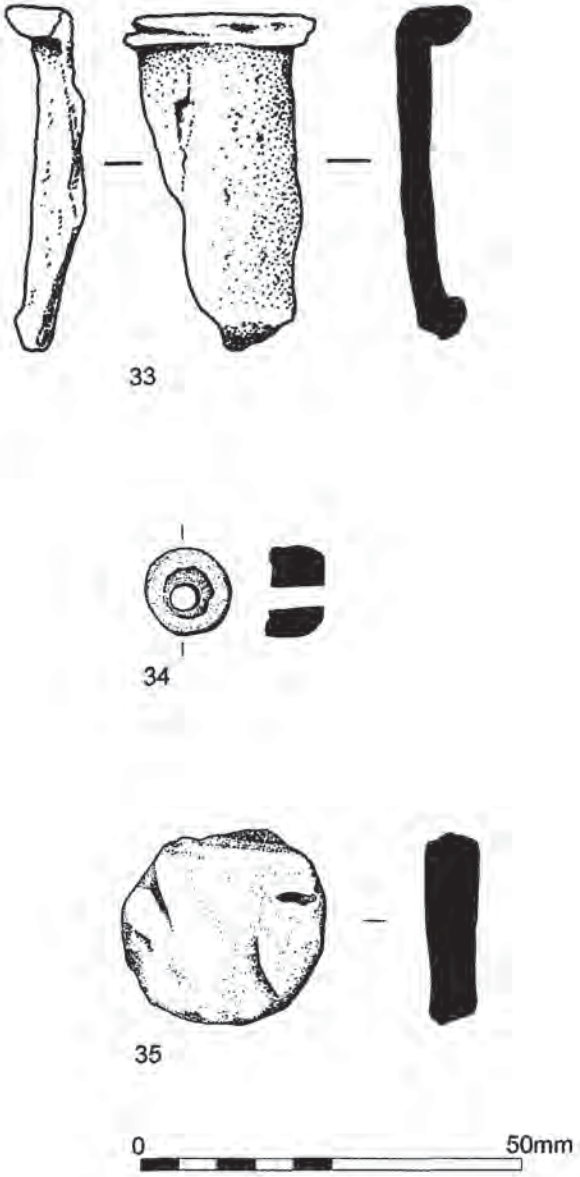
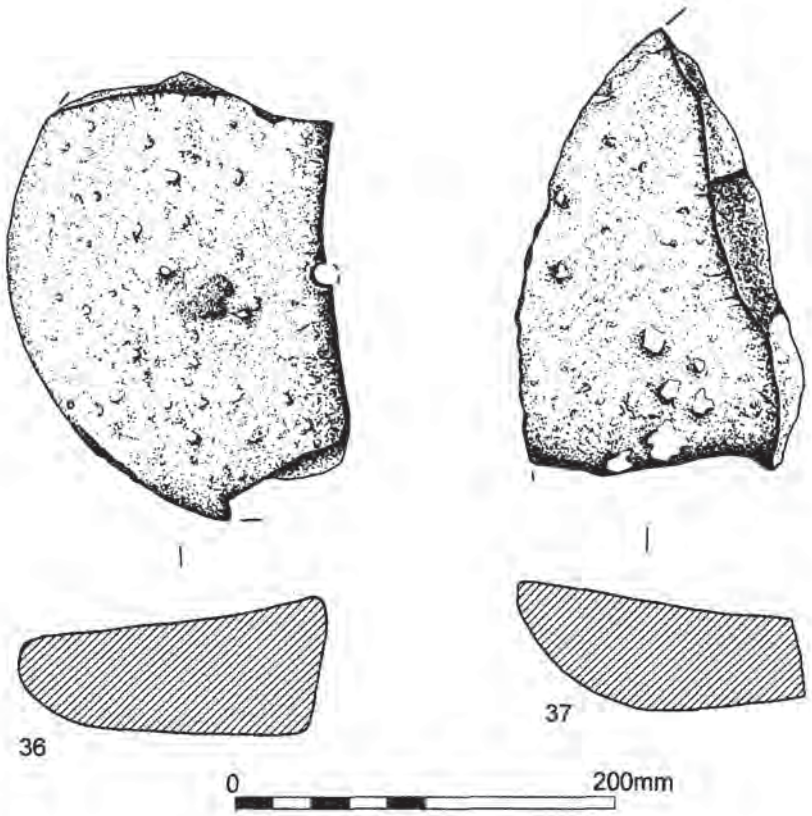


Figure 60: Registered finds, lead, lead alloy and ceramic objects.



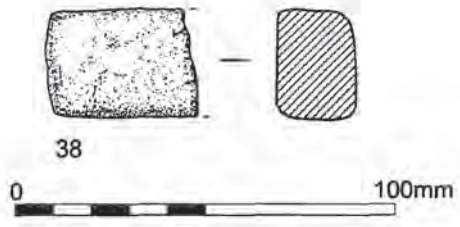


Figure 61: Registered finds, stone objects.

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