YORK ARCHAEOLOGICAL TRUST

An Assessment Report on an Archaeological Excavation

HUNTINGTON SOUTH MOOR YORK

by Mark Johnson

REPORT NUMBER 2004/16

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Cover illustration:
Roman Camp 1 before excavation
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ABSTRACT

York Archaeological Trust undertook the excavation of a 3.4ha block of development land at Monks Cross (Huntington South Moor), York, between March and June of 2003.

Parts of a prehistoric landscape that included at least one Neolithic pit and a curvilinear ditch (possibly for an enclosure) were revealed in the south-eastern part of the site. To the north of this part of a major landscape boundary, a pit alignment of probable Bronze Age or Iron Age origin, was examined. Later re-defined by a broad shallow cut, this boundary remained visible until at least the 2nd century AD. A cluster of pits and small post-holes together with two small ring-gullies - probably hay stack or hay rick gullies may also be of prehistoric date, though were located within the limits of a Roman camp.

Substantial parts of an early-mid 2nd century AD Roman camp, Camp 1, were surveyed and excavated. The camp proved to have been marked out with considerable geometric accuracy to precise measurements (in Roman feet), though the encompassing ditch had been cut with less precision and finesse. Evidence was found to indicate that this camp was short-lived and was subsequently slighted with parts of the rampart being backfilled into the ditch. It is proposed that this camp was of a temporary nature and not created as a practice work. With a greater degree of speculation, it is suggested that the military and historical context for the camp may be one in which troops and supplies were mustered around the legionary fortress at York prior to campaigning in the north in the reign of Hadrian. An adjacent Roman camp, Camp 2, together with other examples at Bootham Stray, may have had the same purpose.

Figure 1: Site location map. (Site shown blue, Bootham Stray Camps shown red)

1. INTRODUCTION AND BACKGROUND

Between 24th March and 13th June 2003, York Archaeological Trust carried out a major programme of excavation of a Roman camp and earlier prehistoric features on land at Huntington South Moor, York, (NGR: SE625545; Figure 1, Site location plan). This entailed the excavation of six large trenches within three areas or zones (Figure 2). The excavations were carried out in response to proposals to develop the site for commercial and car-parking purposes and followed a specification issued by the Principal Archaeologist of the City of York Council. The primary concern of this specification was essentially preservation by record.

The programme of excavation detailed in this report follows on from an evaluation of 2002, (Ottaway 2002).

The contents of this Assessment report follow the principles of Management of Archaeological Projects (MAP 2, English Heritage 1991). The site archive and finds are currently held by York Archaeological Trust under the Yorkshire Museum accession code YORYM: 2000.574

2. GEOLOGY AND TOPOGRAPHY

The site is located just under 4km north-east of the centre of York and around 1.5km south-east of the village of Huntington. All land in the locality is low-lying, typically around 14.5m – 15m AOD and is relatively flat. Camp 1 occupies a slightly elevated position where heights reach nearly 15.5m AOD. The adjacent Camp 2 also occupies ground that is slightly elevated. Two watercourses flow through the area, the River Foss just over 1km to the west and the Tang Hall Beck 1km to the east.

The underlying solid geology of the area is of Bunter and Keuper sandstones, (Geol. Surv., 1959). This is overlain by a drift geology of Warp and Lacustrine clay. The extant topsoils across the area are clayey and, being of limited cultivable value, primarily support pasture. Ground water levels across the site vary seasonally though at the time of excavation typically occurred around 0.5m – 0.65m below ground level (BGL).

All land within the area of investigation has a current usage as farmland though areas to the north of the archaeological site have been developed in recent years as out of town retail outlets. The block of land between Areas 1 and 2 has been crudely metalled and is used as an overflow car-park. What remains of the farmland is partitioned into small rectangular fields whose hedged boundaries follow north – south and east – west alignments. Although much of this farmland is used as pasture, it is known that much of Area 2 and all of Area 3 has been ploughed in recent years.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

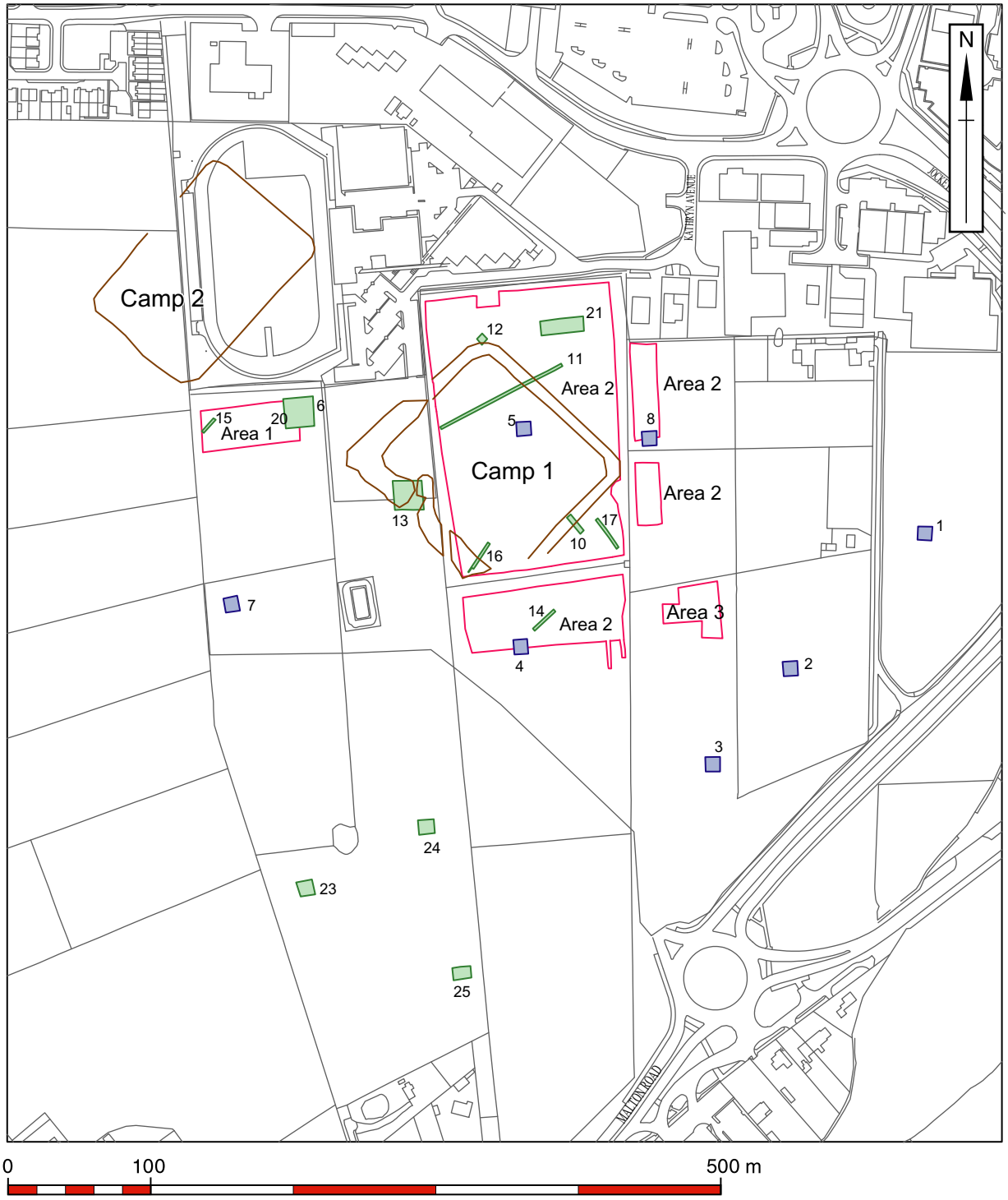
Some archaeological fieldwork in the immediate vicinity of the site has previously been carried out, though on a limited scale. An evaluation comprised of eight 10m x 10m trenches located in and around the fields containing Camp 1 took place in 2000, prior to the discovery of the camp (Macnab 2000). This work produced little in the way of

archaeological features of any antiquity. In March 2002 air photographers from English Heritage identified two Roman camps in the area (Horne 2002. Camp 1 which is the subject of this report and Camp 2 which lies to the north-west, partly underneath the Ryedale Stadium, but on the same alignment. Both camps were subjected to geophysical surveys in April 2002 (Noel 2002). Due to the nature of underlying geological strata at the site, the value of the results of the geophysical surveys was limited, though sufficient to provide additional information on the location and character of the camp defences. Further evaluation of the site, concentrated on parts of Camp 1, was carried out immediately after geophysical survey (Ottaway 2002). This comprised thirteen trenches of various sizes, and confirmed the presence and location of the camp's defences, though provided no information concerning occupation or concise dating of the camp. In addition to highlighting post-medieval activity at the site this evaluation also produced a fairly small, but fine, assemblage of flints that pointed towards prehistoric activity in the area.

In the immediate area of the camps prehistoric activity has been located and examined in recent years. A circular ditch of possible Iron Age date was excavated north of Hopgrove Farm (SE63805530), approximately 1.5km north-east of the site. At a slightly greater distance, some 3.5km to the north-west at Rawcliffe Moor (SE59205630; York Archaeological Trust Gazetteer site 632), ditches and probable hut circles are likely to relate to part of an Iron Age settlement.

The site lies approximately 4km north-east of the Roman legionary fortress and associated urban settlement. In the known and postulated disposition of Roman roads in the area (Brinklow 1986) the site probably lies approximately 400m north-west of Road 4, which ran from York – Malton. Road 3 (York – Stamford Bridge), which merges with Road 4 close to the junction of Malton and Heworth Roads with Stockton Lane, follows a slightly more easterly route than Road 4,

Beyond the military and urban core of Roman York and within the wider locality a number of finds and features of the period have been made. Features of Romano-British date, probably relating to a farmstead, have been located 2.5km to the east at Stockton Moor West (SE 6480 5450) (York Archaeological Trust Gazetteer site 742). Approximately 1.5km to the south-east of the site at Apple Tree Farm) at (SE 6325 5300), a pottery production site has been located (Lawton 1989; 1993). A pit containing pottery wasters was found in the locality of Apple Tree Farm in 1968 with further pottery being reported in 1972 whilst further excavation was carried out in the late 1980s. Probably functioning from the late 1st century until some point around the mid 2nd century, this site produced a range of vessels in different fabrics and is likely to have had military connections. Earlier work by Peter Wenham in the same area had recorded the discovery of three coffined burials, two within gritstone sarcophagi, during the course of drainage works. In addition a metalled road, aligned west-south-west / east-north-east and held likely to have been in use from the early 2nd – 4th century, was also discovered. Quantities of Roman pottery were recovered whilst these drainage works were carried out and also during building operations on the nearby Ashley Park housing estate. Around 1km south of the site, near 210 Stockton Lane (SE 6246 5325), 2nd – 4th century pottery that is thought to be derived from occupation, rather than burials, was discovered in the 1940s, (YAJ, 1943, 424).



Key

- Excavated Areas 2003
- Evaluation Trenches 2002
- Evaluation Trenches 2000
- Location of Roman camps 1 and 2 identified from air photographs, reproduced here with kind permission of the Air Survey Unit of English Heritage

Figure 2: Plan showing areas excavated, previous works and location of Camps 1 and 2

There are two other known Roman Camps on the periphery of York, at Bootham Stray approximately 3km to the west of Monk's Cross (RCHMY1, 47). These camps are fairly closely spaced and of broadly similar size and morphology. 'Seven or eight' camps in the York area were noted by Francis Drake in an annotation on p.37 of his own copy of 'Eboracum' (1736). It may be that the known Monks Cross and Bootham Stray camps form some of those to which Drake referred.

4. METHOD STATEMENT

Subsequent to geophysical surveying a micro-topographic survey of Camp 1 was carried out. The results of this are shown in Figure 18, in the form of contours spaced at 100mm intervals. Opportunity was also taken to draw a hachure survey of Camp 1 independently of the contour survey. This is shown in Figure 19. Observations made on the upstanding elements of the camp are laid out in Section 6.

A trial programme of phosphate sampling was carried out prior to, and immediately after, site stripping. The results of this trial were disappointing and no further phosphate samples were taken, (see specialist report: Phosphate analysis).

Excavation of the site involved the stripping of six blocks that were divided into three areas, numbered 1 – 3. This division of the blocks into three areas was simply to correspond to the Area terminology of the archaeological specification. The site was mechanically stripped of overburden by a 360° excavator equipped with a toothless bucket and removed from the site to stockpiles by a small fleet of tracked dumpers. All mechanical stripping was monitored by between one and three archaeologists. This enabled shovel clearing of any loose or high spots left by the machine, an approach which greatly reduced the need for further cleaning and permitted the bulk of the planning of large features to be carried out without the need for further definition. Once the archaeological horizon was exposed further vehicular traversing was prohibited. Seven un-machined baulks were left across areas of the camp rampart and its associated ditch. These were subsequently drawn, recorded and finally removed by a combination of hand and mechanical excavation. 5m wide baulks were left adjacent to all field boundaries, these exclusion zones serving as access corridors for great crested newts.

Metal-detecting was carried out in advance of overburden stripping and carried out again over the surface of exposed archaeological features.

Excavation strategy was determined by feature type. In excess of 50% of the camp ditch was excavated in a series of segments, mostly 4m long, and all terminals were included. Pit and post-hole sized features were initially half-sectioned and, with the exception of most of those in the prehistoric pit alignment, subsequently fully excavated. Two small penannular gullies were 90% excavated. Where a number of sections, or segments, was excavated across a single feature, each was numbered and recorded independently of the others (so that variations could be more accurately detailed and the maximum amount of information gleaned) the collective being linked by a group or feature number.

As site stripping progressed all features were coarsely plotted by EDM survey, this produced a rapid hard copy plan whose chief function was to enable observations and

progress notes to be annotated. At the end of the fieldwork the entirety of the camp ditch was accurately re-surveyed at closely spaced intervals. All excavated features, including segments of the camp ditch, were manually planned at a scale of 1:20. In the case of the camp ditch these were plotted in reference to a static grid, in other cases with reference to EDM plotted pegs. As a double check on the location of manually drawn plans all section lines were independently plotted by EDM. In the case of approximately one third of segments across the camp ditch all observed fills were single context planned. However, as this policy failed to provide meaningful information additional to that provided by the sections (both of which were drawn in each segment) this policy was subsequently abandoned. Sections were drawn of all excavated features and cuttings at a scale of 1:10. Throughout the course of the excavation each context encountered was recorded as a separate unit on pro-forma record sheets. All contexts related to large or complex features were collectively linked via the use of group numbers. This device was to facilitate the rapid access of individual records and groups of records. Drawing and environmental sample numbers were cross-referenced directly to context record cards. All finds were retained by context number.

Environmental samples were listed in an independent register that contained context details.

An extensive series of photographs was taken during the course of the excavation and consisted of overall site and working shots together with those of individual features, groups of features and sections. The format of these photographs was both colour digital and colour slide. Additionally a number of aerial photographs were taken of the site in digital and print format by English Heritage.

Areas 1 – 3 each had their own context and drawing sequence. The table below lists the number of records, written and drawn (does not include digital surveys). These categories are listed by area and total.

AREAS	CONTEXTS	PLANS	SECTIONS
1	20	2	3
2	491	176	113
3	38	9	13
TOTALS	**549**	**187**	**129**

Table 1: *Summary of drawn and written records*

The entirety of the data sets are currently stored by YAT under the Yorkshire Museum accession code YORYM: 2000.574.

Monitoring of the site was carried out by the City of York Council Principal Archaeologist with further constructive comment being provided by Ian Panter, Regional Science Advisor of English Heritage, by Alan Hall and Harry Kenward of the Environmental Archaeology Unit, University of York and by various members of the staff of York Archaeological Trust.

5. THE ARCHAEOLOGICAL SEQUENCE

The archaeological sequence detailed below is presented within a framework of period blocks. The near non-existence of inter-feature stratigraphic relationships at the site has prevented the ordering of a sequence based purely on stratigraphic principles. Dating and sequencing has perforce been achieved by other means, namely pottery and feature typology/morphology. It is hoped that a number of radiocarbon dates will be obtained after the assessment stage of the project so that outstanding dating questions can rectified. All noted depths relate to measurements taken from the surface of the stripped horizon. During the course of the excavation a large number of features of natural origin, principally tree-boles and animal burrows, were identified and in many cases excavated or partially excavated. A considerable number of these were allocated context numbers and recorded. These are not described in the text but are presented in the context listing of Appendix 1. Modern ceramic field drains are similarly treated.

5.1 Prehistoric

Neolithic (Area 3 only)

5.1.1 Pit 33006 (Figures 4 & 5)

A single feature, within Area 3, produced pottery of a Neolithic date. This feature (33006) was an almost perfect circle in plan and had a diameter of 0.84m. Displaying steep sides and a flattish, slightly concave, base, the cut had a depth of 0.19m. Three fills were seen to occupy the cut. The primary of these (33005) was a thin, orange-brown, clayey sandy silt which contained very occasional flecks of charcoal and extended across the base and part of the sides of 33006. Fill 33004, approximately 30-40% of which was composed of small – medium sized fragments of reddened and blackened stone, sealed 33005. The remainder of 33004 consisted of mid greyish brown sandy silt containing occasional patches of orange clay together with moderate inclusions of charcoal flecks. Several uncharred strawberry seeds within this deposit are likely to be modern contamination, it being understood that the field in which Area 3 lies has in recent times been used for the cultivation of strawberries (see environmental report). A single decorated sherd of probable Durrington Walls-style Grooved Ware dated c.3000BC – 2800 BC was recovered from this fill, as was a struck flake of flint (sf. 00068). The uppermost fill of 33006 was a mid grey sandy silt containing only very occasional small pieces of stone (33003).

It is possible that this feature may have functioned as a cooking pit or hearth of some kind, certainly the size and morphology of the cut could accord with either function. The lower two fills appear likely to relate to usage of the feature. The primary fill (33005) may represent the disturbed 'raked around' edge of the feature whilst 33004 above this is likely to be the remnants of the 'heat element' in which the burnt stone operated as heat storers and distributors.

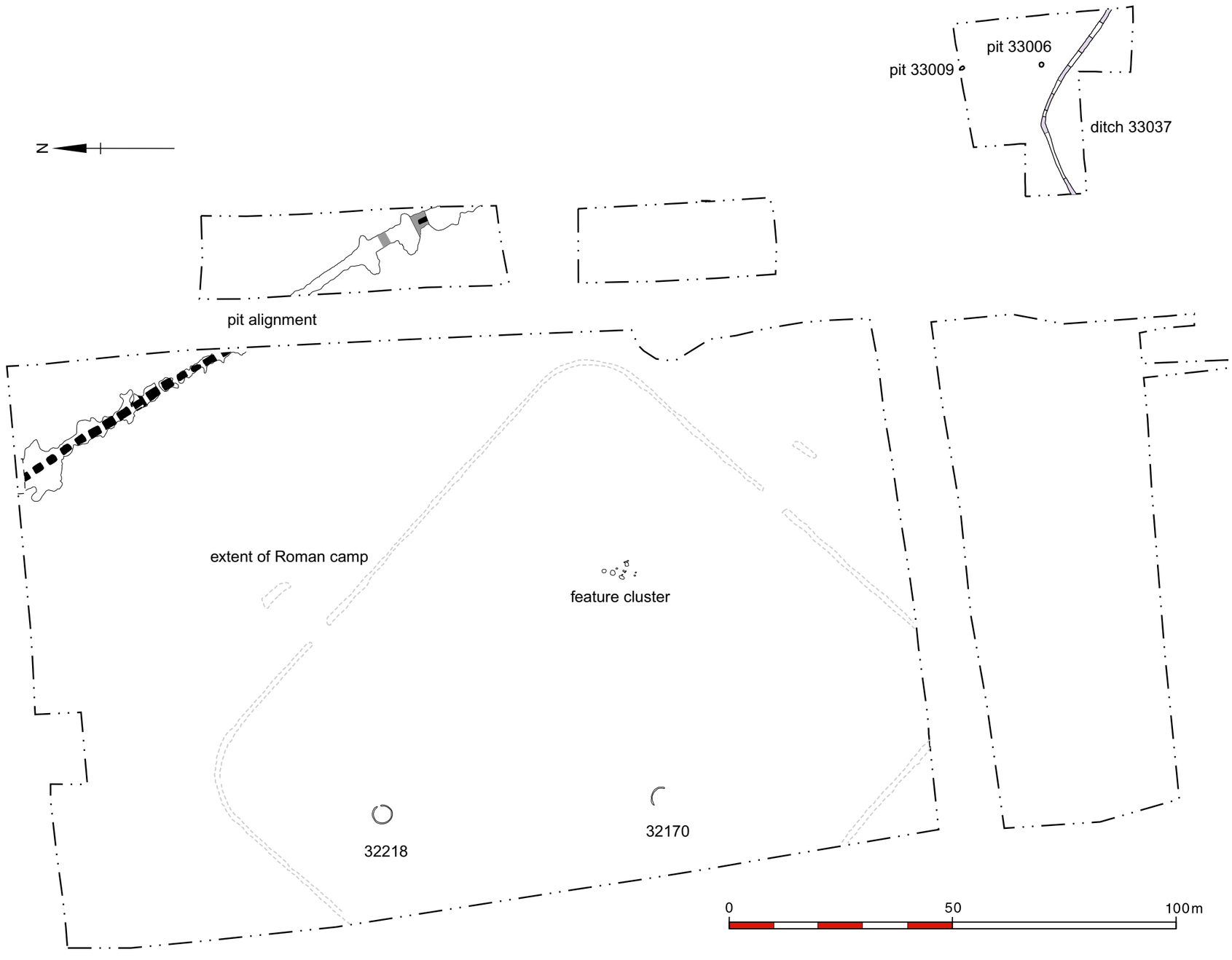


Figure 3: Plan showing distribution of prehistoric and un-dated features across the site

Prehistoric (un-dated) Area 3

5.1.2 Pit 33009 (Figures 4 & 6)

A small cut feature (33009) was located some 17m north of 33006. Somewhat sub-rectangular in plan, 33009 measured some 0.85m x 0.60m but survived to a depth of around 0.10m only. With moderately steep sides and a flattish – slightly undulating base, two fills were present within the cut. The earlier of these (33008) was a deposit of mid-grey silty clay restricted to a small area at the north-western edge of the feature. The remaining fill (33007) was a mid – dark grey (with some patches of reddish brown and black), silty clay containing lumps of burnt clay and charcoal flecks. Two pieces of burned and calcined flint (sf. 00095), one possibly a core, was recovered from this same fill.

Feature 33009 bore resemblances to the Neolithic pit 33006 in terms of overall size and presence of a burnt fill, and it may be that it had a similar function.

5.1.3 Ditch 33037 (Figures 4 and 7)

The largest of the features exposed in Area 3 was part of a curvilinear ditch that extended beyond the limits of excavation to both east and west. Six segments were excavated across this ditch, each segment being a nominal 4m long. The segment cuts (33016, 33028, 33036, 33024, 33020 and 33013) bore certain common characteristics, particularly in terms of proportions and morphology. Ditch width was seen to range from 0.51m – 1.07m whilst much less variation was apparent in depth, this ranging from 0.19m – 0.27m. The ditch profile was typically one of moderately steep sides with a slightly concave base; when this was not the case the tendency was for the sides to be steeper and the base flatter.

Between two and six fills were recorded within each of the excavated segments. The variation in texture, colour and consistency of these fills was considerable, particularly within the upper parts of the ditch. The principal reason for this appears to relate to the density of animal burrowing, which was not only greater in this part of the site than elsewhere (this may relate to the close proximity of hedgerows within this narrow field), but greater in the upper parts of the ditch than the lower. The comparatively similar basal fills (33012, 33019, 33023, 33034, 33033, 33029, 33027, 33015) were mostly orangish-grey sandy silts that occasionally contained small amounts of clay. The physical characteristics of these lower fills together with the manner in which they overlay the base and lower edge parts of the ditch cut suggests the likelihood that they relate to in-wash and edge erosion. One flint, a primary flake, was recovered from 33015 (sf. 00096). The fills occupying the remainder of the ditch (33011, 33018, 33017, 33022, 33021, 33032, 33031, 33035, 33030, 33026, 33025, 33014) were heavily burrowed and in many instances displayed very indistinct interfaces one to another. Two sherds of pottery, one a sherd of probable Ebor fabric (Roman), the other, a fragment of post-medieval date recovered close to the stripped surface in 33017, serve to highlight the disturbed nature of the upper fills. Whilst it has not proved possible to conclusively determine the origin of the upper fills it is likely that they accumulated via processes of natural silting. The origin and function of Ditch 33037 are uncertain. The only reliable dating evidence from one of the undisturbed lower fills was a single flint of probable prehistoric date, though the proximity of the ditch to Pits 33006 and 33009 may also be

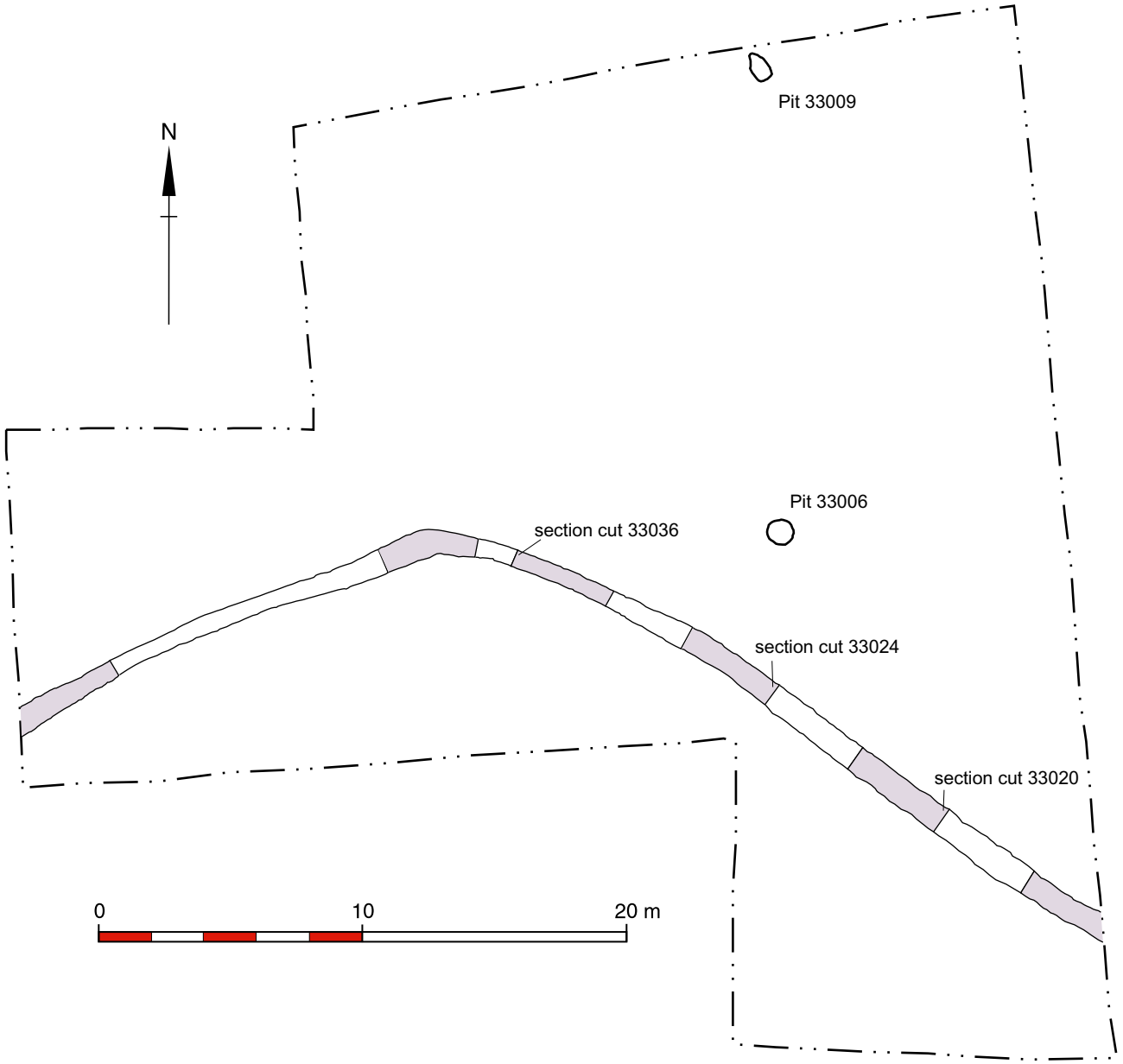


Figure 4: Plan showing prehistoric features in Area 3 (location of sections shown)

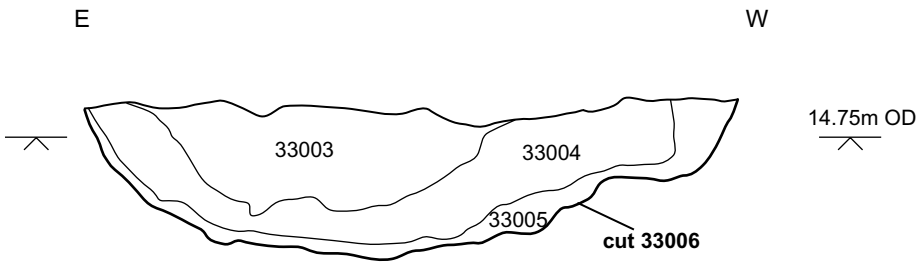


Figure 5: Pit 33006, north facing section

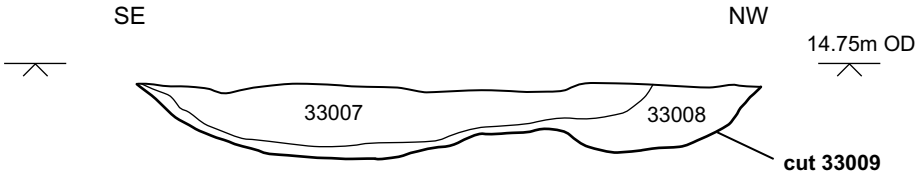
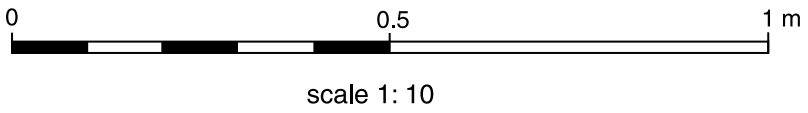


Figure 6: Pit 33009, north-east facing section



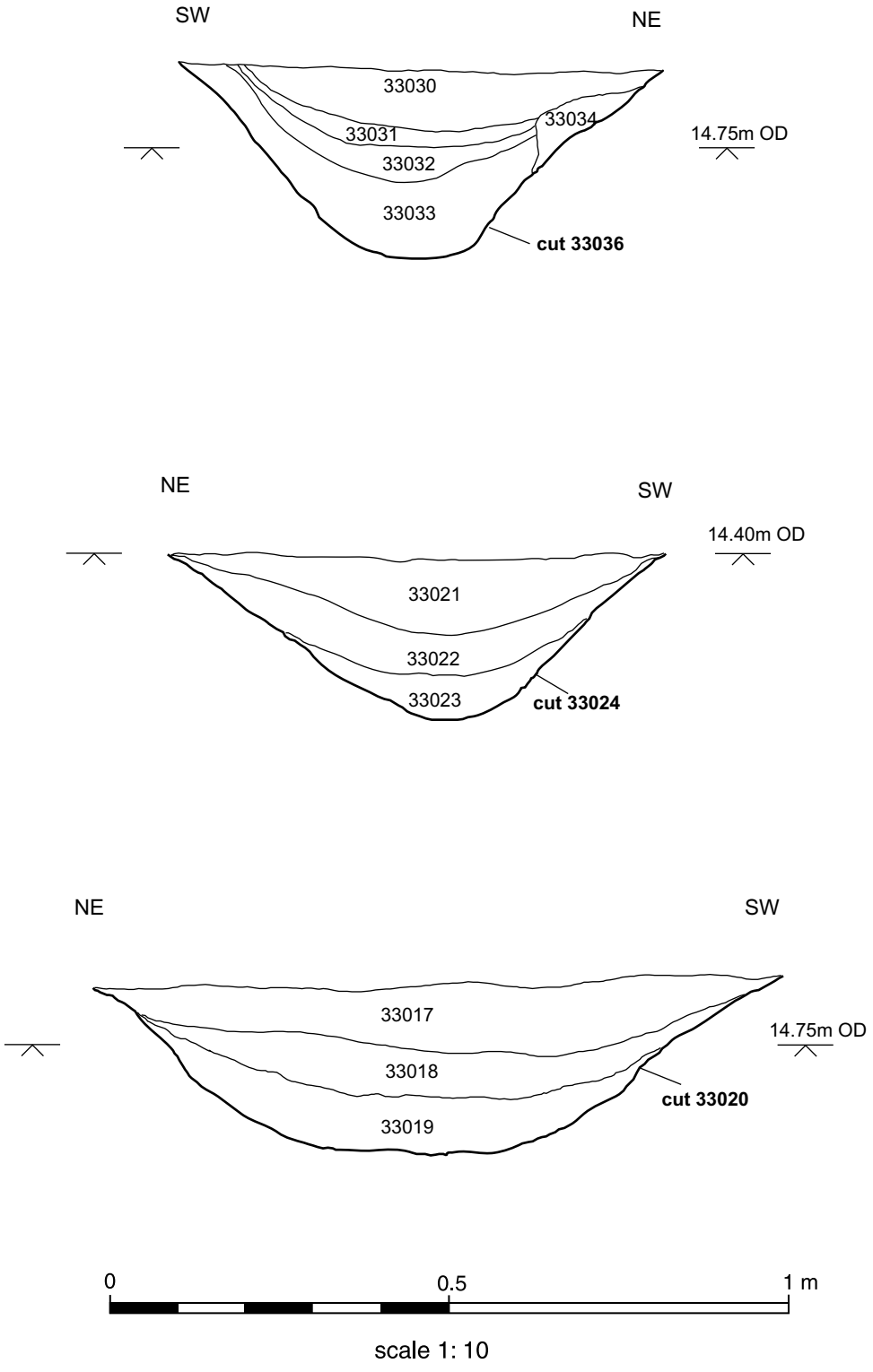


Figure 7 Sections of ditch 33037 (see Figure 4 for locations)

of significance. Form and function are normally closely related and whilst ditch 33037 clearly forms a boundary or barrier of some sort interpretation much beyond this brings us increasingly towards speculation alone. That said its curvilinear form is of some interest and begs the further question of whether the ditch might be enclosing an area or feature.

5.1.4 Pit Alignment (Figures 8-12) (Plates 1 and 2)

Parts of a pit alignment were located in the north-eastern part of Area 2, within both the main large block of the area as well as the smaller north-eastern trench. The alignment in these two parts was separated by a hedgerow with a 5m exclusion zone to either side. It is clear that the alignment continues beyond the limits of the site to both north-west and south-east. The individual pits of the alignment were largely masked by a later feature, or later features. It was only in the main part of Area 2 that each pit was isolated and examined in detail. In the smaller trench a sample of the pits was excavated.

5.1.5 Pit cuts **(main block Area 2)**

Within the main area fifteen pits or parts of pits (32360, 32371, 32383, 32398-9, 32421, 32434, 32446, 32455, 32466-71) were defined and ten were excavated. Considerable uniformity was apparent between all those pits that were excavated. In plan-form they were sub-rectangular, some being close to perfect rectangles, with corners that were slightly rounded. Only in those examples that were not excavated did the shape appear to be 'crudely' sub-rectangular; this almost certainly being a product of the lack of excavation and the proper definition that this would have brought about. The pits were aligned to one another along their long axis. With regard to the excavated examples the plan size was seen to range from 2.20m x 1.75m to 3.02m x 2.20m, some variation in the length to width ratio also being evident. Considerable uniformity was apparent in the depth of the pits, this ranging from 0.75m – 0.90m. Only minor variation was again apparent in pit profile, the sides always being steep – never less than 45° from the vertical and typically 60° - 80°. The relative steepness of both long and short sides within any given pit was generally the same. In all cases the base of the pits displayed a considerable degree of flatness. The edge to edge distance between the pit cuts ranged from 0.71m – 1.39m.

5.1.6 Pit fills **(main block Area 2)**

Several fills were recognisable within each of the pits, the precise number ranging from four to ten, and it is possible to make broad correlations between a number of these. The earliest of the fills (32370, 32382, 32420, 32423, 32433, 32445, 32447, 32454, 32459, 32465) were either pale coloured sands, or reddish brown clay intermingled with lenses of sand. In nearly all cases these deposits were thin and occupied the flat basal area of the cut – occasionally running part way up the feature edges. These thin primary fills appear to represent initial erosion into the pits. In those cases where intermingled lenses of sand and clay existed they may have been laid down in watery conditions. This is a distinct likelihood given the clayey nature of natural strata at the site and its low-lying location; indeed during the course of excavation the bases of the pits regularly filled with ground and rain-water and small quantities of sediment were seen to accumulate.

A number of predominantly small 'edge slump' deposits were present in close association with several of the primary fills, (32406, 32424, 32431-2, 32443-4, 32448,

32460-1). Composed of either reddish brown clay or pale coloured silty sand, these deposits represent erosion of parts of the edges of the pits – both these materials occurring as banded natural geological strata in this part of the site and visible running around the edges of all the excavated pits.

Less inter-pit regularity was present in those fills that lay between the initial erosion and associated slumping, and the very uppermost fills where considerable regularity was again present. The majority, (32362-4, 32366-8, 32380-1, 32392-4, 32401-5, 32417-8, 32426-8, 32430, 32438-40, 32442, 32450-3, 32456, 32464, 32490-1,) of these fills, ranged in colour from light yellowish browns to dark browns (sometimes containing hues varying from pale orange to dull blue), in texture from silty and clayey sands to clayey silts and in consistency from friable to firm. Many of these extended fully from one side of a pit to the other – typically in a dipping profile and were mottled in appearance. Fine lenses of sand and clay permeated through a number these. Such fine lenses again argue for waterlogged conditions prevailing during the deposition of at least some of these fills. A flint, probably a core, was recovered from fill 32404 (sf. 00097) and a minute fragment of what may be Roman brick was found within 32392. Conditions of waterlogged deposition almost certainly apply to fills 32429, 32458, 32457, 32379, 32377, 32397 that generally occurred in the earlier parts of the sequences and were composed almost entirely of fine textured sands and clays. Occasionally interspersed throughout this group of fills were deposits (up to 0.4m across and 0.15m thick in size) of dark brownish grey, clayey silt (32419, 32441, 32451, 32463, 32369, 32378, 32395-6). These may represent the remnants of decayed turf or clumps of topsoil.

This extensive group of fills is likely to represent the gradual silting up of the pits, some of this material being derived from edge erosion and slumping, and some possibly from the erosion of adjacent material. Such material may have been the original up-cast derived from the digging of the pits that was arranged on the ground surface in some manner. The disposition of such spoil is a point of some interest as it has been noted above that the tendency of the fills was to accumulate in a fashion that dipped from all sides towards the central basal area of the pit. This fill profile within the pits may argue against the spoil having being banked up solely on one side of the alignment in a linear manner; if this were to be the case a different fill profile might be anticipated. It is tentatively suggested that the spoil generated by pit digging may have been mounded up on both long axis sides of the pits and possibly even between the pits also. Recent survey work by archaeologists of RCHME on Ebberston Low Moor, North Yorkshire, has identified a number of embanked pit alignments in which lines of pits are bound on either side by earthen banks (Ainsworth and Oswald 1999), and it may be that a similar arrangement existed here. No clear evidence was found to suggest that the pits had ever been re-cut and emptied of their silting.

5.1.7 Re-definition of pit alignment (main block Area 2)

Comment has been made above of the level of similarity of the uppermost of the excavated pit fills. Mention has also been made that after site stripping and prior to excavation the pit alignment had the appearance of a largely continuous wavy edged feature, a number of the bulges of this proving to correspond with the edges of individual pits. The material lying between the pits of the alignment occupied a very shallow generally hollow, typically surviving for a depth of little more than 0.08m, that extended

fully along the length of the alignment. This putative cut (32489) had a width that typically ranged from 1.5m – to around 4m. The material occupying this hollow between the individual pits was a fairly uniform sandy silt, typically of pale greyish brown colour (32488). It did not prove possible to reliably differentiate between this deposit and the uppermost fills of the individual pits which were broadly similar. This similarity of materials between the upper fills of the pits and the linear hollow suggests that the hollow may have been cut when the pits had already largely, but not completely, silted up and that the final silting occurred at the same time/over the same period.

The principal question these observations raise is whether the hollow was a product of human endeavour i.e. a broad shallow ditch cut to re-define the pit alignment, or a product of erosion. There are a number of cases known where pit alignments have been replaced by ditches or possible ditches e.g. at West Heslerton, and Cat Babbleton, both in North Yorkshire, (Powlesland et al. 1986; Cardwell 1989). In the case of the Heslerton example the replacement ditch was of proportions that largely removed the pits whereas at Cat Babbleton the ditch, if such it was, was a shallow feature merely linking the pits at their upper levels (indeed the report suggests that the later ditch may represent a cleaning of an already eroded feature rather than a deliberate attempt to redefine the pit alignment). The Monks Cross example more closely resembles that at Cat Babbleton but was even shallower. In the case of the hollow being a product of erosion it is anticipated that this may have been due initially to action by the elements. Given the water retention qualities of the locality however, this action may have been combined with erosion by animals, possibly including livestock, seeking water accumulated in the pit hollows. In short, the surviving evidence does not permit a conclusive answer to the question posed above; indeed it cannot be ruled out that actions linked to both possibilities may have taken place.

What is more certain is that the latest surviving remnants of the feature were open until at least the 2nd century AD. This is attested by the presence of three sherds of Roman pottery from the upper fills of three of the pits, (32437, 32391, 32400); these incidentally being of the same date and ware as most of those recovered from Camp 1. The only other find recovered from the upper fills was a flint from 32416 (sf. 00100).

5.1.8 North-eastern block Area 2

Within this part of Area 2 the pit alignment had a surface appearance that was again continuous and wavy, some of the bulges measuring nearly 8m across. Examination of the feature in this part of the site was by two segments that cut fully across its width.

The south-eastern of these excavated segments measured 3.3m long and was cut at a point where the feature had a width of around 3.5m. The lowest element within this segment was seen to be the north-western end of a sub-rectangular or linear cut (32486) that measured in excess of 2m long, approximately 1.55m wide and survived for a depth of up to 0.75m. The three visible sides of 32486 were all steep, typically around 60°-80° from vertical whilst the base was flattish/slightly concave. Three distinct fills occupied this cut, the lowest (32485) was a mixture of lenses composed of mid-orange, soft, clayey silt and mid-bluish grey sand. This was overlain by 32484, a silty clay whose mottled colouration ranged from orangish brown to bluish brown and in which occasional flecks of an iron pan type material were present. The characteristics of these two lower fills

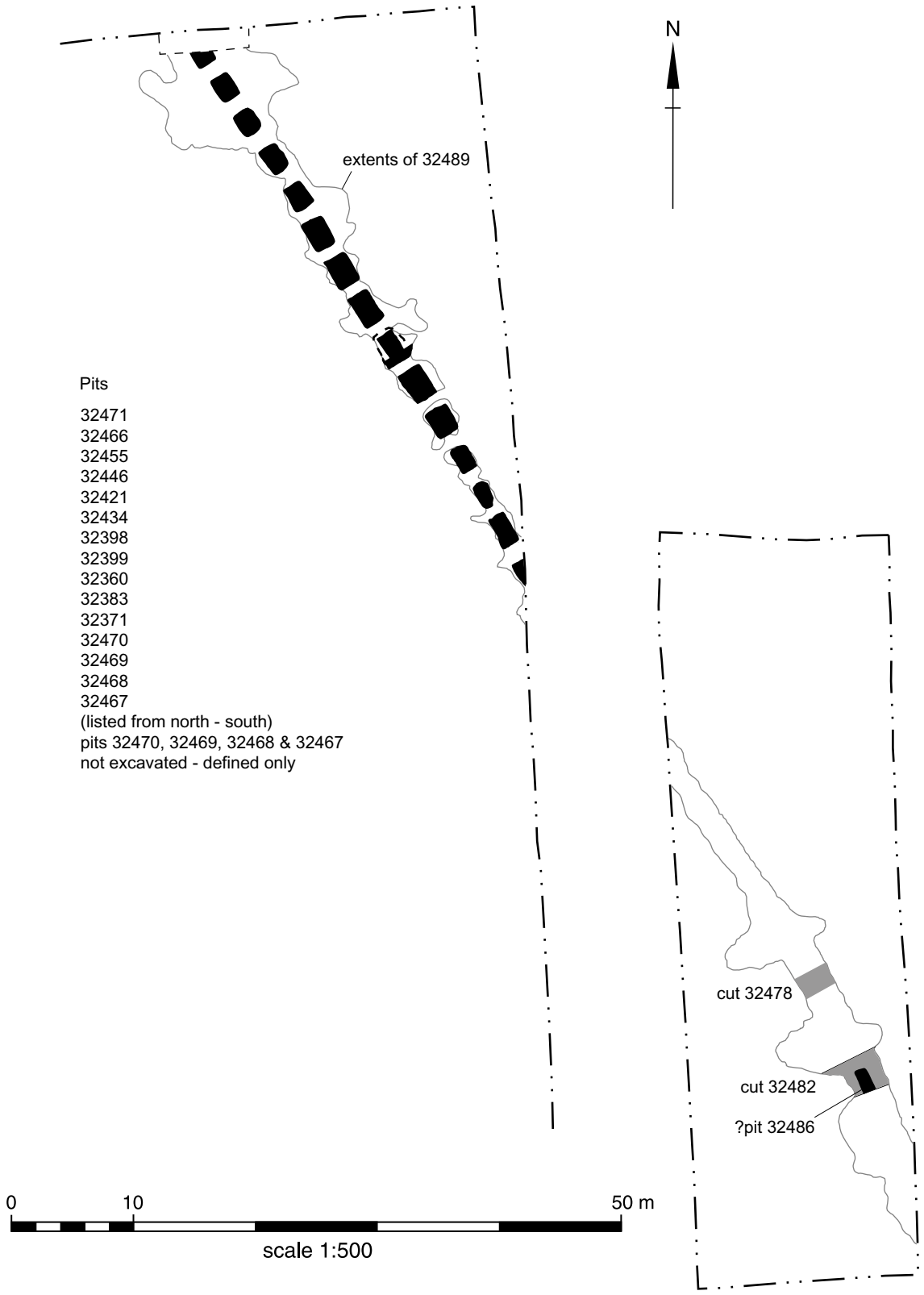


Figure 8: Plan showing prehistoric pit alignment in Area 2 (before and after definition of individual pits)

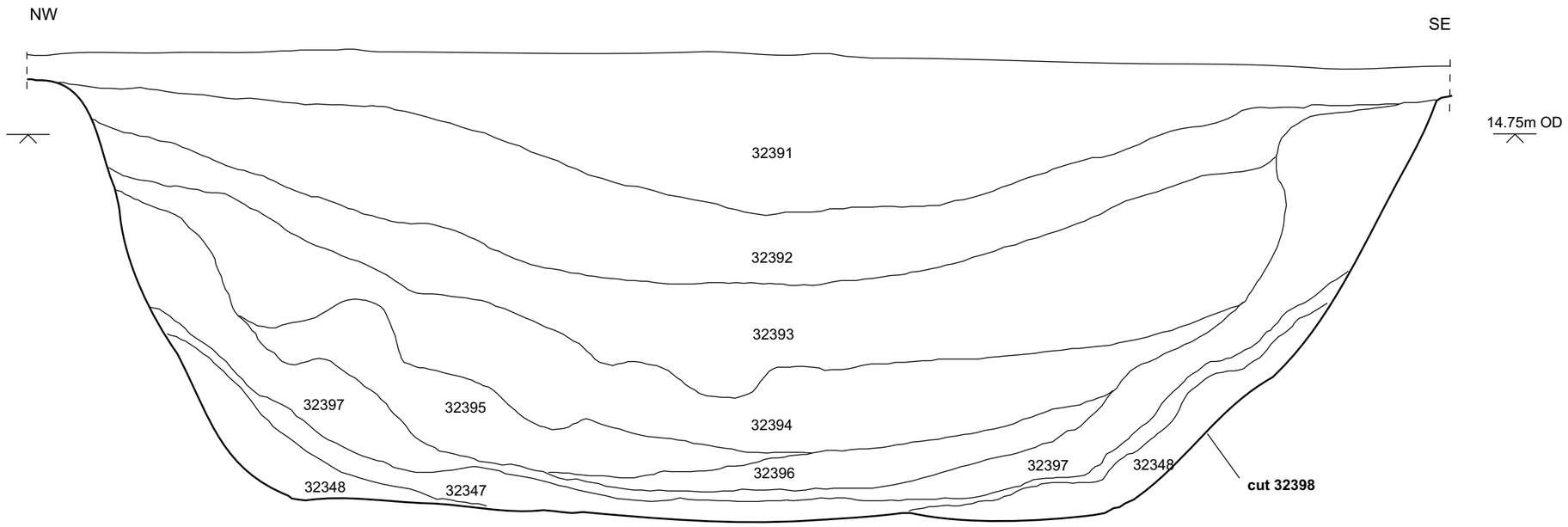


Figure 9: Pit 32398, south-west facing section

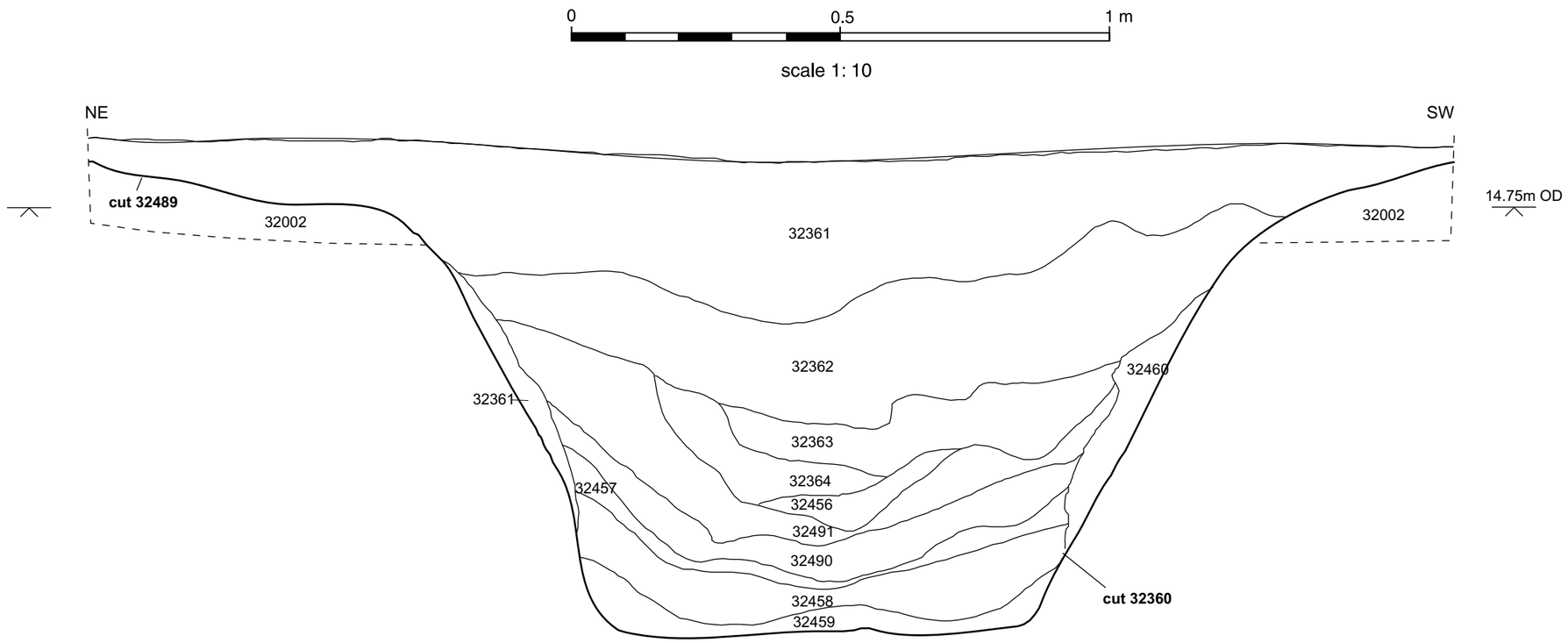


Figure 10: Pit 32360, north-west facing section

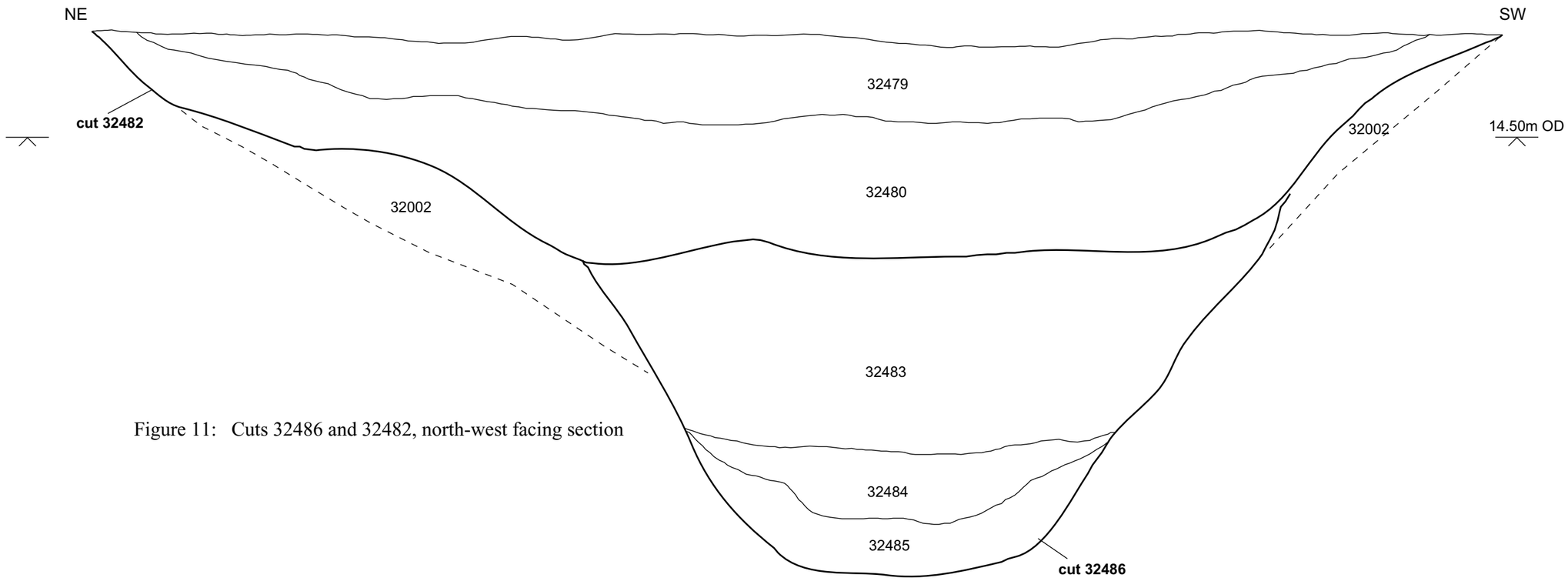


Figure 11: Cuts 32486 and 32482, north-west facing section

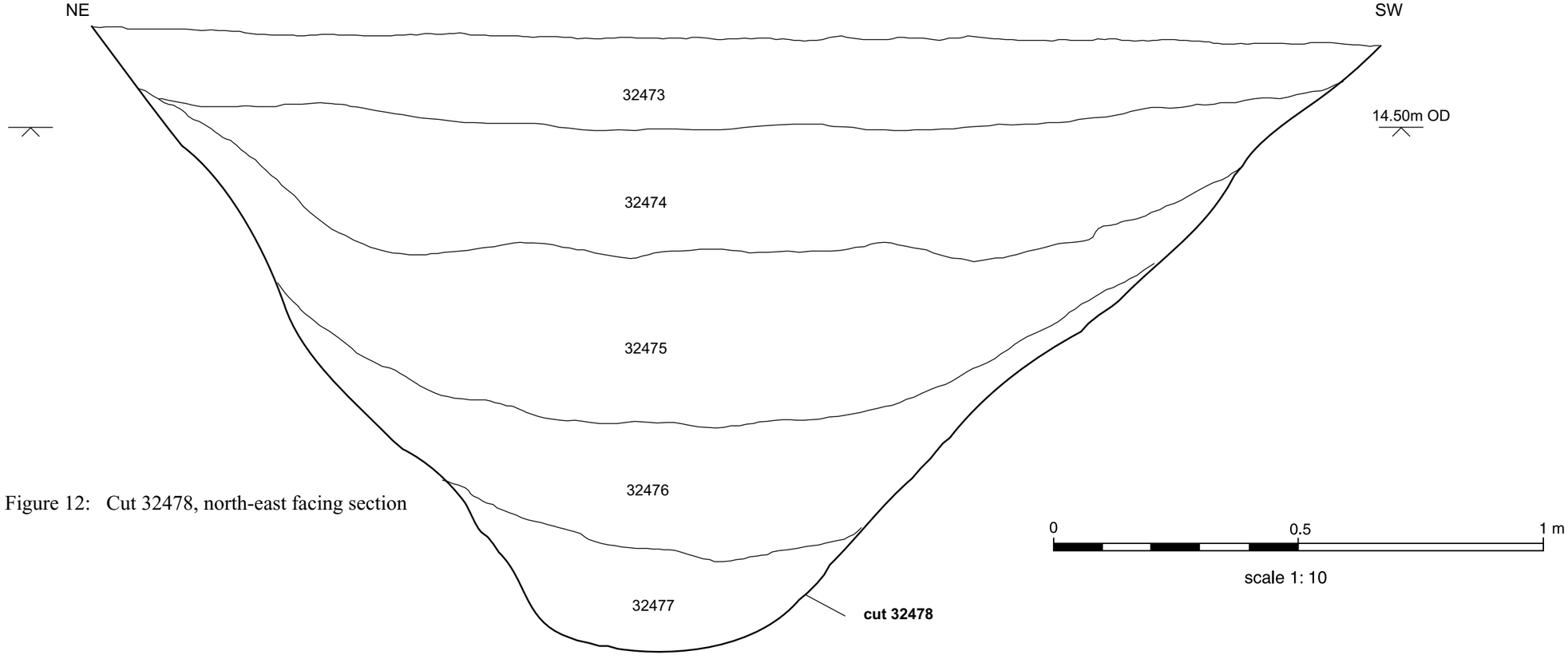


Figure 12: Cut 32478, north-east facing section

Plate 1 *Pit 32398 of pit alignment, after complete excavation, looking north-east*

Plate 2 *Pit 32360 of pit alignment, after partial excavation, looking south-east*

suggest that they accumulated or formed under conditions that may have been waterlogged. The uppermost surviving fill (32483) was a mid-orangish brown, clayey silt. What is likely to have been an irregularly shaped cut (32482) overlay 32486 and its fills. This cut measured up to 3.5m wide and had a depth of up to 0.51m. The cross-sectional profile of 32482 was variable, though typically both edges were gentle to moderately steep and the base flattish, undulations within both edges and parts of the base being present. The lowest fill within this broad hollow was 32480, a mid bluish grey clayey silt with some orangish brown mottling that was overlain by the uppermost fill (32479). This fill was similar to 32480 but slightly more brown in colour and siltier in texture.

The north-western of the segments measured around 2m long and was excavated at a point where the width of the feature was just in excess of 2.6m. Here, only a single cut with a depth of up to 1.15m (32478) could be detected with certainty. The edges of 32478 generally sloped at an angle of around 45° - though steepened slightly in their lower parts, and there was a fairly narrow (typically around 0.4m wide), flat base. Of the five fills observed within this segment, the primary (32477) was a mix of light reddish and greyish brown clayey silts permeated by a number of fine lenses and pockets of sand. This was overlain by 32476 that was composed of reddish brown and grey clayey silt containing occasional flecks of an iron pan type material. Almost identical to 32476 was its successor (32475); the principal difference between the two being the much larger quantities of iron pan type material present in the upper of the two. A fill composed of mottled pale brown and olive green clayey silts, 32474, sealed 32475 and was in turn overlain by 32473, a greenish brown clayey silt that formed the uppermost of the fills within this segment.

When contrasted with the excavations of the pit alignment within the main zone of Area 2, those parts within the eastern zone of the area show some differences of form. In the case of the larger surface side-bulging, this was apparent immediately after stripping. Significantly, what appears to be an individual pit of the alignment (32486) in the south-eastern segment, was succeeded by a broad, shallow hollow (32482) and as such accords well with the main zone. Less similarity was apparent in the north-western segment where only a single cut could be reliably identified and this bore little resemblance to either a pit or a broad, shallow hollow. Whilst it cannot be ruled out that the slightly steeper lower parts of this cut once formed part of a pit, this cannot be verified.

5.1.9 Un-dated Area 2

5.1.10 Feature cluster (Figures 13 - 16)

In the south-east central part of the interior of Camp 1 a cluster of twelve cut features occupied an area of ground measuring under 8m (north – south) x 4m (east – west). With the exception of two small sub-circular gullies, these were the only archaeological features found within the bounds of the Roman camp.

Seven of the features were of small size, generally less than 0.4m across, four of a size up to 1.25m across and one a small linear feature. The southernmost of the small features, 32336, was oval in plan, measured up to 0.36m across by 0.18m deep and displayed steep – near vertical sides, and a pointed base. A single fill of dark grey sandy silt clay (32335)

occupied this cut. Less than 1m to the west of 32336 a further small cut feature of similar proportions (32334) was located. This feature was also oval in plan, measured up to 0.4m across by 0.2m in depth and revealed steep sides and a rounded/pointed base. The sole fill of 32334 (32333) was a grey sandy silt clay that contained one or two small flecks of charcoal and a small quantity of pebble fragments.

Cut 32340 was located approximately 2m north of features 32336 and 32334. Appearing circular in plan with a diameter of 0.15m, this small cut had a depth of only 0.10m, sides that were moderately steep and a base that was slightly pointed. The fill (32339) was a slightly greyish, yellow brown sandy silt clay. Immediately adjacent to 32340 on its north-west side was Cut 32338. This was oval in plan, steep-sided, had a blunt, pointed base with a maximum width of 0.28m and a depth of 0.15m. The single fill of this feature (32337) was identical to 32339, but with a few inclusions of fractured pebbles. Nestled on the north-east side of Cuts 32340 and 32338 was Cut 32344. Of oval plan-form 32344 had moderately steep sides, a rounded base and measured up to 0.38m across by up to 0.21m deep. The single fill of this cut (32343) was a yellowish brown, sandy silt clay. Less than 1m north-west of the tight cluster (32340, 32338, and 32344) was a further small cut, oval in plan (32346). Measuring up to 0.28m across and 0.12m deep, this feature displayed moderately steep sides and a rounded base. Fill 32345, a yellowish brown, sandy clay containing occasional pebble fragments formed the only deposit within this cut. Some 1.5m north-east of 32346 lay Cut 32414. Of a sub-rectangular plan-form this feature measured up to 0.45m across, but only up to 0.04m deep. With near vertical sides and a flat base, the morphology of this feature was at variance with those of the other small cuts within this cluster. A single fill of yellowish brown, sandy clay (32413) containing a number of fractured pebbles, occupied this feature.

The northernmost of the larger features (32349) was oval in plan, and measured up to 0.9m across by little over 0.15m deep. The sides of 32349 were almost vertical except along its northern edge where they were seen to be only moderately steep. The base of this cut was almost flat, a slight fall to the west being apparent. Two fills were noted within 32349. The primary of these (32348) was a thin basal layer of mid brown silty clay containing large amounts of charcoal and occasional fractured pebbles. This deposit was overlain by 32347, a light – mid grey (with some colour variation) sandy clay that contained amounts of fractured pebbles. Approximately 1m south of 32349 lay a further large cut (32330). With a diameter of 1.2m and a depth of 0.46m this cut was the largest feature within the cluster complex. 32330 displayed moderately steep sides, a rounded base and contained two distinct fills. The primary of these (32332) was a pinkish orange, sandy clay that contained frequent fractured pebbles and small cobbles together with frequent charcoal fragments and flecks. Sealing this was 32331, a yellowish brown, sandy silt clay, again containing quantities of fractured stone and charcoal together with a single piece of burned and calcined flint. Situated around 1m south-south-west of 32330 was 32328 which was oval in plan with a long axis measurement of 1.24m but a depth of only 0.10m. With near vertical sides, the base of 32328 was, with the exception of three very small depressions, almost perfectly flat. Fill 32329, a mid brown, sandy silt clay containing quantities of fractured stone and charcoal, was the only deposit to occupy 32328.

Cut 32352 on the east side of the cluster was the only one of the large features to be square, or more precisely sub-square, in plan. With a typical dimension of 0.84m in an east-west axis and of 0.78m in a north-south axis, the corners of 32352 were, with the exception of the south-west, very sharply defined. The sides of the cut were vertical except for the western where the profile was slightly under-cut. The base of 32352 was nearly perfectly flat except for narrow shallow depressions along the eastern and western edges of the cut together with suggestions of two stake-holes along the northern edge. Two fills occupied this cut. The lower (32351) was a light grey, clayey sand silt containing frequent fractured pebbles and occasional flecks of charcoal, that was restricted to the eastern side of the cut. The upper fill 32350, was a dark grey (some colour variation), clayey sand silt that contained frequent stone fragments and moderate quantities of charcoal.

The remaining feature of this cluster was a wavy edged linear slot (32487) that just clipped (and was therefore later than) the eastern side of the square pit 32352. Aligned north-west / south-east and measuring some 1.12m long by up to 0.24m wide, the sides of this feature were steep but the base so varied in depth (from 0.03m – 0.18m) that it was initially thought to be comprised of a series of smaller cuts, (32408-12). A single fill (32407) occupied the slot. This was a pale grey, sandy clay that contained a small number of fractured pebbles.

Given that, with the exception of two small ring-gullies (5.11), these features represent all that was found within the area of the camp, it appears highly likely that the group are in some way related and of broadly similar date; why else this concentration within such a restricted area? It is also obvious that no coherent spatial patterning is readily apparent and that the individual features need not be exactly contemporary (this is certainly the case with 32352 and 32487). In order to attempt any broad interpretation of this feature cluster it is firstly necessary to try to identify its individual components. The seven smaller cuts are of plan shapes and proportions that may accord with post-hole or large stake functions, their shallowness perhaps pointing towards the flimsy nature of the posts and stakes rather than severe truncation. One of these small features (32414) stands out on account of its extreme shallowness and flat base and it may be that it represents, for example, the base of a shallow but larger pit type feature rather than something like a post-hole.

As far as the four larger features are concerned, substantial quantities of charcoal were recovered from a number of them and may relate to their usage. Environmental analysis of fills from these pits has failed to provide further clues. Square pit 32352 is of particular interest, the regularity of its vertical edges and crispness of shape pointing to deliberate and careful construction, presumably for some specific function. The presence of shallow channels around part of the basal edges of 32352 together with suggestions of at least two edge stakes hints that some sort of lining may once have been present within this feature. Environmental analysis of the contents of this feature shed little light on original function however. The small linear feature 32487 post-dates the square pit 32352 and is of uncertain function. This concentration of pits accompanied by small post-holes may represent activities more in line with a craft working, as opposed to a purely domestic, nature.

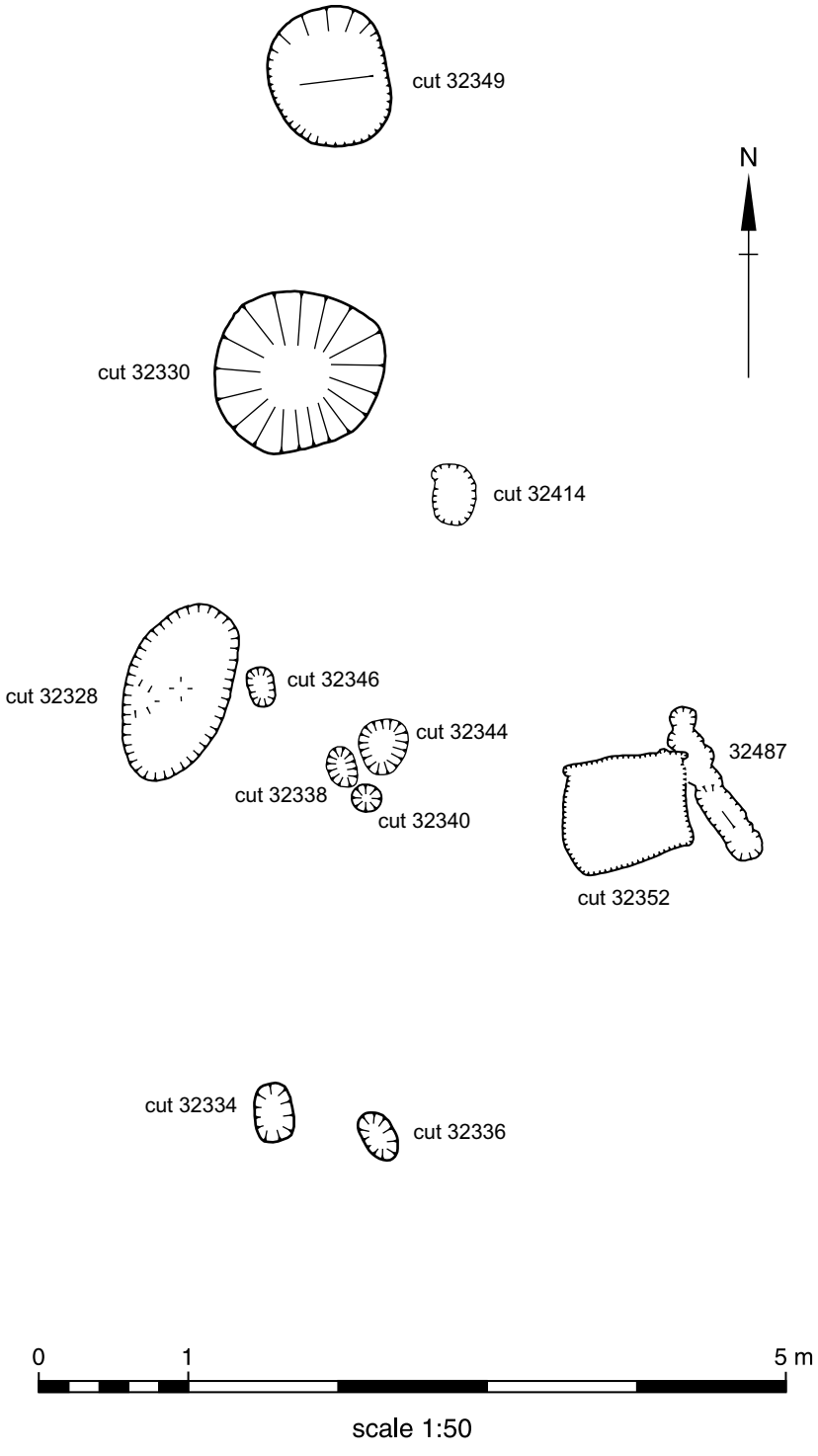


Figure 13 Plan of feature cluster in Area 2

Figure 14: Pit 32349, south facing section

Figure 15: Pit 32330, south facing section

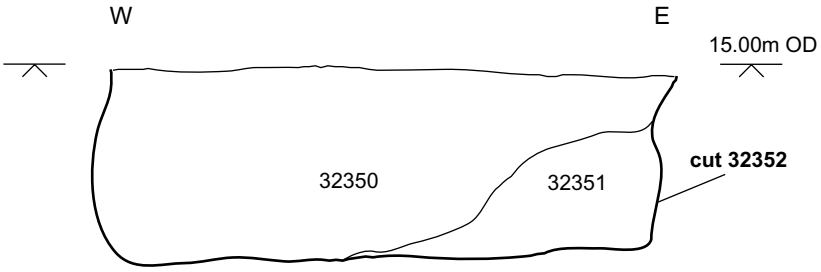
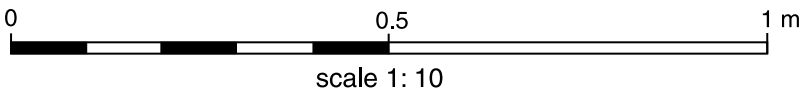


Figure 16: Pit 32352, south facing section



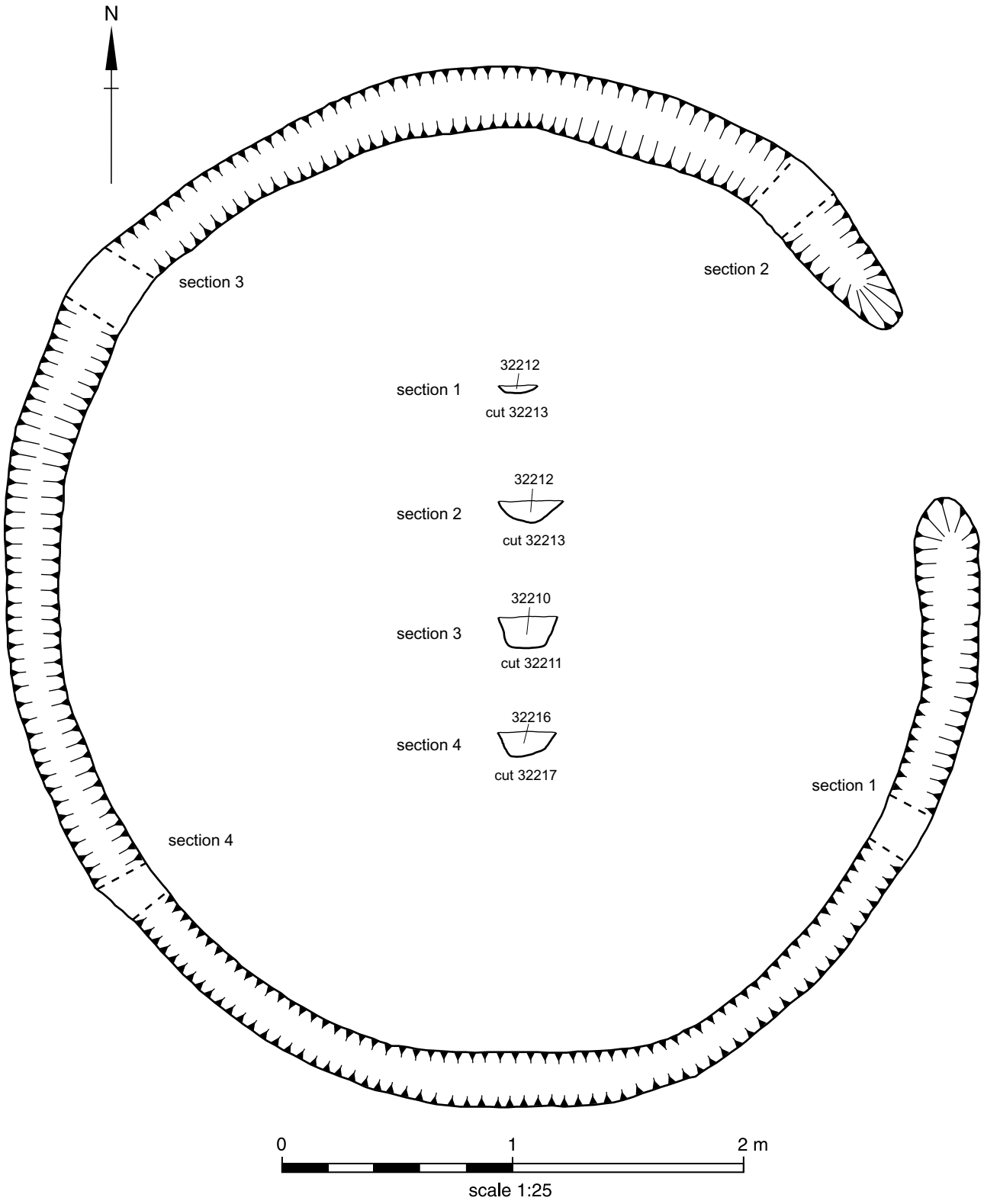


Figure 17: Plan and sections of ring-gully 32218 (same scale)

5.1.11 Ring gullies (Figures 3 & 17)

The remains of two small penannular ring gullies, both located within Camp 1 - though unlikely to relate to it, were identified and examined. Approximately 90% of each feature was excavated with between two and four narrow sections being retained for profile recording. Although only one cut and one fill was present in each example, all of the individual segments were numbered and recorded independently.

The southern gully (32170) survived simply as a curvilinear arc with a maximum width of 0.31m and a depth of up to 0.11m. It is estimated that were the arc to be complete it would have had a diameter of around 5m. The cut (32165, 32167, 32169) displayed edges that ranged in steepness from moderate to steep and a base that was flattish - slightly rounded. The fills (32164, 32166, 32168) were in all cases a light grey, soft, silty sand that showed clear evidence of disturbance from animal burrowing together with some plough scars. Two minute fragments of brick recovered from 32164 may be Roman in origin.

The entire penannular circuit of the northern gully (32218) survived, a narrow 0.8m wide gap in the gully being present on the eastern side. The gully width ranged from 0.18m – 0.3m, the depth from 0.07m – 0.14m and the diameter from 4.22m – 4.5m. The cut (32211, 32213, 32215, 32217) had edges that ranged in steepness from moderate to steep and a base that was again flattish – slightly rounded. In the area of both terminals the edges were more gently sloping and the base somewhat shallower. The fills,(32210, 32212, 32214, 32216) were all mid-yellowish brown, slightly clayey sands. No finds or other dating evidence was present within the fills.

The morphological and size similarities between these two ring gullies suggest the likelihood of a similar function and date for both features. Comparison of the gullies with those in published archaeological literature pertaining to the region reveals a number of similar features near West Heslerton, North Yorkshire, (Powlesland 1986; Powlesland 2003). Here the ring gullies were interpreted as haystack and hayrick gullies, at least some of which were likely to date to the Romano-British period. It may be that a similar interpretation is relevant to the two Monks Cross examples. Both features appear too small to have functioned as domestic dwellings though an interpretation as small livestock pens cannot be ruled out.

5.2. Roman

5.2.1 Camp 1 (Figures 2,18,19,20,21A, 21B, 22,23,24)(Plates 3 –12)

The camp was defined by a single ditch that formed a near perfect round-cornered rectangle. The long axis of the camp was aligned north-west / south-east and within the area of excavation two openings were present each of which was flanked to the exterior by a short stretch of detached ditch (traverse or titulus). The alignment of the camp together with the positioning of its entrances indicates that the *praetentura* occupied the north-western part of the camp and so the camp faced north-west. A total of thirty-four segments were excavated across the camp ditch whilst two more were cut across the traverses. Immediately behind the ditch lay the spread and badly eroded remains of a rampart, small areas of which were just visible as upstanding remains prior to stripping. Those stretches of rampart adjacent to the openings turned inwards and served to enhance

the camp's defensive abilities. Seven baulks, five of which fully extended across the rampart and ditch, were initially left in place. Subsequent to their sections being drawn and recorded these baulks were excavated or mechanically stripped.

5.2.2 Camp ditch

The camp ditch measured some 133.5628m north-west / south-east by 118.4447m north-east / south-west (these measurements based on distances between lines drawn along the inner edge of the ditch) and enclosed an area of some 1.545ha. Measurement of the corners of the camp ditch demonstrates that the sides had been successfully aligned at right angles to one another to within fraction of 1°.

The majority of the segments excavated along the ditch were 4m long, though several measured up to 7.5m in length. Each of the thirty four segments, 32031, 32033, 32083, 32064, 32078, 32090, 32112, 32119, 32122, 32124, 32135, 32141, 32156, 32162, 32175, 32186, 32190-1, 32207, 32209, 32226, 32228, 32236, 32241, 32247, 32257, 32262, 32284, 32287, 32296, 32298-9, 32327, 32358, was independently recorded one from the other.

The ditch displayed considerable variation in terms of width, profile and to a lesser degree depth, these morphological variations often occurring close to one another. Width variation ranged between 0.49m – 1.72m though generally width tended to average just over 1m. Gross changes of width, sometimes apparent over short distances, were present in many places, and, for example, in the case of segment 32247 the width broadened from 0.88m to 1.35m over a distance of 2.2m and in segment 32241 from 1.1m to 1.52m over a distance of 3m. Whilst these two examples represent the extreme, variation, albeit slightly less pronounced, was very common. The extremes of depth ranged between 0.44m – 0.83m though in most places was around 0.60m. Some correlation was apparent between width and depth with those parts of the ditch that were wider tending to be those that were also the deepest. Whilst it has been noted above that considerable width variations were apparent over fairly short distances, the changes in depth tended to be more gradual and occurred over longer distances, the greatest being a fall of 0.08m over a distance of 1m within segment 32186.

Cross-section profile variation was considerable, the only consistent element being an absence of gently sloping edges (excepting very upper parts in a limited number of segments) – all edges being moderately steep. In places the profile was a sharp 'V' shape, in others a 'V' with a broader or more rounded base. Often one edge of the ditch was steeper than the other. In such cases it was more commonly, but not exclusively, the inner edge of the ditch that was the steepest. In a number of instances where the ditch was of narrow width, for example segments 32141 and 32124, the edges of the ditch were very steep, c. 80° from the vertical. Further permutations to the ditch profiles were created by variation in the form of the sides, these often being concave, occasionally convex and less commonly displaying slight stepping. In a minority of excavated segments a basal slot was present. Sometimes this was narrow and shallow, for example 0.07m wide by 0.05m deep in Segment 32031, and sometimes wide and deep, for example 0.30m wide by 0.25m deep in Segment 32064. In some instances the slot had vertical sides and a flat base whilst in others their form was more rounded. These slots seldom ran for more than a few metres and where they were present within a number of

consecutive segments their form and dimensions were seen to vary. The only instances where gentle sloping sides (more correctly parts of sides) were present occurred in the cases of segments 32083, 32135, 32090, 32112, 32119, 32175, 32191, 32247, 32262 and 32287. Here, a very gently sloping upper edge, almost always on the exterior side of the ditch, was present. At a maximum, this 'shelving' of the edges occupied only the upper 0.19m of the side and rose gradually to the stripped surface over a distance of up to 0.77m. Whilst this phenomena was seen to exist in short stretches only, it was present on all four sides and is likely to be an original element rather than a product of later activity.

Within the area of excavation two entrances were present, one on the south-eastern side and one on the north-eastern side. It is believed that two further entrances, on the north-western and south-western sides, also existed, but they lay beyond the limits of excavation. Neither of the observed entrances lay central to their sides, the north-eastern being off-set to the north-west and the south-eastern being off-set to the north-east.

The entrances existed as simple gaps in the camp ditch. The north-eastern gap measured some 5.5m across, the south-western 7m across. All the ditch terminals were excavated, three during the 2003 excavation and one (south-eastern terminal of north-eastern entrance) during the evaluation of 2002. The entrance-way terminals shared a common morphology though their proportions one to another varied considerably. Rather than having rounded or squared ends each terminal displayed an obliquely cut end with slightly rounded corners. In the case of both entrances the plan shape of each terminal mirrored that of its partner the effect being that the inner side of the entrance-way was slightly narrower than the outer. The cross-section profile across the widths of the terminals mirrored that of the adjacent ditches, in each case steep fairly symmetrical sides with a basal slot, whilst the long axis profile of the terminals, i.e. along their lengths, was equally steep sided. One notable aspect of the terminals was again size disparity, in particular at the south-eastern entrance. Here, the north-eastern terminal was around 1.05m wide by 0.49m deep whereas the south-western terminal was a considerably larger 1.44m wide by 0.70m deep. No evidence was found to suggest that the entranceways were elaborated with timber gateways.

5.2.3 Traverse ditches (Figure 22)

Traverses were present opposite and exterior to both of the observed entrance-ways. That opposite the north-eastern entrance (32144) displayed parallel sides, measured some 8m x up to 2.2m wide and was 0.66m deep. It was separated from the entrance gap by a distance of some 11.5m. The traverse was not aligned exactly parallel to the adjacent camp ditch but was 5° askew (the north-western end being slightly further from the camp than the south-eastern end). Unlike the south-eastern traverse, 32144 was very close to being opposite the centre of the entrance-way. The ends of the traverse ditches were of a similar oblique shape to the entrance terminals resulting in the side closest to the camp being slightly greater in length than the other. Traverse 32144 was not only wider than the camp ditch but of different profile. The upper two thirds of the cut were symmetrical, gently sloping and slightly concave, the central lower third being a narrow 0.50m – 0.60m wide slot typically some 0.20m deep.

The traverse opposite the south-eastern entrance (32246) was markedly different from 32144 described above and bore a closer resemblance to the camp ditch. Traverse 32246

measured some 6.01m long x up to 1.45m wide by 0.57m deep and in plan was sub-rectangular with rounded ends. Separated from the entrance gap by a distance of 12m the cut was 8° askew (the south-west end of the traverse being slightly further away from the camp than the north-eastern end) from the adjacent camp ditch. It is noteworthy that this traverse does not occupy a position central to the entrance gap of the camp ditch but is off-set to the north-east. The profile of Cut 32246 was asymmetrical, having a steep south-eastern edge, a much less steep edge to the north-western side with the two being separated by a broad flattish base.

5.2.4 Gully 32269 (Figure 20)

Seemingly related to the camp ditch was a short stretch of gully (32269), located on the south-eastern side of the camp immediately south-west of the eastern corner. This gully was aligned parallel to the camp ditch and at a distance of 0.62m from its exterior edge. Measuring some 4.09m x up to 0.27m wide by up to 0.10m deep this feature had a very steep north-western side, a fairly gentle south-eastern side and a base that was generally flat. A single homogeneous fill of pale grey clayey silt (32268) occupied the gully.

The proximity and alignment of this gully to the camp ditch suggests that they are contemporary and related. There are two likely interpretations. Firstly, the gully may represent a marking out trench cut by surveyors to indicate the location of the ditch (possibly its exterior edge) for a work gang engaged in its cutting. Secondly, the gully may be indicative of a misalignment or digging mistake on the part of a work gang. No similar features were encountered along the ditch circuit. The author is of the opinion that the latter case is the more likely. Examination of the plan of the camp ditch shows that this gully is located opposite a section of ditch, approximately 9m long, where it is fairly narrow, with the greatest indent being on the exterior, south-eastern, side. It will also be noted that if the line of Gully 32269 were extended to the south-west this would accord well with the exterior edge of the camp ditch in this area. Again, the distance from the inner edge of the camp ditch to the outer edge of Gully 32269 produces a total width broadly in line with those stretches of ditch to both south-west and north-east. It suggested therefore that this gully is likely to have originated during the digging of the ditch, the gang engaged on this part of the defences perhaps starting to dig at full width but through absence of time or slothfulness finishing this stretch to narrower proportions.

5.2.5 Rampart (Figure 23)

Prior to site stripping, the remnants of the camp ramparts were, in short grass conditions, just distinguishable in a number of places along their circuit. These areas of up-standing earthwork were recorded in pre-excavation contour and hachure surveys of the site carried out in early March 2003 (Figures18-9). Vestigial traces had previously been identified two dimensionally in the aerial photographs of the camp in 2002 when plough spread rampart soils could be distinguished (at a height of several hundred metres) from adjacent soils. The discernable width of the spread rampart varied from 8m to 16m and its height up to 0.20m. The best-preserved stretches were those parts of the north-western and south-western sides of the camp that occurred in Area 2 i.e. immediately east of the overflow car-park. Here the rampart was typically around 8-10m wide and 0.20m high. Less well-preserved, but just distinct, areas of rampart, were visible on the camp's south-eastern side and also in places along the north-eastern side towards the northern and eastern corners. Parts of in-curving rampart at the camp's entrances were just visible

on the camp's south-eastern side and, to a considerably lesser degree, on the north-eastern side. At the south-east entrance this in-turning was restricted to the north-eastern side and on the north-eastern entrance to the north-western side. It should be noted that aerial photographs of the 1950's suggest the presence of an in-turning rampart on south-western side of the camp now occupied by the overflow car-park

During the process of mechanical stripping of the site seven baulks were left across the earthwork defences, five fully across the rampart and ditch and two across the in-turning rampart by the entrances. These baulks measured between 11.5m – 21.5m long and 2m – 9m wide. At least one section of each baulk was cleaned and recorded in section. A 12.5m long x 6m wide area of rampart was fully hand-excavated within the north-westernmost baulk at the point of best upstanding preservation. Towards the completion of the excavation all rampart material within the baulks was carefully machined under archaeological supervision. It was noted during site stripping that those areas exposed beneath the rampart had a pale greyish hue to their colouration when compared to that of adjacent exposed natural material. This rampart 'ghosting' was present along virtually the whole of the rampart circuit and was visible in post-stripping aerial photographs as well as at ground level. This discolouration effect appears to be due to the preservation of a very thin natural subsoil beneath the bank that away from the rampart has succumbed to eradication by the plough. The differences in texture and consistency of this material were only slightly different from that of adjacent exposed surfaces, the overwhelming distinction being that of coloration.

The results of the observations of the rampart sections and of the area of hand excavation are detailed below. The sections that extended across both rampart and ditch are described in clock-wise order, starting at the north-west, with those across the entranceway rampart in-turns only, as Sections 6 and 7 (starting from the north-east in clock-wise order).

5.2.5.1 Section 1 (Figure 23)

In the area of Section 1 the preservation of the rampart was as great as anywhere along the entire circuit though some animal burrowing (32053) together with more destructive plough damage (32059-60) was present. The lowest deposit visible in section was 32062, a thin layer of mid grey silty clay that was present in the south-eastern parts of Baulk 1. This material is likely to be indicative of the remnants of a buried soil.

In the direct area of the rampart the lowest deposit was 32051, a light grey slightly sandy clayey silt, noted as being slightly darker towards its base in places. Extending for a width of 4.25m and a height of up to 0.19m the north-western limit of this deposit terminated some 1.20m short of the lip of the camp ditch. This material was overlain by a thin band of mid- grey slightly sandy silty clay mottled with light grey and orangish brown patches (32052).

Context 32051 is believed to represent a buried soil preserved from later destruction by the presence of overlying rampart material. The most obviously in situ remains of the rampart consisted of the clayey spread of 32052, though in places the very upper part of this had been struck by the latest episode of ploughing in 2002.

Several deposits were present on either side of the bank. On the north-western side the lowest of these was 32087, a thin deposit of light-mid greyish brown, slightly clayey sandy silt that just lapped the edge of 32052 and extended fully over 32051 to stop just short of the lip of the camp ditch. Two further deposits overlay 32087. The smaller, south-eastern of these (32054) was a clump of mid-grey silty clay that lay close to the second much larger deposit (32055). This latter was of near identical colour, consistency and texture to that of 32054 and was seen to extend fully over and beyond the latest of the fills of the camp ditch.

Given the disposition of these deposits together with their sharp contrast to the overlying topsoil it is clear that all relate to the rampart, albeit in a partially dislodged form. The lowest (32087) may relate to dislodging during the event of camp slighting (see camp ditch fill: backfilling) though 32055 at least post-dates this event as it occurs stratigraphically later than the final silting of the ditch (see camp ditch fill: final silting); 32054 may relate to the same event. The spread nature of these latest contexts may have originated in processes of natural erosion that have been furthered by ploughing. It was clear that a recent plough event had partially cut through both deposits.

On the south-eastern side of the rampart the lowest deposits were 32061 and 32056. The former of these lay towards the south-eastern end of the section and consisted of a thin layer of mid-grey clayey silt. Context 32056 was an extensive deposit of mid-grey clayey silt with some orangish brown mottling that lapped over 32051 and tailed off over 5m to the south-east of this. Two deposits of identical material, (32057-8) – mid-grey silty clays, overlay 32056. It is probable that both contexts originally formed a single deposit having been subsequently separated by a ploughing event.

It is thought that 32061 may represent a preserved soil horizon rather than rampart material. 32056 may relate to a slighting event though ploughing may have served to spread this deposit further. Contexts 32057-8 are likely to have originated in a similar manner to 32056.

5.2.5.2 Section 2

At this point the ground surface along the rampart circuit was approximately 0.1m higher than that of the adjacent ground. This baulk displayed a simple sequence of natural deposits overlain by a soil (32074) this in turn was sealed by the existing topsoil. Context 32074 measured up to 2.56m wide, up to 0.15m high, tailed off to both north-east and south-west, and was located at a distance of 1m interior to the camp ditch. Composed of a light-mid- greyish brown, fine sandy silt, this deposit contained a few small irregular lenses of light orangish yellow sandy silt and occasional flecks of charcoal. 32074 represents vestigial traces of the rampart, quite probably in the form of a leeched buried soil preserved from later disturbance by rampart material that will originally have been mounded above.

5.2.5.3 Section 3

Prior to mechanical stripping the upper part of the rampart in this area was poorly pronounced and nowhere stood to a height of 0.08m above the surrounding ground. Deposits immediately above the level of natural formed elements of the rampart and were seen to be often quite small, thin, and of a mounded appearance. The smallest of these

deposits was only 0.35m in width, the largest 1.7m. The lowest of the rampart deposits were 32280 at the internal limit of the bank, and 32282 at the external. The former (32280) was a mid-greyish brown clayey silt that at its base contained small patches of much darker slightly humic material that may form the remnants of turf. The latter (32282) was a brownish yellow sandy silt clay that extended to within 0.5m of the ditch. A small deposit of light yellowish grey silty clay (32281) overlay the interior edge of 32282 and was in turn sealed by 32279 and 32278; the latter also overlay 32280. 32279 was a small, thin deposit of yellowish and light grey silty clay, 32278 a thicker and more extensive deposit of yellow silty clay. The uppermost surviving rampart deposit at the interior side was 32277, an extensive spread of light greyish yellow sandy silt clay. At the exterior side of the rampart the uppermost deposit was 32273, a light greyish brown clayey sandy silt. This latter material extended just over the latest of the fills of the camp ditch and as such was clearly slumped or spread at a relatively late date, possibly even by plough erosion in recent times.

These rampart deposits provide limited information on its construction. The lowest of the deposits, 32280 and 32282, served to define the width limits of the rampart, the subsequent deposits being lain between them. Contexts 32280 and 32282 are likely to have been derived from former top or subsoils (possibly even a mixture thereof) with some turf fragments likely to be present in 32280. It is possible that these two contexts represent remnants of partially disturbed in situ soils beneath the rampart rather than deposits laid to create it. By contrast deposits 32278-9 and 32281 appeared to have been composed largely of re-deposited natural materials, possibly derived from ditch digging. The origin of 32277 and 32273 is less certain. The total width of the rampart deposits was 4.28m, though allowing for some spread of 32282 on the exterior side is likely to have originally been marginally under 4m.

Sandwiched between the topsoil, and the inner and outer limits of the rampart were two small deposits of greyish brown sandy clay silt, 32271-2. These are likely to represent plough disturbed rampart material.

5.2.5.4 Section 4

Surface traces of the rampart were barely visible at the location of this baulk though some sub-surface indications of its former presence were apparent in the north-east facing section. Here a spread of light orangish grey sandy silt clay nearly 4.9m long with a depth of up to 0.17m (32266) lay directly over natural deposits at a distance of marginally over 4m from the inner edge of the camp ditch. The uppermost part of this material was noted as being very slightly less grey than the lower part. This material was partially overlain on the north-western side by 32267, a material similar to 32266, but noted as being less clayey and slightly darker in colour, and on the south-eastern side by 32264. 32264 was a mid-orangish brown sandy silt clay that spread as far as the lip of the camp ditch. Contexts 32267 and 32264 were both fairly thin and tailed off gradually away from 32266. One further deposit in this section (32263) may originally have related to the rampart. This deposit lay over 32264, above the final silting of the camp ditch and extended just over 1m to the south-east of it.

The only element of this sequence that appears to be in situ and related to the rampart is 32266 and it is probable that at least the lower parts of this may represent in situ soils

preserved from subsequent disturbance by the bank rather than specifically up-cast or laid rampart material. That this material should be located as far as 4m away from the camp ditch would seem to be due to the rampart curving in at this point to form the in-turned entrance on this side of the camp. The considerable width of 32266 may be indicative of a requirement for greater rampart size close to the entrance-way. Deposits 32267 and 32264 are likely to represent former rampart material that has been spread, possibly in the case of 32264, by the slighting of the camp at the time of abandonment, rather than by ploughing as this material is itself sealed by the final silting of the ditch. Context 32263 post-dates the final silting of the camp ditch and may represent plough-spread material.

5.2.5.5 Section 5

Surface indications of the rampart were comparatively strong in the area of Baulk 5, occasionally standing up to 0.1m – 0.15m above the level of the ground to either side. Lying directly over natural material was a deposit of light greyish brown, compact, silty clay, 32386, that contained small pockets of browner silty clay. This deposit stood to a height of nearly 0.40m, had a width of 4.32m, and sloped away fairly steeply to both north-east and south-west; this latter side being located at a distance of 1.5m from the lip of the camp ditch. Lapping over either side of 32386 to both north-east and south-west were deposits of light yellowish brown clayey silt, recorded as 32385 (32203/32204 in opposite section). This was in turn sealed by the modern plough-soil 32001/32384.

Partly as a result of drying out and cracking of the section, little variation was discernable within 32386 though it clearly represents the remnants of the rampart. A detailed examination of this material by a soil scientist indicates that the lowest part of this material represents parts of a surviving in situ soil profile. The material of 32385 is likely to have derived from rampart make-up that has been displaced, perhaps initially by slighting and subsequently by erosion and ploughing.

Hand excavation: A 6m width of the south-western part of Baulk 1 was entirely hand-excavated down to natural deposits. The lowest deposit encountered was 32388, a mid-greyish brown sandy silt of somewhat mixed appearance which contained occasional patches of much darker greyish brown slightly humic material together with occasional flecks of charcoal. The humic element is believed to represent fragments of turf. 32388 had an average width of around 9.80m and was of a gentle convex cross-section profile. The central and highest parts of this context were typically 0.09m – 0.14m above the level of surrounding natural deposits. A dark yellow clayey sand containing occasional patches of darker sandier material (32387) overlay the central parts of 32388 only, typically forming a band just under 3m in width with a maximum depth of around 0.08m. A series of parallel modern plough scars 32389-90 were seen to cut through the upper parts of both 32388 and 32387. Modern plough-soil (32001) lay directly over 32387 and in its lower parts was seen to contain clumps and pockets of clayey silts and sandy silts that were much paler than the overwhelming bulk of the plough-soil and clearly alien to it.

The lowest excavated material (32388) is thought to be derived principally from a buried soil that had been preserved from later destruction by the presence of rampart material above. Context 32387 represents in situ rampart material, which judging by its make-up is likely to have been derived from re-deposited natural, probably ditch digging up-cast.

The alien materials present within the lower parts of the topsoil relate to former rampart material dislodged by recent ploughing.

5.2.5.6 Section 6 (north-east entrance rampart in-turn)

The lowest deposit observed in this section was a 4.59m long, light-mid slightly brownish grey clayey silty sand (32098/32042) that directly overlay natural and had a depth of up to 0.21m. The extreme western side of 32098 was lapped over by 32096, a thin layer of light-mid-brownish grey silty sand that was in turn overlain by a pale brownish grey sandy silt (32097) that contained moderate clumps of yellow clay. Also overlying 32098, on its eastern side, was 32099 a spread of light-mid greyish brown silty sandy clay.

Context 32098 represents the surviving remnants of intact rampart material, possibly incorporating some buried soil in its lowest parts. Deposits 32096-7 and 32099 were almost certainly derived from the rampart. The displacement and spreading of these materials may in part relate to slighting and erosion, plough action almost certainly accelerating and exacerbating these processes.

5.2.5.7 Section 7 (south-east entrance rampart in-turn)

Only a single deposit (32258) was apparent between the machined surface of natural and the existing topsoil. This material was a pale, slightly brownish grey clayey fine silt. Measuring between 5.6m to in excess of 7m (either side of baulk) in width, 32258 survived for a depth of up to 0.19m. It seems certain that 32258 represents surviving remnants of intact rampart material that may incorporate some buried soil in its lowest parts. No further deposits representing former rampart material were present to either side or above.

5.2.6 The Rampart : summary

Although generally in a very poor state of preservation, the rampart remains do provide some basic data. Traces of truncated buried soils were, or appear to have been, universally present under the rampart indicating construction after some stripping of topsoil. The stripping of at least parts of the topsoil, with the preservation of the lower parts of the in situ soil profile, is confirmed by sedimentary analysis (see specialist report). Observation and examination of the baulks revealed only limited evidence for the presence of turf and former topsoil within those areas of surviving rampart material. This is again a factor confirmed by specialist analysis, and one that almost certainly relates to destructive processes at, and after, abandonment of the camp.

In terms of original proportions the width of the rampart at its base averaged fairly closely around 4.50m with the exterior edge generally around 1m from the lip of the camp ditch. The only places where the width of the rampart was grossly in excess of the average was in those sections that impinged on the rampart in-turns, the implication being that the rampart was widened at the vulnerable entrance-ways. Like the rest of the ramparts, the rampart in-turns had suffered severely considerable post-occupation degradation, the spreading and removal of their material making it impossible to be certain of their full original size and course. Indications of turf within the rampart make-up were sparse, a factor likely to relate solely to the poor state of preservation. Only two sherds of pottery were recovered from deposits sealed by the rampart (32042 and 32051).

That from 32042 was of early-mid 2nd century Ebor ware, that from 32051 a burnt sherd probably of the same ware.

5.2.7 Camp ditch fills

Although each of the segments of the camp ditch was numbered and recorded independently, it was clear during the course of excavation (and clearer during post-excavation analysis) that fills could generally be correlated with those in other segments and the entirety fitted into three broad categories, each category relating to an origin via specific depositional means. These three broad categories are:

- Primary silting
- Backfilling
- Final silting

5.2.7.1 Primary silting

Evidence for initial primary silting of the camp ditch was found in thirty one of the thirty four excavated segments and was represented by (32046-7, 32110, 32113, 32125, 32127, 32130, 32132, 32139, 32145, 32147, 32151, 32158, 32159, 32176-7, 32178, 32184-5, 32196, 32200-1, 32206, 32221, 32225, 32231, 32235, 32240, 32242, 32252, 32256, 32261, 32295, 32303, 32306-7, 32314, 32318, 32319-20, 32326, 32356-7, 32359, 32374-5, 32492-3). Between one and three deposits representing this earliest of the fill sequences were present in the segments. This category can itself be sub-divided.

A slight majority of the fills was restricted to the base of the ditch, and occasionally, ran part way up the lower edges of the cut. These were nearly always brown or yellowish brown in colour and composed of fine-textured clayey material, typically only a few centimetres thick. Very thin silty and sandy lenses often permeated these deposits. It is quite likely that watery conditions prevailed during the deposition of these materials. During the course of the excavation it was observed that all excavated ditch segments retained quantities of water during, and for some time after, periods of wet weather and that this nearly always resulted in the accumulation of a fine textured sludgy material in the base of the cut. It is considered that the excavated fills represent in-washes of material that accumulated shortly after the camp ditch was cut and that they are likely to have been deposited in a manner similar to that described above.

The remaining sub-group of this category of ditch fills consists of those deposits, typically fairly thin, that tended to concentrate in the lower parts of the cut, and closely resembled the natural materials through which the ditch had been cut; usually yellowish brown and brown clays or yellowish brown clayey silts. Frequently these were separated from the adjacent natural by patchy lenses of darker silts. These deposits are held to be evidence for the slumping of the edges of the ditch. Such slumping was again observed during the excavation, especially after spells of dry weather (which led to the cracking and loosening up of chunks of the ditch edges) when followed by rain (which caused the loosened chunks to break free and fall).

Collectively this category of deposits is interpreted as a build-up of erosion deposits that accumulated shortly after the camp ditch was cut. That no finds were recovered from these deposits, which effectively represent the life-span of the camp, points towards one

or a combination of the following applying: a short span of occupation, a tidy regime being maintained or a relative absence of non-organic breakable materials.

5.2.7.2 Backfilling

A total of seventy three contexts collectively form the deposits relating to this category of fill, 32035, 32040, 32043, 32049, 32070-1, 32075, 32084, 32091-2, 32095, 32100-6, 32109, 32111, 32126, 32129, 32131, 32133-4, 32136-7, 32140, 32142, 32146, 32148-50, 32152-3, 32157, 32161, 32163, 32174, 32180-1, 32183, 32195, 32197-9, 32219-20, 32224, 32230, 32233, 32237-9, 32249-51 32254, 32260, 32290-94, 32302, 32308, 32312-3, 32316-7, 32325, 32353-5. Deposits of this group occurred in every excavated segment and typically formed half to two thirds of the ditch fill. In all cases these fills overlay the primary silting. It should be stated at the outset that most of the deposits listed are effectively composite contexts and consisted of a range of different materials that were grouped together for convenience; to have not done so would, in circumstances of limited time and resources, have necessitated the allocation of literally thousands of individual numbers and enabled excavation on an extremely limited scale only. In addition to the varied elements of their makeup, it was essentially the highly multi-coloured and jumbled nature of these deposits that highlights them as a coherent grouping distinct from earlier and later fills.

The colour, consistency and texture of these deposits ranged from yellow and brown clays and silty clays to pale grey to dark brown silts and very dark greyish brown, slightly humic material, to pale coloured lenses and pockets of sand. In some instances these individual materials were thin, thoroughly intermixed and convoluted. In others when one particular component was isolated it could be seen to extend for up to 2m or more and have a thickness approaching 0.30m. Often these fills could be seen to be tipping down into and across the cut.

It is suggested that the origin of the materials that compose this group was the rampart that lay immediately behind the camp ditch. It is believed that the rampart was composed of several materials, predominantly cut turf, up-cast from the excavation of the ditch, together with top and subsoil. All of these types of material are represented within the group fills, a factor confirmed by sedimentary analysis (see specialist report: soils and sediments analysis). The yellow and brown clays and silty clays represent excavated natural subsoil – most of which is likely to derive from the ditch, the dark-coloured humic material (which sometimes occurred in fragmented slabs) almost certainly represents turf whilst the remaining materials are likely to be indicative of spreads of topsoil and subsoil. It has already been noted that the varied deposits of this group were frequently intermixed in a series of distinct clumps, pockets and lenses. This sort of disposition would not seem to accord well with a process of deposition via a slow erosion of rampart material into the ditch. Rather, it is suggested that this group of deposits represents slighting of the camp by a partial destruction of the rampart - the dislodged material being cast into the ditch.

Relative to other fills on the site this episode of deliberate backfilling of the camp ditch produced a substantial artefactual assemblage, consisting of pottery, brick and flint. This included twenty -nine sherds of Romano-British pottery, mostly Ebor wares of various forms, but also including a large sherd of Dressel 20 amphora and a sherd of Central

Gaulish Samian. Of the three pieces of brick, two small fragments are clearly of Roman fabric, the third larger piece may again be of Roman origin, though it is of a thickness more common to the post-medieval period. The two pieces of flint from this sequence of ditch fills had been struck, one of the pieces is possibly a re-used flaked axe fragment (sf. 00066-7). All elements of the pottery assemblage were of similar date and it is with a considerable degree of certainty that this episode of slighting of the Roman camp can be dated to the first half of the 2nd century AD.

5.2.7.3 Final silting

It is probable that the slighting of the camp described above filled the bulk of the circuit of the ditch. Remnants of turf-like material within the ditch indicate that much of this in-filling was in large clumps, no doubt with voids between. With time these slighting deposits will have settled thereby providing additional space for later deposits to accumulate. Deposits relating to the final silting up of the camp ditch were observed in all but three of the excavated segments and consist of fifty-seven contexts (32030, 32032, 32034, 32041, 32044-5, 32048, 32063, 32069, 32076-7, 32079-80, 32085-6, 32088-9, 32107-8, 32118, 32120-1, 32123, 32128, 32138, 32155, 32160, 32172-3, 32182, 32192-4, 32205, 32208, 32222-3, 32227, 32229, 32232, 32234, 32237, 32248, 32253, 32255, 32259, 32274-6, 32285-6, 32297, 32300-1, 32315, 32321-4, 32372-3). In many of the segments the presence of only a single fill could be determined, in others up to six distinct fills were noted. In all cases however, this group of deposits post-dated the deliberate back-fills relating to the slighting of the camp.

The fills displayed a fair degree of variation in colour consistency and texture, and it is clear that some of this variation can be related directly to depositional origin. For example, a number of yellowish brown and brown clays and clayey silt deposits, often quite thin, were present immediately adjacent to and in contact with the edges of the ditch. For the most part these occurred on the exterior edge of the ditch. These fills can confidently be ascribed an origin via the slumping and erosion of the upper parts of the ditch edge where it cut into natural clay. From the evidence of those baulks left intact across the rampart remains and ditch it is clear that some of the fills relate to slumping from the slighted ramparts. In some of these sections disturbed and slumped rampart material was seen to slope down and extend into the upper parts of the ditch. Reflecting the composite nature of the rampart, these materials were quite varied, sometimes consisting of re-deposited natural clays and silty clays, and sometimes as darker brown clayey silts – possibly originally derived from the top and subsoils. Only in a few instances were very small clumps of dark-coloured turf type material present. Many of the final silting deposits were homogeneous mid-dark brown fine- textured clayey silts occupying the very uppermost central part of the ditch.

The final silting fills represent a slow gradual accumulation of materials in the very uppermost part of the camp ditch above the level of the deliberate back-filling. At the time at which these deposits started to accumulate the largely in-filled ditch is likely to have had the appearance in profile of little more than a hollow. Nine sherds of Ebor Ware pottery were recovered from various of the upper fills together with nine sherds (all probably derived from a single large fragment) of Knapton ware. All the sherds have a date around the early-mid 2nd century AD (i.e. the same date as the pottery recovered from the deliberate backfilling deposits within the camp ditch) and almost certainly

represent material derived from the occupation of the camp. Three sherds of late 4th century Crambeck mortaria (all from one larger fragment) stand out within this assemblage serving to emphasise the relative absence of later material and presumably, activity. Small quantities of Roman brick were also recovered from two of these contexts together with a single flake of flint (sf. 00080).

5.2.8 Traverse fills (Figure 22)

5.2.8.1 North-eastern traverse

The north-eastern traverse was occupied by three fills. The primary of these (32179) was a mid-reddish brown clay (some colour variation) containing occasional flecks of charcoal that occupied only the lowest part of the linear slot at the base of the cut (32144). This was overlain by 32154, a thick deposit of mid brownish yellow sandy clay that was noted as becoming increasing sandy with depth. Occasional fragments of stone were present within this deposit. The upper fill (32143) was a light yellowish grey silty clay containing occasional cobbles and flecks of charcoal that occupied only the uppermost parts of the traverse cut.

The primary fill represents initial in-wash and erosion of the edges of the cut, much as was observed along the length of the camp ditch. The large intermediate fill (32154) does not have a ready counterpart or equivalent in either the camp ditch or south-eastern traverse. No turf type material was present in this deposit and its origin is not certain. 32154 closely resembled the surrounding natural into which the traverse had been cut (silty clay overlying clayey sand) and it may be that the deposit accumulated largely by a process of erosion; certainly there was no evidence in the form of jumbled different materials and turf to suggest a deliberate backfilling at the time of the slighting of the camp. The uppermost fill is thought to represent a final slow silting up of the vestigial remains of the traverse. No finds material was recovered from this feature.

The north-eastern traverse is of some interest. For one thing the cross-section profile of the traverse itself is unique at the site, for another the available evidence suggests that no bank or rampart was ever present between it and the adjacent entrance. This evidence takes the form of its lack of a deliberate backfill deposit and the absence of a pale grey colouration at the level of natural deposits behind the traverse as were noted under the circuit of the camp rampart.

5.2.8.2 South-eastern traverse

The south-eastern traverse was also occupied by three fills. The lowest (32270) was a light grey silty sand containing occasional pockets and lenses of dark reddish brown sand. This was overlain by 32245 that occupied the bulk of the traverse. This material was a yellowish brown sandy clay containing patches of light grey silty clay throughout its volume and produced several lumps of ferrous slag. The upper fill (32244) was a brownish grey clayey silt that occupied only the very uppermost part of the cut.

The primary fill of the south-eastern traverse is likely to relate to an initial in-wash of material shortly after the cutting of the feature. Despite a lack of turf type material, the intermediate fill is likely, on the basis of its mixed appearance, to be indicative of a deliberate back-filling event, much as was observed elsewhere along the circuit of the

camp ditch. The uppermost fill is likely to represent the final silting up of the remains of the traverse. Despite the likelihood of a deliberate backfilling of the traverse, the absence of a pale grey colouration at the upper level of natural deposits behind the traverse suggests that no associated rampart was ever present.

5.2.9 Ditches south-east of the camp

Traces of two linear geophysical anomalies aligned parallel to the south-east side of the camp were identified and examined in Trench 17 of the 2002 evaluation, (Ottaway 2002, 13). These proved to be small shallow ditches. During the 2003 excavation this area was stripped cleaned and examined and subsequently selectively stripped in narrower trenches and re-cleaned. No trace of these features could be found.

5.2.10 The siting, surveying, metrology and arrangement of the camp (Figure 24)

The principal axes of Camp 1 are aligned north-east / south-west / and north-west / south-east and the sides and ends are parallel to each other. The corners lie close to the cardinal points, due to topographical considerations rather than any other factors. Examination of the topography of the locality shows that the camp occupied ground marginally higher than its immediate surroundings, all but the western corner fitting very snugly just within the 50 foot (15.24m) contour as shown on mid- 20th century Ordnance Survey maps of the area. Indeed the north-western and north-eastern sides of the camp largely reflect the alignment of this contour, the south-east side slightly less so. At the micro-topographical level, survey work carried out immediately prior to the excavation highlighted a low, very slight ridge around 50m long and aligned approximately north – south in the north-eastern part of the camp. This small rise was utilised as part of the in-turned rampart entranceway on the north-eastern side of the camp and serves to emphasise the high degree of consideration given to the siting of the camp.

Detailed examination of the angles and dimensions of Camp 1 provides significant and interesting information; this is pictorially expressed in Figure --. It has been anticipated that the original surveying for the laying out of the camp will have been concerned primarily with the interior space and so all modern investigative measurements have been related to lines following the inner edge of the camp ditch.

When the angles of intersection between lines following the inner line of the ditch are measured all prove to be right angled to within a fraction of 1º. It seems reasonable to assume that the laying out of such a rectangle will have marked the first stage of the surveyor's task, this job no doubt being carried out by legionary surveyors (*agrimensores*) equipped with a *groma* to provide sighting along straight lines and right angles. This rectangle measured some 133.5628m north-west / south-east by 118.4447m north-east / south-west. When these distances are converted to Roman feet or *pes Monetalis* (0.296m = 1pM) the figures are 451.225pM north-west / south-east by 400.151pM north-east / south-west. From these figures it appears highly likely that the rectangle so created was of a pre-determined 9:8 ratio with intended sides of lengths 450pM and 400pM. Based on these figures, the accuracies are within tolerances of small fractions of 1%.

With regard to the rounded corners of the camp, Figure – shows the high accuracy of fit of a circle based on a 50pM radius (14.8m) to these corners. The centre point of the

circle itself is shown set at a distance of 70pM (20.72m) from the point of intersection of the initial rectangle. The location of the circle's centre point on a line mid-way between, i.e. at 45º to the camp sides could have been achieved relatively easily by sighting along the diagonals of the camp rectangle. The laying out of the initial rectangle and the superimposition of rounded corners on this represent the starting points in the layout of the camp. Both tasks appear to have been carried out by competent surveyors.

Slightly less regularity than in the initial layout can be found in the siting of the two entrances uncovered in the excavation. The centre point of the north-eastern entrance lies approximately one third way along its side at a distance of 43.6444m (147.447pM) from the northern corner of the initial rectangle - though not at 150pM which would have been an exact third of the length of the south-east side. The centre point of the south-western entranceway, were this to be central to this side, should occur at a distance of 200pM from the south and eastern corners whereas it actually occurs at a distance of 190.860pM (56.4948m) from the eastern corner. If is assumed that it was intended to lay out the entranceways at distances of a third and half way along the camp sides then in comparison to the basic layout of rectangle and rounded corners the finished product was inaccurate. There are four explanations that are most likely to account for this. Firstly, it may be that the entrance locations were not determined by surveyors or metrological considerations at all, but by other factors, in the case of the north-eastern entrance, for example, by the slight ridge being utilised as part of the in-turning rampart. Secondly, the work of surveyors may have been limited to the rectangle and corners only, the location of entrances at proportions of a third and a half perhaps being marked out by soldiers constructing the camp who may not have been conversant with the finer points of surveying. Thirdly, accurately marked positions for the entrances could have been laid out by surveyors' but these became displaced during construction work. Fourthly, though perhaps unlikely, the surveyors made errors in their marking out.

It has already been noted in the sections describing the camp ditch and traverses that there is variation in the width of the entrances, in the sizes and alignment of the traverses and in the distances of the traverses from the entrances. These observations, together with the evidence of gross ditch cutting irregularities, contrast starkly with the initial elements of the camps laying out and suggest that such inaccuracies occurred once the surveyors' task had been completed.

The absence of surviving Roman archaeological remains from within the camp argues for accommodation in leather tents rather than permanent structures. Spaces rather than metalled roads would have provided a ready means of access and communication within the camp. One of these is likely to have been present immediately interior to, and following the entire circuit of, the rampart. Others can be anticipated to have extended into the camp from the entranceways forming four principal divisions and providing a framework for a grid of streets.

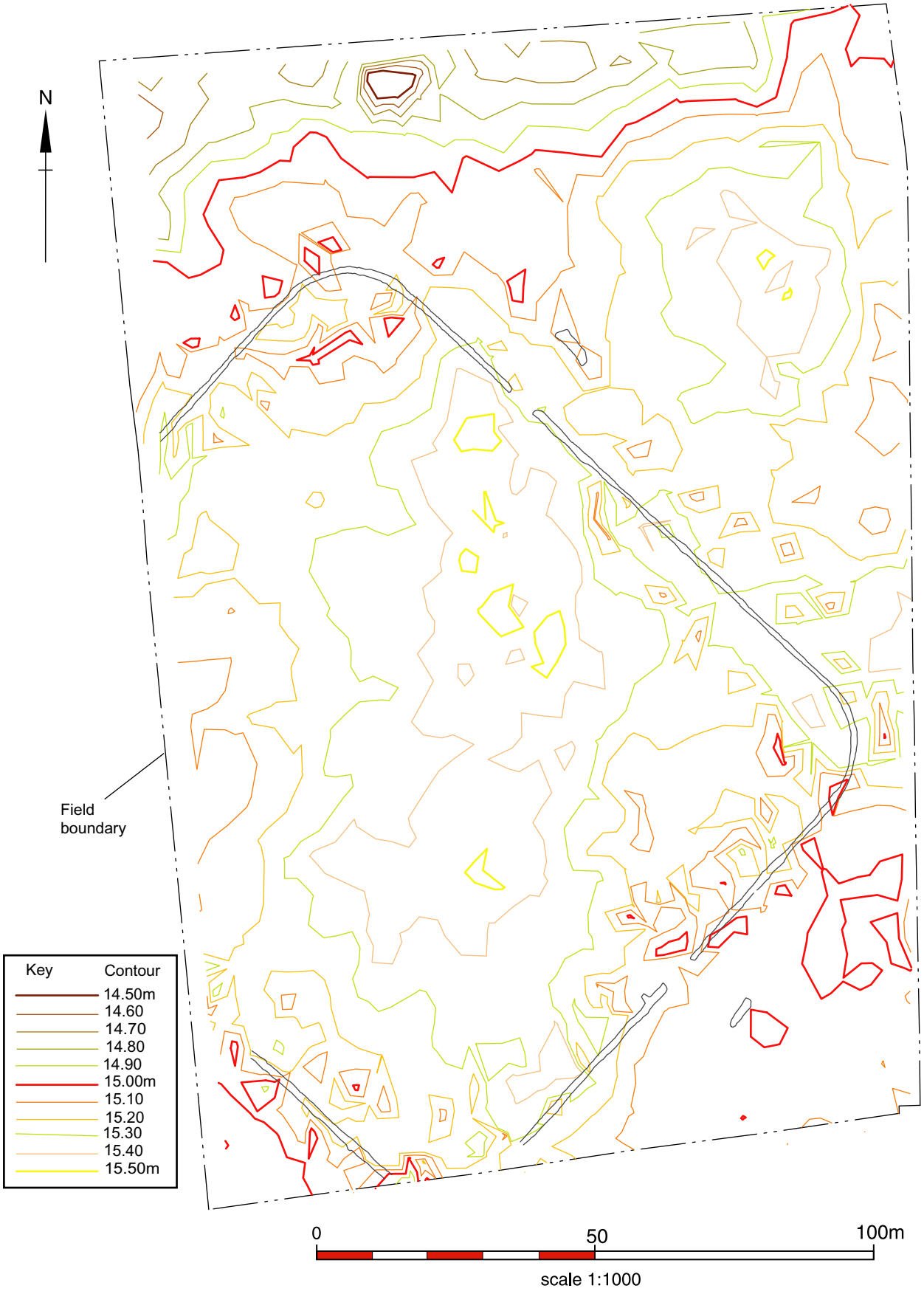


Figure 18: Contour survey overlain on plan of excavated camp

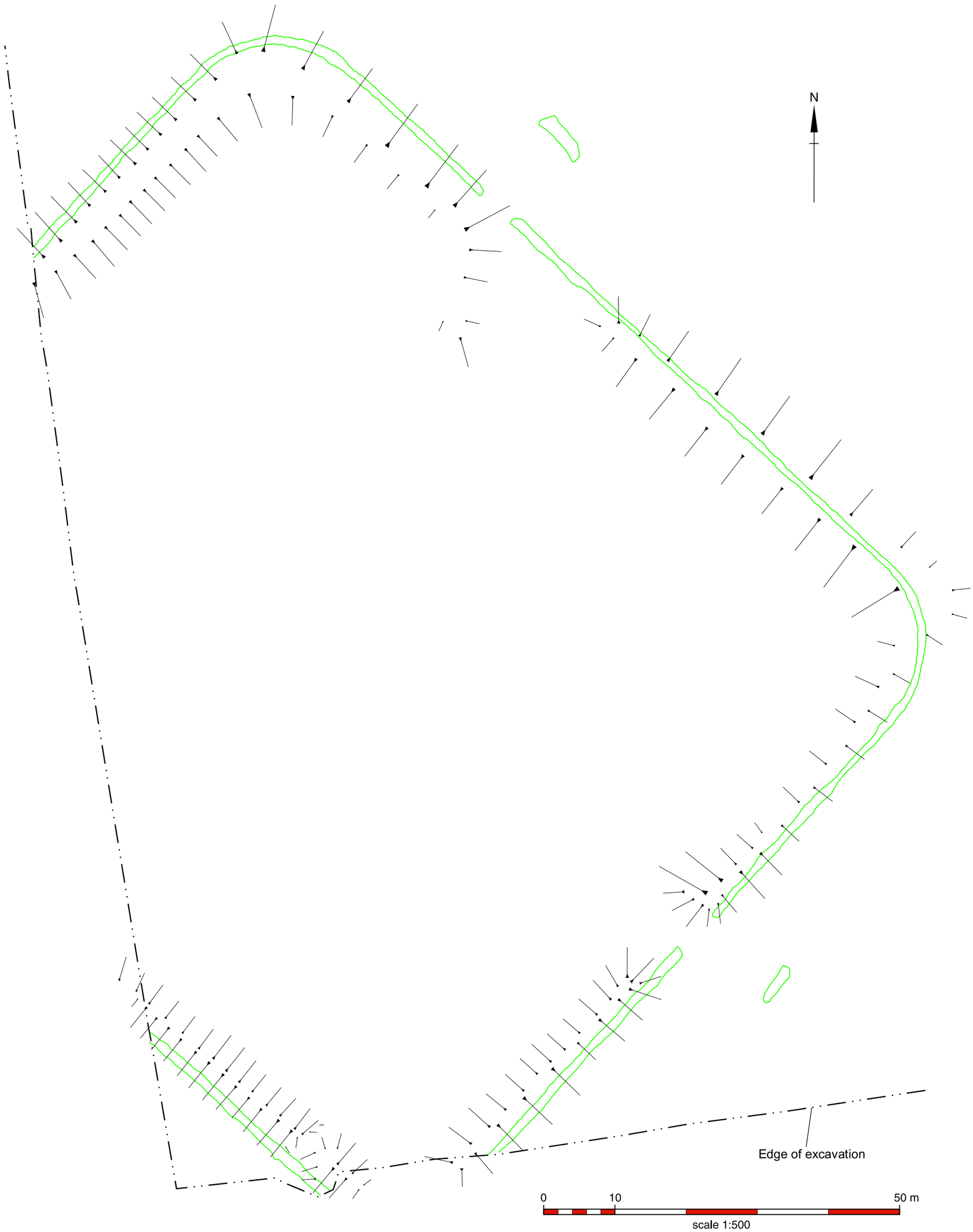


Figure 19: Hachure survey overlain on plan of excavated camp

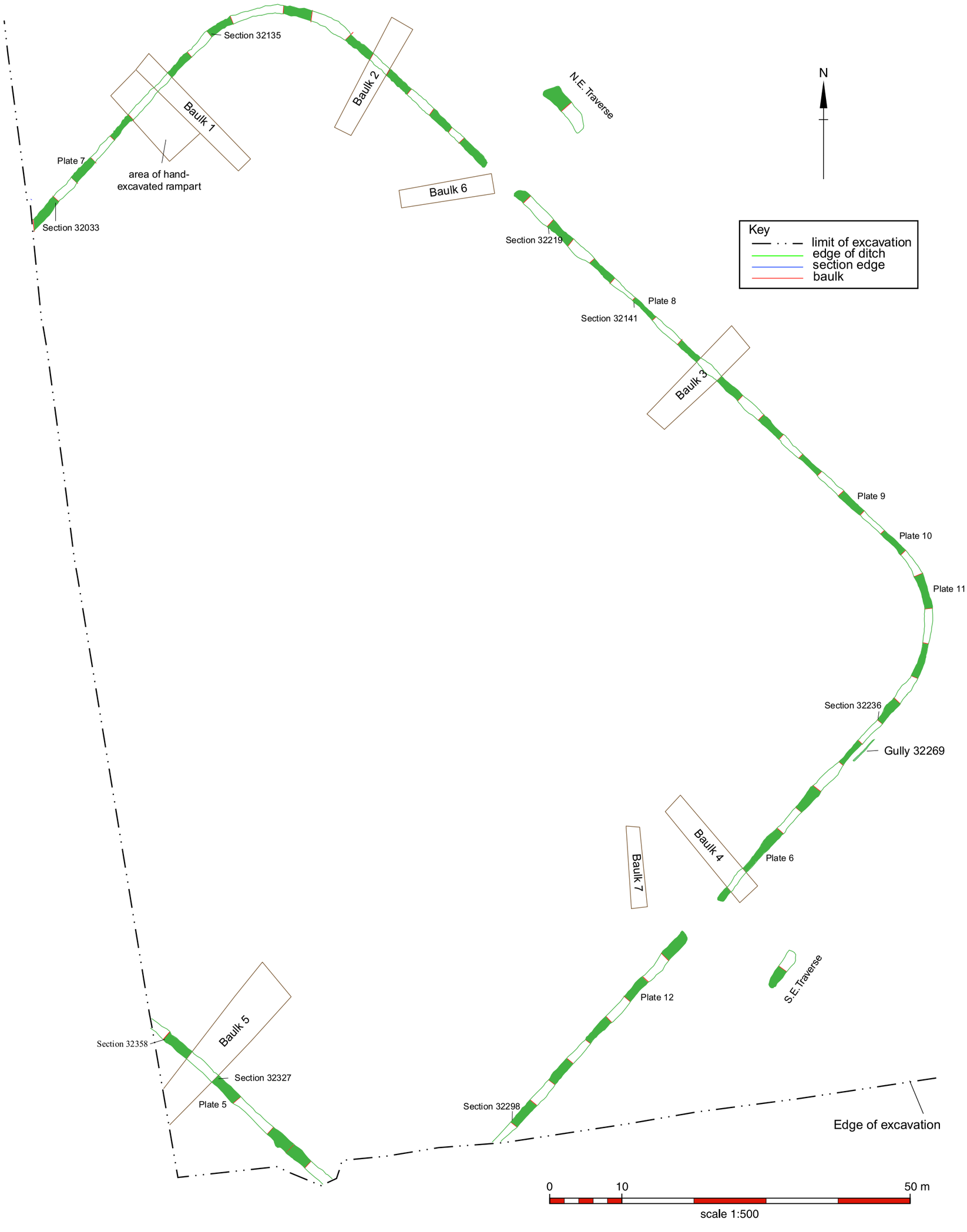


Figure 20: Plan of Camp 1, excavated segments are highlighted green and baulks numbered. Plates are referencd to segments and sections located by cut numbers

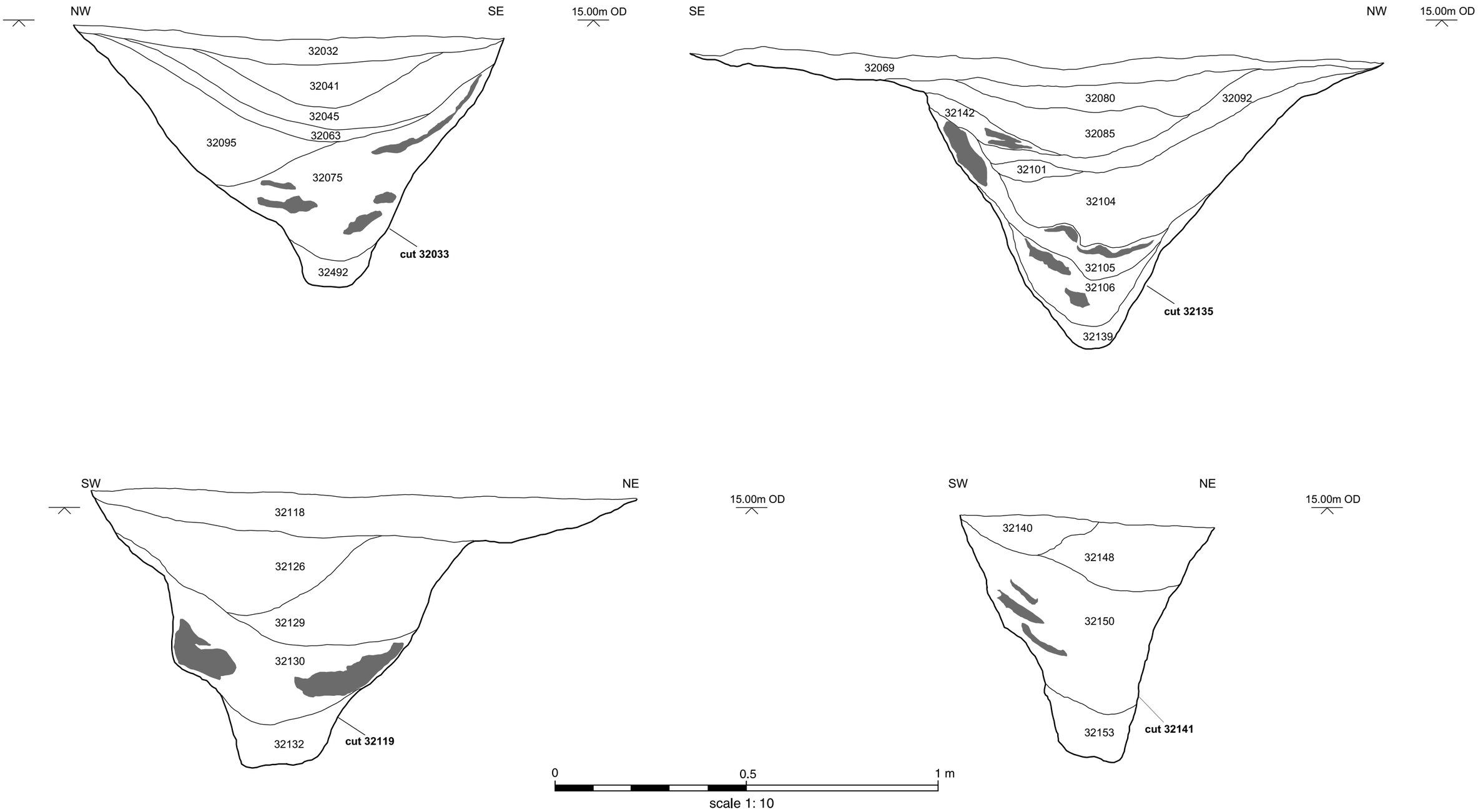


Figure 21 (a): Camp 1 ditch sections (see Figure 20 for locations)

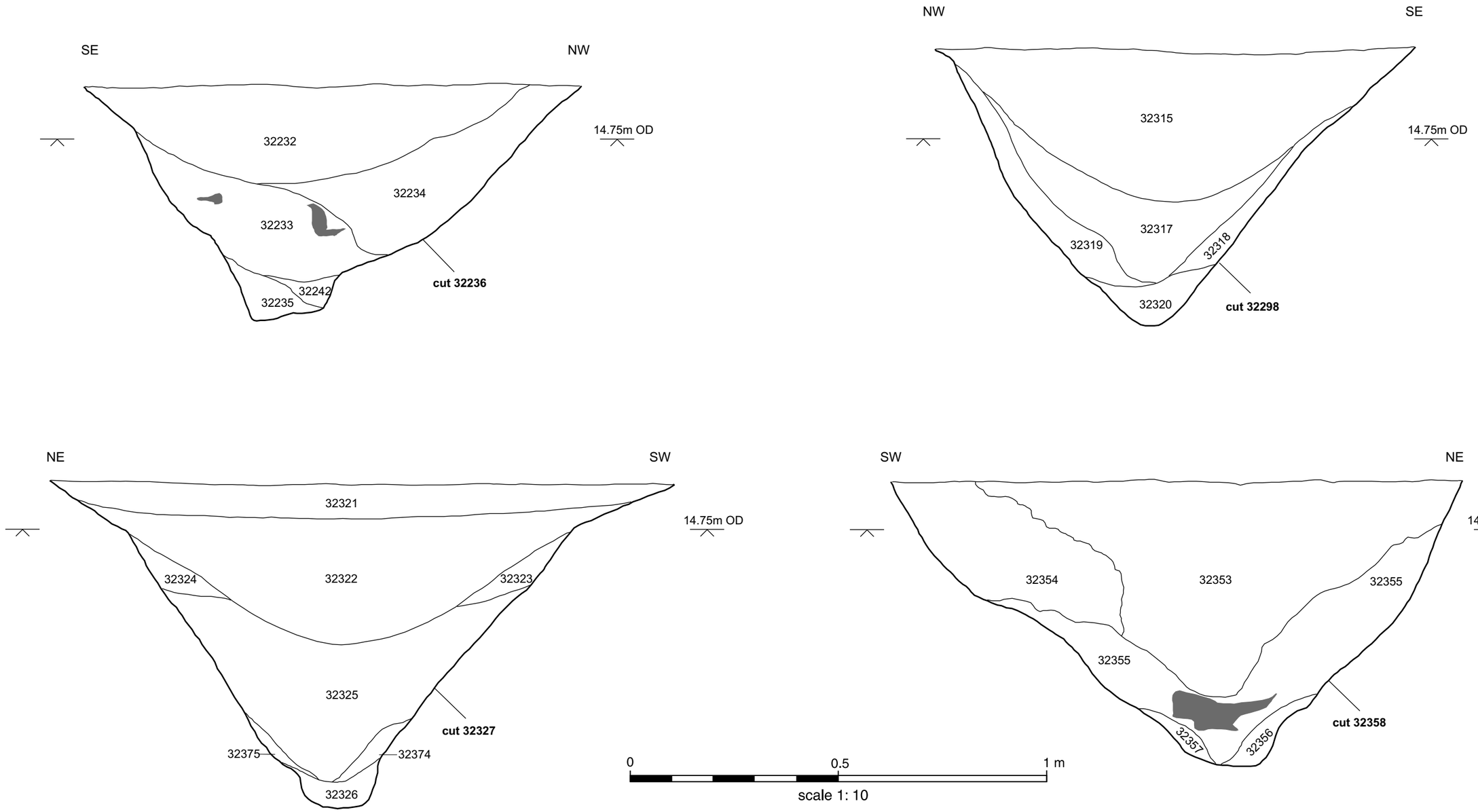


Figure 21 (b): Camp 1 ditch sections (see Figure 20 for locations)

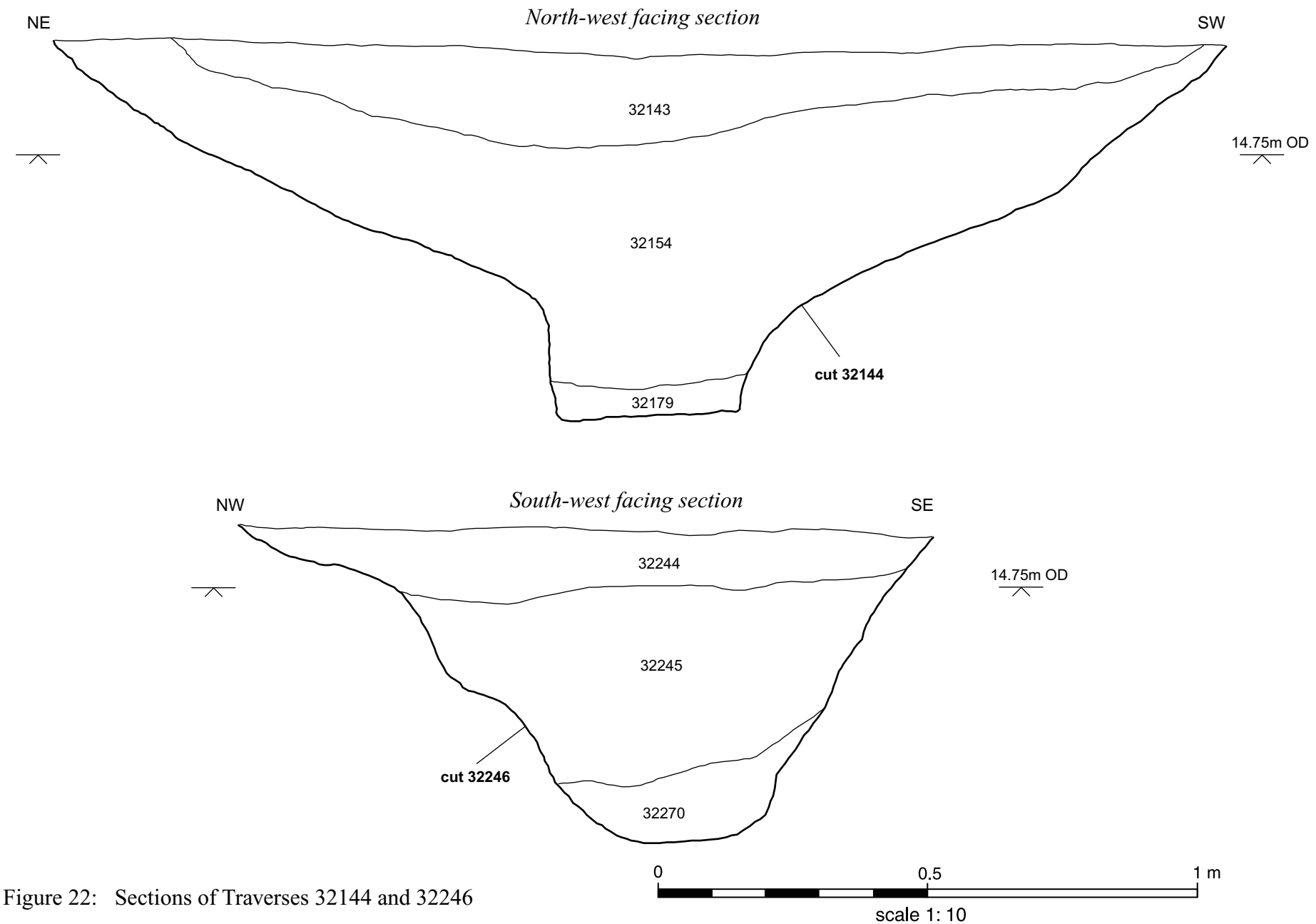


Figure 22: Sections of Traverses 32144 and 32246

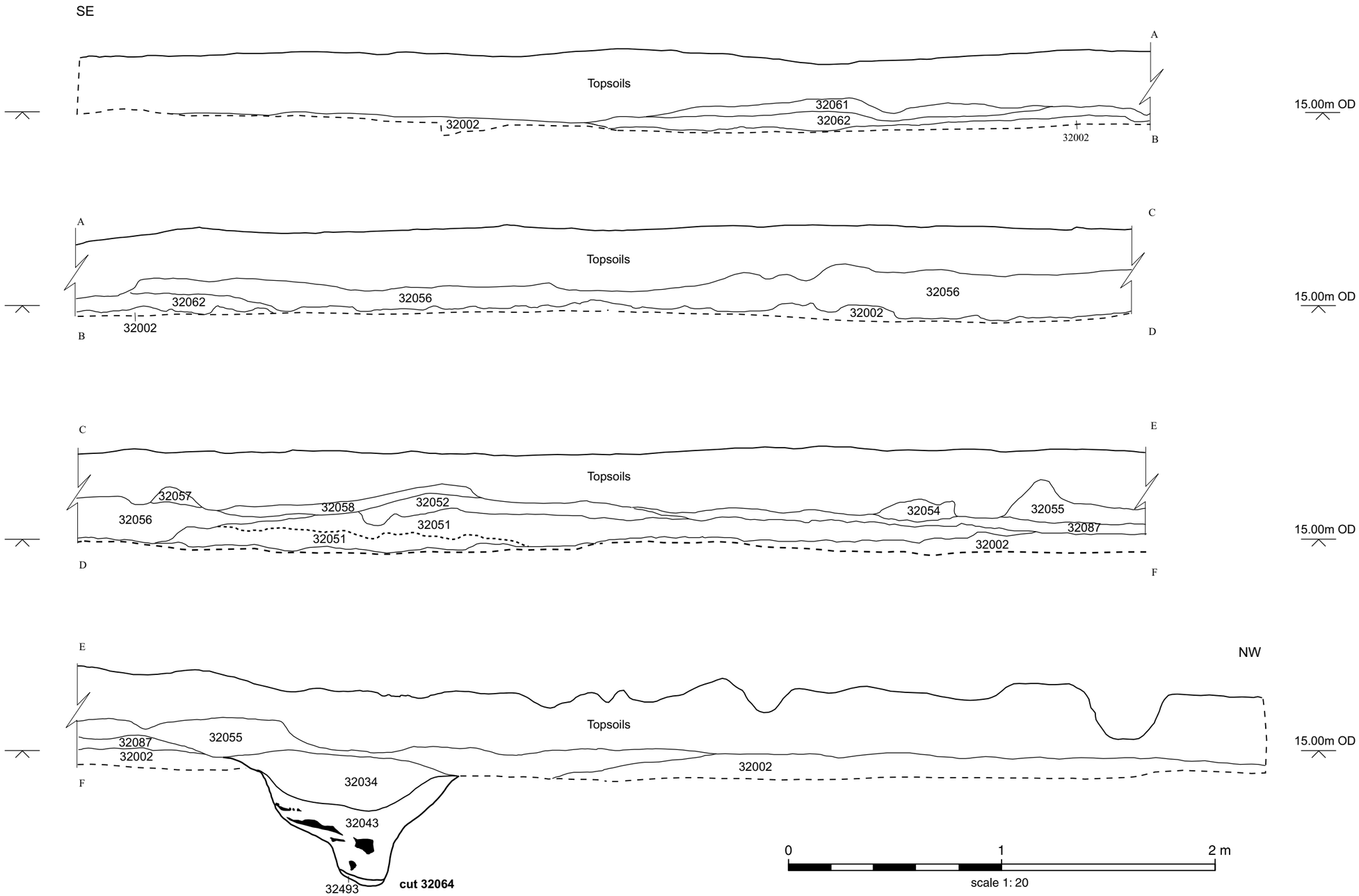


Figure 23: North-east facing section, Baulk 1

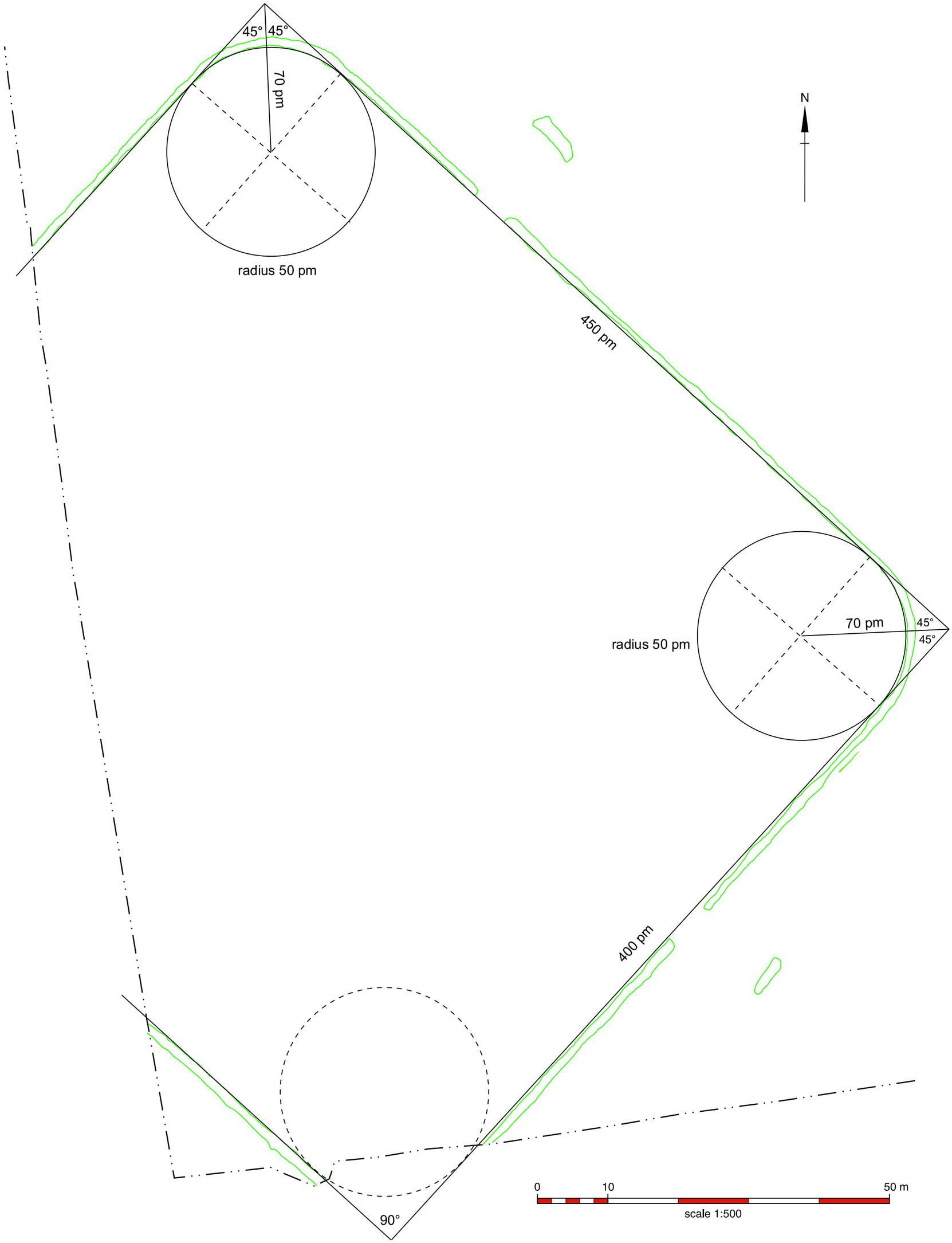


Figure 24: Plan demonstrating surveying and metrology of Camp 1 (distances in Roman Feet;p.m.)

Plate 4 *Camp 1 during excavation*

Plate 3 *Camp 1 before excavation*

Plate 5
Camp 1, segment 32327 showing a well executed section of ditch with basal slot looking south-east

Plate 6
Camp 1, segment 32247 showing variation in width and profile looking south-west

Plate 7
Camp 1, segment 32031
looking north-east

Plate 8
Camp 1, segment 32141
looking south-east

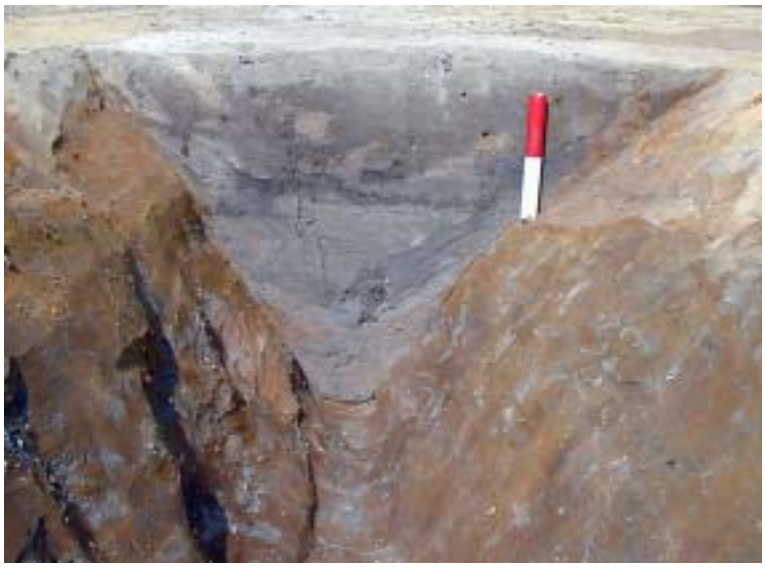


Plate 9
Camp 1, segment 32162
looking north-west

Plate 10
Camp 1, segment 32186
looking north-west

Plate 11
Camp 1, segment 32226
looking north

Plate 12
Camp 1, segment 32262
looking south-west

6. POTTERY by Ailsa Mainman

Ninety-five sherds of pottery were recovered from the excavations, the majority of which was of Roman date. A single sherd of Neolithic grooved ware (see also flints) and a handful of post-medieval and modern sherds represent the only other pottery recovered.

6.1 Prehistoric

The Neolithic grooved ware sherd from Pit 33006 was recognised as Durrington-Walls type by Terry Manby who suggests a date c. 3000-2800 BC.

6.2 Roman

The Roman pottery was examined by Dr. Vivien Swan whose comments have been incorporated here. She believes that the bulk of the material is of Hadrianic date (AD 117-138) and would, therefore, fit into the early part of York's Ceramic Period CP2a (120-160 Hadrianic/early Antonine) as defined by Monaghan (1997). This is on the basis of the high proportion of Ebor ware forms, a single sherd of Central Gaulish samian, a sherd of Dressel 20 amphora and a few sherds of Knapton ware. The only Roman material which falls outside this dating comprises three joining sherds of a 4th century Crambeck mortarium which is likely to post-date the camp construction and use.

The material is all very abraded and sherds from smaller thinner-walled vessels have been broken into scrappy often un-diagnostic pieces. This is often true of the flagon or jug sherds (contexts 31014, 32140, 32148, 32237, 32248, 32312, 32437) which include fragments of handles, necks and rims. There are also several thick-walled sherds (contexts 32035, 32091, 32129, 32237, 32286, 32315, 32388, 32391, 32400, 32415,) and bases (contexts 32091, 32255) from large Ebor storage vessels or jars. Other Ebor vessels are represented by sherds and scraps in contexts 32042, 32353, 32091, 32251, 32300, 32161, 32290, 32222, 32154, 33017.

A single large Spanish amphora sherd (Dressel 20) was recovered from 32103, a single large thick Central Gaulish samian sherd (form 1831 or 31) came from 32131 and sherds from a single Knapton-type calcite-gritted ware vessel from 32208. All these belong somewhere in the early or central decades of the 2nd century. There is a single sherd of grey ware from 32472 which is not inconsistent with this date. Most of these sherds were recovered from the camp ditch fills and associated soils, although some were recovered from the upper fills of prehistoric pits outside the camp area. The sherds of Crambeck mortarium are unlikely to be associated with the use of the camp as they are of 4th century date.

The Roman pottery sequence is then followed by a long gap until the 18th century when green-glazed earthenwares, slipwares, stonewares and tin-glazed earthenwares make an appearance, mostly from unstratified contexts in the three different areas (contexts 31000, 32060, 32288, 33000,32000). The single possible exception is a very abraded oxidised sherd whose worn surface retains traces of glaze and which might be of medieval date.

6.3 Summary

The pottery suggests that the construction and occupation of Camp 1 belongs to the first half of the 2nd century. The pottery forms, Dr Swan commented, are generally to do with supply and provisioning rather than food preparation. This is consistent with the evidence from other similar camps as is the overall paucity of pottery recovered; the sherds from this site need only represent a very few vessels.
The complete absence of pottery to cover almost fifteen centuries between the Crambeck mortarium of the 4th century and the 18th century earthenwares is remarkable and must be explained by the suitability or otherwise of the land for agricultural purposes.

CONTEXT	FIND	NO. OF SHERDS	SPOTDATE	DETAILS
31000	BF00089	12	19th/20th Century	5 sherds of flower pot fabric, 5 sherds of tin-glazed earthenware's 1 sherd of green glazed post medieval earthenware 1 odd concretion
31014	BF00090	2	Early-Mid 2nd Century	1 part of Ebor flagon ribbed handle 1 sherd with abraded glaze
32042	BF00094	2	Early-Mid 2nd Century	1 base of large Ebor vessel 2 Ebor scraps abraded
32051	BF00095	1	?Roman	1 very burned and almost unidentifiable sherd - could be Ebor ware
32060	BF00096	3	18/19th Century	2 sherds of tin-glazed earthenware 1 brown English stoneware
32089	BF00107	3	Late 4th Century	3 sherds from a Crambeck mortaria
32091	BF00097	5	Early-Mid 2nd Century	1 base of large Ebor jar or storgae vessel 4 Ebor sherds
32099	BF00098	1	Medieval	1 thin-walled oxidised sherd with the remains of a very abraded glaze on exterior - surface abraded away
32103	BF00105	1	2nd Century	1 large Dressel 20 amphora fragment - abraded
32129	BF00099	1	Early-Mid 2nd Century	1 thick-walled sherd from large jar or storage vessel - surfaces abraded
32131	BF00106	1	2nd Century	1 large thick Central Gaulish samian sherd - possibly form 1831 or 31- mid 2nd century onwards
32140	BF00100	1	Early-Mid 2nd Century	1 abraded Ebor flagon or jug rim
32148	BF00101	2	Early-Mid 2nd Century	2 abraded Ebor flagon or jug rims
32154	BF00102	1	Early-Mid 2nd Century	1 Ebor?scrap
32161	BF00103	2	Early-Mid 2nd Century	2 spalled flakes - ?Ebor
32208	BF00087	9	Mid/Late 2nd Century	Rim and sherds in Knapton ware
32222	BF00104	1	Early-Mid	1 tiny ?Ebor scrap - v abraded

			2nd Century	
32237	BF00109	6	Early-Mid 2nd Century	1 sherd from large Ebor storage vessel or jar 5 small sherds possibly from an Ebor flagon
32248	BF00110	3	Early-Mid 2nd Century	3 abraded Ebor sherds, one with possible handle attachment scar, possibly from a flagon
32251	BF00111	3	?Early-Mid 2nd Century	3 sherds from a very abraded single vessel - possibly Ebor - surfaces abraded away and no distinctive features
32255	BF00112	1	Early-Mid 2nd Century	1 flat base in a very abraded Ebor-like fabric
32286	BF00113	1	Early-Mid 2nd Century	1 thick-walled sherd from a large Ebor storage vessel or jar
32288	BF00114	2	18th/19th	2 sherds of tin-glazed earthenware
32290	BF00115	2	Early-Mid 2nd Century	2 abraded sherds of Ebor ware
32300	BF00116	1	Early-Mid 2nd Century	1 very abrade possible rim fragment of Ebor ware
32312	BF00117	2	Early-Mid 2nd Century	2 sherds from a ribbed handle of an Ebor flagon form
32315	BF00118	1	Early-Mid 2nd Century	1 thick-walled sherd from a large Ebor storage vessel or jar
32353	BF00119	3	Early-Mid 2nd Century	3 sherds of ?Ebor ware, abraded and un-diagnostic form
32391	BF00126	1	Early-Mid 2nd Century	1 thick-walled sherd from large Ebor storage vessel or jar
32400	BF00120	1	Early-Mid 2nd Century	1 thick-walled sherd from a large storage vessel or jar
32415	BF00128	1	Early-Mid 2nd Century	1 thick-walled sherd from large Ebor storage vessel or jar
32437	BF00127	1	Early-Mid 2nd Century	1 ?neck from ?Ebor flagon
32472	BF00172	1	2nd Century	1 grey ware sherd
33000	BF00121	13	18th/19th Century	10 tin-glazed earthenware's, 2 brown-glazed, 1 ?Ebor
33004	BF00122	1	Neolithic	decorated sherd in a hard soapy fabric-probably Durrington walls-style grooved ware c. 3000BC - 2800 BC (T.Manby 10/6/2003)
33017	BF00125	2	Post Medieval	1 post-medieval sherd 1 ?Ebor fabric

Table 2: *Summary of pottery spotdates and descriptions*

7. FLINT by T.G. Manby and Ailsa Mainman

The assemblage of flint was examined by T.G. Manby whose comments are incorporated here. The material, with the exception of the Wolds flint described below, is all Devensian till flint from east coast glacial drift deposits. The flint is of high quality and is part of a Late Neolithic broad blade industry comprising cores, broad primary and secondary flakes together with a possible re-used axe fragment (sf 66), end and side scrapers, a possible awl (sf 22) and a fine example of a proto plano-convex blade with extensive re-touch (sf9). The industry is of significance as it is very unusual in the Vale of York, being more commonly encountered on the glacial moraine or Wolds area. The flint industry is entirely consistent with the fragment of Durrington-Walls type grooved ware pottery from the site indicating a date c.3200-3800 BC.

**Note that the flint from the 2003 evaluation, the first nine items listed below, are incorporated in this report.*

CONTEXT	FIND	QUANTITY	DETAILS
10000	SF00060	1	Un-worked Wolds flint
11007	SF00022	1	Devensian till flint from coastal glacial drift. Mottled flint side scraper or awl, secondary retouch to form point or awl
12082	SF00008	1	Devensian till flint from coastal glacial drift.
16000	SF00010	7	Wolds flint un-worked
16003	SF00015	1	Not flint, not worked
16005	SF00007	3	3 objects, 2 found to be raw flint and discarded. 1 worked flint retained.
16005	SF00007	3	Devensian till flint from coastal drift. Large chestnut flint blade, both edges have been utilised.
21000	SF00005	2	Primary flake with edge retouch producing serrated edge. Late Neolithic.
21210	SF00009	1	Devensian till flint from coastal drift. Chestnut flint. Proto plano-convex knife. Both edges have retouch and round scraper-like end. Point possibly broken off. Late Neolithic.
31000	SF00078	1	Devensian till flint from coastal glacial drift. Secondary flake of orange flint
32000	SF00082	1	Devensian till flint from coastal glacial drift. Orange mottled broad flint scraper and end scraper, latter very worn.
32001	SF00087	1	Devensian till flint from coastal glacial drift. Unworked wolds flint.
32002	SF00071	1	Devensian till flint from coastal glacial drift. Struck flake of mottled flint, some edge utilization.
32002	SF00072	1	Devensian till flint from coastal glacial drift. Two blade cores of chestnut flint. One has 2 striking platforms, second has 3 striking platforms.
32002	SF00073	1	Devensian till flint from coastal glacial drift. Flake of mottled flint.
32002	SF00101	1	Devensian till flint from east coast glacial deposits. Brown mottled flint core.
32002	SF00102	2	Devensian till flint from east coast glacial deposits. Broad orange flint flake plus orange flint chip.

32002	SF00103	1	Devensian till flint from east coast glacial deposits. Broad chestnut flint blade, one edge with fine retouch, other edge utilized.
32086	SF00080	1	Devensian till flint from coastal glacial drift. Primary flake of chestnut flint. Some edge utilisation
32105	SF00067	1	Devensian till flint from coastal glacial drift. Mottled flint, primary flake.
32224	SF00066	1	Devensian till flint from coastal glacial drift. Possible re-used flaked axe fragment. Edges of broad 'negative' struck surface have utilisation.
32331	SF00094	1	Devensian till flint from coastal glacial drift. Burned and calcined flint lump.
32404	SF00097	1	Devensian till flint from coastal glacial drift. Conical core, chestnut flint.
32416	SF00100	1	Devensian till flint from east coast glacial deposits. Secondary flake of mottled chestnut flint . Some edge utilization.
33000	SF00099	1	Devensian till flint from east coast glacial deposits. Primary mottled flake. Possibly wolds flint.
33004	SF00068	1	Devensian till flint from coastal glacial drift. Struck flake of chestnut flint.
33007	SF00095	2	Devensian till flint from coastal glacial drift. Burned and calcined flint, possible core.
33015	SF00096	1	Devensian till flint from coastal glacial drift. Primary flake, possibly wolds flint.

Table 3: *Summary of flint descriptions*

8. SMALL FINDS by Nicky Rogers

Seventy-four small finds (excluding flints) were assessed, and none could be identified as earlier than the post-medieval period. Post-medieval/modern tobacco pipes and glass fragments composed a large part of the assemblage. The ironwork was made up largely of nails and other fragments, with a modern staple, washer, knife blade and slag from one phased deposit (32245). A probable 19th century copper alloy button and lead alloy shot were also recovered. This material all appears to derive from recent activity and none appears to belong to the phases of prehistoric and Roman activity on the site.

9. CERAMIC BUILDING MATERIALS by Jane McComish

A total of 3.876kg of Ceramic Building Material (CBM) was examined from the site, most of which was of Roman date. Most of the fragments recovered were tiny undiagnostic pieces, making identification of forms almost impossible; the majority of the fragments could only be identified as Roman, and as a default were classified as brick. There were a small number of imbrex and tegula fragments, together with a few fragments of medieval roofing tile and some probable medieval brick.

9.1 Methodology

Standard Y.A.T. methodology for the recording of ceramic building materials was employed.

9.2 Fabrics

All of the fabrics seen conformed to the York Fabric series. The fabrics present are summarised on Table 4.The Roman fabrics tend to be bright red in colour, and are made from better-sorted clays with fewer large or irregular inclusions than medieval fabrics. It must be noted that most of the fragments observed were very small indeed making identification of the fabrics tentative in many cases.

FABRIC	WEIGHT	WEIGHT AS A % OF TOTAL	FORMS PRESENT
R0	83	2.14	Roman brick
R1	450	11.61	Roman brick, ?imbrex
R2	20	0.52	Roman brick
R5	10	0.26	Roman brick
R7	20	0.52	Roman brick
R9	343	8.85	Roman brick, imbrex, tegula
R10	485	12.51	Roman brick, ?tegula
R12	5	0.13	Roman brick
R14	20	0.52	Roman brick
M0	375	9.67	Brick
M1	50	1.29	Plain
M2	10	0.26	?Ridge
M3	180	4.64	Plain
M4	90	2.32	Plain
M60	15	0.39	Plain
M15	20	0.52	Peg
M26	1700	43.85	Brick
TOTAL WEIGHT	**3876**		

Table 4: *Summary of fabrics present*

Clearly fabrics R1, R9 and R10 were the dominant Roman fabrics; all of which are widespread within York. More research into Roman fabrics from excavations across York is needed to fully assess these fabrics in terms of their distribution both spatially and chronologically. Most of the medieval fabrics were represented by single fragments of CBM and are of types common throughout York. The exception is M60, which is relatively rare.

9.3 Forms

Most of the material from the site was of Roman date. The commonest form was Roman brick which existed as very small fragments (which could have been either be tegula or brick, but this could not be determined). Bricks could be used in a number of differing ways including walling, as pilae in hypocausts, or for flooring. The roof tile was in the form of tegula and imbrex. The tegula were between 20-24mm thick, and the only flange height recovered was 35mm. The imbrex ranged from 15-17mm thick which is broadly similar to the range suggested by Betts (Betts 1985, 170 and 174). All of the forms

present on site were in use throughout the entire Roman period, and they are therefore of little help in terms of dating the site.

There was a small number of medieval roofing tile fragments. These consisted of a peg hole 10mm thick with a diamond shaped peg hole, four fragments of plain tile that ranged from 12-15mm thick and a fragment of possible ridge tile. These medieval roofing fragments are of 13-16th century date. The tiny number of fragments involved suggests they are the result of very occasional dumping, and that there were no medieval tiles structures nearby.

There was also one fragment consisting of three bricks that had been fused together through intense overfiring. These may represent kiln wasters and are of probable medieval date.

9.4 Conclusion

The quantity of material recovered was relatively small and contained nothing of particular significance. Most of the fragments were far too small to allow determination their form, but the fabrics were of Roman date. The minute size and abraded nature of many of the fragments suggests they were damaged by extensive ploughing. The minute quantity of Roman CBM present on the site (1.436kg) suggests the fragments are the result of occasional dumping rather than from brick built or tile roofed structures on the site. The small number of medieval fragments would also suggest occasional tipping rather than any settlement on the site.

CONTEXT	FABRIC	FORM	WEIGHT	BREADTH	THICKNESS	COMMENTS
Unstratified	R9	Rbrick	2	0	0	
31000	R0	Rbrick	30	0	0	Ten tiny fragments
31014	R9	Rbrick	1	0	0	
32000	R9	Rbrick	20	0	0	
32000	R5	Rbrick	10	0	0	
32000	R7	Rbrick	20	0	0	
32000	R1	Rbrick	30	0	0	
32000	R1	?Imbrex	30	0	16	
32000	R1	Rbrick	30	0	0	
32000	M1	Plain	50	0	14	
32000	R10	Rbrick	40	0	0	
32000	M4	Plain	90	0	13	
32000	R1	Rbrick	150	0	0	
32000	R0	Rbrick	40	0	0	Ten tiny fragments
32000	R9	Rbrick	10	0	0	
32000	R1	Rbrick	10	0	0	
32000	R1	Rbrick	10	0	0	
32000	R10	Rbrick	5	0	0	
32000	R2	Rbrick	20	0	0	
32000	R1	Rbrick	10	0	0	

32000	R1	Rbrick	10	0	0	
32000	R10	Rbrick	20	0	0	
32000	R9	Rbrick	40	0	0	
32000	R1	Rbrick	160	0	0	
32000	R9	Imbrex	20	0	15	
32000	R9	Imbrex	15	0	0	
32000	M2	?Ridge	10	0	0	
32000	M15	Peg	20	0	10	Diamond peg hole 10x ?mm
32000	M60	Plain	15	0	12	
32000	R9	Tegula	150	0	24	Flange 35mm high and badly damaged
32000	R9	Tegula	10	0	0	Too damaged to determine original profile
32000	R10	?Tegula	400	0	20	In three fragments. No flange surviving
32000	M0	Rbrick	375	0	0	
32017	R10	Rbrick	20	0	0	
32030	M3	Plain	180	0	15	
32060	R9	Rbrick	20	0	0	
32091	P0	Brick	1700	133	66	Overfired and blown. Three bricks fused together. Possibly slop moulded. Possibly a waster.
32100	R0	Rbrick	3	0	0	
32164	R0	?Rbrick	1	0	0	Two minute fragments
32208	R14	Rbrick	20	0	0	
32288	R1	Rbrick	10	0	0	
32392	R0	Rbrick	2	0	0	Minute fragment
32422	R9	?Imbrex	25	0	17	
33000	R0	Rbrick	7	0	0	Five tiny fragments
33000	R9	Rbrick	5	0	0	
33000	R12	Rbrick	5	0	0	

33000	R9	Rbrick	5	0	0	
33000	R9	Rbrick	20	0	0	
Total			3876			

Table 5: *Summary of Ceramic Building Material*

10. SOILS AND SEDIMENTS ANALYSIS by Raimonda Usai

10.1 Introduction and aims

The objectives of geoarchaeological analysis were:

1) to provide an interpretation of the nature of the camp rampart and a permanent record of the characteristics of the earthwork contexts (rampart and ditch) with internationally recognized soil nomenclature and terminology (thus understandable by any reader - professional or not - employing commonly available terminology booklets available worldwide).

- to provide information on pre-Roman occupation and land use
- to provide knowledge of the soil make-up and vegetation before camp construction
- to provide information on the possible camp preparation before rampart construction

10.2 Methods

Seven main baulks crossing the rampart or correlated site features were made available for soil and sediment investigation. For reference, the five larger baulks crossing the rampart and ditch were numbered clockwise from 1 to 5, starting from the north-west end of the rampart outcrop (the two smaller baulks crossing the rampart in-turns only were not sampled). The site was visited four times. Standard soil and sediment description were carried out on site on two selected baulks (Baulks 1 and 4) and horizon designation was carried out on a selection of adjacent sections in the same baulks and in Baulk 5. Undisturbed samples were collected for macro- and micromorphological analysis. All samples analysed are listed in the Appendix (Table 7)

10.3 Results

The following results include micromorphological (thin section) and macromorphological (field scale and loose sample) analysis. To simplify the result description, in this paragraph the loose sample and field scale description always follow the description of the thin section containing the same material.

Paragraphs in small point-size contain technical results. Explanation of these are given with a simple terminology in the discussion/profile summary and conclusion sections at the end of this report.

10.3.1 Baulk 1, Profile 1

Profile 1 was excavated on the north-west facing section of Baulk 1, at the centre of the feature described by the archaeologist as the rampart. The vertical succession of the profile included:

cm 0-31. Modern soil
cm 31 - 40 Rampart
cm 40 - 65++ Pre-rampart materials

Thin section MX1-TS

This thin section contains an upper (from the modern 0-31 cm horizon) and lower layer (from the rampart material at 31-40 cm).

MX1-TS - upper layer

Specimen depth: 22-31 cm (local modern plough soil). Brown fine material with undifferentiated b-fabric; 10% quartz mineral sand grains; no artefacts/charcoal; < 5% roots and tissue residues; granular peds and subordinately sub-angular peds (25-50% of area). Voids: 40-3000 μm planes and subordinately channels, with random basic orientation. Granular and sub-angular microstructure. Horizon designation: Ap[1]

Loose samples

Ap horizon of plough soil**.** 2.5Y-2.5/1. Abrupt irregular and broken boundary to horizon below.

MX1-TS - lower layer

Specimen depth: 31-41 cm (?rampart).Greyish dusty fine material. Locally brown undifferentiated and locally speckled b-fabric. 50%|scarcely weathered rounded and subangular quartz silt and sand mineral grains. No artefacts or readily observable charcoal. No peds. Occasional small-medium equant and elongated cavities. Massive microstructure. Particle size: > 40% clay. Horizon: non *in situ,* Bs/E horizon[2]-derived materials (on site this material seemed to consist of upside-down *latu sensu* Aturf@ including remains of a spodic (Bs) horizon in continuity with formerly underlying remains of an eluvial Eg horizon. This material is next to/mixed with the organic-rich modern plough soil (Ap).

[1]) Ap horizons : mineral horizons that have formed at the surface or below a top soil. Often A horizons have a significant organic component. The suffix p indicates ploughing. Please see also horizon explanations on Pages 11 and 12.

[2]) Bs horizons: horizons which have formed below and A, E or O horizon and display illuvial accumulation of sesquioxides (visible as reddish patches) and organic matter.

E horizons: mineral horizons characterized by depletion/loss of iron/clay/iron and aluminium, leaving a concentration of sand and silt particles.

Loose samples
Dominant colour 2.5Y-3/2, with many (> 20%) distinct to prominent and clear to diffuse mottles. < 5%, < 1mm packing voids. Very large cracks and fissures filled by material from overlying modern Ap horizon. Abrupt and irregular (subordinately broken) boundary with horizon below, with pockets. Horizon designation: B-E [3].

Thin section MX1-2α-TS
Specimen depth: 35-40 cm (?rampart). Fine material masked by sesquioxides/organic matter, undifferentiated. .40% sub-angular medium quartz sand mineral grains. Four < 1mm angular charcoal fragments and very few vegetable tissue fragments. No peds observed. 1-2 mm elongated cavities. Chamber microstructure. Occasional medium (up to 2 mm) brown (parallel light), sesquioxide and other opaque hypocoatings. Mixing of this horizon with the upper modern organic-rich Ap horizon. Particle size: sandy to silty clay (>40% clay; #60% sand+silt). Horizon: Bs-B (excluding mixed parts).

Thin section MX1-3-TS (upper 5cm)
Specimen depth: 52-55 cm. (*in situ* pre-rampart soil). Brown fine material with undifferentiated and differentiated but non-speckled b-fabric. . 85% sub-angular quartz sand grains. No artefacts and peds observed. Rare elongated or equant cavities. Rare mall to large brown clay coatings and fragmented dusty brown typic clay coatings [cfr. papulae] and rare small to medium dusty opaque [sesquioxide (plus organic?) typic clay coatings. Particle size: Loamy sand (70-85% sand+silt, clay=15-30%). Horizon tentative designation: E-Bs

Loose sample
Apedal. Dominant colour: 2.5Y-4/2. Clear-gradual smooth boundary with horizon below. Horizon designation: E-Bs

Thin section MX1-3-TS (lower 5 cm)
Specimens depth:cm 56-61 (*in situ* pre-rampart soil). Brown dusty fine material. Undifferentiated or differentiated but non-speckled b-fabric. .80% sub-angular quartz fine to coarse sand grains. No significant presence of charcoal (one fragment observed). No peds. Rare equant and elongated cavities. Frequent small to very large brown (under parallel light) black and subordinately orange iron or opaque, and (less represented) limpid clay typic-, hypo- and quasi-coatings. Particle size: Loamy sand (–80% sand[+silt], clay.20%). Horizon designation: Bs.

Loose sample
Massive structure. Presence of < 1mm packing voids and <5% fine (1mm) to coarse (> 5mm) root channels. Dominant colour 10YR-3/1-2 to 5/4. Diffuse smooth boundary with horizon below. Horizon: Bs

[3]) B-E horizons: composite horizons including parts of a B and a E horizon.
B horizons: Mineral horizons which have formed below and O, E or A horizon.

10.3.2 Baulk 4, Profile 1

This profile was excavated on a south-facing section of Baulk 4, at the centre of the feature assumed to represent the rampart.

Thin section MX5-1-TS (upper part)

Including the local modern plough soil. Brown/black fine material, with undifferentiated or differentiated non-speckled b-fabric. Angular and sub-angular quartz sand grains. Many roots and organic tissue. Very abundant (75-100% specimen's area) moderately or strongly developed 3-10, 10-20 cm and <200 to 1000µm granular and sub-angular blocky peds. Many (5-10%) voids including elongated or equant cavities and planes, in a random basic orientation. Horizon designation: Ap.

Loose sample

Dominant colour: 10YR-2/1. Very strong 10-20 mm granular peds and strong <10-50 mm subangular blocky peds. Presence of roots (average observed diameter 1-2 mm). Abrupt smooth lower boundary. Horizon: Ap.

Thin section MX5-1 -TS (lower part)

Including ?rampart material. Brown fine material, with speckled b-fabric. – Abundant (30%) subangular quartz sand grains and rare flint. <2% large (10mm) and smaller (up to 3mm) flaky or rounded) charcoal, and rare organic tissue residues. 25-50% are of specimen with weak sub-angular blocky peds. <8% void, including planes, channels and elongated-equant cavities. Rare medium red hypocoatings, and rare small black typic coatings and sandy clay silt hypocoatings. Particle size: > 35 % clay . Horizon designation: part of a Bg horizon [4].

Loose sample

Dominant colour: 10YR 3/2 , with many (>20%) faint to prominent, clear to diffuse mottles. Consistence: hard when dry. Moderately strong 50->100 mm subangular blocky peds. Very few (<5%) fine (<1mm) packing voids and few (up to 15%) very fine (0.075-1mm) to medium (2-5mm) planes. Clear boundary with lower horizon.

Thin section MX5-2-TS

Including *In situ* pre-rampart soil. Dotted greyish brown fine material, with speckled b-fabric. Abundant (30%) sub-angular quartz sand and silt grains, and rare flint and feldspars. 30% silt to sand-sized (up to 2 mm) weathered charcoal fragments, mainly in flakes. Poorly developed 4-10 µm and strongly developed 50-100 µm sub-angular blocky peds. Less than 50% area with < 500µm elongated cavities and a >300µm plane, all voids with random basic orientation. Rare small limpid yellowish-red typic coatings and limpid-dusty medium hypocoatings. < 10% large black typic nodules. Particle size: sandy loamy organic/clay (10%sand, 20 % silt). Horizon designation: B

[4])Bg horizons: horizons which have formed below and A, E or O horizon. The suffix g indicates that iron has been reduced and removed during ancient soil formation, or that saturation with stagnant water has preserved in a reduced state.

Loose sample
Dominant (>> 50%) mottling of 10 YR 5/4 colour on 2.5Y-5/1 background. Mottles: many faint to prominent and clear to diffuse. No peds observed. Abrupt irregular lower boundary. Horizon designation: B.

Thin section MX5-3-TS
Including *in situ* pre-rampart soil. Greyish-reddish brown stipple and mosaic speckled and grano-, poro-striated b-fabric. 20% sub-angular quartz sand grains and subordinately feldspars in a porphyric related distribution. Massive and sub-angular microstructure, mostly apedal material except for 10-20 % consisting of poorly to moderately developed 5-10 µm sub-angular blocky peds. ~20% voids, including planes and elongated/equant cavities. Frequent small to large orange (under parallel polarized light) yellow (under cross-polarized light) limpid hypo- and quasicoatings. Many (≥20%) ≤ 2 mm red or dark reddish brown typic sesquioxide nodules. Few (,5%) large yellow (under cross- and parallel-polarized light) nodules. made by clay and sesquioxides. Particle size: sandy clay to clay (clay ≥ 30-55% and sand ≤45-70%). Horizon designation: CB[5]

Loose sample
Dominant colour: 10YR-5/6 with common distinct to prominent, clear to diffuse mottles on red background. Consistence: very hard when dry. 20-100mm sub-angular blocky peds. Very few < 2mm planes.

10.3.3 Baulk 4, Profile 2

Profile 2 was located 2m east of Profile 1, in the same section. A summary of the profile vertical succession is:

- Modern soil
- Buried *in situ* soil with no evidence for the rampart.

10.3.4 Baulk 5

The profile vertical succession identified on the basis of field observations on the west-facing section of Baulk 5, is summarized in Table 6.

NE ← North Eastern part				Highest part of Baulk 5	Highest area Of Baulk 5	South Western part →SW		
Ap 3Bg	Ap 2Eg 3Bg	Ap 2Eg 2BC 3Bg	Ap 2Ep 2BC3 Bg	Ap 2Eg 2B* 2BC 3Eg? 3Bg	Ap 2Eg 2B* 2BC 3Eg? 3Bg	Ap 2Eg 2B* 2BC 3Eg? 3Bg	Ap 2BC 3Eg? 3Bg	Ap 2BC 3Eg? 3Bg

[5]) CB horizons: composite horizons containing parts of a B and C horizon.

(*) indicates that the mineral rampart material contains an organic component. The change of number before horizon notations indicates a stratigraphic discontinuity. In this case, Number 2 indicates what on site was thought to represent rampart materials, Number 3 indicates the local *in situ* buried soil, and absence of number indicates the modern surface soil. Such number and notations do not correspond to the standard soil profile nomenclature generally adopted in soil science, but have been selected here to allow a ready visual interpretation of the table.

***Table 6**: Set of profiles observed on a W-facing side of Baulk 5 and horizon field definition*

Ditch samples

The two monolith tins containing thin sections MX-TIN-1 (YAT) α and β and MX-TIN-2 (YAT) α and β were collected by the excavator on an east- and west-facing section, respectively, of two different portions of the ditch to the West of Baulk 1.

Thin section MX-TIN 1 (YAT) α

The section includes three discreet parts, arranged at a angle of approximately 45E to the ground surface:

Upper part

Brown grey fine material with speckled b-fabric. 20% coarse material, including sub-angular quartz sand and silt grains [texture: clay]. Several (~2%) up to 1 mm weathered charcoal flakes. Angular blocky peds. Planes and elongated or equant cavities with random basic orientation. <5% small to medium yellow limpid dusty hypo- and quasi-coatings. Tentative horizon designation: CB.

Middle part

Dark brown fine material with undifferentiated b-fabric. 50% coarse material including sub-angular quartz sand and silt grains [texture: sandy clay]. > 3% up to 1.5 mm fresh or weathered charcoal flakes and sub-angular fragments. Granular peds. Planes and elongated or equant cavities, with a strong parallel basic distribution and orientation patterns, and a referred distribution and orientation at a 45E angle with the ground surface. Tentative horizon designation: O.

Lower part

Grey brown) fine material with speckled and striated b-fabric. A component contains 20% coarse material, including sub-angular quartz sand and silt grains [texture: clay; horizon designation: B]. Another component contains 70% coarse material with sub-angular quartz sand and silt grains [texture: loamy sand; horizon designation: E]. Rare (up to 2%) up to 1 mm non significantly weathered charcoal flakes. Apedal, with planes and elongated or equant cavities with random basic orientation. Occasional large yellow limpid dusty hypocoatings.

Monolith Tin 2, Thin section MX-TIN2 (YAT)

The section includes three discreet parts.

Upper part
Grey brown fine material with speckled b-fabric. > 70% coarse fraction including sub-angular quartz sand and silt grains. Texture: sandy silt loam. Apedal, with randomly orientated voids including medium equant cavities and a large single root channel.

Middle part
Brown fine material with undifferentiated b-fabric. 40% coarse material including sub-angular quartz sand and silt grains [texture: silt clay loam]. Occasional angular and sub-angular non significantly weathered up to 8mm charcoal fragments. Granular peds. Rare equant cavities and several small, medium and large channels, all void being in a random orientation pattern.

Lower part
Greyish-brown fine material with speckled b-fabric. >70% coarse material, including angular and sub-angular quartz sand and silt grains and occasional angular and sub-angular (~ rectangular) flint (< 1.5mm). Some < 0.5 mm charcoal flakes, and ≤9mm charcoal fragments, all non significantly weathered. Apedal, with occasional small and medium equant cavities, and small to large channels, all in random distribution.

Monolith from Ditch 32156
The monolith from Ditch 32156 was collected by the excavators on the east-facing section of the ditch. Thus, field and spatial relationships of the monolith materials were not directly observed by the writer. Only a visual examination of the monolith materials indicated the presence of an upper context (32084 - a silty clay brown massive organic rich layer, occupying the upper third of the monolith), and a lower succession of alternating turf layers at different angles. Such layers included:

A lower turf succession arranged at 45° with the ground surface, and upside-down (with respect to the original in situ turf constituting this succession). Such turf succession included a very dark brown to black, 6cm thick, organic rich Oh horizon, in continuity with an overlying (formerly underlying, when the material was in situ) greyish brown sandy, 4cm thick, mottled Eh horizon, in continuity with an overlying (formerly overlying) brown up to 4cm thick B horizon. Thus, formerly, this material was the upper part of a soil profile with a horizon succession of the type (from top to bottom):

- Oh (6cm +)
- Eh (4cm)
- B (4cm+)

with part of the original Oh horizon having been truncated.

An upper turf succession, in horizontal position and the right way up, including: an upper sandy bleached horizon (Horizon E) horizon, up to 1 cm thick, of uncertain continuity with an underlying very dark brown to black organic-rich, up to 4 cm thick Oh horizon, in continuity with an underlying brown sandy, 2 cm thick, mottled B horizon, in continuity with an underlying sandy grey, 1.5 cm thick, Eg horizon.

Thus, representing a soil profile horizon succession of the type (from top to bottom):

- E (1 cm or originally thicker) in possible continuity with an underlying:
- Oh (4 cm or originally thicker)
- B (2 cm)
- Eg (1.5 cm or originally thicker)

This would have ordinarily been on top of another B and underlying C horizon.

8. DISCUSSION

8.1 Comments and profile summary: the ditch fill

In agreement with the 2002 geoarchaeological examinations of two similar monoliths collected in the ditch on the northern corner of the camp, and with the 2002 and 2003 archaeological interpretation, the materials from Ditch 21156 are consistent with the former archaeological hypothesis of:

- Initial silting of the ditch
- Successive deliberate filling of the ditch with turfs and soil material arranged in a disordered manner and at different angles
- Final layer covering the ditch fill to ground level

The two upper and lower main turf successions in the monolith, as well as the materials from the two thin sections from the ditch fill [Thin sections MX-TIN 1 and 2 (YAT)] provide important and unique information on the vertical profile vertical horizon succession of the local soils constituting the rampart and in situ at the time of the camp construction.

In fact, the two successions observed in the monolith (the Oh Eh-B from top to bottom) and the (E)-Oh-B-Eg from top to bottom) constitute two important variations of the same type of soil (as it is often seen in modern soils, too). In this site, the succession of the past (as it was just before the Romans employed it to construct the rampart), certainly overlain - in stratigraphic unconformity - another in situ mineral subsoil horizon (Horizon B or BC), which in turn overlay basal material C horizon) of the same buried soil. This material was similar to the basal material underlying the site now.

In other 'natural' sites, the organic upper Oh horizon of comparable modern soils is often visible on site, and in each or the same site may vary in thickness from one or two cm to tens of centimetres or more. However, no such significant organic topsoil (Horizon Oh) is visible in the rampart.

Thus, importantly, the fact that the two successions represented in the monolith both include one a 6 cm organic-rich upper Oh horizon, an the other a similar 4 cm thick horizon, both missing from the local soil now visible on site below the rampart sections, show that the local soils before rampart construction were certainly truncated by total or partial removal of the upper organic-rich Oh horizon before/for rampart construction.

Likewise, the organic-rich Oh horizon is generally missing [except for a some evidence for an Oh horizon in the upper apart of the rampart in Baulk 4] from the rampart itself.

Although this can certainly be the result of rampart disruption, it is reasonable to hypothesize that the organic-rich Oh horizon could also have been removed from the rampart-building materials before/for rampart construction.

Similar evidence is found in a rampart at the Cawthorn (North Yorkshire) Roman camps. Such materials as still under examination, but preliminary results show that the rampart was built with a succession including two turf layers, one above the other, each including a succession of podsolic profile horizons, and both without a very significant representation of the Oh horizon, most likely removed by the Romans from the turfs before rampart construction.

The lower part of Thin Section MX-TIN1 (YAT), from the ditch fill, was similar to the CB horizon material of Baulk 4. The parallel orientation and distribution patterns of voids in the middle part of Thin Section MX-TIN1(YAT) suggest strong disturbance and possibly a strong compression or parallel movement of the material parallel to the ditch cut. Correlating with the evidence from the two monoliths collected in 2002 and the field evidence of Ditch 32156 and the in situ soil observed, the materials from the monolith tins from the ditch fill seem to represent disordered and jammed pieces of local soils and turf, cut into pieces and compressed into the ditch or onto the ditch sides. There is not sufficient evidence to provide a more definite interpretation.

8.2 Comments and profile Summary: Baulk 1

A summary of the horizons of Profile 1 includes (from top to bottom):

- **Upper rampart**: Soil horizon at cm 31 - 35, including sesquioxide accumulation, except for some bleached parts of lighter colour (BsE horizon[6]).
- **Lower rampart:** Soil horizon at m 35 - 40, including areas of sesquioxide accumulation (BsB horizon [7])

- **Upper in situ buried soil** at cm 40 - 49. Horizon of sesquioxide accumulation,

except for some impoverished (bleached) parts of lighter colour (BsE Horizon)

- **Middle in situ buried soil** at cm 49 - 65 (Bs Horizon)
- **Lower in situ buried soil** at cm 65++ C horizon [8]).

The presence of fragmented clay pedofeatures ('papulae') in the basal in situ buried Bs horizon may be explained as a residue and suggest some physical disturbance below the rampart. Such evidence is not matched by similar evidence within the rampart materials. This is consistent with truncation of the in situ pre-rampart buried profile, with removal of its upper horizons.

[6]) Horizons BsE: composite horizons containing parts of a Bs and of an E horizon.

[7]) Horizons BsB: composite B horizons containing a large Bs horizon component.

[8]) C horizons: horizons or layers which are little affected by soil-forming processes

Plant tissues from the upper modern plough soils are not found in the deeper buried rampart. This may suggest that the degree of vertical transportation of the material in the buried horizons (rampart and below) was low.

The rampart of this profile contains the same sequence of soil horizons as the soil underneath (i. e. an E to Bs horizon succession). However, both rampart and in situ buried soil in this sequence miss their upper organic-rich top soil. Such top soil has been removed from the in situ soil before rampart construction. Since the ancient top soil is also missing from the rampart materials, it has also been truncated (either by modern ploughing, or before/during rampart construction).

In this profile, charcoal is not represented in any horizon except in the lower part of the rampart, where there is also evidence for mixing. Thus, such charcoal is unlikely to have derived from the upper modern soil. The charcoal in the rampart could be possibly derived from some cultivation or occupation in correspondence of the buried in situ pre-Roman upper subsoil (B horizon) which was then employed to build the rampart. Alternatively, it could have resulted from Roman disturbance of the same material before they employed it to build the rampart. The disturbance does not appear to be modern because above (Sections MX1-1b or MX1-2) there is no evidence of similar disturbance. The extent of disturbance, however, is not high because it does not reach down into the Bs-C horizon (Section MX1-3).

8.2 Comments and profile summary: Baulk 4, Profile 1

The horizons of Profile 1 of Baulk 4 included (from top to bottom):

Modern soil, at cm 0-23 cm

Rampart: buried soil horizon at cm 23 -35. Mineral horizon with some accumulation of iron oxides (Bg/w horizon).

Upper in situ buried soil at cm 35 - 45. A brownish horizon with only a limited accumulation of iron (B horizon).
Middle in situ buried soil at cm 45 - 48. A composite horizon, including reddish abundant clay-rich materials, with accumulations of clay, iron and sesquioxides (CB horizon[9]).
Lower in situ buried (basal part, or parent material of the in situ buried soil) at cm 48++ Reddish clay rich mineral horizon with accumulations of iron, clay and sesquioxides (CB horizon).

In the field, organic materials were identified between the rampart and the underlying in situ buried soil. However, such materials were not observed in thin section, possibly because of the small size of thin section samples.

[9]) CB horizons: Composite horizons including parts of a B and of a C horizon

The rampart is represented by a Bw or Bg horizon with occasional charcoal flakes. The local in situ soil contains weathered charcoal which is not very represented in modern soils horizons above it. Thus, it is possible that charcoal was in the local soil before rampart construction, and that disturbance of the local soil occurred some time before rampart construction. Thus, different hypotheses can be drawn, either on the presence of pre-Roman occupation/cultivation, or on other disturbance prior or during (pre-rampart) Roman occupation.

8.3 Comments and profile summary:Baulk 4, Profile 2

The vertical horizon succession in Profile 2 (only 2 m to the East of Profile 1) was :

Horizon Ap (modern)
Horizon 2B (buried upper in situ soil)
Horizon 2C (buried lower in situ soil)

As expected, there is no trace of the rampart between the modern plough soil and the underlying in situ soil horizons. The profile only represented a modern soil overlying an in situ buried soil from which the top soil and the underlying organic-mineral A horizon were missing, most likely as a result of modern ploughing.

8.4 Comments and profile summary: Baulk 5

The horizon succession is very similar to that observed for Baulks 1 and 4. In Baulk 5, however, there is an additional bleached (E) horizon beneath the rampart's B or BC horizon. Such an occurrence, and the fact this horizon is not represented in other profiles on site, is a common feature of this type of soils. Thus, there is no evidence that the feature could indicate a different method of rampart construction for this part of the camp, or that the materials have been collected in a place which was different from the source of the other rampart materials of Baulks 1 and 4.

There is evidence, however, that the rampart here has undergone more intense post-Roman disruption and vertical mixing than in other parts of the camp, as is proved by the abundant organic accumulations in the rampart (indicated by B* in Table 1). Such accumulation is not a process that occurred in the in situ buried soil before rampart construction, but rather a more recent process.

8.5 Summary and Conclusion

The findings described in the previous sections can be summarised as follows:

1) The local soils at the time of the construction of the camp were of two main types. The first type, for example found in Baulk 4, included a vertical succession of horizons (from the top to the bottom of the ancient profiles) of the following type:

a topsoil (Oh horizon in the international nomenclature) with vegetation and organic matter, dark colour, earthy, with aggregates (not preserved on site, but preserved in some of the ditch-fill materials);

Horizon A - an earthy organic-mineral horizon (also not preserved on site, but its traces may be represented in the ditch fill).

Horizon Eg - a bleached, light-coloured grey sandy horizon with few accumulations of iron oxides (rare orange-coloured patches). This horizon is often friable and, when dry, tends to break down. Thus, this material is not resistant to disturbance, is unsuitable for, or incapable of bearing weight or other compression, and thus may not be particularly suitable for rampart construction. However, other Roman camp ramparts in Britain often contain Eg horizon material together with more resistant materials (e.g. Cawthorn Camps, North Yorkshire)

Horizon Bg. A reddish brown horizon of clay-rich texture with mottles (reddish/orange accumulations of iron oxides). This is the horizon where all products bleached from the overlying Eg horizon are deposited (i.e. this is the recipient of all products moving down from the overlying Eg horizon).

This horizon is moderately compact and resistant to compression or disturbance and can last for a long time as a building material.

Horizon BC. A horizon containing parts of the overlying Bg and of the underlying C horizons.

Horizon C. The parent material, a glacial drift-derived material of variable texture

The second soil type (for example in Baulk 1) was similar to the first with the main difference being that instead of a clay-rich Bg horizon, a sandy Bs horizon was present. Such Bs horizon was also reddish brown with reddish/orange accumulations (of sesquioxides). This was also an horizon where all bleaching products from the overlying Eg horizon were accumulated. This Bs horizon, however, contained high quantities of sand, and was much more friable and less compact than the Bg horizon. In this second soil type, the basal Horizon C was very sandy.

To summarize: the two main ancient in situ soil types included a vertical horizon succession of the type:

- Horizon Oh
- Horizon A
- Horizon Eg
- Horizon Bs (sandy) or Bg (clay-rich)
- Horizon BC
- Horizon C (clay-rich or sandy)

Today, such types of horizon successions, and particularly the type containing the Bs horizon, are mainly found in natural soils under heathland (e.g. *Calluna*), which was possibly the dominant local vegetation type prior to camp construction. In some cases, however, the same soil types can be found under certain forests. Although the writer has found no evidence for tree remains, and had no knowledge of any traces of woodland or

forest in the site, it is suggested that pollen analysis is carried out to identify with more detail and certainty the type of vegetation present in/around the site.

The horizons were in situ and on top of each other. Although the vertical succession of Horizons A-Eg-Bg / Bs-BC-C could have been similar to the one described above, natural horizon successions can be locally variable. In this case, the most important variation for site interpretation is that, in different places at the camp, some horizons of the succession were missing or only scarcely represented. This is very often the case for natural soils in Britain and elsewhere. It must be emphasized, however, that the two upper horizons (Oh and A) are not usually missing from natural British modern soil sequences of these types.

2) The rampart material was made up of various parts of the above described vertical successions, collected from the middle part of the local in situ soils from within or near the camp.

3) The degree of vertical transportation of soil materials and inclusions, in the rampart and the buried soil below, was low in Baulks 1 and 4, and high in Baulk 5. This supports the significance of the analytical results obtained for Baulks 1 and 4, and their correlation with the site's stratigraphy.

4) There is evidence for soil disturbance in the materials of/from the pre-Roman soil profile - whether the materials are in the in situ buried soil profile, or in the rampart (derived from the same in situ materials).

Such disturbance is to be attributed to some event before rampart construction, whether this event was the Roman occupation itself, or some pre-Roman activity is uncertain. The fact that evidence for disturbance was modest and local could either be the result of some post-Roman taphonomy, or could imply that disturbance/burning/?cultivation (whether before or during Roman occupation) has been modest/sporadic or concentrated in some parts of the camp.

5) There is very strong evidence indicating that the local ancient in situ soils were certainly truncated before rampart construction. Such truncation included the total or partial removal of the ancient in situ upper part of the soil, which included an old organic-rich Oh horizon (ancient topsoil), and/or an A horizon (an organic-mineral horizon below the ancient top soil). Although such material was not represented in the buried soil or in the rampart, disturbed remains possibly including parts of the missing top Oh and A horizons were found within the ditch fill.

Such organic-rich top Oh and/or A horizons are also missing from the rampart itself. Although this can certainly be the result of rampart disruption, it is also possible that the top organic-rich Oh and/or A horizon could have been removed from the rampart-building materials before/for rampart construction.

6) The soil evidence for the ditch fill confirms the archaeological interpretation describing the following three main events:

- A first stage of silting of the ditch

- Successive deliberate filling of the ditch with turf and local soil material arranged in a disordered manner and at different angles
- Final layer covering the ditch fill to ground level

7) There is evidence that the materials of the ditch fill were in places compressed in a direction parallel to the sides of the ditch cut.

SAMPLE	COMMENT
MX1-1b	Baulk 1, modern soil and buried ?rampart (lose)
MX1- 1a	Baulk 1, buried ?rampart with tow overlying modern soil and under-lying buried contexts (undisturbed and lose)
MX1-1b	Baulk 1, buried ?rampart with tow over- and under-lying contexts (undisturbed and lose)
MX1-2	Baulk 1, buried ?rampart with underlying bleached context (undisturbed and lose)
MX1- 3a-α	Baulk 1, buried in situ subsoil (undisturbed)
MX1-3a-β	Baulk 1, buried in situ subsoil (lose)
MX5-1	Baulk 4, modern soil (lose)
MX5-2	Baulk 4, buried ?rampart with upper part of underlying buried soil (lose)
MX5-3	Baulk 4, buried in situ subsoil and underlying parent material (lose)
MX1-1bTIN	Baulk 1, modern soil and buried ?rampart. TIN
MX1-1b - TS	Baulk 1, modern soil and buried ?rampart. Thin section
MX1-2αTIN- TS	Baulk 1, buried ?rampart with underlying bleached context. TIN
MX1-2a - TS	Baulk 1, buried ?rampart with underlying bleached context. Thin section
MX1-2βTIN	Baulk 1, buried ?rampart with underlying bleached context. TIN
MX1-2β - TS	Baulk 1, buried ?rampart with underlying bleached context. Thin section
MX1-3bTIN	Baulk 1, buried in situ subsoil (undisturbed tin)
MX1-3b - TS	Baulk 1, buried in situ subsoil. Thin section
MX5-1TIN	Baulk 4, modern soil. TIN
MX5-1- TS - TS	Baulk 4, modern soil. Thin section
MX5-2TIN	Baulk 4, buried ?rampart with upper part of underlying buried soil. TIN

MX5-2 TS - TS	Baulk 4, buried ?rampart with upper part of underlying buried soil. Thin section
MX5-3TIN	Baulk 4, buried in situ subsoil and underlying parent material. TIN
MX5-3- TS - TS	Baulk 4, buried in situ subsoil and underlying parent material. Thin section
MX-TIN 1 (YAT)	Ditch fill
MX-TIN 1 (YAT) - TSα	Ditch fill
MX-TIN 1 (YAT) - TSβ	Ditch fill
MX-TIN 2 (YAT) - TSα	Ditch fill
MX-TIN 1 (YAT) - TSβ	Ditch fill
Monolith 32156 (YAT)	Monolith from Ditch 32156

Table 7: *Summary of soil samples taken*

11. PHOSPHATE ANALYSIS by Marina Ciaraldi

Phosphate testing was undertaken on thirty-five samples collected during the archaeological excavation of Camp 1. Ten control samples were collected from the topsoil in an area outside the Roman camp (Area B) and inside the Roman camp (Area C). The remaining twenty-five samples were collected after stripping of the archaeological area, from the subsoil within the interior of the Roman camp (Area C). None of these samples, however, was associated with any particular feature. The aim of the test was to establish the distribution of phosphates in the archaeological deposits and to assess whether this had been affected by modern human activities in the area. It is likely that, after the abandonment of the Roman camp the area was used for agricultural purposes, which continued until the present day use as pasture.

The phosphates were tested using the Mehilich technique (Terry *et al*. 2000), according to the laboratory protocol outlined in Ciaraldi and Canti (forthcoming).

The phosphate values obtained show a substantial difference between the samples from Area B (outside the Roman camp) and Area C (inside of Roman camp) (Table 8). The average value of the phosphates from Area B is 44.12, while that from Area C is 5 for the topsoil samples and 3.8 for the subsoil samples. The distinct difference between phosphate values inside and outside the camp seems to be consistent with the different nature of the soil. Samples from Area B, on the other hand, are a clayey/dark brown loam, while those from Area C are sandy/clayey in the topsoil and decisively clayey in the subsoil. While it is clear that the differences between phosphate values obtained from the top- and subsoil are influenced by modern human activities such as use of fertilisers, rubbish disposal and agricultural activities, it is also possible that they are related to the different nature of the soil. A difference in the efficiency of the "fixation" of phosphorus in the soil could be the reason behind the different distribution of values. An association of low phosphate values and clayey soils, for instance, was observed also at Grange Park (Ciaraldi forthcoming).

The low phosphate values both in the top- and subsoil inside the Roman camp, suggests that, at least in Area B, modern human activities had little influence on the distribution of phosphates, particularly in the archaeological deposits. Only samples Nos. 60, 70, 74 and 78 show slightly higher phosphate values but they are not associated with any features and they do not follow any particular distribution pattern. It is possible that the low phosphate content is due to the temporary/short human occupation of the area in the past. Human occupation is generally associated with heavy production of phosphate as a consequence of its high output of domestic refuse, food waste, plant and animal remains, excreta, bodies and manure (phosphate 'enrichment'). Once deposited in the soil, phosphorus establishes strong bonds (fixation) with other elements (mainly with Ca, Al and Fe) forming highly stable compounds. The increment of phosphates in the soil is cumulative (Eidt 1977 and 1984). This interpretation is consistent with the rest of the archaeological evidence which indicates the presence of a frequentation of the site rather limited in time and with no presence of building structures or other types of features (Mark Johnson *pers. comm.*).

Small fragments of charcoal were observed in three samples (see Table 8) but their presence does not seem to have been reflected in the phosphates content of the samples.

11.1 Recommendations

On the basis of the considerations highlighted above, no further phosphates testing is recommended for the remaining samples.

SAMPLE	PHOSPHATES	LOCATION	COMMENTS
45	90.8	topsoil Area B – outside Roman camp	Clayey loam, dark brown rootlets
46	46.8	topsoil Area B – outside Roman camp	Clayey loam, dark brown rootlets
47	62.2	topsoil Area B – outside Roman camp	Clayey loam, dark brown
48	4.6	topsoil Area B – outside Roman camp	Clayey loam, dark brown
49	16.2	topsoil Area B – outside Roman camp	sandy soil, dark brown, rootlets
50	2.8	topsoil Area C – inside Roman camp	sandy soil, dark brown, rootlets
51	4.6	topsoil Area C – inside Roman camp	sandy soil, dark brown, rootlets
52	5	topsoil Area C – inside Roman camp	sandy soil, dark brown, rootlets and rather humic
53	7.6	topsoil Area C – inside Roman camp	Silty clay, brown, rootlets
54	5	topsoil Area C – inside Roman camp	Silty clay, brown, rootlets
55	2.6	subsoil– inside Roman camp	Clay, yellow/pink
56	2.8	subsoil– inside Roman camp	Clay, yellow/pink
57	2.6	subsoil– inside Roman camp	Clay, yellow/pink
58	2.2	subsoil– inside Roman camp	Clay, yellow/pink
59	2.6	subsoil– inside Roman camp	Clay, yellow/pink
60	10.4	subsoil– inside Roman camp	Clay, yellow/grey
61	2.6	subsoil– inside Roman camp	Clay, yellow/grey
62	0.2	subsoil– inside Roman camp	Clay, yellow/pink
63	1.2	subsoil– inside Roman camp	Clay, yellow/pink
64	2.6	subsoil– inside Roman camp	Clay, yellow/pink
65	2.2	subsoil– inside Roman camp	Clay, yellow/pink
66	2.2	subsoil– inside Roman camp	Clay, yellow/pink; charcoal flakes
67	0.8	subsoil– inside Roman camp	Clay, yellow/pink
68	4.79	subsoil– inside Roman camp	Clay, yellow/pink; charcoal flakes
69	1.09	subsoil– inside Roman camp	Clay, yellow/pink
70	9.4	subsoil– inside Roman camp	Clay, yellow/pink
71	1.8	subsoil– inside Roman camp	Clay, yellow/pink
72	2	subsoil– inside Roman camp	Clay, yellow/pink

73	2.2	subsoil– inside Roman camp	Clay, yellow/pink; charcoal flakes
74	9	subsoil– inside Roman camp	Clay, yellow/pink
75	1.6	subsoil– inside Roman camp	Clay, yellow/pink
76	3.6	subsoil– inside Roman camp	Clay, yellow/pink
77	3.6	subsoil– inside Roman camp	Clay, yellow/pink
78	16.2	subsoil– inside Roman camp	Clay, yellow/pink
79	4.4	subsoil– inside Roman camp	Clay, yellow/pink

Table 8: *Summary of Phosphate testing results*

12. ENVIRONMENTAL SAMPLES by Alan Hall, John Carrot and Kathryn Johnson

12.1 Introduction

The fills of the prehistoric features and the Roman camp ditch were systematically and extensively sampled. Sub-samples were chosen for the assessment to reflect a cross-section of the feature types and periods represented at the site. Two series of samples were examined. The first comprised material from 58 sub-samples (most of about 5 litres/8 kg, with 4 being larger) processed by York Archaeological Trust. This was submitted in the form of dried residues and 'flots' (i.e. wash-overs); some sorting of the former having been carried out to separate charcoal (and any artefactual finds) from mineral material. The second series comprised nine smaller sub-samples processed by PRS.

12.2 Methodology

The sub-samples selected by PRS were processed following the procedures of Kenward *et al*. (1980; 1986).

The washovers resulting from processing of the sediment samples were examined for plant and invertebrate macrofossils. The residues were scanned for larger plant macrofossils and other biological and artefactual remains. Where larger concentrations of remains were present, all the material was scanned under the binocular microscope and any plant (and other biological) material noted.

12.3 Results

The washovers from the processed sub-samples were mostly of modern rootlets and the residues of sand, stones and small lumps of un-disaggregated sediment. Both components were very small, generally amounting to only a few millilitres or tens of grams.

Ancient biological remains recovered were largely restricted to small amounts of charcoal. A very few other charred and un-charred plant remains were noted, but no other classes of biological material were seen.

The results of the investigations are summarised in Table 9.

12.4 Discussion and statement of potential

Plant remains (the only ancient biological remains recorded) were limited to small (often vanishingly small) amounts of wood charcoal, most of it (where checked) being oak (*Quercus*) or ash (*Fraxinus*), perhaps primarily from structural timber. A few other charred remains were noted in one of the samples from a prehistoric feature (see Table 9), but there was no evidence for charred cereals or weeds, for example. The few un-charred remains (including the small amounts of rootlet present in most samples) seem very likely to be of recent origin, though in this respect the several un-charred strawberry (*Fragaria*) achenes from one of the prehistoric samples is unusual and not readily explained, even as modern intrusive material.

None of the charcoal is suitable for dating by radiocarbon assay: it is generally rather worn, certainly in the case of material from the Roman ditches (so there is a possibility of reworking), and for the most part appears to come from branches or trunks, and thus might give a misleadingly old date.

12.5 Recommendations

No further work on this material is thought worthwhile unless a more detailed record of the charcoal is desired. Examination of further samples seems unlikely to yield useful results.

12.6 Retention and disposal

There are no good archaeobotanical reasons to retain the material in the longer term.

All of the remaining unprocessed sediment samples may be discarded unless they are to be processed for the recovery of material other than biological remains.

12.7 Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records.

Table 9: *Monks Cross, York (2000.574): Plant remains from samples.* † *- indicates those contexts/samples which have been examined in more detail, including wood species identifications for charcoal fragments where possible. The suffixes 'Y' and 'P' are used against the sample numbers to differentiate material processed respectively by YAT and PRS (see text).* ***** *- weights of samples processed by YAT are assumed to be about 8 kg, unless stated otherwise. Charcoal: + = estimated to be <1% of original sample volume; ++ = estimated to be 1-10% of original sample volume; figure in brackets gives maximum size of any fragment; material includes: D – unidentified diffuse-porous species; F – ash; Q – oak.*

CONTEXT	CONTEXT TYPE	SAMPLE	WEIGHT (KG)	CHARCOAL	NOTES
'Natural'					
32310	fill of natural feature	96Y	*		
?Prehistoric					
32331†	pit fill	100Y	*	++ (15) Q F	large residue (for this group!) of about 500 cm^3 of angular gravel (to 50 mm) and some iron-stained and worn charcoal (probably about 60:40 by volume)
32332†	pit fill	101P	0.8	++ (10) Q F	washover of about 20 cm^3 mainly brittle, but rather clean, charcoal, the largest fragments apparently 'curl' wood or similar
32333†	posthole fill	102P	0.72	+ (5)	
32335†	posthole fill	107P	0.82	+ (2)	
32347†	pit fill	104Y	*	+ (10)	
32348†	pit fill	105P	1.6	+ (5)	trace of (?charred) Cenococcum sclerotia (these fungal resting bodies are common in many kinds of active soil, including land under arable cultivation as well as peats and woodland soils)
32350	pit fill	103Y	*	+ (8)	
33032	ditch fill	111Y	*	+ (5)	
Prehistoric					
32391	pit fill	112Y	*	+ (2)	
32392	pit fill	113Y	*	+ (10)	only one charcoal fragment to 10 mm, most much smaller
32393	pit fill	114Y	*	+ (5)	
32394	pit fill	115Y	*		

CONTEXT	CONTEXT TYPE	SAMPLE	WEIGHT (KG)	CHARCOAL	NOTES
32395	pit fill	116Y	*	+ (18)	only one charcoal fragment to 18 mm, most much smaller
32396	pit fill	108Y	*	+ (12)	
		117Y	*	+ (10)	
		117P†	3.0	+ (10)	traces of charred herbaceous detritus, ?peat (to 2 mm) traces of (?charred) Cenococcum sclerotia, perhaps all derived from burnt peat or turves
32397	pit fill	118Y	*	+ (2)	
32404	pit fill	109Y	*	+ (10)	
		109P†	3.0	+ (2)	
32447	pit fill	119Y	*	+ (7)	
32448	pit fill	120Y	*		
Neolithic					
33004	pit fill	94Y	*	+ (3)	
	pit fill	94P†	3.0	+ (10)	several reasonably well-preserved uncharred Fragaria seeds (and some other remains which look suspiciously like modern contaminants)
33005†	pit fill	95Y	*	+ (20) F	
		99P	3.0	+ (10) Q F	
?Prehistoric/?Romano-British					
32164	gully fill	41Y	*	+ (8)	
		44Y	*	+ (7)	
32168		42Y	*	+ (6)	one fragment of ?modern glass

CONTEXT	CONTEXT TYPE	SAMPLE	WEIGHT (KG)	CHARCOAL	NOTES
32216		84Y	*	+ (8)	
Roman					
32035	camp ditch fills	22Y	*	+ (12)	
32041		23Y	*	+ (7)	
32043†		24Y	*	+ (2)	
32049†		25Y	*	+ (20) Q	
		25P	7.0	+ (20) Q	many small (?charred) Cenococcum sclerotia and flakes of modern ?woody root bark
32071		26Y	*	+ (15)	
32075		32Y†	*	+ (10)	
		33Y	*	+ (8)	some fragments marked as bone were charcoal; some fragments marked as wood were 'silted' charcoal
32092		27Y	*	+ (8)	
32101		28Y	*	+ (12)	most charcoal much less than 12 mm; one fragment of metal wire
32102		29Y	*	+ (15)	most charcoal very fine (to 1 mm); three fragments of metal wire
32103		31Y†	*	+ (10)	
		37Y	20	+ (7)	two tiny fragments of brick/tile (to 5 mm); two tubs of sample
32105		30Y	*	+ (10)	most charcoal much less than 10 mm
32136†		39Y	*	+ (10)	
32137†		34Y	*	+ (15) Q F	

CONTEXT	CONTEXT TYPE	SAMPLE	WEIGHT (KG)	CHARCOAL	NOTES
32150†		36Y	*	+ (10)	
32152		40Y	*	+ (5)	
32153	camp ditch fills (continued)	38Y	*	+ (12)	most charcoal much less than 12 mm
32161†		43Y	*	+ (15) D	
32180†		80Y	*	+ (10)	
32181		81Y	*		
32197		82Y	*	+ (4)	
32198†		83Y	20	++ (15)	a total of about 60 cm^3 of coarser charcoal and what appeared to be quite coarse charred bark (to 25 mm); two tubs of sample
32238		86Y	*	+ (7)	
32254†		89Y	*	++ (10) Q	about 50 cm^3 charcoal, apparently mostly oak
32259		90Y	*	+ (8)	
32260		91Y	*	+ (8)	
32261		92Y	*	+ (8)	
32302		93Y	*	+ (8)	
32312		98Y	*	+ (8)	
32325†		97Y	*	+ (10)	
32355		106Y	*	+ (5)	
Unknown date					

CONTEXT	CONTEXT TYPE	SAMPLE	WEIGHT (KG)	CHARCOAL	NOTES
32143	traverse ditch fill	35Y	*	+ (10)	
32243	?	87Y	20		two tubs of sample
32245	traverse ditch fill	88Y	30		a little ?iron concreted sediment; three tubs of sample
32388	buried soil	110Y	*		

13. DISCUSSION AND CONCLUSIONS

13.1 Prehistoric

The prehistoric archaeology revealed at Monk's Cross was not predicted by geophysical survey and serves to reinforce the fact that archaeology of the prehistoric periods is often present in the Vale of York even if not readily discernable by remote sensing. The earliest component of the prehistoric archaeology was a Neolithic pit, one further pit possibly being of a similar date. Parts of a curvilinear ditch, perhaps an enclosure of some sort, was located close to the Neolithic pit, though its date remains uncertain.

A major landscape feature, the pit alignment, is by analogy with similar features elsewhere in the region, most probably of Bronze Age or Iron Age origin and appears to have been re-defined in a continuous linear fashion in its latest form. Small quantities of Roman pottery recovered from the uppermost of the pit fills suggest that the last vestiges of this major feature were still visible in the mid-2nd century AD.

A concentrated cluster of pits and post-hole type features may relate to prehistoric occupation/activity in the vicinity.

Two small ring-gullies, probably representative of hay-stack or hay-rick gullies, did not produce any dating evidence, though they may be of prehistoric date.

Specialist analysis of soils and sediments from the site indicate ancient ground disturbance, though this may have occurred at the time of construction and occupation of the Roman camp rather than at a time prior to this.

13.2 Roman

The single feature that can be confirmed as being of Romano-British date at the site is Camp 1. Examination of the camp and the pottery recovered indicate a single period of occupation that was of short duration, this occurring in the early – mid 2nd century AD.

The location of Camp 1 on a small area of very slightly elevated ground highlights the degree of consideration involved in its positioning. It has also been demonstrated that the surveying involved in marking out the camp was performed to a high degree of accuracy and to pre-determined dimensions and proportions. Both the siting and marking out of the camp will probably have been carried out by legionary surveyors from York or by an advance party of surveyors from the unit to be housed at the camp. Either way, it is clear that the surveyors were of some competence.

Roman military treatises make it clear that the design of individual camps was tailored to suit the size of unit to be housed. Camp 1 is of a size (c.1.545ha) and form typical of the 1st and 2nd centuries that was used to house around five hundred auxiliary troops. That no indication of internal structures, arrangements or layout was preserved at the camp is owed to its temporary nature. Any structures that may originally have been contained will presumably have been comprised predominantly of leather tents.

Although generally in a very poor state of preservation, the rampart remains have provided some basic data. Traces of truncated in situ buried soils were, or appear to have been, universally present under the rampart indicating construction at a ground level that had been at least partially stripped of turf/vegetation and topsoil. In terms of original proportions, the width of the rampart at its base averaged fairly closely around 4.50m with the exterior edge generally around 1m from the lip of the camp ditch. The only places where the width of the rampart grossly exceeded this average was in the area of the in-turned ramparts by the entrances, the implication being that the rampart was of additional strength at these vulnerable entrance-ways. Indications of turf within the rampart make-up were sparse, a factor likely to relate solely to the poor state of preservation. Given the poor state of rampart preservation it has not proved possible to determine the original height of this with any accuracy.

Considerable irregularities of the ditch in terms of width, profile and to a lesser degree depth were recorded along the entire circuit of the camp. The differences in size, shape, profile, angle of alignments and positioning of the traverses in relation to camp entrances– one to the other has also been noted. All these irregularities are held to relate to errors (or discrepancies from regularity) made by those responsible for digging the camp ditch (almost certainly soldiers) rather than to intention. In spite of these irregularities the constructors must have been working to a pre-determined plan , probably as laid down in a surveying manual.

One cause of the observed irregularities is likely to have been the practice of using work gangs to excavate specific lengths of ditch. Although individual stretches of ditch of near identical form can be isolated at various places along the circuit, it cannot be conclusively stated that they form the work of one particular gang. They were possibly the labour of more than one gang working to an identical format, but it has not proved possible to calculate these stretches as recurring at set distances along the ditch. What can be said, however, is that in some instances these stretches are barely more than 6m long. Whilst one outcome of digging by gangs will be a degree of variation this factor does not account for the lack of overall quality.

The short-lived nature of the camp was demonstrated by the presence of only a small amount of in-wash primary fill. A sequence of highly mixed fills above this level containing turf, re-deposited natural and other soils, is believed to relate to a deliberate slighting of the camp in which rampart material was spread – much of it into the ditch. This slighting after abandonment, or end of operational use of the camp, may have been designed to render the camp unusable by potential adversaries.

An understanding of the function of Camp 1, and the context in which it was created may be gained from analysis of form, size and dating. The function of the camp can be considered under four headings namely:

- Marching Camp for periodic use by troops on the march
- Labour Camp for accommodating men engaged in specific construction projects
- Practice Camp built by troops on manoeuvres
- Temporary Camp for one-off temporary accommodation of troops

The first of these can be readily dismissed as the site lies close to the legionary fortress at York (which it clearly post-dates). It is also unlikely that Camp 1 served as a labour camp, again as the site lies close to the fortress. Although it is possible that some construction work may have been taking place in the fortress at York at around the time Camp 1 was occupied, it is perhaps unlikely that troops would need to be re-housed outside the fortress, particularly at such a distance.

Although the Bootham Stray Roman camps to the north of York (of broadly similar size and morphology) have traditionally been held to represent practice camps (RCHMY1, 47), it is suggested that Camp 1 is unlikely to have served such a function (an argument that may extend to the Bootham Stray examples also). There are a number of very small camps in Wales with numerous gateways that have reasonably been interpreted as practice camps (Welfare and Swan 1995). The argument here being that the emphasis on entrances permitted the practice construction of these more difficult elements, along with the corners of the camp, whilst the restricted space of the interior would permit the pitching of no more than a small handful of tents. Camp 1 by contrast does not have a proliferation of entrances. In terms of size and general morphology Camp 1 resembles a small fort and regional parallels can be found at Roall Manor Farm to the east of Castleford (Bewley and Macleod 1993) and Hayton, East Yorkshire (Johnson 1978), both of which are likely to have been forts manned by units of auxiliaries around five hundred strong.

It is suggested that the context in which the camp was constructed was most likely one in which the emphasis was on completing the job rather than on finesse of execution. Such a setting may have been in the construction of a temporary camp as opposed to a practice camp. The lack of constructional finesse at Camp 1 is quite marked and standards certainly fell far short of the strictures of the military treatises of the period.

If the interpretation of Camp 1 as a temporary camp is accepted then one may ask why it was constructed and moreover did it relate to Camp 2 and the Bootham camps in any way? It is tentatively suggested that the military and historical context of the camp may be one in which troop mustering and preparations for activity or campaigning in the north were focused on York with troops and supplies moving up from southern England and possibly even from the continent. There are a number of reported incidents in Britain in the first half of the 2nd century that may have required the massing of troops in the north. For example, with the arrival of emperor Hadrian in Britain in the early 120s AD, large bodies of troops were required in the north for the construction and defence of Hadrian's new frontier works. Later, during the reign of Antoninus Pius there is considerable evidence of large-scale military campaigning in southern Scotland with victories being announced in 142/143 and 154/155 (Salway 1981). The massing of large bodies of soldiery may account for the Monks Cross, Bootham Stray camps and other camps in the locality that are as yet un-located. Whether all the camps relate to a single occasion or individually to multiple events is not known though on typological grounds all appear to be of broadly similar date.

No clear evidence was recovered during the excavation that pointed directly to the nature of land use at the site in the Roman period either before or after the short life of Camp 1.

This negative result may in itself suggest the immediate area as being of marginal significance, possibly due to its relatively low lying and poorly drained position. Any usage during this period was almost certainly geared primarily towards agriculture, perhaps for pasture as in more recent times.

13.3 POST-ROMAN – MEDIEVAL

No features clearly relating to the Post-Roman or medieval periods were encountered at the site. Finds relating to this time span consisted only of a few fragments of medieval roofing tile and a single sherd of probable medieval pottery. These finds are likely to represent no more than a manuring scatter.

13.4 POST-MEDIEVAL – MODERN

The existing landscape of small rectangular hedge-bound fields at the site is entirely a product of post-medieval enclosure. 19th century maps of the locality indicate a slightly greater degree of division than is apparent today, some hedgerows having been grubbed up in the recent past. Sub-surface traces of post-medieval activity were encountered in the 2003 programme of excavation in addition to a number of drains, stake-holes and gullies found in the 2002 evaluation.

Those features found in the 2003 excavation consisted almost entirely of primitive land drains in Areas 1 and 2 and account for contexts 31019, 32003-18, 32023, 32028-9, 32288-9 These drains consisted of stretches of cuts, nearly always in straight lines aligned parallel to the existing field boundaries. Often the cuts turned through 90º and fed into neighbouring drains, the overall impression being of an incomplete latticework. Below the level of removed topsoil these features ranged in depth from 0.05m – 0.18m, in width from 0.15m – 0.40m and typically displayed vertical sides and bases that were either flat or concave. Dependent upon surviving depth two fills were typically present within the cuts. The lowest of these was generally a slightly greyish mid brown clayey silt, the upper much paler coloured and usually more clayey. These features are believed to be indicative of a type of simple field drain described in 18th century agricultural manuals (J. Walker pers. com.). In such a drain a channel is first cut, turf is then laid at the bottom and the channel back-filled; the operating principle being that water will flow more freely through the re-deposited turf than a clayey sub-soil. A handful of later post-medieval finds were recovered from these features.

The remaining excavated features of probable post-medieval date consisted of four post-holes, Contexts 31005/31006, 32019/32020, 32021/32022, 32026/32027. None of these was of any great size or depth or could be related to other features. No dating evidence was recovered any of the post-holes. During the 2002 evaluation a number of field drains and gullies of this date were encountered whilst large numbers of stake-holes were examined in Trenches 12 and 21.

The other remnants of the surviving post-medieval landscape consisted of straight, close spaced ridge and furrow that was evident extending fully across the field in which Area 1 was located and in the field in which contained the southern part of Area 2. Both sets of ridge and furrow were aligned north – south parallel to the enclosure field boundaries and

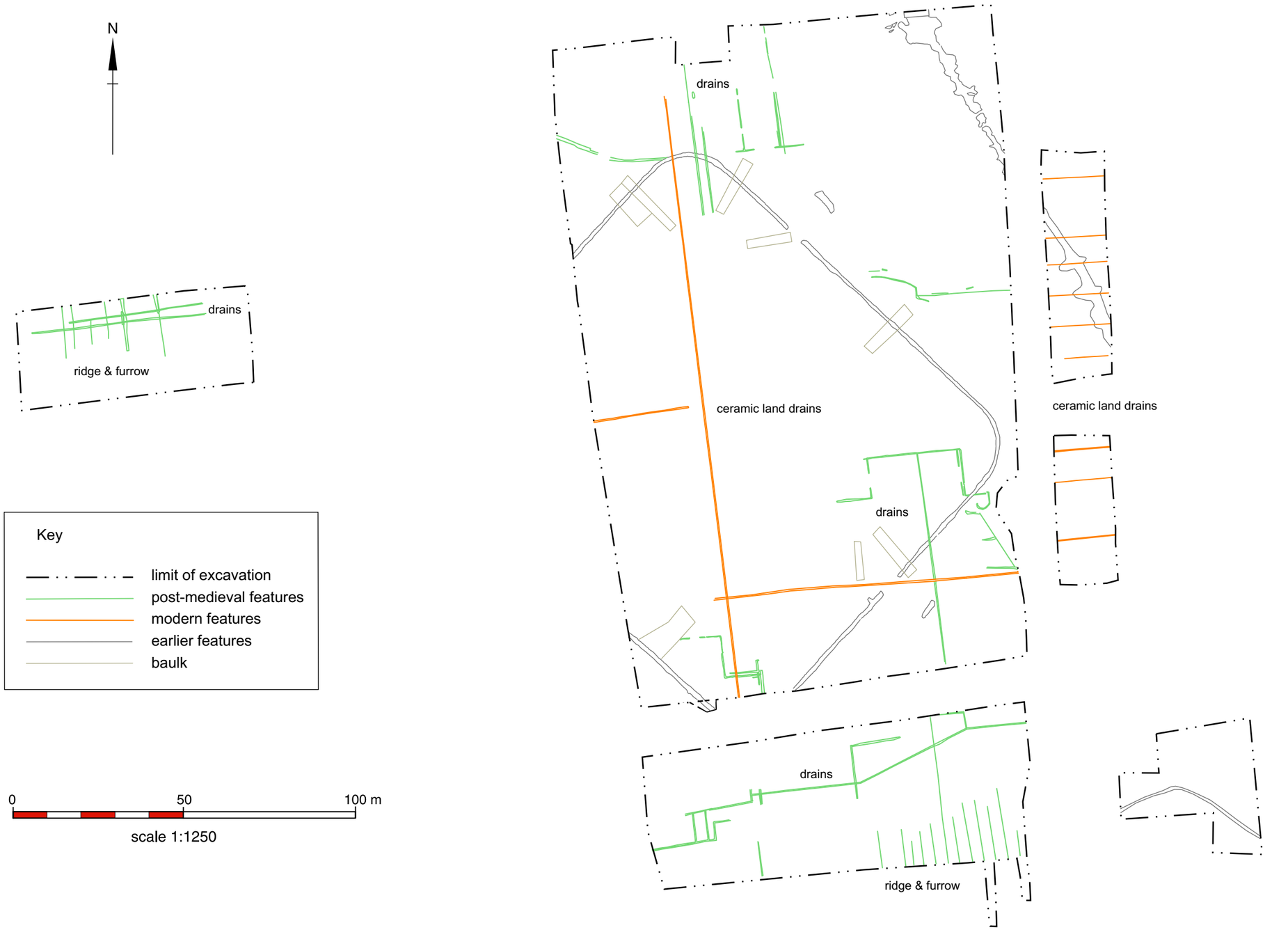


Figure 25: Plan of post-medieval and modern features

surveyed prior to site stripping. The spacing centre of ridge to centre of ridge in both cases was 4.5m – 5m. The system in Area 1 was much better preserved than that of Area 2. The former was nearly everywhere well defined with headlands visible at either end of the field. The latter was only partially visible at the northern end of the field, not at all towards the south. During the course of the survey it was noted that further ridge and furrow, all seemingly close spaced, is present in certain other pasture fields to the west of the site and in the area of Camp 2. The morphology of this ridge and furrow implies a late date, possibly early 19th century. It is uncertain if these systems represent a 'one off' episode of ploughing (possibly even to assist the drainage rather than grow crops) or a more prolonged, albeit temporary, conversion from pasture to arable.

Until recently agricultural practice at the site continued simply as livestock grazing. Whilst the 2002 ploughing of the field containing Camp 1 led to its discovery, the excavation has demonstrated that this caused damage to the remains of the rampart. A number of ceramic land drains intend to improve the pasture have also been cut across the site in the last hundred or so years. One other modern activity in the area of Camp 1 has impacted on the site in a more destructive manner, namely the siting of an overflow car park on the western quarter of the camp.

14. BIBLIOGRAPHY

Ainsworth, S. and Oswald, A., 1999.'Prehistoric embanked pit-alignments on Ebberston Low Moor, Ryedale, North Yorkshire', *Archaeological Investigation Report Series AI/7/1999.* (English Heritage)

Betts, I., 1985. *A scientific investigation of the brick and tile industry of York to the mid eighteenth century*, (PHD thesis, University of Bradford).

Bewley, R.H., and Macleod, D., 1993 'The Discovery of a Roman Fort at Roall Manor Farm, North Yorkshire' *Britannia,* 24, 243-247

Brinklow, D., Hall, R.A., Magilton, J.R., and Donaghey, S., 1986. *Coney Street, Aldwark and Clementhorpe, Minor Sites, and Roman Roads.* The Archaeology of York 6/3

Cardwell, P., 1989. 'Excavations at Cat Babbleton Farm, Ganton, North Yorkshire 1986'. *Yorkshire Archaeo. J,* 61, 15-27

Ciaraldi, M., (forthcoming). Phosphate Analysis in: S. Buteux – *Excavation at Grange Park, Northampton.*

Ciaraldi, M., and Canti, M., (forthcoming). 'Comparison of two Phosphates Tests on Soils from Grange Park: The Mehlich Method and the ring Test', *Centre for Archaeology Report.*

Dobney, K., Hall, A.R., Kenward, H. K. and Milles, A., 1992. 'A working Classification of Sample types for Environmental Archaeology', *Circaea* 9, 24-6.

Eidt, R., 1977. 'Detection and Examination of Anthrosols by Phosphate Analysis', *Science* 9, 33-36

Eidt, R., 1984. 'Advances in Abandoned Settlement Analysis', *Center for Latin America, University of Wisconsin, Milwaukee.*

English Heritage. 1991. Management of Archaeological Projects.

Geol. Surv. 1959. Geological Survey of Great Britain (England & Wales), solid and drift, Sheet 63.

Horne, P. D., 2002. 'Huntington South Moor Roman Camps, North Yorkshire', *Aerial Survey Report Series AER/6/2002.* (English Heritage)

Lawton, I., 1989. Roman Kiln Study, B.A. dissertation submitted to University of York, 1989.

Johnson,S., 1978. 'Hayton Roman Fort' *Britannia,* 9, 1978,57-114

Kenward, H. K., Hall, A. R., and Jones, A. K. G., 1980. 'A Tested Set of Techniques for the Extraction of Plant and Animal Microfossils from Waterlogged Archaeological Deposits', *Science and Archaeology* 22, 3-15.

Kenward, H. K., Engleman, C., Robertson, A., and Large, F., 1986. 'Rapid Scanning of Urban Archaeological Deposits for Insect Remain'*, Circaea* 3, 163-172.

Lawton, I., 1993. 'Apple Tree Farm 1987-1992: An Ebor Ware Kiln Site, Interim Report' *orkshire Archaeol. Ser. Roman Antiquities Section Bulletin* 10, 1992-93

Macnab, N., 2000. 'Land at Huntington South Moor, Monks Cross, York. Report on an Archaeological Desk-Top Study and Evaluation' *York Archaeological Trust, 2000 Field Report Number 32.*

Manby, T., 1974. 'Grooved Ware Sites in Yorkshire and the North of England', *British Archaeol. Rep.* 9

Ottaway, P., 1993. Roman York (London)

Ottaway, P., 2002. 'Huntington South Moor, Monks Cross, York. Report on an Archaeological Evaluation' *York Archaeological Trust, 2002 Field Report Number 26.*

Powlesland, D., Haughton, C., Hanson, J., 1986. ' Excavations at Heslerton, North Yorkshire 1978-82' *The Yorkshire Archaeol. J,* 143, 1986.

Powlesland, D., 2003. 'The Heslerton Parish Project: 20 Years of Archaeological research in the Vale of Pickering'. In Manby, T, G., Moorhouse, S., & Ottaway, P., The Archaeology of Yorkshire, An Assessment at the Beginning of the 20th Century. *Yorkshire Archaeol. Soc. Occasional Papers* 3, 275-291

RCHMY. Royal Commision on Historical Monuments (England). An Inventory of the Historical Monuments in the City of York. 1: *Eburacum, Roman York* (1962) (London)
Salway, P., 1981. Roman Britain (Oxford)

Terry, R. E., Hardin, P. J., Houston, S. D., Nelson, S. D., Jackson, M. W., Carr, J., and Parnell, J., 2000. 'Quantative Phosporus Measurement: a Field test Procedure for Archaeological Site Analysis at Piedras Negras, Guatemala' *Geoarchaeology* 15, 2, 151-166

Welfare, H., and Swan, V., 1995. Roman Camps in England, The Field Archaeology. (Royal Commision on the Historical Monuments of England)

YAJ, 1943. Roman Yorkshire, 1941. *Yorkshire Archaeol. J,* 35, 424

York Archaeological Trust Gazetteer. http://www.yorkarchaeology.co.uk/gaz/index.htm

15. ACKNOWLEDGMENTS

Excavation team	Eliza Gore, Mike Keech, Brian Milner,Tim Kearsey, Toby Kendall, Mark Johnson, Mark Randerson, Ben Reeves, Steve Toase, Maria Vinnels
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APPENDIX 1:

CONTEXT	DESCRIPTION	DRWG NO(S).	SAMPLE NO.
31000	Unstratified finds-machine strip		
31001	Topsoil		
31002	Natural		
31003	Fill of tree-bole	Digital	
31004	Cut of tree-bole	Digital	
31005	Fill of modern feature	Digital	
31006	Cut of modern feature	Digital	
31007	Tree-bole	Digital	
31008	Tree-bole	Digital	
31009	Tree-bole	Digital	
31010	Tree-bole	Digital	
31011	Fill of natural feature	Digital	
31012	Cut of natural feature	Digital	
31013	Fill of natural feature	Digital	
31014	Cut of natural feature	Digital	
31015	Tree-bole	Digital	
31016	Tree-bole	Digital	
31017	Tree-bole	Digital	
31018	Natural feature	Digital	
31019	Post-med. Drainage	Digital	

***Table 10*:** *Listings of contexts, drawing numbers and sample numbers, Area 1*

CONTEXT	DESCRIPTION	DRWG NO(S).	SAMPLE NO.
32000	Unstratified finds-machine strip		
32001	Topsoil		
32002	Natural		
32003	Fill of p.med. drain	S.1,2, P.32006	
32004	Cut of p.med. drain	S.1,2, P.32006	
32005	Fill of p.med. drain	S.1,2, P.32006	
32006	Cut of p.med. drain	S.1,2, P.32006	
32007	Fill of p.med. drain	S.3,4, P.32008	
32008	Cut of p.med. drain	S.3,4, P.32008	
32009	Fill of p.med. drain	S.3,4, P.32008	
32010	Cut of p.med. drain	S.3,4, P.32008	
32011	Fill of p.med. drain	S.10, P.32011	
32012	Cut of p.med. drain	S.10, P.32011	
32013	Fill of p.med. drain	S.5,6, P.32014	
32014	Cut of p.med. drain	S.5,6, P.32014	
32015	Fill of p.med. drain	S.7,8, P.32016	
32016	Cut of p.med. drain	S.7,8, P.32016	
32017	Fill of p.med. drain	S.9, P.32017	

32018 32019	Cut of p.med. drain Fill of post-hole	S.9, P.32017 P.32017	
32020	Cut of post-hole	P.32017	
32021	Fill of post-hole	P.32017	
32022	Cut of post-hole	P.32017	
32023	Structure No., p.med drains, s. part Area 2	Digital	
32024	Fill of modern field drain	P.32025	
32025	Cut of modern field drain	P.32025	
32026	Fill of post-hole	P.32026	
32027	Cut of post-hole	P.32026	
32028	P.med drain	P.32026	
32029	Structure No., p.med drains, s. part Area 2	Digital	
32030	Camp ditch fill	S.12,13, P.32030	
32031	Camp ditch cut	S.12,13, P.32031	
32032	Camp ditch fill	S.23, P.32032	
32033	Camp ditch cut	S.23, P.32033	
32034	Camp ditch fill	S.15, P.32034	
32035	Camp ditch fill	S.12,13, P.32035	22
32036	Fill of stake-hole/natural	P.32036	
32037	Cut of stake-hole/natural	P.32037	
32038	Void – stake/burrow	P.32038	
32039	Void – stake/burrow	P.32039	
32040	Camp ditch fill	P.32040	
32041	Camp ditch fill	S.23, P.32041	23
32042	Same as 32098		
32043	Camp ditch fill	S.14,15, P.32043	24
32044	Camp ditch fill	S.17,18, P.32044	
32045	Camp ditch fill	S.23, P.32045	
32046	Camp ditch fill	S.12,13, P.32046	
32047	Camp ditch fill	S.12,13, P.32047	
32048	Camp ditch fill	S. 23, P.32048	
32049	Camp ditch fill	S.17,18, P.32049	25
32050	Metal detected finds, rampart topsoil, Area 2		
32051	Buried soil (baulk 1)	S.14	
32052	Buried soil (baulk 1)	S.14	
32053	Animal burrowing (baulk 1)	S.14	
32054	Disturbed rampart (baulk 1)	S.14	
32055	Disturbed rampart (baulk 1)	S.14	
32056	Disturbed rampart (baulk 1)	S.14	
32057	Disturbed rampart (baulk 1)	S.14	
32058	Disturbed rampart (baulk 1)	S.14	
32059	Plough disturbance (baulk 1)	S.14	
32060	Plough disturbance (baulk 1)	S.14	
32061	Buried soil (baulk 1)	S.14	

32062	Buried soil (baulk 1)	S.14	
32063	Camp ditch fill	S.23, P.32063	
32064	Camp ditch cut	S.14,15, P.32064	
32065	Fill of animal disturbance	P.32063	
32066	Cut of animal disturbance	P.32063	
32067	Fill of animal disturbance	P.32063	
32068	Cut of animal disturbance	P.32063	
32069	Camp ditch fill	S.26,27, P.32069	
32070	Camp ditch fill	S.17,18, P.32070	
32071	Camp ditch fill	S.17,18, P.32071	26
32072	Fill of modern field drain	S.16	
32073	Cut of modern field drain	S.16	
32074	Buried soil/rampart	S.16	
32075	Camp ditch fill	S.23, P.32075	32,33
32076	Camp ditch fill	S.16,20, P.32076	
32077	Camp ditch fill	S.16,20, P.32077	
32078	Camp ditch cut	S.16,20, P.32078	
32079	Camp ditch fill	S.31,32, P.32079	
32080	Camp ditch fill	S.26,27, P.32080	
32081	Fill of animal disturbance	P.32075	
32082	Cut of animal disturbance	P.32075	
32083	Camp ditch cut	S.17,18, P.32083	
32084	Camp ditch fill	S.31,32, P.32084	
32085	Camp ditch fill	S.26,27, P.32084	
32086	Camp ditch fill	S.21,22, P.32086	
32087	Rampart slump (baulk 1)	S.14	
32088	Camp ditch fill	S.28,29, P.32088	
32089	Camp ditch fill	S.28,29, P.32089	
32090	Camp ditch fill	S.28,29, P.32090	
32091	Camp ditch fill	S.21,22, P.32091	
32092	Camp ditch fill	S.26,27, P.32092	27
32093	Animal burrow fill	P.3092	
32094	Animal burrow cut	P.3092	
32095	Camp ditch fill	S.23, P.32095	
32096	Disturbed rampart material, (baulk 6)	S.19	
32097	Disturbed rampart material, (baulk 6)	S.19	
32098	Rampart/buried soil, (baulk 6)	S.19	
32099	Disturbed rampart material, (baulk 6)	S.19	
32100	Camp ditch fill	S.31,32, P.32100	
32101	Camp ditch fill	S.26,27, P.32101	28
32102	Camp ditch fill	S.21,22, P.32102	29
32103	Camp ditch fill	S.31,32, P.32103	31,37
32104	Camp ditch fill	S.26,27, P.32104	
32105	Camp ditch fill	S.26,27	30

32106	Camp ditch fill	S.26,27	
32107	Camp ditch fill	S.16,20, P.32107	
32108	Camp ditch fill	S.16,20, P.32108	
32109	Camp ditch fill	S.16,20, P.32109	
32110	Camp ditch fill	S.16,20, P.32110	
32111	Camp ditch fill	S.21,22, P.32111	
32112	Camp ditch cut	S.21,22, P.32112	
32113	Camp ditch fill	S.31,32, P.32113	
32114	Fill of animal disturbance	P.32114	
32115	Cut of animal disturbance	P.32115	
32116	Fill of animal disturbance	P.32114	
32117	Cut of animal disturbance	P.32115	
32118	Camp ditch fill	S.24,25, P.32118	
32119	Camp ditch cut	S.24,25, P.32119	
32120	Camp ditch fill	S.30, P.32120	
32121	Camp ditch fill	S.30, P.32121	
32122	Camp ditch cut	S.30, P.32122	
32123	Camp ditch fill	S.35,36, P.32123	
32124	Camp ditch cut	S.35,36, P.32124	
32125	Camp ditch fill	S.31,32, P.32125	
32126	Camp ditch fill	S.24,25, P.32126	
32127	Camp ditch fill	S.31,32, P.32127	
32128	Camp ditch fill	S.35,36, P.32128	
32129	Camp ditch fill	S.24,25, P.32129	
32130	Camp ditch fill	S.24,25, P.32130	
32131	Camp ditch fill	S.35,36, P.32131	
32132	Camp ditch fill	S.24,25, P.32132	
32133	Camp ditch fill	S.35,36, P.32133	
32134	Camp ditch fill	S.35, P.32133	
32135	Camp ditch cut	S.26,27, P.32135	
32136	Camp ditch fill	S.35,36, P.32136	39
32137	Camp ditch fill	S.30, P.32137	34
32138	Camp ditch fill	S.30, P.32138	
32139	Camp ditch fill	S.26,27	
32140	Camp ditch fill	S.33,34, P.32140	
32141	Camp ditch cut	S.33,34, P.32141	
32142	Camp ditch fill	S.26,27, P.32086	
32143	Traverse ditch fill	S.49, P.32143	35
32144	Traverse ditch cut	S.49, P.32144	
32145	Camp ditch fill	S.28,29, P.32145	
32146	Camp ditch fill	S.28,29, P.32146	
32147	Camp ditch fill	S.28,29, P.32147	
32148	Camp ditch fill	S.33,34, P.32148	
32149	Camp ditch fill	S.35,36, P.32149	
32150	Camp ditch fill	S.33,34, P.32150	36
32151	Camp ditch fill	P.32151	
32152	Camp ditch fill	S.35,36, P.32152	40

32153	Camp ditch fill	S.33,34, P.32153	38
32154	Traverse ditch fill	S.49, P.32154	
32155	Camp ditch fill	S.50, P.32155	
32156	Camp ditch cut	S.31,32, P.32156	
32157	Camp ditch fill	S.50, P.32157	
32158	Camp ditch fill	P.32158	
32159	Camp ditch fill	S.30, P.32158	
32160	Camp ditch fill	S.41,42	
32161	Camp ditch fill	S.41,42	43
32162	Camp ditch cut	S.41,42, P.32162	
32163	Camp ditch fill	S.50,51, P.32163	
32164	Gully fill	S.37, P.32170	41
32165	Gully cut	S.37, P.32170	
32166	Gully fill	S.38,39	
32167	Gully cut	S.38,39, P.32170	
32168	Gully fill	S.40	42
32169	Gully cut	S.40, P.32170	
32170	Feature No. stack gully		
32171	Animal burrow	P.32170	
32172	Camp ditch fill	S.47,48	
32173	Camp ditch fill	S.47,48	
32174	Camp ditch fill	S.50,51, P.32174	44
32175	Camp ditch cut	S.47,48, P.32175	
32176	Camp ditch fill	S.41,42	
32177	Camp ditch fill	S.41,42	
32178	Camp ditch fill	S.41,42	
32179	Traverse ditch fill	S.49, P.32179	
32180	Camp ditch fill	S.47,48	80
32181	Camp ditch fill	S.47,48	81
32182	Camp ditch fill	S.43,44	
32183	Camp ditch fill	S.43,44	
32184	Camp ditch fill	S.43,44	
32185	Camp ditch fill	S.43,44	
32186	Camp ditch cut	S.43,44, P.32186	
32187	Natural fill	S.44	
32188	Natural cut	S.44	
32189	Not issued		
32190	Camp ditch cut	S.50,51, P.32190	
32191	Camp ditch cut	S.45,46, P.32191	
32192	Camp ditch fill	S.45,46	
32193	Camp ditch fill	S.45,46	
32194	Camp ditch fill	S.45,46	
32195	Camp ditch fill	S.45,46	
32196	Camp ditch fill	S.45,46	
32197	Camp ditch fill	S.46	82
32198	Camp ditch fill	S.52,53	83
32199	Camp ditch fill	S.50,51	

32200	Camp ditch fill	S.50,51	
32201	Camp ditch fill	S.50,51	
32202	Topsoil	S.51	
32203	Rampart slump/plough (Baulk 5)	S.51	
32204	Rampart slump/plough (Baulk 5)	S.51	
32205	Camp ditch fill	S.52,53	
32206	Camp ditch fill	S.52,53	
32207	Camp ditch cut	S.52,53	
32208	Camp ditch fill	S.62,63	
32209	Camp ditch cut	S.62,63	
32210	Gully fill	S.54,55, P.32218	
32211	Gully cut	S.54,55, P.32218	
32212	Gully fill	S.56,57, P.32218	
32213	Gully cut	S.56,57, P.32218	
32214	Gully fill	S.58,59, P.32218	
32215	Gully cut	S.58,59, P.32218	
32216	Gully fill	S.60,61, P.32218	84
32217	Gully cut	S.60,61, P.32218	
32218	Feature No. sub-circular gully	P.32218	
32219	Camp ditch fill	S.63	
32220	Camp ditch fill	S.62,63	
32221	Camp ditch fill	S.62,63	
32222	Camp ditch fill	S.64,65	
32223	Camp ditch fill	S.64,65	
32224	Camp ditch fill	S.64,65	
32225	Camp ditch fill	S.64,65	
32226	Camp ditch cut	S.64,65	
32227	Camp ditch fill	S.66,67	
32228	Camp ditch cut	S.66,67	
32229	Camp ditch fill	S.66,67	
32230	Camp ditch fill	S.66,67	85
32231	Camp ditch fill	S.66,67	
32232	Camp ditch fill	S.68,69	
32233	Camp ditch fill	S.68,69	
32234	Camp ditch fill	S.68,69	
32235	Camp ditch fill	S.68,69	
32236	Camp ditch cut	S.68,69, P.32236	
32237	Camp ditch fill	S.70,71	
32238	Camp ditch fill	S.70,71	86
32239	Camp ditch fill	S.70,71	
32240	Camp ditch fill	S.70,71	
32241	Camp ditch cut	S.70,71, P.32241	
32242	Camp ditch fill	S.68,69	
32243	Not issued/deleted		87
32244	Traverse ditch fill	S.77, P.32246	
32245	Traverse ditch fill	S.77	88
32246	Traverse ditch cut	S.77, P.32246	

32247	Camp ditch cut	S.72,73, P.32247	
32248	Camp ditch fill	S.72,73	
32249	Camp ditch fill	S.72,73	
32250	Camp ditch fill	S.72,73	
32251	Camp ditch fill	S.72,73	
32252	Camp ditch fill	S.72,73	
32253	Camp ditch fill	S.79	
32254	Camp ditch fill	S.79	89
32255	Camp ditch fill	S.79	
32256	Camp ditch fill	S.79	
32257	Camp ditch cut	S.79, P.32257	
32258	Rampart material (baulk 7)	S.75, 80	
32259	Camp ditch fill	S.81,82	90
32260	Camp ditch fill	S.81,82	91
32261	Camp ditch fill	S.81,82	92
32262	Camp ditch cut	S.81,82, P.32262	
32263	Rampart spread (baulk 4)	S.74	
32264	Rampart spread (baulk 4)	S.74	
32265	Natural	S.74	
32266	Rampart material	S.74	
32267	Rampart spread (baulk 4)	S.74	
32268	Slot fill	S.76, P.32269	
32269	Slot cut	S.76, P.32269	
32270	Traverse ditch fill	S.77	
32271	Rampart spread (baulk 3)	S.78	
32272	Rampart spread (baulk 3)	S.78	
32273	Rampart spread (baulk 3)	S.78	
32274	Camp ditch fill	S.78	
32275	Camp ditch fill	S.78	
32276	Camp ditch fill	S.78	
32277	Rampart spread (baulk 3)	S.78	
32278	Rampart material (baulk 3)	S.78	
32279	Rampart material (baulk 3)	S.78	
32280	Rampart material (baulk 3)	S.78	
32281	Rampart material (baulk 3)	S.78	
32282	Rampart material (baulk 3)	S.78	
32283	Natural	S.78	
32284	Camp ditch cut	S.91,92, P.32284	
32285	Camp ditch fill	S.91,92	
32286	Camp ditch fill	S.87,88	
32287	Camp ditch cut	S.87,88, P.32287	
32288	Post-med drain fill	S.83,84	
32289	Post-med drain cut	S.83,84	
32290	Camp ditch fill	S.85,86	
32291	Camp ditch fill	S.85,86	
32292	Camp ditch fill	S.85,86	
32293	Camp ditch fill	S.85,86	

32294	Camp ditch fill	S.85,86	
32295	Camp ditch fill	S.85,86	
32296	Camp ditch cut	S.85,86, P.32296	
32297	Camp ditch fill	S.89,90	
32298	Camp ditch cut	S.89,90, P.32298	
32299	Camp ditch cut	S.93, P.32299	
32300	Camp ditch fill	S.93	
32301	Camp ditch fill	S.93	
32302	Camp ditch fill	S.93	93
32303	Camp ditch fill	S.93	
32304	Fill of natural feature	32305	
32305	Cut of natural feature	32305	
32306	Camp ditch fill	S.91,92	
32307	Camp ditch fill	S.91,92	
32308	Camp ditch fill	S.91,92	
32309	Fill of natural feature	S.93, P.32299	
32310	Fill of natural feature	S.93, P.32299	96
32311	Fill of natural feature	S.93, P.32299	
32312	Camp ditch fill	S.97	98
32313	Camp ditch fill	S.97	
32314	Camp ditch fill	S.97	
32315	Camp ditch fill	S.89,90	
32316	Camp ditch fill	S.89,90	
32317	Camp ditch fill	S.89,90	
32318	Camp ditch fill	S.90	
32319	Camp ditch fill	S.90	
32320	Camp ditch fill	S.89,90	
32321	Camp ditch fill	S.98,99	
32322	Camp ditch fill	S.98,99	
32323	Camp ditch fill	S.98,99	
32324	Camp ditch fill	S.98,99	
32325	Camp ditch fill	S.98,99	97
32326	Camp ditch fill	S.98,99	
32327	Camp ditch cut	S.98,99	
32328	Pit cut	S.104, P.32328	
32329	Pit fill	S.104, P.32328	
32330	Pit cut	S.104, P.32330	
32331	Pit fill	S.104, P.32330	100
32332	Pit fill	S.104	101
32333	Post-hole fill	S.104, P.32328	102
32334	Post-hole cut	S.104, P.32328	
32335	Post-hole fill	S.104, P.32328	107
32336	Post-hole cut	S.104, P.32328	
32337	Post-hole fill	S.104, P.32328	
32338	Post-hole cut	S.104, P.32328	
32339	Post-hole fill	S.104, P.32328	
32340	Post-hole cut	S.104, P.32328	

32341	Fill of natural feature	S.104, P.32328	
32342	Cut of natural feature	S.104, P.32328	
32343	Post-hole fill	S.104, P.32328	
32344	Post-hole cut	S.104, P.32328	
32345	Post-hole fill	S.104, P.32328	
32346	Post-hole cut	S.104, P.32328	
32347	Pit fill	S.104, P.32328	104
32348	Pit fill	S.104, P.32328	105
32349	Pit cut	S.104, P.32330	
32350	Pit fill	S.104, P.32328	103
32351	Pit fill	S.104, P.32328	
32352	Pit cut	S.104, P.32328	
32353	Camp ditch fill	S.95,96	
32354	Camp ditch fill	S.95,96	
32355	Camp ditch fill	S.95,96	106
32356	Camp ditch fill	S.95,96	
32357	Camp ditch fill	S.95,96	
32358	Camp ditch cut	S.95,96, P.32358	
32359	Pit (alignment) cut	S.94, P.32360	
32360	Pit (alignment) fill	S.94	
32361	Pit (alignment) fill	S.94	
32362	Pit (alignment) fill	S.94	
32363	Pit (alignment) fill	S.94	
32364	Pit (alignment) fill	S.94	
32365	Pit (alignment) fill	S.100	
32366	Pit (alignment) fill	S.100	
32367	Pit (alignment) fill	S.100	
32368	Pit (alignment) fill	S.100	
32369	Pit (alignment) fill	S.100	
32370	Pit (alignment) fill	S.100	
32371	Pit (alignment) cut	S.100, P.32371	
32372	Camp ditch fill	S.98	
32373	Camp ditch fill	S.98	
32374	Camp ditch fill	S.98,99	
32375	Camp ditch fill	S.98,99	
32376	Pit (alignment) fill	S.101	
32377	Pit (alignment) fill	S.101	
32378	Pit (alignment) fill	S.101	
32379	Pit (alignment) fill	S.101	
32380	Pit (alignment) fill	S.101	
32381	Pit (alignment) fill	S.101	
32382	Pit (alignment) fill	S.101	
32383	Pit (alignment) cut	S.101, P.32383	
32384	Plough/top-soil (Baulk 5)	S.102	
32385	Rampart spread (Baulk 5)	S.102	
32386	Rampart material (Baulk 5)	S.102	
32387	Rampart material (hand	P.32387	

	excavation)		
32388	Buried soil (Rampart hand excavation)	P.32388	110
32389	Plough scar fills (Rampart hand excavation)	P.32390	
32390	Plough scar cuts (Rampart hand excavation)	P.32390	
32391	Pit (alignment) fill	S.103	112
32392	Pit (alignment) fill	S.103	113
32393	Pit (alignment) fill	S.103	114
32394	Pit (alignment) fill	S.103	115
32395	Pit (alignment) fill	S.103	116
32396	Pit (alignment) fill	S.103	108,117
32397	Pit (alignment) fill	S.103	118
32398	Pit (alignment) cut	S.103, P.32398	
32399	Pit (alignment) cut	S.105, P.32399	
32400	Pit (alignment) fill	S.105	
32401	Pit (alignment) fill	S.105	
32402	Pit (alignment) fill	S.105	
32403	Pit (alignment) fill	S.105	
32404	Pit (alignment) fill	S.105	109
32405	Pit (alignment) fill	S.105	
32406	Pit (alignment) fill	S.105	
32407	Fill of unknown features (32408-32412)	P.32328	
32408	Cut of unknown feature	P.32328	
32409	Cut of unknown feature	P.32328	
32410	Cut of unknown feature	P.32328	
32411	Cut of unknown feature	P.32328	
32412	Cut of unknown feature	P.32328	
32413	Fill of small feature	P.32328	
32414	Cut of small feature	P.32328	
32415	No. for find from fill of unex. Ditch seg.	Digital	
32416	Pit (alignment) fill	S.107	
32417	Pit (alignment) fill	S.107	
32418	Pit (alignment) fill	S.107	
32419	Pit (alignment) fill	S.107	
32420	Pit (alignment) fill	S.107	
32421	Pit (alignment) cut	S.107, P.32421	
32422	No. for find from fill of unex. Ditch seg.	Digital	
32423	Pit (alignment) fill	S.105	
32424	Pit (alignment) fill	S.105	
32425	Pit (alignment) fill	S.106	
32426	Pit (alignment) fill	S.106	
32427	Pit (alignment) fill	S.106	

32428	Pit (alignment) fill	S.106	
32429	Pit (alignment) fill	S.106	
32430	Pit (alignment) fill	S.106	
32431	Pit (alignment) fill	S.106	
32432	Pit (alignment) fill	S.106	
32433	Pit (alignment) fill	S.106	
32434	Pit (alignment) cut	S.106, P.32434	
32435	Fill of plough scar	S.108, P.32446	
32436	Cut of plough scar	S.108, P.32446	
32437	Pit (alignment) fill	S.108, P.32446	
32438	Pit (alignment) fill	S.108	
32439	Pit (alignment) fill	S.108	
32440	Pit (alignment) fill	S.108	
32441	Pit (alignment) fill	S.108	
32442	Pit (alignment) fill	S.108	
32443	Pit (alignment) fill	S.108	
32444	Pit (alignment) fill	S.108	
32445	Pit (alignment) fill	S.108	
32446	Pit (alignment) cut	S.108, P.32446	
32447	Pit (alignment) fill	S.103, P.32398	119
32448	Pit (alignment) fill	S.103	120
32449	Pit (alignment) fill	S.109, P.32455	
32450	Pit (alignment) fill	S.109	
32451	Pit (alignment) fill	S.109	
32452	Pit (alignment) fill	S.109	
32453	Pit (alignment) fill	S.109	
32454	Pit (alignment) fill	S.109	
32455	Pit (alignment) fill	S.109	
32456	Pit (alignment) fill	S.94	
32457	Pit (alignment) fill	S.94	
32458	Pit (alignment) fill	S.94	
32459	Pit (alignment) fill	S.94	
32460	Pit (alignment) fill	S.94	
32461	Pit (alignment) fill	S.94	
32462	Pit (alignment) fill	S.110, P.32466	
32463	Pit (alignment) fill	S.110	
32464	Pit (alignment) fill	S.110	
32465	Pit (alignment) fill	S.110	
32466	Pit (alignment) cut	S.110, P.32466	
32467	Pit (alignment) unexcavated	P.32468	
32468	Pit (alignment) unexcavated	P.32468	
32469	Pit (alignment) unexcavated	P.32469	
32470	Pit (alignment) unexcavated	P.32470	
32471	Pit (alignment) unexcavated	P.32471	
32472	Cleaning/definition spit, N.E. part Area 2	Digital	
32473	Fill of pit/ditch, N.E. part Area 2	S.111	

32474	Fill of pit/ditch, N.E. part Area 2	S.111	
32475	Fill of pit/ditch, N.E. part Area 2	S.111	
32476	Fill of pit/ditch, N.E. part Area 2	S.111	
32477	Fill of pit/ditch, N.E. part Area 2	S.111	
32478	Cut of pit/ditch, N.E. part Area 2	S.111, P.32478	
32479	Fill of hollow over pit alignment Epart Area 2	S112,113 P32486	
32480	Fill of hollow over pit alignment Epart Area 2	S.112,113	
32481	Not issued		
32482	Fill of hollow over pit alignment Epart Area 2	S.112,113	
32483	Fill of pit/ditch, N.E. part Area 2	S.113	
32484	Fill of pit/ditch, N.E. part Area 2	S.113	
32485	Fill of pit, N.E. part Area 2	S.113	
32486	Pit cut, N.E. part Area 2	S.113, P.32486	
32487	Group No. wavy edged slot	P.32328	
32488	Fill of hollow over pit alignment, main part	Digital	
32489	Cut of hollow over pit alignment, main part	Digital	
32490	Pit (alignment) fill	S.94	
32491	Pit (alignment) fill	S.94	
32492	Camp ditch fill	S.23	
32493	Camp ditch fill	S.14	

***Table 11*:** *Listings of contexts, drawing numbers and sample numbers, Area 2*

CONTEXT	DESCRIPTION	DRWG NO(S).	SAMPLE NO.
33000	Unstratified machine finds		
33001	Topsoil		
33002	Natural		
33003	Pit fill	S.301,302	
33004	Pit fill	S.301,302	94,95
33005	Pit fill	S.301,302	99
33006	Pit cut	S301,302 P.33006	
33007	Pit fill	S.303	
33008	Pit fill	S.303	
33009	Pit cut	S.303, P.3309	
33010	Sub-soil?	S.304,305	
33011	Ditch fill	S.304	
33012	Ditch fill	S.304	
33013	Ditch cut	S.304, P.33013	
33014	Ditch fill	S.305	
33015	Ditch fill	S.305	
33016	Ditch cut	S.305, P.33016	

33017	Ditch fill	S.306,307	
33018	Ditch fill	S.306,307	
33019	Ditch fill	S.306,307	
33020	Ditch cut	S306,307P.33020	
33021	Ditch fill	S.308,309	
33022	Ditch fill	S.308,309	
33023	Ditch fill	S.308,309	
33024	Ditch cut	S308,309P.33024	
33025	Ditch fill	S.310,311	
33026	Ditch fill	S.310,311	
33027	Ditch fill	S.310,311	
33028	Ditch cut	S310,311P.33028	
33029	Ditch fill	S.311	
33030	Ditch fill	S.312,313	
33031	Ditch fill	S.312,313	
33032	Ditch fill	S.312,313	111
33033	Ditch fill	S.312,313	
33034	Ditch fill	S.312	
33035	Ditch fill	S.313	
33036	Ditch cut	S312,313P.33036	
33037	Feature No. Curvilinear ditch	Digital	

***Table 12*:** *Listings of contexts, drawing numbers and sample numbers, Area 3*

APPENDIX 2: PHOTOGRAPHIC ARCHIVE

Table 13*: *Listings of digital photographs

NUMBER	DETAILS	DIRECTION
0738-216	Visitors at open day	
0738-217	Visitors at open day	
0738-218	Visitors at open day	
0738-219	Visitors at open day	
0738-220	Visitors at open day	
0738-221	Visitors at open day	
0738-222	Visitors at open day	
0738-223	Visitors at open day	
0785-112	Cut 32162	S
0785-113	Cut 32162	N
0785-119	Cut 32144	S.E
0785-120	Working shot	S.W
0785-121	Working shot	S.W
0785-122	Working shot	S.W
0785-124	Working shot	S.W
0785-125	Working shot	S.W
0785-126	Working shot	S.W
0785-128	Working shot	N.E
0785-129	Working shot	N.E
0785-139	Working shot	S.W
0785-140	Working shot	S.W
0785-142	Cut 32209	
0785-159	Cut 32257	S.W
0785-161	Cut 32246	N.E
0785-167	Cut 32247	S.W
0785-179	Cut 33016	N.E
0785-188	Cuts 32328, 32346, 32338, 32340, 32344, 32342	N
0785-199	Cut 32352	N
0785-200	Cut 32352	N
0785-201	Pit 32371 during excavation	N.E
0785-202	Pit 32371 during excavation	N.E
0785-203	Pit alignment, general shot	
0785-204	Pit 32360, during excavation	S.E
0785-205	Pit 32383, during excavation	E
0785-206	Pit 32398, after excavation	N.E
0785-207	Pit 32398, after excavation	N.E
0785-208	Pit 32398, after excavation	N.E
0785-210	Pit 32360, after excavation	S.E
0785-211	Pit 32360, after excavation	S.E
0785-212	Pit 32360, after excavation	S.E
0785-213	Pit 32360, after excavation	S.E

0785-214	Pit 32360, after excavation	S.E
0785-215	Pit 32360, after excavation	N.W
0785-240	General view of camp	N.E
0785-241	General view of camp	N.E
0785-242	General view of camp	S.E
0785-243	General view of camp	S.E
0785-244	North-east side of camp	S.E
0785-245	Cuts 32486, 32482	S.E
0785-246	Cuts 32486, 32482	S.E
0785-247	Pit 32360	S.E
0785-248	Cuts 32486, 32482	S.E
0785-249	Neolithic pottery	
0785-250	Neolithic pottery	
0785-251	Small find 80	
0785-252	Small find 80	
0785-253	Small find 66	
0785-254	Small find 66	
0785-255	Small find 82	
0785-256	Small find 82	
0785-257	Small find 72	
0785-258	Small find 72	
0785-259	Small find 97	
0785-260	Small find 97	
0785-261	Small find 09	
0785-262	Small find 09	
0785-263	Small find 94	
0785-264	Small find 94	
0785-265	Small find 101	
0785-266	Small find 101	
0785-267	Small find 07	
0785-268	Small find 07	
0785-269	Small find 71	
0785-270	Small find 71	
0785-271	Small find 05	
0785-272	Small find 05	
0785-273	Small find 08	
0785-274	Small find 08	
0785-275	Small find 102	
0785-276	Small find 102	
0785-277	Small find 103	
0785-278	Small find 103	
0785-41	Overturned dumper	
0785-42	Overturned dumper	
0785-43	Overturned dumper	
0785-45	Cut 32064	E
0785-46	Cut 32064	W

0785-47	Cut 32064	W
0785-48	Cut 32064	E
0785-49	Cut 32047	W
0785-50	Cut 32047	E
0785-51	Cut 32047	W
0785-52	Cut 32047	W
0785-53	Detail of rampart adjacent to N.E. entrance	N
0785-54	Detail of rampart adjacent to N.E. entrance	N
0785-55	Detail of rampart adjacent to N.E. entrance	N
0785-56	Detail of rampart adjacent to N.E. entrance	N
0785-57	Detail of rampart adjacent to N.E. entrance	N
0785-58	Detail of rampart adjacent to N.E. entrance	N
0785-59	Detail of rampart adjacent to N.E. entrance	N
0785-60	Detail of rampart adjacent to N.E. entrance	N
0785-61	Detail of rampart adjacent to N.E. entrance	N
0785-64	Detail of rampart adjacent to N.E. entrance	N
0785-67	Rampart section W. of 32064	W
0785-70	Rampart detail	N.W
0785-72	Rampart detail, Baulk 1	W
0785-73	Rampart detail, Baulk 1	W
0785-74	Rampart detail, Baulk 1	W
0785-75	Rampart detail, Baulk 1	N.W
0785-76	N. end of site	W
0785-77	N. end of site	W
0785-78	Mixed backfill 32136 in Cut 32124	N
0785-79	Cut 32135	W
0785-80	Cut 32078	N
0785-81	Cut 32078	S
0785-82	Cut 32078	S
0785-83	Cut 32112	S
0785-84	Cut 32112	S
0785-86	Cut 32119	S
0785-87	Cut 32119	S
0785-88	Cut 32090	N
0785-90	Cut 32124	S
0785-92	Cut 32124	N
0785-93	Cut 32141	S
0785-94	Cut 32141	|N
0785-95	Cut 32156	W
0785-96	Cut 32156	W
0785-97	Terminal 32122	N.W
0785-98	Feature 32170	S
0785-99	Cut 32160	S

Table 14*: *Listings of colour slides

NUMBER	DETAILS	DIRECTION
0785-100	Cut 32162	S
0785-101	Cut 32162	N
0785-102	Cut 32175	N
0785-103	Cut 32175	N
0785-104	Cut 32175	S
0785-105	Cut 32175	N
0785-106	Cut 32175	N
0785-107	Cut 32186	N.W
0785-108	Cut 32186	N
0785-109	Cut 32190	S
0785-110	Cut 32190	S
0785-109	Cut 32190	S
0785-110	Cut 32190	S
0785-111	Cut 32190	N
0785-114	Cut 32207	N
0785-115	Cut 32207	N
0785-116	Cut 32207	S
0785-117	Cut 32144	S.E
0785-118	Cut 32144	N.W
0785-123	Working shot	S.W
0785-127	Working shot	N.E
0785-138	After the rain	N
0785-141	Cut 32209	
0785-143	Cut 32209	
0785-144	Cut 32226	
0785-145	Cut 32226	
0785-146	Cut 32226	
0785-147	Cut 32228	S.W
0785-148	Cut 32228	S.W
0785-149	Cut 32228	S.E
0785-150	Cut 32241	S.W
0785-151	Cut 32241	S.W
0785-152	Cut 32241	N.E
0785-153	Cut 32236	W
0785-154	Cut 32236	W
0785-155	Cut 32236	E
0785-156	Cut 32257	N.E
0785-157	Cut 32257	N.E
0785-158	Cut 32257	S.W
0785-160	Cut 32246	N.E
0785-162	Cut 32262	S.W
0785-163	Cut 32262	S.W
0785-165	Cut 32262	N.E

0785-166	Cut 32269	N.E
0785-169	Cut 32287	N.W
0785-170	Cut 32287	N.W
0785-171	Cut 32286	S.E
0785-172	Cut 32295	N.E
0785-173	Cut 32295	N.E
0785-174	Cut 32295	S.W
0785-175	Cut 33013	N.W
0785-176	Cut 33013	N.W
0785-177	Cut 33013	S.E
0785-178	Cut 33016	N.E
0785-179	Cut 33016	N.E
0785-180	Cut 33016	N.E
0785-181	Cut 32299	N.E
0785-182	Cut 32299	N.E
0785-183	Cut 32299	W
0785-184	Cut 32299	S.W
0785-185	Cut 32298	S.W
0785-186	Cut 32293	N.E
0785-187	Cuts 32334, 32336	N.E
0785-189	32330	N
0785-190	Cut 32349	N
0785-191	Cut 32287	S
0785-192	Cut 32287	N
0785-193	Cut 32287	S
0785-194	Cut 32358	N
0785-195	Cut 32358	S
0785-196	Cut 32327	S.E
0785-197	Cut 32327	S.E
0785-198	Cut 32327	N.W
0785-44	Area 1	W
0785-62	Rampart in baulk 1	N
0785-63	Rampart in baulk 1	N
0785-65	Rampart section west of 32064	W
0785-66	Rampart section west of 32064	W
0785-68	Rampart section west of 32064	W
0785-69	Rampart section west of 32064	W
0785-71	Rampart in Baulk 1	N
0785-78	Mixed backfill 32136 in Cut 32124	N
0785-89	Cut 32141	N
0785-91	Cut 32141	S
0785-98	32170	S
0785-99	Cut 32160	S
2003-02-09	Site stripping	
2003-02-12	Site stripping	
2003-02-13	Site stripping	

2003-02-14	Site stripping	
2003-02-15	Baulk 1	S.W
2003-03-04	Terminal 32122	S.E
2003-03-06	Terminal 32122	N.W