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ARCHAEOLOGICAL EXCAVATIONS AT YORK COMMUNITY STADIUM

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EXCAVATION REPORT

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AOD Above Ordnance Datum

YAT York Archaeological Trust

NON-TECHNICAL SUMMARY

An archaeological excavation was undertaken from 18th May to 26th June 2015 at the site of the Community Stadium, York. A trench approximately 7450 square metres in size was excavated to recover remains from a known Roman camp, which had been identified by aerial photography. Part of two sides and one corner of the Roman camp ditch were present, but the associated bank and most of the internal features had been truncated by modern activity. A small number of undated pits and post-holes were present, together with 18th century plough furrows and modern field drains.

KEY PROJECT INFORMATION

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1 INTRODUCTION

From 18th May to 26th June 2015 an excavation was undertaken at the site of the York Community Stadium, formerly known as both Ryedale Stadium and Huntington Stadium (Figure 1). The work was carried out by York Archaeological Trust on behalf of the City of York Council, and was monitored by Mr. J. Oxley, the City of York's Principal Archaeologist.

Aerial photography undertaken in 2002 by English Heritage revealed the presence of two Roman camps in the Huntington Moor Area. The south-easternmost of these was named Camp 1, while the north-westernmost was named Camp 2, and it is Camp 2 that forms the subject of the present report. Camp 1 was subsequently subjected to extensive archaeological excavation, prior to the development of the area as a retail park (see section 4.2.3-4.2.4 below). The remaining portion of Camp 2 survives as a visible earthwork in the fields to the immediate west of the present site (Plate 2), and this surviving portion is now a Scheduled Ancient Monument (SAM 1020976).

At the time of excavation the Community Stadium site comprised a disused sports stadium containing a rugby pitch, surrounded by an oval shaped athletics track, with two grandstands to either side of the long-axis of the track/pitch (Plate 1). The archaeological excavation comprised a single trench which incorporated the entire area of the rugby pitch and a small portion of the athletics track (Figure 2). The excavation was approximately 7450 square metres in area, the main portion was rectangular and measured on average 98.6m in length north-south and 68.5m in width west-east, with an additional sub-rectangular area 23.4m x 4.85m in size midway along the eastern side of the main area.

The main aim of the excavation was to determine whether any remains from Camp 2 survived beneath the sports stadium (none were seen in the aerial photographs or in a geophysical survey of the rugby pitch), and if so to recover information relating to the date and character of the camp.

2 METHODOLOGY

The deposits associated with the rugby pitch and athletics track were removed by machine on 18th-20th May. This work was undertaken by N. Jagger Demolition and Construction under archaeological supervision. Part of the fence separating the stadium from a car park located to its immediate south was removed, to enable the car park to be used for stockpiling the spoil. The portion of removed-fencing was replaced by temporary Herras fencing panels which could be opened each day to act as a gateway for the site machinery, but chained shut each night to secure the site. The deposits were removed using two 32 ton 360° mechanical excavator machines, four dumper trucks, one Moxie truck and a bulldozer (Plates 3-4). In the interest of safety a strict one-way system was observed by the machinery, with the dumpers/Moxie entering through the temporary gate at the southern end of the site, then moving clockwise to collect spoil from the excavator-machines, before continuing in a clockwise direction back to the temporary gate and out to the spoil heaps (Plates 5-6). This system kept the need for reversing machinery, always a dangerous manoeuvre, to a minimum. The spoil was stacked in the car park to the south of the stadium (Plate 7), in four distinct piles, the westernmost pile being turf and topsoil, with a pile of sand to its east, then a pile of gravel in the south-

easternmost portion of the car park. To the north of the gravel pile, along the eastern side of the car park was a stockpile of any other excavated materials such as running track, rubble etc. The careful separation of the excavated spoil into piles was done at the request of the City of York Council, to ensure that where possible materials could be reused for landscaping in the forthcoming redevelopment of the site.

From 25th May to 19th June a community excavation was held at the site, using volunteers under the supervision of three members of YAT staff. This community excavation had been extensively advertised by YAT from November 2014 onwards. The excavation was open free of charge to anyone who booked one of the 16 spaces available each day.

Excavation was impossible on three occasions due to heavy rain, and on these occasions the volunteers were given talks on glass, pottery or stratigraphy as an alternative to excavation. The excavation area was enclosed by low-level crowd barrier fences, so that the public and school parties could safely visit the site.

All archaeological features were excavated by hand and recorded in accordance with the YAT recording manual, with appropriate context cards, 1:20 plans, 1:10 section drawings and digital photographs being taken. The only exceptions were that the modern field drains associated with the rugby pitch were not excavated, and only a representative sample of two of the post-medieval furrows on the site were excavated by hand. All surveying was done using a Leica GPS system, for this reason there is no site levels book. Linear features (such as field drains) were surveyed with the GPS only, while any hand excavated features were both surveyed with the GPS and drawn by hand. The positions of any cross-sections through archaeological features were also surveyed in using the GPS, thereby fixing the location of the section-drawing in relation to the national grid.

The artefacts from the site were excavated and stored in accordance with the YAT recording manual. Fifteen environmental samples were taken, 14 of which were for general biological analysis, while the remaining sample was a spot sample taken for a timber species analysis.

From the 22nd to the 26th June a bore-hole survey was undertaken of the site, the results of which are given in Appendix 9. In addition, during this final week all the ditch cross-sections were infilled, to ensure that no-one could be injured by falling into them, and the site barrier fencing, cabins, tools etc. were all removed from the site before it was handed back to the city of York Council on Friday 26th June.

2.1 Community outreach

The project was designed to involve the community, with a variety of different approaches being offered to ensure maximum public engagement.

Prior to the excavation commencing Dr. J. Rimmer led “Archive Introduction and Research Session” at the York Explore Library (See Appendix 7)

Extensive use of web-based sources was made to make the project as inclusive as possible. A Wordpress website (https://digyorkstadium.wordpress.com/) was created shortly after the project’s inception and was regularly updated with background information, details on how to get involved and site diaries to disseminate discoveries as they were made. At present (September 2015), the site has received 10,450 views. Web traffic came predominantly from the UK, but the project also gained considerable interest from the US, Canada and across

Europe. Social media was also utilised with a Twitter account (https://twitter.com/digyorkstadium) gaining 730 followers and a Facebook group (https://www.facebook.com/groups/319759298209171/?fref=ts) gaining 200 members. These outlets were updated frequently, allowing anyone with an interest in archaeology to follow developments as they happened.

A total of 60 volunteers (listed in the acknowledgements) worked on the Community Stadium site, all of whom are thanked for their enthusiasm and hard-work.

Each Friday there was a public open day from 11am to 3pm, with J. Baxter, E. Caves Coats and R. Webster acting as guides. This work was coordinated by H. Harris. The open days were attended by 11 visitors on the 29th May, 30 visitors on 5th June, 17 visitors on 12th June and 15 visitors on 19th June.

The site was used for a number of school visits, with staff from YAT (F. Bennett, F. Brigham, M. Lester S. Perry, J. Stockdale and C. Tuckley) acting as the guides/teachers. This proved to be a highly successful and enjoyable element of the project, with 630 children visiting the site. The following school visits happened during the course of the excavation:

Headlands Primary School - approximately 90 children (aged 7-9)

Queen Margaret's School, Escrick - approximately 20 children (aged 13-14)

Huntington Primary School - approximately 250 children (aged 7-11)

Huntington Primary School - approximately 180 children (aged 4-7)

Robert Wilkinson Primary School - approximately 90 children (aged 8-9)

A series of four talks were given at Huntington Memorial Hall from 1.30-3.30pm on 29th May, 5th June, 12th June and 19th June. The first talk by I. Milsted was titled “Discovering Landscapes: Reconnaissance and landscapes”, the second talk by A. Jenner and N. Van Doorn was “Finding things: identifying artefacts and archaeology”, the third talk by I. Milsted was “Putting together the story: archaeological analysis” and the final talk by J.M. McComish, J. Stockdale and F. Bennett was “Telling the story: public interpretation of archaeology”. These talks were attended by 19 people, six people, seven people and three people respectively.

Eleven members of the York and District Metal Detecting Club (listed in the acknowledgements) came to site during the first and final weeks of the excavation to assist with the location of any artefacts in the unexcavated portions of the site. Each metal-detected signal was marked with either a yellow or red flag (for non-ferrous and ferrous signals respectively) and these points were investigated by the volunteer excavators.

While the community excavation was ongoing Dr J. Kenny undertook a geophysical survey on the surviving portions of the camp in the fields to the west of the stadium.

D. Dodwell undertook low-level aerial photography for the excavation, using a kite, drone and pole. Mr. Dodwell kindly gave permission for his photographs to be used within this report, and the resultant superb images are credited to him (Plates 1-7, 15, 27, 31, 38-40 and 42-45).

During the project local artist Catherine Sutcliffe-Fuller was able to access to the site to continue an ongoing art project with the City of York Council.

3 LOCATION, GEOLOGY & TOPOGRAPHY

The site is located approximately 3km north-east of York Minster, and 1km south of Huntington village centre, on low-lying land ranging from 14.5-15m AOD. The River Foss lies 1.2m to the west of the site.

The underlying solid geology is of Sherwood sandstones of late Permian date, overlain by drift geology of Warp and Laucustrine clays (British Geological Survey).

At the time of excavation the site comprised a disused sports stadium with a central rugby pitch aligned with its long axis north-south, surrounded by an oval shaped athletics track. In the semi-circular area between the pitch and the track at the northern end of the pitch there was a shot put cage, while in the semi-circular area between the pitch and the track on the southern side there was a grassed area with a pole-vaulting runway. Long-jump pits were present between the rugby pitch and the athletics track on the eastern side of the pitch. Two grandstand buildings aligned north-south were present to the west and east of the running track. The stadium site was bordered to the north by a garage and servicing centre, to the north-east by a go-carting business, to the east by the former Water World swimming pool and associated gymnasium, to the south-east and south by a car park, and to the west by fields of pasture, with housing beyond.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 Archaeological background

Various features of prehistoric date are known from the vicinity; excavations in the area of Camp 1 uncovered a Neolithic pit and curvilinear ditch (possibly from an enclosure), together with part of a Bronze Age or Iron Age pit alignment that formed a major boundary. This boundary was later redefined by a ditch. In addition, there were two small ring-gullies, possibly hay-rick gullies, and a cluster of twelve undated pits and post-holes that were interpreted as being of possible prehistoric date (Johnson 2004, 89). Extensive excavations to the south-east of Camp 1 yielded a low-density of undated pits, post-holes and gullies that were interpreted as being of possible prehistoric origin; there was also a ditch containing a Bronze Age arrowhead (Johnson 2012, 1). A circular ditch of possible Iron Age date is known from Hopgrove Farm approximately 1.75km north-east of the present site (Macnab 2000, 6), while Iron Age ditches and possible hut circles are known from Rawcliffe Moor 3km north-west of the present site (Hunter-Mann 1992a, 23-4).

The site lies approximately 4km north-east of the Roman legionary fortress of *Eburacum* and its associated urban settlement, and the site is approximately 450m north-west of a postulated Roman road to Malton (RCHM 1962, Figure 2). William Stukeley and Francis Drake writing in the 18th century noted that there were 'seven or eight' camps in the York area, but they did not record their precise locations (Ottaway 2002, 22). Two of these camps on Bootham Stray 2.5km north of the legionary fortress have been identified in recent times (RCHM 1962 47; Welfare and Swan 1995, 135-6), and it is likely that the two Huntington Moor camps were also originally among these eight sites (Horne and Macleod 2002, 11).

Several Roman sites are known within a 3km radius of the present site. (The archaeological investigations of Camp 1 are detailed in section 4.2 below). Second to fourth century pottery

derived from occupation, rather than burials, was discovered in the 1940s near 210 Stockton Lane, approximately 1km south of the present site (YAJ 1943, 424). Roman remains including Roman tile, pottery, and three coins were recorded by P. Wenham in the Ashley Park Estate area in 1959, approximately 1.5km south-south-east of the present site (Macnab 2000, 6), while at Bad Bargain Lane a cremation and part of a Roman road were recovered (Macnab 2000, 6). Also in 1959 mechanical diggers cut through an oak lined grave containing a gypsum-filled lead coffin and an un-inscribed stone coffin at grid reference SE 6310 5310, with a further uninscribed gritstone coffin containing gypsum and a skeleton being found at grid reference SE 6325 5322 (Macnab 2000, 6).

Apple Tree Farm, approximately 2km south-south-east of the present site, yielded various Roman features, including evidence of pottery manufacture of late 1st century to mid-2nd century date (Lawton 1993). Earlier work in the same area in 1959 had recorded the discovery of two stone sarcophagi together with numerous pottery and tile fragments (Macnab 2000, 6). A Roman cremation, ditches and a cobbled surface were found on the northern side of Bad Bargain Lane in the late 1950s (ibid., 6). Features of Romano-British date, probably relating to a farmstead, have been located 2.5km to the east at Stockton Moor West (YAT site archive code 1996.390). Two further Roman camps are known 2.2km and 2.4km west-north-west of the present site at Bootham Stray; both camps were 'playing-card' shaped, the first camp being 150m x 85m in size, and the second 107m x 81m; these camps had at least two and at least three entrances respectively, all of which had in-turning *claviculae* entrances (RCHM 1962, 47). These camps are sited on low-lying land at an elevation of *c.* 14m AOD. Parts of a Romano-British field system are also known from Rawcliffe Manor 3km north-west of the present site (Hunter-Mann 1994a, 23; Hunter-Mann 1992b, 29; Hunter-Mann 1994a, 10; Hunter-Mann 1994b, 16; Hunter-Mann 1994c, 26).

Very little archaeological evidence of medieval activity has been recovered in the vicinity, but this is hardly surprising given that this area was forest or grazing-land during these periods. No evidence of Anglian or Anglo-Scandinavian activity was found during excavations on the site of Camp 1, or in the area to its immediate south-east (Ottaway 2002, 20; Johnson 2012, 36). An Anglian cremation urn from a cemetery on Heworth Moor was recorded in 1879 (RCHM 1975, xxvii). Evidence of later medieval activity in the immediate vicinity of the camps is also sparse, though a few sherds of 11-16th century pottery were recovered from Camp 1 (Ottaway 2002, 20).

Archaeological evidence for the post-medieval period from the area primarily relates to agriculture. Various gullies and land-drains of 18th century date were present in the area of Camp 1, together with ridge and furrow of 19th century date and some modern ceramic field drains (Ottaway 2002, 21; Johnson 2004, 91). The area to the south-east of Camp 1 also contained modern ceramic field drains (Johnson 2012, 13 and 22). A geophysical survey of Camps 1 and 2 also showed evidence of ploughing probably dating to the 19th-20th century (Ottaway 2002, 21). Post-medieval plough-marks were also present at the site of Annamine Nursery some 350m to the north-west of the present site (Dean 2004, 20).

4.2 Previous archaeological investigations into the Roman camps at Huntington Moor

See Figure 3 for the location of previous archaeological investigations

4.2.1 Archaeological evaluation in the vicinity of Camp 1 in 2000

An evaluation comprising eight 10m x 10m trenches was undertaken in 2000 in the area of Camp 1 (Figure 3; Macnab 2000). No conclusive evidence of prehistoric activity was recovered during this excavation, but there were hints of Roman activity in the form of ten sherds of Roman ceramic building material and some possibly truncated Roman features (Macnab 2000, 20). No evidence for Anglian, Anglo-Scandinavian, or later medieval activity, was present in this excavation, but post-medieval plough-scars were visible in several of the trenches (ibid., 20).

4.2.2 Aerial photography in 2002

Routine aerial reconnaissance by English Heritage in 2002 identified two rectangular enclosures characteristic of Roman temporary camps (Horne and Macleod 2002, 3). The north-westernmost of these camps had been partially destroyed by the Ryedale Stadium, while the area of the south-easternmost camp was at that time destined for development, making investigation of the visible remains a matter of some urgency. The sites were re-photographed, and earlier photographs within the English Heritage archives were re-examined.

This process showed that Camp 1 comprised a ditch and internal rampart of rectangular plan with rounded corners, which measured 123m x 108m in size and was aligned with the long axis north-west to south-east (ibid., 7). A possible entrance was visible on the north-eastern side of the camp, approximately one third of the way along the side, with what was thought to be an in-turning *clavicula* entrance (ibid., 9). Dark patches visible within Camp 1 on the aerial photographs were interpreted as being due to the ponding of surface water in the post-Roman period (ibid., 9).

Camp 2 (the present site) was visible as a right angled ditch and associated bank in the fields to the immediate west of the Ryedale Stadium, though no remains were visible within the stadium itself, the size of the camp was therefore unclear from the aerial photographic survey.

Exceptionally straight ridge and furrow marks, spaced approximately 5m apart, were visible on the aerial photographs in the area of both the camps; these were interpreted as being of 19th or 20th century date, relating to land-improvement. Some of the furrows were more broadly spaced at 8m apart, and these were interpreted as being of an earlier date (ibid., 7).

4.2.3 Geophysical survey of the camps and archaeological evaluation of Camp 1 in 2002

Following the discovery of the camps in the aerial photographic reconnaissance further evaluation work was undertaken, comprising a geophysical survey of both camps and an archaeological evaluation of Camp 1 (Ottaway 2002).

A combination of magnetometry and resistivity survey revealed not just the Camp 1 defences but also a number of linear features some of which were on the same alignment as the camp both within and outside the camp perimeter (ibid., 9). Two of these features parallel to the south-east defences proved on excavation to be shallow ditches (ibid., 9). A number of areas of high resistivity within the camp proved on excavation to be natural deposits of iron-rich soils (ibid., 9). The geophysical survey also suggested that the bank of Camp 2 was better preserved than that of Camp 1 (ibid., 21).

The excavation comprised thirteen trenches of various sizes (Figure 3). No evidence of prehistoric features was present, but a number of flints were recovered from the excavations suggestive of prehistoric activity in the area (ibid., 20). The excavation confirmed the presence and location of Camp 1's defences, which comprised a ditch, 1m-1.1m in breadth and 0.75m deep, and the vestigial remains of an internal rampart composed of the clay dug out of the ditch (ibid., 26). The excavations confirmed the presence of an entrance on the north-eastern side of Camp 1, but the existence of a *clavicula* style entrance could not be proved (ibid., 20). It was noted that evidence for any other entrances had probably been destroyed in the post-Roman period. There was evidence that the rampart was deliberately slighted when the camp was abandoned, with sections of decayed turf identified in all of the excavated cross-sections through the ditch (ibid., 20). Soil samples from two of the ditches contained charred heather, which could have originated from burnt turves or from peat used as fuel (ibid., 20). No internal features relating to the camp were present in the excavated areas, and no dateable artefacts were found to clarify the date of the camp, indeed the lack of artefacts suggested that the camp was only occupied for a few weeks or months at most (ibid., 20-1).

4.2.4 Archaeological excavation of Camp 1 in 2004

Further extensive archaeological investigations on Camp 1 were undertaken in 2004 (Figure 3). This excavation showed that the camp ditch had been accurately surveyed-in to precise measurements in Roman feet or *pes Monetalis* (0.296m = 1pM); the intended size was 450pM and 400pM or a 9:8 ratio for the length of the side, while the actual size was only fractionally different being 451.225pM north-west/south-east by 400.151pM north-east/south-west (Johnson 2004, 3 and 42). While the overall layout of the camp had been carefully surveyed in, there were gross ditch cutting irregularities, suggesting that these inaccuracies had occurred once the surveyor's task had been completed, (ibid., 43).

A total of 34 segments were excavated through the camp ditch, and cross-sections of the badly eroded bank were also excavated (ibid., 29). The ditch ranged from 0.49m to 1.72m in width and 0.44m to 0.83m in depth, with gross changes in width apparent even over short distances (ibid., 30). Differences in the depth of the ditch overall were less pronounced (ibid., 30). The ditch profile was similarly varied, with only a minority of the sections having a basal slot, and this also varied considerably in size ranging from 0.07m to 0.3m in width and from 0.05m to 0.25m in depth; these slots usually ran for only a few metres (ibid., 30).

A narrow gully was present parallel to and immediately outside the south-eastern side of Camp 1, which may have represented a marking out trench, or the line that should have been followed when digging the ditch (ibid., 32).

Two entrances were present within the excavated area, both of which were simple gaps in the camp ditch, the north-eastern entrance was 5.5m wide and the south-eastern entrance was 7m wide (ibid., 31). The termini ditches had oblique ends, making the entrance slightly narrower on the inner side (ibid., 31). There was no evidence for elaboration of the entrances with timber gateways, but there were traverse ditches opposite and exterior to both entrances, separated from the main ditch (ibid., 31). The traverse ditch at the north-eastern entrance was 8m long, 2.2m wide and 0.66m deep and it was located 11.5m north-east of the main camp ditch, while the traverse ditch opposite the south-eastern entrance was 6m long,

up to 1.45m wide, 0.57m deep and was separated from the main camp ditch by 12m (ibid., 31).

The line of the rampart was just visible prior to the stripping of the site (ibid., 89). On excavation there was evidence that turf and topsoil had been stripped prior to the construction of the rampart (ibid., 89). The rampart seemed to have been 4.5m wide originally, with a 1m wide gap (*berm*) between the bank and ditch, but poor survival made it impossible to estimate the original height of the rampart (the bank only survived to a height of 0.2m at most); it is possible that the rampart was wider near the entrance ways, but the rampart was so degraded this is by no means certain (ibid., 31, 89). Two sherds of early to mid-2nd century Ebor ware pottery were recovered from within the rampart.

The absence of surviving archaeological remains from within the camp suggests that any accommodation comprised leather tents rather than more permanent structures (ibid., 43).

Evidence that the camp was both short-lived and deliberately slighted was present (ibid., 3). The camp ditch had begun to silt up and suffered from some slumpage, before being deliberately backfilled with material derived from the rampart (ibid., 39). The limited nature of the initial silting is suggestive of a short time-frame for any occupation of the camp. The ditch infill resultant from slighting included 29 sherds of Roman pottery dating from the first half of the 2nd century AD (ibid., 39). Further silting took place after the camp had been slighted, and this later silting incorporated Roman pottery of 2nd to 4th century date (ibid., 41).

4.2.5 Archaeological evaluation in the area to the south-east of Camp 1 in 2012

Thirty-one evaluation trenches were excavated in the area to the south-east of Camp 1 in 2012. These revealed a low density of undated features thought to be of prehistoric date and a ditch containing a Bronze Age arrowhead (Johnson 2012, 1 and 36-7).

4.2.6 Earthwork survey of Camp 2 in 2013

An earthwork survey on Camp 1 and on the surviving portions of Camp 2, undertaken in 2013, found that the surviving remains were consistent with the description of the monuments given in the Scheduled Ancient Monument Record (Pinnock 2013, 3). In the case of Camp 2 the bank was seen to be 6-8m wide, with evidence of the ponding of water in a 10m wide area immediately inside the bank and in a 2-4m wide area to the exterior of the bank (Pinnock 2013, 10).

4.2.7 Trial trenching of the sports stadium pitch in 2015

A series of 6 test pits were excavated on 17th March 2015, 4 in the area of the rugby pitch and a further two in the perimeter area to the north and north-west (Appendix 8). The test pits in the pitch showed that the uppermost 0.6m of deposits related to the rugby pitch comprising a membrane, beneath a 0.25m thick deposit of gravel, covered by a 0.2m thick layer of sand, which was beneath the topsoil and turf of the pitch. The depth of these deposits was clearly aimed at improving the drainage of the pitch area, given that the underlying deposits comprised poorly draining natural clay. The thickness of the gravel was responsible for the masking of any features in the geophysical survey. The two test pits beyond the pitch revealed make-up deposits interpreted as relating to the construction of the stadium.

4.2.8 Geophysical survey of the stadium pitch and adjacent Scheduled Ancient Monument in 2015

The rugby pitch was the subject of geophysical survey during February 2015, undertaken for YAT by Dr Jon Kenny and a group of community volunteers as part of the Community Stadium Project. The results are presented in Appendix 11 and Figures 18-19; unfortunately neither the magnetometer nor the resistivity survey was able to detect features through the 0.6m of modern deposits at the site (see 4.2.7).

However, a resistivity survey undertaken on the extant earthworks of the Scheduled Ancient Monument immediately west of the stadium was much more successful. This survey was permitted by Historic England under a Section 42 licence and was conducted by Dr Kenny with another group of volunteers during the stadium excavation in June 2015 (Appendix 11). The survey clearly identified the outline of both the ditch and bank of the western corner of the Roman camp (Figures 20-24). These survey results are interpreted below in sections 5.6 and 6, alongside the results of the excavation.

4.3 Historical background

The place name Huntington is of Old English derivation, combining the person al name *Honta* with the suffix *ington* meaning a farmstead. Huntington was in the wapentake (hundred) of Bulmer (GenUKI), and lay within the forest of Galtres, which was originally used for hunting by the Northumbrian earls (Macnab 2000, 3). There was almost certainly a church present prior to the Norman Conquest, as one is mentioned in the Domesday Book of 1086. Immediately prior to the Norman Conquest the land was held by Torchill and Tormord (VCH 1923, 145-50).

Huntington is mentioned in the Domesday Book as *Huntindune* (ibid., 145-50). After the Conquest parts of the manor remained in the hands of the king (until 1267), the remainder being held by the Count of Mortain and Count Alan (ibid., 145-50). Overlordship may have passed to Neil Fossard, then to the Mauley's who held the land until 1384 (ibid., 145-50). In 1189 the Brothers of St John of Jerusalem owned land in the area; this holding gradually increased in size to 4 carucates of land by 1303 (ibid., 145-50). At various times in the later medieval period the religious houses of St Mary's Abbey, York, St Leonard's Hospital, York, St Nicholas's Hospital, York and Guisborough Priory held land in Huntington (ibid., 145-50), as did the Knights Hospitallers and the Austin Friars (British History Online).

The parish church was in the hands of Count Mortain in 1086; it later passed to the Abbey of Evesham, before being granted to the Abbot of Whitby in 1159-60, then to the Vicars Choral of York in 1353 (ibid., 145-50 and Bulmer 1890). The present Huntington church is of 12th century origin, with various later medieval additions including part of a medieval cross-base (Bulmer 1890).

The manor house is at the southern end of the village (British History Online). A chapel dedicated to St Augustine is mentioned in 1333 (Macnab 2000, 3). There was a windmill in Huntington in 1363, which is mentioned again in 1460 (VCH 1923, 145-50). Huntington Hall at the northern end of the village may occupy the site of the first house of the Holmes family, which is known to have existed from the late 15th century (Macnab 2000, 3). By 1588 the manor was held by the Queen as part of her lands at Sherriff Hutton (VCH 1923, 145-50).

The forest of Galtres was gradually cleared during the medieval period, creating small holdings or grazing land (Macnab 2000, 3). In 1629 Sir Arthur Ingram was allowed by the crown to

deforest all the land which belonged to his manor (VCH 1923, 145-50). Portions of Huntington church were rebuilt in the early 17th century (Macnab 2000, 3).

Enclosure maps of 1768 and 1775 depict both Huntington North Moor and Earswick Common (ibid., 5). In 1770 600 acres of land in the adjacent common of Earswick was enclosed (VCH 1923, 145-50).

The earliest sketch of the parish of Huntington, which shows field boundaries in the area, was drawn by W. Anderson in 1827 and was published in his "Field Book for the plan of the parish of Huntington" in 1829. A tithe award map from 1841 is also known, and this lists the various owners and tenants of the fields, most of which were in use for either meadow or pasture (Macnab 2000, 5). In 1845 Huntington mill was located on Hoggard Hill, which is now known as Mill Hill (ibid., 5). The York to Scarborough railway line was built crossing the parish of Huntington in 1845 (History of York).

The earliest Ordnance Survey map of the area dates to 1852 (Plate 8); this depicts a largely rural landscape dominated by regular rectangular-shaped enclosure fields, some of which contain small agricultural buildings. The village of Huntington is shown as a linear settlement, with houses fronting the main street. By this stage there was a Methodist chapel at the northern end of the village, close to Huntington Hall; a village school was present just to the south of Huntington Hall, six pumps and a well are named in the village, and there were two public houses, the Hare and Hounds and the Smith's Arms. The church, vicarage and manor house are all shown, on the south-western side of the village. A second manor house is shown at the southern end of the village. Huntington New Lane was known as South Lane at this time, while Pigeoncote Farm was known as Brecks Farm.

The Methodist chapel was enlarged in 1867 and rebuilt in 1900 (VCH 1923, 145-50). The nave and tower of Huntington church were rebuilt in 1874 at a cost of £3000 (Bulmer 1890). Throughout the 20th century Huntington village has grown in size considerably, and it now forms part of the suburbs of York (Macnab 2000, 5).

5 RESULTS OF THE EXCAVATON

The various deposits and cut features discovered on the site are described below and illustrated on Figures 4-5. To avoid a repetitive text, the full context descriptions are given in Appendix 2.

5.1 Natural

The earliest deposit at the site was naturally occurring clay (Context 1169) deposited during the last glaciation. The clay was light orange in colour, marbled with grey and brown clay. Within this were occasional patches of sandy clay, particularly in the south-eastern portion of the site. The clay had virtually no inclusions of stone, suggesting that it was lacustrine in origin.

5.2 Isolated undated features

A small number of undated features were present across the site, in all cases the overwhelming bulk of the feature had been truncated by modern activity, leaving only the basal portions of the features surviving. The features in question were:

Context 1010 (Plate 9, Figure 6) was a small sub-oval cut 0.3m x 0.53m x 0.12m in size. This was infilled with clay with occasional flecks of charcoal (Context 1009).

Context 1012 (Plate 10, Figure 6) was a small irregularly shaped cut 0.61m x 0.44m x 0.28m in size, infilled with clay (Context 1011).

Context 1014 (Plate 11, Figure 6) was a sub oval cut 0.74m x 1.8m x 0.13m in size, infilled with clay (Context 1013).

Context 1050 (Plate 12, Figure 6) was a circular cut 0.92m x 0.9m x 0.14m in size, infilled with silty clay (Context 1049).

Context 1056 (Plate 13, Figure 6) was an irregular linear shaped cut the long axis of which was aligned north-east to south-west, was 1.7m x 0.7m x 0.34m in size and was infilled with silty clay (Context 1055).

Context 1065 was a sub-circular cut 1.42m x 1.33m x 0.32m in size, filled with silty sandy clay (Context 1064, Figure 6).

Context 1067 was a linear but slightly irregular cut aligned west-east, 5m long, 0.8m wide and up to 0.2m deep, which was backfilled with silty clay (Context 1066, Plate 14, Figure 6). The fill contained an undateable sherd of pottery (see Appendix 3). This feature almost certainly did not relate to the Roman camp, as it was located directly across the camp entrance, but on a completely different alignment.

These cuts were scattered across the site, and there were no stratigraphic links between either any of these features or between these features and those described in 5.3-5.7 below, though three of the features (Context 1011-1012, 1049-1050 and 1064-1065) were truncated by a modern field drain related to the present sports stadium (as described in 5.8 below). Stratigraphically it is therefore impossible to know whether these features relate to the Roman camp at the site or not, they could predate it, be contemporaneous with it, or post-date it.

5.3 Cluster of undated features

A group of undated pits, post-holes and stake-holes (Plate 25, Figure 15) were present to the immediate south of the north-eastern ditch of the Roman camp. It is known from the surviving portion of the Roman camp that there was a bank immediately inside the camp ditch, and the features described here must therefore have been either earlier than the bank or must have been cut into it.

There was a cluster of stake-holes ranging from 0.07-0.2m in diameter (Contexts 1139/1141/1143/1145/1147/1149/1151/1153/1163/1165) which were infilled with silty clay (Contexts 1138/1140/1142/1144/1146/1148/1150/1152/1162/1164 respectively). The easternmost two of these cuts 1163 and 1165 were truncated by a group of intercut pits, the backfills of which clearly contained burnt material, ascertained from the environmental samples as deriving from locally-sourced pine and birch wood, and oak from further afield (Appendix 10). The earliest and largest of these pits (Context 1161) was 2.06m x 1.5m in area and 0.09m deep and was infilled with grey-black silty clay (Context 1160). This pit was truncated on the southern side by a smaller pit, Context 1159, which was 0.8m x 0.5m in area and 0.15m deep, and was infilled with an ashy deposit (Context 1158). This was in turn

truncated on the southern side by a pit 1m x 0.75m in area and 0.08m deep, infilled with clayey silt (Context 1156). Cut into the top of 1156 was a small pit or post-hole (Context 1155) which was 0.26m in diameter and 0.04m deep, and was backfilled with Context 1055.

5.4 Roman camp ditch

A major ditch was present at the site (Plate 15), this was roughly L shaped in plan, the northern portion being aligned north-west to south-east, turning through a rounded corner with the southern portion aligned south-west to north-east. It is clear from aerial photography work that this ditch forms part of the north-eastern and south-eastern sides of a Roman camp, of the classic 'playing-card' shape. The portion of the camp which survives in the adjacent field has an associated bank immediately inside the ditch, but this did not survive within the excavation area due to modern truncation. On the north-eastern side of the ditch there was a gap 5.2m wide, marking an entrance into the camp. The ditch termini to either side of the entrance were square in plan.

Eight cross-sections were excavated through the ditch, each of which was allocated an individual set of context numbers for the cut and associated backfills. The eight cross-sections were located close to the northern limit of excavation (Context 1080, Plate 16 Figure 7), at the northernmost terminus (Context 1111, Plate 17 Figure 8), at the southernmost terminus (Context 1121, Plate 18 Figure 9), on the north-eastern side between the southernmost terminus and the corner of the ditch (Context 1087, Plate19 Figure 10), on the corner of the ditch (Context 1102, Plate 20 Figure 11), two sections along the south-eastern side of the ditch (Context 1054 Plate 21 and Context 1062, Plates 22-3 and Figures 12-13), and at the southernmost limit of excavation (Context 1137, Plate 24 Figure 14).

The ditch ranged from 1.75m to 3.6m wide and was between 0.79m to 1.19m deep. In the case of sections 1054, 1062, 1080, 1087 and 1111 (Figures 7-8, 10 and 12-13) there was a vertically sided slot at the base, while the upper portions were typically at an angle of between 40-45°. The central slots ranged in breadth from 0.15m to 0.3m and in depth from 0.25m to 0.59m in width. The cross-section excavated at the corner of the ditch had a different profile with a central channel between 0.35m-0.80m in width and 0.42m-0.55m deep, within which there was a narrow central basal channel 0.08m-0.27m wide and 0.07m-0.10m deep (Figure 11). A similar profile was present in the cross-section of terminus 1121, where a central channel 0.47m wide and 0.53m deep had a second smaller channel 0.26m wide and 0.16m deep along its base (Figure 9). The cross-section at the south-western end of the camp ditch, Context 1137, was different being notably broader than the other cross-sections, with no clearly defined central channel, and more gently sloping sides (Figure 14).

Three small post-holes were clearly related to the ditch spatially. The first of these post-holes was integral with the north-eastern side of ditch cut 1087, and it was not therefore allocated a separate context number; this comprised a small circular cut 0.24m in diameter and 0.05m deep. There were two post-holes (Contexts 1070 and 1072) which were located, side-by-side to the immediate north of ditch cut 1054. These were 0.14m and 0.2m in diameter respectively, but were both 0.15m deep.

5.5 Infilling of the major ditch

The sequence of deposits infilling the camp ditch varied along its length, with no two cross-sections being entirely identical in terms of the number of deposits seen. The infills of the

various cross-sections of the ditch are therefore described separately below, working around the ditch from the northernmost, to the easternmost then to the southernmost cross-section. It should be noted that in the case of sections 1054 and 1062 some of the uppermost backfill deposits had to be machined away to remove modern contamination. The upper fill of the ditch in the unexcavated portions was given the overall context number 1168 (Plate 12) so as to provide a clear stratigraphic link between all the excavated sections of the camp ditch on the site Harris matrix.

5.5.1 The backfilling of ditch 1080 (Plate 16, Figure 7)

The primary fill was clay 0.28m thick (Context 1094) which was beneath two organic deposits located at either side of the ditch (Contexts 1092-1093). These organic deposits were of unusual shape. At the south-eastern end of the ditch cross-section they were almost sub-rectangular but with the long-axis vertically within the ditch, while at the north-western end they merged into a single layer infilling the full width of the ditch. These were sealed by a deposit of mixed clay 0.38m thick (Context 1091). Above this, at either side of the ditch, were deposits of yellow clay 0.15m thick (Contexts 1089 and 1090). These were sealed by a thin deposit of pale grey clay 0.04m thick (Context 1088) which was in turn beneath two deposits of organic clay 0.05m thick (Context 1078 and 1079). Above this was a mixed deposit of clay 0.25m thick (Context 1077), which was beneath mottled silty clay 0.16m thick (Context 1076). The uppermost deposit was silty clay 0.05m thick (Context 1075).

5.5.2 The backfilling of ditch 1111 (Plate 17, Figure 8)

The primary fill was clay 0.1m thick (Context 1109) which was beneath an organic deposit 0.28m thick (Contexts 1108). This was below a deposit of mottled clay 0.28m thick (Context 1107) which was in turn sealed by a deposit of marbled clay 0.2m thick with an organic content (Context 1106). This was beneath a deposit of clay 0.14m thick (Context 1105). The uppermost deposit was silty clay 0.18m thick (Context 1104) which contained four sherds of Roman pottery.

5.5.3 The backfilling of ditch 1121 (Plate 18, Figure 9)

The earliest fills were deposits of clay on the sides of the ditch (Contexts 1120 and 1123) which presumably represented the slumping of the ditch sides. Above these was a deposit of clay in the base of the ditch which was 0.17m thick (Context 1119). This was sealed by an organic deposit 0.1m thick (Context 1118) which was in turn beneath a thin band of pale grey clay 0.04m thick (Context 1117) and a further deposit of organic clay 0.08m thick (Context 1116). These deposits were sealed by a deposit of dark grey clay 0.3m thick (Context 1115) which was in turn below a deposit of mixed clay 0.2m thick (Context 1114). Above these was a thin deposit of grey clay 0.04m thick (Context 1113). The uppermost deposit was of mottled clay 0.15m thick (Context 1112) which contained a highly abraded sherd of Roman pottery.

5.5.4 The backfilling of ditch 1087 (Plate 19, Figure 10)

The primary fill was pale grey clay 0.12m thick (Context 1087). This was sealed by an organic deposit 0.07m thick (Context 1095), which was in turn beneath a deposit of clay 0.22m thick (Context 1086). Above this was a deposit of mottled clay 0.16m thick with an organic content (Context 1085). This was beneath two deposits of mottled clay 0.14m-0.20mm thick (Contexts 1083 and 1084) which were located along the sides of the ditch. These were sealed by a

deposit of clay 0.25m thick (Context 1082). The uppermost deposit was silty clay 0.08m thick (Context 1081).

5.5.5 The backfilling of ditch 1102 (Plate 20, Figure 11)

The primary backfill was organic clay 0.18m thick (Context 1101) which was sealed by a deposit of clay 0.24m thick (Context 1101). This was beneath mottled clay 0.24m thick (Context 1099), which formed a continuous layer at the north-western end of the cross-section, but was formed two distinct patches along either side of the ditch at the south-eastern end of the cross-section. Above this was a clay deposit 0.28m thick (Context 1098) which again varied along the length of the cross section, from a continuous layer at the north-western end to a narrow almost vertically-sided deposit along the centre of the ditch at the south-eastern end. This was in turn beneath a clay deposit 0.15m thick (Context 1097). The uppermost deposit was clay up to 0.35m thick (Context 1110) which contained a highly abraded sherd of Roman pottery; this deposit was only visible in the south-easternmost half of the ditch.

5.5.6 The backfilling of ditch 1054 (Plate 21, Figure 12)

The primary fill was pale grey clay 0.13m thick (Context 1063). This was sealed by a deposit of orange clay 0.33m thick (Context 1053) which was in turn beneath an organic deposit 0.04m thick (Context 1068). Above this was a deposit of mottled clay 0.17m thick (Context 1052). The two post-holes to the immediate north of the ditch were infilled with compact mottled clay (Contexts 1071 and 1069). Sealing both the post-holes was a deposit of silty clay 0.28m thick (Context 1051), which also formed the uppermost fill of the ditch.

5.5.7 The backfilling of ditch 1062 (Plates 22-23, Figure 13)

The primary fill comprised laminated grey clay 0.12m thick (Context 1061), which was beneath an organic deposit 0.14m thick (Context 1060). This was in turn sealed by a deposit of mixed clay 0.32m thick (Context 1059) above which was a thin deposit of black clay 0.06m thick (Context 1058). The uppermost sill was of silty clay 0.33m thick (Context 1057), which contained a single sherd of 18th century pottery.

5.5.8 The backfilling of ditch 1137 (Plate 24, Figure 14)

The earliest deposits were yellow to orange clay up to 0.22m thick (Contexts 1130 and 1136) which occurred against the sides of ditch cut 1137. These were beneath a deposit of clay 0.1m thick (Context 1135), above which there was a deposit of silty clay up to 0.18m thick (Context 1134). This was sealed by two deposits of silty clay with organic elements (Contexts 1132-1133) that were 0.34m and 0.12m thick respectively. These two contexts abutted one another with and almost vertical-edge. These were in turn sealed by three deposits of silty clay 0.16m thick (Context 1131), 0.14m thick (Context 1129) and 0.07m thick (Context 1128). Above these was a deposit of black silty clay 0.08m thick (Context 1127). The uppermost fill was sandy clay 0.08m thick (Context 1126).

5.6 Comparative data from the geophysical survey of the SAM

The resistivity survey of the scheduled extant earthwork remains of Camp 2, in the field immediately west of the stadium, clearly defined the location and form of both the bank and ditch of the western corner of Camp 2. The results are presented in Appendix 11 and Figures 18-24.

The bank survives up to 8m in width, even though it is only a 0.25m high earthwork (Pinnock, 2013, 10); the complete lack of a bank in the excavation demonstrates the severity of the truncation that occurred when the stadium was built.

The ditch is apparent in the central part of the resistivity survey, where later ploughing has been less severe, as a 6-7m wide feature following the outside line of the bank. This is up to twice as wide as the broadest surviving portion of the ditch within the stadium, again demonstrating the extent of the 1980s truncation. The fill presented as a relatively high resistance anomaly, perhaps suggesting that compacted clay was slighted from the bank as in-filling material.

Defining the western corner by geophysical survey allows an estimation of the camp dimensions by projecting the lines of the ditches from the excavated position of the eastern corner. This gives an approximate figure of *c.* 162m X 122m.

5.7 Brick culvert

A brick culvert (Context 1007 Plate 26) in a linear construction cut (Context 1008) was present close to the eastern limit of excavation. This was aligned east-west and was constructed of bricks 225mm x 120mm x 55mm in size, indicating a 16th-mid 18th century or later date for the feature. Any other related buildings or features had been entirely removed by modern truncation.

5.8 Features of 18-19th century date

A group of 19 parallel north-south aligned linear cuts were present, which were collectively numbered Context 1167 (Plates 27-29, Figure 4 and Figure 16), while the individual context numbers allocated were Contexts 1035-1048, 1124-1125 and 1170-1172. These cuts were between 0.6m to 2m in width and were spaced between 1.8m-3m apart. Cross-sections through a representative two of these features were excavated (Context 1044 and 1046, Plates 23-24, Figure 16), and these showed that the cuts were a maximum of 0.1m deep with very shallow gently sloping sides. These features were clearly the result of ploughing. Pottery from Contexts 1036-37 and 1043-48 was consistently of 18th-19th century date (see Appendix 3). In addition, a number of 18th century, 18th-19th century and 19th century clay pipe fragments were present in Contexts 1043-1048 (see Appendix 4.2). There were also a few sherds of residual Roman glass of 1st-3rd century date in Contexts 1044-1045 and 1047, a fragment of post-medieval glass in Context 1048, and a few sherds of residual medieval ceramic building material in Contexts 1046-1048.

A somewhat irregularly shaped cut (Context 1074, Plate 30, Figure 6) was also present to the immediate south of the north-eastern ditch of the Roman camp. Context 1074 was 1.12m x 0.93m x 0.11m in size and was infilled with silty clay (Context 1073) which contained two sherds of 18th/19th century pottery.

5.9 Features of 19-20th century date

A single ceramic field drain was present (Context 1103 Plate 29). This was aligned north-south, and was by chance directly above the central line of furrow 1044. The ceramic drain was clearly late 19th or 20th century in date comprising a circular cross-sectioned machine-made ceramic pipe in segments 0.4m long and 0.1m in diameter.

All the features/deposits described above were sealed by a number of deposits related to the construction of the present sports stadium. There were a series of 23 machine cut gravel filled field drains which were collectively numbered Context 1166 (Plate 31 Figure 4), these were on average 0.1m wide and where excavated they were approximately 0.5m deep. The majority of these drains were aligned east-west (Contexts 1001-1031) and were spaced approximately 4.8m apart, but two were aligned north-south and spaced 3m apart down the centre of the former rugby pitch (Contexts 1032-1033). There was also a plastic drain pipe set in a sand-filled trench which ran around the circumference of the former rugby pitch (Context 1034). This pipe was removed by the excavation on the eastern, northern and western sides of the pitch, but the southern portion remains below the pole-vault track. This pipe related to a sprinkler system for the pitch.

Above the drains there was a thin cloth membrane covering the entire area of the pitch; this was also present beneath the running track. The membrane and all the deposits above the membrane were removed by machine prior to the excavation starting and they were collectively numbered Context 1000. There was some variation in the machine-cleared deposits (Figure 17). The area of the former long jump pits comprised concrete lined sand filled pits. The modern deposits removed in the area of the running track and the short lengths of track associated with the long jump pits comprised a layer of limestone chippings 0.2m thick, beneath sand 0.3m thick, beneath the running track surface (Plate 33). Beneath the former rugby pitch (Plate 32) there was a 0.3m layer of gravel, sealed by sand 0.15m thick, sealed by the turf of the pitch. In places beneath the pitch there were small sub-circular cuts on average 0.2m in diameter, which were lined with membrane, but filled with packed limestone chippings. These pierced through the gravel layer into the underlying natural. In the south-eastern portion of the site the limestone filled cuts had done considerable damage to the underlying deposits, for this reason machine clearance had to be slightly deeper in this area. Set into the pitch were sockets for rugby goal posts, two at each end of the pitch. These comprised hollow metal tubes 0.15m in diameter set in concrete bases up to 0.58m in diameter. Some residual fragments of Roman glass, 18th-19th century clay pipe and 19th century pottery were present within the machined deposits (see Appendices 4 and 5).

6 SUMMARY AND CONCLUSION

6.1 Period by period discussion and interpretation

6.1.1 Prehistoric 4000 BC-AD71

No conclusively prehistoric artefacts were recovered during the excavation, however there were a number of badly truncated undated features scattered across the site which are probably of this date. These included a linear feature, a number of small pits/post-holes, and a cluster of pits containing evidence of burnt materials.

The relatively isolated features (Contexts 1010, 1012, 1014, 1050, 1056, 1065 and 1067) contained only one artefact, a sherd of undated pottery in linear feature 1067. Context 1067 has to be of Neolithic or later date, but the remaining features could be of any date. The dearth of artefactual evidence within this group of features does however suggest they are of a prehistoric date, as artefacts are usually rare in prehistoric features in the York area.

With regard to the cluster of features shown on Figure 15 none of the small stake-holes/post-holes (Contexts 1139, 1141, 1143, 1145, 1147, 1149, 1151, 1153 and 1163) were arranged in a pattern suggestive of a structure (i.e. straight lines). The presence of such a cluster of stakes/posts together with pits containing burnt materials (Contexts 1155, 1157, 1159 and 1161) is, however, suggestive of some kind of occupation, although the only seeds identified in the samples are likely to be later intrusions (Appendix 10) so this is not certain. The presence of oak in this burnt material distinguishes this group of features from the Roman ones, which did not contain oak (Appendix 10).

As noted in section 5.3 above this cluster of features was located immediately adjacent to the north-western boundary ditch of the Roman camp, in the area where the outside-edge of the camp bank would have been located (had if not been truncated by modern building activity). This cluster of features must therefore have been either earlier than the bank or must have been cut into it. While the Roman army is known to have disposed of refuse in specially dug pits which were usually concentrated in the area adjacent to the rampart (Ottaway 2002, 21), it seems very unlikely that features would have been deliberately cut into the front edge of the Roman bank, i.e. the area between the wooden palisade at the top of the bank and the ditch. This suggests that this cluster of features is more likely to pre-date the Roman bank than to post-date it.

Assuming that all of these features are prehistoric they would form part of a pattern of prehistoric activity in the vicinity (Johnson 2004, 89; Johnson 2012, 36).

6.1.2 Roman AD 71-410

Construction of the Roman Camp

A ditch from a Roman camp, known as Camp 2, was present at the site. No traces of the internal bank associated with this ditch or of any internal features relating to the camp were present, these having been truncated by modern activity. There was clearly a bank inside the ditch originally as this survives in the undisturbed portion of the camp to the south-west of the present site.

The camp ditch was rectangular in shape, with rounded corners, and was aligned with its long-axis north-east to south-west. It is impossible to obtain an accurate measurement of the size of the camp, as neither a length nor breadth has been fully excavated, but as the western corner was identified by geophysics and the eastern corner by excavation it is possible to project the line of the ditch (Figure 24) and estimate the area enclosed by the ditch at *c.* 162m X 122m, making 19764m² or *c.*1.98ha. There was clear evidence of an entrance on the north-eastern side, taking the form of a simple gap in the ditch 5.2m wide; this would appear be slightly south-east of the central point to that side, judging by the projected position of the northern corner (Figure 24). The termini to either side of this entrance were sub-rectangular in shape. There was no evidence for any form of timber gateway adjacent to this entrance, neither was there any evidence of a traverse ditch to the north-east of the entrance.

The north-eastern side and corner of the camp ditch were a consistent width of between 2m to 2.2m and depth of between 1m and 1.19m (Contexts 1080, 1121, 1111, 1074 and 1102). Although the northernmost two cross-sections through the south-eastern side of the camp ditch (Contexts 1054 and 1062) were slightly smaller at 1.75m-1.9m in width and shallower at

0.9m-0.98m in depth, it should be noted this area had been machined to a slightly greater depth at the start of the excavations, so as to remove modern contamination; this undoubtedly also removed the uppermost portion of the ditch. It is reasonable to suppose therefore that the ditch in this area was originally of a similar size and depth to that on the north-eastern side of the camp. A 1st or 2nd century Roman military treatise entitled *De Metatione Castorum* stated that a camp ditch should be at least 5 Roman feet wide and 3 Roman feet deep (Breeze 2002, 11). A Roman foot equates to 296mm, giving a recommended width of at least 1.48m and depth of 0.89m. Clearly the Camp 2 ditch more than met this suggested size. As the bank does not survive in the excavated area it is impossible to know its original size.

All of these cross-sections contained evidence of central channels, though these varied in size and profile considerably, as noted above on page 12. The varied profiles of the central channel may be a result of the Roman practice of using gangs of soldiers to excavate specific lengths of ditches, with each gang of men digging the ditch slightly differently.

The south-westernmost cross-section (Context 1137) through the camp ditch was notably different, being broader at 3.6m wide and shallower at 0.78m deep. This cross-section also lacked a clearly defined central channel as seen in the other ditch cross-sections. It is unclear why the ditch should be so much broader at this point, and of a notably different profile, but one possibility is that this represents the start of an in-turning *clavicula* style ditch at an entrance, the bulk of which lay to beyond the southern limit of excavation. Further excavation would be required to determine if this was indeed the case. If cross-section 1137 does indeed represent the start of a *clavicula* entrance, this would have been located roughly mid-way along the south-eastern side of the camp.

Three small post-holes were present in association with the ditch, one on the north-eastern, i.e. external side of the ditch in cross-section 1087, and two post-holes were present just inside the ditch in cross-section 1054 on the south-eastern side of the camp.

The use of Camp 2

No internal features of clearly Roman date were present within Camp 2 due to modern truncation. The total absence of mortar, ceramic building material fragments or stone fragments at the site, indicates that the site never had permanent buildings, but rather was used for temporary structures such as tents.

In the case of cross-section 1121 a small amount of slumping (Contexts 1120 and 1123) occurred along the ditch sides before any silting could take place within the camp ditch. Silting was seen within most of the ditch cross-sections (Contexts 1094, 1119, 1109, 1096, 1063 and 1061).

This initial silting comprised clay and laminated clay, between 0.1m-0.28m thick, which had clearly weathered out from the ditch sides. These deposits represent the only contexts which are interpreted as being contemporaneous with the use of the camp. As no dateable artefacts were recovered from any of these contexts it is unclear both when the ditch was excavated, and how long it took for this initial silting to accumulate, though the lack of artefacts within this silting could indicate that the camp was occupied for a very short period of time.

There was no clear evidence of primary silting in either the corner of the camp ditch (Context 1102) or the south-westernmost cross-section (Context 1137) suggesting that very little time elapsed between the excavation and subsequent backfilling of the ditch.

The abandonment of Camp 2

Many of the deposits seen in the cross-sections of the camp ditch are suggestive of rapid backfilling. Various deposits had almost vertical edges, while others had highly irregular upper surfaces, suggesting that there was insufficient time for erosion or settling to occur before the deposit in question was sealed. Some of the backfill deposits were also notably thicker adjacent to the bank, suggestive of the bank being deliberately pushed back into the ditch. This suggestion is supported by the resistivity survey of the adjacent SAM, which showed the ditch fill as a relatively high-resistance anomaly, possible due to the presence of compacted clay within it. These various deposit profiles suggest that the camp ditch was rapidly backfilled at some stage and the most logical interpretation of this is that the camp was deliberately slighted when abandoned. The evidence for rapid backfilling is given below in relation to each cross-section of the ditch in turn.

In the case of cross-section 1080 (Figure 7) deposits 1091-93 each had almost vertical sides and irregular upper surfaces, implying rapid backfilling. Deposits 1088 and 1090 must have been deposited shortly after Context 1091, thereby preserving its uneven upper surface. It should be noted that the earliest deposits in this sequence, Contexts 1092-93 were highly organic, possibly originating from turf on the camp bank. The next deposits in the sequence, Contexts 1077-79, all had highly irregular upper surfaces suggestive of rapid backfilling, while Context 1076 must have been deposited shortly after 1077, thereby preserving its irregular upper surface. Furthermore, Context 1077 was notably thicker on the south-western side i.e. the side nearest to the bank, implying the bank had been pushed back into the ditch. These profiles suggest that Contexts 1076-79, 1088 and 1090-93 were all the result of rapid backfilling.

Within cross-section 1121 (Figure 9) deposit 1116 had an irregular upper surface implying that Context 1115 had been deposited shortly afterwards. Again, two of the earliest deposits in this sequence, Contexts 1116 and 1118, were highly organic, possibly originating from turf on the camp bank. Both deposits 1114 and 1115 were notably thicker on the south-western side adjacent to the camp bank, implying the bank had been pushed back into the ditch. The irregular upper surface of 1113 may also be indicative of rapid backfilling, implying that Context 1112 had been deposited shortly after 1113 so as to preserve its irregular upper surface. This suggests that deposits 1112-1116 were the result of deliberate rapid backfilling, though it should be noted that the uppermost backfill, Context 1112, contained a single sherd of highly abraded Roman pottery which may imply that either Context 1112 was of post-Roman date or the sherd in question represents contamination resultant from post-medieval plough damage.

In cross-section 1111 (Figure 8) the earliest of the backfills, Context 1108, was highly organic, matching the sequence seen in cross-sections 1080 and 1121 to the north-west. This organic matter again probably represents turf from the camp bank. Deposit 1107 had an irregular upper surface, implying that deposit 1106 was deposited very shortly afterwards. Context 1106 was also thicker adjacent to the bank, implying that the bank had been pushed into the

ditch. The uppermost backfill, Context 1104 contained four un-abraded sherds of Roman pottery, implying that this backfill was contemporaneous with the slighting of the camp. It can be argued therefore that all the deposits seen in this cross-section from 1104-1108 were resultant from rapid backfilling.

The earliest deposit in cross-section 1087 (Context 1095, Figure 10) was highly organic, mirroring the sequence seen in the cross-sections to the north-west. The upper surfaces of the earliest deposits in the cross-section (Contexts 1086 and 1095) were uneven and almost convex respectively, implying that they were resultant from rapid backfilling, and that Context 1085 above was part of the same process, thereby preserving the upper surface of 1087. Deposit 1083 had an almost vertical edge, and also had the appearance of having been pushed in from the bank to its immediate south-west. Context 1082 must have been deposited shortly after 1083 for this profile to have been preserved. The implication is that Contexts 1082-87 and 1095 were all the result of rapid backfilling.

In cross-section 1102 (Figure 11) on the corner of the camp, the earliest deposit, Context 1101 was again highly organic, matching the sequences seen in all the cross-sections described above. This deposit had an irregular upper surface, implying that both it and the deposit above (Context 1100) were the result of rapid backfilling. Contexts 1098-99 varied along their length from having irregular upper surfaces, to having near vertical edges, again indicative of rapid backfilling. Context 1097 seems to have been pushed into the ditch from the bank to its immediate south-west. All of these deposits therefore seem to be the result of rapid backfilling. At the southern end of this cross-section the backfilling does not seem to have reached the upper edge of the ditch on the outer eastern side.

The three earliest deposits within cross-section 1054 (Figure 12, Contexts 1053, 1068 and 1052 all had highly uneven upper surfaces, implying that they, were the result of rapid backfilling. The uppermost deposit in this sequence 1051 must also have been deposited shortly after 1052 thereby preserving its irregular upper profile. All the deposits within this cross-section therefore seem to be result of rapid backfilling.

Cross-section 1137 contained abundant evidence of rapid backfilling. The earliest deposits in the sequence all had either vertical edges (Contexts 1130 and 1132-36) or highly uneven upper surfaces (Contexts 1128-29, 1131, 1134-35) suggestive of material being rapidly thrown into the ditch. Context 1127 must also have been part of this process, being deposited shortly after Context 1128 and therefore preserving its irregular upper surface.

The results of the environmental samples from the cross sections described are presented in Appendix 10. They produced charcoal derived from locally-available woods, including Scots pine and birch; evidence survived for these readily-worked soft woods being used as both kindling/firewood and in larger sections as structural timbers, capable of being sourced and worked rapidly. The relative absence of oak, a hard wood requiring greater resources to process, supports the 'temporary' nature of a structure designed to be essentially disposable.

The presence of burnt heather roots suggests that locally-sourced turves were either being used as fuel, or (and perhaps also) that when the camp was slighted, the palisade and turf bank were fired as part of the demolition process (Appendix 10). This supports the interpretation of deliberate and rapid destruction and may explain the presence of charcoal

derived from trunk wood, possibly from the posts in the post-holes associated with the camp ditch. Additionally, the lack of charred cereal grains and seeds, and the relatively small number of animal bone fragments, suggests limited or short-lived occupation of the camp, adding to the impression of its temporary nature. However, all these interpretations must be understood in the context of the significant truncation of the entire sequence in modern times which has removed the evidence necessary to make a more certain and subtle judgment.

The only cross-section that did not contain any compelling evidence of rapid backfilling was cross-section 1062 (Figure 13). The upper surfaces of Contexts 1058-60 were either flat or slightly concave, as would be expected from a process of gradual silting and settling. It is unclear why this section should be so different to all the others excavated, but the implication is that for some reason this portion of the ditch infilled slowly, implying that for some reason a small portion of the camp ditch was not slighted; the lack of charcoal from the samples in this section supports this view.

A comparison of the two Huntington Moor Roman camps

The two Roman camps at Huntington Moor share some similarities. Both camps had clearly been accurately surveyed-in; the evidence for Camp 1 is reviewed in Johnson (2012, 42-3), while in the case of Camp 2 the north-eastern and south-eastern sides of the camp were at an exact right angle to one another, with the eastern corner of the camp being a perfect arc. Both of the camps are aligned with their corners close to the cardinal points, and the camp entrances are of similar size at 5.5m wide in Camp 1 (Johnson 2004, 31) and 5.2m in Camp 2.

The lack of internal archaeological features at Camp 1, or of any evidence for permanent structures at Camp 2, suggests that both camps were used for temporary structures such as tents (Johnson 2012, 43). The lack of artefacts at both camps, also suggest that they were both of short duration. It is clear that both camps were deliberately slighted when abandoned (see above and Johnson 2012, 3). While there is evidence for the re-use of some camps in England, such as Chew Green in Northumberland (Welfare and Swann 1995, 23), no such evidence was present at Huntington Moor.

Despite these similarities there are some clear differences in terms of the overall design of the two Huntington Moor camps.

- While Camp 1 at Huntington Moor had been carefully sited on a small area of marginally higher ground (Johnson 2004, 89), no such consideration went into the siting of Camp 2, which was on lower lying land that had no obvious strategic advantage.
- Camp 1 measured 133.5m x 118.4m in size and *c.* 1.58ha in area (Johnson 2004, 30). The crude measurements achieved by projecting the corners of Camp 2 are 162m X 122m in size and *c.*1.98ha., so that as well as exhibiting a more rectangular shape than Camp 1, Camp 2 was also slightly larger.
- There was no trace of a traverse ditch outside the north-eastern entrance to Camp 2, while such features were present at Camp 1.
- The ditch termini either side of the gateways at Camp 1 were at an oblique angle to the line of the ditch, creating an entrance that was narrower on the inside than on the

outside of the ditch (Johnson 2004, 31); there was no evidence of such a design at Camp 2

- The ditch of Camp 2 lacked the frequent gross-changes of width seen in the Camp 1 ditch which ranged from 0.49m to 1.72m in breadth (Johnson 2004, 30). The differences in the width of the Camp 1 ditch were interpreted as being due to the Roman practice of using gangs of soldiers to excavate specific lengths of ditches.
- At Camp 2 central channels within the ditches were the norm, where they were the exception at Camp 1 (Johnson 2004, 30).
- There was no evidence for a setting-out gully at Camp 2, though a short length of such a feature was present at Camp 1 (Johnson 2004, 32).

Given that the defensive bank of Camp 2 did not survive, it is impossible to know if there was a *clavicula* style bank at the camp entrance or not, but part of an in-turning rampart was present at Camp 1 (Johnson 2004, 31-2).

Very little dating evidence was recovered from either of the Huntington Moor camps. Camp 1 was dated by pottery to the early-mid 2nd century, while Camp 2 was dated to the 2nd-3rd century on the basis of grey-ware pottery. Given the paucity of dating evidence it is impossible to determine how the two Huntington Moor camps relate to one another chronologically. It seems unlikely that two camps would have been in existence at exactly the same time, as it would surely have been easier to build one larger camp instead of two smaller ones. If the two camps were sequential in terms of construction, it may simply have been easier to build a new camp rather than to reoccupy an earlier camp, especially one that had been deliberately slighted.

Camp 2 Huntington Moor in relation to other Roman camps

Military camps are known from across the Roman Empire, and in the case of Britain the majority are located in Wales or Northern England, especially in the Hadrian's Wall area (Ottaway 2002, 21). While this pattern may be a reflection of military necessity (protecting the north of England and Wales from unconquered areas to the north and west respectively), the pattern may be somewhat distorted by levels of survival. There must have been camps in the south and east of England dating to the initial conquest of the area, but few are known, and it is possible this is a reflection of post-Roman damage, through either intensive ploughing or because such camps have been obscured by later settlements. In contrast camps in the upland areas of Britain may have suffered less damage in the post-Roman period due to the area being used largely for pastoral agriculture and having dispersed settlement patterns (Welfare and Swan 1995, 3).

Evidence for the dates at which specific camps were constructed across England is sparse (ibid., 3), and while camps were clearly in use from the outset of the Roman conquest/occupation of Britain in the late 1st century it is unclear when, or if, they fell out of use in Britain (ibid., 2). Vegetius, writing at the end of the 4th century, regretted that the traditions of camp construction had been lost, but this may not have been the case across the entire empire, indeed in vulnerable provinces like Britain the tradition may have continued (ibid., 3).

Camps would have been built for any number of different reasons. The Romano-Jewish historian Josephus writing in the later 1st century AD noted how camps were used when advancing into hostile territory stating that *"Nor can their [the Romans'] enemies easily surprise them with the suddenness of their incursions, for as soon as they have marched into an enemy's land they do not begin to fight till they have walled their camp about; nor is the fence they raise rashly made, or uneven...but if it happens that the ground is uneven, it is first levelled. As for what is within the camp, it is set apart for tents...in the middle of all is the general's own tent in the nature of a temple, insomuch, that it appears to be a city built on the sudden"* (Josephus Book 3 Chapter 5).

It is also clear from ancient sources that numerous camps could be built in a single military campaign. Sallust (Chapter 45) writing in the first century BC noted the Roman commander Metellus' "*moved his camp daily, exercising the soldiers by marches across the country: he fortified it with a rampart and a trench, exactly as if the enemy had been at hand*" during the. campaigns in the Jugurthine War.

It was also clearly desirable for new recruits to practice building camps, as such features were indispensible in times of war. The fourth century author Vegetius (Book 1 Chapter 21) noted "*The recruit should learn how to build camps, for nothing is so safe or indispensable in war, since it a camp has been properly constructed, soldiers spend days and nights so secure behind the rampart – even if the enemy is besieging it – that they seem to carry a walled city about with them everywhere*".

Allocating a specific function to any individual camp is very difficult, for as Welfare and Swan (1995, 1) have noted "*Without the most extensive and painstaking excavations, archaeology is unlikely to distinguish earthworks constructed for an overnight stop or for a seasonal campaign from those sites which were regularly reoccupied, perhaps on an annual basis, in due season*". Even with detailed excavation interpretation may still be difficult

Roman camps in Britain have often been sub-divided on the basis of their perceived function into 'marching camps' used as the Roman army advanced northwards through hostile territory, 'labour camps' used to accommodate men engaged in specific construction projects, 'practice camps' built as training exercises by troops stationed in forts and 'temporary camps' used for the one-off accommodation of troops in an area, or for some other military reason.

Ascribing a particular function to the Huntington Moor camps is hampered by a lack of internal features and dearth of dateable artefacts, either of which might have given some clue as to the nature and duration of occupation. That said, it seems unlikely given the 2nd to 3rd century date of Camp 2 that it relates to the period of the initial conquest, so it is unlikely to represent a marching camp. The date of the camp also precludes the possibility of it existing to protect the approaches to York while the initial fortress was being built. The camp would seem too far from the legionary fort to represent the housing of men involved in construction work in the fortress, besides such men would logically have been housed in the fortress itself; it seems unlikely therefore that Camp 2 represents a labour camp.

With regards to practice camps, Welfare and Swan (1995, 24) suggest that the smallest Roman camps, those of 25m-40m square, would logically be practice camps as the enclosed area

would be too small to be of practical military use. Several examples of small camps of this type at Llandridnod Wells in Wales have numerous entrances, and it had been suggested that this was to enable soldiers practice construction of the most difficult elements of a camp (ibid., 24). Neither of the camps at Huntington Moor are of such small scale, nor do they have a proliferation of gates, so they are not practice camps of this type. The presence of a cluster of camps around the legionary fortress in York (see p5), including the two surviving examples at Huntington Moor, and those at Bootham Stray, may however suggest that Camp 2 is one of a group of slightly larger practice camps designed to occupy the army during peacetime. This possibility has been suggested elsewhere (Welfare and Swan 1995, 24)

The Huntington Moor camps could equally represent temporary camps for the accommodation of troops, though given the lack of artefacts present this must have been for very short periods of time. Equating this to a specific campaign is impossible due to the lack of dateable artefacts, but Huntington Moor Camp 2 could potentially have been used when troops were being moved northwards either for the construction of the defences of Hadrian's wall at the start of the 2nd century, or for the campaigns of Antoninus Pius in southern Scotland in the mid-2nd century.

The siting of a camp would be determined by military needs, which would vary dependent upon the function of the camp and whether the army was on active or peacetime manoeuvres. It is unclear what factors determined the precise positioning of the camps around York. In the case of Huntington Moor, an RAF aerial photograph from 1953 (Plate 46) shows a pronounced straight crop-mark on a north-east to south-west alignment directly between the two camps; this line clearly pre-dates the enclosure field pattern, but is on a similar alignment to the long-axes of both the camps, perhaps suggesting that the features are related. No trace of this feature was seen in the north-westernmost portion of the 2004 excavation area, so its precise interpretation is unclear, but if it is interpreted as a Roman trackway, it is possible the camps were positioned in relation to this feature. Welfare and Swan (1995, 14) note that camps are often oriented in relation to existing roads.

In terms of size, camps in England range from less than 0.5ha to 23ha, though most of the camps are less than 2ha in size (ibid., 11 and 107). The two Huntington Moor camps at approximately 1.6 and 1.9ha therefore fit into the typical size range for such camps.

There was clearly variation in the overall shape of Roman camps, indeed, the fourth century Roman author Vegetius (Book 1 Chapter 23) stated that camps "*should be made sometimes square, sometimes triangular, sometimes semicircular, according as the nature and demands of the site require*". Of the 107 English camp plans published by Welfare and Swan (1995, 12-13) the overwhelming majority (99 examples) were sub-rectangular in plan with rounded corners (the classic 'playing-card' shape), though three were rhomboid, three were of irregular plan and three comprised two adjoining sub-rectangular enclosures. The most unusual in terms of ground-plan is Cawthorne Camp C in North Yorkshire, which is almost coffin shaped (ibid., 12). The preference was clearly for sub-rectangular camps, and Vegetius (Book 3 Chapter 8) also noted that while "*appearance should not prejudice utility, although those camps of which the length is one third longer than the width are deemed more attractive*" (Welfare and Swan 1995, 10). Huntington Moor Camp could therefore be deemed as both

highly standard, but also 'ideal' in terms of its layout, having exactly the proportions suggested by Vegetius. In contrast Huntington Moor Camp 1 is somewhat squarer in shape.

Vegetius (Book 1 Chapter 24) suggested that camp defences should comprise a turf wall 3 Roman feet high with a ditch in front 9 Roman feet wide and 7 Roman feet deep. Most camps in England do indeed have a single defensive ditch and bank, though Lees Hall in Northumberland had an additional outwork comprising a bank concentric with the inner ditch/bank (Welfare and Swan 1995, 110-11). Clearly both the Huntington Moor camps conform to the norm as both have a ditch and bank (though in the case of Camp 2 the bank only survives in the area of the Scheduled Ancient Monument to the south-west of the present excavation).

Roman authors suggest that it was the bank rather than the ditch that was considered the most important element of the defence (ibid., 17). Given that the bank did not survive within the excavated portion of Huntington Moor Camp 2, it is impossible to determine either its original width, or the method of its construction. Logically, however, the material from the ditch would have been used in the construction of the bank, which would imply a largely clay bank faced with turf.

Camp defences were usually strengthened by stakes, as noted by both Polybius and Livy (ibid., 17). Vegetius (Book 1 Chapter 24) suggests strengthening the rampart with stakes of very strong wood "*which the soldiers are accustomed to carry with them*". The only possible evidence for the use of stakes in the defences at Huntington Moor Camp 2 was two stake holes immediately inside the ditch cross-section 1054, which may represent tentative evidence for a fence along the forward face of the camp bank. While two stake-holes is hardly overwhelming evidence for such a fence, it is perfectly possible that any remaining evidence was truncated when the modern sports stadium was built. Evidence of stakes on the forward face of the camp bank is known from a camp at Galley Gill in Cumbria (Welfare and Swan 1995, 38). Alternatively it is possible that the three post-holes at Camp 2 may be associated with marking out the location of the ditch in some way.

The camp ditch formed an outer defence. It is common for camp ditches in England to vary in profile along their length (ibid., 17-18). Josephus, writing in the third quarter of the 1st century AD, noted that every man in a unit could be allocated a short section of defences to construct, ensuring that the camp defences were built very quickly (ibid., 17). The practice of allocating individuals or gangs of me to dig specific sections of a camp perimeter ditch probably accounts for the varied profile of both the Huntington Moor camp ditches, being particularly marked in the case of Camp 1. It is clear that 'ankle-breakers' were not always present on Roman camp ditches in England (ibid., 17-18), an inconsistency reflected at Huntington Moor, where Camp 1 has only short lengths of such features, while at Camp 2 ankle-breakers were the norm.

One of the camps at Bootham Stray 2.4km to the north of York had a bank of stiff clay 5.5m wide, with a berm 0.4m wide outside, then a ditch 1.3m wide and 1.2m deep (ibid., 136) while at Huntington Moor Camp 1 (Johnson 2004, 30-31, 89) there was a bank up to 4.5m wide, a 1m wide berm, then a ditch 0.49m-1.72m deep and 0.44m-0.83m deep. The width of the bank and berm at Huntington Moor Camp 2 are unknown, making comparisons with Bootham Stray and Camp 1 at Huntington Moor impossible. The Camp 2 ditch, however, was of a similar scale to that seen at Bootham Stray.

There was clearly considerable variation in the design and number of gateways into Roman camps. The various designs seen in Welfare and Swan's (1995, 12-13) survey of 107 camps in England include:

- Camps with no clear entrances (four examples)
- Entrances in the form of between one and four simple gaps in defensive circuit (25 examples)
- Between one and nine entrances with a gap and external traverse ditches (39 examples)
- Between two and ten entrances with either a simple gap or gap with an external traverse ditch (19 examples)
- Between two and four entrances with *claviculae* banks facing inwards (nine examples)
- Between four and five entrances each of which is either a simple gap or a gap with a *clavicula* bank facing inwards (three examples)
- Five entrances, two comprising gaps and three with *claviculae* banks facing outwards (one example)
- Between two and four entrances each with *claviculae* banks facing inwards and outwards to create a curving corridor (two examples)
- Four entrances each with a *clavicula* bank and an external traverse ditch (two examples)
- Between two and four entrances with either a gap and external traverse ditch or with an inward facing *clavicula* bank and external traverse ditch (two examples)
- Double bank and ditch with four entrances comprising gaps on the external bank and *claviculae* banks on the internal defensive circuit (one example)

It is clear that most camps had entrances comprising either simple gaps in the defensive circuit or, gaps with external traverse ditches (83 examples), while the use of *clacivulae* banks was less common (20 examples). It should be noted that a *clavicula* would usually simply be present in the bank and not the associated ditch, which would make identification of such features difficult. A lack of dating evidence from excavated camps makes it unclear whether the various designs of gates varied over time or was the result of regimental tradition (Welfare and Swan 1995, 21).

Huntington Moor Camp 1 had external traverse ditches and a hint of an in-turning *clavicula* bank. The only entrance to be excavated at Huntington Moor Camp 2 comprised a simple gap, though it is possible that the widening of the ditch on the south-eastern side of the camp may represent part of an inward facing *clavicula* ditch, which would be more unusual for England as a whole (further excavation would be needed to clarify the location and design of the south-eastern gateway at the camp). The camps at Bootham Stray 2.5km north of York have *claviculae* at the entrances (ibid., 135).

There was no standard position for entrances into camps, the position being determined by practical considerations. Vegetius (Book 1 Chapter 23) noted that the principal gate "*should face east, or the direction which looks towards the enemy, or if on the march it should face the direction in which the army is to proceed*". The majority of entrances were, however, either mid-way along the side of the camp, or one-third of the way along the side of the camp (Welfare and Swan 1995, 18). The north-eastern entrance of Huntington Moor Camp 2 was

located centrally along the side of the camp, and if the widening of the ditch at the southern limit of excavation is indeed part of an entrance, then this would have been approximately one-third along the south-eastern side of the camp.

It is almost impossible to estimate the number of men housed in camps, as it is usually unclear how much of the camp was given over to accommodation, and how much to other activities, such as the housing of animals (ibid., 22).

Camp 2 at Huntington Moor seems to have been slighted on abandonment. The deliberate slighting of camps is recorded by Josephus, and it has been noted at other Roman camps in England, such as Brackenrigg and Galley Gill in Cumbria, Bromfield in Shropshire (ibid., 18) and Huntington Moor Camp 1 (Johnson 2004, 3).

6.1.3 Anglian and Anglo-Scandinavian AD410-1066

No conclusive evidence of Anglian or Anglo-Scandinavian activity was found at the site. The only evidence for activity of this date found in the vicinity is a single sherd of Anglian pottery recovered from the 2002 excavations at Camp 1 (Ottaway 2002, 20). No other artefacts of this date have been recovered from any of the other archaeological sites in the immediate area, which collectively represent extensive excavations (Macnab 2000, 21; Johnson 2004, 91; Dean 2004, 56; Johnson 2012, 39-41). It is clear, therefore that any activity of this date in the area was on a very limited scale.

Context 1110 (the uppermost deposit at the southern end of ditch cross-section 1102), was a thick layer of clay that contained an abraded sherd of Roman pottery. This part of the site was clearly prone to waterlogging, and it is possible that Context 1110 accumulated as a result of the ponding of water in the area above the earlier Roman ditch. Such a process could have begun in the Anglian period and continued well into the late medieval period.

6.1.4 Medieval 1066-1540

No evidence of medieval activity was found at the site. Three sites in the immediate vicinity produced a small quantity of medieval artefacts, namely pottery or ceramic building material (Macnab 2000, 21; Ottaway, 2002, 20; Johnson 2004, 91), which probably came to the site as a result of manuring fields. No artefacts of medieval date were recovered from the 2012 excavations to the south-east of Camp 1 (Johnson 2012, 39-41) perhaps suggesting that this area was not subjected to manuring during the medieval period.

Again it should be noted that some of the uppermost backfills of the Roman camp ditch could have accumulated in this period.

6.1.5 Post-Medieval AD1540-1850

The earliest post-Roman feature to survive on the site was a brick culvert constructed from 16-18th century bricks. All traces of any associated buildings had been removed when the modern sports stadium was constructed, so it is unclear what type of building this culvert related to. There were also the remains of a single pit of 18/19th century date, presumably representing the occasional disposal of rubbish within the fields to the south-east of Huntington.

The entire area of the site was covered by narrowly-spaced, exceptionally straight, north-south aligned plough furrows seen. These were clearly dated by a number of artefacts to the 19th century (though they also contained residual material of Roman to 18th century date),

thereby confirming the suggested date given in the original English Heritage aerial photographic survey (Horne and Macleod 2002, 7). It should be noted that the surviving furrows were very shallow, due to truncation by modern activity at the site. Similar furrows were observed in the 2002 aerial photographs in the area to the west and south-west of the stadium, and in the area of Camp 1 (Ottaway 23002, 21; Johnson 2012, 37), indicating that there was widespread land improvement in the area in the 19th century.

Context 1057 (the uppermost fill of ditch cross-section 1062) contained a sherd of 18th century pottery, suggesting that this deposit accumulated in the post-medieval period.

In the case of ditch cross-sections 1080, 1087 and 1137 the cross-section suggested that the upper portion of the ditch had been planed flat, presumably by post-Roman ploughing, which had resulted in thin deposits of silty clay being deposited above the ditches (Contexts 1075 1081 and 1126 respectively). Given that the ploughing at the site is of 19th century date, these three deposits are therefore also interpreted as being 19th century in date.

6.1.6 Modern1850 onwards

A single ceramic field drain of late 19th century or later date was seen during the excavations. Fragments of ceramics from similar features were present on other sites in the vicinity (Ottaway 2002, 16; Johnson 2012, 43), but drains of this type were clearly not common in the area, which may suggest low-intensity agricultural activity in the area.

All the remaining evidence of modern activity at the site related to the construction of the Ryedale Sports Stadium, which was completed in 1989. It is clear that the construction of the stadium resulted in the truncation of all earlier remains on the site, including the removal of the internal bank of Camp 1, together with all but the basal few centimetres of all other features of archaeological origin in the area. Clearly the rugby pitch had been carefully constructed with a view to providing adequate drainage, with layers of both gravel and sand beneath the turf of the pitch.

6.2 Engagement of the community

As noted in the methodology, this project was designed from the outset to engage the community as much as possible. A total of 809 members of the public were involved in the project in some way, either as participants, or visitors, and this large number clearly represents a successful outreach programme. The involvement of D. Dodwell was a great asset for the excavation, providing superb photographs of the site, a selection of which were used on the excavation blog and have been used in this report. Any future projects of this type would be wise to involve such a skilled photographer. The involvement of metal detectorists represented was significant, and undoubtedly improved the level of artefact recovery at the site. Hopefully this excavation has gone some way towards improving the relationship between the archaeological and the metal detecting communities in York.

There are, however, some comments which should be made to ensure that any future programmes of this nature reach an even wider audience.

The 60 people who worked on the excavation had all pre-booked (some of whom are shown plates 34-45). On each day, however, at least one person who had booked a space did not show up. Non-attendance was particularly marked on the first day of the excavation, when six people did not show up (this was a sunny Bank Holiday, and presumably a trip to the seaside

was a more attractive option!). Perhaps if people had been asked to pay a refundable deposit, or to pay a nominal fee, attendance would have been better.

Feedback on the Dig York Stadium project's web presence was universally positive, with many enjoying the ability to access 'live' updates from afar. The application of these online resources within a community excavation is an excellent example of their value as a means to both publicise a project and to disseminate its findings. Any future projects should also look to build a strong web presence as this will help to develop an interest in archaeology in a contemporary demographic.

The schools visits were highly successful, being attended by an impressive 630 children. The children and their teachers clearly enjoyed the visits. The success of the school visits was due to the outstanding efforts of the various YAT staff involved, and it is difficult to see how this aspect of community engagement could have been improved upon in any way.

A total of 73 people attended the open days, and it is fair to say this was a far lower number that such events usually attract. With hindsight this is probably a result of timing; the open days were held on Fridays, when inevitably most people were at work and therefore unable to visit. It would have been better to have had a single open day, on the final Saturday of the project, to ensure that as many people as possible could have visited.

Some of the people attending the open days also commented that they had found it hard to find the excavation because their car satellite-navigation systems had taken them to the wrong location, namely the car park to the south of the stadium, only to find a large spoil heap and a sign saying "car-park closed". Better signage could have alleviated this problem.

The Friday lectures were attended by 35 people, the majority of whom had also worked on the excavation. Feedback forms given out to those attending were universally positive; clearly those attending enjoyed these talks immensely. In terms of staff time, however, this represented a lot of effort for a relatively small number of participants. As with the open days, low attendance may have been the result of holding the talks on a Friday afternoon. It might have been better to hold these talks on weekday evenings so as to attract more visitors.

6.3 Recommendations for further work

It is clear that the construction of the sports stadium had severely damaged Camp 2, removing all traces of the internal bank and virtually all traces of any associated internal features, or indeed any earlier features, such as the prehistoric features uncovered in the excavations of the nearby Camp 1. The lack of internal features coupled with the almost total absence of datable artefacts makes the precise dating and duration of this camp difficult to determine.

Given that the surviving portion of the Camp to the west of the sports stadium is better preserved, a case could be made for further excavation in this part of the camp, as this would offer the potential to recover internal features and associated artefacts. Such information would be of local and regional importance, in helping to clarify the date, function and duration of the camp. Work in the surviving portion of the camp also offer the potential to recover samples of organic material suitable for Radio Carbon 14 dating, which may also further clarify the date of the camp. As this surviving portion is a Scheduled Ancient Monument any such investigations could only take place if the relevant consent was obtained.

It is possible that the widening of the ditch seen in the south-westernmost excavated cross-section could be associated with a gateway into the camp located immediately beyond the southern limits of excavation. It is recommended that at the very least a watching brief is undertaken during any construction works in this areas to see if there is indeed any evidence of such a gateway and whether this is of a *clavicula* design.

7. PLATES

Plate 1 . General view across the stadium facing east. Photograph by D. Dodwell.

Plate 2. The surviving portion of the Roman camp (marked in yellow) facing south-west.

Photograph by D. Dodwell.

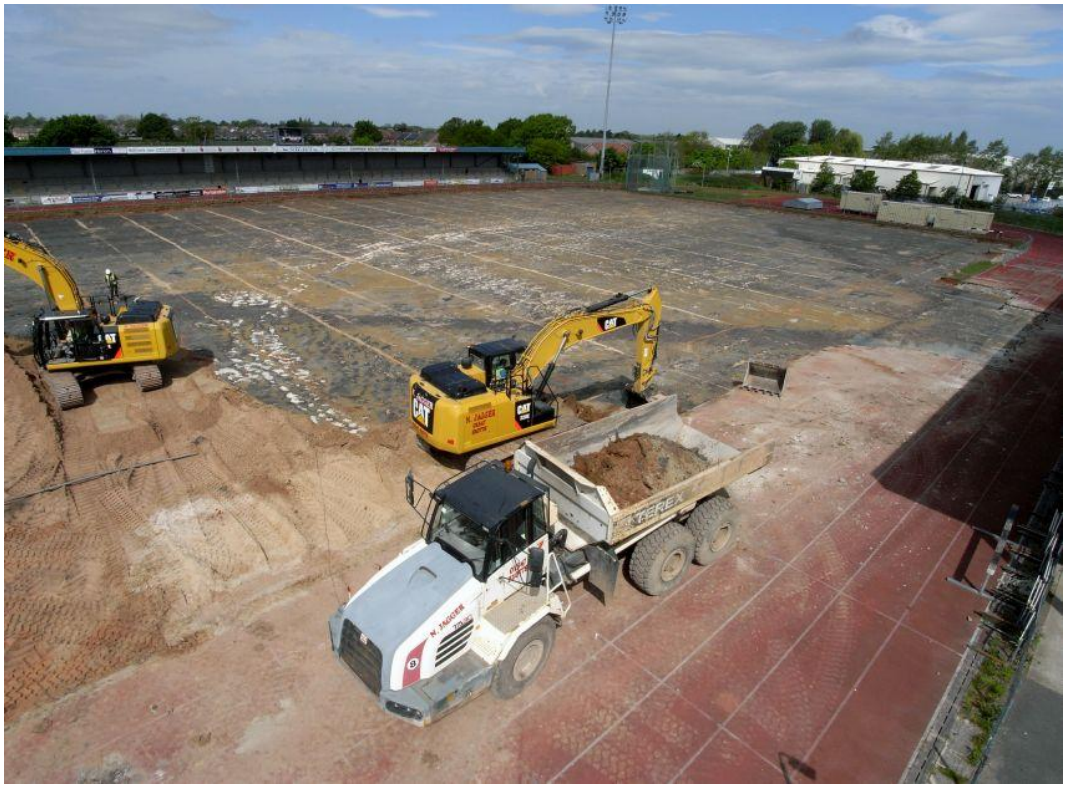

Plate 3. The excavator machines and Moxie facing north. Photograph by D. Dodwell.

Plate 4. Filling a dumper truck facing north-east. Machining of the site facing north.

Photograph by D.Dodwell.

Plate 5. Machining of the site, facing east. Photograph by D. Dodwell.

Plate 6. Machining of the site facing north. Photograph by D. Dodwell.

Plate 7. The site spoil heaps facing south. Photograph by D. Dodwell.

Plate 8. The 1852 Ordnance Survey 6" to one mile map of Huntington.

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Plate 9. Context 1010 south facing section. Scale unit 0.1m.

Plate 10. Context 1012 west facing section. Scale unit 0.1m.

Plate 11. Context 1014 west facing section. Scale unit 0.1m.

Plate 12. Context 1050 south facing section. Scale unit 0.1m.

Plate 13. Context 1056 South-east facing section. Scale unit 0.1m.

Plate 14. Context 1067 east facing section. Scale unit 0.1m.

Plate 15. The Roman camp ditch facing west. Photograph by D. Dodwell.

Plate 16. Context 1080 north-west facing section. Scale unit 0.1m.

Plate 17. Context 1111 north-west facing section. Larger scale unit 0.5m.

Plate 18. Context 1121 south-east facing section. Larger scale unit 0.5m.

Plate 19. Context 1087 north-west facing section. Larger scale unit 0.5m

Plate 20. Context 1102 south facing section. Larger scale unit 0.5m.

Plate 21. Context 1054 south-east facing section. Larger scale unit 0.5m.

Plate 22. Context 1062 south-west facing section. Larger scale unit 0.5m.

Plate 23. Context 1062 north-east facing section.

Plate 24. Context 1137 north-east facing section. Larger scale unit 0.5m.

Plate 25. Contexts 1139-1165 facing east. Scale unit 0.5m.

Plate 26. Context 1007 facing west. Scale unit 0.1m.

Plate 27. The plough furrows facing south. Photograph by D. Dodwell.

Plate 28. Plough furrow Context 1046 north facing section. Scale unit 0.1m.

Plate 29. Plough furrow 1044 and drain 1103 north facing section. Scale unit 0.1m.

Plate 30. Context 1074 south-east facing section. Scale unit 0.1m.

Plate 31. Plough furrows and field drains facing north east. Photograph by D. Dodwell.

Plate 32. North facing section though the deposits relating to the sports stadium. Scale unit 0.1m.

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Plate 34. Geophysical surveying of the stadium facing east.

Plate 35. Excavating the Roman ditch termini and adjacent features facing south-east.

Plate 36. Excavating the Roman ditch north-western terminus facing north-east.

Plate 37. Excavating the Roman ditch termini and adjacent features facing south-east.

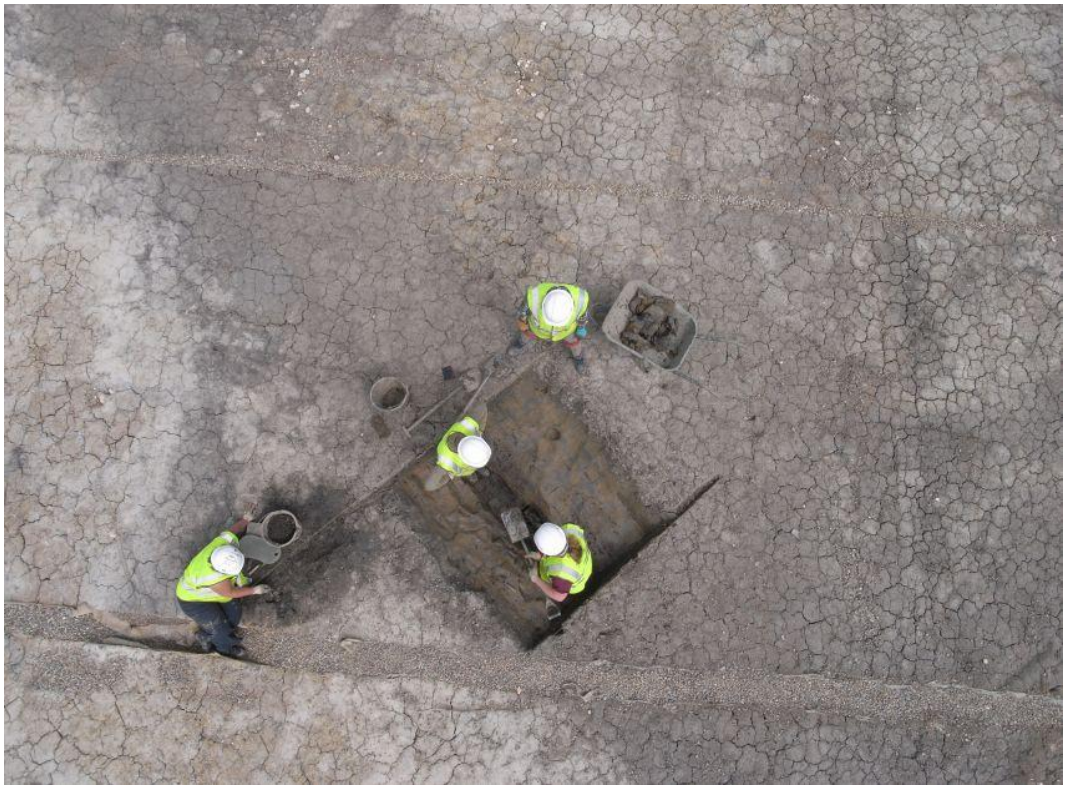

Plate 38. Excavation of ditch section 1087 and pit 1074. Photograph by D. Dodwell.

Plate 39. Excavation of ditch section 1062. Photograph by D. Dodwell.

Plate 40. Excavation of terminus 1111. Photograph by D. Dodwell.

Plate 41. Excavation of Context 1054 facing north-east.

Plate 42. Excavation of Context 1137. Photograph by D.Dodwell.

Plate 43. Excavation of Context 1137. Photograph by D. Dodwell

Plate 44. Recording of ditch section 1102. Photograph by D. Dodwell.

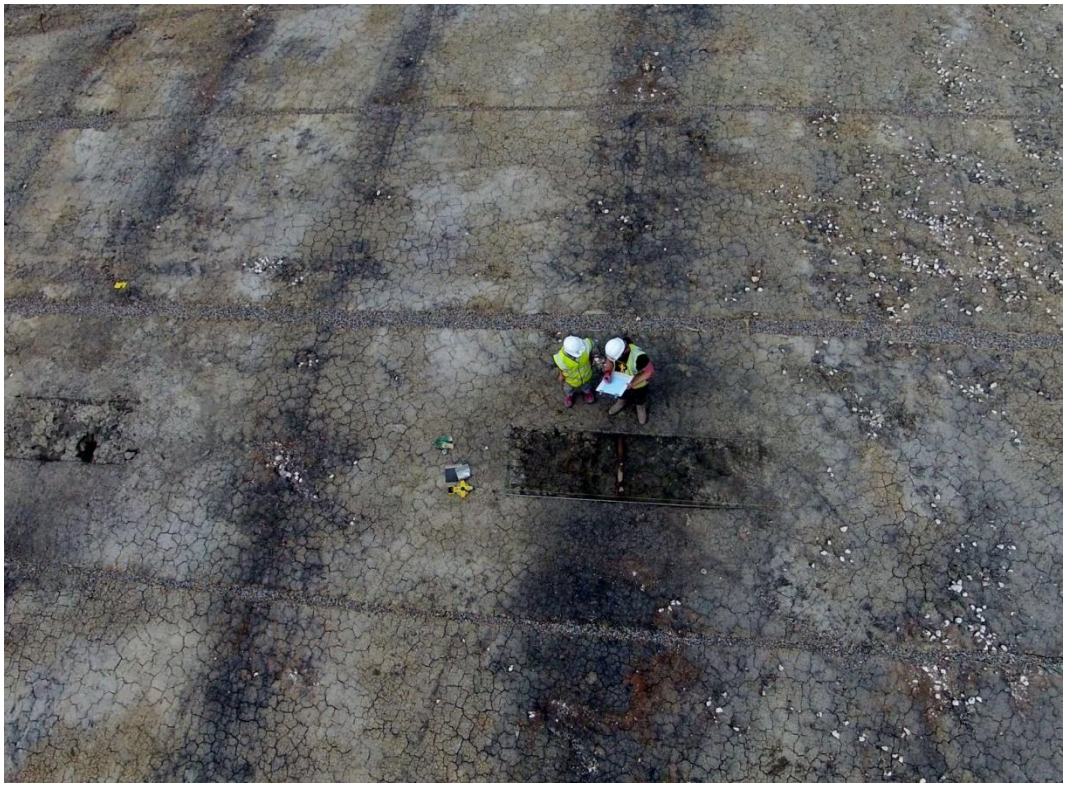

Plate 45. Recording furrow 1044. Photograph by D.Dodwell.

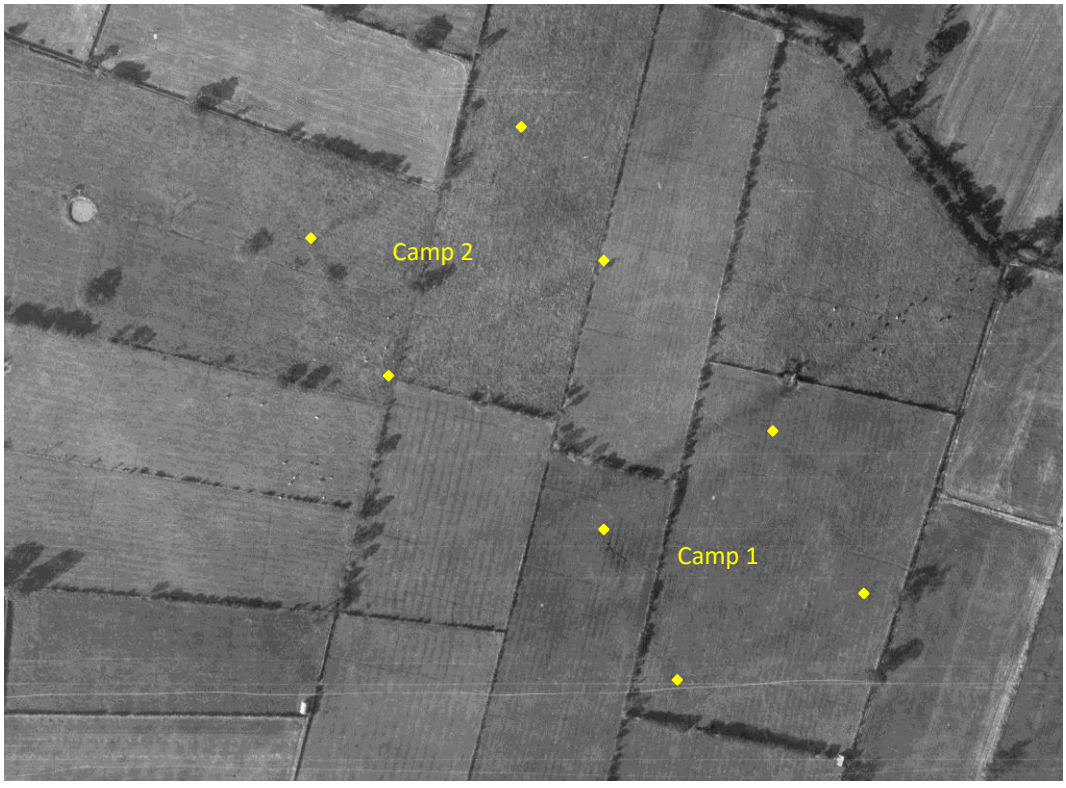

Plate 46. RAF aerial photograph of 1953 showing the two Huntington Moor camps (SAM listing, photo reference 540/613/5009) with the corners of the camps highlighted in yellow.

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It should be noted that the M. Johnson who worked on this site and prepared some of the illustrations for this report is not the same person as the M. Johnson who undertook excavation work in the area in 2004 and 2012.

APPENDIX 1 – INDEX TO ARCHIVE

Table 1 Index to archive

Item	Number of items
Context register	7 x A4 sheets
Context sheets	172 sheets
Sample register	1 x A4 sheet
Sample sheets	15 x A4 sheets
Original drawings	30 permatrace sheets
Photo register	Word document on paper
Digital photographs	1096 jpg and 1096 identical raf files
Written Scheme of Investigation	Within final report
Final Report	1 x document
Weekly H&S Sheets	5 xA4 sheets
Machine check sheets	8 x A4 sheets
Risk assess	2 copies signed by staff
Metal detectorist forms	9 x A4 sheets

APPENDIX 2 – CONTEXT LIST

Table 2 Context descriptions

For brevity compass directions have been abbreviated to N for north, E for east, and so on.

Context no.	Description
1000	Overburden. Beneath the former rugby pitch this comprised 100mm turf above 200mm of sand above 300mm of gravel above a mesh membrane. Beneath the running track it comprised 100mm turf above 200mm of sand above 300mm of limestone chippings above a mesh membrane.
1001	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1002	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1003	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1004	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1005	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1006	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1007	Brick culvert – Linear structure 3.58m long, 0.25m wide and 0.16m deep, aligned E-W. Made of bricks 225 x 120 x 55mm in size. With a basal course laid on bed, and two side walls of bricks laid on stretcher. Brick size suggests 16th-mid 18th century date.
1008	Construction cut. Linear cut 3.58m long, 0.25m wide and 0.16m deep, aligned E-W. Vertical sides and flat base. For brick culvert 1007
1009	Fill of 1010. Firmly compact dark grey-black clay with charcoal flecks and fragments.
1010	Post-hole. Sub circular cut 0.3mx 0.53m x 0.12m in size. Steep side on W, shallow on E. Base slopes gently towards W.
1011	Fill of 1011. Firmly compact dark grey to blue grey sandy clay. Occasional flecks of charcoal manganese and vary occasional burnt pebbles.
1012	Pit cut. Highly irregular in plan and section. 0.61m x 0.44m x 0.28m in size. Sub-oval in plan, sides irregular, base with shallower portion on northern side and deeper on west. Base irregular.
1013	Fill of 1014. Firm dark brown clay.
1014	Pit cut. Sub oval in plan, 0.74m x 1.8m x 0.13m in size. Moderate break of slope at top, moderately sloping sides and irregular to flat base.
1015	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1016	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1017	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1018	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1019	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1020	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.

Context no.	Description
1021	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1022	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1023	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1024	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1025	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1026	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1027	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1028	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1029	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1030	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1031	Field drain. Aligned E-W. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1032	Field drain. Aligned N-S. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1033	Field drain. Aligned N-S. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with gravel.
1034	Field drain. Aligned N-S. Not excavated. 50-100mm in width. Clearly machine dug with vertical sides, depth unknown. Filled with sand and a plastic pipe.
1035	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1036	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1037	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1038	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1039	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1040	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1041	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1042	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1043	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1044	Linear plough scar and fill, aligned N-S.).6m wide and 0.1m deep. Fill comprised compact dark grey-brown silty clay. Gentle break of slope at surface, shallow concave profile.

Context no.	Description
1045	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1046	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1047	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1048	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1049	Fill of 1050. Firm dark blak-brown silty caly with moderate charcoal flecks, occasional pebbles and flecks of CBM.
1050	Pit cut. Sub circular cut 0.92m x 09.9m x 0.14m in size. Moderate breaks of slope at top, moderately steep irregular sides and irregular base.
1051	Fill of 1054. Firm dark grey silty clay.
1052	Fill of 1054. Very compact pale grey to light brown clay with orange clay mottling.
1053	Fill of 1054. Very compact light orange clay with occasional flecks grey clay.
1054	Ditch cut. Linear cut aligned NE-SW. 1.6m wide and 0.95m deep. Arbitrary section through a ditch. Very steep sides with a vertically sided slop 0.27m wide and 0.3m deep at the base.
1055	Fill of 1055. Friable to firm dark grey brown sandy silty clay with occasional flecks and fragments of charcoal.
1056	Pit cut. Irregular in plan, long axis aligned NE-SW. 1.7m x 0.7m x 0.34m in size. Sharp to moderate break of slope at top, moderate sides, concave base.
1057	Fill of 1062. Firm dark grey silty clay. Occasional charcoal flecks
1058	Fill of 1062. Firm dark grey-black silty clay.
1059	Fill of 1062. Firm mixed orange and dark grey clay.
1060	Fill of 1062. Soft black clayey silt with occasional charcoal.
1061	Fill of 1062. Soft pale grey silty clay and clay in thin laminated bands.
1062	Ditch cut. Linear cut 1.67m wide and 1.02m deep aligned NW-SE. Arbitrary section through a ditch. Very steep sides with a vertically sided slop 0.24m wide and 0.3m deep at the base.
1063	Fill of 1054. Compact dark grey clay.
1064	Fill of 1065. Firm to friable dark brown-grey silty sandy clay. Occasional flecks and fragments charcoal and patches of sand.
1065	Pit cut. Sub oval in plan, long axis N-S. 1.42m x 1.33m x 0.32m. Moderate break of slope at top, gently sloping sides, concave base.
1066	Fill of 1067. Friable to firm dark brown silty clay.
1067	Linear cut aligned E-W. Two slots excavated through this cut which was 0.62m wide and 0.12m deep. Sharp break of slope at top, steep to moderate sides, slightly irregular base.
1068	Fill of 1054. Compact dark grey-black organic clay. Organic component heavily decayed.
1069	Fill of 1070. Compact mottled clay ranging from pale to dark grey to yellow-orange.
1070	Post-hole. Circular cut 0.14m in diameter and 0.15m deep. Sharp break of slope at surface, vertical sides, flat base.
1071	Fill of 1072. Compact mottled clay ranging from pale to dark grey to yellow-orange in colour.
1072	Post-hole. Circular cut 0.20m in diameter and 0.15m deep. Sharp break of slope at surface, vertical sides, flat base.

Context no.	Description
1073	Fill of 1074. Firm to friable dark black-brown silty clay with occasional flecks of charcoal.
1074	Pit or post-hole. Irregular in plan, 1.12m x 0.93m x 0.11m in size. Moderate break of slope at sides, gently sloping sides, irregular base.
1075	Fill of 1080. Compact dark grey silty clay.
1076	Fill of 1080. Compact mottled yellow to light grey silty clay. Occasional flecks charcoal.
1077	Fill of 1080. Mixed light yellow to pale grey to dark grey clay. Generally yellower on the northern side and greyer on the southern side.
1078	Fill of 1080. Compact pale grey clay.
1079	Fill of 1080. Compact dark grey-black decayed organic matter and clay.
1080	Ditch cut. Linear cut 2.2m wide and 1.18m deep aligned NW-SE. Arbitrary section through a ditch. On N side has upper slope at 45 degrees, on S side the upper slope is steep. Lower portions of both sides vertical, forming a narrow channel 0.2m wide and 0.3m deep
1081	Fill of 1087. Compact dark grey silty clay.
1082	Fill of 1087. Compact dark to mid grey clay. Occasional flecks of charcoal and orange clay.
1083	Fill of 1087. Compact mid grey clay mottled with patches of orange clay.
1084	Fill of 1087. Compact mid grey clay mottled with patches of orange clay.
1085	Fill of 1087. Compact orange clay mottled with grey clay. Occasional patches of dark grey decayed organic matter.
1086	Fill of 1087. Compact mid grey clay with moderate flecks charcoal and patches of orange clay.
1087	Ditch cut. Linear cut 1.92m wide and 1m deep aligned NW-SE. Arbitrary section through a ditch. On N side has upper slope is steep breaking to a small shelf or step with an integral post-hole 0.2m in diameter on the N side. On S side the upper slope is steep. Lower portions of both sides vertical, forming a narrow channel 0.25m wide and 0.55m deep
1088	Fill of 1080. Compact pale grey clay with moderate flecks charcoal.
1089	Fill of 1080. Very compact yellow clay flecked with occasional grey clay.
1090	Fill of 1080. Very compact yellow clay flecked with occasional grey clay. Very occasional flecks charcoal.
1091	Fill of 1080. Mixed mottled pale yellow to pale grey clay with pockets of flecks of charcoal or decayed organic matter.
1092	Fill of 1080. Moderately compact dark grey decayed organic matter. Vertically sided when seen in section.
1093	Fill of 1080. Moderately compact dark grey decayed organic matter. Vertically sided when seen in cross-section.
1094	Fill of 1080. Compact pale grey clay.
1095	Fill of 1087. Moderately compact. Dark grey organic clay.
1096	Fill of 1087. Compact Pale grey clay. Occasional flecks of charcoal.
1097	Fill of 1102. Soft mid brown grey silty clay with orange mottling. Occasional flecks of charcoal.
1098	Fill of 1102. Soft mid brown to dark grey silty clay mottled with orange clay.
1099	Fill of 1102. Soft orange silty clay mottled with mid grey to brown silty clay.
1100	Fill of 1102. Soft mid brown-grey clay. Occasional flecks charcoal.
1101	Fill of 1102. Soft dark grey clay with moderate flecks of organic matter and charcoal.

Context no.	Description
1102	Ditch cut. Linear cut 2.2m wide and 1.09m deep aligned NW-SE. Arbitrary section through a ditch. Sharp break of slope at surface, steep upper sides with slight shelf on N side, vertically sided channel 0.5-1m wide at base with narrow channel 0.3m x 0.1m in size at base.
1103	Filed drain. Linear cut aligned N-S. 0.3m wide, not fully excavated so depth unknown. Contained a circular cross-sectioned machine made ceramic field drain in segments 0.4m long and 0.1m in diameter.
1104	Fill of 1111. Compact mid grey silty clay with occasional flecks charcoal, and flecks orange clay.
1105	Fill of 1111. Very compact light grey to orange clay. Occasional charcoal flecks.
1106	Fill of 1111. Very compact mid orange marbled with grey clay. Occasional small patches of organic matter.
1107	Fill of 1111. Light grey mottled with dark grey compact clay. Slightly organic. Dark grey to black patches of organic matter and occasional flecks of orange clay.
1108	Fill of 1111. Very compact pale grey slightly organic clay mottled with dark grey clay. Occasional flecks orange clay and charcoal. On large patch of decayed organic matter, possibly wood.
1109	Fill of 1111. Compact mid brown grey clay with occasional flecks of organic matter.
1110	Fill of 1111. Firm dark brown grey clay with occasional flecks of charcoal.
1111	Ditch cut. Linear cut 2.6m wide and 1.15m deep aligned NW-SE, with square ended terminus. Arbitrary section through a ditch terminus. NW side has upper slope at 45 degrees, then a flat step, then an almost vertical lower edge. SE side has upper portion at 45 degrees the almost vertical lower edge. Slightly concave base.
1112	Fill of 1121. Firmly compacted dark grey clay mottled orange and brown. Moderate flecks of charcoal.
1113	Fill of 1121. Firmly compacted mid grey clay with rare flecks of charcoal.
1114	Fill of 1121. Firmly compact mixed deposit ranging from orange to mid grey to mottled mid grey and orange slightly silty clay. Frequent flecks of charcoal.
1115	Fill of 1121. Firmly compacted dark grey to pale grey clay with patched of grey sandy clay and moderate flecks of charcoal.
1116	Fill of 1121. Soft dark brown to black organic clay.
1117	Fill of 1121. Moderately compact pale grey clay.
1118	Fill of 1121. Soft black organic clay with twig like elements.
1119	Fill of 1121. Pale grey to brown firmly compacted clay.
1120	Fill of 1121. Moderately compact mid brown clay.
1121	Ditch cut. Linear cut 2.1m wide and 1m deep aligned NW-SE, with square ended terminus. Arbitrary section through a ditch terminus. SW side has upper slop of 45 degrees, breaking to an almost vertical lower edge. SE side has concave upper edge breaking to vertical lower edge. NE side has gentle break of slope at top, then a shelf before breaking to a vertical lower edge. Base flat.
1122	Number not used
1123	Fill of 1121. Moderately compact mid brown clay.
1124	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1125	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1126	Fill of 1137. Friable mid yellow grey sandy clay.
1127	Fill of 1137. Firm to friable dark grey-black silty clay. Occasional charcoal.

Context no.	Description
1128	Fill of 1137. Friable to soft mid brown grey silty clay mottled with yellow clay. Occasional flecks of charcoal.
1129	Fill of 1137. Firm mid yellow brown clay mixed with grey silty clay, yellow-brown sandy clay and dark grey clay. Occasional flecks charcoal, and fragments of decayed sandstone.
1130	Fill of 1137. Firm yellow to orange-brown clay.
1131	Fill of 1137. Firm to friable mid brown grey silty clay mixed with patches of soft yellow brown clay, dark brown grey silty caly and yellow brown clayey sand. Moderate charcoal flecks.
1132	Fill of 1137. Firm to friable mid to dark grey silty clay. Frequent flecks and fragments of charcoal. Moderate decayed organic matter possibly wood and bark.
1133	Fill of 1137. Firm mid grey brown clay with occasional flecks and small fragments of charcoal.
1134	Fill of 1137. Firm mid brown-yellow silty clay mottled with light yellow grey clayey sand.
1135	Fill of 1137. Soft mid orange brown clay.
1136	Fill of 1137. Soft mid orange brown clay mottled with soft light grey clay.
1137	Ditch cut. Linear cut 3.8m wide and 0.76m deep aligned SW-NE. Moderate break of slope at top, into stepped slope on SE side and gradual slope on NW side. Concave base.
1138	Fill of 1139. Moderately compact dark grey silty clay. Frequent charcoal flecks.
1139	Post-hole. Circular cut 0.07m in diameter and 0.05m deep. Sharp break of slope at surface and V shaped profile.
1140	Fill of 1141. Moderately compact dark grey silty clay with one limestone pebble 10x8mm in size.
1141	Post-hole. Circular cut 0.09m in diameter and 0.08m deep. Sharp break of slope at surface almost V shaped profile. Slightly steeper on S side.
1142	Fill of 1143. Pale grey moderately compact silty clay.
1143	Post-hole. Circular cut 0.14m in diameter and 0.01m deep. Gently sloping sides and flat base.
1144	Fill of 1144. Moderately compact pale grey silty clay.
1145	Post-hole. Circular cut 0.14m in diameter and 0.02m deep. Gently sloping sides and flat base.
1146	Fill of 1147. Moderately compact pale grey silty clay with occasional flecks of charcoal.
1147	Post-hole. Circular cut 0.14m in diameter and 0.02m deep. Gently sloping sides and flat base.
1148	Fill of 1149. Moderately compact mid grey silty clay with occasional flecks of charcoal.
1149	Post-hole. Circular cut 0.17m in diameter but truncated by a modern field drain on the southern side. 0.03m deep. Gently sloping sides and flat base
1150	Fill of 1151. Moderately compact dark grey silty clay with occasional flecks of charcoal.
1151	Post-hole. Circular cut 0.2m in diameter and 0.03m deep. Gently sloping sides and flat base
1152	Fill of 1153. Moderately compact dark grey silty clay with moderate charcoal flecks.
1153	Post-hole. Circular cut 0.15m in diameter and 0.06m deep. Almost V shaped profile but slightly gentler slope on southern side with a slight step in the profile.
1154	Fill of 1155. Moderately compact dark grey-black silty clay with charcoal flecks.

Context no.	Description
1155	Post-hole. Circular cut 0.26m in diameter and 0.04m deep. Gently sloping sides and flat base
1156	Fill of 1157. Dark grey moderately compact to friable clayey silt with moderate charcoal patches and patches of yellow clay.
1157	Pit cut. Circular cut truncated on southern side by modern field drain, and upper portions removed by modern activity. Sub circular in 1m x 0.75m in area and 0.08m deep. Gently sloping sides and undulating base.
1158	Fill of 1159. Moderately compact, friable on excavation, mid grey clay and light orange ashy silt, which is concentrated in the centre of the deposit. Moderate flecks of charcoal.
1159	Pit cut. Circular cut truncated on southern side by 1157. Sub circular in 0.8m x 0.5m in area and 0.15m deep. Gently sloping sides and undulating base.
1160	Fill of 1161. Moderately compact dark grey-black silty clay. Frequent flecks of charcoal.
1161	Pit cut. Circular cut truncated on southern side by 1159. Sub circular in 2.06m x 1.5m in area and 0.09m deep. Gently sloping sides and irregular base.
1162	Fill of 1163. Moderately compact pale grey clay. Occasional flecks charcoal.
1163	Post-hole. Circular cut 0.12m in diameter and 0.04m deep. Gently sloping sides and flat base
1164	Fill of 1165. Moderately compact pale grey sandy clay.
1165	Stake-hole. Circular cut 0.04m in diameter and 0.03m deep. Vertical sides and flat base.
1166	Collective number allocated for all modern gravel filled field drains.
1167	Collective number allocated for all N-S aligned plough furrows.
1168	Collective number allocated for the Roman camp ditch.
1169	Natural clay. Firmly compacted orange clay with brown marbling. Occasional patches of orange sandy clay especially in the south-east corner of the site.
1170	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1171	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.
1172	Linear plough scar and fill, aligned N-S. Not excavated. Fill comprised compact dark grey-brown silty clay.

APPENDIX 3 – THE POTTERY BY A. JENNER

3.1 INTRODUCTION

Excavations at the above site produced ninety-six sherds from fifteen Contexts. They date from the Roman period to the 19th century, although there is no Anglo Scandinavian or medieval material and only a scrap of 16th century Cistercian ware.

The wares were probably all used in a domestic situation initially, but are small and abraded suggesting that they are not always in a primary context. They may have been re-deposited or incorporated into fills and may even have been spread over the area to break up hard soil.

3.2 METHODOLOGY

Visual analysis involved separating fabric and form groups by date and type. The number and size of the sherds within each fabric and form group is recorded by context and listed in tabular form (see Table 3 below). Sherds are considered to be 'small' if they measure less than 5cm, 'medium' if they measure 5 to 10cms and large if over 10cms at their widest girth. 'Very small' sherds are less than 2cms and 'scraps' are less than 1 cm approximately. Abrasion is noted as 'abraded' when edges are worn or 'very abraded' when surfaces and edges are worn and rounded.

3.3 DISCUSSION

All Roman sherds (Contexts 1104; 1110; 1112) are represented by scraps or small sherds and most are abraded. Despite this, 4 sherds (Context 1104) do not show any signs of abrasion. A jar (Context 1000) and a bowl (Context 1110) are the only identifiable Roman forms.

The 18th century earthen wares include slip and black and brown glazed earthen wares. The slip wares are either mugs or possets for drinking, or dishes for serving or storing solid foodstuffs such as fruit. Sherds of Ryedale reduced green glazed earthen wares are too small to identify the form that they came from. These wares are in circulation in York from the late 16th to the early 18th centuries.

18th century English brown stone wares include sherds from bowls (Contexts 1037; 1048), as well as a plate and perhaps part of a jug (Context 1000). Some are decorated with incised patterns. These wares may have been made in Yorkshire or Derbyshire. There are no German stone wares and no imported wares of any kind.

Finer 18th century wares include several sherds from a white salt glazed plate which has a moulded 'dot, diaper and basket' pattern at the rim (Context 1048). A complete repeat of this pattern is a mid-18th century type (Noel-Hume1969, 116, fig 35, 1). These wares may indicate some affluence, although this cannot be ascertained from the sherds from one plate.

The 19th century pearl and transfer printed wares (Context 1000) include plates and a bowl which may have been used for eating. The transfer printed ware sherds are from plates decorated with the 'willow pattern' in blue. These were mass produced and cheap.

A few cream ware sherds may have been used from the late 18th through the 19th century. Some scraps are painted, but this does not necessarily suggest that their owners were particularly wealthy. Despite this, there are no plain white earthen wares which might indicate slightly poorer owners.

One highly fired sherd (Context 1048) with a fine china white fabric and pearly glass-like glaze, is from a small jar or vase. It has straight sides and a sharp angle at the shoulder, where it turns inwards. It has a short straight neck.

Another heat altered sherd (Context 1073) has angular cut edges which may indicate that it was re-used. It is hard to determine the form that it derived from, though it has a small globular body and fairly straight neck. As with the finer walled jar above (Context 1048), it has an almost porcelain fused fabric.

3.4 RECOMMENDATIONS FOR FURTHER WORK

There are no recommendations for further work.

3.5 BIBLIOGRAPHY

Noel-Hume, I., 1969. *A Guide to artefacts of Colonial America* (Philadelphia).

Table 3 Pottery catalogue

Context	Quantity	Dating	Details
1000	33	19TH CENTURY	2 sanitary white ware large and small, 3 tin glazed light blue, 1 Roman grey very abraded small,1 Ryedale small slightly abraded, 2 slip dish with trailed lines 17th to 18th century small, 1 slip bowl rim 18th to 19th century small, 5 slip mug including base small to large, 5 pearl including bowl base small to large, 1 transfer printed small 1 sponged small abraded, 8 cream including rolled plate rim jar base small, 3 Roman abraded scraps 1 cream with brown and green painted design small abraded, 2 pearl with painted brown design scraps, 1 Roman red ware jar rim large, 4 English brown stone ware including plate and possible jug with incised decoration small to medium, 1 black glazed scrap,1 tortoiseshell scrap, 6 mid brown glazed earthen ware including jar rim and base small to medium
1036	2	18TH/19TH CENTURY	2 light grey fabric with brown tortoiseshell effect glaze complete jar base large
1037	2	18TH/19TH CENTURY	2 English brown stone ware bowl base and sherd with incised decoration large and small
1043	1	18TH CENTURY	1 refined red ware with machined series of wavy lines small

Context	Quantity	Dating	Details
1044	25	19TH CENTURY	2 transfer printed plate blue willow pattern small, 1 cream with moulded foliate swags scrap, 4 pearl scraps abraded, 2 slip dish with thumbed edge feathered decoration, 18th century large, 7 slip oven dish with brown streaks small to medium, 1 Ryedale small, 1 black glazed red ware scrap, 2 terracotta plant pot small, 2 lightly oxidised with flaked mid brown glaze small, 3 English brown stone ware small and scrap, 1 Roman scrap, 1 brown glazed fine red very small
1045	7	LATE 18TH/19TH CENTURY	1 Roman small, 1 early black glazed jar rim fine small, 1 slip ware with yellow inside and brown out closed form small, 1 pearl scrap 1 stone ware with light brown glaze very small, 1 very fine white with dark mottled surfaces very small, 1 banded slip
1046	8	18TH CENTURY	1 cream very small, 2 cream with green and brown hand painted eye small and scrap, 1 buff fabric with mottled brown glaze medium large 1 red earthen ware base with remnants of black glaze large abraded, 1 Cistercian scrap, 1 black glazed closed small 1 green brown glazed very small
1047	7	EARLY 18TH CENTURY	1 slip fine closed form with buff fabric mottled brown glaze out and yellow in small 1 slip fine closed form with red fabric and mottled brown glaze with yellow stripe small 1 slip ware fine bowl rim with red fabric and mottled dark brown glaze small 1 Ryedale small, 1Roman fine walled small, 1 cream with light green and brown paint and rilling very small, 1 terracotta plant pot small very abraded
1048	1	1740 TO 1785	2 English brown stone ware bowl with incised decoration small and scrap, 1 tin glazed small abraded, 2 slip dish small, 3 white salt glazed stone ware plate with dot diaper and basket pattern small to medium, 1 scrap unglazed, 3 unglazed china small jar heat altered small
1057	1	18TH CENTURY	1 red earthen ware with mottled brown glaze small very abraded
1066	1	UNKNOWN	1 unglazed grey ware scrap

Context	Quantity	Dating	Details
1073	2	18TH/19TH CENTURY	1china jar heat altered with dark glaze with wax resist design over cut edges small, 1 red ware bottle neck with mid brown glaze small
1104	4	ROMAN	4 Roman grey ware with lightly oxidised external surface fine sandy feel fine walls small to medium
1110	1	ROMAN	1 Roman bowl base very abraded
1112	1	ROMAN	1 grey ware with dark reduced core and lightly oxidised external surface and fine sandy feel small very abraded

APPENDIX 4 – THE ARTEFACTS BY N. ROGERS AND K. WESTON

4.1 Assessment of Small Finds By N. Rogers

4.1.1 Introduction

A total of 50 small finds were recorded; 40 of these finds comprised objects of metal, and are assessed in this report. The iron and copper alloy objects had been X-rayed, and identifications are informed by study of the X-rays. Some doubt about the material of at least two objects is noted (see below); it is anticipated the Conservation assessment will confirm the material of these objects. Five finds are provisionally identified as slag or metalworking debris and it is recommended that these are assessed by an archaeometallurgist (see below). Five finds of stone, fired clay and glass are reported upon by K. Weston (see 5.2 below).

4.1.2 Methodology

All the finds of iron, copper alloy and silver were X-rayed prior to the assessment being carried out, and identifications of these objects have been made with reference to the X-rays.

4.1.3 Discussion

Iron

Five finds are of iron, and three of these comprise nails (SFs16, 25, 40) all of which come from plough furrows. SF39 is an unstratified rectangular double-looped buckle of recent date, and SF41 from a plough furrow appears to be a large U-shaped staple or padlock shackle; the solidity of the metal indicates that this object is likely to be of recent date.

Copper Alloy

Twenty seven finds are made of copper alloy; of these, nine finds (SFs1, 7, 8, 14, part of 18, 22, 27, 33 and 35) comprise a total of 21 buttons and/or fastening studs of 18th – 20th century date. (Fragments of glass – probably from buttons - were also identified in SFs 18 and 27). Seventeen of the buttons/studs were recovered from plough furrows; the exceptions were three buttons in SF1 which were unstratified, and one button (SF35) from ditch backfill (Context 1057). Four coins were retrieved from plough furrows: SFs13 and 21 both appear to be of Victorian date, whilst SF37 dates to the Georgian period (*c.*1714-1830), and SF38 is from the reign of George II (1727-1760). Other finds also found in plough furrows include a machine made thimble (SF2), a possible decorative mount (SF5), a possible badge depicting a horse with rider in a frock coat (SF9), a small key (possibly for a fob watch) (SF10), a probable buckle plate (SF11), possible upholstery tacks (part of SF18), a small – probably child's size - finger ring with a setting of glass (SF26), a pendant loop from a necklace (SF29) and a large suspension ring (SF31). The sole object from an earlier deposit is SF36, Context 1110 which is a ditch backfill deposit; this object comprises a piece of wire, or possibly part of a pin shank, but unfortunately is undatable.

Lead alloy

Seven finds are made of lead alloy. Three finds (SFs24, 30, 34) comprise a total of nine working spillages, and bar SF12 may also derive from lead alloy working. Other finds include sheet fragments (SF6), and an object of uncertain function (SF12). All these finds came from plough furrows.

4.1.4 Conclusion

Much of this small metal assemblage appears to represent personal dress accessories or other personal items; there is virtually no evidence of structures with only three nails found. Possible lead alloy working is indicated by the working debris. Most of the finds occurred in plough furrows, or were unstratified, and appear to date from the 18th century onwards. A possible copper alloy pin fragment (SF36) was found in earlier ditch backfill, but the object itself is undatable.

4.1.5 Recommendations for further research

There are no recommendations for further research save SF 2 and 15, which may require further identification.

4.1.6 Recommendations for retention/discard

None of this material requires retention

Table 4 Small Finds

Find	Context	Name	Material
SF1	1000	Buttons	Copper Alloy
SF2	1000	Fragments	Lead Alloy
SF3	1000	Slag	Slag
SF4	1035	Thimble	Copper Alloy
SF5	1037	Object	Copper Alloy
SF6	1038	Sheet Fragments	Lead Alloy
SF7	1040	Button	Copper Alloy
SF8	1042	Button	Copper Alloy
SF9	1043	Badge	Copper Alloy
SF10	1043	Key	Copper Alloy
SF11	1043	Buckle Plate	Copper Alloy
SF12	1043	Object	Lead Alloy
SF13	1044	Coin	Copper Alloy
SF14	1044	Button	Copper Alloy
SF15	1044	Fragments	Copper Alloy
SF16	1044	Nail	Iron
SF17	1044	Slag	Slag
SF18	1045	Buttons, Tacks	Copper Alloy, Glass
SF19	1045	Objects	Copper Alloy
SF20	1045	Fragments	Lead Alloy
SF21	1046	Coin	Copper Alloy

Find	Context	Name	Material
SF22	1046	Buttons	Copper Alloy
SF23	1046	Object	Copper Alloy
SF24	1046	Spillages	Lead Alloy
SF25	1046	Nail	Iron
SF26	1047	Finger Ring	Copper Alloy, Plastic
SF27	1047	Buttons	Copper Alloy, Glass
SF28	1047	Sheet Fragment	Copper Alloy
SF29	1047	Object	Copper Alloy
SF30	1047	Spillages	Lead Alloy
SF31	1048	Ring	Copper Alloy
SF32	1048	Discs	Copper Alloy
SF33	1048	Buttons	Copper Alloy
SF34	1048	Spillage	Lead Alloy
SF35	1057	Button	Copper Alloy
SF36	1110	Fragment	Copper Alloy
SF37	1124	Coin	Copper Alloy
SF38	1125	Coin	Copper Alloy
SF39	1000	Buckle	Iron
SF40	1044	Nail	Iron
SF41	1048	Object	Iron
SF42	1044	Slag	Slag
SF43	*1057*	*Fragment*	*Bone (originally identified as lead alloy)*
SF44	1000	Tobacco Pipe	Fired Clay
SF45	1043	Tobacco Pipe	Fired Clay
SF46	1044	Tobacco Pipe	Fired Clay
SF47	1045	Fragment	Glass
SF48	1000	Slag	Slag
SF49	1048	Slag	Slag
SF50	1046	Object	Stone

4.2 Assessment of Fired Clay Tobacco Pipe By K. Weston

A total of 14 bowl fragments and 26 stem fragments of fired clay tobacco pipe were recovered from eight contexts from excavations at York Community Stadium; contexts 1000, 1043, 1044-48 and 1104.

The only complete bowl was recovered from plough furrow C1044 and is likely date to the early 18th century, in addition to three fragments from a second bowl. This context also contained the majority of the stem fragments (15) recovered from across the site.

The earliest clay pipe fragment was recovered from ditch fill C1104; this stem fragment is green glazed and is likely to date to the 17th century. All other bowl and stem fragments within the assemblage date to the 18th/19th century.

None of the stems or bowl fragments contained any makers' marks and therefore it is not possible to establish an exact date or provenance for any of the fragments within this assemblage.

No further work is recommended.

Table 5 Fired clay tobacco pipe description and dating

Context	Context Description	Date	Bowl	Stem	Description	Notes
1000	Machining Pitch Make-Up/Unstrat	18th/19th C	9	4	6 18th/19th C bowl fragments with moulded decoration, 3 plain bowl fragments, 3 18th/19th C stem fragments and 1 17th/18th C stem fragment	SF 44
1043	Plough Furrow	18th/19th C	1	1	1 18th/19th C stem fragment and 1 18th C bowl fragment with moulded decoration	SF 45
1044	Plough Furrow	18th/19th C	4	15	1 early 18th C bowl with moulded decoration, 3 bowl fragments (date unid as frags too small but likely to all be from the same bowl, 15 18th/19th C stem fragments.	SF 46
1045	Plough Furrow	19th C		2	1 17th/18th and 1 19th C stem fragment	
1046	Plough Furrow	19th C		1	1 19th C stem fragment	
1047	Plough Furrow	19th C		1	1 19th C stem fragment	
1048	Plough Furrow	19th C		1	1 19th C stem fragment	
1104	Ditch Fill	17th C		1	1 green glazed 17th C stem fragment	

4.3 Assessment of Glass by K. Weston

A total of 13 fragments of glass were recovered from five contexts from excavations at York Community Stadium. Nine sherds appear to be Roman vessel glass, two sherds are from post medieval drink bottles and two sherds are modern. Fragmentation within the assemblage is high and signs of abrasion are present on some of the sherds. Two of the Roman vessel sherds show evidence of heat damage (one from Context 1000 and SF47 from Context 1045).

Four sherds were recovered from Context 1000 (Machining Pitch Make-Up/Unstratified). These included three residual possible Roman bottle sherds (two body and one rim) and one body sherd from a 20th century wine or beer bottle. The remaining nine sherds were recovered from plough furrows (Contexts 1044, 1045, 1047 and 1048). Six of these sherds appear to be Roman and are likely to be from Roman straight sided bottles which would have been for everyday use within the household for food stuffs and storage. These vessels were in use throughout the 1st, 2nd and 3rd centuries, though within these plough furrows these sherds are likely to be residual. The remaining three sherds are post medieval in date and are all from Context 1048; one sherd from a 19th century wine/spirit bottle and two sherds of modern blue glass, possibly from a shop window advertising board. The one Roman sherd in this context is certainly residual.

No further work is recommended for this assemblage.

Table 6 Glass description and dating

Context	Context Description	Date	Total NOSH	Description	Notes
1000	Machining Pitch Make-Up/Unstrat	Post medieval	4	Two body sherds from blue green straight sided ?Roman vessel(s), one heat damaged rim sherd from green aqua ?Roman vessel and one olive green body sherd from post-medieval vessel.	One heat damaged
1044	Plough Furrow	Roman (probably residual)	2	One body sherd from blue green straight sided ?Roman vessel and one body sherd from green aqua straight sided ?Roman vessel.	
1045	Plough Furrow	Roman (probably residual)	1	One sherd blue green heat damaged glass, possibly from Roman vessel.	Heat damaged
1047	Plough Furrow	Roman (probably residual)	2	Two body sherds from blue green straight sided ?Roman vessel(s).	
1048	Plough Furrow	Post medieval	4	One body sherd from 19th Century wine/spirit bottle, one body sherd from green aqua cylindrical ?Roman bottle, and 2 sherds of unid modern blue glass.	

References

Price, J. and Cottam, S., 1998. 'Romano-British Glass Vessels: a handbook', *Practical Handbook in Archaeology No. **14** (York: Council for British Archaeology).*

APPENDIX 5 – THE CONSERVATION ASSESSMENT BY C WILKINSON

Table 7 40 artefacts assessed by YAT Conservation

Material	Quantity
Iron	5
Copper Alloy	26 (2 composite with glass)
Lead Alloy	8
Bone	1

5.1 AIMS AND OBJECTIVES

This report aims to meet the requirements of MAP2 (English Heritage, 2001) and MoRPHE (English Heritage, 2006) to produce a stable site archive. This has involved X-radiography and an assessment of the condition, stability and packaging of the finds.

The condition of the various classes of material is summarised and indicators of unusual preservation noted. The potential of the assemblage for further analysis and research is discussed, and recommendations made for further investigative conservation and long term storage.

5.2 PROCEDURES

Fifteen of the metallic recorded finds (with the exception of Lead alloy) were X-rayed using standard Y.A.T. procedures and equipment. One plate was used, and given a reference number in the YAT conservation laboratory series (X8598). The X-ray number was written on each small find bag. Each image on the radiograph was labelled with its small find number. The plates were packaged in archival paper pockets.

All forty of the finds were examined under a binocular microscope at X20 magnification. The material identifications were checked and observations made about the condition and stability of the finds, recorded below. An assessment of each find is available on the Integrated Archaeological Database (IADB).

5.3 CONDITION ASSESSMENT SUMMARY

5.3.1 Metals

Copper Alloy: The copper alloy finds were in fairly good condition. A majority showed some signs of active corrosion but this is in general limited to small spots and should be kept at bay by dry storage. Two of the copper alloy finds (SF26 and SF27) were composite objects with glass. The glass was in good condition and showed no signs of deterioration or glass disease.

Iron: A majority of the iron finds were heavily corroded and in poor-fair condition. Only one iron find (SF40) was found to be in good condition. Some level of active orange corrosion was noted on all of the iron finds along with cracks and flaking of the surface. Dry storage is essential.

Lead alloy: The lead alloy finds were in fairly good condition. A thin patchy layer of active white corrosion was visible on all the finds. Active corrosion should be kept at bay by dry storage. Keep objects away from sources of organic acids such as paper and card.

5.3.2 Inorganics:

Bone: There was one find identified as a fragment of bone (SF43). The bone is in good condition with possible fibrous bundles present on the surface.

5.4 STATEMENT OF POTENTIAL

5.4.1 Indicators of preservation:

There were no indicators of a specific burial environment, all objects having come from well-aerated terrestrial deposits.

5.4.2 Dating evidence:

There are four coins in the collection, dates are unclear but they appear to range from the Georgian Period (SF37 and SF38) to the Victorian Period (SF13 and SF31).

5.4.3 Evidence of technology, craft or industry or anything else of note

Metalworking: There are four examples of slag (SF3, SF42, SF48 and SF49) and three examples of lead metal working waste/spillage (SF24, SF30 and SF34) which have been recommended for referral to an archaeometallurgist.

5.5 RECOMMENDATIONS

5.5.1 Further Investigative Conservation

Investigative conservation is proposed for the following artefacts to aid identification and clarification:

Table 8 Proposed investigative conservation

SF	Material	Aim	Estimated time
4	Copper Alloy	Stabilise crack	2 hours
9	Lead Alloy	Investigate to obtain object ID	3 hours
26	Copper Alloy and Glass	Consolidate and investigate	3 hours
39	Iron	Consolidate and stabilise	3 hours

Selected items could have corrosion removed fully for publication or display.

5.5.2 Analysis and specialist Support

To be arranged after the investigative conservation has been completed.

Archaeometallurgy: If the context warrants further investigation the slag and metalworking waste (SF3, SF24, SF30, SF34 SF42, SF48 and SF49) could be referred to an archaeometallurgist.

5.5.3 Packaging and Long Term Storage

All finds were well-packed in suitable sealed containers to provide the appropriate desiccated and damp environments.

All materials used are archive stable and acid-free. The metal finds should be stored in a desiccated environment at less than 15%RH. The desiccated environment will need to be maintained. Keep lead alloys away from sources of volatile organic acids such as paper and card.

5.6 REFERENCES

English Heritage, *Management of Archaeological Projects*, 1991.

English Heritage, *Management of Research Projects in the Historic Environment*, 2006

APPENDIX 6 – THE CERAMIC BULIDING MATERIAL BY J.M. MCCOMISH

A total of ten sherds of ceramic building material weighing a total of 360g were present at the Community Stadium site. The CBM was recorded to a standard YAT methodology, whereby each sherd is recorded in full, with only a representative sample being retained for long-term curation. The sherds were for the most part very small (8 weighed 25g or less). All of the material was of medieval or later date, and it was all recovered from either modern plough furrows or from the deposits cleared by machine at the start of the excavation.

There were seven sherds of medieval plain tile of 13-16th century date, one sherd of ridge tile of 13-16th century date, one sherd of pan tile of 17th century or later date and one sherd of brick which could have been of medieval or post-medieval date. All of the sherds were typical for the York area in terms of their fabrics and dimensions.

This small quantity of material had probably come to the site through the practice of manuring fields.

The ceramic building material does not merit any further research.

Table 9 CBM by context

Context	Date range	Forms present
1000	13-16th	Plain, Ridge
1044	13-16th	Plain
1046	13-16th	Plain
1047	14-16th+	Medieval brick?
1048	13-16th	Plain

APPENDIX 7 – INTRODUCTION TO RESEARCH SESSIONS BY DR. J. RIMMER

Held in association with York Explore Library and Archives, City of York Council, and JORVIK DIG, the aim of the research sessions were to provide workshop-based training in archive study, online historical resources, and the Historic Environment Record for York. By looking at the broader history of Huntington and the wider context of sport in York, we also sought to expand our current knowledge and understanding beyond the area of excavation, and to enthuse and encourage the public to get involved in the project through documentary and archaeological research. The sessions were fully booked up and attended by 30 people over three days.

The archive sessions were held at the newly-refurbished York Explore Library and Archives from 23rd -25th March 2015 and provided the opportunity for participants to explore historic maps and plans, written records dating to the 19th century, and photographs which detailed the history of sport in York. Training was also given on how to use the local newspaper archive held on microfilm and online through The British Newspaper Archive. York Archaeological Trust's newly-created archaeology library at JORVIK DIG presented the ideal venue for the investigation of the historic environment in and around Huntington Stadium. Training was provided in how the Historic Environment Record database for York can be searched and interrogated for known archaeological activity in and around the site of the new Community Stadium.

Over the course of the research sessions, a number of discoveries were made about the relatively recent development of the area. In studying the historic maps and identifying landscape features and buildings, it became clear that the new Community Stadium is located in an area known historically as Huntington South Moor, which was characterised by open fields and scattered farms. The current field pattern probably dates to 18th- or early 19th-century enclosure, though ridge and furrow dating to the medieval and post-medieval periods suggests long-term ploughing in the area. A number of lanes providing access through the landscape: New Lane, Jockey Lane, Brecks Lane and Butters Lane. The 1852 map indicated that New Lane was formerly known as South Lane. Huntington Grange, a listed building dating to the 18th century, is one of few surviving historic farms in the area.

In comparing the historic maps with aerial photographs taken in the 1930s, 1950s and 1980s, we found that the character of the area to the south of Huntington has changed significantly in the last 30 years. A high number of archaeological investigations have recently taken place ahead of new residential, commercial and industrial developments. Jockey Lane was extended in the 1980s to link New Lane and Malton Road, and to facilitate the busy out-of-town commercial area of Monks Cross.

Further information about the development of the Huntington area was identified by members of the group who had either lived there for several years, or knew the area well. Personal recollections shed light on former buildings such as the brewery on New Lane, which was built in the early 20th century and demolished to make way for the new housing development. Brewery Cottages on New Lane were purportedly built to house the employees of the brewery and now represent the final vestiges of this industry.

The research sessions were successful in providing an introduction to archival and library research, and also in unearthing information about the development of the area around the new Community Stadium across the 18th-20th centuries. It brought people from different backgrounds (students, professionals, and local history and archaeology enthusiasts), many of whom also took part in the archaeology training sessions.

Participants**:**

B. Angel, J. Auty, M. Auty, B. Barker, S. Barron, J. Bibby, A. Calverley, T. Carmichael, B. Collison, P. Cope, M. Cowen, D. Dodwell, J. Errington, J. Geddes, V. Gilham, K. Green, M. Johnson, P. Leggett, R. Marden, S. Nelson, A.E. Nuttall, L. Reed, C. Roberts, C. Robinson, A. Royle, J. Shrewsbury, A. Silcock, P. Thoresby, L. Venables, R. Weatherill and H. Wilkes

APPENDIX 8 – GEOTECHNICAL TRIAL PITS BY I. D. MILSTED

6 geotechnical test pits were observed on 17th March 2015. These formed part of a wider geo-technical survey but pits 11-14 and 35-6 were the only ones to potentially impact on the archaeology.

Each trial pit was excavated using a JCB and measured approximately 1.2m X 2m in plan, and were excavated until natural deposits were observed. Four of the pits, numbers 11 – 14, were located in the area of the pitch, forming an east-west aligned transect at intervals of 20m save for pit 14, which was off-set to avoid disturbing the running track that was still in use at the time of the survey. A further two pits, numbers 35 and 36, were located in the grassed area to the north of the pitch (number 36) and in an area of grass to the west of the pitch near the perimeter of the stadium (number 35) (Figure 2).

Trial pits 11-14 exhibited an identical deposit sequence. Natural clay was observed at 0.60m below ground level and is analogous with deposit 1169 identified in the main excavation. The uniform level of the surface reflects the truncation of natural deposits during the construction of the stadium in 1989.

Natural clay was overlain by the make-up and turf of the pitch, consisting of a membrane, then approximately 0.20m of clean gravel, 0.20m of clean sand and 0.10m of turf/topsoil. These deposits were grouped together in the main excavation as context 1000. In pits 12 and 13 the surface of natural clay was disturbed with large fragments of limestone and chalk, which in the light of the main excavation probably represent an early sub-base for the rugby pitch that was later removed and replaced with the gravel. In pit 14, a plastic service pipe was exposed aligned N-S; this was not disturbed. The pipe was removed during the main excavation and transpired to be part of a gravity-fed irrigation system.

Pit 36 contained a very similar sequence, but natural clay was observed at 0.44m BGL, 140mm higher than under the main pitch. Above this was a 0.19m thick layer of silty clay that probably represents re-deposited natural material disturbed during the stadium construction; this was sealed beneath 0.12m of clean sand and 0.13m of turf.

Pit 35 was markedly different from the others, and was the only one observed not within the pitch or pitch apron. This was observed because it was located in the approximate projected position of the Roman bank line. Natural clay was identified at 0.74m BGL and consisted of orange silty clay. Above this was a 0.47m thick mixed, banded deposit of dark grey and orange silty sandy clays with brick, stone, charcoal, degraded wood fragments and possible coal. This deposit may represent pre-stadium ground make-up deposits contained re-deposited 19th and 20th century waste material. Above it were a 0.15m thick layer of crushed limestone and sand, a 0.10m thick layer of clean small gravel and 0.02m of topsoil, all derived from the construction of the stadium.

No archaeological features were observed in any of the trial pits and Figure 24 demonstrates that none were located over the Roman features encountered during the main excavation.

APPENDIX 9 – THE BORE HOLE SURVEY BY S. CARSON

9.1 Summary

A total of 26 borehole cores were extracted from three delineated transects at approximately 15m intervals. The borehole survey was undertaken to establish the potential for the presence of preserved botanical remains related to a Roman camp, particularly in relation to the substantial ditch feature. The deposits were characterised and recorded in the field after extraction and subsequently were replaced. It was established that all of the laminated silt deposits below any existing ephemeral soil horizon were glacial in origin, pre dating human occupation and as a consequence, unlikely to be of archaeological significance.

9.2 Introduction

A trench of approximately 7450 square metres in size was excavated to recover remains from a known Roman camp that had been identified previously by aerial photography. Part of two sides and one corner of the Roman camp ditch were present, but the associated bank and most of the internal features had been truncated by modern activity. A small number of undated pits and post-holes were present, together with 18th century plough furrows and modern field drains (McComish 2015). Subsequent to excavation a borehole survey was conducted within the trench along 3 transects along the length of the pitch area, spaced 30m apart. The trench was approximately 60m wide and allowed for one transect along each edge and one through the centre. A total of 26 boreholes were extracted and analysed to characterise the soils and deposits associated with the Roman camp.

The underlying solid geology consisted of Sedimentary Bedrock Sherwood Sandstone Group, formed approximately 229 to 271 million years ago in the Triassic and Permian Periods. The superficial geology within the area consists of Alne Glaciolacustrine Formation clays and silts which formed up to 2 million years ago in the Quaternary Period when the local environment was dominated by ice age conditions (www.bgs.ac.uk). Occasional areas of windblown deposits are also present within the area, formed from wind eroding, transporting and depositing sand and silt-sized material (www.bgs.ac.uk).

9.3 Methodology

Three delineated transects were selected for investigation, each with eight or nine borehole locations at approximately 15m intervals and a maximum 2m depth. Each transect had a borehole sunk at roughly 15m intervals along it. Transect 1 was located along one edge within the trench and allowed for 8 boreholes to be extracted, transect 2 was within the middle of the trench and allowed for 9 boreholes to be extracted, two of which were located outside the trench through the manmade track, and transect 3 was located along the other edge of the main excavation trench from which 9 boreholes were extracted, including one through the track.

The boreholes were extracted with a motorised percussion auger drill rig with borehole tube diameters of *c*. 15cm. Once extracted, the individual contexts were assessed visually, identified and characterised in the field before the core was replaced. This was achieved by determining texture following Avery (1973) with reference to McMillan & Powell (1999) and colour loosely following Munsell (2009). All descriptions and processes undertaken conform to guidelines set out by English Heritage (Ayala et al 2007).

9.4 Results

Results are detailed and discussed below. Borehole Description Sheets and Drawn Deposit Models were prepared for the archive; they are not reproduced in this report as the results were of minimal interest. The description sheets and deposit model describe only three boreholes from each of the transects as a representation of the typical deposits encountered. The majority of the cores contained at least five important soil/sedimentological units, described in detail below.

9.4.1 Silty Clay

The majority of the cores contained compacted light grey mottled silty clay, some with occasional sandy or silty lenses, directly underlying the soil, when ephemeral soil horizons were present. The silty clay did not vary in depth; it had an approximate extent of 50cm in all of the boreholes with no other significant characteristics. The structure was predominantly described as massive (compact/consolidated) with mottles probably caused by a degree of intermittent waterlogging.

9.4.2 Fissured Laminated Clay

This deposit occurs in all of the cores to varying depths and extents, commonly below the light grey clay deposit. Described as silty clay, the characteristics of this deposit are dark greyish brown laminated clay with intermittent light grey clays and dark brown silts. These laminations have subsequently been fissured/cracked at some stage post deposition and have infilled with grey silts. The fissuring is likely to have been caused by weathering such as freeze/thawing or intermittent drying and waterlogging causing infiltration of silt material. These laminated deposits were formed in a low energy lacustrine environment in the Quaternary Period.

9.4.3 Laminated Clay

Extensive deposits of very finely laminated clays occur in most cases directly below the fissured laminated clay deposits, with the exception of boreholes 1 and 6-9 where they are entirely absent. Described as dark greyish brown lacustrine silty clay with frequent fine light grey silty laminations, the deposit consisted of alternating layers of dark brown fine silts and light grey brown clays. These laminations were particularly well preserved and the laminations were easily peeled apart in sheets between many of the light grey clay lenses. These laminated clays were formed under the same depositional condition as the overlying fissured clays.

9.4.4 Modern/Made Ground

The boreholes taken at the locations outside the extent of the main trench were drilled through the modern man made stadium track and construction/levelling material. This consisted of asphalt material, red sandy gravel and limestone cobbles. This material was directly overlying the ephemeral natural soil horizon and subsequent underlying superficial geological deposits.

9.4.5 Soil

Soil was observed in the baulk sections of the trench. The soil was almost entirely absent within most of the cores within the trench area, and only preserved within the boreholes outside the perimeter of the main excavation trench, under the made ground of the track.

This consisted predominantly of homogenous minerogenic light grey brown silty clay with little to no organic content. The soil displayed a mainly loose, granular structure, with areas of more compaction and massive (consolidated) structure. The lower boundary of the soil was abrupt and wavy with little mixing between the underlying clay deposit. Fragments of charcoal were observed, and other inclusions were limited to small fragments of ceramic building material.

9.5 Discussion

Each borehole was extracted only to an extent of 2m. This was due to the similarity of the deposits to those typically recorded within borehole surveys conducted by other contractors/prospectors in the immediate area (www.bgs.ac.uk). The same superficial glacial and post glacial lacustrine deposits are widespread in the Vale of York, extending over a vast area; subsequently they were expected to be encountered also at the site of York Stadium. No other significant archaeological horizons such as buried soils or artefacts would be expected within these glacial deposits.

The ephemeral soil horizon observed in the boreholes extracted outside the area of excavation also appeared to be characteristically similar to soils described nearby (www.bgs.ac.uk). However, this comparison is entirely tentative due to the limited extent of comparable material, although the same basic characteristics were observed and described within each of the borehole survey areas.

The superficial deposits within the borehole survey area appear to be dominated by low energy deposition of silts and clays, with extensive laminated clays occurring in every borehole. The deposits were described as fine laminar silty clay with frequent fine light grey silty laminations/partings. The partings were very clearly defined, not affected by fissuring or infilling and consisted of fine 2mm laminations of fine silts and clays. These deposits did not contain any gravels, sands or coarser material and are likely to be low energy lacustrine deposits. Therefore, these deposits pre date any occupation within the area as they represent the formation of the glacial Alne Glaciolacustrine silts and clays laid down in glacial lakes 2 million years ago. The glaciolacustrine clays and silts were deposited in cold periods by glaciers scouring the landscape and depositing moraines of till, with outwash sand and gravel deposits from seasonal and post glacial meltwaters (www.bgs.ac.uk)

It is probable that the fissured laminated clay deposits and the laminated clay deposits are part of the same depositional sequence and deposited at the same time under the same low energy lacustrine conditions during the Quaternary Period. The uppermost layers have become fissured post deposition, whether by weathering freeze/thawing or intermittent drying and waterlogging as a result of glacial or post glacial events. The effects of such have probably been exacerbated by subsequent bioturbation via roots.

Almost all of the deposits exhibited no evidence of mixing or transitional phases, with the boundaries between horizons generally sharp, abrupt or clear indicating rapid deposition and no substantial inactive period to allow for significant soil formation. No buried soils or organic deposits were recorded under the laminated clays and silts within any of the cores. Consequently, the overall general understanding of the superficial deposits and sediments within the vicinity have been characterised as entirely glacial in origin, pre dating human occupation and cannot be associated with or linked to any archaeology within the area.

9.6 Recommendations

Further borehole prospection could be conducted within the adjacent fields to establish the extent of the large ditch of the Roman camp in conjunction with the aerial photography and other known research. This could enable the discovery of more extensive soils that have not been truncated by the construction of the stadium and may be able to locate areas of potential environmental significance.

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APPENDIX 10 – ENVIRONMENTAL ANALYSIS BY DR. J. MILLER AND S. CARSON

10.1 Summary

Samples from Camp 2 Roman camp at Huntington Moor, York were submitted for specialist environmental processing and analysis. Undated pit features that potentially pre date the Roman camp ditch contained only scant carbonised botanical remains. However, the limited number of charcoal fragments recorded was indicative of burning of large timbers of Scots pine type and oak. Deposits from within the Roman ditch produced a similarly limited botanical assemblage, here related primarily to burning of large timbers of Scots pine type and exploitation of local woodland resources. Evidence for burning of heathland turves was also found; this may reflect domestic fuel use but could also be suggestive of burning of a turf rampart associated with the defensive ditch. No remains directly related to food processing or consumption practices were recovered, and no artefacts were found. The results concur with initial interpretations of the short lived nature of the site including limited, non intensive occupation. Collectively, the burning of large Scots pine and birch timbers especially, together with the evidence for burnt turves could support the interpretation of the slighting of the camp including conflagration of a defensive banked ditch palisade.

10.2 Introduction

Aerial photography undertaken in 2002 by English Heritage revealed the presence of two Roman camps in the Huntington Moor Area. The south-easternmost of these was termed Camp 1, whilst the other to the north-west was denoted Camp 2. A trench of approximately 7450 square metres in extent was excavated in 2015 to recover remains from Camp 2. Part of two sides and one corner of the Roman camp ditch were revealed, although the associated bank and most of the internal features had been truncated by modern activity. A small number of undated pits and post-holes were present, together with 18th century plough furrows and modern field drains (McComish 2015).

A range of samples from the Camp 2 Roman ditch and undated associated pit features recovered during excavation were submitted to the Dickson Laboratory for specialist processing and analysis. It was anticipated that results obtained would contribute towards the interpretation of the site, provide answers to address specific research questions posed and provide evidence for the nature and land use of the occupied area over time.

10.3 Methodology

10.3.1 Bulk Sample Processing

Bulk samples were received within 10 litre plastic tubs, sealed to exclude light and air. They were described and then floted for the recovery of environmental evidence and artefacts using standard methods and a bespoke adapted Siraf flotation system including pumped recycled water with four settling tanks. Samples were disaggregated by agitating in water over a 500µm diameter mesh supported over a flotation drum. Light, primarily organic materials that floated as wash-over (flots) were retained on 500µm and 1mm calibrated mesh diameter Endicot sieves whilst other materials larger than 500µm that did not float remained on the mesh as the retent. Organic materials that were deemed potentially waterlogged were retained in water pending closer laboratory examination, whilst non-waterlogged flots were dried according to standard practice.

Wet retents were spread out on plastic trays and examined visually before being tagged and dried. Flot materials from non-waterlogged deposits were wrapped in blue acid-free paper, tagged and recorded before being air dried on trays in a warm drying room. Once dried, the retents were sieved using 4mm and 2mm Endicot sieves and sorted using magnified illuminated lamps for all categories of artefacts and ecofacts. A magnet was employed to locate magnetised stone and metals. Sorted materials were bagged, labelled for submission to specialists and weighed (where relevant) using an Ohaus CS200 digital scale calibrated to 0.01g. Sorted residues were also weighed on a digital scale, bagged and stored pending decision for disposal.

Sorting of flots was undertaken using a Nikon 93756 binocular microscope at variable magnifications with associated Schott cold light source. The matrix composition was described according to Hubbard & Clapham's abundance scale (1992).

10.3.2 Botanical Material Identification

For each sample, the total volumes of the flot and carbonised botanical material from the sorted retent were recorded separately. The flot was then added to the corresponding retent and the total volume sorted through a stack of calibrated 4mm, 1mm and 500µm mesh diameter sieves. The volume of carbonised material from each fraction thus obtained was recorded; this gave a total volume of charcoal present and an indication of fragments size.

Charcoal identification was undertaken using the reflected light of either a Brunel SP80 or Zenith metam P-1 metallurgical microscopes at x40 magnification. Depending upon volume present, 100% of the charcoal >4mm fragment size, or a representative sample thereof, was identified as completely as preservation would allow. Weights were obtained. Charcoal >2mm fragment size was scanned, and if necessary and feasible a selection was identified to ensure the identified material provided an accurate representation of the species composition for each sample analysed. All cereals, other seeds and vegetative macroplant remains were identified as specifically as preservation would allow using either a Nikon 93756 or Zeiss Stemi binocular microscope at variable magnifications of between X8 - X40 with associated Schott cold light sources.

Charcoal identification was undertaken with reference to Schweingruber (1990). Seed identification was confirmed by comparison with images within Beijerinck (1947) and Cappers et al. (2006) and the Dickson botanical reference collection. Plant nomenclature follows Stace (1997).

10.3.3 Faunal Remains Identification

The faunal remains were examined in laboratory conditions and recorded with guidance from Dobney *et al.* (1999) and O'Connor (2008). For each context, observations were made on bone preservation, colour, angularity of breaks and fragment size. Evidence of butchery, gnawing, burning or post depositional damage were recorded where present. Identification of species was completed using published identification guides (Pales and Garcia 1981), as well as comparative material from the zoo-archaeological reference collection at the Dickson Laboratory. Wherever specific identification was not achievable, bone fragments were classified using the following categories; unidentified mammal, unidentified bird, or unidentified fish. Mammalian fragments that retained characteristics that enabled estimation of the size of the animal were assigned to one or more of the following categories: large

mammal (the size of horse/cow/large cervid [i.e. deer]), medium mammal 1 (the size of sheep/goat/pig/small cervid), medium mammal 2 (the size of dog/cat/hare), small mammal (the size of rodents, mustelidae etc). Very small bone scraps (usually smaller than 10mm) were recorded as unidentifiable and only counted approximately.

10.4 Results

Results are detailed and discussed below, with tables of results attached separately. Table 1 denotes Environmental Results; Table 2 is Retent Sorting Results and Table 3 records Faunal Remains Results.

10.4.1 Isolated Undated Features – pits/postholes

No artefacts that were conclusively prehistoric were recovered during the excavation, although a number of badly truncated undated features scattered across the site were considered likely to relate to this period. They included a linear feature, a number of small pits/post-holes and a cluster of pits containing burnt materials (McComish 2015).

Context 1049 Sample <02> Pit

Few botanical remains were recovered, consisting primarily of numerous small fragments of oak (*Quercus*) charcoal with one fragment of willow/poplar (*Salix/Populus*). The oak may have derived from a structural timber or have been burned intentionally for whatever purpose. No other notable components were recovered from the sample. Evidence for post depositional alteration of the fill was noted with the presence of uncarbonised roots and worm eggs.

Context 1159/1158 Sample <14> Pit/Posthole

The sample did not contain any botanical material other than frequent uncarbonised modern roots. A number of small magnetic fragments were recovered that are likely to have derived from natural iron pan formation within the pit.

Context 1161/1160 Sample <15> Pit

A small number of charcoal fragments from this fill were identified as predominantly Scots pine (*Pinus sylvestris*) type with occasional birch (*Betula*) and willow/poplar. Rare uncarbonised seeds including stinging nettle (*Urtica dioica*) creeping/field buttercup (*Ranunculus repens/acris)* and celery-leaved buttercup (*Ranunculus sceleratus*) are likely to be later intrusions. The seed taxa are typical native arable/ruderal weeds of damp places; as such they could have grown at the site and could plausibly be contemporaneous with the ditch fill, given the high clay content of these fills. However, the seeds were very well preserved, suggesting that whilst not necessarily particularly modern in origin, they are possibly indicative of subsequent environmental conditions.

Context 1064 Sample <01> Pit

Only charcoal derived from Scots pine type was identified from this fill of a pit interpreted on site as potentially having contained cess. The presence of charcoal would suggest that waste disposal is feasible, although given that all of the wood was of the same type, it could also reflect demolition of a structure, since Scots pine produces excellent timbers for structural uprights. However, resinous woods like pine also make excellent kindling. Roman legionaries are recorded as having carried Scots pine spills for firelighters (Dickson & Dickson 2000; Miller 2002). Since the trees would have grown well within the local, acid moorland environment,

the wood is very likely to have been exploited for domestic fuel as well as construction. Consequently, provenance here could reflect various possibilities. One possible sedge (*Carex*) seed and a buttercup may be later intrusives, this suggestion supported by the presence of invertebrate fragments and prolific roots.

10.4.2 Large Roman Ditch

A major ditch was present at the site, roughly L shaped in plan with the northern portion aligned north-west to south-east, turning through a rounded corner and the southern portion aligned south-west to north-east. Eight cross-sections were excavated through the ditch, each of which was allocated an individual set of context numbers for the cut/cross-section and associated fills (McComish 2015).

Context 1060 Sample <03> Cross-Section 1062

Very little remained of the sample after processing and only two fragments of charcoal were recovered, both identified as birch. Other than a few roots and small vegetative remains, the only other botanical remains present were one Scots pine needle leaf and a creeping/field buttercup seed, both uncarbonised. These remains are likely to reflect subsequent intrusions to the fill.

Context 1093 Sample <04> Cross-Section 1080

Very little remained of sample <04> after processing and only one fragment of charcoal was recovered, identified as birch. Uncarbonised plant macros indicative of acid moorland and damp heath were also recovered, although in a very limited quantity. These included tawny sedge (*Carex hostiana*) and yellow sedge (*Carex viridula)* seeds, heather (*Calluna vulgaris*) and cross-leaved heath (*Erica tetralix*) leaves and a tormentil (*Potentilla erecta*) seed. One stinging nettle seed was also recorded, suggestive of cultivation or more eutrophic soil conditions.

Although the moorland/heath taxa would concur with the Scots pine and birch charcoal recorded to imply they could be contemporaneous with the site, a number of worm eggs were also noted, to imply that the deposit had undergone some degree of bioturbation. Consequently, there is the possibility of later seeds becoming incorporated.

Context 1096 Sample <05> Cross-Section 1087

Occasional charcoal fragments, described as having derived from large round wood twigs or branches, were recovered and identified as predominantly Scots pine type with two fragments of birch and one willow/poplar. However, many of the Scots pine fragments also appear to have derived from trunk wood. The charcoal assemblage probably reflects utilisation of local mixed pine/birch woodland resources, gathered directly for use as fuel or re use of waste from structural components. The sample also contained carbonised heather family (Ericaceae) stems, possibly derived from burning of turves or peat used as fuel, or the burning of a structural component such as ditch banking. One uncarbonised silver birch seed was recorded; this is very likely to be a modern introduction to the fill.

Context 1100 Sample <06> Cross-Section 1102

The botanical remains from this fill included four fragments of Scots pine trunk wood charcoal, two of birch derived from medium branch wood and one fragment of hazel (*Corylus*). This is the only hazel charcoal recorded from any of the samples analysed. The charcoal assemblage

probably reflects utilisation of the mixed pine/birch woodland that would have grown within the immediately local environment. Two carbonised heather family stems were also recovered, which may have derived from burning of heathland turves or peat, with turves being more likely in this environment. Uncarbonised seeds and leaves of cross-leaved heath were the only uncarbonised botanical remains and could be loosely contemporaneous or more modern in origin. A spot sample of wood remains from this context was identified by S. Allen (pers. comm.) as six fragments of ash and one fragment of oak.

Context 1101 Sample <07> Cross-Section 1102

Numerous small fragments of charcoal were recovered, predominantly Scots pine type derived from trunk wood with two fragments of birch branch wood. The only other carbonised remains were stems of grass (Poaceae). These remains suggest mixed provenance including the burning of turves and larger timbers, whether for fuel, or perhaps destruction of a structure. The possibility cannot be excluded that this relates to a turf bank with timber palisade for the ditch, such as was recorded along the Antonine wall in Scotland (Dickson & Dickson 2000; Miller 2007).

Context 1108 Sample <09> Cross-Section 1111

Occasional charcoal fragments of Scots pine trunk wood, two fragments of birch large round wood branches and two fragments of willow/poplar were recovered from this ditch fill. The charcoal assemblage probably reflects utilisation of local mixed pine/birch woodland resources, gathered specifically for use as fuel or as structural components. The sample also contained carbonised heather family (Ericaceae) stems, possibly derived from burning of turves or peat, with turves being more likely on this particular site. The turves may have been burned as fuel, or could reflect residual evidence of a turf embankment for the ditch. As such, the association with Scots pine wood may imply the burning of a structural component such as a palisade upon the bank. The birch and willow type could reflect hearth fuel or wattle panelling.

Context 1118 Sample <10> Cross-Section 1121

A number of charcoal fragments were recovered from this deposit, identified as birch and Scots pine trunk wood. These were present in almost equal quantities and are likely to reflect utilisation of very local woodland resources. One fragment of oak was also recovered, also derived from a large timber. The oak is of note, as this tree type would not grow within the local acidic wet heath/moorland so reflects timber brought in from further afield. Charcoal derived from trunk wood is often associated with burning of structural components, whether as a result of demolition or re use of timbers as fuel. No other significant botanical remains were noted to help with the interpretation of this fill, although roots were noted and invertebrates including earthworm eggs were recorded. The bioturbation potential implies that the oak charcoal recorded may not be contemporaneous with the more abundant Scots pine and birch.

Context 1119 Sample <11> Cross-Section 1121

The deposit contained a slightly more diverse charcoal assemblage than many of the others, although the botanical remains in general were still somewhat limited in number. The fragments were identified as predominantly Scots pine, mostly from large trunk wood, with

occasional birch and alder (*Alnus*) branch fragments and one fragment each of oak and willow. This was the only sample to contain alder. Both alder and willow are reflective of relatively wet, eutrophic environments. Such a diverse assemblage is indicative of exploitation of mixed local woodland resources over a wider landscape, whether for hearth fuel or any of a number of other purposes. The sample also contained carbonised heather family (Ericaceae) stems. This could reflect destruction of a turf bank (with structural palisade) or waste from the banking down of a domestic hearth.

Context 1119 Sample <12> Cross-Section 1121

The charcoal assemblage from sample 12 was very similar to that of sample 11, albeit without the addition of alder. Here, fragments were identified as predominantly Scots pine type, mostly derived from large trunk wood, with occasional birch and one fragment each of oak and willow/poplar. Slightly poorer preservation and smaller fragment sizes here meant that absolute separation of poplar and willow was not achievable, although willow is more likely. Similarly, the Scots pine type is very probably also Scots pine itself, although absolute confirmation requiring preservation of fine detail on the rays was not visible in these small fragments. As with sample 11, the sample also contained carbonised heather family (Ericaceae) stems, suggesting burning of turves or peat. Collectively, the carbonised assemblage implies utilisation of local woodland and moorland resources, whether reflecting domestic hearth fuel or the destruction of banking and structural palisade associated with the ditch. Uncarbonised plant macros indicative of a wet marshy environment and damp heath were also recovered, although in very limited numbers. These included three each of tawny sedge and yellow sedge seeds, six tormentil (*Potentilla erecta*) seeds and a stinging nettle seed. However, these could be intrusive, since roots and a number of worm eggs and invertebrate fragments were also noted. This implies that the deposit had undergone a degree of bioturbation.

Sample <12> Context 1119 was the only sample to contain bone. This consisted of one fragment *c*. 2mm in size, too small to be identified. The fragment was completely calcined, demonstrating that it had been burnt at high temperatures in a well oxidised fire. This piece of bone was well preserved, suggesting it had not been reworked significantly post-deposition. Since this was the only fragment of bone recovered, it is not possible to interpret the provenance of it, although it is interesting to note. Nevertheless, it would support the interpretation that at least some of the charcoal assemblage from this fill might relate to domestic hearth waste. However, the fragment is so tiny that redeposition from later activity on the site cannot be excluded absolutely.

Context 1132 Sample <13> Cross-Section 1137

Very little remained of the sample after processing and only three fragments of charcoal were recovered, identified as willow/poplar, albeit even some of that only tentatively. Such a limited assemblage cannot provide significant interpretative value to the deposit.

10.4.3 Spot Finds

Three contexts contained animal bone spot finds which were hand collected in the field and submitted to the Dickson Laboratory for analysis.

Context 1000 Make–Up Material and Turf of Pitch

The bone from Context 1000 consisted of four small fragments c.10-20mm, none of which were diagnostic of species. They were all were recorded as medium to large mammal due to their shape and size and were calcined, indicating that they had been burnt at high temperatures in a well oxidized fire. Three demonstrated extensive surface cracking, suggesting that they had been burnt for a prolonged period. These three were well preserved, displaying sharp, un-worn edges. The fourth fragment was also calcined, but appeared to be more poorly preserved with rounded edges and a loss of original surface texture. The presence of calcined bone in this context strongly supportive of human activity, although with only four small fragments of bone it is not possible to interpret the provenance or reason for burning in greater detail.

Context 1047 18th-19th Century Features

Two fragments of bone were recovered from Context 1047. Neither of these was diagnostic of species, but both were large enough to identify that they originated from large mammals. These fragments were both well worn and displayed signs of root-etching across the bone surface which demonstrates a high level of post depositional taphonomic change.

Context 1048 18th-19th Century Features

A single fragment of bone was recovered from Context 1048. This was not diagnostic of species, although the shape and size of it indicated that it originated from an animal the size of a sheep/goat, pig or small deer (i.e. medium mammal 1). The fragment was calcined, demonstrating that it had been burnt at a high temperature in a well oxidised fire. The burning of a medium mammal 1 in this way may be a sign of waste disposal following food preparation.

10.5 Discussion

The samples submitted for processing and analysis were extremely clayey and as a result took a significant length of time to process. The flots and retents thus obtained following flotation were very small, with very little botanical material noted and no artefacts recovered. The botanical remains were mostly limited to occasional to frequent small charcoal fragments. The charcoal fragments were in some instances very small and regularly were somewhat abraded, suggesting at least a degree of re deposition of material. It is likely that this reflects burnt, trampled detritus incorporated when the ditch was backfilled. The variation in deposit profiles within the Roman ditch suggest that the camp ditch was rapidly backfilled at some stage, the most logical interpretation for which is that the camp was deliberately slighted when abandoned (McComish 2015). The destruction would have included firing of any banking and palisades related to the ditched enclosure.

No significant artefacts were recovered from any of the samples. This, together with the limited charcoal assemblage, may suggest that the site has either been significantly truncated or that occupation of the camp was non-intensive and ephemeral. This evidence corroborates the initial interpretation of the site. No evidence of carbonised cereals or other evidence of consumption or subsistence practices was found, other than the few finds of bone, most of which are considered to postdate the Roman ditch. One of the undated possible prehistoric features contained a number of fragments of magnetic material, although these are considered to have natural provenance. This pit/posthole fill (Contexts 1159/1158) contained

iron pan that would have formed at the interface between the upper sediments and the underlying impermeable clay, where subsequent waterlogging prevented the natural filtration and dissipation of water.

The undated pit features have been assigned a probable prehistoric date and are considered to predate the Roman camp ditch. Only a few carbonised botanical remains were recovered from these features, limited to small charcoal fragments identified predominantly as Scots pine in two of the pit fills (Contexts 1161/1160 & 1064) and oak within another (Context 1049). This apparent bias may be explained by the availability of such resources or selection for the particular qualities of the wood. The large quantity of oak in pit fill (Context 1049) may reflect demolition waste or a post burnt *in-situ*, whether accidentally or by design; whether in some ritual function or as part of a phase of remodelling and reuse of a structural element. Conversely, oak charcoal was rare within the Roman ditch fills, limited only to occasional fragments within the fills at cross-section 1121. This contrast further supports the archaeological interpretation mooted that these sets of features are not contemporaneous.

The charcoal from the Roman ditch samples are representative of exploitation of local mixed woodland resources, probably used for a variety of purposes, including, but not limited to fuel or kindling within small domestic hearths and camp fires. Much of the Scots pine and Scots pine type charcoal was described as having derived from trunk wood and therefore more than likely represents burning of large timbers. The difference here between Scots pine and Scots pine type relates purely to the level of identification able to be achieved with absolute confidence. The entire assemblage is very likely to be Scots pine *per se.* Scots pine produces good quality timbers, for which there are numerous prior uses known, including roofing shingles and roof beams (Gale and Cutler 2000). Scots pine grows well on acidic, impoverished, wet and shallow soils, such as are indicated by the highly clay substrate and macrofossil indicators of acid moorland/wet heath found, including the sedges, heathers and tormentil. Pine is highly likely to have been a substantial part of the local heathland vegetation during the Roman occupation. Other than for construction, Scots pine timbers may have formed a substantial part of a palisade relating to the ditch defences. The resinous small branches and hand-cut spills also make excellent kindling and firelighters (Miller and Ramsay 2002).

Birch was also particularly prevalent and may have had structural use; birches can be coppiced (Dickson and Dickson 2000) to produce numerous branches of uniform diameter. Birches are pioneer trees with a wide habitat range. Scots pine-birch woodland is frequently supported on heathland and was the main vegetation maximum on acid impoverished moorland in many parts of the British Isles in prehistory (Bennett 1989). Collectively, the proliferation of Scots pine and birch charcoal within the small assemblage found is strongly suggestive of the use of locally available resources. There were also occasional finds in the Roman ditch fills of hazel, alder and especially willow/poplar charcoal; again these were probably all willow but with full identification potential limited by preservation and fragment size. These taxa, together with the rare oak found, demonstrate that the wider landscape also contained more eutrophic soils, some of it still marginal and wet but at least some of it better drained and deeper.

The question was posed regarding the organic fills of the ditch and whether evidence exists of them being derived from the use of turves or peat as fuel. Carbonised heather stems were

recovered previously from soil samples from the excavation of Camp 1 in 2002 which alluded to the use of such material for fuel (McComish 2015). Carbonised heather family stems were also found within the Roman ditch fills (Contexts 1096, 1100, 1108 & 1119) at Camp 2. These remains are strongly indicative of burning of peat or turves, more than likely turves introduced from the local heathland. However, it does not necessarily follow that the turves were burned as fuel. Given the archaeological evidence to support the interpretation that the camp was deliberately slighted (McComish 2015), it is considered quite feasible that turves placed within the ditch itself or forming banking associated with a defensive timber palisade may have been burned during the conflagration to destroy the camp. There is evidence to support the burning of turf ramparts during the destruction of camps along the Antonine Wall (Dickson and Dickson 2000; Miller and Ramsay 2007), although at those sites the turves were of grassy origin, again reflecting the use of local resources.

The charcoal assemblage differs to those from other Roman camps within the area, with different taxa present. At Cawthorn Camps, North Yorkshire, the charcoal assemblage was dominated by oak and ash (*Fraxinus*) but also include carbonised heather type stems within a sample from part of the rampart (Hall 2000), similar to those samples from the Camp 2 ditch fills. The difference between Cawthorn camps and the camps that form part of the current study is likely to reflect local availability of resources. However, the heather stems are of note in both cases. Heathland turves are well known for previous use to bank domestic hearths for cereal processing, and so where associated with carbonised cereals, this is likely to be their provenance. However, no cereals were found at York Stadium and only one very tiny bone fragment was recorded, which could even be a later intrusion. Consequently, in such cases the turves must have been used either for fuel or been part of the ditch itself, whether as a consolidatory lining or form defensive banking.

A similar charcoal assemblage to the Cawthorn camps was also observed at Monks Cross, York with the assemblage dominated by oak and ash (Hall et al. 2003). Such a disparity in taxa at similar sites within the area may be reflective of availability of local woodland resources or intentional selection for a specific purpose or activity that was not carried out at Camp 2 of the current study. When available, oak is usually the preferred wood for fuel use that requires prolonged burning at very high temperatures. As such oak is regularly associated with metalworking and industrial processes and has been the smelting fuel of choice since antiquity (Tylecote 1962; Dickson and Dickson 2000). However, no evidence for such activities was observed with the features and this might have influenced the choice of taxa used for fuel used within more domestic hearths and fires. It is also possible that such oaks as were available near Huntingdon Moor were avoided rather than selected for incorporation within a camp intended to have only ephemeral use. Oak is a hard wood that requires great effort to model, whereas the softwood of Scots pine by contrast is much easier to work with.

No carbonised cereals or other plant remains were recovered from the samples, with only occasional uncarbonised seeds identified. These are quite likely to be later intrusions and not contemporaneous with the fills within the features. The scarcity of contemporaneous plant macrofossils may be explained by unfavourable preservation conditions within the features or as a result of very little food preparation or production activities having occurred at the site in the first instance. Again, this lack of occupation evidence may corroborate the interpretation of the short lived nature of the site.

All of the samples contained roots, insect/invertebrate remains or worm eggs in variable abundance. The presence of such remains may explain the occurrence and preservation of uncarbonised seeds within deposits not deemed to be waterlogged. The uncarbonised botanical remains could have been introduced to the fills as a result of bioturbation and other post depositional processes. If so, any such finds would be limited to being purely indicative of the nature of the landscape in subsequent times. However, many of the taxa present are indicative of a fairly damp ruderal heath or moorland, such as the charcoal assemblage and high clay content of the fills would suggest. Consequently, they reflect the unimproved local landscape of this site. The high clay contents means that the possibility cannot be excluded entirely that some of them may be contemporaneous with the occupation levels examined here, although others, especially the nettles and buttercups, reflect agricultural activities and are very likely to be later intrusions, albeit not necessarily reflecting very recent times.

Overall the bone recovered was of minimal quantity and quality and consequently adds little to the interpretation of the site, beyond acknowledging the presence of it in relation to other artefacts.

Table 10 Environmental sample assessment results

5791 York Community Stadium	Context	1049	1158	1160	1064	1060	1093	1096	1100	1101	1108	1118	1119	1119	1132
YORYM: 2015.406	Sample	02	14	15	01	03	04	05	06	07	09	10	11	12	13
	Feature type	pit (cess?)	posthole/pit	pit	pit (cess?)	large Roman ditch									
	Cut/cross-section	1050	1159	1161	1065	1062	1080	1087	1102		1111	1121			1137
Flot (total vol)		10ml	15ml	15ml	20ml	<5ml	5ml	<<5ml	10ml	35ml	<5ml	5ml	10ml	<5ml	20ml
uncarb roots		+++	++++	++++	++++	+	++	+	+	+	+	++	+	++	+
uncarb veg material		++	-	++	++	+	++	+	+++	++++	+	+	++	+	+++
Invertebrates		+	+	+	++	+	+	+	-	-	-	+++	++	++	+
cv		+++	-	++	+	+	+	++	-	++	-	++	+	++	+
Charcoal total volume (F+R)		25ml	Nil	10ml	20ml	<5ml	2.5ml	5ml	5ml	5ml	5ml	30ml	7.5ml	10ml	<5ml
Flot & Retent charcoal >4mm		20ml	-	5ml	10ml	<2.5ml	-	<5ml	<5ml	<5ml	<5ml	20ml	<5ml	5ml	<<2.5ml
Flot & Retent charcoal <4mm>2mm		5ml	-	5ml	10ml	<<2.5ml	<<2.5ml	<<5ml	<2.5ml	<2.5ml	<5ml	10ml	<<2.5ml	<5ml	<<2.5ml
% ID >4mm		100%	-	100%	100%	100%	>2mm 100%	100%	100%	100%	100%	100%	100%	100%	100%
AMS option Y / N (narrative)		Y (*Salix/Pop*)	N	Y (*Salix/Pop*)	N	N	N	Y (*Betula*)	Y (*Betula*)	Y (*Betula*)	Y (*Betula*)	Y (*Betula*)	Y (*Salix*)	Y (*Betula*)	Y (*Salix/Pop*)
Charcoal ID	**Common name**														
Alnus	Alder	-	-	-	-	-	-	-	-	-	-	-	2 (0.05g)	-	-
Betula	Birch	-	-	3 (0.17g)	-	1 (0.02g)	`(0.01g)	2 (0.10g)	2 (0.09g)	2 (0.09g)	2 (0.08g)	18 (2.49g)	3 (0.17g)	4 (0.09g)	-
cf *Betula* incl bark	cf birch	-	-	-	-	1 (0.05g)	-	-	-	-	-	-	-	-	-
Corylus	Hazel	-	-	-	-	-	-	-	1 (0.03g)	-	-	-	-	-	-
Pinus sylvestris ss	Scots pine	-	-	-	-	-	-	-	4 (0.20g)	-	5 (0.28g)	-	6 (0.37g)	-	-
Pinus sylvestris type	Scots pine type	-	-	12 (0.50g)	42 (2.18g)	-	-	6 (0.15g)	-	11 (0.28g)	-	11 (0.79g)	-	8 (0.50g)	-
Quercus	Oak	27 (4.43g)	-	-	-	-	-	-	-	-	-	1 (0.05g)	1 (0.11g)	1 (0.06g)	-
Salix	Willow	-	-	-	-	-	-	-	-	-	-	-	1 (0.05g)	-	-

Salix/Populus	willow/poplar	1 (0.05g)	-	3 (0.21g)	-	-	-	1 (0.04g)	-	-	2 (0.13g)	-	-	1 (0.02g)	1 (0.05g)
cf Salix/Populus	cf willow/poplar	-	-	-	-	-	-	-	-	-	-	-	-	-	2 (0.09g)
(carb) Macros	**Common Name**														
Ericaceae stems	heather family	-	-	-	-	-	-	7 (0.30g)	2 (0.03g)	-	3 (0.03g)	-	2 (0.01g)	2 (0.06g)	-
Poaceae stems	grass family	-	-	-	-	-	-	-	-	3 (0.04g)	-	-	-	-	-
(uncarb) Macros	**Common name**														
Betula pendula fruit	silver birch	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Calluna vulgaris leaf	Heather	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Carex hostiana seed	tawny sedge	-	-	-	-	-	1	-	-	-	-	-	-	3	-
Carex viridula sl seed	yellow sedge	-	-	-	-	-	1	-	-	-	-	-	-	3	-
cf Carex sp	cf sedge	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Erica tetralix seed	cross leaved heath	-	-	-	-	-	-	-	5	-	-	-	-	-	-
Erica tetralix leaf	cross leaved heath	-	-	-	-	-	2	-	4	-	-	-	-	-	-
Pinus sylvestris leaf	Scots pine leaf	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Potentilla erecta seed	Tormentil	-	-	-	-	-	1	-	-	-	-	-	-	6	-
Ranunculus repens/acris seed	creeping/field buttercup	-	-	1	1	1	-	-	-	-	-	-	-	-	-
Ranunculus sceleratus	celery-leaved buttercup	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Urtica dioica seed	stinging nettle	-	-	3	-	-	1	-	-	-	-	-	-	1	-
Other															
Nitrogen fixing root nodules	root nodules	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Earthworm/worm eggs	Worm	3	-	-	1	1	>10	2	-	-	-	6	-	3	-
Invertebrate fragments	beetle legs, carapace etc	-	-	1	4	-	2	-	-	-	-	-	-	6	-
magnetised particles (natural)	natural iron pan	-	+++ (5.80g)	-	-	-	-	-	-	-	-	-	-	-	-

Table 11 Retent sorting results

York Stadium 5791			Sample info (volumes in L)					Constituents weights (g)								
Context	Sample	Type	total tubs	tubs processed	sample vol	retents processed	Retent vol	Charcoal	Wood	Bone	Shell	CBM	Metal	magnetic material	Plant material	
1049	02	GBA	1	1	10	1	0.07	4.23								
1060	03	GBA	1	1	8	1	0.02	0.07								
1064	01	GBA	1	1	10	1	0.05	3.93								
1093	04	GBA	1	1	10	1	0.01	0.09								
1096	05	GBA	1	1	8	1	0.07	0.88								
1100	06	GBA	1	1	10	1	0.10	0.51								
1101	07	GBA	1	1	7	1	0.05	0.69								
1108	09	GBA	1	1	8	1	0.07	0.73								
1118	10	GBA	1	1	10	1	0.05	6.13								
1119	11	GBA	1	1	10	1	0.05	1.28								
1119	12	GBA	1	1	10	1	0.02	0.89		0.02						
1132	13	GBA	1	1	7	1	0.02	0.16								
1159	14	GBA	1	1	10	1	4.00							5.85		
1161	15	GBA	1	1	8	1	0.02	1.36								

Table 12 Faunal remains results

Context	1000	1047	1048	1119	Total
sample	N/A	N/A	N/A	12	
medium mammal 1			1		**1**
large mammal		1			**1**
medium to large mammal	4	1			**5**
unidentified				1	**1**
Total NISP	**4**	**1**	**1**	**1**	**8**

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APPENDIX 11 – GEOPHYSICAL SURVEY BY I. D. MILSTED

11.1 INTRODUCTION

York Archaeological Trust was commissioned by York City Council to deliver a community project to survey and excavate of the remains of the Roman Marching Camp on Huntington South Moor, located beneath the pitch of the former Ryedale Stadium, Monks Cross, York (Figure 1). This work was undertaken in advance of the proposed redevelopment of the stadium.

As part of this project, YAT were asked by the City of York Archaeologist John Oxley to include the extant, scheduled earthwork remains of the camp located in the field immediately west of the stadium (SE 6209 5469). This earthwork, Scheduled Ancient Monument (SAM) 1020976, was identified during aerial survey by English Heritage in 2002 (Horne and Macleod 2002, 3), along with a second camp to the South East that was excavated by YAT in 2004 (Johnson, 2004). It was obvious that the scheduled camp earthworks had previously extended into the field now occupied by the stadium, and the purpose of the geophysical survey was to provide comparative data for the survey and subsequent excavation of the stadium pitch, alongside delivering a training opportunity for community volunteers.

YAT applied to English Heritage for a Section 42 licence in February 2015, which was granted (Case no. SL00098596). The original project programme of April-May 2015 was subsequently delayed to June, and the 6 month reporting condition of the licence was extended by the Inspector of Ancient Monuments, Dr. K. Emerick.

The geophysical survey of the pitch took place from 23-27th February 2015, and the survey of SAM 1020976 took place during the excavation of the pitch between 8th and 16th June 2015. Both surveys were led by Community Archaeologist Dr. J. Kenny and carried out by a team of volunteers recruited by YAT for the Community Stadium project.

This appendix is an adapted version of a stand-alone report on the SAM survey (YAT report 2015/41, prepared for Historic England to discharge the Section 42 licence conditions.

11.2 METHODOLOGY

11.2.1 Stadium pitch survey

20 grid squares measuring 20m X 20m were laid out over the 0.6 ha area of the stadium pitch using hand tapes. The extant rugby half-way line was used at a baseline and was surveyed by GPS.

The geophysical techniques employed were magnetometry and resistivity. Magnetometry was carried out using an FM256 Fluxgate Gradiometer at 0.5m sample intervals and 1m traverse intervals, using parallel surveying.

Resistivity was carried out using an RM15 and an RM85. The probe configuration was dual fixed with 0.5m spacing for both instruments, and samples were taken at 1m intervals with traverse widths of 1m by the zig-zag survey method.

The raw data for both survey types was processed in Geoplot 3.00 using standard despiking, edge match and interpolation techniques as detailed in the available Historic England guidance (Historic England, 2008, 43). The results were very limited, and only processed greyscale plots for each method are presented in Figures 18-19 (Appendix 12).

11.2.2 Scheduled Ancient Monument (SAM) survey

22 grid squares measuring 20m X 20m were laid out over the 0.9ha area of the SAM (Figure 20) using hand-tapes. The baseline was surveyed by GPS.

The geophysical techniques employed were magnetometry and resistivity. Magnetometry was carried out using an FM256 Fluxgate Gradiometer at 0.5m sample intervals and 1m traverse intervals, using parallel surveying. Unfortunately, the FM256 developed a fault that rendered the survey data unusable and there was no more time available to re-survey the area. Consequently, no magnetometry data is available.

Resistivity was carried out using an RM15 and an RM85. The probe configuration was dual fixed with 0.5m spacing for both instruments, and samples were taken at 1m intervals with traverse widths of 1m by the zig-zag survey method. The raw data was processed in Geoplot 3.00 using standard despiking, edge match and interpolation techniques as detailed in the available Historic England guidance (Historic England, 2008, 43). Both raw and processed greyscale plots are presented in Figures 20-21 and interpreted in Figures 22-24.

11.3 LOCATION, GEOLOGY & TOPOGRAPHY

The pitch survey was located at SE 6218 5472, and the SAM survey was located in three fields immediately west of the Huntington Stadium, centred on SE 6209 5469 (Figures 1 and 2). The pitch was entirely bounded by a running track with the stadium stands to the west and east; each field was demarcated by post and wire fences along former hedge lines. To the north the fields are bordered by housing, to the west by New Lane and to the south by further fields.

The underlying drift geology consists of glaciolacustrine silts and clays, and the solid geology is part of the Sherwood sandstone group (http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html accessed 09/09/15).

The pitch consisted of a level turf surface. The fields are generally level and currently in grass pasture. The bank of the SAM and the traces of ridge and furrow are visible on the ground as earthworks and vegetation traces in the central field, whilst in the two fields either side it is clear that the remains have been reduced by modern ploughing.

11.4 RESULTS

11.4.1 Survey of the pitch

Both the magnetometer and resistivity surveys of the pitch failed to identify any archaeological features (Figures 18-19). During a subsequent test-pit survey (Appendix 8) and the main excavation it was found that beneath the 0.10m thick turf lay a further c. 0.20m of clean sand and c.0.20-0.25m of gravel before the Roman features were identified cut into truncated natural deposits. This considerable depth of make-up deposits proved too dense for the geophysics equipment to penetrate. However, carrying out the survey provided a useful training exercise for the volunteer team, who then conducted a successful survey of the SAM.

11.4.2 Survey of the SAM

As stated above, the FM256 magnetometer suffered a fault that rendered the survey data irretrievable.

The resistivity survey results are presented here as an unprocessed plot (Figure 20) and a processed plot (Figure 21). The survey is interpreted in Figure 22 and can be compared with the excavated features within the stadium in Figures 23-24.

The features visible on the plot are present as areas of relatively high resistance and represent the western corner of the Roman marching camp bank and ditch, along with later east-west aligned ridge-and-furrow cultivation.

It is immediately apparent that the degree of greater plough-truncation in the two flanking fields, evident in the surviving earthworks, is also suggested by the survey results. In the central field, the western corner of the Roman camp bank is clearly visible as an 8m wide band, with the fainter traces of the 6-7m wide ditch outside it. In the flanking fields, only the outside of the bank is clearly visible, with the remainder much less distinct, whilst the traces of the ditch are barely apparent.

Unless the scheduled remains of the camp are excavated and suggest otherwise, it must be assumed that the bank appears as a high-resistance anomaly due to the packed clayey material it is constructed with. The relatively high-resistance signal of the ditch may relate to the deliberate in-filling of the ditch with clayey material slighted from the bank; this interpretation is suggested by the excavation of the Roman features in the neighbouring stadium pitch (McComish, 2015, 18) and is discussed below.

The ridge and furrow is tightly spaced and may relate to 18th and 19th century ploughing during the agricultural improvement of the moorland surrounding York. The excavation of the neighbouring stadium pitch also suggested that earlier, broadly spaced medieval cultivation may also be present, and this may be masked beneath the more recent ploughing in the survey area.

11.5 Discussion

The survey of the pitch was clearly affected by the c.450mm of gravel and sand make-up beneath the turf of the pitch. Faint linear traces are apparent but at most these may represent wheel ruts of the plant used during the stadium construction; similar traces were identified during the excavation.

The SAM survey results provide useful information to corroborate earlier work and contribute to the understanding of Camp 2.

The width of the bank supports the dimensions ascertained in an earlier earthwork survey of the SAM (Pinnock 2013, 10), which measured the surviving height at only 0.25m and corroborated the effect of differential ploughing identified in the geophysics.

The outline of the Roman camp as surveyed by geophysics relates very clearly to the outline of the ditch as revealed by the excavation of the former Ryedale stadium pitch (Figures 23-24; McComish 2015). No trace of the bank was apparent during the excavation as the pitch area was truncated to a depth of at least 600mm during the construction of the stadium in 1989. Despite this, the surviving ditch was still between 1.75m to 3.6m wide and 0.79m to 1.19m

deep (McComish, 2015, 12), suggesting that the 6-7m wide ditch revealed by resistivity may be in excess of 2m deep within the scheduled area. Very little dating material was recovered during the excavation save a small assemblage of abraded 2nd-3rd century Roman pottery (McComish, 2015, Appendix 3).

Combining both the geophysical survey and the neighbouring excavation allows an assessment of the camp dimensions by projecting the exterior lines from the identified corners. This provides dimensions for the ditch, with the short axis measuring c. 122m and the long axis measuring *c.* 162m. The precise Roman surveying of the corners during construction, evident in both survey and excavation, along with the recorded dimensions of the bank and ditch demonstrate that the construction of the camp more than satisfied the criteria stipulated in the 1st or 2nd century Roman military treatise entitled *De Metatione Castorum* (McComish, 2015, 17). No entrances were identified in the SAM; the excavation suggested a simple 5.2m wide gap forming an entrance on the north-eastern side and a possible *clavicula* along the south-eastern side.

It was clear from the relatively uneroded ditch sides and the vertical tip-lines in the backfills that the camp ditch had been purposefully and rapidly infilled shortly after its construction (McComish, 2015, 18). The backfills of the ditches were very clay-rich, with tiplines suggesting that the bank was the primary source of material. This may explain the relatively high-resistance presentation of the ditch in the geophysics, as the clayey fills mixed with the topsoil during ploughing and provided a denser contrast with the cleaner topsoil deposits either side of the ditch.

Camp 2 as explored by geophysics and excavation bears many similarities to Camp 1, where the ditch and bank were surveyed with similar precision, there were no demonstrably contemporary internal features and the ditches appear to have been rapidly infilled by slighting the bank. However, the ditches of Camp 2 were far more regular in size and profile than the highly irregular ditches of Camp1, and consistently contained the narrow 'ankle-breaker' slot at the base. The positioning of Camp 2 on slightly higher ground hinted at a more strategic location than Camp 1 (McComish, 2015, 20).

Despite their apparent differences in quality, it is difficult to definitively identify either Huntington Moor camp as a 'practice' or 'marching' or 'labour' camp *per se.* The 2-3rd century dates preclude an association with garrisoning and labour camps during the building of the fortress and therefore peace-time 'practising' seems likely, although troop movements up to Hadrian's Wall from the early-mid 2nd century, Antonius Pius' campaigns against the Scots in the mid 2nd century (McComish, 2015, 22) or even Septimus Severus' occupation of *Eboracum* in the early 3rd century (Ottaway, 2004, 79) may provide an active military context for the Huntington Moor camps.

The ridge-and-furrow visible in the geophysics and as extant earthworks was identified as of probably 19th century date by the original aerial survey (Horne and Macleod 2002, 7). Similarly narrow-gauged cultivation was present across the entire Camp 2 excavation and produced 18th and 19th century pottery and artefacts; this matched the results of the Camp 1 excavation and corroborates the interpretation that this is evidence for the early modern agricultural improvement of Huntington South Moor (McComish, 2015, 26).

11.6 References

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The author would like to thank the tenant and landowner for access to the field, and the Historic England team for advice.

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APPENDIX 12 – FIGURES

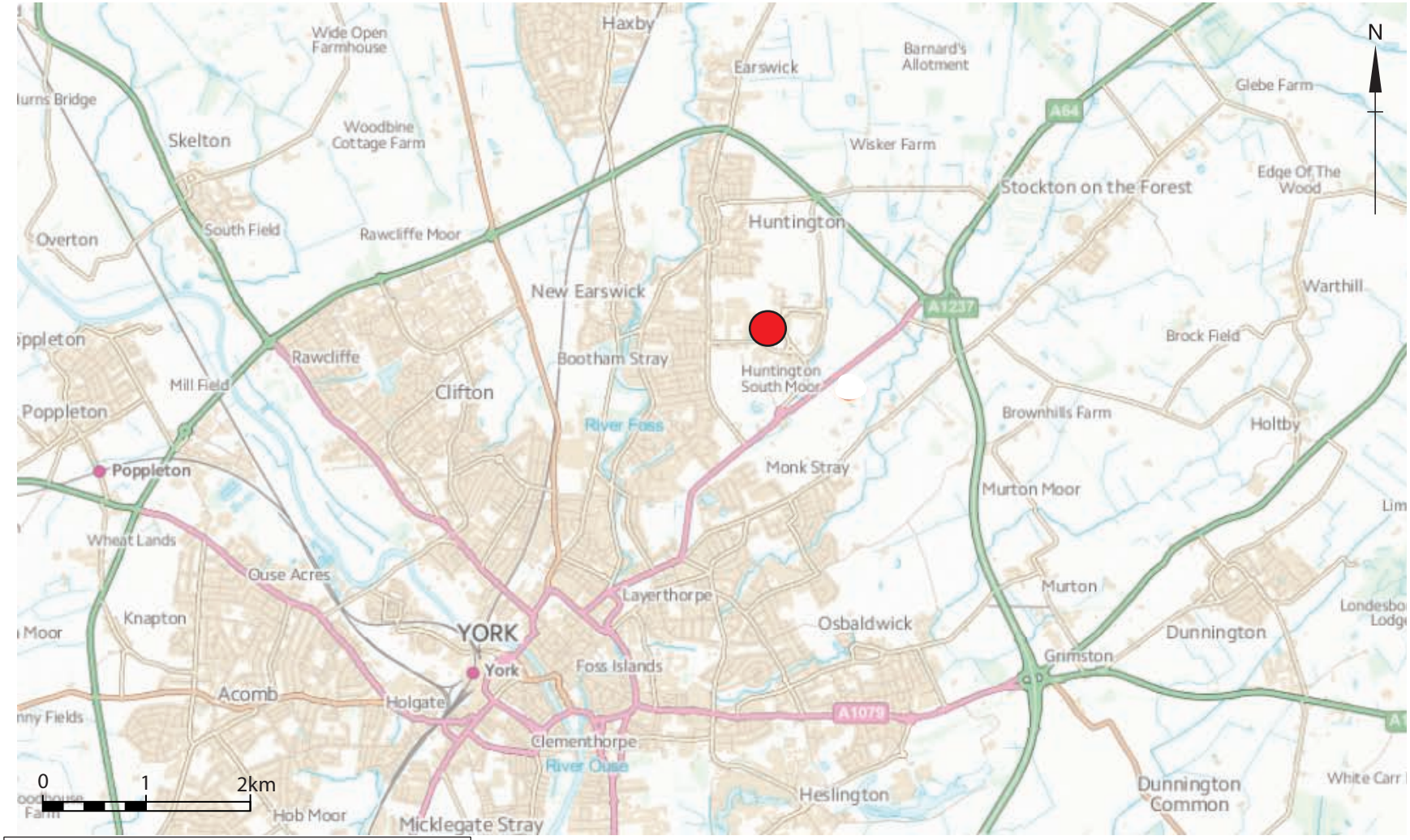


Fig. 01 Site location

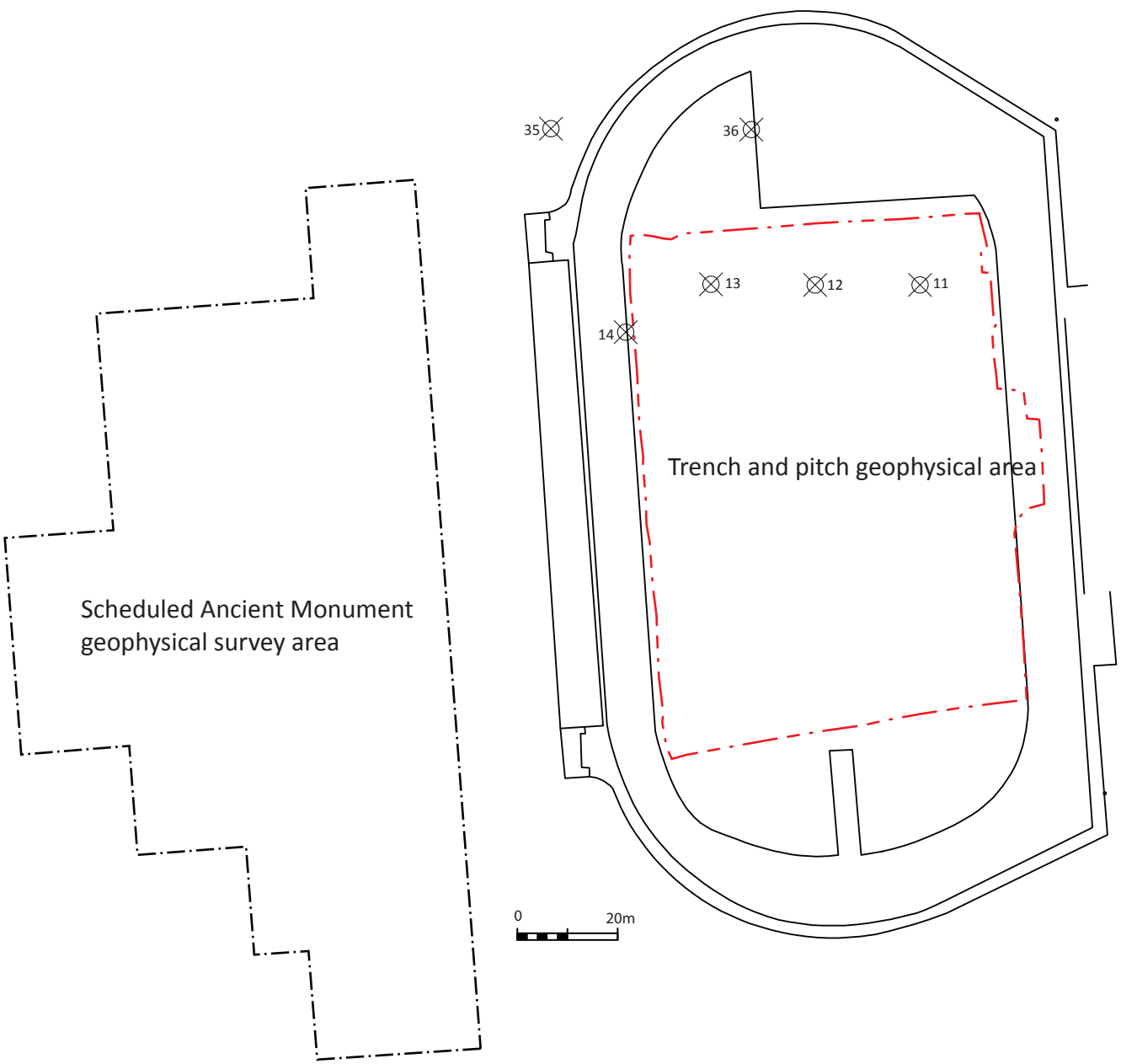


Fig. 02 Location of trench, SAM geophysical area and geotechnical testpits within stadium

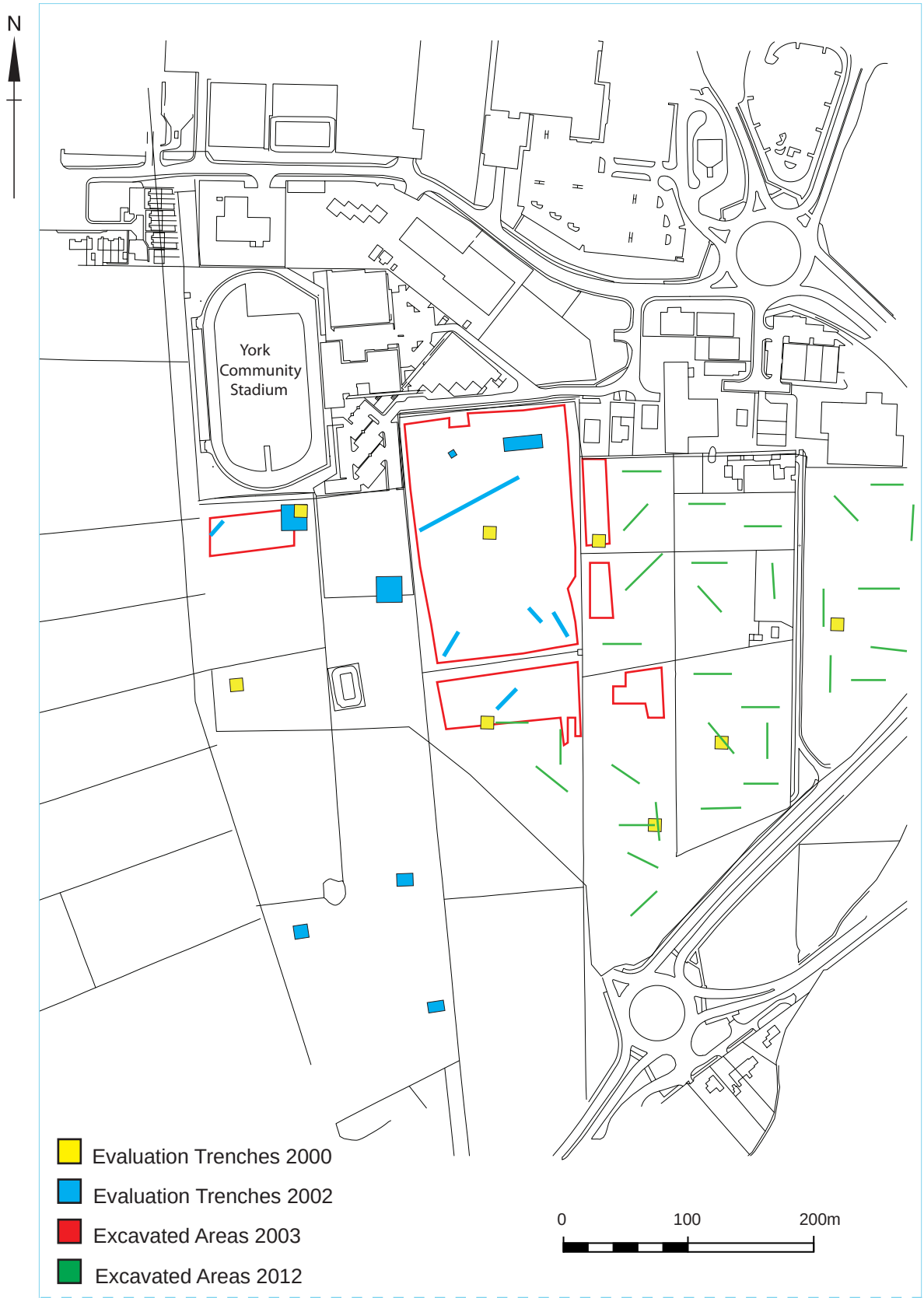


Fig. 03 Previous excavations and evaluations

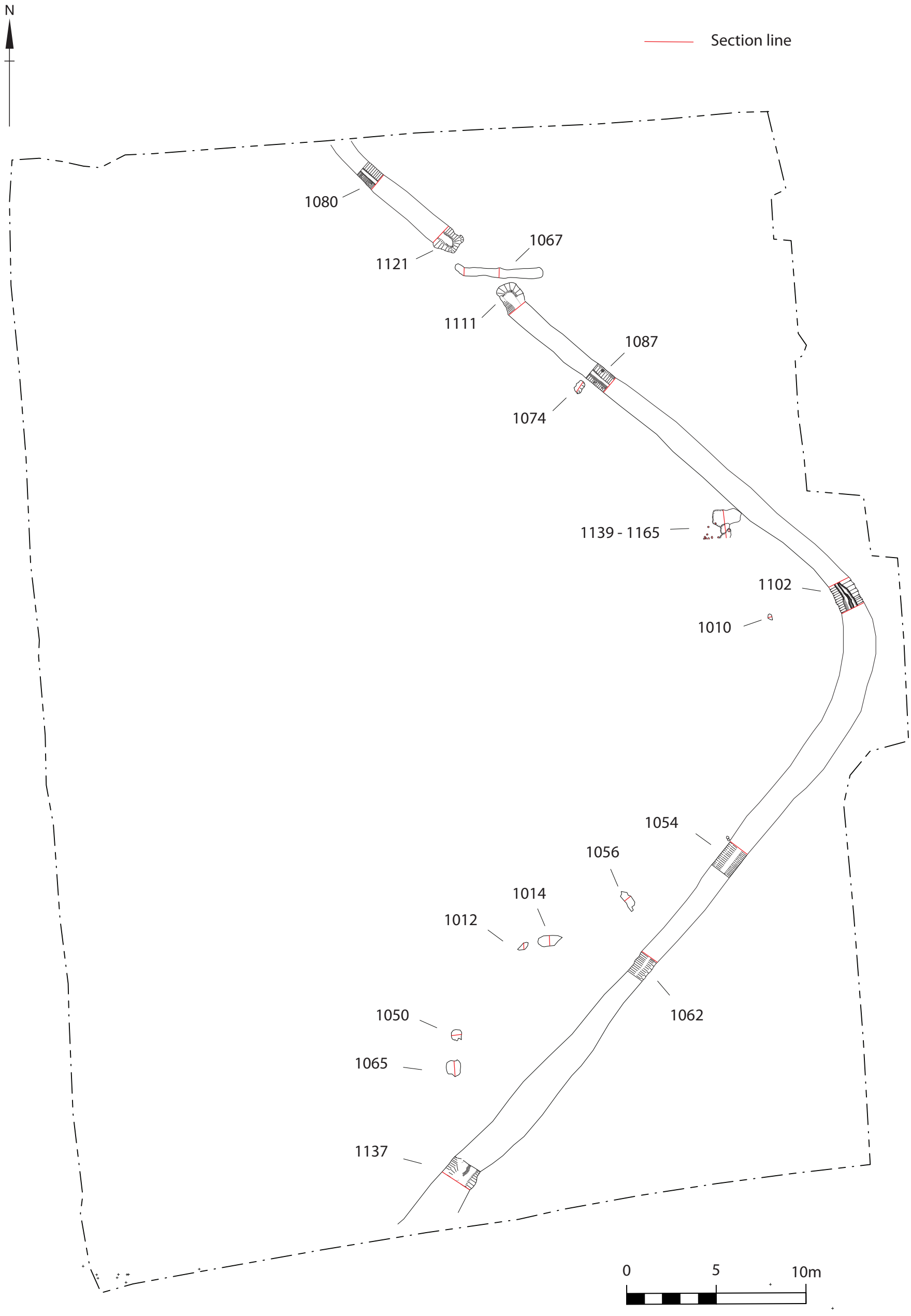


Fig. 04 Archaeological Features (labelled by cut number)

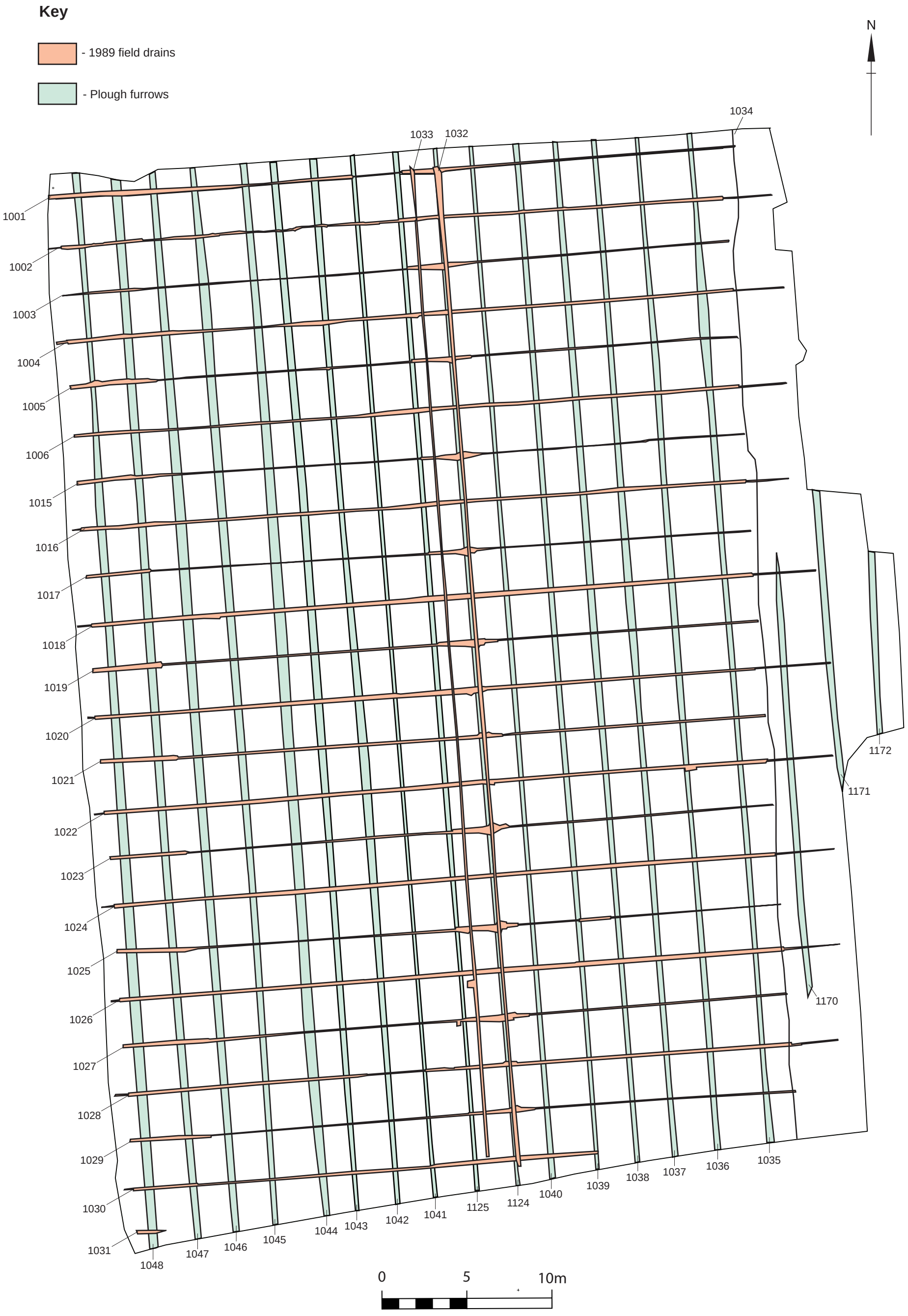


Fig. 05 Plough Scars and Field Drains

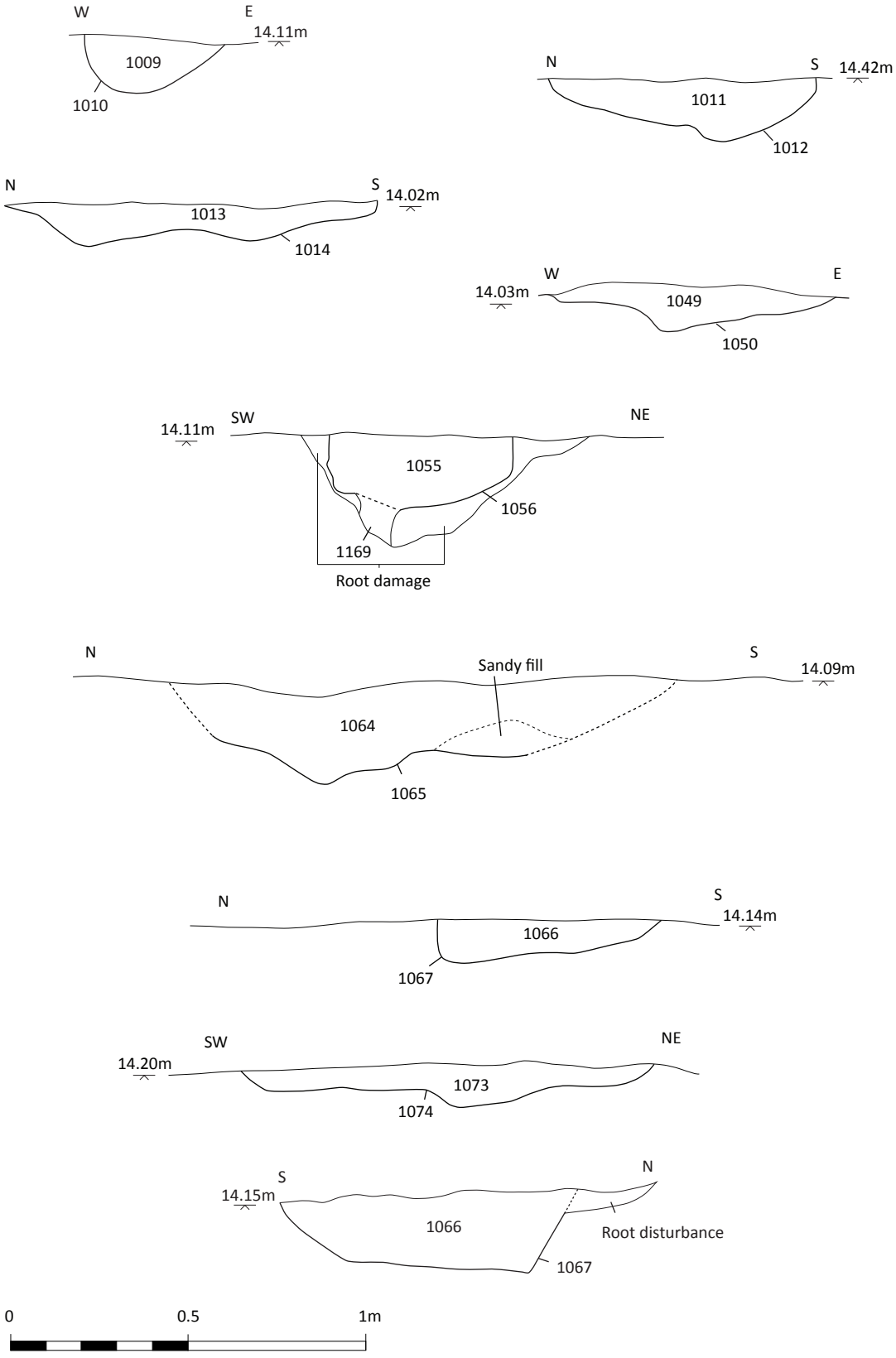


Figure 6: Sections of contexts 1010-1014, 1050, 1056, 1065-1067, 1074

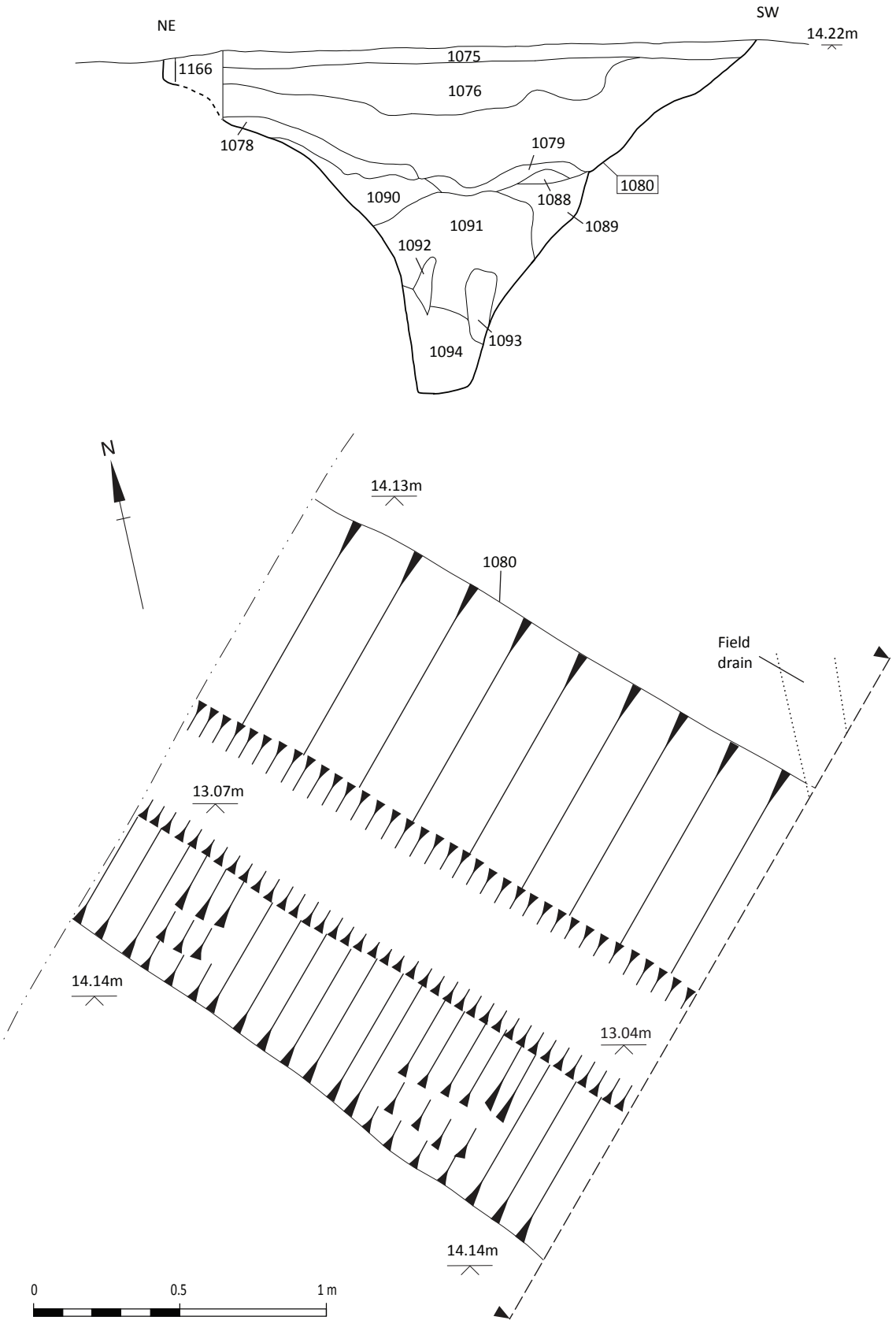


Figure 7: Plan and section of context 1080

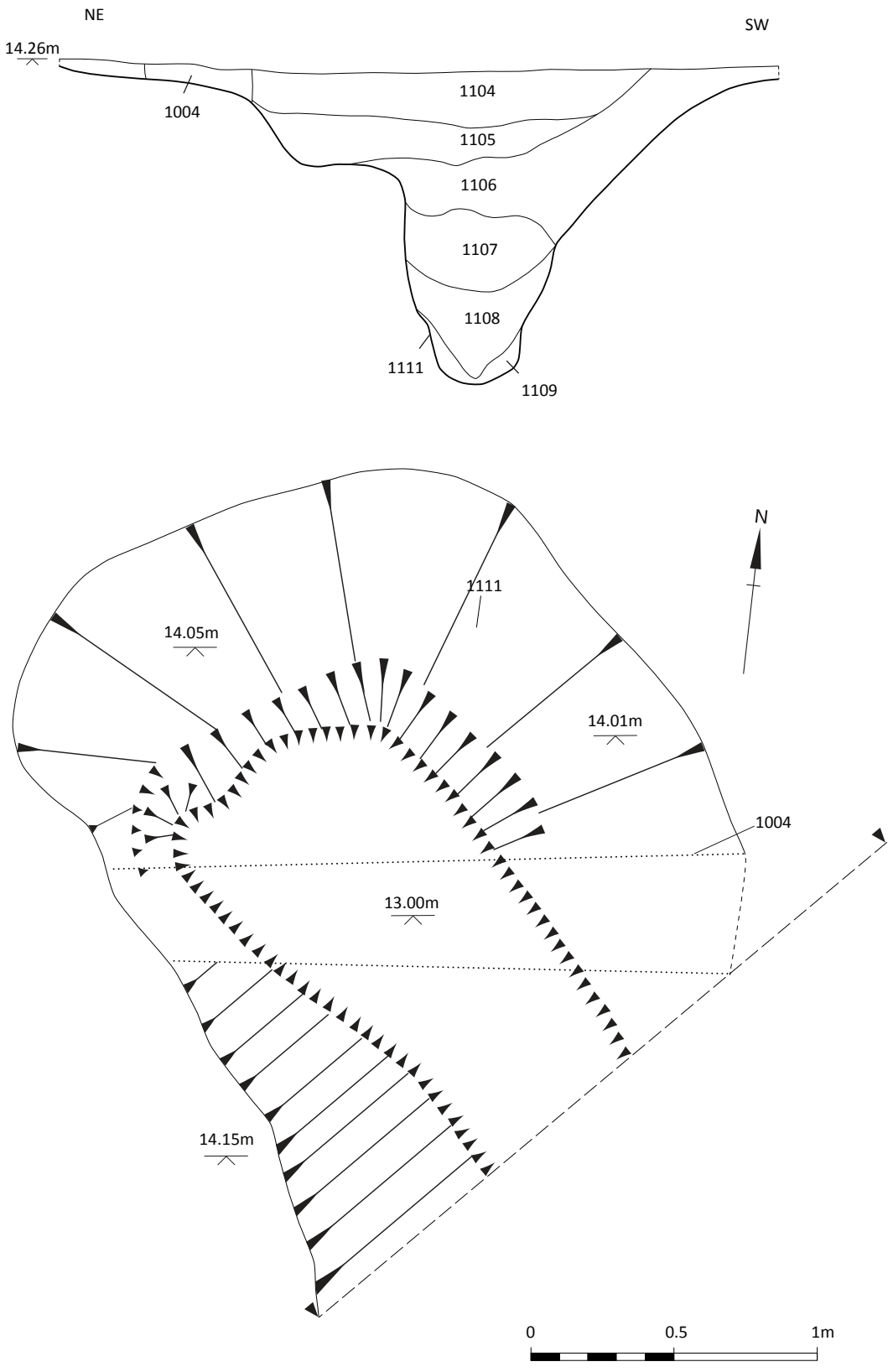


Figure 8: Plan and section of context 1111

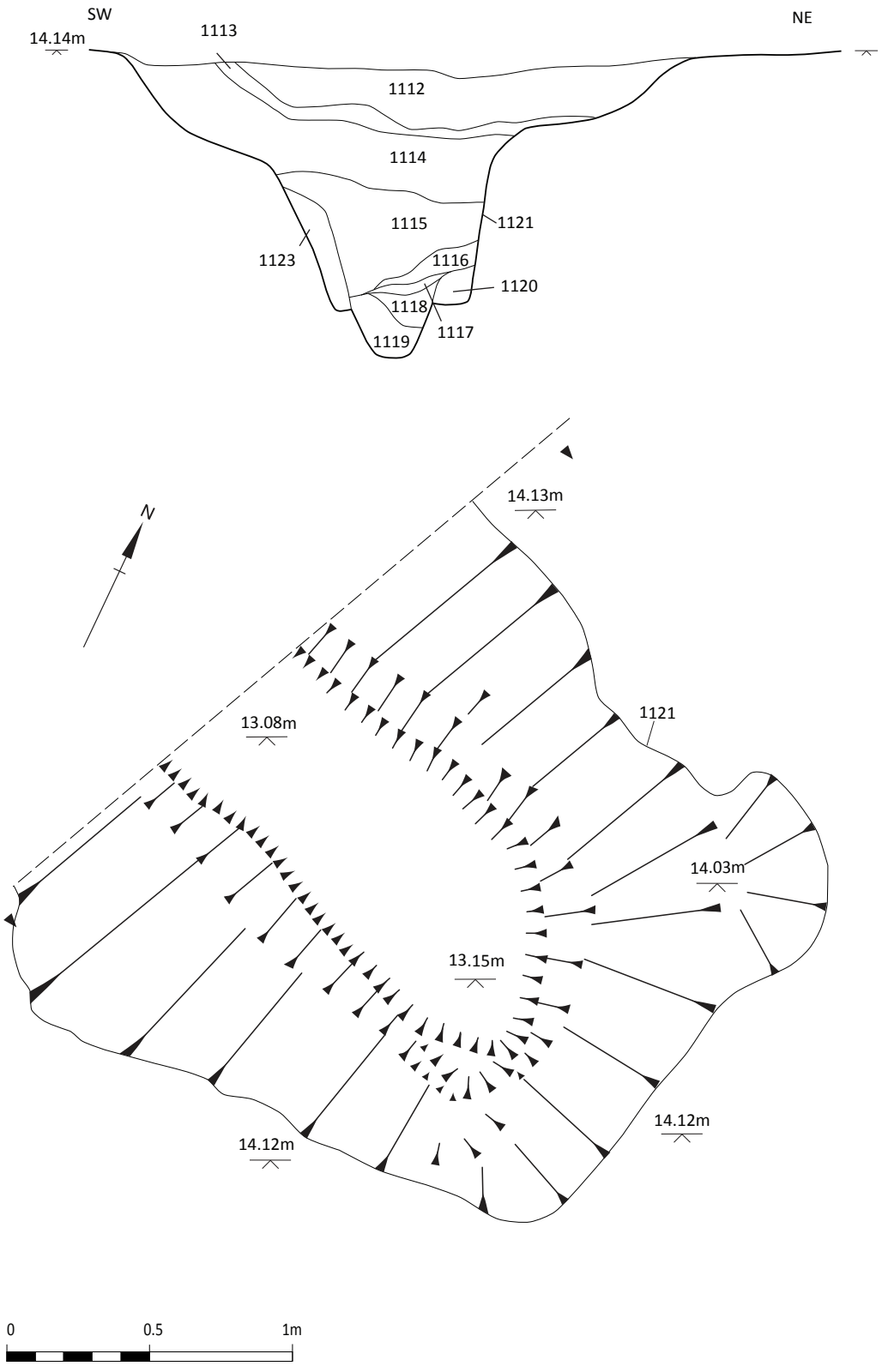


Figure 9: Plan and section of context 1121

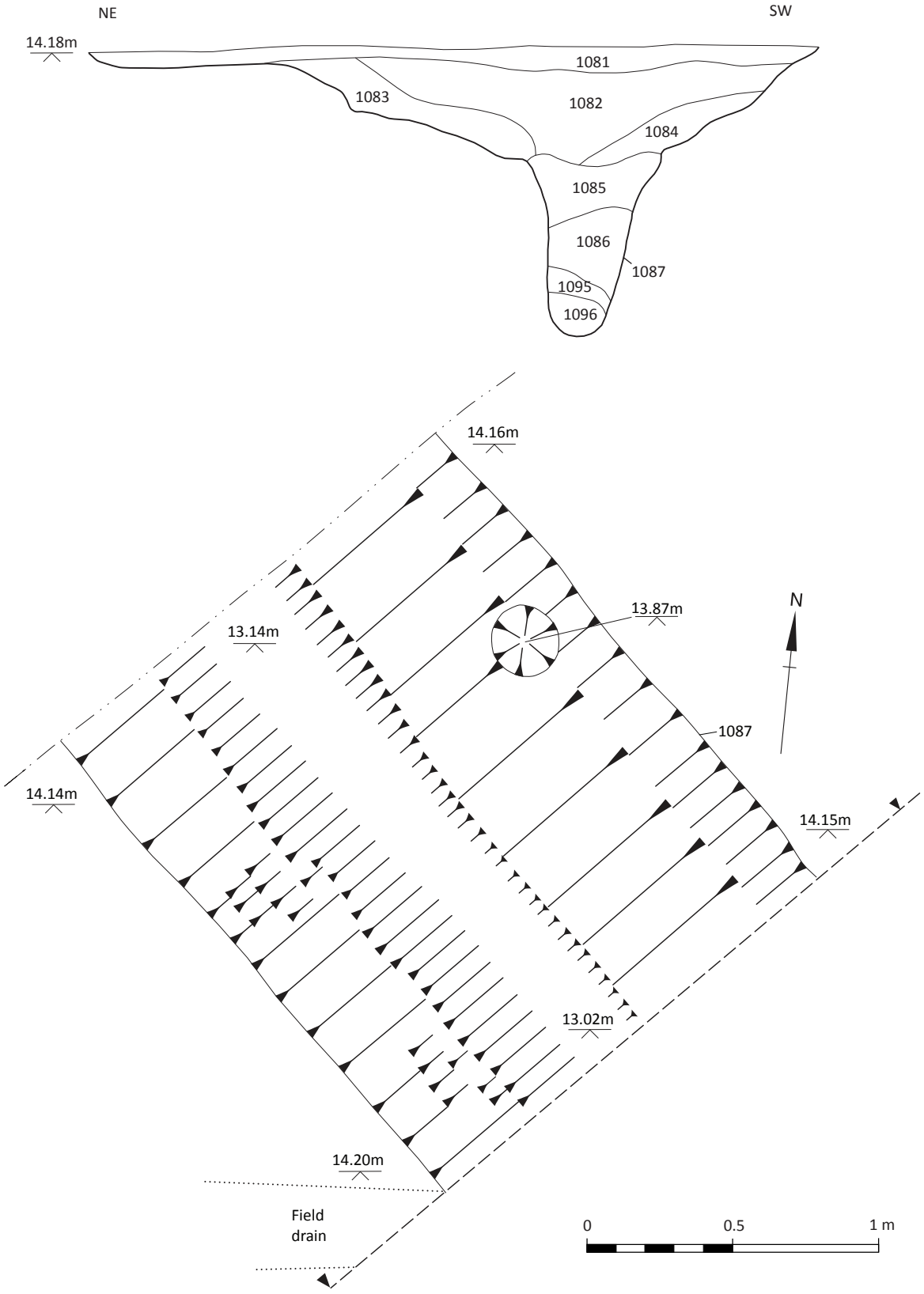


Figure 10: Plan and section of context 1087

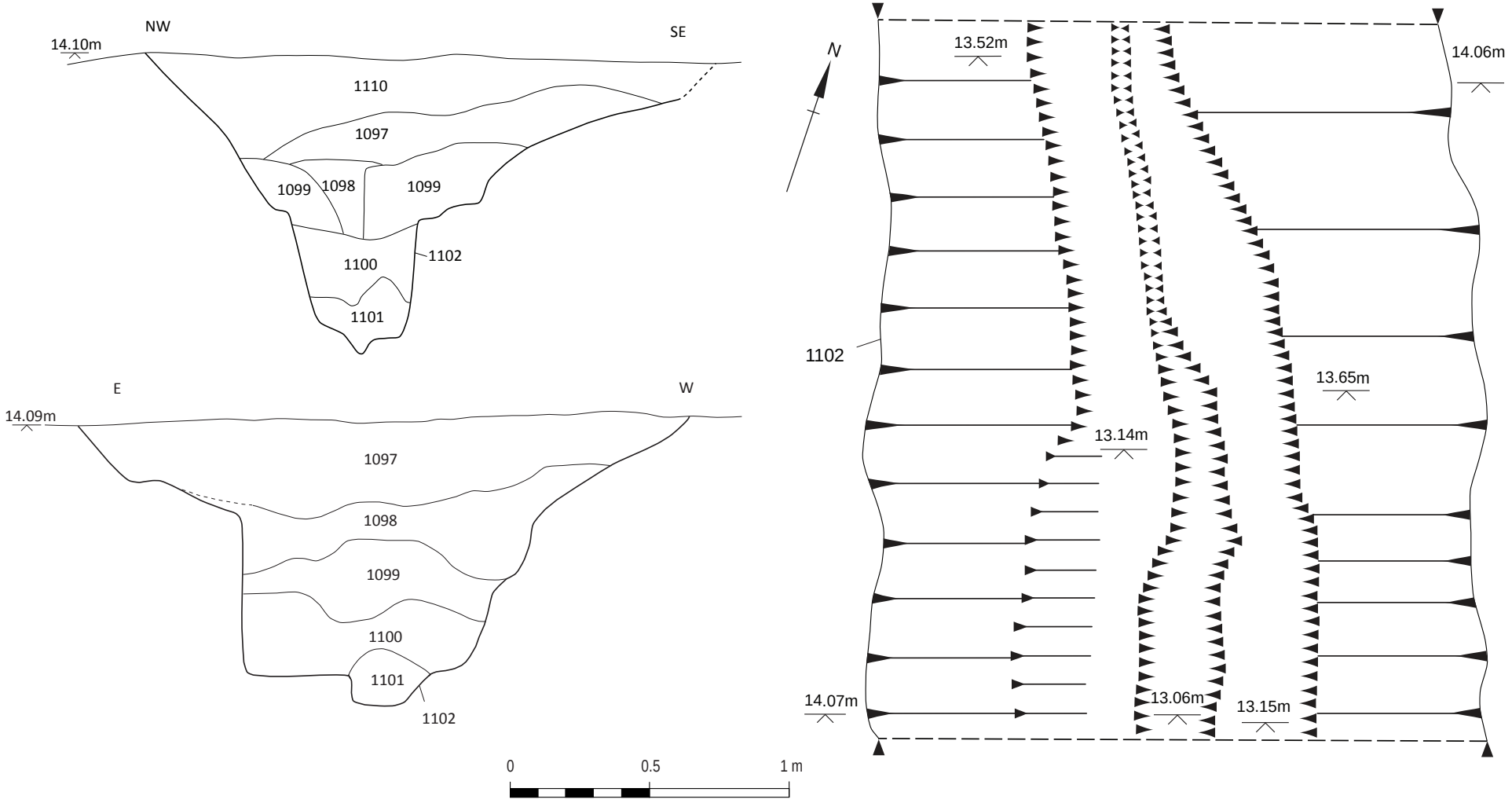


Figure 11: Plan and sections of context 1102

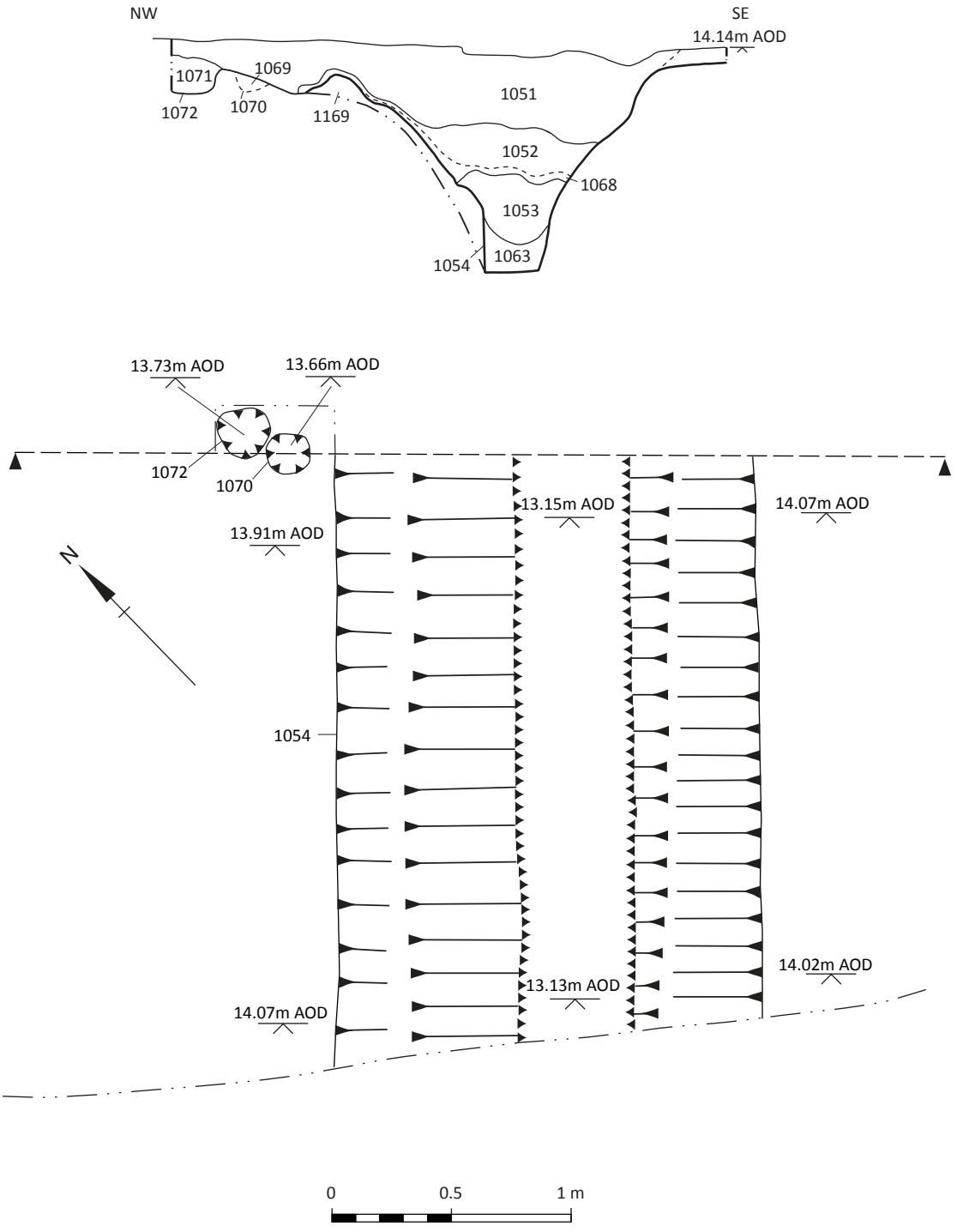


Figure 12 Section and plan of context 1054

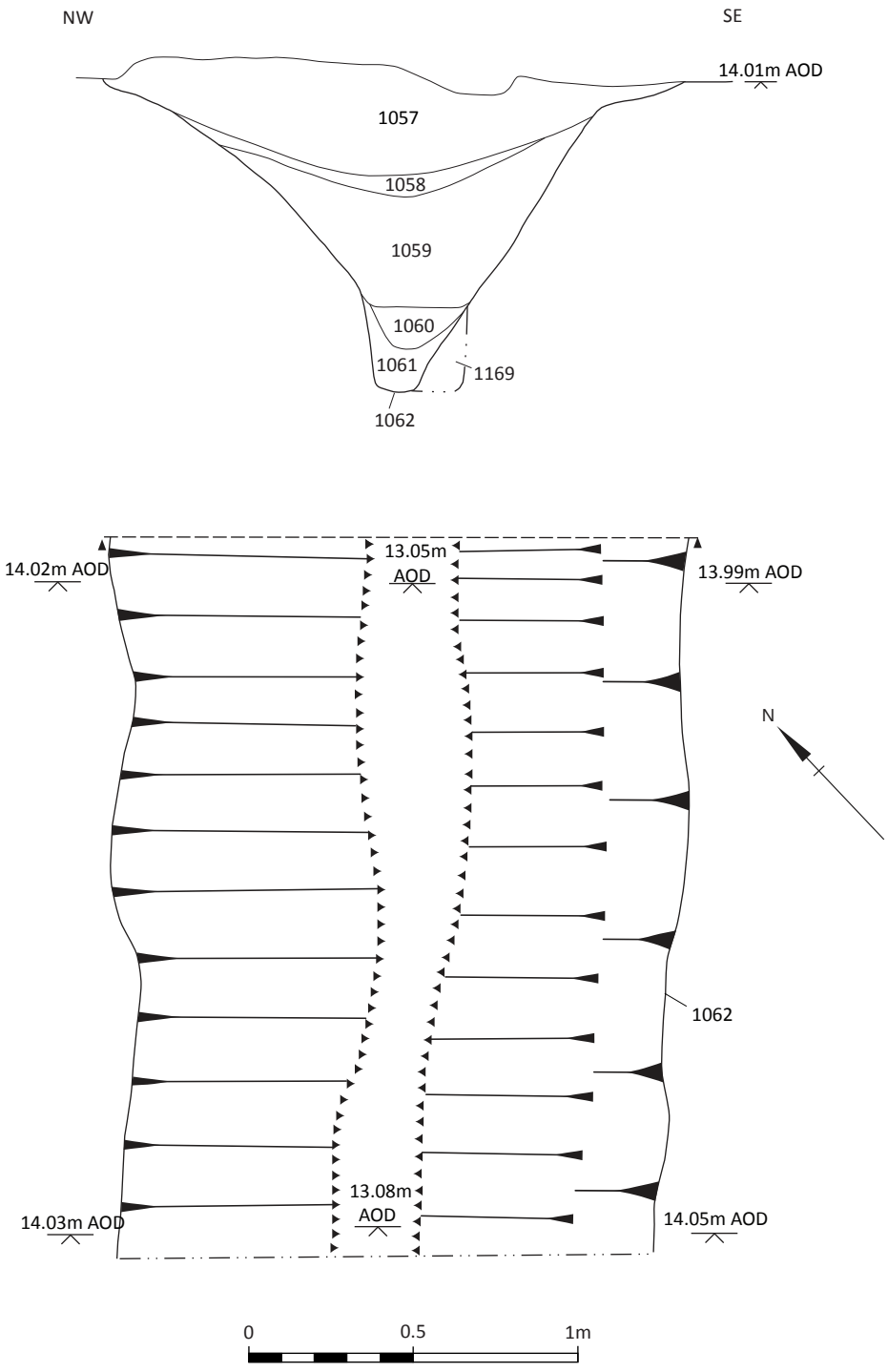


Figure 13 Plan and section of context 1062

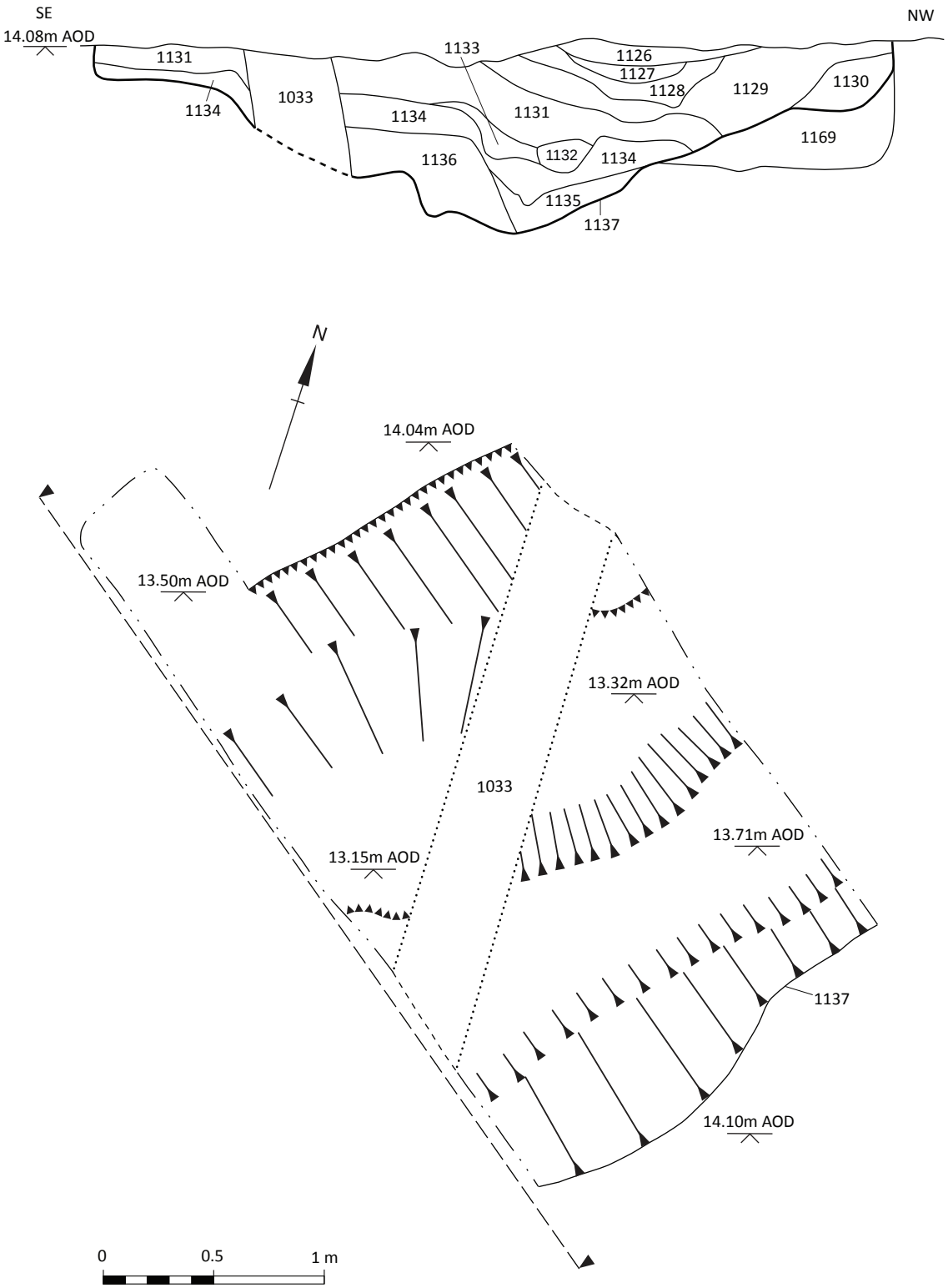


Figure 14 Plan and section of context 1137

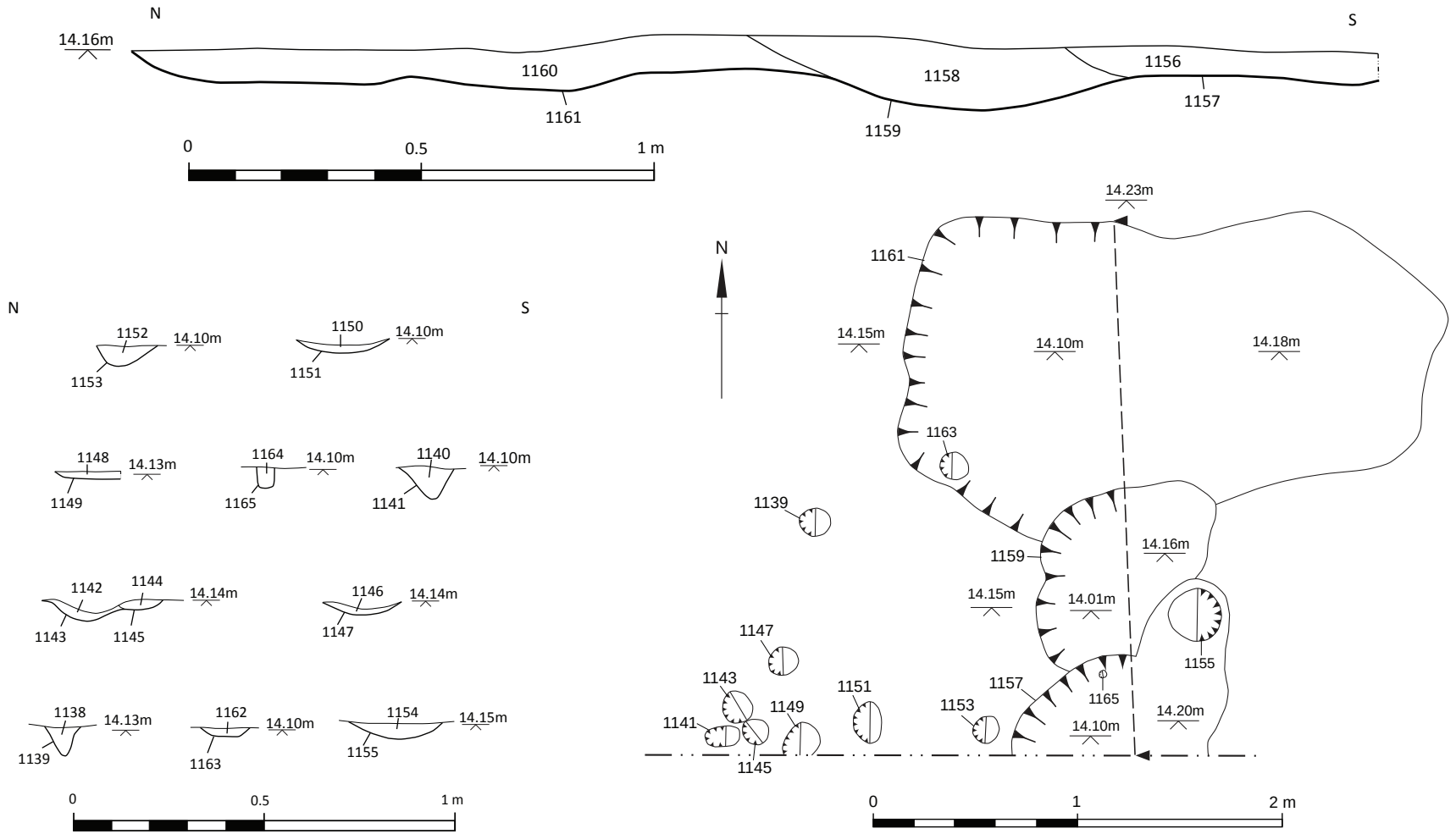


Figure 15: Plan and sections of contexts 1139 to 1165

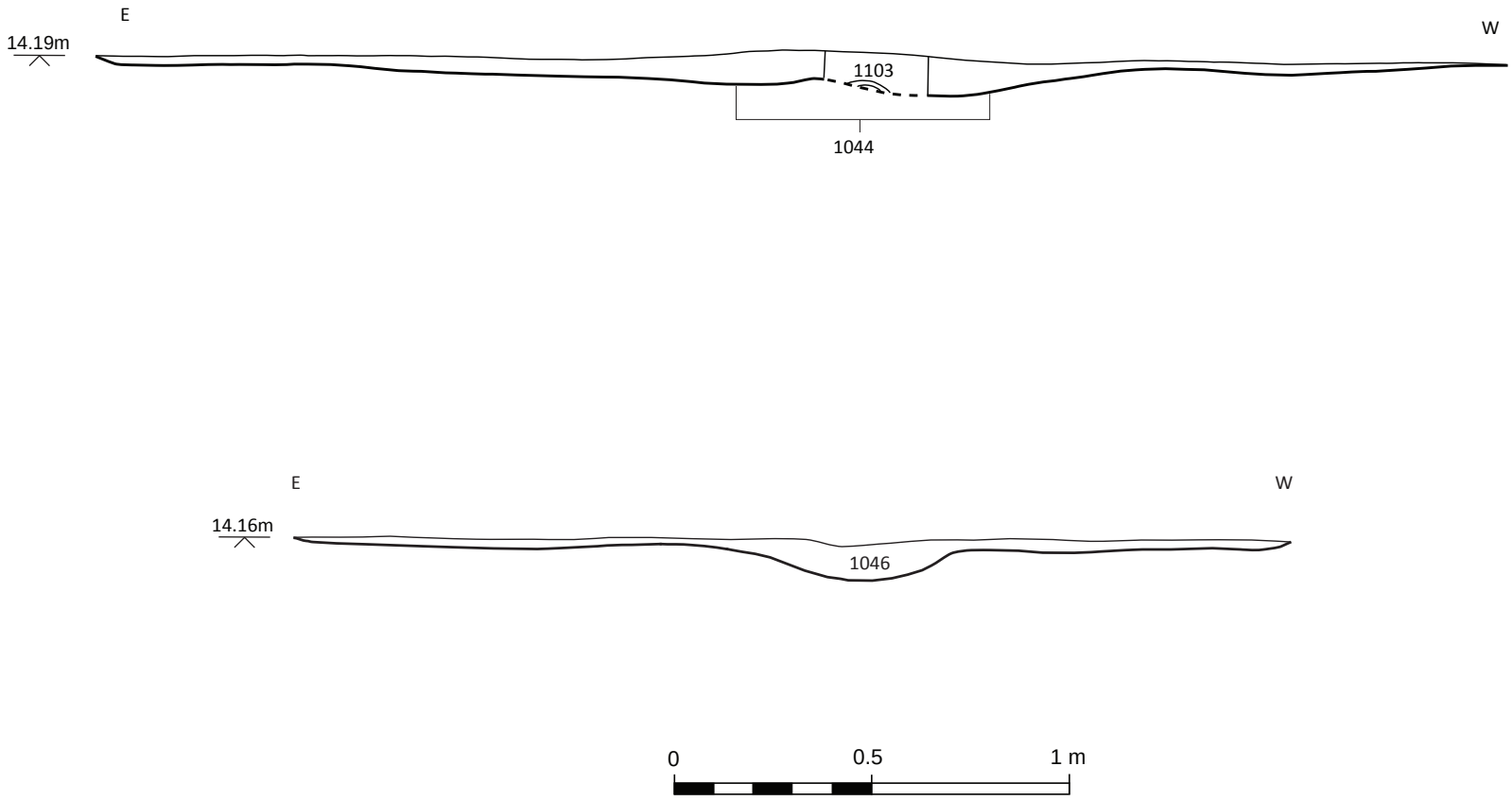


Figure 16: Sections of plough furrows 1044 and 1046

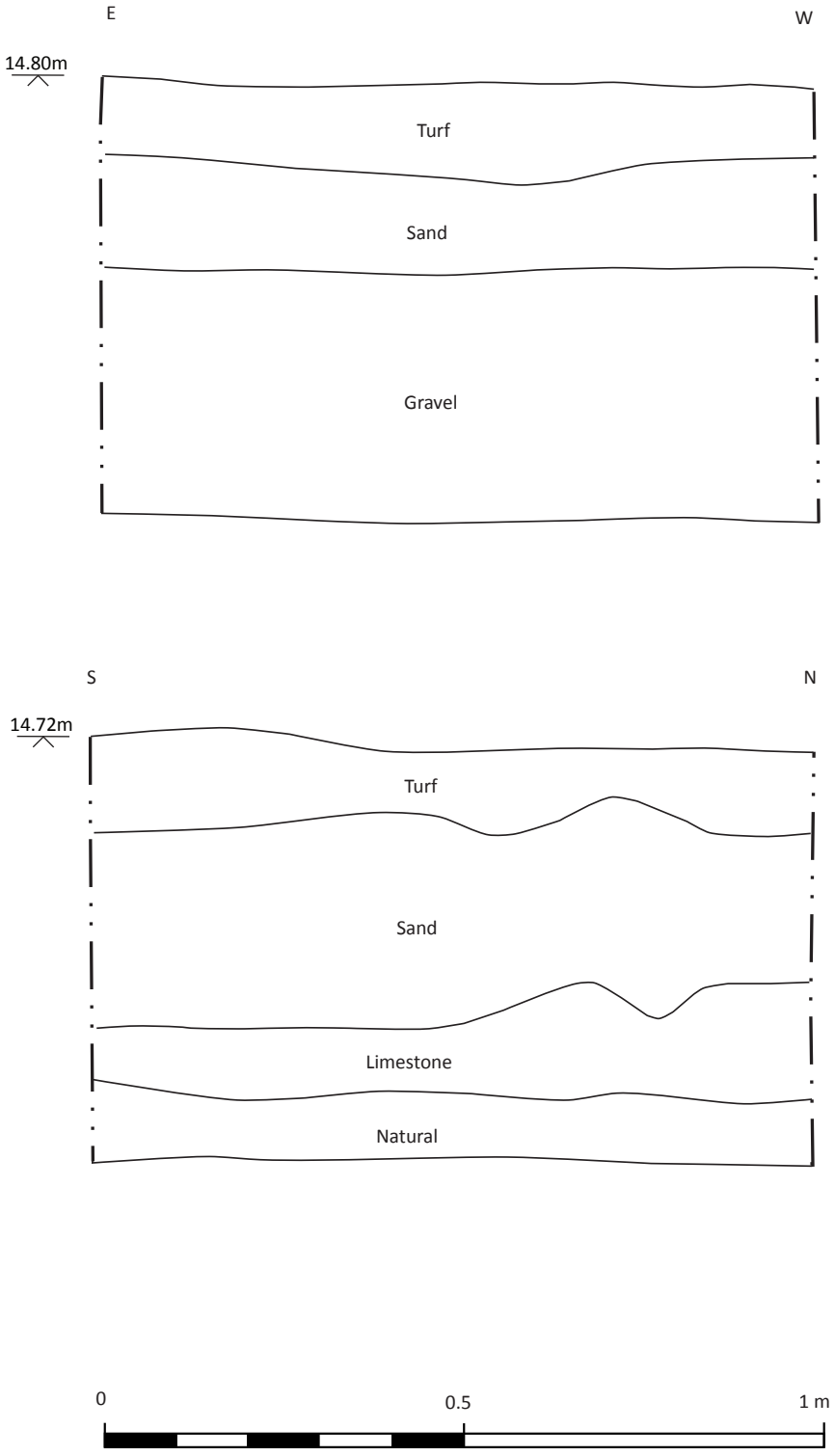


Figure 17: Sections of context 1000

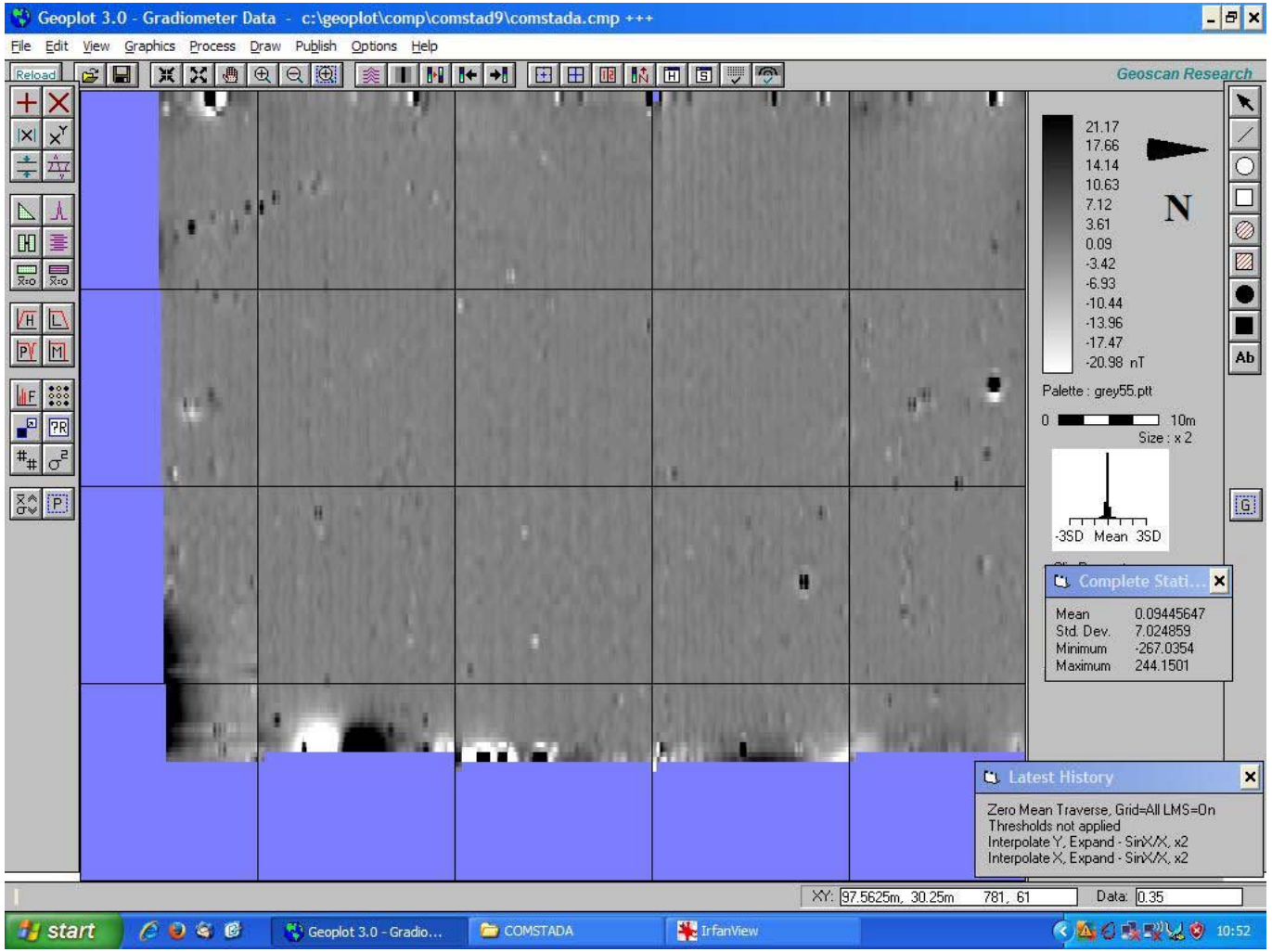


Fig. 18 Processed megnetometer survey of the pitch

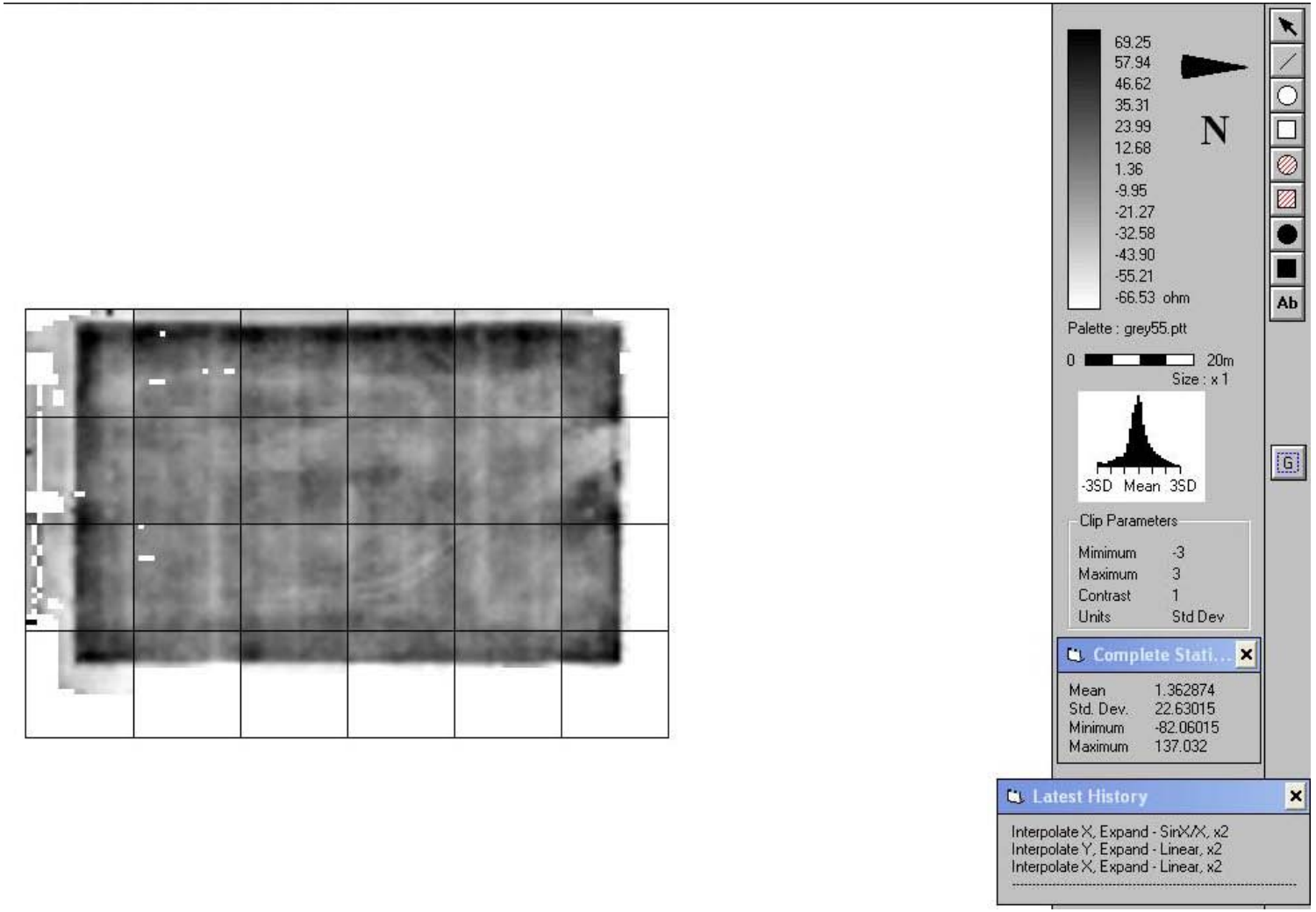


Fig. 19 Processed resistivity survey of the pitch

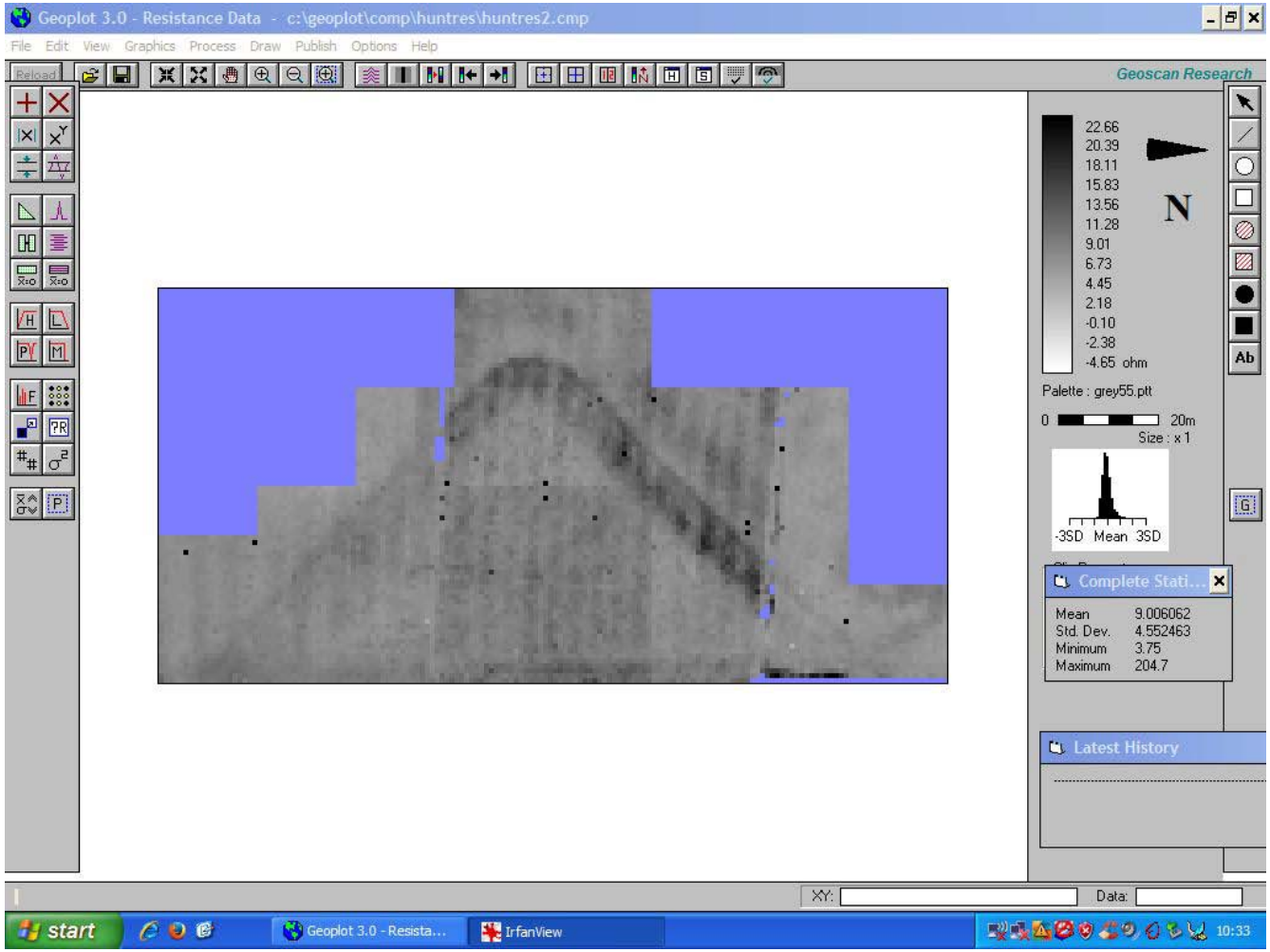


Fig. 20 Unprocessed resistivity SAM plot

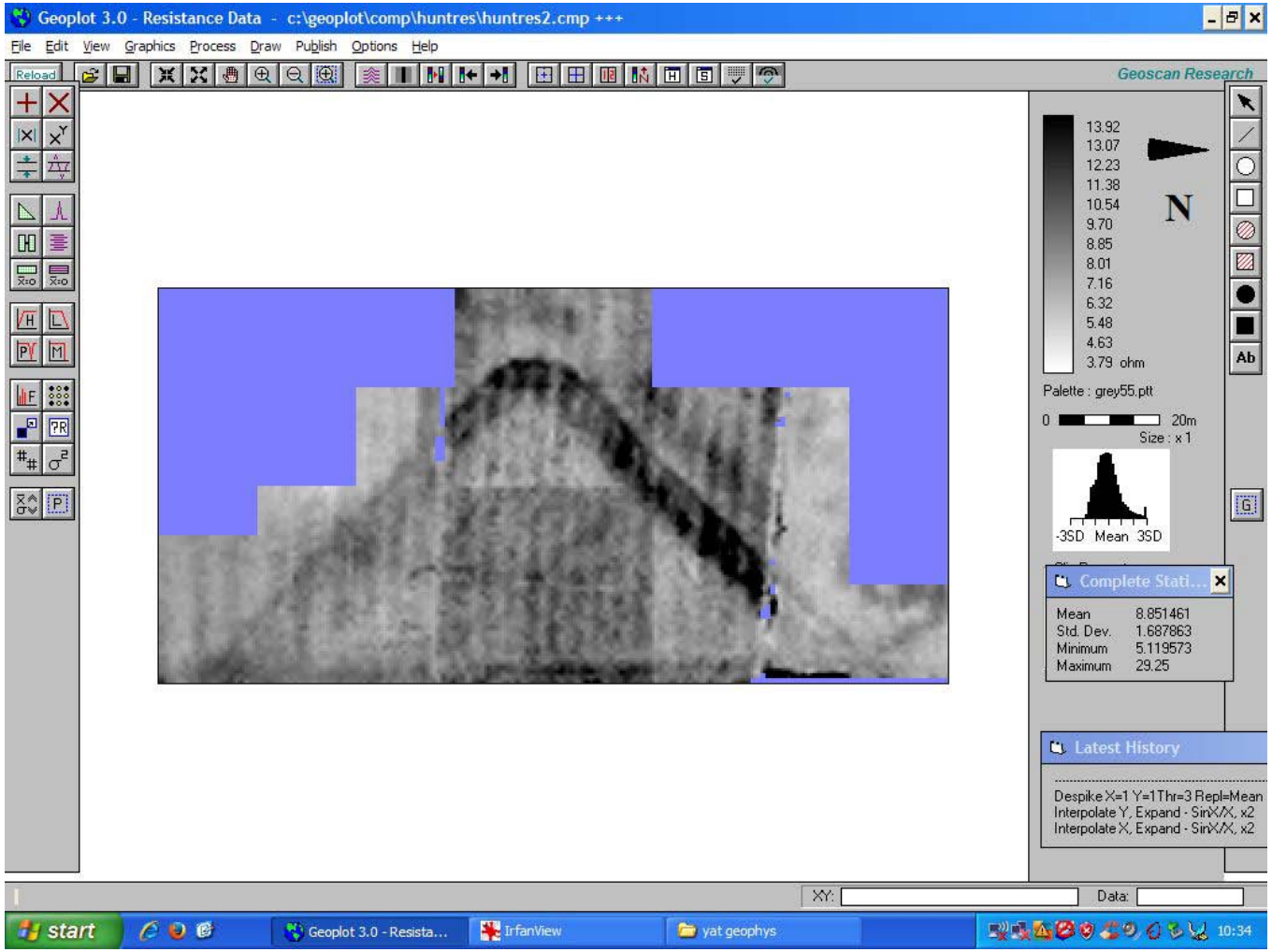


Fig. 21 Processed resistivity SAM plot

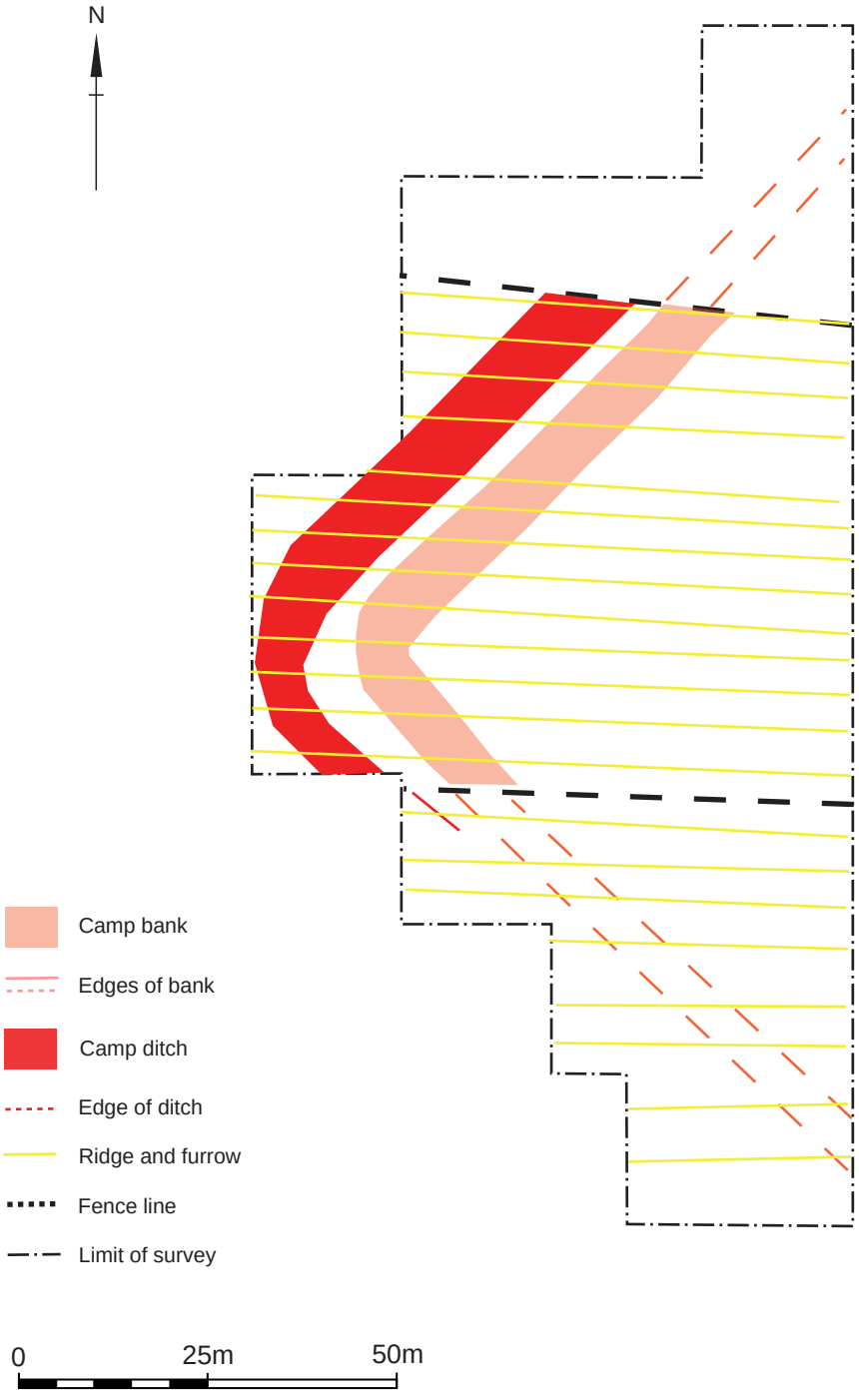


Fig. 22 Interpretation of SAM resistivity

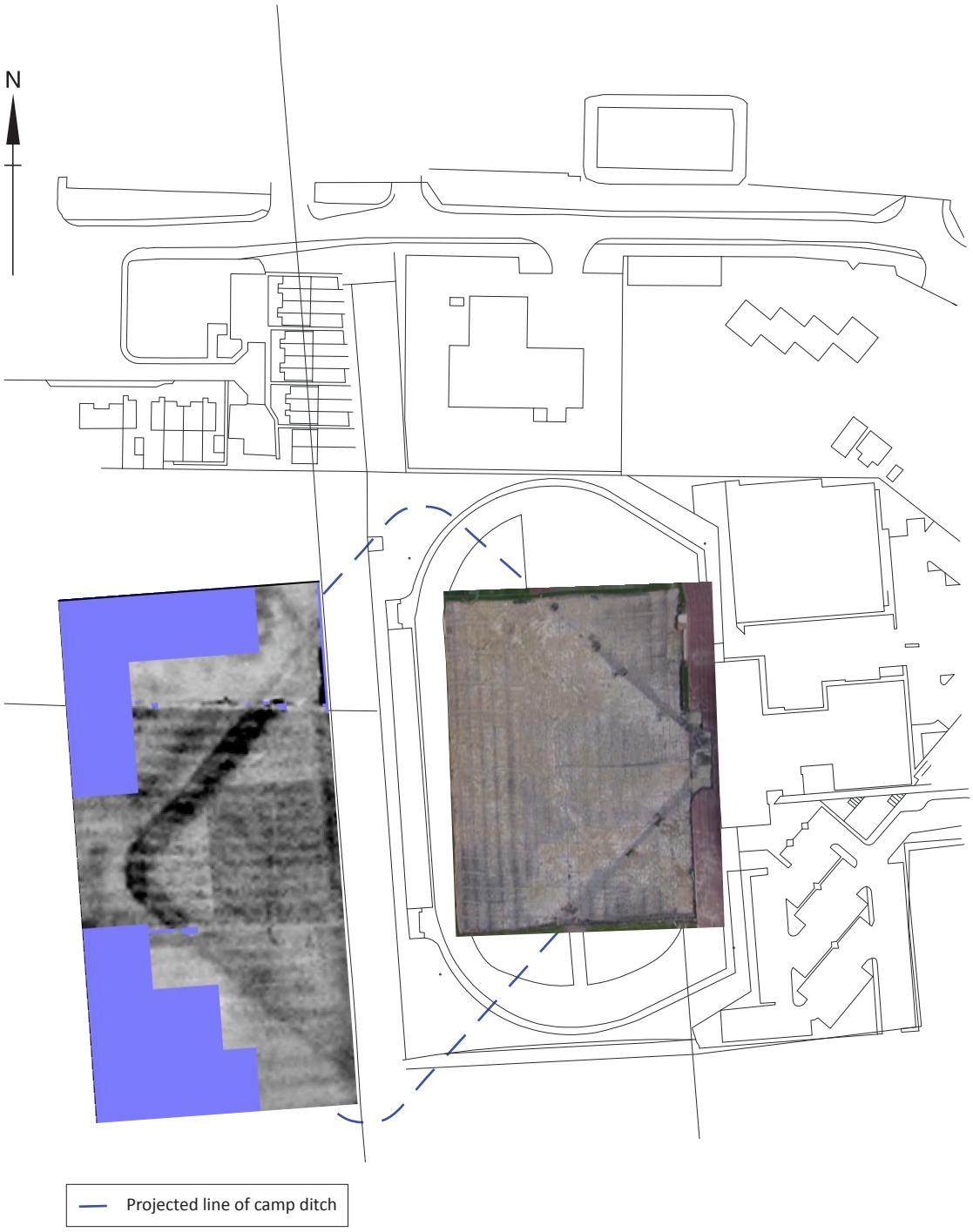
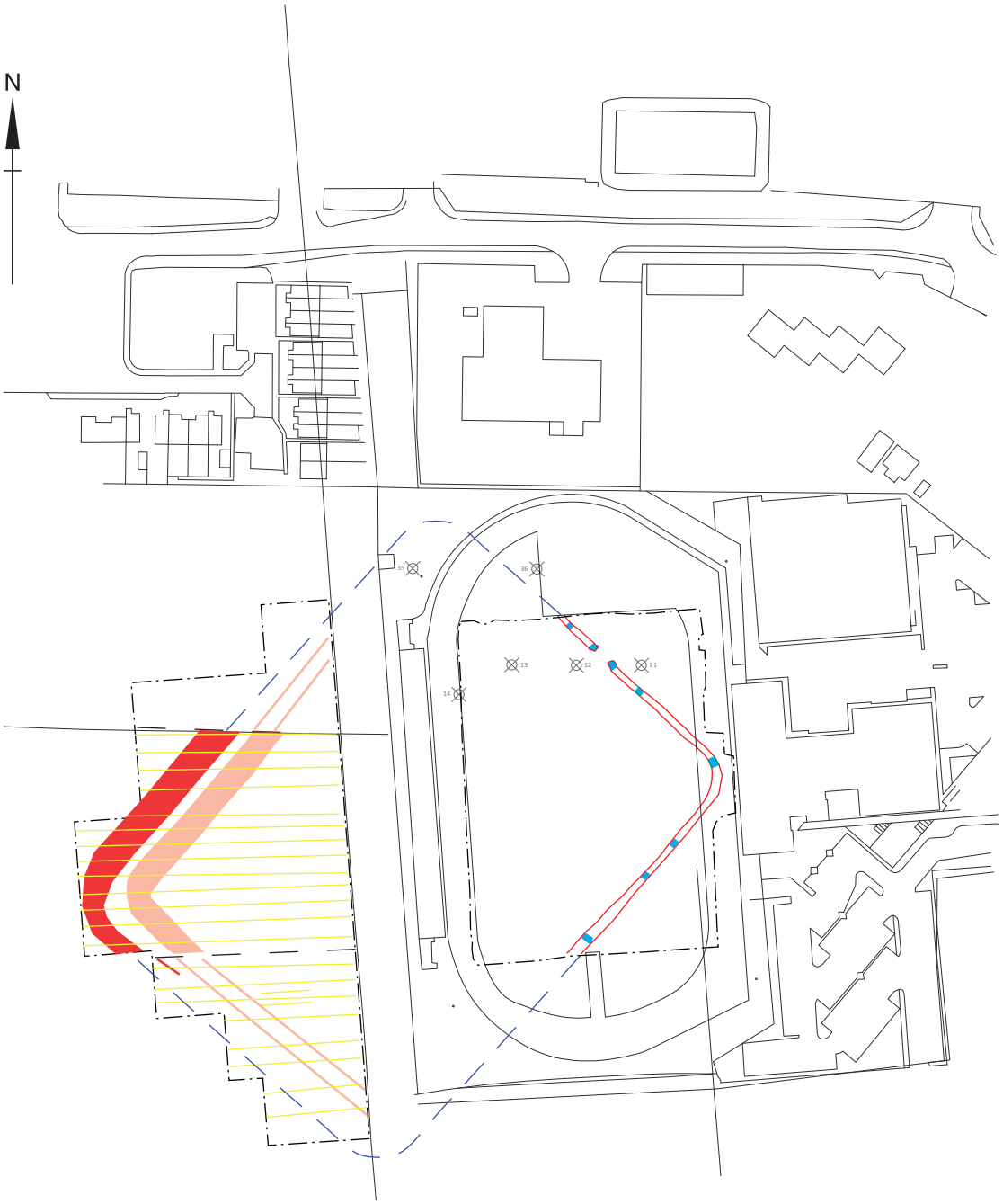


Figure 23: Excavation photograph and processed SAM resistivity survey



Excavation

Projected camp ditch
Edges of ditch
Excavated areas
Limit of excavation

Geophysical Survey

Camp bank
Camp ditch
Ridge and furrow
Fence
Limit of Survey

0 50 100m

Figure 24: Geophysical interpretation and excavation plan