ARCHAEOLOGICAL SERVICES WYAS

Darrington Quarry Northern Extension
Darrington
West Yorkshire

Archaeological Excavation and Phase 2 Trial Trenching

Report no. 2390

October 2012

Client: Waste Recycling Group Limited

REGISTERED ORGANISATION IfA

Darrington Quarry Northern Extension, West Yorkshire

Archaeological Excavation and Phase 2 Trial Trenching

Summary

This report details the results of excavations in the Phase 2 extraction area of Darrington Quarry Northern Extension, undertaken to investigate a large trapezoidal ditched enclosure and its immediate environs, including further mitigation carried out in relation to Trenches 37 and 38. This work was undertaken from September to December 2011 and revealed evidence relating to the main enclosure ditch and a limited series of internal features including pits, post-holes and gullies. An array of external linear gullies, ditches and pits were also probably associated with a phase of the enclosure's use.

The evidence suggests two principle phases of activity. The enclosures construction may arguably be dated in relation to a single inhumation recorded within the entrance to the enclosure. This has produced a radiocarbon date between the 2nd and 4th centuries BC, while pottery, mainly deriving from the upper ditch fills, indicate a period of occupation focused on the 2nd century AD. The lack of evidence relating to the intervening period may result from either a period of abandonment or else complete re-excavation of the earlier ditch fills prior to the final phase of occupation.

ARCHAEOLOGICAL
SERVICES
WYAS

Report Information

Client:	Waste Recycling Group Limited
Address:	6 Sidings Court, White Rose Way, Doncaster DN4 5NU
Report Type:	Excavation
Location:	Darrington Quarry Northern Extension
County:	West Yorkshire
Grid Reference:	SE 500 223
Period(s) of activity represented:	Iron Age, Romano-British
Report Number:	2390
Project Number:	3807
Site Code:	DNQ
Planning Application No.:	07/00003/FUL
Museum Accession No.:	Not yet assigned
Date of fieldwork:	September-December 2011
Date of report:	September 2012
Project Management:	Ian Roberts BSc FSA MIfA
Fieldwork supervisor:	Adam Tinsley BA BA MA
Report:	Adam Tinsley, David Williams BA PIfA and Ian Roberts
Illustrations:	Jon Prudhoe and David Williams
Photographs:	David Williams
Specialists:	John Carrott (carbonised plant macrofossils and molluscs) Hilary Cool PhD (jet and shale objects) John Cruse (quernstone) Gail Hama BA (iron objects) Malin Holst MSc (human remains) Ruth Leary MA (pottery) Gerry McDonnell PhD (slag) Jane Richardson PhD (animal bone and marine shell) SUERC (radiocarbon dating) Angela Walker (carbonised plant macrofossils and molluscs) Margaret Ward MA (samian pottery) Phil Weston MA (flint)

Authorisation for distribution: ----------

PO Box 30, Nepshaw Lane South, Morley, Leeds LS27 0UG
Telephone: 0113 383 7500.
Email: admin@aswyas.com

Contents

Appendices

Bibliography

List of Figures

List of Plates

List of Tables

List of Graphs

Acknowledgements

Archaeological Services WYAS (ASWYAS) would like to thank Matt Hayes of Waste Recycling Group for both commissioning the project Bob Binstead of Darrington Quarries Ltd for providing on-site help and assistance throughout the project. The project was managed and directed by Ian Roberts and the excavation was supervised by Adam Tinsley assisted by David Williams, Marina Rose, Louise Felding, Bob Hamilton, Rachael Reader, Kimberly Teale, Kathryn Ormston and Charlie Morris. Site surveying was undertaken by Sam Harrison and Mitch Pollington.

Ian Sanderson and Rebecca Remmer from West Yorkshire Archaeology Advisory Service monitored the project.

The post-excavation finds and environmental processing was co-ordinated by Zoe Horn. In addition to the named specialists, the report was prepared by Adam Tinsley, David Williams and Ian Roberts and has been edited by Jane Richardson and Ian Roberts.

1 Introduction

Following a geophysical survey (Webb 2008) and a programme of trial trenching (Williams *et al.* 2008, Tinsley *et al*. 2012) Archaeological Services WYAS was commissioned by Waste Recycling Group Limited to carry out excavations in an area of proposed limestone extraction located immediately north of the M62 motorway and south of Knottingley, West Yorkshire. The Phase 2 mitigation involved the excavation of a large trapezoidal enclosure to the east of Leys Lane as well as the expansion of several former trenches appended to this area (Trenches 37, 38, 40 and 48). The enclosure was known from cropmark evidence and was further identified by previous geophysical survey and trial trenching (Williams *et al.* 2008). The scope of the required archaeological excavation was determined by the West Yorkshire Archaeological Advisory Service (WYAAS) in their specification of August 2011 (Appendix 3) and as part of further mitigation required in relation to the results of the trial trenching.

Site location and topography

The site is located to the north of the village of Darrington on the north side of the M62, between the motorway and Knottingley (Fig. 1). The area of limestone extraction presently under consideration lies to the east of Leys Lane and forms part of a larger eight phase extraction area that extends to the west. The Phase 2 extraction area containing the enclosure and two further mitigation trenches (37 and 38) occupies the majority of a field currently under cultivation and immediately bordering the M62 to the south, with a railway line to the east and north-east and fallow fields to the north and west (Fig. 2). Topographically this area forms a slight ridge and plateau projecting from south to north at a height of approximately 33m aOD. The land then dips before gently rising again to the north.

Soils, geology and land-use

The solid geology of the site is mapped as Magnesian Limestone of the Permian period (Geological Survey 2001). The soils comprise well-drained loamy soil of the Aberford Series (Soil Survey of England and Wales 1980). A small rectangle of land in the south-eastern part of the site is under arable cultivation and had been re-seeded after the harvesting of a wheat crop. The remainder of the site had not been under any agricultural regime and had been left fallow for several years.

2 Archaeological and Historical Background

A desk-based assessment (Ford 2007) revealed that there was, at the time, relatively little known archaeological potential within the proposed extraction area apart from the trapezoidal enclosure. Fragmented cropmarks, however, pointed to the existence of former field systems and enclosures in the surrounding landscape.

The potential for surviving remains has been borne out by the discoveries made through geophysical survey, trial trenching and excavation on the Darrington Quarry West site, immediately to the south of the M62 (Heapy 2008, Williams 2010).

In 2008 the present site was subject to partial geophysical (magnetometer) survey (Webb 2008). As well as enhancing the plan of the trapezoidal cropmark enclosure, the survey revealed fragments of a former regime of ditched land division and associated enclosures. Many of the boundaries are erratic and generally the enclosures are appended to the principal boundaries. The arrangement is typical of many irregular Late Iron Age or Romano-British enclosure and field systems found elsewhere on the Magnesian Limestone in this region (Roberts *et al*. 2010).

Following the identification of potential archaeological features by geophysical survey, a limited programme of pre-determination trial trenching was undertaken in 2008. This work saw 23 trenches targeted upon the main cropmark and geophysical survey anomalies to reveal evidence of land division and settlement dating to the Iron Age and Roman periods. The earliest dated feature was a human pit burial, near the entrance to the trapezoidal enclosure, that has been radiocarbon dated to the pre-Roman Iron Age (380-180 cal. BC). The main period of exploitation, as represented by the pottery appears to have been in the later Roman period with a peak of activity in the 2nd century (Williams *et al*. 2008).

A further phase of trial trenching was undertaken between August and September 2011 and involved the excavation of an additional 63 trenches across the first four mineral extraction areas to the east of Leys Lane (Tinsley *et al.* 2012). The aim of this trial trenching was to investigate the apparently blank areas of land in between the cropmark and geophysical survey anomalies, that had not received investigation in the pre-determination phase of work. The purpose of the trenching in these areas was to ascertain if the lack of remote sensing data was a true reflection of the archaeological potential. It revealed limited evidence of linear land divisions, primarily relating to the Iron Age and Romano-British period, and required a limited phase of further mitigation undertaken in relation to trenches in Extraction Phases 1 and 2. This further mitigation involved the expansion of those trenches found to contain archaeological features in order to confirm the character and extent of the features. This included the two trenches appended to the main excavation area, the evidence from which is discussed here.

3 Aims and Objectives

The general aim of the investigation was to record, analyse and report all archaeological remains within the areas of interest prior to their destruction by mineral extraction. The realisation of this aim was essentially two fold.

With regard to the additional mitigation required in relation to Trenches 37 and 38, the aim was to confirm and enhance the archaeological features recorded during the previous phase of trial trenching and to determine their relationship to the trapezoidal enclosure and wider regime of land divisions.

In relation to the main excavation area, the objective was to open an area large enough to encompass the trapezoidal enclosure as well as any potential internal and external features. Excavation of these features was carried out in order to establish their character, content and phasing and to determine the nature and period of occupation relative to the wider pattern of occupation and land division in the area. Specific aims arising from the predetermination phase of trial trenching related to the identification of further potential burials at the site as well as the determination of an origin and function for the construction of the enclosure and subsequent episodes of occupation. Of particular relevance was the identification of evidence relating to periods of occupation associated with the previously identified inhumation burial and represented by the deposits within the enclosure ditch and related features.

4 Methodology

The excavation was carried out in accordance with the WYAAS specification (Appendix 3), and with accepted professional standards and guidelines (Institute of Field Archaeologists 2009), as well as the ASWYAS site recording manual (ASWYAS 2010).

The main excavation area (approximately 100m by 100m) and appended trench expansion areas in relation to former Trenches 37 and 38, were laid out using a Trimble Geo-explorer GPS system. Additional areas requiring mitigation, Trenches 40 and 48, were also laid out. The trench limits and aspects of the planning grid were subsequently surveyed using the same GPS system and fixed in relation to nearby permanent structures and to the Ordnance Survey national grid.

All topsoil and subsoil deposits were removed in level spits (not more than 0.2m thick) using a 360º excavator equipped with a smooth-bladed ditching bucket, under direct archaeological supervision. All machining was stopped at the first identifiable archaeological horizon or natural deposits. The stripped surface was cleaned by hand and inspected for any archaeological remains. All linear features were subject to a manual sampling regime of 20% of their total length within the trench, and each excavated section was no less than 1m in length. In accordance with the authorised amendment to the original specification by WYAAS, excavation of half of all sections across the main enclosure ditch was initiated using a mechanical excavator. Among such sections the upper ditch fill was removed in controlled spits, no more that 0.2m thick, under direct archaeological supervision to a depth of approximately 0.7m. Deposits below this level were then removed by hand down to the base of the ditch cut. All other sections across the enclosure ditch were excavated by hand in

their entirety. All terminal-ends, corners and intersections were fully investigated. All discrete features such as pits and post-holes were, at a minimum, 50% excavated (by area).

All archaeological features were accurately recorded in plan at a scale of 1:50 or 1:20 and all excavated features were recorded in section at scales of either 1:10 or 1:20. All plans and sections include spot heights relative to the Ordnance Datum (OD) in metres. A full written and photographic record was made of all archaeological features. A soil-sampling programme was undertaken for the identification and recovery of carbonised remains, vertebrate remains, molluscs and small artefactual material. Soil samples of up to 40 litres were taken from the fills of excavated features where appropriate.

5 Results

The results of the excavation are discussed in terms of the ditched enclosure itself, the internal features and finally the external features. Those features excavated during the pre-determination phase of trial trenching (Williams *et al.* 2008) are also included.

Main enclosure ditch

Upon removal of the overburden, the main enclosure was exposed in plan as a continuous and highly distinct single circuit, confirming the cropmark evidence and geophysical survey (Webb 2008; Fig. 2; Plate 1). The ditch, Group 109, defined an area straddling the ridge of high ground, mostly occupying part of the plateau of land to the south-west but also partially extending down its slope to the north east, at a height between 32m and 35.64m aOD. The area enclosed was trapezoidal in plan and orientated south-west to north-east. At its widest point along the north-east side, it was 62.5m, whilst at its narrowest on the south-west side it was 45m, the overall length of the enclosure being 52.5m. The total area enclosed was approximately 0.23 hectares. A single break in the ditch, 8.75m wide, was evident within the north-eastern ditch. It was, positioned slightly off centre towards the north, and represents the only entrance to the enclosure interior. Both terminals had relatively square ends, most notably in relation to the north-eastern terminal (Plate 2 and 3).

The enclosure ditch had previously been examined during the pre-determination phase of trial trenching (Williams *et al.* 2008). This had involved the excavation of a limited section across the south-eastern ditch terminal (previously defined as cut 295) and a further section investigating the south-western ditch length (previously defined as cut 254). Its fills had produced a small assemblage of ceramic material, animal bone, metalwork and charred material, indicative of Romano-British occupation focused primarily on the 2nd century AD, but with some evidence for 3rd and 4th-century activity.

During the current phase of mitigation it was decided to reopen and expand upon the excavation carried out at the south-eastern terminal in order to develop a better understanding of the feature, as to well as to excavate a further section across the south-western ditch

length. In addition, the ditch was examined at a further seven locations including a section excavated across each of the four corners of the enclosure, the opposing north-eastern ditch terminus and across the centre of the north-western and south-eastern ditch lengths. In this way representative profiles were obtained and potentially important focal points for deposition were investigated.

These excavations confirmed the profile of the ditch as being relatively symmetrical with steeply angled, at times vertical or undercut sides and a flat base (Plates 4-7). The base was found to possess several steps at the north-eastern corner (Fig. 3; Plate 8) and within the central slot across the south-eastern ditch (Fig. 3; Plate 10). These descended in depth from west to east. Following this pattern, the ditch as a whole was also found to be variable in depth, *c.*1.4m in northern and western sections but increasing to over 2m in south-eastern and eastern sections and achieving a maximum of 2.24m at the south-eastern terminal (see Figs 3 and 4). Plough action had substantially reduced the depth of many features, indicated by the poor preservation of many external ditch sections and the general dearth of internal features (see below), and as such the original depth of the enclosure ditch may have been considerably deeper. Similarly, the width of the ditch varied considerably. The ditch varied in width between 2.43m and 5.15m, the widest point was the entrance terminals, notably the south-eastern terminal, where excavation revealed it to be 5.15m wide and between 1.9m and 2.24m deep. By contrast the narrowest points occurring towards the rear of the enclosure. The enclosure, therefore, was substantial and would have been even more impressive immediately following its construction. It was clearly intended to make an explicit statement, particularly with respect to the approach to the enclosure entrance, and as such may indicate an origin for the enclosure as the residence of a high-status family or as some other significant, perhaps non-domestic, site (see Discussion and Conclusions).

Further variation in the nature of the enclosure ditch cut was revealed in relation to the north-eastern corner section. Here the internal edge of the cut descended at a steep angle for approximately 1m at which point it levelled out, forming a small step approximately 0.5m wide, before again descending this time vertically to the base of the ditch (Fig. 4, S.364, Plate 10). This shelf was not identified in any other excavated section and no obvious function for the feature could be discerned. It may be noted that a discrete dumping deposit (715, not shown in section), that included charred material and disarticulated animal bone, did appear just above the shelf although the ditch had obviously silted to this level by the time of that deposition. Given the disarticulated state of the animal bones in this dump it probably represented the disposal of domestic refuse, rather than any form of ritual deposit.

The fill of the enclosure ditch was found to be broadly similar to that described by previous assessment as well as relatively identical across all excavated sections and can be summarised as follows. The primary fill in all cases was a light grey brown, compacted sandy clay with abundant small angular limestone blocks. This extended across the entire base of the cut and was on average *c.*0.2m deep. It most likely relates to a phase of natural silting

immediately after ditch construction, but prior to the edges becoming consolidated. In all cases this primary fill was found to be relatively sterile and contained no cultural material. The environmental samples taken from the primary fill did, however, recover indeterminate charred grain from context 695 (the north-western terminal of Group 109). This was used to obtain a radiocarbon date in the range of cal AD 135-337.

Above the primary silt were a series of largely medium orange brown sandy clays, containing few angular limestone blocks, which in the majority of cases extended variably up each side of the ditch cut, some almost to the very top. These deposits were largely sterile, although those identified in relation to the south-eastern terminal section (781 and 782) were found to contain limited amounts of Romano-British pottery, animal bone and charcoal, in accordance with the observations made during trial trenching. These deposits probably relate to a period of slow natural silting during which time the ditch appears to have been kept relatively clean of domestic refuse.

Immediately above this silting level, a major infilling deposit was identified, which primarily comprised irregular limestone blocks with little by way of a soil matrix. The limestone blocks were angular and poorly sorted, with a size range between 0.03m and 0.5m. There were intermixed with rare rounded cobbles, some of which (mainly relating to the south-eastern terminus) displayed signs of being heat affected (Fig. 4, S.372; Plates 4-7). With the exception of fills 748, 789, and 780, which produced small quantities of Romano-British pottery and animal bone, these deposits were almost entirely sterile. While it could not always be discerned, the direction of infilling suggested by the position of the stones indicated it derived both externally and internally. Given the large size of some of the stones, the material almost certainly derived from the original excavation of the ditch and, by extension, presumably had formed an internal as well as external bank prior to their re-deposition within the ditch. It is unclear if their inclusion in the ditch resulted from a deliberate act, where the proposed banks were slighted, or as a consequence of natural denudation of the earthwork, although the quantity of stone, the absence of an additional soil matrix and the scarcity of finds may suggest the former.

In some cases, including those sections identified during the trial trenching, this stony deposit represented the main fill of the ditch. Although a slightly more complex sequence emerged in other sections. In this regard the stony lower layer was found to be succeeded by further medium orange sandy clay deposits, which also extended up the sides of the cut and probably represent another phase of natural silting. Where a physical relationship occurred, this upper silting could be distinguished in most cases from the initial silting deposits by a higher ratio of limestone block inclusions, although a degree of intermixing was evident. This second episode of silting separates the lower stony layer from a second similar stony deposit which constituted the majority of the remaining ditch fill. This second stony layer was further distinguished from the lower stony layer by a higher proportion of rounded and heat effected cobbles, as well as a greater quantity of cultural material, including Romano-British

ceramics, animal bone and charred material. The second stony deposit again probably derived from material forming one or more banks collapsing into the ditch. The greater quantity of cultural material recovered from this deposit would suggest that this occurred more gradually, although again deliberate infilling cannot be ruled out. Additional deposits were identified above this second stony layer and given the greater content of a soil matrix, probably indicate a final phase of gradual natural infilling as well as subsequent plough disturbance.

In the north-eastern, as well as south-eastern, corner sections this upper and lower sequence was further distinguished by the presence of intermediary layers, interleaved with the second clayey silting deposits, and consisting of discrete dumps of burnt material, as represented for example by contexts 715 and 720. In the case of deposit 720 (Fig. 4, S.364; Plate 11), this charred material represents the residue of metalworking and contained slag, aspects of hearth lining and hammer scale. The contents of this deposit, while small in quantity, are representative of the full process of metalworking and indicate that some small-scale smithing occurred on the site. Using charred barley retrieved from context 720 a radiocarbon date in the range of cal AD 2-134 was obtained. Several metal objects (e.g. SFs 5 and 6) were also recovered from context 721. A single piece of mineralised fabric indicative of a twill weave was also recovered from the upper level of this context. The evidence from this dump also accords with the recovery of parts of a possible crucible recovered from fill 269, the stony layer identified in the south-eastern ditch terminus during the trial trenching. In addition to several smaller features, a pronounced dipolar isolated spike was also produced during geophysical survey towards the centre of the enclosure (Webb 2008). This is normally indicative of a major ferrous deposit and its location towards the centre of the enclosure suggested a direct relationship to it, perhaps indicating an area of metalworking. Excavation revealed no objects or deposits that could be related to metalworking, however, and the anomaly may have derived from an object removed together with the topsoil. Dump 715 was located just above the shelf identified half way down the inner cut of the ditch. By contrast to deposit 720, it consisted of charred material intermixed with a large quantity of both burnt and un-burnt animal bone and probably represents a dump of domestic refuse. Taken together such deposits indicate small-scale industry and normal domestic activity occurring during the later Romano-British period.

The presence of these discrete dumping deposits, as well as the greater quantity of cultural material deriving from the upper fills can be contrasted with the relative sterility of the lower deposits. This dichotomy would suggest that there is a distinct change in the history of the site, possibly linked to a period of abandonment where a proposed inner and outer bank were perhaps deliberately slighted or otherwise naturally eroded into the ditch and partially filled it. Alternatively, or perhaps as a compliment to this proposed sequence, a shift in the function or status of the site may also be inferred. In this regard the construction of such an immense enclosure ditch can be contrasted with the interpretation of the pottery corpus from the upper fills, which Leary points out does not demonstrate any high-status qualities but is rather ordinary in content. This said, no distinction has been identified according to status or date

with regard to the pottery from the upper and lower sequence which would support such a division.

In relation to the south-western corner section only, the stratigraphic sequence may be further complicated by the presence of a possible re-cut (757), filled by deposit 732 (Fig. 4, S.370; Plate 12). This possible re-cut was up to 0.9m wide and 0.75m deep and possessed a U-shaped profile and occupied the internal edge of the enclosure. Its fill (732) consisted of a medium brown silty clay with common angular limestone blocks. It contrasted markedly with the upper stony deposit (730) of the main ditch cut, but was observed only in the south-east-facing section. It could not be traced in the opposing section or that of the central slot in the south-west length of the enclosure ditch. If genuine, the re-cut in the south-western corner is very limited in extent and does not constitute a concerted effort to re-establish the enclosure ditch. Instead it may represent a discrete feature such as a pit cut into the top of the ditch after it had almost entirely silted up. No finds were recovered from the feature and consequently it cannot be dated. A potential phase of re-cutting was postulated following the trial trenching, in order to explain the disparity of dates between the pit burial and enclosure ditch (discussed below), when it was suggested that all evidence of interceding activity had been scoured from the ditch. Such a scenario would require the complete destruction of the original cut and attendant deposits as no evidence for re-cutting was identified in any other section.

A further observation may be made in relation to the distribution of the finds in the various excavated sections. While few finds were recovered from the south-eastern terminus, this almost certainly reflects the fact it could not be fully excavated during the initial phase of trial trenching (Williams *et al.* 2008). Taking this into account, it is notable that the majority of finds derived from the ditch sections at the front and sides of the enclosure. For example, the bulk of the pottery assemblage from the main phase of excavation derives from the south-eastern ditch cut 747 (fill 748) while further material came from ditch cut 684 (fills 685 and 686) and cut 742 (fill 736). The distribution of animal bone is similarly disposed with the larger deposits deriving from the front corners, terminals and south-eastern central section. The discrete dumping of material represented by context 715 and the metal working deposit 720 were also focused upon the corner sections at the front of the enclosure. By contrast, only small amounts of animal bone and pottery were recovered from sections excavated at the rear of the enclosure. This indicates that the primary focus of depositional activity was at the front and sides of the enclosure while the rear was kept relatively clean. This may suggest a functional division inherent at the site, although any interpretations of the deposition of finds is weakened by the fact that no coherent structures were identified within the enclosure. Perhaps the focus of deposition towards the front of the enclosure was linked to the conspicuous display of material consumption in areas more open to full public view, perhaps linked to ritual acts, but the convenient disposal of ordinary domestic refuse, as well as the residue of small-scale industrial activity, is also possible.

Internal Features

A number of shallow features were identified within the interior of the enclosure, and while the majority of geophysical anomalies proved to be natural, a number of pits and post-holes as well as a single linear gully were investigated. For the most part these features were spatially discrete and consequently no structural pattern was discerned. The poor preservation and definition of internal features is disappointing and probably results from the gradual destruction of the site by long-term deep ploughing.

Group 108

A single linear gully extended for approximately 16m on a south-west to north-east axis just off centre and towards the rear of the enclosure interior (Fig. 3). At its south-west end, this gully stopped approximately 10m short of the enclosure ditch, although several shallow and slightly irregular patches of fill may suggest the ploughed out continuation of the feature further west. At its north-eastern end, the feature appeared to turn towards the north-west before entering an area of natural clay hollows and petering out.

The gully was found to be very shallow, with a depth not exceeding 0.16m, and slightly irregular in profile. The best preserved section revealed a regular, well defined and U-shaped profile, with a rounded base and steeply angled sides (Fig. 5, S.357). The gully was filled by a relatively homogenous medium orange brown sandy clay containing occasional angular limestone blocks. A fragment of fired clay or handmade pre-Roman pottery was recovered from fill 704 in the south-western terminal slot. The fragment is likely to be pre-Roman based on the large organic inclusions found within the fabric. The gully had probably suffered considerable denudation by plough activity, which would account for the shallow and slightly irregular profile, and probably represents an internal sub-division. If the gully coexisted with the enclosure the recovery of potentially pre-Roman pottery from its fill supports the notion that the enclosure was pre-Roman in origin.

Pit and Post-hole Features

Ten individual pits and post-holes were identified within the enclosure interior, with a further five features also identified within Trench 22. The majority of these features occurred in relative isolation and did not form any coherent pattern. One notable exception relates to the pair of pits located just inside the enclosure entrance (Pits 693 and 696).

Pits 693 and 696

These two pits were previously identified by geophysical survey and the southern one (cut 696) had been partially excavated and recorded as cut 260 within Trench 22 (Williams *et al.* 2008). They were located just inside the enclosure entrance and were approximately 1.5m apart, each being about 1m from the respective enclosure ditch terminals (Fig. 3). Both were aligned on the same north-south axis and each was roughly sub-rectangular in shape, measuring approximately 2.5m in length, 1m in width and up to 0.5m in depth. They had well defined U-shaped profiles, vertical sides and relatively flat bases (Fig. 5, S.351 and 352; Plate

13). Each was filled by an identical deposit containing abundant angular limestone blocks with rare rounded cobbles. Neither produced any finds or dating evidence.

Given their position, symmetry and size, it can be argued that each pit originally held one or more large wooden posts which would have formed an entrance structure. This suggestion is supported by a distinct circular depression indicative of a post noted in the base of cut 696 towards its northern end. A gateway reinforces the notion that the enclosure in its original form was an impressive and potentially high-status structure, access to which was controlled.

Post-holes 262 and 722

Post-hole 262 was recorded in Trench 22 and was located approximately 10m to the south-west of the gateway pit 696 and west of the south-eastern terminal (Fig. 3). It was only 0.2m in diameter and 0.16m deep and contained a single clay fill which appeared to have been heat affected (Fig. 5, S.81).

Post-hole 722 was recorded during current excavations and was located approximately 12m west of post-hole 262 and 6-8m from the eastern terminus of gully 108 (Fig. 3). It was oval in shape with a length of 0.3m and width of 0.22m. It was of similar size to 262 but slightly better preserved with a depth of up to 0.24m and vertical clearly defined edges (Fig. 5, S.362). It contained a single medium brown sandy clay fill (723) with common small angular limestone blocks.

Pit 699 and Post-hole 713

Both of these features were located towards the north-eastern corner of the enclosure, within 1m of each other, and consequently may be structurally related, despite ostensible differences in form (Fig. 3).

Pit 699 was roughly pear-shaped in plan with the widest point towards the north-west and aligned on a north-west to south-east axis. It was approximately 1.25m long, 1m wide and up to 0.3m deep with well-defined vertical edges and a relatively flat base (Fig. 5, S.353). It was filled by a single deposit (700) consisting of a medium grey brown sandy clay with common angular limestone inclusions and rare rounded cobbles.

Post-hole 713 was located approximately 1m to the west of pit 699. It was circular in shape with a diameter of 0.5m and had well-defined vertical edges but a relatively shallow depth of 0.21m (Fig. 5, S.359). It contained a similar fill (714) to that of pit 699 with a medium grey brown sandy clay containing common angular limestone blocks and rare rounded cobbles.

Neither feature produced any finds or dating evidence.

Feature 812

This feature was located 2m south of the internal edge of the north-western enclosure ditch, approximately 10m west of post-hole 713 (Fig. 3). It was a large sub-circular feature, approximately 4.3m long and 2.4m wide, orientated on a south-west to north-east axis. In profile it was found to be very shallow, achieving a depth of no more than 0.18m and to have

a slightly irregular base merging into poorly defined edges (Fig. 5, S.380). It contained a medium orange brown sandy clay with occasional angular limestone blocks and occasional charcoal inclusions throughout but displaying a particular concentration along the southern edge. The presence of charcoal distinguished the feature from natural hollows that occur across the site. The feature may represent the ploughed out remains of a large pit.

Post-hole 810

This post-hole was located approximately 9m to the west of feature 812 (Fig. 3) and was sub-circular in plan with a length of 0.41m and a width of 0.34m. It contained a medium orange brown sandy clay distinguished by the presence of occasional charcoal flecks. In profile the post-hole was U-shaped and well defined with a depth of 0.21m (Fig. 5, S.381).

Pit 701

Pit 701 was located approximately mid-way between feature 812 and post-hole 810, but 10m further to the south (Fig. 3). In plan it was oval in shape with a length of 1.18m and a width of 0.81m orientated east to west. In profile the feature was found to be shallow with a depth of 0.16m, to have a slightly irregular base and to contain a single dark grey sandy clay with occasional limestone blocks (Fig. 5, S.355). This fill produced a number of ferrous objects which have subsequently been identified as representing two possible blade fragments, a nail and a spike of unspecified function that generally date to the Romano-British period.

Feature 716

This feature was located approximately 2m in from the south-western corner of the enclosure ditch (Fig. 3). In plan it was sub-circular with a length of 1.4m and a width of 1.18m orientated from east to west. In profile the feature was 0.21m deep and had an irregular edge with a step to the north (Fig. 5, S.360). It contained a single medium orange brown sandy clay fill with occasional angular limestone blocks with a particular concentration of stone occurring along the southern edge. The irregularity of the profile may suggest that it had a natural origin, perhaps relating to a tree throw, although in plan it appeared fairly regular and distinct.

Pit 718

The pit was located approximately 4m in from the south-eastern corner of the enclosure (Fig. 3). It was slightly sub-circular in plan with a length of 1m and a width of 0.87m and was cut partially into a natural patch of clay that made defining its edges slightly difficult. For the most part its fill, a medium grey brown sandy clay, could be distinguished by the presence of charcoal inclusions along its edges. In profile it had relatively steep sides although it achieved a depth of only 0.2m (Fig. 5, S.361).

Hollow 625)

The partial remains of an upper and two lower millstone (millstones 2-4) were encountered within a hollow cut (625) located within the south-eastern part of the enclosure (Fig. 5, Plan 314 and Figs 9 and 10; Plate 14). The millstones were located immediately below, but

partially within the topsoil and had possibly been broken up by plough action, although the concentration of the fragments relative to each other would suggest they had travelled little from their original point of deposition. The form of the stone is indicative of a 3rd to 4th century AD date, which accords with the date for some of the pottery recovered from the enclosure ditch (primarily that from the section excavated across the south-eastern terminal during the predetermination trial trenching phase of work).

The fragments were positioned on top of a very clean homogenous red clay deposit (626) that filled the small hollow. The hollow was roughly circular in shape with a diameter of 1.2m and possessed a shallow profile reaching 0.15m with near vertical edges and a slightly uneven base (Fig. 5, S.314). The clay fill of this feature is interpreted as a potential and deliberate levelling and foundation deposit for the millstones. This may be supported by the relative regularity of the hollow which suggests a deliberate pit cut. Both stones appear to have been reused, perhaps as a hearth, as they displayed signs of having beenbeing heat affected, but no sign of *in situ* heating was apparent. Instead, the millstones may be seen as a foundation deposit perhaps supporting a post-setting, although in structural terms they appear to have existed in isolation.

Other features defined in Trench 22

A small number of features were identified and partially excavated within Trench 22 (Fig. 3) during the initial predetermination phase of trial trenching. They were variously described as probable gully terminals and pit features. Feature 264, by virtue of its irregular profile and lack of further corroborating evidence, could be dismissed as non-archaeological. Features 247 and 256 were recorded as possible gully terminals but no continuation of them could be identified at the open-excavation stage. As such, they may represent discrete features.

External Features

Approximately sixteen individual features were identified beyond the confines of the main enclosure (Fig. 3). The majority of these comprised shallow linear gullies and ditches, variously arranged around the enclosure and within appended Trenches 37 and 38. A number of discrete pit features were focused almost entirely around the enclosure's entrance. While these appear to respect the main enclosure ditch, they may represent quite separate phases of activity, as discussed below.

Pit features

A small number of pits were recorded beyond the enclosure. All bar one occurred almost immediately in front of the enclosure entrance, and slightly to the south-east, and as such may be regarded as relating to the same phase of activity. One small pit (cut 642) occurs in relative isolation further to the north-east, near the eastern limit of Trench 38 (Figs 2 and 3).

Pit 249, (burial pit)

The most significant discrete feature on the site was excavated within Trench 22 during the predetermination phase of trial trenching (Williams *et al.* 2008). It was located approximately 2.5m east of the entrance (Fig. 3). The pit was circular with a diameter of approximately 1.5m and was very well defined in profile with vertical edges reaching to a flat base at a depth of 0.9m (Fig. 6, S.73 and Plan 249; Plate 15). The fill consisted of a primary deposit of dark brown silty sand comprising approximately 75% of the pit's infilling with the remainder made up of an upper fill of lighter coloured material.

Within the pit, the body of a mature adult woman had been lain in an extended fashion, positioned off-centre and with the head and upper torso leaning against the pit wall (Plate 15). The hands were placed over the pelvic area and in the vicinity of the lower left ulna and radius were annular ornaments that may have adorned a bracelet (see Cool below; Plate 16). Concretion of some of the bone to the limestone bedrock provides good evidence that the inhumation had been interred when the pit was open and clean of debris. The position of the body did not utilise the full extent of the pit and the excavator has argued that the additional space may have contained an assemblage of grave goods made up from perishable items, such as wood and skins.

The human remains provided a radiocarbon date in the range 380-180 cal BC. This places the burial firmly in the pre-Roman Late Iron Age period and as such does not accord with the pottery assemblage from the enclosure ditch, which primarily relates to the 2nd to 4th centuries AD. This indicates two separate phases of activity on the site, removed by as much as 600 years, but perhaps as little as 400 years, with little evidence of interceding activity. Given the location of the pit towards the front of the enclosure, and furthermore almost within the entrance, it is possible that the construction of the enclosure respected the burial pit, suggesting that the two could be broadly contemporary. Whilst there is no other evidence to link the pit and the construction of the enclosure ditch, by virtue of their spatial relationship, the interment of the inhumation may be regarded as providing the best *terminus post quem* for the enclosure.

Pit 669

Pit 669 was located approximately 2.5m to the south-east of the burial pit 249 and 2m east of the south-eastern ditch terminal (Fig. 3). It was circular in plan with a diameter slightly larger than the burial pit of 1.7m. In profile it was well defined with near vertical edges and extended to a depth of 0.71m (Fig. 6, S.344; Plate 17). The pit contained two distinct fills, a primary deposit (671), approximately 0.25m thick consisting of light yellow brown sandy clay with occasional angular limestone blocks and rare rounded cobbles, and a secondary fill (670), which resembled the stony deposits encountered in the enclosure ditch. It consisted of abundant angular limestone blocks, some up to 0.5m in size, and common rounded cobbles within a scant sandy clay soil matrix. Both fills produced a very small quantity of animal

bone and the primary deposit also contained rare amounts of charcoal. No other finds were recovered from the feature.

Feature 252

This pit was identified and recorded during the excavation of Trench 22 and was located approximately 2m to the south-east of the burial pit (Fig. 3). It was identified as bowl-shaped with a diameter of 0.83m and a depth of 0.19m (Fig 6, S.75) and contained a single homogenous fill (253) comprising a light orange brown silty sand with occasional limestone fragments that produced no finds. The shallow depth appears in stark contrast to that of the other pits associated with this group and may indicate either a much more ephemeral pit or else a natural feature.

Pit 687

The pit was located approximately 4m to the east of pit 669 (Fig. 3). It was circular in plan with a diameter of 1.34m and in profile was well defined with vertical edges and a flat base (Fig. 6, S.349; Plate 18). Similar to pits 249 and 669, it was filled by two distinct deposits, a primary fill (689), consisting of medium yellowish brown sandy clay with occasional angular limestone blocks, a the main secondary fill (688) of medium reddish brown sandy clay with common angular limestone blocks and rare rounded cobbles. The secondary fill produced a small quantity of animal bone but again no other artefacts. In contrast to pit 669, the nature of the fill suggests either a gradual silting of the feature or otherwise rapid backfilling with mainly soil. No functional explanation for the pit could be determined.

Feature 690

This feature was located less than 0.5m immediately east of pit 687 (Fig. 3) and in plan formed a very regular and clearly defined oblong shape, approximately 2m long and 1m wide, orientated on a north to south axis. In profile the angled edges were very distinct, if slightly irregular, and gave way to a rounded base at a depth of 0.3m (Fig. 6, S 350). It contained a single very homogenous fill (691) consisting of a medium orange brown sandy clay with rare angular limestone blocks and occasional rounded cobbles. It produced no finds and the character of the fill may suggest a natural feature.

Isolated Pit 642

This shallow pit was located approximately 4m west of where the linear gully, Context Group 102, emerged from the eastern limits of Trench 38 (Figs 2 and 3). In plan it was originally identified as a discrete mass of animal bone intermixed with elements of the topsoil. It was therefore thought that this may simply reflect a decayed carcass within the topsoil layer, but further investigation revealed that the animal bone was at least partially articulated and comprised the remains of a sheep positioned within a shallow cut obviously disturbed by plough activity. Cut 642 was revealed to be circular in shape with a diameter of approximately 0.63m. While the profile was very limited achieving a depth of only 0.14m, it was fairly regular with a rounded base (Fig 6, S.642). Below the topsoil, the fill (639), comprised a medium brown silty clay with common angular limestone blocks, containing

further quantities of animal bone. Such structured deposition can be paralleled at other sites in the region such as Ferrybridge (Richardson 2005) and Ledston (Roberts 2005) where they have been imbued with ritual connotations.

Group 100

Group 100 represents a ditch extending along a north to south axis within the extended area of Trench 38. This feature was not apparent during geophysical assessment and consequently was not targeted, or indeed encountered, during the original phase of trial trenching (Tinsley *et al.* 2012). It extended in plan from the southern limit of excavation for approximately 11m before terminating (Figs 2 and 3). At this point the ditch was interrupted by a small gap approximately 2.5m wide which provided access across the feature. After this break the ditch continued for a further 5m before entering the eastern limit of excavation.

The ditch was examined at four points, including a possible intersection with a second ditch which bisected it on an east-west axis, but which proved to be a furrow or other ephemeral feature. Ditch 100 was deepest and most clearly defined against the southern baulk (Fig. 7, S.308). Here it was found to be 1.43m wide and 0.6m deep with a clearly defined V-shaped profile incorporating angled sides and a narrow flat base. It contained two distinct fills; 616, the primary deposit, consisting of a medium orange brown sandy clay with frequent angular limestone blocks and comprising half the ditch, and 615, a secondary deposit, of medium grey brown sandy clay with frequent angular limestone blocks and common rounded cobbles. The lower fill produced a small quantity of animal bone as well as two flint bladelets. The upper fill also produced a small quantity of animal bone, a single leaf-shaped arrow head and a single sherd of Romano-British Greyware.

At the terminal of this section of ditch, the width and depth of the ditch reduced to 0.9m and 0.33m respectively. The profile also varied with a slightly wider base and a pronounced step in the western side, although two fills were still present. The secondary fill (624) produced a small quantity of animal bone.

Excavation of the terminus of the northern extension of this ditch revealed a shallow, wide bowl-shaped profile with a width of 1.3m and a depth of 0.23m. Here it contained a single fill (630) of medium orange brown sandy clay with common angular limestone blocks and a small quantity of animal bone. Overall the ditch decreased in depth and width from south to north and varied in profile from one section to the other, although both terminal sections were roughly equivalent. This may suggest separate episodes of construction although the shared alignment demonstrates a common purpose.

Given the presence of the Greyware, which must be regarded as providing a *terminus post quem* for the feature, the flint assemblage is obviously residual in nature and indicative of general low level Mesolithic to Neolithic activity.

Groups 101 and 102

Group 101 represents a linear feature partially identified during geophysical assessment and consequently targeted by Trench 38, before being exposed further within the main excavation area. Ditch 101 extend for approximately 25m north-south with the north end terminating in the eastern limit of excavation while at the southern end the ditch turned at a right angle and proceeded west for a further 15m before terminating approximately 4m short of the main enclosure ditch. The north-south ditch had a shallow rounded profile *c.*0.61m and 0.12m deep. It contained a single fill of medium orange brown clay with common angular limestone blocks but produced no finds. Excavation of the east-west ditch, revealed a more clearly defined and better preserved feature. Here the profile of the ditch was up to 1.2m wide, 0.41m deep and V-shaped with angled sides and a narrow flat base (Fig. 7, S.316). It contained a single homogenous fill of medium reddish brown sandy clay with common angular limestone blocks and rare rounded cobbles. A small quantity of animal bone was recovered from the ditch terminus. This focus may suggest deliberate placement although the material was not articulated.

Group 102 was originally identified in Trench 38 as a linear feature approximately 0.63m wide extending from east to west across the trench. Excavation across the feature revealed a shallow cut which was 0.11m deep and rounded in profile. It contained a single fill of medium orange brown sandy clay with common angular limestone blocks. Expansion of the trench exposed the ditch on the same axis over a length of 21.5m. At its eastern end the ditch petered out and became less distinct just before reaching the limit of excavation and at the western end terminated approximately 5m short of the enclosure ditch. To the west the ditch was generally wider at 0.76m wide and deeper at 0.35m, with well defined V-shaped profile and a narrow flat base comparable to that of Group 101 (Fig. 7, S.327). It also contained a single medium reddish brown sandy clay fill with common angular limestone blocks and rounded cobbles from which a small amount of animal bone was also recovered from the terminus.

While the eastern section of Group 102 was poorly defined it is likely that Groups 101 and 102 intersected just beyond the limits of excavation. On this basis, the two groups may form a large U-shaped enclosure orientated roughly north to south with the western side entirely open. The enclosure terminates just before reaching the main enclosure ditch and is positioned just in front of the entrance but off to its south. The gap between both enclosures could represent access across the area, or alternatively may indicate that the U-shaped enclosure respected an external bank belonging to the main enclosure. This would suggest that the U-shaped enclosure post-dated the main enclosure. Alternatively if the two enclosures were contemporary and a bank was present, one or other of the access points, most likely that to the north of the main enclosure entrance, must have been clear of a material. The provision of an additional external enclosure appended to the main area may have functioned as a stock corral. In this regard the recovery of animal bone from each

terminal, may indicate a symbolic act, although the lack of articulation and thereby structure to the deposit, may render a mundane explanation more plausible.

Group 103

This group represents a single linear feature recorded approximately 8m north of the south-eastern corner of the main excavation area (Fig. 3). In plan it extended west from the limit of excavation for approximately 16m on an east-west axis and it was up to 1.4m wide. Three sections across its width revealed a surprisingly shallow feature with a slightly irregular bowl shaped profile. It contained a single fill which comprised a medium reddish brown sandy clay with common angular limestone blocks and rare rounded cobbles that produced no finds.

Given the shallow profile and lack of finds, it is difficult to ascribe a suitable function to the feature and it may well relate to a continuation of the Group 104 gully.

Group 104

Group 104 was defined in plan as a gently curving gully extending on an east-west axis for approximately 45m (Fig. 3). It was located approximately 10m south of the south-eastern length of the main enclosure ditch and ran more or less parallel to it. It was found to be up to 0.7m wide, slightly irregular, but generally bowl-shaped and very shallow, with a maximum depth not exceeding 0.16m (Fig. 7, S.334). It contained a single very homogenous fill which consisted of a medium reddish brown sandy clay with occasional angular limestone blocks and rare rounded cobbles. It produced no finds other than a small assemblage of snail shells.

While shallow and relatively sterile, the regularity and clarity of the feature in plan leaves little doubt as to its authenticity. This is further reinforced by the spatial relationship with the main enclosure ditch. The gully was probably constructed along with other similar features (Groups 105 and 106), some time after (but obviously respecting) the main enclosure and any attendant earthworks. This may have occurred during the functional life time of the primary enclosure or it may have occurred some time after the enclosure had gone out of use, and while still respecting any extant earthworks relates to the imposition of a new land division upon the site. Unfortunately the lack of datable finds from this or any other similar feature does not allow either possibility to be refuted or confirmed (see Discussion and Conclusions).

Group 105

Group 105 was defined in plan as a relatively short and slightly sinuous length of gully, approximately 20m long, orientated north-south, but heavily disturbed. It was probably part of the same feature that could be traced for a further 30m northwards. It was located approximately 10m west and parallel to the south-western length of the enclosure ditch and therefore resembles Group 104, although the two were separated by a gap of approximately 5m and therefore did not form a continuous feature (Fig. 3). Group 105 was found to be up to 0.93m wide and 0.25m deep with a slightly variable bowl shaped profile (Fig. 7, S.340). It contained a single homogenous fill identical to that of group 104 which produced no finds.

While less well preserved, and slightly more sinuous than Group 104 in form, Group 105 clearly relates to the same phase of activity (see above).

Trench 21 features

Two features were identified within Trench 21 during the predetermination phase of work. Only at the eastern end of the trench were definite archaeological features encountered in the form of a large feature initially interpreted as a ditch (288) and a small gully (274).

The cut of Feature 288 (Fig. 3) was 1.83m wide. 0.9m deep and possessed a V-shaped profile with a flat base. It contained two fills, the upper fill being a mid orange brown sandy silt with moderate subangular limestone and occasional rounded heat affected sandstone cobbles. The primary fill of the feature, was an orange brown sandy silt, with frequent angular and tabular inclusions.

Gully 274 was 0.65m wide and 0.22m deep, orientated approximately north-west to south east. Its orientation suggests that it could have been a field boundary perhaps relating to the north-western part of Group 105.

Neither feature was identified during the stripping of the main mitigation area and suggests that Feature 288 was a pit rather than a ditch. The lack of the continuation of gully 274 also suggest the level of plough damage is highly localised. No finds were recovered from either feature making it difficult to phase them.

Group 106

Group 106 was defined in plan as a single length of gully, approximately 26m long and on average 0.9m wide, orientated south-west to north-east and located approximately 12m north of the north-western length of the enclosure ditch (Fig. 3). Similar to Groups 104 and 105, it ran parallel to the main enclosure ditch but did not extend along its full length and possessed a well-defined terminus at either end. It had a fairly regular bowl-shaped profile up to 0.3m deep (Fig. 7, S.347) and contained a single homogenous fill of medium reddish brown sandy clay with common angular limestone blocks and rare rounded cobbles. It produced no finds. The location and form of the gully would suggest that it corresponds to the same phase of activity as Group 104 and 105.

Group 107

Group 107 was defined as a comparatively short length of gully, approximately 11m long and up to 0.91m wide (Fig. 7, S.348). It was orientated on a south-west to north-east axis and located approximately half way between the enclosure ditch to the south and Context Group 106 to the north (Fig. 3). Overall the feature was less well defined compared to similar context groups and at its north-eastern end simply petered out as it reached an area densely populated by natural hollows and spreads of material. While this area of natural features may well have served to mask the gully, every effort to locate it proved negative.

The gully was found in plan to comprise of a distinct segmented section in relation to the terminus but elsewhere appeared to be continuous. In profile this comprised of a bowl-shape cut approximately 0.25m deep with a slightly irregular base and sides. It contained a single medium orange brown sandy clay with common angular limestone blocks and produced no finds. The location of this feature between the enclosure ditch and Group 106, suggests that the feature relates to a different phase of activity.

Group 110

Group 110 was identified within Trench 37 and the area exposed around it and relates to two gully features which collectively formed an reverse h-shape in plan (Figs 2 and 3). Both gullies were shallow and bowl shaped in profile, up to a maximum of 0.69m in width and 0.13m in depth. A uniform fill of light orange brown sandy clay with common angular limestone blocks was observed. No finds were recovered. The gullies appear to represent the ploughed out remains of ditches forming a small enclosure, probably appended to a further field boundary. They may correspond with one or more phases of activity identified in relation to the main enclosure or reflect partitioning of the land.

Feature 798

A single linear feature was observed to extend east for approximately 11m from the south-eastern corner of the enclosure ditch (Fig. 3) before eventually petering out. This was initially thought to represent a further ditch appended to the enclosure. Upon excavation, however, it was found to be very shallow with a depth of only 0.06m (Fig. 4, S.377). It contained a single medium grey brown silty clay fill (799) similar to feature 103 approximately 15m south, from which no finds were recovered. It may be that the two features (798 and Group 103) represent relics of a ridge and furrow system and therefore are unconnected to any phase of activity associated with the enclosure.

The ditches and gullies, located outside of the enclosure complex can be considered as part of a wider series of land divisions associated with the enclosure but also extending across other sections of the site, where they have been variously identified by cropmark evidence, geophysical survey and trial trenching (Webb 2008; Williams *et al.* 2008 and Tinsley *et al.* 2012). Such field systems are typical of those encountered in the wider landscape where they developed incrementally primarily during the Iron Age and subsequent Romano-British period (Roberts *et al.* 2010).

Trench 40 Mitigation Area (See Fig. 2)

An area of 20m by 20m was excavated around a shallow linear feature found in Trench 40 during the evaluation. The overburden consisted of both topsoil and subsoil measuring between 0.30m-0.50m in depth. Two slots were excavated through the exposed east-west linear feature, which crossed the entire width of the trench. It was between 1.15m-1.31m in width and 0.08m-0.19m in depth. The cut was very shallow and uneven in places indicative of hedgerow roots, rather than an archaeological feature. The single fill was a reddish orange

brown silty clay with occasional small limestone fragments from which no finds were recovered.

Trench 48 Mitigation Area (See Fig. 2)

A 20m by 20m area was excavated around a supposed gully terminal found during the investigation of Trench 48. The overburden consisted of both topsoil and subsoil measuring between 0.33m-0.55m in depth, with the subsoil only present in the northern 5m of the trench. Upon excavation the possible gully was identified as a natural feature, irregular and sinuous in plan.

6 Artefact Record

Pottery by Ruth Leary

Methodology

The pottery has been examined in context groups and catalogued according to the Guidelines of the Study Group for Romano-British Pottery for basic archiving (Darling 2004). The fabrics were recorded in broad groups and the source suggested where appropriate. Reference is made to the National Fabric Collection where appropriate (Tomber and Dore 1998). Details of fabric variations are recorded where appropriate.

The Pottery

The excavation of the enclosure and its surrounding features produced 321 fragments, all of which were submitted for examination. Of these two were possibly fired clay. The remainder comprised well preserved sherds of Romano-British pottery and 26 handmade sherds of prehistoric type although such vessels continued to be used in the early Roman period in this area. The pottery was examined and recorded by ware and vessel type and given spot dates (Tables 1-3 and Graph 1). The date range of the context groups are given below. Detailed lists are presented in Appendix 1. The 88 sherds recovered from the excavation of Trench 22 were reported by Leary in Williams *et al.* 2008. Relevant data are tabulated below.

Table 1. Quantity from contexts by sherd count weight and rim percentage

Context	Nos.	Weight (g)	RE
615	1	31.4	0
671	7	0.0	0
685	63	613.9	79
686	10	95.6	10
698	8	161.6	0
704	2	0.0	0
705	2	62.1	0
708	2	14.1	0
715	2	69.0	10
730	3	22.2	10
736	25	361.9	64
748	99	726.7	95
781	10	56.6	0
789	1	2.2	0
790	1	38.4	0
792	1	6.9	0
NW corner Enclosure ditch	2	16.3	0

Unstrat.	1	8.6	10
Total	233	2288	278
Evaluation Trench 22 Contexts			
255	7	56	-
266	18	294	-
267	8	218	-
268	3	23	-
269	48	368	-
270	6	45	-
272	6	104	
Total from evaluation	88	1108	-
Total		**321**	

Range and variety of material

Wares

The fabric of the pottery was first examined by eye and sorted into ware groups on the basis of colour, hardness, feel, fracture, inclusions and manufacturing technique. National fabric collection codes are given wherever possible (Tomber and Dore 1998).

Table 2. Quantities of wares from open-area excavation

Fabric code	Fabric	Tomber and Dore 1997	Count	Weight (g)	Rim %
BB1	BB1	BB1	71	555.6	72
BB1?	BB1	BB1?	10	49.9	5
E1?	?Ebor or York area oxidised ware.	EBO OX	3	46.6	0
FC/H	either fragments of handmade pottery with burnt organic inclusions or fired clay - reduced		2	0.0	0
GRB	Greyware		6	177.0	45
GRB1	S Yorkshire Greyware		115	1312.0	144
H1	Handmade with calcareous inclusions		24	134.2	12
H2	Handmade with quartz and Granitic inclusions		2	11.9	0

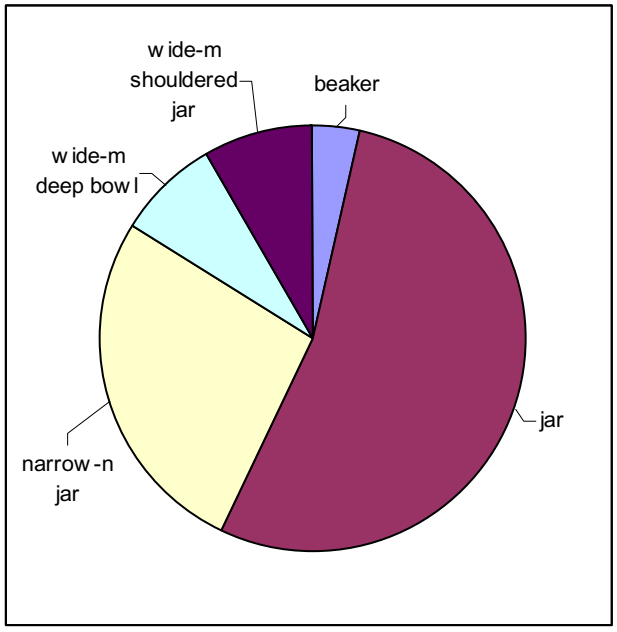
Medium, quartz-tempered Greyware was the most common ware present. This is characterised by the subrounded quartz inclusions typical of the South Yorkshire kilns

operating from the mid-2nd to the mid-4th century around Doncaster (Buckland *et al*. 1980; 2001, types Ea, F and H). The second most common fabric group is black burnished ware category 1. It was difficult to determine the source of this but the forms, small neckless jars with bead or short everted rims, suggest an origin in Dorset (Gillam 1976, Nos. 17-17 and 30) rather than Doncaster. Other Greyware is dissimilar to that produced in the Doncaster kilns and is of unknown origin. Three undiagnostic bodysherds in oxidised ware were similar to Ebor ware. No amphora, mortaria or imported ceramics other than samian were identified, although a number of Crambeck wares, including mortaria and East Yorkshire calcite gritted wares were identified from the excavations in Trench 22. The pottery group from the evaluation typically dated to the 4th century, probably during the expansion period of the Crambeck industries in the mid-4th century.

Forms

Most vessels are Greyware jars in BB1 forms and small BB1 jars with bead and everted rims. A possible BB1 sherd was identified. Two everted rim jars seem to be of the narrow-necked type and one has a zone off acute lattice burnish. Deep Greyware bowls of the type made at the South Yorkshire kilns were present with the earlier bead and club-type rims. A shouldered wide-mouth jar/bowl with rolled rim was also identified. One vessel appears to be a cheesepress base. A group of 43 crucible sherds from a fill (269) of the enclosure ditch 109 were of unusual type. One handmade base with a splayed simple base in a medium quartz tempered fabric may be from a non-crucible vessel since although it had burnt material adhering, No slaggy accretions were identified. The other sherds were over burnt and had a tapering rounded rim. They appeared to come from an open vessel and had much slaggy material adhering to the inside.

Graph 1. Relative quantities of vessel types



Chronology

The pottery indicates that most of the activity on the site dates to the 2nd century. Small amounts of pre-Roman Iron Age and late 1st to early 2nd-century Roman pottery were identified in fills 708 and 781 of the enclosure ditch (Group 109), with one sherd dating to the late 3rd to 4th-century coming from an unstratified deposit. Much of the pottery can only be dated broadly to the period of production at the kilns around Doncaster. However, the lack of later types, such as Dales ware and Dales type, Huntcliff types, Crambeck ware, grey gritty wares and Nene Valley wares and of vessel types such as the splayed rim BB1 jars with obtuse lattice, lid-seated jars and the developed flanged bowl types, suggests that most of the groups date to the 2nd century. Interestingly, the material recovered from the enclosure ditch terminal during the evaluation produced eleven sherds of Crambeck Greyware, one sherd of Crambeck white mortarium and one base sherds from a Nene Valley bowl were recovered indicating that there had been some activity during the later 3rd to 4th centuries AD.

The pottery from the enclosure ditch fills suggest infilling taking place during the 2nd century, possibly with a phase in the PRIA or late 1st to early 2nd century, but with most of the fills containing pottery of the early to mid-2nd or mid- to late 2nd century. In particular, the larger groups (from 685 and 686, 736 and 748), include types of mid-2nd century date. The scraps of ceramic material from internal feature 703 were difficult to evaluate and could be either fired clay or handmade pre-Roman pottery. The former identification is likely given the large organic inclusions. Only undiagnostic Greyware was found in feature 614 and the fragments from pit 669 do not appear to be pottery.

Table 3. Spot-dates by context

Context	Count	Weight	Date
615	1	31.4	Mid 2nd-4th century, undiagnostic sherds and not closely datable
671	7	-	Not pottery
685	63	613.9	Mid 2nd century, BB1 and GRB1 jars with acute lattice burnish and S Yorkshire Greyware deep bowls a and shouldered jars
686	10	95.6	Early-mid 2nd century BB1 jar, same as vessel in 685
698	8	161.6	Mid 2nd-4th century, undiagnostic sherds and not closely datable
704	2	-	Fired clay or handmade pottery
705	2	62.1	Mid 2nd-4th century, deep bowl with bead rim, South Yorkshire type
708	2	14.1	Late 1st-Early/mid 2nd century, rusticated jar sherd
715	2	69.0	2nd century, Hadrianic-early Antonine. BB1 jar
730	3	22.2	Mid 2nd-4th century, GRB1 wide-mouthed shouldered jar with rolled out rim from S Yorkshire kilns

Context	Count	Weight	Date
736	25	361.9	Mid-late 2nd century, BB1 and GRB1 jars with acute lattice burnish and GRB1 S Yorkshire types including deep bowls, shouldered wide-mouthed jars and a handmade with tall blunt ended rim.
748	99	726.7	Mid-late 2nd century BB1 and GRB1 type jars, GRB1 cheesepress, narrow-necked jar and other everted rim jars
781	10	56.6	Pre Roman Iron Age, handmade calcite gritted ware jar base
789	1	2.2	Mid 2nd-4th century, undiagnostic sherds and not closely datable
790	1	38.4	Mid 2nd-4th century, undiagnostic sherds and not closely datable
792	1	6.9	c.AD120-200, BB1 jar sherd with acute lattice burnish.
NW corner Enclosure ditch	2	16.3	Mid 2nd-4th century, undiagnostic sherds and not closely datable
Unstrat.	1	8.6	Late 3rd-mid 4th century, Greyware long necked beaker with everted rim.
Evaluation Context	**Count**	**Weight**	**Date**
255	7	-	Mid-2nd to mid-4th century, GRB1 base sherd from a jar with acute lattice burnish
266	18	-	AD 280+, optimum mid-4th century +, Crambeck white mortarium sherd and a medium-quartz tempered oxidised ware bodysherd with traces of a colour coat
267	8	-	AD 280+, optimum mid- century, GRB1 body herd fashioned into a spindle whorl
268	3	-	AD 280+, optimum mid- century, Crambeck Ware bodysherds
269	48	-	Late 3rd to 4th century, 43 fragments of crucible, and one sherd of Nene Valley ware
270	6	-	AD 280+, optimum mid-4th century +, GRB1 scraps and abraded bodysherds
272	6	-	AD 280+, optimum mid-4th century +, GRB1 and Doncaster black burnished ware with acute lattice burnish

Function and site status

The vessel types present are consistent with a rural settlement of low status or an area that is on the periphery of the domestic settlement. The assemblage included one specialist vessel in the form of a cheesepress.

Samian pottery by Margret Ward

Four sherds of Samian ware were recovered from the excavations. These represent three vessels, each displaying faint smoked spots. This sample adds substantially to the information provided by two Central Gaulish vessels that were amongst finds recovered from Darrington Quarry West in 2008 (Williams 2010). The Samian fragments, were 2nd-century products, the latest being the decorated bowl, Cat. No. 2. The footring of a second moulded bowl (Cat. No. 3) was one of the late South Gaulish products, in this case from Banassac. Banassac ware, particularly those sherds lacking diagnostic features, is found relatively rarely on British sites, or, at least, it is rarely identified as such. The few Banassac vessels that have been identified previously at northern locations by the present writer were all found at military or *vicus* sites and all but one were found west of the Pennines, the previous exception being, possibly, an unpublished fragment of a moulded bowl which was found in the Castleford *vicus*.

A larger sample is required to comment on the proportion of moulded bowls reflective of a high-status site. Other small groups of Samian ware have been recorded at various locations in this area: they included finds to the north of Darrington, again all representing 2nd-century vessels (Ward 2007, 234).

Table 4. Summary of sherd numbers, Estimated Vessel Equivalents (EVEs) and weights

Fabric	Nos. of sherds	Nos. of vessels	EVEs by rim %	EVEs by footrings%	Weight in gms
South Gaulish	1	1	-	-	12
Central Gaulish	3	2	0.09	-	42
Total	4	3	0.09	0.07	54

Catalogue

1 Central Gaulish dish, form 18/31 or 18/31R, produced in the range *c.* AD 120-160. A single sherd, comprising 3% of the rim and weighing 16g; *Group 109, Ditch 684, Context 686*

2 Central Gaulish moulded bowl, form 37, displaying a blurred ovolo (probably Rogers 1974, B156) and horizontal beadrow (A2?) above the edge of some unidentifiable decoration. Ovolo B156 would indicate the style of Iullinus ii or Mercator iv (Leeds notation), potters who were producing bowls in the period AD 160-190/200. Two, adjoining sherds constituted 6% of the rim at diameter 220mm; weight 26g; *Group 109, Ditch 709, Context 705*

3 South Gaulish moulded bowl, form 37 retaining no decoration, but in a heavily yellow-flecked fabric that was produced at Banassac in the range *c.* AD 110-150. A fragment from the footring that was little worn if at all: 7% at diameter 100mm; weight 12g; *Group 109, Ditch 709, Context 705*

Flint by Phil Weston

Four flint artefacts were recovered from three separate contexts in Trench 38. Diagnostic pieces suggest activity on site during the later Mesolithic to early Neolithic period but as all the flint was recovered from Iron Age or Romano-British (or later) features the assemblage must be considered residual and representative of low level early prehistoric activity in the area. Identification and terminology follows Andrefsky (1998) and Butler (2005).

Catalogue

1 Leaf-shaped arrowhead. The butt has been removed as has the majority of the bulb of percussion. Mottled mid to light grey, slightly translucent. Tertiary. Slightly patinated. Fairly sharp. The arrowhead is of the kite-shaped form tradition, having symmetrical upper and lower halves. The piece is formed on a flake shaped by invasive pressure flaking. Approximately 60% of its dorsal face is invasively flaked whilst the ventral face exhibits flaking over approximately 15% of its area; *Group 100, Ditch 614, Context 615*

2 Small bladelet. Trimmed butt. Light grey, opaque. Secondary. Patinated. Fairly sharp. No evidence of use wear. *Group 100, Ditch 614, Context 616*

3 Blade. Trimmed butt. Light grey, opaque. Tertiary. Patinated. Fairly sharp. Evidence of use wear along both lateral edges. *Group 100, Ditch 614, Context 616*

4 Flake. Unprepared butt. Mid to dark grey, slightly translucent. Tertiary. Moderately patinated. Fairly sharp. No evidence of use wear. *Group 100, Ditch 617, Context 619*

Quern and millstones by John Cruse

Fragments of one quernstone and three millstones were recovered from the excavations. A single fragment from a beehive quern was recovered from the fill of ditch Group 109 and is either pre Roman Iron Age or Romano-British in date. The millstones were recovered from within the enclosure itself with millstones 3 and 4 likely to represent both the upper and lower stones of a large millstone from 3rd or 4th century. Three distinct querns have, therefore, been recovered from the excavation.

Beehive Upper Stone

The fragment of a beehive upper stone (Cat. No. 1) has a very short feed-pipe, which indicates that it was very well-used before being broken up. Based on a suggested height of between 160-180mm high when new, it would probably have weighed around 25kg – so that, by the end of its life, the quern could have lost some 60% of its original weight.

This quern could be from the Late Iron Age, but elsewhere in Yorkshire, many other examples have also been found in contexts which date throughout the Roman period (and

into the post-Roman period). Unfortunately, as these beehives are usually found in later, secondary contexts, their original period of use can rarely be firmly dated.

Heslop (2008, 75) has observed that the structured deposition of querns within enclosure ditches has been increasingly noted on Late Iron Age (and later) sites and has suggested that such practices could be intended to reinforce such boundaries.

Three Millstones

The diameter of these stones indicates that they are clearly Roman millstones. As ten of the twelve comparable dated examples come from 3rd or 4th century AD contexts, they are likely to be Late Roman in date. Such millstones could be powered by waterwheels, or by animals, or possibly by human power. With no surviving data on any fittings at the centre of the millstone, each option is possible. The deposit also indicates the termination of a phase of nearby cereal processing, whose scale exceeded that needed for domestic consumption.

Millstone 3 is particularly interesting, as it adds to the 23 other known UK examples of upper millstones with opposed double feed-pipes. Its clearest parallel is a 830mm diameter mill-stone, which was found in an early 4th century AD context at Birdoswald on Hadrian's Wall (Wilmott, 1997, 290-3, SF 133). This would suggest that the central perforation for the drive shaft of millstone 3 could be around 160mm diameter.

Analysis of Yorkshire Archaeological Society Quern Survey records has shown that the majority of the Roman millstones, 46 of the 55, have been found on the narrow strip of Permian Limestone, which fringes the western side of the Vale of York. The discovery of these three millstones from a new site, also on the Permian Limestone, adds to this intriguing local concentration of Late Roman cereal processing capacity.

Catalogue

1 Beehive upper stone (20-25%), broken radially, probably after some of the grinding surface (G/S) edge had been removed by a single impact. The outer surface and the conical hopper are both neatly peck dressed. The hopper has a flat-topped collar, 20mm wide, whose exterior face rises 10-15mm vertically above the domed outer surface. The G/S is flat and worn smooth. Sandstone, greyish white, medium to (mainly) coarse grained with subangular to (more commonly) subrounded grains, poorly sorted, poorly compacted. Upper Coal Measures. Diam. c.280mm; h. 115mm; Hopper w. 130mm, d. 90mm; Feedpipe diam. *c.*25mm; weight 2kg (est. intact weight 8-10kg). *Group 109, Ditch 728, Context 730, SF 7*

2 Millstone lower stone (*c.*5%) in three small fragments (A, B & C), two of which have a modern break (A & B): Whilst the grinding surface is flat, the other face has a rougher finish, so is assumed to be the base section of a lower stone. With its vertical skirt and a profile thinning towards the centre, then to balance the expected slightly convex G/S, it would be expected that the base would be somewhat concave.

Sandstone, pale brown, fine to medium grained, well sorted and well compacted. Heat reddened indicating burning, prior to deposition. Coal Measures. Diam. *c.*850mm; h., Rim 70mm, thinning to 60mm; Weight 5.5kg (est. intact 90-100kg). *Pit 625 Context 626, SF 1; Fig. 5, Plan 314 and Fig 8; Plate 14*

*3 Millstone, probable double feed-pipe upper stone (17%) single fragment. Piece D preserves 25% of the millstone's intact vertical rim, with linear fractures back to a central, worked face. This can be reconstructed as the 170mm long, roughly straight, outer edge of a 'D' shaped feed-pipe, offset from the presumed central connection to the drive-shaft. The millstone's flat upper surface is neatly peck-dressed, with impacts *c.*15mm diam. and 2-3mm deep. In the last 20mm towards the rounded rim edge, it thickens by 2-3mm. The G/S has concentric wear-marks, with a more distinct groove with an estimated diameter of *c.* 30-35cm, skirting the outside of the feeder pipe edge, which is interpreted as a somewhat elliptical 'distributor groove' for the incoming grain. As the stone's profile thins towards its centre, it is assumed that the upper surface would be flat and the grinding surface somewhat concave. Sandstone, pale brown, fine to medium grained, well sorted and well compacted. Heat reddened indicating burning, prior to deposition. Coal Measures. Diam. 850mm; h., Rim 80mm, at Feed Pipe edge 58mm; Weight 19 kg (est. intact *c.* 100kg). *Pit 625, Context 626, SF 1; Fig. 5, Plan 314 and Fig. 9; Plate 14*

*4 Millstone, probable lower stone (c.17%), in two joining fragments, pieces E & F include c.20% of the rim edge, from which c.30% has been removed. As there is no evidence for internal structural features, it was initially interpreted as part of upper stone millstone 3. However, although its grind surface has similar concentric wear to that on millstone 3, this face did not include the expected 'distribution groove', but instead has short, radial grooves around its outer edge, a feature not found on millstone 3. Its non-grind surface face also seemed to have suffered from more loss than millstone 3, with only 25% of its surface being retained. In view of these differences, but the commonality in both lithology and diameter, it is therefore interpreted as part of a lower stone, which is likely to have been paired with millstone 3. Sandstone, pale brown, fine to medium grained, well sorted and well compacted. Heat reddened indicating burning, prior to deposition. Coal Measures. Diam. 850mm , Rim 80mm; Weight: 13 kg (est. intact *c.* 75kg). *Pit 625, Context 626, SF 1; Fig. 5, Plan 314 and Fig 10; Plate 14*

Metallic objects by Gail Hama and Hilary Cool

Eight iron objects and a possible piece of mineralised textile were found during the excavations and reported according to MAP2 guidelines (English Heritage,1991). X-radiography has been used to inform this report.

The V-shaped profile of a suggested knife blade fragment (Cat. No. 1) was recovered from the fill of a pit within the enclosure. The edge and back of the blade run parallel but the tip and tang are both missing. Classification of its form is not possible without the tip being present, though it could be Roman in date given the wide range of knives in use during this period. Item No. 2 is a tanged implement from the same deposit. The tang is level with the back, and the blade edge and back are both straight. Both implements were found in association with an iron spike (Cat. No. 3).

Although nails are ubiquitous finds on sites dating from the Roman period onwards, item No. 4 is a particularly well-preserved example of a conical-headed nail. The head has not been rounded or flattened by hammering, suggesting that it was not used. Comparable examples are known from Housesteads (Manning 1976, fig. 25.171). Ditch fill 721/708 also yielded a near complete flat-headed nail (Cat. No. 5) and a nail shank (Cat. No. 6). A nail shank or bent strip (Cat. No. 7) was found in association with the blade, tanged implement and spike, while a further nail shank came Group 100. Their fragmentary condition and lack of diagnostic features makes it impossible to refine the date range.

Item No. 9 was identified as an iron object at the time of excavation, but on further examination details of textile weave could be seen. It is likely to be a block of material, a twill textile, probably wool (R. Janaway pers. comm.) that has been preserved by contact with iron corrosion products.

This is a small collection of items that could all easily be Romano-British in date. The conical-headed nail has parallels with those found at the Roman fort at Housesteads. The fragment of possible textile is significant given the rarity of such finds.

Six further metallic items, one of copper alloy and four of iron were recovered from the evaluation and are included in the catalogue below. To avoid confusion evaluation small finds are suffixed with ‘e’ throughout. The four iron items seem to be parts of nails. Three of the objects are derived from the fill and sealing deposits 269 and 266 within the terminus, the entrance of enclosure ditch 109. Deposit 266 also produced the fragment of copper alloy sheet, which X-ray suggests might be part of a vessel rim.

Catalogue

1 Blade fragment; tip and tang missing; V-shaped profile, worn edge. L. 62mm+, W. 22mm, Th. of back c. 4mm; *Pit 701, Context 702*

*2 Tanged implement; whittle tang level with back; edge runs parallel to back. L. of tang 29mm+ L. of blade 49mm+; Th. of back 4mm; *Pit 701, Context 702; Fig. 8*

3 Spike, slightly tapering form, incomplete at one end. L. 185mm+, W. 3-9mm; *Pit 701, Context 702*

*4 Nail with conical head, complete. L. 62mm, W. 4mm, Th. 3mm, Diam. of head 10mm, H of head 8mm; *Group 109, Ditch 709, Context 721, SF 5; Fig. 8*

5 Nail, near complete; tip missing; rectangular sectioned shank almost circular, flat head. L. 60mm+, W. 5mm, Th. 4mm, Diam. of head 15mm; *Group 109, Ditch 709, Context 721*

6 Nail shank, square cross-section. L. 40mm+, W. 4mm, Th. 4mm; *Group 100, Ditch 709, Context 708*

7 Nail shank or bent strip. L. 60mm+, W. 4mm Context 702; *Group 100, Pit 701, Context 702*

8 Nail shank, bent; tip missing; shank rectangular in section; circular, slightly domed head. L. 60mm+, W. 9mm, Th. 8mm; *Group 100, Ditch 614, Context 615*

9 Block of mineralised organic remains, possibly textile. L. 55mm, W. 35mm; *Group 109, Ditch 709, Context 721, SF 6*

10 Head and part of the shank of an iron nail, 22mm long, head 15mm and shank 5mm in diameter. *Group 109, Trench 22; Context 226; SF 6e*

11 ?Part of the shank of an iron nail, 20mm long and shank 4mm in diameter. *Group 109, Trench 22; Context 269*

12 ?Part of the shank of an iron nail, 70mm long and shank 5mm (max.) in diameter. *Trench 22; Context U/S*

13 Fragment of copper alloy sheet, seemingly with curved lipped rim, 40mm by 25mm, possibly from a plate or dish of about 120mm in diameter. *Group 109, Trench 22; Context 266; SF 8e*

Jet and shale objects by Hilary Cool

Two annular rings were recovered from grave fill 251 (Fig. 8; Plates 15 and 16). The smaller (Cat. No. 1) of these rings is clearly made of jet (or a closely related material in the fossil fuel range). The material of the larger ring (Cat. No. 2) is more problematical. It appears dull opaque grey with small white flecks. During conservation it was suggested that it was made of glass. This is considered to be unlikely as the two small chips on the circumference show none of the features to be expected if it was glass (conchoidal fracture, glossy surface) and it is more likely to be stone, but not of the fossil fuel range.

Simple rings made of jet-like material like this occur sporadically from the Bronze Age onwards. The fact that these two rings have come with an inhumation burial that has been

dated via the radiocarbon technique (380-180 cal BC; Table 16) is of great value in wider studies of Iron Age artefacts, as dating such artefacts is frequently problematic.

It seems most likely that both these rings were used either as part of dress fastenings or beads. The size of the smaller one would be appropriate for a bead. The larger one would fall into the size range of large glass annular beads of the later Iron Age and so it too could be a bead. Other possible functions such as it being a spindle whorl seem less likely given its overall size and weight and the large size of the central perforation.

Catalogue

*1 Annular ring with oval cross-section. Diameter 16.5mm, perforation diameter 6.5mm, maximum thickness 4mm. *Trench 22, Pit 249, Context 251, SF 4e; Fig. 8*

*2 Annular ring with oval cross-section. Diameter 23mm, perforation diameter 10.5mm, maximum thickness 4.5mm. *Trench 22, Pit 249, Context 251, SF 4e; Fig. 8*

Slag by Gerry McDonnell

Slag Classification

The slags were visually examined and their classification is based solely on morphology. In general they are divided into two broad groups. First is the diagnostic ferrous material, which can be attributed to a particular industrial process. These comprise ores and the ironworking slags (i.e. smelting and smithing slags). The second group is the non-diagnostic slags, which could have been generated by a number of different processes, but which show no diagnostic characteristic that can identify the process. In many cases the non-diagnostic residues (e.g. hearth or furnace lining), may be ascribed to a particular process through archaeological association. The residue classifications are defined below. The count and weight of each slag type present in each context was recorded.

Diagnostic Ferrous Slags and Residues

Smithing Slag - randomly shaped pieces of iron silicate slag generated by the smithing process. In general slag is described as smithing slag unless there is good evidence to indicate that it derived from the smelting process.

Hearth Bottom (HB) - a piano—convex accumulation of iron silicate slag formed in the smithing hearth.

Hammer Scale - there are two forms of hammer scale, flake and spheroidal. During heating a piece of iron may develop a thin skin of scale, which is predominantly iron oxide. This will break from the metal during hammering, and normally falls to the ground as small (usually less than 5mm long) fishscale-like flakes. During fire welding, the mechanical joining of two pieces of metal at high temperature, the surfaces to be joined will have been cleaned by the addition of a flux (usually sand). The flux reacts with any scale present to form a thin film of

liquid slag. When the pieces are hammered together the slag is expelled, and during flight forms balls of liquid slag (<10mm diameter) and freeze. Both these micro—slags are generated during smithing, and are normally deposited around the working area (around the anvil). The presence of hammer scale is therefore a strong indicator that smithing (primary or secondary) was carried out on the site. Their small size precludes their hand recovery, and they are usually recovered during soil sample sieving (for environmental data).

Non-Diagnostic Slags and Residues

Hearth or Furnace Lining - the clay lining of an industrial hearth, furnace or kiln that has a vitrified or slag-attacked face. It is not possible to distinguish between furnace and hearth lining.

Cinder - high silica-content slag that can either be formed as described above or by high temperature reaction between silica and ferruginous material. It can be considered either a non-diagnostic slag or a diagnostic slag depending on its iron content and morphology.

Results

Description

The slag recovered from the site comprises a single dump of smithing debris that includes smithing slag, hammer scale and hearth lining.

Table 5 lists the slag types present on the site, which comprises smithing slag lumps, but no hearth bottoms. The hearth lining is characterised by the presence of two examples of part of the blow-hole. A small amount of cinder is also present and represents a higher silica smithing slag. Although the total quantity of slag is small (0.8kg of smithing slag lumps, and 0.3kg of hearth lining, and hearth bottoms are absent), all the material derives from a thin lens (context 720) within the main enclosure ditch (Group 109) fill. The sieving programme recovered a significant amount of hammer scale, both flake and spheroidal, from this fill (Table 6). This indicates that the full range of smithing activity was being carried out, i.e. forging, folding and welding. The deposit can be interpreted as a single dump of smithing debris, presumably from activity within the enclosure. A small quantity of burnt organic-like material (coal) was also recovered.

Significance

The deposit is a single dump of smithing waste from a blacksmiths forge. Although the retained material is a small quantity, it is a representative assemblage, only lacking hearth bottoms. The quantity of hearth lining is high relative to the quantity of smithing debris, and two examples of the blow-hole are present, with one that is of exceptional quality.

Table 5. Slag listing of the slags recovered, ordered by sample number

Context	Sample Number	SSL count	SSL weight	Cinder count	Cinder wt	HL count	HL wt	Other	Comment
720	6	35	277	3	24	4	30		
720	6					17	97		
720	6							20	10 frags of burnt coal?
720	25	23	357	3	20				
720		1	184			10	130		small part of the arc of the blowhole
720						20	77		excellent blowhole
		59	818	6	44	31	257	20	

(SSL- smithing Slag lumps; HL - Hearth Lining; weight in grams)

Table 6. List of the micro-residues recovered (weight in grams)

Context	Sieve Number	HS?	Flake?	Spheroidal?	Comment	Sample Weight
710	6	y	y	y	flake dominant	19
710	6	y		y		4
710	25	y	y	y		2
710	25	y	y			7
Total Weight						32

7 Environmental Record

Human remains by Malin Holst

A single skeleton, recovered from pit 249 is moderately well preserved. There are few post-mortem breaks, but considerable erosion has led to the loss of much of the bone surface, which may in turn have resulted in the loss of some pathological manifestations. Concretions were found on many bones, though these did not obscure the bone surface.

The skeleton was a middle aged female (26-45 years) of gracile build, with a calculated stature of 148cm (4 ft 11 ins). Lesions in the eyes suggest that she had suffered from iron deficiency anaemia during childhood. Evidence for non-specific inflammation evident on the shins; the inflammation had been mild and was receding at the time of death. There was slight spinal degenerative joint disease.

Animal bone and marine shell by Jane Richardson

In total, 2090 animal bone fragments and three oyster shells were recovered during the hand excavation of features, and the subsequent processing of soil samples. Only from the main enclosure ditch (Group 109) are there sufficient bone fragments to satisfy a minimum reliable sample size of around 500 (with reference to a number of statistical parameters after Van der Veen and Fieller 1982, 296). A further 590 animal bone fragments were recovered from the evaluation excavations within Trench 22. This was reported in Williams *et al*. 2008, but the data are also included within Table 7 below. All the animal bone from the evaluation was from Ditch 109, with the exception of the bone associated with the burial, which is from a small song bird.

Methodology

Bones and shells were identified to taxa wherever possible, although lower-order categories were also used (e.g. sheep/goat, cattle-sized). As the assemblage was small, all fragments were fully recorded. Of the 2091 fragments recovered from the open-area excavtion (Table 7), 238 bones and one shell were identified as diagnostic zones, here defined as diagnostic non-reproducible parts (Table 8).

For age-at-death data, epiphyseal fusion (after Silver 1969) and the eruption and wear of deciduous and permanent check teeth were considered. Dental eruption and wear were recorded using the letter codes of Grant (1982). Bone condition, erosion and fragment size were recorded in order to assess bone preservation, while gnawing, burning and butchery marks were noted to determine bone treatment. Given the fragmented nature of the assemblage, and its poor condition, no measureable bones are present. Pathological bones have been noted.

Results

The assemblage is of questionable value due to its small size, poor condition and fragmented nature. Butchery marks are limited to sixteen fragments of mainly cattle, but also pig and sheep, bones. Eroded surfaces are so commonplace, however, that this is surely an underestimation. Burnt bones were rarely noted, with the exception of a cache of cremated bones, identified as sheep, sheep/goat and sheep-sized, from fill 715 of the enclosure ditch. Twenty-two bones have been gnawed by dogs.

Cattle and sheep/goat and sheep bones predominate, suggesting that these taxa contributed most to the meat diet of the inhabitants. All 105 of the sheep bones from discrete features, however, represent a single animal deposited in pit 642. This animal was a young adult at death (the third molar in an early stage of wear), and cut marks to its radius indicates it had been butchered. Dental wear data from the disarticulated cattle and sheep bones reveal a predominance of adult (the third molar at wear stage G) and older cattle (the third molar at wear stage J to L), but no neonatal or juvenile animals. Similarly, sheep are represented only by young adult (the third molar in an early stage of wear), adult (the third molar at wear stage

G) and older animals (the third molar at wear stage J to M). These age data suggest that animals were typically maintained into adulthood, indicating that breeding and/or secondary products were valued. Assuming localised production (and two neonatal post-cranial bones, one cattle and one sheep/goat, were recovered), it is possible that younger, prime meat animals were traded off site.

Pigs, in particular, would have provided dietary variability, but goat, chicken and oysters were also apparently utilised. Dental wear data for pigs indicate that this animal was slaughtered at an optimal age for meat. It is less likely that horses or dogs were consumed and certainly none of their bones are butchered. Horses may have been used as traction or pack animals and the little age data available indicate that they were typically maintained to an advanced age.

Pathological bones were recorded only for cattle. They are restricted to congenital abnormalities of the third mandibular molar (two cases of a reduced third cusp; or 12.5% of the third molars) and joint changes associated with the metatarsal (three examples; or 30%) and navicular cuboid (two examples; or 50%). The joint changes may be associated with the prevalence of older animals, or the presence of traction cattle.

Table 7. Animal bone fragments and shells by group/feature

	100	**102**	**108**	**109**	**Pits (including Pit 249)**	**Total**	**Evaluation bone from Group 109**
Cattle	5	9	9	374	30	427	208
Horse	13			21	1	35	1
Pig			7	35		42	4
Sheep/goat	2		9	136	3	150	82
Sheep				11	105	116	1
Goat				1		1	
Dog			1		1	2	
Chicken				1		1	
Passerine					1		
Bird spp.				2		2	
Cattle-sized	25	22	14	956	2	1019	186
Pig-sized				1		1	
Sheep-sized	2		19	273		294	108
Bone total	47	31	59	1811	143	2091	590
Oyster				3		3	

Table 8. Animal bone and shell zones by group/feature

	100	102	108	109	pits	Total
Cattle	2	1	1	117	1	122
Horse	4			7	1	12
Pig			2	8		10
Sheep/goat			2	41	2	45
Sheep				5	32	37
Goat				1		1
Dog					1	1
Chicken				1		1
Bird spp.				2		2
Cattle-sized				5		5
Pig-sized				1		1
Sheep-sized				1		1
Bone total	6	1	5	189	37	238
Oyster				1		1

Charred plant macrofossil and molluscs by John Carrott and Angela Walker

Introduction

Flots from 27 sediment samples ('GBA'/'BS' *sensu* Dobney *et al*. 1992), together with small amounts of shell and charred material from seven of the sample residues and a little hand-collected charcoal from five deposits, were submitted for examination.

Methods

Each of the sediment samples was processed in its entirety by ASWYAS using a Siraf-style water flotation system with a 300 micron sieve for the flot fraction and a 1mm sieving mesh for the residue fraction. The processed sample fractions were dried prior to recording.

The flots and submitted material had been sorted from the sample residues and were examined for macrofossil remains using a low-power binocular microscope (x7 to x45); the flot material was sieved into fractions using 2mm and 4mm sieves. All of the components of the flots were recorded using a five-point semi-quantitative scale. The abundance scale employed was:

1. - few/rare, up to 3 individuals/items or a trace level component of the whole;
2. - some/present, 4 to 20 items or a minor component;
3. - many/common, 21 to 50 or a significant component;
4. - very many/abundant, 51 to 200 or a major component and

5. - super-abundant, over 200 items/individuals or a dominant component of the whole.

Processed sample fractions were scanned until no new remains were observed and a sense of the abundance of each taxon or component (relative to the processed fraction as a whole) was achieved.

Plant macrofossil remains were compared with modern reference material (where possible) and with published works (e.g. Cappers *et al*. 2006 and, for cereal identifications, Jacomet 2006), and identified to the lowest taxon necessary to achieve the aims of the project. Wood and charcoal identifications were attempted for a selection of fragments of over 2mm in radial cross-section. Pieces were broken to give a clean radial cross-sectional surface and the anatomical structures were examined using a low-power binocular microscope (x7 to x45). Basic identifications were made by comparison with modern reference material, where possible, and with reference to published works (Hather 2000; Schoch *et al*. 2004). Nomenclature for plant taxa follows Stace (1997), with cereal identifications following Jacomet (2006) where nomenclature follows van Zeist (1984).

Land snail remains were examined and individuals identified as closely as possible, with reference to published works (chief sources: Cameron 2003; Cameron and Redfern 1976; Ellis 1969; Kerney 1999; Kerney and Cameron 1979). Nomenclature follows Kerney (1999). Numbers of the burrowing snail *Cecilioides acicula* (Müller) were recorded semi-quantitatively as outlined above but these records are not included in any interpretation because of the likelihood of its being intrusive to the deposits (this species may burrow to depths of 2 metres – Kerney 1999, 168). Minimum numbers of individuals present were usually determined by numbers of shell apices, but in cases where numbers of large (and diagnostic) portions of the shell other than the apex were more readily and reliably identified these were used instead.

Results

The results are presented in Tables 9 to 15 within Appendix 4. Table 9 summarises the components of the flots. Table 10 gives details of the material submitted as charred plant remains sorted from the sample residues and Table 11 provides similar information for the hand-collected charred plant material. Tables 12 to 14 provide additional information for the mollusc assemblages from the flots, with Table 15 showing additional records for the remains sorted from the sample residues.

Ancient plant remains recovered from the sample flots were largely restricted to poorly preserved indeterminate charcoal (largest fragment to 27mm from context 724, lower fill of enclosure ditch 109), with occasional charred grains from nine of the deposits. Most of the charred grains were also indeterminate (or only tentatively and partially identifiable) and no diagnostic cereal chaff was present in any of the flots or residues. A small number of charred grains were partially identifiable with more confidence and these comprised three barley (*Hordeum*) grains from the primary fill 695, of the main enclosure ditch 109, a wheat

(*Triticum*) grain, from a discrete deposit of charred material 715, from enclosure ditch 109 and a barley grain from a metalworking slag deposit 709, also from enclosure ditch 109.

Some additional charcoal was recovered from three of the samples residues (contexts 720, 809 and 811 – largest fragment to 38mm from context 720) and also by hand-collection from five deposits (contexts 673, 677, 686, 719 and 782). Preservation was uniformly poor and no fragments could be positively identified to species; although some were certainly of a diffuse-porous species and some of these were tentatively identified as heather (cf. *Calluna*). Much of the material recovered from the residue from Sample 25 (context 720) and submitted as charcoal proved to be low grade coal/shale.

Other organic remains of ancient origin from the samples were restricted to small to large assemblages of land snails. Twelve of the individual assemblages (from contexts 650, 660, 694, 697, 700, 707, 714, 715, 717, 719, 890 and 811) were too small for any detailed interpretation (most of these were also dominated by remains of the burrowing snail, *Cecilioides acicula* – see below); the small sizes of these assemblages may indicate that these deposits formed relatively quickly, perhaps by a partial collapse or deliberate backfilling (this may be supported – or refuted – by the nature of the sample residues as a whole). The characters of all bar one of the larger snail assemblages were very similar being dominated by shade-loving taxa (e.g. *Carychium tridentatum*, *Discus rotundatus*, *Acanthinula aculeata*, *Ena obscura*, *Clausilia bidentata*), with a minor component of more open ground species (e.g. *Vallonia* species, *Vertigo pygmaea*). The exception was the rather small assemblage from fill 675, the western terminus of group 106, which containing some shade taxa (*Discus rotundatus*, *Clausilia bidentata*), was biased more in favour of open ground species and included records of *Truncatellina cylindrica* and *Pupilla muscorum* which are most often associated with very exposed areas of bare earth and rock.

All of the sample flots contained at least some remains which were clearly modern intrusions into the deposits and/or contaminants of the samples and in seventeen cases these (in the form of modern rootlets and/or other modern plant detritus) constituted the bulk of the flot. Other modern intrusive or contaminant remains regularly recorded included earthworm egg capsules and/or *Heterodera* sp. cysts, arthropod remains (including beetle sclerites and other insect fragments) and seeds and similar structures (notably seeds of orache/goosefoot – *Atriplex*/*Chenopodium* and achenes of fumitory – *Fumaria*) . A significant proportion of most of the snail assemblages (20 of 27) was also composed of the burrowing, and almost certainly intrusive, land snail, *Ceciloides acicula*; the exceptions to this being the large assemblages from contexts 710, 760, 781, 788 and 806, which gave no records of this species.

Discussion

Identifiable ancient charred plant remains recovered were few, with the bulk of the material composed of indeterminate charcoal; presumably fuel waste. There were occasional partially identifiable charred cereal remains, including wheat and barley, but these were too few to allow any detailed interpretation.

The larger land snail assemblages were predominantly of shade-loving taxa, with a lesser component of open ground/grassland species. Many of the assemblages were dominated by remains of *Carychium tridentatum* which may exploit cover supplied by vegetation no more substantial than long grass growth (sufficient that the base of the grass remains permanently moist). However, other species, such as *Discus rotundatus*, *Acanthinula aculeata* and *Clausilia bidentata*, suggest woodland, scrub or hedgerow. Overall, it would appear that the area was quite heavily vegetated at the time of the formation of the deposits, with those species of more open spaces probably reflecting cleared areas within the enclosure itself. There was also a suggestion of cleared ground (including areas of bare earth and exposed rock) to the north of the enclosure from the modest land snail assemblage recovered from the western terminus of an east-west aligned gully in this area.

Radiocarbon dating by SUERC

A single sample of human bone from pit 249 and two charred grains from context 695 and context 720, both from the main enclosure ditch, Group 109 were submitted for radiocarbon dating at the Scottish Universities Environment Research Centre (SUERC). The samples were submitted in order to provide secure dates for both the inhumation identified within pit 249, located just outside the main enclosure and to establish a secure date from the fills from the main enclosure. The results are presented in Table 16.

Table 16. Radiocarbon dating results

Lab. Code	Context	Material	Radiocarbon Age BP	Cal Age d1 (68.2%)	Cal Age d2 (95.4%)	Delta ^{13}C rel. VPDB (‰)
SUERC-20318 (GU-17508)	251	Human bone	2200±30	360-280 BC 260-200 BC	380-180 BC	-20.3
SUERC-40139 (GU-27059)	695	Indeterminate charred grain	1780±30	214-261 AD 280-326 AD	135-337 AD	-21.1
SUERC-40140 (GU-27060)	720	Charred barley grain	1925±30	53-90 AD 100-124 AD	2-134 AD	-23.7

8 Discussion and Conclusions by Ian Roberts

Visibility and Preservation

The sheer scale of the main trapezoidal enclosure ditch explains why it produced one of the few well defined cropmark anomalies in this landscape, and a strong response in the geophysical data. On the basis of the cropmark data alone the enclosure appears isolated, although as hinted at in the geophysical data, and confirmed by the excavations, it can be seen to have been integrated into a wider field system, the remains of which have largely been lost to agricultural erosion. The extensive regime of land division, better represented to the west of Leys Lane (Williams *et al.* 2010) and to the south of the M62, (Heapy 2008; Williams 2010), is represented by a series of truncated and intermittent ditched boundaries, orientated north-east to south-west and north-west to south-east, on approximately the same orientation of the trapezoidal enclosure.

Dating

The limited dating evidence from both the wider trial trenching excavations and the investigation focused upon the trapezoidal enclosure, points to two broad periods of occupation: the pre-Roman Iron Age and the later Roman period. The only definite Iron Age dating evidence is represented by the human pit burial and its associated finds, which is radiocarbon dated in the range 380-180 cal BC (Table 16, SUERC-20318). For this burial to be used to date the enclosure we must adopt an assumption that its position, not central to the entrance, was an associated ritual deposit. Although several burials of this type are known from the region (see below), none have been found in such locations with respect to an enclosure entrance. This is not to say that the enclosure was not created in the Iron Age period. Indeed, the entrance arrangement has parallels with Iron Age sites elsewhere (see below), and a small amount of late prehistoric pottery and part of a beehive quern attest to activity in this period. This apart, the pottery evidence suggests that the earliest fills within this enclosure ditch originated in the Roman period. Thus, in order to equate the pit and burial with the enclosure, we must entertain the notion that the enclosure ditch was re-cut and/or totally scoured of Iron Age deposits as part of a redefinition and reoccupation in the later Roman period.

The vast majority of the pottery from the enclosure dates to the 2nd century AD, which is possibly when the enclosure may have seen its most intensive use. Late Roman pottery occurs in lesser quantities, but demonstrates the enclosure's continued existence within the wider field system, which has produced pottery of predominantly of 3rd and 4th-century date (Williams *et al.* 2008). This period of use is endorsed by the radiocarbon date ranges obtained from the charred grain from the ditch fills (SUERC-40139 and SUERC-40140, Table 16).

The Iron Age Burial

Although isolated Iron Age pit burials are quite common in the area, especially on the Magnesian Limestone, the specific ritual represented by this example is abnormal in terms of

our limited understanding. Pre-Roman Iron Age pit burials are known from a number of settlement sites, the closest being Dalton Parlours (Wrathmell and Nicholson 1990), Ferrybridge (Richardson 2005; Brown *et al*., 2007, Site Q), South Elmsall (Grassam 2010) and Wattle Syke, near Boston Spa (Richardson forthcoming 2012). In most cases the burial pits in settlement contexts are designed to accommodate just the body, occasionally varying in size and form when advantage is taken of the capacity of an enclosure ditch for an interment. The Darrington burial is a variation on a different type of pit burial, which has mainly been identified at a site at Micklefield, where eight have been encountered (Brown *et al.* 2007, 100-4), and from a site at Ledston, from which two are known (Roberts 2005c). The defining morphological features of these burials are large sub-circular pits of variable depth, between 1m and 2.7m in diameter, with vertical sides and a flat base. As with Iron Age pit burials elsewhere all of the skeletons are crouched (or occasionally flexed), but the burials are usually placed off-centre within the pit. There is no obvious reason for this but, it might be supposed that it was a consequence of partitioning the pit in order to accommodate organic grave goods which have not survived. Strontium isotope analysis of the skeletons found at Micklefield suggest that this distinct form of Middle Iron Age burial, which seems to date to the 4th-2nd centuries cal BC, may be those of first generation migrants from another part of Britain (Brown *et al*. 2007, 103; Montgomery *et al.* 2007, 353-4), which may have established an Iron Age sub-group in Yorkshire, although this notion obviously needs further testing.

The Darrington example conforms generally to the Micklefield and Ledston pit burials, but is unique in that the body has been laid in the pit in a semi-supine extended position, the head having been propped up against the south wall of the pit. Extended burials proper (which this strictly is not), are usually associated with inhumations of the Roman period. Extended pre-Roman Iron Age burials have been found near Tadcaster (McIntyre and Williams 2010) and Ferrybridge (Brown *et al.* 2007, 61), but both are situations where the burial position had been conditioned by the use of a ditch.

Both the Micklefield and Ledston pit burials were an occasional occurrence that took place within extensive pit groups, many of which contained no surviving evidence. Apart from the occasional human burial, some were found to contain animal remains, sometimes near complete skeletons similar circumstances to those of the human remains. The pits themselves are of a form which suggests they functioned as storage pits, although the excavations of the pit groups at both Ledston and Micklefield have failed to find any evidence for such a use. It is possible that large pits of this nature, whether single or in large groups, were imbued with ritual significance, perhaps relating to fertility rites associated with a chthonic deity. Whilst most of the pits did not contain human burials, some did contain a range of structured depositions that might be construed as structured or placed deposits. These included the deposition of quern stones, parts of animals and pots. Therefore, it might be reasonable to view the inhumations as just one in a suite of rituals associated with pits. In this respect it is perhaps significant that the Darrington pit burial occurred in association with other

morphologically similar pits, albeit only two (669 and 687), which in this case do not seem to have left any trace of human remains or other placed deposits.

The Enclosure

Whilst the orientation of the enclosure is generally in accord with the rest of the field system, the fact that the enclosure plan is trapezoidal, rather than rectangular suggests that it pre-dates the field system, despite the lack of obviously early evidence from its interior and ditch fills.

It is debatable whether the trapezoidal plan is typologically deliberate and significant. The region has many settlement enclosures with broad ditches known from cropmarks, which appear to be the earliest elements in more extensive enclosure and field system complexes of the Later Iron Age and Roman period (see Roberts *et al.* 2010, 28-31). The trapezoidal enclosure has not previously been identified as a separate form (Deegan 2007), and it is probably a product of the wide variation seen in four-sided rectilinear enclosures, whose shape was dictated by orientation, topography and other unknown factors – a point reinforced by trapezoidal plans having been adopted for some enclosures with extended trackway entrances (Deegan 2007; Roberts *et al*. 2010, fig. 38). Many trapezoidal enclosures were identified within the Magnesian Limestone cropmark study area, but there is no obvious pattern to their distribution, as may be seen in other more distinctive enclosure types. As seems to be the case for the majority of all enclosures, the main entrances of the known trapezoidal enclosures mostly face east (as is the case for the Darrington example), although in other examples the entrance does not always occur in the long side of the trapezium and it is therefore unlikely that this was a device for creating an impressive entrance façade.

There is little doubt that the entrance of the Darrington enclosure would have been impressive, with its massive ditch terminals and, presumably, enlarged banks to match. Excavated ditches of this size are not common in the area, but large examples have been found at Ferrybridge (Martin 2005, Enclosure C) and Wattle Syke (Richardson forthcoming 2012, Enclosures 5, 9 and 10). Enlarged entrance terminals are not well documented in the region, most cropmarks not being well enough defined for such features to reliably confirmed, and of the excavated examples only the Iron Age enclosure at Normanton Golf Course (Timms 2005, figs 19 and 20) the Roman enclosure at Rothwell Haigh (Cool and Richardson forthcoming) had enlarged terminals similar to those found at Darrington. The form of entrance structure, indicated by the two elongated pits, is not one that is commonly represented in the region, although it is not dissimilar to Iron Age examples that have been recorded at Parlington Hollins, near Garforth (Holbrey and Burgess 2001, Enclosure B), Normanton (Timms 2005, figs 24 and 25) and Wattle Syke (Richardson 2012 forthcoming); whilst continuous gullies across entrances have been found at Moss Carr, Methley (Roberts and Richardson 2002, Enclosure C) and Knottingley Road, Pontefract (Brown *et al.* 2007, fig. 24). Further afield, more comparable Iron Age examples, in the form of a pair of elongated slots, are known from Wakerley, Northants (Jackson 1978) and Burradon, Northumberland (Jobey 1970). The elongated slots presumably housed timber uprights.

Although the slots at Darrington were not deep, being less the 0.5m deep, the uprights would probably have been braced by a lintel and supported by virtue of being incorporated into the extended up-cast bank, effectively leaving an entrance of only 2m in width.

The former existence of an internal bank is a supposition. It is supported to a degree by the absence of any internal features within close proximity of the ditch (716 in the south-west corner is 2m away, but it is thought that this was tree throw), and is indicated by the nature of the ditch fills at certain locations, although some ditch sections also possibly imply the existence of an external bank. Given the nature of the ditch fills, the banks must have been composed largely of limestone rubble, and may have been coursed for stability, there being no evidence for internal or external revetments, as found at Wattle Syke (Richardson forthcoming 2012).

The absence of any coherent feature arrangements within the interior of the enclosure means any interpretation of its function is difficult. The evidence there is hints at domestic occupation and former existence of roundhouse or rectangular structures cannot be discounted given the degree of agricultural erosion that has clearly taken place, which would have removed all but the deepest features. Typically, based upon the evidence from other sites, we might expect this enclosure to have contained only one roundhouse at any one time in the Iron Age (not necessarily in a central location), but there is insufficient evidence to indicate the position of any such structure(s). The fact that the finds count was highest in the eastern parts of the ditch might suggest that activity was focused on that side of the enclosure in the Roman period.

The partitioning and sub-division of enclosures is quite common (e.g. Roberts *et al.* 2010, 31) and is suggested by the remains of a central gully aligned with the southern ditch terminal, possibly designed to partition different agricultural activities or separate corralled livestock. Excavated examples of Iron Age settlement enclosures having been partitioning to facilitate a change of use in the Roman period are known from Swillington Brickworks (Vyner 1992), Hampole (Brown 1997) and Bempton Lane, Bridlington (Roberts 2009). There are several east-facing cropmark enclosures with east-west central sub-divisions on the limestone in the vicinity of Darrington, the nearest being 3.5km away to the south-west of Darrington and in Stapleton Park to the south-east.

It is reasonable to equate any sub-division of the enclosure with the integration of the enclosure in to the Romano-British field system, as represented by the shallower ditches/gullies of Groups 101-106. The pre-existence of the trapezoidal enclosure is indicated by the concentric and equidistant nature of some of these boundaries to the north, west and south (Groups 104-106), which together may have provided a race to channel livestock around the re-used relict enclosure into the enclosures to the east and the interior of the enclosure itself. Parallels for such arrangements are known from several cropmark enclosures, including a notably similar example from Darrington involving a partitioned

trapezoidal enclosure integrated into a field system, just 2.6km to the south-west of this site (Roberts *et al*. 2010, 32, fig. 43).

Despite the absence of any evidence for internal structures, it is possible that the enclosure could have been created as the secure residence of high-status, as indicated by the size of the ditch and the entrance portal, perhaps similar to the large-ditched Iron Age enclosures found at Wattle Syke (Richardson forthcoming 21012). It also feasible that the original enclosure had a religious function, as has been considered for the large-ditched pre-Roman Iron Age enclosures at Ferrybridge (Roberts 2005b, 215) and Normanton (Timms 2005, 123-5), both incidentally being notable for being slightly trapezoidal. There is no evidence for ritual activity at this Darrington site, other than possibly the pit inhumation outside the entrance. It is debatable whether the pit burial was interred at the time of the enclosure's creation, but it seems unlikely that its location is purely coincidental. The presence of the inhumation does not necessarily have any implications for the function of the enclosure as singular adult human pit burials form one of the many rituals associated with Iron Age settlements in the region. The scarcity of diagnostic Iron Age artefacts is also quite common, which presents problems in determining the exact nature of the transition between the enclosures use in the Iron Age and the Roman period. There may have been a period of abandonment, but this is not definite. The enclosure ditch certainly seems to have been redefined in the Roman period when the enclosure was incorporated into a more comprehensive regime of land division, and possibly formed an obvious hub for this, as would appear to have been the case at the excavated site at Stile Hill, Colton (Barkle n.d.). The arrangement of the later field boundaries suggests the site was primarily geared to livestock management and the animal bone evidence would suggest that the livestock in question were predominantly cattle. The presence of some cereal grain, querns and metalworking debris suggests a mixed site economy existed in the Roman period, in keeping with the findings of other rural sites of this period in this part of Yorkshire (Roberts *et al*. 2010, 64-5).

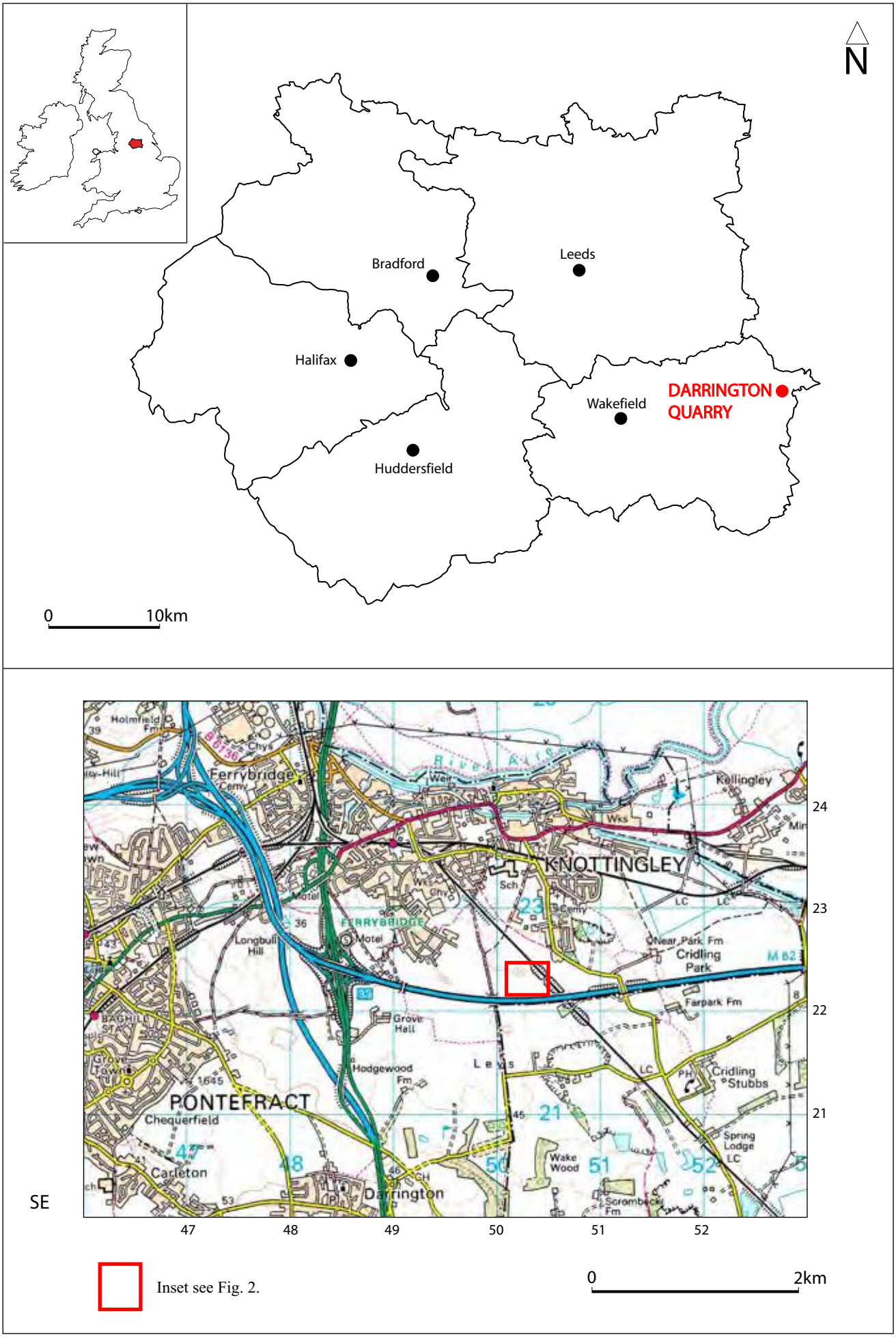


Fig. 1. Site location

QUARRY EXTENSION LIMIT
WILLIAMS *ET AL*. 2008 TRIAL TRENCH
TINSLEY *ET AL*. 2012 TRIAL TRENCH
MITIGATION EXCAVTION AREAS
ARCHAEOLOGICAL FEATURES

N

Mitigation trench 48
Mitigation trench 40
Mitigation trench 38
Main mitigation area
Inset see Fig. 3
Mitigation trench 37

4223 00
4222 00
4501 00
4502 00
4503 00
4504 00

Archaeological Services W Y A S
PO Box 30, Nepshaw Lane South, Morley, LS27 0UG
Tel: 0113 383 7500 Fax:0113 383 7501

0 50m

Fig. 2. Site plan showing mitigation areas and location of previous archaeological investigations (1:1000 @ A3)

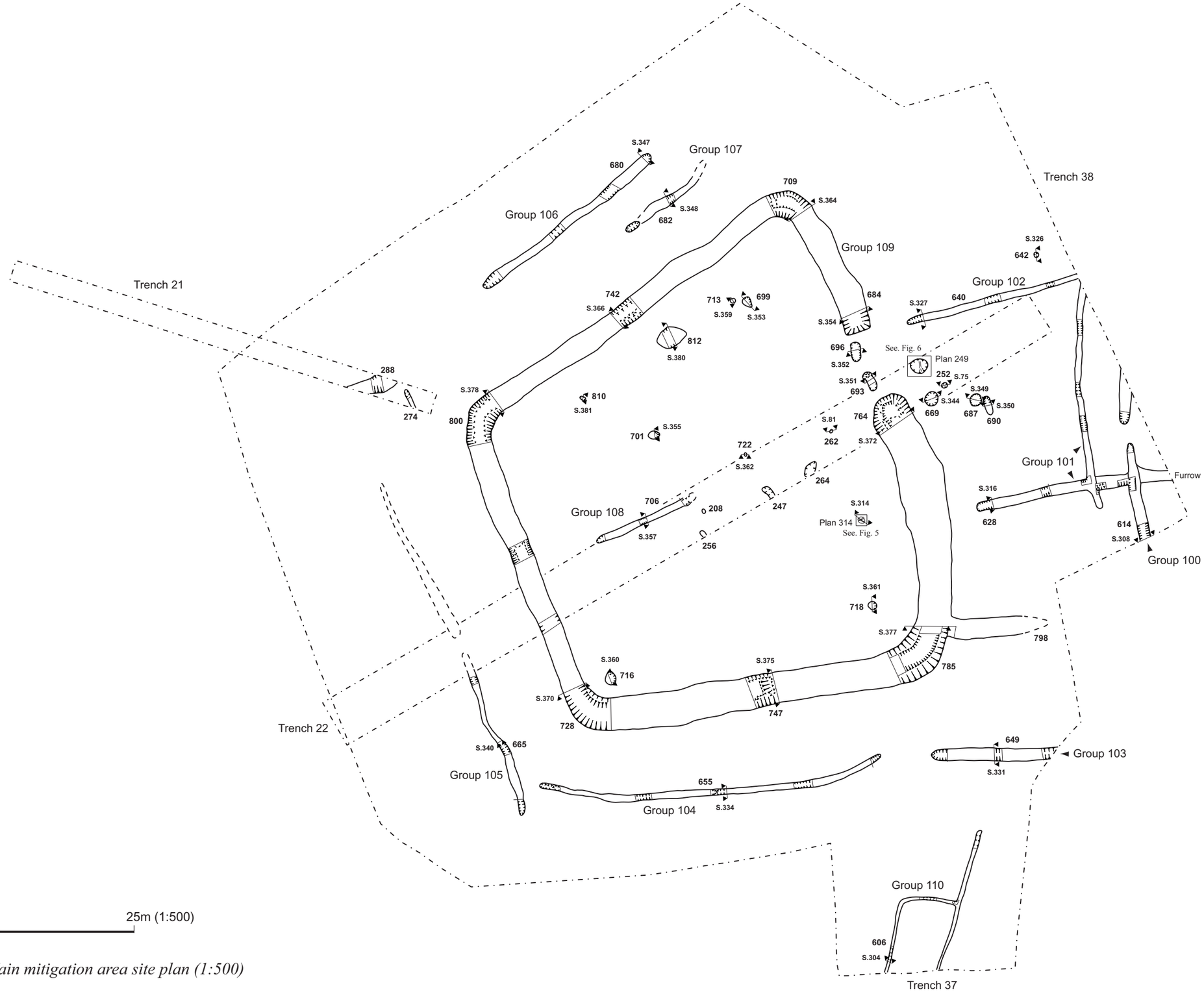


Fig. 3. Main mitigation area site plan (1:500)

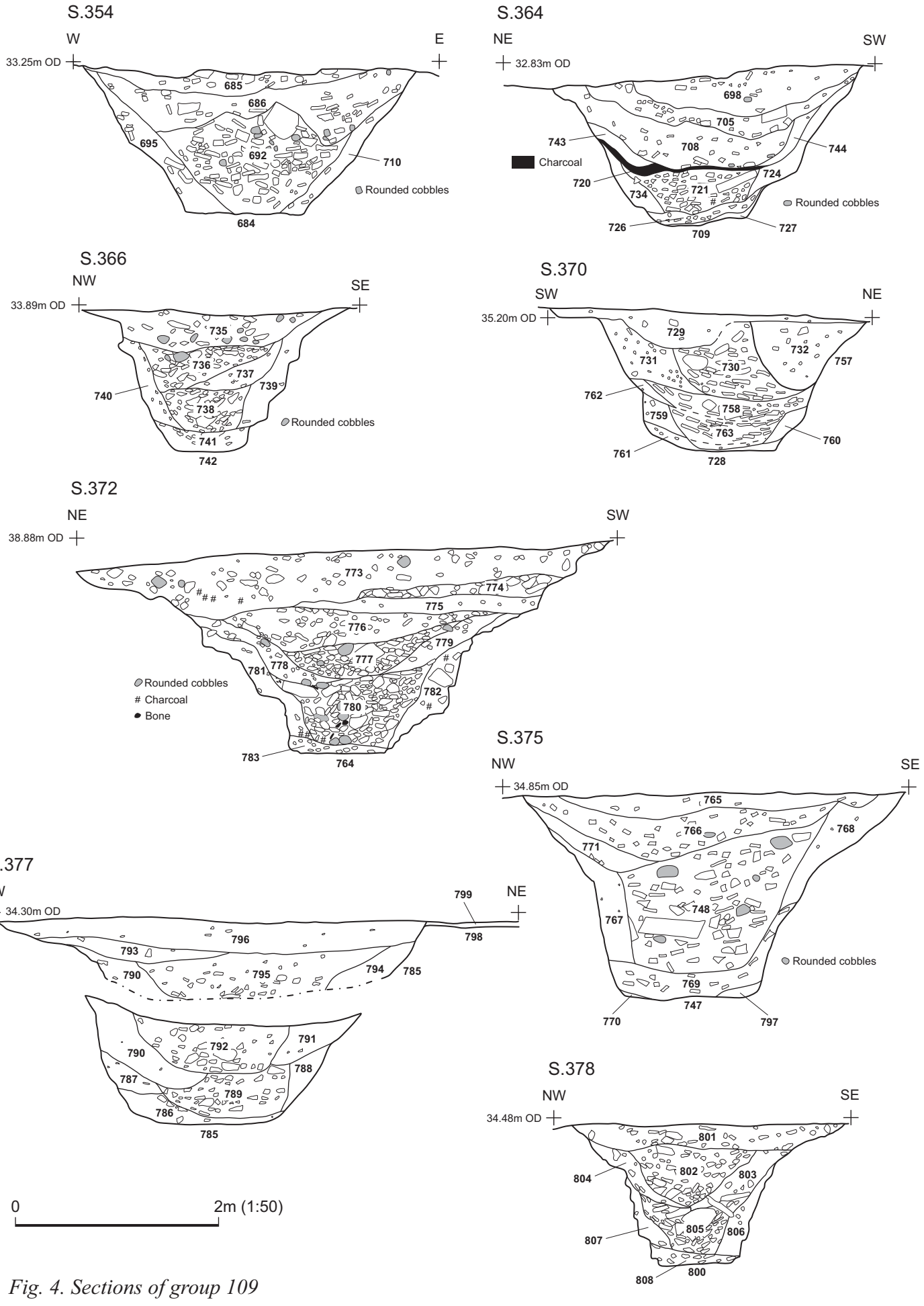


Fig. 4. Sections of group 109

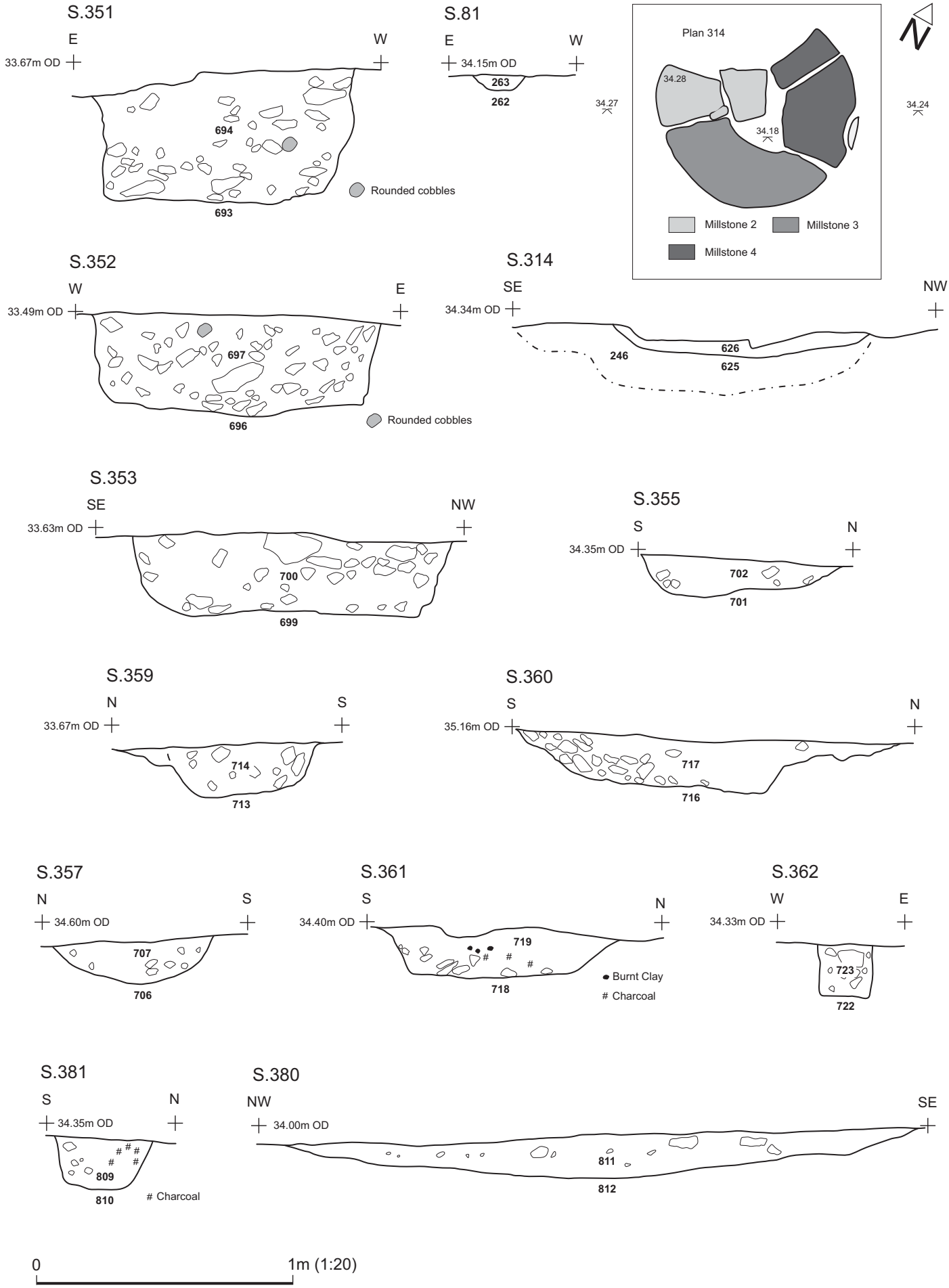


Fig. 5. Sections and plan of internal features

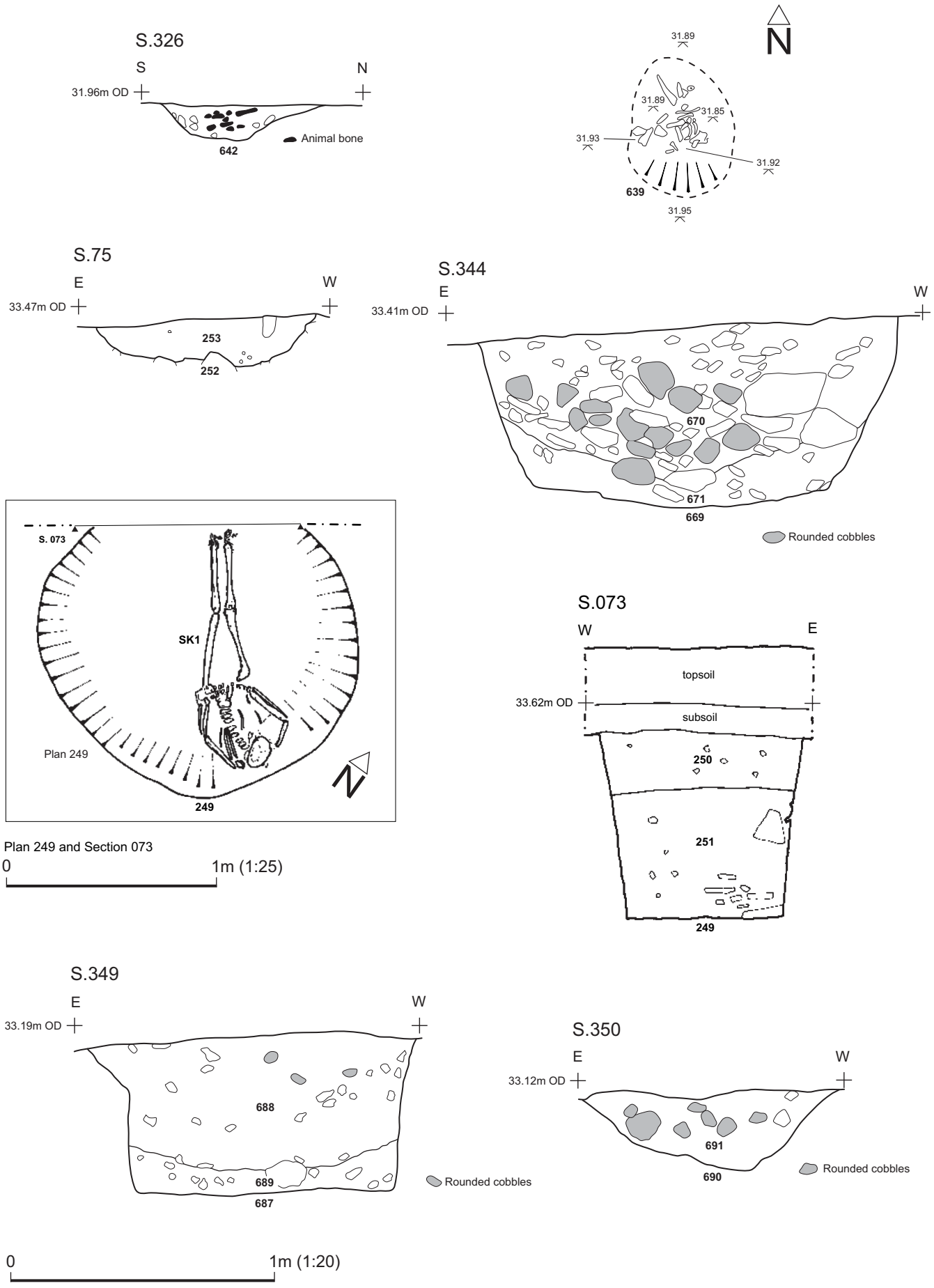


Fig. 6. Plans and sections of pit group features

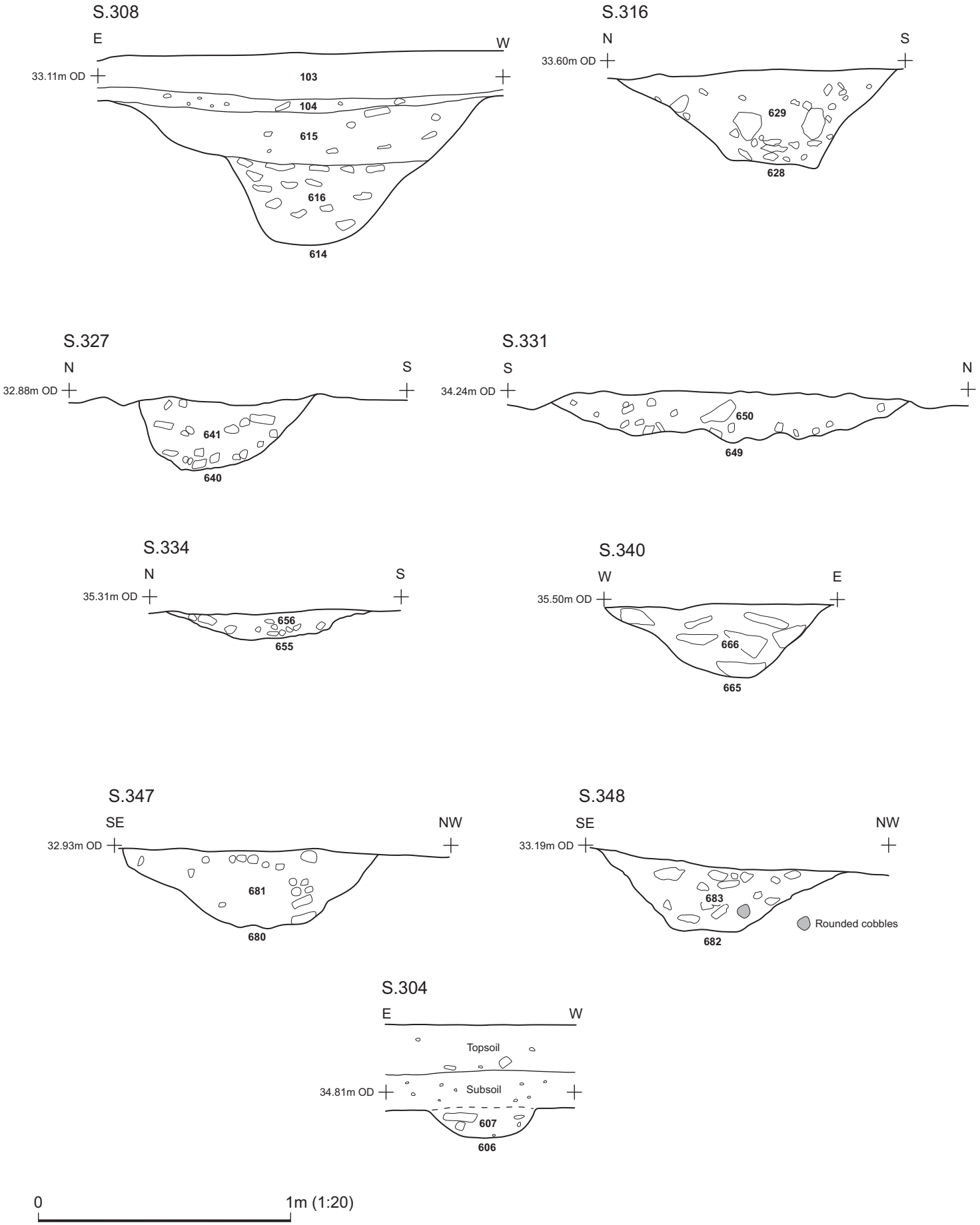


Fig. 7. Sections of groups 100-107 and 110

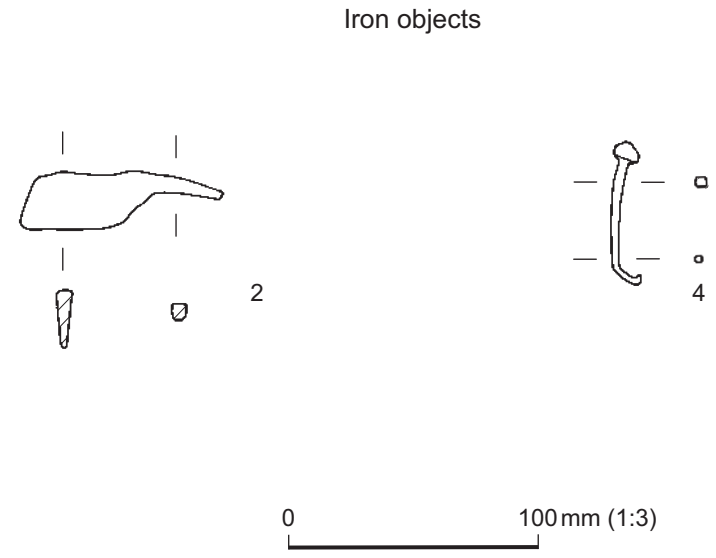


Fig. 8. Finds.

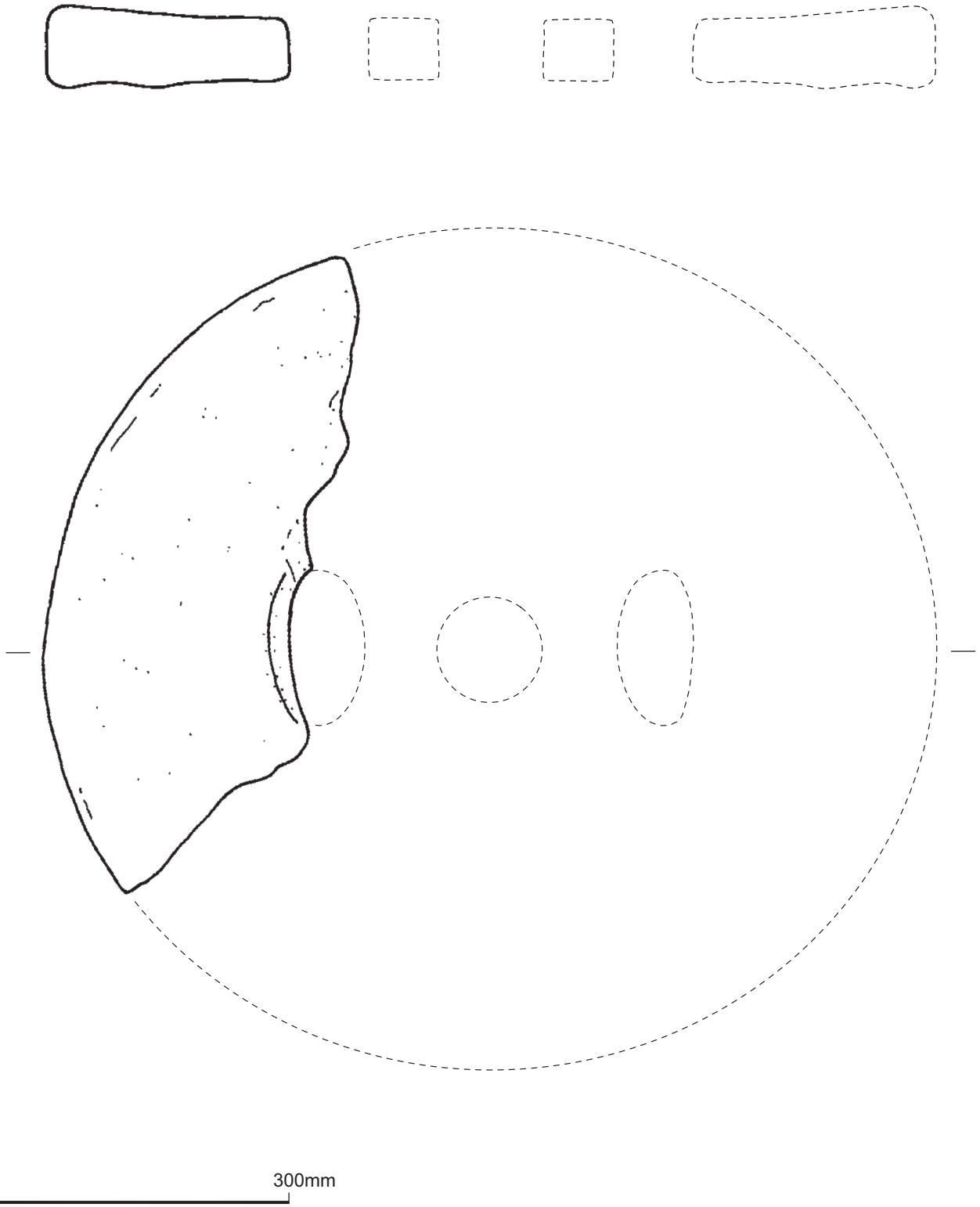


Fig. 9. Millstone 3 fragment

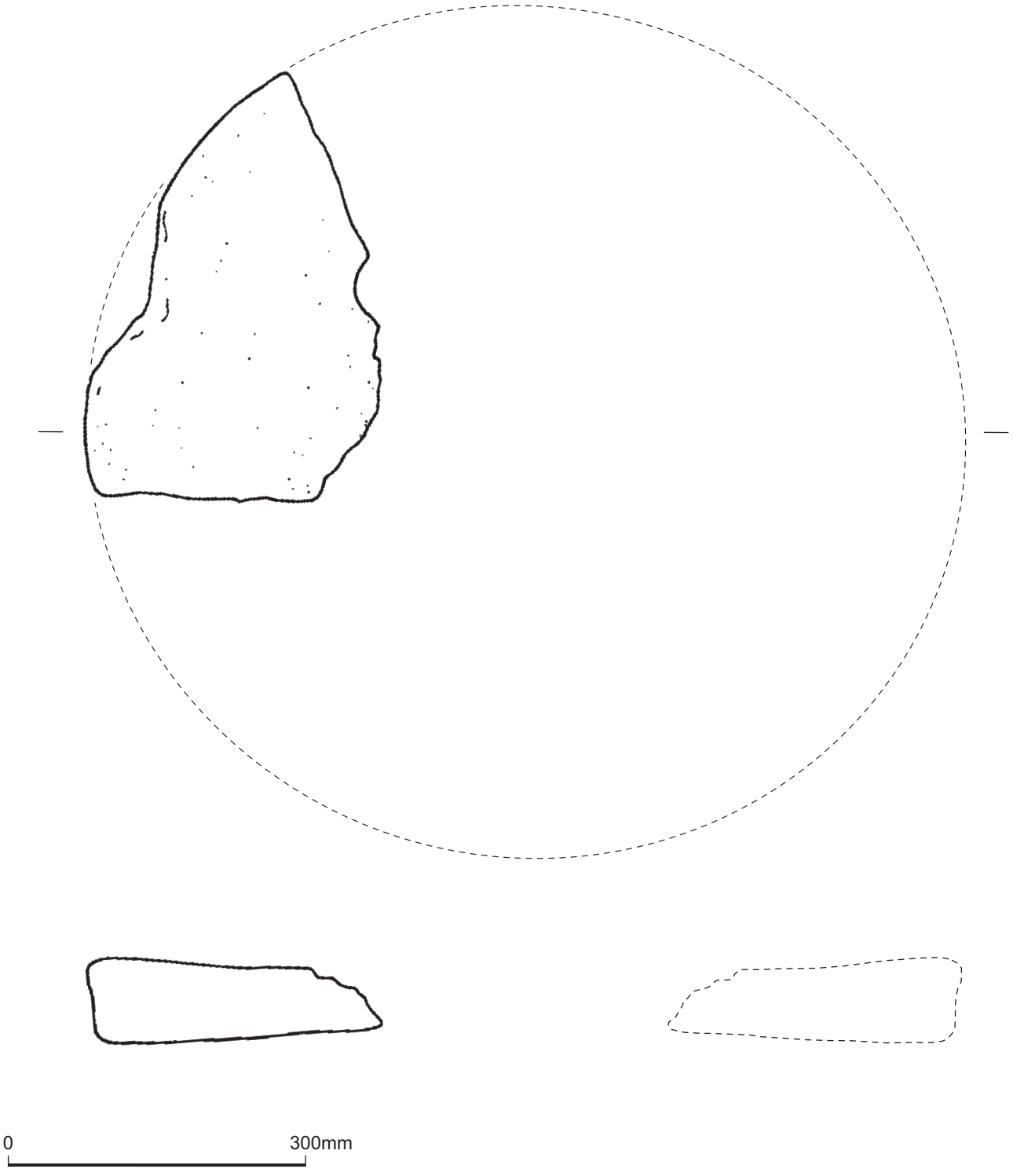


Fig. 10. Millstone 4 fragment

Plate 1. The main enclosure during stripping. Viewed facing north-west.

Plate 2. Detail of the square north-east terminal. Viewed facing south.

Plate 3. Detail of the south-east terminal. Viewed facing north.

Plate 4. The south facing section of the north-east terminal. Viewed facing north.

Plate 5. The north facing section of the south-east terminal. Viewed facing south.

Plate 6. The north-east facing section of the central slot across the north-west length of the enclosure ditch. Viewed facing south-west.

Plate 7. The south-east facing section of the central slot across the south-west length of the enclosure ditch. Viewed facing north-west.

Plate 8. The east facing section of the north-east corner of the enclosure ditch, featuring the step in level evident in the base of cut 709. Viewed facing west.

Plate 9. The step evident in the base of cut 747 in the central slot across the south-east length of enclosure ditch, with stepped section to rear. Viewed facing west.

Plate 10. The stepped internal surface of cut 709 in the north-east corner of the enclosure ditch. Viewed facing south-west.

Plate 11. The north west facing section of the north-east corner of the enclosure ditch. Featuring the burnt metal working deposit 720 (bottom left). Viewed facing south-east.

Plate 12. The south facing section of the south-west corner of the enclosure ditch. Featuring the possible re-cut 757 (top right). Viewed facing north.

Plate 13. The northern gateway pit, cut 696. Viewed facing north.

Plate 14. Detail of the millstones 2, 3 and 4; Small find 1. Viewed facing south-east.

Plate 15. The inhumation exposed in pit 249 in Trench 22. Viewed facing south-east

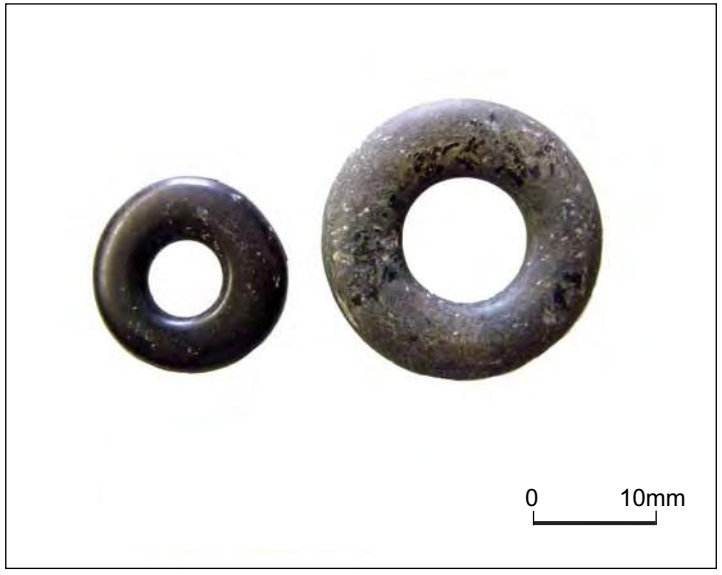


Plate 16. The annular rings after cleaning.

Plate 17. The north facing section of pit 669. Viewed facing south

Plate 18. The north facing section of pit 687. Viewed facing south.

Appendix 1: Inventory of primary archive

Phase	File/Box No	Description	Quantity
Excavation	File no.1	Specification of work	1
		Form B Finds and Sample Register	9
		Levels Survey Book	2
		Daily Site Recording Form	51
		Digital Photograph Record Sheet	5
		Photo register sheets	4
		Drawing Register	5
		Drawing Sheet Register	2
		Trench Record Sheet	1
		Small Find Register	1
		Sample Register	1
		Environmental Lab Sheets	29
		B&W Contact Sheets	
		Negatives	
	File no. 2	Group Context register sheets	1
		Group Context Sheets	10
		Context register sheets	9
		Context sheets (nos. 604-812)	207
	File no. 3	Drawing Sheets featuring sections and limited plans	38
	Loose	Drawing Sheets featuring master plan and individual grid plans\	27

Appendix 2: Concordance of contexts yielding artefacts or environmental remains

Abbreviations

Bone	Animal bone
Cruc.	Crucible
Cu. A.	Copper alloy object
Fe. O.	Iron object
Hum.	Human bone
PRIA pot	Pre-Roman Iron Age pottery
RB pot	Romano-British pottery

Context	Trench	Group	Description	Artefacts and environmental samples
104	-	-	Topsoil	Number retained from previous trenching
246	-	-	Natural Limestone Bedrock	Number retained from previous trenching
604	T37	-	Cut of eastern north-south gully	-
605	T37	-	Fill of 604	-
606	T37	-	Cut of eastern north-south gully	-
607	T37	-	Fill of 606	-
608	T37	-	Cut of western north-south gully	-
609	T37	-	Fill of 608	-
610	T37	-	Cut of east-west gully length	-
611	T37	-	Fill of 610	-
612	T37	-	Cut of eastern north-south gully	-
613	T37	-	Fill of 612	-
614	T38	100	Cut of north-south ditch	-
615	T38	100	Secondary fill of 614	RB Pot (1); Flint (1), Animal bone; Sample 8
616	T38	100	Primary fill of 614	Flint (1); Fe O. (1); Animal bone
617	T38	100	Cut of north-south ditch	-
618	T38	100	Secondary fill of 617	Animal bone
619	T38	100	Primary fill of 617	Flint (1)
620	T38	100	Shallow cut of possible east-west linear bisecting 617	-
621	T38	100	Fill of 620	-
622	T38	100	Cut of southern terminal to north-south ditch	-
623	T38	100	Primary fill of 622	-
624	T38	100	Secondary fill of 622	Animal bone
625	Enc	-	Cut of hollow containing the	-

			millstone	
626	Enc	-	Red clay fill of 625, possible levelling deposit	Quernstone, SF1
627	T38	100	Cut of southern terminal to north-south ditch	-
628	T38 and Enc	101	Cut of western terminus to southern east-west ditch	-
629	T38 and Enc	101	Fill of 628	Animal bone; Snail Shell; Sample 9
630	T38	100	Fill of 627	Animal bone
631	T38 and Enc	101	Cut of mid section east-west ditch	-
632	T38 and Enc	101	Fill of 631	-
633	T38 and Enc	101	Cut of corner section east-west ditch	-
634	T38 and Enc	101	Fill of 633	-
635	T38	101	Cut of north-south ditch	-
636	T38	101	Fill of 635	-
637	T38	101	Cut of north-south ditch	-
638	T38	101	Fill of 637	-
639	T38	-	Fill of shallow pit 642	Animal bone
640	T38 and Enc	102	Cut of western terminal of northern east-west ditch	-
641	T38 and Enc	102	Fill of 640	Animal bone; Sample 10
642	T38	-	Cut of shallow pit	-
643	T38 and Enc	102	Fill of cut 644	-
644	T38 and Enc	102	Cut of mid section of northern east-west ditch	-
645	T38 and Enc	102	Cut of northern east-west ditch	-
646	T38 and Enc	102	Fill of 645	-
647	Enc	103	Cut of shallow east-west linear	-
648	Enc	103	Fill of 647	-
649	Enc	103	Cut of shallow east-west linear	-

650	Enc	103	Fill of 649	Sample 14
651	Enc	103	Cut of shallow east-west linear	-
652	Enc	103	Fill of 651	-
653	Enc	104	Cut of eastern terminus of east-west gully	-
654	Enc	104	Fill of 653	-
655	Enc	104	Cut of east-west gully	-
656	Enc	104	Fill of 655	-
657	Enc	104	Cut of east-west gully	-
658	Enc	104	Fill of 657	-
659	Enc	104	Cut of east-west gully	-
660	Enc	104	Fill of 659	Sample 13
661	Enc	104	Cut of east-west gully	-
662	Enc	104	Fill of 661	Snail Shell
663	Enc	105	Cut of southern terminal to north-south gully west of enclosure	-
664	Enc	105	Fill of 663	Snail shell
665	Enc	105	Cut of north-south gully west of enclosure	-
666	Enc	105	Fill of 665	-
667	Enc	105	Cut of north-south gully west of enclosure	-
668	Enc	105	Fill of 667	Snail shell
669	Enc	-	Cut of large circular pit to the south-east of entrance	-
670	Enc	-	Secondary stony fill cut 669	Animal bone
671	Enc	-	Primary fill of 669	RB Pot (7); Animal bone; Sample 1
672	Enc	106	Cut of east-west gully north of enclosure	-
673	Enc	106	Fill of 672	Snail shell and charcoal
674	Enc	106	Cut of western terminus to east-west gully north of enclosure	-
675	Enc	106	Fill of 674	Sample 12
676	Enc	106	Cut of east-west gully north of enclosure	-
677	Enc	106	Fill of 676	Snail shell and charcoal
678	Enc	107	Segmented western terminus to east-west gully north of enclosure	-
679	Enc	107	Fill of 678	-
680	Enc	106	Cut of eastern terminus to east-west gully north of enclosure	-
681	Enc	106	Fill of 680	-
682	Enc	107	Cut of segmented east-west gully north of enclosure	-
683	Enc	107	Fill of 682	-

684	Enc	109	Cut of north-east terminal to the main enclosure ditch	-
685	Enc	109	Final fill of 684	RB Pot (63); Animal bone; snail shell
686	Enc	109	Upper fill of 684	RB Pot (10); Samian Pot (1);
687	Enc	-	Cut of circular pit east of 669	-
688	Enc	-	Secondary fill of 687	Animal bone
689	Enc	-	Primary fill of 687	Sample 2
690	Enc	-	Cut of shallow oblong pit	-
691	Enc	-	Fill of 690	-
692	Enc	109	Lower stony fill of 684	Animal bone; snail shell
693	Enc	-	Cut of southern gateway pit	-
694	Enc	-	Fill of 693	Sample 20
695	Enc	109	Primary fill of 684	Sample 3
696	Enc	-	Cut of northern gateway pit	-
697	Enc	-	Fill of 696	Sample 21
698	Enc	109	Final fill of 709 north-east corner of enclosure ditch	RB Pot (8); Animal bone
699	Enc	-	Cut of pear shaped pit	-
700	Enc	-	Fill of 699	Sample 22
701	Enc	-	Cut of shallow pit	-
702	Enc	-	Fill of 701	Fe O. (4)
703	Enc	108	Cut of western terminus to internal gully	-
704	Enc	108	Fill of 703	PRIA Pot (2)
705	Enc	109	Secondary fill of 709 north-eastern corner of enclosure ditch	RB Pot (2); Samian Pot (2); Small find 2 and 3
706	Enc	108	Cut of internal gully	-
707	Enc	108	Fill of 706	Sample 23
708	Enc	109	Secondary fill of 709 north-eastern corner of enclosure ditch	RB Pot (2); Fe O. (1) Animal bone
709	Enc	109	Cut of north-east corner of the main enclosure ditch	
710	Enc	109	Primary fill of 684	-
711	Enc	108	Cut of internal gully	-
712	Enc	108	Fill of 711	-
713	Enc	-	Cut of post hole	-
714	Enc	-	Fill of 713	Sample 5
715	Enc	109	Discrete deposit of charred material and animal bone in 709 north-east corner of enclosure ditch	RB Pot (2); Animal bone, snail shell, charcoal, Sample 7
716	Enc	-	Cut of shallow feature in the south-west corner of enclosure	-
717	Enc	-	Fill of 716	Sample 18
718	Enc	-	Cut of shallow pit south-east corner of enclosure	-
719	Enc	-	Fill of 718	Sample 19

720	Enc	109	Metalworking slag deposit in 709 north-east corner of main enclosure ditch	Slag, burnt clay, Sample 6 and 25
721	Enc	109	Lower stony layer in 709 north-east corner of main enclosure ditch	Fe O. (3) SF 5 and 6; Animal bone,
722	Enc	-	Cut of post hole	-
723	Enc	-	Fill of 722	Sample 11
724	Enc	109	Lower fill of 709 north-east corner of main enclosure ditch	Sample 26
725	Enc	109	Lower fill of 709 north-east corner of main enclosure ditch	Animal bone
726	Enc	109	Primary fill of 709 north-east corner of main enclosure ditch	Animal bone
727	Enc	109	Primary silt of 709 north-east corner of main enclosure ditch	-
728	Enc	109	Cut of main enclosure ditch south-west corner	-
729	Enc	109	Final fill of 728 south-west corner main enclosure ditch	Animal bone
730	Enc	109	Secondary fill of 728 south-west corner of main enclosure ditch	RB Pot (3); Quernstone; Animal bone
731	Enc	109	Secondary fill of 728 south-west corner of main enclosure ditch	-
732	Enc	109	Fill of re-cut 757 in south-west corner of main enclosure ditch	-
733	Enc	VOID	VOID	VOID
734	Enc	109	Fill of 709 north-east corner of main enclosure ditch	-
735	Enc	109	Upper fill of 742 central section of north-west length of main enclosure ditch	Animal bone
736	Enc	109	Upper fill of 742 central section of north-west length of main enclosure ditch	RB Pot (25);
737	Enc	109	Secondary fill of 742 central section of north-west length of main enclosure ditch	-
738	Enc	109	Secondary fill of 742 central section of north-west length of main enclosure ditch	Animal bone
739	Enc	109	Primary silting of 742 central section of north-west length of main enclosure ditch	-
740	Enc	109	Primary silting of 742 central section of north-west length of main enclosure ditch	-
741	Enc	109	Primary fill of 742 central section of north-west length of main enclosure ditch	-

742	Enc	109	Cut of central section of north-west length of main enclosure ditch	-
743	Enc	109	Primary silting of 709 north-east corner of main enclosure ditch	-
744	Enc	109	Primary silting of 709 north-east corner of main enclosure ditch	-
745	Enc	109	Primary silting of 709 north-east corner of main enclosure ditch	-
746	Enc	109	Cut of central section of south-west length of main enclosure ditch	-
747	Enc	109	Cut of central section of south-east length of main enclosure ditch	-
748	Enc	109	Primary stony deposit in 747 central section of south-east length of main enclosure ditch	RB Pot (99);
749	Enc	109	Upper fill of 746 central section of south-west length of main enclosure ditch	Animal bone
750	Enc	109	Upper fill of 746 central section of south-west length of main enclosure ditch	Animal bone and snail shell
751	Enc	109	Upper fill of 746 central section of south-west length of main enclosure ditch	-
752	Enc	109	Upper fill of 746 central section of south-west length of main enclosure ditch	-
753	Enc	109	Lower stony deposit in 746 central section of south-west length of main enclosure ditch	Animal bone and snail shell
754	Enc	109	Primary silting of 746 central section of south-west length of main enclosure ditch	-
755	Enc	109	Primary silting of 746 central section of south-west length of main enclosure ditch	-
756	Enc	109	Primary fill of 746 central section of south-west length of main enclosure ditch	Snail shell
757	Enc	109	Possible re-cut of south-west corner of main enclosure ditch	-
758	Enc	109	Primary stony fill of 728 south-west corner of main enclosure ditch	-
759	Enc	109	Primary silting of 728 south-west corner of main enclosure ditch	-
760	Enc	109	Primary silting of 728 south-west corner of main enclosure	Sample 27

			ditch	
761	Enc	109	Primary fill of 728 south-west corner of main enclosure ditch	-
762	Enc	109	Secondary fill of 728 south-west corner of main enclosure ditch	Animal bone
763	Enc	109	Primary fill of 728 south-west corner of main enclosure ditch	-
764	Enc	109	Cut of south-east terminal to main enclosure ditch	-
765	Enc	109	Final fill of 747 central section of south-east length of main enclosure ditch	-
766	Enc	109	Upper fill of 747 central section of south-east length of main enclosure ditch	-
767	Enc	109	Upper fill of 747 central section of south-east length of main enclosure ditch	Animal bone
768	Enc	109	Upper fill of 747 central section of south-east length of main enclosure ditch	-
769	Enc	109	Lower stony deposit of 747 central section of south-east length of main enclosure ditch	Animal bone and snail shell
770	Enc	109	Primary silting of 747 central section of south-east length of main enclosure ditch	-
771	Enc	109	Primary silting of 747 central section of south-east length of main enclosure ditch	-
772	Enc	109	Primary silting of 747 central section of south-east length of main enclosure ditch	-
773	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
774	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
775	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
776	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
777	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
778	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-
779	Enc	109	Upper fill of 764 south-east terminal of main enclosure ditch	-

780	Enc	109	Lower stony fill of 764 south-east terminus of main enclosure ditch	Animal bone
781	Enc	109	Primary silting deposit of 764 south-east terminal of main enclosure ditch	RB Pot (10); Animal bone, Sample 24
782	Enc	109	Primary silting deposit of 764 south-east terminal of main enclosure ditch	Animal bone
783	Enc	109	Primary fill of 764 south-east terminal of main enclosure ditch	-
784	Enc	109	Primary silting of 747 central section of south-east length of main enclosure ditch	-
785	Enc	109	Cut of south-east corner of main enclosure ditch.	-
786	Enc	109	Primary fill of 785 south-east corner of main enclosure ditch	-
787	Enc	109	Primary silting of 785 south-east corner of main enclosure ditch	Animal bone and snail shell
788	Enc	109	Lower fill of 785 south-east corner of main enclosure ditch	-
789	Enc	109	Lower stony fill of 785 south-east corner of main enclosure ditch	RB Pot (1); Pottery and snail shell
790	Enc	109	Lower fill of 785 south-east corner of main enclosure ditch	RB Pot (1); Pottery and animal bone
791	Enc	109	Upper silting deposit in 785 south-east corner of main enclosure ditch	Animal bone
792	Enc	109	Upper stony deposit in 785 south-east corner of main enclosure ditch	RB Pot (1)
793	Enc	109	Upper fill of 785 south-east corner of main enclosure ditch	-
794	Enc	109	Upper fill of 785 south-east corner of main enclosure ditch	-
795	Enc	109	Upper stony fill of 785 south-east corner of main enclosure ditch	Animal bone
796	Enc	109	Final fill of 785 south-east corner of main enclosure ditch	-
797	Enc	109	Primary fill of 747 central section south-east length of main enclosure ditch	-
798	Enc	109	Cut of shallow linear feature extending east from the south-east corner of the main enclosure ditch	-
799	Enc	109	Fill of 798	-
800	Enc	109	Cut of north-west corner of main enclosure ditch	-

801	Enc	109	Final fill of 800 north-west corner of main enclosure ditch	-
802	Enc	109	Upper stony layer of 800 north-west corner of main enclosure ditch	-
803	Enc	109	Upper silting deposit of 800 north-west corner of main enclosure ditch	-
804	Enc	109	Upper silting deposit of 800 north-west corner of main enclosure ditch	-
805	Enc	109	Lower stony deposit of 800 north-west corner of main enclosure ditch	Animal bone
806	Enc	109	Primary silting deposit of 800 north-west corner of main enclosure ditch	Animal bone
807	Enc	109	Primary silting deposit of 800 north-west corner of main enclosure ditch	-
808	Enc	109	Primary fill of 800 north-west corner of main enclosure ditch	-
809	Enc	-	Fill of 810	Charcoal Sample 16
810	Enc	-	Cut of post hole	-
811	Enc	-	Fill of feature 812	Charcoal
812	Enc	-	Cut of shallow feature	-

Additional relevant contexts from Trenches 21 and 22

Context	Trench	Comparative Group No.	Description	Artefacts and environmental samples
247	22	-	Cut of gully terminal	-
248	22	-	Single fill of 247	-
249	22	-	Cut of pit containing SK1	-
250	22	-	Upper fill of pit 249	GBA55, GBA 56
251	22	-	Lower fill of pit 249	Hum.; Jet O. (1); Shale O. (1); Bone (1); sample 58, sample 62
252	22	-	Cut of pit	-
253	22	-	Single fill of pit 253	GBA 57
254	22	109	Cut of enclosure ditch	-
255	22	109	Primary fill of enclosure ditch 255	RB pot (7); Bone (71); GBA 59
256	22	-	Cut of possible post-hole	-
257	22	-	Fill of 256	GBA 60
258	22	-	Cut of possible post-hole	-
259	22	-	Fill of 258	GBA61
260	22	-	Cut of post-hole	-
261	22	-	Fill of post-hole 260	GBA 63
262	22	-	Cut of small post-hole	-

263	22	-	Single fill of post-hole 262	Bone (1); GBA 64
264	22	-	Cut of shallow feature	-
265	22	-	Fill of 264	Slag (2)
266	22	109	Dark top fill of ditch terminal 295	RB pot (16); Mortaria (1); Cu. O. (1); Fe. O. (1); ?Worked stone (1); Bone (27)
267	22	109	Mid brown fill of ditch terminal 295	RB pot (8); Bone (46)
268	22	109	Red clayey fill of ditch terminal 295	RB pot (3); GBA 68
269	22	109	Rubble fill of ditch terminal 295	RB pot (5); Cruc. (43); Fe. O. (1); Bone (392)
270	22	109	Light brown fill of ditch terminal 295	RB pot (6); Fired Clay (15); Bone (41)
271	-	-	VOID	-
272	22	109	Orange fill of ditch terminal 295	RB pot (6); Bone (8)
273	-	-	VOID	-
274	21	-	Cut of linear terminal	-
275	21	-	Fill of 274	-
276	22	109	Charcoal rich fill in ditch terminal 295	Bone (2); GBA 65
277	-	-	VOID	-
278	20	109	Cut of gully or water channel	-
279	20	-	Fill of 278	-
280	22	109	Upper fill of enclosure ditch 254	-
281	22	109	Main bulk fill of enclosure ditch 254	-
282	22	109	Side silting of enclosure ditch 254	-
283	22	109	Side silting of enclosure ditch 254	-
				-
286	21	-	Primary fill of 288	-
287	21	-	Secondary fill of 288	GBA 66
288	21	-	Cut of ditch	-
295	22	109	Cut of ditch terminal	-

Appendix 3: Specification

WEST YORKSHIRE ARCHAEOLOGY ADVISORY SERVICE:
SPECIFICATION FOR AN ARCHAEOLOGICAL EXCAVATION AT DARRINGTON QUARRY NORTH EXTENSION

Specification prepared on behalf of Wakefield Metropolitan District Council at the request of Ian Roberts of Archaeological Services WYAS (Planning reference 08/01696/FUL)

1. Summary

1.1 A limited amount of archaeological work consisting of open-area excavation is proposed to mitigate the impact of development at the above site.

1.2 This specification deals with the required excavation, with the preparation of a post-excavation assessment of the results of the excavation, and with the preparation of a report on the site. The results of the excavation and assessment will indicate whether any further archaeological monitoring (in the form of a watching brief during development) or any further analysis of the finds and samples resulting from the fieldwork will be required. Any further fieldwork arising from the results of the excavation and the post-excavation assessment will be additional to the work specified below, and will be covered by a supplementary specification.

1.3 This specification has been prepared by the curatorial branch of the West Yorkshire Archaeology Advisory Service (WYAAS), the holders of the West Yorkshire Historic Environment Record.

NOTE: The requirements detailed in paragraphs 6.1, 6.2, 6.3, 6.4, 6.5, 7.6, 7.7 and 9.1 are to be met by the archaeological contractor **prior** to the commencement of fieldwork by completing and returning the attached form to the WY Archaeology Advisory Service.

2. Site Location & Description (Fig.1)

Grid Reference: SE 5024 2222

2.1 The area proposed for quarrying is located south of Knottingley and north of Darrington. The site is bisected by Leys Lane, which runs north to south. This specification covers the part of the site which lies to the east of Leys Lane, and within the Phase 2 extraction site. This first extraction area (phases 1-4) is bounded to the west by Leys Lane, to the south by the M62, to the east by a railway line and to the north by open fields. The underlying geology is Upper Magnesian Limestone.

2.2 The site is located in the District of Wakefield and the historic township of Knottingley and Cridling Stubbs.

3. Planning Background

3.1 Planning permission for an extension to Darrington Quarry to extract Magnesian Limestone has been granted by Wakefield Metropolitan District Council (08/01696/FUL).

3.2 The Planning Authority have attached an archaeological condition to the above planning permission as they have been advised by the WYAAS that there is reason to believe that important archaeological remains will be affected by the proposed development and that an archaeological excavation is required to investigate the impact of quarrying. The site has already been subject to a pre-determination geophysical survey and limited trial trenching exercise which demonstrated that significant archaeological remains were present on site, and that further evaluation and open area excavation would be required before extraction commenced. Evaluation of phases 1 and 2 had already taken place, and this specification covers the open area excavation of an enclosure in Phase 2, along with further mitigation within phase 2.

3.3 This specification has been prepared by the WYAAS at the request of Ian Roberts of ASWYAS (idroberts@aswyas.com 0113 3837 504), acting on behalf of the applicants, to detail what is required for the excavation.

4. Archaeological Interest

4.1 Cropmarks visible on aerial photographs show fragments of enclosures and ditches in fields in the vicinity of the site. Investigations of similar enclosures elsewhere in the district have revealed occupation dating to the late prehistoric or the Romano British period.

4.2 Limited pre-determination geophysical survey and trial trenching were carried out in June – September 2008 on the site. The geophysical survey identified evidence of a field system comprising ditches and enclosures of a probably Iron Age/Romano British date in the west and north of the site. To the southeast of the site a large trapezoidal enclosure was also located. Linear anomalies relating to medieval and post medieval ridge and furrow cultivation was identified across the whole of the site. The trapezoidal enclosure is the focus of this specification.

4.3 The limited trial trenching confirmed the results of the geophysical survey. 23 trenches were opened across the whole site to investigate the geophysical anomalies. The excavation indicated that the earliest activity on site dated to the pre-Roman Iron Age. A human burial found in a pit was radiocarbon dated to this period. The finds evidence indicated that activity on site mostly occurred during the 3rd and 4th centuries AD, in the later Roman period. A single trench was excavated across the trapezoidal enclosure which exposed two separate parts of the enclosure ditch. At one point (close to the south-eastern entrance terminal) the ditch was 3.6m wide and 1.9m deep, while at the other point (on the south-west side) the ditch was only 2m wide and 1.2m deep. Discrete features were investigated inside the enclosure, but no coherent structures were indentified within the confines of the trench.

4.4 Further evaluation took place in August 2011. To date, phases 1 and 2 have been further evaluated. A number of pits and gullys have been located within both phases. Some of the features contained pottery dating from the Iron Age and Romano British periods.

5. Aims of the Excavations

5.1 The objective of the project is to fully record, analyse and report all archaeological remains within the areas of interest ('preservation by record') prior to their destruction during the development of the site, and to place the results of this work in the public domain by depositing it with the WY Historic Environment Record (Registry of Deeds, Newstead Road, Wakefield WF1 2DE).

5.2 The specific aims are:

- to preserve by record the archaeological remains that will be impacted by the proposed development;
- to confirm and enhance the results of the earlier evaluation;
- to determine if the features relate to prehistoric/ Roman agricultural field systems or settlement activity;
- to where possible determine how these features fit into the prehistoric/ Roman landscape of the area;
- if more than one period is represented on site determine whether there is continuity between these;
- to establish the evidence for continuity of Iron Age/ Roman occupation;
- to determine if any other human burials are located on site;
- to contribute information to key research objectives identified by the following research agendas:
    I. The Neolithic, Bronze Age and Iron Age in West Yorkshire (Blaise Vyner 2008); and
    II. The Iron Age & Romano-British periods in West Yorkshire (Adrian Chadwick 2009).

6. General Instructions

6.1 Health and Safety

6.1.1 The archaeologist on site will naturally operate with due regard for Health and Safety regulations. Regard should also be taken of any reasonable additional constraints that the developer or other contractors may impose. The excavation may require the preparation of a Risk Assessment of the site in accordance with the Health and Safety at Work Regulations. WYAAS and its officers cannot be held responsible for any accidents or injuries that may occur to outside contractors while attempting to conform to this specification. Any Health and Safety issues which may hinder compliance with this specification should be discussed with WYAAS at the earliest possible opportunity (see section 13.2).

6.2 Confirmation of Adherence to Specification

6.2.1 Prior to the commencement of *any work,* the archaeological contractor must confirm adherence to this specification in writing to WYAAS, or state (with reasons) any proposals to vary the specification. Should the contractor wish to vary the specification, then written confirmation of the agreement of WYAAS to any variations

is required prior to work commencing. Unauthorised variations are made at the sole risk of the contractor. **Modifications presented in the form of a re-written specification/project design will not be considered by WYAAS.** Any technical queries arising from the specification detailed below should be addressed to WYAAS without delay.

6.3 Confirmation of Timetable and Contractors' Qualifications

6.3.1 Prior to the commencement of *any work*, the archaeological contractor **must** provide WYAAS **in writing** with:

- a projected timetable for the site work;
- details of the staff structure and numbers;
- names and *CVs* of key project members (the project manager, site supervisor, any proposed specialists, sub-contractors *etc.*).

6.3.2 All project staff provided by the archaeological contractor must be suitably qualified and experienced for their roles. The timetable should be adequate to allow the work to be undertaken to the appropriate professional standard, subject to the ultimate judgement of WYAAS.

6.4 Notification

6.4.1 The excavations will be monitored as necessary and practicable by WYAAS in its role as curator of the county's archaeology. WYAAS should be provided with **as much notice as possible in writing** (and certainly not less than one week) of the intention to start work. A copy of the archaeological contractor's risk assessment of the site should accompany the notification.

6.4.2 The museums officer named in paragraph 9.1 should be notified in writing of the commencement of fieldwork at the same time as WYAAS.

6.4.3 As a courtesy, English Heritage's Regional Science Adviser, Dr Andy Hammon should also be notified of the intention to commence fieldwork. (Tel.: 01904 601983; email: andy.hammon@english-heritage.org.uk).

6.5 Documentary Research

6.5.1 A Desk Based assessment, geophysical survey and limited trial trenching have already been carried out for this project; copies of these reports should be obtained from ASWYAS who have requested this specification. Alternatively they are available for consultation by prior arrangement at the WYHER. Please note the HER charges for commercial consultations. In addition to providing a knowledge base for the work in hand, the results of these investigations may be incorporated into the contractor's fieldwork report where they are considered to contribute to that report, but any extraneous material should be omitted. The results of the desk based assessment, along with the results of the earlier geophysical survey and trial trenching should be used to help inform the interpretation of the results of the site investigations.

6.6 Location of Services, etc.

6.6.1 The archaeological contractor will be responsible for locating any drainage pipes, service pipes, cables etc which may cross any of the trench lines, and for taking the necessary measures to avoid disturbing such services.

7. Fieldwork Methodology

7.1 Trench Size and Location (Fig. 1)

7.1.1 The work will involve the excavation of an open area totalling 9319m^2 covering the area of the trapezoidal enclosure and its immediate environs. In addition to this, three areas measuring 20m by 20m will be excavated around features identified in the recent evaluation of the Phase 2 area. The contractor should also make provision for a contingency area of up to 1000m^2. The use of the contingency will depend upon the results obtained during the initial excavations and will be implemented at the discretion of WYAAS. The decision to invoke all or part of the contingency area will be issued in writing, in retrospect after site discussions if necessary.

7.1.2 The open-area excavation trenches should be located as shown on Figure 1 (shown in blue).

	Area (m^2)	**Rationale**
Area A	9319	Open area excavation plus extension to investigate features from trench 38
Area B	400	To investigate features found in trench 37
Area C	400	To investigate features found in trench 40
Area D	400	To investigate features found in trench 48

Total excavation area: **10519m^2**
Contingency allowance: **up to 1000m^2**

7.2 Method of Excavation

7.2.1 The excavation areas may be opened using an appropriate machine fitted with a wide toothless ditching bucket. The topsoil and recent overburden should be removed down to the first significant archaeological horizon in successive level spits of maximum 0.2m thickness. **Under no circumstances should the machine be used to cut arbitrary trenches down to natural deposits.** All machine work must be carried out under direct archaeological supervision and the machine halted if significant archaeological deposits are encountered. The top of the first significant archaeological horizon may be exposed by the machine, but must then be cleaned by hand and inspected for features. Excavation should then continue manually.

7.2.2 All archaeological remains will be hand excavated in an archaeologically controlled and stratigraphic manner sufficient to meet the aims and objectives of the project. The excavation will record the **complete** stratigraphic sequence, down to naturally occurring deposits and will investigate and record **all** inter-relationships between features. The following excavation strategy will be employed:

- Linear boundary features: a minimum sample of 20% of each linear boundary feature such as ditches and trackways. Each section should be at least 1m wide and, where possible, sections will be located and recorded adjacent to the trench edge. All intersections will be investigated to determine the relationship(s) between the component features. All termini will be investigated.

- Other linear and discrete features: all stake-holes, post-holes, pits, ring ditches, kilns, and other structural/funerary/industrial features will be 50% excavated in the first instance, recorded in section, and then fully excavated. All intersections will be investigated to determine the relationship(s) between the component features. Where possible, sections will be located and recorded adjacent to the trench edge.
- Built structures: walls, floors etc will be excavated sufficient to establish their form, phasing, construction techniques. All intersections will be investigated to determine the relationship(s) between the component features.

7.2.3 All artefacts are to be retained for processing and analysis except for unstratified 19th & 20th-century material, which may be noted and discarded.

7.2.4 Samples for environmental analysis and scientific dating should be taken if suitable material is encountered during the excavation. Provision should also be made for specialist sampling if appropriate (soil profiles, archaeomagnetic dating, dendrochrology etc.) (Also see paragraph 7.5.)

7.3 Method of Recording

7.3.1 The trenches are to be recorded according to the normal principles of stratigraphic excavation. The stratigraphy of each area is to be recorded, even when no archaeological deposits have been identified.

7.3.2 Section drawings (at a minimum scale of 1:20) must include heights A.O.D. Plans (at a minimum scale of 1:50) must include O.D. spot heights for all principal strata and any features. At least one section of each trench edge, showing a representative and complete sequence of deposits from the modern ground surface to the natural geology, will be drawn.

7.3.3 The actual areas of excavation and all archaeological (and possibly archaeological) features should be accurately located on a site plan and recorded by photographs, scale drawings and written descriptions sufficient to permit the preparation of a detailed archive and report on the material. The trench locations, as excavated, will be accurately surveyed, tied into the O.S. National Grid and located on an up-to-date 1:1250 O.S. map base.

7.3.4 As an alternative to colour slide photography, good quality digital photography may be supplied as an alternative, using cameras with a minimum resolution of 4 megapixels. Note that conventional black and white print photography is still required and constitutes the permanent record. Digital images will only be acceptable as an alternative to colour slide photography if each image is supplied in three file formats (as a RAW data file, a DNG file and as a JPEG file). The contractor must include metadata embedded in the DNG file. The metadata must include the following: the commonly used name for the site being photographed, the relevant centred OS grid coordinates for the site to at least six figures, the relevant township name, the date of photograph, the subject of the photograph, the direction of shot and the name of the organisation taking the photograph. Images are to be supplied to WYAAS on gold CDs by the archaeological contractor accompanying the hard copy of the report.

7.4 Use of Metal Detectors

7.4.1 Spoil heaps are to be scanned for non-ferrous metal artefacts using a metal detector capable of making this discrimination, operated by an experienced metal detector user (if necessary, operating under the supervision of the contracting archaeologist). Modern artefacts are to be noted but not retained (19th-century material and earlier should be retained.)

7.4.2 If a non-professional archaeologist is to be used to carry out the metal-detecting, a formal agreement of their position as a sub-contractor working under direction must be agreed in advance of their use on site. This formal agreement will apply whether they are paid or not. To avoid financial claims under the Treasure Act a suggested wording for this formal agreement with the metal detectorist is: "In the process of working on the archaeological investigation at [*location of site*] between the dates of [*insert dates*], [*name of person contributing to project*] is working under direction or permission of [*name of archaeological organisation*] and hereby waives all rights to rewards for objects discovered that could otherwise be payable under the Treasure Act 1996."

7.5 Environmental Sampling Strategy

7.5.1 Bulk samples must be taken from **all** securely stratified deposits using the methodologies outlined by English Heritage in the Centre for Archaeology Guidelines no.1 (2002), “Environmental Archaeology. A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation”.

7.5.2 Samples for specialist environmental analysis and scientific dating (soil profiles, archaeomagnetic dating, dendrochrology etc.) should be taken if suitable material is encountered during the excavation. The English Heritage Regional Science Advisor should be consulted (Dr Andy Hammon, tel.: 01904 601983, email: andy.hammon@english-heritage.org.uk) and provision should be made for an appropriate specialist(s) to visit the site, take samples and discuss the sampling strategy, if necessary.

7.6 Conservation Strategy

7.6.1 A conservation strategy must be developed in collaboration with a recognised laboratory. All finds must be assessed in order to recover information that will contribute to an understanding of their deterioration and hence preservation potential, as well as identifying potential for further investigation. Furthermore, all finds must be stabilised and packaged in accordance with the requirements of the receiving museum. As a guiding principle, only artefacts of a “displayable” quality would warrant full conservation, but metalwork and coinage from stratified contexts would be expected to be x-rayed if necessary, and conservation costs should also be included as a contingency.

7.7 Human Remains

7.7.1 Any human remains that are discovered must initially be left *in-situ*, covered and protected. WYAAS will be notified at the earliest opportunity. If removal is necessary the remains must be excavated archaeologically in accordance with the *Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England* published by English Heritage (2005), a valid Ministry of Justice licence and any local environmental health regulations.

7.8 Treasure Act

7.8.1 The terms of the Treasure Act 1996 must be followed with regard to any finds that might fall within its purview. Any finds must be removed to a safe place and reported to the local coroner as required by the procedures as laid down in the "Code of Practice". Where removal cannot be effected on the same working day as the discovery, suitable security measures must be taken to protect the finds from theft.

7.9 Unexpectedly Significant or Complex Discoveries

7.9.1 Should there be unexpectedly significant or complex discoveries made that warrant, in the professional judgement of the archaeologist on site, more detailed recording than is appropriate within the terms of this specification, then the archaeological contractor should urgently contact WYAAS with the relevant information to enable them to resolve the matter with the developer.

8. Monitoring

8.1 The project will be monitored as necessary and practicable by WYAAS, in its role as curator of the county's archaeology and advisor to the local Planning Authority. WYAAS's representative will be afforded access to the site at any reasonable time. It is usual practice that the visit is arranged in advance, but this is not always feasible.

8.2 WYAAS's representative will be provided with a site tour and an overview of the site by the senior archaeologist present and should be afforded the opportunity to view all trenches, any finds made that are still on site, and any records not in immediate use. It is anticipated that the records of an exemplar context that has previously been fully recorded will be examined. Any observed deficiencies during the site visit are to be made good to the satisfaction of WYAAS's representative, by the next agreed site meeting. Access is also to be afforded at any reasonable time to English Heritage's Regional Archaeological Scientific Advisor.

8.3 Please note that WYAAS now make a charge for site monitoring visits. An invoice will be raised on the archaeological contractor.. Please contact us for the current charge.

9. Archive Deposition

9.1 Before commencing any fieldwork, the archaeological contractor must contact the archaeological curator of the relevant district museum to determine the museum's requirements for the deposition of an excavation archive. In this case the contact is Wakefield M.D.C. Museum and Arts, Pontefract Museum, 5 Salter Row, Pontefract, WF8 1BA. telephone 01924 305352; Museums Curatorial and Collections Officer: Mr David Evans. Agreement for deposition should be confirmed in writing by the archaeological contractor; this correspondence is to be copied to the WY Archaeology Advisory Service.

9.2 It is the policy of Wakefield Museums to accept complete excavation archives, including primary site records and research archives and finds, from all excavations carried out in the District that it serves.

9.3 It is the responsibility of the archaeological contractor to endeavour to obtain the written consent of the landowner to the deposition of finds with Wakefield Museums.

9.4 It is the responsibility of the archaeological contractor to meet Wakefield Museum's requirements in the preparation of excavation archives for deposition.

10. Post-excavation Assessment and Analysis

10.1 Initial Treatment of Artefacts and Samples

Upon completion of fieldwork all finds will be cleaned, identified, marked (if appropriate) and properly packed and stored in accordance with the requirements of national guidelines. Metalwork will be x-rayed (as per paragraph 7.6) and assessed by a conservator. Any samples taken shall be processed appropriately.

10.2 Archive Consolidation

10.2.1 The site archive will be checked, cross-referenced and made internally consistent. A fully indexed archive shall be compiled consisting of all primary written documents, plans, sections, photographic negatives and a complete set of labelled photographic prints/slides.

10.2.2 Standards for archive compilation and transfer should conform to those outlined in *Archaeological Archives – a guide to best practice in creation, compilation, transfer and curation* (Archaeological Archives Forum, 2007). The contractor should also take account of any additional requirements imposed by the recipient museum (see section 9 above).

10.2.3 The original archive is to accompany the deposition of any finds, providing the landowner agrees to the deposition of finds in a publicly accessible archive (see paragraph 9.3 above). In the absence of this agreement the field archive (less finds) is to be deposited with the West Yorkshire Archaeology Advisory Service.

10.3 Assessment - Artefacts

All artefacts must be assessed by a qualified and experienced specialist. Assessment should be generally based on MAP2 but should include:

- preparation of a descriptive catalogue;
- dating (where possible);
- an assessment of the significance of the assemblage;
- an assessment of the potential for further analysis to contribute to the interpretation of the archaeology of this site;
- an assessment of the potential for further analysis to contribute to artefact studies;
- recommendations for additional artefact illustration/photography;
- an assessment of the condition of the assemblage and recommendations for conservation, retention/discard and archiving.

10.4 Assessment - Samples

All environmental material must be assessed by a qualified and experienced specialist. Assessment should be generally based on MAP2 but should include:

- preparation of a descriptive table/catalogue;

- identification of material suitable for scientific dating;
- an assessment of the significance of the assemblage;
- an assessment of the potential for further analysis to contribute to the interpretation of the archaeology of this site;
- an assessment of the potential for further analysis to contribute to environmental studies;
- an assessment of the condition of the assemblage and recommendations for retention/discard and archiving.

10.5 Dating
Scientific dating should be undertaken at this stage if it is required to fulfil the aims of the project.

11 Reporting (Stage 1) – Interim Assessment of Potential
11.1 Following the return of the specialist reports to the archaeological contractor, but prior to the commencement of preparation of the detailed site report, the contractor should arrange a meeting with the WY Archaeology Advisory Service and (at his discretion) English Heritage's Regional Science Adviser (Andy Hammon, English Heritage, 37 Tanner Row, York Y01 6WP). The purpose of this meeting is to discuss the results of the initial stratigraphic synthesis and initial scientific analyses, and to determine

- the ability of the available data to fulfil the stated aims and objectives of the project
- any requirement for further scientific analyses prior to the formulation of the full report on the site.

The meeting may take the form of a telephone discussion, at the discretion of the WY Archaeology Advisory Service.

11.2 Prior to the meeting, documentation sufficient to enable the Advisory Service and English Heritage's Regional Science Adviser to evaluate any proposals for further analysis should be made available to WYAAS and EH. This documentation should consist of the following as a minimum, but should not include a detailed site narrative or constitute a draft of the final report:

11.2.1 Text
- A brief narrative outline of the results of the excavation (**N.B.** this is not intended to be a detailed description of the stratigraphic sequence, but should provide sufficient detail to permit the form and development of the site to be understood by a third party who has not visited the excavation);
- Detailed description of any features/feature groups, the interpretation of which may be affected by the results of further scientific analysis;
- A re-evaluation of the aims and objectives of the project in the light of the initial specialist analysis;
- A descriptive context catalogue;
- Unedited copies of specialist reports;
- Detailed and specific recommendations for further artefact and environmental analysis;

- Detailed and specific recommendations for any additional scientific dating;
- Detailed and specific recommendations for further documentary research;
- Costings for any recommended further research, scientific analysis or dating;
- Recommendations for general publication in monograph form or in an appropriate journal, if warranted by the results of the excavation.

11.2.2 Illustrations

Illustrations should be sufficient to permit the summary discussion to be understood by a third party, and should include:

- Location plan;
- Trench locations (as excavated), overlaid on an up-to-date 1:1250 O.S. map base;
- Draft phase plans (these should be at a scale sufficient to illustrate major context and feature groups important to an understanding of the site narrative)
- Plans, sections and photographs sufficient to permit the narrative outline to be understood, and to support recommendations for further specialist analysis. Draft drawings and marked-up digital photographs are acceptable as long as these are legible.

12. Reporting (Stage 2) – Full Report

12.1 If further specialist analysis is judged by the WY Archaeology Advisory Service to be necessary and appropriate, this work should be commissioned and the results incorporated into a full report. If no further specialist analysis is required, then a full report will be produced.

12.2 Details of the style and format of the full report are to be determined by the archaeological contractor. However, it should be produced with sufficient care and attention to detail to be of academic use to future researchers. The report should be fully illustrated and include:

- background information;
- a description of the methodology;
- a full description of the results;
- an interpretation of the results in a local/regional/national context as appropriate;
- a full bibliography.

Appendices to the report should include:

- Unedited copies of final specialist reports;
- a quantified index to the site archive
- written confirmation from the relevant museum or other repository that the archive has been accepted for long-term storage, with full location details of the archive
- a copy of this specification.

12.3 Location plans should be produced at a scale which enables easy site identification and which depict the full extent of the site. A scale of 1:50,000 is not

regarded as appropriate unless accompanied by more detailed plan(s). The location of the trenches (as excavated) should be overlaid on an up-to-date 1:1250 O.S. map base.

12.4 All illustrations should be executed to publication standard. Site plans should be at an appropriate, measurable scale showing the trenches as excavated and all identified (and, if possible, predicted) archaeological features/deposits. Trench and feature plans must include O.D. spot heights for all principal strata and any features. Section drawings must include O.D heights and be cross-referenced to an appropriate plan.

12.5 Finds that are critical for dating and interpretation should be illustrated.

12.6 Discrete features crucial to the interpretation of the site should be illustrated photographically.

12.7 In addition to the full report to be deposited with the WY Historic Environment Record, the results of this excavation may merit publication in monograph form or in a suitable archaeological journal (subject to the judgement of the WY Archaeology Advisory Service). If further publication is considered to be necessary, the archaeological contractor will be expected to approach the editor of the appropriate publication (after discussions with WYAAS) to confirm the journal's requirements and views with regard to the suitability of the proffered material.

12.8 The full report will be submitted directly to the WY Archaeology Advisory Service within a timescale agreed by both parties. The report will then assessed by WYAAS to establish whether or not it is suitable for accession into the WY Historic Environment Record. Any comments made by WYAAS in response to the submission of an unsatisfactory report will be taken into account and will result in the reissue of a suitably edited report to all parties, within a timescale which has been agreed with WYAAS. Completion of this project and a recommendation from WYAAS for the full discharge of the archaeological condition is dependant upon receipt by WYAAS of i) a satisfactory full report and, should publication be warranted, ii) a copy of a letter from an appropriate journal editor or publisher confirming acceptance of the article.

12.9 The full report, once accepted by WYAAS, will be supplied on the understanding that it will be added to the West Yorkshire Historic Environment Record and will become a public document after an appropriate period of time (generally not exceeding six months).

12.10 Copyright - Please note that by depositing this report, the contractor gives permission for the material presented within the document to be used by the WYAAS, in perpetuity, although The Contractor retains the right to be identified as the author of all project documentation and reports as specified in the *Copyright, Designs and Patents Act* 1988 (chapter IV, section 79). The permission will allow the WYAAS to reproduce material, including for non-commercial use by third parties, with the copyright owner suitably acknowledged.

12.11 The West Yorkshire HER supports the Online Access to Index of Archaeological Investigations (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. The archaeological contractor must therefore complete the online OASIS form at http://ads.ahds.ac.uk/project/oasis/. Contractors are advised to contact the West Yorkshire HER officer prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, the West Yorkshire HER may place the information on a web-site. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to the case officer at the West Yorkshire HER.

12.12 The attached summary sheet should be completed and submitted to the West Yorkshire Archaeology Advisory Service for inclusion on WYAAS's website.

13. General Considerations

13.1 Authorised Alterations to Specification by Contractor

13.1.1 It should be noted that this specification is based upon records available in the West Yorkshire Historic Environment Record. It is recommended that archaeological contractors should carry out a site inspection prior to submitting a tender. If, upon visiting the site or at any time during the course of the recording exercise, it appears in the archaeologist's professional judgement that:

> i) a part or the whole of the site is not amenable to recording as detailed above, and/or
> ii) an alternative approach may be more appropriate or likely to produce more informative results,

then it is expected that the archaeologist will contact WYAAS as a matter of urgency. If contractors have not yet been appointed, any variations which WYAAS considers to be justifiable on archaeological grounds will be incorporated into a revised specification, which will then be re-issued to the developer for redistribution to the tendering contractors. If an appointment has already been made and site work is ongoing, WYAAS will resolve the matter in liaison with the developer and the Local Planning Authority.

13. 2 Unauthorised Alterations to Specification by Contractor

13.2.1 It is the archaeological contractor's responsibility to ensure that they have obtained WYAAS's consent in writing to any variation of the specification prior to the commencement of on-site work or (where applicable) prior to the finalisation of the tender. Unauthorised variations may result in WYAAS being unable to recommend determination of the planning application to the Local Planning Authority based on the archaeological information available and are therefore made solely at the risk of the contractor.

13.3 Technical Queries

13.3.1 Any technical queries arising from the specification detailed above, should be addressed to WYAAS without delay.

13.4 Publicity

13.4.1 If the project is to be publicised in any way (including media releases, publications etc.), then it is expected that WYAAS will be given the opportunity to consider whether its collaborative role should be acknowledged, and if so, the form of words used will be at WYAAS's discretion.

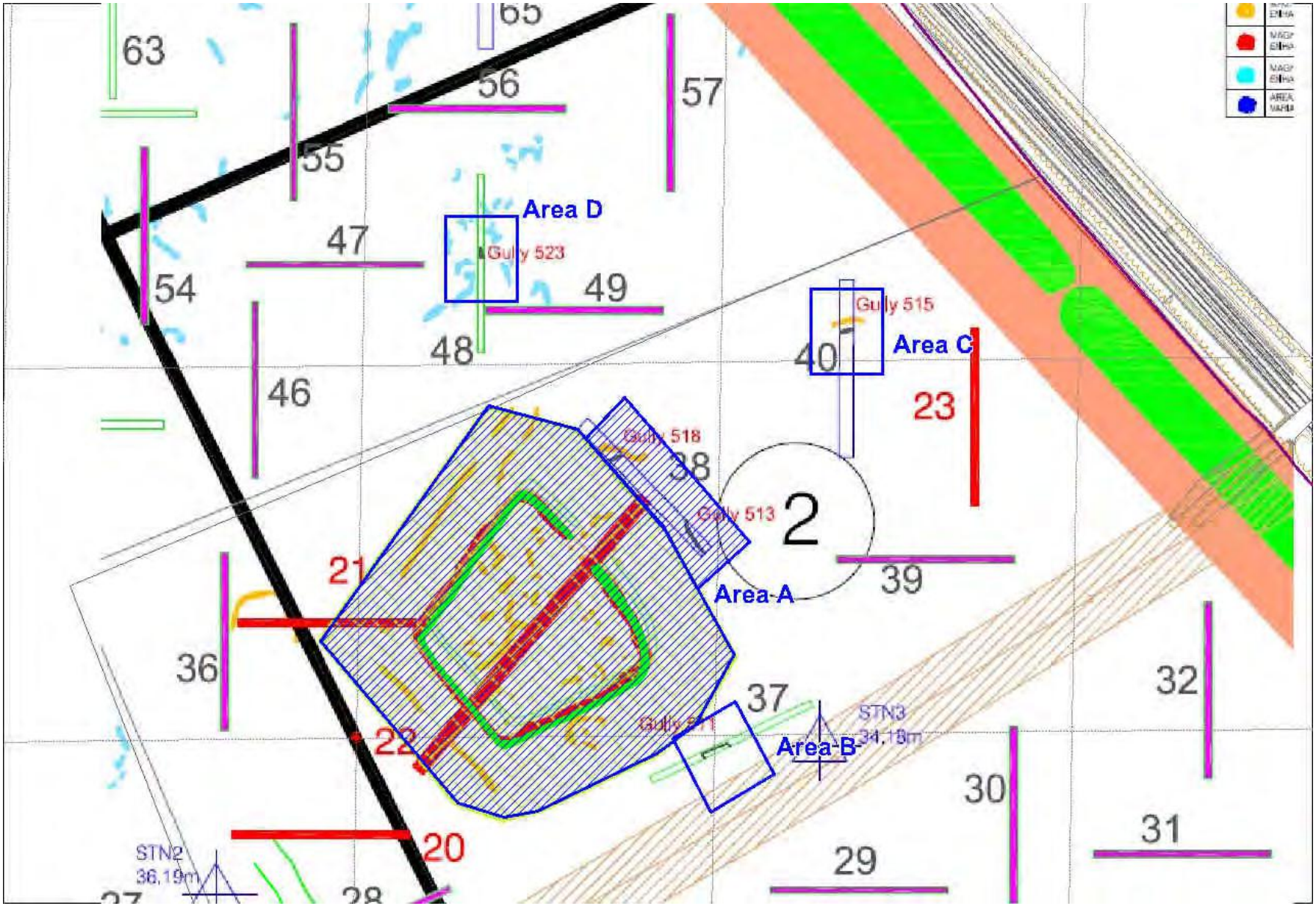
13.5 Valid Period of Specification

13.5.1 This specification is valid for a period of one year from date of issue. After that time it may need to be revised to take into account new discoveries, changes in policy or the introduction of new working practices or techniques.

Rebecca Remmer **September 2011**
West Yorkshire Archaeology Advisory Service

West Yorkshire Archaeology Advisory Service
Registry of Deeds
Newstead Road
Wakefield
WF1 2DE

Telephone: 01924 305992
Fax: 01924 306810
E-mail: rremmer@wyjs.org.uk


63
65
56
57
55
Area D
47
Gully 523
54
49
48
Gully 515
40
Area C
46
23
Gully 518
38
Gully 513
2
21
Area A
39
36
37
32
Area B
STN3
34.18m
22
30
31
20
29
STN2
36.19m

Appendix 4: Charred plant and mollusc tables

All of the components of the flots were recorded using a five-point semi-quantitative scale. The abundance scale employed was:

1. few/rare, up to 3 individuals/items or a trace level component of the whole;
2. some/present, 4 to 20 items or a minor component;
3. many/common, 21 to 50 or a significant component;
4. very many/abundant, 51 to 200 or a major component and
5. super-abundant, over 200 items/individuals or a dominant component of the whole.

Semi-quantitative summary of components of the submitted sample flots and note regarding the quantity of material sorted from the corresponding residues

CN	S	Vol. (l)	Flot wt (g)	CPR from res (g)	C'coal	C'coal Max. dim.	Ch. grain	Ch. chaff	Ch. seed	Cind.	Coal	Unch. 'seed'	Mod. root/ det.	eecs	Mod. arth	Moll.	Sed. 'crumb'/sand	Notes
615	8	10	2.7	None	1	3	-	-	-	1	1	1	5	1	1	4	-	Modern 'seeds' of orache/goosefoot (*Atriplex*/ *Chenopodium*; score 1) and fumitory (*Fumaria*; score 1)
629	9	10	8.3	None	1	4	-	-	-	-	1	1	5	1	-	4	3	Modern seeds of orache/goosefoot
641	10	10	4.2	None	1	4	-	-	-	-	1	1	5	2	2	4	3	Modern bramble, ?raspberry (cf. *Rubus idaeus* L.) fruitstone
650	14	10	1.7	None	1	2	-	-	-	-	1	2	5	-	-	3	1	Modern seeds of orache/goosefoot
660	13	10	2.3	None	1	2	-	-	-	1	1	2	5	-	1	3	1	Modern seeds of orache/goosefoot
671	1	20	16	None	1	2	-	-	-	2	2	-	5	2	2	5	5	-
675	12	10	1.7	None	-	-	1	-	-	-	1	2	5	1	1	3	-	1x poorly preserved indeterminate charred grain; modern seeds of orache/goosefoot
689	2	10	6.8	None	2	5	1	-	-	2	2	2	5	1	3	5	-	2x poorly preserved, silted charred grains – both possibly wheat (cf. *Triticum*); modern seeds of orache/goosefoot (score 2) and fumitory (score 1)
694	20	10	1.5	None	-	-	1	-	-	-	1	1	5	1	1	3	-	2x poorly preserved, silted, indeterminate charred grains; modern seeds of orache/goosefoot
695	3	10	5.6	None	3	4	2	-	-	-	-	-	2	-	1	5	-	17x charred cereal grains/grain fragments in total. Poor to moderate preservation (missing surfaces, broken); 3x barley (*Hordeum*), 4x wheat/barley (*Triticum*/*Hordeum*) – these

CN	S	Vol. (l)	Flot wt (g)	CPR from res (g)	C'coal	C'coal Max. dim.	Ch. grain	Ch. chaff	Ch. seed	Cind.	Coal	Unch. 'seed'	Mod. root/ det.	eecs	Mod. arth	Moll.	Sed. 'crumb'/sand	Notes
																		grains exhibited characteristics of both wheat and barley, 6x Cerealia indeterminate. The remaining four fragments lacked the main countable/diagnostic elements.
697	21	10	2.8	None	1	2	-	-	-	-	1	2	5	2	-	3	-	Modern seeds of orache/goosefoot; small stones to 5 mm (score 1)
700	22	10	2.4	None	-	-	1	-	-	1	1	2	5	2	-	3	-	1x poorly preserved, silted charred ?wheat (cf. *Triticum*) grain; modern seeds of orache/goosefoot
707	23	10	2.1	None	1	-	-	-	-	-	1	3	5	1	-	3	1	Modern seeds mostly orache/goosefoot
710	4	10	5.1	None	1	3	-	-	-	-	-	-	3	-	1	5	-	-
714	5	5	0.4	None	1	3	-	-	-	-	1	1	5	-	-	3	1	Modern seeds of orache/goosefoot
715	7	1.5	15	None	5	18	1	-	-	-	-	-	2	-	-	2	2	1x charred wheat (*Triticum*) grain; a few small fragments of indeterminate burnt bone to 3 mm (score 2)
717	18	10	2.8	None	-	-	-	-	-	1	1	2	5	2	2	4	1	Modern seeds of orache/goosefoot
719	19	10	1.3	None	1	1	1	-	-	-	-	1	5	2	-	2	-	1x very poorly preserved, silted, indeterminate charred ?grain; modern seeds include orache/goosefoot
720	6	10	114	None	5	17	-	-	-	4	-	1	3	-	-	4	2	Some 'ashy' concretions to 12 mm (score 2)
720	25	10	39	24.7	5	16	1	-	-	3	2	-	2	-	1	5	2	1x charred barley (*Hordeum*) grain; some 'ashy' concretions to 20 mm (score 2)

CN	S	Vol. (l)	Flot wt (g)	CPR from res (g)	C'coal	C'coal Max. dim.	Ch. grain	Ch. chaff	Ch. seed	Cind.	Coal	Unch. 'seed'	Mod. root/ det.	eecs	Mod. arth	Moll.	Sed. 'crumb'/sand	Notes
724	26	20	8.9	None	3	27	1	-	-	-	-	-	4	2	1	5	4	1x poorly preserved, indeterminate charred grain; trace of indeterminate small vertebrate bone (score 2)
760	27	20	8.7	None	1	2	-	-	-	-	-	-	1	-	-	5	1	Trace of indeterminate small vertebrate bone (score 1)
781	24	20	14	None	2	1	-	-	-	-	-	1	2	2	-	5	2	Occasional modern seed fragments including orache/goosefoot
788	28	20	10	None	1	2	-	-	-	-	-	-	2	-	-	5	3	A few small stones to 6 mm (score 1)
806	29	20	8.4	None	1	2	-	-	-	1	-	1	2	-	2	5	3	Modern seeds of orache/goosefoot; trace of indeterminate small vertebrate bone (score 2)
809	16	10	2.6	0.7	1	4	-	-	-	1	1	3	5	1	-	3	1	Modern 'seeds' of orache/goosefoot (score 3) and fumitory (score 1)
811	17	10	10	2.3	3	16	-	-	-	-	2	2	5	2	2	3	4	Modern seeds of orache/goosefoot

Key: 'CN' = context number; 'S' = sample number; 'Vol. (l)' = approximate volume of sediment sample processed; 'Flot wt (g)' = weight in grammes of dried 'flot' submitted; 'CPR from res (g)' = weight in grammes of material submitted as charred plant remains sorted from sample residue; 'C'coal' = charcoal; 'Max. dim.' = maximum linear dimension in millimetres; 'Ch.' = charred; 'Cind.' = cinder; 'Unch. 'seed'' = uncharred seeds and other similar plant structures (e.g. achenes, fruitstones) – probably modern; 'Mod. root/det.' = modern rootlet and/or other plant detritus (mostly the former); 'eecs' = egg capsules of earthworms and/or Heterodera *cysts; 'Mod. arth' = modern arthropod remains (including beetle sclerites and other insect remains); 'Moll.' = molluscs; 'H'scale' = hammerscale (all spheroid in this instance); 'Sed. 'crumb'/sand' = small lumps of undisaggregated sediment (to 2 mm) and/or sand. Semi-quantitative abundance scale: 1 – few/rare, up to 3 individuals/items or a trace level component of the whole; 2 – some/present, 4 to 20 items or a minor component; 3 – many/common, 21 to 50 or a significant component; 4 – very many/abundant, 51 to 200 or a major component; and 5 – super-abundant, over 200 items/individuals or a dominant component of the whole. For further details of the mollusc taxa recovered in the 'flots' see Tables 12 to 14 and for additional records of molluscs sorted from the residues see Table 15.*

Charred plant remains from sample residues

CN	S	Vol. (l)	CPR from res (g)	Notes
720	25	10	24.7	Approximately 35 fragments to 38 mm most of which appear to be low grade coal/shale. Occasional fragments of charcoal including the largest (i.e. to 38 mm). Two of the charcoal fragments, again including the largest, could be partially identified as diffuse-porous, possibly heather (cf. *Calluna*); the smaller fragment was of roundwood with the waney edge present but was only an outer edge fragment and so the age of wood growth could not be determined.
809	16	10	0.7	7x heavily silted flakes/slivers of charcoal to 16 mm. Cell structures were rather deformed and all of the fragments had a slightly vitrified appearance. No roundwood was present and no identifications were possible.
811	17	10	2.3.0	18x silted flakes/slivers of charcoal to 23 mm; identification of the four largest was attempted. All were partially identified as of a diffuse-porous species, possibly heather (cf. *Calluna*) but none could be identified more closely and there was no roundwood present.

Key: 'CN' = context number; 'S' = sample number; 'Vol. (l)' = approximate volume of sediment sample processed; 'CPR from res (g)' = weight in grammes of material submitted as charred plant remains sorted from the sample residues.

Hand-collected charcoal

CN	Notes
673	One small bag of material submitted. Bag 1: 1.0 g – approximately 20 fragments of lightly to heavily silted charcoal to 13 mm, no identifications possible.
677	Two small bags of material submitted. Bag 1: 0.5 g – small fragments of heavily silted charcoal to 10 mm (mostly less than 4 mm), largest fragment probably diffuse-porous but preservation poor, other fragments indeterminate.

CN	Notes
	Bag 2: 0.1 g – 1x heavily silted charcoal fragment to 8 mm, diffuse porous species (probably heather, *Calluna*), some curvature to the visible growth rings but no waney edge present and inner 'core' wood missing.
686	Two small bags of material submitted. Bag 1: 1.1 g – approximately 13 charcoal fragments to 15 mm, largest and one other fragment of diffuse-porous roundwood (possibly heather, cf. *Calluna*), age of wood growth indeterminate as no waney edge present and inner 'core' wood missing from both fragments. Bag 2: 2.5 g (damp) – approximately 20 charcoal fragments of 4 to 17 mm and some smaller flakes, some fragments silted but others not, all poorly preserved (soft and crumbly) and no identifications were possible.
719	One small bag of material submitted. Bag 1: 5.6 g (damp) – fragments of very crumbly indeterminate charcoal to 8 mm in sediment matrix, sample mostly sediment.
782	One small bag of material submitted. Bag 1: 1.2 g (damp) – approximately 15 charcoal fragments of 4 to 15 mm and numerous smaller flakes, all extremely soft and crumbly, largest fragment diffuse-porous but not identifiable further, second largest fragment probably heather (cf. *Calluna*), no roundwood charcoal present.

Key: 'CN' = context number.

Semi-quantitative records of the mollusc remains from the sample flots – contexts 615 to 697

Context number	**615**	**629**	**641**	**650**	**660**	**671**	**675**	**689**	**694**	**695**	**697**
Sample number	8	9	10	14	13	1	12	2	20	3	21
Dry weight of submitted material (g)	2.7	8.3	4.2	1.7	2.3	16.0	1.7	6.8	1.5	5.6	2.8
Carychium tridentatum (Risso)	2	4	-	1	2	4	-	4	-	5	-
Carychium sp. (apex fragment)	-	3	1	-	-	3	-	4	-	4	-
Cochlicopa ?*lubrica* (Müller)	-	1	1	-	1	1	-	1	-	1	-
Cochlicopa ?*lubricella* (Porro)	-	-	2	-	-	1	1	1	1	2	-
Cochlicopa sp. (apices or non-apex fragments)	-	1	1	1	-	1	-	2	1	3	-
Truncatellina cylindrica (Férussac)	-	-	-	-	-	-	1	-	-	-	-
?*Truncatellina cylindrica* (Férussac) - broken	-	-	-	-	-	-	1	-	-	-	-
Vertigo pygmaea (Draparnaud)	1	2	-	-	-	-	1	2	-	2	1
Vertigo ?*pygmaea* (Draparnaud)	-	-	-	2	-	-	-	-	-	-	-
Vertigo sp. (apices)	-	1	-	-	-	-	1	2	-	-	-
Pupilla muscorum (L.)	-	-	-	-	-	1	1	-	-	-	-
Lauria cylindracea (da Costa)	-	-	-	-	-	-	-	-	-	1	-
Pupillidae sp. (apex fragment)	-	-	-	-	-	1	-	-	-	2	-
Vallonia costata (Müller)	-	-	1	-	-	-	1	1	1	3	1
Vallonia excentrica Sterki	1	1	1	1	1	1	1	1	-	-	1
Vallonia ?*excentrica* Sterki	-	-	-	-	-	-	-	-	-	1	-
Vallonia sp.	-	-	-	-	-	-	-	-	-	-	-
Acanthinula aculeata (Müller)	-	-	-	-	-	2	-	1	-	2	-
Ena obscura (Müller)	-	-	-	-	-	-	-	1	-	1	-
Punctum pygmaeum (Draparnaud)	-	-	-	1	-	2	1	2	-	2	-
Discus rotundatus (Müller)	2	2	2	-	1	3	1	2	1	4	2
Vitrea crystallina (Müller)	-	-	-	-	-	1	-	2	1	2	-
Vitrea crystallina (Müller)/*V. contracta* (Westerlund)	2	2	1	1	-	2	-	2	1	3	1
Aegopinella ?*nitidula* (Draparnaud)	-	-	-	-	-	2	-	1	1	2	-

?*Aegopinella* sp. (apex)	-	-	-	-	-	-	-	-	-	-	1
?*Oxychilus* sp. (apex)	-	-	1	-	-	2	-	-	-	-	-
Euconulus fulvus (Müller)	-	-	-	-	-	-	-	-	-	2	-
Cecilioides acicula (Müller)	4	4	4	2	3	4	2	4	3	2	3
Cochlodina laminata (Montagu)	-	-	-	-	-	-	-	-	-	-	-
Clausilia bidentata (Ström)	-	2	-	-	-	-	1	-	-	1	-
clausilid apex - indeterminate	-	2	1	-	-	-	-	-	-	2	-
clausilid non-apex - indeterminate	-	-	-	-	1	-	-	-	-	-	-
Trichia ?*hispida* (L.)	1	-	1	-	1	2	-	2	-	1	-
Cepaea/*Arianta* sp.	-	-	-	-	-	-	-	1	-	-	-
snail eggs	5	4	3	1	2	4	-	3	3	2	3
Unidentified land snails	1	2	2	2	2	4	2	4	2	5	2

Semi-quantitative abundance scale: 1 – few/rare, up to 3 individuals/items or a trace level component of the whole; 2 – some/present, 4 to 20 items or a minor component; 3 – many/common, 21 to 50 or a significant component; 4 – very many/abundant, 51 to 200 or a major component; and 5 – super-abundant, over 200 items/individuals or a dominant component of the whole.

Semi-quantitative records of the mollusc remains from the sample 'flots' – contexts 700 to 760.

Context number	**700**	**707**	**710**	**714**	**715**	**717**	**719**	**720**	**720**	**724**	**760**
Sample number	22	23	4	5	7	18	19	6	25	26	27
Dry weight of submitted material (g)	2.4	2.1	5.1	0.4	15	2.8	1.3	114	39	8.9	8.7
Carychium tridentatum (Risso)	1	1	5	-	-	2	-	3	4	4	5
Carychium sp. (apex fragment)	-	-	4	-	1	-	-	-	-	3	4
Cochlicopa ?*lubrica* (Müller)	-	-	2	-	-	-	-	-	2	-	1
Cochlicopa ?*lubricella* (Porro)	-	1	2	-	-	1	-	2	2	1	3
Cochlicopa sp. (apices or non-apex fragments)	-	-	2	-	-	1	-	2	2	1	2
Truncatellina cylindrica (Férussac)	-	-	-	-	-	-	-	-	-	-	-
?*Truncatellina cylindrica* (Férussac) - broken	-	-	-	-	-	-	-	-	-	-	-
Vertigo pygmaea (Draparnaud)	-	-	1	-	-	-	1	-	-	-	-
Vertigo ?*pygmaea* (Draparnaud)	1	1	-	-	-	-	-	-	1	1	-
Vertigo sp. (apices)	-	-	1	-	-	1	-	-	-	-	1
Pupilla muscorum (L.)	-	-	-	-	-	-	-	-	-	-	-
Lauria cylindracea (da Costa)	-	-	1	-	-	-	-	-	2	-	2
Pupillidae sp. (apex fragment)	-	-	2	-	-	-	-	2	2	-	2
Vallonia costata (Müller)	-	-	3	-	-	-	-	2	1	1	-
Vallonia excentrica Sterki	-	1	2	-	-	1	-	1	1	-	-
Vallonia ?*excentrica* Sterki	-	-	-	-	-	-	-	-	-	1	-
Vallonia sp.	-	-	-	-	-	-	1	-	-	-	-
Acanthinula aculeata (Müller)	-	-	2	-	-	1	-	2	2	1	3
Ena obscura (Müller)	-	-	1	-	-	-	-	-	1	-	2
Punctum pygmaeum (Draparnaud)	1	-	2	-	-	-	-	2	2	2	2
Discus rotundatus (Müller)	-	1	4	-	1	1	1	3	3	3	4
Vitrea crystallina (Müller)	-	-	1	-	-	-	-	-	-	-	2
Vitrea crystallina (Müller)/*V. contracta* (Westerlund)	1	-	3	-	-	-	1	2	2	2	2
Aegopinella ?*nitidula* (Draparnaud)	1	-	2	-	-	-	-	-	-	1	2

?*Aegopinella* sp. (apex)	-	-	-	-	-	-	-	1	1	-	-
?*Oxychilus* sp. (apex)	-	-	2	-	-	-	-	-	-	1	2
Euconulus fulvus (Müller)	-	-	-	-	-	-	-	-	-	-	-
Cecilioides acicula (Müller)	3	3	-	3	2	4	2	3	3	4	-
Cochlodina laminata (Montagu)	-	-	-	-	-	-	-	-	-	-	1
Clausilia bidentata (Ström)	-	-	1	-	-	-	-	-	1	-	1
clausilid apex - indeterminate	-	-	2	-	-	-	-	1	2	1	2
clausilid non-apex - indeterminate	-	-	-	-	-	-	-	-	-	-	-
Trichia ?*hispida* (L.)	-	-	3	-	-	-	-	1	2	1	2
Cepaea/*Arianta* sp.	-	-	-	-	-	-	-	-	1	-	-
snail eggs	2	2	3	-	-	3	2	2	1	3	3
Unidentified land snails	1	2	4	1	1	2	1	3	3	3	4

Semi-quantitative abundance scale: 1 – few/rare, up to 3 individuals/items or a trace level component of the whole; 2 – some/present, 4 to 20 items or a minor component; 3 – many/common, 21 to 50 or a significant component; 4 – very many/abundant, 51 to 200 or a major component; and 5 – super-abundant, over 200 items/individuals or a dominant component of the whole.

Semi-quantitative records of the mollusc remains from the sample flots – contexts 781 to 811

Context number	**781**	**788**	**806**	**809**	**811**
Sample number	24	28	29	16	17
Dry weight of submitted material (g)	14	10	8.4	2.6	10
Carychium tridentatum (Risso)	5	5	5	2	-
Carychium sp. (apex fragment)	5	3	5	-	-
Cochlicopa ?*lubrica* (Müller)	2	1	1	-	-
Cochlicopa ?*lubricella* (Porro)	4	2	2	1	-
Cochlicopa sp. (apices or non-apex fragments)	3	2	1	-	-
Truncatellina cylindrica (Férussac)	-	-	-	-	-
?*Truncatellina cylindrica* (Férussac) - broken	-	-	-	-	-
Vertigo pygmaea (Draparnaud)	-	-	2	-	-
Vertigo ?*pygmaea* (Draparnaud)	1	-	-	1	2
Vertigo sp. (apices)	-	-	-	-	-
Pupilla muscorum (L.)	-	-	-	-	-
Lauria cylindracea (da Costa)	-	-	1	-	-
Pupillidae sp. (apex fragment)	-	1	1	-	-
Vallonia costata (Müller)	-	-	-	-	-
Vallonia excentrica Sterki	1	-	-	1	1
Vallonia ?*excentrica* Sterki	-	-	-	-	-
Vallonia sp.	-	-	-	-	-
Acanthinula aculeata (Müller)	3	3	3	-	-
Ena obscura (Müller)	1	1	2	-	-
Punctum pygmaeum (Draparnaud)	3	3	2	-	-
Discus rotundatus (Müller)	4	4	4	-	1
Vitrea crystallina (Müller)	2	2	3	-	-
Vitrea crystallina (Müller)/*V. contracta* (Westerlund)	4	4	3	-	1
Aegopinella ?*nitidula* (Draparnaud)	3	-	-	-	-
?*Aegopinella* sp. (apex)	-	3	-	-	-

?*Oxychilus* sp. (apex)	3	1	1	-	-
Euconulus fulvus (Müller)	2	-	1	-	-
Cecilioides acicula (Müller)	-	-	-	3	3
Cochlodina laminata (Montagu)	-	-	-	-	-
Clausilia bidentata (Ström)	-	1	2	-	-
clausilid apex - indeterminate	1	1	2	-	-
clausilid non-apex - indeterminate	-	-	-	-	-
Trichia ?*hispida* (L.)	4	2	2	-	-
Cepaea/*Arianta* sp.	1	1	-	-	-
snail eggs	-	-	2	3	3
Unidentified land snails	5	5	4	1	-

Semi-quantitative abundance scale: 1 – few/rare, up to 3 individuals/items or a trace level component of the whole; 2 – some/present, 4 to 20 items or a minor component; 3 – many/common, 21 to 50 or a significant component; 4 – very many/abundant, 51 to 200 or a major component; and 5 – super-abundant, over 200 items/individuals or a dominant component of the whole

Mollusc remains sorted from the sample residues. Figures shown are minimum numbers of individuals present.

Context number	**710**	**760**	**788**	**806**
Sample number	4	27	28	29
Discus rotundatus (Müller)	-	2	1	-
?*Aegopinella* sp. (apex)	1	1	-	2
Trichia ?*hispida* (L.)	-	3	1	-
Cepaea ?*nemoralis* (L.)	2	1	-	2
Unidentified land snails	1	3	2	-

Bibliography

Andrefsky, W., 1998, *Lithics. Macroscopic approaches to analysis*

ASWYAS, 2012, Excavation manual

Barkle, W., n.d., Stile Hill, Colton, West Yorkshire, Excavation Archive, West Yorkshire HER

Brown, F., Howard-Davis, C., Brennand, M., Boyle, A., Evans, T., O'Connor, S., Spence, A., Heawood, R. and Lupton, A., 2007, *The Archaeology of the A1(M) Darrington to Dishforth DBFO Road Scheme*, Lancaster Imprints

Brown, K., 1997, 'Hazel Lane Quarry, Hampole, South Yorkshire', Unpublished ASWYAS Rep. 479, South Yorkshire SMR

Buckland, P.C., Dolby, M.J. and Magilton, J.R., 1980, The Romano-British pottery industries of South Yorkshire: a review, *Britannia* 11, 145-64.

Buckland, P.C., Hartley, K.H. and Rigby, V., 2001, 'The Roman Pottery kilns at Rossington Bridge Excavations 1956-1961', Journal *of Roman Pottery studies Vol. 9*

Butler, C., 2005, *Prehistoric Flintwork*

Cameron, R., 2003, *Keys for the Identification of Land Snails in the British Isles*. Field Studies Council Occasional Publication 79

Cameron, R., and Redfern, M., 1976, *British Land Snails: Synopses of the British Fauna*

Cappers, R. T. J., Bekker, R. and Jans J. E. A., (2006). *Digitale Zadenatlas van Nederland*. Gronigen Archaeological Studies 4.

Cool, H.E.M. and Richardson, J.E., forthcoming, 'Exploring ritual deposits in a well at Rothwell Haigh, Leeds', *Britannia*

Darling, M.J. 2004, 'Guidelines for the archiving of Roman pottery', *Journal of Roman Pottery Studies* 11, 67-75

Deegan, A., 2007, 'Characterisation of the Arial Photograph Evidence' in Roberts, I., Deegan, A., Berg, D. and Ford, L., 2007, Archaeological Cropmark Landscapes of the Magnesian Limestone, Unpublished archive report, Chapter 6

Dobney, K., Hall, A. R., Kenward, H. K. and Milles, A., 1992, 'A working classification of sample types for environmental archaeology'. *Circaea, the Journal of the Association for Environmental Archaeology* 9**,** 24-6

Ellis, A. E. 1969, *British Snails: A Guide to the Non-Marine Gastropoda of Great Britain and Ireland – Pleistocene to Recent*

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

Ford, L., 2007, 'Darrington Quarry Northern Extension, Darrington, West Yorkshire. Archaeological Desk-based Assessment', Unpubl. ASWYAS Rep. 1703, West Yorkshire HER

Geological Survey of Great Britain (solid edition), 2001 Sheet 70, 1:50, 000 scale

Gillam, J. P., 1976, Coarse fumed ware in northern Britain and beyond, *Glasgow Archaeol. J.* 4, 57-89

Grant, A., 1982, 'The use of tooth wear as a guide to the age of domestic ungulates', in Wilson, B., Grigson, C. and Payne, S. (eds), *Ageing and Sexing Animal Bones from Archaeological Sites*, Br. Archaeol. Rep. Br. Ser. 109, 91-108

Grassam, A., 2010, 'Excavations on Land between Field Lane and Doncaster Road, South Elmsall, West Yorkshire', Unpublished ASWYAS Rep. 2030, West Yorkshire HER

Hather, J. G., 2000, *The Identification of the Northern European Woods: a Guide for Archaeologists and Conservators*

Heapy, E., 2008, 'Darrington Quarry West, Knottingley, West Yorkshire', Unpubl. ASWYAS Rep. 1844, West Yorkshire HER

Heslop, D.H., 2008, *Patterns of Quern production. Acquisition and Deposition: A corpus of beehive querns for Northern Yorkshire and southern Durham*

Holbrey, R, and Burgess, A., 2001, 'Parlington Hollins', in Roberts *et al.* (eds), 83-104

Institute for Archaeologists, 2009, Standards and Guidance for Archaeological Excavation

Jackson, D.A., 1978, 'Excavations at Wakerley, Northants', *Britannia* 9, 115-242

Jacomet, S., 2006, *Identification of Cereal Remains from Archaeological Sites. 2nd edition*

Jobey, G., 1970, The Iron Age Settlement and Homestead at Burradon, Northumberland', *Archaeologia Aeliana* (4th Ser.) 48, 51-95

Kerney, M., 1999, *Atlas of the Land and Freshwater Molluscs of Britain and Ireland*

Kerney, M. P. and Cameron, R. A. D., 1979, *A Field Guide to the Land Snails of Britain and North-West Europe*

Martin, L., 2005, 'The iron Age and Romano-British Enclosures', in Roberts 2005a (ed.) 189-125

Martin, L., Richardson, J. and Roberts, I., forthcoming 2012, *Iron Age and Roman Settlements at Wattle Syke,* Yorkshire Archaeology 11

Manning, W. H., 1976, *Catalogue of Romano-British Ironwork in the Museum of Antiquities, Newcastle upon Tyne*

McIntyre, I. and Williams, D., 2010, 'Jackdaw Crag Quarry, Southern Extension, Tadcaster, North Yorkshire: Archaeological evaluation by trial trenching', Unpublished ASWYAS Rep. 2082, North Yorkshire HER

Montgomery, J., Lakin, K. and Evans, J., 2007, 'Strontium Isotope Analysis', in Brown *et al*., 353-4

Richardson, J., 2005, 'The pit alignment' in Roberts (ed.) 2005a, 53-71, 207-9

Richardson, J., forthcoming 2012, 'Prehistoric and early Roman phases', in Martin *et al*.,

Roberts, I. (ed.), 2005a, *Ferrybridge Henge: The Ritual Landscape,* Yorkshire Archaeology 10

Roberts, I., 2005b, 'Possible functions of the Iron Age enclosures', in Roberts (ed.) 2005a, 215-6

Roberts, I. (ed.), 2005c, *The Iron Age Settlement at Ledston: A Report on the Excavations of 1976 and 1996*, Archaeol. Serv. WYAS Publ. 7

Roberts, I., 2009, 'A Late Iron Age and Romano-British Settlement Enclosure at High Wold, Bempton Lane, Bridlington, East Yorkshire', *Yorkshire Archaeological Journal* 81, 47-137

Roberts, I., Burgess, A. and Berg, D. (eds), 2001, *A New Link to the Past. The Archaeological Landscape of the M1-A1 Link Road*, Yorkshire Archaeology 7

Roberts, I. and Richardson, J., 2002, *Iron Age and Romano-British Settlement Enclosures at Moss Carr, Methley*, ASWYAS Occassional Series Publications, 2

Roberts, I., with Deegan, A. and Berg, D., 2010, *Understanding the Cropmark Landscapes of the Magnesian Limestone*

Rogers, G.B., 1974, *Poteries Sigillées de la Gaule Centrale, I: les Motifs Non Figurés* in *Gallia suppl. 28*, (Paris)

Schoch, W., Heller, I., Schweingruber, F. H., Kienast, F., (2004). *Wood anatomy of central European Species*. Online version: www.woodanatomy.ch (Accessed 26/07/12)

Silver, I. A., 1969, 'The ageing of domestic aniamls' in D. Brothwell and E.Higgs (eds.), *Science in Archaeology*, 283-302

Soil Survey of England and Wales, 1980 Soils of Northern England Sheet 1

Stace, C., (1997). *New Flora of the British Isles. 2nd edition*

Timms, S., 2005, 'Normanton Golf Course: Excavation and Evaluation', Unpublished FAS report, West Yorkshire HER

Tinsley, A, Williams, D. and Weston, P., 2012, 'Darrington Quarry Northern Extension, West Yorkshire, Report of Trial Trenching in Extraction Phases 1-4 and Additional Mitigation in Phases 1 and 2, unpubl. ASWYAS Rep. 2299

Tomber, R. and Dore, J., 1998, *The National Roman Fabric Reference Collection. A Handbook*, MoLAS Monograph 2

Van der Veen, M. and Fieller, N., 1982, 'Sampling seeds', *Journal of Archaeological Science* 9, 287-298

Ward, M., 2007, 'The samian ware', in Brown, F., Howard-Davis, C.H., Brennand, M., Boyle, A., Evans, T., O'Connor, S., Spence, A., Heawood, R. and Lupton, A., *The archaeology of the A1 (M), Darrington to Dishforth Road Scheme DBFO Road Scheme*, Lancaster Imprints 12, 234-236

Webb, A., 2008, 'Darrington Quarry North, Knottingley, West Yorkshire. Geophysical Survey', unpubl. ASWYAS Rep. 1868

Williams, D., 2010, 'Darrington Quarry Western Extension. Archaeological Evaluation and Excavation', unpubl ASWYAS Rep. 2045

Williams, D., Roberts, I. and Walsh, A., 2008, 'Darrington Quarry Northern Extension, Darrington, West Yorkshire', unpubl. ASWYAS Rep. 1881

Wilmott, T., 1997, *Birdoswald. Excavations of the Roman fort on Hadrian's Wall and its successor settlements: 1987-92*, English Heritage

Wrathmell, S. and Nicholson, A. (eds), 1990, *Dalton Parlours. Iron Age Settlement and Roman Villa*, Yorkshire Archaeology 3

van Zeist, W. A., 1984, 'List of names of wild and cultivated cereals', *Bulletin on Sumerian Agriculture 1*, 8-16

Vyner, B., 1992, 'Iron Age and Roman-British landscape transitions. Report on excavations at Swillington, West Yorkshire', York Environs Project. Unpublished. West Yorkshire HER