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Excavations on land between Field Lane and Doncaster Road, South Elmsall West Yorkshire

Excavation Report

February 2010

Report No. 2030

CLIENT

Commercial Development Projects Ltd and Next Plc

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Summary

A series of archaeological investigations undertaken between 1997 and 1999 to the east of South Elmsall in advance of development revealed evidence for prehistoric occupation. The earliest phase of settlement probably dates to the Bronze Age and is represented by the remains of three roundhouses and a large group of rectilinear post-built structures. A further two roundhouses were also identified in separate part of the site, enclosed by a timber palisade, and these may also be Bronze Age or more probably earlier Iron Age in date. The landscape was increasingly divided during the later Iron Age by long, sinuous field boundaries. The remains of a trackway represented by parallel ditches ran east-west through the site, with a branch running in north-south direction, with a small group of inhumations were located at the junction of the trackways. The remains of four sub-rectangular enclosures were integrated into the field system, one of which was probably used for occupation, while a fifth enclosure occupied a somewhat isolated location at the north end of the site.

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Report Information

Clients:	Commercial Development Projects Ltd and Next Plc
Report Type:	Excavation Report
Location:	Field Lane and Doncaster Road, South Elmsall
County:	West Yorkshire
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Period(s) of activity represented:	Neolithic, Bronze Age, Iron Age and Romano-British
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Site Code:	SEL97, FLA98, FLB98, FLC98, FLD98, DRE99
Date of fieldwork:	1997, 1998 and 1999
Date of report:	February 2010
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1 Introduction

Archaeological investigations were undertaken at five separate sites by Archaeological Services WYAS (ASWYAS) between Doncaster Road and Field Lane in South Elmsall, West Yorkshire between 1997 and 1999, in advance of the progressive development of the site. The village of South Elmsall is located approximately 19km north-west of Doncaster and 17km south-east of Wakefield (Fig. 1).

The landscape under investigation is located to the north-east of the village, centred on NGR SE 484 119, bounded by Doncaster Road to the north-east and Field Lane to the south (Fig. 2). The land falls away gradually from approximately 65m OD in the west to 45m OD. The drift geology in the area comprises Lower Magnesian Limestone (British Geological Survey 1976) overlaid by shallow, well drained calcareous loams of Aberford association (511a; Soil Survey of England and Wales 1983).

2 Archaeological Background

The settlement of South Elmsall is situated on the western side of the Magnesian Limestone Belt, close to the junction with the Coal Measure geology. Archaeological investigations, cropmark analysis and geophysical survey has revealed this to be a landscape that was extensively occupied throughout the later prehistoric and Romano-British periods (Roberts *et al* 2008). In contrast, however, evidence for early prehistoric activity in the region is comparatively rare and is often represented by scatters of worked flint and isolated features, such as the pits recorded during investigations at Barnsdale Bar (Gidman and Roberts 2005), approximately 4km to the north-east. Remains associated with earlier prehistoric activity have also been recently identified during investigations along the route of Hemsworth to A1 Link Road (Weston in prep.), to the north of South Emsall.

Much of the archaeological remains of apparent Neolithic and/or Bronze Age date are in the form of ceremonial or ritual monuments, such as the Ferrybridge Henge, located some 12km to the north, although these seem to occur in fewer numbers in this area when compared to other regions, such as the Yorkshire Wolds (Burgess 2001a). Settlement remains are elusive, although where they have been encountered they are seen to be unenclosed, and are thus not readily detectable from crop mark analysis (e.g. Burgess 2001a; Vyner 2008); it is perhaps significant that those finds that have been found were discovered due to their proximity with later prehistoric and Romano-British sites.

The later prehistoric period appears to have witnessed an the increased division of the landscape with the creation of enclosures and field systems over extensive areas, linked together by a series of track ways. Such remains are often highly visible as cropmarks and a study undertaken within the area of investigation revealed a number of anomalies, including two possible trackways, field systems and enclosures (Fig. 2), along with a cropmark feature currently interpreted as a Roman marching camp to the south-east (PRN 871-AP ref. 44.41.81.98), although this latter feature has not been substantiated. Excavations of similar

cropmark features at other sites in the near vicinity have confirmed such features to be late Iron Age to Romano-British in date.

The open area excavations at South Elmsall were preceded by a programme of geophysical surveys, which confirmed the presence of features as shown in the aerial photographs and identified further potential features (Noel 1993; McNaught 1997; Webb 1998; Fig. 2). A programme of trial trenching based on the results of the geophysical survey, saw a total of 49 trial trenches excavated, which mainly targeted the anomalies recorded during the geophysical survey. The trial trenching confirmed the presence of archaeological remains, including a number of enclosures, within the proposed development areas, and a series of open area excavations were undertaken in order to further investigate main areas of archaeological potential. In addition, a trial trench in Field Lane D positioned to investigate parallel linear anomalies of a possible trackway revealed a series of post-holes and the subsequent extension of the trench eventually revealed a large enclosure gully, the presence of which had not been previously suggested by the cropmark or geophysical evidence.

3 Methodology

The archaeological investigations at South Elmsall comprised a total of nine open areas, investigated in five developmental stages. The position of the open areas was determined in response to archaeological features identified during the earlier evaluations. The selected areas were initially stripped using 360° mechanical diggers with toothless ditching buckets under archaeological supervision. The topsoil and subsoils were removed in level spits down to the top of the first archaeological horizon or undisturbed natural. The areas were then cleaned manually and all identified features hand excavated and recorded.

The sites presented here were all investigated and reported on individually (Table 1). A separate numbering system was used for each the stages of excavation, although for the purposes of this combined report some new groups numbers have also been assigned to the major features to aid presentation (e.g. Roundhouse A, Ditch One).

Table 1. Summary of sites excavated

Site Name	Site Code	Dates of Investigation	Report Reference
Field Lane D	FLD 98	November 1997 – January 1998	Howell 1998
Field Lane B	FLB 98	September 1997	O'Neill 1998
Field Lane C	FLC 98	November - December 1997	McNaught 1998
Dale Lane	SEL 97	March 1997	Burgess 1998
Junction of Doncaster Road and Field Lane	DRE 99	June – August 1999	Grassam 2008

4 Results

The open area excavations have provided evidence for human activity dating from the Neolithic to the Medieval period. The features in the main appear to belong to two broad phases of settlement: the Bronze Age and Earlier Iron Age, and the Later Iron Age. The features are presented by phase where possible, with the dating relying on a combination of finds distribution, radiocarbon dating and stratigraphic or spatial relationships between features. It has not been possible to assign dates to all the features excavated, and a description of the more noteworthy of these undated features is included below. The excavations have also revealed features of post-Roman date and a brief description of these is also given; further information being provided in the earlier reports (Table 1).

The Bronze Age and Earlier Iron Age

The earlier prehistoric activity was focussed in two areas; Doncaster Road (Area W; Figs 3 and 4) and Field Lane D (Trench III; Figs 8 and 9). Although dating evidence is limited, Doncaster Road appears to represent the earliest phase of activity, comprising an unenclosed settlement with the remains of three roundhouses. To the east of the roundhouses lay the remains of several small rectilinear structures and while they have produced little diagnostic evidence, they nevertheless are probably associated with this earlier unenclosed phase of activity. The remains of a further two roundhouses were identified approximately 5.5km to the west in Field Lane D (Trench III), located within a large, possibly timber palisaded enclosure.

A number of other features, including several possible two-post structures and a kiln/furnace, were identified in close proximity to the roundhouses. The lack of diagnostic and stratigraphic evidence prohibits their inclusion within this phase and they are discussed separately later.

Roundhouses A, B and C

The three roundhouses were arranged in a line facing east in the western part of Area W (Figs 3, 5 and 6). All three were similar morphologically, each being defined by six post-holes with two further posts forming projecting porched entrances. The post-holes measured between 0.32m to 0.55m in diameter, and were fairly shallow, with depths typically varying from 0.04m to 0.25m. They appeared to be better preserved in Roundhouse B however, measuring up to 0.45m deep. The posts forming the entrances were also larger in plan, measuring between 0.6m and 1.25m.

Roundhouse A, the northernmost structure, measured approximately 4m in diameter and provided evidence in the form of four stake-holes and three post-holes for possible internal structural elements within it (Fig. 5; Plate 1). The post-holes defining the entrance appeared to have been re-cut, indicating they were replaced at some point. A linear arrangement of six post-holes (8002) located immediately to the north-side of the entrance may also be contemporary with Roundhouse A given their location, possibly representing a fence or a

windbreak, although there is no stratigraphic or artefactual evidence to support this relationship.

Roundhouse B lay approximately 5m south of Roundhouse A. It too measured 4m in diameter and the entrance was defined by two re-cut post-holes. It contained just one internal post-hole, located slightly to the west of the centre of the structure (Fig. 5).

Roundhouse C was located some 16m to the south of Roundhouse B, and although it was similar in plan, it was slightly larger having a 5.5m diameter (Fig. 6; Plate 2). As with Roundhouse B, a single internal post-hole was identified slightly off-centre. In contrast to the other structures the two perimeter post-holes adjacent to the entrance in Roundhouse C had opposing shallow internal linear extensions each approximately 1m in length, which may reflect an internal partition. A further notable difference is the presence of the curvilinear post-hole alignment 8001 which lay to the west of Roundhouse C and was partly concentric to it. It was composed from 41 post-holes and measured approximately 18m in length. The preservation of the north-eastern end of 8001 was seen to have been adversely affected by medieval ridge-and-furrow cultivation, however, and it may have continued on this alignment for a greater distance, possibly being represented by the two additional post-holes on the same alignment which lay approximately 2m to the north of post-hole alignment 8001. Other post-holes may have also been lost and it is not clear whether a 1.5m gap between the southern sub-circular part of post-hole alignment and the straighter northern section represents a deliberate break within the alignment, perhaps forming an entrance, or whether it was caused by localised truncation.

The post-holes defining the roundhouses yielded few finds: single sherds of prehistoric pottery were recovered from Roundhouse B (post-hole 2585) and C (post-hole 2429), and worked flint dated to the Late Neolithic or Early Bronze Age was recovered from Roundhouses A (post-hole 2478) and C (post-hole 2436). Other than the post-holes, no further remains associated with occupation, such as hearths, were identified within the roundhouses, although this is perhaps to be expected given apparent level of truncation recorded across the site.

Given the spatial positions and morphology of the three roundhouses, it is conceivable that they are all broadly of the same date, if not necessarily contemporary. Dating for these structures has been provided by two radiocarbon dates from charcoal recovered from post-holes within Roundhouses B and C, which have provided dates in the range of cal. 1294 to 1006 BC and cal. 1686 BC to 1526 BC respectively (Table 8, AA-36889 (GU-8807) and AA-36888 (GU-8806)). This suggests a potential gap between the construction these two of almost 700 years, and even if Roundhouse A was built some time in-between Roundhouses B and C, the chronological interval between these buildings seems implausible. Although the radiocarbon dating needs to be used with caution due the to potential for residuality within the environmental material, a Bronze Age date for the roundhouses is possible given their morphology and similarities to other structures seemingly of Bronze Age date (e.g. Swillington Common (Howell 2001)).

Rectilinear Structures

The remains of nineteen rectilinear structures were identified in the east and south-east of Area W (Figs 3 and 7; Plate 3). The structures were mostly composed of four post-holes arranged into an approximate square, with some more narrow, sub-rectangular examples being recorded (e.g. 7013 and 7015). The structures varied in length from 0.7m to 3m, and the post-holes typically survived to between 0.1m and 0.35m in depth. Three examples of three-post structures were noted within the site (7012, 7016, 7017 and 7019), which are interpreted as the truncated remains of four-post structures. Clusters of small, rectilinear structures of this size and form have been encountered on other Iron Age sites in the region, such as Colton (Johnson 2002, 2003) and Micklefield, West Yorkshire (Brown *et al.* 2007a), and at Sutton Common, South Yorkshire (van de Noort *et al.* 2007), although in rather different circumstances. While their purpose is unclear, they are typically interpreted as the supports for granaries or raised platforms (see page 70).

The majority of the four-post structures were positioned in a north-south linear alignment in the eastern part of the site, stretching for approximately 40m and they may have been positioned in respect to an unidentified feature, possibly a routeway (cf Micklefield, Brown *et al.* 2007). The remaining structures appeared to be positioned in a less regulated manner, and it maybe that these are either associated with another phase of activity or that the served a different function to the majority. This suggestion maybe supported by the recovery of a significant assemblage of slag (approximately 3kg in weight) from two of three post-holes forming rectilinear structure 7019, located in the southern end of the site, which could indicate it was associated with some form of industrial activity.

Given the similarities between the rectilinear structures and their distribution, it is assumed that they are broadly contemporary with one another. Some evidence for sub-phasing is provided by post-hole 640 in 7003 which was re-cut (638) during the construction of 7002 (Fig. 7), and by post-hole 628 which was used by both 7004 and 7005, otherwise, no other stratigraphic relationships were observed between the features. The diagnostic evidence from the post-holes was very sparse, although radiocarbon analysis of a sample from 7002 (post-hole 638) produced a date in the range of cal. 896 to 807 BC (Table 8, AA-36883 (GU-8801)) and a sherd of Iron Age type pottery was recovered from 7001 (post-hole 2356).

Any relationship between the roundhouses and the rectilinear post-structures is impossible to demonstrate. The range of dates provided by the radiocarbon analysis may facilitate a perceived association, but they could equally relate to distinctly different phases of activity. It maybe significant that the rectilinear structures were located on the east side of linear post-hole alignment 8003 and Ditch One, which effectively divided them from the roundhouses and perhaps defined separate activity zones. This succession of boundaries have only been dated from the Later Iron Age however, with the northernmost post-hole of 8003 (2035) producing a radiocarbon date of cal. 409 to 385 BC (Table 8, AA-36885 (GU-8803)), although this does not preclude the presence of an earlier boundary along this axis. Another possibility is that the post-holes forming structure 8003 were not contemporary with each

other and were periodically replaced with new posts, which might imply that 8003 is an older and more long-lived feature than suggested by the radiocarbon dating. Both 8003 and the adjacent ditch are discussed further in the later section.

Palisade Enclosure A and Roundhouses D and E

The outline of a sub-rectangular enclosure measuring approximately 56m by 45m, enclosing an area some 2190m^2, was revealed in Trench III in Field Lane D (Figs 8 and 9). The objective of this excavation was to determine the limits of this enclosure discovered by the trial trenching and so the surrounding area was not investigated. The enclosure was defined by a shallow, U-shaped gully (e.g. Fig. 8, S.444), which varied between 0.31m and 0.45m in width and 0.21m and 0.36m in depth. In plan, the enclosure ditch appeared to 'bulge' in places and its backfill contained a high stone content, possibly used as a packing material. Several depressions were observed in the base of the gully and, collectively, the evidence suggests that the gully could have supported some form of timber palisade.

Two narrow entrances to the enclosure, measuring approximately 1.2m wide, lay mid-way along the northern side and just north of the south-east corner. Both entrances were flanked by outward projecting linear extensions, approximately 1.2m in length, which ran at 90 degrees to the enclosure ditch. Four stake-holes were identified in the eastern projection at the northern entrance, while both sides of the south-eastern entrance were seen to be cut by a series of post-holes. A section cut through the north-western corner of the enclosure established that both ditches ended with rounded terminals a short distance from each other, defined by a single large post-hole.

The remnants of two roundhouse structures (Roundhouses D and E) were identified within the area enclosed by the palisade trench (Figs 8, 10 and 11). Roundhouse D was broadly central within the enclosure and, like the roundhouses in Area W, was defined by six post-holes measuring approximately 6m in diameter (Fig. 10). It had a south-east facing porched entrance, possibly orientated towards the south-eastern enclosure entrance, and it was flanked by two short linear features arranged north-east to south-west. An additional post-hole lay to the south-east of the northern linear feature. No opposing post-hole was identified, although an 'L' –shaped spread of material possibly representing the faint remains of a timber slot was identified next to the southern part of the entrance. A single post-hole was recorded just off centre within the structure, akin to that identified in Roundhouses B and C.

Roundhouse E lay approximately 14m to the south-west of Roundhouse D. It appeared more elliptical in plan and was slightly smaller than Roundhouse D, measuring 6m by 5m (Fig. 11; Plate 4). It was defined by nine post-holes, with two additional ones forming an east facing entrance, again possibly facing towards the enclosure entrance. A pit was positioned between the two entranceway post-holes, while part of a possible drainage gully was identified to the south of the entrance. No internal features were identified within Roundhouse E.

The enclosure and the roundhouses are interpreted as being contemporary with one another given the position of the buildings within the enclosure and the corresponding alignment of the entrances. A radiocarbon date from a piece of charcoal from the enclosure gully produced a date in the range of cal. 1516 to 1407 BC (Table 8, AA-36493 (GU-8747)), while animal bone from the possible drainage gully 4238 associated with Roundhouse E provided a date of cal. 799 to 673 BC (Table 8, AA-36506 (GU-8765)). Unfortunately, neither date can be that reliable as the charcoal from the enclosure gully has the potential to be residual, while the association of the gully with Roundhouse E is based solely on their spatial juxtaposition.

Despite the problems with the radiocarbon dates, the enclosure gully likely dates to the Bronze Age to earlier Iron Age periods as it was cut by a double ditched trackway which dates from the later Iron Age period. A similar date is also plausible for the roundhouses given the similarities in form between these and those identified in Area W and their position inside the enclosure gully may represent a gradual shift towards a more enclosed settlement pattern.

Later Iron Age

The outline of the later Iron Age field systems, including a long double ditched trackway, was initially identified from cropmark data and the results of the geophysical surveys (Fig. 2). The open area excavations established that the field boundaries were typically composed of sinuous, sometimes segmented linear features, orientated generally north-south and east-west.

A number of small sub-rectangular enclosures were integrated within the field system, marking a shift towards a more enclosed settlement pattern. Four of the enclosures (B to E) identified in the open areas were positioned between two, somewhat closely spaced field boundaries, while a fifth (Enclosure F) was positioned in the northern part of the area and although Enclosure F appears not to be integrated into the field system, the diagnostic evidence shows it be part of the same phase of activity. A metalled surface composed of water worn stone positioned adjacent to Enclosure C and D is also dated to Later Iron Age , although radiocarbon dates suggests it may have been in use towards the end of the phase and possibly into the early Romano-British period.

The excavations also provided evidence for funerary activity: four inhumations were identified within the trackway and a further two were recovered from pits in Enclosure E and outside of Enclosure F.

Linear Boundaries: Eastern Area (Fig. 12)

Doncaster Road Area W: Ditches One, Two and Three and linear post alignment 8003

Ditch One, which lay in Doncaster Road Area W, was the longest exposed section of the field system (Figs 3 and 12). Here it was seen to run parallel to the linear post-hole alignment (8003), which extended north-north-east to south-south-west for approximately 34m and was composed of 28 post-holes, measuring between 0.18m and 0.53m in diameter, although most were between 0.3m and 0.4m. Post-hole depths varied from 0.03m to 0.37m. Overall, the

post-hole alignment was slightly sinuous in plan with the posts being unevenly spaced, being closely packed at the northern end but with some gaps towards the southern end, possibly caused by truncation.

Approximately 120m of the adjacent ditched field boundary, Ditch One (5001, 5002, 5004, and 5006 to 5013) was exposed by the open area excavation, and it probably continued beyond the limits of the excavation. The boundary was composed of eleven ditch segments which varied in length from 2m to 45m, although most were no longer then 12m in length, and the depths were between 0.16m and 0.71m. It is possible that any continuous element of the boundary could have been formed by an adjacent bank formed using material quarried from the ditch segments. The profiles along the ditch varied from a 'U' shape to a 'V' (e.g. Fig. 13, S.84 and S.277) and a number of bulges were recorded in plan. Evidence for re-cutting was identified in several sections, particularly at the southern end of ditch segment 5007, although given the sinuous form and variations in size and profiles, the boundary as a whole was probably regularly remodelled.

A possible enclosure incorporated into the field boundary was represented by a segment of ditch (5008) and the northern part of 5011 (Fig. 13). Although its outline was fragmentary, its southern and eastern sides were visible and it appears to have measured approximately 20m in length. The southern extent of it was formed by a short, linear feature orientated broadly north-west to south-east which was later cut by the by north-east to south-west ditch 5011, forming a 'T' shape in plan. It is not clear whether pits 5009 and 5010 represent internal features within the enclosure or whether they were part of Ditch One. If the latter, then it maybe that the enclosure was either created after the boundary was established or that the boundary continued to be used after the enclosure was abandoned.

The northern end of Ditch One was cut by Ditch Two, a continuous linear ditch which ran on a north-west to south-east alignment for 64m (Figs 3 and 12). Although it did not appear segmented in plan, it shared the same meandering form and measured between 0.5m and 1.3m in width and 0.56m to 0.13m in depth. It terminated approximately 1m to the west of the north-east to south-west aligned Ditch Three, which ran for 5m continuing beyond the limits of the excavation.

Pottery of later prehistoric date was recovered from various ditch sections, while a charcoal sample obtained from the northernmost post-hole in post-hole alignment 8003 (2035) produced a radiocarbon date of cal. 409 to 385 BC (Table 8, AA-36885 (GU-8803)). The boundaries are thus likely to be associated with activity in the later Iron Age period, probably after the roundhouses to the west of the boundary had been abandoned. The chronological relationship between the field boundaries and the rectilinear structures is somewhat harder to interpret given the limited diagnostic evidence obtained from the latter, although the position of the rectilinear structures within the area defined by the two main field boundaries maybe significant.

The relationship between the segmented boundary and the linear post-hole alignment 8003 is also not clear. The northern end of 8003 lay to the west of the boundary, while the southern part lay to the east, which may indicate that either the two did not co-exist or were created at different times. The post-hole alignment may however have provided some form of revetment for the adjacent bank and it is possible that it was the ditch which ran on alternate sides of the bank. Another possible interpretation is that the post-hole alignment was a precursor to the bank and ditched field boundary (cf. linear post-hole alignment 351 next to Enclosure B), although there is no stratigraphic evidence to prove this.

Areas T and V: Ditches Four, Five and Six

Elements of field system were also manifest in Areas T and V, located approximately 110m to the north and 100m east of Area W respectively (Fig. 12). In Area T, three linear features forming a segmented ditched boundary some 35m in length (Ditch Four) was identified, orientated approximately east-north-east to west-south-west (3000 to 3002; Fig. 14). As with the field boundaries identified in Area W, the linear features appeared to have been re-cut periodically, resulting in their somewhat meandering form. The upper fill of segment 3001 contained a high density of medium to large limestone fragments, possibly representing the remains of an adjacent bank or deposited deliberately in order to backfill the segment. It also produced two sherds of prehistoric pottery. A further short linear feature, composed of intercutting elongated pits (3003) lay to the south of the linear boundary. It was aligned north-west to south-east and it contained several sherds of prehistoric pottery. Its orientation may indicate that 3002 was not part of the field system.

Area V contained an 'L'-shaped ditch, which ran for 15m on an approximate north-south alignment before turning through 90 degrees to continue eastwards for 20m, beyond the limits of the excavation (4000 to 4001; Ditch Five; Fig. 15). A second separate linear feature (Ditch Six) continued southwards on the broadly the same axis as 4000, approximately 1.5m from where the boundary turned. As with ditch segment 3001, in some places the north-south ditch contained concentrations of larger limestone fragments within the upper regions of the fill, or separate predominately stone-rich fills.

Linear Boundaries: Western Area (Fig. 16)

Sections of north-east to south-west aligned segmented ditches exposed to the west of the Doncaster Road are interpreted as being part of the same broad phase of landscape division and enclosure given the similarities in form and use of similar alignments. In the earlier stages of the post-excavation analysis, the ditches seven and eight were thought to have been continued northwards from Field Lanes B to Field Lane C, and the numbering of the ditches in this report reflects this interpretation. An alternative interpretation for the layout of these has been suggested, however, the details of which are shown below.

Ditch Seven ran for some 34m through the east end of Field Lane B, where it was composed of four linear segments (366), varying in length from 16m to 2m (Plate 5). A linear geophysical anomaly identified along the same orientation possibly represents the

continuation of this field boundary for some 140m northwards into Field Lane C, where a single continuous ditch measuring 12m in length was recorded on the same alignment (30007). The numbering of this feature here reflects this interpretation.

Ditch Eight lay approximately 40m to the west of Ditch Seven, and it appears to run from Field Lane B in a broadly north-east direction for some 230m to Field Lane C, parallel to Ditch Seven (Figs 16, 19 and 21). The southern end of the ditch (264) formed the eastern extent of Enclosure B (Fig. 19) and is discussed further below (see page 12). Approximately 1m to the north of ditch 264 lay the southern terminus of ditch 075, of which 10.5m of its length was exposed in the trench. Ditch 075 was cut by 132, although the southern terminus of this ditch lay approximately 3m to the north of ditch 264, perhaps to allow for a wider access point through the field boundary. In Field Lane C, Ditch Eight was composed of three sections of ditch (30003 to 30005; Fig. 21), forming the boundaries to Enclosures C, D and E (see page 14).

Linear post-hole alignment 351 ran for 11m parallel to the east of Ditch Eight in Field Lane B and was composed of nineteen post-holes, with a pit located at the north end, between the terminus of ditch 264 and 075 (Fig. 19, Plate 6). Three re-cut post-holes lay at the southern end of the alignment, suggesting the timber posts at this end were replaced at some point. The function of 351 is not obvious, although its juxtaposition with a field boundary ditch is akin to linear post-hole alignment 8003 recorded next to Ditch One Doncaster Road Area W and may, therefore, have formed a revetment to an external bank established next to Ditch Eight, or represent a fragment of an earlier phase of land division which predates the ditch. The position of the larger post-hole or pit within the proposed entrance way may have held some form of post part of a timber structure that could have assisted the controlling of livestock into or out of the enclosure.

Approximately 85m to the west of Ditch Eight lay Ditch Nine, which was composed from at least five sinous segments, varying in length from approximately 1.5m to 15m, and approximately 40m of its extent was exposed in Field Lane D Trench IV (Fig. 20).

Some variations in the alignment of the field boundaries were observed and Ditch Ten, located in the northern part of Field Lane B, which extended for approximately 30m on a north-west to south-east alignment, terminating to the north-west. Running at right angles to the north-west end was segmented Ditch Eleven, which extended for approximately 21m (Fig. 16). Despite the difference in alignment, their irregular form suggests that they might be of a similar date to the other field boundaries identified in the vicinity and the shift in alignment coincides with a slight dog-leg in the parallel linear geophysical anomalies thought to represent the northern continuations of ditches 075/132 and 366. It is perhaps also worthy of note that ditches 077 and 078 produced a significant assemblage of slag and slag nodules, whereas the other field boundaries in the immediate vicinity were devoid of finds.

An alternative interpretation for development and layout of the field boundaries here, as shown on Figure 16, is with the southern end of ditches seven and eight representing a

different set of field boundaries to those in the northern part of the site, with perhaps ditch ten and forming the northern boundary to these (I. Roberts pers comm.). If so, then it is possible that the linear boundaries in the western part of the site were formed in at least two phases, with perhaps those northern end, exposed in Field Lane C, representing a later addition.

Although not exposed in any of the open area excavations, a series of linear geophysical anomalies aligned west-north-west to east-south-east identified to the north of Field Lane C may be part of the same field system (Fig. 16), perhaps defining the northern extent of the occupation zone defined by Enclosures B to E.

Trackway and burials

The remains of trackway defined by parallel ditches was located in the western and southern parts of the later Iron Age field system. It was initially identified as a cropmark and geophysical anomaly and is estimated to have extended for at least 211m on a north-south axis before merging in the south into an east-west aligned trackway, which can be plotted as a cropmark for approximately 600m to the east (Figs 2 and 16).

The ditches defining the trackway were exposed in Field Lane D Trenches III and IV (Figs 8 and 17). They were seen to be spaced approximately 5m apart and measured between 1m and 2m in width and between 0.34m and 0.78m in depth. The remains of a hollow-way was identified along the east-west section (40005), which varied in width from 2.55m and 3.20m and had a maximum depth of 0.25m (Fig. 17, S.448). No corresponding hollow-way was identified along the north-south trackway section and it maybe that the east-west section was more heavily utilised as a route way. A short linear feature or elongated pit 4068 was also possibly associated with the east-west section of the trackway, located between the hollow-way and the northern ditch, although the stratigraphic relationship between these features could not be ascertained.

The ditches forming the trackway cut through the backfill of Palisade Enclosure A, and was therefore established after it went out of use. It was also recorded as cutting post-hole 4155, located approximately 7m to the south-east of undated post-hole group 40011 (Fig. 17). Although located some distance away, it is possible that 4155 was part of post-hole group 40011 and would therefore predate the trackway.

Finds recovered from the trackway, however, included pottery dating from the later prehistoric to the Romano-British periods and animal bone that has been radiocarbon dated to the early medieval period (cal. AD 889 to 993, Table 8, AA-25494 (GU-8749)), which may indicate the long term use of this routeway, or the date after which it was infilled.

Burials

Three north-south aligned grave cuts (40004), containing the remains of at least four individuals, lay in a group between trackway ditches 40006 and 40007 at the junction of the two trackways (Fig. 17). Their mutually exclusive positioning suggests they are contemporary with one another and with the trackway, but this may be coincidental. The grave cuts were all sub-rectangular in plan, measuring between 1.1m to 1.22m in length,

0.5m to 0.6m in width and 0.08m to 0.32m in depth (Fig. 18). Grave cut 4030 contained the remains of two individuals (SK 4032 and SK 4032B), although one (SK 4032B) had been heavily disturbed. Graves 4087 and 4116 each contained single inhumations (SK 4086 (Plate 7) and SK 4117), radiocarbon dated to cal. 340 to 35 BC and cal. 362 to 105 BC, respectively (Table 8, GU-7670 and GU-7671). SK 4032 had been placed with the head lying to the north, possibly originally in a crouched position, while SK 4086 and SK 4117 had been placed in a crouched position, with their heads to the south.

Enclosures B to E

Sub-rectangular ditched Enclosures B to E were appended to field boundary Ditch Eight, with Enclosure B located to the south, near the projected route of the east-west trackway, while the conjoined Enclosures C, D and E lay approximately 180m to the north.

Enclosure B and associated features

The northern part of Enclosure B was exposed in both Field Lanes B and D (Figs 19 and 20). It was appended to western side of Ditch Eight and measured approximately 45m by 29m, enclosing an area approximately 1150m^2 . No gaps forming an entrance were visible in plan, although it was more likely that such could have been positioned in the southern part of the enclosure, close to the projected route of the trackway, in an area not investigated.

Enclosure B was formed in at least two phases. The earlier phase was represented by ditches 4000 (=1300) and 065, which formed the western and northern sides, and both exhibited sharp, 'V' shaped profiles measuring typically 1.5m wide and 0.75m deep (Fig. 19, S.7 and Fig. 20, S.419). The later phase was represented by ditch 264, which also formed part of Ditch Eight, and it cut the east end of ditch 065. In contrast to the other enclosure boundaries, ditch 264 had a 'U' shaped profile, and was much wider, measuring 2.5m wide and 1m deep (Fig. 19, S.105). No evidence for an eastern ditch associated with the first enclosure phase was identified, although it is conceivable that the remains of an earlier ditch were removed when ditch 264 was dug. It is also possible that ditch 264 was cut as part of the remodelling of Ditch Eight, coinciding with the re-cutting of the field boundary ditch 075 by ditch 132.

Artefacts recovered from the ditches forming Enclosure B included pottery of Late Iron Age to Romano British type, along with animal bone, flint and fired clay. A sample from ditch 40000 was radiocarbon dated to cal. 349 to 107 BC (Table 8, AA-36495 (GU-8750)).

The eastern side of Enclosure B was sub-divided by gullies 066 and 076a (Fig. 19). Gully 066 was curvilinear in plan and ran from east to west for approximately 7m, before turning through 90 degrees and continuing northwards for some 7.5m metres before prescribing an arc to run to the west again for 7m. It measured approximately 1m in width and 0.35m in depth and ended in square-shaped terminal. A sub-rectangular pit lay at the western end of the gully and has been assumed to be a related feature. Three smaller, segmented gullies (076) continued along the same east-west alignment as 066 for approximately 10m, terminating

1.2m west of enclosure ditch 264. The relationship between the western most gully and gully 066 was obscured by a number of small pits or post-holes which cut through both features (feature group 370).

Together, gullies 066 and 076a enclosed an area measuring some 19m by 12m, with a narrower 'funnel' section located on its west side, which measured 9m long by 3.5m wide, and its shape in plan may indicate an association with stock control activity (cf. Enclosure F, page 17, Fig. 23). The variations in the size and form of the gullies forming the sub-enclosure suggests it was form varied, with perhaps the smaller segmented gullies representing the remains of a more temporary, easily movable obstacle to assist in corralling livestock, while gully 066 may have held a more robust, permanent timber structure. Alternatively, it maybe that the structure supported by gullies 076a originally extended further westwards and was later partially replaced by gully 066. A group of 22 post-holes (367) lay within the sub-enclosure and although no outlines of structures could be discerned from their distribution, they nonetheless probably represent the remains of timber structures, again possibly associated with the livestock management.

A second group of twelve post-holes (370) lay to the south of post-hole group 367, and as they were located on either side of ditch 066 and two were seen to cut it, they are probably associated with a later phase of activity.

A further sub-division in Enclosure B was formed by a north-west to south-east aligned gully 076b and the east-west aligned linear segmented gullies (076a; Plate 8). Just the northern part of this sub-enclosure was exposed within the open area and it measured approximately 10m wide and in excess of 8m in length. The original function of this enclosure may have also been associated with stock control, and a gap measuring 1.5m wide in the north-west corner may have provided access either into or out of this area.

Located within the second sub-enclosure are what appears to be the remains of a two four-post structures. The post-holes were set between 2m and 2.5m apart, with four-post structure 372 being replaced by 112 almost on the same footprint.

The linear post-hole alignment 40010 could have formed another internal partition in the western part of the enclosure (Fig. 20). It was composed of six post-holes aligned approximately north-south for 7m. No evidence for its continuation to the north or south was identified, although the area to the south coincided with the limits of the Field Lane D open area investigations. A dense cluster of pits and post-holes (40008 and 40009) were identified to the west of 40010, and although some more outlying features were identified, this area did appear to form the focus for an area of activity. The pits and post-holes in these groups also exhibit some linearity in plan.

The post-holes in the western part of the enclosure typically measured 0.3m in diameter and between 0.1 and 0.2m in depth, while the pits were approximately 1m by 0.8m in plan and 0.25m deep. The most noteworthy feature here is pit 4062, the largest of the discrete features, measuring 2m by 2.2m in plan and 1.2m deep (Fig. 20, S.536). This pit contained a complex

sequence of eight fills, being filled initially by re-deposited natural material, which was then sealed by a deposit of 'fire-affected natural'. Overlying this was a grey, ash rich layer containing cereal grain and at least 55 quern stone fragments. The remaining five fills comprised layers of mid orange-brown silted sand. The pit also yielded a comparatively large artefact assemblage, including later prehistoric pottery, animal bone and metal objects. A sample of grain from in pit 4062 produced a date in the range of cal. 167 to 1 BC (Table 8, AA-36496 (GU-8751)).

Also noteworthy is pit 4122, located approximately 2m to the north of 4062, as it contained a significant quantity of hammerscale, a by-product from smithing, a rubbing stone possibly from a saddle quern, along with animal bone. The discovery of the hammerscale in this pit was somewhat unexpected, particularly as no other evidence for smithing was found in the immediate area. Whether the artefacts were disposed in the pits merely as refuse or as some form of ritual deposition remains open for speculation, although it important to note the lack of any significant evidence for industrial activity from any other features in this area.

The other features that produced artefactual remains in this area were post-hole 098, located approximated 17m to the north-east of pit 4062 (Fig. 19), which contained a small quantity of later prehistoric pottery while a number of sherds from the same vessel were found in pit 114, located to the north of ditch 066. Fragments of animal bone and heat affected stone were recovered from post-holes forming group 761 and an unstratified fragment of saddle quern was found in this area.

Such a high artefact and environmental assemblage in comparison to the other enclosures in the area suggests that Enclosure B was at some point used for occupation, however there are also some elements which appear to be more closely related with its supposed use for containing livestock, while the finds recovered from pits 4062 and 4122 together may represent waste produced by some form of industrial activity, such as metal working or crop processing. It is likely, therefore, that the features within Enclosure B represent several sub-phases of activity.

Enclosures C, D and E

The possible outline of a comparatively small enclosure (Enclosure C) appended to west side field boundary Ditch Eight was identified initially as a geophysical anomaly (Fig. 2). It measured 37m by 26m, encompassing an area of approximately 938m^2 . The excavation exposed just three sides of Enclosure C; a southern boundary was not seen (Fig. 21). The eastern side of the enclosure was defined by ditch 30007, which forms the northern end of field boundary Ditch Seven, and it ran for 34m, terminating in the north in a rounded, steep sided section. Its width varied along its exposed extent from 0.7m to 1.7m and it had a maximum depth of 0.73m. The western side was formed by segmented field boundary ditches 30003 to 30005, which form part of Ditch Eight, and ran parallel to 30007 for a total of 36m. The western enclosure boundary as a whole varied in width from 0.8m to 1.6, with an

average depth of 0.5m, and clear evidence for re-cutting was identified in ditch section 30004.

Ditch 30006 formed a sub-division running between ditches 30004 and 30007, forming the northern extent of Enclosure C. It measured 39m in length, and varied in width from 0.87m to 1.6m, having a maximum depth of 0.73m. Two of the excavated sections in 30006 provided some evidence for the re-cutting of this boundary, although it was not conclusive. Both the eastern and northern enclosure ditches were seen to be filled with alternating layers of gritty limestone material and darker silt, and the variations may be related to different (possibly seasonal), activities undertaken in the near vicinity.

Ditch 30006 terminated 4m to the west of ditch 30007 and the gap between is so wide that it may have provided access to the enclosed area. A distance of some 1.2m was observed between the northern end of ditch segment 30004 and the western terminal of 30006 which may indicate that the enclosure had been formed with respect to a pre-existing bank.

The outline of a possible further enclosure (Enclosure D) lay immediately to the north of Enclosure C, measuring some 34m by 37m. Its southern boundary was formed by ditch 30006, with Ditches Seven and Eight forming the eastern and western boundaries. An east-west linear geophysical anomaly identified during the geophysical survey (Fig. 2) could have represented the northern boundary of the enclosure. The interpretation of Enclosure D is tentative as both the eastern and western ditches appear to terminate within the limits of the open area excavation, although this may be due to truncation.

Enclosure E was appended to the east of the Ditch Eight (30003 to 30005) and measured approximately 24m by 40m. Although the full extent of Enclosure E was not exposed in the trench, its northern boundary maybe represented by either a short linear anomaly identified during the geophysical survey, which appears to run for the length of Enclosure E and terminate at Ditch Eight, or by a longer linear geophysical anomaly, which may form the northern boundary of Enclosure D (Fig. 2).

The southern boundary of Enclosure E was defined by ditch 30002, which ran westwards from the northern terminus of enclosure ditch 30003 for approximately 24m. A section cut midway along it identified evidence for at least three re-cuts (Fig. 22, S.96), including a possible rounded terminal (3225), and ditch 30002 may have originally been composed of a series of shorter segments. The western terminus was later cut by two shallow pits (3202 and 3045).

The last phase of re-cutting recorded in 30002 formed a large, curvilinear shaped ditch (30001), which ran east-west for 23m before turning through 90 degrees to continue northwards for 32m, beyond the limits of the excavation. Ditch 30001 was also probably also re-cut at least once and at the point where the ditch turned, a narrow gully could be clearly seen running parallel to the east of a larger ditch. Ditch 30001 had a distinctly stepped profile, particularly on its eastern and northern sides (Fig. 22, S.51) and it is likely that the adjacent gully continued for the full length of the boundary. The profile of the north-south

ditch sections (Fig. 22, S.51) suggests a number of other phases of re-cutting, although the homogenous nature of the fills does not permit any firm conclusions to be drawn about the chronological development of the boundary.

By comparison, the evidence for periodic re-modelling was more clearly visible along those ditches forming Enclosure E, possibly because it was in use for a longer period of time. Given that the enclosures share a common boundary with each other they are likely to be broadly contemporary with each other and a late Iron Age origin is confirmed by the results of radiocarbon analysis from a sample obtained from the earlier cut of 30004 which produced a date in the range of cal. 349 to 107 BC (Table 8, AA-36497 (GU-8752)) and a small assemblage of later prehistoric pottery from ditches 30002 and 30004.

Three discrete features were identified in Enclosure D (3066, 3046 and 3065), the latter containing the fragmented remains of an inhumation (SK 3059) in a sub-circular grave, measuring 0.9m by 0.8m in plan and 0.16m in depth. The body had been placed in a crouched position on its right hand side, with the head positioned towards the north (Fig. 22). A sample submitted for radiocarbon dating produced a date in the range of cal. BC 169- AD 51 (Table 8, GU-7669). Pit 3046, located 6m to the north-east of the inhumation produced a sherd of pottery of late Iron Age to Romano-British date. Just one undated double post-hole (3062) was located within Enclosure E, while no internal features were identified within Enclosure C. The limited number of internal features, the comparatively small artefact assemblage recovered from the enclosure ditches in comparison to Enclosure B and the presence of the burial may be taken as evidence that Enclosures C, D and E were perhaps primarily associated with livestock, rather than any domestic activity.

Metalled Area

The only evidence for activity which possibly spanned the Late Iron Age and Romano-British periods was a metalled area and associated features, located to the east of Enclosure C (Fig. 21; Plate 9). The later date of this feature is based on the radiocarbon dating and, in part, the pottery evidence.

The metalled layer (30009) comprised water worn stone pebbles varying in size from 0.2m to 20mm, set into a mid-grey brown sandy silt spread across a *c.* 400m^2 area, extending up to 1m away from the eastern side of Enclosure C. The density of the stones varied throughout this area (see Fig. 21) with two parallel linear trends aligned approximately north-south visible, although this may have been caused by plough damage. A comparatively high quantity of cattle bone had been deposited upon and within the metalled surface, possibly as a packing material (see Richardson, p. 60). Earlier suggestions that the quantity of animal bone here maybe an indication that the metalled surface was associated with butchery activity can not be substantiated. A radiocarbon date obtained from a sample of the animal bones in this layer produced a date of cal. 42 BC to AD 77 (Table 8, AA-36798 (GU-8753)).

A series of 'trampled' layers of earth were observed around the metalled area, and in places these were seen to be sealed by it. These deposits are described as being similar to the natural sub-soil or plough soil, and they could therefore represent a buried soil. Overlying the metalled surface was a dark silt deposit, approximately 0.1m deep, which possibly accumulated naturally after the area fell into disuse.

A total of nine pits and post-holes were identified in association with the metalled area. They measured between 1.7m and 0.22 in length, 0.9m and 0.17m in width and between 0.5m and 0.05m in depth. Pit 3218 and post-holes 3145 and 3160 cut the metalled layer, while pit 3074 and post-hole 3037 cut the underlying deposit and are therefore possibly contemporary with the use of the metalled area, perhaps representing structural remains.

A significant assemblage of metal-working debris, including material consistent with iron and copper-alloy working, and a large deposit of hammerscale, the latter recovered from post-hole 3037 located in the southern part of the metalled area, was recovered from this area. The presence of hammerscale in the fill of post-hole 3037 may indicate that it supported a piece of metal-working equipment, such as an anvil (see Cowgill, p. 47). The metalled surface may, therefore, have been used for small scale metal-working activity.

The location and extent the metalled area seems to be delineated by Ditch Seven, and it is therefore likely that the ditch was at least visible, if not still in use, when the metalled surface was created. The presence of slag fragments in the fill of the southern most section of ditch 30007 (fill 3194) and in the upper fills in Enclosure E Ditch 30002 (fills 3209 and 3174), along with some pieces of crushed hammerscale (in 3174), suggest that these two ditches may have been abandoned but open when the metal working was undertaken. If the presence of slag within the upper fills of Ditch 30002 does relate to the Late Iron Age to Early Romano-British period metal working phase, it has important implications for the dating of Enclosure E ditch 30001. This ditch was clearly seen to cut the fill of 30002 and it may therefore be associated with a phase of activity that is later than previously outlined.

Enclosure F

Enclosure F was located approximately 350m to the north of Enclosures C, D and E (Fig. 2). In contrast to the other enclosures recorded in the area, Enclosure F was much more irregular in plan, although much of the variation is caused by the meandering course of its western boundary (Fig. 23). Enclosure F was the largest of the identified enclosures investigated, measuring in excess of 51m in length with a width of 41m at its widest point, narrowing to 12m at the northern end, thus enclosing an area of approximately 1600m^2.

The enclosure was defined by a continuous ditch which varied in width from 0.7m to 2.7m and in depth from 0.48m to 0.98m. The excavated enclosure ditch sections provided no evidence for re-cutting and it would therefore appear that the enclosure was established in a single episode. Pottery dating to the Iron Age was found within the ditch fills, along with

animal bone, flint and slag, and a radiocarbon analysis produced a date in the range of cal. 349 to 109 BC (Table 8, AA-26218), and is therefore of a similar date as Enclosures B to E.

No entrance to the enclosure was observed in plan, however the east and west ditches seem to be converging towards the northern end, possibly creating a funnelled shaped entrance as a means of controlling the movement of livestock. The enclosure may have also at one time been accessed in the south-eastern corner as the width of the ditch here narrowed from 1.3m to 0.7m, although its depth remained unchanged, perhaps facilitating a bridge (Fig. 24, S.59; Plate 10).

A small sub-enclosure formed by curvilinear gully 700 lay in the south-eastern corner of Enclosure F, encompassing .the possible entrance way. The south end of gully 700 lay approximately 2m away from the enclosure ditch and it extended on a north-south alignment for 7.25m before turning and continuing for 6m on a north-east to south-west alignment, terminating approximately 6m from the eastern enclosure ditch, enclosing an area measuring 10m by 12.5m. Its fill contained fragments of animal bone and Iron Age pottery. The space between the enclosure ditch and the gully may indicate that the ditch was accompanied by an internal bank.

Pits 4035 and 4005, and Gully 4010 and 4022

Pit 4035 lay in the south-west corner of Enclosure F. It was sub-oval in plan, measuring 2.1m by 1.54m and 0.9m deep with straight sides and a flat base. A sherd of Iron Age pottery and three pieces of slag were recovered from the basal fill of the pit, while a radiocarbon sample from the same context produced a date in the range of cal. 99 BC to AD 25 (Table 8, AA-26219). The radiocarbon date range is later than that obtained from the fill of the enclosure ditch which may indicate that 4035 is associated with a later phase of activity.

The western enclosure ditch cut pit 4005 and gully 4010, which indicates some form of human activity prior to the establishment of the Enclosure F. Pit 4005 measured 2.1m by 1.35m and was 1.1 deep. It had straight near vertical sides and flat base. Gully 4010 was curvilinear in plan and ran on an east-west axis for approximately 2m, terminating in the west. A second possible east-west gully (4022) terminated approximately 2m to the north of Gully 4010 and it is possible that the two gullies are associated with the same phase of activity. None of the features produced any diagnostic finds, although fragments of animal bone were recovered from the fills of pit 4005 and gully 4010.

Pit Group 400

Pit 4040 lay to the west of gully 700 and was recorded as part of a pit group (400) which included three pits located externally to the south of Enclosure F. The four circular pits were arranged in an approximately square arrangement and measured between 1.7m and 1.25m in diameter and between 0.75m and 0.4m in depth. The primary fill of the smaller of the pits (4015) contained the partial remains of an inhumation (SK001; Fig. 24; Plate 11). Although Iron Age pottery was recovered from the fill of Pit 4001, it also produced charcoal

radiocarbon dated in the range of cal. 6128 to 6003 BC (Table 8, AA-26220), and the charcoal is therefore assumed to be residual.

While the similarities in form and the spatial positioning of these four pits suggests they are contemporary with one another, the positioning of 4040 on the opposite side of the enclosure ditch suggests they either pre-date or post-date the enclosure ditch. This may be further reinforced by the close proximity of pit 4040 to the ditch, particularly if the enclosure had an internal bank.

Roman and Post-Roman Activity

A linear arrangement of four post-holes, located in the east of Palisade Enclosure A, ran north-west to south-east for 13m (40013) and all were fairly even spaced at approximately 4m apart (Fig. 8). The stratigraphic relationship between the palisade enclosure ditch and the southernmost post-hole 4249 was not clearly established during the excavation. A small sherd of Roman grey ware was recovered from the fill of post-hole 4273, although this was heavily abraded may be residual, suggesting a Roman or post-Roman date for this alignment.

Features dating to the post-Roman period predominately comprised large quarry pits, likely dating to later medieval and post-medieval periods. A large sub-square quarry pit (371) and a smaller sub-circular pit (260) had truncated the eastern ditch in Enclosure B (Fig. 19), while a third pit lay approximately 12m to the east. A number of pits were identified in the Field Lane D Trench III and to the east in the northern extension in Field Lane B. A series of five intersecting pits were recorded in Doncaster Road Area W (9026; Fig. 3).

Sherds of unstratified post-medieval pottery recovered throughout the area are probably associated with agricultural activity.

Unphased features

The following section describes the more noteworthy of the undated or unphased features identified during the excavations.

Doncaster Road (Fig. 3)

Two-post structures 7020 to 7022 and 7026

Four pairs of post-holes spaced approximately 1.5m apart were located some 7.5m to the south of Roundhouse C (7022), 4m south of Roundhouse B (7020-21) and 5m to the west of Roundhouse A (7026) (Fig. 3). They may represent the remains of two-post structures possibly associated with some domestic activity related to the occupation of the roundhouses, although there is no evidence to suggest they are contemporary with settlement evidence or each other. The posts forming 7020 were smaller compared to the neighbouring post-holes (7021), and were of a similar size to those forming linear post-hole alignment 8001, which

lay to the west of it. It is possible, therefore, that 7020 represents the continuation of this linear post-hole alignment rather than a separate structure.

Post-hole alignment 8002 and kiln or crop drier 9002

A 4m long post-hole alignment (8002), lay to the north-east of the entrance to Roundhouse A (Fig. 5). It comprised six post-holes aligned north-west to south-east. They measured between 0.28m and 0.13m in diameter and 0.09m and 0.04m in depth. The post-holes were unevenly spaced, although given the shallow nature of the surviving post-holes it is possible that all traces of some intervening post-holes had been destroyed. Given their proximity to Roundhouse A, they may be contemporary features although there is no further evidence to support this.

A 'dumb-bell' plan kiln or crop drier (9002) was located approximately 9m north-east of Roundhouse A and 5m west of linear post-hole alignment 8003 (Fig. 3). It was composed of two oval chambers aligned along a north-east to south-west axis, measuring respectively 1.9m by 0.86m by 0.31m deep and 1.6m by 0.85m and 0.35m deep. These were connected by a flue measuring 1m by 0.2m by 0.05m deep (Plate 12). The south-western chamber contained evidence for burning in its base in the form of reddened limestone and is therefore assumed to be the firebox or stoke-hole. Unfortunately, this feature neither produced any diagnostic evidence or any remains to indicate its purpose.

Possible circular structure 6004 and post-hole alignments 8004 and 8005

A possible circular structure (6004) was located approximately 17m to the east of the middle to late Bronze Age roundhouses. It had been adversely affected by truncation, with some of its nine post-holes being defined by shallow depressions in the bedrock. It measured approximately 8m in diameter, somewhat larger than the roundhouse structures to the west, and no entrance or internal features were evident. No diagnostic evidence was recovered from any of the post-holes during the excavation and a radiocarbon analysis of samples from two its post-holes failed to provide a date earlier than cal. AD 1950 (Table 8, AA-36886 (GU-8804) and AA-36887 (GU-8805)). Although its circular form is fairly convincing in plan, the validity of this arrangement as an ancient structure remains open to question.

Linear post-hole alignments 8004 and 8005 lay to the east of 6004. They comprised two parallel three post-hole linear arrangements, measuring 6m and 4.5m respectively.

Undated pits and post-holes

A further 27 pits or post-holes were identified in Doncaster Road Area W, ten of which lay in a 400m^2 area in the western part of the site, approximately 15m to the west of Ditch One. This group included seven seemingly random post-holes measuring between 0.16m and 0.6m in diameter and between 0.03m and 0.16m in depth. The remainder of the group comprised three pits, measuring from 0.75m to 1.44m in diameter and between 0.12m and 0.15m in depth. One of these pits (9019) contained a near complete cow skeleton.

Field Lane D Trench III (Figs 8 and 9)

Post-hole group 40016 and double pit and post-hole arrangement

The unphased features located in Field Lane D Trench III consisted of five clusters of post-holes. The largest of these comprised ten post-holes located near the south-east of the enclosure (40016). The post-holes were fairly uniform in size, measuring between 0.28m and 0.44m in diameter and 0.06m to 0.18m in depth. Two pits (4257 and 4253) lay approximately 5m to the north of post-hole group 40016, both with post-holes located immediately to the south (4386 and 4270). The juxtaposition of pits and post-holes suggest that they served a particular function, although while their shape in plan was clearly defined, they all had irregular profiles and it is possible that they are natural features rather than archaeological ones.

Post-hole group 40019

Two pairs of post-holes (40019), similar to those identified on the Doncaster Road site, were located to the rear of Roundhouse 40014 in the palisade enclosure. They were spaced approximately 2m apart, with one orientated broadly north-south and the other north-east to south-west. Despite the lack of corroborating evidence, their proximity to the Roundhouse 40014 may again indicate that these post-holes pairings represent some form of structure associated with domestic activity.

The remaining group lay in the northern part of the site, to the west of the double ditched trackway. It comprised four post-holes arranged in a possible arc.

Field Lane D Trench IV (Figs 17 and 20)

Post-hole group 40011 and Pit 4175

Post-hole group 40011 comprised three post-holes positioned between 0.2m and 1.4m to the west of the trackway, while another three lay between the trackway ditches, arranged along a north-west to south-east axis for 3.5m (Fig. 17). Taken together, the post-holes appear to have a sub-rectangular arrangement in plan, although the posts are spaced at irregular intervals and no southern side was evident. Given the position of the post-holes with respect to the trackway ditches it appears unlikely they were contemporary with it.

An isolated pit (4175) lay approximately 30m to the west of the trackway (not shown on plan) and measured 1m by 0.8m by 0.3m deep. While this pit contained no diagnostic remains, the top of it was observed to be cut by a plough scar which contained a sherd of medieval pottery.

Pit and post-hole group 40018

A small, circular arrangement of a post-pit and two double-post-holes was located 12m east of field boundary Ditch Nine and 24m to the west of Enclosure B (Fig. 20). The post-pit was positioned to the west of the arrangement and measured 0.92m by 0.95m in plan and was 0.3m deep. The double post-holes lay to the north and south of the pit, extending to the east, and measured between 0.31m by 0.7m in diameter and were between 0.1m and 0.16m deep.

All contained packing material and the remains of post-pipes and thus had clearly supported timber posts. One the post-holes (4191) contained fragments of slag.

Field Lane B (Fig. 19)

Pit and post-hole group 368

Approximately 5m to the east of Enclosure B lay a group of eighteen post-holes and three pits (368). The pits and sixteen of the post-holes were located in a broadly sub-circular array, covering an area of approximately 35m^2, and possibly represent a structure. The remaining two post-holes lay 3m to the south-east of the main group. The features in this group varied greatly in size from 0.25m to 1.4m in width and 0.04m to 0.40m in depth. Pits 241 and 243 appeared to be intercutting, although no stratigraphic relationship could be distinguished from the section. Finds from these post-holes comprise a fragment of flint from one, while another contained a small quantity of animal bone.

Pits 127 and 109

Two isolated pits up to 2m long and over 1m wide, containing the partially articulated remains of cow skeletons, were identified in Area B. One pit (127) lay 21m to the west of Enclosure B, while the other (109) lay approximately 77m to the north of the enclosure (not shown on plan).

Field Lane C (Fig. 21)

Two possible double pits or post-holes (3066 and 3062) were identified in the northern part of the Field Lane C site. Given their proximity to features dating to the late Iron Age, these may also be of a similar date.

Dale Lane (Fig. 23)

Ditch 100 was located in the northern part of the site, external to Enclosure D. It ran on an south-west to north-east alignment for approximately 9m, appearing to continue northwards beyond the limits of the excavation. It measured between 1.25m to 1.9m in width with moderately steep sides breaking into a flat base at a depth of between 0.28m to 0.48m, shallower than that seen in the ditches forming Enclosure F.

5 The Finds

The finds assemblage from the excavations comprised pottery, worked stone objects, flint, metal working remains, metal objects and a spindle whorl. The majority of the pottery is of a type typically dated to the Later Iron Age, although there is nothing to preclude a Bronze Age or earlier Iron Age date for some of the sherds. Much of the worked stone comprised fragments of quern recovered from a single context (pit 4062), while the worked flint consists primarily of undiagnostic flakes, with most occurring as residual items in the later features. Although small in size, the analysis of the metal working assemblage had identified evidence for iron production in the area, with evidence for iron and copper working, manufacture or the repairing of objects possibly being undertaken at Field Lane Area C. Just seven metal

objects recovered were deemed suitable for analysis and consisting of two pieces of copper alloy, a small iron collar, a piece of slag and three nails, and thus provide little additional information. A single spindle whorl, recovered as an unstratified object within Enclosure B, was also analysed and dated to the Iron Age/Romano-British period.

The majority of the reports of the finds analysis presented below were prepared for the individual sites and have been subsequently combined, where possible, into a single report and catalogue. The catalogues for each find type is presented after the corresponding report, and each entry includes the site code, trench number, feature and/or group number, context number, small find number (SF) and the assigned phase. Those entries marked with an asterisk have been illustrated (Figs 25 to 27).

The Pottery by G. Robbins and Dr C. G. Cumberpatch with contributions by P. Beswick, S. Elsdon and V. Rigby

Collectively the sites have produced 151 sherds of pottery, more than half of this being derived from the Field Lane sites. The pottery is predominantly Later Iron Age in date, with small assemblages of Bronze Age/Early Iron Age and 2nd century Roman-British material from the Field Lane and Doncaster Road sites. Generally the assemblage is not very diagnostic, the fabrics being very variable and the majority of the material not being indicative of particular forms. Nevertheless, for the Field Lane assemblage, it has been possible to differentiate some fifteen separate fabrics and identify nine rims/bases, in a way that has not been possible for the less diagnostic Doncaster Road and Dale Lane assemblages. Consequently, some examples from the Field Lane material find parallels with later Iron Age pottery previously found at local sites such as Ledston, Pickburn Leys and Dalton Parlours.

Field Lanes B, C and D

The excavations at Field Lanes B, C and D recovered a total of 85 sherds (663 g) of possible Iron Age and Romano-British date, of which 80 were from stratified contexts.

The assemblage has been recorded in line with the recommendations of the Prehistoric Ceramics Research Group (PCRG 1992). Each group has been given an alpha-numeric label, which has allowed splitting and honing of categories, and should allow further reworking or addition to the typology. Where they occur, rim and basal forms have been recorded in the catalogue and discussed below.

Fabric groups

A: A shell-tempered fabric. Generally an oxidised dull brown to red in colour, although exterior surface and margin is often obscured by the black residue of heavy secondary burning. The fabric varies from soft to hard, has a smooth texture and irregular fracture. All examples appear to be hand made. Inclusions are restricted to common quantities of poorly-sorted platey shell or fossil shell between 2mm and 8mm in size. The type sherds are Nos. 42, 43 and 50.

A total of seven sherds weighing 87g in Fabric A were recovered. All were from pit 4062 within Enclosure B. There is therefore no evidence for the duration of this fabric, but its deposition in pit 4062 would associate it with the main phase of use of the enclosure.

This shell-tempered fabric appears to be paralleled by other Iron Age ceramics in the immediate region. It is coarser than the examples from Pickburn Leys (Sydes 1985; Cumberpatch and Sydes 1993), more comparable with a large jar from Ledston (Buckland *et al.* 2005, 20, fig. 13).

B1: A variable and loose class of fabrics with rock inclusions embracing a number of variations in character of firing and inclusions. The typical sherd is oxidised at the exterior surface but otherwise shows signs of firing in a neutral atmosphere. The sherds are hard and smooth, but with an irregular fracture. Sherds appear to have been worked by both wheel and hand. Inclusions are a moderate quantity of poorly sorted angular heterogeneous rock fragments, not specifically identifiable in hand specimens, usually less than 8mm in diameter. In some examples very fine well-sorted quartz is present in sparse to moderate quantities. This class could be split, and more examples, or microscopic inspection, would doubtless lead to refinement. The type sherds for class B1 are Nos 2 and 5.

A total of 26 sherds weighing 112g was recovered. Sherds of this class have the widest site distribution, cropping-up on both Field Lane B and Field Lane D. They are predominantly associated with features within Enclosure B (pits 009, 114 and 4062, ditch 011 and post-hole 098) and the ditches defining the enclosure (121 and 253). However, the fabric also has a strong presence in the post-hole features forming structures within the Palisade Enclosure A (4238, 4275 and 4299), and is present in the grave 4087 and the trackway ditch (4123). This would suggest a long chronology for the fabric, as Palisade Enclosure A is demonstrably earlier than the double ditched trackway which appear to form part of the same landscape as Enclosure B.

The class would appear to be paralleled by Iron Age ceramics in the immediate region, and may be comparable to the Dalton Parlour's 'erratic tempered group' (Sumpter 1990; Buckland, Runnacles and Sumpter 1990). It is also directly comparable with a sherd sealed beneath the Castleford-Tadcaster Roman road (Evans *et al.* 2001, 170, cat no. 150), which was concluded between the 50s and 70 AD (Margary 1973, 415-416); though with the observation that the latter sherd shows quartz of upto 10mm in size.

B2: Type represented by one sherd only, distinguished from B1 by common quartz inclusions (which may possibly occur naturally in the clay source). The sherd is patchy grey to black, generally showing signs of firing in a neutral atmosphere, though some oxidisation is present at the exterior margin and core. The fabric is hard and sandy with an irregular fracture, and appears to be handmade. Inclusions are common well sorted fine quartz and sparse poorly sorted angular rock fragments low in sphericity and 2 to 4 mm in size.

The one sherd in fabric B2 weighed 14g and was recovered from the fill of possible ring gully 4238, associated with Roundhouse E, located within Palisade Enclosure A (No. 7). Other sherds from the same context were in fabric B1.

B3: A cohesive class within the 'B' type, distinguished from B1 by the presence of shell or fossil shell as an inclusion. There appears to be a slight difference between those sherds from contexts 008 and 113 (pits 009 and 114, respectively), with the former showing more shell; but overall this is a far tighter group than many. The typical sherd is an oxidised mid brown to orangey red on the exterior surface and into the exterior margin. The core and interior margin appear not to be oxidised, while the interior surface matches the outer. The fabric is soft and smooth, but with an irregular fracture. All examples appear to have been hand made. Inclusions are a moderate quantity of poorly sorted angular heterogeneous rock fragments, not specifically identifiable in hand specimens, usually less than 8mm in diameter. Most distinctively, shell or fossil shell forms a rare inclusion, is poorly sorted, angular, with low sphericity and is usually less than 5mm in size. It is not clear whether this was a naturally occurring inclusion or an added temper.

A total of eleven sherds weighing 150g in fabric B3 were recovered, of which ten sizeable sherds from a maximum of two vessels were found within intercutting pits (009 and 114) within Enclosure B, whilst one small sherd was recovered from Ditch Eight (223), to the north-east of that enclosure. These contexts would suggest an overlap in date and probably use with vessels in Fabrics A and B1.

B4: A coarse fabric with heterogeneous rock inclusions within the 'B' type, but distinguished from B1 by consistent colouration of light grey at outer or outer and inner surfaces, and black at core. Although rock inclusions vary, the character of the sherds is distinctive. Firing appears to be neutral throughout. Fabrics vary between soft and hard, with sandy texture and irregular fracture. All examples appear to be hand made. Inclusions are a moderate quantity of poorly-sorted angular rock fragments generally less than 8mm in size, and rare to moderate quantities of well-sorted fine quartz. It should be noted that these sherds are very similar to Nos 5 and 6 classed as Fabric B1, and the classes may be cognate. The type sherds are Nos 35 and 26.

The distribution of Fabric B4 is restricted to Field Lane C, where a total of eight sherds weighing 56g was recovered from the fills of ditches 30002 and 30004, which formed part of Enclosure E and C, and layer 3188 beneath the metalled surface. These contexts would suggest a date for fabric B4 within and probably towards the end of the period of use of the field boundaries.

C: An extremely thick, though light, porous fabric. Light red orange in colour, oxidised throughout except at the core. The fabric is hard and sandy, with an irregular fracture. Inclusions are very mixed, but generally well-sorted; sparse poorly-sorted sub-angular red material usually less than 6mm by 2mm, rare well-sorted, angular shell or fossil shell less than 2mm in size, sparse well-sorted fine quartz, and on the surface, sparse poorly-sorted

impressions of vegetation *c*. 4mm in length. The fabric contrasts with other groups in the relatively high quality of manufacture. Type sherds are Nos 48 and 49.

A total of seven sherds weighing 80g in Fabric C was recovered, all from pit 4062. The context of stratification indicates a date of deposition within the period of Fabric B1, which is stratified above and below, as well as Fabrics A, D and E.

D: A distinctively well-made fabric. Oxidised giving an orange colour, except for a black core. The fabric is very hard and smooth, but with a hackly fracture. The example appears to be hand made. Inclusions are moderate amounts of well-sorted, sub-angular red spheres usually 1mm in diameter, moderate amounts of well-sorted rounded spheres of quartz generally less than 0.8mm in size, and rare quantities of poorly-sorted angular shell of around 0.5mm in size. The character of this sherd - its homogeneity, hardness and form - is reminiscent of the mass-produced wares of the Romano-British period, and it may well be of such a date. The type sherd is No. 47.

Only one sherd weighing 42g in fabric D was recovered, from the fifth fill of pit 4062 within the Enclosure B. The context of stratification indicates a date of deposition within the period of Fabric B1, which is stratified above and below, as well as Fabrics A, C and E.

E: A pale orangey, oxidised fabric, soft and smooth with a laminated fracture. The examples appear to be hand made. Inclusions are restricted to rare quantities of well-sorted very fine quartz. Though the fabric is vesicular in the break these voids do not appear to result from the loss of inclusions. The fabric indicates a greater control of firing conditions than, say, the 'B' group. Type sherds are Nos 38 and 39.

A total of five sherds weighing 23g in Fabric E was recovered, all from the uppermost fill of pit 4062 within Enclosure B. The fabric is therefore associated in date with Fabrics A, B1, C and D.

F: A seemingly oxidised ware characterised on one sherd only. The fabric is hard and sandy, but with a smooth fracture. Inclusions are restricted to a moderate quantity of well-sorted fine quartz. This sherd may be burnt greyware. Its character certainly suggests a late date by comparison with the majority of the assemblage, perhaps second century AD or later. The type sherd is No. 37.

The sole example weighing 13g was recovered from the fill of the east-west section of the double ditch trackway (3033), and may be viewed as dating to within and probably towards the end of the period of use of it.

G: Black burnished ware. One unstratified example weighing 8g was recovered as a piece of unstratified material in Field Lane B. A classic example of the fabric type defined by Farrar (Farrar 1973). Black throughout, except a thin margin of red oxidisation at the interior margin. A hard, sandy fabric with an irregular fracture, tempered with sand filler showing as common well-sorted, medium-sized, sub-angular, highly spherical, quartz. At this location, the sherd was probably a Doncaster product, perhaps from Rossington Bridge, and probably

dating to the 2nd century AD (Buckland, Hartley and Rigby, 2001, 44; Buckland, Magilton and Dolby, 1980, 152).

H: A distinctively well-made black fabric. The fabric was fired in a neutral atmosphere, is hard and smooth but with an irregular fracture, and appears to be handmade. There are moderate quantities of poorly-sorted, sub-angular white inclusions, generally less than 4mm in size, and rare poorly-sorted, angular rock fragments generally less than 8mm in size. Neither inclusion was specifically identifiable in the hand specimen. The type sherd is No. 19

Only two examples weighing 7g were recovered one of which was unstratified. The other came from the third of five fills of the eastern ditch of Enclosure B (cut 253), which implies a date within, or perhaps towards the end of the period of use of the enclosure.

I: Greyware. The fabric has seen firing in a neutral atmosphere, is soft, sandy, with a fine fracture. Inclusions are a rare quantity of poorly-sorted angular quartz generally less than 3mm in size. Also, moderate amounts of poorly-sorted rounded to sub-rounded spheres of grey and white material generally less than 3mm in size, which may be grog temper. This is a standard greyware, probably dating to the mid second century AD or after. Only two sherds weighing a total of 9g were recovered. One sherd came from the fill of the western ditch (cut 1300) of Enclosure B. This context would suggest a date within or towards the end of the period of use of the enclosure. The second small sherd was recovered from the environmental sample taken from the fill of a post-hole 4273 (40013) within Palisade Enclosure A.

J: A possibly later fabric. Colour ranges from black to light grey, though firing appears to be in a neutral atmosphere throughout. Fabrics are generally hard to very hard, sandy, with an irregular fracture, and the examples appear to be hand made. Inclusions are common well-sorted, sub-rounded, highly spherical sandstone generally less than 10mm in diameter, common quantities of well-sorted, fine quartz, and moderate quantities of well-sorted, angular heterogeneous rock fragments generally less than 3mm in size. Three refitting unstratified examples weighing 23g were recovered as unstratified fragments from Field Lane B. This context of recovery coupled with the distinctive hardness and manufacture of the sherds may indicate a later date than the majority of the assemblage.

K: Ceramic building material, possibly brick. The material is an oxidised orange throughout, is soft, smooth to soapy in texture, irregular to hackly in the break, and includes sparse well-sorted fine quartz. These appear to be medieval or modern brick crumbs. The type sherd is Cat No. 29.

Distribution of fabric K is restricted to the metalled surfaces (3106 and 3197) and the overlying layer (3126) from which a total of 19g was recovered. A radiocarbon date obtained from a fragment of animal bone recovered from the metalled surface showed it to be later Iron Age in date (cal. BC 42 – AD 77; Table 8, AA-36798 (GU-8753)) and the material is therefore probably intrusive. These contexts and the nature of the material would suggest that the fabric should be seen as quite separate in date to the majority of the assemblage.

L: A well-fired, heavy, black fabric. Firing is neutral throughout. The fabric is hard and sandy, with an irregular fracture. The example appears to be hand made. Inclusions are a moderate quantity of well-sorted, fine quartz, moderate quantities of poorly-sorted angular fine-grained sandstone usually less than 10mm in size, and sparse well-sorted, angular rock fragments less than 3mm in size. The distinguishing feature of the fabric is its quantity of rock inclusions. The type sherd is No. 28. This is the only recovered example, weighing 20g, and its context, the fill of the isolated pit 3046 in Enclosure D, does not allow any precise suggestion of date, though the example would be at home with the Iron Age and Roman fabrics from this site.

Vessel forms and decoration

The majority of the assemblage is constituted by plain, and often small, body sherds not indicative of vessel form. From stratified contexts only nine rim sherds were recovered, while three of these sherds refit and two other sherds may very well be from another single vessel. Thus there are only six rim forms represented:

R2 - A simple, everted, flat plane rim, clearly formed by hand. Two examples were recovered, both in Fabric A and probably from the same vessel (pit 4062, contexts 4063 and 4190). The diameter of the rims (outer rim 20cm, inner rim 18cm), and indeed the heavy sooting of both sherds, suggests they belonged to a fairly large cooking vessel.

R3 - A simple, inverted, flat plane rim. Extremely similar to R2 except in the direction of the lip. Again, clearly formed by hand. One example, again in Fabric A was recovered from pit 4062 (context 4063). The vessel was clearly somewhat smaller, with an outer rim of about 12cm. Again heavy exterior sooting suggests use as a cooking vessel.

R4 - A simple, upstanding rim formed by hand. One example was recovered in Fabric B4 from ditch 30004 in Enclosure C/E (context 3040). It appears to be from a fairly large (18cm outer rim diameter) straight-sided vessel. The rim, and fabric, is very similar to R5 below.

R5 - An upstanding rim with an internal bevel formed by hand. One example was recovered in Fabric B1 from gully 4238 (context 4239). It is unfortunately not possible to reconstruct the angle of the vessel walls, and therefore suggest whether the sherd formed the bevelled rim of a near-vertically sided jar, or the flat rim of an open bowl. The sherd is perhaps the most interesting of the assemblage, due to its decoration. Defined horizontal and vertical lines are formed by dots incised by a stabbing tool, over the exterior of the vessel from directly below the rim across the extent of the sherd.

R7 - A crude, lipped rim. One example was recovered in Fabric E from pit 4062 (context 4063). The sherd was too small to yield measurements of the rim diameter, or any indication of vessel type. Overall, the sherd and its form is similar, but not identical, to R10 below.

R10 - A thick stepped rim, slightly sloping inwards. Three refitting sherds in Fabric E were recovered from pit 4062 (context 4063). The examples preserve nothing of the vessel's body shape. The outer rim diameter is around 14cm, while the internal rim diameter around 11cm.

B1 - A simple, flat base with a diameter of 10cm produced in Fabric D. The quality of the fabric and the form of the base may suggest a Romano-British date. One example was recovered from pit 4062 (context 4129).

Two rim sherds were recovered unstratified:

R1 - A simple, everted, rounded rim in Fabric G (Field Lane B). This was clearly a black-burnished ware cooking pot of the kind frequently found in that fabric (Farrar 1973).

R3 - A simple, inverted rim with a slight bead on the exterior, in Fabric H (Field Lane B). The upper rim is flattish, and has a scored diagonal line decoration.

Doncaster Road

The assemblage from the Doncaster Road excavations consisted of 45 sherds weighing 192 grams and representing a maximum of 36 vessels. The date range was wide with Iron Age type pottery, Roman, medieval and post-medieval pottery all being represented. Two sherds are thought to be Roman in date and were found in probable quarry pits in Area W which also contained sherds dated to the medieval period. Further information about the Roman and medieval pottery is held in the archive.

The prehistoric sherds all appear to be of a similar type and are derived from Ditch 1004 (Trial Trench M), feature group 3003, Field Ditches One, Two and Four, four post-structure 7001, Roundhouses B and C and pit 2206. The fabric is coarse, soft and reduced to black throughout with dull reddish surfaces. The inclusions consist of large (up to 2mm and occasionally larger) angular quartz grains and other, unidentified, rock fragments. The weakness of the clay matrix means that in many cases the inclusions have fallen away from the broken surfaces leaving angular impressions. The size of the inclusions and the characteristics of the clay matrix give an angular 'blocky' character to the fractures and broken edges. All the vessels were hand modelled and there are no signs of the use of a turntable. The group included two diagnostic sherds a simple rounded rim from fill 2207of pit 2206 (SF 09) and a flat base from fill 2430 of post-hole 2429 (Roundhouse C; SF 17). Neither was particularly distinctive and the overall impression was that these were fragments of plain, undecorated and unelaborated vessels.

In terms of parallels, the material from the Field Lanes B, C and D (see above) is probably the closest to the material from this site.

It is impossible to determine the precise date of the material from the characteristics of the pottery alone. There is nothing in the nature of the pottery which precludes a date in the second or early first millennium BC. Indeed, the suggestion that the features formed part of an early element in the landscape could account for the unusual absence of Roman pottery.

Dale Lane

A total of 22 sherds of prehistoric pottery was recovered during the excavations at the Dale Lane site (Enclosure F). The pottery was in the main of an Iron Age type, possibly spanning the middle and later parts of the period, with one sherd perhaps of mid Bronze Age to early

Iron Age date (Cat No. 71). Five sherds from a Shelly ware jar were also identified, dating from the Iron Age to the Romano-British period (No. 66). The results of the analysis of the pottery are summarised in the catalogue below.

Discussion

The pottery generally appears to represent two broad phases of activity. The earliest Bronze Age/Early Iron Age material has been found in association with the Palisade Enclosure A and its internal structures (Roundhouses D and E), whilst the Later Iron Age material has been recovered from features associated with the enclosures of the rectilinear field system, the double-ditched trackway and the graves. The metalled surfaces of Field Lane C may represent a later phase of activity.

All the stratified fabrics occurred in Later Iron Age deposits, with the exception of Fabric K, which is ceramic building material associated with the metalled surfaces. Only Fabric B1 was recovered from a Bronze Age/Early Iron Age feature, suggesting that the use and deposition of this fabric predated and substantially overlapped with that of other fabrics.

Although statigraphic evidence indicates sub-divisions within the Later Iron Age archaeology, there is little hope of refining the chronology of use and deposition of the ceramics fabrics. Pit 114 (Enclosure B) was clearly earlier than pit 009, but sherds in fabrics B1 and B3 from the fills of both features were so similar they could be argued to be from the same vessels, suggesting a very narrow chronology for the cutting and filling of the two pits. Pit 4062, also in Enclosure B, showed evidence for eight successive filling episodes. However, considering the close similarity of the rim sherds (SF420, SF433) in Fabric A from the uppermost (context 4063) and primary (context 4190) fills of the pit, a short chronology for filling is implied; perhaps a rapid series of contemporary dumping episodes, rather than a slow accumulation. If this argument is accepted, then the contemporaneity of Fabrics A, B1, C, D and E, all of which were recovered from the pit's fillings, is implied.

Overall, then, it may be stated that Fabric B1 appears to be the earliest on the site, contemporary with the use of the structures within Palisade Enclosure A. Fabric B1 continued to be deposited alongside the other fabrics throughout the use of the Enclosure B, within features in the enclosure's interior. Fabric B1 was still present, again alongside the other fabrics, during the period of infilling of the enclosure and fieldsystem ditches, presumably dating to the time of those features' abandonment.

The absolute chronology of the deposition of this ceramic material is difficult to judge. The form of the enclosure and field systems are typical of the late Iron Age/Romano-British date for the landscape. This would be supported by the ceramic evidence. Fabrics groups A and B have good parallels in the immediate region which are conventionally assigned to the very late Iron Age. Indeed, in this region, the use of pottery within the domestic sphere appears to be a phenomenon of the very late Iron Age; very few sites produce earlier assemblages. Moreover, the inclusion of the few sherds in fabrics F and I in the fill of the east-west trackway (3033) and the fill of the western ditch of the Enclosure B (1300) respectively,

suggest some overlap into the period of mass-production of Romano-British ceramics, perhaps from the second century AD onwards. Given the inclusion of the latter sherds in the fills of these features, they may give some idea of the date of abandonment of these features, rather than the period of use.

Catalogue (Fig. 25)

Key: OR = outer rim; IR = inner rim. Description of fabric types and rim types can be found in the main body of the report.

1. Fabric B1 body sherd, 1g, moderate abrasion. *FLD, Trench III; post-hole 4275 (Roundhouse D), context 4276; GBA 499; Bronze Age to Earlier Iron Age*

2. Fabric B1 body sherd, 9g, light abrasion. *FLD, Trench III; post-hole 4299 (Roundhouse D), context 4334; SF449; Bronze Age to Earlier Iron Age*

3. Fabric B1 body sherd, 7g, light abrasion. *FLD, Trench III; post-hole 4299 (Roundhouse D), context 4334; SF451; Bronze Age to Earlier Iron Age*

4. Six Fabric B1 body sherds, 8g, moderate abrasion. *FLD, Trench III; post-hole 4299 (Roundhouse D), context 4334; GBA509; Bronze Age to Earlier Iron Age*

5*. Fabric B1 rim sherd (R5), 22g, light abrasion, stabbed decoration forms defined horizontal and vertical lines. *FLD, Trench III; ring gully 4238, context 4239, SF441, Roundhouse E, Bronze Age to Early Iron Age*

6. Fabric B1 body sherd, 8g, moderate abrasion. *FLD, Trench III; ring gully 4238 (Roundhouse E), context 4239; SF442; Bronze Age to Earlier Iron Age*

7. Fabric B2 body sherd, 14g, moderate abrasion. *FLD, Trench III; ring gully 4238 (Roundhouse E), context 4239; SF446; Bronze Age to Earlier Iron Age*

8. Iron Age type body sherd, 2g, abraded, one surface surviving. *DRE, Area W; post-hole 2356 (Rectilinear Structure 11), context 2357; SF 12; Bronze Age to earlier Iron Age*

9*. Iron Age type flat base sherd, coarse textured, reduced ware, 23g. *DRE, Area W; post-hole 2429 (Roundhouse C), context 2430; SF 17; Bronze Age to earlier Iron Age*

10. Iron Age type, 1g, abraded, no surfaces. *DRE, Area W; post-hole 2585 (Roundhouse B), context 2576; SF 16; Bronze Age to earlier Iron Age*

11. Two Fabric B1 body sherds, 13g, moderate to heavy abrasion. *FLB; pit 009, context 008; Later Iron Age*

12. Six Fabric B3 body sherds from same vessel, 71g, light abrasion. *FLB; pit 009, context 008; Later Iron Age*

13. One Fabric B1 body sherd, 7g, moderate abrasion. *FLB; gully 011 (Group 066), context 010; Later Iron Age*

14. Two Fabric B1 body sherds, 9g, moderate abrasion. *FLB; post-hole 098, context 097; Later Iron Age*

15. Two Fabric B1 body sherds, 5g, heavy abrasion. *FLB; pit 114, context 113; Later Iron Age*

16. Four Fabric B3 body sherds, 77g, light abrasion, sherds refit, modern break. *FLB; pit 114, context 113; Later Iron Age*

17. Fabric B1 body sherd, 11g, light abrasion. *FLB; ditch 121 (Enclosure B), context 118; Later Iron Age*

18. Fabric B3 body sherd, 2g, light abrasion. *FLB; ditch 222 (Ditch Eight), context 223; Later Iron Age*

19. Fabric H body sherd, 1g, heavy abrasion, wiped decoration. *FLB; ditch 253 (Enclosure B), context 257; Later Iron Age*

20. Fabric B1 body sherd, 1g, heavy abrasion. *FLB, ditch 253 (Enclosure B), context 259, Later Iron Age*

21. Fabric I body sherd, 5g. *FLB; ditch 1300 (Enclosure B), context 1301, Later Iron Age*

22. Fabric B4 body sherd, 2g, heavy abrasion. *FLC; ditch 3129 (30002, Enclosure E), context 3130; SF336; Later Iron Age*

23. Fabric B4 body sherd, 1g, heavy abrasion. *FLC; ditch 3155 (30001, Enclosure E), context 3157; SF341; Later Iron Age*

24. Fabric B4 body sherd, 7g, heavy abrasion. *FLC; ditch 3158 (30002, Enclosure E), context 3159; SF339; Later Iron Age*

25. Fabric B4 body sherd, 5g, heavy abrasion. *FLC; ditch 3158 (30002, Enclosure E), context 3159; SF340; Later Iron Age*

26*. Fabric B4 rim (R4), 15g, heavy abrasion, diameter: OR = 18cm, IR = 17cm. *FLC; ditch 3039 (30004, Enclosure C/E), context 3040; SF303; Later Iron Age*

27. Fabric B4 body sherd, 17g, heavy abrasion. *FLC; ditch 3041 (30004, Enclosure C/E), context 3042; SF304; Later Iron Age*

28. Fabric L upper body sherd, 20g, moderate abrasion, scored horizontal line. *FLC; pit 3046, feature 3047; SF305; Later Iron Age*

29. Fabric K body sherd, 4g, heavy abrasion. *FLC; metalled layer3106; SF306; Later Iron Age*

30. Fabric K body sherd, 1g, moderate abrasion. *FLC; metalled layer 3106; SF310; Later Iron Age*

31. Fabric Two K body sherds, 5g, heavy abrasion. *FLC; metalled layer 3106; SF31; Later Iron Age*

32. Fabric K body sherd, 1g, heavy abrasion. *FLC; metalled layer 3106; SF31; Later Iron Age*

33. Fabric K body sherd, 7g, heavy abrasion. *FLC; layer 3126; SF331; Later Iron Age*

34. Three Fabric K body sherds, heavy abrasion. *FLC; metalled layer 319;, SF 362*; *Later Iron Age*

35. Fabric B4 body sherd, 6g, heavy abrasion. *FLC; layer 3188; SF353; Later Iron Age*

36. Fabric B4 body sherd, 3g, heavy abrasion. *FLC; layer 3188; SF355; Later Iron Age*

37. Fabric F body sherd, 13g, moderate abrasion. *FLD, Trench IV; ditch 4033 (east-west trackway), context 4025; SF403; Later Iron Age*

38. Two Fabric E rim sherds (R10), 10g, light abrasion, diameter: OR = 14 cm, IR = 11cm, sherds refits with SF421. *FLD, Trench IV; pit 4062, context 4063; SF 417; Later Iron Age*

39*. Fabric E rim sherd (R10), 7g, heavy abrasion, diameter: OR = 14cm, IR = 11cm, refits with SF417. *FLD, Trench IV; pit 4062, context 4063; SF 421; Later Iron Age*

40. Fabric E body sherd, 2g, moderate abrasion. *FLD, Trench IV; pit 4062, context 4063; SF 419; Later Iron Age*

41*. Fabric E rim sherd (R7), 4g, moderate abrasion. *FLD, Trench IV; pit 4062, context 4063; SF 452; Later Iron Age*

42*. Three Fabric A rim sherds (R3), 10g, light abrasion, external sooting, diameter: OR = 12cm, IR = 10cm, refit, modern break. *FLD, Trench IV; pit 4062, context 4063; SF 423; Later Iron Age*

43*. Rim sherd (R2), 50g, light abrasion, external sooting, diameter: OR = 21, IR = 18, possibly part of the same vessel SF433 (context 4190). *FLD, Trench IV; pit 4062, context 4063; SF420; Later Iron Age*

44. Body sherd, 5g, light abrasion. *FLD, Trench IV; pit 4062, context 4063; SF422; Later Iron Age*

45. Body sherd, 1g, moderate abrasion, small crumbs. *FLD, Trench IV; pit 4062, context 4063; SF436; Later Iron Age*

46. Two Fabric B1 body sherds, 2g, moderate abrasion, small crumbs. *FLD, Trench IV; pit 4062, context 4063; SF436; Later Iron Age*

47*. Fabric D, base (B1), 42g, light abrasion, diameter 10cm. *FLD, Trench IV; pit 4062, context 4129; SF426; Later Iron Age*

48. Four Fabric C body sherds, 56g, light to moderate abrasion, modern breaks. *FLD, Trench IV; pit 4062, context 4189; SF434; Later Iron Age*

49. Three Fabric C body sherds, 24g, moderate abrasion, burnt all over. *FLD, Trench IV; pit 4062, context 4129; SF439; Later Iron Age*

50. Rim sherd (R2), 21g, light abrasion, external sooting, diameter: OR = 21cm, IR = 18cm, same or similar vessel as SF420, context 4063. *FLD, Trench IV; pit 4062, context 4190; SF433; Later Iron Age*

51. Two Fabric B1 body sherds, 5g, heavy abrasion, possibly result of cleaning. *FLD, Trench IV; grave 4087, context 4088; SF453; Later Iron Age*

52. Two Fabric B1 body sherds, 4g, light abrasion, refit, modern break. *FLD, Trench IV; ditch 4123 (40007, North-South trackway), context 4124; SF430; Later Iron Age*

53. Three black reduced Iron Age type ware body sherds, 8g. *DRE, Area V; ditch 1004 (Ditch Five), context 1005; SF1; Later Iron Age*

54. Two Iron Age type sherds, 1g. *DRE, Area T; ditch 1513 (Ditch Four), context 1514; Later Iron Age*

55. Two Iron Age type body sherds, one with both surfaces surviving, 12g. *DRE, Area T; ditch 1513 (Ditch Four), context 1515; SF 3, Later Iron Age*

56. Body sherd, 13g, groove (?decoration) around vessel; possible whitish deposit internally. *DRE, Area T; ditch 1513 (Ditch Four), context 1515; SF 2; Later Iron Age*

57. Iron Age type body sherd, 1g. *DRE, Area T; ditch 1513 (Ditch Four), context 1515; SF 2; Later Iron Age*

58. Two Iron Age type body sherds, abraded, 2g. *DRE, Area T; ditch 1528 (Ditch Four), context 1529; SF 5; Later Iron Age*

59. Three Iron Age type local sandy textured ware body sherds, 1g. *DRE, Area W; ditch 2010 (Ditch One), context 2009; SF 4; Later Iron Age*

60. Iron Age type body sherd, 2g, one surface. *DRE, Area W; ditch 2131 (Ditch Two), context 2130; Later Iron Age*

61. Four Iron Age type body sherds, abraded and shattered, 4g. *DRE, Area W; ditch 2131 (Ditch Two), context 2130; SF ; Later Iron Age*

62. Four late Iron Age type fragments, 3g, no surfaces. *DRE, Area W; pit 2206, context 2207; SF 10; Later Iron Age*

63*. Four Iron Age type sherds, forming simple rounded rim, friable, crumbly fabric containing large angular rock fragments, 6g. *DRE, Area W; pit 2206, context 2207; SF 9; Later Iron Age*

64. Iron Age type fragment, shell and quartz tempered, 3g. *DRE, Area W; ditch 2240 (Ditch One), context 2239; SF 11; Later Iron Age*

65. Body sherd, fabric smooth and soapy texture, laminated and moderately tempered with shell inclusions, exterior reddish brown and core and internal surfaces black, abraded. Similar to a sherd found at Long Lane Quarry dated to the 3rd or 4th century BC. *SEL; pit 4035, context 4039; Later Iron Age*

66. Five Shelly ware sherds, ovoid jar, a slightly everted flat-topped rim, finger impressions on the top fabric, fabric heavily shell gritted with large, laminated fragments up to 10mm in length, possibly crushed oyster shell. Similar to one from Ledston (West Yorks) and Kirmington (North Lincs), dated to the early Iron Age, although shell tempering was common throughout the first millennium BC and into the Romano-British period, in Lincolnshire and the Humber Estuary. *SEL; ditch 2000 (200, Enclosure F), context 2002; Later Iron Age.*

67. Body sherd, light red surface and a grey core, possible evidence for controlled firing, fabric has finely crushed shell and possibly some flint in the filler, possible late Iron Age in date. *SEL; ditch 2011 (200, Enclosure F), context 2012; Later Iron Age*

68. Body sherd, thin fabric, fine sand and probable grog filler of possible middle Iron Age date. *SEL; ditch 2013 (200, Enclosure F), context 2014; Later Iron Age*

69. Body sherd, brown surfaces and dark grey core, possible sand or grog filler; dates possibly to the Earlier Iron Age. *SEL; ditch 4003 (Gully 700), context 4000; Later Iron Age*

70. Four sherds, middle Iron Age date. *SEL; pit 4001 (400) context 4002; Later Iron Age*

71*. Six sherds, possible mid Bronze Age to early Iron Age date. *SEL; ditch 3013 (300, Enclosure F), context 3012; Later Iron Age*

72. Fabric I body sherd, 4g, heavily abrasion. *FLD, Trench III; post-hole 4273, context 4274; GBA 501; Undated*

73. Fabric G rim (R1), 8g, heavy abrasion, diameter: OR = 16cm, IR = 15cm, burnished. *FLB; Unstratified*

74*. Fabric H rim (R3), 6g, moderate abrasion, diameter: OR = 10cm, IR = 8cm, scored, diagonal decoration on upper rim. *FLB; Unstratified*

75. Three Fabric J body sherds, 23g, heavily abraded, refit, modern break. *FLB; Unstratified*

76. Iron Age type body sherd; hard, reduced 9g. *DRE; Unstratified*

Stone objects by D. G. Heslop

Of the 58 items worked stone recovered, 55 comprised fragments of quern collected from an ashy fill 4104 in pit 4062, located in Enclosure B (Nos 1 to 12). The remainder of the assemblage consisted of two rubbing stones, one from pit 4122, also in Enclosure B (No. 15) and the other unstratified (No. 13), and a possible saddle quern (No. 14). The deposition of

such a high quantity of quern fragments in one context is unusual in the region and much of the post-excavation analysis has focussed on the quern assemblage.

The quern fragments from pit 4062 represents eleven stones which had been broken, in antiquity, into many pieces. The eleven reconstructed querns have been assigned letters (A to K, Nos 1-11). Five fragments which could not be assigned to a specific stone, having a different lithology or surface treatment, have been grouped as L (No. 12). The catalogue therefore represents the minimum stone count and there remains a possibility that more querns are represented within the assemblage.

Discussion

The assemblage of quern from pit 4062 is exceptional in terms of the number of fragments recovered from a single site, let alone one feature, and is one of the most important assemblages of querns from Yorkshire, showing clear evidence of processes that have been suspected on others sites in Northern England.

Querns A and B (Figs 26.1 and 26.2) appear to be a matched pair, one of only three or four from West Yorkshire and are particularly interesting given that the top and bottom are of different lithologies. Evidence from quarry sites in South Yorkshire has suggested that pairs were fashioned from a single block and then divided at an advanced stage of manufacture, hence the description of "toggle-stone" of such pairs which have been abandoned at a late stage of manufacture. The implication of this is that the pair would then stay together in use. The evidence from the stones themselves, however, is that different lithologies could be coupled, producing markedly unsymmetrical wear patterns on the grinding face of each stone, as would be expected if different degrees of durability were found on each face. Querns A and B, however, appear to be both of different lithology and form, suggesting that they were not originally intended to be a matching pair.

The quern assemblage is exceptionally important because the depositional evidence suggests that the querns were in use at the same time or were from a very narrow date range and, therefore, any differences in form and source cannot be attributed to chronological variations. The querns are thus likely to have been derived from a single settlement or a closely linked wider group of settlements.

The variation in form, where tall querns are in use along side flatter forms, with collared examples together with simple hopper profiles, has been suggested from the less well contexted wider distribution of querns from North and West Yorkshire. When sites, whether stray finds, field-walking results or from excavations, produce more than one quern, they are just as likely to be of different forms as the same form, whatever the lithology. Either different manufacturing sites (each producing a limited range of forms) are being accessed by the settlements, or the manufacturing sites produced a wide range of forms intended for different functions, or for different markets.

This tight chronological range of the assemblage is equally important when considering the secondary formal properties, such as the type of handle, hopper, grinding face and surface

tooling. The wider evidence is that there is less variation in handle type, resulting from the method of making the handle socket, than profile form. It is thought that these features were added on the consumption site and might therefore have more potential for reflecting identity and social distinction than the primary formal properties.

The deliberate destruction of querns prior to deposition has been suggested from the raw data. Given that pit 4062 was fully excavated, it is likely that the quern assemblage represents all of the material placed in the pit, and it appears that that not all of the stone derived from the destruction of the querns was deposited in the pit. Also deposited in this pit was cereal grain and metallurgical debris and thus, collectively, it may represent form of ritual activity involving burial of the means of subsistence production with its products, possibly reflecting a cyclical ritual with a close metaphorical link between iron production and cereal growing, and the symbolic/totemic dimension of the artefacts, including querns, used in these processes (e.g. Hill 1995).

Catalogue (Figs 26 and 27)

1* *Quern A*: Beehive, upper. Fig. 26.1. Medium-grained, angular, poorly sorted sandstone of light-pink/grey colour with bands of darker brown-pink staining running through the stone. No fossil pits or larger inclusions. A good milling stone, possibly a little brittle and with flaws from the banding. Two non-joining fragments (frags. 37 and 38) of a top stone, in total around 35% surviving, possibly one of a matched pair, with Quern B. Neither fragment has any outer surface surviving, making it resemble a rough-out in appearance, but the grinding surface is worn and there is no extant outer edge of the base, suggesting that the outer surface has been deliberately removed by striking off a series of facets from the surface. Lacking an outer surface, the form cannot be accurately described. It is over 260mm in height and of an unknown diameter. This latter gap in the data for this stone is particularly significant, because the stone appears to be one of a pair, with Quern B, but without the diameter, and the form of the outer lip, this assertion is less able to be tested. The proximity of the handle-hole to the grinding face suggests that the stone has been fairly well worn down. One fragment has a portion of the hopper, feed-pipe and one handle in section. The hopper is of concave form, over 90mm in diameter, and has been coarsely worked with a round-ended tool of around 5mm across. The base of the feed-pipe has been widened to over twice its width (not measurable) and has ferruginous staining presumably from an iron spigot. The characteristics of the handle socket are particularly clear in half-section. It is in two sections, a deeper cylindrical socket with round end, 17mm across and at least 105 mm in depth, steeply inclined and almost penetrating into the feed-pipe. Of great interest is a deposit of white, plaster-like powder on the inner surface of the socket; (cf. Querns C and E). The outer part is wider, 27mm across, and with a round end, 30mm from the extant outer edge (not the original surface). It is not possible to say if this represent two phases of handle fixing, or whether the shallow, wider one was earlier or not; it may be two phases of drilling of a single handle. The grinding surface is moderately worn in concave form, evenly abrasive, with no sign of dressing. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

2.* *Quern B*: Beehive, lower. Fig. 26.2. Medium-grained, rounded and well-sorted grains in an open matrix, without inclusions or fossil-pits. Light grey with pinkish overtones, and bands of darker red staining. Overall, a very good milling lithology. Large base stone, moderately worn, and then smashed into fragments. Four joining, two other attributed (frags. 18-22). When put back together, the

stone "joins" Quern A, in that the slightly convex grinding face of B fits into the concave recess of A and the diameters of feed-pipe and spigot hole match. As mentioned above, as the outer edge of the grinding face of A is missing, there is no way to see if the diameters were the same. If they were put together in use, it is interesting that there are slight differences in lithology and they cannot have been quarried from the same boulder/roughout, although they may well be products of the same factory. As with A, there seems to have been a deliberate attempt to remove the outer surface, with only a small section of about 70mm of the outer lip extant. At least seven facets or chords have been knocked off the circumference, and by splitting the base, the basal facet has been comprehensively separated from the grinding face and was not recovered. The original dimensions were - diameter, approx. 285mm; height, over 230mm. The spigot hole is intact, evenly cylindrical with a round end, 70mm deep and uniformly 27mm in diameter. There is no surviving outer surface to show the quality of tooling of manufacture. The grinding face is moderately or lightly worn, with no sign of re-dressing. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

3.* *Quern C*: Beehive, upper. Fig 26.3. Fine to medium sandstone with well-sorted and rounded grains. Occasional flaws and voids in the bedding plane. Not fossiliferous. Light grey, pinkish colour. One fragment (frag. 35) representing less than 20% of upper stone, with part of one handle extant but no outer surfaces or features, except the grinding face. No dimensions recoverable. The handle is inclined and probably of a wide and shallow cylindrical type, possibly like one of the two sockets forming the handle of Quern A, above. Like that example, the inner wall of the socket is coated with a plaster-like concretion, white in colour and very fine in texture and up to 2mm thick. As with Querns A and B, a very deliberate and systematic process of breaking facets off the stone has occurred before deposition. In this instance, even the hopper and feed-pipe are missing from the surviving fragment. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

4. *Quern D*: ?Saddle quern. Coarse to medium grained sandstone with some banding of irregular, less well-sorted and more angular grains. No fossil pits or larger inclusions. Light grey-brown in colour. Good milling properties. Two joining frags (frag. 25, 100mm x 52mm x 3mm; frag. 26, 170mm x 140mm x 32mm) of the grinding surface of a stone object, probably a saddle quern, which has lost most of the main body, but there is no clear axis to the surviving sections. The grinding face is concave and has no sign of rotary wear or striations. It has been evenly worked or dressed with a hammer or round-tipped chisel, diameter 10mm, recently before deposition, or the stone has not been used. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

5.* *Quern E:* Beehive, upper. Fig. 26.5. Medium, well-sorted and rounded grained sandstone of light grey-pink colour. The stone has been sculptured at right-angles to the bedding plain, which is apparent in the wear of the grinding face, and in the line of fracture when broken. The fragments displays many fine cracks through the stone, particularly fragment 33, which looks as though it might shatter into small pieces at any moment. This is probably from the trauma of breakage, bringing out small flaws in the stone. Five joining fragments (frags 31-35) representing about 55% of the top stone. No outer surface, hopper or outer lip of base included. Although no dimensions can be recorded, it must have been a tall, and therefore lightly used top stone, standing now over 260mm in height. The feed-pipe is well exposed and complex, having a rounded triangular section from being made of three small holes in a triangular pattern. A further hole, one of the trial holes, was abandoned before it reached through to the grinding face because the line veered away from the intended direction of the pipe. This has not been recorded on any other quern from this region. The bottom of the feed-pipe has been widened by wear from the spigot, and is coated with the fine white plaster-like

accretion seen in the handle-holes of Querns A and C. The grinding face is very flat, re-inforcing the suggestion that it was new or little used when broken. Some wear was noted around the feed-pipe, which has produced a slight lip down into the spigot-hole of the underlying base stone. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

6.* *Quern F*: Beehive, upper. Fig. 27.6. Medium grained sandstone of light grey colour with pinkish overtones, with rounded and well-sorted grains, and darker bands of reddish colour. No fossil pits or larger inclusions. The lithology has a good open matrix which will give good milling properties. Two joining fragments (frags 1 and 2) the other attributed on characteristics. Approximately 45% surviving. The two main pieces (frags 3 & 4) are opposing quarter-fragments, with break-lines through the feed-pipe and handles, of which there are three in total. Neither of these has any of the outer surface surviving, but one of the smaller, non-joining fragments (9), is from the outer lip of the circumference. Both fragments 3 and 4 have the lower part of the hopper, which is concave and crudely worked with irregular peck-marks in concentric circles around the hopper. Both portions are sooted or burnt across the surface of the hopper and 50mm down into the feed-pipe, but not across the fractures, suggesting this was done when the stone was intact. From the surviving parts of the feed-pipe, it can be seen to be triangular in plan, suggesting that was made by drilling three pilot holes in a triangular pattern that were then joined, (cf. Quern E). The lower part of the pipe has been widened, probably in use. Fragment 4 has one handle-hole, half-sectioned by the break. This slopes slightly and has a regular section, 22mm in diameter, and penetrates through to the feed-pipe. The last 35mm and the sides of the rest of the socket are covered with the white plaster-like accretion seen on A and C. The impression of the wooden? handle can be made out. This deposit may be a lime-based fixing for the wooden handle. Fragment 3 has a very unusual handle socket, consisting of two inclined holes, of similar dimensions to the Fragment 4 handle but of oval section, which are so close together that they have merged into one much larger void, which has then been worked-on or worn further to create a round hole of large proportions. The upper slot has traces of an iron handle, as expected with a socket of slot-shape. The junction with the feed-pipe of these two initial holes is on Fragment 3 and also has traces of the white plaster-like accretion. The lower of the pair on three is roughly opposite the Fragment 4 handle, and they probably form an opposed pair, replaced by the upper slot when the stone had worn to the point that the lower one was catching as the quern rotated. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

7. *Quern G*: ?Saddle Quern. Medium grained sandstone of dark grey/pink colour and of moderately angular, well-sorted grains, without fossil pits or larger inclusions. Again, a good milling source rock. One piece of a quern (frag. 17) with only part of the grinding face, and no there formal characteristics. The wear pattern on the face is very slightly concave in both axis, suggesting that it is from a saddle quern, but if so, it was very lightly used, as the depression in the surface is only 2mm across the surviving potion of 103mm x 65mm, and the stone is 92mm thick, which, if it were a saddle quern, would mean that there was a lot of life still left in the stone. The grinding surface is covered with regular, round peck-marks up to 3mm across, from dressing shortly before the stone was discarded. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

8.* *Quern H*: Beehive, upper. Fig. 27.8. The grinding face show the stone to have been sculpted at right-angles to the bedding plane, at the junction between bands of finer (medium-fine)and coarser (medium) sandstone, of well sorted and moderately angular grains. The coarser band has larger inclusions of angular quartz, up to 3mm across. Seven fragments (frags 5, 6, 8, 10-13), all joining, of hemispherical, collared quern, forming about 65% of the original, heavily worn, stone. As with the

other examples, considerable attention has been paid to removing facets from the outer surface, but some exterior survives around one of the two handle holes. This is the flattest of the group, with a diameter of about 320mm and a height not much greater than 160mm, but the full height does not survive, because the stone had a collar approximately 30mm wide which has been broken-off, a feature often noted on collared querns. The outer surface was smooth and regular, with faint traces of tool marks. Part of a U-shaped hopper survives; this has been worked with a coarser tool than the exterior with an oval-tipped hammer or chisel, over 3mm across. The hopper is 130mm across and over 130mm deep. The feed-pipe is wide and cleanly drilled, at approximately 370mm across, and, as can be seen from the X-section, is now steeply angled to the grinding face, showing the uneven progress of wear. Two handles are present, the earlier having worn through to the grinding face. It is 130 mm long, just penetrating into the feed-pipe, and of triangular section, suggesting it was made with the three pilot hole method seen on, for example, the feed-pipe of Quern E. The later handle is cone-shaped and oval in section, and has traces of both a white plaster-like accretion and an iron handle at the pointed end. The overall length is not measurable because the outer surface is missing here, but it stops several millimetres short of the feed-pipe. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

9.* *Quern I*: Beehive, upper. Fig. 27.9. A fine to medium grained sandstone, of well-rounded and sorted grains in a dense, closed matrix, without fossil-pits or inclusions and of a light grey-pink colour. Occasional voids and flaws in the stone are present. A poor milling stone, prone to polishing on wear, rather than remaining abrasive during use. Five fragments (frags 7, 14-17), three joining (exception is frag. 14) of about 50% of a beehive topstone of irregular, asymmetrical shape. The outer surface survives over most of the quern, and shows a slightly concave, 'waisted' profile, with one side having a flattened facet with a very smooth surface. This might a resulted from the quern being made from a water-rounded boulder, rather than quarried from an exposure. The carved sections were finished with a round-tipped hammer, 2mm across, leaving a fine, regular surface of closely-spaced peck-marks. Hemispherical in general shape (diameter, approx. 210; height, 173mm), the upper rim survives but not the feed-pipe. Enough of the hopper is present to show that it was of conical shape, over 100mm deep and about 130mm across and was well-executed with a fine-pointed tool, leaving no visible tooling marks. The earlier handle socket is 105mm long and 25mm wide, with a smoothly-drilled surface and a regular circular section. This has almost worn through to the grinding face. The later hole, at about 90 degrees to the earlier socket, is exposed in the fracture, showing a two phase hole. A broad, shallow, outer section, 50mm long and 33mm wide, with an inner, deeper section 35mm longer, of oval section and with a ferrous concretion at the end, from the iron handle. The grinding face is very concave, 14mm across the radius, and has been worn very smooth, almost polished in appearance. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

10. *Quern J*: ?Beehive. Medium grey-brown fine-grained sandstone. Well sorted and moderately sorted grains in a dense, micaceous matrix. Very similar to Quern K, below, and probably from the same formation. Poor milling qualities. A total of ten fragments (frags 39, 40, 43-45, 48-50, 52, 54, the largest 130mm x 95mm x 90mm) of a quern stone thought to be a beehive because of the presence of part of a handle socket or one edge of the feed-pipe (frag. 52) and a small section of grinding surface (frag. 49). No indication of form. The detail on fragment 52 is identical in manufacture to the feed-pipe of Quern E. The grinding face is only 32mm x 40mm is size, without dressing, but with clear sign of polishing through use and a slight concavity. It was slightly blackened before being broken. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

11.* *Quern K*: Beehive, upper. Fig. 27.11. Medium grey-brown fine-grained sandstone. Well sorted and moderately sorted grains. Almost identical to Quern J, but with slightly finer and denser white-grey matrix and without mica. Moderate to poor milling properties, the grinding surface would need to be kept dressed to ensure efficient operation. The striations may have resulted from the use of the stone on a coarser sandstone base, which had occasional larger inclusions, like Quern H, which would carve grooves out of the top stone when they wore proud from the base grinding surface. Seven fragments (41, 42, 46, 47, 51, 53 and 55), only two joining (41 and 42), with the remainder being associated on the basis of lithology, staining, surface tooling and fracture pattern. The largest, fragment 53, has part of the grinding face (125mm x 90mm), a handle hole sectioned by the fracture and part of the outer surface, enough to show that the profile was hemispherical or slightly flatter. There is no hopper or feed-pipe. The handle is steeply inclined, as are most from this assemblage, and is very close in manufacture to the upper handle from Quern I, with roughly the same dimensions of the outer, wider section, but with the narrower deeper part penetrating less into the centre. Ferruginous staining is present on the side of the wider part. The outer surface shows evidence of tooling, but this has been worn, probably by handling during use, so that the hammer-marks are not distinct. The grinding face is slightly concave, and has a series of concentric circular striations, but no sign of dressing. *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

12.* *Quern L*: ?Beehive. Fig. 27.12. Light pink- grey sandstone, identical to lithology of Quern A. Five fragments (24, 27-30). These fragments might be from Quern A, but lack the ferruginous staining of the Quern A attribution, although this could change across the quern. One fragment (30) has grinding face which is slightly smoother and more polished than Quern A. This could be from A, as the grinding face often shows more wear near the outer lip (which was not present on A). *FLD, Trench IV; pit 4062, context 4104; Late Iron Age*

13. Part of a water-rounded pebble or glacial erratic used as a rubbing stone, probably the top stone of a saddle quern. Fine-grained, well sorted dark grey sandstone with angular quartz inclusions up to 2mm across. Very dense matrix. Water-worn pebble or erratic from glacial till. The grinding face is much smoother than the upper surface of the stone, which shows no sign of tooling, whereas the outer edges of the grinding stone retain evidence of working or dressing with a round-toothed hammer. *FLB; U/S; SF 1*

14. Stone object identified as artefact by nature of one surface having been worn of worked and polished. Coarse-grained sandstone, of poorly sorted angular grains. Grey-brown with reddish tinges from high degree of ferruginous staining in the banding of the rock. No larger inclusions or fossil pits. A very friable sandstone which would make a poor quality grinding stone. Fragment of unknown percentage, 130mm x 90mm x 65mm in size. The worn or worked face has a markedly undulating surface parallel to the longest surviving axis. Possibly a saddle quern in the very early stages of wear. *FLC; Enclosure C ditch 30009, context 3087; SF 338; Late Iron Age*

15. Fragment, probably around 50%, of rubbing stone, probably the upper stone used with a saddle quern. Coarse to medium, very poorly sorted sand-stone. Occasional quartz pebbles, well rounded and up to 2 mm across. Light brown colour with darker brown blotches, of iron staining, in patches up to 200mm across. There are ferruginous concretions on the grinding face of the stone, distinct from the blotches in the lithology. This may be iron-panning from natural chemical processes in the soil, or be related to the metallurgical debris found in the fill of the pit. Roughly rectangular plan and rounded upper surface worn smooth by prolonged handling, (the form fits very well into the hand) and convex grinding face, with an abrasively rough finish, probably from contact with a coarser base stone. No

sign of dressing or tooling on the object. There are a number of damage breaks on the stone. *FLD, Trench IV; Pit 4122, context 4121; SF 431; Late Iron Age*

The Flint by Heidi Taylor

Of the 46 fragments of flint collected from the excavations, 51% of flakes were tertiary (no cortex on dorsal surface), 35% were secondary (some cortex on the dorsal surface), and 4% were primary (total cortication across dorsal surface). The low numbers of primary flakes suggests that there was no initial core reduction taking place at the site. Evidence of retouch and/or utilisation was seen on 33% of the flakes and this, along with the low numbers of primary flakes, suggests that the activities going on at this site were domestic rather than industrial.

The tool assemblage consisted of three scrapers (Nos 19, 27 and 42). Scrapers are a common tool type throughout prehistory and tend not to be diagnostic of any particular period, although sub-circular scrapers, such as the one found in post-hole 2478 in Roundhouse 1 (No. 42), are common in Neolithic and Bronze Age assemblages. The technological features such as the narrowness of flakes and a prepared platform tend to suggest a Neolithic or Early Bronze Age date. The assemblage also contained narrow flakes/blades and numerous pieces displaying carefully controlled working, including platform preparation, which is characteristic of Mesolithic/Neolithic flint working.

The majority of the flint was recovered from features dated from the Iron Age/Romano-British and medieval periods and is therefore very probably residual. Its distribution is thinly scattered over a wide area with a small and probably insignificant concentration found in the Field Lane C metalled surface (30009). On the basis of the flint found the area does not seem to have had any long-term occupation of the site prior to the Iron Age. The collection at face value appears to represent low level use of the site by a small number of people in the Mesolithic to Early Bronze Age periods.

Catalogue

1. Flint flake, secondary, patinated. *FLB; U/S*

2. Flint flake, tertiary, patinated. *FLB; U/S*

3. Flint flake, tertiary, with irregular retouch/utilisation on two edges of dorsal side, patinated. *FLB; U/S*

4. Flint flake, tertiary, with irregular retouch/utilisation on two edges of dorsal side, patinated *FLB; U/S*

5. Broken flint flake, primary, patinated. *FLB; Quarry pit 377, context 002; ?Late Medieval*

6. Flint chip, patinated. *FLB; Pit 009, context 008; Late Iron Age*

7. Flint chip, patinated. *FLB; Enclosure B Ditch 264, context 130; Late Iron Age*

8. Flint fragment, tertiary, patinated. *FLB; Field Boundary 075, context 223; Late Iron Age*

9. Flint narrow flake, primary, with retouch/utilisation on one edge, patinated. *FLB; Post-hole 247 (group 368), context 248; Undated*

10. Flint lump, patinated. *FLB; Quarry Pit 377, context 359; ?Late Medieval*

11. Flint flake, tertiary, patinated. *FLB; Enclosure B Ditch 264, context 365; Late Iron Age*

12. Struck flint piece, patinated. *FLC; Metalled surface 30009, context 3184; Late Iron Age/Romano-British*

13. Flint lump, patinated. *FLC; Metalled surface 30009, context 3044; SF 32; Late Iron Age/Romano-British*

14. Small flint blade, secondary, partly patinated. *FLC; Natural feature 3171, context 3170; SF343; Undated*

15. Flint flake, tertiary, retouch/utilisation on one edge, patinated. *FLC; U/S; SF 343*

16. Flint blade, secondary, careful retouch down one edge and distal end, platform preparation, patination. *FLC; Metalled surface 30009, context 3144; SF 344; Late Iron Age/Romano-British*

17. Flint flake, tertiary, retouch/utilisation, patination. *FLC; Metalled surface 30009, context 3181; SF 345; Late Iron Age/Romano-British*

18. Flint flake, tertiary, patinated. *FLC; Metalled surface 30009, context 3182; SF 349; Late Iron Age/Romano-British*

19. Scraper with cortex on striking platform, careful retouch, patinated. *FLC; Metalled surface 30009, context 3185; SF 356; Late Iron Age/Romano-British*

20. Broken blade, tertiary, patinated. *FLC; Enclosure E Ditch 30001, context 3110; SF 357; Late Iron Age/Romano-British*

21. Flint chip, patinated. *FLC; Metalled surface 30009, context 3184; SF 358; Late Iron Age/Romano-British*

22. Flint flake, secondary with large prepared platform with retouch/utilisation on edge of platform, patinated. *FLC; Metalled surface 30009, context 3169; SF 360; Late Iron Age/Romano-British*

23. Flint flake, secondary patinated. *FLC; Metalled surface 30009, context 3197; SF 363; Late Iron Age/Romano-British*

24. Struck flint piece, tertiary, patinated. *FLD; U/S*

25. Flint flake, burnt, secondary, with retouch on two edges. *FLD; U/S*

26. Narrow flint flake, broken through patina, light brown flint. *FLD; Trench IV; Feature 4000, context 4001; SF 400; Undated*

27. Small flint scraper, cortex on platform, secondary, retouch on distal end, patinated. *FLD; Trench IV; Pit 4037, context 4038; SF 409; Late Iron Age*

28. Flint flake, tertiary, patinated. *FLD; Trench IV; Pit 4039, context 4040; SF 408; Late Iron Age*

29. Struck flint piece, tertiary, patinated.. *FLD; Trench III; Roundhouse 5, post-hole 4238, context 4239; SF 443; Earlier Iron Age*

30. Flint flake, secondary, retouched on one edge, patinated. *FLD; Trench III; Enclosure A, context 4331; SF 450; Earlier Iron Age*

31. Broken flint flake/blade, secondary, patinated. *FLD; Trench III; Roundhouse 4, post-hole 4298, context 4335; SF 448; Earlier Iron Age*

32. Broken flint flake, tertiary. *FLD; Trench III; Roundhouse 4, post-hole 4298, context 4335; Earlier Iron Age*

33. Flint blade, curved, with cortex on striking platform. Careful retouch on dorsal side on to edges, patinated. *FLD; Trench III; Roundhouse 4, post-hole 4298, context 4335; Earlier Iron Age*

34. Flint chip, broken through patina. *FLD; Trench IV; Pit 4062, context 4104; SF 458; Late Iron Age*

35. Broken blade/flake, tertiary, patinated. *FLD; Trench III; Roundhouse 5, post-hole 4310, context 4311, SF 525; Earlier Iron Age*

36. Flint chip, tertiary, patinated. *FLD; Trench III; Roundhouse 5, post-hole 4320, context 4321; SF 530; Earlier Iron Age*

37. Flint chip, tertiary, patinated. *FLD; Trench IV; Pit 4039, context 4040; SF 425; ?Late Iron Age*

38. Broken flint flake, brown flint, no patina. *FLD; Trench III; Enclosure A, context 4265; SF 537; Earlier Iron Age*

39. Flint lump, patinated. *FLD; Trench III; Roundhouse 5, post-hole 4308, context 4309; SF 524; Earlier Iron Age*

40. Narrow flake of mottled white/grey flint with some cortex present on distal end. There is some possible utilisation on one edge. *DRE; Trench W; Ditch 5001, context 2121; Late Iron Age*

41. Narrow flake of white flint with hard brown accretions. The flake may have utilisation on one edge, but it is difficult to be sure because of the accretions. *DRE; Trench W; Roundhouse 3, post-hole 2435, context 2436; Bronze Age*

42. Sub-circular scraper made on white flint with retouch on three sides. Hard brown accretions on the flint make it difficult to see more detail. *DRE; Trench W; Roundhouse 1, post-hole 2478, context 2479; Bronze Age*

43. Small flake made on brown/grey flint with prepared platform and retouch on one side. There is cortex along one side. *DRE; Trench R; U/S*

44. Small flake of brown flint probably detached from a narrow flake/blade core. This flake shows signs of having been burnt. Some tiny pieces of cortex remain at the distal end of the flake. It has been carefully prepared with a clear striking platform and its dorsal surface has numerous scars from the removals of other flakes prior to its detachment from the core. On the ventral surface there has been some more recent damage at the distal end. *SEL; U/S cleaning layer above Enclosure D Ditch 300.*

45. Small chip of opaque cream flint. This is the kind of debris produced in large quantities during an episode of knapping. The presence of only one chip suggests that knapping did not take place on site. *SEL; Group 400, pit 4006, context 4007; ?Late Iron Age*

46. Narrow flake of pale cream/brown opaque flint. This flake has been carefully prepared and shows controlled working. There is some possible utilisation/edge wear along one side and on the distal end. The surface of the flake shows scars have been removed on two directions prior to the knapping of the flake. *SEL; Enclosure D, context 5004; Late Iron Age*

The Metal Working Remains by Jane Cowgill with G. McDonnell

A total of 204 pieces (*c*. 13.25kg) of industrial material was recovered (see Table 2). The majority was recovered by hand during the excavations, but a small quantity was also recovered from the residues of the environmental samples. The condition of the slags is very

varied with some being black and glossy while others are grey and matt, suggesting that the latter have suffered from some weathering or have been reworked and may, therefore, be residual.

Table 2. The metal-working debris and associated materials by type.

	Field Lane		**Doncaster Road**		**Dale Lane**	
	Quantity	Weight (g)	Quantity	Weight (g)	Quantity	Weight (g)
SMELTING SLAGS						
Flow	6	2011				
Furnace Slag	1	848				
Furnace Structure	1	238	6	1447		
Fired Clay	7	55				
Slag			16#	1531#	4	65
Tap Slag	1	20	11	1330		
SMITHING SLAGS						
Cinder	12	74				
Hammerscale	*	296				
Hearth Bottom	14	2902			12	610
Slag	64	652				
Smithing Slag Lumps	11	384				
NON SPECIFIC TYPES						
Clinker	3	12				
Fuel Ash Slag	16	5				
Fired Clay	7	55				
Iron Stone	5	21	3	40		
Vitrified Clay			4	613		
Vitrified Hearth Lining	15	49				

* Not recorded.
# Majority are probably from iron smelting rather than smithing

The slags from Doncaster Road form a coherent group of mainly iron smelting slags, whilst those from Field Lane B, C and D, are fairly diverse in appearance and do not show the consistency of type that occurs when an assemblage is derived from a single smithy or is the by-product of one smith. Some are very dense while others have frequent voids or a more open structure and are therefore much lighter. The majority of the slags were generated during iron production or working but there is also some evidence for copper-alloy working from the Field Lane C metalled surface (30009) and from pit 4062 in Enclosure B at Field Lane D.

Only a very small quantity (675g) of slag was recovered from the Dale Lane site. However the presence of smithing debris clearly indicates the manufacture and use of iron in the area. There is no evidence to indicate the presence of a 'smithy' from the material recovered, although it is noted that all the hearth bottoms were recovered from the south-west corner of the enclosure.

As many of the pieces recovered from the environmental samples were extremely small, weighing less than one gramme, most could not be assigned to a specific process. The provenance of some of this evidence has to be treated with caution because it is so light that it could have been distributed by the wind. Hammerscale, for instance, is easily wind borne.

The smelting slags

There is minimal evidence for iron production from the Field Lane sites (eight pieces), most it from Ditch Eleven (segment 078, fill 080). In contrast, the majority of the slag from Doncaster Road was generated by this process. There are four types of slag that can confidently be associated with iron smelting and these are the tapped slags, flows, furnace slag, and pieces of furnace structure; tap slag is usually associated with smelting although similar pieces are occasionally generated during iron smithing. The individual pieces of tapped slag are all quite small with none having the large plate-like pieces that are often encountered. The flows or runs that are visible on each piece are also generally small, one 'dollop' of a piece may be the result of a single tap (Ditch One, segment 5012, fill 2174).

The flows are a very unusual type of tapped slag. The six individual pieces are all dense and black but do not have the raked form of many Iron Age slags or the morphology of the tapped slags described above. These pieces seem to have been slowly tapped from a furnace down some sort of a drop and then removed before they were allowed to build up.

The material from Doncaster Road simply categorised as slag is probably all an unusual type of smelting slag with the exception of two possible hearth bottoms (Ditch One, segment 5007 fill 2117 and segment 5011, fill 2141). The latter has a red 'rusty' outer surface and has smaller, but frequent, charcoal inclusions. The main feature of this group of smelting slags is their density but also the frequency and size of the charcoal imprints (rarely inclusions); pieces measuring over 50mm x 20mm x 20mm are not uncommon. Smelting slags that contain large pieces of charcoal are usually thought to be furnace slag (i.e. slags that have cooled within the furnace structure), but they are normally much lighter, less dense, and are not as black as this material. They also sometimes have furnace lining attached and 'edges' that were clearly shaped by the inside of the structure. None of these characteristics are apparent on this slag, however it would seem unlikely that such large pieces of charcoal would be allowed to become entrapped in the slag outside the furnace and therefore it must be concluded that the slag was allowed to collect within it. We therefore have evidence for an iron production technology that may have tapped some, but possibly only small amounts, of slag while allowing the majority to collect within the furnace. One piece of ironstone was recorded from Ditch 4 (segment 3001, fill 1527), which was noticeably heavy for its size.

High quality ores may have been available to the smelters in which case they may have been able to produce minimum amounts of slag while maintaining a high iron output.

No *in situ* evidence was found for the furnace structures, although seven pieces of furnace wall were recovered all of which indicate the occasional need for major repairs. These are all probably from around the air hole about half way up the shaft, the part of the structure that is subjected to the most intensive heat, where the clay walls are most likely to vitrify and become attacked by the slag. This is also the zone where the iron bloom forms become attached to the furnace wall and possibly these pieces were torn out when the bloom was extracted. There is clear evidence for multiple repairs to the structures using small fist-sized lumps of clay, sometimes applied over an already vitrified surface. A minimum of three successive repairs are apparent on one piece from rectilinear structure 7019 (fill 2181). The clays used have a sandy matrix with some iron stone inclusions.

The assemblage from the Field Lane sites includes only single pieces of furnace slag, furnace structure and tap slag, the latter two both from unstratified contexts. The very small assemblage of smelting slag found on this site indicates that iron was not being produced within any of these excavated areas.

There is no dating evidence directly associated with the main group of slag from rectilinear structure 7019, fill 2181, but the fact that a number of pieces also occur in Ditch One suggests that the industry may date to the late Iron Age. Evidence for iron-smelting sites of this date continues to be elusive due to a combination of factors including the frequent lack of associated datable material and the assumption that all slag tapped furnaces are Romano-British.

Iron smithing slags

The iron-smithing slags were recovered from Field Lane B, C and D, and include the plano-convex hearth bottoms, smithing slag lumps and the cinder. The smithing assemblage is composed of all the normal types of slags that would be expected to represent this activity. It is dominated by the hearth bottoms and in this instance these are quite small and light, the heaviest but incomplete piece from metalled surface 30009 weighs 396g (context 3184). The term ‘hearth bottoms’ is unfortunate because they do not form at the base of the hearth but on the hearth wall just below the source of the air draft (usually a tuyere). Two of the fourteen hearth bottoms recovered have hearth lining attached and in the case of at least one of these it is likely to be the remains of a tuyere (pit 4062, fill 4189 in Enclosure B). Fuel inclusions and imprints are common (see discussion below) and a number of pieces have surfaces masked by iron corrosion products.

The smithing slag lumps are smaller pieces of slag that remained loose in the hearth and are often considered proto-hearth bottoms. One of the eleven pieces found is excessively glassy and contains large amounts of sand. This may be evidence that fluxing was employed, namely the scattering of sand over the surface of the iron prior to welding to remove any iron that had oxidised. A number of pieces have a matt, rather than glossy, surface which may be

due to post-depositional processes but it may also indicate that they were redeposited or weathered by exposure for a period of time. The small size of the assemblage does not allow for a conclusive statement.

All the cinder was probably produced by iron smithing, even though at least one piece has a copper alloy inclusion (metalled surface 30009, context 3106) and further small blobs were evident in the samples that contained this piece. It is possible that the smith worked both metals independently in the same hearth or that composite metal objects were being produced.

The pieces categorised just as slag, in contrast to those from Doncaster Road, are generally small pieces that cannot be more precisely identified with confidence. The majority were probably produced during iron smithing although there are three pieces which may possibly be associated with non-ferrous working (metalled surface 30009, contexts 3106 and 3182 and pit 4062, fill 4189 in Enclosure B).

Hammerscale is an important indicator of the location of a smithy and small amounts of crushed scale were noted in the soil in the bags containing the slag from metalled surface 30009 (context 3184) and Enclosure E ditch 30002, (context 3174), while three individual pieces were extracted from the sample from post-hole 286 in linear post-hole alignment 351 (fill 287). The biggest and most impressive deposit of hammerscale on the site was recovered from post-hole 3037 (fill 3038), next to metalled surface 30009. Fresh plate and spheroidal hammerscale, weighing approximately 580g (not all of the scale has been separated from the ironstone fragments and sand that comprise the remainder of the retent), comprises more than half of the residue from a 30 litre sample. This gives a ratio of about 20g of hammerscale per litre of soil, which is unusually high. The only slag from this feature, however, is a single small smithing slag lump. At least 1g of spheroidal and plate hammerscale was also recovered from an environmental sample taken from pit 4122 (fill 4121) in Enclosure B. This includes a number of large 'fresh' pieces but the surprising aspect of this find is again the complete lack of any iron smithing slag from this area of the site or indeed from this feature.

Associated finds

Finds such as fuel ash slags, fired and vitrified clay and vitrified hearth linings are not necessarily produced during iron production or smithing and may be generated by other high temperature processes. When found directly associated with iron slags, however, it is likely that this is the means of their formation. The pieces of reduced fired vitrified clay from Doncaster Road, for example, are all likely to be associated with the production of iron there. Three quite large pieces have a triangular section (maximum surviving thickness 50mm) with a flowed upper face meeting at an angle of *c*. 50º a 'moulded' face (Ditch One, segment 5010, fill 512, segment 5001 fill 2003 and rectilinear structure 7011 fill 2253). The clay is vitrified throughout and has suffered varying degrees of distortion. They may be repair pieces but it is unclear with what part of the process they are associated. All the exceptions are from the Field Lane sites (excluding some of the small fragments from the environmental samples)

and consist of pieces of fired clay including a possible tuyere fragment from trampled layer 3188, below metalled surface 30009, two pieces from Enclosure B western ditch fill 4023 and eastern ditch fills 225 and 226. The piece from 225 is probably a small piece of structural fired clay that may have been accidentally burnt or is perhaps from an oven type structure. There are imprints on the oxidised side from the probable remains of wattling and it is evident that the clay was pushed onto some sort of frame. The two pieces from Enclosure B ditch fill 226 have a curved face and again have the imprints of organic material (straw or grasses?), although in this instance these appear to be a temper to strengthen (and lighten?) the clay rather than the remains of any sort of frame. The pieces from Field Lane C and Enclosure B ditch fill 4023 have vitrified surfaces and have therefore been subjected to very high temperatures while the reduced piece with a smooth surface from pit 4062, fill 4129 may be the remains of a hearth.

Fuel

Wood or charcoal inclusions and imprints in the slags were fairly common, especially from those from the Doncaster Road site, but also particularly in the flow slag, hearth bottoms and smithing slag lumps from Field Lane. This indicates that charcoal or wood was the fuel used for both the smelting and smithing of iron. The exceptions are the few unstratified smithing slags which contained coal and are therefore probably later in date. Charcoal is the usual fuel used for both smelting and smithing because it is cleaner, more controllable and burns to a higher temperature than wood. Wood is useable for smelting (pers. comm. D Starley) and could become incorporated in the slag if the quantity of oxygen at the base of the furnace prevented it from burning. In a smithing hearth the heat of the semi-liquid slags would have caused any wood in contact with them to combust. In some instances the inclusions do seem to have a structure that is more reminiscent of wood rather than charcoal at a magnification of x10 and there is a slight possibility that some is minerally preserved wood or wood that has been only partially carbonised. The inclusions are all stained brown by iron corrosion products from the slags. Either option would be extremely unusual and therefore the fuel was probably charcoal.

Large pieces of charcoal are commonly found in smelting slags because by using sizeable pieces for smelting it enables a higher and more sustainable temperature to be maintained. This is certainly the case with these, one large inclusion surviving in the slag measures over 50mm x 20mm x 20mm. The large size and quantity of many of the pieces in the smithing slags is a bit more unusual, especially in many of the hearth bottoms. Oak is the most common species used for smelting and a range of woods are suitable for smithing. The species of wood that were used to make the surviving charcoal have not been identified because of the limited quantity.

Discussion and Conclusions

Although only a small quantity of slag was recovered during the excavations, the character of the assemblages from the different areas investigated are distinctly different . The majority, if not all, of the metal-working debris from the Doncaster Road and Dale Lane sites was generated by the production of iron. Most of the pieces are in a fairly fresh condition and were produced by the same industry and technology. The slags from Doncaster Road are concentrated in the southern part of the site with the largest group (*c*. 2.5kg) being found in post-hole 2181 in rectilinear structure 7019, which is very close to the southern end of the open area. The slag could have functioned as post packing but the presence of twelve large pieces in the hole may be seen as slightly excessive for this purpose. Most of the remainder of the assemblage was recovered from the fill of Ditch One and Ditch Eleven. There is, therefore, evidence for an iron production industry, probably located to the south or west of the excavated area. From the evidence recovered it is not possible to estimate the scale, duration or importance of this. The size of the charcoal inclusions in the slags suggest that established woodland, probably local, was exploited and a charcoal production industry would be envisaged operating with, or alongside, the iron producers.

The metalled surface in Field Lane C has produced evidence for metal working, probably representing iron and copper-alloy working or the manufacture or repair of objects that required a component of both metals. There is here a high percentage of types of debris that cannot be assigned to a specific process, including vitrified hearth lining and fuel ash slags, and there are a number of pieces of cinder which are glassy and 'colourful' which can be an indicator of non-ferrous metal working. A fragment of vitrified 'rim', *c*. 12mm thick from 3126 is unfortunately too small to judge whether it is from a vessel (for example a crucible) or is a structural fragment, perhaps part of a hearth or tuyere. The assemblage from 3184 contrasts with those discussed above because it is composed exclusively of iron-smithing slags and the presence of crushed hammerscale suggests that the smithing of iron occurred nearby. The quantity of sand in some of these slags (for example 3184) suggests that the smith was fluxing the iron before welding. The quantity of metal-working debris found is small and does not suggest a permanent workshop but perhaps the visit of an itinerant craftsman.

Just to the south of the metalled surface was post-hole 3038 which produced a large and fresh assemblage of hammerscale weighing *c*.580g that probably represents either a part of a smithy floor or sweepings from one. The density of hammerscale within the feature suggests that it could have been located within a smithy and the post-hole was perhaps dug to support a piece of smithy equipment, such as the anvil (around which the hammerscale is generated) or perhaps the bellows. The presence of such a large fresh deposit of hammerscale that includes many large spheroids and plates with a total lack of associated iron-smithing slags is unusual. Slags are more easily transported than scale but their secondary usage is limited and total removal would seem unlikely. Usually slag would be expected to be found in a heap outside the smithy.

Significant quantities of hammerscale were also found in Enclosure B (pit 4122), in a condition indicative of having been deposited straight from the smithy floor. The absence of any smithing slag in this vicinity is therefore perplexing.

Metal Objects by H.E.M Cool

Little can be said about the metalwork recovered. The nails (Nos 5 to 7) come from contexts phased to the Late Iron Age, although their presence would definitely suggest these contexts are of Romano-British date as iron nails are typical of that period and extremely rare earlier. The nails from Nos 5 and 7 were recovered from ditch fills and therefore may represent the abandonment of these features. The remaining nail (No. 6) is from grave 4030, which formed part of a group of inhumations radiocarbon dated to the later Iron Age (Table 8; GU-7670 and GU-7671).

Evidence for iron working and the casting of copper alloy is provided by the piece of iron slag (Cat No. 3), which in an X-radiograph can be seen to have the typical vesicular structure, and by a fragment of casting waste (Cat No. 4). Neither of these nor the rod (No. 1) or the little iron collar (No. 2) can be independently dated.

Catalogue

1. Rod. Copper alloy. Circular-sectioned; flat ends. Length 43mm, section 4.5mm. *FLD; Enclosure B, pit 4062, context 4063, SF 412; Later Iron Age*

2. Collar. Rectangular iron strap bent into an open cylinder; small rectangular slot centrally at one point. Length 9mm, thickness 1mm. diameter 12 x10mm. *FLD; Enclosure B, pit 4062, context 4063, SF 444; Later Iron Age*

3. Iron slag. 6g. *FLB; Enclosure B, pit 037, context 036, SF 6; Later Iron Age*

4. Casting waste; copper alloy. 6g; *FLB; Ditch 078, context 017, SF 5; Later Iron Age*

5. Nail; head and shank fragment. *FLD, Area IV; Trackway ditch 40001, context 4025, SF 404; Later Iron Age*

6. Nail; head and shank fragment. *FLD, Area IV; Grave 40004, context 4031, SF 405; Later Iron Age*

7. Nail; head and shank fragment, probably modern. *FLB, Ditch Eight, context 204, SF 04; Later Iron Age*

Spindle Whorl by Penelope Walton Rogers

A small bun-shaped stone with a hold drilled through the centre (SF 002), was recovered from Field Lane B, from an unstratified context within the Enclosure B. The artefact weighs 9.6g, is 21.00 – 22.00mm diameter, 12.6mm deep and the central hole is 4.4 – 5.0mm diameter. The surface is smooth, but not lathe-turned. The source of the stone has been identified by Dr. G. D. Gaunt as Lower Carboniferous rocks, and fossilised coral running through the fabric forms an attractive pattern on the surface.

This is almost certainly a small spindle whorl, used to weight the spindle when spinning yarn. A number of whorls in a variety of shapes and sizes have been found at other Iron Age sites such as the hill fort at Danebury, Hampshire (Brown 1984, 422-5; Ryder 1993, 313-4) and the villages of Somerset Levels (Bulleid 1926, 61-3; Coles 1987, 157-168). Disc and cylindrical shapes are the most common, but bun-shapes are also well represented. The diameter of the central hole of the South Elmsall example falls within the range of 4 – 8mm which is regarded as characteristic of Iron Age and Romano-British spindle holes (later spindle holes are larger, to accommodate thicker spindles) (Walton Rogers 1997, 1731). At 9.6g, it is rather light, but there is at least one bun-shaped chalk whorl from Meare Village East, Somerset, which is as little as 7g (W78, Coles 1987, 161-2). Such whorls were probably used to spin short-staple wools into soft lightweight yarns.

6 The Environmental Evidence

Details of the analysis undertaken on the human and animal bone, charred plant material and radiocarbon samples is reproduced below. A total of six skeletons were recovered during the excavations, with four representing almost complete examples while the two were highly fragmentary, and all are thought to have been interred during the Late Iron Age period. Unfortunately, despite the comparatively large assemblage of animal bone retrieved during the investigations, the poor preservation and highly fragmentary nature of this assemblage has limited the scope of analysis. Similarly, despite the undertaking of an extensive programme of soil sampling in all areas investigated, only a small quantity of charred plant remains was recovered and again few conclusions can be drawn from the analysis. A total of twenty samples were submitted for radiocarbon dating, which has provided evidence for activity spanning the Mesolithic, Bronze Age and Iron Age periods.

The analysis of the human remains and the charred plant remains was undertaken for the individual sites, although they are presented below as a single report. The archive contains each of the individual reports.

The Human Bone

Four individuals were identified during excavations in Field Lane C and D (SK 3059, SK 4117, SK 4086 and SK 4032), although post-excavation osteological analysis has identified a number of bone fragments consistent with the presence of a fifth individual within Grave Cut 4030 (SK 4032B). A further skeleton (SK001) was recovered from primary fill (4012) of pit 4015, by Enclosure F at Dale Lane (Figs 23 and 24, Plate 11). The articulated remains of an ulna, radius and metacarpals were identified during excavation, along with a humerus and some small cranial fragments, which were recovered from within the fill as loose bones. A full report detailing the analysis of these remains is provided with the site archive: what follows is a summary of that report.

The aim of the skeletal analysis was to determine the age (Lovejoy *et al* 1985a; Brooks and Suchey 1990; Lovejoy *et al.* 1985b; Miles 1963; Smith 1991; Meindl and Lovejoy 1985; Schwartz 1995), sex (Buikstra and Ubelaker 1994; Bass 1987) and stature of the skeletons (Trotter 1970), as well as to record and diagnose any skeletal manifestations of disease and trauma (Ortner and Putschar 1984; Buikstra and Ubelaker 1994). The skeletons were analysed in detail, assessing the preservation and completeness, as well as determining the age, sex and stature of the individuals. All pathological lesions were recorded and described. A full report on the analyses is provided with the site archive.

Field Lane C and D by Helen Start

Demographics

The small size of the sample and fragmentary nature of the remains prohibits the undertaking of any formal demographic analysis, although a few general observations can be made about the basic age and sex structure of the group. All fall into the prime adult (26-45) age category with possible cross overs into the older or younger adult categories. Only SK 4032 is a possible old adult with a maximum age-at-death chronological estimate of 48 years old. Skeleton SK 4117 remains within the prime adult age category, but is considered to be in the older reaches of this range. Osteological ageing techniques become less reliable the older the individual under study is, with under estimates of twenty years not unknown (Molleson and Cox, 1993: Start and Kirk, 1998). Therefore both these individuals could easily have been older at death than the osteological estimates suggest. In any case, it was clearly possible for individuals in this group to survive well into middle age.

The remaining skeletons (SK 3059, SK 4032B and SK 4086) are all either older young adults, or younger prime adults. All three are considered to be at least into their twenties. The ageing of younger adults is slightly more secure than older adults, though not as accurate as the ageing of children. Age-at-death estimates for most of these individuals was quite reliant on the assessment of dental attrition. All of the dentition's recovered from this group had an unusual wear pattern (see page 54), and this may influence the resulting age-at-death estimate.

With regard to sex, the only comment it is possible to make is that a person of either sex was equally likely to be buried.

Archaeological Context

The general north-south orientation of the graves, and the fact that a mixture of crouched and extended body positions are present (three of four known body positions are couched), fits the Iron age/Romano-British picture of burial ritual relatively well (Darvill 1987). However, the exclusion, or non recovery, of grave goods is unexpected.

Biological Quality of Life

It has not been possible through osteological analysis to establish the cause of death of any of the five individuals recovered. This is often the case where only skeletal remains are

available for study (Ortner and Putschar 1984). However, the palaeopathological study of human skeletal remains can offer comments on the health status of individuals in life.

The skeletal remains were in the majority fragmentary, incomplete and subject to cortical damage from roots and general erosion and these factors necessarily limit the scope of the investigation of palaeopathological manifestations. Only those conditions and health indicators which were observed can be reported here, although the lack of evidence cannot be equated with absence of disease.

Dental Health

An examination of dental pathology offers the potential to comment on life style areas such as diet, nutrition, stress and health, as well as oral hygiene. A summary of the data recovered from the dentition is presented in Table 5.

All of the Field Lane individuals presented evidence of dental calculus to some degree with 82.7% (110/133) of all teeth present affected by this condition. None of the teeth affected by calculus in this sample presented severe calculus (after Brothwell 1981) and only 16 teeth had levels of calculus considered to be moderate. Of the four individuals for whom calculus had progressed in some cases to a moderate level, this was usually affecting posterior teeth which are harder to clean than anterior teeth. In general then calculus was common and usually manifest in a mild form.

Periodontal disease is often linked to calculus, with the presence of calculus increasing the chances of gum disease which leads to resorbtion of the alveolar bone which forms the tooth sockets. Levels of periodontal disease were generally relatively low compared to calculus with two individuals (SK 3059 and SK 4117) unaffected, and SK 4032 and SK 4032B each affected in 7 and 8 sockets respectively. However, SK 4086 presents a different picture with more than half (19/29) of the sockets present displaying alveolar resorbtion to some degree.

Only 9 of the 133 (6.8%) teeth present were affected by caries. In most cases this condition was present as a small pit with only two teeth affected by medium sized pits which still left more than half the crown intact (after Lukacs 1989).

Three individuals (SK 4032, SK 4032B and SK 4086), had teeth absent due to assumed agenesis or non-eruption. Dental crowding which resulted in rotated maxillary premolars was seen in the jaws of SK 3059, although this condition is so common as to be almost normal, and will have had little or no affect on the individual during life (Hillson 1996).

Diet, Dental Hygiene and Behaviour

The majority of teeth were affected by mild or moderate dental calculus which, in combination with the generally low levels of periodontal disease and caries, suggests a diet not rich in sugars and highly processed starches, although the high level of periodontal disease seen in SK 4086 could perhaps indicate that they had a diet richer in sugars and processed starches, or was less careful about dental hygiene than the other four.

Disregarding the unusual pattern of dental wear discussed below, in general attrition was observed to have been heavy. It is likely that this heavy wear is the result of a coarser diet, and that tiny fragments of grindstones were regularly included in milled cereals. These tiny fragments not only caused heavy wear on the teeth, but they may also have aided in keeping the rate of dental caries low by grinding away lesions before they could take hold, and in effect 'cleaning' the teeth (Walker *et al* 1991).

An unusual attrition pattern was observed for all five skeletons, with all or some of the first molars, maxillary and mandibular, showing levels of attrition that were heavier than would be expected on observation of the rest of the dentition. In other words, the first molars were worn faster than the other teeth. This could be the result of a behavioural or cultural factor. Perhaps leather was softened using these teeth, or some other activity which required the chewing motion possible for molar teeth.

Stress Indicators

Enamel hypoplasia usually presents on the teeth as single or multiple pits or grooves around the circumference of the crown (Hillson 1996). These lines or pits represent periods of arrested, and then resumed, growth while the enamel crown of the tooth concerned was being laid down. Thus their presence on teeth is taken to indicate that the individual suffered a period of stress causing the growth arrest sometime during childhood and possible causes of hypoplasia include disease, malnutrition, trauma, and even psychologically stressful events. Four of the five individuals in this group present thin horizontal grooves characteristic of enamel hypoplasia with the exception being SK 4086.

If the level of the observed hypoplasia is compared to a standard tooth development chart, it is possible to approximate when the period of stress occurred. Estimated ages at which the stressful episodes causing growth arrest are as follows: SK 3059 18 months-3 years (nine permanent anterior teeth all affected at same stage of development); SK 4032 5-6 years (single maxillary premolar); SK 4032B 3-5 years (three anterior teeth); SK 4117 10-15 years (maxillary third molar). Clearly children were subject to periods of stress serious enough to halt growth at any point in pre-adult life.

It is perhaps notable that SK 4086 was again the exception to a general pattern, however it was not free of 'stress' indicators. The right orbit of this individual presented evidence that he suffered iron deficinecy anaemia which has been traditionally though indicative of childhood nutritional or infectious stress (Ortner and Putscher 1984). Another possible explanation is that it was a response by the body to parasitic infestation or infection whereby the human body withholds iron required by the pathogens or parasites in order that they are unable to survive and reproduce (Stuart-Macadam 1991).

Degenerative Joint Disease

SK 4086 presented evidence of degenerative joint disease on three ribs, at the right bunion joint and in the lower thoracic spine, while SK 4117 presented this condition at the head of

one rib . It is not surprising that SK 4086 presented the most evidence for skeletal pathology because this was by far the best preserved and most complete individual.

Congenital Conditions

SK 4086 was subject to a mild form of a congenital condition causing the first sacral vertebrae to 'try to be' a lumbar vertebrae (lumbarisation). This condition would have had little effect during life and is a relatively common congenital abnormality today (Ortner and Putscher, 1984).

Dale Lane by Andrea Burgess

The overall condition of the Dale Lane skeleton was poor. Post-deposition and excavation damage had caused fragmentation of all of the skeletal elements. In addition the bone had been severely affected by differential post-deposition erosion. The long bones displayed extreme damage to the outer cortical bone and in each case the less dense cancellous bone of the epiphyses had been completely eroded. The cranial fragments had been less effected by erosion, cortical damage was still evident but the lack of cancellous bone in these elements meant that preservation was reasonably good and that the majority of the breaks could be reconstructed.

Although the skeletal elements could still be utilised for non-metric age and gender determination methods, the condition of the bone precluded metric analysis for stature estimation and gender determination, and the erosive damage to the surface of the bone may have removed any morphological changes indicative of pathologies.

The poor condition of the material meant that only the cranium was suitable for use in age estimation. A scheme of ageing based upon the assessment of ectocranial suture closure was used (Meindl and Lovejoy 1985). The use of only one ageing method, instead of a combination of methods, reduces the potential accuracy of the age assessment. In addition, cranial suture closure is thought to incorporate higher levels of inaccuracy than other methods of ageing. A large age range has been obtained for these skeletal remains, in order to reduce the inaccuracies inherent in using fragmentary incomplete material. Although these remains were fragmentary, the coronal and sagittal sutures were complete, which gave an age range of 44.8 - 49.2 years, with a standard deviation of approximately 12 years. Given the limitations of this method outlined above, it is therefore suggested that an age of over 40 years and the age category of 'prime adult' are applied to this individual.

Standard macroscopic methods defining male and female morphological features were applied (Steele and Bramblett 1988; White 1991). Methods of gender determination are potentially 85% accurate when cranial remains only are used, 90% when the pelvis is used, and 95% when both the cranium and pelvis can be used (Krogman 1962). Only cranial remains were available for use on these remains, and the reduction in accuracy of gender determination when based on fragmentary material should be recognised. Only five potentially diagnostic features were observable. However of these features all were assessed

to be 'female' (these female traits include marked frontal/parietal bossing, the vertical inclination of the forehead and slight temporal ridges), and overall the reconstructed cranium was relatively small and gracile.

No pathologies were identified and one non-metric trait was present. The persistence of the medio-frontal suture was noted, a condition known as metopism. This suture usually fuses completely at 2 years of age but in this case is only 50% closed. This is a fairly common genetically inherited non-pathological trait.

The incomplete nature of SK001 and the position of the remains in a primary pit fill raises the issue of whether this represented a complete or incomplete burial, a primary inhumation, or a disarticulated inhumation after exposure. The excavation records clearly show that the ulna, radius and metacarpals were articulated and that the cranium was positioned at the same level as the other remains. The articulation of the elements of the right arm indicates that this was a primary inhumation. The phalanxes and metacarpals are among the first group of bones to become disarticulated as the corpse decomposes (Micozzi 1991) and therefore are unlikely to be in articulation in a secondary burial. There is no reason to suggest that these remains represent more than one individual.

It is possible to suggest that this may have been a primary inhumation of an incomplete partially articulated body, i.e. of dismembered body parts. No cut marks were noted on the bones, however the post-deposition erosion may have removed these. A further possibility is that this was a complete burial which was disturbed (intentionally or otherwise) soon after inhumation. However, the recorded section through the pit fills shows no evidence for disturbance of the deposits.

Differential preservation may be suggested as a more functional explanation for the incomplete nature of SK001. Differential erosion of cortical and cancellous bone is clearly evident in the skeletal elements which have been preserved, and also can be inferred from the complete absence of the carpals which would obviously have originally been present and in articulation between the ulna, radius and metacarpals.

In summary, the skeletal remains probably represent one individual. This was a primary inhumation of the remains of an adult female, but the body was probably incomplete at the time of the burial. The possible human long bone fragment recovered from a secondary ditch fill may be a second inhumation or may have been the result of the disturbance of SK001. However, any interpretation involving this isolated fragment must be treated with caution.

Table 3. Summary of the results of the skeletal analysis

Skeleton No.	Grave Cut	Age-at-death	Sex	Stature (cm)	Pathology
SK 3059	30010	24-30 (young adult/younger prime adult)	M?/?	168.5	Dental disease: caries, dental crowding, rotated teeth, calculus, enamel hypoplasia
SK 4032	4030	35-48 (older prime adult/old adult)	F?	160.5	Dental disease: calculus, periodontal disease, enamel hypoplasia
SK 4032B	4030	22-36 (young adult/younger prime adult	?	?	Dental disease: calculus, periodontal disease, caries, enamel hypoplasia
SK 4086	4087	24-38 young adult/younger prime adult)	M	165.5	Dental disease: caries, unusual attrition Degenerative joint disease: spinal, ribs and bunion joint of big toe
SK 4117	4116	34-44 (older prime adult)	F?	149	Dental disease: calculus, caries, enamel hypoplasia Degenerative joint disease: rib
SK 001	Pit 4015	44.8 – 49.2 (older prime adult)	F	-	-

Table 4. Burial position and orientation

Skeleton	SK 3059	SK 4032	SK 4032B	SK 4086	SK 4117	SK 001
Burial Position	crouched	extended	?	crouched	crouched	?
	lying on right side	supine	?	lying on back	lying on back	?
Orientation	N-S	NNE-SSW	?	N-S	N-S	?
Head	N	NNE	?	S	S	?

Table 5. Summary of dental health

Skeleton	SK 3059	SK 4032	SK 4032B	SK 4086	SK 4117	SK 001
Age	YA/PA (24-30)	PA/OA (35-48)	YA/PA (22-36)	YA/PA (24-38)	PA (34-44)	PA (44.8 – 49.2)
Maxilla	15	16	7	15	9	-
Mandible	16	14	11	14	16	-
Total	31	30	18	29	25	-
Calculus	26=mild	23=mild 5=moderate	13=mild 4=moderate	19=mild 5=moderate	13=mild 2=moderate	-
PD*	-	4=mild 3=moderate	6=mild 2=moderate	14=mild 5=moderate	-	-
Caries	1=small 1=medium	-	2=small 1=medium	3=small	1=small	-
AMTL*	-	-	-	-	-	-
LEH*	9	1	2	-	1	-
Agenisis	-	right mand. third molar	left mand. third molar	left mand third molar	-	-
Other	crowding: L maxillary premolars rotated	-	-	-	-	-

PD = periodontal disease; AMTL = =ante mortem tooth loss; LEH = linear enamel hypoplasia

Animal Bone by Dr J. Richardson

Introduction

Unfortunately, despite the extensive nature of the investigations, only 3773 animal bone fragments were recovered and of these only 424 were classified as bone zones. Even before the assemblage is sub-divided by phase, this total falls well below the minimum reliable sample size of around 500 (with reference to a number of statistical parameters) (van der Veen and Fieller 1982, 296). As a result, the assemblage can offer only tentative assessments of animal husbandry and dietary preferences over time.

Methodology

All bone fragments were identified to taxa wherever possible, although lower-order categories were also used (e.g. sheep/goat, cattle-sized). The separation of sheep and goat bones was routinely attempted, using the criteria of Boessneck (1969) and Payne (1969, 1985), but as no goat bones were identified, sheep/goat bones are assumed to be of sheep. Recording including the identification of diagnostic element zones, which by definition are easily identifiable and non-reproducible. Using zones in subsequent analyses eliminated the possibility of recording an anatomical zone more than once.

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 for cattle, sheep and pig were recorded using the letter codes of Grant (1982) and age stages were calculated using Halstead (1985) for cattle, Payne (1973) for sheep and a similar wear progression was assumed for pig. The sexing of the cattle and sheep populations was achieved with reference to the sexually dimorphic distinctions of the pelvis (after Prummel and Frisch 1986, 575), while the sexually dimorphic tusks of pigs were noted.

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. Butchery was routinely differentiated into chop and cut (knife) marks and the position and direction of these marks were recorded using Binford-type codes (Binford 1981).

Finally pathological bones were described, but given the fragmented and poorly preserved nature of the assemblage, biometrical data were not recorded.

All bone data were entered into an Access database.

Results

Taphonomy

Retrieval of bone occurred without the use of on-site sieving and it can only be assumed that bone was missed during excavation. It is likely that the smaller bones and the smaller species will have been biased against (see Payne 1992, 1).

The animal bone was typically heavily degraded with eroded bone surfaces. This reduced the bones to such a friable state that fragmentation was highly likely. Both condition and fragmentation will have influenced bone survival, but also the ability to identify bone zones to taxa.

Some burning of bone occurred (8% of the assemblage), with nearly all burnt bones (96%) recovered from pits and post-holes, and from two pits in particular. From a Late Iron Age pit (4062) within Enclosure B, 24% of the burnt bones were recovered, with 52% of the burnt bones recovered from pit 114 (unphased). Presumably these caches of burnt bone represent the rare disposal of waste from a hearth or similar feature, as *in-situ* burning was not present.

Butchered bones were much more scarce, with only nine examples identified, all from Late Iron Age deposits within pit 4062 (Enclosure B) and Ditch One (segment 5000). The highly degraded nature of bone surfaces, however, made the identification of cut marks very difficult. With the exception of sheep/goat humerus from pit 4062, all the butchered bones were cattle (6) or cattle-sized (2) bones. While one cattle horncore had been chopped from the skull, all the remaining butchery marks were indicative of dismembering.

Animal husbandry

The relatively few bones associated with the roundhouses within Enclosure A (Bronze Age-earlier Iron Age) include tooth and long bone fragments. They are likely to represent domestic debris (including as they do cattle, sheep/goat and pig fragments), but no further interpretation of an assemblage that contained no bone zones is possible (cf. Tables 7 and 8).

Late Iron Age material has been recovered from all the main excavation areas. Treating them as a single animal bone assemblage is questionable therefore, although further sub-division would make any interpretations untenable. The proportion of bone zones indicates a dominance of sheep bones, followed by cattle, pig and horse. The high proportion of sheep bones, however, is largely the product of a single ewe, around six to eight years at death (based on dental wear data), deposited in pit 3195. The animal had suffered from a probable ossification of the ligaments following the subluxation of the shoulder joint (cf. O'Connor 1984, 24) as indicated by the formation of bone spurs on the proximal humerus and the distal scapula. This is a trauma (dislocation, sprain or blow), more commonly observed in the elbow where it is referred to as 'penning elbow' (Baker and Brothwell 1980, 127). A further ten zones can be accounted for by the deposition of two horned sheep skulls in pit 4062 within Enclosure B. By excluding the skeleton and skulls, the number of sheep zones is reduced to seven. As such, cattle and sheep (including sheep/goat) were perhaps of comparable significance, with pigs offering some dietary variability. Horses may also have been consumed, although no horse bones were butchered.

The bones from the Late Iron Age/Romano-British phase were associated with layer 30009, a metalled surface to the west of Enclosure C that yielded a comparatively high quantity of animal bone. The bones are unlikely to represent carcass-processing area, as no butchered bones were found. An alternative hypothesis that bone was used as packing material to form a working surface is possible and might be supported by the dominance of larger cattle bones, but the presence of a partial foal skeleton (some vertebrae, and partial hind limbs) in such a deposit is hard to explain.

The unphased bones are of little interpretative value, but the concentration of cattle bones requires explanation. Most of these are accounted for by the disposal of cattle carcasses or body parts in pits. Pit 109 contained an adult animal, possible male, that suffered from osteoarthritis to its pelvis (eburnation, pitting and slight lipping to the pubic articular surface). It is tempting to suggest that this animal was used for traction. Pit 114 contained an incomplete adult cattle skeleton and partial adult skeletons were disposed of in pits 127 and 2023.

Unfortunately age data (from epiphyseal fusion and dental eruption and wear) were scarce regardless of period. Sub-adult, adult and aged cattle were identified from Late Iron Age deposits and sub-adult and adult sheep were also identified from the deposits of this period. A foal (in its first year) has already been mentioned from the metalled surface 30009 (Late Iron Age-Roman), but from here aged cattle and adult sheep were also noted. The presence of sub-adult, but not juvenile, cattle and sheep exclusive to Late Iron Age deposits suggests that

prime beef and lamb was available, while adult and aged animals are indicative of livestock maintained for breeding and/or for their secondary products.

While it is apparent that domestic animals provided most of the protein intake of the inhabitants of these rural sites, one red deer bone from metalled surface 30009 hints at the availability of game. The presence of a humerus fragment, a bone associated with a meat-rich part of the carcass, suggests that venison was a rare addition to the diet.

Table 6. Number of bone fragments by phase

	Bronze Age-earlier Iron Age	Late Iron Age	Late Iron Age-Roman	? medieval	Not phased
Cattle	1	107	126	1	1335
Horse		23	27		
Sheep		144			7
Sheep/goat	2	77	14		17
Pig	1	32	10	1	10
Dog			1		
Red deer			1		
Deer sp.			1		
Cattle-size	19	464	350	2	346
Sheep-size	14	332	28	1	268
Pig -size					7
Microfauna		3			
Frog/toad		1			
Total	37	1183	558	5	1990

Table 7. Number of bone zones by phase

	Late Iron Age	Late Iron Age-Roman	? medieval	Not phased
Cattle	38	35	1	130
Horse	9	9		
Sheep	123			6
Sheep/goat	23	3		10
Pig	10	3		3
Dog		1		
Red deer		1		
Cattle-size	5	1		
Sheep-size	3			2
Frog/toad	1			
Total	212	53	1	158

Discussion

Taphonomic processes, particularly degradation due to the soil chemistry, severely affected the animal bones and reduced the number of bone zones available for analysis. It is highly probable, therefore, that the recovered assemblages are not representative of activities across this wide area.

With this caveat in mind, it is probable that both cattle and sheep/goats were important resources for the Late Iron Age and early Roman inhabitants. It is possible that these animals were raised for meat and secondary products such as fleeces and traction. Intensive milk production is less likely in the absence of neonatal animals, although the observed taphonomic processes will have biased against these fragile bones. Horses may have been raised locally as the foal from metalled surface 30009 was much too young to have been broken. They may have been consumed, but their value as work animals, traction and/or pack horses, was probably prevalent. Pigs, and very rarely red deer, will have offered some dietary variability.

Evidence for specific activity areas was not found, but atypical, perhaps even structured deposits may be indicated by the disposal of cattle, sheep and foal carcasses or body parts. With the exception of the foal, these were all placed into pits, although unfortunately the majority remains undated.

Charred plant remains by Dr. R. Young, Dr. J. Richardson and Dr. T. Holden

Soil samples of up to 40 litres in volume were obtained from 350 contexts during the excavations in order to and a select sample were processed using an Ankara style flotation machine, with a 300 micron sieve, and the charred plant remains analysed. Given the high level of contamination and the limited quantity of charred plant remains recovered, there has been little scope for meaningful analysis.

Field Lane B

A total of six samples were analysed, all from features located in within Enclosure B. Three had cereal grains present (context 042 from pit 043; context 113 from pit 114 and context 749 from post-hole 751), with *Triticum* being the more common species represented along side a smaller amount of *Hordeum*. Context 113 also produced a small amount of weed seeds. Context 750, also from post-hole 751, contained fragments of hazel nut shell, the only other type of plant material other than wood charcoal present.

Field Lane C

Samples from Enclosures C, D and E produced very little in the way of archaeological material. Modern seeds, however, of both *Chenopodium* and *Aethusa cynapium* were noted.

Field Lane D

Of the samples analysed from features associated with Bronze Age to earlier Iron Age Enclosure A (Field Lane D, Trench III), just one context (post-hole 4306 of Roundhouse E) produced cereal remains in the form of *Triticum* fragments and a hazel nut shell. The enclosure ditch itself produced a small quantity of weed seeds (*Chenopodium*) from context 4388, while undated post-hole 4357 in group 40016 (context 4367) yielded probable modern weed seeds.

The samples taken from features in the western side of the later Iron Age Enclosure B (Trench IV) produced a relatively high number of seeds and grains, particularly contexts 4104 and 4132, both fills of Late Iron Age pit 4062. The other context from Enclosure B which produced cereal grains and seeds was 4217, the fill of a possible Late Iron Age post-hole (4216). The overwhelming majority of the cereals identified are wheat (*Triticum*), with a comparatively small amount of barley (*Hordeum*). The samples also contained moderate amounts of weed seeds, including bromegrass (*Bromus*) and fat hen (*Chenopodium*). Context 4157 (from pit 4158) also produced a single wheat grain.

Doncaster Road

Just four of the samples contained carbonised cereal grains and all were from undated features (context 2129 from post-hole 2128,;context 2313 from post-hole 2314; and contexts 2160 and 2164 of post-holes 2159 and 2163, respectively, both associated with a possible circular structure (6004)). These grains included wheat (*Triticum* sp.) and barley (*Hordeum* sp.). A further two samples contained weed seeds that are often associated with arable land, *Lolium temulentum* (darnel) and *Bromus sterilis* (barren brome). These botanical remains

represent the 'background noise' of plant debris that may be expected on most habitation sites.

Dale Lane

The samples taken from Enclosure F contexts 4038 and 4039, both fills of pit 4035, contained poorly preserved *Triticum* grains (either bread wheat or spelt), while context 4025 (pit 4005) contained a single rachis segment of a species of free-threshing wheat, probably *Triticum aestivum* (bread wheat).

Discussion by R Young

Cereal

Only one of the samples taken from features thought to be Bronze Age to Earlier Iron Age in date produced a small amount of fragmented carbonised cereal grains (4307 from post-hole 4306, Roundhouse E), although this and context 4388 (fill of Enclosure A) both had a number of *Chenopodium* sp. seeds, as well as a very small number of other weeds, and one hazel nut shell fragment. Neither produced any chaff. The evidence at face value suggests that the area saw limited cereal production, preparation and consumption. However an absence of cereal use here should not necessarily be inferred, as both wheat and barley have been recorded at Bronze Age sites elsewhere (e.g. Hallshill in the north-east of England; van der Veen 1992, 166).

The majority of cereal remains have been recovered from pit fills within the Late Iron Age Enclosure B, and of these the overwhelming majority are of wheat, with a comparatively small amount of barley. The wheat itself is almost all *Triticum dicoccum*, or emmer wheat, with a very little *T. spelta*, or spelt wheat. While spelt wheat tends to occur in greater concentration in sites with some evidence of Roman occupation, it is known in the north of England from early first millennium BC (van der Veen 1992, 157).

It is noticeable that in all the contexts containing cereal grains, regardless of function or location, there are very few weed seeds, and the majority of these weeds are associated with arable production (Jones 1988). Furthermore, within each context where cereal grains have been identified, there is very little chaff, but that recorded is all from wheat species. The only context with a significant amount of chaff noted was 4104, which is discussed further below. A notable proportion (15-20%) of the cereal grains have depressed sides, which is characteristic of harvesting while the grains are immature, or milk-ripe, and then dried or smoked (Bond 1994, 189; van der Veen 1989, 303). It has been suggested that grain is harvested when milk-ripe for use as animal food rather than as a consequence of climatic constraints on harvesting times.

Overall, the ratios of cereal grains to weed seeds and chaff indicates that the material recovered and identified represents processed crops. Those weed seeds present are of a size similar to cleaned grains, such as bromegrass and plantain, and thus are likely to have been retained with grain through sieving and winnowing. This does not automatically make this a

'consumer' rather than 'producer' site, but does suggest that there was a definite division between harvesting, processing and cooking and/or consumption areas.

The amount of charred plant remains recovered from all of the excavated areas is not great (apart from Pit 4062), although much of the assemblage represents cleaned product, which is either being cooked or stored prior to consumption. The quantity of plant material is in keeping with random, accidental charring episodes which were then dumped as waste material within the pits.

In her analysis of archaeobotanical material from nine sites dating to the Bronze Age through to the Iron Age-Romano British period, van der Veen (1992, 155) suggested the possibility of dividing such sites into two groups: those indulging in small scale subsistence agriculture and those carrying out larger scale, extensive agricultural production. Among the criteria used to distinguish these two groups were the types and quantities of cereals, the weed flora composition and the levels of soil nitrogen (van der Veen 1992, 145). Although the South Elmsall assemblage is comparatively small, and no soil analysis has been carried out, both the cereal assemblage (emmer, barley and some spelt) and the weed assemblage (*Chenopodium* sp., *Rumex* sp., *Polygonum* sp.) are similar to those van der Veen associates with small-scale intensive cultivation based on intensive ploughing methods, and possibly even fertiliser use (van der Veen, 137-8, 145).

Pit 4062, Enclosure B

By far the largest assemblage and the greatest concentration of plant material was obtained from Pit 4062, context 4104, which also contained the remains of at least eleven quern stones broken prior to deposition and metalworking debris. In comparison to the cereal remains from other contexts, 4104 has a greater proportion of chaff, which along with the quern stones, may suggest a deliberate placement of the material, perhaps denoting the undertaking of crop processing or possibly metal working activity. It is noted above that an average of 15-20% of the cereal grains showed characteristic signs of having been harvested while immature, but for the material from context 4104 this rises to over 30%.

Also from 4104 is a quantity of amorphous charred plant material that examination under a low power microscope indicates is plant material that has been heated to a high temperature, and at some stage during this heating process has been in contact with cereal grains. The irregular surfaces of the pieces of amorphous material have indentations and impressions that appear to have morphology similar to cereal grains (most likely wheat). These pieces of amorphous material vary in size, from approximately >2mm^2 to <2cm^2. Although the pieces are organic in origin, they may have some connection with industrial activity.

Radiocarbon Dating

A total of twenty samples from the excavations were submitted for radiocarbon dating, seven each from the Doncaster Road and Field Lane D sites and three each from Field Lane C and Dale Lane sites (Table 8). A number of the samples contained insufficient organic material

for a conventional 'high precision' radiometric count and were therefore dated using accelerator mass spectrometry (AMS). The samples with an 'AA' coding were measured at the University of Arizona AMS facility, the reminder were measured by the Scottish Universities Environmental Research Centre (SUERC). The results were calibrated by SUERC.

The earliest date range achieved was from pit 4001, located near Later Iron Age Enclosure F, which corresponded with the Mesolithic period. As sherds of pottery of Iron Age type were recovered from the same fill, however, the charcoal sample is judged to be residual.

The dates strongly indicate a Bronze Age to Early Iron Age phase of activity within the landscape, with the samples from Roundhouses B and C and Enclosure A all producing the dates from this period. The variation in date between the neighbouring roundhouses is surprising however, as it suggests that they were far from contemporary with one another, which seems somewhat unlikely given their spatial proximity and similarity of form. The variation between the date produced by Enclosure A and Roundhouse E is far wider, however, with Roundhouse E potentially being constructed almost 1000 years after Enclosure A was in use, which again is at odds with the spatial evidence. Given this, it is again possible that some of the charcoal sampled was residual.

The radiocarbon dates obtained for Enclosure B, C and F and their associated features, linear post-alignment 8003 and the burials reveal these to be of Later Iron Age date, with just the metalled surface near Enclosure C and pit 4035 suggesting some continuity of activity into first century AD, possibly after the Roman Conquest. The early medieval date provided by the animal bone from the double ditched trackway, which is clearly integral to the layout of the later Iron Age landscape here, could be seen as evidence for the continued use of this feature after the other features in the area had fallen into disuse, although no other evidence for major activity in this period was identified from the excavations.

The lack of dates from the two samples obtained from post-holes forming part of the possible circular post-hole structure 6004 is disappointing and it remains unclear whether this is indeed a modern feature or an ancient one that has suffered significant and intrusive disturbance.

Table 8: Summary of radiocarbon dating results

Site Code	Context	Feature	Lab. Number	Sample material	Radiocarbon Age BP	cal. date at 1σ	cal. date at 2σ	Delta ^{13}C rel. PDB
SEL	4002	Pit 4001	AA – 26220	Charcoal: *Pomoideae*	7255 ± 50	cal. BC 6128 – 6003, cal. BP 8077 – 7952	cal. BC 6213 – 5980, cal. BP 8162 – 7929	-25.5‰
DRE	2440	Fill of post-hole 2439, Roundhouse C	AA-36888 (GU-8806)	Charcoal: *Alnus/corylus*	3340 ± 45	cal. BC 1686-1526, cal. BP 3635-3475	cal. BC 1740-1518, cal. BP 3689-3467	-25.4‰
FLD	4388	Fill ditch 4387, Enclosure A	AA – 36493 (GU – 8747)	Charcoal : *Corylus*	3175 ± 50	cal. BC 1516 – 1407, cal. BP 3473 – 3268	cal. BC 1524 – 1319, cal. BP 3473 – 3268	-25.2‰
DRE	2576	Fill of post-hole 2585, Roundhouse B	AA-36889 (GU-8807)	Charcoal: *Crategus sp.*	2954 ± 40	cal. BC 1257-1051, cal. BP 3206-3000	cal. BC 1294-1006, cal. BP 3243-2955	-23.9‰
DRE	639	Fill of post-hole 638, Rectilinear Structure 7002/7003	AA-36883 (GU-8801)	Charcoal : *Quercus*	2695 ± 40	cal. BC 896-807, cal. BP 2845-2756	cal. BC 918-799, cal. BP 2867-2748	-23.3‰
FLD	4239	Fill of post-hole 4238, Roundhouse E	AA – 36506 (GU – 8765)	Animal Bone: Cow, right mandible and molars	2565 ± 45	cal. BC 799- 673, cal. BP 2748 – 2622	cal. BC 813 – 542, cal. BP 2762 – 2491	-20.9‰
DRE	2034	Fill of post-hole 2035, Linear post-hole structure 8003	AA-36885 (GU-8803)	Charcoal: *Corylus*	2345 ± 60	cal. BC 409-385, cal. BP 2359-2335	cal. BC 757-214, cal. BP 2707-2164	-23.3‰
FLD	SK4117	Burial group 40004	GU – 7671	Human Bone	2150 ± 70	cal. BC 362 – 105, cal. BP 2311 – 2054	cal. BC 390 – 10, cal. BP 2339 – 1959	-21.3‰
FLD	SK4086	Burial group 40004	GU – 7670	Human Bone	2100 ± 80	cal. BC 340- 35, cal. BP 2289 – 1984	cal. BC 380 – cal. AD 70, cal BP 2329- 1880	-20.9‰
SEL	5006	Fill of ditch 5002, Enclosure F	AA – 26218	Charcoal: *Quercus*	2040 ± 50	cal. BC 349 – 109, cal. BP 2298 – 2058	cal. BC 370 – 50, cal. BP 2319 - 1999	-26.1‰
FLC	3040	Fill of ditch 3039, Enclosure C	AA – 36497 (GU – 8752)	Charcoal : Alder	2145 ± 50	cal. BC 349 – 107, cal. BP 2298 – 2056	cal. BC 362 – 5, cal. BP 2311 – 1954	-25.1‰

Site Code	Context	Feature	Lab. Number	Sample material	Radiocarbon Age BP	cal. date at 1σ	cal. date at 2σ	Delta ^{13}C rel. PDB
FLD	4023	Fill of ditch 4022, Enclosure B	AA – 36495 (GU – 8750)	Animal Bone – Horse right illium/iscium	2145 ± 50	cal. BC 349 – 107, cal. BP 2298 – 2056	cal. BC 362 – 5, cal BP 2311 – 1954	-22.4‰
FLC	SK3059	Burial 30010	GU - 7669	Human Bone	2040 ± 80	cal. BC 169 – AD 51, cal. BP 2118 – 1899	cal. BC 354 – AD 120, cal. BP 2303 – 1830	-21.4‰
FLD	4104	Pit 4062, Group 40008	AA – 36496 (GU – 8751)	Grain: *Triticum*	2070 ± 50	cal. BC 167- 1, cal. BP 2116 – 1950	cal. BC 201 – AD 51, cal BP 2150 – 1899	-21.7‰
SEL	4039	Pit 4035	AA – 26219	Charcoal: *Prunus spinosa*	2105 ± 50	cal. BC 99 – AD 25, cal. BP 2048 – 1925	cal. 165 BC – AD 80, cal. BP 2114 – 1870	-23.8‰
FLC	3182	Metalled Surface 30009	AA – 36798 (GU – 8753)	Animal Bone : Horse (foal) scapula/iscium/femur	1980 ± 55	cal. BC 42 – AD 77, cal. BP 1992 – 1873	cal. BC 106 – AD 130, cal. BP 2056 – 1820	-21.3‰
FLD	4078	Fill of ditch 4079, Track way 40006	AA-25494 (GU – 8749)	Animal Bone - Horse metatarsal and tibia	1110 ± 50	cal. AD 889- 993, cal. BP 1061 -957	cal. AD 780 – 1020, cal. BP 1170 -930	-21.2‰
DRE	2029	Fill of ditch 2030, Ditch One, segment 5007	AA-36884 (GU-8802)	Charcoal : *Quercus*	930 ± 45	cal. AD 1025-1176, cal. BP 925-774	cal. AD 1017-1217, cal. BP 933-733	-24.9‰
DRE	2160	Fill of post-hole 2159, Possible circular post-hole arrangement 6004	AA-36886 (GU-8804)	Charcoal: *Hordeum*	Post 1950 AD	N/A	N/A	-24.5‰
DRE	2164	Fill of post-hole 2163, Possible circular post-hole arrangement 6004	AA-36887 (GU-8805)	Charcoal : *Hordeum*	Post 1950 AD	N/A	N/A	-23.9‰

7 Discussion

The earlier prehistoric landscape

The South Elmsall investigations have revealed evidence for early prehistoric activity in the area. The evidence can, however, only be described as a 'background noise' represented as it is by the thin and wide spread distribution of worked flint, probably representing the periodic use of the landscape by mobile communities, whose activity had little discernable impact on the archaeological record (e.g. Brown *et al.* 2007b). This level of activity is largely in-keeping with that identified on other sites throughout the Magnesian Limestone belt, which typically sees Mesolithic to early Bronze Age remains represented by residual worked flint and the occasional isolated feature (Burgess 2001a; Brown *et al.* 2007b; Roberts *et al.* 2008), such as the cremation pits identified at Barnsdale Bar, approximately 4km to the noth-west (Gidman and Roberts 2005).

The Bronze Age is often better represented than the Mesolithic and Neolithic periods, seeing an increase in lithic finds and funerary monuments, such as round barrows, suggesting perhaps a rise in activity at this time (Burgess 2001a, 258). In contrast to other parts of the country, such as the Thames Valley, evidence relating to Bronze Age settlement has remained elusive in West Yorkshire, and thus the remains identified at South Elmsall, along with those at Swillington Common approximately 20km to the north (Howell 2001), are of significant regional importance.

The Settlement Evidence

Although the dating for the roundhouses at South Elmsall is far from absolute, the weight of the evidence points to them being broadly of Bronze Age to Earlier Iron Age date, with the rectilinear structures probably also belong to latter end of this phase. The five roundhouses lay in two distinct groups, located some 750m apart, and thus represent separate areas of settlement. The radiocarbon dates reveal that Roundhouses A to C were probably constructed earlier than Roundhouses D and E (see Table 8), and the settlements were therefore probably not contemporary. As has already been highlighted, the radiocarbon dates require treating with some caution given the opportunity for residual material to be inadvertently sampled. Indeed, if the dating is taken at face value, this would indicate that Palisade Enclosure A was abandoned some 850 years before Roundhouses D and E were constructed.

The roundhouses all share a number of key features; all are of timber post construction, measuring between 4m and 6m in diameter, with east to south-east facing porched entrances. They correspond well with other excavated Bronze Age structures, including those at Swillington Common (Howell 2001, 67). Some differences can be discerned in each of the structures though, perhaps reflecting a certain amount of individual style or functional need, such as the opposing elongated post-holes and the surrounding curvilinear post-alignment 8001 in Roundhouse C (Fig. 6). The presence of a possible fragment of gully around Roundhouse E, possibly representing the remains of a drip gully or a wall trench, maybe an accident of preservation rather than evidence for a significantly different design, although other examples have been identified at other later Iron Age roundhouses in West Yorkshire

(Burgess 2001b). The porched entrances all appear to vary in plan, with Roundhouse E's possibly being somewhat more simplistic in style, while the evidence for re-cuts in posts forming the entrance to Roundhouses A and B suggests that they were remodelled. An alternative interpretation could see the entrances represented by free-standing posts that were periodically replaced, rather than being integrated with the main body of the structure (I. Roberts pers comm.). The most obvious difference, however, is the position of Roundhouses D and E within Palisade Enclosure A, the significance of which is further explored later.

Although finds from the roundhouses were sparse and with no evidence for hearths being recorded, the structures are nevertheless interpreted as domestic structures. The size of the roundhouses suggests they accommodated single family units, and were perhaps occupied during the lifetime of a single generation, with perhaps successive generations constructing and occupying the neighbouring buildings (e.g. Brück 1999). The possible remodelled entrances in Roundhouse A and B could indicate some longevity of use, however. The limited number of internal features and finds prohibits any discussion about how the internal space within the houses was utilised. Possible activity around the houses could be represented by the double post arrangements, such as the pair located to the rear of Roundhouse D. Although these are undated, similar arrangements have been recorded at many occupation sites throughout the country and represent structures used for any number of purposes, such as a drying rack or looms (e.g. Cunliffe and Poole 1991, 38).

Rectilinear Structures

The chronological relationship between Roundhouses A to C and the nearby rectilinear structures is not clear, although the radiocarbon dates suggests the latter are later in date than the former. Some contemporaenity can not be ruled out given the potentially long period of activity represented by the rectilinear structures, particularly if the remains represent successive use of structures, rather than their simultaneous construction and use.

Rectilinear structures of this form are typically thought to have supported a platform and thus are usually interpreted as raised granaries or stores, although other suggested interpretations include watchtowers, excarnation platforms (Ellison and Drewett 1971), barns, chicken houses or stables (Reynolds 1979, 81). A four-post structure recorded during excavations at Manchester Airport, of comparable size to that found South Elmsall, is interpreted as a possible weaving loom or some form of frame for treating animal hides (Garner 2001, 50). While some of these interpretations appear more plausible than others, it highlights how little these features are presently understood. The lack of finds or known context for the nineteen possible structures of this type found at South Elmsall does little to resolve or further this area of debate.

Single examples or small groups of rectilinear structures are a frequently identified feature on prehistoric sites, although larger groupings such as those at South Elmsall are also been known. A total of thirteen were identified at Temple Point, Colton (Johnson 2002, 36-41; 2003, 8), immediately adjacent to the Swillington Common site, while at least fifteen could be discerned in plan at Micklefield (Brown *et al.* 2007a, 90). Between 115 and 155 four-post

structures were also identified at Sutton Common, South Yorkshire, although these were located within a lowland 'marsh-fort', in quite different circumstances to the other examples highlighted above (Van de Noort *et al.* 2007, 115) At both Temple Point and Micklefield, the structures were seen to vary in size and form, with some appearing to be quite narrow, akin to structures 7015 and 7013. The structures at both sites are dated to the Iron Age period. The dates from Micklefield are based on the pottery recovered from post-holes from three structures and the presence of an Iron Age roundhouse nearby, while Temple Point appear to rely on the proximity of the structures to a single Iron Age type roundhouse and dated examples from other sites. It may be significant, however, the coincidence of the location of the structures from the latter site lie in close proximity to three Bronze Age round barrows, with some being positioned clearly in respect the monument (Johnson 2002, 41).

Some commonalities and differences in regards to the positioning and layout of the rectilinear structures can be observed at these three sites. The structures are situated in an apparently open landscape at South Elmsall and Temple Point, while the Micklefield and Sutton Common examples are positioned within an enclosure. The layout of the structures at South Elmsall, Sutton Common and Micklefield and follow a common alignments, with those at the latter site exhibiting a north-west to south-east trend, parallel to the enclosure ditch (Brown *et al.* 2007a, 90). Those at Sutton Common were arranged into rows, with up to six structures in each, the orientation of which respected the alignment of the nearest line of defences (Van de Noort *et al.* 2007, 115-6). The majority of the South Elmsall rectilinear structures ran on a broadly north-south alignment, with most forming a linear group, which can be seen to mirror the alignment of the later Iron Age Ditch One and its possible post-built precursor (8003). It is also possible, however, that they were situated in respect to an unidentified feature to the east of the site, such as a trackway, and thus may be comparable to those at Temple Point which can be seen to be concentrated close to the junction of two trackways (Johnson 2002, 41). In each case, the similarity in the positioning of the structures further supports the notion that these structures tend to be broadly contemporary with one another.

A gap possibly representing a routeway through the rectilinear structures was evident at the Micklefield site (Brown *et al.* 2007a, 91), reminiscent of the structured layout of 'granaries' observed at some hillfort sites, including Danebury (Hants) (Cunliffe 2005, 412). The clustering of such structures within sites has led to the interpretation of them as being 'centralised storage' areas or zones (see Gent 1983). In many instances, although by no means all, these 'storage' areas are located away from the main focus of settlement, as is potentially the case for the South Elmsall examples, possibly as a means of reducing the risk of fire (Cunliffe 1991, 411), although those found in a central location within a settlement (e.g. Micklefield), would have perhaps been afforded greater protection from outsiders (Brown *et al* 2007a, 93).

Also worthy of note is the possible outlying rectilinear structure, 7019, located at the southernmost end of the Doncaster Road site. This structure not only differed from the others because in its location, but by the presence of the twelve large fragments of slag, some

probably derived from the furnace wall, found in the northern most posthole (2182, fill 2181). If this material was used as a packing material then its seems odd that it was not also used in the adjacent post-holes. An alternative interpretation was that this represents a special deposit. Such a practice is suggested in regards to a large quantity of charred barley and wheat recovered from a post-hole at Micklefield (Brown *et al.* 2007a, 92-3), while 55 of the structures at Sutton Common were seen to contain deposits of charred grain in one post-hole, more often the south-west corner one (Van de Noort *et al* 2007, 126, 133). In all instances, such a deposit is thought to have been undertaken during the construction of the structure, and is probably directly associated with the purpose of the structure.

The development of an enclosed landscape

The most obvious difference between the two areas of earlier settlement identified at South Elmsall concerns the presence of Palisade Enclosure A. For reasons already outlined, it is assumed that Roundhouse D and E are contemporary with Palisade Enclosure A and therefore represent an early example on an 'enclosed settlement', a pattern which became more common as the Iron Age progressed (Burgess 2001b). The evidence for an earlier Iron Age date for this settlement, as opposed to a Bronze Age one, may go some way towards supporting this notion. In contrast, the lack of evidence for a continuous boundary around Roundhouses A to C suggests that this was 'open settlement'.

A similar pattern at activity was observed at Swillington Common, with an earlier open settlement gradually giving way to an increasingly enclosed landscape (Howell 2001). This site also revealed the remains of a palisade enclosure, although in contrast to the South Elmsall example, it was represented in the archaeological record by 163 closely spaced post-holes, with an interval of 6.6m in the south-eastern corner, interpreted as a possible entrance way. The radiocarbon dates provided a date of 790-400 BC, 758 – 261 BC and 397-167 BC, suggesting could be of earlier Iron Age date. The area enclosed by the post-holes was much smaller in size at 575m^2 and it contained no obvious remains of structures of a domestic type, although the remains of a four or five post structure was integrated into its north-eastern side, interpreted as either another entrance or possibly a small tower (Howell 2001, 60-61). The purpose of the Swillington Common palisade enclosure thus remains open to speculation.

Given the presence of at least two roundhouses within Palisade Enclosure A, it is assumed that its main purpose was to define an areas used for domestic occupation. The fact that the structures are located within the southern part of the enclosure, with relatively few remains being identified in the northern part of the enclosure may indicate that this area was used for some other form of activity, perhaps for corralling livestock. Further evidence for the dual purpose of this enclosure is provided by the presence of two entrances, both accompanied by outwards projecting 'porches'.

There has been much discussion about the reasons for a shift to enclosed settlements in the Iron Age. The potential functional role of an enclosure is clear, such as affording protection from predators, however this does not account for why these factors suddenly became an

issue at this time. It has been suggested that the development of enclosures may have represented changes in the social and symbolic views of the population, or wide ranging changes in the structure of society, such as a rise in tribal territoriality (e.g. Hingley 1984, Bowden and McOmish 1987, Collis 1996, Rees 2008). The physical demarcation of the landscape likely had a major impact on those people occupying or utilising the land, as the creation of a fixed boundary would have marked the visible division between what was classed as being within the settlement, as opposed to that outside it. The act of enclosure can also be viewed as a means of conveying the belief of ownership and control on the land (Collis 1996).

Enclosures probably do not represent an introduction of a sense of territoriality, rather they probably demonstrate a change in the way of this was expressed, perhaps replacing the use of monumental structures in the Neolithic and early Bronze Age periods (Pryor 1998, 30). Such a change may reflect a shift in the structure of family unit, with maybe a clearer sense of who 'belonged' to the family as opposed to those outside it, which possibly emerged as the population became more sedentary as agricultural activity intensified, which in turn led to an increase in the sense of ownership of the land (e.g. Thomas 1997, 215). It has also been suggested that the physical appearance of any enclosure boundary, including the profile of the ditch, should be viewed within a symbolic framework, reflecting as it may long held family traditions and evidence of decision making based on a set of beliefs and understandings (Rees 2008, 73).

Thus, it is possible to view the creation of Palisade Enclosure A as an expression of ownership and control over the land by its occupants. They were able to control who or what had access to this area, and determine when this could occur. The presence of two entrances, one seemingly leading into the main area of domestic activity while the other possibly allowed access to some other area of activity, could indicate that access to some parts of the enclosure were prohibited. The occupants were also able to control what the entrants to the enclosure were and were not able to view on arrival; somebody accessing the south-eastern entrance to Palisade Enclosure A would have probably been able to see clearly the entrances to Roundhouse D and possibly Roundhouse E.

While no conclusions can be drawn from such speculations, they nonetheless provide an opportunity to explore why the two areas of settlement at South Elmsall are manifest differently. They also suggest a fundamental change in the way the landscape was viewed and possibly utilised. But such ideas can lead to the oversimplification of the evidence. As has already been highlighted, the definition of an 'open settlement' presumes that enclosure has to be in the form of structure, a ditch and/or bank, which completely surrounds the area of settlement. However, it could be argued that the presence of the curvilinear post-built structure around Roundhouse C should also be viewed as a statement of symbolic and social attitudes, representing as it does a physical boundary which perhaps defined a 'settlement zone', as well as restricting and defining access to the area. Perhaps this boundary represents

the gradual evolution and development of ideas of enclosure, which were later manifest in more substantial and, archaeologically, more visible form.

The Later Iron Age landscape

Continuity, change and development

The earliest elements of Later Iron Age landscape indentified at South Elmsall are probably the long, and somewhat irregular linear features, thought to represent the boundaries of large fields. The segmented and sinuous form likely indicates that they were accompanied by a bank, which was rebuilt periodically. In two instances, the line of these boundaries is seen to run parallel to linear post-holes alignments (8003 by Ditch One and 351 by Ditch Eight). The coincidence of the parallel alignment of these post-holes and ditches is such that some form of relationship can be inferred, although how they relate chronologically can not be confirmed. One perhaps convenient way to interpret this is with the post-hole alignments predating the ditched linear boundaries, with the former reflecting the apparent wide use of timber palisades, such as those seen in early examples of enclosures, including Enclosure A (Burgess 2001b, 264), and this is in part supported by the broad and potentially early radiocarbon date from one of the post-holes in 8003 (cal. 757 BC to cal. 214 BC, Table 8, AA-36885 (GU-8803)).

In other words, this would suggest a progression from the use of timber posts for the division and enclosure of the land, to the use of banks and ditches. The replacement of timber palisades with ditches and banks is a not well recorded phenomena in respect to field boundaries, although it has been noted at a number of enclosures, including Dalton Parlours (e.g. Wrathmell 1990, 275). The progression from the use of timber palisades to a ditch and bank may have been more common than is at present suggested in the archaeological record as the act of digging and remodelling of the ditches may have destroyed the more ephemeral remains associated with timber palisade structures (Burgess 2001b). The reasons for the change from timber to ditches and banks may have been due to the human effort involved in the collection and preparation of the timber, along with that required for the actual construction of the boundary, compared to the energy expanded during the digging of the ditches and banks. The coincidence of this change in architecture and the expansion in the division of the landscape may be seen as supporting this notion.

The precise date for the construction of the ditch and bank field system at South Elmsall is again unknown, although its sinuous and segmented form is indicative of its establishment being perhaps in the earlier end of the Later Iron Age, its irregular form perhaps being due to the landscape still containing large tracts of woodland at this time (Roberts 2005, 211). Few remains were recovered from the fill of the field boundaries, although those items that were recovered will reflect the date of the final silting up of the features, and thus can not assist in dating the establishment of such features (Burgess 2001b). The shape and form of these boundaries has been noted on other sites in the region, such as Barnsdale Bar (Grassam and Ford 2008), and in are thought in some instances to have originated in the Middle Iron Age

period (Brennard *et al* 2007). While such a date for construction can not be proved for South Elmsall, the evidence for earlier settlement activity here may lend support to this assertion. Much of the Magnesian Limestone region was probably still covered in woodland until the Later Iron Age period, however some clearance may have already been undertaken in those areas where earlier activity is attested (Roberts 2005, 211).

Unlike other areas where early enclosure is evident, such as Swillington Common, the position of Palisade Enclosure A appears to have had little bearing on the layout of the later Iron Age landscape. Moreover, the imposition of the double ditched trackway through Enclosure A suggests a significant break between the two phases of activity, whereupon all traces of the enclosure, both physically and cognitively, had been lost. While this observation alone should not be taken as evidence for the lack of continuity of the use of the landscape as it is not clear at what point the trackway was constructed, it does however highlight how gradual and piecemeal such changes probably were.

Trackways often formed an early part of the Iron Age landscape as seen at Swillington Common (Howell 2001), and in some instances perhaps represent the physical demarcation of an earlier and long established route (Chadwick 2009, 82). An early date for the establishment of the South Elmsall trackways has yet to be proven for certain archaeologically, given the lack of diagnostic material recovered it, although an Iron Age date is probable given its relationship to the other features identified. The north-south section of the trackway clearly post-dates the use of Palisade Enclosure A, so this element at least must be middle to later Iron Age in date, while the location and orientation of the western linear boundaries and Enclosure B corresponds well to the east-west section of trackway. It may also be noteworthy that the cropmark evidence to the south of Field Lane shows further linear features whose orientation appears to respect the line of the trackway, perhaps suggesting that the linear features here post-date the establishment of the trackway (Fig. 2).

Landscape use

An increase in the number of field boundaries and enclosures is a feature common to many Later Iron Age landscapes throughout the region, and many of the reasons cited for this are the same as those presented above in relation to Palisade Enclosure A. A further possible factor for the increase in activity, however included a rise in population, which in turn may have resulted in the need for more intensive exploitation of arable resources and livestock (Knight 2007, 193).

The importance of livestock management is indicated by Enclosures C to F, all of which are thought to have been primarily associated with some form of stock control. It is also possible to infer from the arrangement of internal features (gullies 066 and 076a) within Enclosure B that it too was utilised for livestock at some point. Interpreting the intended purpose of such enclosures must be approached with caution, especially given the potential impact of truncation on the survival of the more ephemeral archaeological remains, such as post-holes

and beam slots and there can be a tendency to proscribe a livestock or ancillary function onto those enclosures merely based on a lack of internal features or finds.

The presence of the double ditched trackway points to the importance of the movement of livestock through this landscape. The trackway was possibly accompanied by banks on either side, which in conjunction with the ditches controlled access to the fields. In contrast, little evidence for arable activity was recovered during the excavations. Cereal remains were identified in some of the features inside Enclosure B, along with a large cache of broken quern stones. The cereal remains, however, appear to represent the remains of consumption rather than crop processing, which lends weight to the assumption that Enclosure B was at some point associated with occupation. A proportion of the cereal remains are thought to represent the remains of animal fodder, which again points to the importance of livestock in the area.

The presence and density of features in Enclosure B and the comparatively large finds assemblage recovered from the enclosure ditch and internal features demonstrates that it was the focus of some form domestic activity in the later Iron Age. No evidence for any form of structure, such as a roundhouse, was identified within the area investigated, although it is conceivable that such remains lay in the southern extent of the enclosure complex. If the enclosure was only occupied periodically then there is potential for a more light weight structure being used for occupation, which has left no trace in the archaeological record.

An alternative explanation is that Enclosure B was utilised for activities which supported a nearby settlement, rather than occupation in its own right, as may be suggested by the finds assemblage and features identified. At least two internal sub-divisions were identified in the east of the enclosure, while possible linear arrangements of post-holes in the west may have screened off other areas. A four-post structure was identified within one of the sub-divisions, possibly suggesting some crop storage took place there. The deposit of querns in pit 4062, alongside charred grain and metal work, along with the hammerscale in pit 4122, may indicate crop processing and/or industrial activity, probably smithing, here or nearby.

Evidence for iron production was also identified in the western end of the area, to the south of Doncaster Road Area W, and in association with the metalled surface, adjacent to Enclosure C, perhaps involving the repair rather than the manufacture of existing objects. The surface of water worn pebbles and animal bone, seems to have been deliberately laid in order to provide a solid footing in order that this area could be utilised, although the effort required to establish such a surface seems a little at odds with the apparent small-scale nature of the metal working activity undertaken here. It maybe that this area also served another function, however the lack of evidence for butchery from animal bones here refutes any previous speculation that this represents a carcass processing site.

Funerary and ritual activity

A total of six inhumations were identified during the excavations; four had been interred a group approximately 120m to the west of Enclosure B, while the remaining two had placed in

association with probable stock enclosures D and F. The number of individuals represented at South Elmsall represents a very small proportion of those who actually inhabited the landscape in the later Iron Age. Later Iron Age burials are rare and it maybe that inhumation was not a widely practiced custom but one preserved for certain members of society or where death occurred in a particular circumstance (Chadwick 2009, 125). The evidence from South Elmsall is in-keeping with rites seen throughout West Yorkshire, with no one burial practice appearing to dominate (Burgess 2001b, 268).

The grouped inhumations had been positioned at the junction of the trackway, in between the ditches, and while the location maybe a coincidence, the dating would nonetheless suggest some contemporanity. It is possible that the cross roads held a specific relevance in local beliefs, or simply facilitated the position of these individuals to be remembered without the use of some form of visual marker, such as a mound. A horse burial at Easington, East Yorkshire, occupied a similar position at the junction between two roads, and may have been interred as a "foundation" deposit when the trackway and neighbouring enclosure and roundhouse structure was established during the early Roman period (Fern 2007, 71). Alternatively, it maybe that it was the position of the burials that subsequently influenced the layout of trackway, as has been supposed at Barnsdale Bar, where a field boundary was later established immediately alongside an earlier burial (Grassam and Ford 2008).

The burial in Enclosure D had been placed near the south-western corner of the enclosure, perhaps reinforcing the significance of the relationship between boundaries and burials (Parker Pearson 1999). In contrast, it is not clear if the partial remains of an adult female recovered from pit 4015 pre-dates or post-dates the use of Enclosure F, although it maybe that again the position of the enclosure ditch was influenced by existing features. The fragmentary nature of this burial, along with its deposition in a pit, is in marked contrast to others identified. Although fragmentary, the remains were clearly articulated and may have therefore been removed prior to deposition, perhaps as part of a ritual.

An interpretation of 'ritual' is often applied to archaeological deposits which appear to have no rational explanation or do not clearly represent a mundane activity. Such an explanation is often ascribed to 'structured' or 'placed' deposits, whereby an item such as pottery, animal or human remains or metalwork, has been deliberately deposited within a context, often a pit or a ditch terminus. Issues arise, however, when determining which deposits merely represent the disposal of rubbish, compared to those objects which have deliberately chosen for deposition as part of some form of ceremony or religious act. For instance, while it is evident that the partial human remains in pit 4015 were interred through human agency, it is not possible to know is whether the separation of the body prior to internment represented the important part of the ritual or whether it was the placement of it in the pit which was significant (Chadwick 2009, 112; Brück 1999).

The contents of pit 4062 in Enclosure B, which yielded around 55 fragments of from at least twelve querns, along with charred grain, a dump of burnt material, metal objects, animal bone and pottery is difficult to explain away as normal rubbish deposition. There is no evidence

that the physical act of deposition within the pit itself constituted a ritual activity. Rather, the symbolism may have been manifest through the act of breaking the querns, or the collection of the individual objects by perhaps one or more people and their transportation into one place.

Querns in particular, either whole or fragmented, in particular are a commonly encountered in 'placed' deposit in Iron Age and Romano-British contexts throughout Britain. Regional include those from two pits excavated inside an enclosure at Parlington Hollins (Holbrey and Burgess 2001) and from roundhouse gullies at Dalton Parlours (Buckley and Major 1990) and Moss Carr, Methley (Roberts and Richardson 2002). One possible explanation for this is that querns were possibly imbued with a ritual meaning due to the role they played in the cycle of arable production, particularly in how they are used to process and transform the harvested crops into food (Hingley 1992).

A second pit, also located in Enclosure B, contained a large quantity of hammerscale along with a fragment of saddle quern and animal bone. At face value, the contents of this pit may point simply to the undertaking of smithing activity in the area, however given that lack of similar remains the neighbouring features, it appears the remains were deliberately selected and brought here for deposition. This would again suggest an activity which carried some symbolism or specific purpose outside the realms of rational explanation.

Although undated, a complete cattle carcass and the three partial examples may also represent some form of ritual activity. Animal burials are a common feature on Iron Age and Romano-British sites, such a Micklefield where partial, semi-articulated and a complete examples of cattle and dog were recorded in pits (Brown *et al.* 2007a, 97). Given that these animals were not consumed after death, indicates that were not viewed as appropriate for consumption for some reason. Perhaps the burial represented some form of sacrifice in order to appease a deity. Alternatively, the flesh might have been viewed as unclean or unsafe to eat because of some illness the animal exhibited or the way in which it died.

Post- Iron Age Activity

There is little in the way of archaeological evidence to distinguish Later Iron Age from early Romano-British activity in West Yorkshire. Pottery types and styles classed as 'Roman' do not appear to have been much in use prior to the early 2nd century, while coinage and metal finds are rare outside of military, urban or 'high status' sites (Chadwick 2009). The lack of evidence for a transition period is probably because life for most, particularly in rural settings, remained unchanged after the arrival of the Roman military forces in *c*. AD 70, and there is, archaeologically, nothing to find.

Continuity into the Romano-British period is also often represented by the straightening and remodelling of existing field boundaries and enclosures, along with the continued sub-division of existing parts of the landscape, such as that seen at Swillington Common (Howell 2001, 65). A similar pattern of restructuring and expansion and can also be discerned on sites investigated near South Elmsall, including the Barnsdale Bar quarry site (Burgess 2001c;

Grassam and Ford 2008) and along the route of the Hemsworth Bypass (Weston in prep). In contrast to these sites, the archaeological evidence from South Elmsall suggests little continuation of activity much beyond the end of the 1st century AD. A small quantity of pottery of potentially Romano-British date, including a sherd of grey ware, was found in upper fills of Enclosure B, indicating that it had probably gone out of use by this time, while a post-hole in Palisade Enclosure A also produced a small fragment of grey ware. The existing linear boundaries, however, do not exhibit signs of remodelling and straightening, and neither is there any suggestion of any additional sub-division. The evidence therefore points to the large scale abandonment of the site by at least the 2nd century.

8 Conclusions

The investigations at South Elmsall have found and investigated prehistoric settlement of Bronze Age and Earlier Iron Age date, that are under represented in the West Yorkshire archaeological record. The largely unenclosed nature of the activity at this time makes identifying such features from aerial photographs or geophysical survey almost impossible, and even the somewhat shallow and ephemeral nature of the gully defining Palisade Enclosure A was invisible in the remote sensing data. Had it not been for the presence of the double ditched trackway and the fortuitous position of an evaluation trench, then this enclosure and its internal features may never have been located.

As predicted, much of the features identified during earlier evaluation work were dated to the Later Iron Age, a fact that further reinforces the evidence for extensive rural activity at that time throughout the Magnesian Limestone belt in West Yorkshire.

Unlike other sites in the area, the South Elmsall landscape does not appears to have been exploited in the ensuing Romano-British period. This again may be simply because there is a lack of diagnostic finds relating to this period, however the landscape itself exhibits little to indicate its continued use. The reasons why this part of the landscape was abandoned is not clear, however it may have been due to other, perhaps more convenient, fertile, areas being cleared.

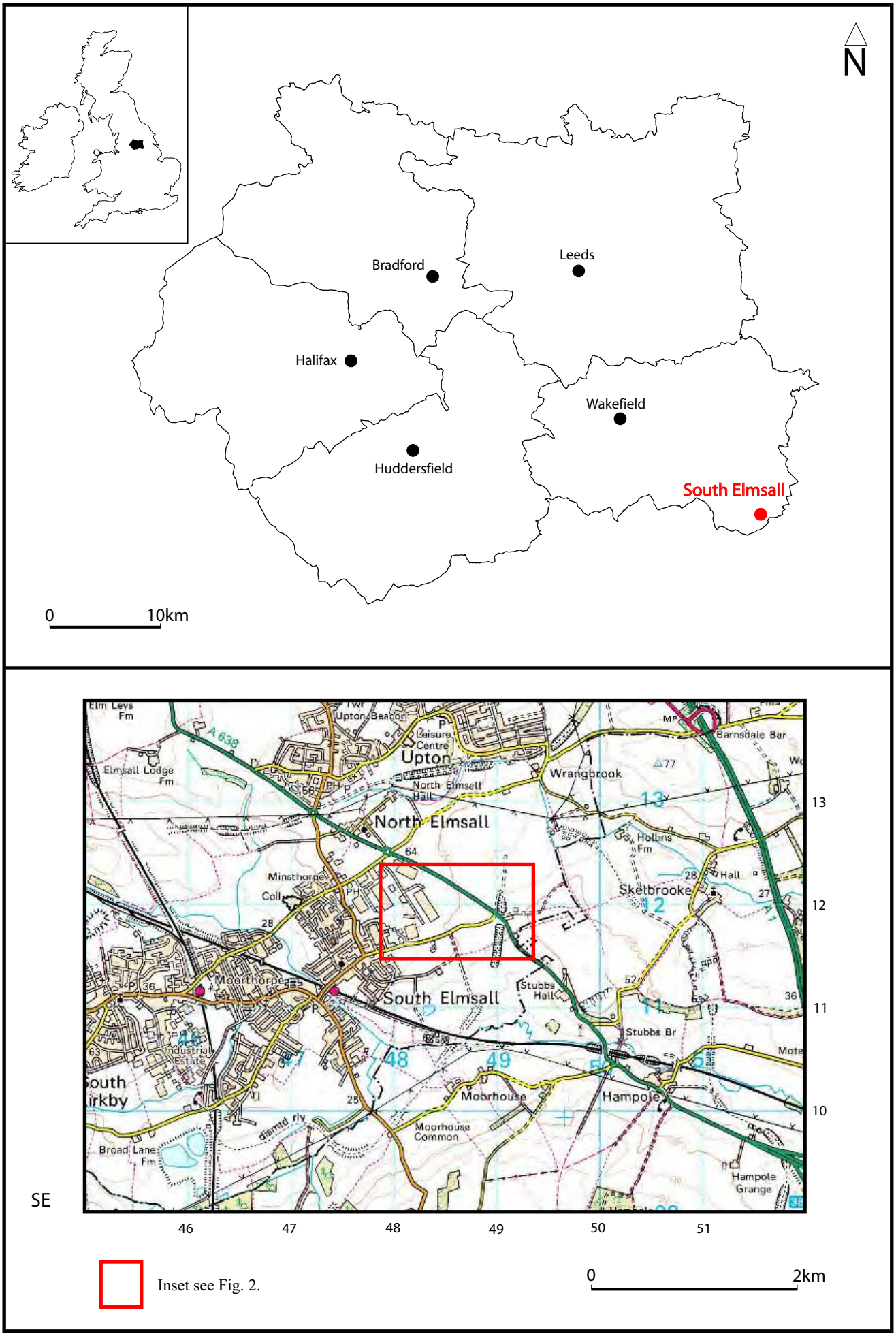


Fig. 1. Site location

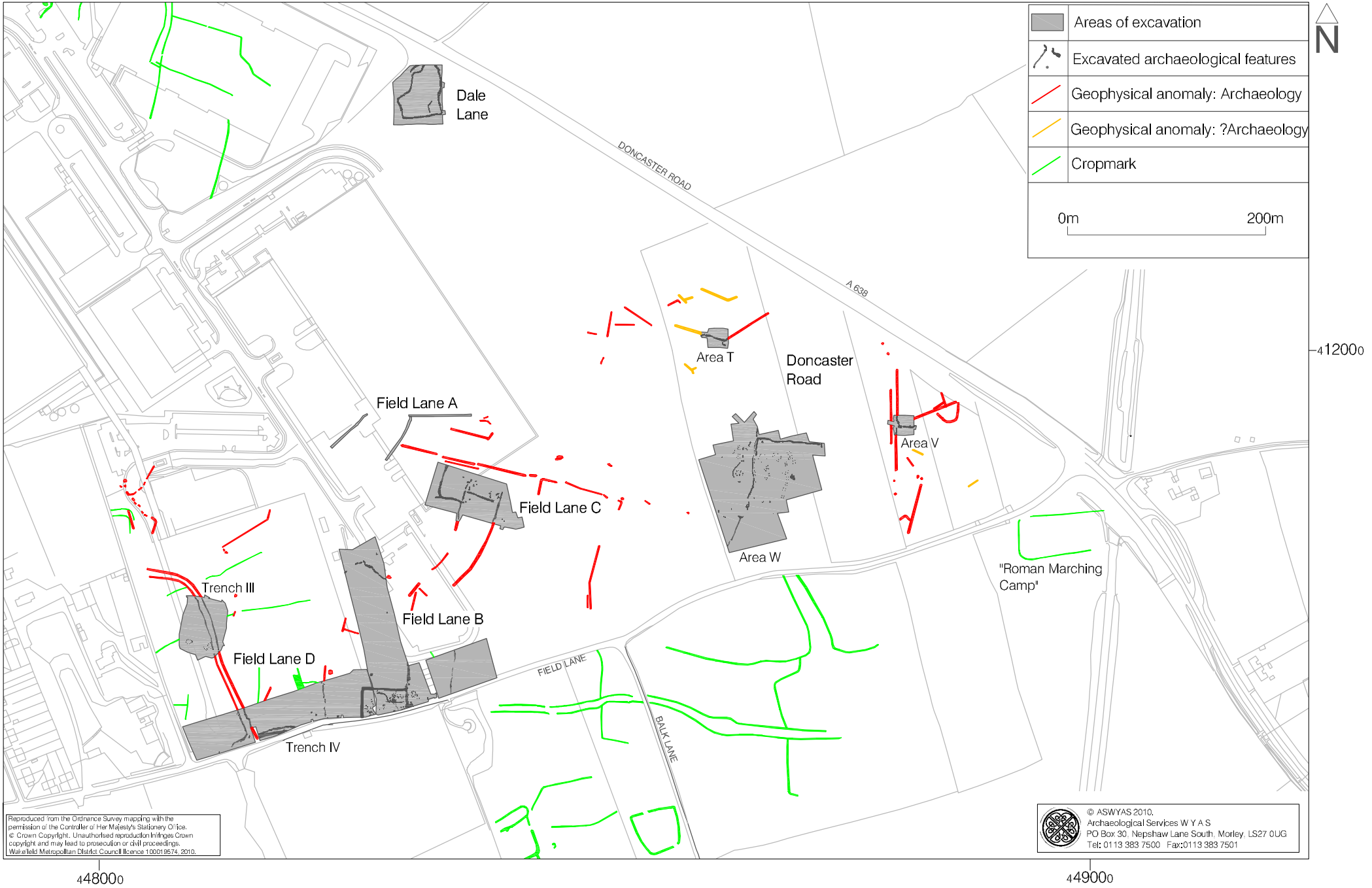


Fig 2. Detailed site location plan, showing all areas investigated (Scale 1:5000)

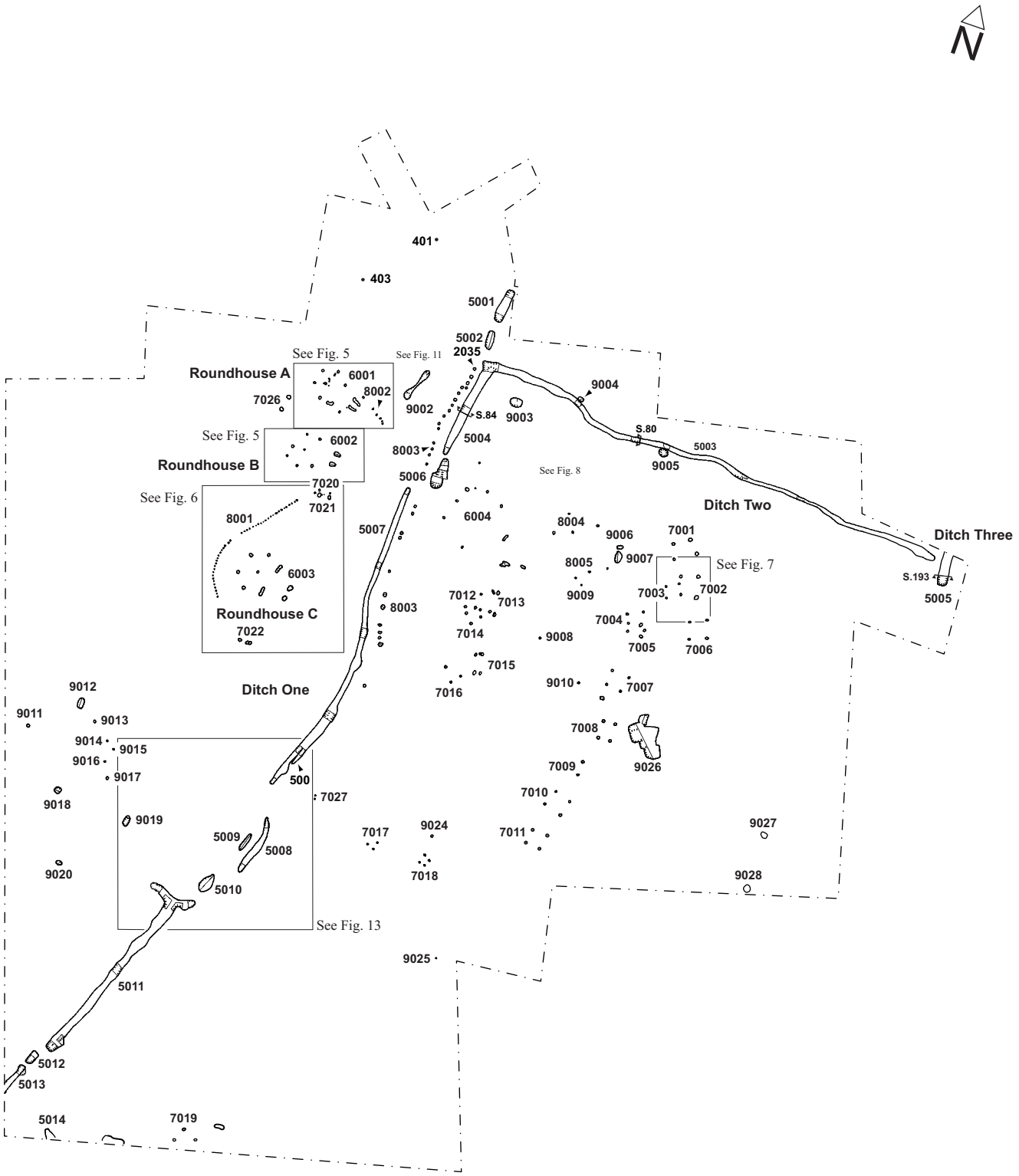


Fig. 3. Plan of Doncaster Road Area W

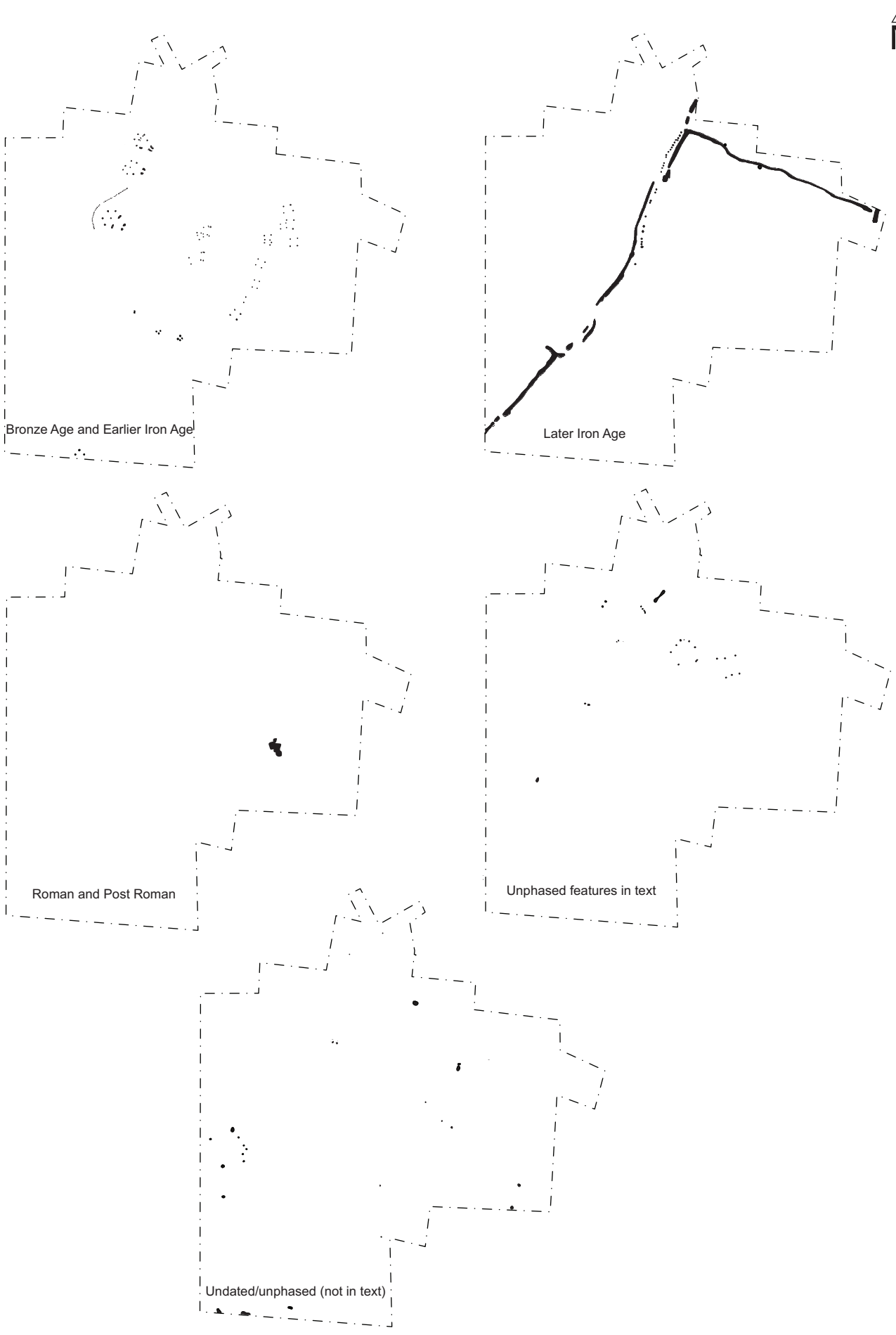
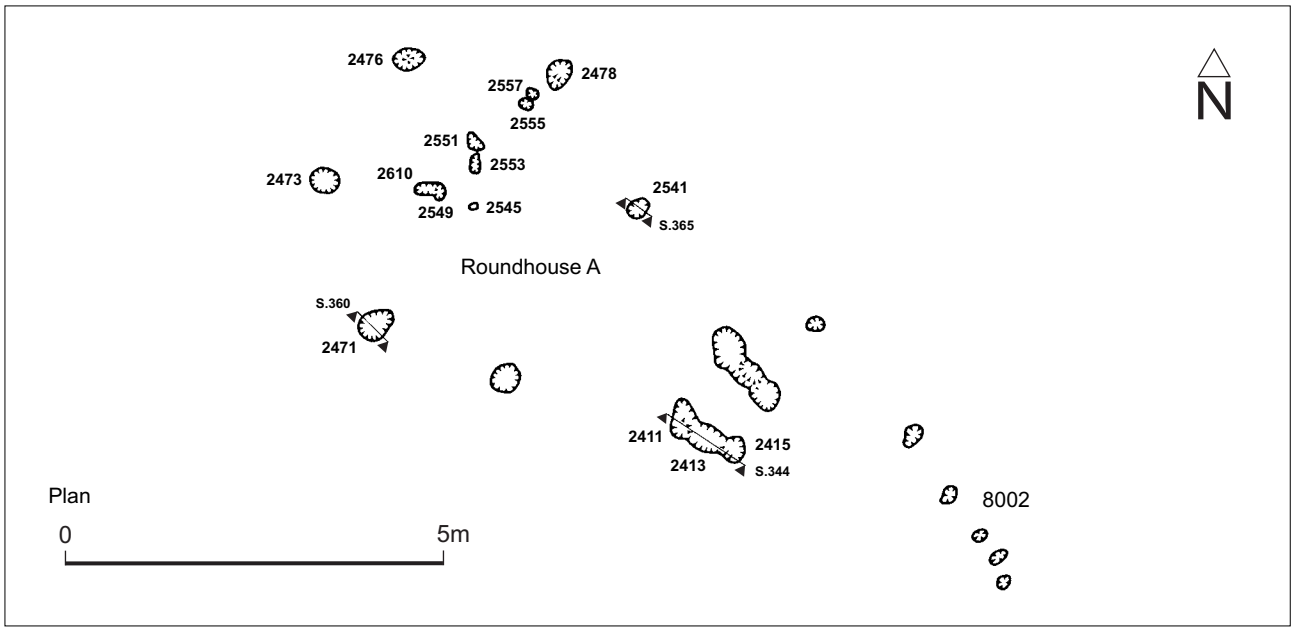
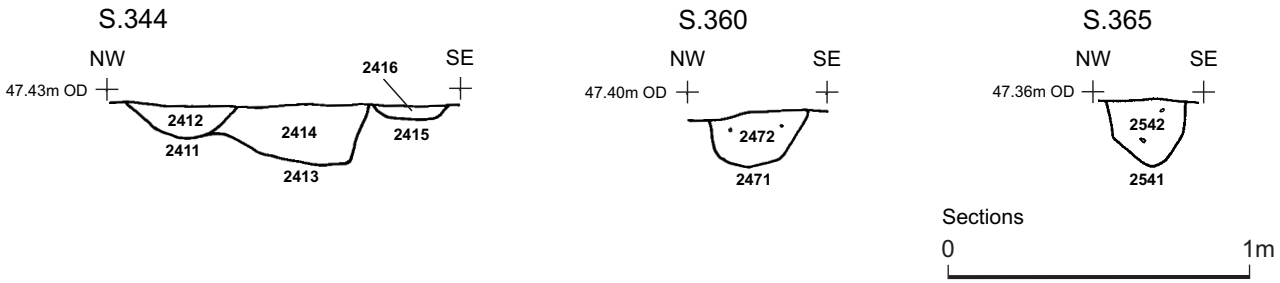
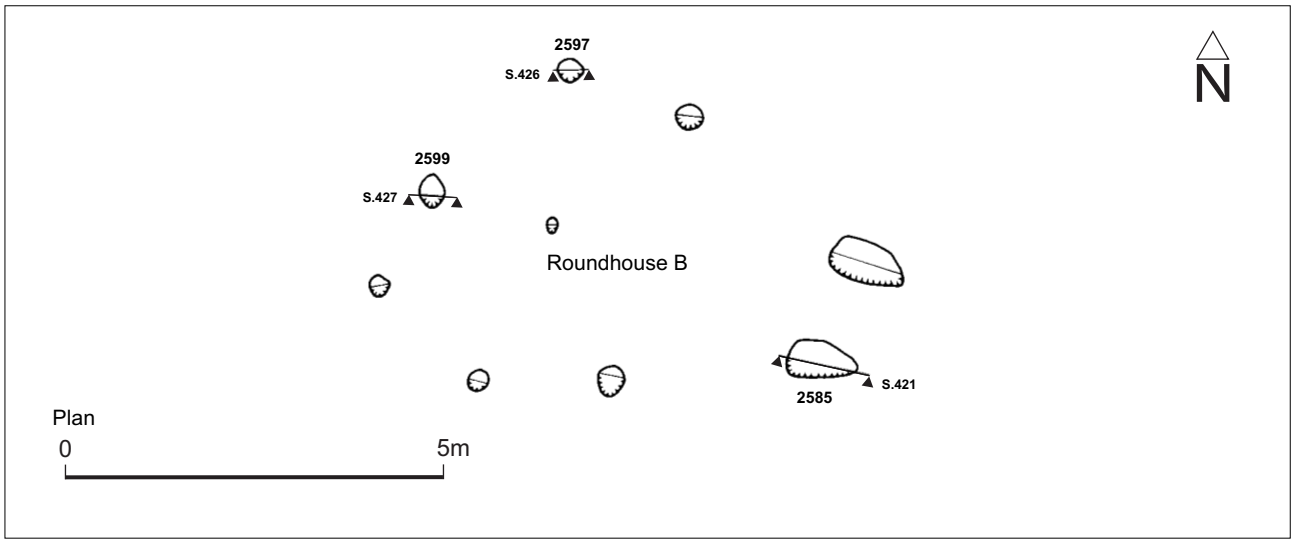


Fig. 4. Phase plan of Doncaster Road Area W







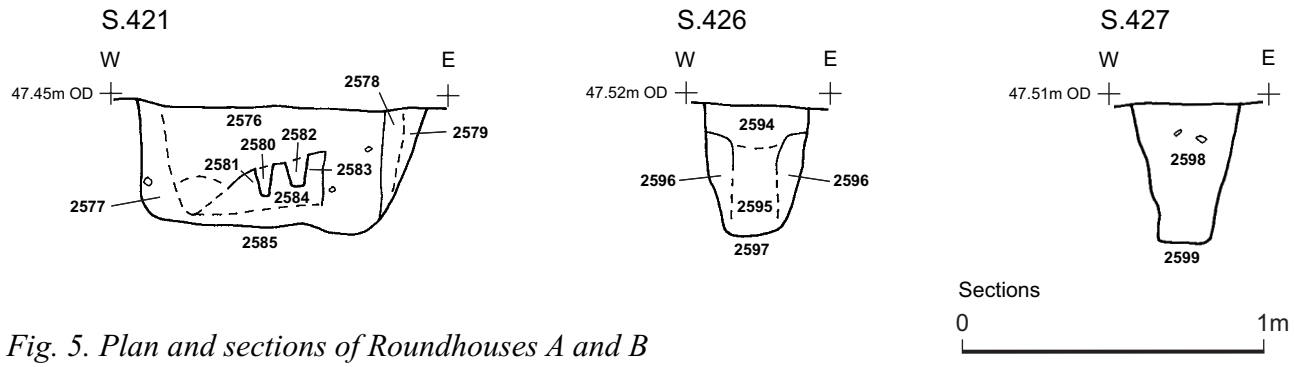
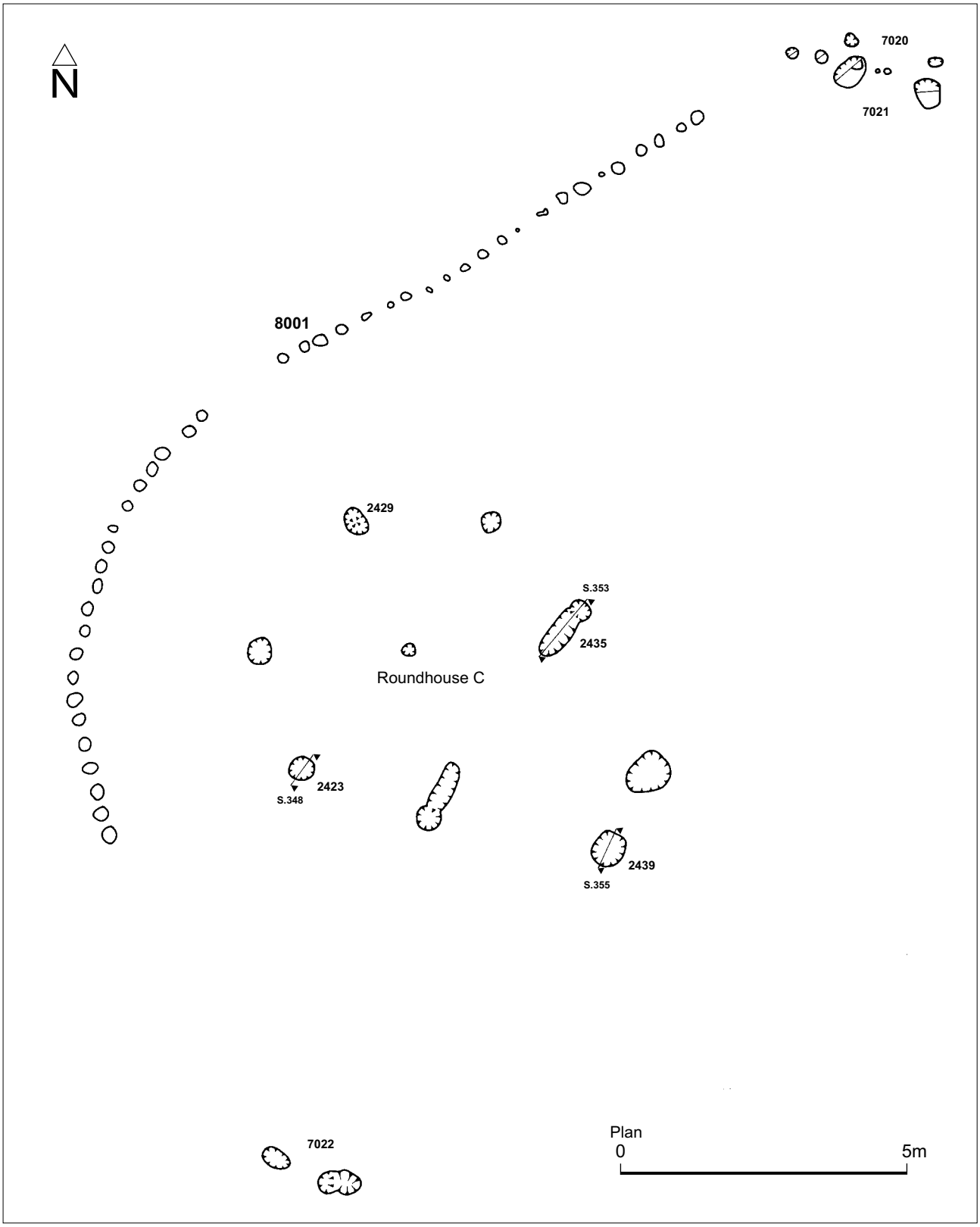


Fig. 5. Plan and sections of Roundhouses A and B



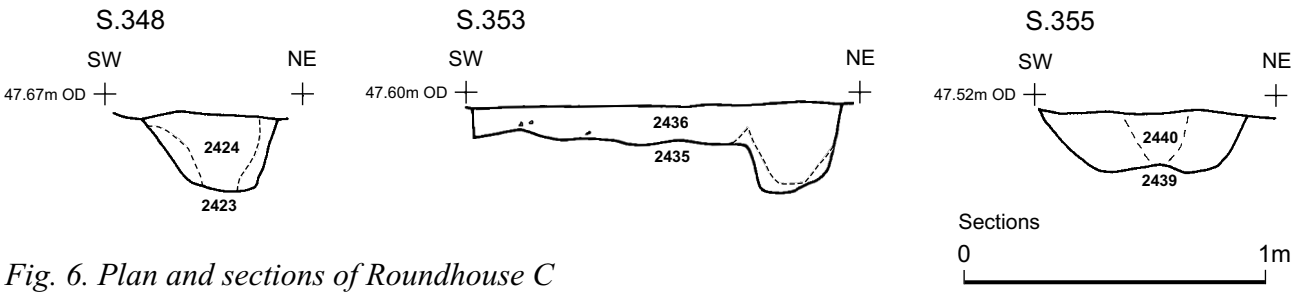


Fig. 6. Plan and sections of Roundhouse C

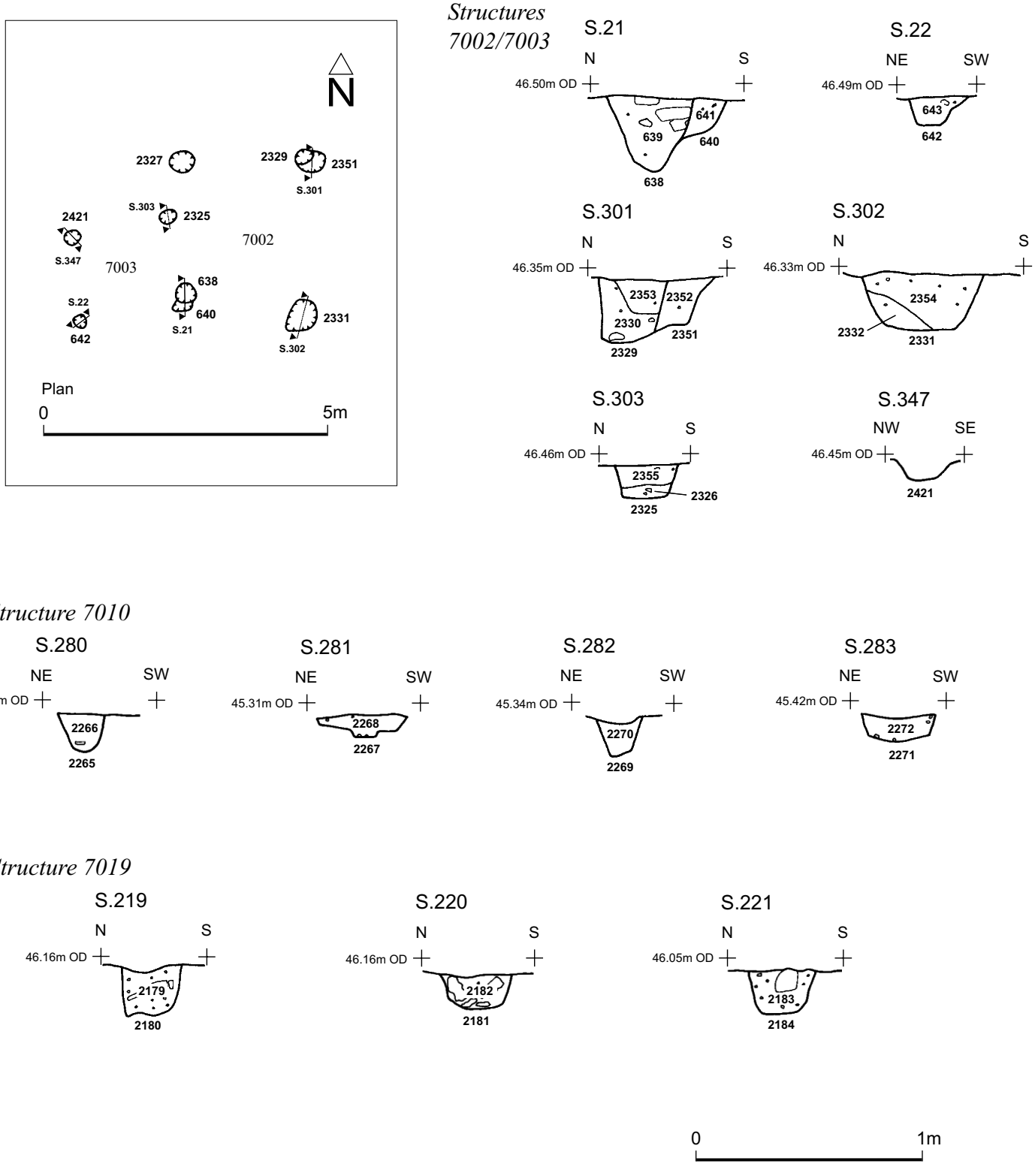
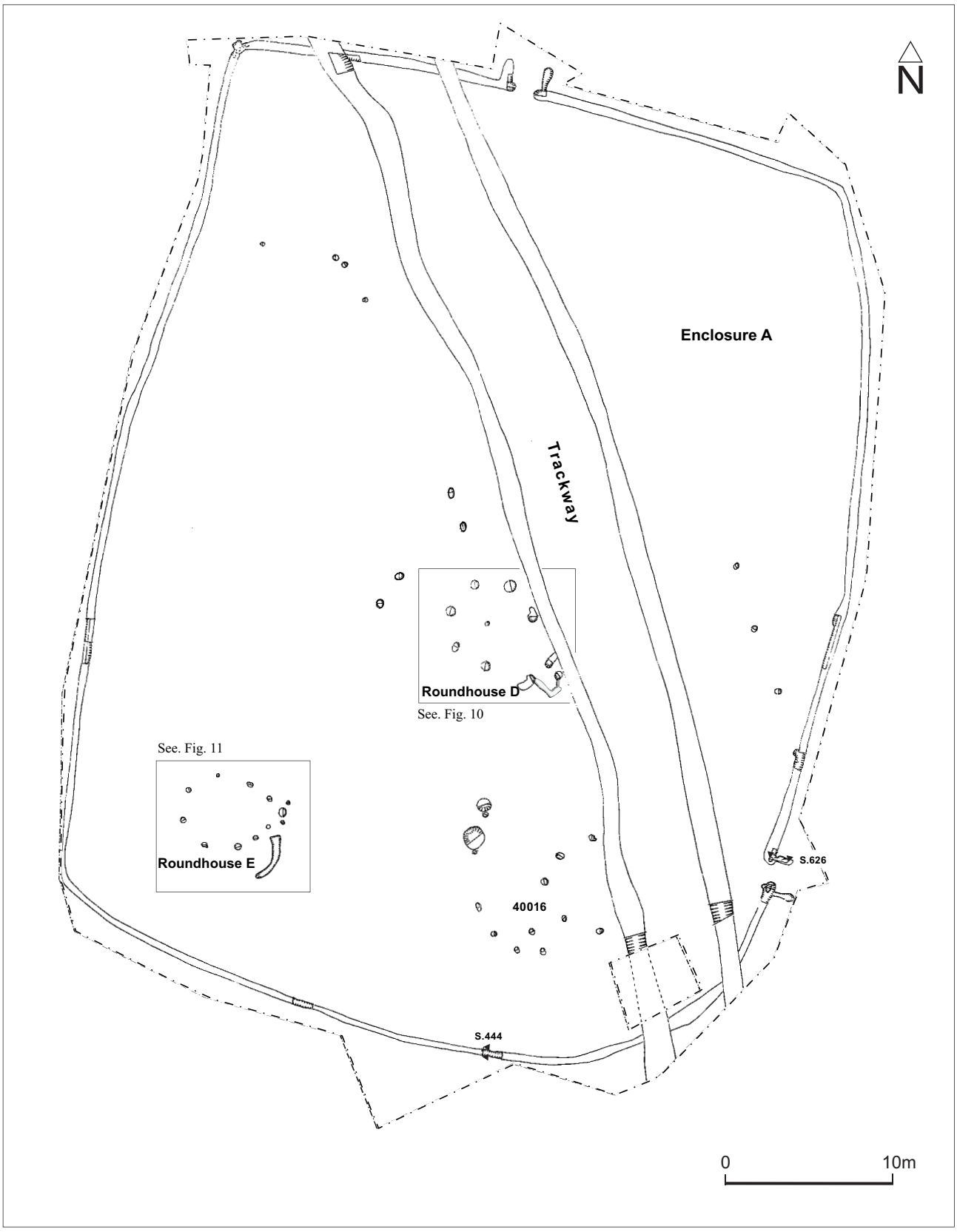


Fig. 7. Plan of Rectilinear Structures 7002 and 7003 and sections of 7002, 7003, 7010 and 7019



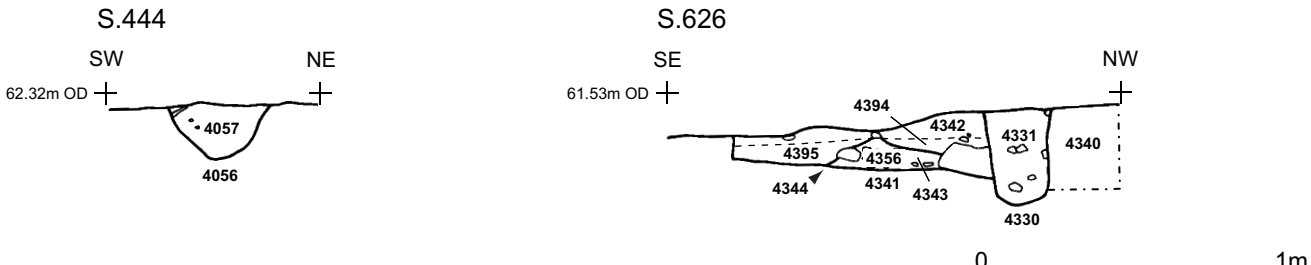


Fig. 8. Plan of Field Lane D Trench III and Palisade Enclosure A sections

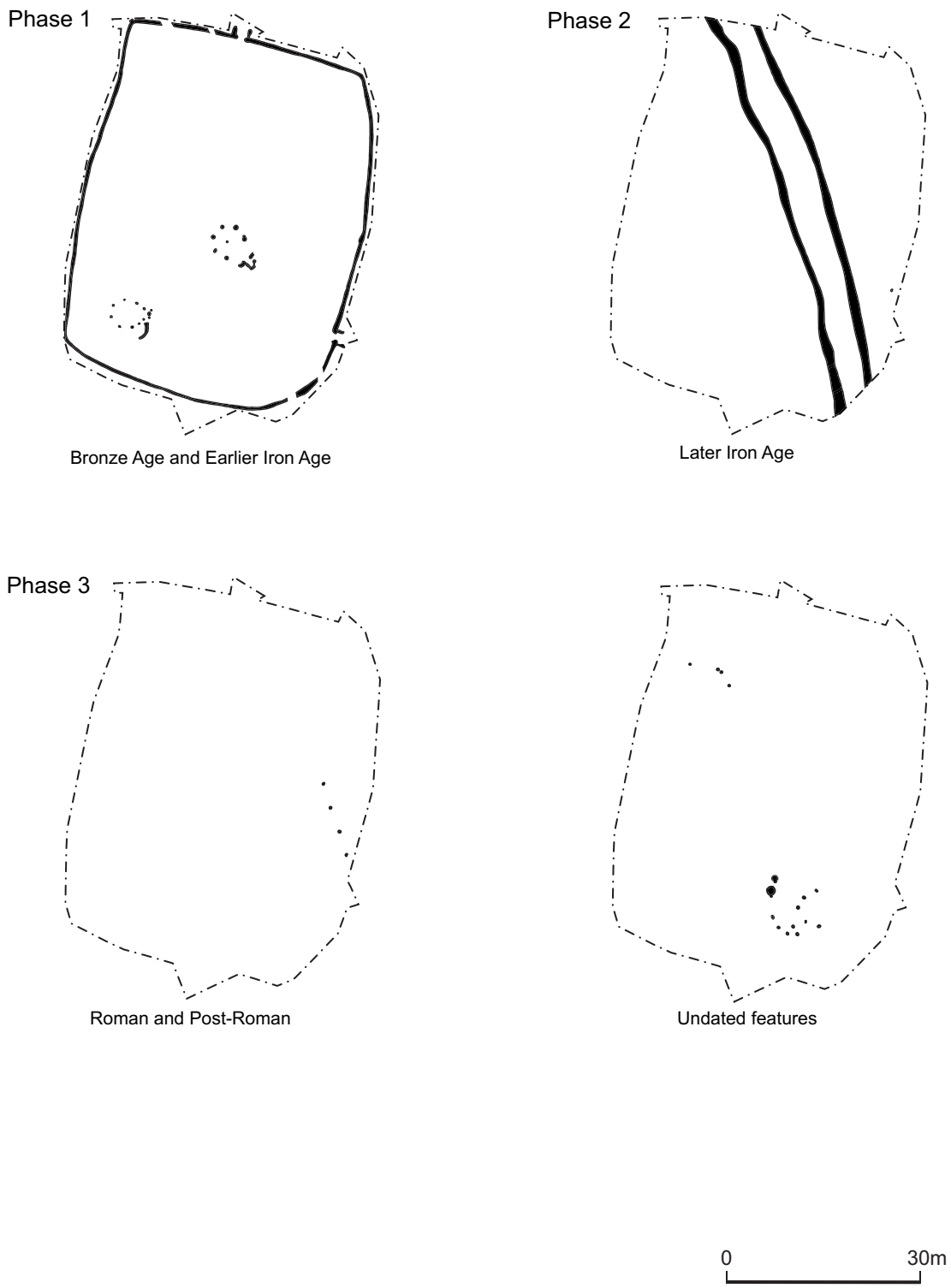
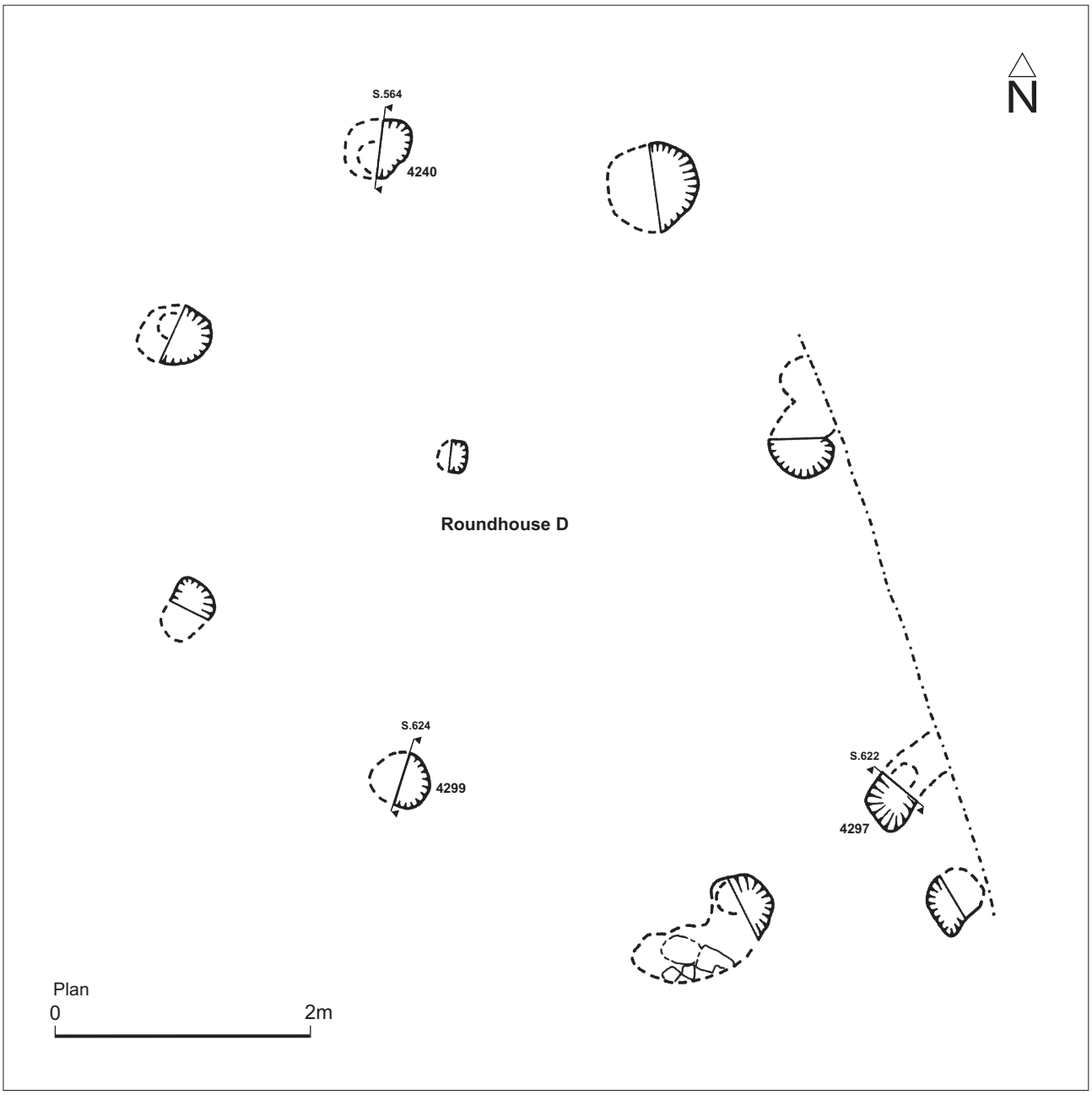


Fig. 9. Phase plan of Field Lane D Trench III



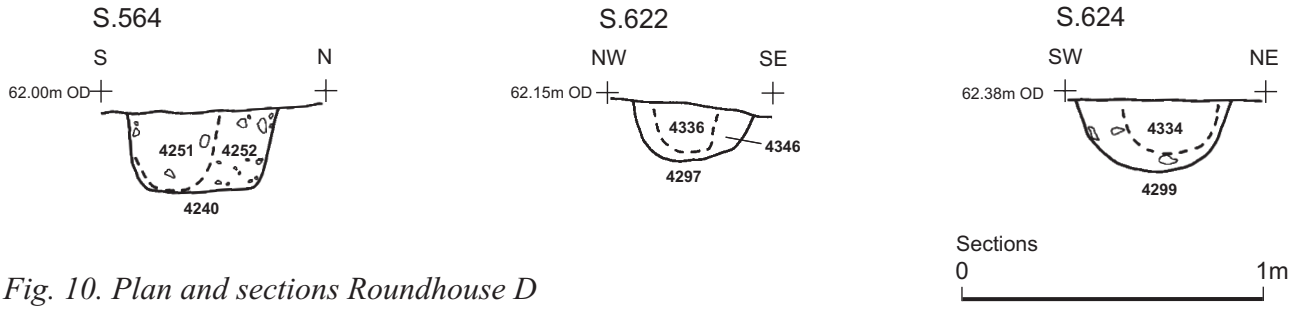
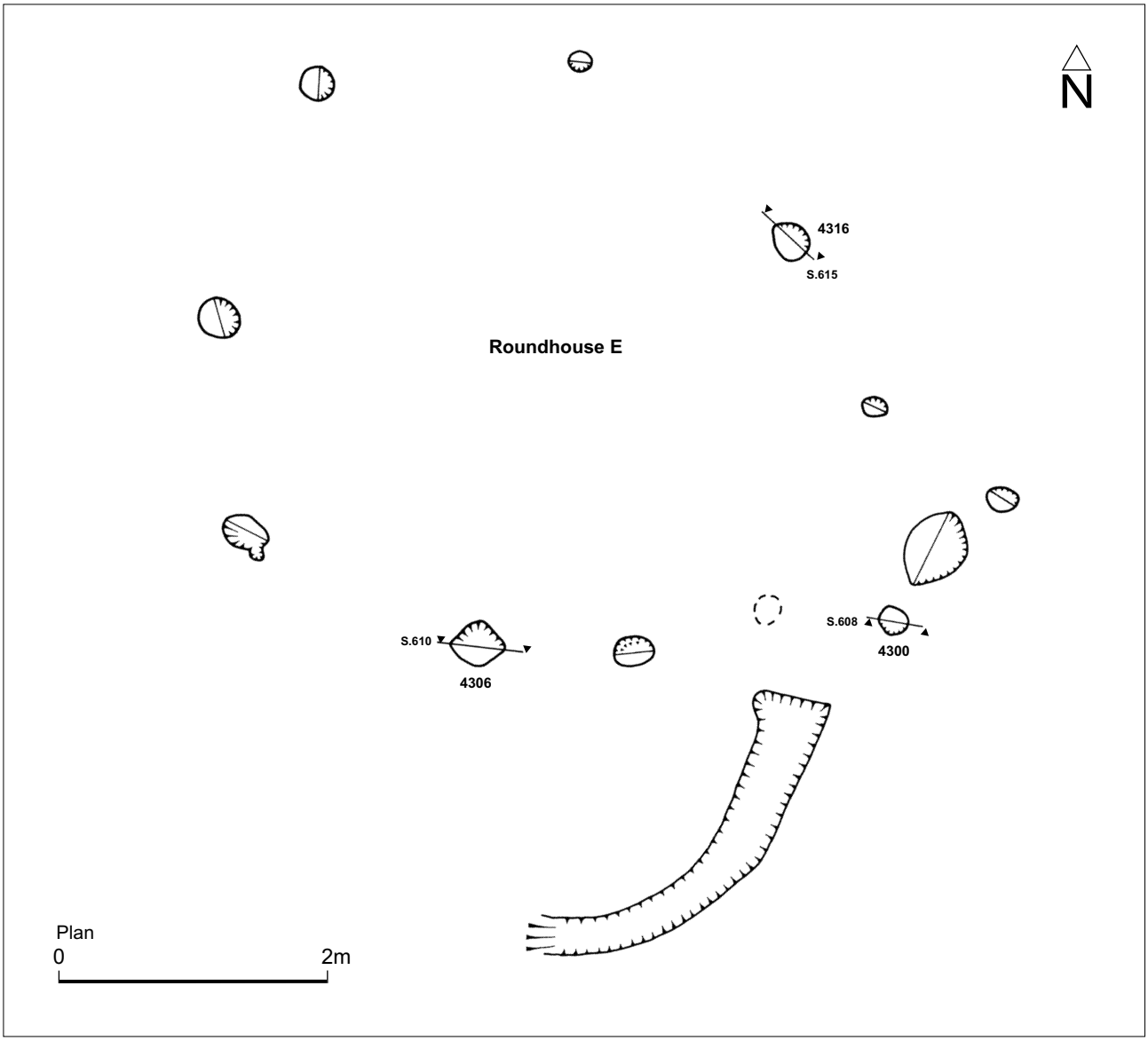


Fig. 10. Plan and sections Roundhouse D



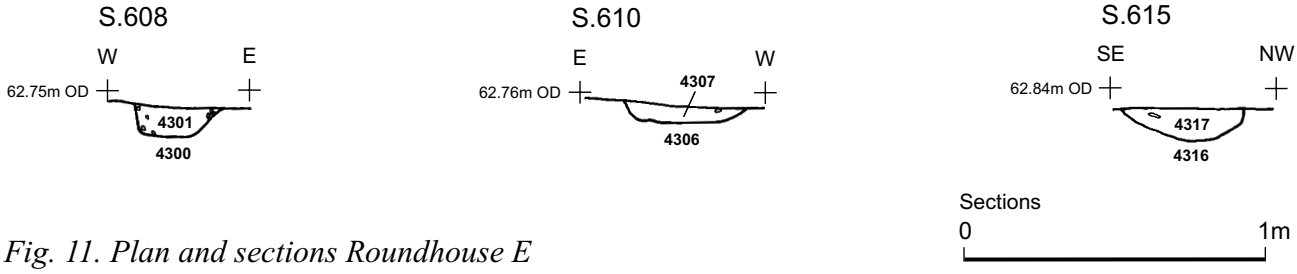


Fig. 11. Plan and sections Roundhouse E

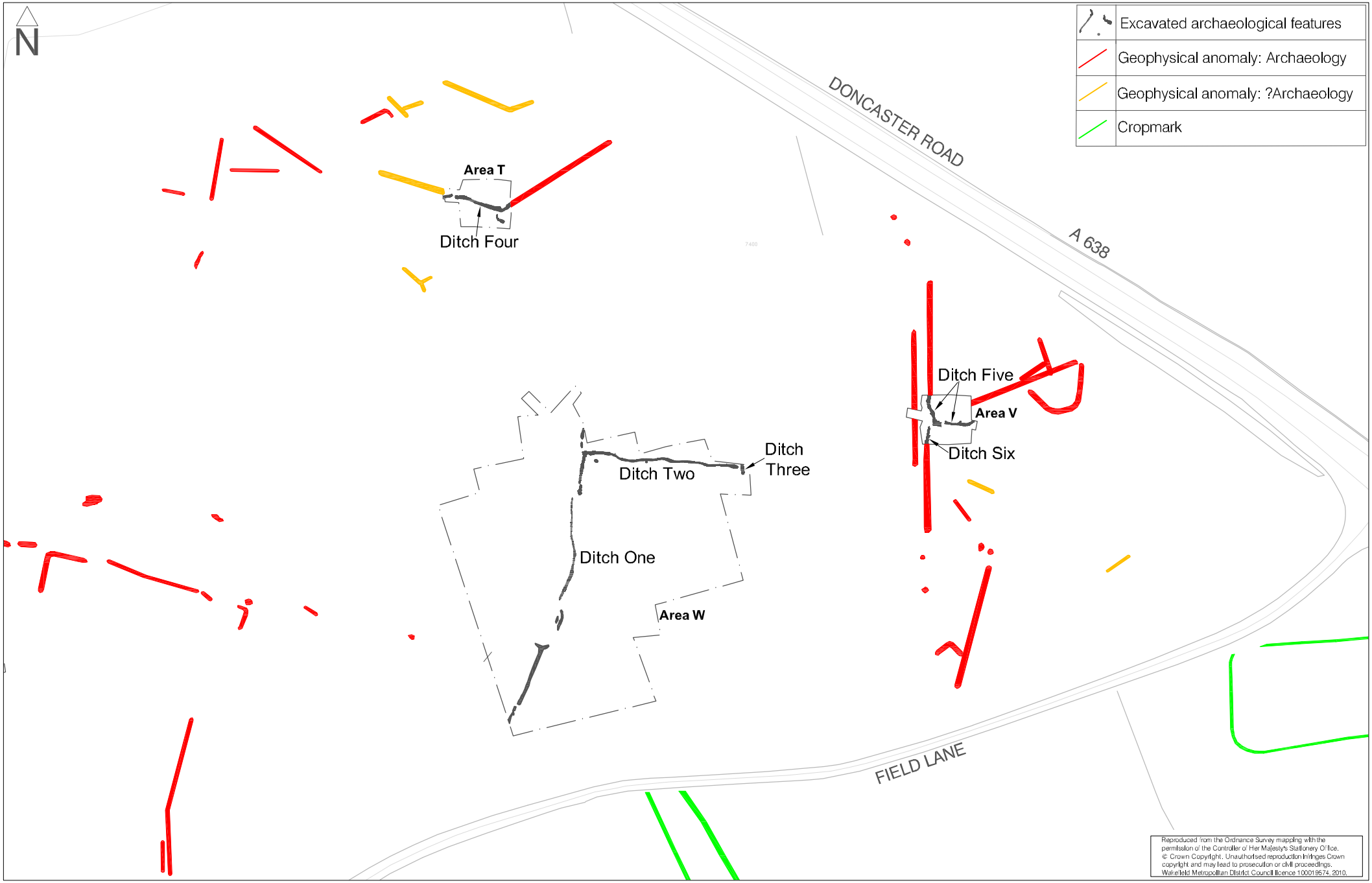


Fig 12. Linear Boundaries: Eastern Area

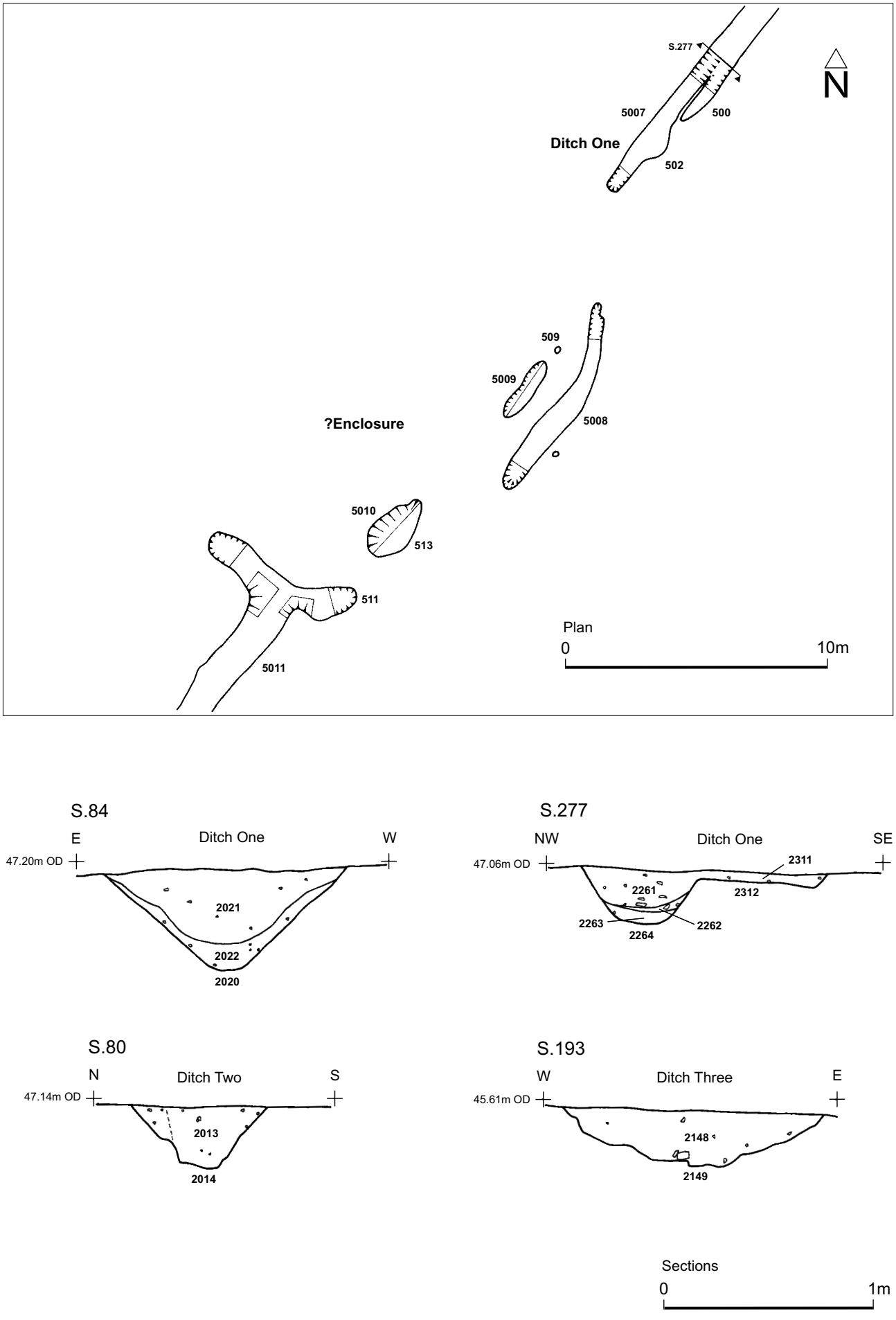


Fig. 13. Plan of possible enclosure in Ditch One and Ditches One, Two and Three sections

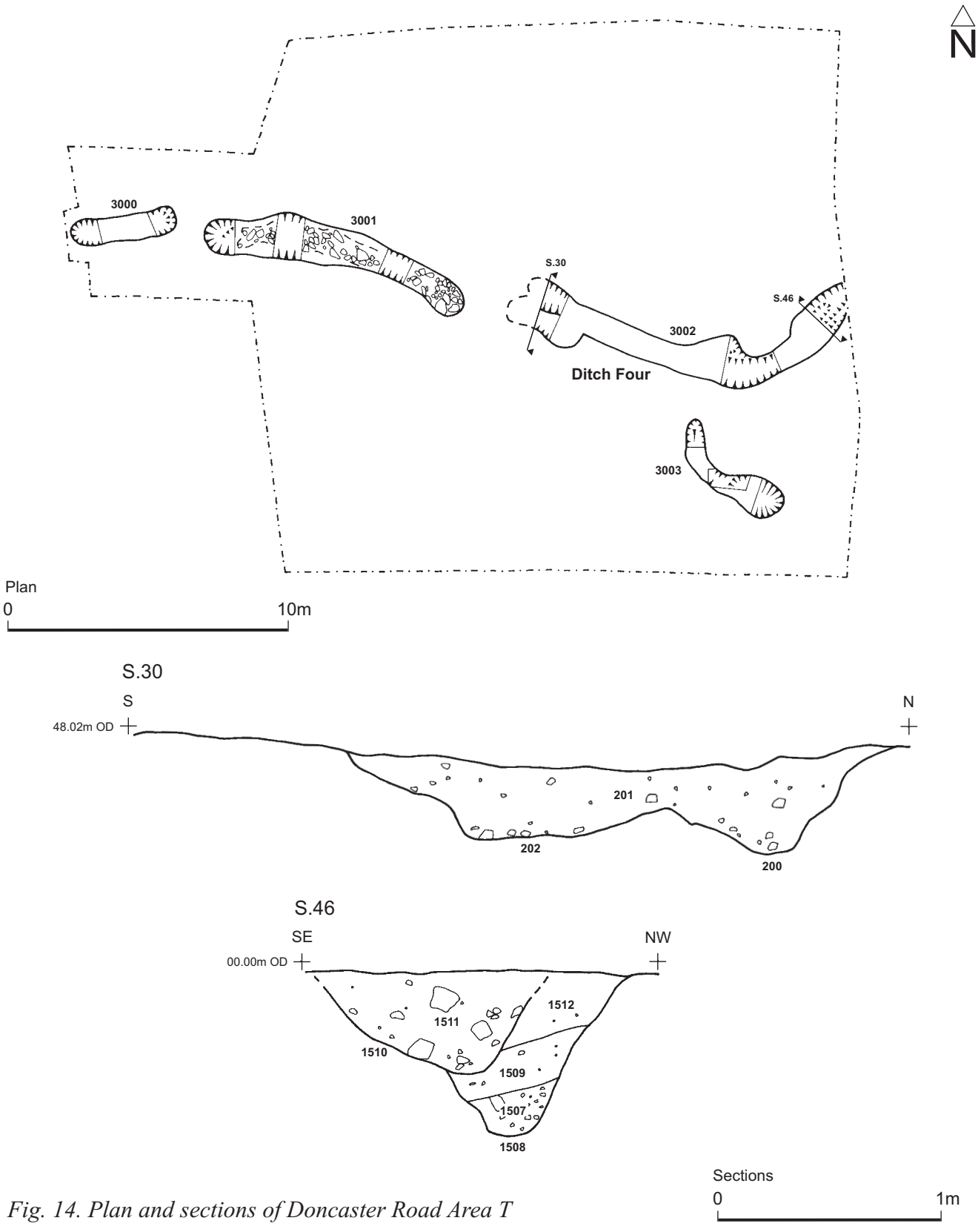


Fig. 14. Plan and sections of Doncaster Road Area T

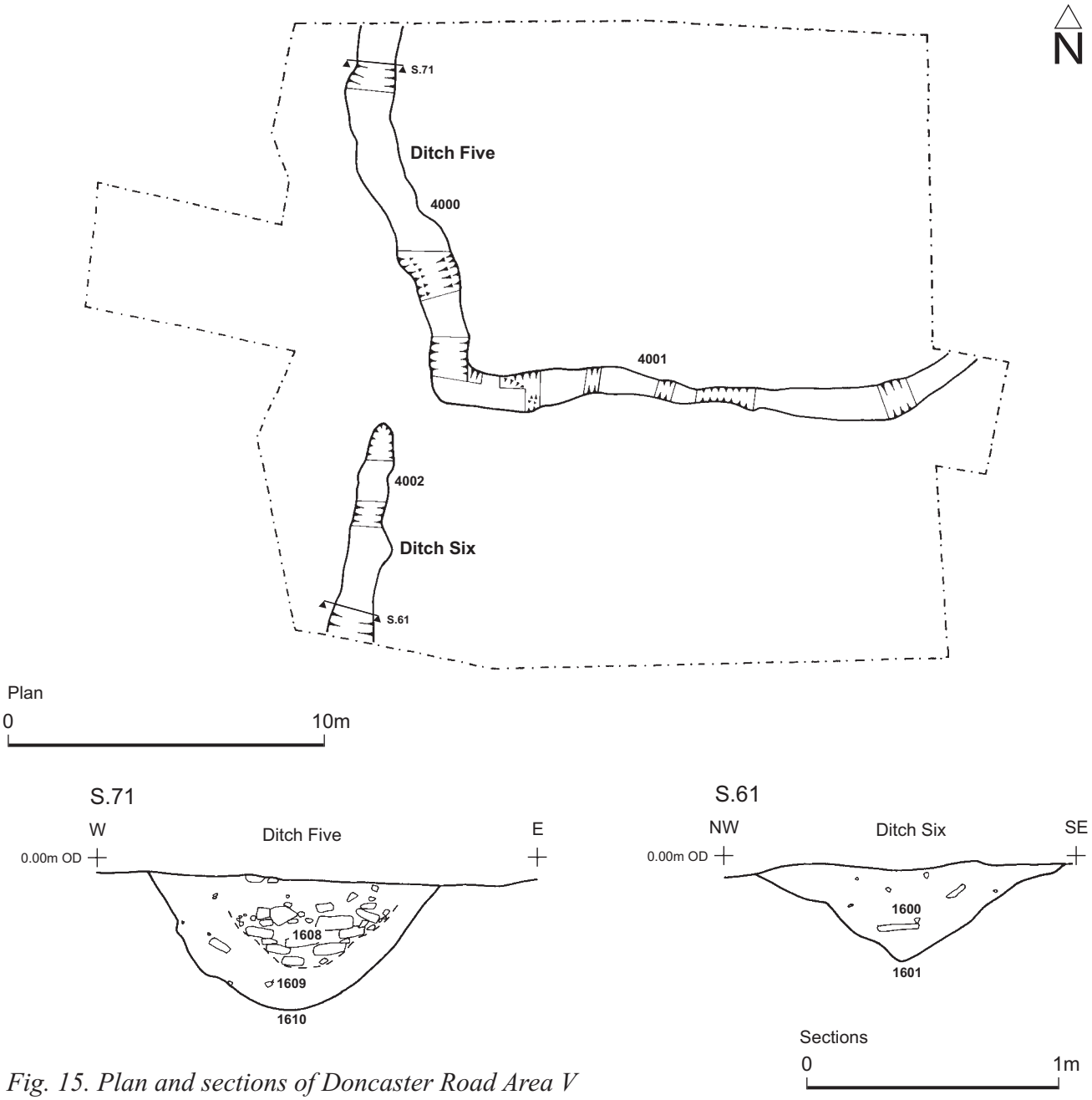


Fig. 15. Plan and sections of Doncaster Road Area V

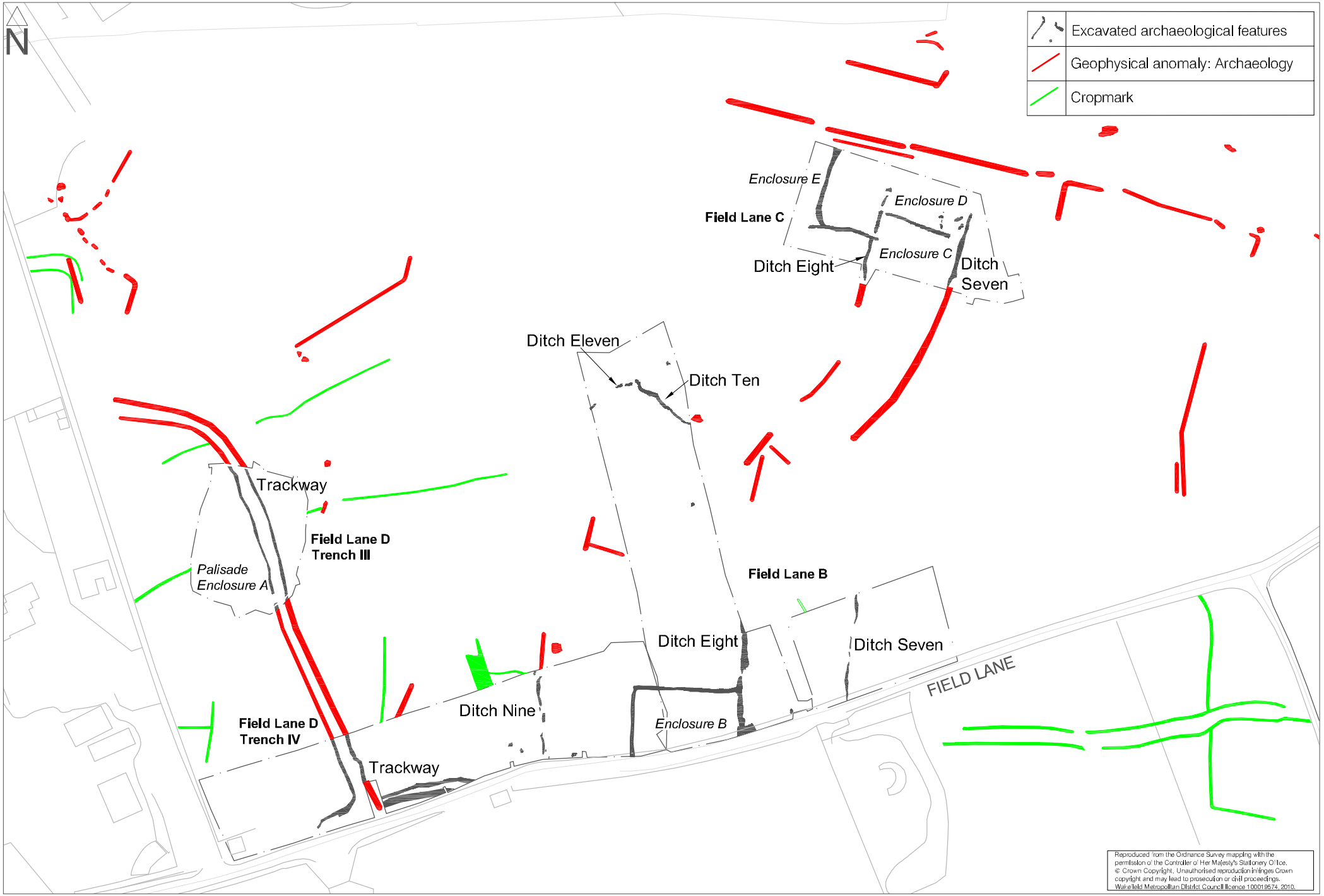


Fig 16. Linear Boundaries: Western Area

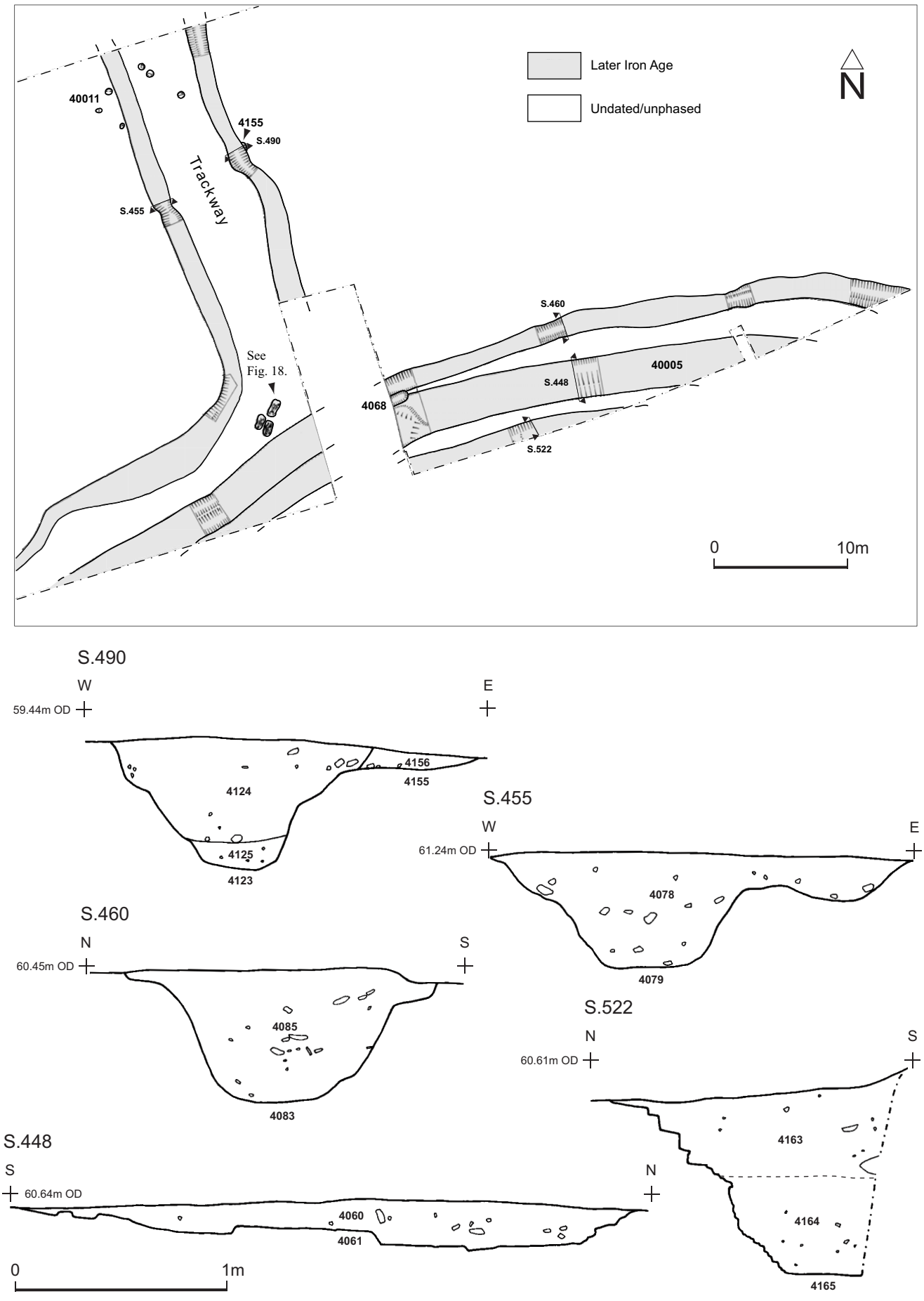


Fig. 17. Plan of Field Lane Tench IV (West) and trackway ditch sections

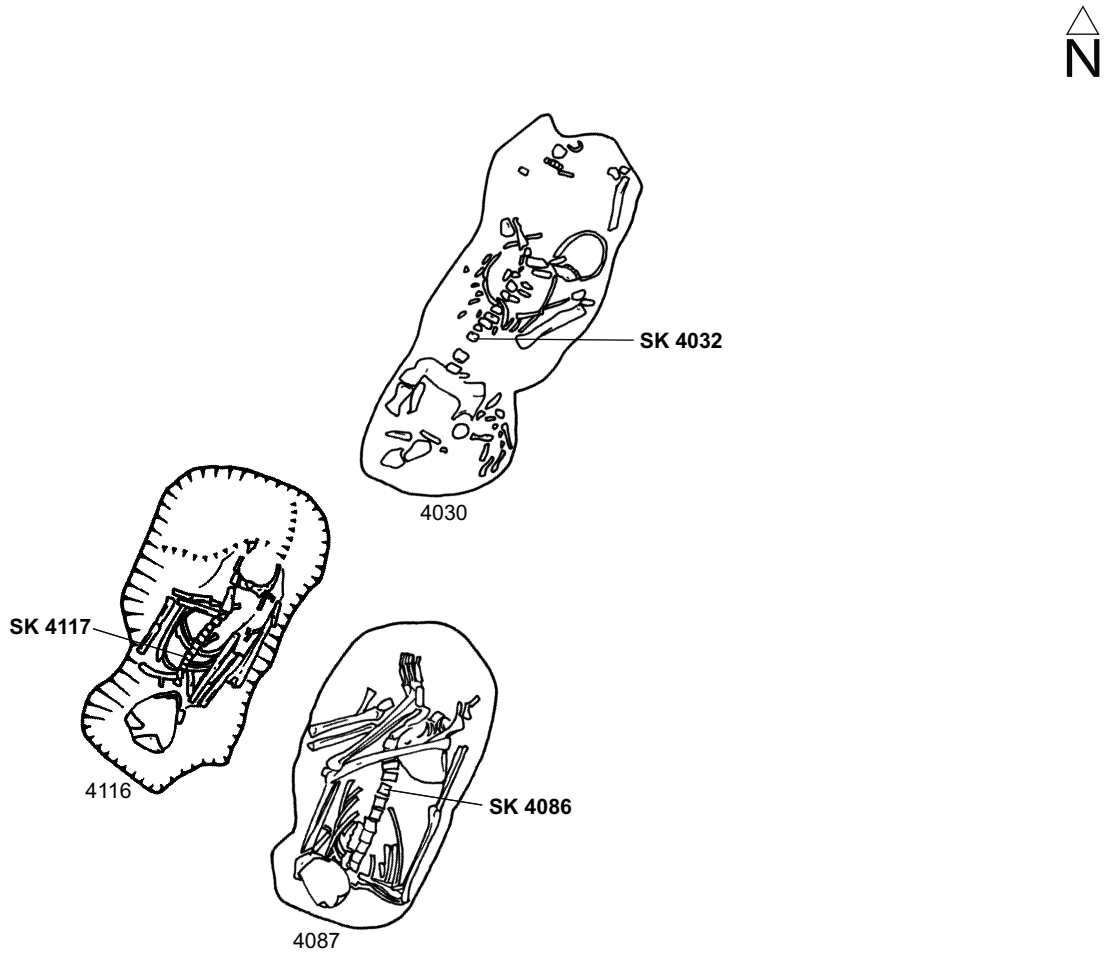


Fig. 18. Plan of skeleton group 40004

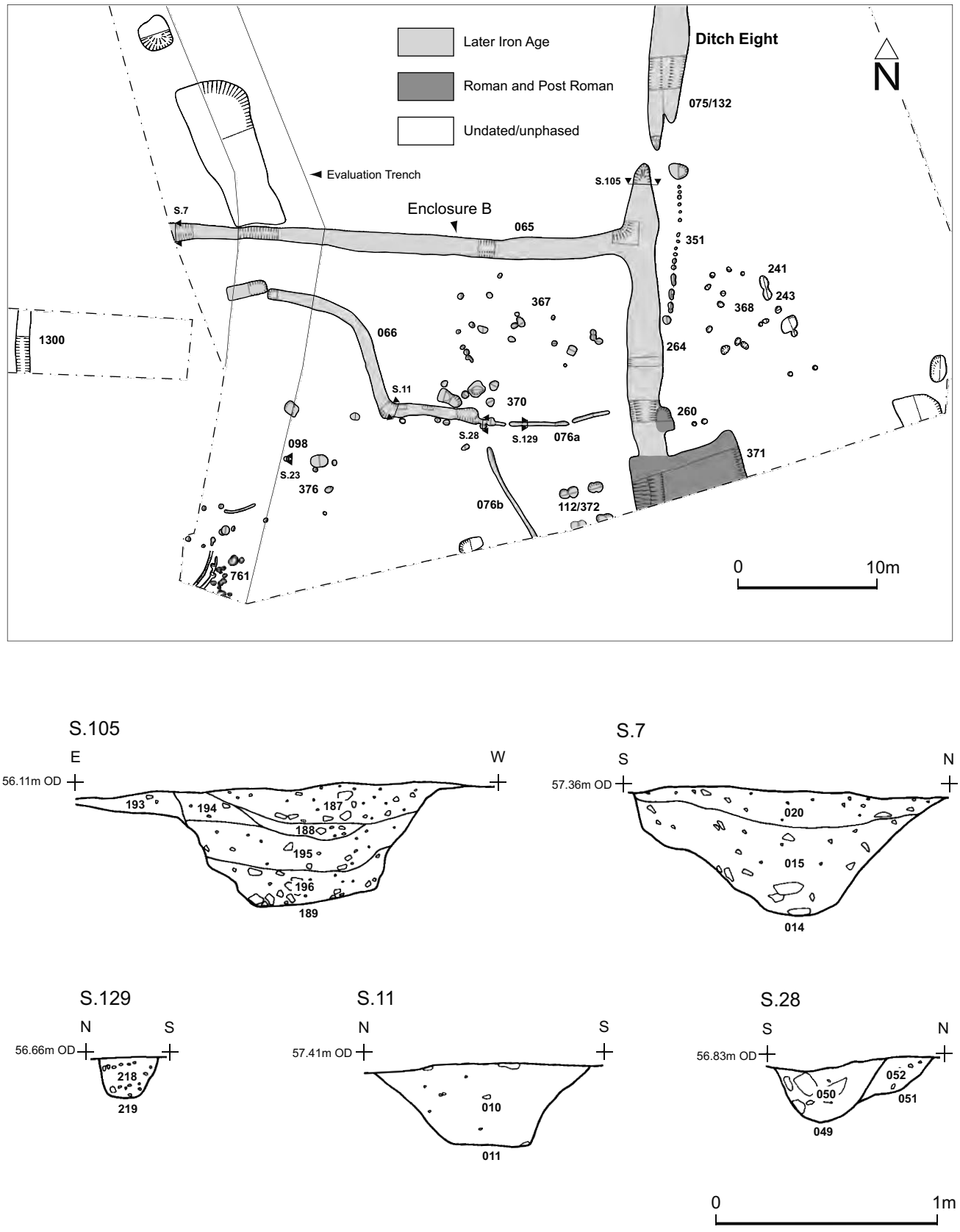


Fig. 19. Plan and sections of Field Lane B (east side of Enclosure B)

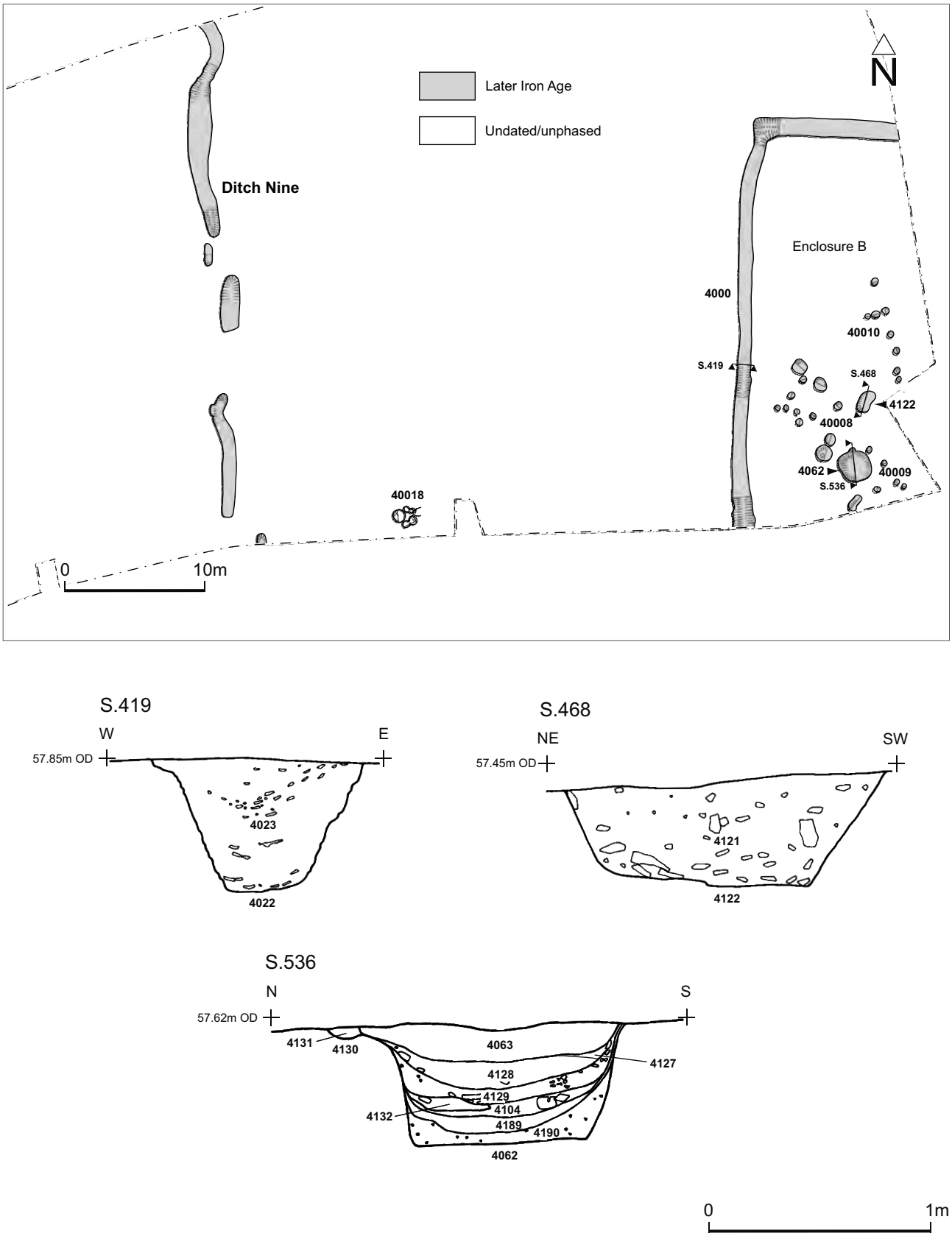


Fig. 20. Plan and sections of Field Lane D Trench IV (East; west side of Enclosure B)

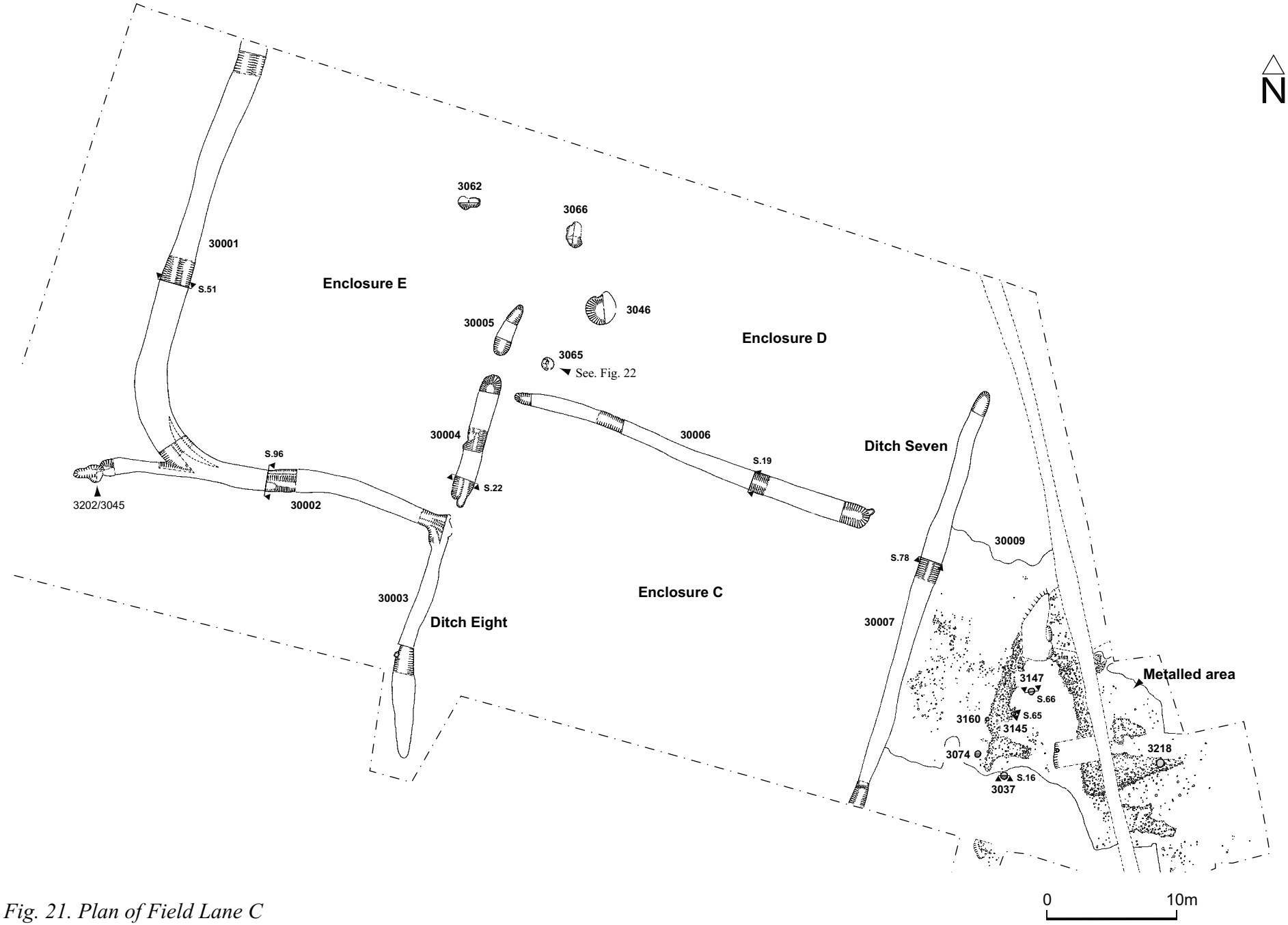


Fig. 21. Plan of Field Lane C

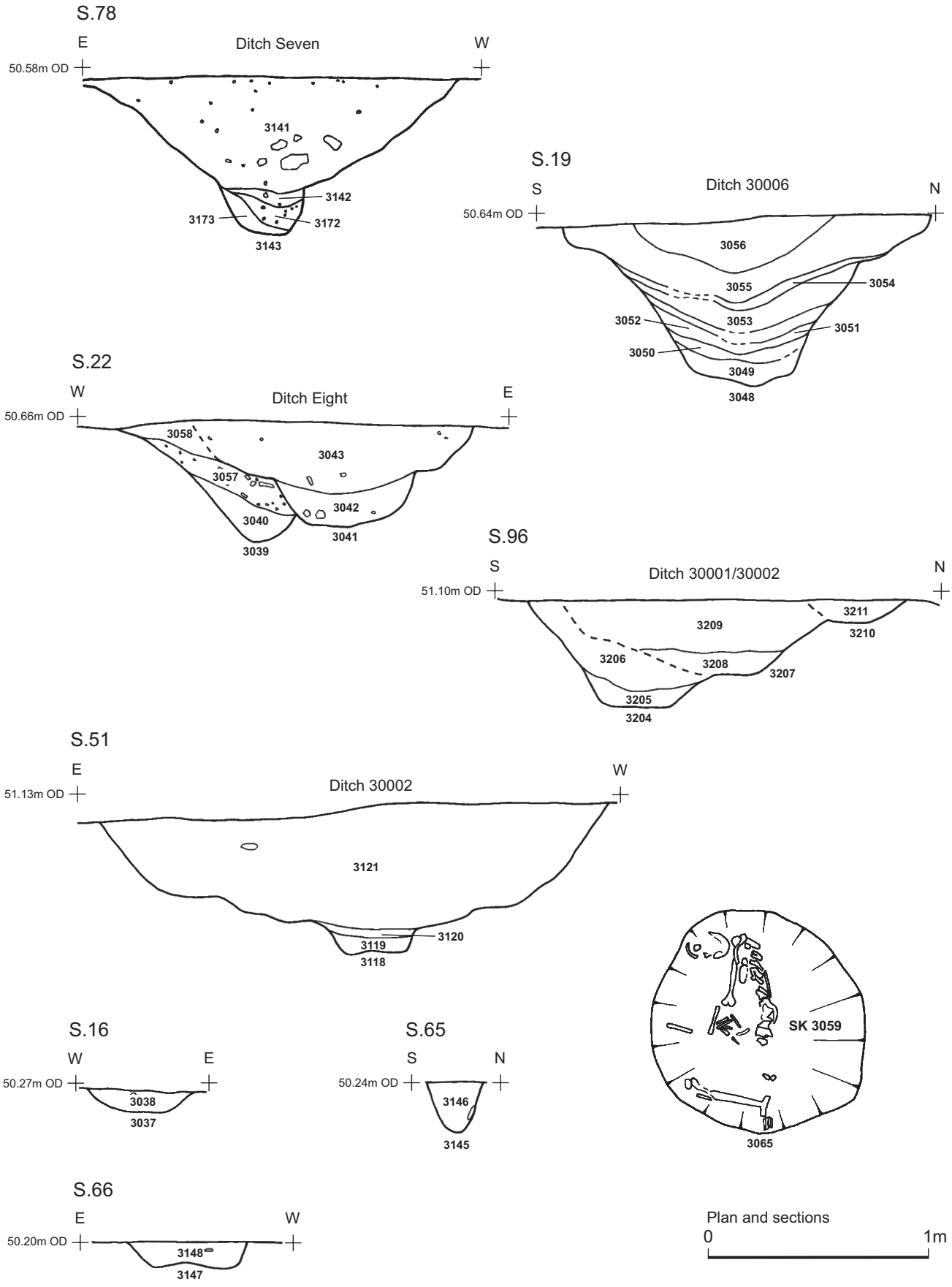


Fig. 22. Sections from Field Lane C and plan of SK 3059

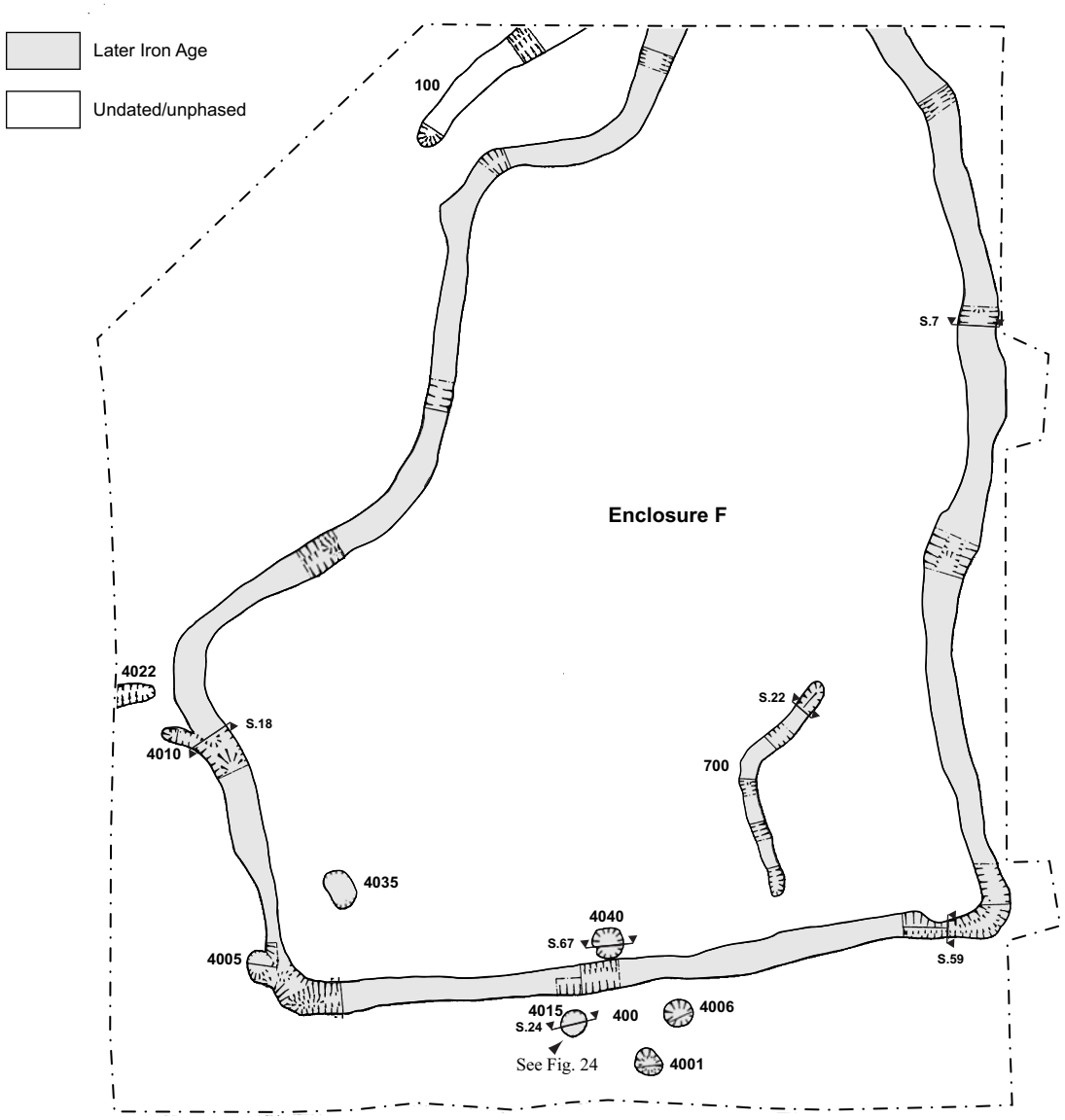


Fig. 23. Plan of Dale Lane

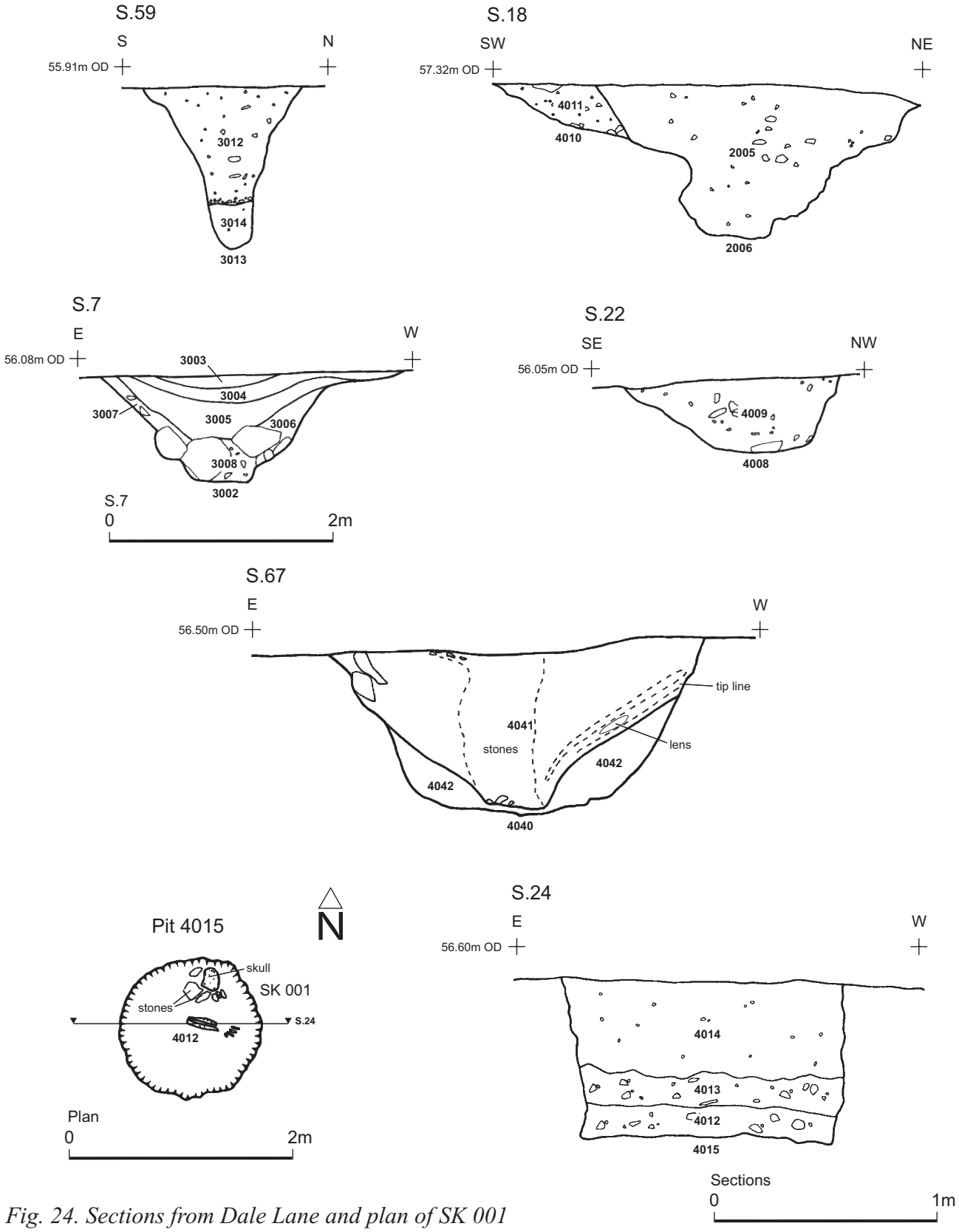


Fig. 24. Sections from Dale Lane and plan of SK 001

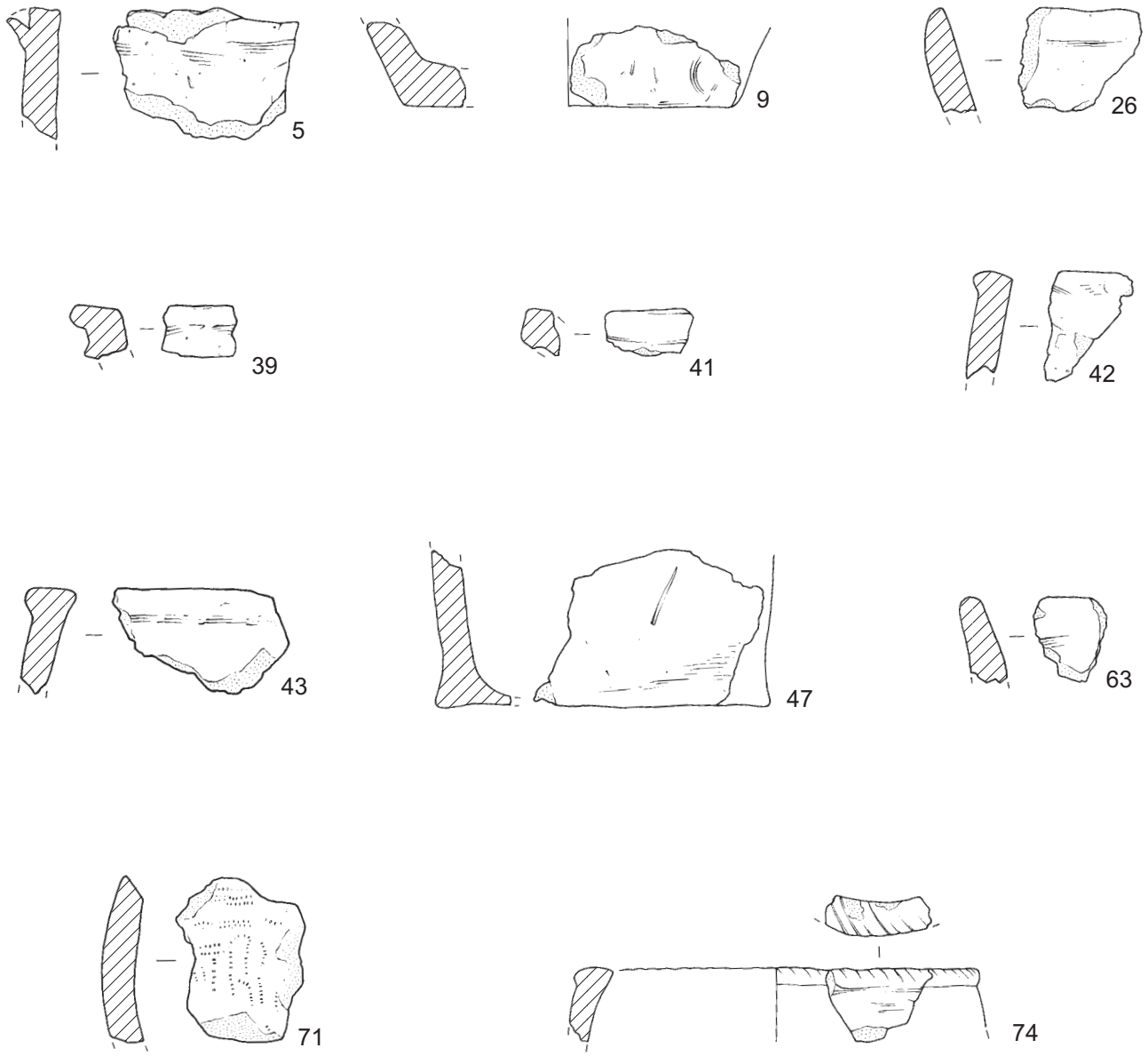


Fig. 25. The Pottery, scale 1:2

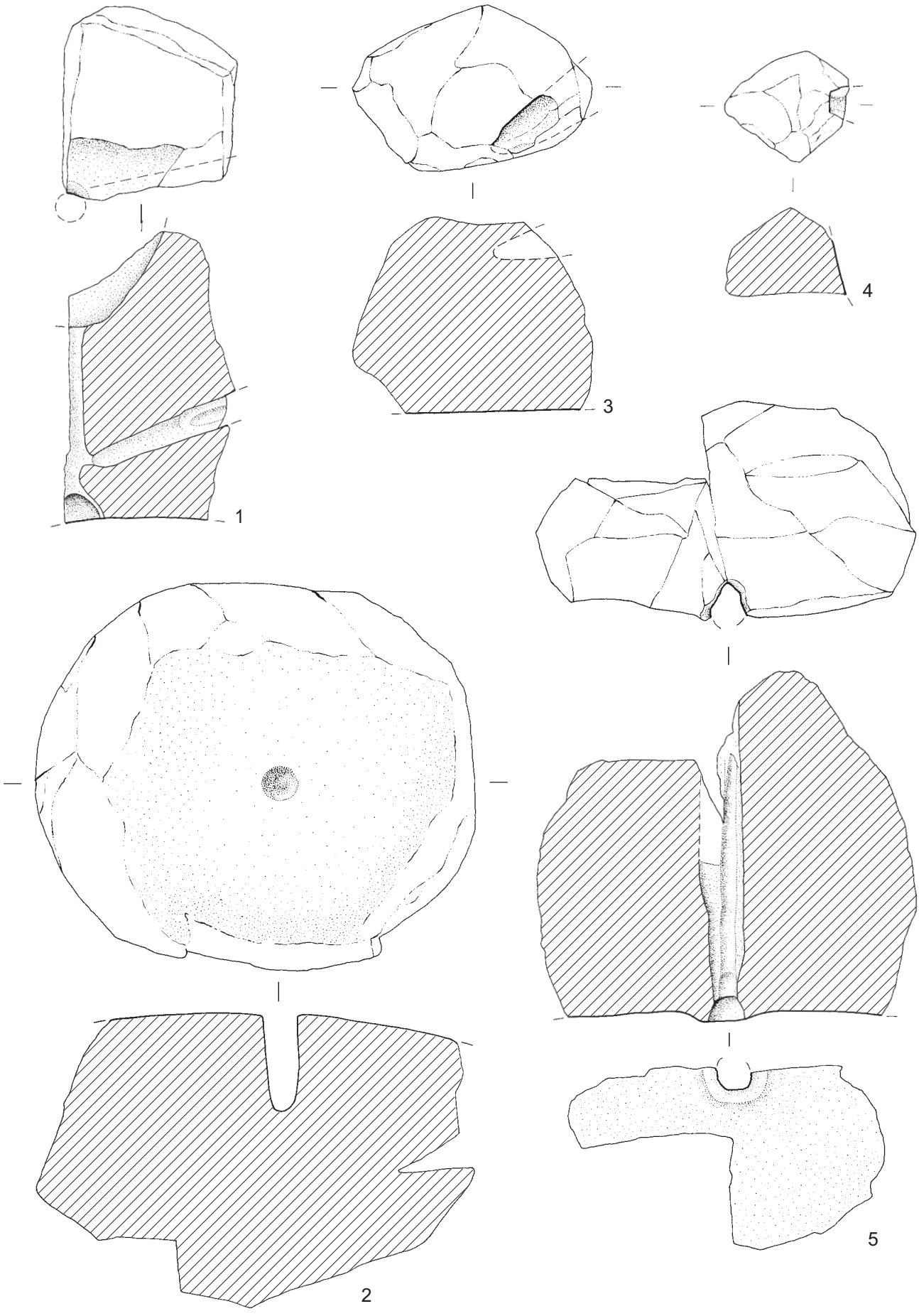


Fig. 26. The Querns (1 to 5), scale 1:4

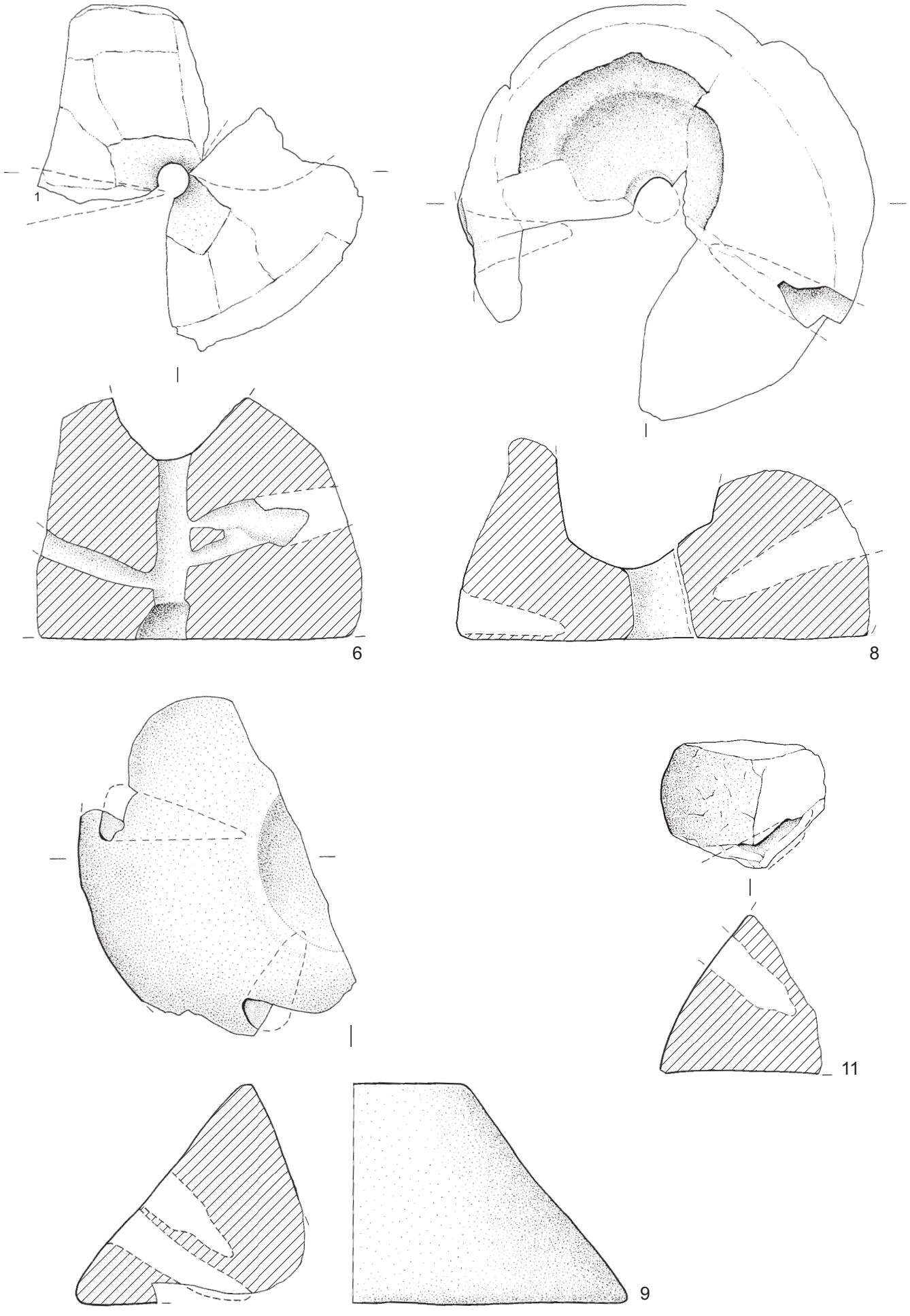


Fig. 27. The Querns (6, 8, 9 and 11), scale 1:4

Plate 1. Roundhouse A and linear post-hole alignment 8002, facing north-west

Plate 2. Roundhouse C and curvilnear post -hole alignment 8001, facing north-east. Plough scars are visible across the site

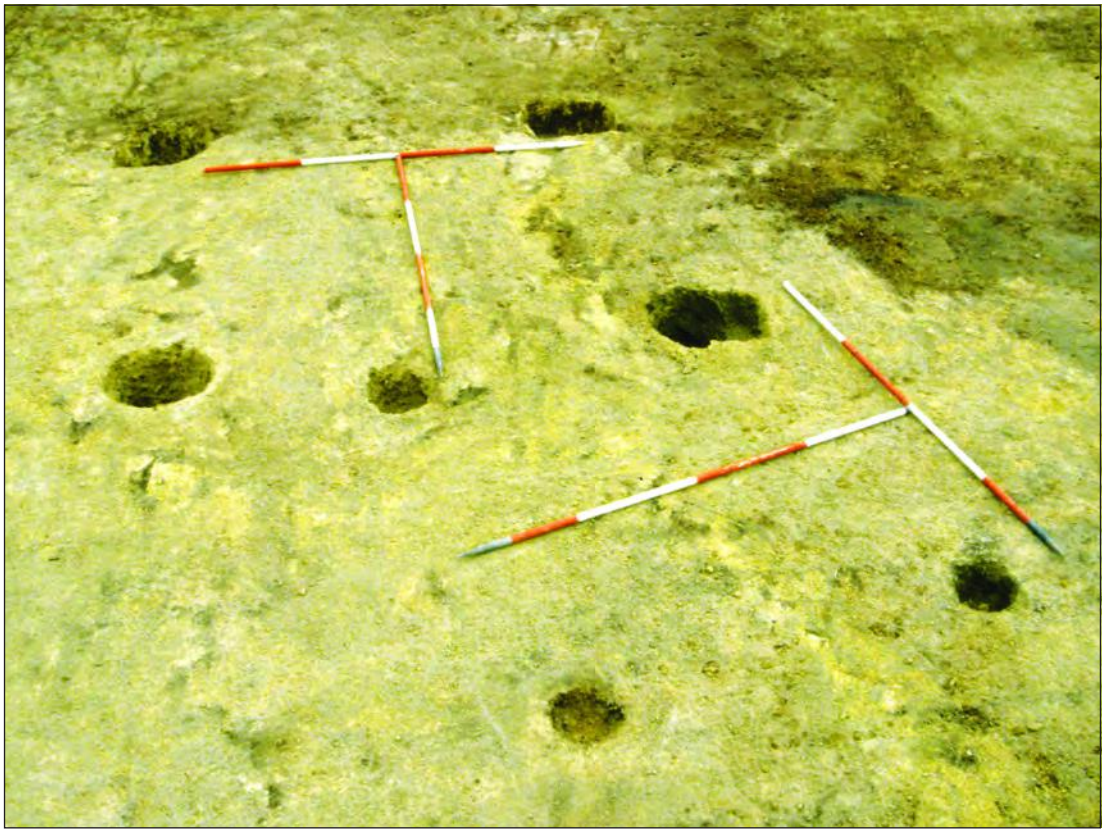


Plate 3. Rectilinear structures 7002 and 7003, facing east

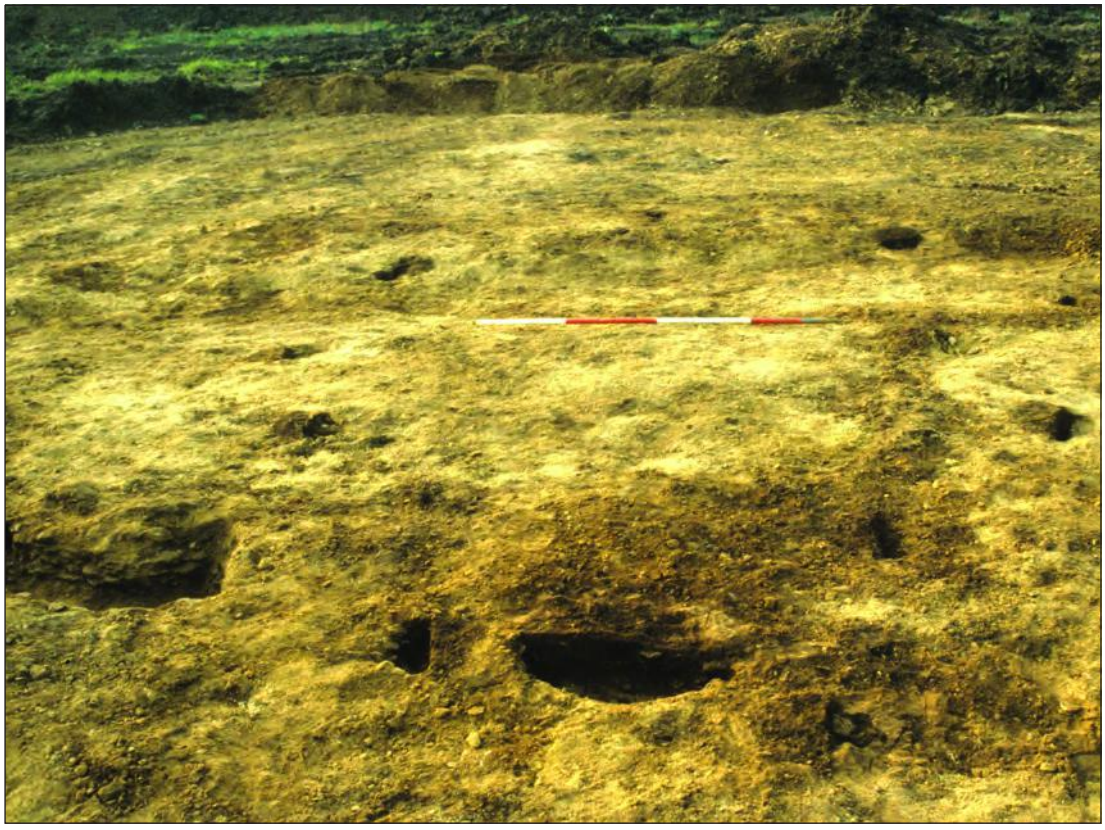


Plate 4. Roundhouse E, facing west

Plate 5. Ditch Seven, facing north

Plate 6. East end of Enclosure B, Ditch Eight and linear post-hole alignment 351, facing north-west

Plate 7. Skelton 4086 in Grave 4087

Plate 8. Sub-enclosure gullies 076a and 076b and rectilinear strucutre 112/372, facing south-east

Plate 9. Metalled area, facing south

Plate 10. Possible access point in south-east corner of Enclosure F, facing east

Plate 11. SK 001 in pit 4015

Plate 12. Undated crop drier or kiln 9001 in Doncaster Road Area W, facing north

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