





NOSTERFIELD QUARRY

NOSTERFIELD

NORTH YORKSHIRE

INTERIM REPORT

REPORT
MARCH 2005

WATCHING BRIEF

NOSTERFIELD QUARRY

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SITE CODE: NOS

NGR: SE 280 808

INTERIM REPORT

March 2005

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Summary

This interim report presents the provisional results of an on-going watching brief at Nosterfield Quarry, North Yorkshire. Archaeological fieldwork has been undertaken at Nosterfield Quarry since 1991, by a range of contractors. Pre-determination assessment and evaluation was undertaken by Mike Griffiths and Associates and AOC (Scotland) in 1991-2 and 1995 in support of a planning application for the current quarry operation. Subsequently, a series of watching briefs has been undertaken across the site prior to gravel extraction, in accordance with an archaeological planning condition. Since 1998, this fieldwork has been carried out by Field Archaeology Specialists Ltd, on behalf of Mike Griffiths and Associates, for Tarmac Northern Ltd. This report initially summarises the results of fieldwork carried out in the area prior to 1995, and the state of knowledge at that time. Since that date, surveys, watching briefs and further evaluation have revealed the range and character of archaeology within the site, and provided evidence for the changing use of the landscape from the Mesolithic to the modern day. The long duration of this project has also allowed for the development of methodologies best suited to the nature of the site, and the archaeological remains in this area.

The successive phases of investigation have revealed a diverse range of features, dispersed throughout the quarry site. Small pits have been identified predominantly in the eastern part of the site. A significant concentration of archaeological features has been identified to the west of the quarry, where linear features (ditches and pit alignments), ring-ditches and square-ditch enclosures have been identified, as well as a number of cremation and inhumation burials.

The earliest evidence from the site consists of a series of Mesolithic lithic artefacts, from secondary contexts, but providing an indication that the landscape was occupied at this time. Into the Neolithic, evidence for domestic activity becomes more secure. A period of land clearance in the later Neolithic and early Bronze Age has been identified from a programme of sediment analysis, which would seem to correspond with the dates ascribed to assemblages of pottery and lithics produced from pits. This may indicate domestic occupation in the area, possibly restricted to specific zones within the landscape, and contemporaneous with the construction of the monument complex of Thornborough to the south. During the Bronze Age, the area seems to have become a focal point for burial, rather than occupation, with the construction of ring-ditches (round barrows), which are suggested to have formed the centre of cremation cemeteries, and later for inhumation. During the Iron Age, there appears to have been a demarcation of the landscape with boundaries, through the construction of pit alignments and ditches. Inhumation burials, and a horse burial, suggest that the area formed a funerary location until the end of the Iron Age. Romanised occupation followed with evidence for a corn-drying kiln, and an assemblage of high status pottery. This occupation appears to have disused many of the preceding features. This change in use remained until the modern day, and the landscape became dominated by the agricultural features and divisions of land that characterised the medieval and post-medieval landscapes.

Acknowledgements

Field Archaeology Specialists Ltd are grateful for the assistance and cooperation of Alan Coe and the staff of Tarmac Northern Ltd, and Neil Campling of the North Yorkshire County Council Heritage Unit, throughout the course of the project.

1.0 INTRODUCTION

This interim report provides a preliminary account of the results of an ongoing watching brief being undertaken at Nosterfield Quarry, North Yorkshire, on behalf of Mike Griffiths and Associates for Tarmac (Northern) Ltd. The archaeological investigation in advance of mineral extraction at Nosterfield Quarry will not be completed for several years, and as such this report is based on the preliminary assessment and review of field records, and selected specialist assessments and analyses, which have been prioritised in order to inform the strategy for the ongoing watching brief. This interim report has been prepared at the request of Tarmac (Northern) Ltd. in support of a planning application to extend Nosterfield Quarry. In accordance with the archaeological planning condition for the current quarry, a full and final report including all necessary assessments and analyses, will be produced on completion of the watching brief and the results published.

The watching brief at Nosterfield Quarry commenced in 1995, and has been carried out since 1998 by Field Archaeology Specialists (FAS) Ltd on behalf of Mike Griffiths and Associates for Tarmac Northern Ltd. The area covered by the fieldwork lies to the north of Nosterfield village, North Yorkshire.

1.1 LOCATION AND LAND USE

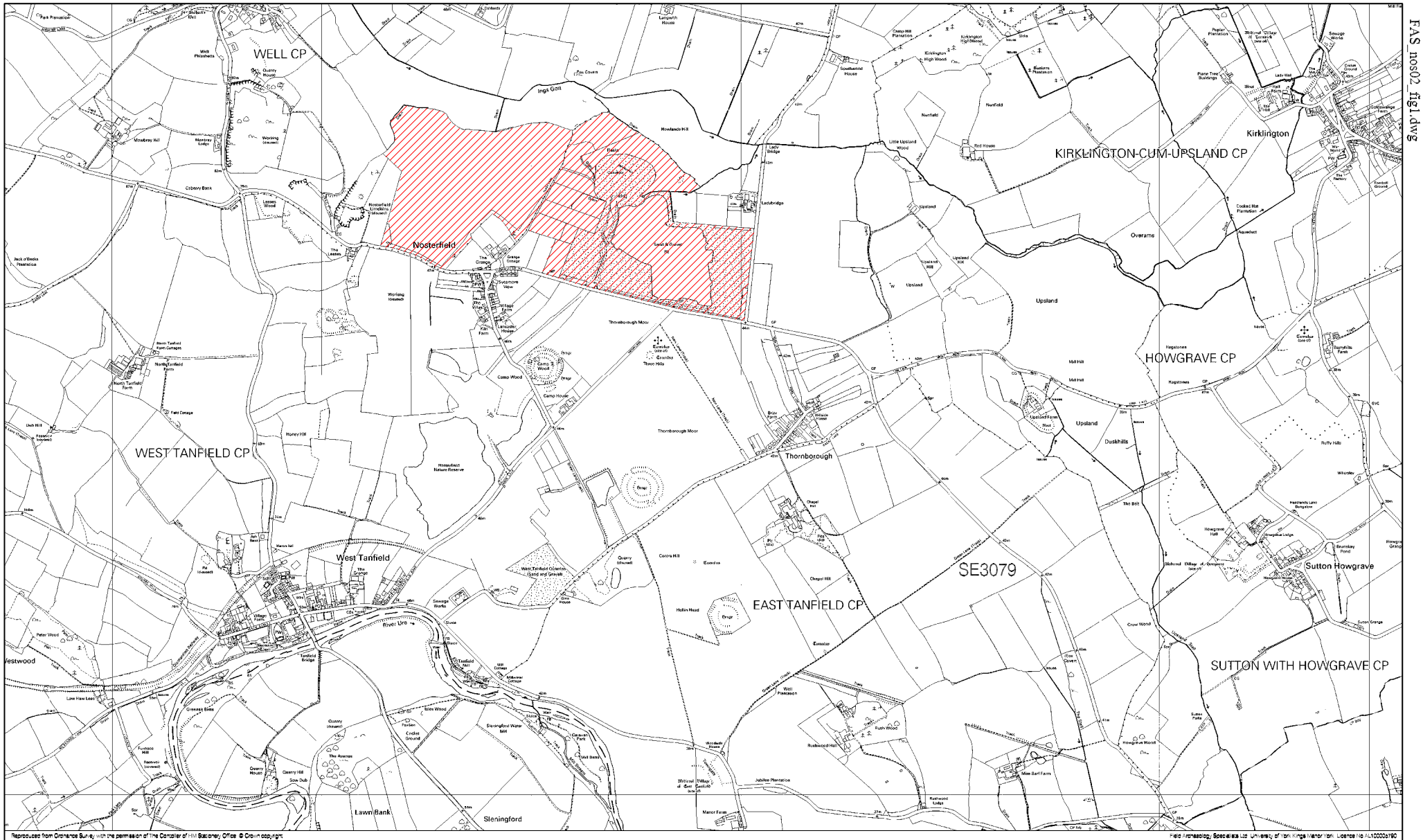
Nosterfield Quarry (SE 280 808) is situated to the west of Nosterfield village, North Yorkshire, on fluvio-glacial gravels that lie to the north of the River Ure. The quarry occupies land on the northern side of the B6267, as it leads away from the A1 (Figure 1), bounded to the east by a road, and extending westwards for 1800m. The quarry extends north-south for 660m, covering a total of 106 hectares. At the onset of this project, existing quarry workings dominated the eastern part of this area, lying between the road to the south, and extending north and west for a total of 13.4 hectares.

The area of investigation generally lies between 40m and 43m AOD, rising gently from north to south, and much of the surrounding area is given over to arable land and pasture. The northern part of the site is occupied by a relict lake, in which peat deposits have formed and which retains a marshy character, now known as the Flasks.

To the east of the quarry, the land rises towards Upsland Hill, and in the west, slopes towards the more distant Whitwell Hill. Generally, the landscape surrounding the quarry site is dominated by arable cultivation, although areas such as the Flasks have always been poorly drained. The disused marl pits, areas of peat, limestone and sandstone quarries located within the surrounding areas provide evidence for extraction over several centuries.

1.2 PLANNING BACKGROUND

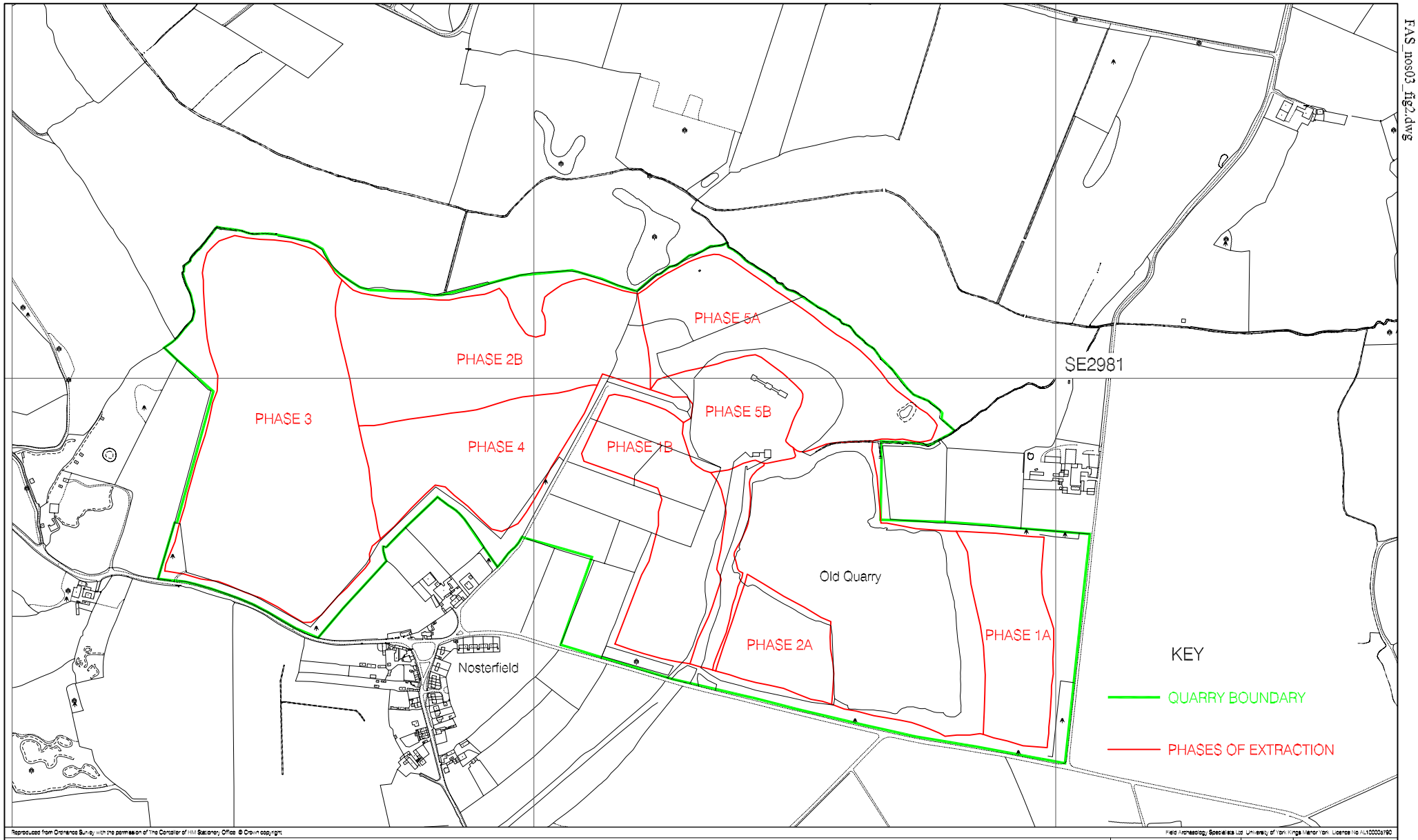
Planning permission for the current quarrying operation at Nosterfield Quarry was granted by North Yorkshire County Council in January 1995. This planning permission included an archaeological condition requiring a watching brief to be maintained during topsoil stripping at the quarry, and the submission of a full report within 6 months of the completion of the final phase of fieldwork. Since 1995 a watching brief has been maintained on successive phases of mineral extraction undertaken in line with the phases of operation submitted with the planning application (Figure 2).



Location map

Scale 1:25000

Figure 1



Phases of mineral extraction

Scale 1:10000

Figure 2

1.3 AIMS AND OBJECTIVES

The primary aim of the watching brief was to identify, investigate and record any archaeological remains within the quarry area prior to mineral extraction, and where possible to determine their date, character and function. A further objective of the archaeological investigation was to develop the most effective methodological approach, given the nature of the archaeological remains encountered, the anticipated variation in the natural strata, and the necessary health and safety constraints of working on an active quarry. In many instances, a variety of investigative techniques were tested in order to enhance data recovery. Geophysical survey, topographic survey, fieldwalking (before and after topsoil stripping), test pitting, and auger survey were employed to provide a fuller record than would have been produced by the watching brief alone.

1.4 CHRONOLOGY OF INVESTIGATION

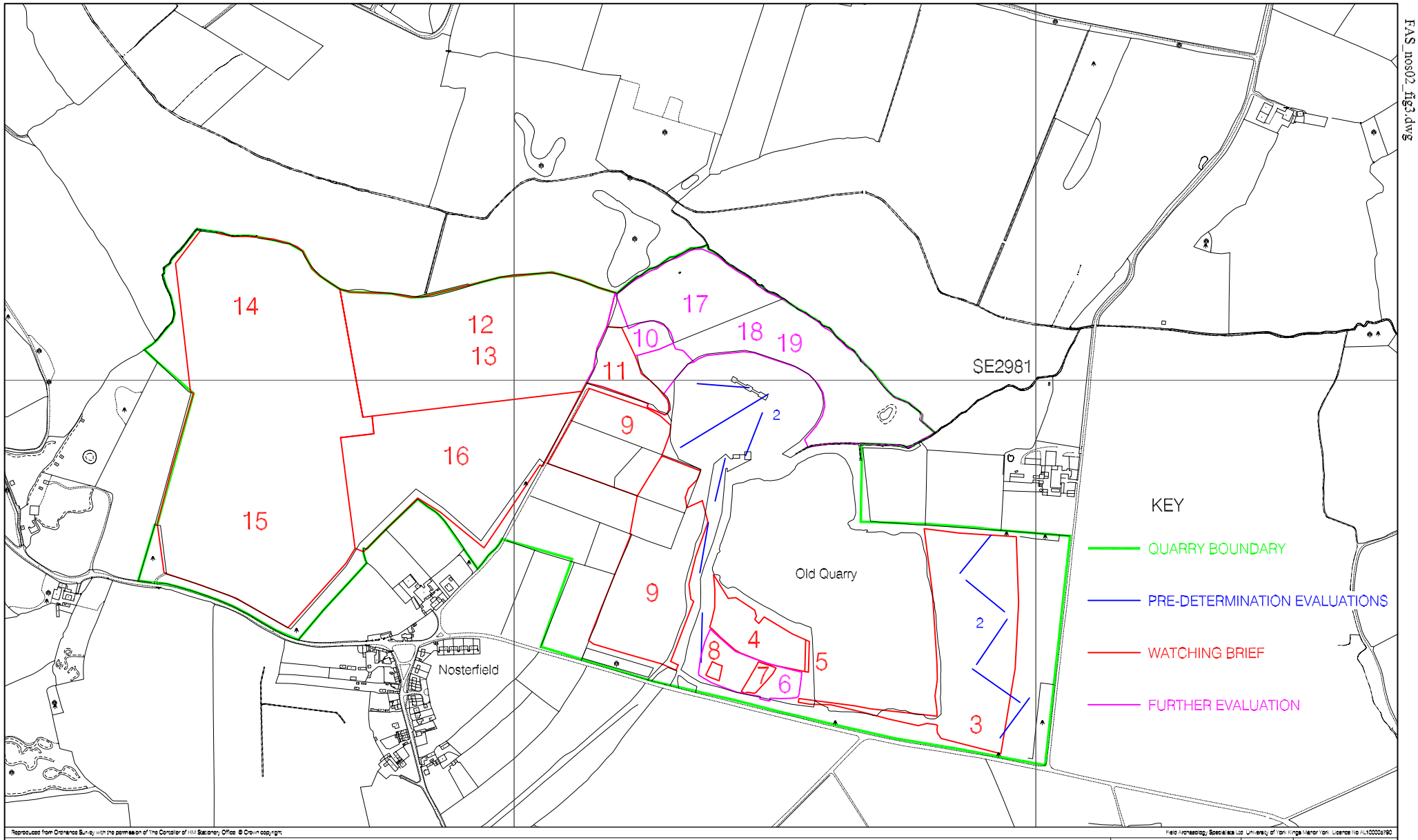
Pre-determination assessment and evaluation of the Nosterfield Quarry site was undertaken in a number of stages from 1991 to 1995, with the watching brief commencing in 1995 (Table 1; Figure 3). Fieldwork was initially undertaken or commissioned by Mike Griffiths and Associates (MGA); phases of fieldwork were carried out by West Yorkshire Archaeological Services (WYAS) and AOC (Scotland). Full reports on all of these stages are available online at:

www.archaeologicalplanningconsultancy.co.uk/mga/projects/noster/index.html.

From 1998 onwards, FAS continued a programme of further evaluation, watching briefs and surveys at successive areas of the Nosterfield Quarry site. The methodology and results for each investigation are presented individually: relevant feature and structure indices are appended (Appendix A and B), along with specialist reports.

Table 1 Index of Investigations

Investigation No	Intervention No	Quarry Phase	Activity	Contractor	Date
PRE-DETERMINATION ASSESSMENT AND EVALUATION					
1	-	-	Desk based assessment, walkover and test pitting	MGA	July 1991 - January 1992
2	-	-	Evaluation	AOC	January 1995
POST-DETERMINATION SURVEY, FURTHER EVALUATION AND WATCHING BRIEF					
3	Area 1, 2, 3, Trench 4	1a, 5b	Watching brief	MGA	Spring 1995
4	Trench 5	0.083	Watching brief	MGA	1996
5	-	0.083	Watching brief	WYAS	January 1997
6	-	0.083	Geophysical survey	WYAS	March 1997
7	Trench 7	0.083	Evaluation	MGA	March 1997
8	Trench 6	0.083	Watching brief	MGA	Spring 1997
9	Intervention 1, 2	1b	Watching brief	FAS	April-Sept 1998, April 1999



Map of archaeological investigations

Scale 1:10000

Figure 3

Investigation No	Intervention No	Quarry Phase	Activity	Contractor	Date
10	Intervention 3	2b, 5a	Walkover and contour survey	FAS	Summer 1999
11	Intervention 4	2b, 5a	Watching brief	FAS	September 1999
12	Intervention 6	2b	Walkover survey	FAS	December 1999
13	Intervention 5NE	2b	Watching brief	FAS	January - February 2000, May 2000
14	Intervention 5NW	3	Watching brief	FAS	October - November 2001
15	Intervention 5SW	3	Watching brief	FAS	April and June 2002, September 2002
16	Intervention 5SE	4	Watching brief and test pits	FAS	November - December 2003, June 2004
17	Intervention 9	0.2083	Topographic survey (Flasks)	FAS	August 2003
18	Intervention 7	0.2083	Augur survey (Flasks)	FAS	August 2003
19	Intervention 8	0.2083	Evaluation (Flasks)	FAS	September 2003

2.0 ARCHAEOLOGICAL BACKGROUND

There is now a considerable corpus of information available for the development of the Thornborough landscape, and a strong interest from both academic and public quarters. However, very little in the way of modern archaeological information was available for the area at the outset of this project in 1995. The principal prehistoric features - the henges, cursus and round barrows - had long been recognised, and had formed the focus of antiquarian attention since the 1860s. Continued interest in the 1950s added to the knowledge of these monuments, but again this activity focussed on small-scale investigations of specific monuments. Until recent work by the Vale of Mowbray Neolithic Landscape Project (Harding 1994-1997; Harding and Johnson 2003; 2004a-d), and the work at Nosterfield Quarry, little research had been undertaken to understand the wider context of these monuments. The current state of knowledge has been summarised in recent reports and large-scale assessments (Harding and Johnson 2003; FAS 2003a). Fieldwalking programmes (Harding and Johnson 1994; 2004b), environmental investigations (Howard *et al* 2000; Long and Tipping 1998; Tipping 2000), survey and excavation (Harding and Johnson 2004a-d) allow the landscape of the Thornborough monument complex to be explored further. Even so, fieldwork in the area is still seen to lag behind the more intensively studied prehistoric landscapes of southern England, and calls have been made for more comprehensive, detailed investigations of upstanding and below-ground archaeology (Harding and Johnson 2003, 9). In this context, the current work at Nosterfield quarry will provide a valuable and significant contribution to this area of research.

2.1 HISTORY OF ARCHAEOLOGICAL INVESTIGATIONS IN THE NOSTERFIELD AREA

The relative lack of knowledge at the outset of this project in 1995 can be emphasised by considering the history of investigation to that date, through antiquarian activity, early archaeological excavations and modern research. These results contrast dramatically with information that has been acquired since that date. The main focus was naturally on the prehistory of the area, but until the work of the 1990s, very little work was undertaken on a

broader, landscape-wide scale.

2.1.1 Antiquarian studies

Prehistoric monuments

Antiquarians and commentators of the 18th and 19th century had long been aware of the major monuments of the Nosterfield/Thornborough area, and particularly the three Thornborough henges that lie to the south of Nosterfield Quarry (Pennant 1773, in Thomas 1955, 443). The Ordnance Survey edition of 1852 labels them as 'camps' (OS 1852), and it appears that the nature and date of these monuments was little understood. Some contemporary scholars did, however, question this identification, instead suggesting their use for cattle pens or religious assembly (Lukis 1870a, 118-9). Antiquarian activity did not, however, focus on the henges, but on the more familiar barrows that cluster around them. These were recognised as prehistoric burial sites, and as such, were expected to yield interesting finds. Excavation of these monuments, many of which had already been substantially diminished by ploughing, formed part of the pastimes of notable individuals, and most particularly for this region, of the Reverend W. Lukis (Lukis 1870a, 119). Lukis' accounts record the enthusiasm of his contemporaries for the excavation of ancient remains:

> '...in the following week the Rev. W. Greenwell, of Durham, paid me a visit, and as I knew that no manual employment would afford him greater pleasure than grave-digging, I proposed that we should make a further examination of Howe Hill....' (Lukis 1870b, 176)

Numerous barrows are known to have existed in the wider area of the vale occupied by the Rivers Swale and Ure, and a considerable number have been recognised in the immediate vicinity. Lukis describes the remains of 'Centre Hill' barrow, between the southern and central henges, and records the finds of a body, thought to have been in a log coffin, '5 feet below the apex' (Lukis 1870a, 119). To the south of the Nosterfield Quarry, a series of barrows gave 'Three Hills Field' its name, and several more barrows are known from cropmarks and upstanding remains in the area around the Thornborough henges. Lukis is known to have investigated all three of these monuments, and records, albeit briefly, finds of ceramic vessels, flint and cremated bone (Lukis 1870a, 120).

In 1846, in the more easterly area surrounding the henge at Hutton Moor, antiquarians opened a barrow. Accounts record traces of charcoal, and evidence for burning beneath a small cairn, though no burial was identified (Manby 1971, 178). Lukis also excavated three barrows on Melmerby Common in 1864, and all were found to contain cremated bone, one with an urn and one with a pygmy cup (Lukis 1870a, 120; Manby 1971, 177). Their precise locations are unknown, although one is presumed to have been the 'Burtree Barrow', as flint implements from the investigations are recorded to have come from 'a barrow west of Sixpenny Hill, Parish of Sharow'. These activities seem to have been popular for some time, and the barrow at Stapley Hill, near Kirklington, is known to have been excavated in 1903 (Manby 1971, 175).

Fortunately, Lukis and his contemporaries left some account of their activities, though the records are notably cursory (Lukis 1870; Harding and Johnson 2004a, 5). Prior to recent excavations at Nosterfield Quarry, and in the Thornborough monument complex (Harding and Johnson 2004a; 2004d), these were the only 'archaeological' records pertaining to Bronze Age monuments in the immediate vicinity, and over the centuries, the barrows have been increasingly damaged by cultivation (Harding and Johnson 2004a, 16).

Early medieval sites

Lukis also encountered burials which seem likely to date to the early medieval period. At Howe Hill, near Carthorpe, four inhumations were identified and excavated. One was found to have been buried with at least four glass beads, and other grave goods included knives, buckles and strap ends. From Lukis' descriptions, it appears that these might represent crouched burials (Lukis 1870b). Another inhumation close to Camp Hill, again with grave goods, was deemed by Lukis to be 'evidently of the Danish period' (Lukis 1870b, 180). Lukis notes the propensity for burial on the top of gravel ridges (Lukis 1870b).

Of subsequent early medieval activity little appears to have been known, and the enthusiasm for exploring any possible sites of this date is not so evident. Collingwood (1907; 1909-11) records the presence of Anglian sculpture from Magdalen Field, and from the garden of Tanfield Lodge, while Whellan (1859) records the presence of a chapel near Hall Garth. Little further attention was given to remains of this date, and the nature of activity during this period remains largely uncertain today.

Even less attention appears to have focussed on remains of later periods. Few upstanding monuments of medieval and later date are known from the vicinity; the area is considered to have been primarily common land or agricultural through to the modern period. Antiquarian activity remained directed primarily towards the prehistoric monuments.

2.1.2 Archaeological investigations of the 20th century

Prehistory

The focus on major monuments continued into the 20th century, when more detailed archaeological investigations were carried out at the Thornborough monument complex (Thomas 1955; Vatcher 1960), and in the wider area. In addition to the three monuments of the Thornborough alignment, the henges further south, at Hutton Moor, Nunwick and Cana Barn, were studied. Of these six, four were subject to some form of archaeological investigation during the early to mid-20th century. The Hutton Moor henge was investigated 'some years' before 1929 (Raistrick 1929, 364) and Nunwick was explored in 1961(Dymond 1964). During 1952, Nicholas Thomas investigated the central of the Thornborough henges (Thomas 1955). At the central henge, two small sections were cut across the inner ditch, one of which was extended to investigate the outer bank, two were cut across the known line of the cursus and a small trench was dug close to the centre of the henge (Thomas 1955, 428). A profile across the northern henge was also undertaken, with two test pits dug into the bottom of the inner ditch (Thomas 1955, 434).

During investigations of the central Thornborough henge, Thomas identified a significant quantity of gypsum, which was used to suggest that the monument banks may have been coated with white gypsum (Thomas 1955, 433). Conclusions concerning date and chronology were, however, rare, as few diagnostic finds were produced. On the basis of simplicity, the Nunwick henge was considered to be the earliest of the six (Dymond 1964, 101). Thomas (1955, 429) used climatic evidence from soil samples to suggest a date in the early Bronze Age for the construction of the henges. Only during much more recent excavations of the Thornborough complex were more secure, scientific dates produced, and various phases of construction identified (Harding 1998; Harding 2003).

Burl's classification of the henges, building on work by Atkinson and Piggott, highlighted the links between these monuments as a distinct group. Five of the six known henges in the region belong to Burl's Class IIA, of which the 'Big Rings' of Dorchester-on-Thames is the only example outside this area of North Yorkshire (Burl 1969). The recognition of these monuments as a regional group was an important move away from the concentration on monuments in southern England.

A cursus, running across the central Thornborough henge, was initially identified between 1945 and 1958 by J.K. St Joseph, whose aerial photographs revealed a linear feature at least 2.3km in length and between 44 and 58 km wide, aligned NE-SW. Thomas (1955) carried out excavations of the cursus ditch in 1952, also recording the sections of the cursus as they were removed during gravel quarrying at their western end (Thomas 1955, 429-432). Thomas showed that the cursus ditch underlies the southern bank of the central henge, and a high humus content in the lower backfill of the cursus ditch was seen to reflect the location of the monument in 'relatively close woodland under an oceanic climate with plentiful rainfall'. It was therefore concluded that 'the Thornborough cursus was constructed in the Atlantic or pre-Bronze Age climatic phase (Thomas 1955, 432).

Vatcher recorded the nature of the cursus ditch some six years later, when 'owing to extensive gravel quarrying, part of the northwest side of the cursus ditch had been exposed and part quarried away' (Vatcher 1960, 425). Although no artefacts were recovered from this fieldwork, study of the soil samples led Vatcher to support the conclusion that the monuments would have been constructed in the late Neolithic-early Bronze Age, again on the grounds of evidence for climate change (Vatcher 1960, 179). This date has since been parallelled by finds at other cursus sites in Yorkshire (Topping 1982).

During quarrying in 1958 a stone cist was uncovered, containing a crouched inhumation, on the central line of the cursus (Vatcher 1960, 181-2). This may represent continued use of the monument complex into the Bronze Age. During the 20th century, more work was also undertaken on the barrow burials. The Quernhow barrow was investigation in 1949 (Waterman 1951), revealing two phases of burial, which included cremations accompanied by food vessels.

Roman

Investigations during the 1930s to 1960s also revealed more about Roman use of the Nosterfield landscape, though the lack of major settlements in the area means that known remains are dispersed and often fragmentary. The main landscape feature that has been recognised for some time is the route of Dere Street, which formed a predecessor to the modern A1. Sections of road surface were identified at Healam Bridge in 1949 (*YAJ* 1951, 522-3) and at the Baldersby Gate cross roads in 1939 (*YAJ* 1943, 97-9). This was the only Roman route known in the area.

Major forts were known to have existed at Aldborough and Catterick, but the much closer settlement at Healam Bridge was not securely identified until the 1990s, just prior to the onset of the current investigation (Jones 1994). This fort was dated by ceramic evidence to the Hadrianic/Antonine period, though some evidence for 3rd and 4th century activity has been revealed. The settlement comprised a fort and associated *vicus*; the latter had come to dominate the site by the 4th century (Jones 1994). Additionally, a single inhumation was known from investigations (Jones 1994).

Within the more rural landscape surrounding the area of investigation, a number of smaller sites were known, including at least two villa complexes. Investigations at Well, less than 1km northwest of Nosterfield, produced evidence for a bathhouse, and tessellated pavement (Gilyard-Beer 1951), ascribed a date in the late 2nd century (Smith 1969, 78). A second villa has been recognised to the south, at Castle Dikes, where a bipartite complex was identified within a subrectangular earthwork (Berry 1953), producing evidence for mosaic floors of 2nd-century date, and fragments of painted plaster (Liversidge 1969, 141, 148). At Yamagarth, near Kirklington, a burial was found, associated with finds of 'white ware', though the only Roman evidence in the immediate vicinity comprised a bronze brooch, found in 1951 (*YAJ* 1951, 523).

Throughout the 20th century, interest in archaeological evidence of later periods increased, and the deserted medieval villages of Britain were given more attention (Beresford and Hurst 1971). The sites of East Tanfield, Yarnwick Garth, Nunwick, Howgrave and Sleningford are among the deserted settlements in the area surrounding Nosterfield; the village of East Tanfield was considered by Beresford and Hurst to be of medium quality, worthy of preservation (Beresford and Hurst 1971).

2.1.3 Modern investigations in the Nosterfield Quarry area

During fieldwork of the early 1990s, prehistorians such as Harding expressed the need to appreciate regional variation in monumentality, and to move away from using the southern complexes of Wessex as comparanda (Harding 1991). In recognising the lack of modern archaeological research directed towards the monuments of this area, and the need to explore their landscape context, the Vale of Mowbray Neolithic Landscape Project was established in 1994, and conducted a series of investigations which ran until 1999.

2.2 THE STATE OF KNOWLEDGE IN 1995

At the outset of the current investigation, the significance of the prehistory of the Nosterfield area was beginning to be recognised, tying in with a move towards wider landscape approaches to prehistory. The work by Harding was revealing the complex organisation of the landscape, as a programme of reconnaissance fieldwalking demonstrated variations in the distribution of artefacts from different periods. During the Mesolithic and early Neolithic, the area appears to have been widely used, and no discrete patterns were identified. However, during the later Neolithic and early Bronze Age, contemporary with the construction of the major monuments of the area, there appears to have been a marked change in the occupation of the landscape, and evidence for domestic occupation was found to occur at locations distant from the henge monuments. This has been interpreted as a conscious separation of sacred and profane, corresponding with major changes within the organisation of society (Harding 1994, 1995).

The watching brief that had started within Nosterfield Quarry was providing a rare opportunity to investigate large open areas within the landscape and was beginning to reveal the nature of the surviving archaeology within this area. Although much damaged, and often destroyed, by medieval, post-medieval and modern agriculture, the archaeology within the wider area was beginning to be recognised by the academic community as one of significance for the study of prehistory and landscape use in northern England.

3.0 PRE-DETERMINATION ASSESSMENT AND EVALUATION

The earliest investigations associated with the quarry were undertaken by Mike Griffiths and Associates, in support of a planning application for sand and gravel extraction at Nosterfield. A desk-based assessment was carried out, followed by an archaeological evaluation.

3.1 INVESTIGATION 1 (DESK-BASED ASSESSMENT)

In July 1991, Tilcon Ltd. commissioned a preliminary archaeological survey for an area of proposed quarrying near to Nosterfield (MGA 1991; MGA 1992). This involved a desk-based assessment of the archaeological resource, using records available at the time (Phase 1), following which attention was paid to an area in the northern part of the proposed quarry, known as the Flasks. This area was subject to a walkover survey, the recovery and sieving of samples of peat, the extraction of a 1m monolith, and the preparation of a deposit model (Phase 2).

3.1.1 Fieldwork results

Phase 1

The desk-based assessment was compiled following an examination of records held in the North Yorkshire SMR, County Archives, local history collections and available aerial photographs. The importance of the area as a prehistoric ritual landscape was recognised, as was the fact that features associated with this landscape would extend into the area to be quarried. This research identified pre-existing soil surveys which suggested that the area of pasture beneath the Flasks contained peat deposits potentially containing palaeoenvironmental evidence. As such, investigations commenced to ascertain the extent of the peat, and the nature of remains preserved within it.

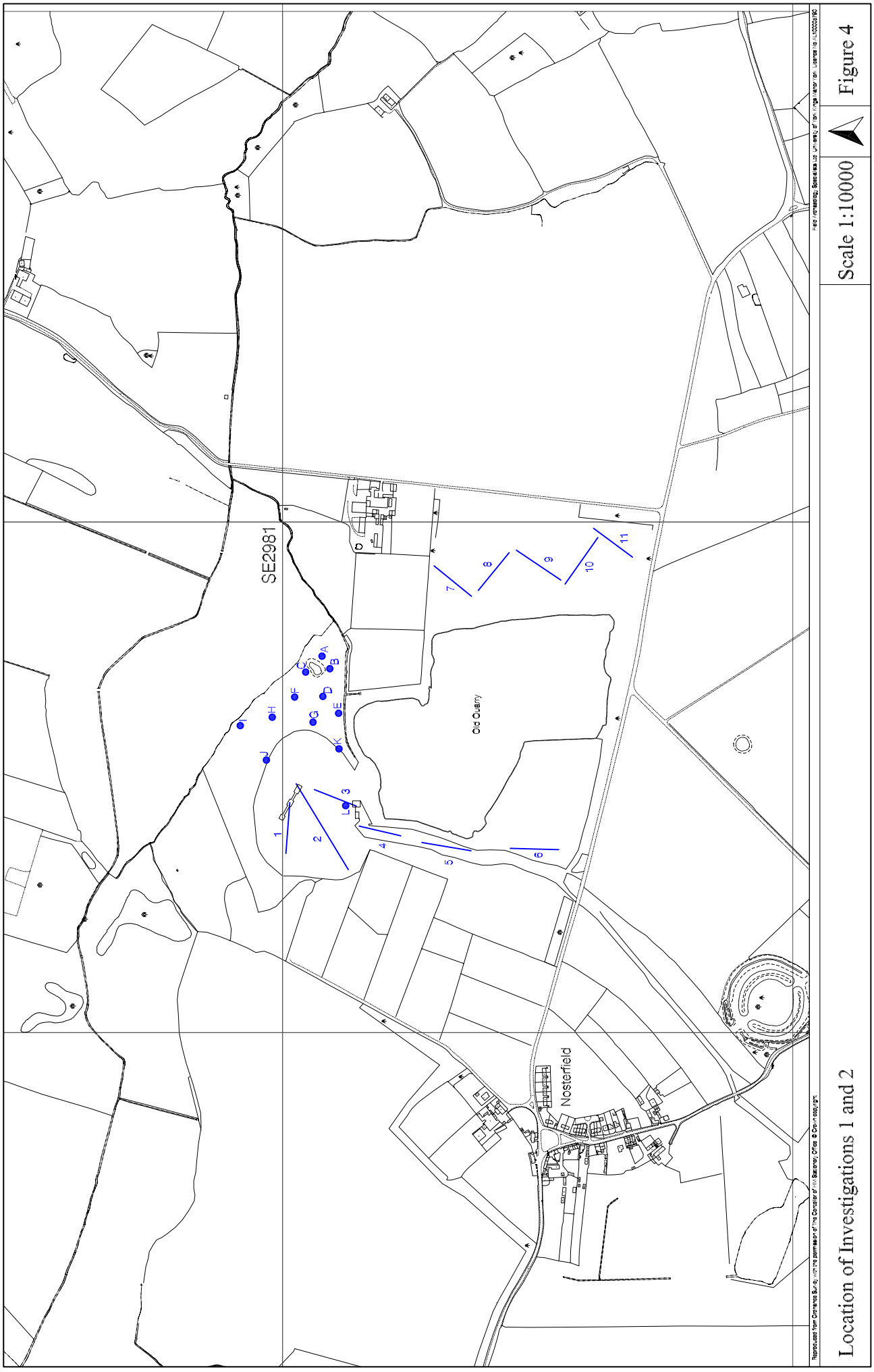
Phase 2

In October 1991, a 1m monolith was extracted from the Flasks (SE 286 808), and subject to analysis (Berg 1991), which revealed that the peat at Nosterfield is phragmites peat, formed at the edge of an ancient lake. During sampling, a number of flint items were recovered from the surface of the area, which have since been subject to specialist study and identified as flakes of uncertain date (Appendix C: Part 1).

Following these results, the area of investigation was extended, and a walkover survey of an area of pasture was undertaken. In twelve locations (A to L), 2kg samples of exposed peat/soil were collected and wet-sieved; finds recovered from this were all identified as modern brick or tile (Figure 4). This survey allowed some conclusions to be drawn concerning the extent of the peat, and the area was subsequently subject to an auger survey, which confirmed the presence of a continuous stratum of peat, which became shallower towards the north of the area. The survey also identified a number of much deeper channels which may have been formed by water.

3.2 INVESTIGATION 2 (EVALUATION)

An evaluation was carried out in January 1995 by AOC (Scotland) on behalf of Mike Griffiths and Associates, for Tilcon Ltd., in advance of the extension of the gravel quarry at Nosterfield (Quarry Phase 1a, 5b; see Figure



Location of Investigations 1 and 2

Scale 1:10000

Figure 4

2). Two areas were subject to investigation: a corridor to the west of the earlier quarry, for the installation of a haul road, and a rectangular area to the east of the earlier quarry. The evaluation consisted of eleven trial trenches. All trenches were 100m x 2m, with the exception of Trench 2, which measured 200m x 2m (see Figure 4). The topsoil was stripped, and visible features were cleaned, excavated and recorded (Dalland 1995).

3.2.1 Fieldwork results

The Flasks (Trenches 1 to 3)
Work on the area of the Flasks revealed a total of four features of potential archaeological interest, comprising two linear features and two sub-circular pits. Of these, one of the pits (Cut 102) and one of the ditches (Cut 104) produced modern material, and the second ditch (Cut 106) was identified as an old hedgerow. The final pit produced no datable remains.

Haul Road (Trenches 4 to 6)
Within Trenches 4 to 6, apart from a modern field drain in Trench 4, the only identifiable features were two sub-rectangular pits identified in Trench 6 (Cut 603, Cut 605). Two samples from these features revealed that they contained carbonised hazelnut shells and charcoal, as well as a flint artefacts (Holden 1995). Analysis of the flint remains suggested that they would not be out of place in a Neolithic context, but that they could not be used to ascribe a secure date (Rowe 1998; Appendix C: Part 1).

Eastern end of the old quarry pit (Trenches 7 to 11)
Within Trenches 7 to 11, just three features of archaeological potential were identified, comprising a circular pit (Cut 702), the butt-end of a ditch (Cut 1001) and a linear feature (Cut 1103), of which none produced diagnostic or dateable finds.

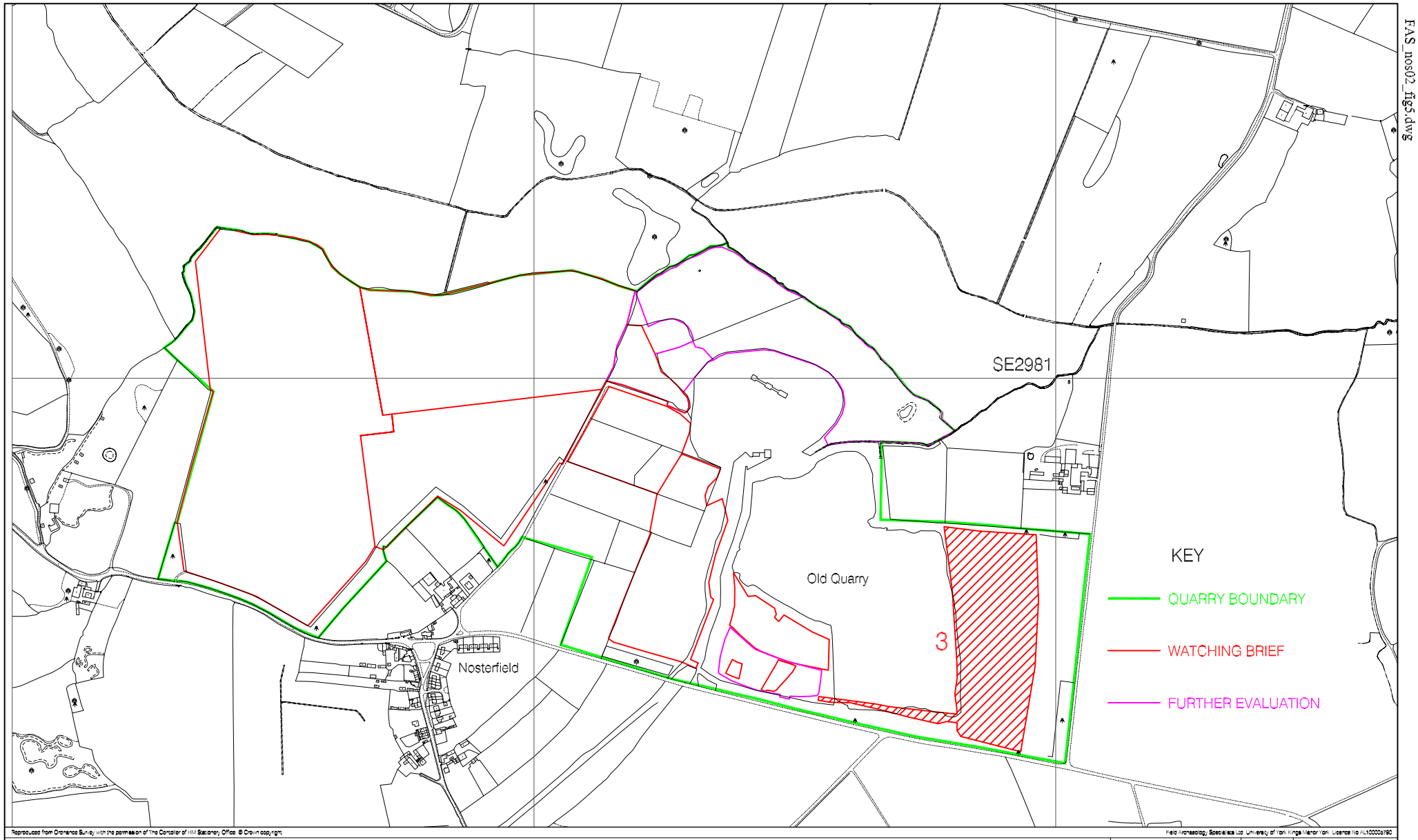
3.2.2 Assessment

Given the proximity of Investigation 2 to the known monument complexes of Thornborough, the lack of archaeological features identified in this area was notable. The potential of the area to produce prehistoric features was suggested by the environmental evidence and flints produced from pits (Cut 603 and Cut 605), but such features appear to have been very widely dispersed throughout the area. The excavation of trenches covered a total area of 2400m^2, and only two recorded features provided material indicative of a potentially early date; perhaps significantly, these were found in the same trench.

4.0 WATCHING BRIEF

4.1 INVESTIGATION 3 (AREA 1, 2 AND 3, TRENCH 4)

Also in 1995, a watching brief was undertaken during the stripping of topsoil in an area of Nosterfield Quarry previously evaluated by Trenches 7 to 11 of Investigation 2 (Quarry Phase 1a, 5b)(Figure 5). For the purposes of recording, this area was divided into Areas 1 and 2. A watching brief was also maintained on the construction of the haul road, referred to as Area 3, which had been covered by Trenches 4 to 6. The results of this fieldwork



Location of Investigation 3

Scale 1:10000

Figure 5

were reported in an earlier document, on which the following summary is based (Gledhill and Griffiths 1995).

4.1.1 Fieldwork procedure

The upper portion of the topsoil was removed using box scrapers which was a common practice on quarries in this period. The remaining topsoil was removed using large back-acting excavators fitted with a wide, toothless ditching bucket. Initially any anomaly was marked and mapped, and if considered to be a genuine feature, was excavated in half-section and recorded. In Area 1, this strategy was revised in the light of the number of features being revealed, and the speed of the topsoil stripping. Where groups of features existed, then at least one of each size was planned and sectioned. The others were located, and sectioned when working conditions allowed, or were quickly excavated to recover any material; machines were used to section the sink holes (Appendix A).

Due to the soft nature of the marl in Area 3, the topsoil and marl were excavated together, which reduced the potential for identifying archaeological features. Where possible, these were noted and recorded.

The cut numbers originally assigned are used as feature numbers for the purposes of this report, and are used to refer to the cut and related deposits as a group.

4.1.2 Fieldwork results

AREA 1 (TRENCH 4)

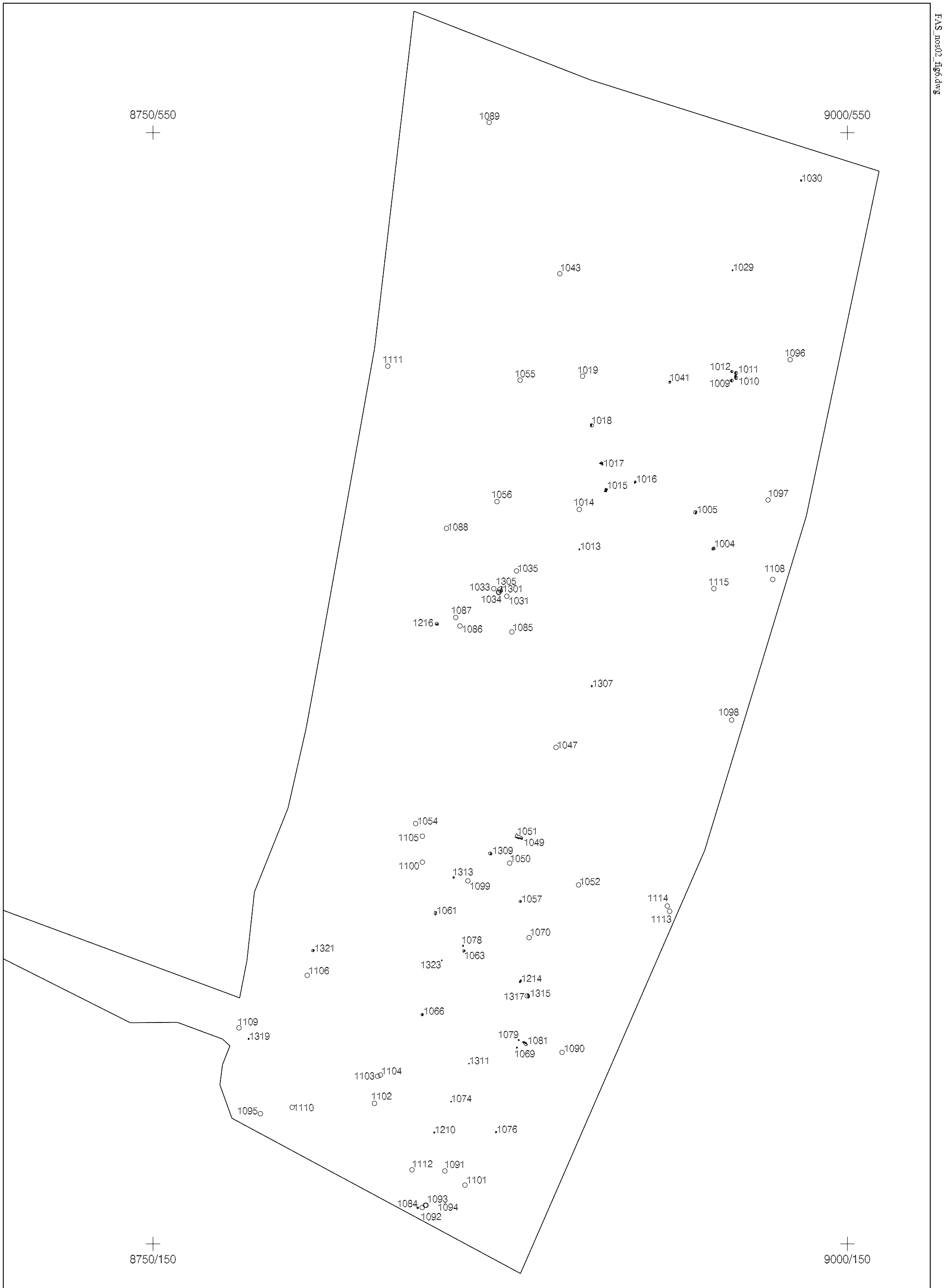
Area 1 was the largest of the three, and covered an area of approximately 6.2 hectares to the east of the old quarry workings and south of Ladybridge Farm, bounded to the east and south by roads. This land occupies the end of a low ridge, which extends southwards beyond the B6267 Nosterfield road. At the western part of the site, the land was found to slope away sharply towards the edge of a relict lake.

Topsoil stripping in this area revealed an orange-brown subsoil, up to 0.50m thick, over clean grey sands, grits and gravels, which were exposed in places. On the western edge of the area, where the ground surface sloped towards the in-filled lake, strips of desiccated peat were exposed which possibly marked the edge of the Pleistocene lake. Elsewhere, one large area of heavier clay was noted (50m east-west by 30m north-south). Almost the entire surface of the subsoil was found to be covered with parallel lines of disturbance 0.20m wide and 0.50m apart, which were identified as modern subsoiling. The area of clay was also cut by a series of stone-filled land drains which produced no dating evidence but which are considered to be post-medieval in date.

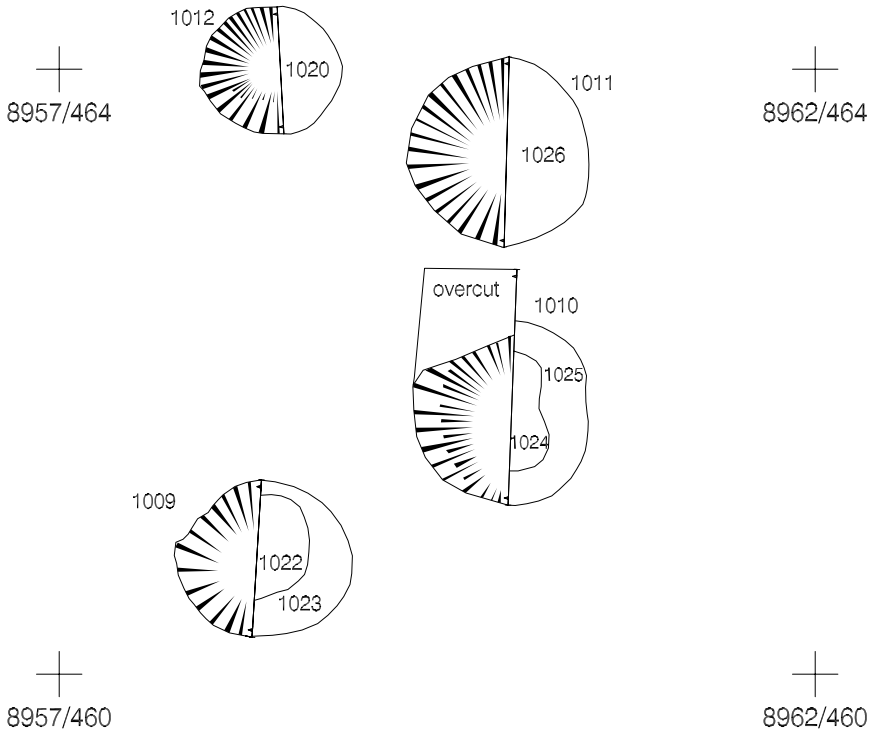
Pits and hearths

During excavations, a series of 83 anomalies were identified, of which 38 were excavated and recorded in detail. The remainder were located and rapidly excavated in order to retrieve dating evidence, but not fully recorded, due to time constraints. The features were found to be distributed across Area 1, forming two loose groups to the north and south (Figure 6). Within this distribution, two smaller clusters of features could be identified (Figures 7 and 8). No features were revealed on the area of clay, or on the lower slopes leading to the relict lake.

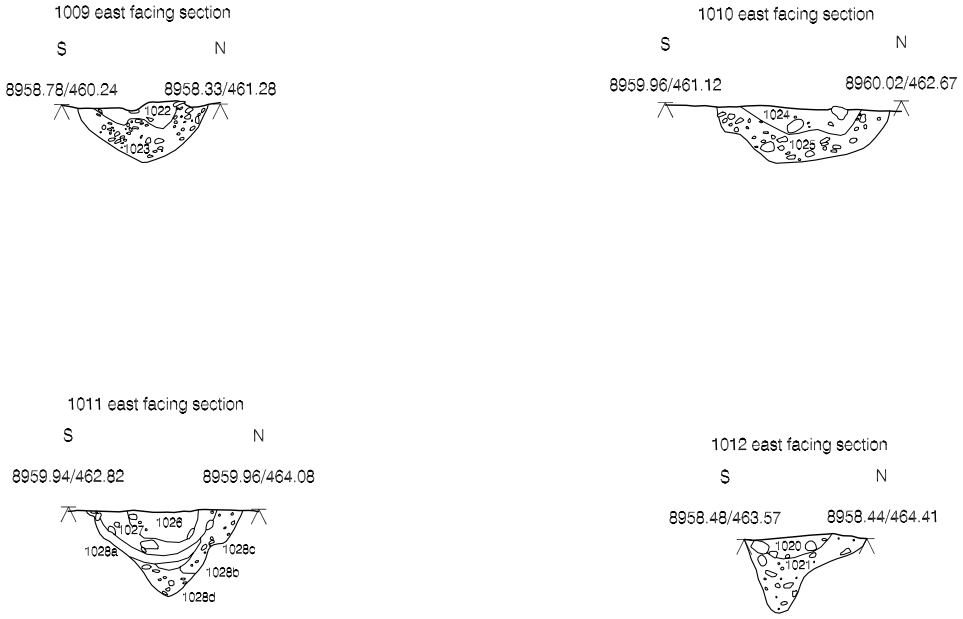
The section drawings of the 38 sectioned features reveals them to have been pits (35) or scoops (3), of which 13 were interpreted as hearths on the basis of heat affected soils or charcoal-rich fills, and the remaining 70 were



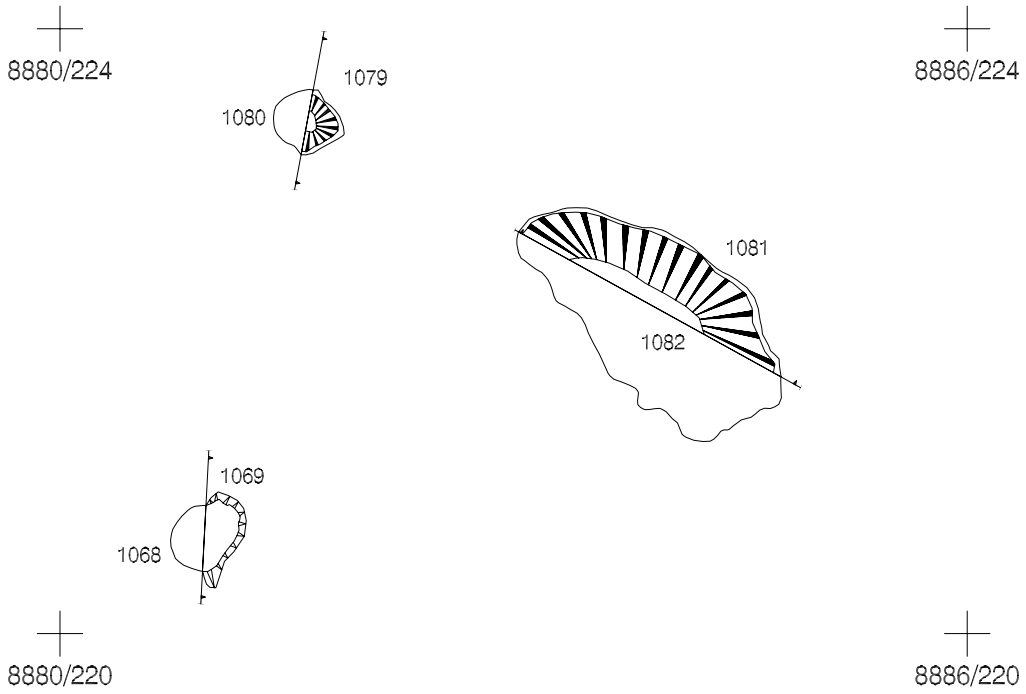
Investigation 3 (Trench 4, Area 1) map of archaeological features | Scale 1:1250 | Figure 6



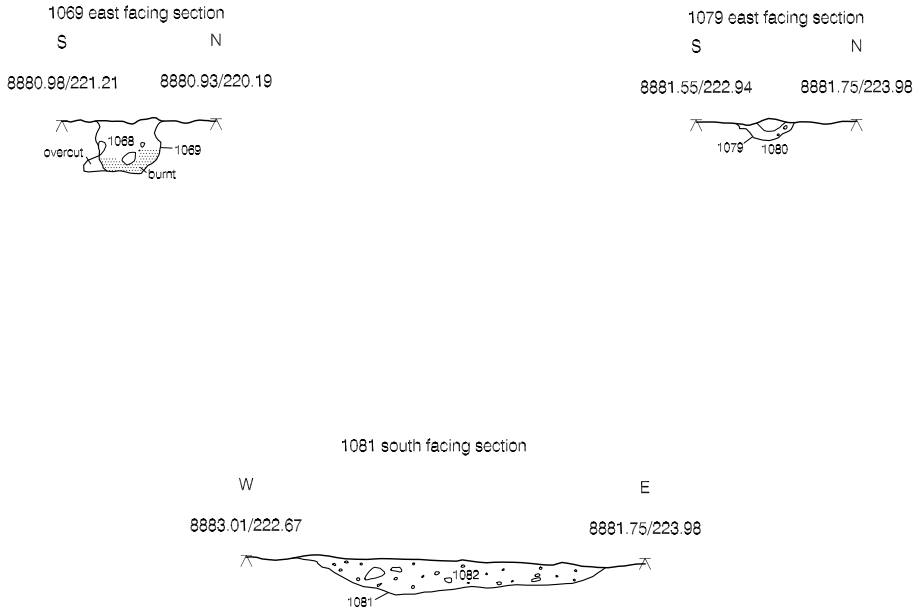
Investigation 3 pit complex hachure plans | Scale 1:50



Investigation 3 pit complex sections | Scale 1:50 | Figure 7



Investigation 3 hachure plans of 1069, 1079 and 1081 | Scale 1:50



Investigation 3 sections of 1068, 1080 and 1082 | Scale 1:50 | Figure 8

therefore classed as pits.

Features which might tentatively be identified as hearths include F1061, F1069 and F1081, the cuts of which were described as slightly heat affected soil beneath a fire. Other anomalies which appear to have been scorched, and were interpreted on site as possible hearths, included some rapidly excavated features (F1085, F1095, F1100 and F1102). Other features which are described as containing patches of soil burnt a dull brick red (F1041 and F1115) are probably pits which produced evidence of burnt material (for example F1051 produced charred hazelnut shells and burnt bone). F1051 is described as being made up of a series of features.

The pits varied in size and shape. Three different types were identified by the excavators (Type 1-3) based upon the number and the character of the fill, and the presence of finds. Type 1 pits were found to be the most common, consisting of regular U- or V-shaped profile, with a diameter of between 0.80m and 1.20m, and ranging from 0.20 to 0.80m in recorded depth. This type typically had three fills, with a sterile lower backfill, and finds of flint and rare ceramic fragments in the upper fills. The upper fill was usually stony or contained frequent burnt stones and occasional charcoal; the middle fill was charcoal-rich; the lower fill was also stony and produced only occasional charcoal, although burnt stone was rare or absent. Nine pits of Type 1 were excavated (F1005, F1015, F1030, F1057, F1066, F1210, F1216, F1313, F1321), and six other anomalies may also belong to this group (F1052, F1089, F1092, F1099, F1112, F1398).

Type 2 pits (F1009, F1010, F1012, F1016, F1017) contained two fills, lacking the 'bowl shaped second fill of Type 1'; the upper fill was a less stony silty matrix which produced occasional burnt stone and charcoal; the lower fill was stony with a coarse sand component. Finds were recovered mostly from the upper fills of these features.

Type 3 pits were smaller, with a base that was level or slightly dished (F1069, F1074, F1307). The upper fill was sandy and virtually stone free, with few charcoal flecks, but the lower fill was slightly siltier, with occasional fragments of burnt stone and more charcoal. Finds were mostly in the lower fill; pottery was common with flint less common. Of these examples, records suggest that F1074 and F1069 had only one fill, which may indicate that they may in fact belong with the remainder of the features which were not assigned to any type.

F1004 was the only pit to be fully excavated and recorded. It had apparently been re-cut with sandstone slabs positioned in the base of the re-cut. Possible re-cuts were observed in two other pits, F1011 and F1305, and a flat fire-scorched stone was found in a horizontal position close to the surface of F1009.

F1305 was a large sub-rectangular pit, and represented the only feature on the site with significant stratigraphy. The primary fill, C1304, was composed of a loose, fine, ashy material with frequent small stones and gravel. It darkened gradually toward the base from grey to almost black; much of the stone content was burnt. The upper fill, C1302, appeared to be a re-deposited subsoil (C1303). It had been cut on the north side by a re-cut F1301, filled with a grey to black deposit which consisted mostly of charcoal. Rounded pebble-sized stones which were reddened and cracked were common, particularly toward the base of the fill.

Of the remaining 45 features which were not fully recorded, 38 were identified as pits, and 7 as possible hearths.

Generally, these features are undated, although Neolithic dates have been suggested for two, on the basis of ceramic or lithic material.

Possible Sink Holes

F1117 and F1118 were two large circular features, both of which were sectioned by machine. The northern feature, F1118 was vertical-sided, 2.00m in diameter and over 1.50m deep. It contained a mid-brown loamy sand. The southern pit, F1117, was 3.00m in diameter and over 1.00m deep and several fills were noted. The upper fill was a mid-brown sand, 0.40m thick, although on the surface was a discontinuous spread of charcoal and burnt soil; below this were successive fills of stony material.

Plate 1 Peterborough ware

Finds

Nineteen of the excavated features produced finds of prehistoric date. The material consisted primarily of pottery, of which the most diagnostic fabrics are identified as Grimston Ware, Peterborough Ware and Grooved Ware (Plate 1), and lithics (Appendix D: Part 1). Although much of the lithic assemblage was largely undiagnostic, those elements that were datable are considered to be not earlier than the Neolithic, and all of the tools were concurrent with use in the early and later Neolithic. Two samples were subject to environmental analysis revealed the presence of cereal grains, probably barley, along with apple/pear seeds and hazelnut (Appendix E: Part 1).

Plate 2 Volcanic rock saw

Seventeen out of the 38 excavated features produced lithic material. Most of the features produced less than 20 pieces, although two, F1011 (33), F1216 (46), produced more. One of the unrecorded features, F1096 (340), produced a substantially greater amount (Appendix C: Part 1). A number of fragments were noted to have been burnt, but as they generally occurred with unburnt flint, this cannot be considered evidence for *in situ* burning. Of the diagnostic fragments, an end scraper knapped from a polished handaxe was identified in pit F1074 and identified as Neolithic; a similar date is suggested by a leaf point (F1018), a leaf butted arrowhead (F1069), and a volcanic rock saw (F1313; Plate 2).

The ceramic material allows for some chronological distinction to be made between the features. Of the 19 features to have produced ceramic, two produced earlier Neolithic Grimston Ware, both of which are located at the southern end of the site. Subsequent activity, evidenced by later Neolithic wares, is found throughout Area 1 (Plate 3).

Plate 3 Late Neolithic grooved ware

AREA 2

Area 2 is recorded to have been located to the south of the Flasks, and west of the old gravel pit, and probably represents topsoil stripping of the northern part of the haul road to the processing plant. Topsoiling of the area revealed a sand and gravel subsoil similar in character to that in Area 1. Three features were described situated on the better drained, higher ground. F2001 was a poorly defined feature with an irregular base. It measured L0.70m x W0.45m and was 0.17m deep. It contained a brown sandy silt fill with occasional small stones and flecks of charcoal. Some 70m further north was a sub-circular feature, F2002, 0.75m diameter and 0.60m deep, which had steep sides and a rounded base and contained two fills. About 15m north of this there was a small, superficial spread of charcoal and burnt stone, F2003. The charcoal formed three small, discrete patches about 0.30m in diameter.

AREA 3

A third area (Area 3) was stripped to form a new haul road which ran north from the main Nosterfield road to the processing site, west of the old quarry workings. The topsoil consisted of a desiccated peat, mixed with a small amount of marl, probably as a result of ploughing. Beneath the topsoil were patches of better preserved peat and a thicker deposit of marl. Where it was exposed in side channels at the south and north ends of the area the marl was at least 0.40m thick, in the centre it overlay waterlogged sands and gravels at a depth of 1.00m.

Several features were noted during the topsoil stripping. A low bank made of stone was observed in the southwest corner of the area, aligned approximately north-south. A mature ash tree grew on this close to the northern end of the bank. North of it a shallow, flat-bottomed ditch was defined on a similar alignment to the bank. These features were interpreted as a recent field boundary.

To the east of the field boundary were four sub-circular pits filled with deposits of dark brown peat. These were identified as natural sink holes, and as such were not recorded as archaeological features. Three of the pits were grouped at the northern end and one at the southern end of Area 3. These features varied in diameter from 1.20 to 1.50m and in depth from 0.70m to over 1.50m.

4.1.3 Assessment

The watching brief revealed a scatter of features, pits and scoops and possibly hearths around the margins of a former lake which had apparently largely silted up by the Neolithic. The features are all that remains of what appears to be occupation near the margins of the relict lake, close to natural sink holes, which may have contained standing water or been localised patches of marshy ground. Although occasionally grouped together in small clusters, the pits and scoops do not form any coherent pattern, nor is there anything to suggest that activity was continuous, but it is perhaps noteworthy that the features which produced earlier ceramics are located at the southern end of the site.

4.2 INVESTIGATION 4 (TRENCH 5)

A watching brief in the spring of 1996 (Trench 5) revealed a scatter of features and recent animal burials. Trench 5 was a rectangular area 204m east-west by 77m north-south, situated south of the old quarry workings and approximately 100m north of the B6267 Nosterfield road (Quarry Phase 2a). It covered an area of 1.52

hectares, and had not been the subject of any previous archaeological investigation (Figure 9).

4.2.1 Fieldwork Procedure

Topsoil from the site was stripped using back-acting excavators, fitted with toothless ditching buckets. Features were identified and mapped following topsoil stripping, and a representative sample excavated and recorded.

4.2.2 Fieldwork Results

The watching brief identified a number of features scattered widely across the area of investigation, of which two appear to have been spreads (C5003 and C5034), two were identified as vegetation pits (F5037 and F3038), and the remainder comprised a ditch and a series of scoops and pits (Figure 10).

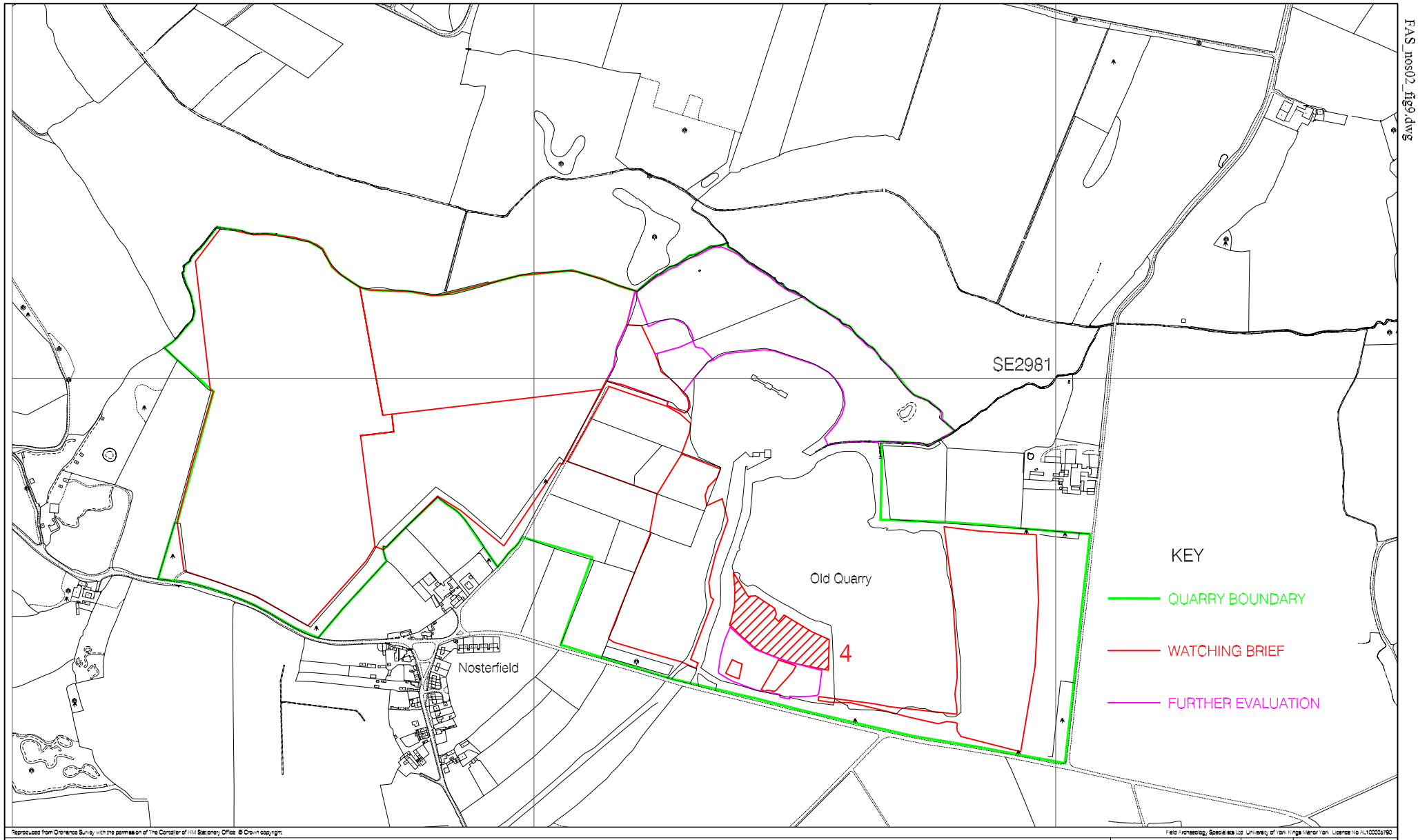
Land drains and modern animal burials
Beneath the topsoil, at least four linear field drains crossed the area on a north-south axis. No finds were recovered from these and they are assumed to be of recent date. They appear to drain water to the north. One ditch, F5007, was also considered to be modern, and therefore was not fully mapped. A series of modern animal burials were also identified; nine contained sheep and two cow skeletons, which were clustered around the northern edge of the area.

Spreads
Two unexcavated spreads were mapped (C5003 and C5034), but were found to represent natural anomalies, and were not recorded further.

Pits and scoops
Thirteen features were excavated, distributed widely across the area with loose clusters formed by two or more features. Two more possible pits were identified but not recorded further (F5009 and F5026). Apart from three shallow scoops, all of the features were pits (Appendix A).

As a group, the excavated features were small, and all but two were found to be sub-circular or oval features, with a diameter of less than 1.00m and a depth of between 0.05m and 0.40m. F5021 and F5035 were found to be larger, sub-rectangular features measuring 1.78m x 0.55m and 1.30m x 0.52m respectively. No more than two fills were identified in each feature, and very few finds were recovered (Figures 11 and 12).

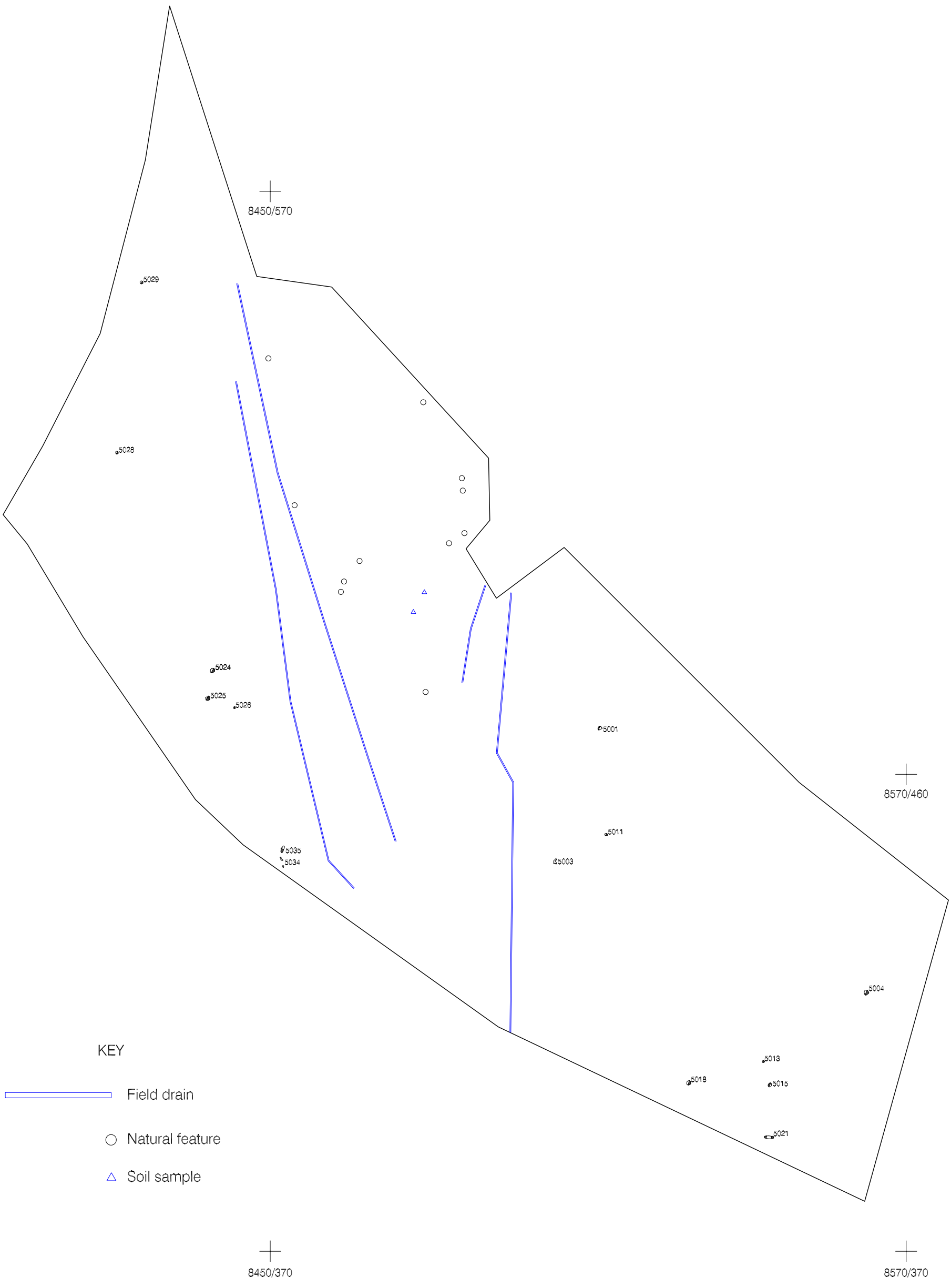
A small group of prehistoric finds (lithics and pottery) was recovered from F5004, F5013 and F5035. Very small fragments of prehistoric pottery were recovered from F5013 (C5014); diagnostic fragments were identified as late Neolithic Peterborough Ware together with a few pieces of waste flint. F5035 (C5036) produced a serrated blade and a bifacially worked tool, possibly an unfinished leaf or chisel-shaped arrowhead, dating to the late Neolithic or early Bronze Age. One other piece of flint debitage came from F5004 (C5005) and a scraper was recovered from an unstratified context (Appendix C: Part 1).



Location of Investigation 4

Scale 1:10000

Figure 9

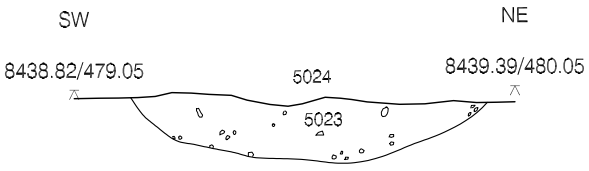


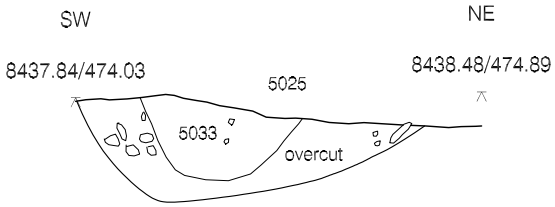
Investigation 4 map of archaeological features

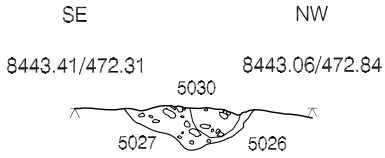
Scale 1:750

Figure 10

Investigation 4 hachure plans of 5024, 5025 and 5026	Scale 1:50		Figure 11







Investigation 4 sections of 5024, 5025 and 5026	Scale 1:20	Figure 12

4.2.3 Assessment

The features, and the finds recovered, suggest that the archaeology of this area was similar in character to that identified in Investigation 3 (Area 1). Again, the recorded remains were sparsely scattered, making identification of any spatial variation problematic.

4.3 INVESTIGATION 5 (WYAS)

In late January 1997 a watching brief was undertaken within an area, 60m by 7m, along the eastern side of Trench 5 (Quarry Phase 2a). No archaeological remains were identified, and no finds retrieved (Figure 13; Appendix F: Part 1).

4.3.1 Fieldwork procedure

The area was stripped of topsoil using a tracked back-acting mechanical excavator, during which time close archaeological supervision was maintained. The topsoil was stripped and scanned for finds, and subsequently, the subsoil was removed in a series of controlled spits down to the level of natural gravel. This surface was then inspected for archaeological features.

4.3.2 Fieldwork results

No finds were recovered, and no archaeological features were identified.

4.3.3 Assessment

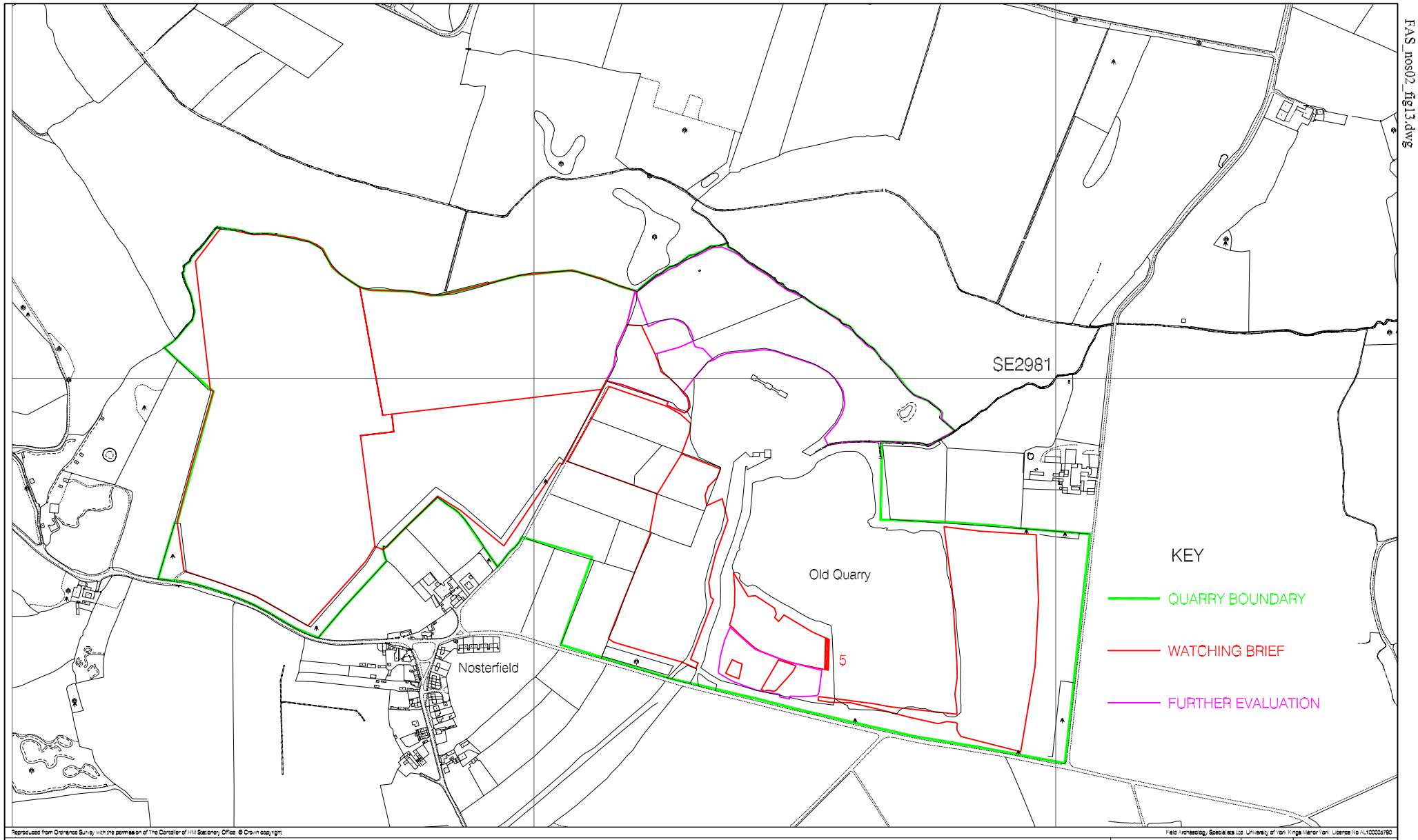
Given the dispersed nature of the archaeological features identified in nearby investigations, it is perhaps not surprising that archaeological features were not identified within such a small area of investigation; it is possible that archaeological remains had simply not survived in this area.

4.4 INVESTIGATION 6

During July 1997, WYAS were commissioned to undertake a gradiometer survey of a 1 hectare area between Investigation 5 (Trench 5) and the Nosterfield road (B6267) (Quarry Phase 2a) (Figure 14). The survey aimed to ascertain whether gradiometry represented a suitable evaluation technique on the local gravel geology, and to assess the nature of any remains that could be identified.

4.4.1 Fieldwork procedure

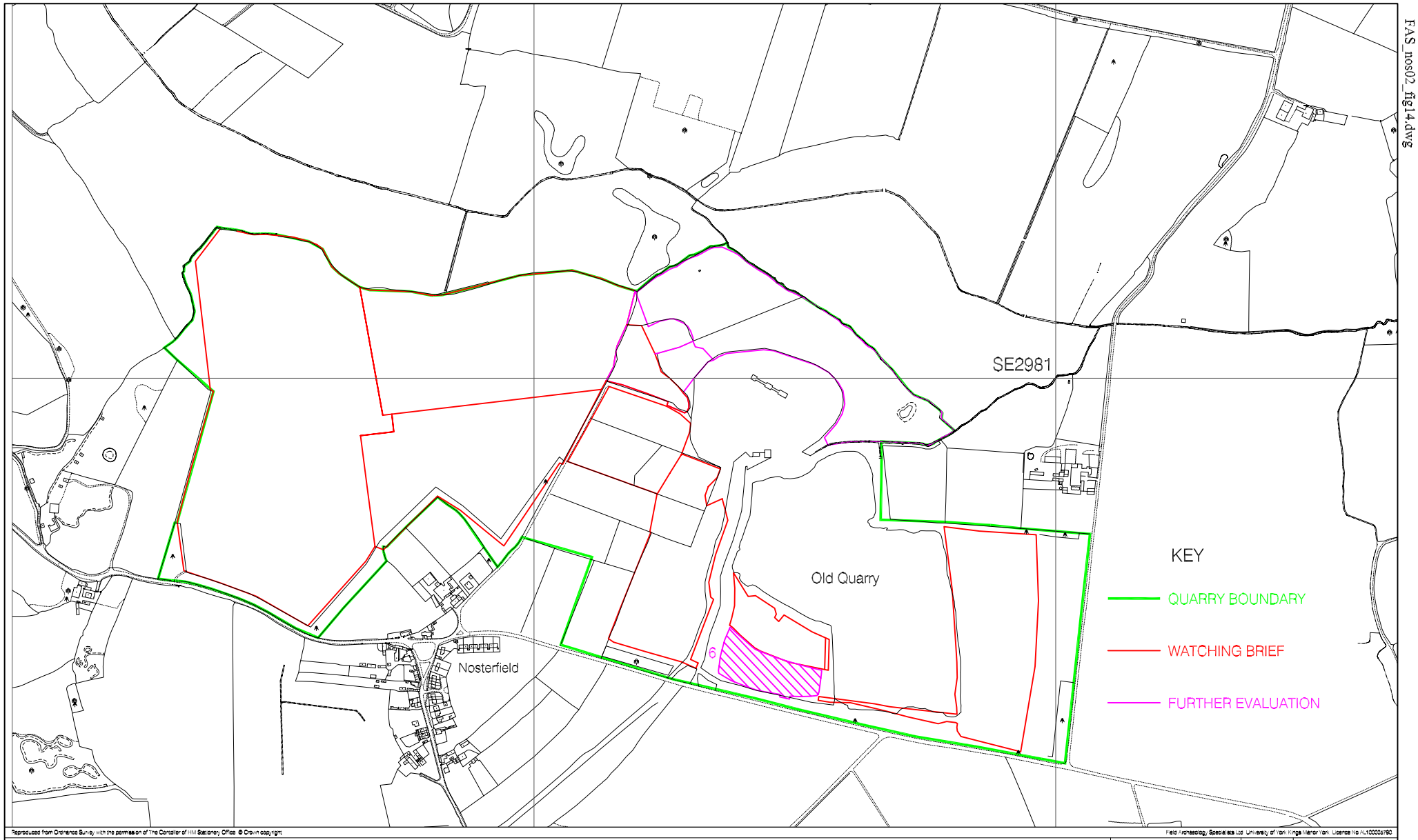
The magnetometer survey was undertaken using a Geoscan FM36 fluxgate gradiometer. Readings were taken at 0.50m intervals along 1.00m traverses. Details of methodology and technical information are detailed in the report produced by WYAS (Appendix F: Part 2)



Location of Investigation 5

Scale 1:10000

Figure 13



Location of Investigation 6

Scale 1:10000

Figure 14

4.4.2 Fieldwork results

Three types of anomaly were identified during this survey: 'iron spikes', positive magnetic anomalies identified as possible pits, and a more general area of enhanced readings. 'Iron spikes' were common across the site, and are generally interpreted as ferrous material on the ground surface and in the topsoil. As such, they were not of archaeological interest. Three isolated responses were identified which were interpreted as possible negative features such as pits. Two of these anomalies were identified at the northeastern edge of the survey area, while a third was found to the west. A linear feature was identified to the east of the area, which was interpreted as a plastic pipe. Immediately to the south of the latter features, an area of enhanced readings was identified, possibly reflecting burning in this area.

4.4.3 Assessment

It was concluded from this survey that both discrete and linear features could be identified on the local gravel substrate. The nature and function of these features, however, remained uncertain, and the results of subsequent watching briefs in the same area demonstrated archaeological features to be much denser than the results of the magnetometer survey suggested.

4.5 INVESTIGATION 7 (TRENCH 7)

The watching brief was carried out on the south side of the quarry in the spring of 1997. The investigation covered a rectangular area of approximately 0.2 hectares, measuring 63m NE-SW by 32m NW-SE (Quarry Phase 2a). The northern limit of investigation abutted that of Investigation 4, and the site extended southwards to within 23m of the Nosterfield road (Figure 15). The results revealed that the surviving archaeological features were much denser than suggested by the gradiometer survey, and revealed a pit alignment running for much of the length of the intervention.

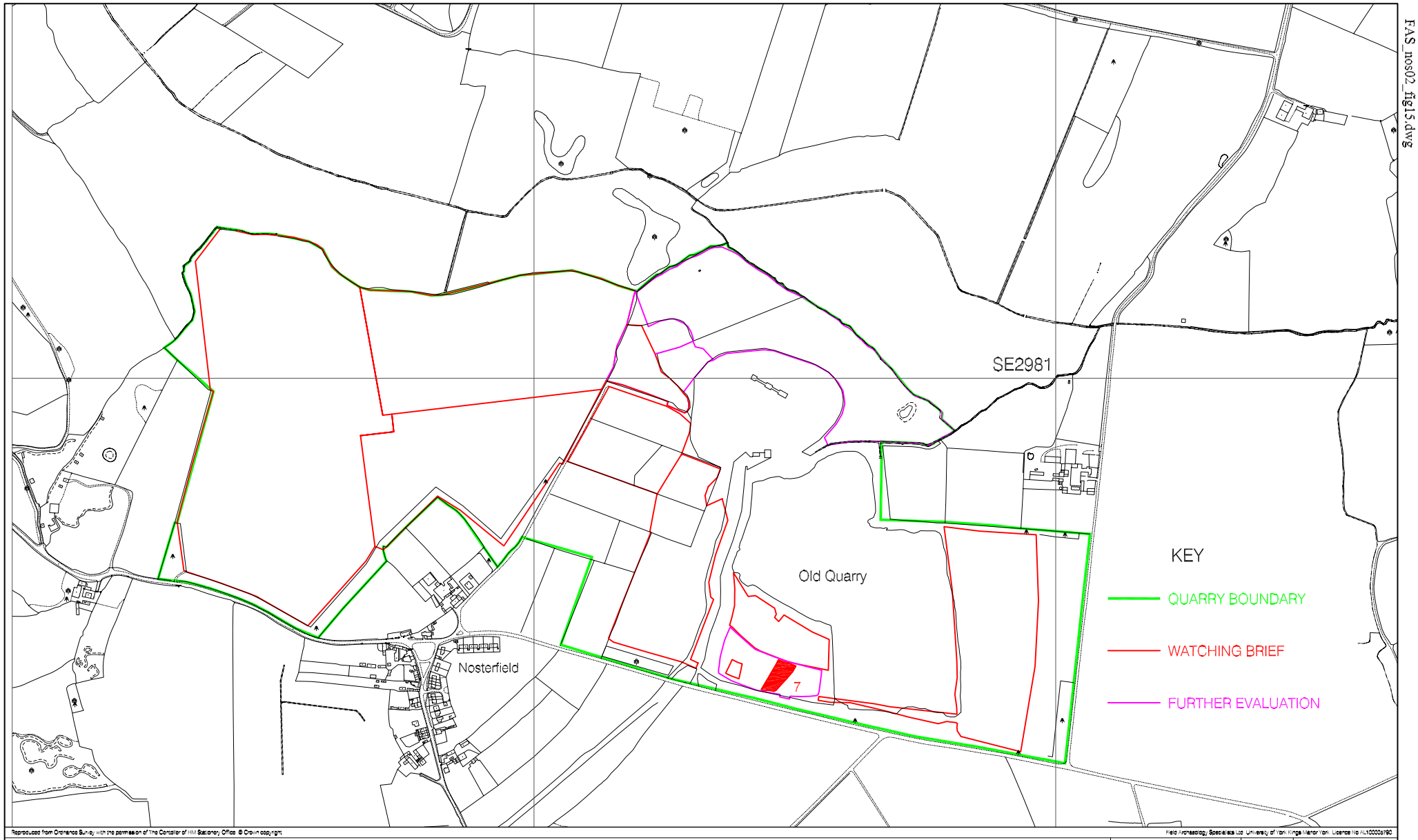
4.5.1 Fieldwork procedure

Topsoil was stripped using a tracked mechanical excavator under archaeological supervision. All archaeological features were mapped, and the majority were then half-sectioned and recorded.

4.5.2 Fieldwork Results

A total of 46 features were recorded, all of which were identified as pits. Of these, a total of 37 were found to form a pit alignment (Structure 12), which extended for 68m in an ESE-WSW direction, curving northwards at its northern edge, and apparently continuing beyond the southern limit of investigation (Figure 16; Appendix A, B).

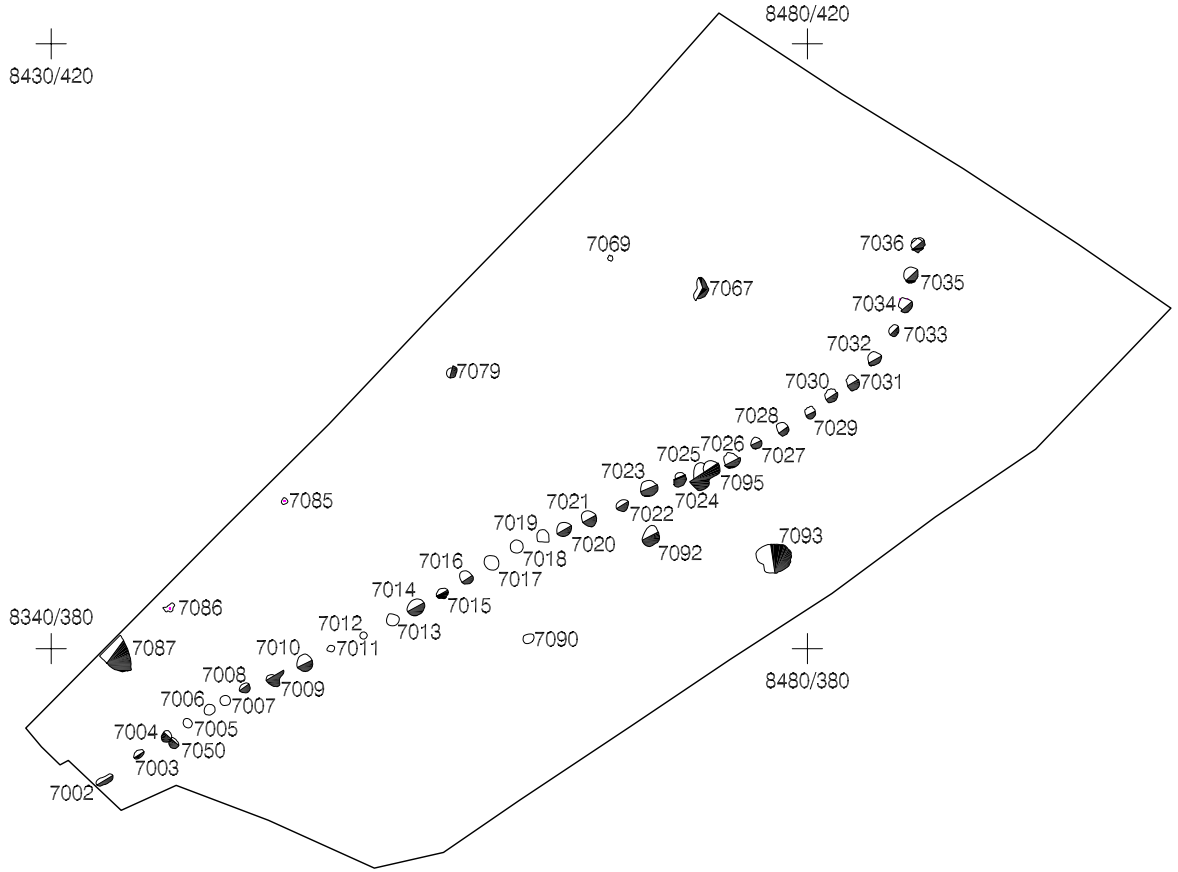
Of the 37 pits which make up the pit alignment, most were oval or sub-circular in plan, although F7002 at the south end was sub-rectangular (Figure 17 and 18). The pits were spaced at intervals which varied from 0.60 to 1.20m; the greatest distance between excavated pits measured 1.80m (F7002 to F7003). There are two examples of pits which appear to abut or cut one another, suggesting some chronological depth in the use of the pit



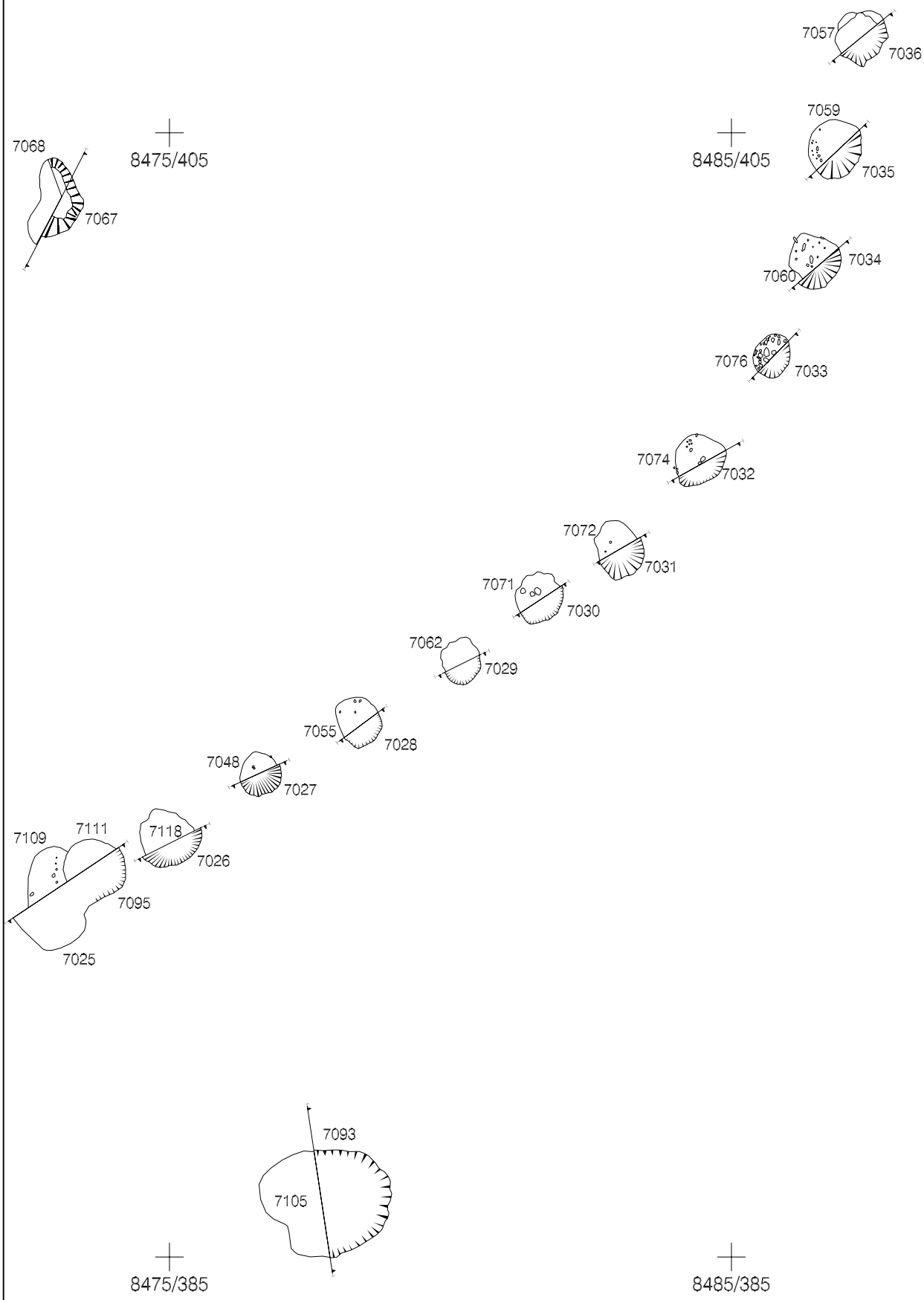
Location of Investigation 7

Scale 1:10000

Figure 15



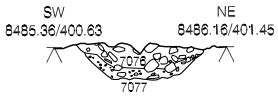
Investigation 7 map of archaeological features | Scale 1:500 | Figure 16



Investigation 7 detail of Structure 12	Scale 1:100	Figure 17

7027 southeast facing section

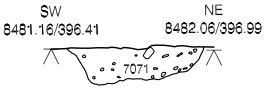
7033 southeast facing section



7028 southeast facing section

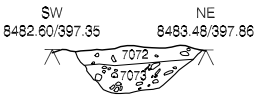
7034 southeast facing section

7030 southeast facing section

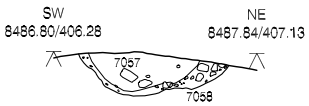


7035 southeast facing section

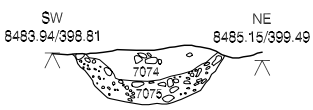
7031 southeast facing section



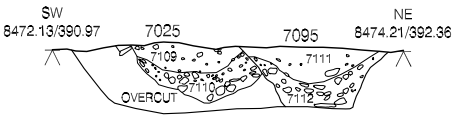
7036 southeast facing section



7032 southeast facing section



7025 7095 southeast facing section



Investigation 7 Structure 12 sections	Scale 1:50	Figure 18

alignment. Upon excavation, the pits were found to vary in depth from 0.13 to 0.71m, and in diameter from 0.41m to 1.23m. During excavation, no finds were recovered; the majority of pits were found have one or two backfills, whilst three distinct fills were identified within two of the features. None of the pits contained post-pipes or exhibited evidence that they had originally held timber uprights.

A further nine pits were mapped in Trench 7 to either side of the pit alignment, of which four were excavated. None of these features appear to have been directly associated with Structure 12. To the east F7093, a large but shallow pit was identified, measuring 0.44m deep and 1.11m in diameter. Another large feature, possibly a pit, appeared to extend beyond the eastern edge of the area (F7087), but was not excavated.

Further to the north, four smaller pits (F7086, F7085, F7079 and F7069) appear to follow a NE-SW alignment, and may represent another linear structure. The excavation of F7079 revealed a small, steep sided V-shaped pit, 0.61m deep and 0.47m diameter, which contained a sequence of four back-fills (C7080-C7083).

4.5.3 Assessment

The significance of discoveries made during Investigation 7 rest predominantly on the pit alignment. Pit alignments are known to have been constructed from the Neolithic to the Roman period; features of a similar nature have been identified to the west in more recent watching briefs, and dated to the Iron Age (Investigation 15).

The failure of the magnetometer survey to identify the pit alignment is noteworthy, but not surprising given the often sterile and compacted backfills of these features.

4.6 INVESTIGATION 8 (TRENCH 6)

During the summer of 1997, the watching brief continued in an area to the west of Investigation 7, again on the southern side of the quarry (Quarry Phase 2a). The area was situated to the south of Trench 5 (Investigation 4), adjacent to the junction formed by the B6267 Nosterfield road and the quarry haul road which leads to the processing site. The watching brief covered an area measuring 28m north-south and 24m east-west (Figure 19).

4.6.1 Fieldwork Procedure

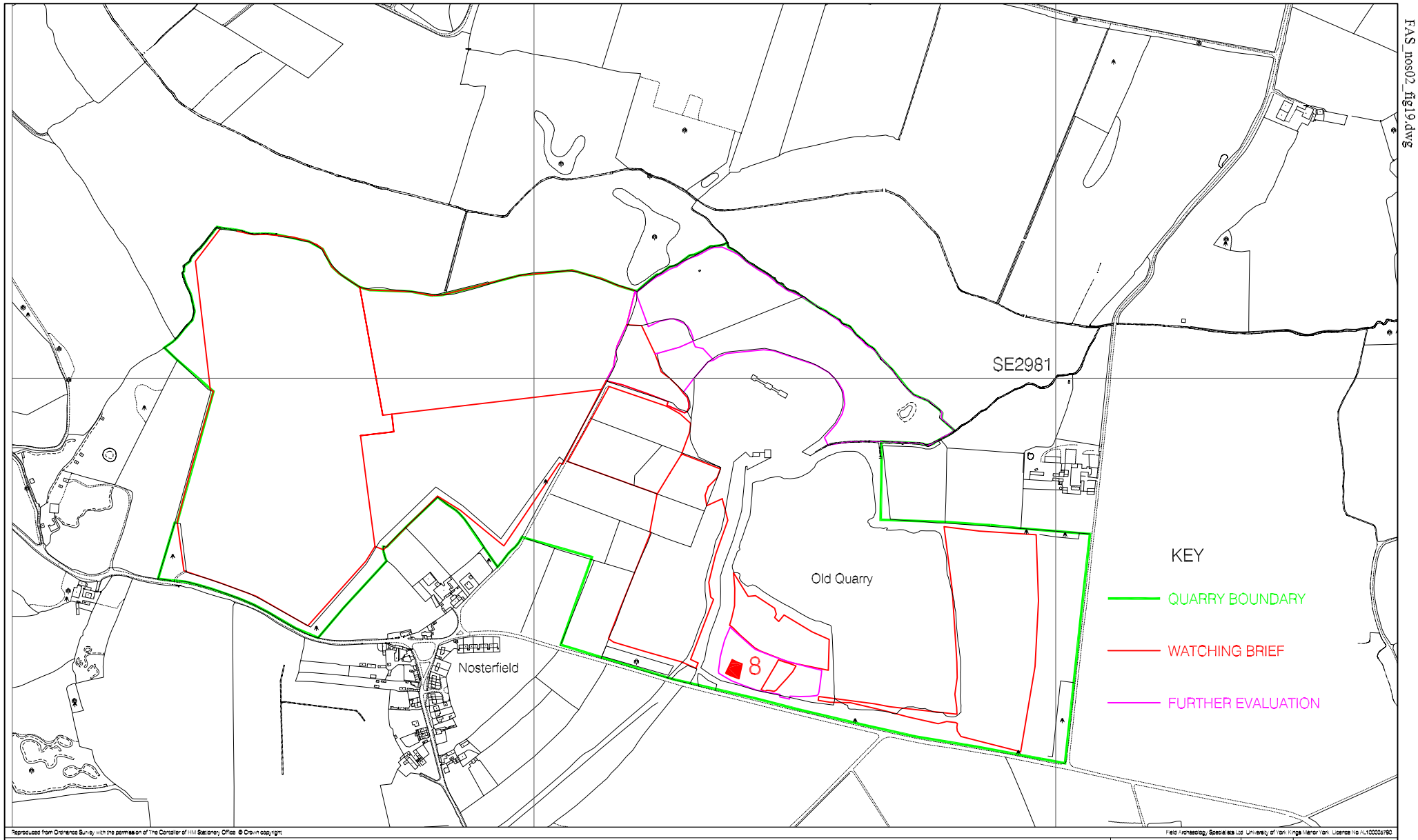
The methodology employed during Investigation 7 was continued during Investigation 8.

4.6.2 Fieldwork Results

No archaeological features were identified during this investigation.

4.7 INVESTIGATION 9 (INTERVENTION 1 AND 2)

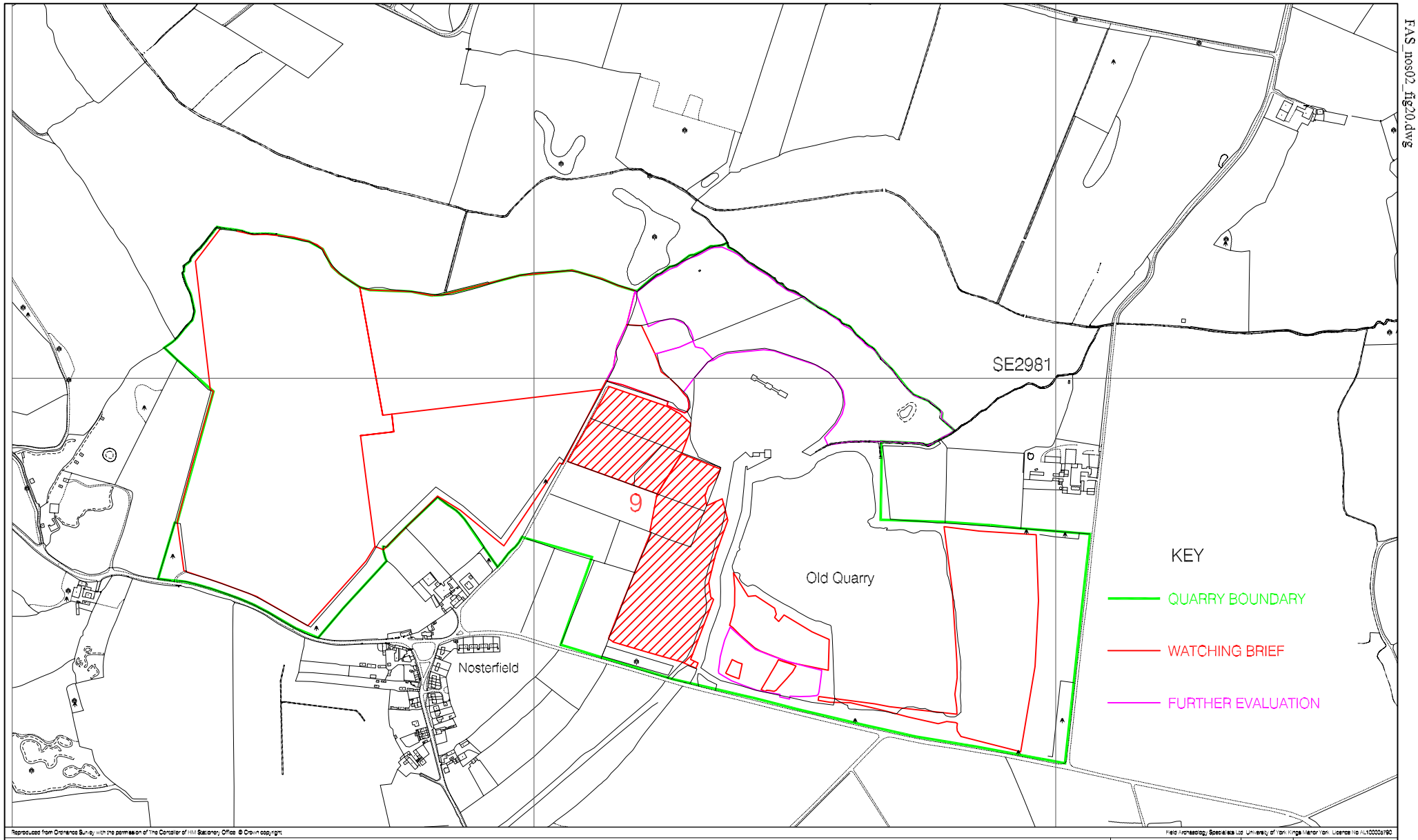
Between July 1998 and May 1999, FAS undertook a watching brief in an area lying to the west of Investigation 4 to 7 (Quarry Phase 1b)(Figure 20). This work was carried out in two phases: Intervention 1 saw the



Location of Investigation 8

Scale 1:10000

Figure 19



Location of Investigation 9

Scale 1:10000

Figure 20

monitoring of topsoil stripping, and the mapping, excavation and recording of any archaeological features; Intervention 2 consisted of fieldwalking of the area, in response to the recovery of finds from the surface of the subsoil during earlier work.

The area of investigation covered 5.8 hectares, located on generally level ground between the 41 to 43m contours. The land rises gently to the south, while to the northwest, the ground slopes upwards more steeply. Areas to the north and east of the area were observed to be significantly wetter than those to the south and east. For this investigation, the area was divided into two parcels. Intervention 1(West) was situated within the right angled bend of Flask Lane, covering an area of 162m by 182m (3.0 hectares), while Intervention 1(East) occupied a larger, rectangular area, measuring 380m north-south and 145m east-west (5.2hectares) (Figure 21). The watching brief covered two seasons work on land that was both arable and pasture. Work on Intervention 1(East) began in July 1998 and continued intermittently until September; Intervention 1 (West) adjacent to Flask Lane was undertaken in April and May 1999.

4.7.1 Fieldwork Procedure

Intervention 1(E)

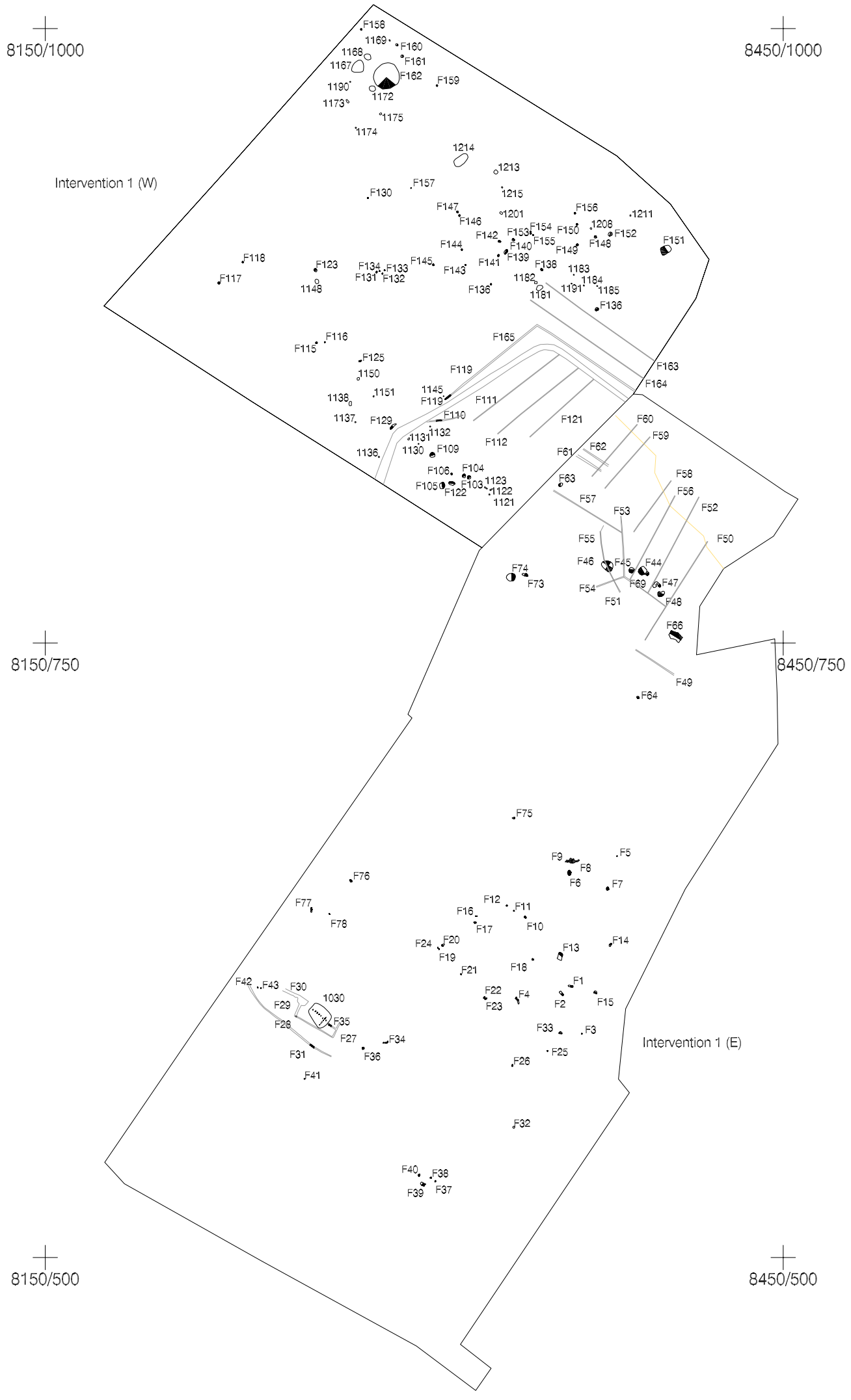
Topsoil was removed under archaeological supervision using a tracked mechanical excavator fitted with a broad toothless ditching bucket. Beneath the topsoil the clean subsoil surface consisted of glacial sands and gravels. Feature visibility was generally good against the sands and gravels but at the extreme northern end of the site, where the ground was wet, areas of peat and marl were exposed (in area of approximately 2152m^2), and in this inaccessible area the watching brief could only be maintained at a safe working distance.

Once an area had been topsoil stripped all anomalies were flagged and the machinery kept off the area. Larger or more extensive areas of interest were also de-limited by flags. Continuous monitoring of the weathered surface under different conditions revealed further anomalies which were also investigated.

All the anomalies were investigated in the first instance by hand cleaning and were then tested by excavation. A few anomalies disappeared after cleaning and were abandoned (identified as areas of remnant topsoil). During excavation others proved to be of geological origin and were also abandoned, but the remainder were mapped, excavated and recorded according to standard FAS field operating procedures. Feature numbers began at F1 and Contexts at C1000. All features were half-sectioned, although a few which produced finds were then completely excavated. Hachure plans were drawn either when the features were half-sectioned or once excavation was complete. The site grid was provided by the quarry based upon Ordnance Survey values. It was extended across the site as and when required to map any features and contexts.

Intervention 1 (W)

Intervention 1(W) bordered Flask Lane to the west and north, and the earlier watching brief area to the east. Land to the south was used for arable farming. The topographic situation of the site appears to influence the distribution of the archaeological remains. Activity was mapped on the higher ground which extended to the back of the site, towards Flask Lane. The eastern side commanded views over Intervention 1(E), and the peaty, wet areas further to the north and east. In the southeast corner a large drain, visible on the OS maps of the area, marked approximately the break in slope onto lower wetter areas. Other land drains were later mapped but not



Investigation 9 map of archaeological features | Scale 1:2000 | Figure 21

excavated.

The recording system continued the indices that had been created in 1998, with Features starting at F103 and Contexts at C1121. In 1999, the recording followed the same general procedures to those laid down in 1998, with the exception that all anomalies were initially only allocated a context number until they had been tested by excavation. A few deposits contained calcined bone and where these were encountered the fill was recovered in full and processed off-site. Once topsoil had been removed, and in addition to the routine monitoring of the weathering subsoil surface, fieldwalking was conducted (Intervention 2). The purpose of the fieldwalking was to investigate the possibility of finds surviving virtually at subsoil level in pockets of remnant topsoil.

4.7.2 Fieldwork Results

INTERVENTION 1(E)

In the eastern parcel of land, the watching brief identified an initial 78 features (Appendix A), of which 6 were tested and abandoned when found not to be archaeological (F65, F76, F68, F70-2), 19 represented modern land drains, and 2 were animal burrows. Sixty-seven features were mapped, and comprised a series of pits (more than 0.10m deep), scoops (less than 0.10m deep), sinkholes and ditches, distributed in two broad groups, one at the northern end of the site overlooking the wetter area, and a second further south on the level ground.

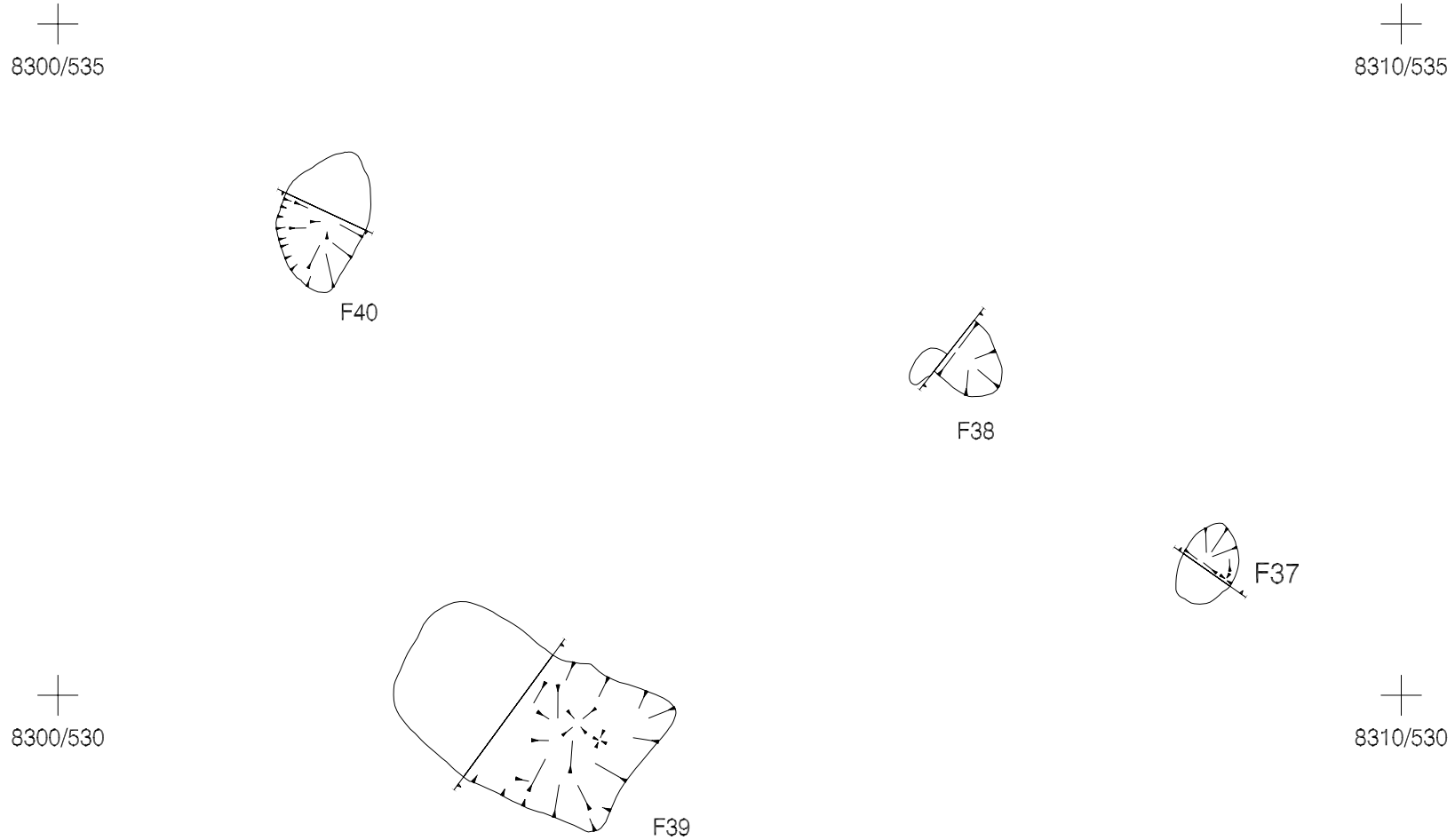
Pits and scoops

Pits represent the most common feature identified during the watching brief, and 31 were identified within Intervention 1(E). A further 14 more shallow features were identified as scoops. Although no obvious clustering is evident, and no structures have been identified, these features are more densely distributed within an area of roughly 100m^2 towards the centre of the area, and a small cluster of four features can be identified at the southern end of the site. A smaller number of isolated features were identified in the area occupied by modern drains to the north; these were more scarce, however, and of these, 3 (F44, F45, F46) were found to be sink holes.

The pits and scoops were found to vary considerably in shape and size (Figures 22 and 23). The majority were oval or sub-circular in plan, measuring between 0.25 and 1.00m in average diameter, with an exceptionally large feature measuring 2.25m x 1.50m (F6). These features measured up to 0.55m in depth, and the majority were found to contain only one fill.

Five pits were sub-rectangular (F1, F4, F14, F23, F39), and upon excavation were found to be shallow, up to 0.20m deep, and varied in length from 1.00 to 3.00m long. Pits classified as irregular did not fit into any of the above categories, and measured between 0.32 to 1.85m in length and up to 0.85m wide.

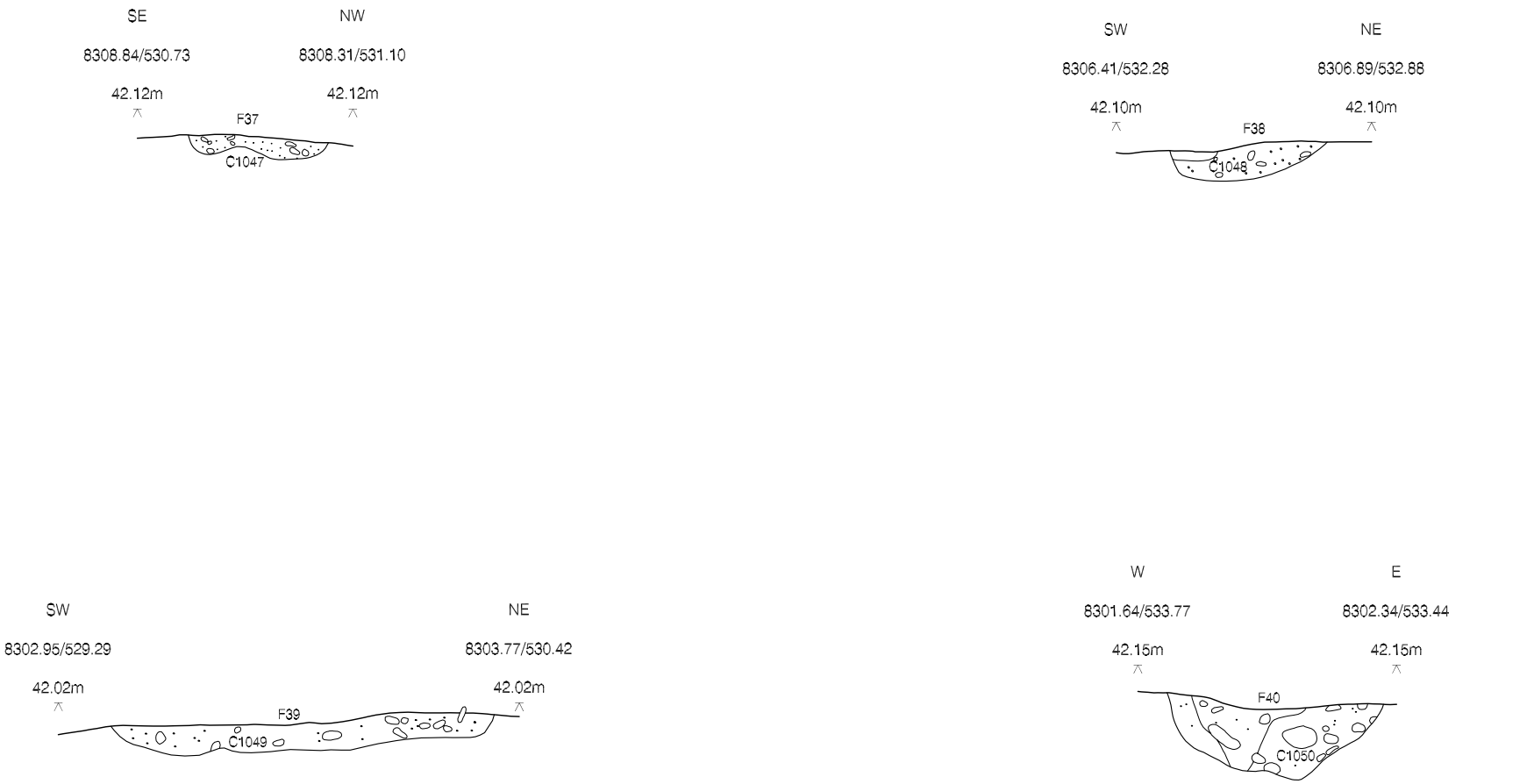
During the watching brief, areas of burrowing were identified by loose and collapsing backfill; however, where disturbance was less severe it was often difficult to establish whether the feature was man-made. Three features, originally described as pits or scoops were later re-classified as animal burrows upon further investigation (F15, F16, F34).



Investigation 9 (Intervention 1) pit complex hachure plan

Scale 1:50

Figure 22



Investigation 9 (Intervention 1) F37, F38, F39 and F40 sections | Scale 1:20 | Figure 23

Only two pits, F75 and F77, contained more than a single fill. Most of the fills varied from fairly coarse, sterile sand or silt to brown or dark grey loams and contained sparse to abundant quantities of stone (usually gravel to pebble sized). Charcoal occurred in just over half of the pit and scoop fills. The quantity reported varied from occasional, rare flecks to abundant amounts (F4, F12, F22, F23, F26, F38, F40).

F77 contained a residue from burning. The upper fill C1082 was characterised by a dark brown silty sand mixed with, unusually, patches of pale white sand. It overlay a silty sand C1083, red in colour possibly as a result of being scorched; other components included some charcoal and fragments of burnt stone. The lower fill, C1084, was a brown silty deposit with ash and abundant charcoal. The pit was irregular in shape and after excavation it appeared to consist of three small sub-circular hollows (Figure 24). It was not dissimilar in character to another small, irregular pit F19 (small hollows which abutted each other). It produced a few flecks of charcoal and a small quantity of heat-affected earth (C1021). F10 was an oval scoop, 1.00m long and 0.70m wide but only 0.06m deep. The fill, C1011, contained rare charcoal flecks and had apparently been scorched, suggesting it may be the remains of a hearth or firing from a higher level.

An oval pit, F69, was identified on the shoulder of F44 (sink hole), although no relationship was established between the features. F69 was unusually deep (1.10m). Excavation produced only a deposit of peat and occasional stones, which suggested it belonged to the cluster of sink holes that occur in the locality. The base of the pit was just below the perched water table. At the northern end of the site were two shallow scoops (F47, F48). Both these features contained a shallow, peaty fill and were similar to other nearby features identified as sink holes (F44 to F46, possibly F69).

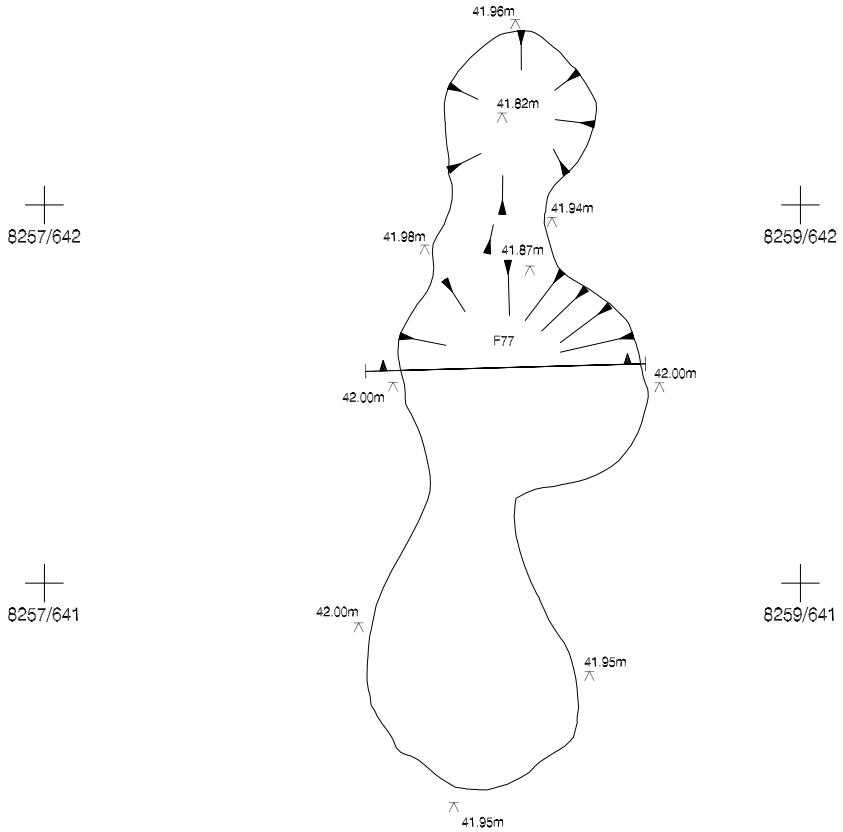
Some of the pits may have resulted from trees or bushes being grubbed-up. F74 was a large sub-circular pit, 3.60m in diameter and 0.18m deep, which produced root scars on the base of the cut. Pit F32 was found to be a modern animal burial.

Linear features

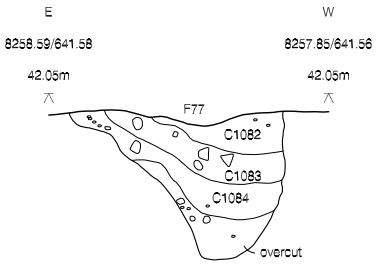
A series of land drains represented the most modern features identified. These were concentrated on the northern edge of the site, and generally followed a NE-SW alignment (F50, F52, F56, F58, F59, F60), with examples also running NW-SE (F49, F51, F53, F57, F61, F62, F69). F53 and F55 ran roughly north-south between F51 and F57, also joined by F54.

Further south, a series of conjoining ditches (F27, F28, F29, F30, F35) appeared to delimit and then lead into an area of peat (C1030), which represents a geological sink hole.

Other than the land drains, linear features consisted of one ditch and a short curvilinear feature. Feature 8 was identified as a curvilinear gully, running east-west for approximately 6m, and bearing an uncertain relationship with pit (F9), which lies centrally over it. Flint finds from F9 may suggest a prehistoric date. A second ditch was identified further to the southeast, running roughly NW-SE for a distance of *c.*45m (F31). A fragment of modern pottery, and a considerable amount of root disturbance, led to interpretation of this feature as a hedgeline.



Investigation 9 (Intervention 1) F77 post-excavation plan	Scale 1:20	



Investigation 9 (Intervention 1) F77 section	Scale 1:20	Figure 24

Sink Holes

Four sink holes were identified to the north of the site (F44, F45, F46, C1030), created by the collapse of sub-surface strata beneath ground level. These features were mapped and subject to intensive investigations for the recovery of palaeoenvironmental material. A further three features were subsequently identified which may belong to the same group of features (F47, F48, F69). Such features are specific to geological conditions, and have been noted at several locations within the surrounding landscape, occurring as small hollows, from *c.*2.0m in diameter, or much larger depressions; most notably at Snape Mires, to the north of Nosterfield, where an area of 6km^2 is believed to have collapsed during the late glacial period (FAS 2005).

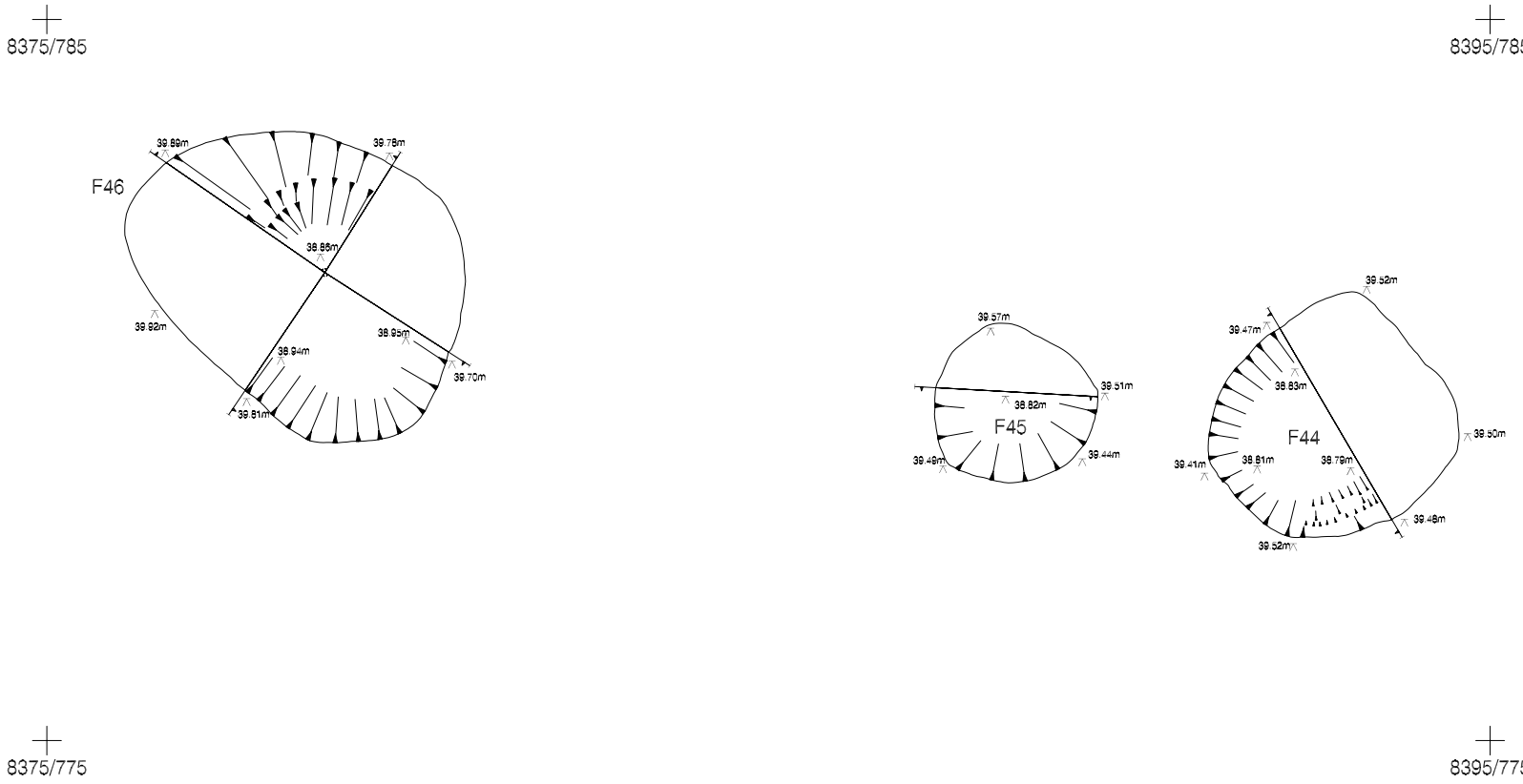
These sink holes occur primarily in two locations in this investigation area, with a single example (C1030) located in the central part of the intervention, and the remainder clustered at the northern end of the site (F44 to 46, with F47 to 49). This latter group is considered to be the result of collapsing subterranean strata.

C1030 was the upper fill of a sink hole, situated at 39.46m AOD, whose extent was only mapped at the subsoil horizon. None of the buried deposits were excavated but the strata sequence was investigated using an auger array laid across both axes of the in-fill. The sink hole was situated in a larger hollow and measured 9.22m long and 6.23m wide; its upper fill (C1030) consisted of a reddish brown desiccated peat, 0.17m thick. A total of 13 augers were drilled through the surface, revealing a sequence of peat and marl sediments to a depth of approximately 1.0m. A sequence of deposits was recorded (C1030 to C1036), but further investigation was abandoned because sediment could not be recovered in the waterlogged conditions. The area around the sink hole had been the focus of relatively recent drainage activity. A series of land drains were dug in a rectangular fashion around the south side of the sink hole, presumably to improve drainage in a locally wet area. It is likely that the drains (F27 to F30, F35) carried the water off on the eastern (lower) side, although the drains were not mapped far beyond the edge of the hollow. A small segment of F28 was excavated, where it measured 0.30m wide and 0.25m deep and had a distinct square profile containing pebbles and cobbles.

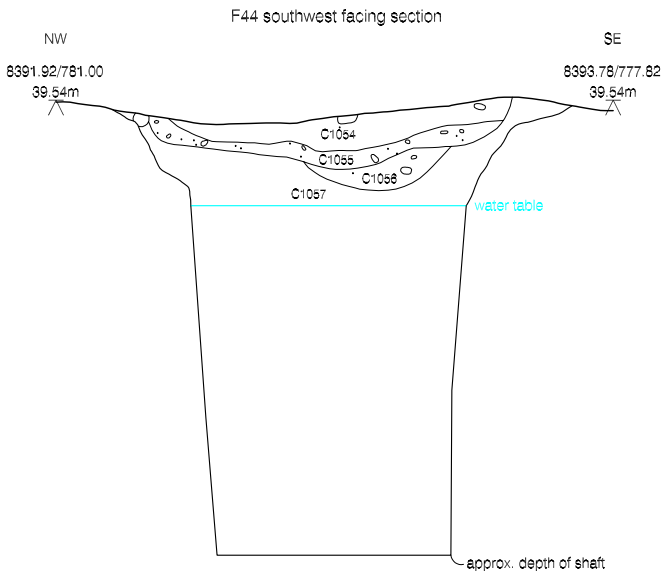
A second set of sink holes were investigated to the north on the edge of the peaty area. When these features were identified, the project environmental consultant (Dr Stephen Carter) was invited to site in order to consider a revised strategy for their investigation. It was decided that the features should be excavated to the fullest possible depth with due regard to health and safety, and where possible, column samples should be taken to the base of the holes in order to assess their potential.

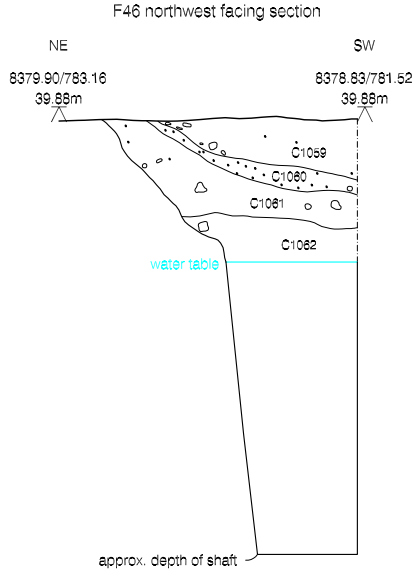
Initially the sink holes were excavated at least to the depth of the water table. F44 and F45 were half sectioned and F46, the largest hole, was quadranted and opposite quadrants removed to study the profile. These features were all sub-circular, measuring between 3.09m (F44), 2.25m (F45) and 4.70m (F46) in diameter (Figure 25). All three shafts reached a similar level, 36.53m AOD, 36.99m AOD and 36.92m AOD respectively. F44 and F45 contained a sequence of deposits comprising loams over layers of peat (Figure 26), which extended beyond the water table. F46 was similar, but lacked the waterlain sediments that were evident in the other two features.

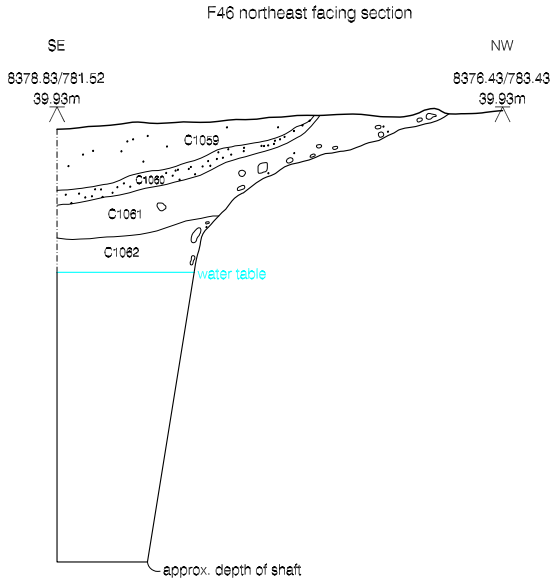
F44, F45 and F46 had funnel-shaped profiles characterised by broad sub-circular tops and narrower, near-vertical shafts, probably circular in plan. The upper levels had acquired accumulations of soil, blown or ploughed into the features; these deposits may have accumulated more rapidly after the area was drained and once the land was used for arable farming on a regular basis. C1060, a deposit of stonier in-fill in F46, may have

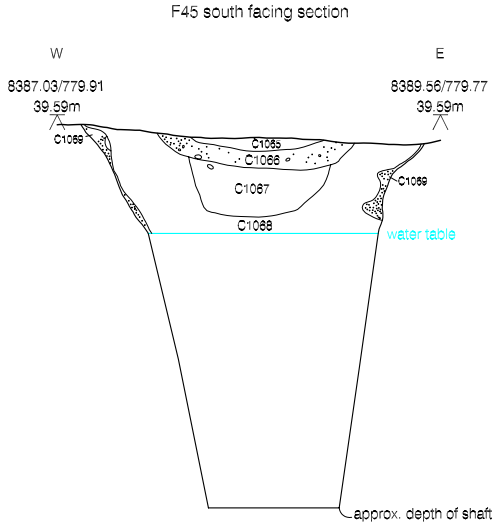


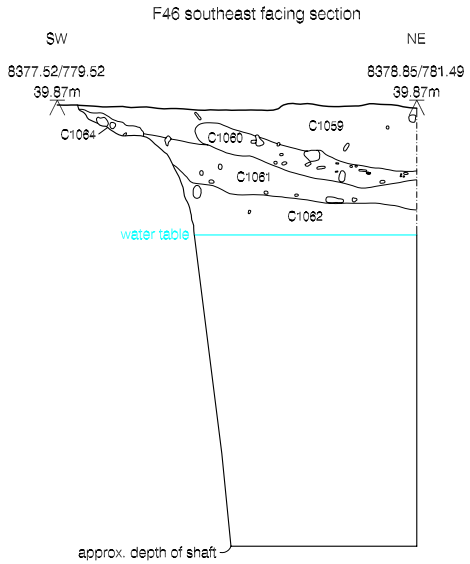
Investigation 9 (Intervention 1) F44, F45 and F46 post-excavation plans | Scale 1:100 | Figure 25

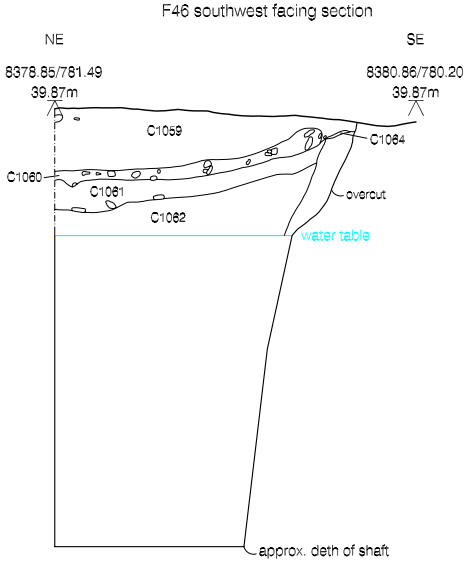












Investigation 9 (Intervention 1) F44, F45 and F46 sections | Scale 1:50 | Figure 26

been used deliberately to level up the hollows, but at some stage in the 19th century or early 20th century, a land drain was cut across F46 to a depth which suggests that the surface of the holes had stabilised.

Monolith tins were used to recover samples from the upper fills of all sink holes. At this depth, a mechanical excavator was used to reduce the level of the surrounding ground surface (box section). Hand-excavation continued for a short while but was halted rapidly by the poor working conditions. Below the water table, the gravel sides also became too unstable and flowing water caused regular collapses of the feature edge and even the box sides. Excavation ended at this point, but sampling continued using a Russian auger, producing a continuous column for each of the three pits.

The samples taken from these features were the subject of analysis at Stirling University (Appendix E: Part 2); Long and Tipping suggested initially that the shafts were man-made, presumably for the collection of water, although subsequent analysis has confirmed that these features would have formed naturally, through the collapse of underlying sediments (Appendix E: Part 3). F46 differed from F44 and F45 in that it showed no evidence for having contained standing water. Analysis of the sediment stratigraphy of these shafts led to recommendations that a programme of pollen analysis and radiocarbon dating be carried out, in order to ascertain environmental change in the vicinity.

A sample from F45 was therefore subject to further analysis (Appendix E: Part 4), which revealed evidence for the vegetational history of the area from the Late Neolithic to the late Iron Age. Nine phases of activity were defined, which included five phases of woodland recession. The earliest of these was dated to the Late Neolithic, and the latest to the Iron Age. The final stage of woodland decline is considered to have been climatically instigated, while the earlier four phases are considered to have been due to human clearance and removal of the woodland.

Analysis and radiocarbon dating was also carried out in order to investigate the interface between peat and marl sediments (Find 14) in an area immediately adjacent to the sinkholes F44, 45 and 46. The radiocarbon dating at the base of the peat demonstrated that it was forming from the early Holocene (8705-8440 cal BC: Beta-143458; Appendix E: Part 3), suggesting that the marl-forming lake had been terrestrialised by this time.

More recently, Dr Stephen Carter (Headland Archaeology) has reassessed the value of these cores with regard to palaeoenvironmental data (FAS 2005). These features were caused by the dissolution of underlying gypsum strata by groundwater, and subsequent surface subsidence, forming depressions or hollows that can act as sediment traps. However, he noted that the accumulation of material can occur in a number of ways, including intermittent, rapid collapse or blocking of the main pipe, or through more gradual infilling. Following this, secondary collapses can disturb deposits further; to assume that sediments will always represent the gradual and continuous accumulation of material is to oversimplify the complex ways that such features can be formed. For the subsidence hollows at Nosterfield, Carter suggests that the radiocarbon dates for core F45 reveal three discrete phases of rapid sediment accumulation, rather than continuous deposition, providing ‘snap shots’ of local vegetation on each occasion. Between 2.8 and 4.1m, no pollen survives in sediments dating to the early Holocene. From 1.4 to 0.4m, pollen is dominated by woodland taxa, dating to 4000 uncal BP, and from 0.4m upwards, is considered to have been laid down around 2300 uncal BP. This may suggest that the significance of the pollen analysis from these cores requires reconsideration.

INTERVENTION 1(W)

Features identified during the second part of this watching brief included a range similar to that reported for Intervention 1(E) (see Figure 21) (Appendix A). A total of 54 features were identified, 42 of which were pits, 4 were scoops and 8 were land drains (two were selected for excavation). In addition, a series of 33 anomalies were mapped and defined as spreads, although no feature numbers were allocated to such ephemeral remains. Unlike the 1998 season, these spreads were mapped and are included in the final horizon map of Intervention 1(W).

Spreads

The 33 anomalies identified as spreads were generally interpreted as thin patches of existing topsoil in hollows, or stone holes left over after topsoil stripping. The largest spread mapped covered an area of 10.0m x 6.0m (C1138), but varied in size from 0.38m to 5.60m in diameter. Occasionally, the spread disappeared when it was cleaned for further investigation (e.g. C1191).

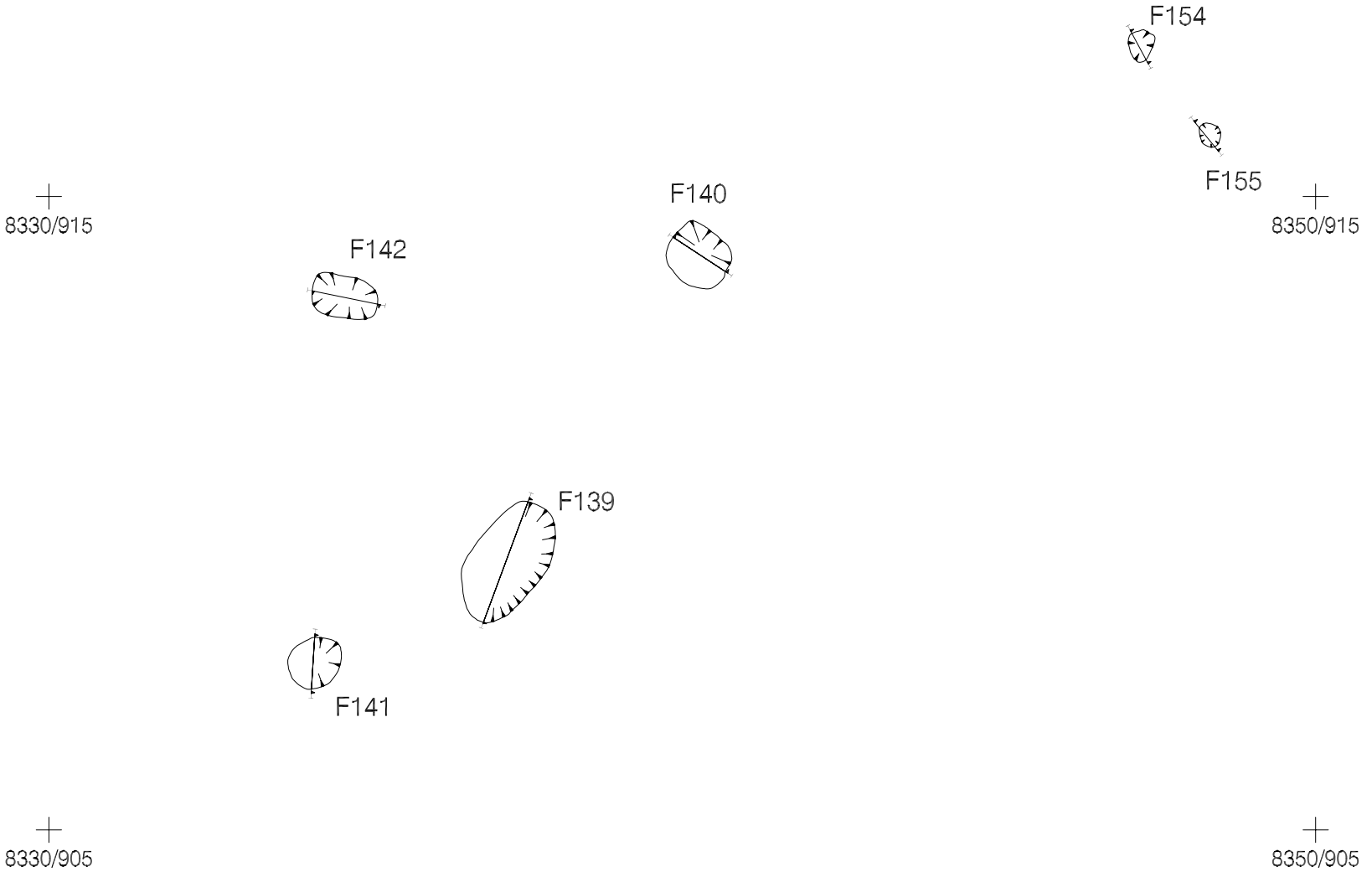
Two short, linear spreads (C1190 and C1211) were identified as the remains of wheel ruts created by the dumper trucks running in poor conditions during the topsoil stripping. The fill of 7 spreads contained charcoal (C1167, C1169, C1174, C1175, C1190, C1213, C1215) and a few produced finds. C1201 produced a fragment of field drain (discarded), C1131 animal bone, C1148, C1173 and C1214 produced pottery and flint; all might indicate that these were very truncated features. A broken jet button was recovered from C1167.

Pits and scoops

Forty-two pits were excavated, although 7 were subsequently identified as sink holes (F103 to F106, F109, F122 and F162), and a further 4 features were classed as scoops (F125, F130, F135, F143). All of the pits were distributed to the north and west of a series of land drains which cut across the southeast corner of the intervention. There was no obvious concentration, although one group appeared to cluster along the edge of the higher ground. A second group can be identified in the northwest corner of the intervention, in association with a number of spreads (Figure 27).

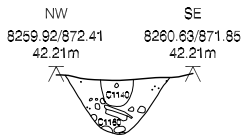
The pits and scoops were found to vary in shape from circular to oval features, although the largest scoop (F135) was sub-rectangular in plan. Pits reached 1.64m (F152) in diameter and 3.0m in length (F129), and scoop F135 measured 2.0m across; the majority, however, measured less than 1.0m across. A single, much larger feature was identified in the northwestern corner of the site, identified as a large pit measuring 4.40m x 3.12m in plan (F151). The pits varied in depth from 0.12 (F116) to 0.57m (F161), although F148 was exceptionally deep, 0.80m and only 0.90m in diameter (Figure 28).

The majority of the pits contained single fills, although an upper and lower fill were excavated in F115, F123 and F148 (see Figure 28). Pit fills were often described as a dark brown sandy silt or a dark grey brown loam, over 60% of which produced charcoal, and occasionally material which appears to have been burnt. Quantities of charcoal varied, and while many backfills produced only rare flecks, a few examples produced more abundant amounts (F123 C1161, F140 C1196, F147 C1199). Occasionally concentrations of silt were noted in the section (for example, F117 C1142 and F131 C1163) which appeared to form horizontal bands and which may be interpreted as the remains of a turf line.

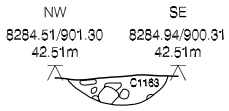


Investigation 9 (Intervention 1) Example of Neolithic and Bronze Age pits | Scale 1:100 | Figure 27

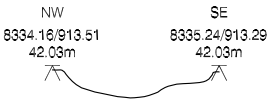
F115 southwest facing section



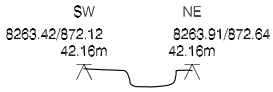
F131 southwest facing section



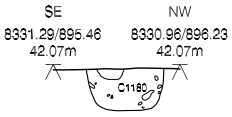
F142 profile



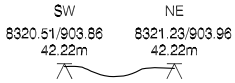
F116 southeast facing section



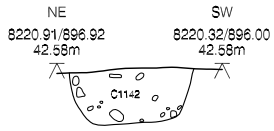
F136 northeast facing section



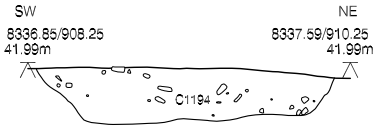
F143 southeast facing section



F117 northwest facing section



F139 southwest facing section



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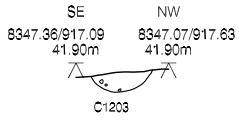
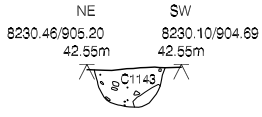
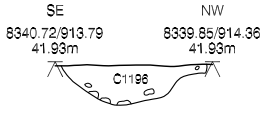


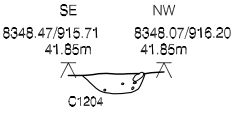
F118 northwest facing section



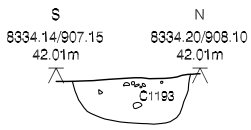
F140 northeast facing section



F154 northeast facing section



F141 east facing section



Investigation 9 (Intervention 1) Neolithic and Bronze Age pit sections	Scale 1:50	Figure 28

Sink Holes

Seven sink holes were identified during the watching brief, all of which were clustered at the eastern edge of Intervention 1(W), forming the western edge of a wider distribution which also included F44, F45, and F46. Generally circular or oval in plan, these features varied in size from 0.60 (F106) to 2.50m (F105) in diameter. The largest sink hole F122 was 2.74 x 1.40m.

The depth of the features varied from 0.20m (F122) to 2.42m (F109), although a measure of the deeper holes was only achieved by augering from the excavated level. The excavation of both F103 and F109 was abandoned on contact with a perched water table at a depth of 0.90m and 1.30m respectively. The shallower sink holes contained peat, or the remains of desiccated peat, although F106 was in-filled with a loam which produced flecks of marl. The deeper holes contained peat at the lowest level excavated but were sealed by layers of topsoil (for example, F103, F104, F109). The profile of these deeper holes was straight-sided, rather than the funnel-shape which was characteristic of the sink holes investigated in 1998. Column samples from the excavated upper levels of F103 and F109 were recovered but were later discarded, as they were not sufficiently complete for analysis. The upper level of F109, C1129 produced the only find, a flint flake.

F162, located in the northwest corner of Intervention 1(W), was an exceptionally large feature, 10.0m in diameter. It did not contain any peat and appears to be the remains of a shallow, partially collapsed sink hole. The in-fill, C1171, produced two pieces of flint. Beneath this deposit were bands of sterile subsoil (C1219 and C1220), removed to confirm contact with the natural subsoil.

Land drains and linear features

In the southeastern corner of Intervention 1(W), a large drain enclosed the corner of the area, running for approximately 90m SW-NE before turning at a right angle, and running NW-SE for 40m beyond the area of investigation. During the watching brief, a further eight features were also identified as land drains (F110-2, F119, F121, F163-5), which appeared to drain off the slope into the larger ditch, or onto lower ground to the north.

Four land drains fed water into the ditch (F110, F111, F112 and F121). A small segment of F110 was excavated, and was found to comprise a narrow gully, 0.48m wide and 0.21m deep, containing no pipework. To the north of the main ditch F119/F165, F163 and F164 drained water directly off site into the former lake margins. The butt-end of F119 was excavated, which revealed a narrow gully 0.50m wide and 0.10m deep.

Finds

Few features yielded remains indicative of function, although twenty-four pits and scoops produced prehistoric finds. The investigation produced a small amount of lithic material, mostly flint but included a few flakes of chert and one stone axe, in a broken condition. Both waste products, utilised and worked tools were present in the assemblage, and included scrapers, a bifacially worked leaf-shaped arrowhead, and a borer or piercing tool. A small handaxe produced from a greenish-grey volcanic tuff was recovered from F141 (C1193), but in a broken

Plate 4 Prehistoric hand axe

condition (Plate 4). It would appear to come from axe factories in the northwest (Cumbria), North Wales or Scotland. The axe was split along its length into four pieces of equal thickness, and it is possible that it was fractured deliberately. An end piece is missing, but the possible presence of soot residues on the surface of the axe suggest it may have been heated, perhaps to encourage failure.

Generally, the number of flint artefacts recovered was relatively low, although F118 (C1143) and F142 (C1195) produced twelve and twenty pieces respectively. The greater part of the prehistoric ceramic assemblage was Grooved Ware (possibly Woodlands style or a local variant), but possible earlier Grimston Ware was also recovered and a small amount of Peterborough Ware was also present (Appendix D: Part 1 and 2). Some of the sherds were undiagnostic or too fragmentary to identify but belong to the tradition of Neolithic or late Neolithic ceramics. One sherd of Beaker pottery from F6 (C1007) is chronologically later than the predominantly late Neolithic assemblage (Appendix D: Part 2).

F130 has been interpreted as the remains of a hearth, and although its backfill (C1162) contained few charcoal flecks, there was a reddening of the subsoil around the excavated feature which suggested that the ground had been fired. Its backfill also incorporated fragments of cracked stones, probably broken by fire. Other features produced cracked stones (pebbles, cobbles and sandstone fragments) apparently broken by heat (e.g. F115, F116, F123, F131, F133, F140, F144, F147, 157), and a burnt flake also occurred in F4. In at least one instance, the stones were accompanied by fragments of calcined bone (F116). A limited number of features produced burnt bone (F116, F125, F134, F142), which upon analysis proved to be non-human.

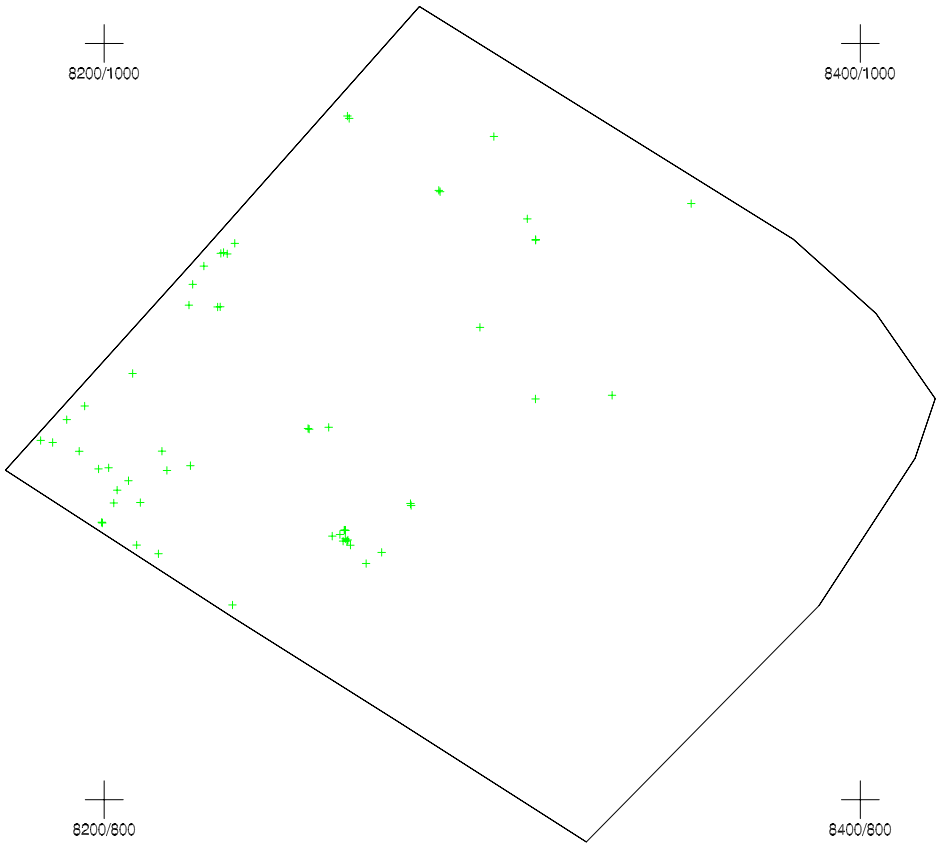
More modern activity appears to be represented by pits F137 and F151. F137 represented an old fence post; it produced a piece of wood (L0.24 x W0.14 x B0.06m) and a few fragments of modern tile. F151 produced fragments of modern brick and animal bone, and is probably the remains of a disturbed animal burial. Notably, these occur at the western limits of the area.

INTERVENTION 2 - SURFACE COLLECTION

Fieldwalking covered the entire area of Intervention 1(W) and was carried out in response to the discovery of a scatter of finds which were noted on the subsoil surface after topsoil stripping. Fifty-nine find spots (Find nos 1-59) were mapped (Figure 29), distributed over the western side of the intervention. One cluster of find spots occurred around two pits F115 and F116, and another near spread C1148 and pit F123 to the north. In the southwest corner of the intervention, a spread of material was collected in an area devoid of any archaeological features.

Lithics accounted for 51 find spots and were single finds apart from Find nos 23 and 43, where two pieces were picked up. The remaining 8 find spots produced 42 sherds and fragments of prehistoric pottery, the largest collection being Find no 37, being 17 sherds. The pottery assemblage contained little diagnostic material, apart from Find no 54, a sherd of Peterborough Ware (close to C1214). The remaining material appears to belong to the Neolithic period following the tradition of Grimston Ware and Grooved Ware recovered in larger quantities from the excavation.

The lithic assemblage contained a similar range of material to the excavation (Plates 5 and 6). It included a core



Investigation 9 (Intervention 2) find spots | Scale 1:2000 | Figure 29

(Find no 22) and a projectile point produced on a thick flake (Find no16), perhaps a crude leaf arrowhead. Scrapers were the most common tool type and it included three small thumbnail scrapers (Find nos 15, 19 and 55), a class of tool that appeared in the early Bronze Age and is a common feature of Beaker associated assemblages.

Plate 5 Flint cores

The discovery of material on the subsoil surface suggests that finds were present at the lowest levels of the ploughsoil, at the interface with the subsoil. At these levels, it appears that even fragile material such as the pottery survives at least initial disturbance by the plough, although it is unlikely to survive at higher levels in the soil profile. The cluster of finds around F115 and F116 demonstrates that ploughing is responsible for a significant amount of damage to the features, and furthermore, suggests that an unknown number of features have been lost in the southwest corner of the area.

Plate 6 Flint projectiles

4.7.3 Assessment

Intervention 1 revealed a scatter of truncated pits and scoops around the margins of a former lake, which by the Neolithic had silted up. The features provide evidence for Neolithic occupation on the site in the vicinity of a series of natural sink holes, which may have contained standing water or localised patches of marshy ground. In this respect, it is perhaps surprising that at least some of the sink-holes, apparently open in the Neolithic and Bronze Age, did not produce any finds contemporary with the occupation, but it may suggest that activity was of a relatively low intensity. Although occasionally grouped together in small clusters, the pits and scoops do not form any coherent pattern.

Activity may have reached a peak during the late Neolithic, but the presence of possibly earlier pottery and a chronologically later Beaker type assemblage (pottery and thumbnail scrapers) suggests that activity continued over a longer period. The area appears to have been abandoned at some time in the early Bronze Age, perhaps reflecting a change in use or a shift in the focus of activity. This can be correlated with the environmental evidence for periods of clearance, which began in the late Neolithic, but which appears to have been of low intensity, and was succeeded by a period of woodland restoration. During the Bronze Age, clearance appears to have occurred in more significant levels, though again this was only temporary.

For the post-medieval and modern periods, the results of the watching brief demonstrate the response to the natural topography and geology of the area: where sink holes reveal areas of the landscape likely to be wetter, field drains appear to have been used in order to drain and use the land to its maximum potential. To the south of Intervention 1(E), the earlier Ordnance Survey maps suggest that the sink hole (C1030) was situated at the end of a smaller field, and the long sinuous ditch, F31, is probably all that remains of that field boundary.

4.8 INVESTIGATION 10 (INTERVENTION 3)

A walkover and contour survey was carried out in the northwest corner of the Flasks in advance of further watching brief work (Quarry Phase 2b, 5a). The area of investigation lies to the north of Intervention 1(W) (Investigation 9), beyond the northern arm of Flask Lane (Figure 30). The field surrounded the western side of the quarry processing plant and at the time of survey was under pasture (late summer 1999). There was no indication that the ground had been ploughed in the recent past.

4.8.1 Fieldwork procedure

The purpose of the walkover survey was to identify and describe any upstanding earthworks or features of potential archaeological interest, and a contour survey was undertaken to map such features.

4.8.2 Fieldwork results

The surface of the field contained a number of hollows (possibly sink holes) and earthwork features. A drop in ground level along the eastern edge of the field appeared to mark the former edge of the in-filled lake, or a broad channel into the lake.

Nine medium to large sub-circular hollows were defined and mapped. The smaller hollows all clustered along the edge of the terrace, which runs NW-SE and represents the boundary of the former lake. A larger, though somewhat poorly defined, hollow in the southwest corner was situated 50m back from the terrace near the former gated entrance to the field. Another depression in the opposite northeast corner, 18m in diameter, appeared to be the remains of a small pond (later identified as another sink hole and some 5m in depth, sampled by Durham University in summer 2003, called Shake-Hole 1: Investigation 18). The remainder of the hollows are also likely to represent sink holes (Figure 31).

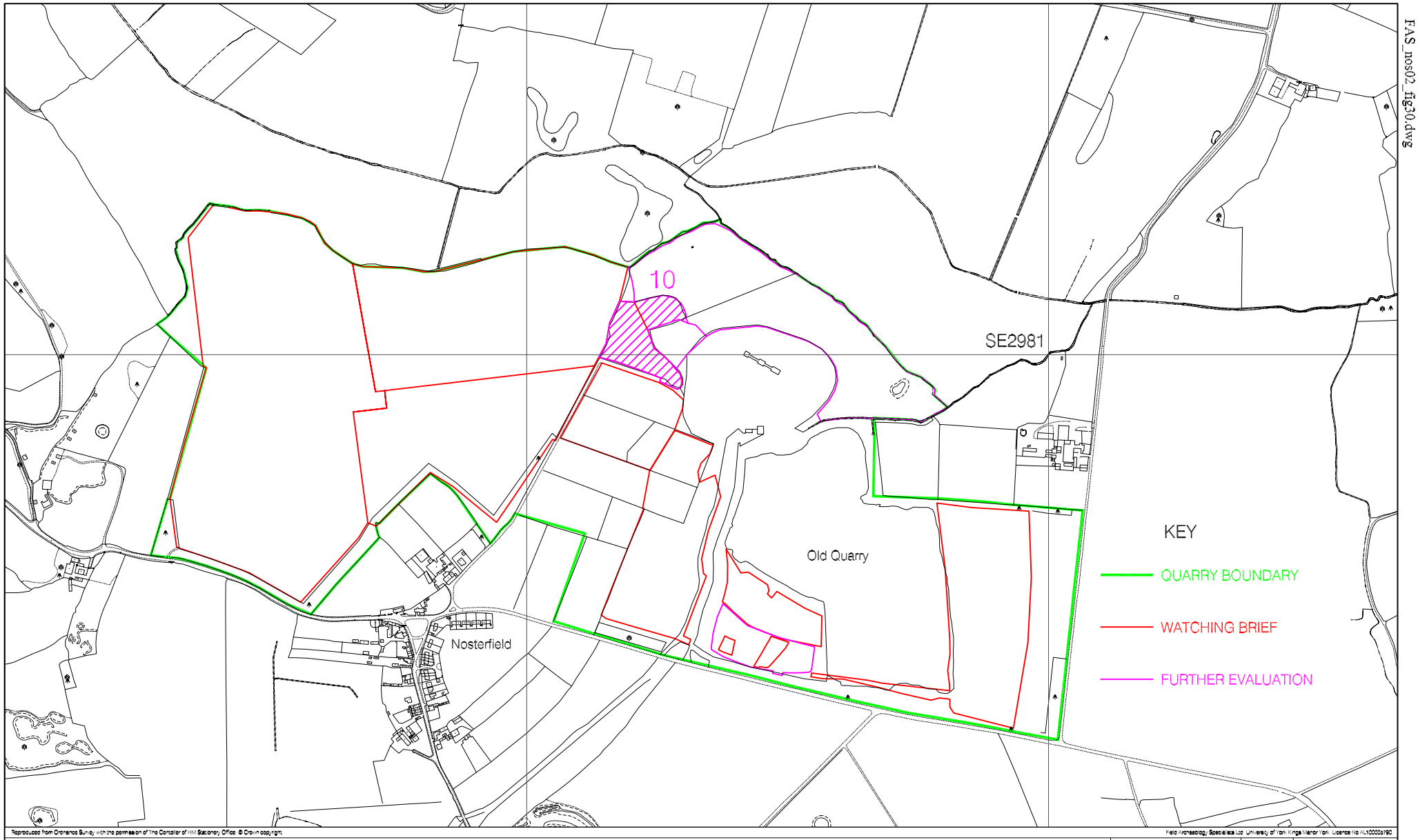
The terrace was found to run along the eastern side of the field between the 40 and 41m contour. At the north end it was crossed by a low bank (NE-SW) running toward a manhole cover situated in the southwest corner. Where it had been exposed by burrows, the soil from the lower levels appeared to consist of a desiccated peat. On the higher ground, the topsoil was shallower (0.30m) and appeared to overlie the gravel subsoil.

4.8.3 Assessment

This fieldwork identified a number of features within the area, identifying potential candidates for investigation during a subsequent phase of watching brief in the same area (Investigation 11).

4.9 INVESTIGATION 11 (INTERVENTION 4)

Investigation 11 (Intervention 4) was carried out on the same area of land, although a new fence had reduced the area by cutting off the northeastern corner (Quarry Phase 2b, 5a)(Figure 32). Intervention 4 therefore covered a triangular area in the northwest corner of the Flasks, to the west of the quarry processing site and north of the previous watching brief (Investigation 9). The area covered approximately 1.20 hectares, with

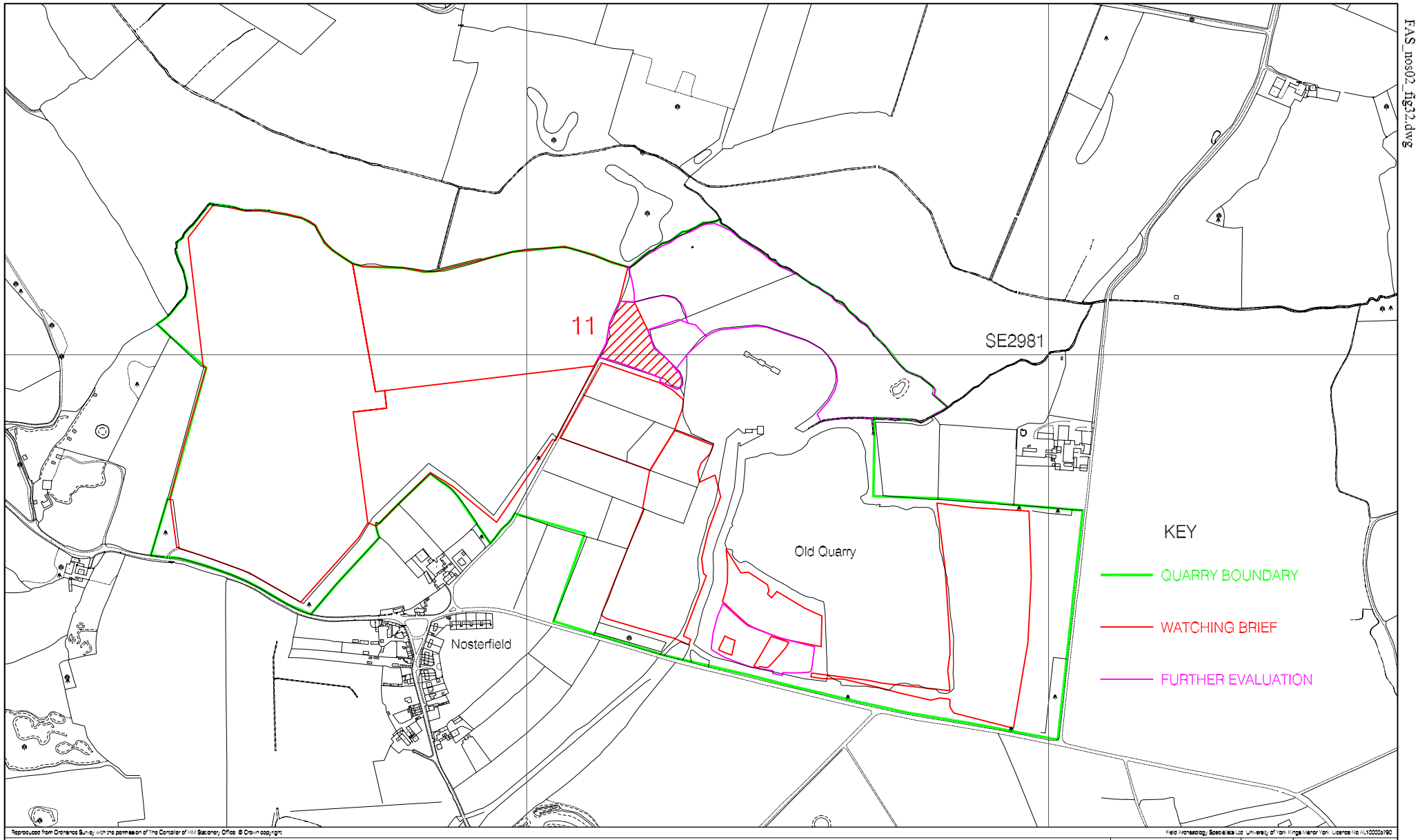


Location of Investigation 10

Scale 1:10000

Figure 30

Investigation 10 contour survey at 0.20m intervals | Scale 1:1250 | Figure 31



Location of Investigation 11

Scale 1:10000

Figure 32

maximum dimensions 120m north-south and 158m east-west. The watching brief was carried out in September 1999.

The ground cover consisted of rough pasture used for grazing sheep, and had not been recently ploughed. Ground level was relatively uneven, although the ground rose from the east side, on the 39m contour, to the west where it reached the 42m contour.

4.9.1 Fieldwork Procedure

The same fieldwork procedure employed for Intervention 1(W) was also used for this investigation, although the presence soft ground and water-logging restricted access in the eastern margins of the area during the watching brief. Features were recorded from F1 and contexts from C1000.

4.9.2 Fieldwork Results

During the watching brief, a total of 15 features were identified and investigated, and 2 land drains were mapped but not excavated (Appendix A). The 15 features were all initially identified as pits; subsequently, 3 were found to represent sink holes (Figure 33).

One group of 9 pits (Structure 11) formed a length of a pit alignment. The remaining pits were identified as sink holes, although one (F6) contained only modern farm debris and no peat. A very small finds assemblage was recovered consisting of pottery, tile, animal bone and one piece of chert.

Pit alignment

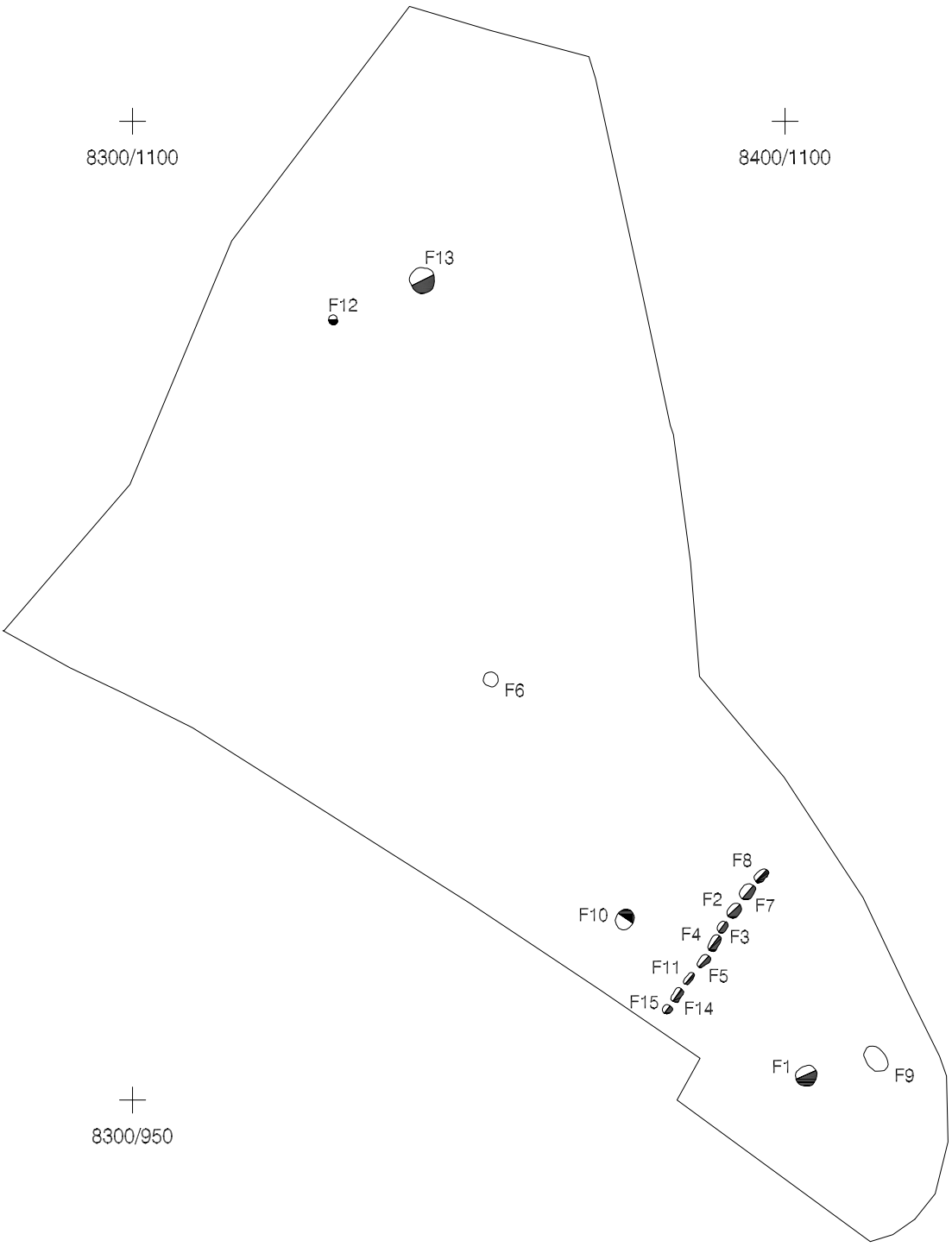
Structure 11 crossed the southeast corner of the area and was orientated NE-SW from the edge of Flask Lane towards the terrace of the former lake. The pit alignment stopped approximately 4m in front of the terrace edge. Within the pit alignment, the oval or sub-rectangular pits were generally situated between 0.71m and 0.94m apart, although the distance between F3 and F4 was only 0.51m, while between F5 and F11 the distance was 1.20m (Figure 34). Most of the pits were sub-rectangular, although others were oval or circular. The largest pit (F4) was 2.76m in length but only 0.26m deep, while the deepest pit, F7, reached 0.52m in depth (Figure 35). The backfill of the pits were either brown clayey silts or sandy clays, which occasionally became stonier at lower levels (e.g. F2, F11, F14 and F15). In general, the pit bases were flat or gently sloping, although in F2 a shallow hollow was defined in the centre of the pit. The only finds from Structure 11 were an undiagnostic fragment of Roman brick from F2 (C1002), and a rim sherd of Torksey or Torksey-type Ware from F8 (C1011) dated to the 10th to 11th century AD (Appendix D: Part 4).

Isolated pits

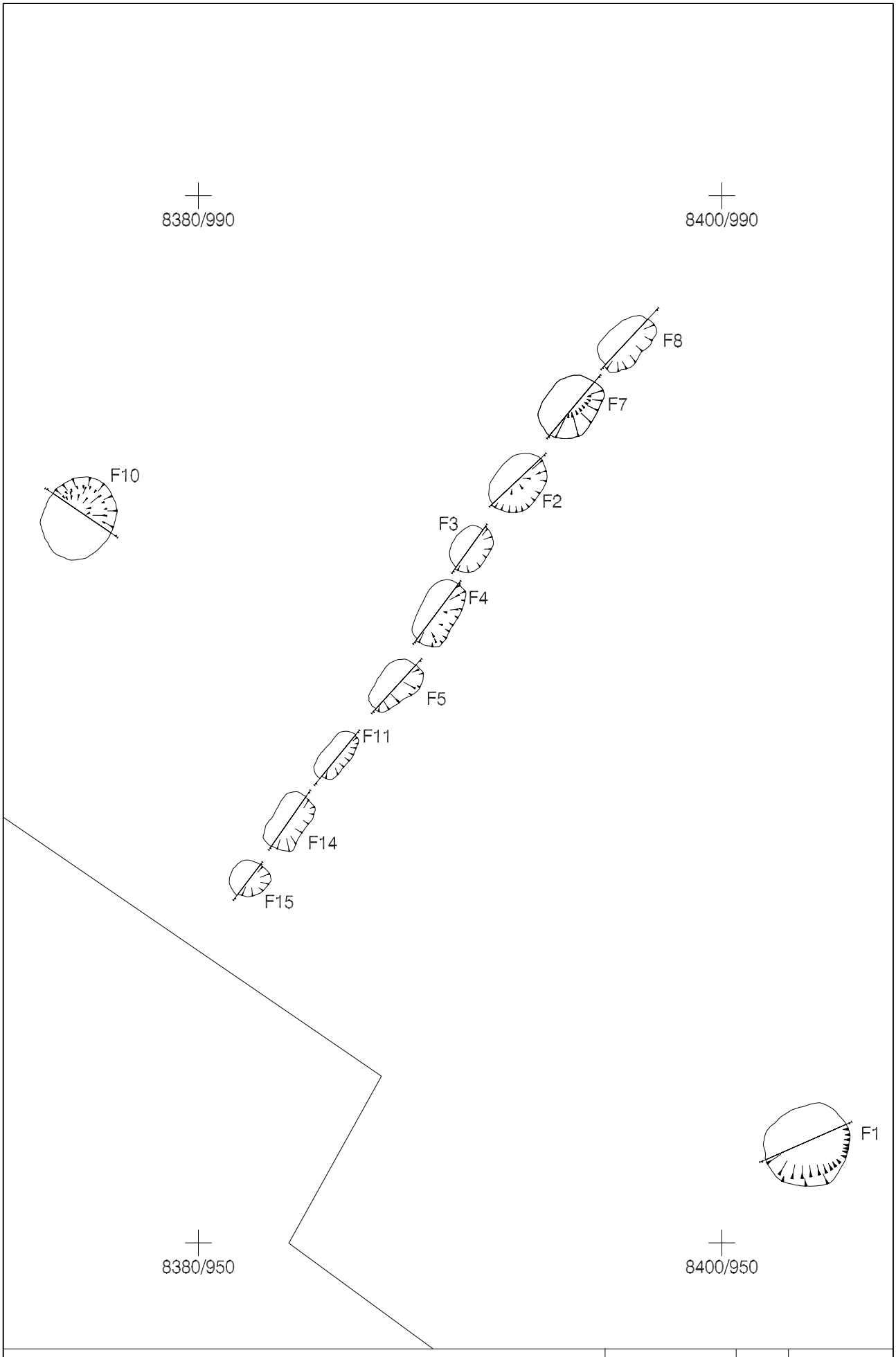
Two other pits (F6 and F12) were not part of the pit alignment. F6 was a modern pit filled with lengths of barbed-wire and other farming debris. F12 was an isolated feature and contained a brown sandy silt (C1018), interpreted as a possible shallow sink hole.

Sink Holes

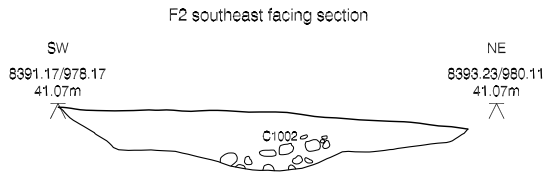
Four sink holes (F1, F9, F10 and F13) were situated on the edge of the gravel terrace, with a further possible

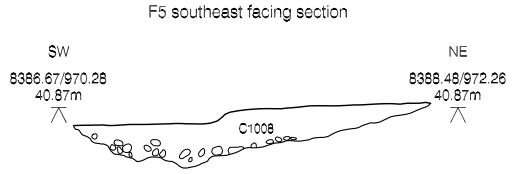


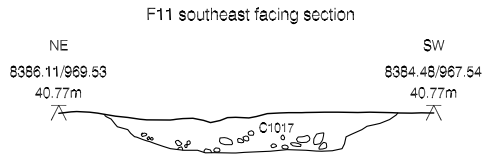
Investigation 11 (Intervention 4) map of archaeological features | Scale 1:1000 | Figure 33

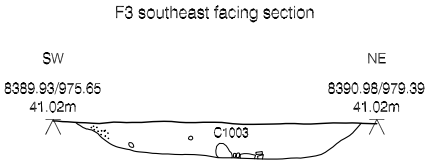


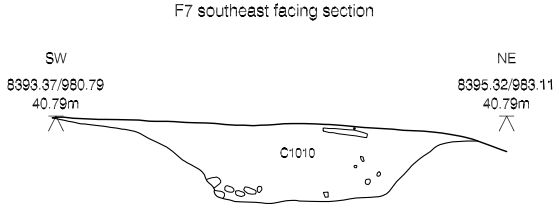
Investigation 11 (Intervention 4) Structure11 | Scale 1:200 | Figure 34

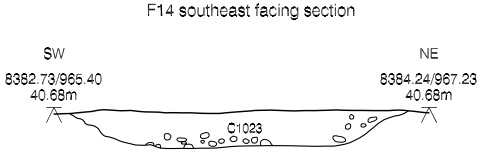


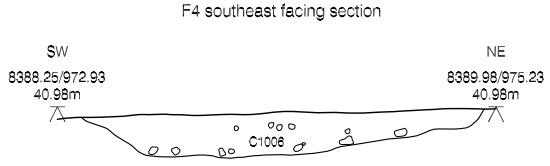


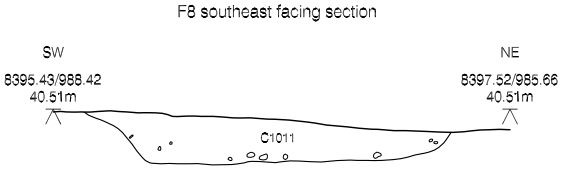












Investigation 11 (Intervention 4) Structure 11 sections

Scale 1:50

Figure 35

example, F12, set further back from the terrace (see Figure 33). Only F13 was fully excavated, the others being abandoned at different depths for health and safety reasons. F9, situated in soft marl, was too dangerous to excavate and was sectioned by machine and recorded remotely. Below the surface the sink holes became wetter and contained a series of layers and occasionally peaty deposits.

The upper fill of each sink hole was characterised by a well-structured soil, representing a deposit of topsoil which had accumulated in the tops of the features possibly as the underlying deposits shrank (Figure 36). F1 (C1000) produced a number of cartridge cases from shot guns (not retained), and a piece of chert from F13 with a single flake bed, possibly a core fragment, was the only lithic find from the investigation.

The lower fill of F1 and F13 contained peat. In F1 (C1007) the peat produced fragments of root and plant remains and was sealed by another peaty deposit (C1001) with lenses of marl. In F13, the peat (C1020) sealed two grey silty clay layers (C1021 and C1022). C1020 produced a fragment of tibia from a large mammal and C1022 a mandible, in a slightly fossilised condition, from a very large deer (elk or megaloceros)(Plate 7).

Plate 7 Elk mandible

4.9.3 Assessment

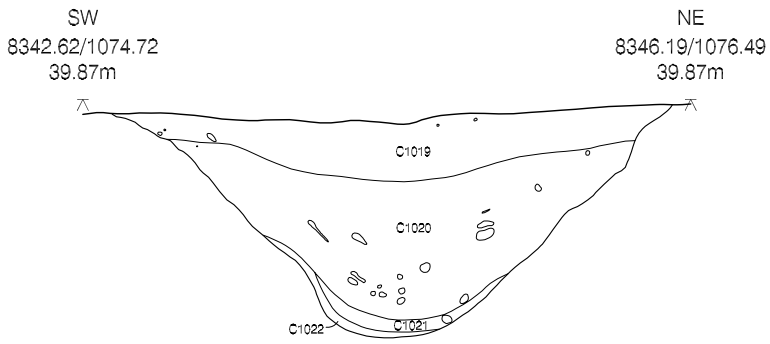
Not all of the hollows mapped in Intervention 3 were identified as features in the excavation, while the watching brief also produced one sink hole (F13) which had not been mapped as a surface feature.

The fragment of mandible from F13, from an animal extinct since the Pleistocene, suggests the possibility of a greater time depth for the formation of the deposits identified within the sink holes.

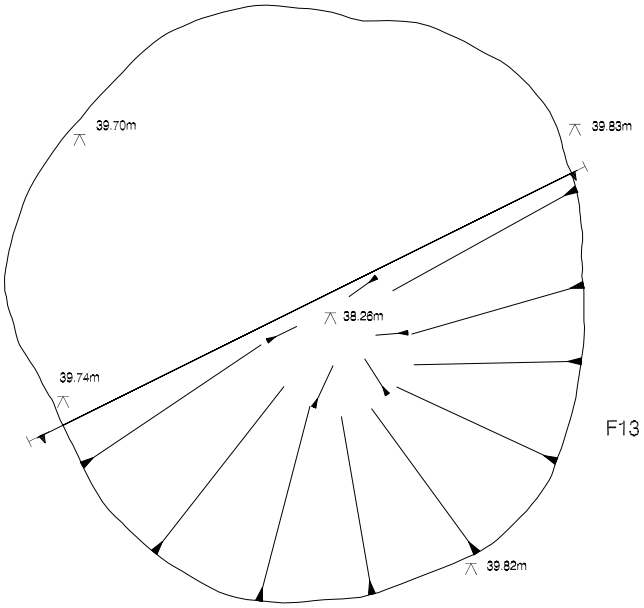
The absence of pits and any material from occupation suggests that late Neolithic activity did not extend across Flask Lane into Intervention 3. It is possible that a west/eastward extension of the pit alignment (Structure 11) could have formed the boundary to the site, although the absence of any finds of prehistoric date may suggest it could be later in the sequence.

Since Structure 11 had not appeared on the other side of the lane in Intervention 1, it is possible that it turned beneath Flask Lane and continued to the east or west. The pit alignment respects the edge of the terrace and may have terminated here on the edge of a wet peaty area. The finds from the pit alignment are difficult to interpret in terms of date. The lack of any further evidence for early medieval features or finds in the area suggests that the fragment of Torksey Ware may have been intrusive; a number of similar features identified during later stages of the watching brief were found to contain Roman ceramic, suggesting a final disuse of these features at this time.

F13 southeast facing section



Large Elk mandible recovered from F13, C1022



Investigation 11 (Intervention 4) F13	Scale 1:50		Figure 36

4.10 INVESTIGATION 12 (INTERVENTION 6)

Investigation 12 consisted of fieldwalking undertaken in the northern part of Nosterfield Quarry in advance of topsoiling (Quarry Phase 2b)(Figure 37). The area of topsoil, covering 10.88 hectares, was walked during December 1999, and a total of only 20 finds were recovered.

4.10.1 Fieldwork Procedure

Fieldwalking was undertaken in two areas of the investigation that had been planted with potatoes; the remainder of the area was under stubble at the time. Complete coverage of the available area was achieved. The finds were individually located using a total station theodolite, and their 3-D coordinates plotted.

4.10.2 Fieldwork Results

Only 20 finds were recovered during this work, consisting of pottery and lithic material (Appendix C: Part 3). Flint artefacts included a single blade, 10 flakes and 7 fragments of debitage, 2 fragments of which were found to have been burnt. A fragment of Roman pottery was also recovered. No notable clusters within the distribution were identified.

4.10.3 Assessment

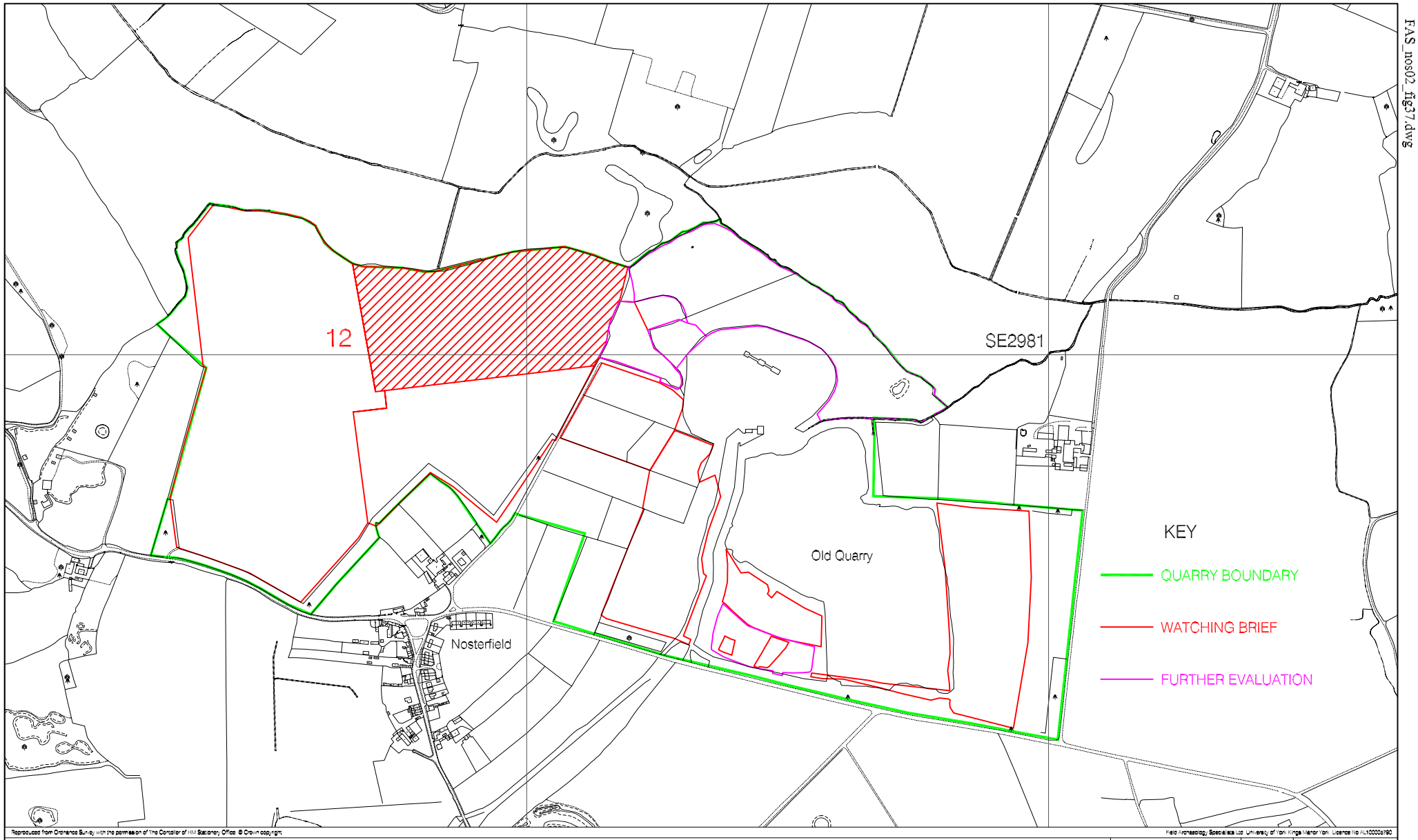
The low number of finds recovered from this phase of work, and their generally undiagnostic nature, means that few conclusions can be drawn regarding their significance. Despite their limited value, these finds add to the general assemblage of prehistoric artefacts recovered during the subsequent watching brief in the same area (Investigation 13: Intervention 5NE). The low number of finds recovered from this phase of work can be compared with the results of Investigation 9 to the east (Intervention 2).

4.11 INVESTIGATION 13 (INTERVENTION 5NE)

A watching brief was undertaken over a large area to the west of the Nosterfield Quarry site, commencing in January 2000 (Quarry Phase 2b). This represented the first of four phases of Intervention 5, the largest area of investigation, covering a total of 37.8 hectares, and measuring 840m from east to west, and 765m north to south. The work was divided into four discrete phases of watching brief (Intervention 5NE, 5NW, 5SW, 5SE), and began with Intervention 5NE, which was undertaken between January and February 2000, and completed in May 2000 (Figure 38). The watching brief in this area revealed a series of linear features, including ditches and pit alignments, which dated from prehistory to the medieval period. A series of small pits was identified, and finds from the excavated features comprised largely prehistoric pottery and lithics.

4.11.1 Fieldwork Procedure

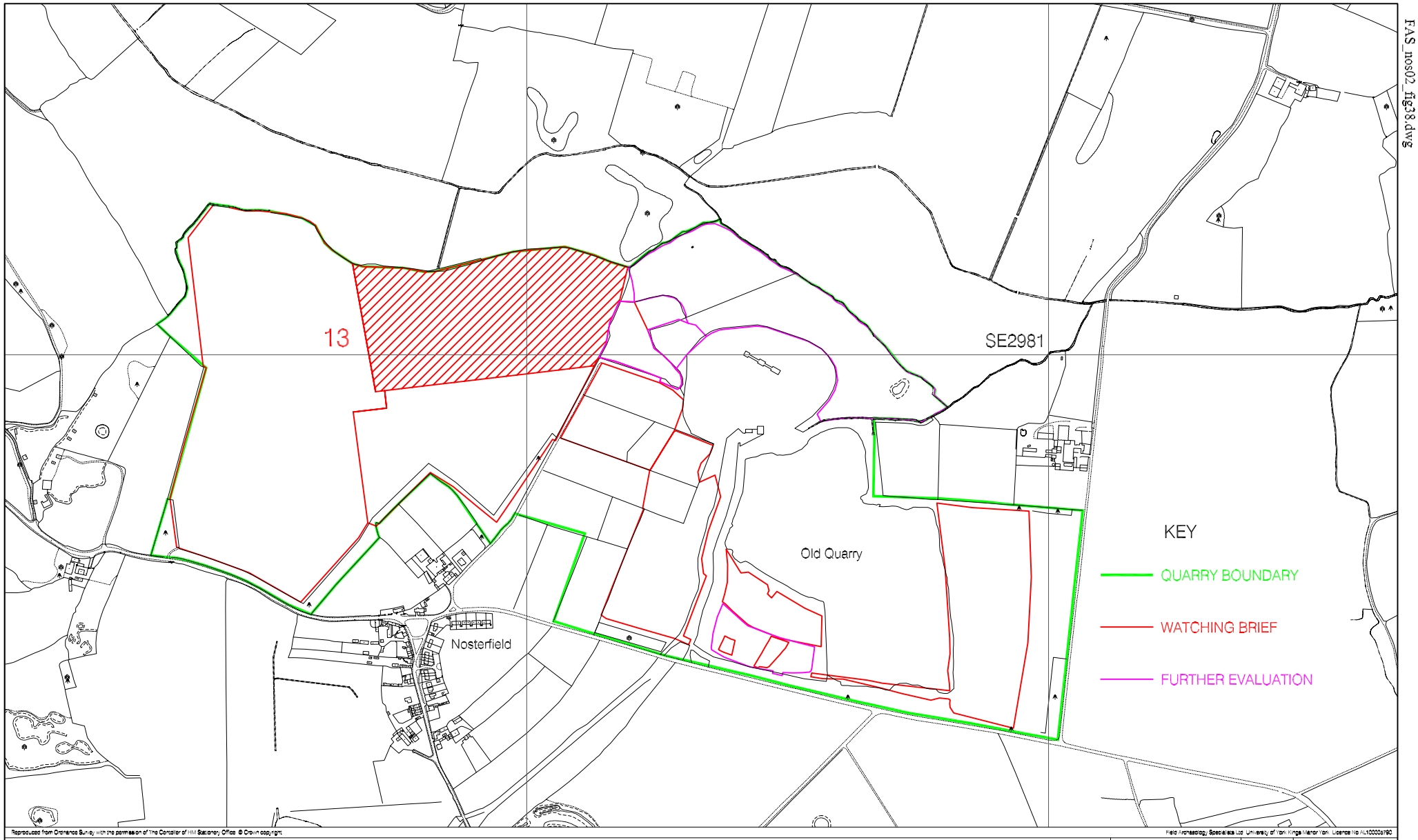
Initially, the topsoil from each area was stripped using a 360˚ tracked machine with a toothless ditching bucket; machinery was then prevented from running on the stripped areas until the archaeological features within each area had been fully investigated. The exposed subsoil was scanned for archaeological features, which were then



Location of Investigation 12

Scale 1:10000

Figure 37



Location of Investigation 13

Scale 1:10000

Figure 38

mapped using a total station theodolite, half-sectioned and recorded. Context records began at C1000 and feature records from F1.

4.11.2 Fieldwork Results

A total of 27 features was identified during the watching brief, of which three have been classified as ditches, and the remainder as pits. Of these, eleven pits and one ditch formed part of a pit-ditch alignment across the southern part of the area, while the remainder were dispersed throughout the area, and showed little evidence for structure or organisation (Figure 39). Dating evidence was rare, but those finds that were produced indicate that activity in the area occurred between the Mesolithic and Bronze Age.

Ditch/pit alignment

Twelve pits were found to be aligned WSW-ESE, extending the line of a substantial ditch which ran for 115m across the southern part of Intervention 5NE (Structure 10)(Figure 40). The ditch was sampled in five sections, and was found to measure approximately 3.50m wide and up to 0.90m in depth, containing a series of fills (Figures 41 and 42). The pits were found to be sub-rectangular in shape, varying in length from 1.34m to 4.10m, and in width from 0.34m to 1.56m, reaching up to 0.72m in depth (Figure 43). Little dating material was recovered from these contexts; a Neolithic fabricator was recovered from the ditch backfill (F15). F16, a pit which shared an unclear relationship with one of the pits of the alignment (F7), or formed part of the structure, produced Grooved Ware of Neolithic date (Appendix D: Part 3).

Isolated pits

A number of small pits were identified within Intervention 5NE, in two main areas. To the north of Structure 10, five small pits were sampled (F1 to F5). Each was less that 1.0m in diameter, with a maximum depth of 0.36m. An undiagnostic fragment of flint was recovered from one feature (F2), and a single fragment of animal bone was recovered from F4 (Appendix G).

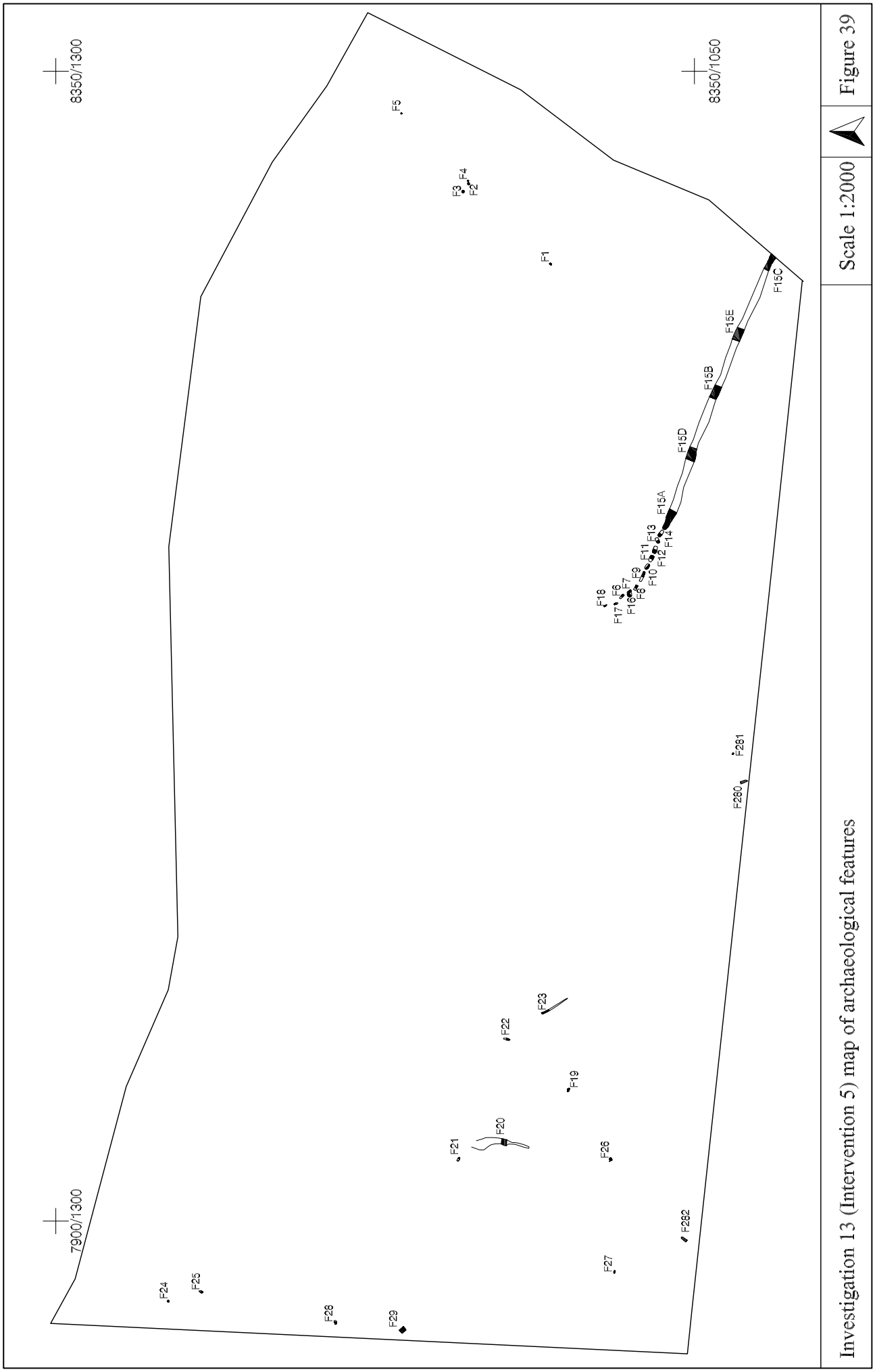
Further to the west, 7 further isolated pits were identified (F19, F20, F21, F24, F25, F26, F27), measuring on average 1.50m x 0.70m. Again, few finds were identified; fragments of flint were recovered from F26.

Linear features

Two linear features were mapped and sampled during the watching brief, both of which lay within the western part of Intervention 5NE. F23 was found to measure 0.50m in width and up to 0.25m deep, and was defined for a distance of 12.05m. F20 represented an irregular shaped feature, apparently cut by, or draining into, an adjacent hedgerow.

4.11.3 Assessment

The majority of the archaeological features within this area provided little or no dating evidence or indication of function, and as such are difficult to interpret. Scattered pits provide some indication of human activity, but cannot be interpreted as structural. The pit-ditch alignment can tentatively be assigned a prehistoric date, although such features are known to have been constructed over a long period.



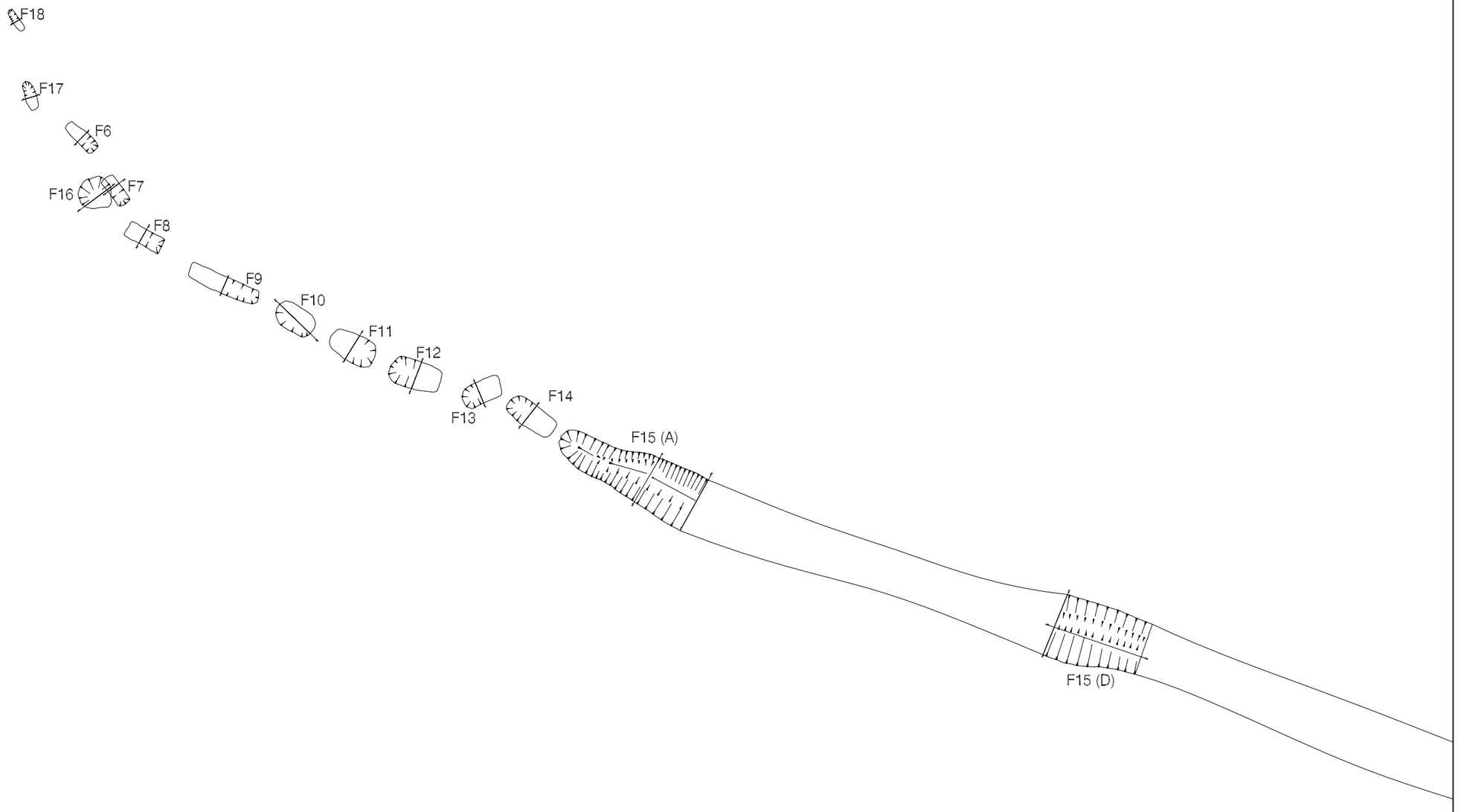
Investigation 13 (Intervention 5) map of archaeological features

Scale 1:2000

Figure 39

8130/1090

8210/1090



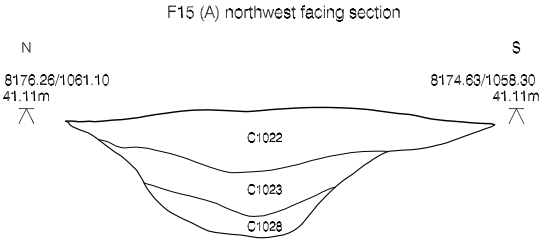
8130/1040

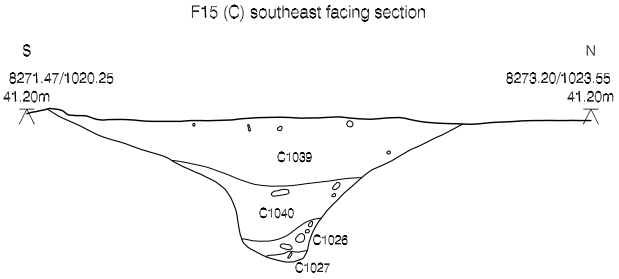
8210/1040

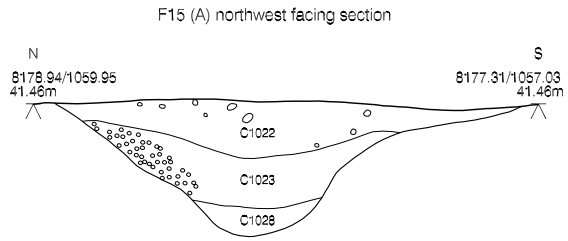
Investigation 13 (Intervention 5) eastern part of Structure 10

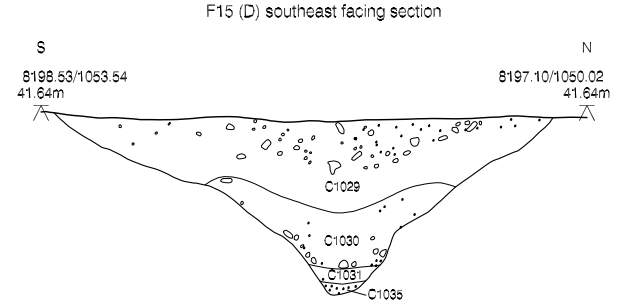
Scale 1:250

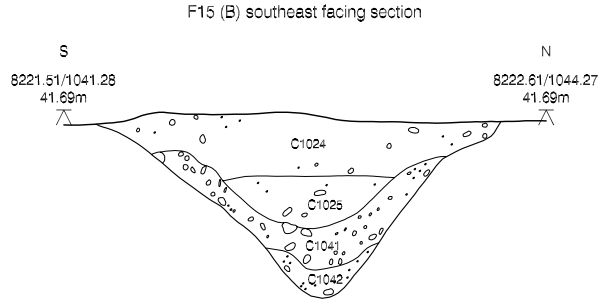
Figure 40

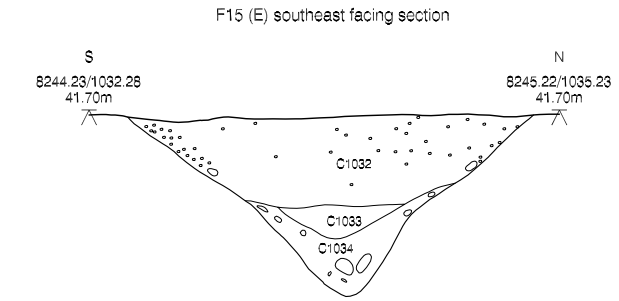






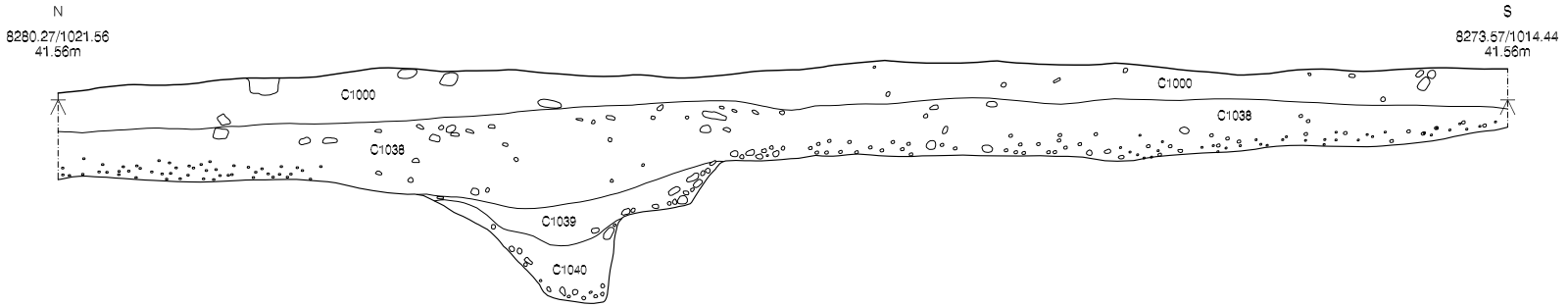




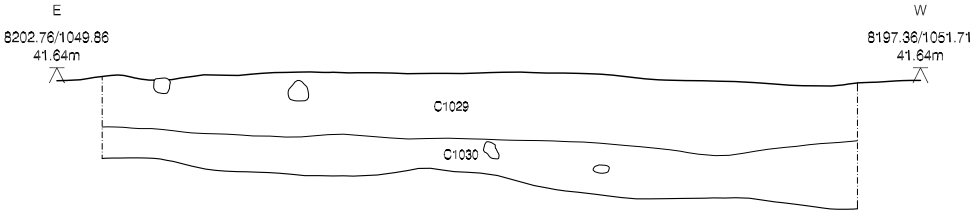


Investigation 13 (Intervention 5) Structure 10 sections	Scale 1:50	Figure 41

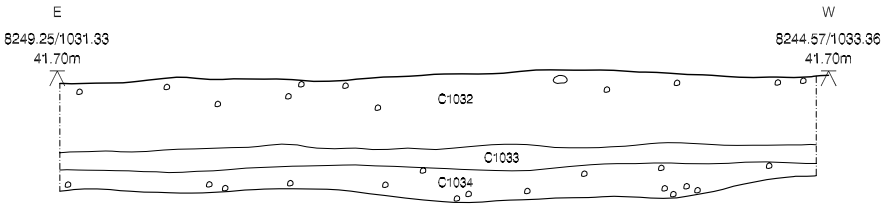
F15 (C) northwest facing section



F15 (D) northeast facing section

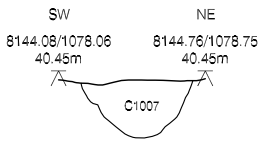


F15 (E) northeast facing section

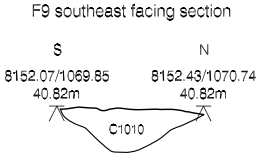


Investigation 13 (Intervention 5) Structure 10 sections	Scale 1:50	Figure 42

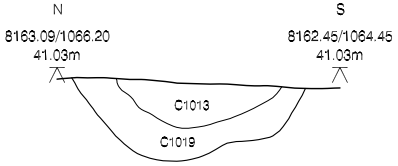
F6 southeast facing section



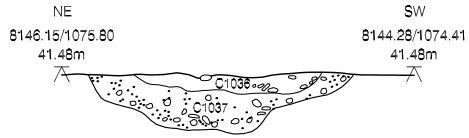
F9 southeast facing section



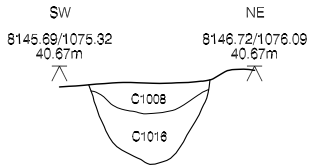
F12 northeast facing section



F16 northwest facing section

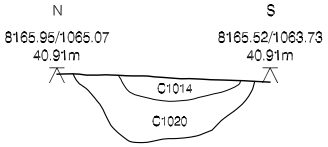


F7 southeast facing section

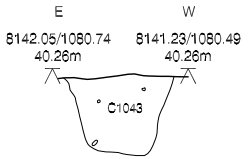


F10 southwest facing section

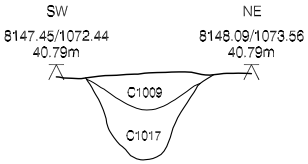
F13 southwest facing section



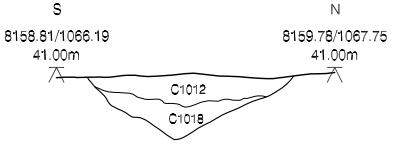
F17 northwest facing section



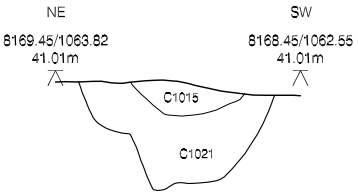
F8 southeast facing section



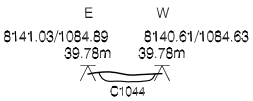
F11 southeast facing section



F14 northwest facing section



F18 northwest facing section



Investigation 13 (Intervention 5) Structure 10 sections | Scale 1:50 | Figure 43

4.12 INVESTIGATION 14 (INTERVENTION 5NW)

A watching brief was subsequently carried out in an area to the west of Intervention 5NE, between October and November 2001; this area was extended southwards slightly in advance of the construction of a new processing plant (Quarry Phase 3) (Figure 44). The archaeological remains identified included land drains, linear features, ditches and hedges. A small number of pits were identified within the area, and upon investigation a number of features were found to be natural, formed by vegetation.

4.12.1 Fieldwork Procedure

The fieldwork strategy adopted for Intervention 5NW had proved adequate for the sampling and recording of the sporadic features that were identified, and as such, the same procedure was adopted for Intervention 5NW.

4.12.2 Fieldwork Results

A total of 31 features were investigated within Intervention 5NW (Figure 45). Five features were found to be natural, caused by vegetation, while the remainder consisted of scattered pits and scoops, and a number of linear features which appear to represent medieval or post-medieval land divisions.

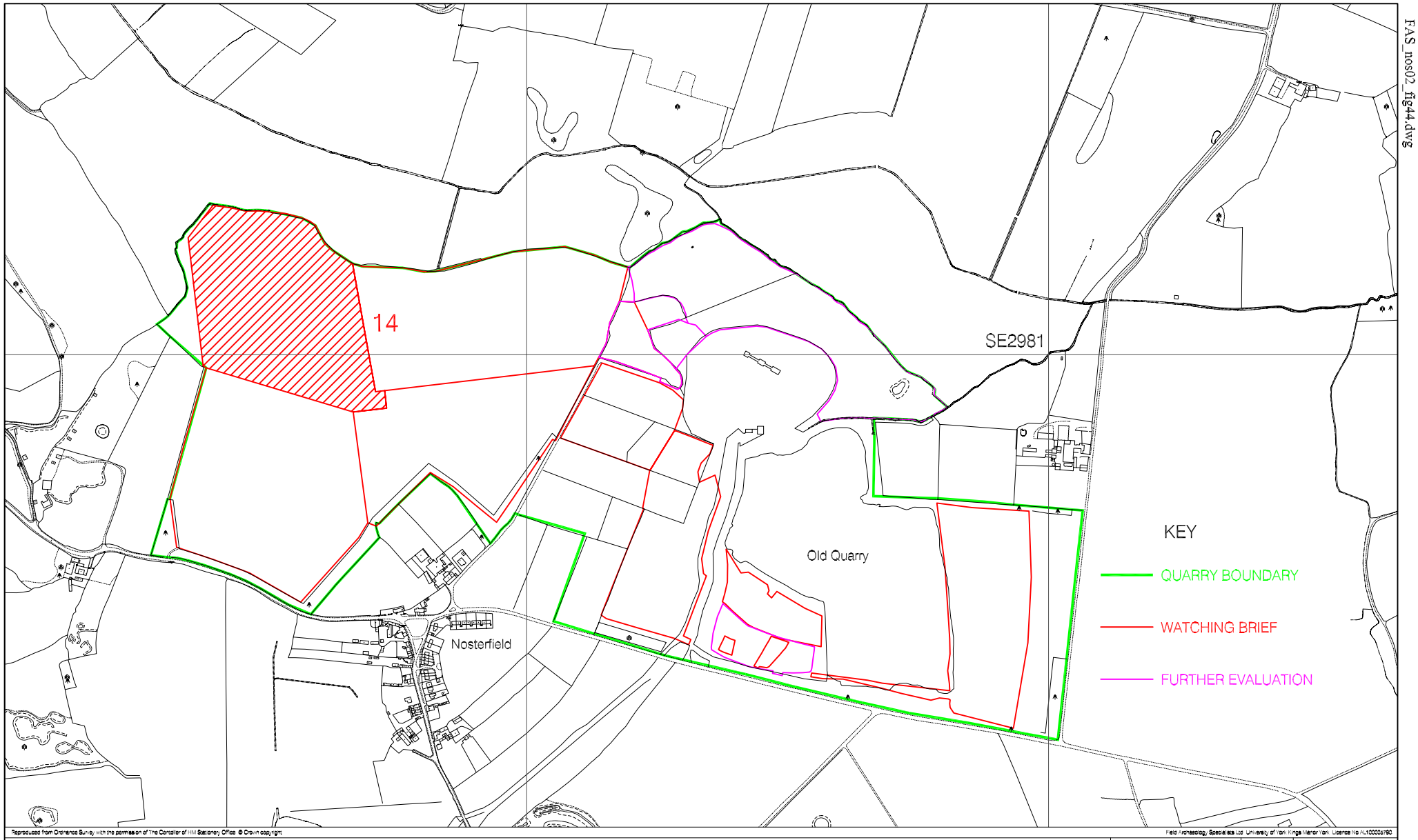
Natural features
Five features from Intervention 5NW were investigated and found to have been caused by natural factors, predominantly represented by tree boles (F50, F51, F53, F56, F57). These features formed a small cluster at the westernmost part of the Intervention, with an isolated example towards the centre.

Pits
The majority of the remaining features were either pits, of which 16 were identified, or scoops, which represented a further 5 features. These pits were scattered throughout the area of investigation and show no discernible pattern, although it has been noted that they occur on areas away from standing water, presumably on higher land. These features ranged in size from 1.7m by 1.04m to 0.60m by 0.50m, and reached up to 0.30m deep. Much more ephemeral were the 5 scoops, which measured between 0.02m and 0.08m deep, and had a maximum diameter of 0.90m. Generally, these features produced very few finds, and no securely dateable evidence was recovered (Figures 46 and 47).

Linear features
The area of investigation was dissected by a number of extensive linear features. Two ditches (F44 and F42/54), reaching lengths of 296m and 174m respectively, were found to run parallel to each other, approximately 60m apart, on a NNW-SSE alignment. Fragments of flint and medieval pottery were retrieved from the backfill of F44.

4.12.3 Assessment

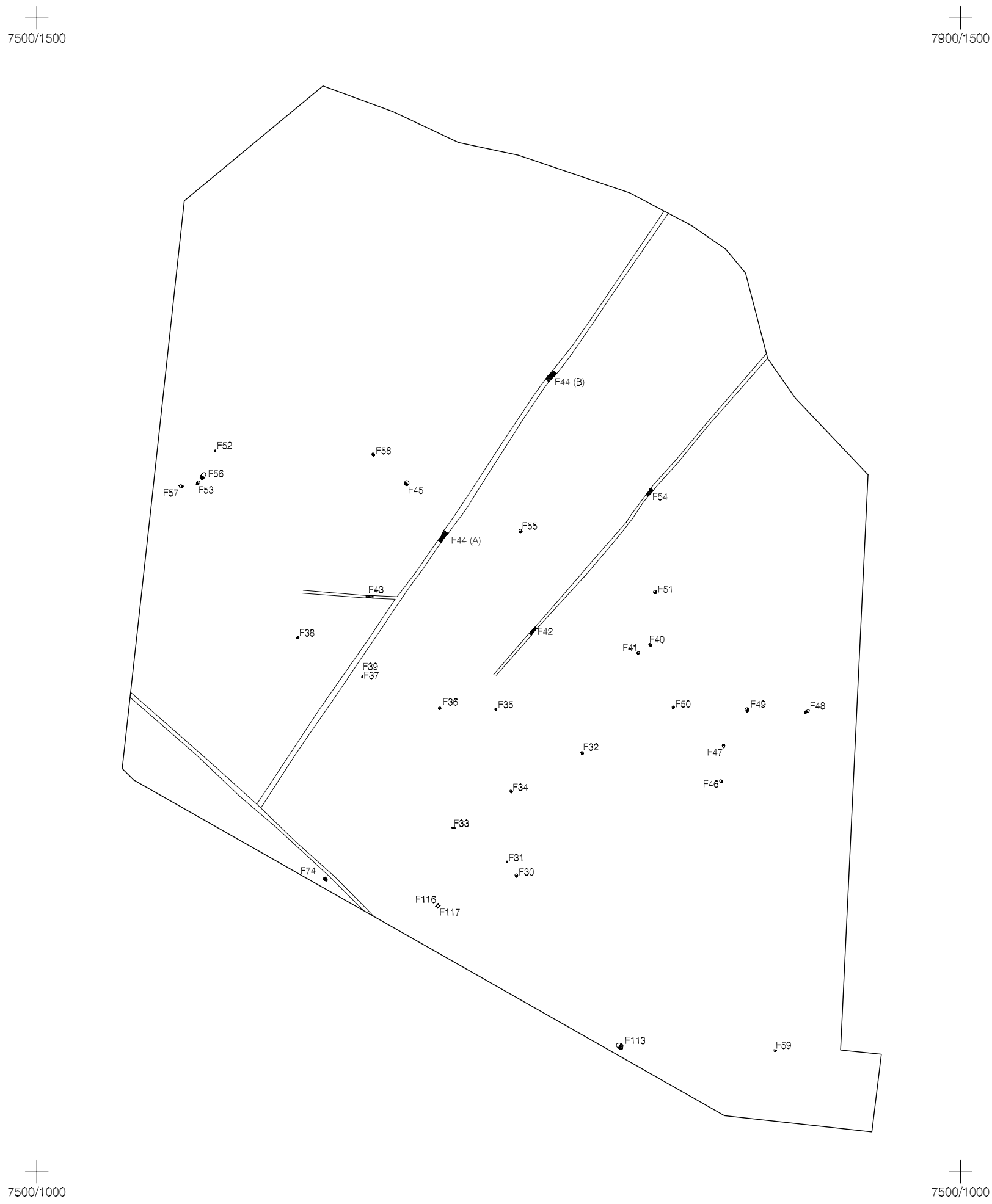
The ditches identified within Intervention 5NW would seem to represent medieval land divisions. The results of investigations in this area produced similar results to those in Intervention 5NE; dispersed pits and scoops



Location of Investigation 14

Scale 1:10000

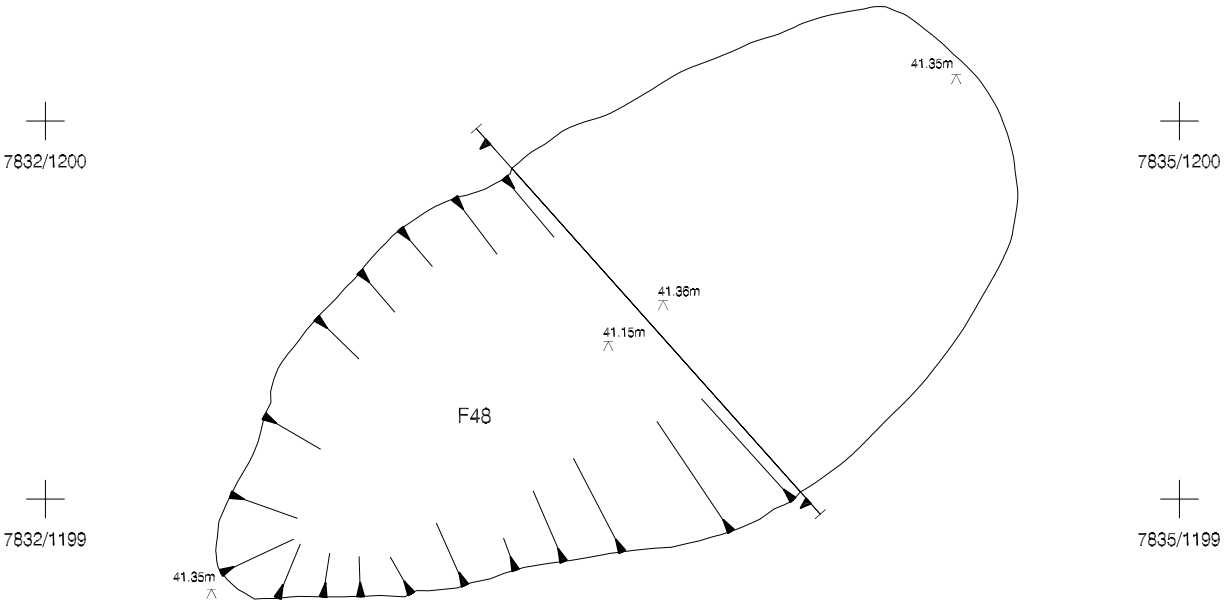
Figure 44



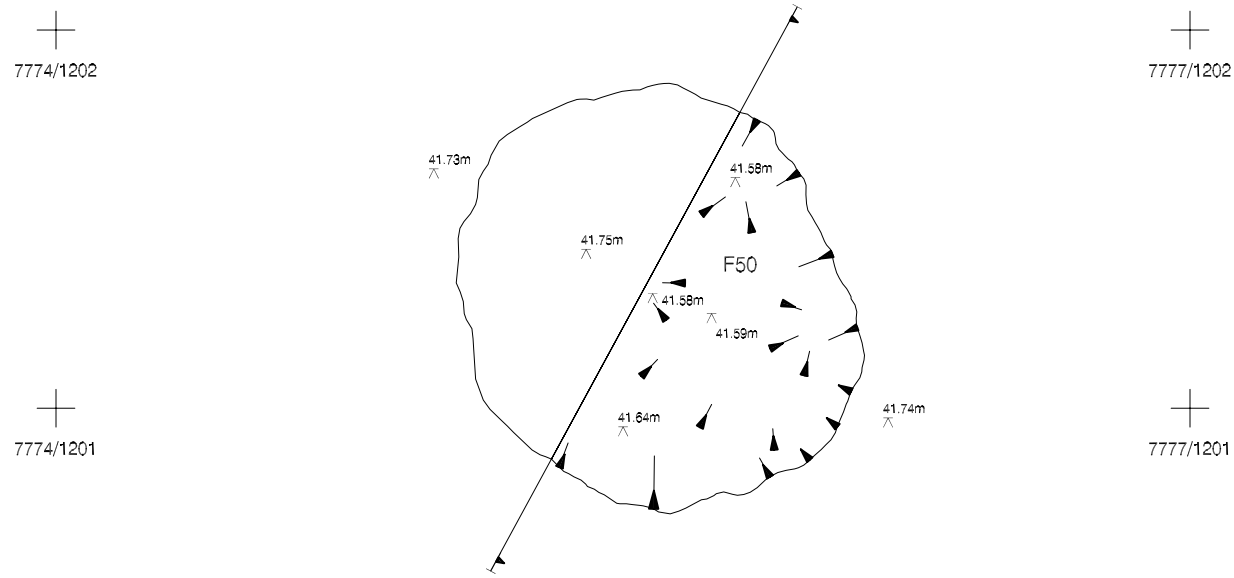
Investigation 14 (Intervention 5) map of archaeological features

Scale 1:2000

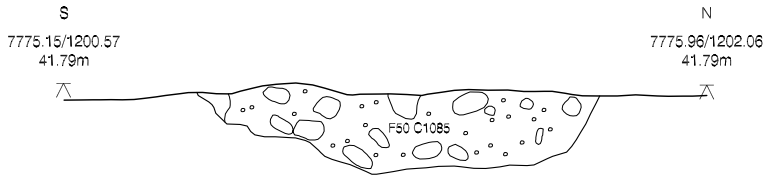
Figure 45



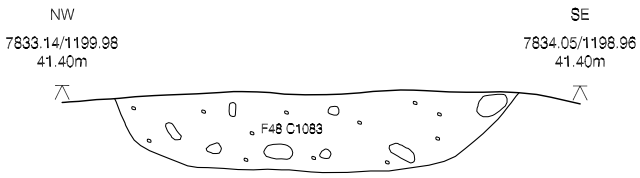
Investigation 14 (Intervention 5) F48 post-excavation plan | Scale 1:20



Investigation 14 (Intervention 5) F50 post-excavation plan | Scale 1:100 | Figure 46



Investigation 14 (Intervention 5) F48 section | Scale 1:20



Investigation 14 (Intervention 5) F50 section | Scale 1:20 | Figure 47

provide evidence for some degree of activity within this landscape, but little indication of function or date.

4.13 INVESTIGATION 15 (INTERVENTION 5SW)

An archaeological watching brief was undertaken to the south of Investigation 13 between April and June 2002, and was completed in September 2003 (Quarry Phase 3)(Figure 48). The stripping of topsoil in this area exposed a much denser distribution of features than in areas to the north, revealing funerary activity which has been dated to the Bronze Age, and at least four pit alignments which divide the landscape. Modern land divisions were also observed and recorded.

4.13.1 Fieldwork Procedure

Although the fieldwork strategy had proved sufficient for the recording and sampling of the dispersed features encountered following the stripping of Intervention 5NW and Intervention 5NE, the removal of topsoil in to the south of these areas, in Intervention 5SW, revealed a much denser distribution of archaeological features. The identification of 4 pit alignments, 3 ring ditches and a series of cremations prompted a revision of the working methodology. As a result, a change was implemented to the level of monitoring over the site, and the sampling strategies employed. Any finds observed on the surface during fieldwork were subsequently collected and located using a total station theodolite.

A review of the environmental sampling strategy was undertaken by Dr Stephen Carter, and the resulting recommendations adopted. Bulk samples were taken from all features: 10 litre samples from each context within ditches, 30 litres from ring-ditches and two pits from each alignment, 10 litres from isolated pits, and 30 litre samples from charcoal-rich fills within archaeological features.

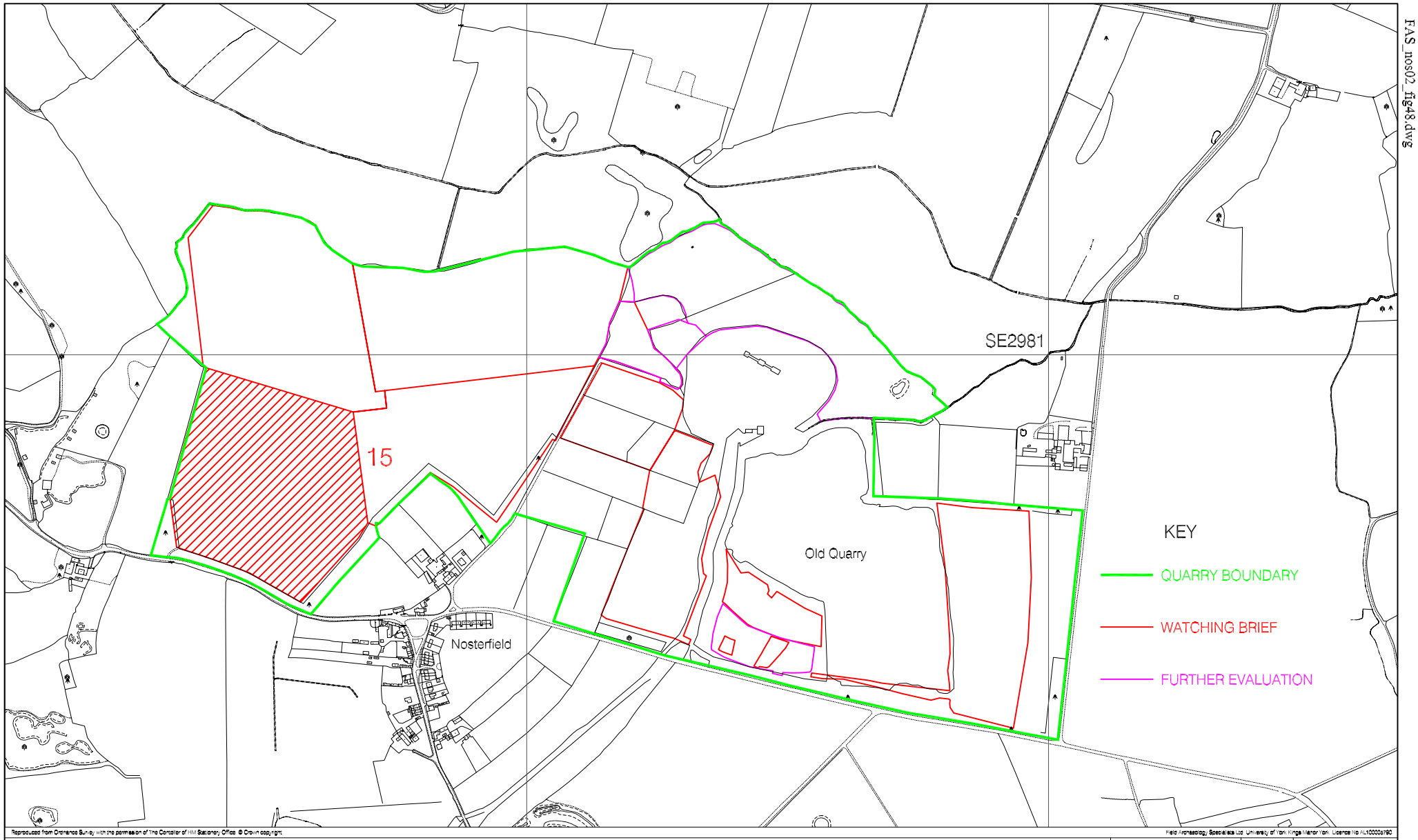
4.13.2 Fieldwork Results

Within Intervention 5SW, a total of 217 features were identified and recorded, representing over three times the number of features identified in the more northerly areas. Of these, 14 proved to be of natural origin, either caused by vegetation or geological anomalies. 126 features were pits, which were found to form part of 4 pit alignments (Structures 1, 2, 4 and 5). Two *foci* of funerary activity were also identified, one focussed on a ring-ditch to the west of the area (Structure 3), and the other comprising a group of cremations and a possible associated ring-ditch to the northeast of the area (Structure 7). All burials were severely plough-damaged, with clear evidence for plough truncation and disturbance. Roman activity was represented by a corn-drying oven (Structure 6), while a timber- and stone-lined well identified in the eastern half of the area produced evidence for a modern date (F202). As with the areas further north, the landscape was found to have been divided by a series of hedgerows and ditches (Figure 49).

Ring-ditches and associated burials

Three ring ditches were identified during the watching brief, and although direct dating evidence was not retrieved, evidence from associated burials has suggested a date in the Bronze Age for their construction.

The largest of the ring-ditches, F264, is situated to the west of Intervention 5SW, measuring approximately 17m



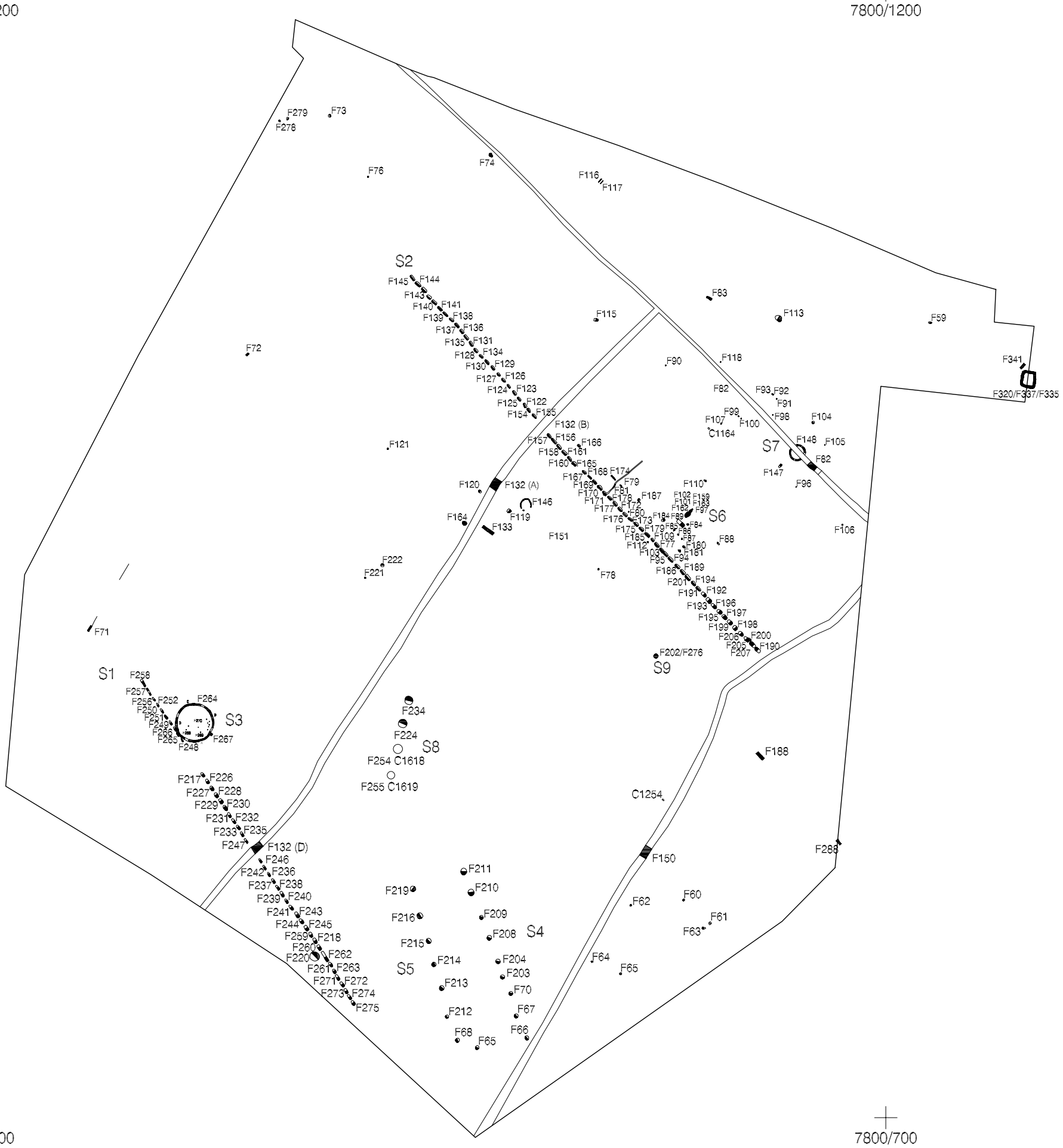
Location of Investigation 15

Scale 1:10000

Figure 48

7400/1200

7800/1200



7400/700

7800/700

Investigation 15 (Intervention 5) map of archaeological features | Scale 1:2000 | Figure 49

in diameter, and is associated with at least two burials (Structure 3)(Figure 50). Within the central area delimited by the ring-ditch, a single cremation was excavated within a pit (F269), which has provided a radiocarbon date of 1605 ±35 BC (SUERC-3786 GU-12287), placing it within the early to mid-Bronze Age (Figure 51: Appendix H: Part 1). A poorly preserved inhumation identified to the east of the ring-ditch (F267) provided a later date of 1240±40 BC (SUERC-3779 GU-12283; Appendix H: Part 1).

Plate 8 F92 and F93, Intervention 5, double cremation burial

In the northern section of Intervention 5SW, a group of 10 pits and scoops containing cremated human remains were identified within an area of approximately 100m x 40m, which also contained a ring-ditch (Structure 7: F90, F91, F92, F93, F96, F98, F99, F100, F105, F106)(Figures 52 and 53; Plate 8). Four of these cremations (F92, F93, F96, F106) were submitted for radiocarbon dating, providing a close range of dates between 1050±35BC and 1135±35BC (Appendix H: Part 1). These dates corroborated the identification of the urns, found inverted within at least four of the burials, as mid-Bronze Age (Plates 9 and 10; Appendix D: Part 3). The burials generally clustered around a ring-ditch (F148), with outliers to the northwest (F90) and southeast (F106). The ring-ditch in this area measured just 7m in diameter, and while it showed no stratigraphic relationship with the human remains, may have formed an original focus for burial.

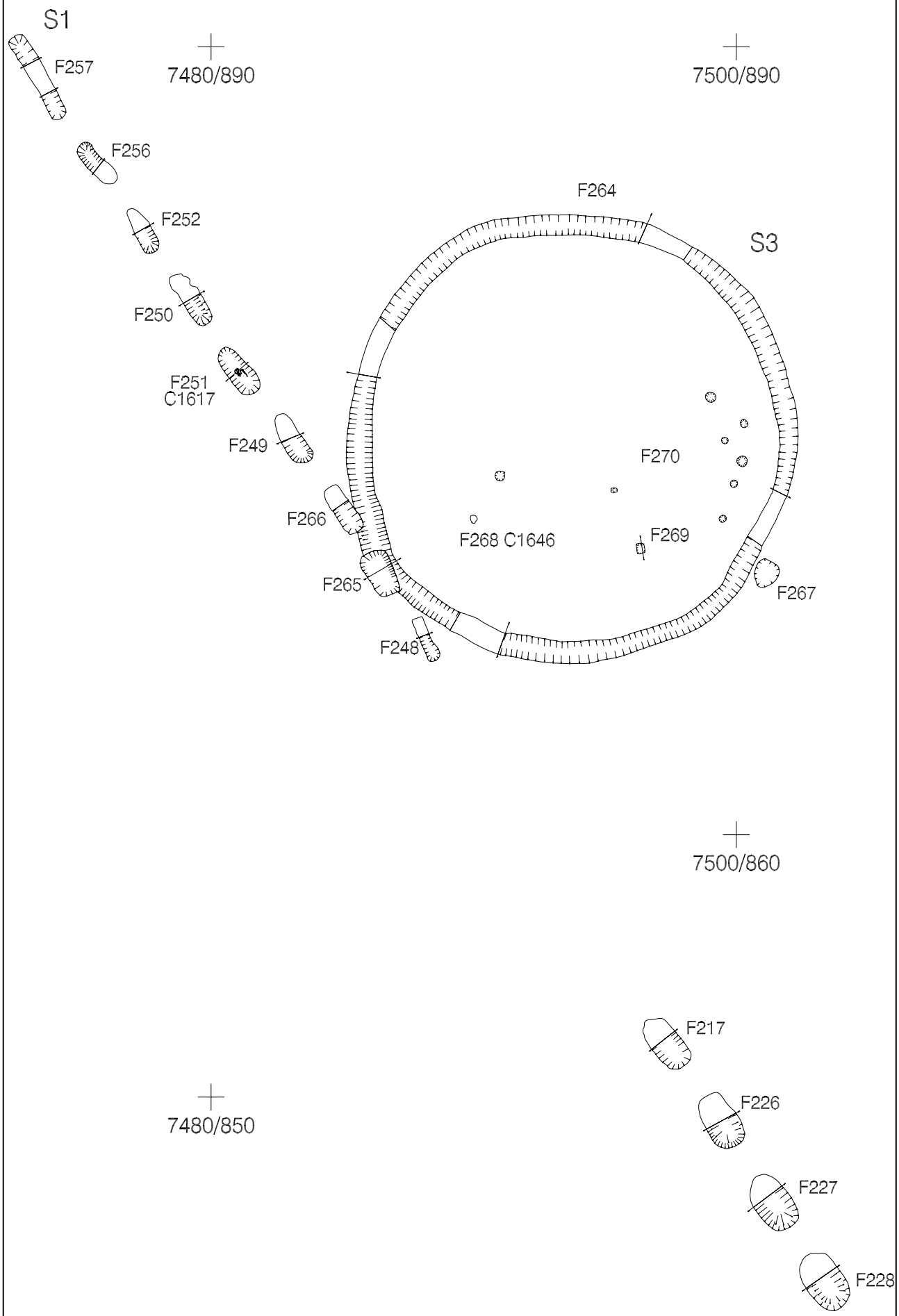
Plate 9 Cremation during excavation

A third, less complete ring-ditch was identified between the two areas of burial (F146)(Plate 11). The feature measured less than 5m in diameter, and upon excavation, the ditch was found to measure up to 0.15m in depth (Figure 54).

Plate 10 Middle Bronze Age urn

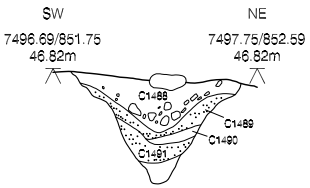
Pit alignments

Cutting the ring-ditch of Structure 3 was an alignment of pits, extending for 172m NW-SW. This pit alignment (Structure 1) comprised forty-three pits, evenly spaced, the majority of gaps measuring between 0.80m and 1.20m (Figure 55). Generally, these features were found to be sub-rectangular in shape, measuring between 1.76m and 5.10m in length, between 0.40m and 1.50m in width and varying in depth (Plate 12; Figure 56). A disarticulated human skeleton was recovered from the upper fills of one of the pits (Plate 13). Osteological analysis suggested that the body had been excarnated prior to deposition in an already silted pit. These remains produced a radiocarbon date of AD40 ± 35 (Appendix H: Part 1; Appendix I: Part 1). The upper fills of a number of the pits produced pottery of Late Iron Age or Roman date, indicating that the feature may have been visible at this time (Appendix D: Part 5).

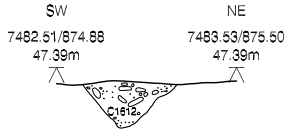


Investigation 15 (Intervention 5) Structure 3 | Scale 1:200 | Figure 50

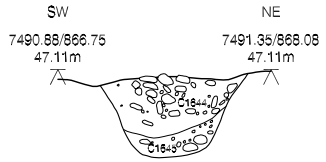
F217 southeast facing section



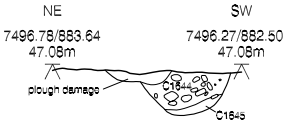
F249 southeast facing section



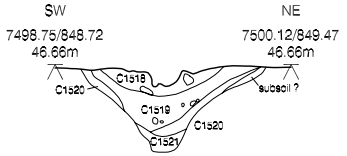
F264 southeast facing section



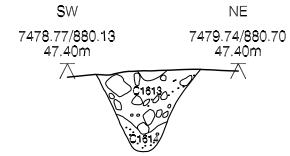
F264 northwest facing section



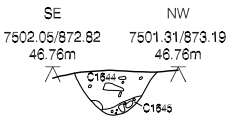
F226 southeast facing section



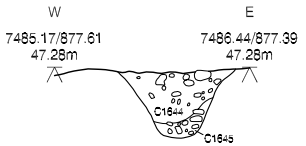
F250 southeast facing section



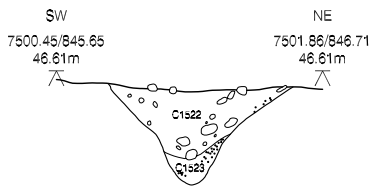
F264 northeast facing section



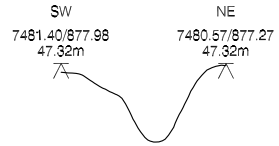
F264 south facing section



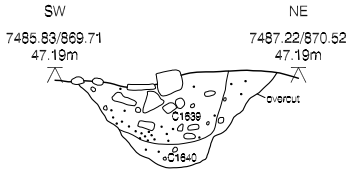
F227 southeast facing section



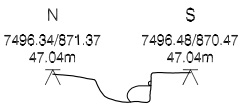
F251 profile



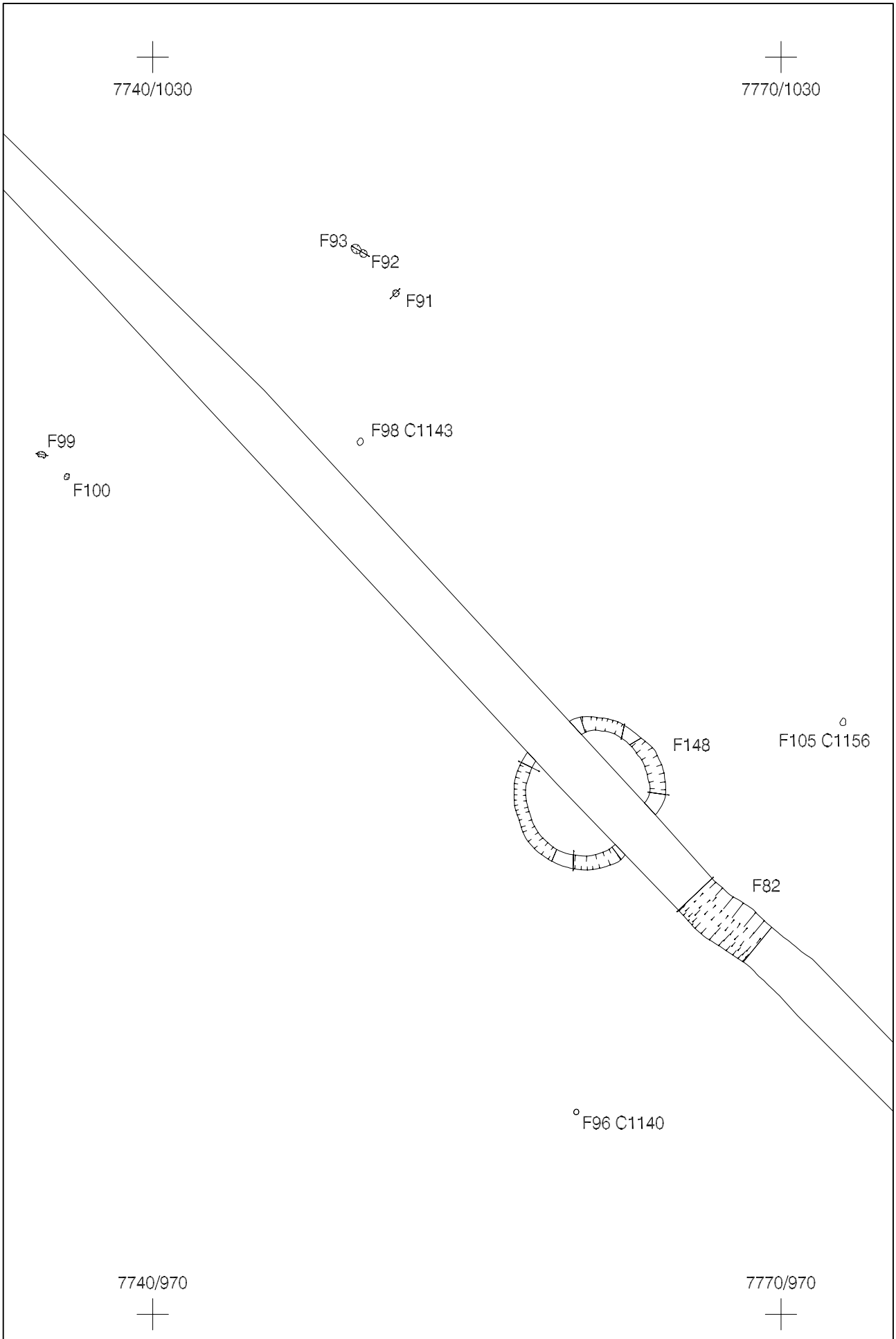
F265 southeast facing section



F269 profile

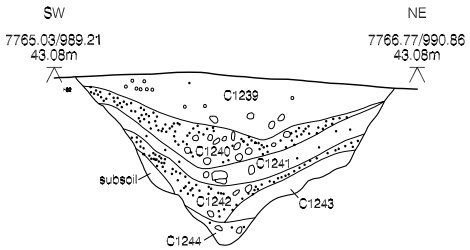


Investigation 15 (Intervention 5) Structure 3 sections | Scale 1:50 | Figure 51

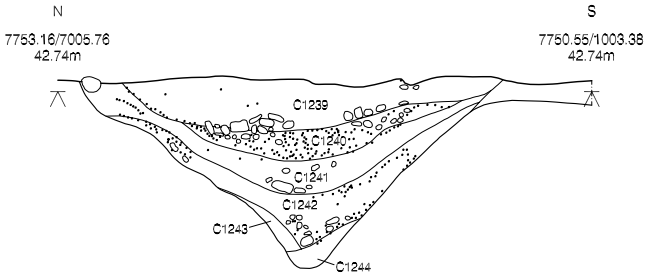


Investigation 15 (Intervention 5) Structure 7, ring ditch and pits containing cremated bone	Scale 1:250	Figure 52

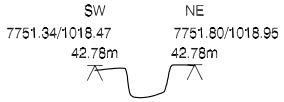
F82 northwest facing section



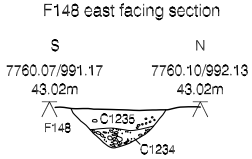
F82 west facing section



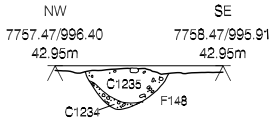
F91 profile



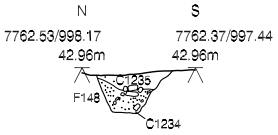
F148 east facing section



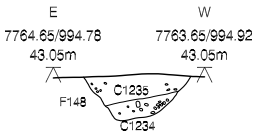
F148 northeast facing section



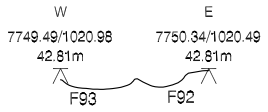
F148 west facing section



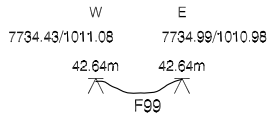
F148 north facing section



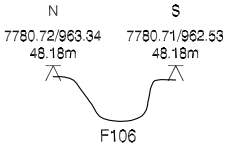
F92 and F93 profile



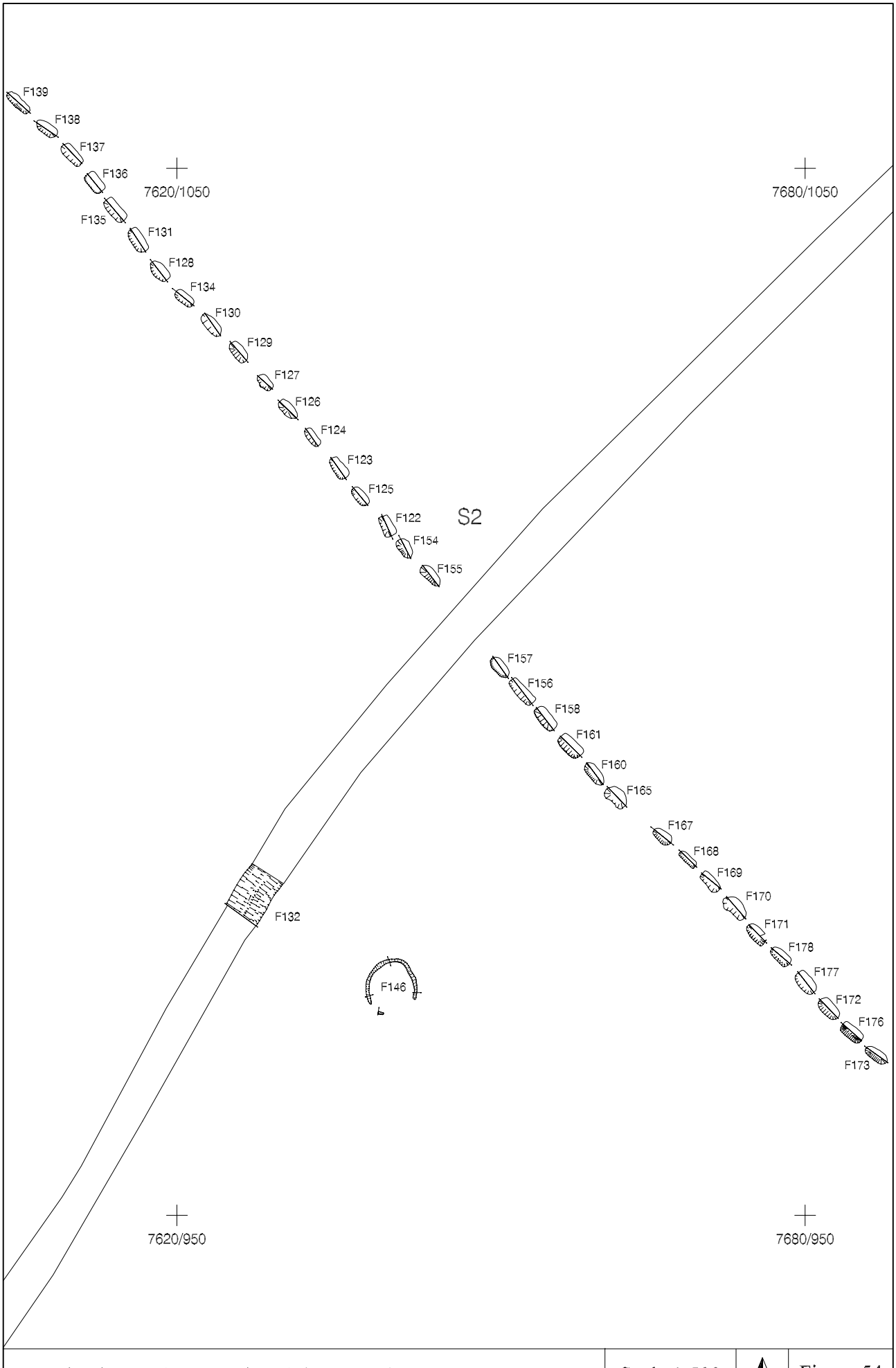
F99 profile



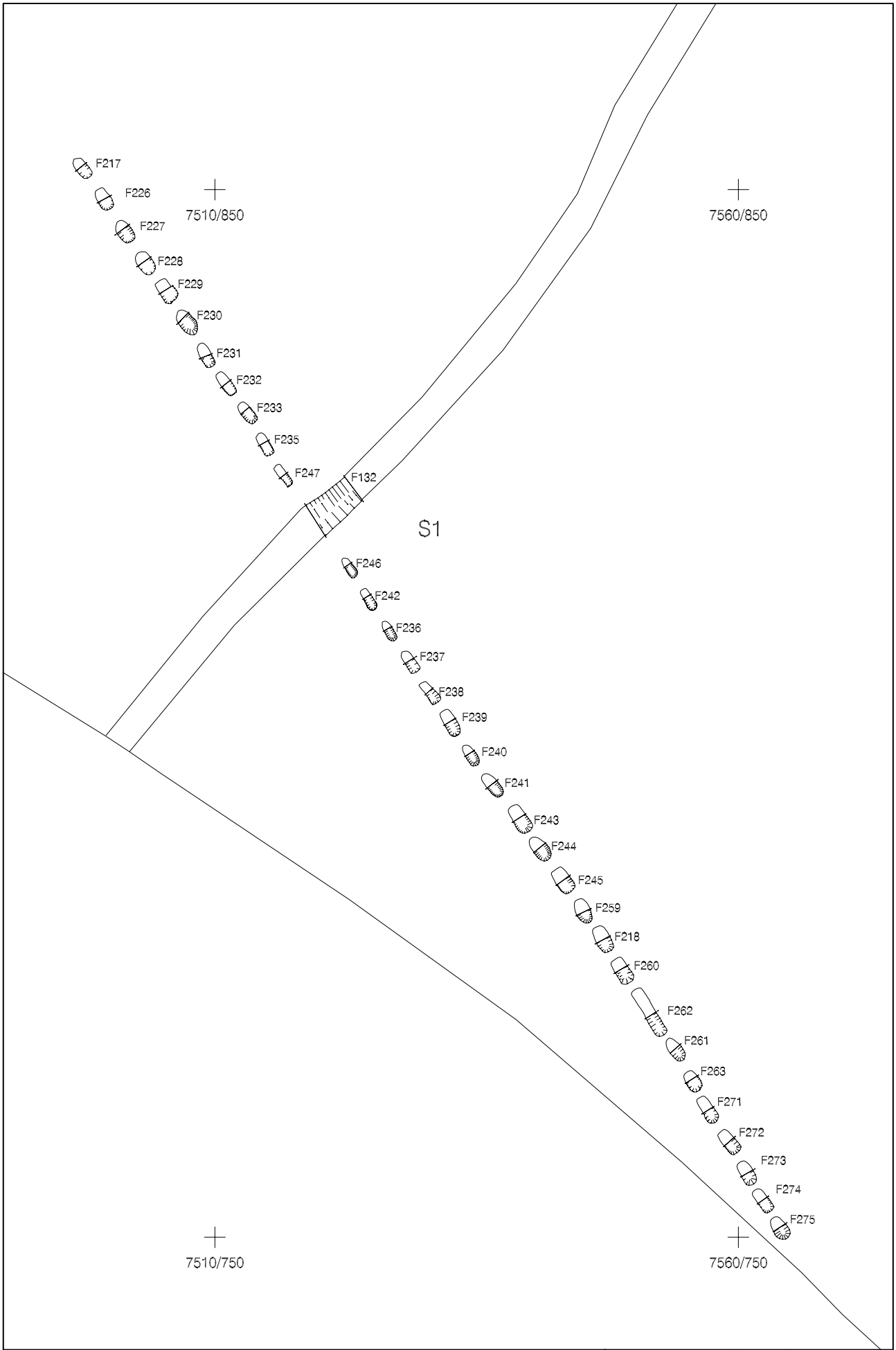
F106 profile



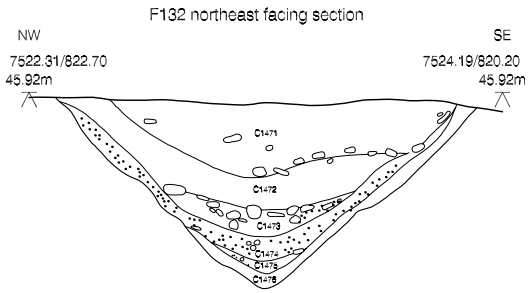
Investigation 15 (Intervention 5) Structure 7 sections | Scale 1:50 | Figure 53

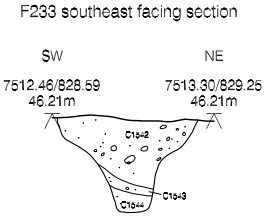


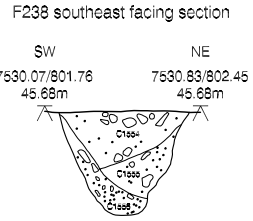
Investigation 15 (Intervention 5) Structure 2 | Scale 1:500 | Figure 54

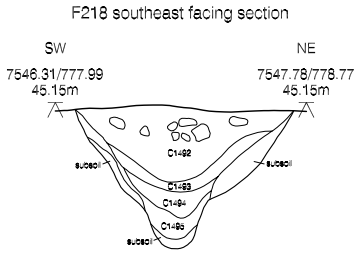


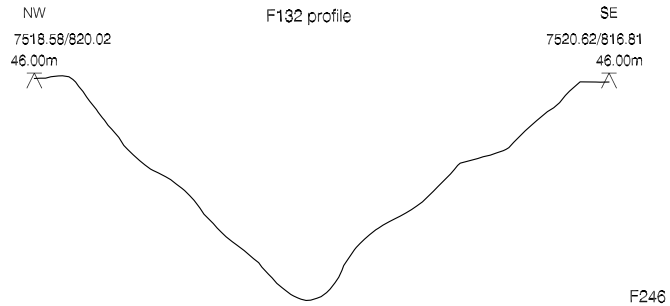
Investigation 15 (Intervention 5) Structure 1	Scale 1:500	Figure 55

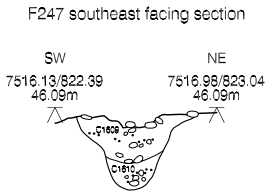


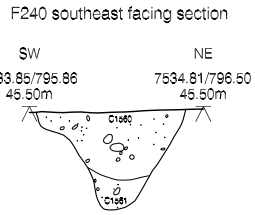


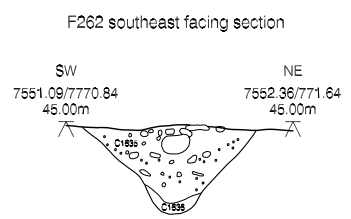


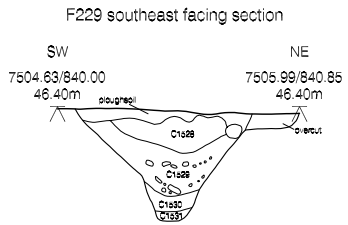


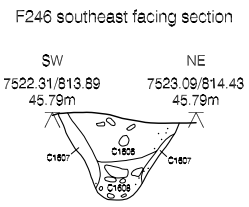


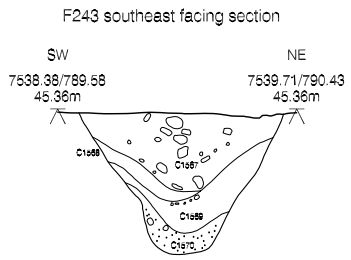


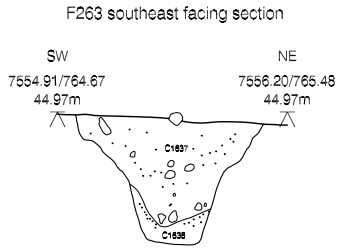


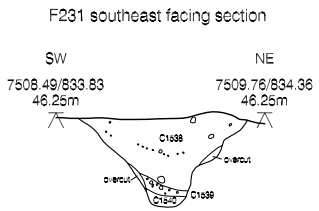


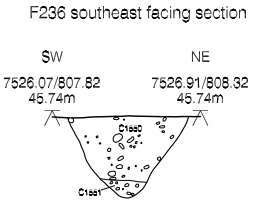


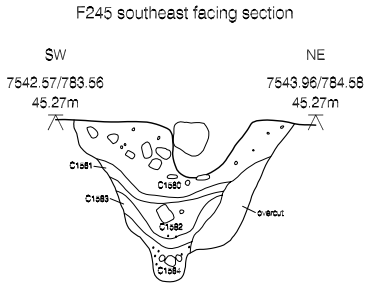


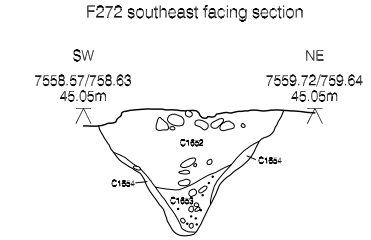












Investigation 15 (Intervention 5) Structure 1 sections

Scale 1:50

Figure 56

Running parallel to pit alignment Structure 1, approximately 225m to the northeast, a second pit alignment was identified (Structure 2), comprising a total of 65 pits, with 2 possible outliers running for a distance of 228m NW-SE (see Figure 54). When the area of investigation was extended slightly to the northwest in 2003, two further pits were identified on a similar alignment, approximately 90m to the northwest. The pits of Structure 2 are similar in shape and spacing to those of Structure 1, and are generally sub-rectangular in plan, measuring between 1.40m and 3.25m in length, and between 0.70m and 1.80m in width (Figure 57; Plate 14).

Plate 11 F146, Intervention 5

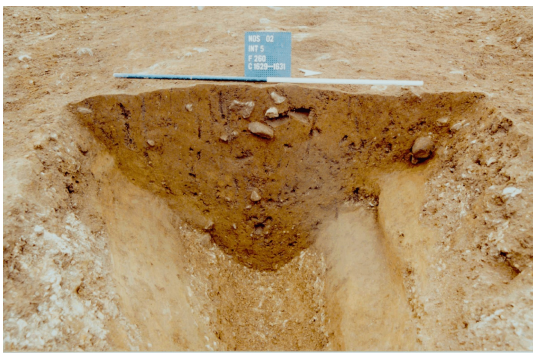


Plate 12 F260, Intervention 5

Two further pit alignments, of a different character, were identified in the southern area of Intervention 5SW (Structures 4 and 5)(Figure 58). Structure 4 comprised 7 pits, aligned NNW-SSE, spaced at intervals of between 10 and 13m for a distance of 72m. Structure 5 showed similar layout and spacing, running parallel to Structure 4 at a distance of 22m to 28m, for a length of 81m. The pits measured between 1.45m and 3.02m in maximum length, and up to 2.40m in depth, generally with a U-shaped profile (Figure 59). Sediments from within one of the pits (F216) were submitted for radiocarbon dating and produced a date of 4675±60 BC, within the later Mesolithic to early Neolithic (AA-51419, GU-10384; Appendix H: Part 2).

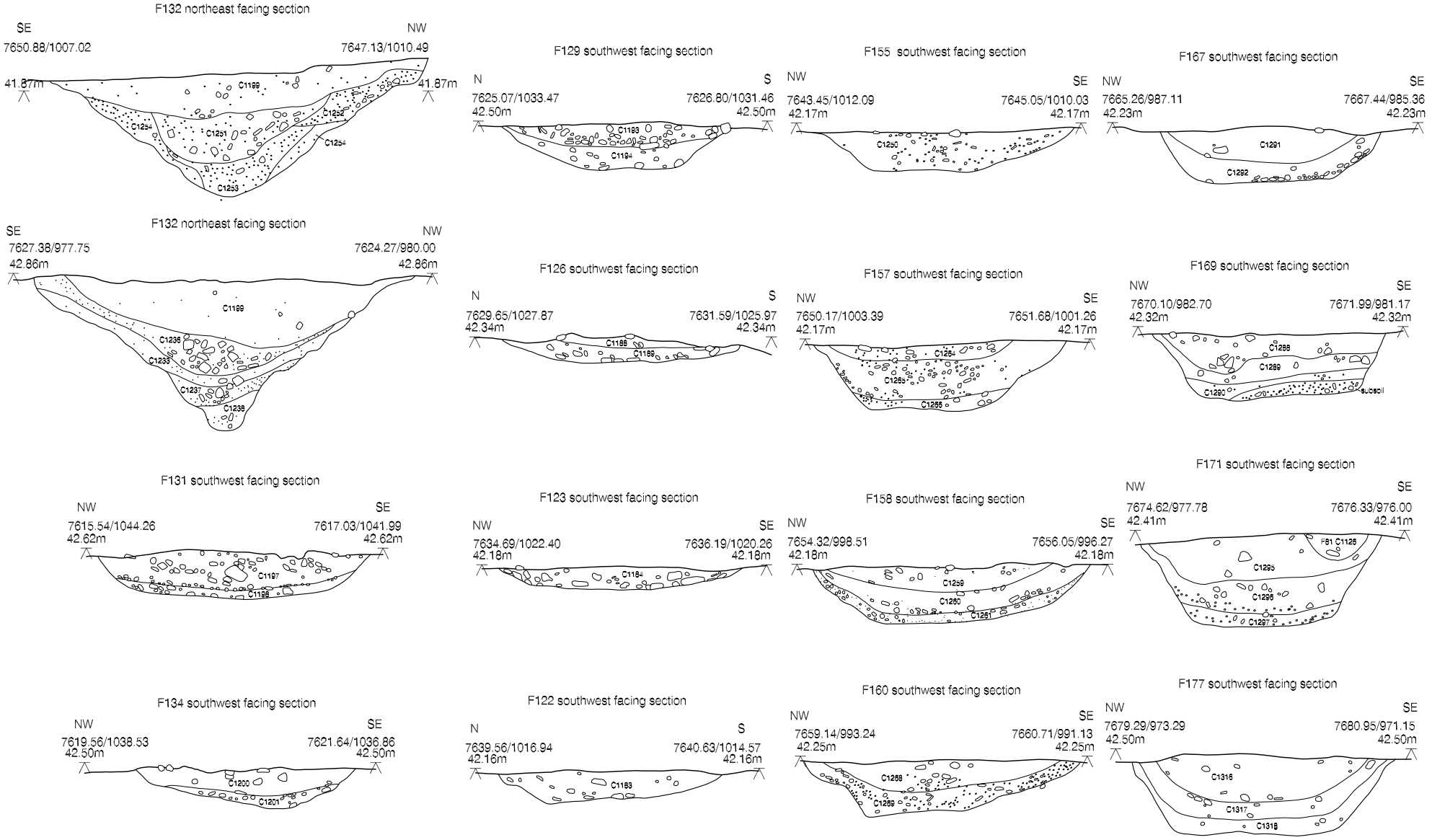
Plate 13 F251 and F253, Intervention 5

An alignment of four pits, with a possible outlier to the south, were identified towards the centre of Intervention 5SW; despite finds of Mesolithic lithics and a Neolithic arrowhead within their backfills (Appendix C:Part 3), it appears that these features represent natural solution holes into which deposits and finds have later silted.

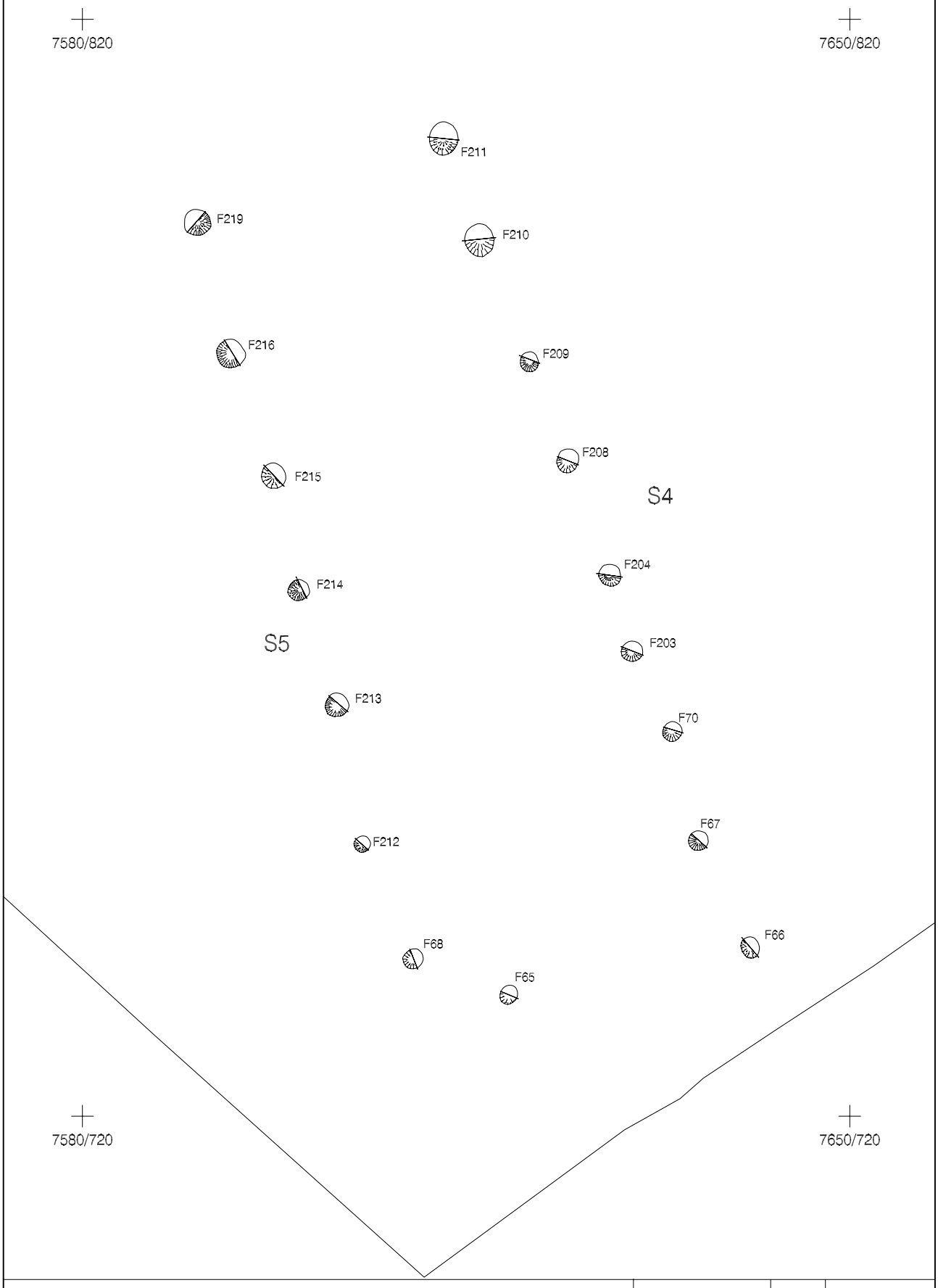
Roman corn-drying kiln

To the northwest of pit alignment Structure 2, a drying oven (Structure 6) was excavated (Plate 15). The feature comprised a series of pits and structural features, which were interpreted as a stoking pit, oven, flue and two post holes (Figures 60 and 61). F101 was allocated to the main oven chamber, within which an oval brick structure had been constructed (F159). This chamber was joined at its southwest side by a flue leading to a larger pit (F97), interpreted as an access point for the kiln, and to the northeast by a stoking pit or flue shaft (F102). A phase of refurbishment was identified, when the flue structures were supported by two further postholes (F162, F163).

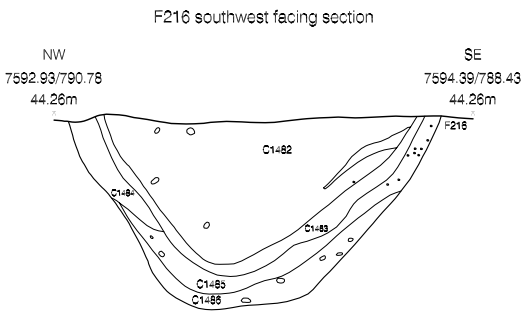
Plate 14 F172, Intervention 5

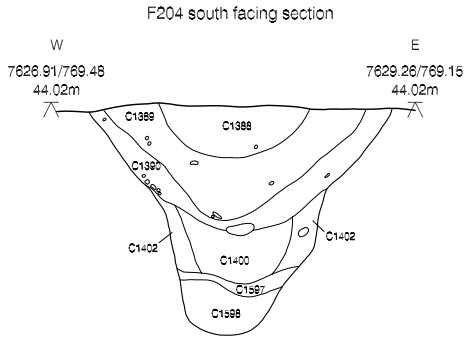


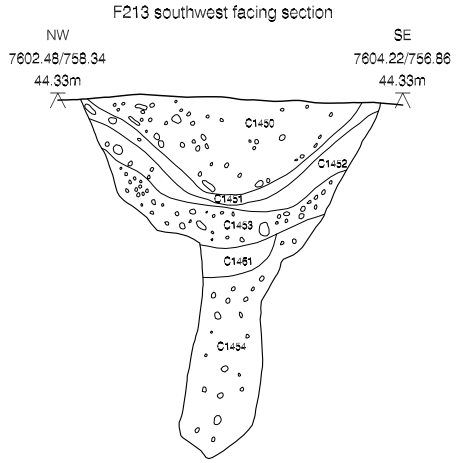
Investigation 15 (Intervention 5) Structure 2 sections | Scale 1:50 | Figure 57

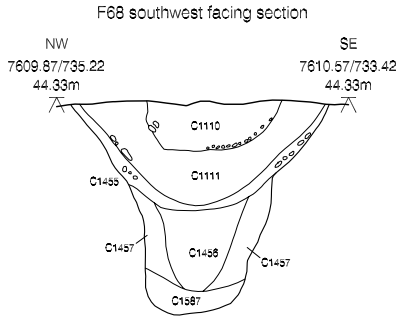


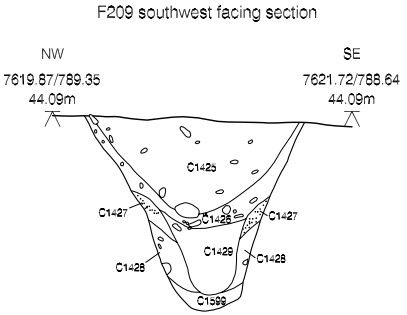
Investigation 15 (Intervention 5) Structure 4 and Structure 5 | Scale 1:500 | Figure 58

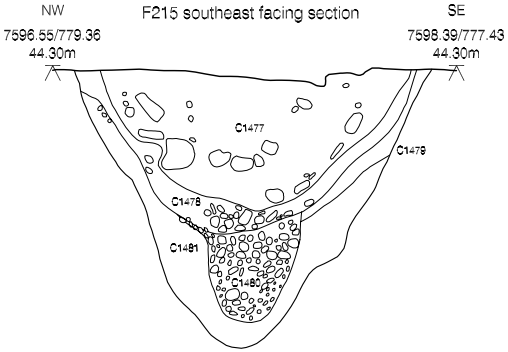


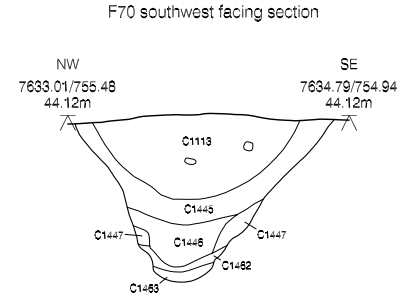


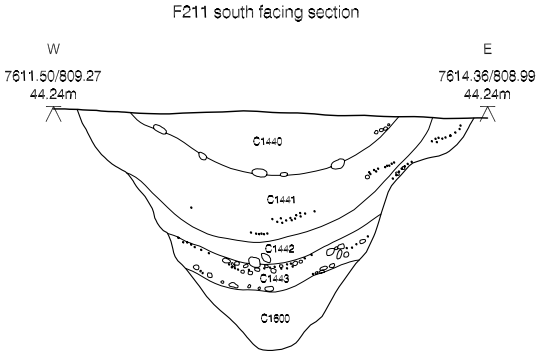


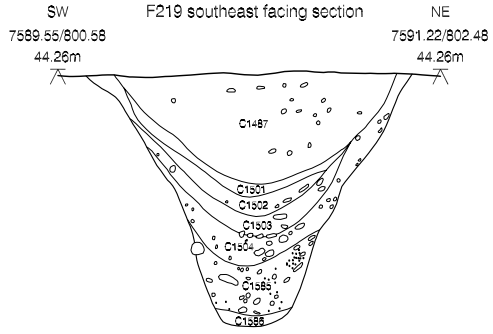








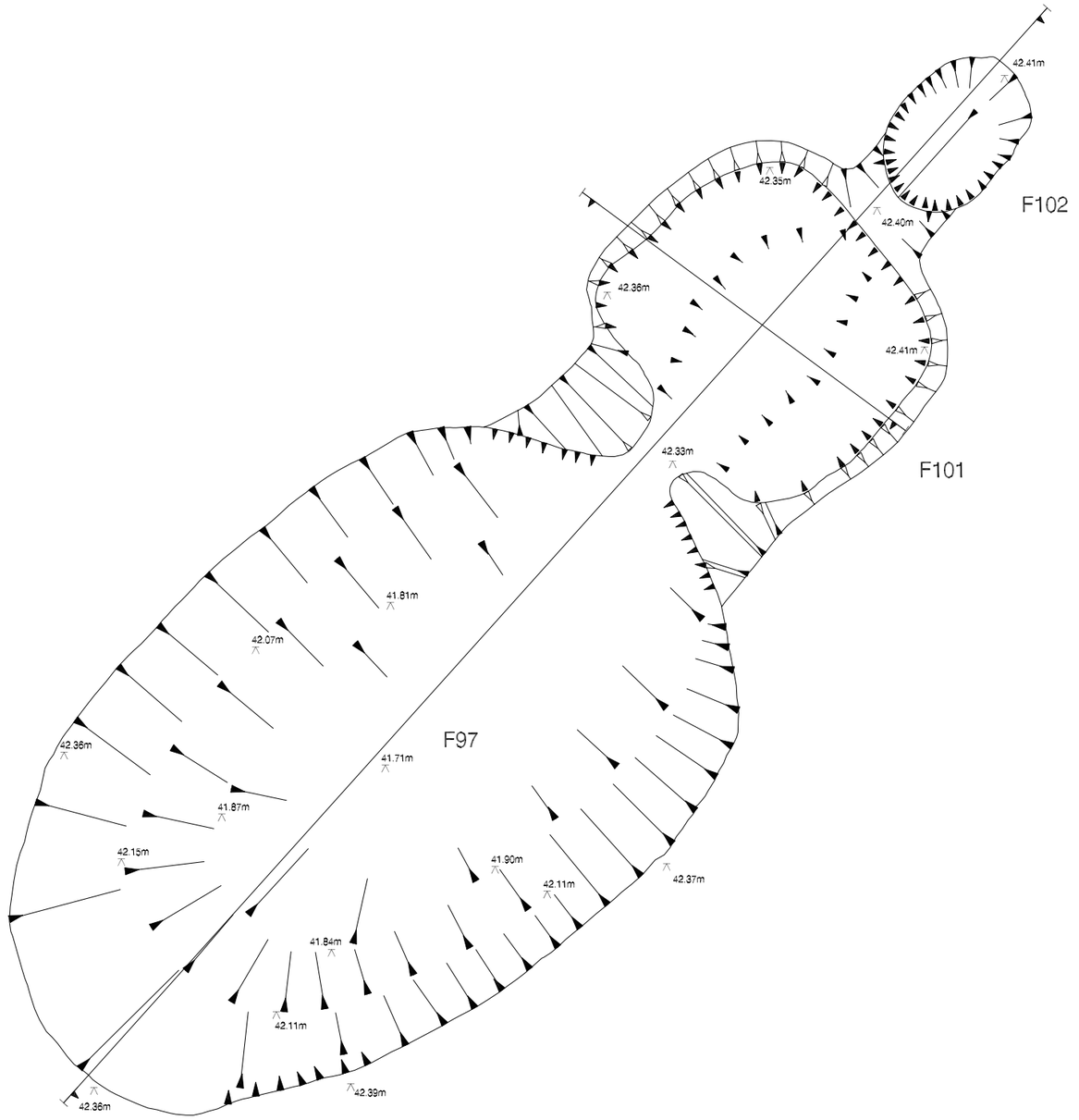




Investigation 15 (Intervention 5) Structure 4 and Structure 5 sections | Scale 1:50 | Figure 59

7710/970

7716/970



7710/966

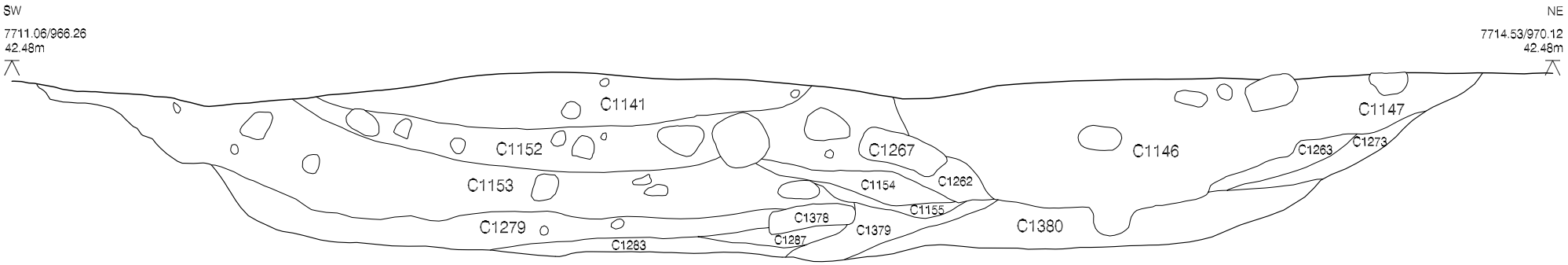
7716/966

Investigation 15 (Intervention 5) Structure 6

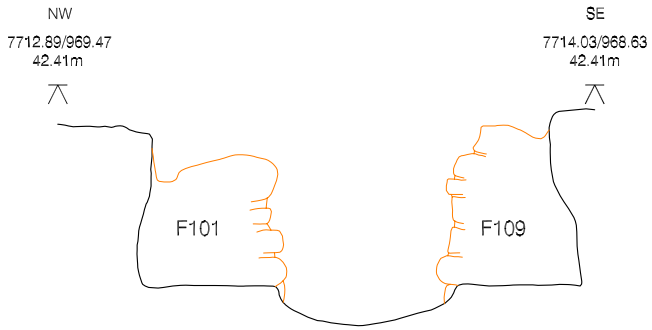
Scale 1:20

Figure 60

F97, F101, F102 southeast facing section



F101, F109 southwest facing section



Investigation 15 (Intervention 5) Structure 6 sections | Scale 1:20 | Figure 61

Archaeomagnetic dating of the feature revealed that the oven had last been fired between AD 100 and AD 170 (Appendix H: Part 3). No charred grain was identified, but the feature has been interpreted tentatively as a drying oven.

Plate 15 F162 and F163, Intervention 5

Roman ceramic was also produced from a number of small pits in the same area as the kiln. A linear feature, interpreted during excavation as a furrow, appears to follow the alignment of these pits, and it may be that these features represent some form of enclosure or structure associated with the kiln. A pit to the southeast of the kiln, measuring 4.02m by 1.48m, produced sherds of Roman amphora and Eboracum Ware, and may have been associated with this phase of activity.

Linear features

Numerous more modern linear features were identified within Intervention 5SW, providing evidence for land boundaries and agricultural activity. A ditch (F82), measuring 2.10m wide and up to 1.10m in depth was found to run on a NW-SE alignment for 327m, extending into Intervention 5NW (Plate 16). This feature cut ring ditch F148, suggesting a post-Bronze Age date, while the upper fills were found to contain early Roman pottery. The upper fill (C1239) has been interpreted as a possible Roman ploughsoil, dishing into the top of an earlier feature.

Plate 16 F82, Intervention 5

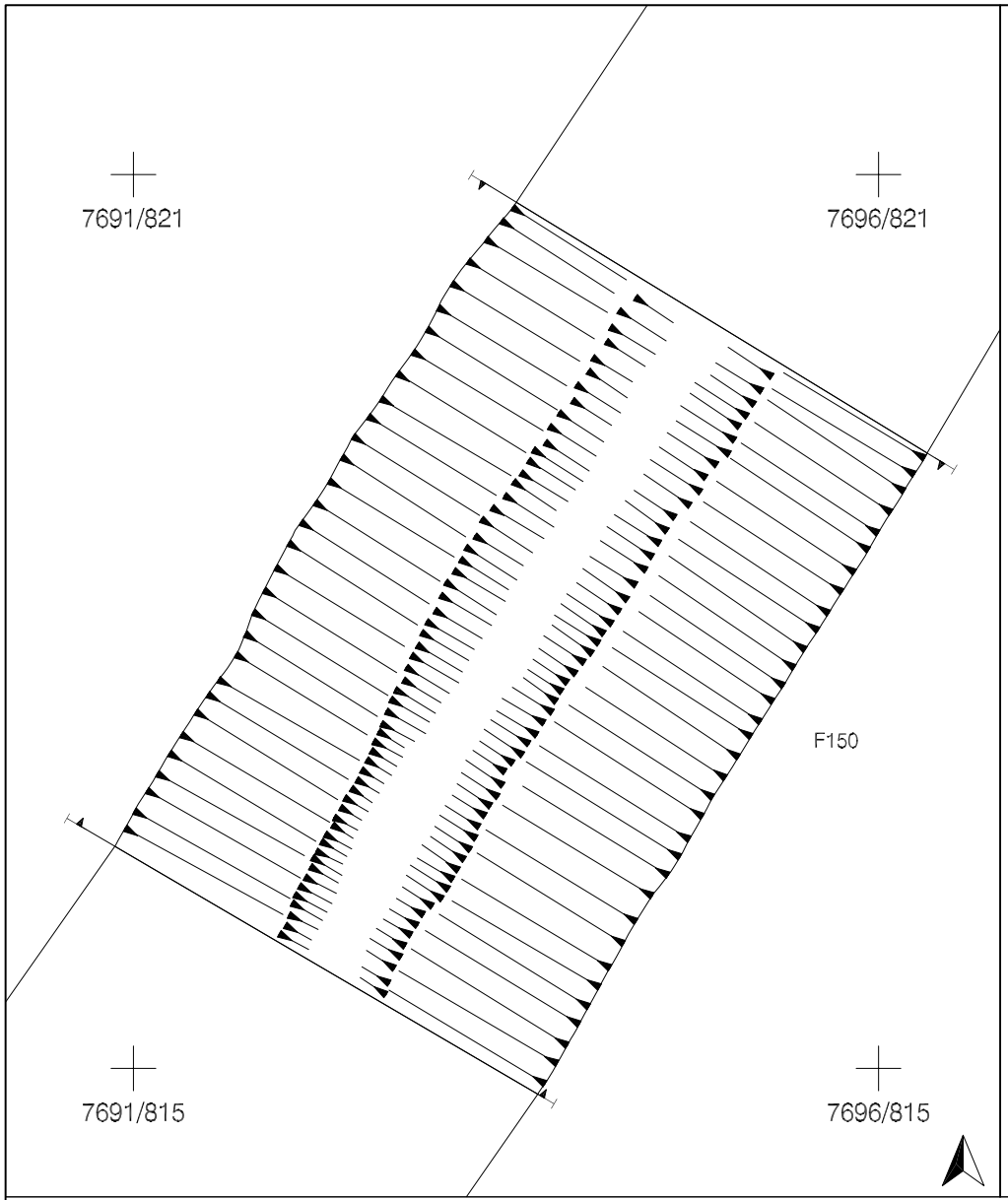
Parallel to this feature (which also runs parallel to pit alignment S1), a number of ditches and furrows were identified (including F188 and F133) and recorded.

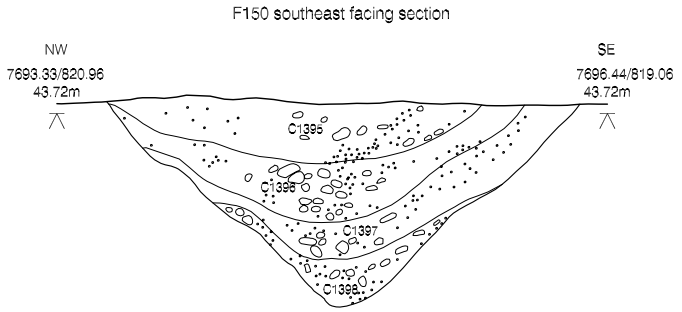
Perpendicular to F82, a second ditch was found to run NE-SW for a distance of 325m towards the southern edge of the intervention (F150)(Figure 62). This was later found to represent part of F82; two fragments of post-medieval ceramic in the uppermost fill might therefore represent a late infilling of a hollow, or intrusive finds caused by later disturbance. A second ditch running NE-SW was identified to the west (F132), and also produced Roman pottery from its upper fills as well as a Roman coin, identified as a silver *denarius*, dating to between AD222 and 235 (C. Barclay *pers. comm.*; Plate 17). Later drainage ditches were found across the area following a similar alignment.

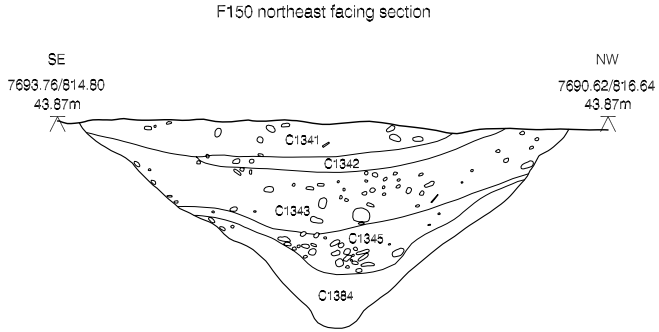
Plate 17 Roman coin showing obverse side

Well

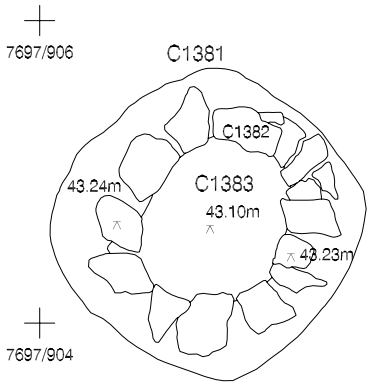
Cutting one of the linear features across the Intervention, a well (F202; Structure 9) was identified and mapped, but initially not excavated further (Figure 63). Subsequently, a 2.50m section of the well was exposed during quarrying, and further recording of the feature took place (Figure 64). The feature (F276) was found to comprise a stone-lined shaft, beneath which a timber raft (F277) was identified.



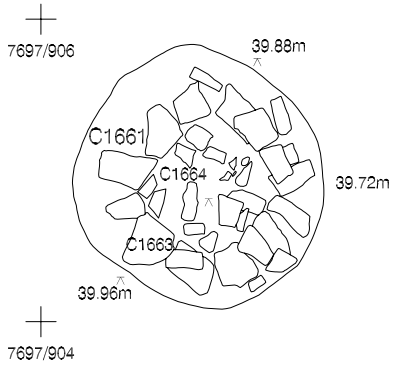




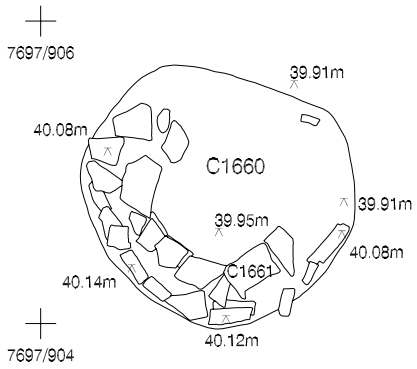
Investigation 15 (Intervention 5) F150 post-excavation plan and sections | Scale 1:50 | Figure 62



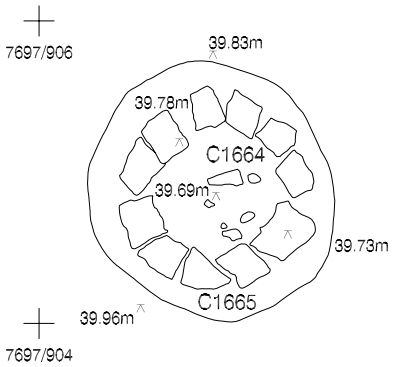
F202 Pre-excavation plan



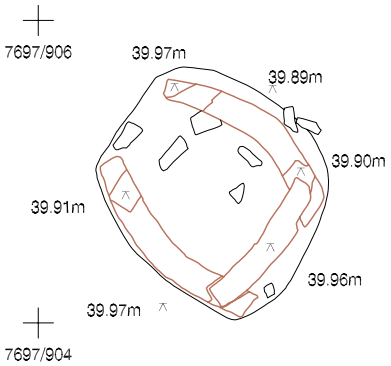
F276 Pre-excavation plan



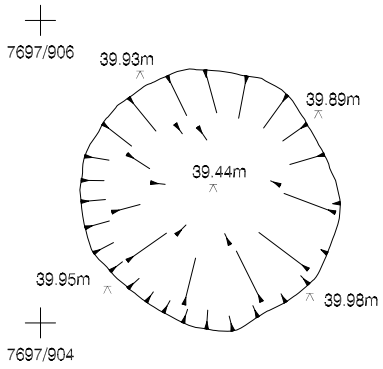
F276 C1661 Pre-excavation plan



F276 C1664 C1665 Pre-excavation plan

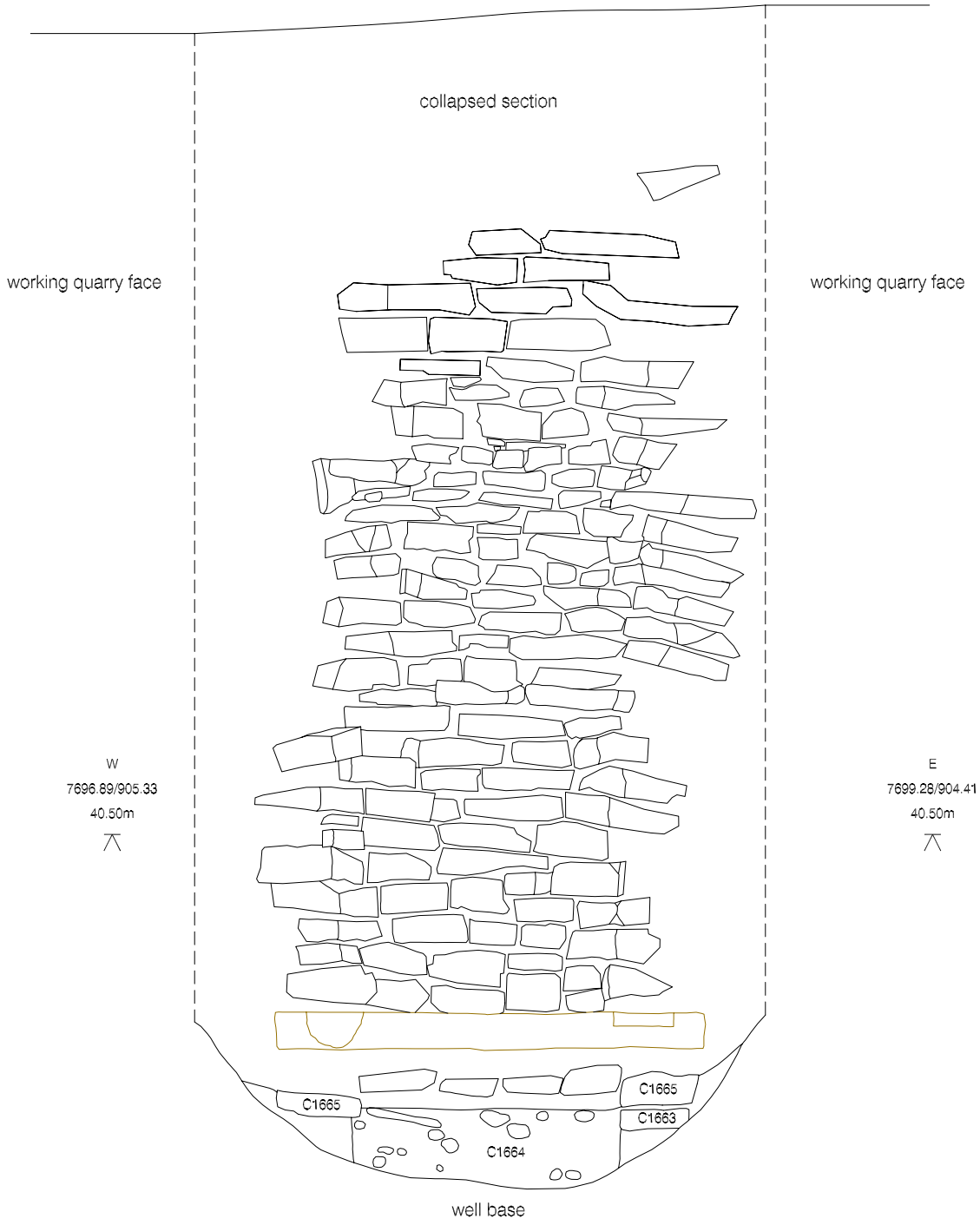


F277 C1662 Pre-excavation plan



F276 Post-excavation plan

Investigation 15 (Intervention 5) F202	Scale 1:50		Figure 63



Investigation 15 (Intervention 5) F202 - Structure 9 elevation	Scale 1:20	Figure 64

Beneath this, the shaft continued, but further excavation was not undertaken for safety reasons. Material within the well provided a 19th century date for the feature. Notably, the feature did not reach the current water table, suggesting a drop in water levels since that time.

A second possible well (F74) was identified in plan as a circular setting of modern brick and mortar, backfilled with modern debris, approximately 0.70m in diameter. This feature was not further excavated, and has been interpreted as either a well or cistern.

Isolated pits and scoops

A further 33 features were identified as isolated pits or scoops, which were found dispersed widely throughout the area, showing no clear distribution. These features ranged in diameter from 0.40m to 4.02m in maximum dimensions and measured up to 0.55m in depth. Few finds were recovered, other than occasional lithic artefacts, including a large assemblage of knapped flint found in pit F164, and an unassociated, and possibly residual, Mesolithic microlith (Plate 18 and 19)(Appendix C: Part 3).

Plate 18 Flint microliths

Plate 19 Flint microburin

Ploughsoil, overburden

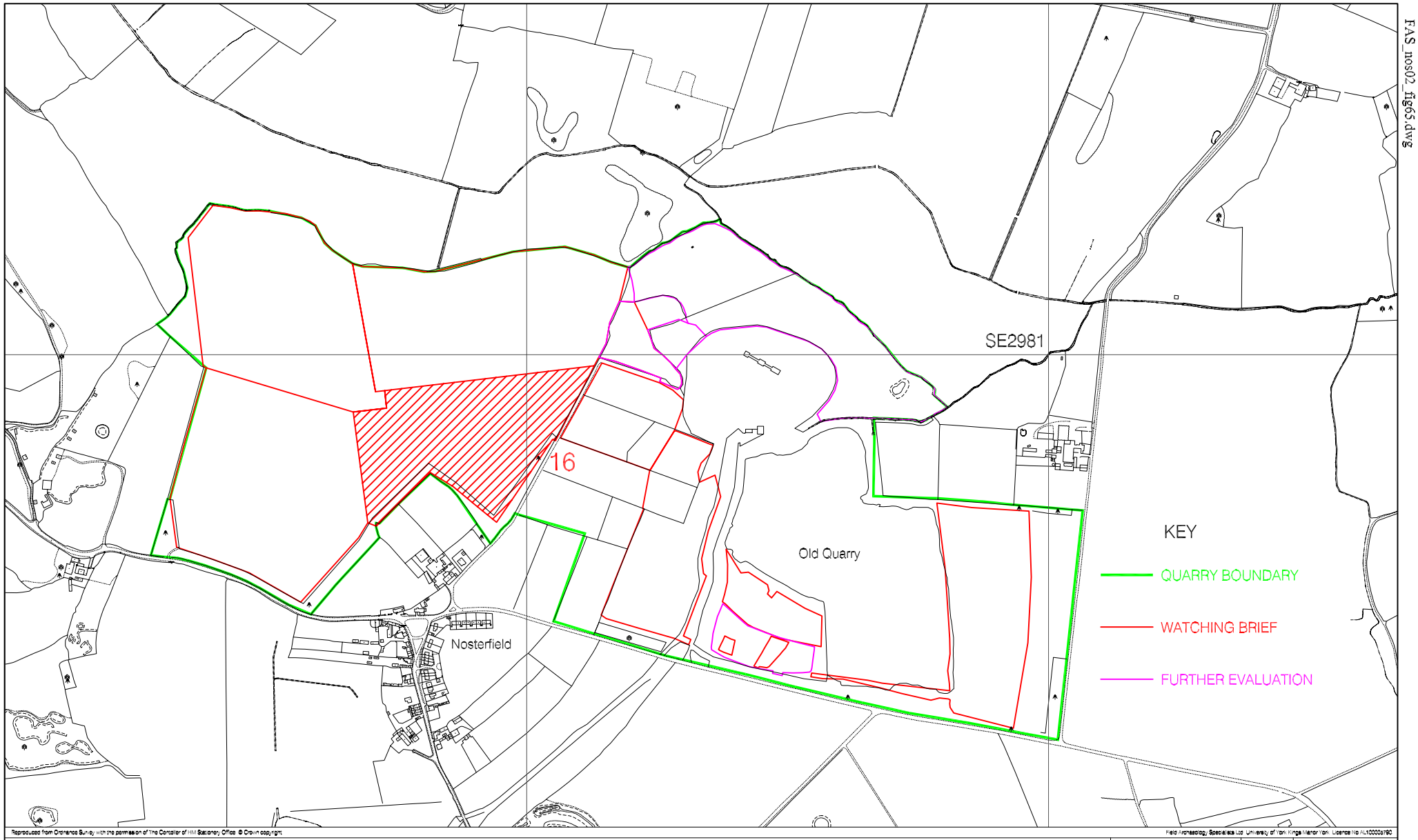
Within the southern part of the intervention, a large spread of material (C1513) was identified as an area of ploughsoil or overburden, from which ceramic of Roman date was recovered.

4.13.3 Assessment

The results from Investigation 15 indicate periods of human activity in this area of the quarry from the Mesolithic to the modern day. A radiocarbon date for the pit alignment (Structure 5) and microliths redeposited in later features are indicative of some presence in the Mesolithic period, although the nature of this activity remains unclear. In the Bronze Age, the site became a funerary focus, with two possible barrows and a cremation cemetery; the burials date to the early-middle Bronze Age. In the Iron Age, a substantial ditch and two pit alignments represent the demarcation of boundaries and the division of the landscape. By the 2nd century, the presence of a possible corn-drying oven suggests the processing of grain, and as with later periods, the archaeological deposits indicate a shift towards an agricultural landscape.

4.14 INVESTIGATION 16 (INTERVENTION 5SE)

A watching brief was undertaken in the final quadrant of Intervention 5 (SE), during November to December 2003, and was completed in June 2004 (Quarry Phase 4)(Figure 65). Archaeological finds were dominated by two square-ditch enclosures, which provided evidence for Iron Age funerary activity.



Location of Investigation 16

Scale 1:10000

Figure 65

4.14.1 Fieldwork Procedure

The fieldwork procedure followed the revised methodology adopted for Intervention 5SW, with the addition of an initial programme of test pitting and sieving undertaken prior to topsoiling. During November to December 2003, the western part of the intervention was subject to a watching brief, following the methodology outlined. Due to the lithic and pottery assemblage recovered from the ploughsoil/subsoil interface during Investigation 12 to the north, and prior to the extension of this area eastwards, 31 test pits were excavated. This involved a grid of three transects 20m apart, with test pits at 10m intervals, and a further four transects across the remaining area (Figure 66). Each test pit measured 1.0m x 1.0m, and was excavated to an average depth of 0.30m, in sieved 0.10m spits. During the watching brief, a final test pit was excavated to investigate the nature of the clay marl into which many of the features had been cut (F413).

4.14.2 Fieldwork Results

Test pits

Sieving of the contexts from the 31 test pits produced few finds (F347-F377; C1769-C1799). Only 19 items were identified, including a fragment of modern glass, iron nails, and pottery, which included modern and medieval vessel sherds, and a single fragment of Roman pottery. Three lithic artefacts were identified.

Watching brief

The watching brief undertaken in this area identified a total of 117 features, of which 46 proved to be caused by vegetation, and two were quarry test pits that were not recorded further (Figure 67). The remaining features comprised ditches, pits, scoops, furrows and hedgelines, and also included two square-ditch enclosures, one of which was probably of Iron Age date, while the other was undated.

Natural features

A number of potentially natural features were identified and tested. These generally comprised large, irregular pits, identified as tree boles (F294, F299, F301, F302, F309, F310, F312-5, F317, F318, F324-8, F330-4, F338-40, F343-4, F345-6, F378-9, F382, F386-7, F396-407, F424-5). A large number of these features were clustered to the south of Intervention 5SW, and around the parallel furrows to the north of the area.

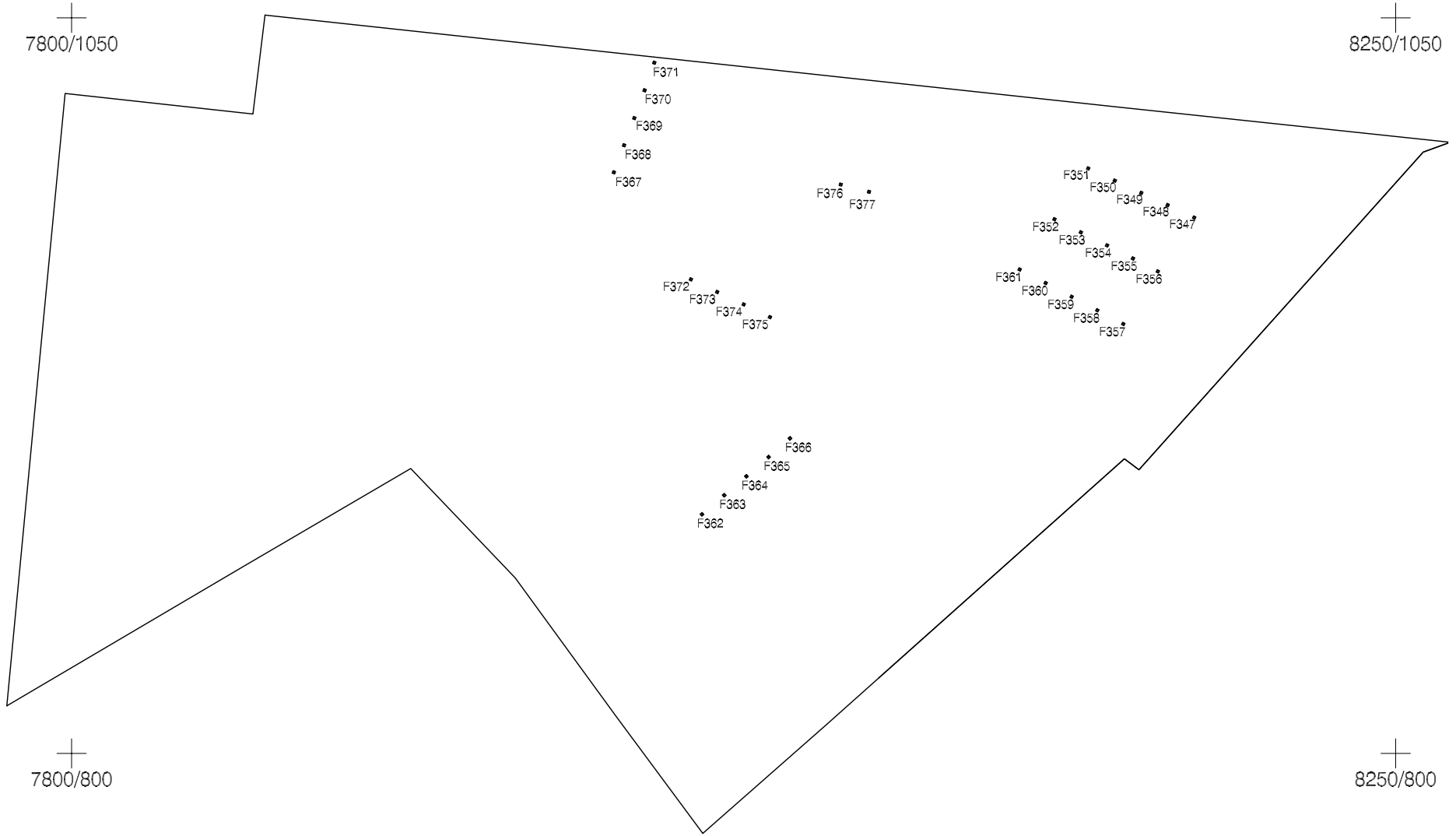
A number of pits and scoops were tested and recorded, but produced homogenous sterile fills which suggest that they were simply natural undulations in the geology; as such they have been classified as natural features (F284-6, F289-92, F296, F419).

Quarry test pits

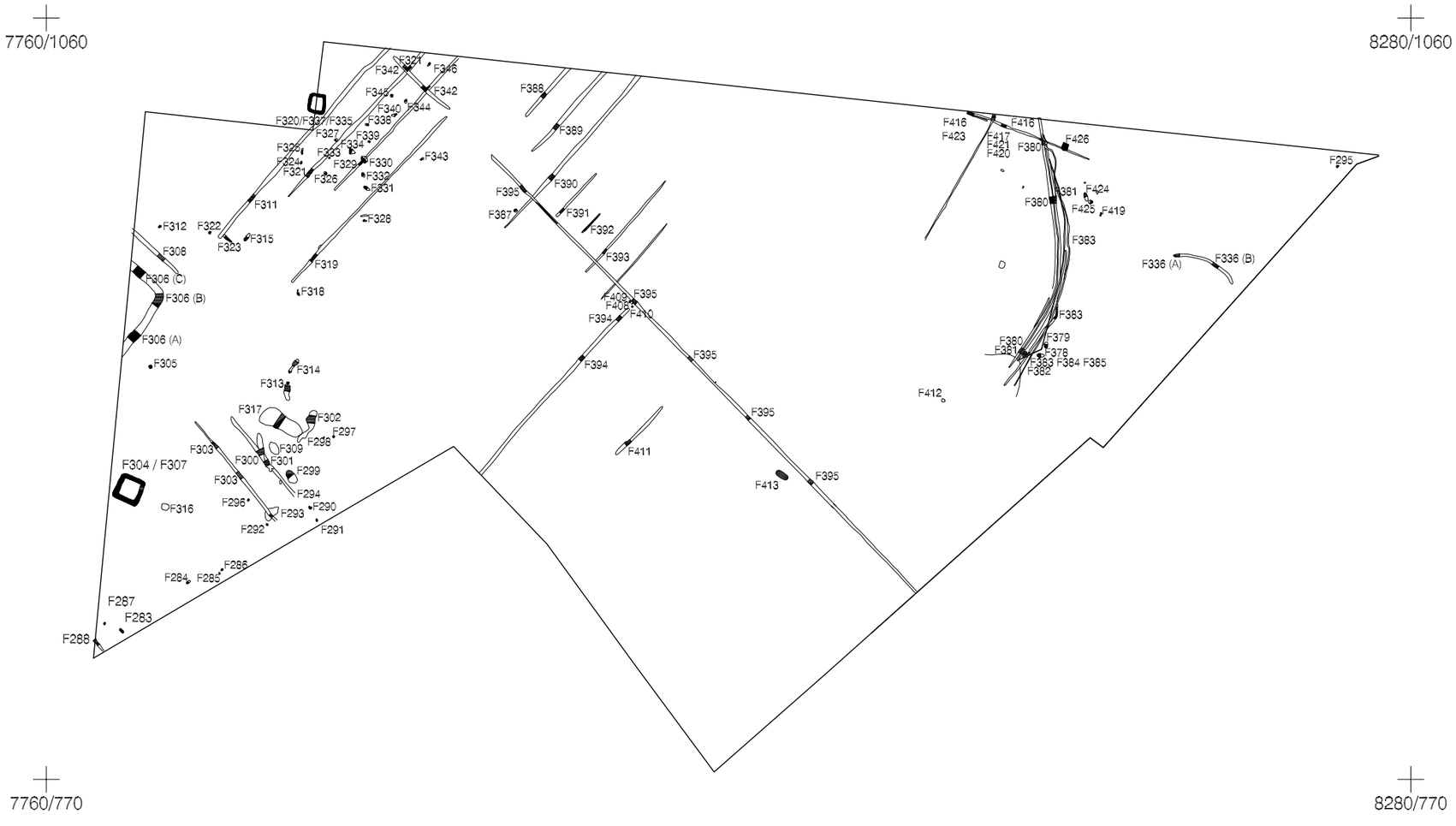
Two features were identified as test pits undertaken by the Quarry (F415, 418), and were not subject to further investigation.

Square barrows and inhumation burial

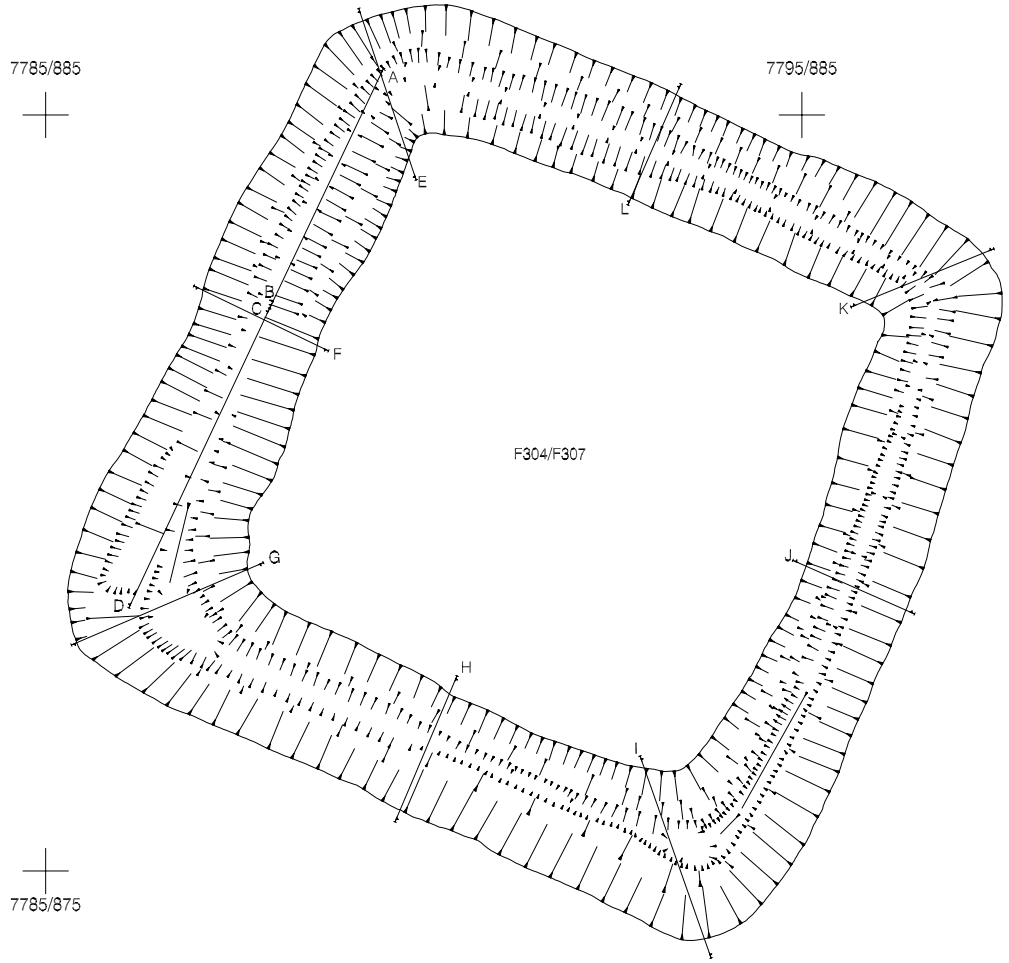
Two square-ditch enclosures (F304 and F320) were identified within Intervention 5SE, each measuring approximately 10m square, and upon excavation, the ditches were found to measure up to 0.75m and 0.42m in depth respectively (Figures 68 and 69; Plates 20 and 21). Each had been the subject of an episode of recutting

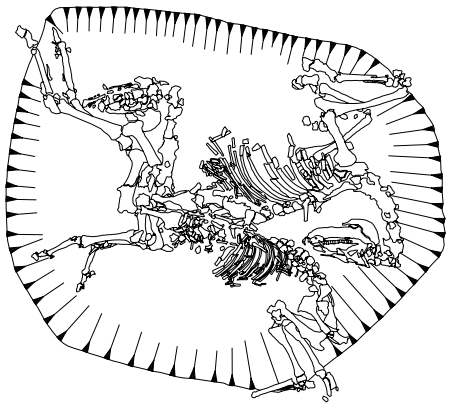


Investigation 16 (Intervention 5) Location of test pits | Scale 1:2000 | Figure 66

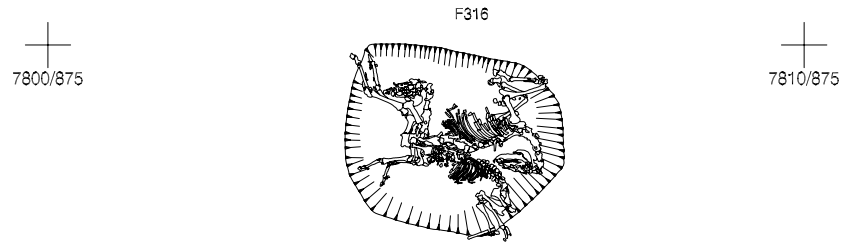


Investigation 16 (Intervention 5) map of archaeological features | Scale 1:2000 | Figure 67

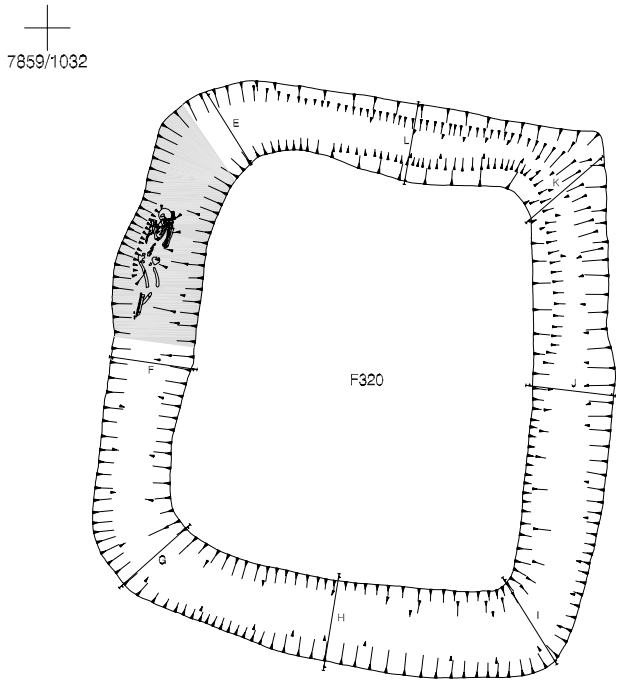




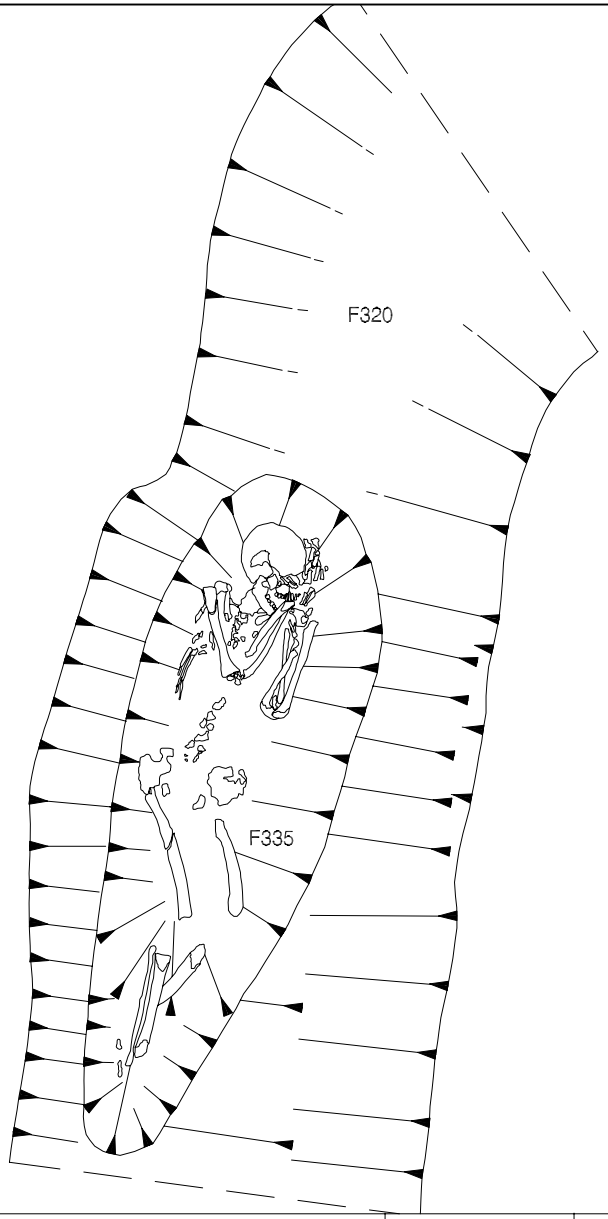
Detail of F316 | Scale 1:50



Investigation 16 (Intervention 5) F304 and F316 | Scale 1:100 | Figure 68



Investigation 16 (Intervention 5) F320 | Scale 1:100



Detail of F335 | Scale 1:20 | Figure 69

(F307 and F337 respectively)(Figure 70). F304/307 was found at the western edge of the intervention (Plate 22), while F320/F337 was identified 160m to the north. These features are of a form often dated to the Iron Age, and are frequently interpreted as square barrows. Although F304/307 produced no dateable material, an Iron Age date was supported for F320/F337 following the excavation of a single inhumation (F335) within the ditch (F320), which predated its recutting (F337)(Plate 23). The skeletal remains provided a radiocarbon date of 135±35 BC (SUERC-3780 GU-12284; Appendix H: Part 1) and were identified as belonging to a male, thirty to forty years of age (Appendix I: Part 2).

Plate 20 F304, Intervention 5, post-excavation

Plate 21 F320, Intervention 5, post-excavation

Horse burial

At a distance of approximately 9m to the east of F304/307, a sub-rectangular pit was excavated, and was found to contain the remains of a quadruple horse burial. The burial was badly plough-damaged, and while two skeletons were partially complete and excavated *in situ*, the remains of two further individuals were identified only by zooarchaeological assessment (F316)(Plate 24) (Appendix G: Part 1). The pit itself measured 2.90m by 2.40m, and up to 0.60m in depth. A horse femur was selected for radiocarbon dating and returned a date of AD 50±35 (SUERC-2974 GU-11688C; Appendix H: Part 4).

Plate 22 F304 and F307, Intervention 5, section L

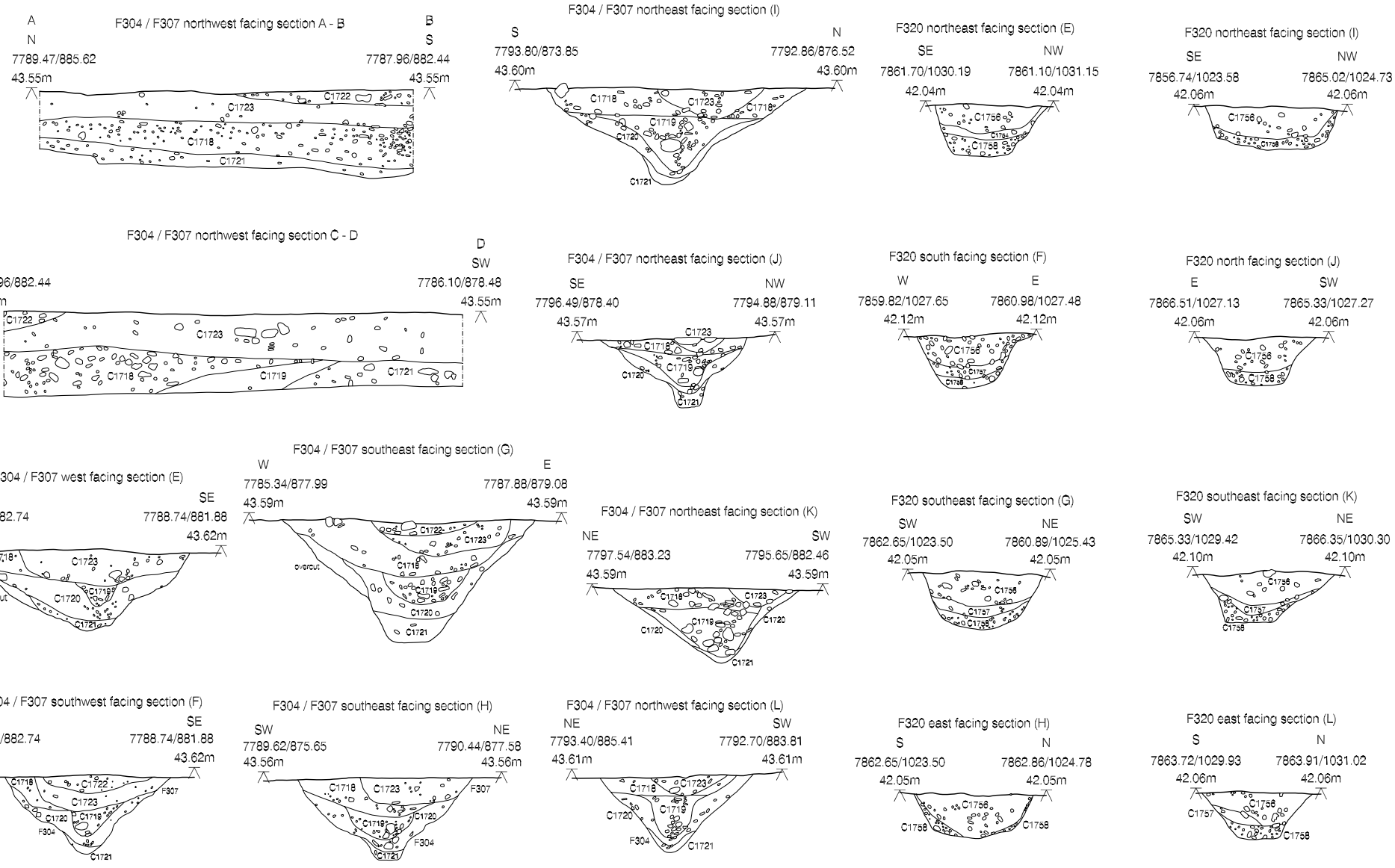
Linear and curvilinear features

At the eastern edge of the intervention, a length of curvilinear ditch was excavated, running approximately east-west. Excavation revealed the feature to measure up to 0.30m deep, and Neolithic pottery was recovered from the backfill of the feature (Appendix D: Part 3).

A number of linear features were identified in the western part of Intervention. An L-shaped section of ditch, orientated NW-SE and NE-SW was investigated in three segments (F306), and measured 3.30m in width and up to 1.30m deep (Plates 25 and 26). Finds recovered from the backfill of this feature comprised early Roman and Roman pottery, with some flint. This ditch represents the convergence of ditches F82 and F150, excavated during the watching brief in Intervention 5SW.

Plate 23 F335, Intervention 5

To the northwest, a series of five linear features was identified running parallel on a NE-SW alignment, for



Investigation 16 (Intervention 5) F304 and F320 sections

Scale 1:50

Figure 70

distances of up to 104m and extending beyond the northern limit of the watching brief. These features were found to be uniform in their spacing, measuring between 9 and 11 m apart. Upon excavation, four of these features (F311, F319, F321, F329, F341) were found be up to 1.25m wide and up to 0.22m deep, and were interpreted as furrows or remnants of hedgerows. Ceramic material from F311 provided a post-medieval date for the backfilling of the feature. In the later phase of watching brief undertaken in Intervention 5SE, a further nine linear features were found to follow the same alignment and regular spacing (F388-394, F411).

Plate 24 F316, Intervention 5, horse burial

Plate 25 F306, Intervention 5

Bisecting a number of these features, a linear feature was found to run on a NW-SE alignment for a distance of 30.0m (F342); this appears to represent a continuation of an extensive ditch (F395), which runs for 232m across the area of Intervention 5SE that was stripped in June 2004. Medieval pottery was found within the backfill of F342 (Appendix D: Part 5). To the southwest, shorter ditches were found to run on the same alignment (F308, F323), and at the southern limit of the intervention, three further furrows were also found to be orientated NW-SE, again running approximately 10m (10.2m) apart (F288, F293, F301, F303). F288 was found to follow the same alignment as F188 and F133 in Intervention 5SW. Shorter lengths of linear features were identified at the northern limits of the intervention (F280, F282); F282 produced medieval ceramic (Appendix D: Part 5).

Plate 26 F306, Intervention 5

At the eastern end of Intervention 5SE, a series of curvilinear features, running roughly north-south, were identified and excavated. These appear to represent a series of at least six gullies (F380, F381, F383, F384, F385, F414), following very similar alignments. The earliest of the sequence, F380 and F381, were found to run parallel for a distance of approximately 100m. A third, F383, runs roughly parallel to these features, to the east, but for a shorter distance. All three features were cut by a subsequent ditch, which ran for a similar distance to F380, following the same curving route. Finally, a more modern feature, F385, was found to cut F384, and contained a ceramic drainage pipe.

Further drainage features were identified a short distance to the west of these gullies. A stone-lined culvert was identified, running in a NNE-SSW alignment, associated with a ditch which appears to have been recut at least once (F417, F420, F421, F422).

All but the latest of these north-south features appear to have been cut by a ditch (interpreted as a hedgeline or boundary ditch) running perpendicular to F417 (F416). This had cut a narrow gully on the same alignment

F423, which had also produced no dateable finds.

Isolated pits

Within the intervention area, a number of isolated pits were identified, which were subject to testing and recording. Three such features (F408, F409, F410) were found in a gap between boundary ditches F394 and F395. It was suggested during investigation that these features may represent truncated postholes related to some kind of gate setting.

Three pits/scoops (F295, F297, F298, F305) were found to measure between 0.40 and 1.50m in diameter, and contained charcoal-rich fills, possibly indicative of *in situ* burning, and lithic artefacts (Plate 27). These were found to be located in the southern part of the intervention, with F295 representing an outlier at the eastern edge of the area.

Plate 27 Flint drill (right) and piercer (left)

The remaining pits (F283, F322, F427) were found to measure between 0.88m and 2.0m in diameter; of these, only F322 produced any finds, which comprised flecks of CBM.

Two pits were found to contain modern sheep burials (F287, F281).

Well

Cutting the WNW-ESE aligned ditch (F416) in the northeastern corner of the intervention, the watching brief identified the remains of a well (F426). Sub-rectangular in shape, the well was found to measure 2.6m x 2.1m, and contained a circular, stone-built shaft, *c.*1.75m in diameter. The backfill of the shaft was found to contain very modern material, including barbed wire and nylon rope (Plate 28).

Plate 28 F426 well, Intervention 5

4.14.3 Assessment

The watching brief undertaken in Investigation 16 revealed some evidence for prehistoric activity in the southern part of the quarry site, although most of the features were heavily plough-truncated, and several could not be dated. A single ditch produced Neolithic ceramic (F336); this was in the same area as one of the charcoal-filled pits, which also produced fragments of flint, indicating human activity of uncertain date.

The watching brief revealed evidence for Iron Age activity in the area, in the form of two possible square barrows and the horse burial. The recutting of both of the ditches suggests at least two phases of use, and the presence of dated burials between the earlier and later ditches places F320/337 firmly in the Iron Age. Although F304/307 produced no independent dating evidence, the similarity of the two features in terms of size and form led to an Iron Age date also being ascribed to this feature. Neither produced evidence for a central burial. The quadruple horse burial identified within 10m of the southern barrow produced a radiocarbon date in the late Iron Age.

The remainder of the features appear to represent medieval or post-medieval division of the land for agricultural purposes, representing hedgerows, gullies or furrows.

4.15 INVESTIGATION 17 (INTERVENTION 9)

A topographic survey was undertaken on an area lying to the northeast of the Nosterfield Quarry, known as the Flasks (Quarry phase 5a)(Figure 71). The area of investigation covered an area of 8.1 hectares, divided into two fields (Field A and Field B), and is characterised by poor drainage (Plate 29). The survey was undertaken during August 2003 in conjunction with an auger survey of the same area (Investigation 18). The results revealed a number of anomalies which were then subject to archaeological evaluation (Intervention 19).

Plate 29 The Flasks

4.15.1 Fieldwork Procedure

Survey data was captured using a total station theodolite, and following downloading from the instrument, was used to create a contour map. Additional points were collected for the hachure plan, and once plotted, were taken into the field so that the drawing could be completed by hand. Hand-drawn plans were subsequently digitised to produce an integrated digital record.

The feature numbers allocated for this investigation began a new index at Feature 1 (Appendix B: Part 2).

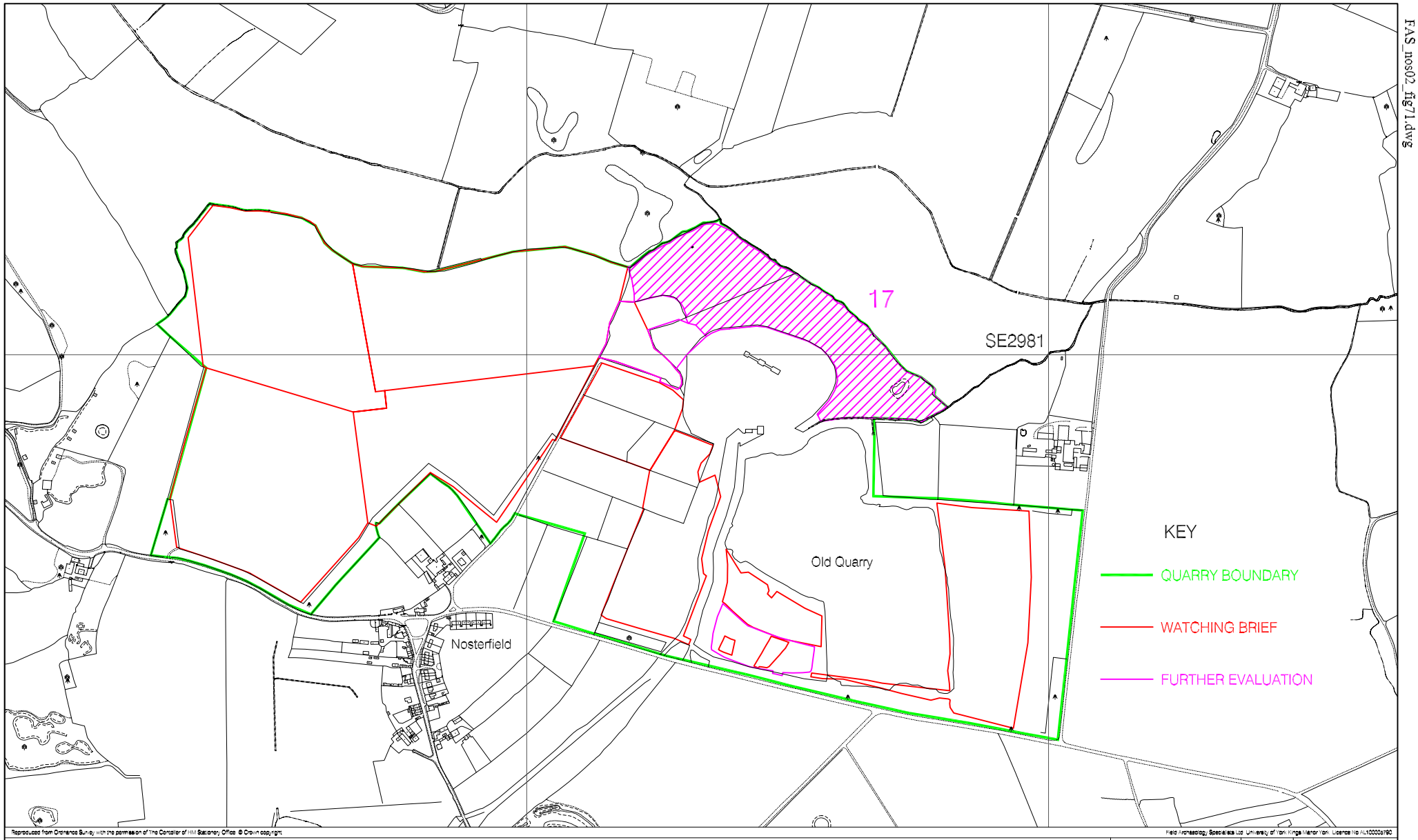
4.15.2 Fieldwork Results

The contour and hachure plans illustrate the topography of the Flasks (Figures 72 and 73), and revealed a number of anomalies within the area, primarily within Field A. Generally, the ground was found to rise from south to north, with the lowest point calculated to be 38.84m AOD.

In the southern field (Field A), to the southeast, two large mounds were identified (Feature 1 and 2), reaching heights of 41.75m AOD. A third mound, Feature 3, was found to reach a height of 41.06m AOD. The contour map demonstrated that the southern mounds (Feature 1 and 2) occupied a fairly level area of land, which varied by only 1.0m over a distance of 300m.

A number of narrow channels were also identified in Field A, running in a southerly direction from the northern field boundary; none appeared to extend to more than 40m to 50m in length. The surface of Field A was also found to contain a number of broad, flat hollows, possibly representing the remains of shallow ponds. At the southern edge of Field A, a shallow hollow ran down to a shallow ford across the adjacent stream.

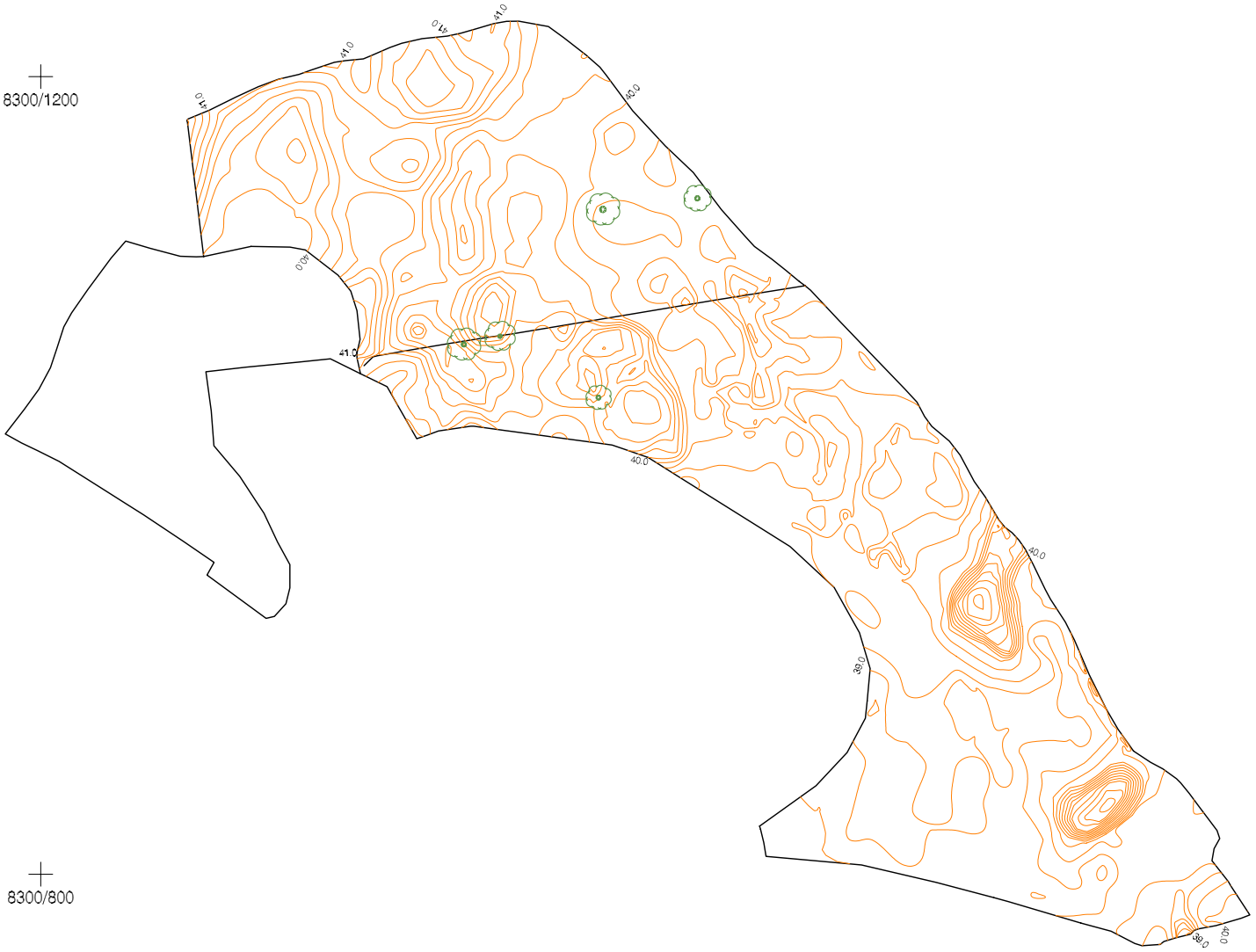
Three sink holes were identified; Feature 7 and Feature 9 lay within Field A, while Feature 8 was situated at the southern edge of Field B. The largest of these, Feature 8, was found to be 10m in diameter, and was situated



Location of Investigation 17

Scale 1:10000

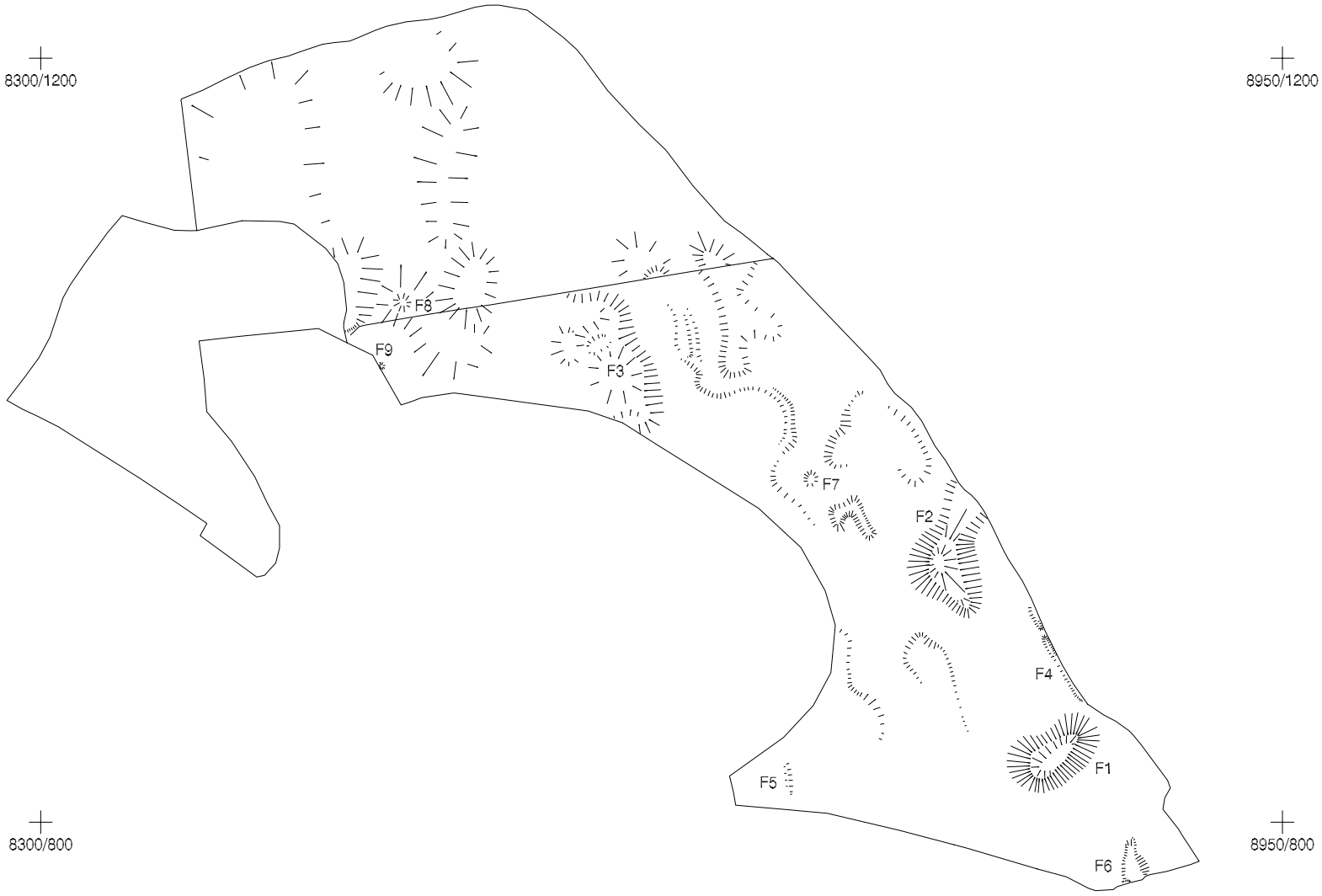
Figure 71



Investigation 17 (Intervention 9) contour map at 0.20m intervals

Scale 1:3000

Figure 72



Investigation 17 (Intervention 9) hachure plan

Scale 1:3000

Figure 73

in a large hollow.

Two linear banks were identified to either side of Field A (Feature 4 and 5). Feature 4 was found to run along the line of the eastern boundary of Field A, and has therefore been interpreted as a field boundary; it appears to have been formed from the upcast of an adjacent drainage ditch. Feature 5 runs along a similar alignment, although its function is less clear.

During investigations, a single sherd of Samian pottery was identified, recovered from an area of animal disturbance on the southern slope of Feature 3 (Appendix C: Part 5).

4.15.3 Assessment

The topographic survey of the site revealed a number of anomalies that were deemed worthy of further investigation. One of the shallow channels running across the site, and one of the large mounds (Feature 1) were selected for further archaeological evaluation, in order to ascertain whether they were man-made. The remainder of the features were considered to be geological.

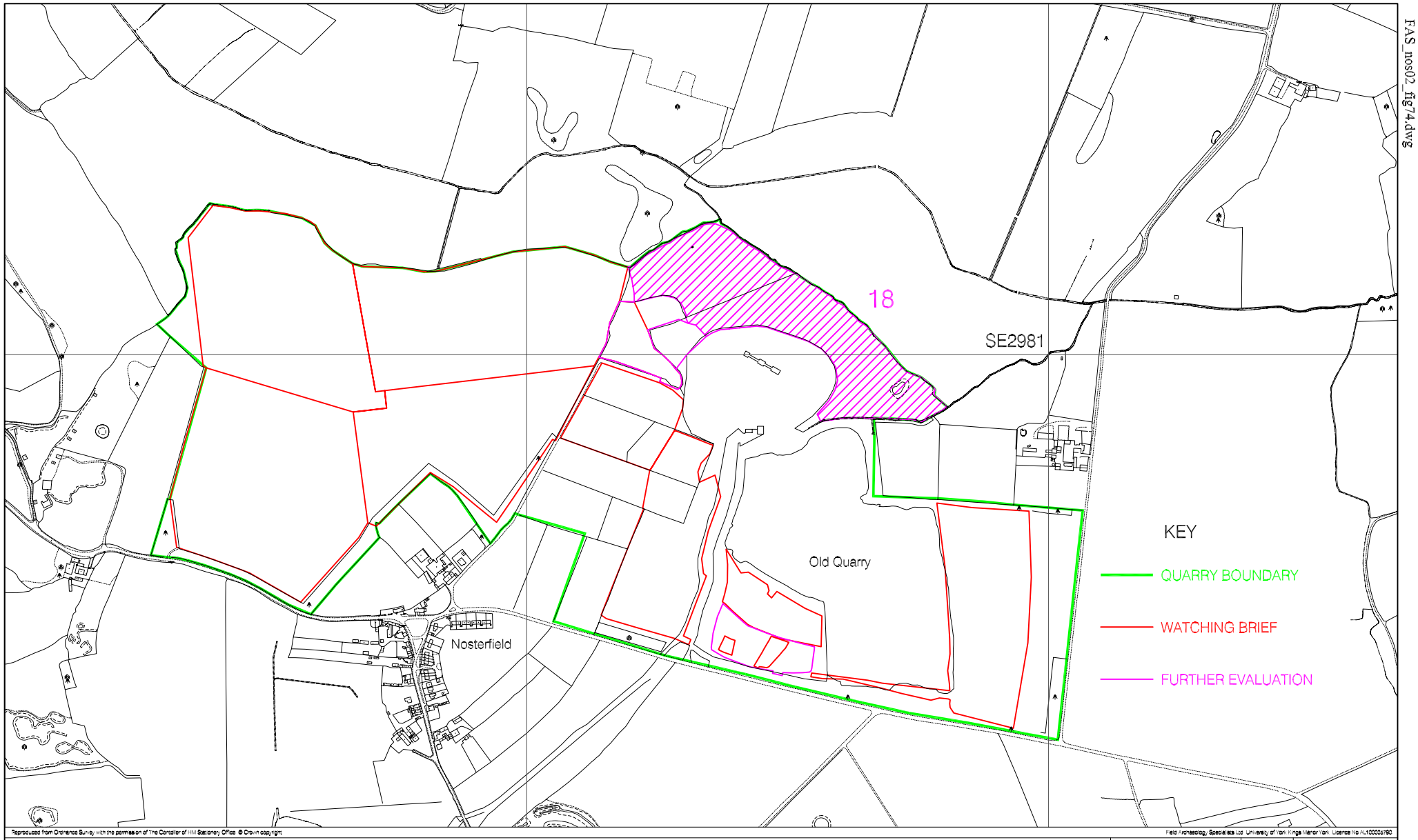
4.16 INVESTIGATION 18 (INTERVENTION 7)

During August 2003, an auger survey was carried out of the same 8.1 hectare site that had previously been subject to a topographic survey (Quarry Phase 5b)(Figure 74). The area of investigation is known to have been occupied previously by a prehistoric lake; the aim of the survey was to investigate the depth, extent and character of the deposits in this area, and to attempt to identify the margins of the lake. Palynological studies and radiocarbon dating of selected sediments revealed that the lake is likely to have disappeared in the mid-9th millennium BC, and provided evidence for the changing nature of the landscape in this area.

4.16.1 Fieldwork Procedure

The auger survey was carried out based on a grid of 20m squares, covering the whole 8.1 hectares (Figure 75). Where geological anomalies such as ponded areas and sink holes had previously been identified, further augering was undertaken. Notably, one such location (Auger 210) lay outside the main area of investigation, over a large sink hole.

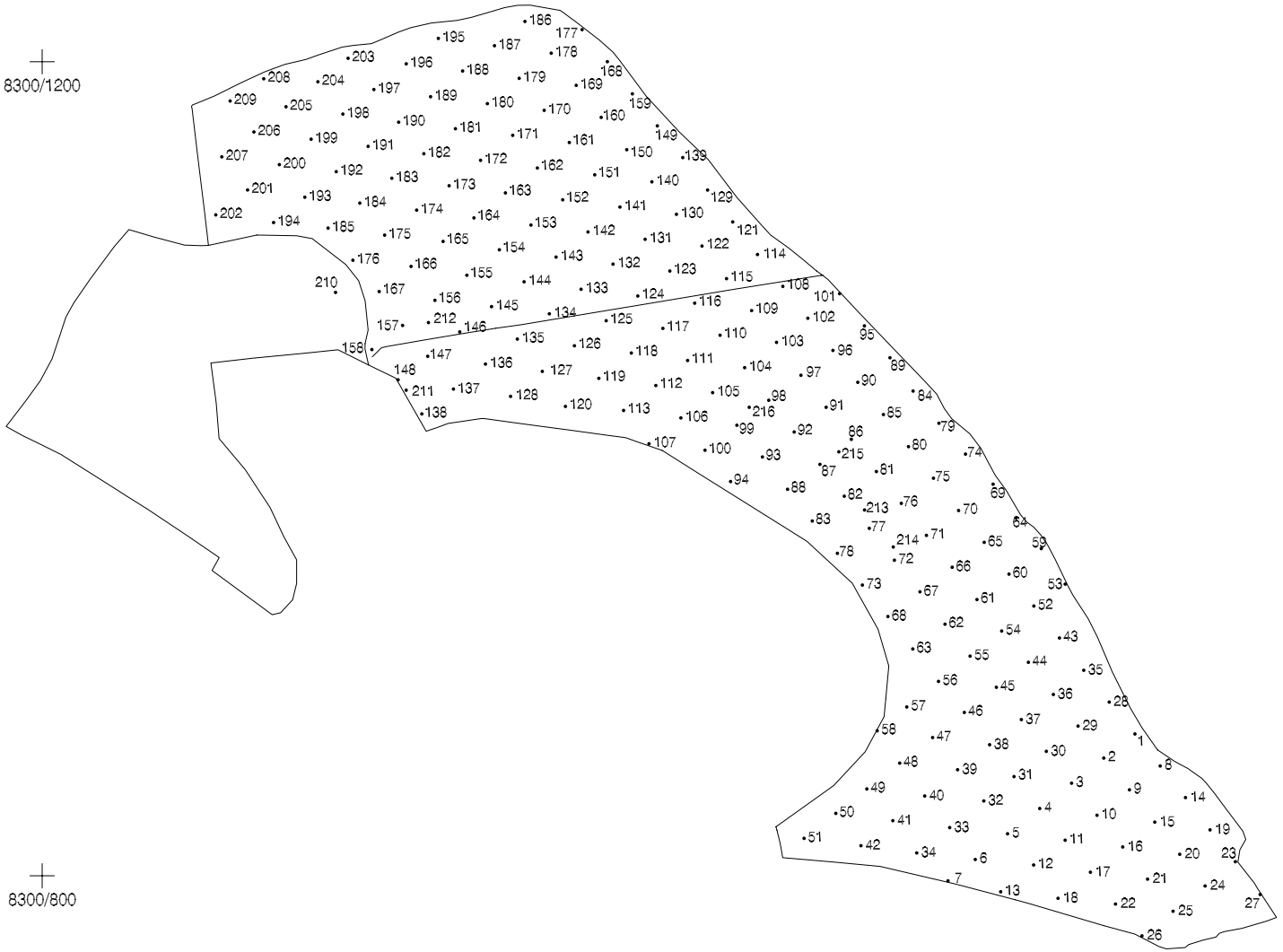
Augering was undertaken to a depth of 1.50m, using a 30mm gouge auger, in order to create a deposit model across the site, and the deposits and sediments identified were recorded using Munsell colour charts (Phase 1). Following the initial survey, two auger holes were selected for further detailed environmental study on the advice of Mairead Rutherford and Dr Jim Innes (Department of Geography, University of Durham)(Phase 2). The sediments from these cores were subject to pollen analysis as part of the Swale-Ure Washlands Project, funded by English Heritage as part of the Aggregates Levy Sustainability Fund.



Location of Investigation 18

Scale 1:10000

Figure 74



Investigation 18 (Intervention 7) location of augers

Scale 1:3000

Figure 75

4.16.2 Fieldwork Results

Phase 1

Buried strata were measured and described at 216 locations across the area of the Flasks. The resulting deposit model revealed that buried deposits were deeper within Field A, to the south of the site (Figure 76 and 77). In this area, most of the strata measured in excess of 0.50m in depth, and the majority were above 1.50m deep. The upper layers comprised a light, friable silty loam topsoil, 0.30m thick, overlying a coarse sandy gravel subsoil. Occasionally the topsoil was represented by a desiccated peat over subsoil; where deeper deposits occurred, this gave way to a well-humified peat. These deeper peats often became waterlogged at depths of 0.40m, and in places reached up to 0.80m thick, overlying grey layers of sandy silts or silty clays (Auger 30), silty sands (Auger hole 7), or sand (Auger 39). Most of these silts, clays and sands contained macroscopic plant remains, and the peat retained a strong organic odour. Small mollusc shells were present in some of the gleyed layers (Auger 65, 69, 74). Auger 48 produced flecks of charcoal within a clayey silt matrix at depths of 0.78m to 0.85m.

Occasionally the strata contained a second layer of peat, sealed beneath grey silts, sands and clays (Augers 42, 50, 74, 84, 85, 94, 101), and it is possible that this forms a consistent layer across all of the area, though falling beneath the maximum 1.5m depth of the survey.

In Field B, the deeper strata were restricted to isolated hollows, which were found to contain peat and the basal layers of grey sand and silts. Only in larger sink holes was the maximum depth of 1.50m achieved.

Calcareous layers in Augers 24, 25, 26 have been interpreted as a marl sediment which in-filled the prehistoric lake.

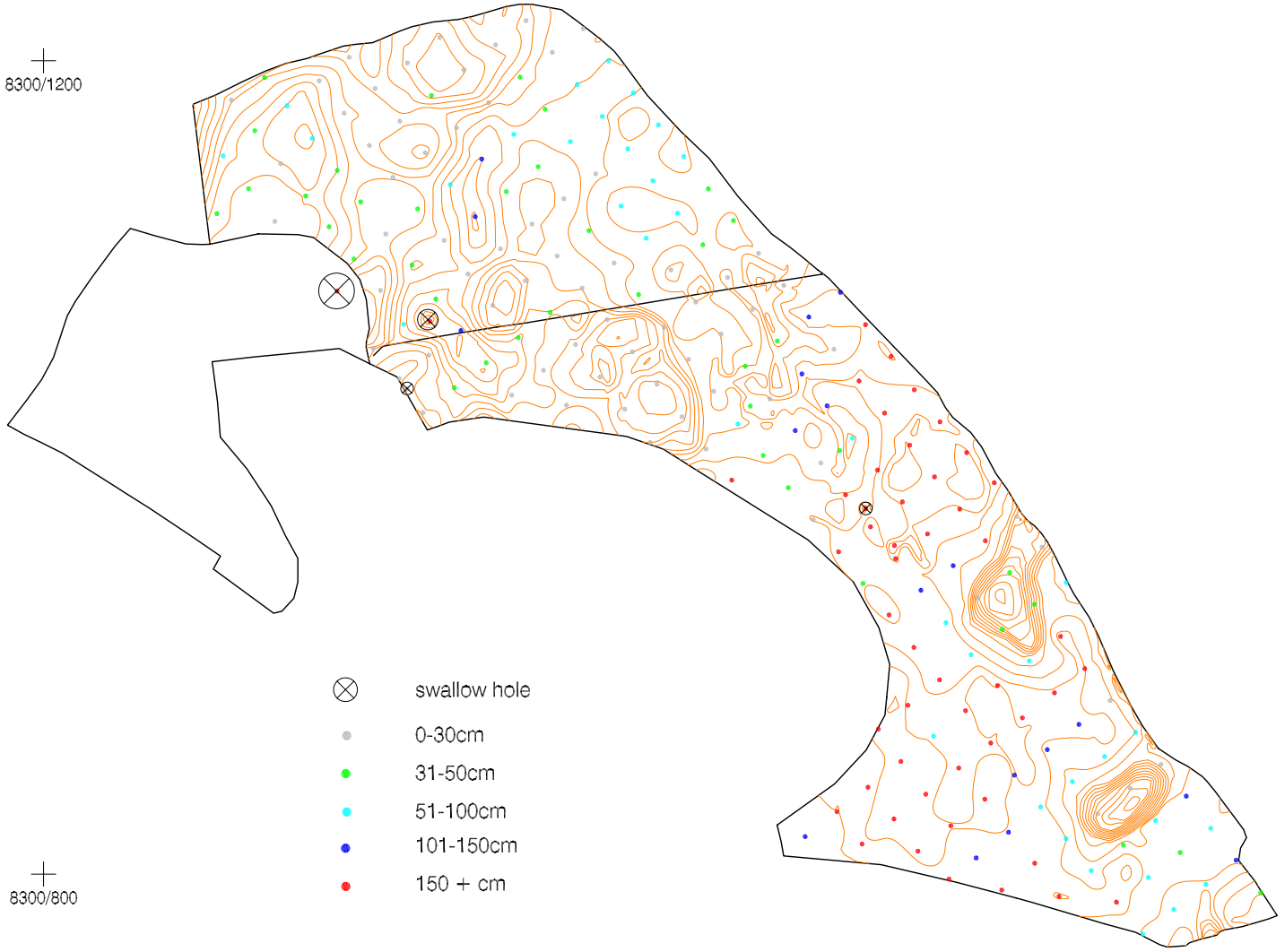
Phase 2

Two auger locations (Auger 69 and 210) were selected as representative of the overall sequence of buried deposits, and were therefore subject to further environmental sampling. The palynology of Auger 69 revealed evidence for the changing landscape of the surrounding area from the Late Glacial period to the Holocene. Initially, a series of organic sediments were laid down within the lake, during a temperate Late Glacial interstadial, at which time the area was characterised by birch and willow woodlands. During the subsequent stadial, as the climate cooled, the landscape was characterised by open vegetation, or sedge tundra, before reverting to birch and willow woodland during the temperate Holocene, at which point the lake is believed to have been largely in-filled (Appendix E: Part 5).

Palynological study of Core 210, within Shake Hole (sink hole) 1, revealed a similar sequence (Appendix E: Part 6). Sediments had collected within the hollow as a result of the dissolution of the underlying Magnesian limestone, and the pollen contained within it revealed a landscape initially dominated by deciduous woodland, giving way to more open grassland with some cereals.

4.16.3 Assessment

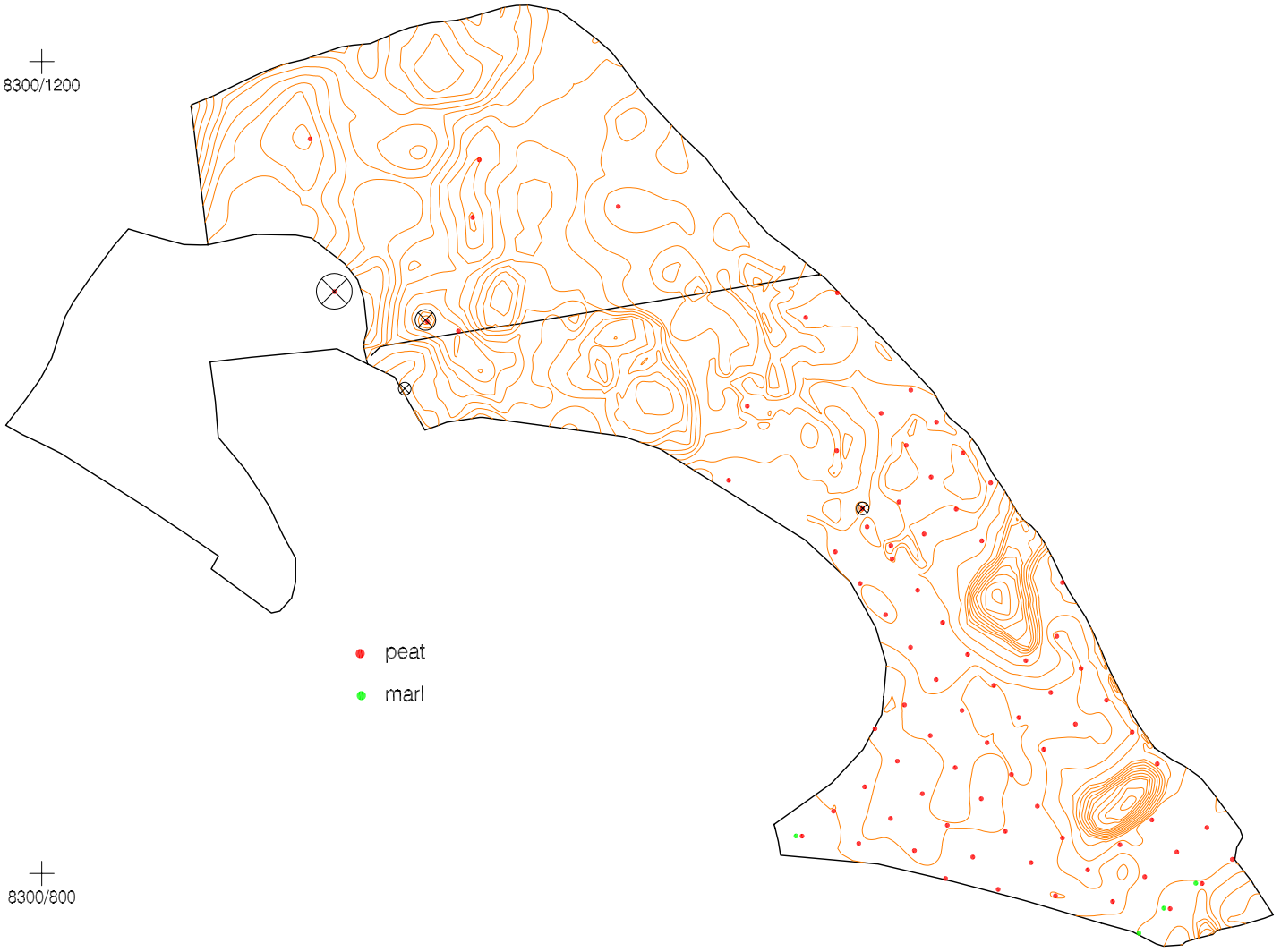
The depth of sediments identified within Field A of the Flasks strongly suggests that this area lay within the



Investigation 18 (Intervention 7) deposit map

Scale 1:3000

Figure 76



Investigation 18 (Intervention7) location of the peat deposits

Scale 1:3000

Figure 77

extent of the prehistoric lake, and the analysis of pollen from within these deposits revealed evidence for the surrounding Late Glacial and Holocene landscape. The nearby sink hole revealed evidence for widespread clearance of surrounding woodland at an unspecified date; this will hopefully be clarified by radiocarbon dating.

4.17 INVESTIGATION 19 (INTERVENTION 8)

During September 2003, an archaeological evaluation was carried out within the area of the Flasks (Quarry Phase 5b)(Figure 78). Two trenches were excavated, directed at two anomalies highlighted during the topographic survey, with the intention of ascertaining whether they were natural or man-made (Figure 79). Excavation of a large mound revealed the feature to be geological, and investigation of a narrow channel produced evidence to suggest that it had been formed as an erosion gully.

4.17.1 Fieldwork Procedure

A small three-ton excavator, fitted with a toothless bucket, was used to open the excavation trenches. Trench A was situated over a linear gully, in the northern half of Field A, aligned east-west and measuring 20m in length and 2m wide. Trench B was located over the large mound (Feature 1) identified during topographic survey. The trench measured 30m by 2m, and was orientated NE-SW. In each trench, the topsoil was removed using the machine, and the surface of the underlying subsoil was hand-cleaned. The sections were cut, cleaned, and the whole trench photographed. One of the longer sections in each trench was selected for recording.

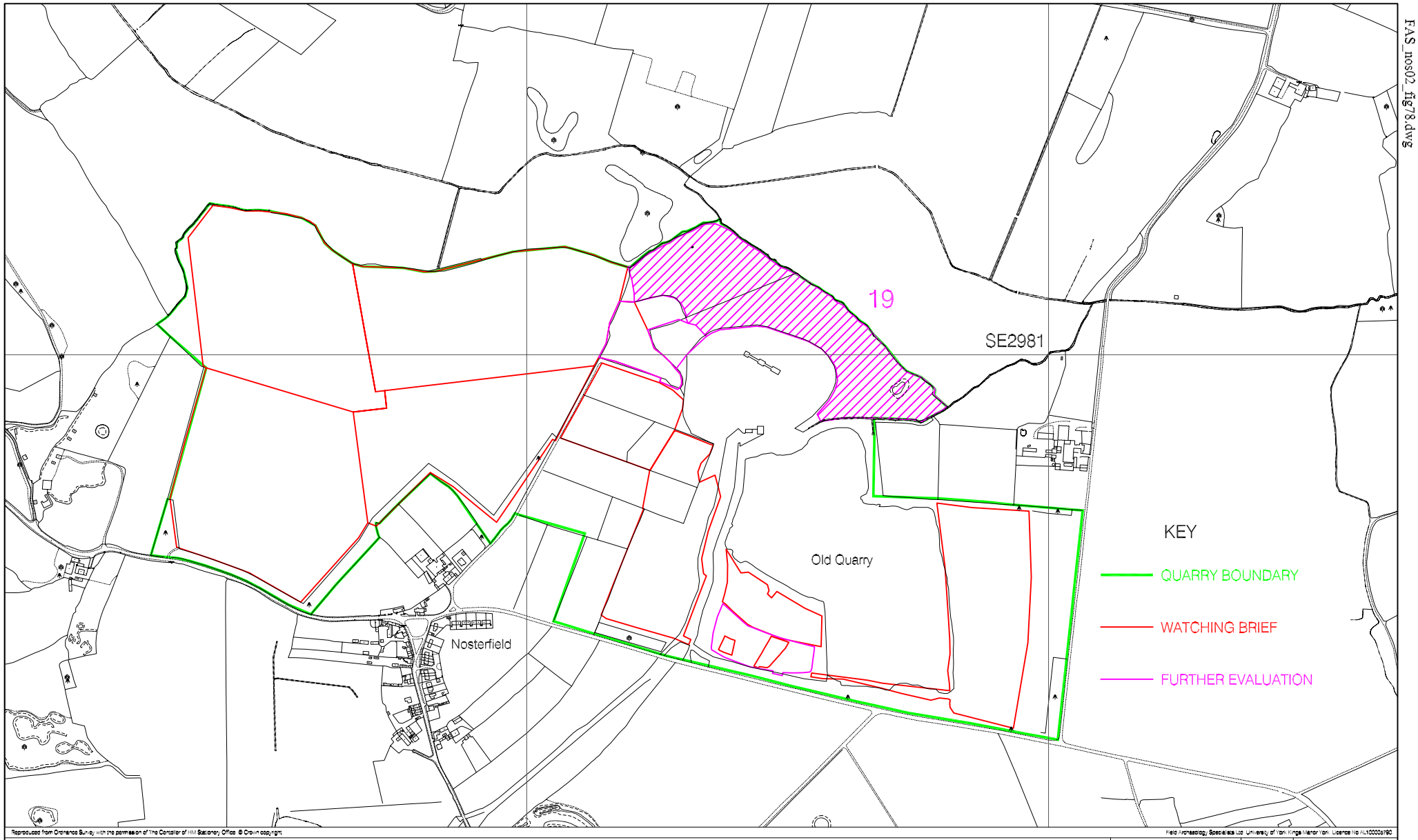
4.17.2 Fieldwork Results

In Trench A, removal of a dark brown silt topsoil revealed two areas of subsoil: a gravel subsoil (C1006) to the west, and a marl (C1007) to the east. These were divided by a linear feature, F1, which comprised a broad, shallow ditch, 3.60m wide and 0.43m deep, filled with a coarse peat (C1001). The lack of evidence for upcast, and the presence of peat within the feature, suggest that the channel was not excavated for the extraction of peat or for drainage purposes. The presence of two distinct types of geology led to the interpretation of this feature as a geological anomaly. Possible evidence was also noted in section for previously unrecorded ploughing in the area, although this convoluted subsoil interface may have been the result of periodic waterlogged conditions (Figure 80).

In Trench B, following removal of topsoil, a ‘dirty’ subsoil was encountered, at a depth of 0.30m. A dump of burnt stones was identified on the top of the mound, within a shallow scoop (F2/F3), but represented the only apparent man-made feature. Two sondages, excavated through the apparent subsoil make-up of the mound, led to an interpretation of the feature as a geological anomaly, disturbed though animal activity. Finds within the topsoil included flints, animal bone, and medieval to post-medieval pottery.

4.17.3 Assessment

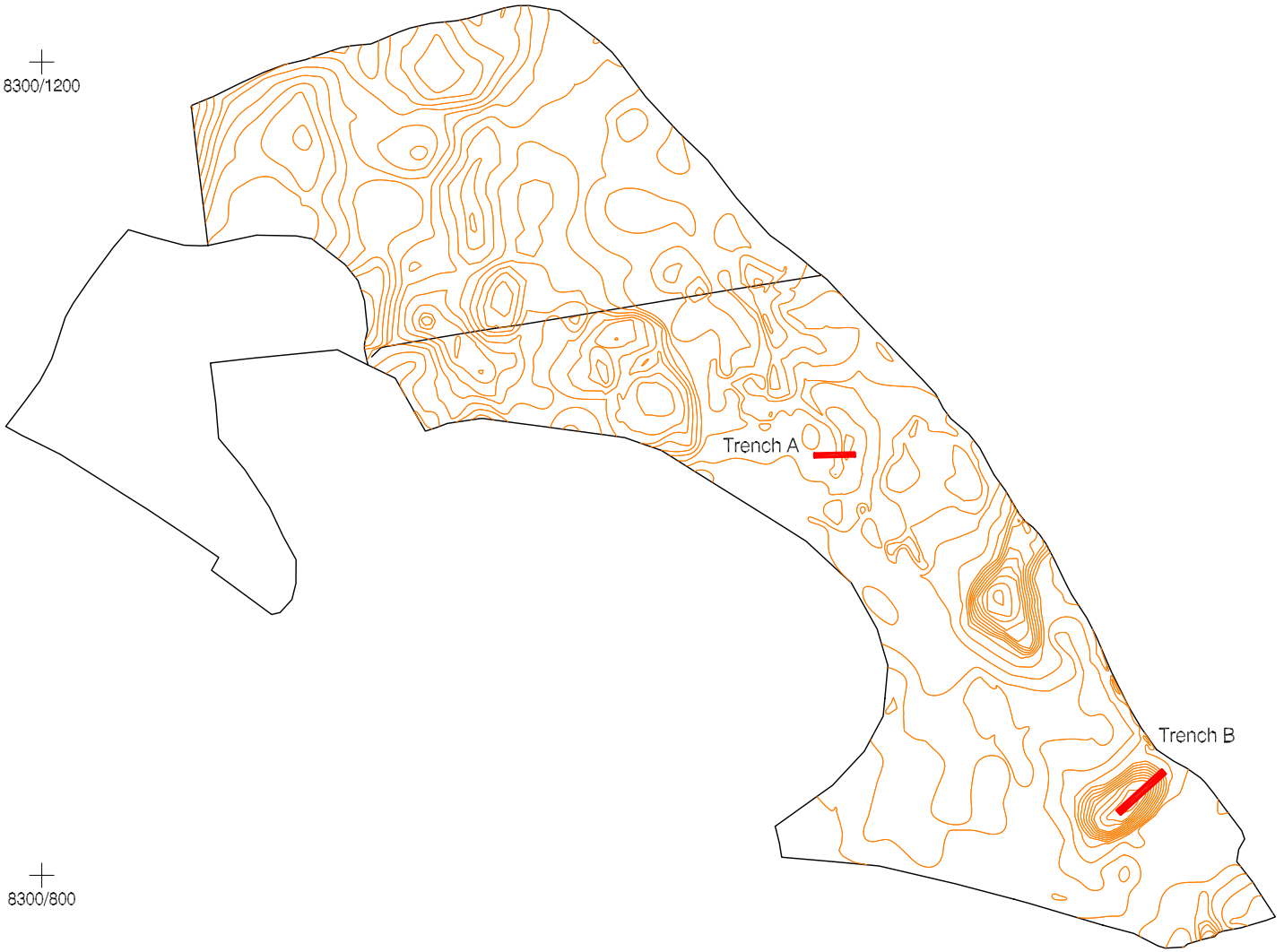
The investigation of both anomalies revealed them to be geological, and the few finds produced might suggest that human activity in the region occurred sporadically and that this particular area was not densely occupied.



Location of Investigation 19

Scale 1:10000

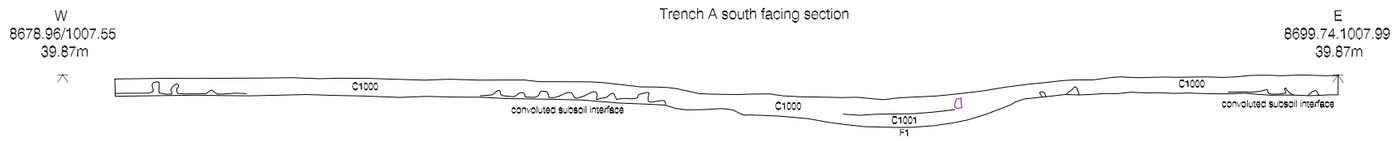
Figure 78

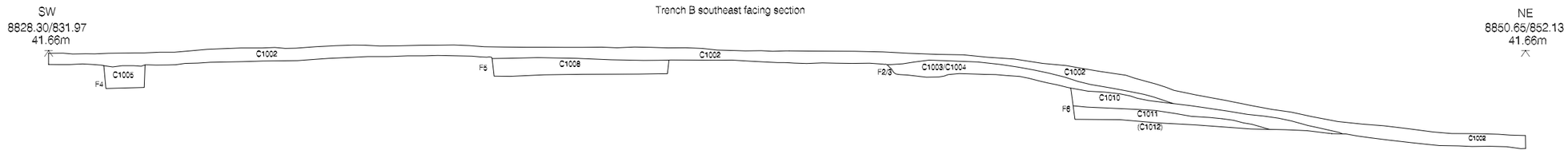


Investigation 19 (Intervention 8) location of trenches

Scale 1:3000

Figure 79





Investigation 19 (Intervention 8) trench sections | Scale 1:100 | Figure 80

5.0 DISCUSSION

The investigations that have been undertaken at Nosterfield Quarry since the 1990s have provided valuable evidence regarding the nature and extent of archaeological features within the area. Over successive phases of investigation, methodologies have been developed that have permitted the surviving archaeology to be suitably recorded and sampled, allowing a detailed picture to be created of the nature and extent of archaeological survival, and its significance regarding the development of landscape use in this area from the Mesolithic to the modern day.

5.1 FEATURE-TYPE AND PRESERVATION

A large number of features were identified across the whole area, but these showed considerable variation in terms of preservation, density and character. A significant number of features were identified as natural during excavation, including tree boles or vegetation pits (65 examples recorded), natural scoops (15 recorded), or animal disturbance (5 burrows recorded). In addition, at least 19 features were identified as sink holes; although a limited number contained archaeological material, they were formed due to underlying geology.

A proportion of features could be associated with the drainage and division of the land for post-medieval or modern agricultural purposes. Five features were identified as old hedgerows, 31 land drains were mapped, 2 culverts identified, and 19 furrows recorded. In addition, 2 modern wells were investigated and recorded.

Of the remaining features, pits and scoops predominated, comprising 420 pits and 39 scoops. These tend to fall into two groups. The better-preserved examples tended to be those which formed part of pit alignments, of which 6, and 1 ditch-pit alignment (182 pits in total), were identified. While these pits tend to be significantly deeper than the isolated pits identified across the rest of the quarry site, they generally consist of shallow cuts, U-shaped in profile, most of which seem to have been badly truncated by later agricultural activity. To these, a total of 9 possible hearths can be added, although such identifications remain tentative.

The pit alignments generally occur towards the southwest of the site, where archaeological features appear to be densest and most diagnostic. Across the remainder of the area, isolated pits seem to be widely dispersed, occurring most frequently in the northern, central and eastern parts of the quarry site.

A total of 31 ditches were recorded; during post-excavation, a number were shown to belong to the same features, but had been identified during different phases of investigation. Excavated ditches included successive curvilinear features, which appear to have been for drainage (Investigation 16). Rectilinear arrangements of ditches and furrows were identified, predominantly in the central part of the quarry site. In the western part of the quarry, a substantial, right-angled ditch was identified (initially as three separate features), which in plan was shown to form part of a rectilinear division of the land, in association with a second NE-SW orientated ditch and two of the pit alignments (Structures 1 and 2).

Also in the western part of the site, a series of three ring-ditches was identified, roughly aligned WSW-ENE. Within one of these, a pit containing human remains was identified, and the northeasterly example was located in the vicinity of ten pits which were found to contain cremated human remains. Two rectilinear ditches

(possible square barrows) were also identified in the western part of the site, and both were shown to have been recut.

Human remains, representing both cremation and inhumation, were identified in a number of pits, all of which occurred in the southwestern part of the quarry site. Eleven pits or scoops were found to contain cremated human bone, some of which had been placed within inverted urns. Two pits produced human remains which showed signs of having been excarnated, one within the southern ring-ditch F264, and one in the upper fills of a pit (F251, F253) in Structure 1. An intact inhumation burial, disturbed by recutting, was identified in the ditch of one of the possible square barrows, and a quadruple horse burial was also identified.

Again in the western part of the site, a corn-drying oven was excavated. Comprehensive excavation and recording of the feature allowed for reconstruction of the different phases of development and use of this structure.

5.2 DATING AND CHRONOLOGY

Overall, only a small proportion of features provided secure evidence for dating; ten of the features containing human or animal bone (horse burial) were subject to radiocarbon dating, as was sediment from one pit of Structure 4. The corn-drying oven provided an archaeomagnetic date in the 2nd century AD. For the remaining archaeological features, dating relies heavily on ceramic and lithic assemblages, as is frequently the case for prehistoric sites (Table 2; Figure 81).

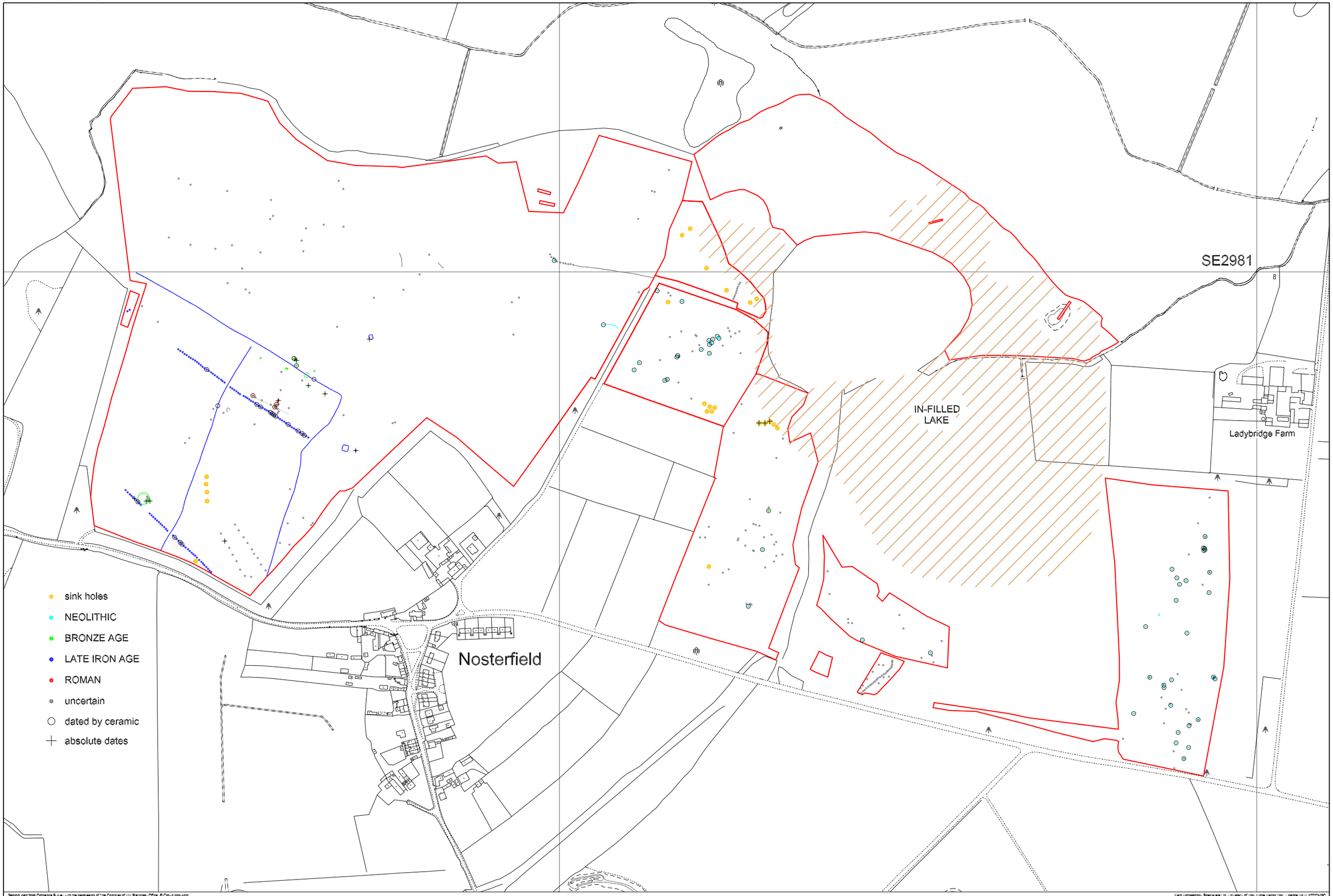
Table 2 Phases of activity

Phase	**Date range**	**Nature of activity**
MESOLITHIC	*c.* 8000BC - *c.*4500BC	Finds
NEOLITHIC	*c.* 4500BC - *c.*2500BC	Pits, finds, possible ditches
BRONZE AGE	*c.* 2500BC - *c.*700BC	Burials, possible ring ditches
IRON AGE	*c.* 700BC - AD43	Burials, pit alignments, enclosures, possible square barrows
ROMAN	AD43 - AD409	Oven, pits, disuse of earlier features
POST-ROMAN TO MODERN	AD 409 - modern	Agricultural, quarrying

Pits: dating

Of the 459 pits and scoops within the study area, only a limited number provided dating evidence (83). The best dated were those which contained cremated and unburnt human bones. Nine of the cremations were found to cluster in one area of Investigation 15 (Structure 7); four contained urns of Middle Bronze Age date, and the cremated remains were radiocarbon-dated to the same period. A pit containing cremated human remains within the southern ring-ditch produced an Early to Middle Bronze Age date, and an inhumation in a pit outside the same ring-ditch provided a Middle to later Bronze Age date. Inhumed remains in the upper fills of a pit within alignment (Structure 1) provided a late Iron Age date, and the horse burial produced a similar late Iron Age date (AD 50±35).

Of the isolated pits and scoops (i.e. not in alignments), a further 51 produced Neolithic ceramics (11%), and 4



Provisional phase map

Scale 1:5000

Figure 81

have been ascribed a broad date in the Neolithic-Bronze Age using diagnostic lithic artefacts (1%). Roman pottery was identified in 6 of these pits (4%). Of the remaining examples, 13 produced undiagnostic flint, and 3 produced Mesolithic microliths considered to have been residual.

A small number of pits from within alignments provided dateable material, and could therefore be used to date a larger number by association. Twelve pits from Structures 1 and 2 were found to contain late Iron Age or early Roman pottery in their upper fills, and human remains from the upper fills of one pit (Structure 1) provided a radiocarbon date of AD 40±35. These finds suggests disuse of the feature, and therefore a valuable *terminus ante quem* in the late Iron Age: a broad Iron Age date for such features is widely accepted (Harding and Johnson 2003).

A pit-ditch alignment to the north of the quarry area produced an assemblage of Neolithic ceramic from an associated pit, and a Neolithic fabricator within the ditch fill. No further dateable material was recovered; a possible Neolithic date can be tentatively suggested. A single pit from a pit alignment (Structure 11) produced an anomalous fragment of Torksey Ware (dated to the 10th or 11th century AD), which may have been intrusive, while no dating evidence at all was produced for the southernmost pit alignment (Structure 12).

The double pit alignment identified at the southwestern corner of the site (Investigation 15) produced an unexpectedly early date. A sediment sample from one pit (F216) within the pit alignment provided a radiocarbon date of 4675±60 BC (6625±60BP: AA-51419, GU-10384), which places the monument in the later Mesolithic, bordering on the traditional transition to the Neolithic. The sediment that was dated derived from the latest fill within the pit, which would suggest that the structure had been constructed at an earlier date. Such a date would place the monument very early in the known sequence of landscape development in the Nosterfield and Thornborough area, and would be unique as a later Mesolithic pit alignment. The dating of this pit alignment currently relies on one radiocarbon date derived from sediment, and will be the subject of further analysis.

Ditches: dating

The majority of linear features have been interpreted as modern drainage ditches, field boundaries or furrows, and are therefore considered to be post-medieval or modern in date. Several could be overlaid with maps of historic boundaries which identified them as likely post-medieval or modern enclosures.

Only a small number of ditches provided dating evidence. A curvilinear section of ditch in the central part of the quarry site produced Neolithic pottery. Further west, the right-angled ditch (identified initially as three separate features, F82, F150 and F306) and a second ditch, running perpendicular to the pit alignments, and between gaps in both, has been seen to form part of a wider enclosure of rectangular areas of land. These features again produced Roman ceramic in their upper fills, and have been assigned an Iron Age date.

Ring-ditches and square-ditch enclosures: dating

Although ring-ditches (possible round barrows) and square-ditch enclosures (possible square barrows) are generally considered, on the grounds of form, to belong to the Bronze Age and Iron Age respectively, all but one of the features from the Nosterfield Quarry site lack independent dating evidence, and can only be given such dates on the grounds of association.

Dating evidence is lacking from all three ring-ditches identified in the southwestern part of the site, and a Bronze Age date can only be tentatively suggested, due to spatial association with securely dated burials. F264 encircles an Early to Middle Bronze Age cremation, and a Bronze Age inhumation lies just outside it. To the northeast, F148 appears to form the focus for the cluster of cremations ascribed to Structure 7.

Of the square-ditch enclosures, F320/F337 was dated to the Iron Age by the presence of inhumation burial (F335) between two distinct phases of ditch construction. Although lying 10m from the quadruple horse burial, the second feature of this type (F304/F307) lacked dating evidence, and can be given an Iron Age date only on the grounds of similarity of size, form and sequence to F320/F337.

5.3 PRELIMINARY INTERPRETATIONS

Bearing the limitations of the evidence in mind, in terms of preservation and dating, consideration of landscape use throughout prehistory can be undertaken on tentative grounds, and the conclusions drawn await refinement as post-excavation analysis and comparative research continues. However, the available results demonstrate that the work at Nosterfield Quarry has provided a unique opportunity to discuss the changing use of a wide tract of landscape from the Mesolithic to the modern day.

5.3.1 Mesolithic

Typically for this period of prehistory, there is very little secure evidence for Mesolithic activity in the area, beyond the presence of worked flints found in later contexts. Fieldwalking undertaken by the Vale of Mowbray Neolithic Landscape project revealed dispersed evidence for Mesolithic and early Neolithic activity, in the form of lithic scatters, most notably in the region of Ladybridge Farm, to the east of the Nosterfield Quarry site (Harding 1994; 1998, 36-7). Recent excavations of a burial monument to the south of the quarry site also produced Mesolithic flint artefacts from a later Neolithic or Bronze Age context (Harding 2004d, 16). The finds from various phases of work at Nosterfield support a growing picture of dispersed Mesolithic activity within this wider landscape, although the scattered and relatively scarce nature of the material does not yet allow for more detailed conclusions to be drawn.

Although Mesolithic activity is predominantly represented by lithic assemblages, as modern archaeological investigation continues, more secure evidence for Mesolithic activity is being produced. Since the publication of Star Carr in 1954 (Clark 1954), further Mesolithic material has been subject to study in the Yorkshire area. Lithic assemblages at Chapel Cave were found in association with hearth features; radiocarbon-dated charcoal from within the excavated sequence provided a date of 6575±59 BP (OxA-8837: Donahue and Lovis 2003, 313). Further afield, evidence for Mesolithic activity has been produced from a site which later formed a focus for Neolithic monumentality, at Billown, on the Isle of Man (Darvill 1999; 2000; 2003). A hearth-pit (4658-4369 cal BC: Beta-89312), pit fill (4542-4464 cal BC; Beta-125767) and a burnt plank (4899-4719 cal BC: Beta-1106691) provided evidence for some, probably temporary, Mesolithic activity on the site. The hearth-pit and flint scatters were found to occur in the same location as later enclosures and pits of Neolithic and Bronze Age date; notably, this area may also have sink holes which may have formed the focal point for later activity (Darvill 2000, 68-70). Recent landscape studies have suggested that natural places and features that were visited with regularity during the Mesolithic came to have a permanent significance for societies, which 'ultimately set

the scene for the construction of monuments in the Neolithic' (Cummings 2003, 74). Such a scenario may present a possible context for the construction of the double pit alignment at Nosterfield in the late Mesolithic.

The nearest parallels for the pit alignments in the surrounding area have, so far, all produced later dates. Pit alignments are traditionally considered to date from the later Neolithic to the Roman period, and double pit alignments are generally thought to date to the later Neolithic (Harding and Johnson 2003, 23). Within the Nosterfield area, a number of double pit alignments have been investigated archaeologically, and have provided dating material in the form of radiocarbon-dated charcoal and ceramic.

During excavation of the Thornborough double pit alignment, between 1995 and 1998, evidence for timber uprights was identified, and Bronze Age pottery and lithic material was recovered from recuts, which have been associated with the removal of the posts themselves. A series of three radiocarbon dates the from post-pipe and recut of one pit, returned dates of 1750-1590 cal BC (3385±38 BP: OxA-11009), 1000-825 cal BC (2761±35 BP: OxA-11033) and 925-800 cal BC (2716±37 BP: OxA-11010) (Harding and Johnson 2003, 23). These dates are associated with the disuse of the feature, and have been used to suggest an approximate date for construction in the later Neolithic or early Bronze Age.

Three further double pit alignments were identified during the widening of the A1 at Dishforth, one of which also provided later Neolithic dates (Tavener 1996, 185-6), and radiocarbon dating of the two double post rows at the site of the Devil's Arrows provided dates of 4234±80 BP (RCD-1596) and 4314±87 BP (RCD-1597)(Harding and Johnson 2003, 23). Although similar in form to the Nosterfield double pit alignment, the examples within the wider area do differ in terms of scale. The nearest parallel is that adjacent to the Thornborough henges, which has pits every 5 to 7m along alignments spaced 10 to 11m apart. In contrast, the rows of pits forming the Nosterfield double pit alignment are 22 to 28m apart, with pits every 10 to 13m; in terms of scale, the Nosterfield pit alignment represents the widest spaced example in the area.

The interpretation and dating of features identified during the Nosterfield Quarry watching brief is at a preliminary stage and as such, conclusions are necessarily tentative. However, preliminary results suggest that the double pit alignment at Nosterfield is one of the earliest of its kind, representing rare, and highly significant, evidence for the development of monumentality within the Mesolithic landscape, and elucidating the way that societies during the Mesolithic exploited and shaped their surroundings.

5.3.2 Neolithic

For the Neolithic period, which is seen traditionally as a period of transition from small-scale agricultural communities to a more stratified society, evidence for occupation and activity becomes more substantial. The earlier part of this period is not well-represented, but is seems that by the later Neolithic, the area surrounding of the in-filled lake appears to have become the focus for domestic activity. Pits and possible hearths, producing ceramic and flint, are found grouped to the west, southwest and southeast of what would have been a broad, marshy area; such features are not attested in the western part of the quarry area.

An WNW-ESE pit-ditch alignment (Structure 10), tentatively assigned to the Neolithic, appears to delineate the northern extent of this activity, beyond which few pits of any date have been identified. It is possible that the

smaller pit alignment to the east (Structure 11) represents an extension of this boundary, after it continues beneath Flask lane, although no dating evidence has been provided for this structure.

The Neolithic also saw the development of the Thornborough monument complex, located to the south of the quarry site. The cursus monument is considered to have been established by the early to mid-Neolithic, and was added to through the construction of the three henges in the later Neolithic (Harding 1998, 29). Evidence for contemporary activity within the quarry site is restricted to its eastern side, and very little material of this date has been identified from the more westerly parts of the study area (Investigations 14 and 15).

5.3.3 Bronze Age

Evidence for Bronze Age activity is primarily funerary, and located in the western part of the quarry site. Finds of Bronze Age ceramic in isolated pits, and the loosely dated lithic artefacts, may represent activity in the wider area, but are rare and therefore difficult to interpret.

There appears to have been a focus for funerary activity in the Bronze Age, with cremation and inhumation burials concentrated seemingly on two of three ring-ditches. These features have only been identified within one area of investigation; given the extensive area that has been subject to archaeological study, it seems likely that this distribution reflects a real variation in landscape use.

The only dates provided for these burials at Nosterfield fall within the Bronze Age; in contrast, recent excavation of a barrow close to the henge complex has been used to suggest a later Neolithic date for the onset of monument construction (Harding 2004a; 2004d). A number of barrows subject to antiquarian investigations in the surrounding area produced ceramic evidence indicative of Bronze Age cremations.

5.3.4 Iron Age

The watching brief at Nosterfield also encountered rare evidence for Iron Age activity. Previous investigations have produced little or no evidence dating to this period, leading to suggestions that the area was not occupied, explained as due to exhaustion of the soils during the Bronze Age (Tavener 1996). Climatic deterioration was attested by the sediment analysis undertaken within the quarry, but the presence of communities within the wider landscape is demonstrated by the construction of a large enclosure, possible square barrows and associated burials which have been assigned an Iron Age date.

The large enclosure, demarcated by a rectilinear system of ditches and pit alignments suggests some reorganisation of the landscape at this time. Outside this enclosure, the presence of possible square barrows, associated with human and horse burials, demonstrates potentially contemporary funerary activity.

It is unclear how such activity relates to the pre-existing Bronze Age landscape. Juxtaposition of sections of ditch and pit alignment over two of the three ring-ditches may be of significance, but awaits further research. The possible erection of square barrows may have been focussed on the site of earlier burials, or may have been placed external to the rectilinear enclosures. The recutting of these features suggests that they remained in use for some considerable period of time.

5.3.5 Roman

During the Roman period, the landscape seems to have changed in character, and it seems that much of the land was given over to arable and agricultural functions. The upper fills of the pit alignments and associated ditches contained pottery of early Roman date, demonstrating that they continued into the Roman period as landscape features, but that they appear to have fallen out of use at this time. The pottery assemblage from the quarry has been used to suggest the presence of a high-status, highly Romanised community in the vicinity, and the oven, which is known to have been in use during the 2nd century AD, may have been associated with such a community.

The area surrounding Nosterfield appears to have been occupied by communities living a highly Romanised lifestyle, presumably centred on villa estates, such as those identified in Well and at Castle Dikes. The establishment of such sites, and the administrative network within which they operated, is likely to have meant considerable change to the organisation and exploitation of the landscape, leading to the disuse of existing monuments (such as the henges, pit alignments and ring-ditches).

5.3.6 Medieval and Post-medieval

The character of later features certainly indicates an agricultural landscape. Throughout medieval, post-medieval and modern periods, the archaeological features reveal the enclosure of fields, and suggest that demarcation and drainage of land were the main activities across the whole area. The variable geology of the region meant that considerable measures were required to drain certain areas of land, particularly in the modern period, and the falling watertable evidenced within one of the well structures may attest to the success of these operations.

The archaeological investigation at Nosterfield Quarry has clearly illustrated the destructive impact of recent agricultural regimes on the archaeological resource of the area. The remains of prehistoric activity defined during the watching briefs had suffered damage from ploughing, and particularly in the case of prehistoric burials, the degree of truncation and disturbance was found to be severe.

6.0 CONCLUSIONS

The ongoing work undertaken at Nosterfield Quarry over the last decade has revealed an increasing amount of information regarding the past development of the area, and the state of preservation of surviving remains. A methodology for identifying, mapping and sampling features has been developed over time which allows for the comprehensive recording of the features and artefacts that survived in this area.

The scale of the investigations permitted the mapping of features over a wide area, and will allow zonation of different types of activity to be identified, rather than the more limited perspective provided by smaller excavations. The consideration of geological changes and diversity within the landscape will allow for the changing activities within the landscape to be viewed within the context of changing vegetation and ground conditions, from the Mesolithic to the modern day.

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