

NYE 92 FW Ph 3  
623 Geophys Ph 3  
602 TI Ph 3  
NYE652 EXC PH 2

REC. 18/10/99

NY5 7651

**Crossgates Farm - Phases II & III  
Seamer  
North Yorkshire  
Interim Report**

NYCC HER	
SNY	7651
ENY	92, 623 602, 652
CNY	838
Parish	4009
Rec'd	18/10/99

October 1999

MAP Archaeological Consultancy Ltd

# Crossgates Farm - Phases II & III, Seamer, North Yorkshire

## Interim Report

### Contents

	Page
Figure List	2
Plate List	3
1. Introduction	4
2. Site Description	4
3. Geology	5
4. Archaeological and Historical Background	5
5. Crossgates Phase III Previous Evaluation	6
6. Aims and Objectives	
Crossgates II - Sample Excavation	8
Crossgates III - Evaluation Excavation	8
7. Methodology	9
7.1 Evaluation	9
7.2 On Site Recording	10
7.3 FmDs	11
8. Results	11
8.1 Crossgates II	11
8.2 Crossgates III	14
9. Discussion	23
10. Recommendations	25
11. Bibliography	26
Appendices - 1. Context List	28
2. Pottery Report	42
3. Archaeomagnetic Dating	55

Figure List	Page
1. Site Location	71
2. Geophysical Survey Interpretation for Crossgates 1 and II and land to the West of Crab Lane	72
3. Excavation areas 1, 3-5	73
4. Crossgates Phase II excavation results	74
5. Crossgates Phase II ditch phasing	75
6. Evaluaton Trenches 1-7, 9 and 10	76
7. Trench 1 feature plan	77
8. Trench 2 feature plan	78
9. Trench 2 sections	79
10. Trench 4 North and South feature plan	80
11. Trench 4 (centre) plan	81
12. Trench 4 sections	82
13. Trench 4 sections	83
14. Trench 4 sections	84
15. Trench 4 sections	85
16. Trench 5 (north) plan	86
17. Trench 5 (south) plan	87
18. Trench 7 plan	88
19. Trench 9 (west) plan	89
20. Trench 9 (south) plan	90
21. Trench 9 sections	91

<b>Plate List</b>	<b>Page</b>
1 Cobble Surface 1007, Entrance Structure 1009 and 1010. Facing north-east.	92
2. Posthole 1065. Facing north.	92
3 Cobble Surface 1005, Cobble foundation beyond Facing north-west	93
4. Posthole 1028. Facing north-west.	93
5. Posthole 1166. Facing south.	94
6. Limestone Building. Facing north	94
7. Limestone Building. Facing south-east.	95
8. Cobble Foundation 1019 Facing south.	95
9. Clay Quarry. Facing south	96
10 Intersection of Ditches 12, 13, 14 and 15 Facing west	96
11 Ditch 4 Facing north-west	97
12. Ditches 18, 20, 21 and 22. Facing north-west	97
13. Enclosure Ditch 4022. Facing west.	98
14. Posthole 4042. Facing east.	98
15. Malting Oven. Facing south-east	99

# **Crossgates Farm - Phases II and III Seamer**

## **Interim Report**

### **1. Introduction**

This interim report has been prepared by MAP Archaeological Consultancy Ltd, on behalf of Persimmon Homes (Yorkshire) Ltd, to summarise the results of excavations conducted in two stages: full excavation of an area to the east of Crab Lane (Crossgates II, CG99), and pre-planning archaeological evaluation excavations to the west of Crab Lane (Crossgates III, CL99), Crossgates, Seamer parish, North Yorkshire (TA 0275 8350 centre - Fig. 1)

On the Crossgates II site, five open areas totalling c 1.5 hectares were examined in 1999 following the evaluation in 1996 of features shown by geophysical survey in the same year (Fig. 2 - GSB 1996). At Crossgates III, nine areas were excavated (Trenches 1-7, 9 and 10), to evaluate a range of anomalies known from a geophysical survey carried out in 1997 by A.L. Pacitto (Fig. 2 - MAP 1998ii).

The Crossgates site as a whole is composed of three development zones (Phases I-III : Fig. 1). Development by Persimmon Homes (Yorkshire) Ltd for housing has been completed on the Phase I site, where small scale archaeological evaluation in the form of Geophysical Survey (GSB 1988) and a series of Sample Excavations (ERARC 1989) and Watching Briefs took place between 1989 and 1992 (see MAP 1998i for an overall summary of the results). Following the 1996 Geophysical Survey and evaluation of Crossgates II sample Excavation was undertaken in March-April 1999.

### **2. Site Description**

Crossgates II lies immediately to the east of Crab Lane and is an extension of the Greenacres development (Crossgates I). The land was formerly an arable field, but lay fallow for a number of years awaiting the present development.

The Crossgates III site is situated to the east of Seamer village, west of Crab Lane (TA 0255 8365 : Fig. 1) and immediately west of Crab Lane, and the Crossgates Phase II development. Crossgates III lies at approximately 36m AOD in the north sloping to 34.2m AOD in the south along Long Lane.

The site, consisting of approximately 3 hectares, is currently under arable crop. The northern boundary of the site is formed by properties backing onto Wold View Road and Wold View Grove, the eastern boundary is Crab Lane and the southern boundary is Long Lane. The proposed western boundary of the site does not follow an existing boundary. No hedgerows survive along the eastern and southern boundaries of the site, although new tree planting has occurred recently.

### **3. Geology**

The geology at the site are fluvio-glacial sands and gravels deposited during the late Devensian/early Flandrian (Mackney 1983). There are 6-7 metres of sands and gravels overlying Corallian limestone at 25m. The present water table lies a few metres below ground surface (taken from borehole data - TA 032 835, provided by Dr Dominda Chada, NRA, York). Two types of soil are to be found within the Crossgates development site. The Wick series, a coarse loamy non-calcareous typical brown earths with profiles of sandy loams which may be stony with small to medium quartzites and some fragments of reddish sandstone, rare pieces of coal and some locally derived sandstones and limestones. The Arrow soils, are coarse loamy non-calcareous gley brown earths. Stones include locally derived Jurassic sandstones and occasionally reddish Triassic sandstones, Jurassic limestones and coal (McHugh 1989).

### **4. Archaeological and Historical Background**

Aerial photography has identified ribbon settlement and Iron Age/Romano-British field systems along the 30 metre contour on the southern side of the Vale of Pickering. Airborne multispectral scanning techniques have noted a similar pattern on the northern side of the Vale which appears to come up to and beyond the area of the site (Powlesland pers. comm.) The impression of the prehistoric landscape across the Vale is one of ditched fields, broad curvilinear trackways and smaller areas of enclosures. Spot finds from within a kilometre of the site consist of worked flint and stone axes of Prehistoric date, an Iron Age chariot burial close to Seamer station, Roman coins, pottery, and an Anglian cemetery.

The proposed development area is situated in what was once one of the Common fields of Seamer known as Low Field.

Since 1988 a series of Geophysical Surveys (Fig 2), Trial Trenching and Sample Excavations have been undertaken on land to the north-east of the proposed development area (Crossgates Phase I), to the east (Crossgates Phase II).

At Crossgates I, Geophysical Survey (undertaken in 1988 and reassessed in 1996 : GSB 1988 & 1996) located a series of linears, curvilinears and rectangular enclosures. During 1989, ERARC undertook sample excavations which continued in line with the development of the site until 1992 (Fig. 2). In Area A excavation revealed ditches, pits and a hearth. Dates for these features varied from the prehistoric through to the medieval. In Area B a pair of square enclosures abutting a linear ditch were shown by excavation to represent square barrows. To the south of the barrows were three structures of ring gully and posthole construction. Pottery from Building 1 was of 9th century BC date. In Area C the excavation of a ditch section within a 'banjo' enclosure located Iron Age pottery. Excavation of a ditch section through a 'D' shaped enclosure in Area D recovered pottery of an early-middle Iron Age date. The archaeology is detailed in a series of reports (summarised in MAP 1998i)

At Crossgates II, Geophysical Survey and Trial Trenching were undertaken in 1996 and 1997 (GSB 1996 & MAP 1998i, respectively). Geophysical survey located a series of rectilinear enclosures of varying size. Trial trenches indicated the presence of a Romano-British enclosure set with a series of field systems (Fig 3). Sample Excavation in 1999 exposed over 2.9 hectares of the site confirming the layout of the field system and recording in detail the nature of settlement in the north-west corner. This work located a series of posthole and pits and a large cobble foundation of Iron Age/Romano-British date.

## **5. Crossgates Phase III**

### **Previous Evaluation**

During 1997, Fieldwalking and a Geophysical Survey was undertaken on the land west of Crab Lane (Crossgates III)

#### **Fieldwalking**

The fieldwalking grid covered the whole of OS Parcels 4400 and 6151 (only a proportion of this area is proposed for development - Fig. 1). The area had been harrowed and sown with spring barley and had a growth height of 0.05-0.10m. The area was walked in 10m square intervals with collection of all material (excluding animal bone and obviously modern brick and tile and metal objects) in a set time interval of 5 minutes per square.

Material collected consisted of medieval, Post-medieval and Modern pottery, flint, glass, clay tobacco pipe, shell. No Roman pottery was recovered.

Forty-two pieces of struck flint were recovered which included twenty-eight pieces of waste material consisting of six chunks, twenty-one flakes and one core. Fourteen tools were also recovered consisting of three blades, three bladelets, seven scrapers (end/side and disc) and a single barb and tanged arrowhead.

The flint assemblage was distributed across the whole of the grid and is of Late Neolithic/Early Bronze Age date.

Fragments of glass vessels and one blue glass bead were collected, all of modern or post-medieval date. Clay tobacco pipe was fairly well represented and consisted of many broken stems, with an occasional bowl fragment of 17th century through to the late 19th century date. Fragments of oyster and the occasional fragment of whelk shell were collected.

In addition to the main categories of finds a small quantity of Welsh roofing slate, glass and clay marbles and a small number of iron objects (horseshoe fragments and nails) were observed.

#### Geophysical Survey

A survey of Crossgates III (Fig. 2) detected archaeological anomalies which consisted of a complex of interlinked and superimposed ditched enclosures which may be of Iron Age/Romano British in date (Fig. 2). One of these is cut by Crab Lane and part of the enclosure appears on the previous Geophysical Survey of the land block to the east.

These enclosures appear over a background of surface geology showing post-glacial stream beds or watercourses meandering from north-east to south-west across the site. Other features include what appears to be a field-boundary separating two areas of medieval ridge and furrow ploughing. This passes through Enclosure A running approximately east-west, and a length of water pipe which runs north-south near the west side of the site before turning east for a few metres at its northern end. This appears to be a disconnected section of pipe probably left over from the market garden. Finally marks which are the result of modern cultivation can be seen as finer lines running east-west over parts of the area.

Three linked enclosures can be seen intruding into the area from the west, but the main concentration of occupation lies towards the east and south of the site. Here three more linked enclosures are of particular interest. A trackway defined by an external ditch, runs along the northern and eastern flanks of these enclosures, giving access to entrances on their eastern side. The fills of the enclosure ditches here are extremely magnetic, varying between 50 and 100 nT, a far stronger reading than would be expected from any normal silting process. At least another eleven enclosures, or parts of enclosures, can be seen.



## 6. Aims and Objectives

### CG II - Sample Excavation

Excavation here was designed to examine the interior of the square enclosure at the north-west of the site, and to provide a chronology and phasing for the ditch system.

### CGIII - Trial Trenching

The main aim of the excavations was to gain details of the date and nature of activity within the enclosure system shown by the geophysical survey, and to complement the results of the sample excavations on that part of the square enclosure lying east of Crab Lane (Crossgates II). A further area (Trench 3) was designed to test the confident assumption that a stone-built Roman structure, whose presence had been hinted at during the Crossgates II excavations, lay within that part of the square enclosure shown by geophysical survey to be situated west of Crab Lane.

Evidence from the geophysical survey shows that features recorded in the western area of Crossgates II continue into Crossgates III, and form part of a much wider landscape. The evaluation excavations aimed to illustrate as far as was possible, how the different elements within that landscape related to each other.

Given the intensive cultivation of the land to the west of Crab Lane, it was also necessary to gain information on the degree of preservation of archaeological deposits and the presence of other disturbance at the site.

The trial trenching of selected areas (Fig 6) as part of a pre-planning evaluation of the site was to provide the opportunity to study the area as part of a much wider landscape, with a view to integrating the results with the previous excavation data from Crossgates I & II into a much wider context.

The evaluation trenches also had the potential to address the research questions outlined below, which corresponded with recent NYCC - Heritage Unit guidelines

1. Differences in the taphonomy and residuality of ceramics, small finds, building materials, bone and plant remains, especially between topsoil and in situ contexts.

2. Changes in form and artefact distributions of field systems and ditches.

3. Characterisation of rural settlement by period and local settlement region.

In addition recent guidelines (EH 1997) states

"Settlement patterns are the key to understanding the economic, social and political structures of rural England" (EH 1997 52)

The siting of Crossgates III within the Vale of Pickering provided an ideal location to evaluate the processes of change over very long periods of time. Sites to the south (Star Carr and Flixton Carr) have and continue to produce evidence for the Late Palaeolithic and Mesolithic. Fieldwalking at Crossgates III has produced evidence for the Neolithic and Bronze Age in the form of flint artefacts. Excavation at Crossgates I produced Bronze Age pottery, and Iron Age pottery has been recovered from the Crossgates I and II sites. Features excavated at Crossgates II have produced Romano-British material. The Geophysical Survey of Crossgates III showed a number of features, many of which suggested multi-period occupation. The Crossgates III site therefore had the potential to provide the information to consider processes of change (EH 1997, 44).

## **7. Methodology**

### **7.1 Excavation**

The stripping of excavation areas was undertaken by a 360 degree excavator, using a toothless bucket, under close archaeological supervision. Machining ceased at the top of archaeological deposits or the natural, whichever was encountered first.

The evaluation areas were hand-cleaned, photographed and planned. Thereafter selective sample excavation was undertaken on the following lines

Ditches/gullies/slots - sections through these features were placed to provide information on phasing, function and dating. Where the phasing was apparent in plan, sections concentrated on recovering dating evidence and information on the profiles. Excavation concentrated on those areas where ditches intersected, excavating deposits at the junctions of or interruptions to linear features over a sufficient length to determine the relationships between components.

Other cut features such as postholes, storage pits and a kiln were half-sectioned to determine and record their form.

Within the costings for the outlined programme of work provision was made for carbon-14 and archaeomagnetic dating, and the analysis of human skeletal material, animal bone, metalwork and environmental bulk samples. A specific sampling strategy for the recovery of palaeoenvironmental material was discussed and implemented under the guidance of the Palaeoecology Research Services (EAU - York)

All work was carried out in line with the Institute of Field Archaeologists Code of Conduct (IFA 1998)

All artefacts were retained for specialist analysis.

## **7.2 On Site Recording**

All archaeological deposits were recorded according to the normal principles of stratigraphic excavation on MAP's *pro forma* sheets which are compatible with the MoLAS recording system (Appendix 1.1, 1.2, 1.3). The MoLAS recording manual was used on site where necessary. The stratigraphy of all trenches was recorded even where no archaeological deposits were found.

### **7.2.1 Plans and Sections**

The full extent of all archaeological deposits were recorded in plan at an appropriate scale on drawing film. All plans were related to the Ordnance Survey grid. Sections of features and individual layers were drawn at a scale of 1:10 and included an OD height. The actual areas of ground disturbance and archaeological features were accurately located on a site plan which was fixed in relation to nearby permanent structures and roads.

### **7.2.2 Photographic Record**

The photographic record was made up of monochrome prints, colour prints and colour slides, included a record of all archaeological features encountered, as well as a selection of general site and working shots

### **7.2.3 Finds**

The finds were processed in accordance with English Heritage Guidelines (EH 1995). All finds were cleaned, identified, assessed, dated (if possible), marked (if appropriate) and properly packed and stored in accordance with the requirements of national guidelines. Finds of significance were recorded as small finds and treated accordingly. Samples of ceramic building materials and masonry were collected and retained for dating purposes and architectural comment

Metal detecting was carried out over the surface of the excavated areas, and on the spoil heaps by accredited detectorists under archaeological supervision.

## **8. Results**

### **8.1 Crossgates II (CG99)**

Five Areas (Site Code CG99. Areas 1-5 - Figs 3 and 4) were excavated at the site during March, April and May 1999, in addition excavation of the part of the site west of Area 1 was continued in the summer of 1999 (Site Code CL99. Area 3). Excavation revealed a large number of linear features, some of which had been encountered during the 1996 evaluation excavations; these are referred to by the same feature numbers used in the evaluation stage (Ditches 1-26 - Fig 4). Settlement activity was concentrated in the north-western part of the site, within the enclosure bounded by Ditch 1, and took the form of a significant limestone building, along with the remains of post-hole structures

Ditch 1 formed the boundary of a square enclosure known from the geophysical survey to cover an area c 45m wide east-west and 50m long north-south. The enclosure was bisected by the modern road, Crab Lane, and was examined on three separate occasions (CG96 evaluation, CG99 excavation east of Crab Lane, CL99 excavation west of, and under, Crab Lane)

Ditch 1 was examined by the excavation of six segments in 1999 (CG99 contexts 1164, 1175 and 1194, CL99 contexts 3012, 3047 and 3050). There was considerable variance in the ditches size, from 4m and 1.6m deep on the northern side (CL99 3047) to 2m wide and 0.85m deep at the south (CL99 3012)

A narrow entrance was identified in the approximate centre of Ditch 1's eastern circuit. Originally, the entrance took the form of two rounded terminals (contexts CG99 1164 and 1175) which created a c 1m wide access to the interior of the enclosure. In the 1st or 2nd century the entrance was remodelled, and a pair of kerbed, limestone foundations (contexts CG99 1009 and 1010) were laid across the original entrance, and slightly offset to it to create a c.2m wide access, which was provided with a cobble surface (context CG99 1007). These were associated with two massive postholes (contexts CG99 1065 and 1102). It is clear that a gated structure was added to the entrance, to accompany the remodelling of the interior of the enclosure

The entrance cobbling extended westwards into the enclosure (context CG99 1005, 1026 and 1027).

At least forty postholes were identified within the enclosure (contexts CG99 1018, 1028, 1032, 1035, 1037, 1039-40, 1052, 1054, 1060, 1066, 1077-8, 1100, 1105, 1138, 1154, 1166, 1185 and CL99 3016-23, 3025, 3027-32, 3034-7 and 3039). The postholes ranged from 0.4 - 1m in diameter and 0.2 - 0.8m m depth. Noteworthy among these were contexts 1154 and 1166 which showed clear signs of the posts having been removed rather than being left to rot *in situ*, pottery linking this demolition phase to the end of the 2nd century Context 1166 was also remarkable for containing a neo-natal human infant skeleton (context CG99 1157) and part of a rotary quern

The postholes indicated the presence of timber structures, but it has not been possible to ascertain their exact form Further work needs to be carried out on the phasing of the postholes, but those excavated to the east of the building (in CG99) predate the cobbled surface, postholes to the south could be contemporary with it

A curvilinear gully (context CL99 3026) may also have been structural.

The limestone building lay in the central / northern area of the enclosure and was 17.5m in length east-west and 9.5m wide north-south. The walls in the western half of the building were clearly defined, being 0.75m wide and constructed of squared, faced, oolitic limestone with no bonding material. A c. 3.5m square room lay within the western gable wall of the building. The eastern half of the building was more poorly preserved, with intact walling only recognisable at the south-eastern corner. Strips of jumbled cobbles and limestone rubble in the inferred position of the south and north walls are interpreted at this stage as robber trenches. The robbing process apparently exposed the foundations along the eastern wall, showing a deposit of heavy cobbles (context CG99 1019), overlain by a brown clay deposit (context CG99 1016)

Amorphous spreads of limestone (contexts CG99 1003-4, 1006, 1013-5 and 1029) to the east of the building seemingly relate to its collapse or demolition, with a similar deposit (context CL99 3024) present to the south

To the north of the square enclosure, a mass of pits cut into the natural clay, these apparently having been clay quarries. A sinuous gully, Ditch 19, ran towards the clay quarries from the east

An isolated pit (context CG 1122) lying c. 20m east of the square enclosure contained 1st / 2nd century sherds.

A large number of linear features were excavated to the east and south-east of the square enclosure, forming a separate system of ditched enclosures.

The earliest element of these enclosures was formed by four parallel east-west linear features (from north to south Ditch 12, Ditch 22, Ditch 21 / 9, Ditch 25 / 5 and Ditch 27) and a north-south linear feature (Ditch 8 / 9).

Ditch 12 was excavated in four segments (contexts CG99 1088, 1090, 1096 and 1110), the average width being 0.8m and depth 0.2m

Ditch 21 (context CG99 1151) was of similar dimensions, running parallel to Ditch 12 c 80m to the south, with Ditch 25 (contexts CG99 3013 and 3015) on a parallel course c 50m further to the south. Both of these ditches merged, as Ditch 9 (context CG99 4008) and Ditch 5 (context CG99 4016) respectively, with Ditch 4, a north-south linear feature (contexts CG99 4005, 4011 and 4015). The three ditches formed a "letter-box"-shaped enclosure or field 150m in length and 50m wide. The fill at the merger of Ditch 4 with Ditch 5 (context CG99 4014) yielded a number of sherds from a single Late Iron Age / Early Roman vessel. North-eastwards of its junction with Ditch 9, the course of Ditch 4 was continued as Ditch 8. Ditch 11 (context CG99 4010) continued perpendicularly eastwards from Ditch 4. Other linear features (Ditch 6 and Ditch 10, contexts CG99 4013 and 4012 respectively) in the area of Ditch 4 proved to be natural in origin.

Ditch 27 (context CG99 5007) took a course parallel to Ditch 25 c 80m to the south.

A group of four linear features (Ditch 16, Ditch 18, Ditch 22 and Ditch 23) lay between Ditch 12 and Ditch 21. Unfortunately, the relationship crucial for dating this complex in relation to Ditch 12 coincided with the position of a modern sewer, so it remains unclear whether these two complexes were laid out at the same time, or if subdivision of the earlier enclosure was involved.

In either event, Ditch 16 (context CG99 1129) formed an L-shaped arrangement, at least 75m north-south and 50m east-west. Excavation showed the ditch to be c 1.4m wide and 0.25m deep.

Ditch 23 (context CG99 1130) continued the southward line of Ditch 16 for a distance of c 40m from the point where the latter returned westwards. Ditch 22 (context CG99 1120 and 1130) took a similar course to the west of Ditch 23, before curving eastwards to run towards the latter. These two ditches formed the west, south and east boundaries of an enclosure c. 30m wide east-west and 45m long north-south, with Ditch 16 closing off the northern boundary. Ditch

22 did not physically merge with Ditch 16, a c. 4m wide "comer-entrance" existing at this point

Ditch 18 (context CG99 1121) was a less substantial gully that joined Ditch 22 at the point where it returned eastwards; excavation implied that the two were contemporary.

A complicated series of linear features lay between Ditch 1 and Ditch 16. Ditch 13 (contexts CG99 1073, 1086 and 1098) and Ditch 14 (contexts CG99 1069 and 1092) ran c. 4m apart on a parallel north-south alignment, before returning westwards to meet towards the main enclosure ditch. Fills (contexts CG99 1068 and 1091) in Ditch 14 contained Late Iron Age / Early Roman and 1st / 2nd century sherds, with Ditch 13, containing 2nd / 3rd century sherds (contexts CG99 1072, 1083-4). A narrow gully, Ditch 15 (contexts CG99 1071 and 1075), linked the two larger ditches at the point where they changed their alignment.

The evidence from Ditch 13 (the 3rd century sherds and the fact that excavation clearly showed it to cut through Ditch 12) suggests that this group of ditches represented the latest phase of Roman activity at the site. The arrangement created by the two ditches would appear to represent a double-ditched trackway.

The three remaining linear features excavated in 1999, were of relatively recent date. Immediately to the east of Crab Lane, Ditch 20 (contexts CG99 1142 and 1149) cut through both Ditch 18 and Ditch 21, and was a relatively shallow feature on a north-north-east to south-south-west alignment, characteristics it shared with Ditch 26 (context CG99 2003) c. 200m to the east. The form of these two features suggests that they were furrows from the pre-enclosure field system.

Finally, a north-south linear feature, Ditch 17 (contexts CG99 1108, 3004 and 3011) cut through both Ditch 12 and Ditch 25, and represented the remains of a field boundary shown on the First Edition Ordnance Survey map.

## 8.2 Crossgates III (CL99)

### Trench 1

Trench 1 (Fig. 7) was situated at the north-eastern end of the development area on a south-west north-east alignment, and was 8m x 4m in size. Geophysical survey carried out prior to this stage of evaluation, had revealed a number of linear anomalies running towards Trench 1, which lay outside the surveyed area. Following machine excavation and hand cleaning two features were visible, a curvilinear

ditch and an amorphous feature partly obscured by the edge of the trench.

The ditch (context 1004) was positioned centrally to the trench at the northern end, and ran southwards where it turned onto an east-west alignment. The excavation of a 1m segment showed that it was 0.9m wide and 0.56m deep, with steep sides and a flat base, cut into the sand and gravel natural. Two deposits were contained within the ditch. Context 1003, the primary fill, was a 0.3m deep pale brown mixed sandy gravel. Context 1002, the upper fill, was 0.26m deep and consisted of a brown silty sand containing pebbles and a few larger stones and limestone fragments. No finds were recovered from either of these fills, neither was there any evidence of charcoal or organic material.

The amorphous feature (context 1007) was situated in the south-western corner of the trench and only lay partly within the excavated area. The shape in plan was roughly linear with dimensions of 3.28m long and 1.86m wide. The excavation of a 1.3m portion of the feature revealed the profile to be fairly shallow sided with a slightly rounded base. The feature also shallowed out towards its northern end. Two fills were identified. The primary fill (context 1006) was 0.29m deep and consisted of a brown sandy silt and pebbles which contained a concentration of large limestone fragments positioned towards the southern end of the feature. The upper fill (context 1005), was 0.14m deep and consisted of a brown sandy silt containing pebbles, water-worn stones and less frequent large limestone fragments. As with the ditch fills no finds were recovered and there was no evidence of any charcoal or organic material.

The lack of finds from any of the features in Trench 1 rules out any positive dating for them. The interpretation of feature 1007 is also limited as its full dimensions were not visible within the confines of the Evaluation Trench.

## Trench 2

Trench 2 (Figs. 8 and 9) was situated in the central/northern part of the site and was excavated over an area of parallel linear anomalies known from the geophysical survey.

After the removal topsoil (context 2001) five linear features (contexts 2004, 2006, 2010, 2014 and 2019) were revealed following approximate north to south alignments. These features were spaced approximately 6m apart, and were in the order of 1.5-2m in width and 0.4-0.5m deep (apart from context 2019 at c. 0.1m deep). Profiles were rounded. There were no finds.



It seems safe to interpret these linear features as the remains of furrows from a rig and furrow field system because of their regular, parallel spacing and rounded profiles. It was noticeable that the three northernmost features were on a slightly different alignment to the two southern examples, this factor reflecting the pattern suggested by the geophysical survey which showed that the anomalies were slightly offset from each other along a line roughly coinciding with the centre of the trench. This factor was tentatively believed to represent a headland within the former field system.

Also present were two narrow linear features (contexts 2012 and 2018 - perhaps also related to ancient ploughing) and an amorphous, shallow pit-like feature (context 2021)

### **Trench 3**

The results of work in this area have been laid out in the section dealing with the results of the Crossgates II (CG99) excavations

### **Trench 4**

This trench (Figs. 11-15) was excavated in the area of the north-east compartment of the rectangular enclosure, a location in which it was anticipated that there would be evidence of settlement-related activity. The evaluation excavation revealed a relatively complicated sequence of ditches, gullies, pits and postholes, and a possible trackway, which have been broken down into a provisional sequence of five phases

#### **Phase 4.1**

This earliest phase was represented by the enclosure ditch, plus a number of pits and gullies.

A segment excavated through the northern ditch of the rectangular enclosure (context 4022) showed it to be 5m wide, at least 1.2m deep, and to have a V-shaped profile. Fills (contexts 4014-7 and 4019-21) were generally silty, and only moderately stony, the exception being a cobbly fill (context 4018) situated in the centre of the ditch. Context 4017 was also exceptional due to the presence of considerable organic remains towards its base. Late Iron Age pottery was found in the ditch fills.

Two pits belonged to this phase, context 4041 a subcircular cut c. 3.5m in diameter and 0.38m deep, and context 4007, also subcircular, and 0.29m deep. These two pits contained Late Iron Age pottery.

An east-west gully, excavated in three segments (contexts 4025, 4026 and 4062) cut into pit 4007, and was c. 6m long and 0.34m deep. The gully butted out at both ends.

To the east of this gully, at the eastern end of the trench, two slightly curvilinear gullies (contexts 4073, and 4064/4075) ran into the trench for a distance of c. 2.5m. Both gullies were c. 0.6m wide, and were steep-sided with depths of 0.3m.

#### Phase 4.2

In this phase a north-south ditch or gully (context 4028) cut into the western east-west gully (contexts 4025, 4026 and 4062) of the preceding phase, and an L-shaped ditch/gully (excavated as segments 4051, 4054 and 4056) cut through the two gullies (contexts 4073 and 4064/4075) at the eastern end of the trench.

Ditch 4028 ran across the full width of the trench, and was c. 0.9m wide and 0.23m deep.

The L-shaped ditch (contexts 4073 and 4064/4075) at the eastern end of the trench, ran for a distance of 3.5m into the trench before turning at right-angles and running northwards for a further 6.5m. This ditch was c. 1.25m wide and 0.5m deep, but ended in a much narrower and shallower butt end (context 4056) at its northern end, where it appeared to respect the major enclosure boundary ditch to the north. The L-shaped ditch contained Late Iron Age sherds.

#### Phase 4.3

This phase concerns ten pits (contexts 4003, 4005, 4013, 4037, 4048, 4060, 4070, 4078, 4082 and 4084), and two probable postholes (contexts 4042 and 4045), along with a ditch (context 4035) and trackway (context 4031) running parallel to the main enclosure ditch. Only two of these (contexts 4037 and 4042) were demonstrably later than the ditches of phase 4.3, but it is convenient to group these similar features together in one place.

The pits were both circular and oval in plan, and ranged in size from 1.2 to 2.5m in size. Pit 4037 contained Roman material, and cut into the fill of ditch 4028. Posthole 4042 cut into ditch 4028, and contained traces of stone packing (context 4038), suggesting that the post had rotted *in situ*.

Ditch 4035 ran c. 5m to the north of enclosure ditch 4022, sharing the same east-west alignment. The outer ditch was 2.2m wide and c. 0.5m deep, and contained a 2nd-century Roman sherd. The area between the two ditches was taken up by a substantial layer of cobbles (context 4031). The general picture gained is that a metalled trackway, bounded by a ditch, was added to the exterior of this enclosure.

Two features excavated in the northern arm of Trench 4 (contexts 4066 and 4068), in a location outside the enclosure, cannot be placed within

the present phasing as they lack relationships with the other excavated features, and also any conclusive dating evidence

Context 4066 was a north-east to south-west aligned curving gully whose course was traced for a distance of 7.5m through the trench. It was c. 1m wide and 0.35m deep.

Context 4068 was a 1.1m long oval pit or posthole situated north-west of the curving gully. The single fill (context 4067) contained pottery of Late Iron Age type.

A 0.2m deep layer of hillwash (context 4001) and a similar depth of modern ploughsoil (context 4000) completed the sequence.

### Trench 5

Trench 5 (Figs 16 and 17) was L-shaped in plan, and was positioned to examine an area of the interior of the south-east compartment of the rectangular enclosure, along with the east and south boundary ditches, and to examine a possible entrance through the eastern ditch

Provisionally, three phases of activity were identified, the first concerning the main enclosure ditch and activity within it (5.1), followed by a recut to this ditch (5.2), and then additional linear features (5.3).

#### Phase 5.1

The first phase of the main enclosure ditch was excavated in two segments, context 5046 on the south side and context 5045 on the east

Context 5046 had a V-shaped profile with a depth of 1.25m, and a width of 2.9m. The fills indicated a fairly even regime of back-filling (contexts 5048, 5051, 5052 and 5053). The uppermost part was filled with a thin charcoal-rich layer (context 5047) and a large deposit of gravelly, silty sand (context 5034).

On the east side of the enclosure, the original ditch, context 5045, had been severely truncated by a later recut, but enough remained to show its form. The ditch had a flat-based-V profile with an estimated depth of 1.45m. The single fill (context 5043) was formed by a series of gravel lenses. Judging from the small area that it was possible to excavate, this ditch formed a terminal at its north end hinting at an entrance at this location.

The suggested date for the original ditch of the rectangular enclosure is Late Iron Age - certainly the recut to it (Phase 5.2) was filling up in the 1st / 2nd century. This would make the enclosure ditch contemporary with a burnt feature (context 5054/ 5016 - described below) that was

archaeomagnetically dated to 40 B.C - 40 A.D. (or less likely 100 B.C. - 60 B.C.).

The burnt feature (context 5054 - Fig. 16) was situated c. 10m west of the entrance and formed a pair with a pit-like feature (context 5027). Context 5054 was a 2.8m long narrow cut with a burnt red clay lining (context 5009); a circular pit (context 5016) lay at the south-east end. In the absence of any slag or hammer scale to show that they were associated with metalworking, these two linked features would usually be termed a "corn drier".

Situated c. 1m to the south, context 5027 was an oval pit of dished profile, 2.9m in length and 0.8m wide (Fig. 16). This pit was lined with a deposit of unfired puddled yellowish green clay (context 5031).

There can be little doubt that the flued feature and the clay-lined pit were directly associated. As metalworking can be ruled out, organic processing must be represented. It seems likely that these features were associated with malting, the clay-lined pit being used to steep the grain, the burnt feature being the kiln where it was malted.

### **Phase 5.2**

The original enclosure ditch was recut, this being excavated in two segments (contexts 5028 and 5044).

The southern segment clearly cut into the northern side of the original ditch (context 5046). The recut had a flat-based V profile, and was 0.8m deep and 2.2m wide. The gravel fills (contexts 5029 and 5032) showed uneventful periods of silting.

On the eastern side of the enclosure ditch, the recut (context 5044) gave conclusive evidence of an entrance through the ditch, in that it terminated in a clear butt end at the north. This recut had a trough-shaped profile with a depth of 0.9m, and was at least 2.5m wide. The fills showed a sequence of fairly even silting episodes. Context 5022, near the top, was remarkable in that it contained a large proportion of charcoal; this context, along with context 5025, contained 1st/2nd century Roman sherds.

The area immediately to the north of recut 5044 was taken up by a substantial expanse of cobbles (context 5002) that apparently represented a trackway passing through the entrance. Contexts 5003 and 5004 were patched repairs to the surface.

### **Phase 5.3**

This phase concerns three linear features that modified the enclosure system.

At the south of the trench a small ditch (context 5023) ran into the original enclosure ditch from the east, and had a V-shaped profile with a depth of 0.36m and a width of 0.8m. This small ditch is known from the geophysical survey and excavations at Crossgates II (CG99, Ditch 25) to run for a distance of 175m to the east.

At the entrance area, another small ditch (context 5049) cut through both the upper fill of the recut ditch terminal and the cobble surface on a curving south-east to north-west alignment. With a U-shaped profile it was c 1m in width and 0.35m deep.

Echoing the pattern in Trench 4, a ditch (context 5007) was traced running outside of and parallel to the main enclosure ditch. The profile was V-shaped with a depth of 0.7m and a width of 2.1m. There were no finds.

A small undated pit or posthole (context 5018) cut into the natural gravel to the east of ditch 5007.

#### Trench 6

Trench 6 was situated to the south-east of Trench 5, partly within the area lying outside the geophysical survey.

No archaeological features or deposits were present, a 0.3m deep layer of modern ploughsoil (context 6001) directly overlying the natural sands and gravels.

#### Trench 7

Trench 7 (Fig. 18) lay at the south-west of the site, and was intended to evaluate a strong linear anomaly, along with a series of weaker rectilinear or curvilinear responses from the geophysical survey. Four phases of activity (7.1-4) were provisionally recognised in this trench.

##### Phase 7.1

This phase concerned a north to south aligned linear feature (context 7018) that represents the strong geophysical anomaly. Ditch 7018 was V-shaped in profile, with a depth of 0.55m and a width of 2.25m. The single fill (context 7019) was a consistent deposit of gravelly sandy silt.

##### Phase 7.2

Three north-south aligned gullies (contexts 7017, 7023 and 7031/7033) made up the activity in this phase.

The gullies were V-shaped in profile and in the order of 0.7m wide 0.3m deep. The fills were sandy silts and sands.

### Phase 7.3

Two east-west gullies represented activity in this phase.

Towards the western end of the trench a 1.1m wide and 0.4m deep gully was excavated in two segments (contexts 7020 and 7027). This gully respected Phase 7.1 ditch 7018 in that it terminated before reaching the earlier ditch.

The other east-west gully, excavated in five segments (contexts 7007, 7014, 7022, 7032 and 7037) ran for a distance of c. 8.5m along the central part of the trench, clearly cutting through the north-south aligned gullies of the preceding phase. With a V-shaped profile, this gully was 0.5m deep and c. 0.7m wide. At its eastern end the terminal showed signs of having been recut, segment 7032 cutting into the fills of segment 7039. The fills were largely sterile, gravelly, silty sands.

### Phase 7.4

Phase 7.4 consisted of two parallel north-east south-west aligned linear features (contexts 7005 and 7029). These two features were similar in character, with dished profiles, c. 0.2m deep and 1.2m wide. The fills (contexts 7006 and 7030 respectively) were brown sandy silts. The character of these features suggests that they were furrows from a ridge and furrow field system.

### Unphased Features

Five discrete cut features (contexts 7002, 7004, 7010, 7012 and 7041) were located towards the eastern end of the trench. As these had no relationships other than that they cut into the natural, phasing was not possible.

There were two pits - context 7002, oval in plan, 1.46m x 0.84m in size and 0.32m deep. Context 7010 was circular, c. 1.90m in diameter and only 0.07m deep.

The remaining features were of posthole form, in the order of 0.3m in diameter and 0.12-0.25m deep.

### Trench 8

*This trench was removed from the evaluation as it lay outside the area to be developed.*

### Trench 9

Trench 9 (Figs 19-21) was situated immediately north of Trench 7, and was located to examine the intersection of the western and south-eastern enclosure compartments, along with an area of the western compartment's interior.

A series of natural features and deposits were located, and ditch segments excavated. Because of the apparent contemporary nature of the archaeological deposits, no phasing has been attempted for Trench 9.

Natural deposits varied greatly within the trench, from a pale silty sand at the north-east (the highest part of the site), through the reddish brown silty coarse sand of the former stream-bed / palaeochannel, to sandy, cobbly gravel at the southern and western limits of the trench.

At the junction of the silty sands and the cobbly gravel in the northern arm of the trench, two linear bands of cobbles (context 9021 and 9028) were at first seen as being archaeological in origin, but proved to be part of the natural drift.

The western ditch of the enclosure (context 9019) proved on excavation to be of V-shaped profile, 1.45m deep and 3m wide. The three fills (contexts 9020, 9023 and 9024) suggested that even in-filling had taken place after a rapid initial gravel silting. Finds were restricted to fragments of ceramic building material from context 9020 at the top of the ditch.

The intersection between the eastern and southern ditches forming the boundaries of the western compartment was examined in order to establish their interrelationships. Excavation suggested that the two ditches were contemporary, or at least filled at the same time.

The north-south ditch (contexts 9015 and 9027) on the east side of the enclosure compartment was of V-shaped profile, c. 1.1m deep and 2.5m wide. There were eight fills in ditch segment 9027 (contexts 9011-2, 9018, and 9031-6).

The southern ditch (context 9026) was also V-shaped in profile, but was more substantial at 4.3m wide and 1.3m deep. This segment had twelve fills (contexts 9012, 9033-4, 9036, 9044-9 and 9051). The fact that three fills (contexts 9033-4 and 9036) were common to both ditches illustrates that they were filling up at the same time.

Context 9012, situated at the top of the west-east ditch (context 9026) contained Roman pottery and ceramic building material, suggesting that it was becoming disused in the Roman period.

A linear feature (context 9006/9008) crossed the southern end of the trench on a north-south alignment. With a dish profile, this feature was c. 1m wide and between 0.12 and 0.30m in depth, its form and dimensions suggesting that it was a furrow.

The sequence was completed by a 0.2m deep layer of colluvial material (context 9002), topped by c. 0.3m of modern ploughsoil

## 9. Discussion

On the Crossgates II site (CG99) excavations explored Late Iron Age and Roman settlement activity within the eastern half of a square enclosure, along with associated agricultural enclosures. The evaluation west of Crab Lane (CL99), where excavations were not as exhaustive as those east of Crab Lane, illustrated the character, date and degree of preservation of deposits there. Taken together the results have advanced the understanding of a widespread landscape of prehistoric and Roman date. East of Crab Lane the complex pattern of linear geophysical anomalies has been provided with a provisional sequence.

As always, geophysical survey resulted in a raw pattern of anomalies that needed to be tested by excavation (Fig 2). Some of the linear anomalies turned out to be of natural origin (e.g. Ditches 6, 10 and 24), and differences in the natural subsoil also responsible for the square, house- or barrow-like anomalies in the vicinity of CL99 Trench 4. Some anomalies showed no physical traces on the ground (e.g. the northward continuation of Ditch 22 beyond Ditch 16). Lastly, the raw pattern presents a complex arrangement of anomalies of widely different dates, in this case from Late Iron Age to post medieval, that need to be disentangled into a meaningful order.

Additionally, areas not covered by the geophysical area were examined to ascertain whether archaeological deposits existed there. Two of these areas (Trench 6 and Trench 10) drew a blank, and the other (Trench 1) showed the presence of a linear feature which would appear to be the continuation of an anomaly shown by the geophysical survey.

The square enclosure, along with the rectangular, compartmented enclosure would seem to have been the earliest elements of the landscape examined in 1999. It is clear that the rectangular enclosure was in existence when the rectilinear fields extending through both sites were laid out, the crucial relationship being that Ditch 25 belonging to the rectilinear field system was later than the rectangular enclosure's boundary ditch.

Both enclosures showed clear evidence of settlement activity, although in the case of the rectangular enclosure, the evaluation suggested that this was confined to the north-eastern and south-eastern compartments. Perhaps the western compartment was reserved for stock-keeping or horticulture.



The excavated evidence points to a Late Iron Age date for the establishment of both the square enclosure and the rectangular enclosure. Sherds of this date were found toward the base of the rectangular enclosure ditch in Trench 4. Interior activity of this date was shown by pits and gullies in same area, and the probable malting kiln in Trench 5, which was archaeomagnetically dated to the late 1st century B.C. or early 1st century A.D. The ceramic evidence points to contemporary timber structures within the square enclosure.

Work on the ditches of the rectangular enclosure in Trench 5 showed that the ditch had been remodelled several times, specifically at the entrance area. The development of the compartments of the enclosure in relationship to each other remains unclear, although it seems that the western and south-eastern units were broadly contemporary.

Excavations at the entrance to the square enclosure showed that this too had been remodelled, pottery evidence suggesting that this took place in the 1st or 2nd century. This event was part of a process that saw the dismantling of post-hole buildings in the eastern part of the square enclosure, and the construction of the limestone building in the 1st or 2nd century. Postholes south of the limestone building point to the existence of a timber structure at that location as well, although as these have only been recorded in plan it is unclear whether these were contemporary with the limestone building or not.

Roman activity was also present in Trench 4 (CL99) where pit 4037 contained Roman material. A parallel ditch was probably dug around the rectangular enclosure boundary at the same time - an excavated segment of this ditch (context 4035) contained Roman material.

The recovery of Roman imbrex and tegula from the enclosure ditch in Trench 9 (CL99) is a further pointer to the complexity of the Roman landscape, the implication being that there is another Roman building in the general vicinity. (The roof of the limestone building was apparently not tiled.)

As stated above, the rectilinear field system was apparently laid out after the establishment of the two settlement enclosures, and presumably formed arable fields. The smaller, enclosures formed by Ditches 16, 18, 22 and 23 (Fig. 5) could well have been stock enclosures positioned close to the settlement within the square enclosure, such features as rounded corners and corner-entrances usually being associated with stock-management.

More complexity to the landscape is shown by the features in Trench 7 (CL99), where a boundary ditch formed the limits of an area of gullies and postholes. The relationship of this area of activity to the

rectangular enclosure is uncertain, as is the function of the small rectilinear ditched "plots" (perhaps these were horticultural in origin). The dating of this activity is also uncertain, though it pre-dates the rigg and furrow field system.

Later in the Roman period, Ditches 13 and 14 (Fig 5) cut across the earlier rectilinear field boundary. These two ditches may have formed a drove-way through the earlier arable fields. This seems to be an reflection of the pattern present along the northern and eastern edges of the rectangular enclosure, where a parallel ditch was laid out along the enclosure boundary - possibly creating another drove-way

Finally, the geophysical survey showed the presence of parallel north-south aligned linear anomalies across the site. Excavations on both sides of Crab Lane showed that these were the remains of pre-enclosure rigg and furrow cultivation associated with Seamer's 'Low Field', with at least one feature being an enclosure-era field ditch. The earlier ditch systems were covered by this field system, showing that they no longer formed part of the management of the landscape

## 10. **Recommendations**

Excavations east of Crab Lane were carried out in order to preserve archaeological remains by record so that the proposed housing development could take place without archaeological hindrance. The discovery of the Roman stone building, with settlement activity of different character and the entrance structure, is regarded as being of sufficient national importance to require additional consideration. At the time of writing, a number of different options are being considered, including the scheduling of the entirety of the square enclosure, and its incorporation into open space within the development.

Evaluation of the separate housing development area west of Crab Lane concentrated on the compartmented rectangular enclosure, and examined a number of linear geophysical anomalies. The conclusion is that the rectangular enclosure represents the most archaeologically significant area west of Crab Lane, and in particular the two eastern compartments which showed clear evidence of settlement activity. The settlement remains are additionally important because they straddle the period of the Late Iron Age, through the Roman conquest, to the 2nd century, and have the potential to give valuable information on this significant period. Aspects of this period - evidence for the use or disruption of native transport and settlement patterns by the Romans - have been identified as Research Questions requiring particular study in North Yorkshire.

Further archaeological work for large areas of the site, which would appear to contain little beyond linear features, could satisfactorily take the form of a series of Watching Briefs, upgrading to Recording Briefs if and where necessary.

It is highly probable that the part of the square enclosure which lies west of Crab Lane will form open space, this in effect means that there is little scope for setting aside additional large areas for open space within the development. The north-eastern and south-eastern compartments of the rectangular enclosure cover an area of c 60m x 90m. This forms a significant area of the development (c 12.5% of the total), and the proposed layout shows a large block of houses at this location. These two factors argue against the feasibility of preserving this part of the site *in situ*.

Clearly the settlement activity in the eastern half of the rectangular enclosure requires a specific archaeological approach, as it is not feasible to preserve the remains *in situ*. It is proposed that the north-eastern and south-eastern compartments of the enclosure should be archaeologically fully excavated in advance of development, so that the information is preserved by record. The record of the excavations should be published. This course of action will advance the understanding of a highly significant period - the Late Iron Age to Roman crossover - while allowing the development of a site that has been accepted into the local area plan for housing development.

## 11. Bibliography

- EH 1991 English Heritage Management of Archaeological Projects, 2nd ed.
- EH 1995 English Heritage A Strategy for the Care and Investigation of Finds
- EH 1997 English Heritage Archaeology Division Research Agenda. (Draft)
- ERARC 1989 Crossgates Farm, Seamer : Archaeological Sampling Excavations. (Unpublished).
- IFA 1998 Institute of Field Archaeologist Year Book and Directory of Members
- GSB 1988 Report on Geophysical Survey : Crossgates Farm, Seamer. Survey No. 1988/9. (Unpublished)

- GSB 1996 Report on Geophysical Survey Crossgates Farm, Seamer. Survey No. 1996/64. (Unpublished).
- McHugh, M. 1989 Soil Report: Crossgates Farm, Seamer, North Yorkshire. Ancient Monuments Laboratory Report 106/89. (Unpublished).
- Mackney, D. 1983 Soils of England and Wales Sheet 1: Northern England. Soil Survey of England and Wales.
- MAP 1998<sub>1</sub> Crossgates Fann, Seamer, North Yorkshire Proposed Residential Development Archaeological Evaluation (Unpublished).
- MAP 1998<sub>11</sub> Crab Lane, Seamer, North Yorkshire Geophysical Survey (Unpublished)

## APPENDIX 1

### Context Listing

#### Context No.    Description

#### CG99

##### Trench 1

1000	Machme cleared deposits - ploughsoil, colluvium & recent disturbance
1001	Deposit, 10YR 3/3 loamy, sandy silt - plough spread
1002	Deposit, 7 5YR 3/2 silty sand - robber trench fill
1003	Deposit, 5YR 3/2 silty clay
1004	Deposit, 10YR 3/4 clayey silt with limestone - building rubble spread
1005	Deposit, 10YR 4/4 silty clay with cobbles - cobbled surface
1006	Deposit, 10YR 3/4 slightly sandy silt - collapsed/plough spread surface
1007	Deposit, 10YR 4/4 silty clay with cobbles - cobbled surface
1008	Cut Robber trench
1009	Structure, limestone revetment for cobble surface
1010	Structure, limestone revetment for cobble surface
1011	Deposit, 7 5YR 4/4 silty clay - ?post packing
1012	Deposit, 7 5YR 4/4 silty clay - ?post packing
1013	Deposit, 10YR 3/6 silty clay
1014	Deposit, 10YR 3/6 silty clay - building debris
1015	Deposit, 10YR 4/4 silty clay - building debris
1016	Deposit, 7 5YR ?? clay - clay surface
1017	Deposit, 10YR 5/6 silty clay grave - ?earlier surface
1018	Cut ?Post pad
1019	Structure Cobbled surface
1020	Deposit, 10YR 3/4 silty clay - post pad for 1039
1021	Deposit, 10YR 3/4 silty clay - post pad
1022	Deposit, 10YR 3/3 clay silt - pit fill
1023	Deposit, 7 5YR 3/3 slightly sandy clay - fill of posthole 1032
1024	Deposit, 10YR 3/2 sandy silt with limestone - limestone spread
1025	Deposit, 10YR 3/2-3/3 sandy silt - fill of posthole 1028
1026	Deposit, 7 5YR 4/3 silty clay with limestone rubble - building debris
1027	Deposit, 7 5YR 4/3 silty clay with cobbles - building debris
1028	Cut Posthole
1029	Deposit, 10YR 4/3 silty sand - ?fill of furrow
1030	Deposit, 10YR 5/6 clay - ?post pad
1031	Deposit, 10YR 3/3 sandy silt - ?posthole fill
1032	Cut. Pot setting
1033	Deposit, 7.5YR 6/6 silty clay - ?post pad
1034	Deposit, 10YR 3/2 clay silt - fill of posthole 1035
1035	Cut. Posthole
1036	Deposit, 10YR 3/4 clayey silt - fill of posthole 1037
1037	Cut Posthole
1038	Deposit, 10YR 3/2 clay silt - ?postpipe in posthole 1052
1039	Cut Posthole.
1040	Cut Posthole
1041	Deposit, 10YR 4/3 clay - sealing layer for posthole 1040
1042	Deposit, 10YR 3/1 slightly silty clay - fill of posthole 1040
1043	Deposit, 10YR 4/6 clay
1044	Deposit, 10YR 4/3 clay silt - fill of pit 1063
1045	Cut. Pit
1046	Not used
1047	Not used

1048 Deposit 10YR 3/2 sandy silt with cobbles and limestone - fill of posthole 1066  
 1049 Not used  
 1050 Not used  
 1051 Deposit, 10YR 4/6 slightly silty clay - ?post packing in posthole 1052  
 1052 Cut Posthole  
 1053 Deposit, 10YR 3/2 clay silt - fill of posthole 1054  
 1054 Cut Posthole  
 1055 Deposit, 10YR 4/3 sandy clay with limestone - ?backfill  
 1056 Cut Pit  
 1057 Deposit, 10YR 3/3 silty clay - fill of postpipe 1058  
 1058 Cut postpipe  
 1059 Deposit, 10YR 4/2 clayey silt - fill posthole 1060  
 1060 Cut Posthole  
 1061 Deposit, 10YR 3/3 silty clay - fill of Ditch 19  
 1062 Deposit, 7 5YR 4/4 silty clay - fill of pit 1063  
 1063 Cut Pit  
 1064 Deposit, 10YR 4/3 silty clay - fill of posthole 1065  
 1065 Cut Posthole  
 1066 Cut Posthole  
 1067 Deposit, 10YR 3/1 sandy silt - fill of 1078  
 1068 Deposit, 10YR 3/3 sandy silt - fill of ditch 1069  
 1069 Cut Segment of Ditch 14  
 1070 Deposit, 10YR 3/3 sandy silt - fill of gully 1071  
 1071 Cut Gully - Ditch 15  
 1072 Deposit, 10YR 3/3 sandy silt - fill of 1073  
 1073 Cut Gully - Ditch 13  
 1074 Deposit, 10YR 3/3 sandy silt - fill of gully 1075  
 1075 Cut Segment of Ditch 15  
 1076 Deposit, 10YR 3/2 slightly clayey silt - fill of posthole 1077  
 1077 Cut Posthole  
 1078 Cut Pit  
 1079 Deposit, 10YR 4/3 silty clay - fill of posthole 1065  
 1080 Deposit, 5YR 4/2 silty clay - fill of 1081  
 1081 Cut Post pipe  
 1082 Deposit, 5YR 4/2 silty clay - ?deliberate backfilling of postpipe 1081  
 1083 Deposit, 10YR 3/3 sandy silt - fill of ditch segment 1086  
 1084 Deposit, 10YR 3/3 sandy silt - fill of ditch segment 1086  
 1085 Deposit, 7 5YR 3/3 silty sand - fill of ditch segment 1086  
 1086 Cut Segment of Ditch 13 at junction with Ditch 12  
 1087 Deposit, 10YR 3/3 silty sand - fill of segment 1088  
 1088 Cut Segment of Ditch 12  
 1089 Deposit, 7 5YR 3/3 sandy silt - fill of segment 1090  
 1090 Cut Ditch 12  
 1091 Deposit, 7.5YR 3/3 silty sand - fill of gully segment 1092  
 1092 Cut Segment at junction of Ditch 12, 1092 part of Ditch 14  
 1093 Deposit, 10YR 4/4 sandy clay - fill of pit 1094  
 1094 Cut Pit  
 1095 Deposit, 10YR 3/3 sandy silt - fill of segment 1096  
 1096 Cut Segment in Ditch 12  
 1097 Deposit, 10YR 3/3 sandy silt - fill of segment 1098  
 1098 Cut Segment of Ditch 13  
 1099 Deposit, 10YR 3/3 slightly clayey silt - fill of 1100  
 1100 Cut Posthole  
 1101 Deposit, 7 5YR 4/3 silty clay - posthole packing for 1102  
 1102 Cut Posthole  
 1103 Deposit, 10YR 3/3 silty clay - fill of pit 1111  
 1104 Deposit, 10YR 3/2 sandy silt - fill of posthole 1105  
 1105 Cut Posthole

1106 Deposit, 7 5YR 3/4 silty sand - fill of ditch 1108  
1107 Deposit, 7 5YR 3/3 sandy silt - fill of ditch 1108  
1108 Cut Segment of Ditch 17  
1109 Deposit, 10YR 3/3 silty sand - fill of ditch 1110  
1110 Cut Segment of Ditch 12 at junction with Ditch 17  
1111 Cut Pit  
1112 Deposit, 7.5YR 3/3 sandy clay - fill of pit 1188  
1113 Deposit, 7.5YR 3/3 silty clay - fill of pit 1114  
1114 Cut Pit  
1115 Deposit, 5YR 3/3 clay silt - fill of pit 1116  
1116 Cut Pit  
1117 Deposit, 7 5YR 4/3 clay silt - fill of 1056  
1118 Deposit, 10YR 3/3 sandy silt with cobbles - cobble spread  
1119 Deposit, 10YR 3/2 clay sih - fill of pit 1122  
1120 Cut Segment at junction of Ditch 22 and Ditch 18  
1121 Cut Segment at junction of Ditch 22 and Ditch 18  
1122 Cut Pit  
1123 Deposit, 7 5YR 4/3 sandy clay - fill of ditch 1120  
1124 Deposit, 7 5YR 4/3 sandy clay - fill of ditch 1120  
1125 Deposit, 10YR 4/3 silty sandy clay - fill of ditch 1120  
1126 Deposit, 10YR 4/3 sandy clay - fill of ditch 1121  
1127 Deposit, 7 5YR 3/2 sandy silt - fill of ditch 1129/1130  
1128 Deposit, 10YR 3/4 sandy silt - fill of ditch 1129/1130  
1129 Cut Segment at junction of Ditch 16 and Ditch 23  
1130 Cut Segment at junction of Ditch 23 and Ditch 16  
1131 Deposit, 7 5YR 3/3 with cobbles - cobble spread  
1132 Cut ?Foundation/stabilising feature for kerb 1009  
1133 Deposit, 7 5YR 3/3 silty clay  
1134 Deposit, 10YR 3/2 sandy clay - fill of 1135  
1135 Cut Shallow depression  
1136 Deposit 10YR 3/2 clay sih - fill of 1163  
1137 Deposit, limestone blocks  
1138 Cut Pothole  
1139 Deposit of cobbles - post setting  
1140 Deposit of cobbles - post setting  
1141 Deposit, 7 5YR 3/4 silty sand - fill of ditch 1142  
1142 Cut Segment of Ditch 20 at junction with Ditch 18  
1143 Deposit 10YR 3/3 silty sand - fill of segment 1144  
1144 Cut Segment at junction of ditch with Ditch 21  
1145 Deposit, 10YR 3/4 silty sand - backfill of posthole 1147  
1146 Deposit, 10YR 3/4 silty sand - fill of posthole 1147  
1147 Cut posthole  
1148 Deposit, 10YR 3/4 silty sand - fill of furrow 1149  
1149 Cut Furrow  
1150 Deposit, 10YR 3/3 silty sand - fill of ditch 1151  
1151 Cut Segment of Ditch 21 at junction with Ditch 20  
1152 Structure Capping for pit 1158  
1153 Deposit, 10YR 3/3 slightly clayey silty sand - fill of posthole 1154  
1154 Cut Posthole  
1155 Deposit, 7 5YR 6/8 silty sand - dump m pit 1163  
1156 Deposit, 10YR 3/2 clay silt - dump  
1157 Child's skeleton  
1158 Deposit, 10YR 3/1 slightly clayey sandy silt - fill of pit 1159  
1159 Cut Pit  
1160 Deposit, 10YR 3/2 slightly sandy clayey silt - fill of shallow depression 1135  
1161 Not used  
1162 Deposit, 2 5YR 4/8 clay - ?kiln lining  
1163 Cut Pit/kiln

1164 Cut Ditch 1  
 1165 Deposit, 10YR 3/2 silty clay - fill of posthole 1166  
 1166 Cut Posthole  
 1167 Deposit, 10YR 3/2 sandy silt with limestone rubble - subsidence into Ditch 1 from 1009  
 1168 Deposit, 10YR 3/4 sandy silt with gravel and cobbles - trample/disturbed natural  
 1169 Deposit, 10YR 2/2 sandy silt - fill of Ditch 1  
 1170 Cut Foundation trench for kerb 1010  
 1171 Deposit of cobbles  
 1172 Deposit, 2 5YR 6/8 clay - ?kiln lining  
 1173 Deposit, 10YR 4/2 sandy clay - ?fill of 1163  
 1174 Deposit, 10YR 3/3 sandy silt - limestone dump in 1169  
 1175 Cut Ditch 1 terminal  
 1176 Deposit of cobbles and limestone - ?post setting  
 1177 Deposit, 10YR 4/2 sandy clay - fill of pit 1179  
 1178 Deposit, 7 5YR 4/3 clay silt - fill of 1179  
 1179 Cut Pit  
 1180 Deposit of cobbles - irregular cobble surface  
 1181 Deposit, 10YR 4/2 clay and silty clay - fill of 1182  
 1182 Cut Rectangular feature  
 1183 Deposit, cluster of limestone fragments  
 1184 Deposit, 10YR 3/2 clayey sand - fill of feature 1185  
 1185 Cut Linear feature  
 1186 Deposit, 7 5YR 3/3 slightly sandy clay - ?surface  
 1187 Deposit, 2 5YR 3/2 clay - fill of pit 1188  
 1188 Cut Pit  
 1189 Deposit, 10YR 4/3 clay silt - fill of pit 1191  
 1190 Deposit, 7 5YR 4/3 clay - fill of pit 1191  
 1191 Cut Pit  
 1192 Deposit, 7 5YR 3/2 sandy clay - fill of pit 1193  
 1193 Cut Pit  
 1194 Cut Ditch 1  
 1195 Deposit, 10YR 3/3 silty clay - fill of ditch 1194  
 1196 Deposit, 10YR 3/3 silty clay - fill of ditch 1194  
 1197 Deposit, 10YR 3/1 silty clay - fill of ditch 1194

#### Trench 2

2000 Deposit, 10YR 3/2 sandy loam - modern ploughsoil  
 2001 Deposit, 10YR 3/4 sandy silt - hillwash  
 2002 Deposit, 10YR 3/3 sandy silt - fill of 2003  
 2003 Cut Furrow

#### Trench 3

3000 Deposit, 10YR 3/2 sandy loam & gravel - Machine removed deposits in Trench 3  
 3001 Deposit, 7 5YR 3/4 fine silty sand - ?fill of 3004  
 3002 Deposit, 10YR 3/4 silty sand - fill of 3004  
 3003 Deposit, 10YR 3/6 silty sand - fill of 3004  
 3004 Cut Post medieval/medieval boundary ditch  
 3005 Deposit, 10YR 3/3 fine sandy silt - fill of 3007  
 3006 Deposit, 10YR 4/6 silty sand - fill of 3007  
 3007 Cut Segment at junction of Ditch 24 and Ditch 17  
 3008 Deposit, 7 5YR 3/4 fine silty sand - fill of 3011  
 3009 Deposit, 10YR 3/4 silty sand - fill of 3011  
 3010 Deposit, 10YR 3/6 silty sand - fill of ?3011  
 3011 Cut Segment at junction of Ditch 25 and Ditch 17  
 3012 Deposit, 10YR 3/4 silty sand - fill of 3013  
 3013 Cut Segment at junction of Ditch 25 and Ditch 17  
 3014 Deposit, 10YR 3/4 silty sand - fill of 3015  
 3015 Cut Segment at junction of Ditch 25 and Ditch 24



3016 Deposit, 10YR 4/6 silty sand - fill of 3017  
3017 Cut Segment at junction of Ditch 24 and Ditch 25

**Trench 4**

4000 Deposit, 10YR 3/2 sandy loam - modern topsoil  
4001 Deposit, 10YR 3/4 sandy silt - hillwash  
4002 Deposit, silty sand - fill of 4005  
4003 Deposit, sandy silt - fill of 4005  
4004 Deposit, slightly sandy silt - fill of 4005  
4005 Cut Field ditch  
4006 Deposit, sandy silt - fill of 4008  
4007 Deposit, slightly sandy silt - fill of 4008  
4008 Cut Segment at junction of Ditch 9 and 4  
4009 Deposit, clayey sand - fill of  
4010 Cut Field boundary ditch  
4011 Cut Field boundary ditch  
4012 Deposit, 10YR 5/4 sandy silt - natural deposit  
4013 Deposit, 10YR 4/3 sandy silt - natural deposit  
4014 Deposit, gritty sand - fill of 4015/4016  
4015 Cut Ditch 4  
4016 Cut Ditch 5

**Trench 5**

5000 Deposit, sandy silt - topsoil  
5001 Deposit, sandy silt - subsoil  
5002 Deposit, sandy silt - natural  
5003 Deposit, silty sand - ?natural  
5004 Natural feature  
5005 Natural deposit  
5006 Natural feature  
5007 Cut Drainage gully  
5008 Deposit, silty sand - fill of 5009  
5009 Cut Drainage gully = 5007

CL99	Trench 1
1001	Deposit
1002	Deposit Friable silty sand Upper of NE - SW aligned ditch within Tr 1 Fairly loose and stony
1003	Deposit Loose mixed sand and silt Primary fill - NE - SW aligned ditch - within Tr 1 A loose sandy /stony deposit-no finds to indicate a date to the feature
1004	Cut NE - SW aligned ditch identified within Tr 1 At southern end of trench the ditch turns to the West
1005	Deposit Friable sandy, silt Top fill of irregular linear feature - SW corner of Tr 1
1006	Deposit Friable coarse sand and silt Secondary fill of irregular shaped feature containing some large Limestone Fragments
1007	Cut Irregular shaped feature (linear curvilinear) situated at SW end of Tr 1 - also partly obscured by trench edge No artefacts from 2 fills 1005 and 1006 to indicate any date Both fills also no of Charcoal etc Ditch 1004 lies to the West of this feature
	Trench 2
2001	Deposit Mid grey/brown Friable sandy, silt Topsoil
2002	Deposit 7.5 YR 3/4 Friable Silty sand Natural stream bed into which features have cut
2003	Cut 7.5 YR 3/4 Friable silty sand NW-SE aligned ditch or furrow
2004	Cut NW-SE aligned ditch Probably field boundary/furrow
2005	Cut 7.5 YR 3/3 Friable silty sand containing small pebbles
2006	Cut Possible furrow
2007	Cut 2.5 YR 2.5/3 Friable sand Natural sand
2008	Cut Cut into natural as change was very difficult to see
2009	Cut 7.5 YR 3/4 Friable silty sand Probably a plough furrow This feature begins as a narrow feature as E end widens out at West edge - so probably represents a plough furrow
2010	Cut Plough furrow cut
2011	Cut 7.5 YR 3/4 Friable Silty sand Possible agricultural feature - may also be surface scar filled by plough residue
2012	Cut Associated with 2010 (Presumably part of med ploughing)
2013	Deposit 7.5 YR 3/4 Very light brown Friable compact fine silt Fill of field boundary ditch
2014	Cut Field boundary ditch cut
2015	Deposit Tumble of irregular cobbles into a field ditch cut-possibly ploughed from natural nearby
2016	Deposit 10 YR 3/2 Very dark grey Friable and slightly plastic peaty silt, very small amount of clay
2017	Deposit 7.5 YR 5/4 (Lighter than natural) Friable sandy silt Lightly cut ploughed area possibly slightly into natural See on plan as small linear feature
2018	Deposit 10 YR 3/3 Sandy silt Linear feature
2019	Cut Lightly cut plough V shallow, seen on plan as Linear feature
2020	Cut 7.5 YR 3/4 Dark brown Friable silty sand Shallow scar from plough furrow
2021	Cut May represent plough furrow scar
	Trench 4
4000	Deposit 10 YR 3/2 Mod Compact, sandy silt Modern plough soil
4001	Deposit 7.5 YR 3/3 Friable sandy silt Hill wash deposit from old cultivation

- 4002 Deposit 10 YR 3/3 Sandy silt Iron age, pit fill
- 4003 Cut
- 4004 Deposit 7 5 YR 3/3 Friable, sandy silt Pit fill, full extent of which is obscured by trench edge Function of pit uncertain
- 4005 Cut Moderate sized cut for a pit - function of which is not clear but may be a post hole
- 4006 Deposit 7 5 3/2 Friable sandy sih single fill of circular pit 4007, which contains an abundance of Limestone and other stone inclusions Some stones appear shattered- possible heat affected but lack/scarcity of Charcoal suggests no in site burning within pit Pottery may be pre Roman
- 4007 Deposit Near circular pit within trench 4, containing stone rich fill 4006 Finds of pottery suggests a pre-Roman (Iron Age) date Function of pit is unclear-fill 4006 contains heat affected stones but very little Charcoal
- 4008 Deposit 5YR 3/2 - Dark reddish brown Friable coarse sand and Silt Upper fill of large sub-circular pit situated in E-W stretch, southern end of Tr 4 Large stones visible in plan at surface of fill-similar to 4006 (upper fill of smaller pit) -situated 1-3m to the East of this feature
- 4009 Deposit 5YR 3/3 Friable sandy sih Secondary fill of pit 4011 Lies below paler 4008, and above stony deposit 4010
- 4010 Deposit 5YR 3/3 Friable coarse sand and silt Primary fill of large sub-circular pit 4011-consisting of a dump of large and medium sized stones within sand and silt Some stones may have been heat affected
- 4011 Cut Large sub-circular pit - containing very large quantity of stones (stone dump) in primary fill 4010 Majority of finds recovered from upper fill 4008 - 1st pot sherds - black calcite gritty material/fabric Function of pit not entirely clear
- 4012 Cut 5YR 3/3 Friable sandy silt Single fill of sub circular pit 4013-which cuts upper fill, 4008, of larger pit 4011 Few sherds of pt recovered from this deposit-dark gritty fabric
- 4013 Cut Sub-circular pit with steep vertical sides (North edge vertical, South steep), with a fairly flat base This feature cuts postdates larger pit 4011
- 4014 Deposit 7 5 YR 3/3 Friable, sandy silt Similar to hillwash 4001
- 4015 Deposit 10 YR 3/3 Friable fine sandy silt Ditch fill
- 4016 Deposit 7 5 YR 3/4 Friable, silty medium sand Ditch fill - must have entered ditch from N
- 4017 Deposit 10 YR 3/2 Mod, compact SL Clay silt
- 4018 Deposit 10 YR 3/3 Compact clay sih Stony ditch fill
- 4019 Deposit 7 5 YR 3/2 Highly compact clay sih
- 4020 Deposit 10 YR 2/2 Friable SL sandy silt Caused by slumping of top edge - or is this natural, part of stream bed shown by confirmed evaluation
- 4021 Deposit 10 YR 3/2 Mod compact clay sih Slumping of edge
- 4022 Cut Enclosure ditch
- 4023 Deposit 5YR 3/4 Friable sandy silt Upper fill identified in excavated segment of the butt - ended gully/ditch 2025
- 4024 Deposit 5 YR 3/4 Friable sandy silt Upper fill of E-W aligned ditch contains a quantity of pottery sherds
- 4025 Cut E-W aligned gully which butt-ends to East-this segment excavated at butt - end
- 4026 Cut E-W aligned ditch - this segment excavated at intersection with N-S ditch 4028 - which is wider and he later of the two features
- 4027 Deposit 10 YR 4/4 Friable sandy sih Upper-fill of N-S aligned ditch 4028 identified during excavating of L shaped segment at intersection with earlier ditch
- 4028 Deposit N-S aligned ditch which is later than intersecting E-W ditch 4026 and earlier than intersecting pit 4037
- 4029 Deposit 10 YR 5/4 Friable sandy silt Primary fill of ditch segment 4025, basically gravely sand-re-deposited natural
- 4030 Deposit 7 5 YR 3/2 Friable Silty sand

- 4031 Deposit 10 YR 3/3 Friable silty clay Remains of track way surfacing, this seems likely given 4031's position between ditches 4022 and 4035
- 4032 Deposit 10 YR Mod compact sandy silt Base of Hillwash deposit (similar to 4001)
- 4033 Deposit 10 YR 3/3 Mod Compact sandy silt Ditch fill
- 4034 Deposit 10 YR 3/2 Compact silty sand Lower ditch fill
- 4035 Cut Secondary boundary ditch
- 4036 Deposit 10 YR 4/3 Mod Friable sandy silt Primary fill of pit 4037 A Gravely deposit containing c 3 sherds of pot and animal bone Basically seems to be redeposited natural and sandy gravel deposit with little to no organic content
- 4037 Deposit Pit fill within Trench 4 partly obscured by Northern baulk Cuts earlier ditch 4028 - segment excavated at interpretation Function of feature unclear-same pottery recovered (roman or earlier) Full dimensions and shape in plan not seen
- 4038 Deposit 10 YR 4/2 Friable medium sandy silt Remains of post-packing from a dismantled post setting
- 4039 Deposit Same as 4023 Primary fill in ditch segment 4026 excavated at interpretation with later and wider N side 4028
- 4040 Deposit 10YR 5/6 Friable coarse sand and silt Primary fill within ditch segment 4028-basically redeposited sand and gravel natural with few larger water worn stones Identified in L shaped segment, intersection with E width 4026 and pit 4037
- 4041 Deposit 10 YR Compact fine sandy silt Post hole fill
- 4042 Cut Post hole cut-but seems to have been dismantled as no post pipe present
- 4043 Deposit 10 YR 4/2 Friable sandy silt Upper most fill of sub-circular pit/post-hole situated in E-W Southern stretch of Tr 4 towards the Eastern end Situated in close proximity to two other features to the South and SE
- 4044 Deposit 10 YR 5/4 Coarse sand, stones and gravel Primary fill of pit/post hole 4045- basically a pale sand and gravel redeposited natural
- 4045 Deposit One of the three sub-circular features situated within close proximity at Southern end of Tr 4 This feature may represent a large post hole stone within upper fill 4044 may indicate post packing
- 4046 Deposit 5YR 3/2 Friable sandy silty clay Uppermost fill oval shaped pit 4048, form which a few pottery sherds have been recovered
- 4047 Deposit 7 5 YR 3/2 Plastic when moist, sandy clay Secondary fill of oval shaped pit 4048 No finds recovered from this deposit
- 4048 Deposit Oval shaped pit which lies immediately to the West of larger sub-circular pit 4011, pit 4007 of a similar size to 4048 lies immediately East of 4011, concentration of pits in this area
- 4049 Deposit 10 YR 4/2 Friable silty sand Ditch fill
- 4050 Deposit 10 YR 3/3 Friable fine silty sand Initial fill if ditch from erosion of gravel edges - seems to have filled from both sides
- 4051 Cut Ditch cut
- 4052 Deposit 7 5 YR 3/2 Plastic when moist Sandy clay Primary fill of pit 4048 - a dump of mostly water worn stones which may be natural Similar deposit to 4010 seen in larger pit 4011 immediately to the end
- 4053 Deposit 10 YR 4/2 Friable silty sand Ditch fill
- 4054 Cut Ditch cut - no Rel with gully 4056 could be detected-are they contemporary
- 4055 Deposit 10 YR 4/2 Friable silty sand Gully fill
- 4056 Cut Drainage feeder into ditch 4054, contemporary or later than big ditch to the North
- 4057 Deposit 10 YR 4/3 Friable sandy silt Upper fill of post hole - contains evidence of post packing Clear to see in section - not clear in plan
- 4058 Deposit 10YR 3/3 Friable coarse sand and clay Slumping fill on Northern side of part excavated post hole 4060
- 4059 Deposit 10YR 4/4 Friable sandy silt

- 4060 Post hole Post - hole present at the intersection of ditch 4062 and pit 4007, seems to post date both these features
- 4061 Deposit See 4024 - same as Upper fill of narrow E-W ditch- the same as deposits 4024 and 4023 excavated in separate segments to the East
- 4062 Cut E-W ditch- same as 4026 and 4029 In this segment apparent that post hole 4060 post dates this feature - also cuts pit 4007, upper fill 4006
- 4063 Deposit 10YR 4/2 Fine sandy sih
- 4064 Cut Gully cut
- 4065 Deposit 10YR 4/2 Friable medium sandy silt Gully fill
- 4066 Cut Gully cut - totally undated
- 4067 Deposit 10 YR 4/2 Mod, compact sandy sih Pit fill
- 4068 Cut Could be dismantled post hole-no post pipe present
- 4069 Deposit 10 YR 4/3 Friable medium sand or silt Primary fill, of irregular - cone shaped pit feature
- 4070 Deposit opening feature towards W end of Trench 4 - one of a number of pits in this area Not enough evidence to interpret function of feature-finds from fill 4069 include several pot sherds and 3 flints
- 4071 Deposit 10 YR 4/3 Friable sandy sih Stony upper fill of tapering pit/feature 4070
- 4072 Deposit 10 YR Friable silty, sand Gully fill
- 4073 Cut Runs parallel to 4004 to North-Associated
- 4074 Deposit 10 YR 4/2 Mod friable sandy sih Gully fill
- 4075 Cut Gully cut terminal
- 4076 Deposit 7 5 YR 3/3 Friable sandy silt Upper fill of sub-circular oval shaped feature, situated at Western end of Tr 4
- 4077 Deposit 7 5 YR 3/2 Friable fine sand and silt Lower fill of oval shaped pit 4078 - contains flint, probably worked Occupies bowl shaped depression at base of pit
- 4078 Deposit Oval shaped pit at W end of Tr 4 Contains little to aid interpretation Remains of possible clay lining present in fill 4079
- 4079 Deposit 10 YR 5/1 Plastic, clay Thin band/line of gray clay present along Eastern cut of Pit 4078 function unclear
- 4080 Deposit 10 YR 4/6 Friable, fine sandy silt Fill of 4078 - present on S side of feature contains no finds and few inclusions
- 4081 Deposit 10YR 4/3 Friable sandy silt Upper fill of sub - circular pit, partly obscured by Northern limit of excavation
- 4082 Deposit Sub circular pit, not quite fully visible - part obscured by limit of trench Un excavated but a number of pot sherds recovered from fill 4081
- 4083 Deposit 10 YR 3/3 Friable sandy sih
- 4084 Cut Irregular shaped feature only partly visible and obscured by S limit of trench Very difficult to follow edges during excavation reliability not good Trench 5
- 5000 Deposit 10 YR 3/2 - 3/3 Friable sandy loam Plough soil
- 5001 Deposit 10 YR 3/4 Friable silty loam Sub soil
- 5002 Deposit 10 YR 3/4 Compact sandy sih and a little clay
- 5003 Deposit 7 5 YR 4/4 Brown Compact silty clay Patch of L S surface added to cobble gate surface 5002
- 5004 Deposit 7 5 YR 5/4 Brown Firm slighdy silty clay Patch in cobble layer 5002, part of gate structure
- 5005 Deposit 10 YR 2/2 Very dark brown Friable silty sand and (large cobble stones)
- 5006 Deposit 10 YR 2/2 Very dark brown Friable silty sand/gravel Ditch fill
- 5007 Cut Ditch cut
- 5008 Deposit 7 5 YR 4/2 Friable silty clay Possibly ridge and furrow, natural
- 5009 Deposit Kiln flue
- 5010 Deposit 10 5 YR /3/2 Friable silty clay
- 5011 Deposit 10R/4/8 - 2 5 Y 5/8 - 10YR /3/2 Loose silty clay Collapsed flue

- debris
- 5012 Cut Possible plough furrow or a small water course judging by erosion pattern of pebbles - ie Very rounded, hardly any that are angular
- 5013 deposit 10YR 2 5/2 Friable Silty sand
- 5014 Deposit 10YR 5/4 - 4/4 Yellowish brown/Dark brown
- 5015 Deposit 7 5YR /3/3 Loose silty Demolition Debris - Fine P T fill
- 5016 Cut Stoke hole/Fire pit for flue 5009
- 5017 Deposit 10YR 3/2, very dark grey/brown Friable sandy silty Fill of ditch segment, very dark and rich, ie loamy, perhaps raking out from corn dryer 5009
- 5018 Cut Possible post hole - no dating
- 5019 Deposit 5 YR /3/2 Loose silty sand Post hole fill
- 5020 Deposit 10YR 3/2, very dark grayish brown Very slightly plastic, clayey silty loam's Fill of post hole or pit dug into terminal of large enclosure ditch Fill rather domestic in character
- 5021 Cut Cut of large Posthole, or rubbish pit in terminal of large enclosure ditch
- 5022 Deposit Friable sandy silt Fill of ditch terminal, rich Charcoal nature suggests originated in corn dryer, to West
- 5023 Cut Possible drainage
- 5024 Deposit 10 YR 3/3 Friable silty sand and large gravel Ditch fill
- 5025 Deposit 10 YR 3/3 Dark brown Friable silty sand Lower fill of ditch terminal-devised from corn dryer or domestic context (pot and bone) Increasing amount of cobbles very prior in character
- 5026 Deposit 5YR 3/2 Loose silty sand
- 5027 Cut Pit cut lined with clay - purpose unknown
- 5028 Cut Possible livestock enclosure ditch or drainage channel
- 5029 Deposit 7 5 YR 3/2 dark brown Friable silty clay, gravel and large cobbles Ditch fill
- 5030 Deposit 10 YR 3/3 Dark brown Friable sandy silt Possible earliest layer in Re-cut ditch, back filled with rich dark material-may have formed a ditch base
- 5031 Deposit 2 5Y 4/3 7 5 YR 4/3 Soft silty clay Relining of pit 5027
- 5032 Deposit 7 5YR 3/2 Dark brown Friable silty sand Ditch fill
- 5033 Deposit 10 YR 4/4 - 4/6 Dark yellow brown Friable sandy silt Extensive deposit of material likely to be washed into ditch and representative of a period of natural silting
- 5034 Deposit 7 5 YR 3/2 dark brown Friable silty sand Ditch fill
- 5035 Deposit 10YR 2/2 Loose silty clay Possible post hole fill
- 5036 Cut Possible post hole
- 5037 Deposit 10 YR 5/6, yellowish brown Compact silty clay Deposit of natural silting in base of ditch segment 5044, clayey nature suggests long period of deposition by water
- 5038 Deposit 10 YR 3/2 very dark grey/brown Slightly compact clayey silty sand Early fill of ditch 5044 quite organic, may be I A /R B domestic dumping
- 5039 Deposit 10 YR 3/2 Loose silty clay Possible redeposited Kiln 5009 waste
- 5040 Deposit 2 5Y 4/5 2 5 YR /3/8 soft clay Pit lining possibly for retaining a liquid within 5027 (5027 is cut into porous natural sands and gravel )
- 5041 Deposit 10 YR 4/4 Dark yellow brown Friable coarse sandy silt Natural silting in base of ditch
- 5042 Deposit 10 YR 3/4 Dark yellow/brown Friable coarse sandy silt Primary fill of ditch re-cut 5044
- 5043 Deposit 10 YR 4/2 Dark greyish brown Friable coarse sandy silt Fill of early ditch below 5044, possibly prior in date
- 5044 Cut Cut of large-shallow R B ditch- RE-cutting line of early ditch with cobble surface to North-later pit/Posthole cut into upper fills Back filled with domestic rubbish
- 5045 Cut Cut of earlier late pre-Roman Iron Age ditch
- 5046 Cut Possible Livestock enclosure and/or drainage channel
- 5047 Deposit 2 5Y N2/ O black friable silty sand and Charcoal Possible scattering

- of burnt material or could just be charcoal that has been brought down through a rabbit (or other small mammal) hole by warm action
- 5048 Deposit 10 YR 3/3 dark brown Friable silty sand and large cobbles Possible lining of cattle enclosure/drainage channel
- 5049 Cut Late ditch - seems to follow 5044 to SW but diverges to curve NNE - crosses Eastern edge of 5044
- 5050 Deposit 10 YR 3/4 Friable sandy silt Deposit, occupation debris
- 5051 Deposit 10 YR 4/4 Friable silty sand Ditch fill suggests gradual silting, perhaps from the Northern side, where a bank or upcast would have been likely Gravel quite natural in feel
- 5052 Deposit 10YR 4/6 Friable sandy silt Possibly primary fill of large NE-SW ditch Very fine Homogeneous deposit suggests gradual silting
- 5053 Deposit 10 YR 4/4 Compact sandy silt Possibly primary fill of ditch 5046 High gravel component suggests 5053 was from the edge of the cut
- 5054 Cut Cut for clay-lined flue  
Trench 6
- 6001 Deposit 10 YR /3/3 Loose silty clay
- 6002 Deposit 7 5 YR 4/3 Loose sandy silt Natural sand/Gravel deposit  
Trench 7
- 7000 Deposit Topsoil
- 7001 Deposit 7 5 YR 3/4 Friable sandy silt Single sandy silt fill of shallow sub-circular feature
- 7002 Deposit Sub- circular feature, towards Eastern end of Tr 7 Little to suggest function of feature No finds to indicate date Four fragments of Charcoal present in fill 7001 No finds from Primary fill 7043
- 7003 Deposit 7 5 YR 4/6 Friable fine sand and silt Single fill of sub-circular post hole-some stone present but not very convincing as post packing Shallow depth may suggest plough truncation
- 7004 Deposit Sub-circular post hole, shallow depth may suggest plough truncation Little evidence of any substantial past
- 7005 Cut
- 7006 Deposit Possible water cause due to non angular erosion of small pebbles present
- 7007 Cut Possible drainage or partition of some kind
- 7008
- 7009 Deposit 10YR 4/4 Friable sandy silt Stony deposit set into what appears to be linear butt-ended feature, 7010 Resembles butt-end of ditch, but very shallow May be plough transacted
- 7010 Cut L-shaped shallow feature filled with stony deposit
- 7011 Deposit 10 YR 4/4 Friable sandy silt Fairly shallow post hole filled with slightly stony deposit, little evidence of any post packing
- 7012 Deposit Sub-circular post hole, similar feature, 7004 lies just to the East, slightly larger but same depth
- 7013 Deposit Single fairly stony fill of E-W aligned ditch- this segment 7014 Easy to see this Linear feature in plan, this fill contrasting with stony
- 7014 Deposit Excavated in L-shaped intersection with N-S ditch 7017-which appears earlier
- 7015 Deposit 7 5 YR 4/6 Friable sandy silt Upper fill of shallow N-S ditch-cut by E-W ditch 7014
- 7016 Deposit 5YR 3/4 Friable fine sand and a little silt Primary fill of N-S ditch-containing few stone inclusions Excavation at intersection shows 7014 post-dates 7017
- 7017 Cut N-S aligned and fairly shallow ditch which intersects with E-W later ditch 7014 Appears that this ditch (7017) was backfilled whilst 7014 remained in use A number of other N-S ditches intersect with E-W ditch
- 7018 Cut
- 7019 Deposit 7 5 YR 3/4 Dark brown Friable sandy silt approx 40% small

- pebbles
- 7020 Cut
- 7021 Deposit 7 5 YR 3/3 Dark brown Friable sandy silt
- 7022 Deposit
- 7023 Deposit N-S alignment ditch intersects with later E-W ditch A number of other N-S ditches intersect with E-W ditch which so far seems to be the later No finds from fill to indicate date
- 7024 Deposit 10 YR 4/4 Friable sandy silt Stony fill of E-W alignment ditch, which cuts earlier N-S ditches
- 7025 Deposit Friable sandy silt Top of fill of N-S aligned ditch 7023, excavated in L-shaped segment at intersection with E-W ditch 7022 which cuts this deposit 7022 the later ditch
- 7026 Deposit Friable, fine sandy and a little silt Stony deposit forming the primary fill of N-S aligned ditch 7023
- 7027 Cut
- 7028 Deposit 7 5 YR 3/3 Dark brown Friable sandy silt
- 7029 Cut
- 7030 Deposit 7 5 YR 3/3 Dark brown Friable sandy silt/Very silty clayey in parts
- 7031 Deposit Segment of N-S ditch excavated at intersection with E-W ditch 7022, which proved later - cuts 7039 fill of this segment This ditch runs the entire width of the trench-mns under N and S edges of trench Segment to N, is 7033
- 7032 Deposit E-W aligned ditch- this may be excavated at terminal Cuts earlier terminal 7038/7037 and N-S ditch 7033
- 7033 Deposit N-S aligned ditch-opening width of Trench-this segment same as 7031-to South Pre date, E-W ditch 7032 which cut, the fill (7036) of this segment
- 7034 Deposit Stony fill of ditch segment 7032-the same as 7024 seen in segment 7022 to the East
- 7035 Deposit 10 YR 5/4 Friable coarse sand and grit Pale sandy fill of ditch segment 7032- forms primary fill No finds recovered for dating
- 7036 Deposit 10 YR 4/4 Friable fine sand - little silt Single fill of N-S ditch 7033, excavated at intersection with later E-W ditch 7032 No finds to date this feature
- 7037 Deposit E - W aligned ditch runs on same alignment as 7032 - which forms re-cut of this feature
- 7038 Deposit 10 YR 4/4 Fine sand and a little silt Stony fill of E-W ditch 7037-no finds recovered for dating
- 7039 Deposit 10 YR 3/3 Friable fine sand and silt
- 7040 Deposit 10 YR /4/4 Friable coarse and gravel Primary fill of 7022 basically seems to be redeposited natural, slumps into ditch from Southern side
- 7041 Deposit Sub-circular feature post hole at West end of Trench 7 No other similar features close by
- 7042 Deposit 10 YR 4/4 Friable sand and a little silt Fill of sub-circular post hole - contains no finds or evidence of post packing
- 7043 Deposit 10 YR 4/4 Friable coarse sand and a little silt Trench 9
- 9001 Deposit 10 YR 3/2 Mod, friable silty medium sandy loam Modern ploughsoil
- 9002 Deposit 10 YR 3/3 Mod, friable sandy silt Hillwash, old ploughsoil
- 9003 Cut This context was not an Archaeological feature, but a variation in the natural deposits
- 9004 Deposit Namral deposit
- 9005 Deposit Grey/brown Friable sandy silt Medium sized cobbles
- 9006 Cut Possibly formed as a result of ploughing or other agricultural/horticulture
- 9007 Deposit Grey/brown Friable sandy silt Medium sized cobbles Fill of linear feature 9008
- 9008 Cut Differences in cut between 9006 and 9008 suggest the linear feature is an irregular cut caused by horticulture/agriculture



- 9009 Deposit 10 YR 3/2 Very dark brown grey Fine sandy clay silt Fill of possible post hole
- 9010 Cut Possible pit or post hole not 100%
- 9011 Deposit 10 YR 4/2
- 9012 Deposit 10 R 4/4 Brown Friable sandy sih Backfill/silting deposit containing roman demolition material
- 9013 Cut 10 YR 2/2 Friable organic soil/ dismrbed clayey natural Composite of fills of modern plough cuts Showing NE-SW and cross ploughing NW-SE
- 9014 Cut Composite of ploughing cuts
- 9015 Cut Possible drainage or field boundary
- 9016 Deposit 10 YR 3/3 Friable gritty sandy sih with approx 40% pea gravel
- 9017 Deposit 10 YR 3/3 Friable sandy sih Gentle erosion into ditch
- 9018 Deposit 10 YR 4/4 Friable gritty sand
- 9019 Cut V shaped ditch of outer boundary of enclosure
- 9020 Deposit 10 YR 4/4 Friable sandy silt Upper fill of V shaped ditch
- 9021 Deposit Linear cobble feature possibly artifact of ploughing a furrow between 9028 and 9021, appears on a excavation to be a geological feature, exposed natural bedding plane
- 9022 Deposit 10 YR 3/4 Friable sandy silt Possibly the remains of a cultivated soil horizon, cut later by ploughing
- 9023 Deposit 7 5 YR 3/3 Friable sandy silt
- 9024 Deposit 7 5 YR 2 5/2 Slightly plastic with small pebbles
- 9025 Deposit 7 5 YR Friable silty sand, with dark peaty patches accruing Peaty soil containing large cobbles
- 9026 Cut Very large boundary ditch cut Which joins from the north Fill deposits were mixed with some large stone/cobble fill deposits were mixed with some large stones No sign of substantial recutting
- 9027 Cut Steep sided ditch seen as contemporary with E-W ditch 9026
- 9028 Deposit Possibly a series of geological bedding plans
- 9029 Deposit Possible plough feature
- 9030 Deposit Possible plough feature
- 9031 Deposit 10 YR 3/4 Friable gritty sand
- 9032 Deposit 10 YR 3/4 Slightly plastic clayey silt Fine sandy sih
- 9033 Deposit 10 YR 3/4 Friable silty sand Ditch fill possibly caused by unnatural deposition or soil back filling
- 9034 Deposit 10 YR 3/4 Coarse sandy silt One of a series of upper fills of a ditch possibly deposited by namral means or backfilling with soil (not large cobbles)
- 9035 Deposit This seems to be a deliberate backfill deposit The ditch intersection at half its visible depth
- 9036 Deposit 10 YR 4/2 Friable very silty sand Very gritty backfill/ silting deposit within ditch 9050
- 9037 Deposit
- 9038 Deposit 10 YR 4/4 Dark yellow Compact slightly silty sand Natural between two geological features
- 9039 Deposit 10 YR 6/4 light yellow/brown Friable sandy silt Natural sand deposit
- 9040 Deposit 10 YR 4/4 Dark yellow/brown Friable slightly silty sand Yellow gritty sand patches
- 9041 Deposit 10 YR 6/4 Friable compact sand
- 9042 Deposit 10 YR 4/6 dark brown Friable silty sand
- 9043 Deposit 10 YR 6/4 light yellow brown Friable compact gritty sand Slumping of ditch edge
- 9044 Deposit 10 YR 4/6 6/8 mottled Friable gritty sand Interface with natural and ditch cut
- 9045 Deposit 10 YR 4/6 Friable sandy sih
- 9046 Deposit 10 YR 4/3 Friable gritty sand
- 9047 Deposit 10 YR 4/3 Friable sandy sih
- 9048 Deposit 10 YR 4/4 Friable sandy sih Fill of boundary ditch

9049 Deposit 10 YR 3/4 Friable sandy sil  
9050 Not used  
9051 Deposit 10 YR 4/6 Friable silty sand Earliest fill of ditch 9026  
9052 Deposit 10 YR 3/2 Very compact dark firm clay Fill of 9050  
Trench 10  
10001 Deposit 10 YR /3/3 Loose silty clay  
10002 Deposit 7 5 YR 4/3 Loose sandy silt Natural sand/Gravel deposit

## APPENDIX 2

### Crossgates (CG99); Pottery Assessment Jeremy Evans with contributions by S. H Willis (9/7/99)

#### Factual data

Around 568 sherds of Iron Age tradition and Roman pottery were recovered from the site. The vast majority of the material consisted of Iron Age tradition handmade calcite gritted wares. Romanised wheel made greywares were the second commonest fabric class with occasional sherds of oxidised ware, Samian, white-slipped oxidised flagon sherds, and there was a single oxidised mortarium base, two Dressel 20 amphora sherds and unusually a bb2 bead rimmed bowl. Table 1 shows an approximate quantification of the major ware classes by minimum number of rims.

Table 1 major ware classes represented at Crossgates.

Calcite gritted	70%
Reduced wares	21%
Oxidised wares	4%
BB2	2%
Samian ware	4%

The 15 sherds of Samian represent less than 3% of the assemblage by count, as such the fineware level here groups with other basic level rural sites (Evans 1993, Evans forthcoming). The amphora sherds comprise 0.4% of the pottery which is also a very low level associated with basic rural sites. The high proportions of Iron Age tradition fabrics here may be compared with similar groups from the ditch under the Beadlam villa and the Langton 'fortlet' (Evans 1995).

Table 000 shows an approximate functional analysis of the assemblage by minimum numbers of rims. Jars form around 90% of the assemblage, with tablewares at around 10% and dish forms being entirely absent. These sort of data group on the very end of the rural site spectrum, being very close to Iron Age assemblages in composition. The data may be compared with those from other sites in East Yorkshire of early Roman date (Evans 1995) where comparable data comes from Hawling road, Market weighton and from the Langton 'fortlet', but they are still at the very jar based end of the range.

There are a few organically tempered sherds which need to be examined for the possibility that they represent briquetage. No sherds to be riveted, although such sherds might not necessarily be expected in an assemblage of this size in an area where pottery is easily available. A single sherd shows evidence of a suspension drilled through the shoulder.

Table 2 approximate functional analysis of the Crossgates assemblage (by minimum numbers of rims)

Storage jars	2%	
Jars	85%	
Bowls	11%	
Dishes	0	
Lids	2%	Total = 53

## Date

Apart from the pit complex 1173 which contains two sherds, one rock tempered and one organically tempered, both of which might be Iron Age, no groups clearly appear to be of Iron Age date, although some of the smaller groups could be. The Samian ware ranges from the Flavian period to the later 2nd/early 3rd century and would seem to imply pottery deposition throughout this period.

The vast majority of the calcite gritted wares are in a range of forms which forms span the later 2nd century (Evans 1995). These are a few examples which may be 3rd century Knapton types, but these can be confused with earlier, similar forms. The greywares include carinated jars of later 1st to 2nd century form, and a rimsherd and several bodysherds with acute lattice decoration from BB copy Hadrianic-Antonine jars. There is a single, Antonine, BB2 bowl and there is also an oxidised Dr 37 copy (?) bowl which may be 2nd century. The weight of the rather scanty coarse pottery dating evidence is 2nd century, with most closely datable pieces falling in the Antonine period. Nene valley colour coated wares are notably absent, as are clearly identifiable Norton greywares and Crambeck products. At latest the site would only seem to run into the beginning of the 3rd century.

## Potential

The national research framework for the study of Romano-British pottery identifies pottery from rural sites as being 'highly significant for our understanding of the Romano-British economy and 'Romanization' (Willis 1997, 15) and the northern regional research framework (Evans and Willis 1997, 22, 25) emphasises the particular need for data from rural sites in the northern region. These sites represent the living conditions of the vast majority of the Romano-British population and their consumption patterns and as such an adequate sample needs full examination and publication. Given the small number of such sites examined in the Vale of Pickering under modern conditions and its association with an Iron Age to Roman Sequence at Crab Tree Lane the material from this site is probably of regional importance.

## Spot Dating

### Context 1001

A level rimmed jar in calcite gritted ware, five proto-Knapton type jars in calcite gritted ware, a greyware jar rim, a greyware carinated jar, compared Shiptonthorpe archive fabric 506. Probably 2nd century.

### Context 1002

An everted rimmed calcite ware jar with lid-seating, later Iron Age to 2nd century.

### Context 1003

A small globular jar with everted rim in oxidised ware, a calcite gritted ware bowl(?) with horizontal, rectangular-sectioned rim.

Context 1004

Three proto-Knapton type calcite gritted ware jars; a jar with a thickened wedge-shaped rim in calcite gritted ware; a small greyware jar with everted rim and cordoned shoulder, a large greyware jar with beaded rim, an oxidised white-slipped bodysherd, 1st - 2nd century.

Context 1005

A bead rimmed jar in calcite gritted ware. Later Iron Age to early Roman.

Context 1009

A Samian bowl, curl 11, SG, La Graufesenque, c. AD 85/90-110 Cross joins 1013

Context 1010

Four calcite gritted ware bodysherds, later Iron Age to early Roman

Context 1013

A Dressel 20 amphora sherd reused as a counter/stopped, 1st-3rd century, a greyware bodysherd, possibly from a Dr 36 copy dish/bowl, possibly 2nd century, a greyware jar rim, a greyware small jar rim, possibly a BB copy; a large calcite gritted storage jar/bowl rim with squared rim; two calcite gritted ware proto-Knapton type jar rims; a samian bowl rim, curloe 11 SG La Graufesenque, c85/90-110, Cross joins 1009; also a CGS bodysherd form not identifiable, AD120-200.

Probably 2nd century

Context 1015

A samian Dr 33 bodysherd, EG Argonne, AD130-260, three samian bowl joining base sherds, form not identifiable, CGS, trimmed for re-use as dish/platter cAD150-200, a CGS bodysherd, probably Dr 18/31R cAD120-150

a proto-Knapton type calcite gritted ware jar rim; a large greyware jar with beaded rim, possibly cross-joins 1004.

Date later 2nd to early 3rd century.

Context 1016

A calcite gritted ware jar with a proto-Knapton type rim, later Iron Age to early Roman

Context 1022

A samian bodysherd possibly Dr33, cAD140-200; a samian Dr 37 bodysherd, CGS, cAD120-200, a calcite gritted ware jar with smoothly outcurving rim. Antonme

Context 1027

Two calcite gritted ware jars with sharply everted rims, possibly Knapton type, possibly 3rd century, a calcite gritted ware jar with mslopmg, thickened rim

Date, possibly 3rd century, but could be earlier

Context 1034

Calcite gritted ware bodysherds, later Iron Age to early Roman.

Context 1036

A proto-Knapton type jar, later Iron Age to early Roman

Context 1043

A greyware and three calcite gritted ware bodysherds, probably 1st-2nd century.

Context 1048

A Dressel 20 neck bodysherd, 1st-3rd century; greyware and calcite gritted ware bodysherds, a small greyware jar with everted rim and shoulder cordon, cross-joins 1004.

Date 1st-2nd century.

Context 1058

A calcite gritted ware bodysherd; an organically tempered sherd.

Date Later Iron Age to early Roman.

Context 1064

Calcite gntted ware bodysherds, Iron Age to early Roman

Context 1067

Calcite gritted ware bodysherds, Iron Age to early Roman.

Context 1068

An oxidised gntty very sandy mortarium base, 1st-2nd century

Context 1072

An oxidised sandy Dr 37 copy (?) bowl rim, 2nd century

Context 1080

A greyware bodysherd with an acute burnished lattice below a wavy burnished line, fabric not clearly Norton, probably Hadrianic-Antonme

Context 1082

Calcite gritted ware bodysherds, Iron Age to early Roman.

Context 1083

Oxidised ware bodysherds, 1st-2nd century, a calcite gritted ware Knapton type jar, 3rd century.

Context 1084

A calcite gntted ware Knapton type jar, 3rd century.

Context 1089

Calcite gntted ware bodysherds, Iron Age to early Roman

Context 1091

Calcite gritted ware bodysherds, Iron Age to early Roman

Context 1103

Calcite gritted ware bodysherds Iron Age to early Roman.

Context 1115

Greyware bodysherds, 1st-2nd century; a calcite gritted ware everted rimmed jar, possibly 1st-2nd century.

Context 1118

Calcite gritted and greyware bodysherds; a large greyware everted rimmed jar with beaded rim, cross-joins 1004 and 1015; a calcite gritted thickened, everted rimmed jar, cross-joins 1004.

Context 1119

A greyware lid rim, probably 1st-2nd century; a calcite gritted ware proto-Knapton type rim  
Date 1st-2nd century

Context 1127

Three greyware bodysherds, 1st-2nd century

Context 1131

A calcite gritted ware bodysherd with a drilled suspension hole; a calcite gritted ware proto-Knapton type jar.  
Date, probably 1st-2nd century

Context 1134

Two possibly Knapton type calcite gritted ware jars, possibly 3rd century.

Context 1136

A fine greyware bodysherd, a proto-Knapton type jar rim  
Date 1st-2nd century

Context 1145

Four calcite gritted ware bodysherds, late Iron Age to early Roman

Context 1146

An oxidised bodysherd, 1st-2nd century.

context 1156

Calcite gritted ware bodysherds; reduced ware bodysherds; a greyware BB copy jar, Hadriamc-Antonine; a samian Dr 27 bodysherd, CGS, cAD120-160

Context 1158

A calcite gritted ware bodysherd, later Iron Age to early Roman

Context 1160

Calcite gritted ware bodysherds, Iron Age to early Roman.

Context 1162

Greyware bodysherds, A calcite gritted ware everted rimmed jar with wedge-shaped rim  
Date, 1st-2nd century.

Context 1167

A BB2 bead rimmed bowl with chamfered rim and acute lattice, Antonine, a ?Knapton type calcite gritted ware jar, ?3rd century; a Dr18/31R, EG, Argonne, cAD130-60, base sherd Date, later 2nd (or early 3rd) century.

Context 1168

Calcite gritted ware and greyware bodysherds; 1st-2nd century.

Context 1169

A greyware bodysherd with acute lattice decoration; a calcite gritted ware bodysherd. Date; Hadrianic-Antonine.

Context 1173

A rock tempered handmade bodysherd and an organically tempered one, possibly Iron Age

Context 1174

A calcite gritted ware bodysherd, Iron Age to early Roman

Context 1177

A calcite gritted ware bodysherd, Iron Age to early Roman.

Context 1178

A greyware lid knob, probably 1st-2nd century.

Context 1181

A calcite gritted ware bodysherd, Iron Age to early Roman.

Context 1195

A Dr 27 samian bodysherd, CGS, cAD120-60, a calcite gritted ware bodysherd, an everted squared greyware jar rim. Date, Hadrianic- Antonine

Context 1196

Three calcite gritted ware bodysherds, an organically tempered sherd; a greyware bodysherd with acute lattice. Date Hadrianic- Antonine.

Context 4014

Five joining calcite gritted ware rimsherd from an everted rimmed jar with wedge shaped rim, later Iron Age to early Roman.

## Bibliography

Evans, J., 1993, Function and finewares in the Roman north, *Journal of Roman pottery studies* 6 (for 1993), 95-118

Evans, J, 1995 Reflections on later Iron Age and 'native' Romano-British pottery in north eastern England, Vyner B, (Ed) *Moorland Monuments*, CBA Res Rept 101, 46-68



Evans, J , forthcoming , Roman and Saxon pottery from the A1/M1 sites, in W.Y A S report on the excavations along the line of the A1/M1

Evans, J., and

Willis, S.H., 1997, **Research framework** for the study of Roman pottery in the north of Britain, in Willis, S.H., (ed) **Research frameworks for the study of Roman pottery**, 22-29

Willis, S.H., 1997, The national research framework, in Willis, S.H., (ed), **research frameworks for the study of Roman pottery**, 6-21

Crab Lane (CG99) Pottery Evaluation and spot dating  
Jeremy Evans (9/7/99)

Some 398 Sherds of stratified pottery from the assessment trenches have been examined. Later Iron Age and early Roman pottery has been recovered, two periods are clearly represented, the later Iron Age and the 2nd century AD.

Table 3 shows approximate breakdown by sherd count of the major fabric classes represented.

Table 3 Major fabric classes at Crab Lane

Calcite gritted	82%
Sandy handmade	4%
Quartz tempered handmade	4%
Organically tempered handmade	3%
Amphorae	0.5%
Oxidised	1%
Reduced	6%
Samian	0

Unsurprisingly calcite gritted wares are commoner than on the 2nd century Crossgates site (CG99) and greywares much rarer, given the major Iron Age component in this assemblage. Non-calcite gritted Iron Age fabrics are comparatively strongly represented for a site in the Vale of Pickering. This is a type of fabric quite common to the southwest along the lower course of the Derwent, whether this is the source area for these requires further investigation.

#### Potential

The national research framework for the study of Romano-British pottery identifies pottery from rural sites as being 'highly significant for our understanding of the Romano-British economy and 'Romanization' (Willis 1997, 15) and the Northern regional research framework (Evans and Willis 1997, 22, 25) emphasises the particular need for data from rural sites in the northern region. These sites represent the living conditions of the vast majority of the Romano-British population and their consumption patterns as such an adequate sample need full examination and publication. The pottery from this site will be particularly useful and it can be compared with material from Crossgates (CG99) and previous excavations at Crossgates (Rutter and Dukes 1958), Seamer (Mitchelson 1950), and will be comparable with material from the BUFAU excavations.

The Iron Age pottery from the site is important, it would appear to date from around the conquest, although physical dating evidence to demonstrate this would be very useful. Very little Iron Age pottery has been published from the Vale of Pickering in recent years. Recovery of more of the Iron Age material in particular should be a priority. The site offers the opportunity to study the Iron groups in comparison with succeeding early Roman groups of calcite gritted ware for any evidence of chronological change. The sources of the non-calcite gritted wares are of interest and would justify petrological analysis to attempt to determine their origin.

## Spot dating

### Trench 2

#### Context 2003

A calcite gritted ware bodysherd, later Iron Age or early Roman.

### Trench 3

#### Context 3002, U/S

Twenty calcite gritted ware bodysherds, a coarsely organically tempered sherd, two greyware bodysherds, a Dressel 20 bodysherds, and a reused piece of tile cut down to form a stopper  
Three calcite gritted ware jar rimsherds, two from jars with straight everted rims. Date, Iron Age to 2nd century material may be represented.

### Trench 4

#### Context 4001

Around 10 calcite gritted ware bodysherds, an everted storage jar rim and a vertically rimmed jar Probably later Iron Age

#### Context 4002

Three calcite gritted ware bodysherds and a barrel jar rim. Later Iron Age or early Roman

#### Context 4004

Five calcite gritted ware bodysherds. Later Iron Age or early Roman.

#### Context 4006

Thirteen calcite gritted ware bodysherds, a jar rim fragment and a jar rim with an everted, squared rim Probably later Iron Age

#### Context 4008

Seven calcite gritted ware bodysherds and one quartz tempered handmade sherd Two calcite gritted ware rim sherds, one with a tapering rim, the other with an out curving rim Probably later Iron Age

#### Context 4012

Four calcite gritted ware bodysherds and one with organic tempering. Later Iron Age, or less probably early Roman.

#### Context 4014

Three calcite gritted ware bodysherds and one with organic tempering. Later Iron Age, or less probably early Roman

#### Context 4016

A calcite gritted ware bodysherd. Later Iron Age or early Roman

Context 4015

Thirty calcite gritted ware bodysherds, one handmade with organically tempered and two with quartz temper Four calcite gritted ware bodysherds, three with straight, everted rims and one with a squared rim Date, later Iron Age

Context 4017

Fourteen calcite gritted ware bodysherds , and five handmade with quartz. Five calcite gritted ware rimsherds with straight everted rims. Date; later Iron Age

Context 4018

Twenty one calcite gritted ware bodysherds, sixteen handmade with sand and occasional quartz and gold mica temper, three with large quartz temper and three with coarse organic temper Five calcite gritted ware rimsherds, two from jars with straight everted rims, one from a jar with thickened everted rim, and two from storage jars or wide-mouthed jars/bowls with squared rims. Also a Dressel 20 amphora bodysherd, 1st-3rd century AD, this need not be as late as the conquest here.

Date; 1st century AD, possibly pre-flavian

Context 4019

Five calcite gritted ware bodysherds and two large jar/wide mouthed bowls with squared rims Date, later Iron Age

Context 4023

Twenty calcite gritted ware bodysherds and two joining rimsherds from a wide-mouthed jar/bowl with a straight everted rim. Date; later Iron Age

Context 4024

Six calcite gritted ware bodysherds and a very thin-walled small jar with an outcurving rim

Context 4030

Five calcite gritted ware bodysherd and a jar rim with a straight, everted rim Date, later Iron Age

Context 4033

A calcite gritted ware bodysherd and a greyware dish rim of Roxby type H (Stead and Rigby 1978), Antonine to early 3rd century

Context 4034

Three calcite gritted ware bodysherds. Later Iron Age or, less probably, early Roman

Context 4036

Four calcite gritted ware bodysherds Later Iron Age or, less probably, early Roman

Context 4043

Two calcite gritted ware bodysherds Later Iron Age or early Roman.

Context 4046

Three calcite gritted ware bodysherds. Later Iron Age or early Roman

#### Context 4049

Four calcite gritted ware bodysherds, and a wheelmade oxidised sherd with large stone inclusions. Date; 1st century.?

#### Context 4050

A calcite gritted ware bodysherd. Later Iron Age or early Roman

#### Context 4053

Four calcite gritted ware bodysherds. Later Iron Age or early Roman

#### Context 4057

Four calcite gritted ware bodysherds Later Iron Age or early Roman.

#### Discussion

With the exception of context 4033, which would appear to be Antonine, and 4049, none of the contexts in this area need date to after the Roman conquest. Three Dressel 20 sherd from the context 4018 could be from a Claudian or Neronian context rather than necessarily being Flavian or later

#### Trench 5

##### U/S

A calcite gritted ware bodysherd and two greyware bodysherds, and a bead rimmed dish, probably a Hadrianic-Antonine BB derived form

##### Context 5001, U/S

Sixteen calcite gritted ware bodysherds, a greyware reeded rimmed bowl rim, Flavian-Trajanic, a fine oxidised rimsherd probably from a pulley wheel rimmed flagon, cf Bidwell and Croom 1997, no 51

##### Context 5020

A calcite gritted ware bodysherd Later Iron Age or early Roman

##### Context 5022

Fourteen calcite gritted ware bodysherds and a quartz tempered handmade bodysherd, a greyware bodysherd; a white-slipped oxidised ware two cordoned flagon handle, 1st-2nd century; three 'crisp' greyware bodysherds with acute lattice decoration, Hadrianic-Antonine, a rustic ware bodysherd, Flavian-Trajanic; three calcite gritted ware straight everted jar rims two with thickened, straight everted rims ; a handmade jar rim with quartz temper with a straight everted rim. Date; Roman material in the group has a Flavian-Trajanic to Hadrianic-Antonine range.

##### Context 5017

Twenty six calcite gritted ware bodysherds, a handmade quartz tempered sherd and four greyware sherds, one of which appears to bear an illiterate graffito Also three calcite gritted ware jar rims, three straight and everted, the fourth squared

Context 5024

Two calcite gritted bodysherds. Later Iron Age or early Roman.

Context 5025

Twenty one calcite gritted ware bodysherds and a sandy handmade sherd; two greyware sherds in a 'crisp' fabric with acute lattice decoration, Hadrianic-Antonine, cross-joins 5022 (?); four greyware bodysherds; an oxidised ware bodysherd and a bowl rim with two grooves, possibly a Dr 37 copy and 2nd century; two calcite gritted ware jars with straight everted rims and a bead rimmed jar Date, Hadrianic-Antonine

Context 5026

Six calcite gritted ware bodysherds, three bodysherds with coarse organic temper and a medieval sherd of Scarborough ware.

Context 5029

Four calcite gritted ware bodysherds Later Iron Age or early Roman.

Context 5030

Four calcite gritted ware bodysherds and one with coarse organic temper Later Iron Age or early Roman.

Context 5031

Two calcite gritted ware bodysherds. Later Iron Age or early Roman

Context 5033

A calcite gritted ware bodysherd and a straight everted rimmed calcite gritted ware jar Later Iron Age or early Roman

Context 5037

A calcite gritted ware bodysherd Later Iron Age or early Roman

Context 5038

A calcite gritted ware jar rim with straight everted rim Later Iron Age or early Roman

## Bibliography

Bidwell, P., and

Croom, A., 1997 The course wares, in Wenham, L.P. and Heywood, B., (eds), The 1968 to 1970 excavations in the vicus at Malton, North Yorkshire, Yorkshire Archaeological Report no 3, Leeds, 61-102

Evans, J., and

Willis, S.H., 1997, Research framework for the study of Roman pottery in the north of Britain, in Willis S.H., (ed) Research frameworks for the study of Roman pottery, 22-29

Michelson, N., 1950, A late fourth century occupation site at Seamer, near Scarborough, Yorks Arch Jnl 37, 420-9

Rutter, J G , and  
Duke,J , 1958, **Excavations at Crossgates near Scarborough 1947-56**, Scarborough and  
District Arch Soc Res Rept no 1

Willis, S H. , 1997, **The national research framework**, in Willis, S.H., (ed), **Research  
frameworks for the study of Roman pottery**, 6-21

**APPENDIX 3**

**Archaeomagnetic Dating**



NYS 8185

ARCHAEO-MAGNETIC STUDY OF  
FIRED CONTEXT 5009 AT CRAB LANE,  
CROSS GATES, SEAMER

A PROGRAMME OF RESEARCH CARRIED OUT  
ON BEHALF OF

MAP ARCHAEOLOGICAL CONSULTANCY Ltd

By

GeoQuest Associates

© Copyright MAP Archaeological Consultancy Ltd & GeoQuest Associates, 1999

## INTRODUCTION

Recent excavations at Crab Lane, Cross Gates, Seamer have revealed a circa 2.5m long, canoe-shaped channel formed of fired clay and limestone (Site Code CL99). The feature is thought to have comprised the flue for a kiln or furnace of possible Iron Age or Roman date (Context 5009).

The archaeological excavations are being carried out by MAP Archaeological Consultancy, under the direction of Mark Stevens, prior to redevelopment of the site for housing.

Archaeomagnetic sampling was carried out on 22nd June 1999 after the excavation had been largely completed. The aim of the study was to determine the last firing date of the clay lining and limestone fabric within the 'flue'.

The principles of the dating technique that were employed in this study are outlined in Appendix A.

## SAMPLING

The excavation showed that the flue had once comprised a substantial structure built of limestone slabs set in a matrix of clay which appeared to have several phases of re-lining. Unfortunately the structure had been truncated by recent ploughing and no associated features, that might indicate its true function, had survived.

Intense red colouration on the flue walls and arch provided good evidence that the structure had been fired to high temperatures and there were no signs of significant disturbance or movement to the structure. It was therefore judged to be an excellent candidate for archaeomagnetic dating.

Oriented samples were recovered using the *button method* devised by Clark, Tariing & Noel (1988). This technique employs a 25mm, flanged plastic disc to act as a field orientation reference, sample label and specimen holder inside the laboratory magnetometer. Buttons were glued in position using a fast setting epoxy resin (Devcon Rapid) with their surfaces set horizontal with a spirit level. Small beads of plasticene beneath the buttons held them steady while the resin cured. Finally, orientation arrows were marked using a sun compass, along with a specimen code.

The specimens were slowly dried over several days and then consolidated by impregnation with a dilute solution of PVA in acetone. Each specimen was cut with a diamond saw until the button retained a volume which fitted the standard 25x25mm specimen holder inside the archaeomagnetic magnetometer.

## MEASUREMENT

The natural remanent magnetisation (NRM) of all samples were measured in a Molspin fluxgate spinner magnetometer (Molyneux, 1971) with a minimum sensitivity of around  $5 \times 10^{-9} \text{Am}^2$ . Remanence directions were corrected for sun compass orientations using data contained in the Nautical Almanac tables: these results are listed in Table 1 and presented on the stereogram of Figure 1.

Generally, the NRM will comprise a primary magnetisation, (in this case presumed to be of thermal origin), together with secondary components acquired in later geomagnetic fields due to diagenesis or partial reheating. Usually, a weak viscous magnetisation is also present, reflecting a tendency for the remanence to adjust to the recent held. If the secondary components are of relatively low stability, then removal by partial demagnetisation will leave the primary remanence of archaeological interest. A pilot specimen with typical NRM and lithological characteristics (SEA7) was demagnetised incrementally, up to a peak alternating field of 60mT and the changes in remanence recorded in order to identify the components of archaeomagnetism and their stability (Figure 2).

From a study of the pilot sample behaviour, an alternating field of 5mT was chosen which would provide for the optimum removal of secondary components of magnetisation in the remaining samples. After partial demagnetisation in this field, sample remanences were remeasured and the results are shown on the stereogram of Figure 3

## RESULTS

Table 1 shows that the samples contained a weak to strong NRM which, in the majority of cases, is clearly controlled by the Earth's magnetic field, presumably reflecting thermoremanence acquired by heating. It can therefore be concluded that the majority of the flue surface has been fired to temperatures exceeding circa.  $680^\circ\text{C}$  (the blocking temperature of magnetite). The results of the demagnetisation test presented in Figure 2 also show that the NRM is extremely stable with negligible changes in the vector direction being induced by the peak applied field of 60mT.

Partial demagnetisation of the set of samples at 5mT caused negligible change in the vector grouping, suggesting that the NRM contains only minor components of secondary magnetisation.

An inspection of Figures 1 and 3 shows that the archaeomagnetic vectors fall into two distinct groups one cluster of 8 samples define a mean direction consistent with an undisturbed geomagnetic held orientation. The second set of sample vectors are anomalous and although geomagnetically controlled show signs of rotation possibly as a result of plough disturbance or burrowing since the last firing event (samples SEA1, 2, 3, 8, 13 & 14). Three of these specimens (SEA1, 2 & 3) were very weakly

magnetised and hence it is also possible that they are located in parts of the flue which remained at lower temperatures during the firing cycle (Table 1).

After rejecting the six samples listed above, the mean archaeomagnetic vector for the flue is computed in Table 1 and corrected to Meriden, the reference location for the UK Master Curve. Comparison of the adjusted vector with the Master Curve in Figure 4 suggests that the last heating of the inner wall of the flue took place during the period:

**40 B.C. - 40 A.D.**

or

**100 B.C. - 60 B.C.**

Thus two dates can be conjectured owing to the looping of the Master Curve during this time. The later date range of 40 B.C. to 40 A.D. is favoured since this corresponds to the closest approach of the vector to the Master Curve. It may be possible to resolve the dating ambiguity by referring to artifactual evidence recovered by the excavation.

## CONCLUSIONS

The following conclusions can be drawn from the results of the archaeomagnetic analysis:

- 1 A total of 14 oriented samples were obtained from a fired canoe shaped structure, presumed to be a flue, excavated at Crab Lane, Cross Gates, Seamer, and subject to detailed archaeomagnetic analysis. All the samples were found to contain a weak to strong magnetisation which in most cases is consistent with heating to a temperature above 680°C in the Earth's magnetic field.
- 2 The results from 6 samples were rejected owing to a weak or anomalous archaeomagnetism due to insufficient firing or mechanical disturbance. The remaining samples yielded an exceptionally well-grouped set of archaeomagnetic vectors.
- 3 Archaeomagnetic dating suggests that the last firing probably took place during the period 40 B.C. to 40 A.D.. Owing to a loop in the UK Master Curve centred at 50 B.C., an earlier date range of 100 B.C. to 60 B.C. can also be conjectured. However the later date is favoured since this corresponds to the closest approach of the archaeomagnetic vector to the Master Curve.

## REFERENCES

- Clark, A.J., Tarling, D.H. & Noel, M., 1988. Developments in archaeomagnetic dating in Britain, *Archaeometry*, 15, 645-667.
- Molyneux, L., 1971. A complete result magnetometer for measuring the remanent magnetisation of rocks, *Geophys. J. R. astr. Soc.*, 24, 429-433.
- Noel, M. & Batt, C.M., 1990. A method for correcting geographically separated remanence directions for the purpose of archaeomagnetic dating, *Geophys. J. R. astr. Soc.*, 102, 753-756.

### Credits

Sampling, Analysis and Report:: M.J. Noel, BSc, PhD, FRAS

Date: 21/7/99

TABLE 1  
 ARCHAEOMAGNETIC RESULTS FROM CONTEXT 5009  
 AT CRAB LANE, CROSS GATES, SEAMER

Sample	LITH	J	D	I	A.F.	D	I	
SEA1	FCL	0.2	62.9	-2.7	5.0	75.0	-0.4	R
SEA2	LST	0.4	93.7	8.4	5.0	87.3	17.9	R
SEA3	LST	0.4	55.3	32.9	5.0	67.3	22.6	R
SEA4	FCL	4.3	346.8	63.0	5.0	352.9	64.2	
SEA5	FCL	3.6	342.1	64.2	5.0	344.5	65.4	
SEA6	FCL	13.6	333.4	69.9	5.0	339.9	70.6	
SEA7	FCL	9.2	15.1	70.0	5.0	12.4	72.5	
SEAS	FCL	110.9	73.4	80.6	5.0	79.7	80.5	R
SEA9	FCL	27.0	350.2	66.5	5.0	352.3	70.3	
SEA10	FCL	7.3	338.5	72.6	5.0	341.7	77.6	
SEA11	FCL	11.5	358.1	68.8	5.0	358.6	70.2	
SEA12	FCL	4.0	356.9	68.9	5.0	7.9	69.0	
SEA13	FCL	35.5	39.5	81.8	5.0	60.1	84.1	R
SEA14	FCL	9.1	68.7	68.9	5.0	88.6	73.3	R
Mean of samples			350.0	68.4		353.8	70.5	
At Meriden						354.1	69.3	

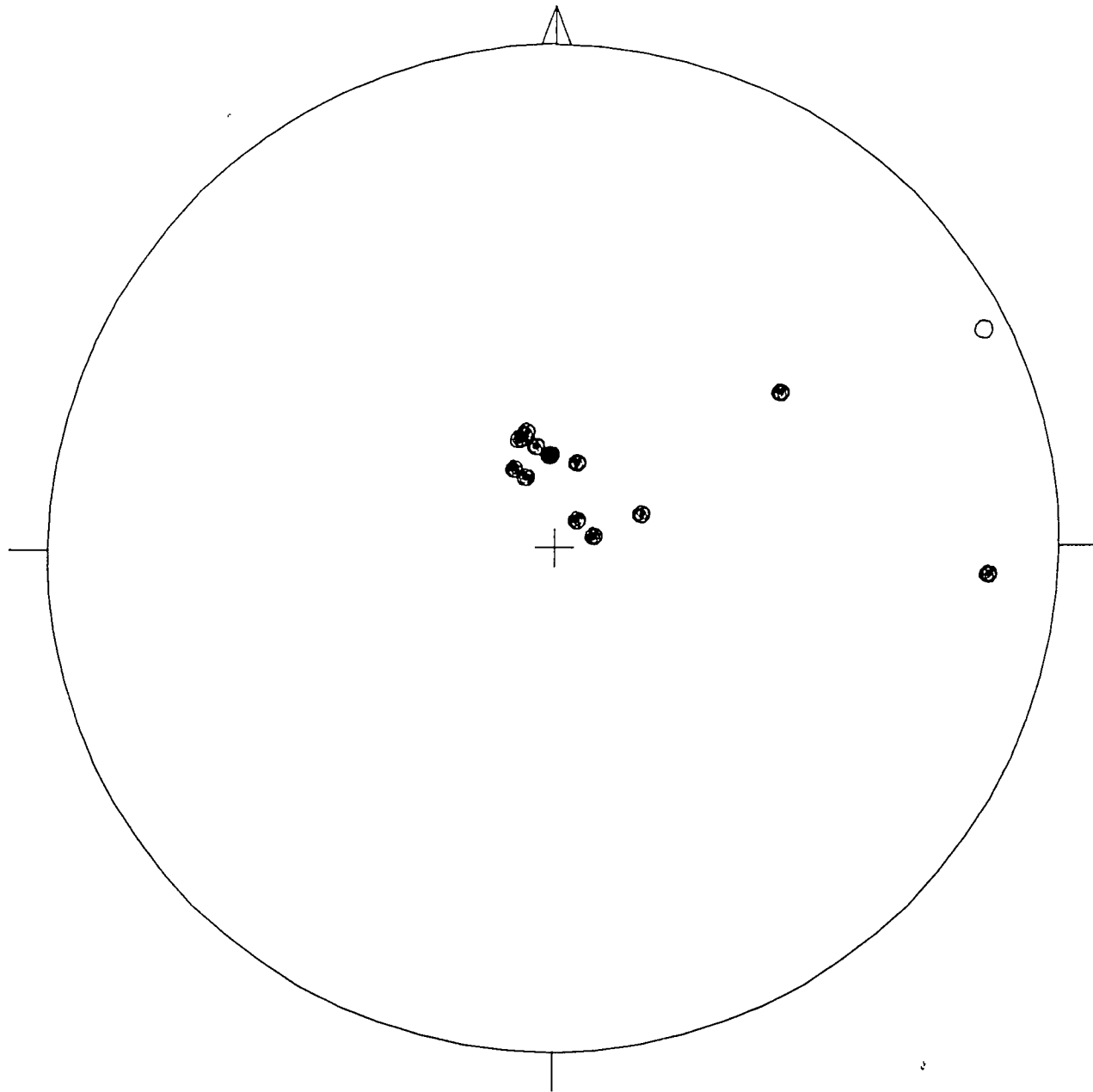
K=194.9 cse=2.1 alpha 95=4.0°

NOTES: LITH=Lithology, FCL=fired clay, LST=burnt limestone D=declination, I=inclination,  
 J=intensity in units of  $\text{mAm}^{-1} \times 10^{-3}$  A F =peak alternating demagnetising field in milliTesla.  
 K=precision parameter, cse=circular standard error, alpha95=semi-angle of the 95% cone of  
 confidence 'R' marks samples that were rejected from the analysis

## FIGURE 1

Directions of natural remanent magnetisation in samples from the flue shown on an equal area stereogram. In this representation, declination increases clockwise while inclination increases from zero at the equator to 90 degrees at the centre of the projection.

CONTEXT 5009, NRM





## FIGURE 2

Changes in the direction and intensity of remanent magnetisation in pilot sample SEA7 during stepwise demagnetisation by alternating magnetic fields.

SEA7

□ = NRM vector

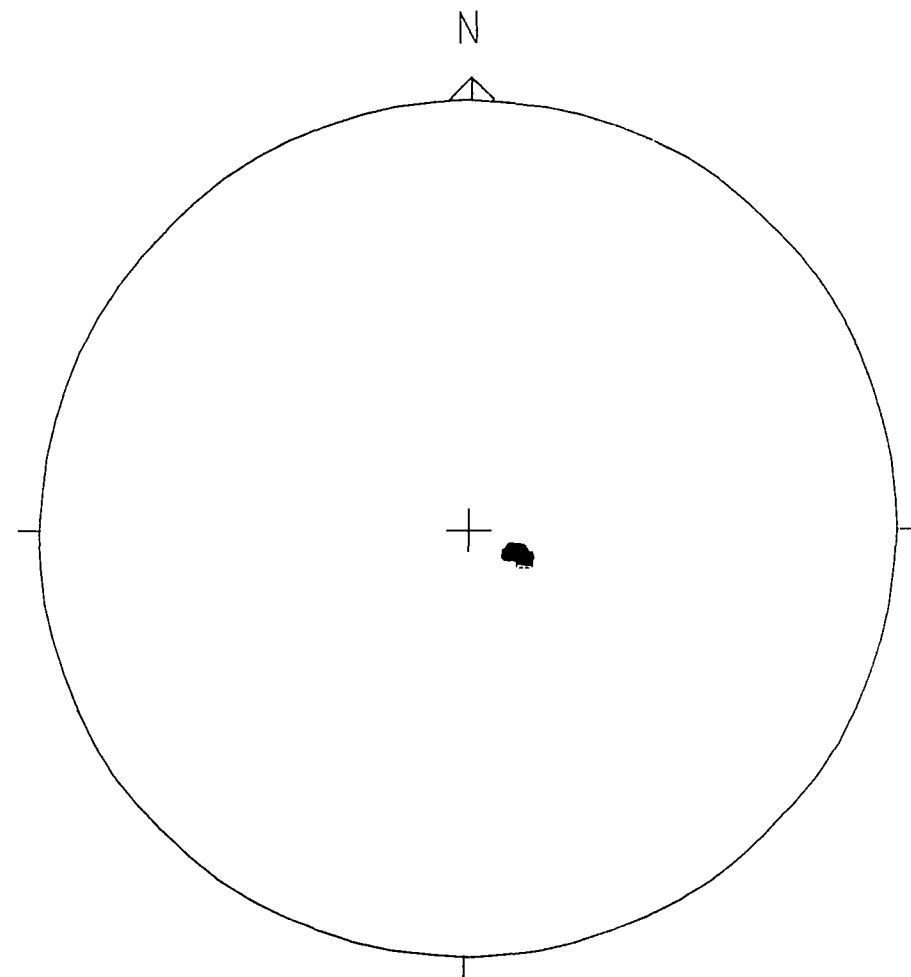
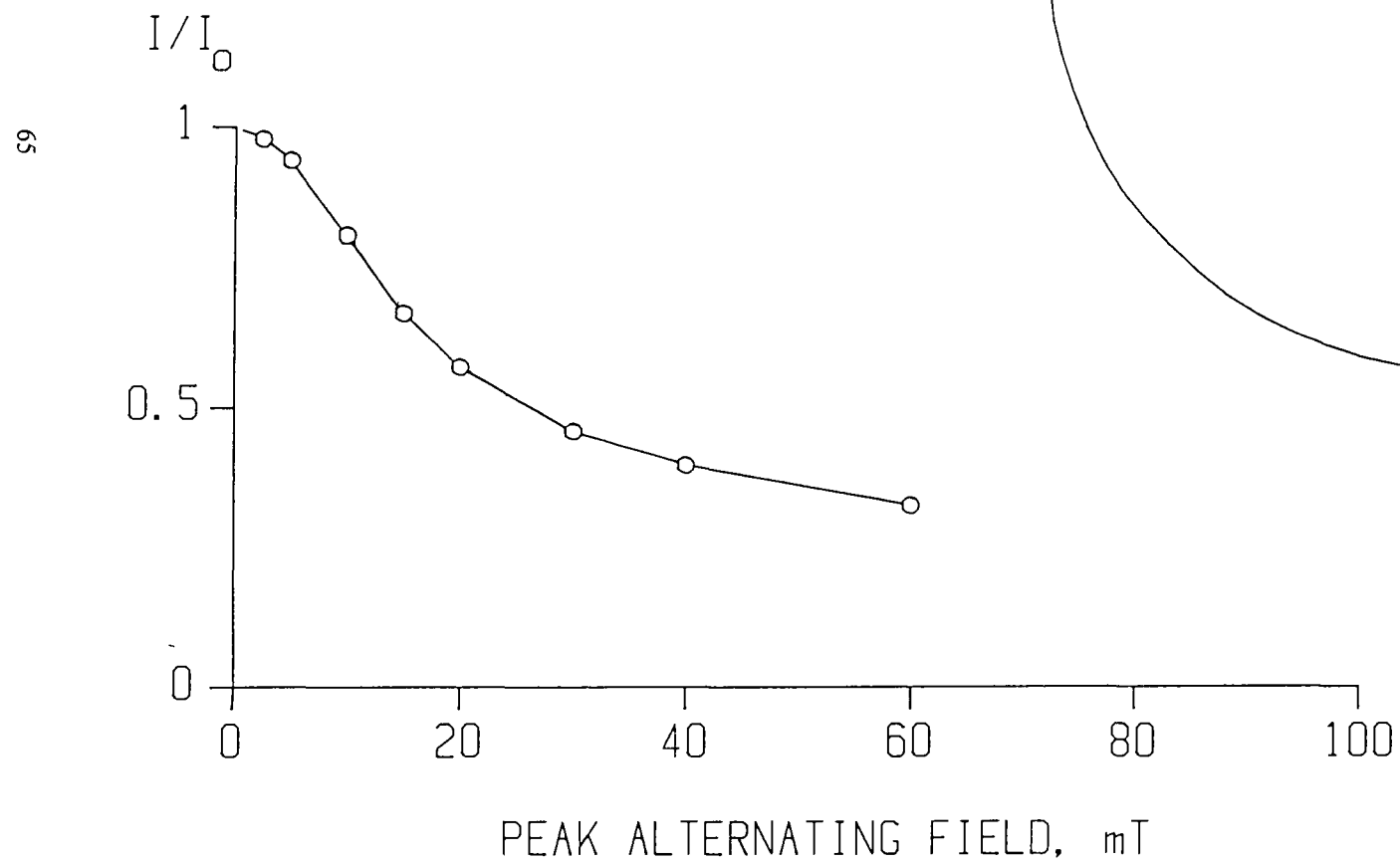
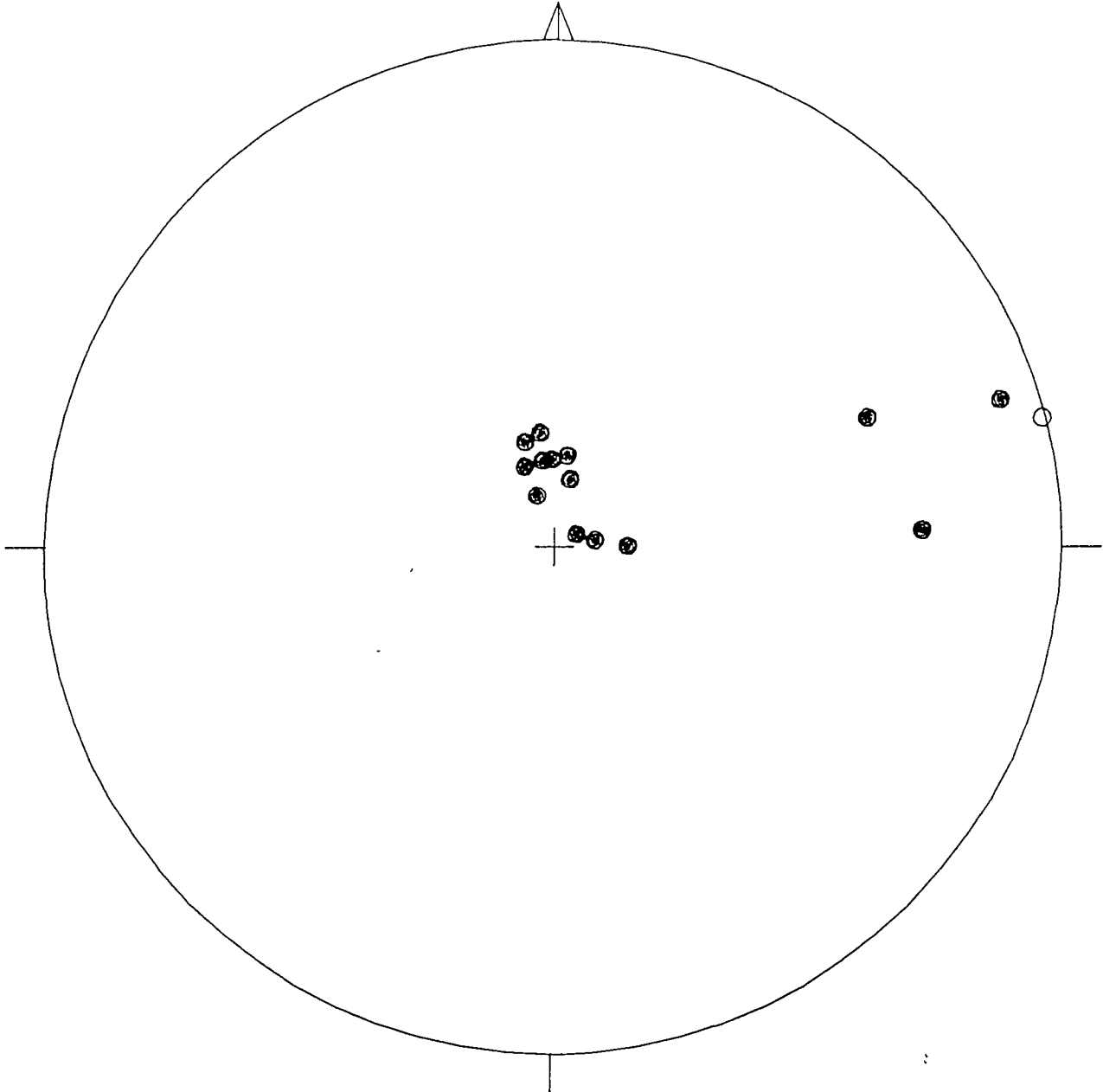




FIGURE 3

Directions of remanent magnetisation in samples from the flue after partial demagnetisation in an alternating field of 5 mT.

CONTEXT 5009, 5mT



67



FIGURE 4

Comparison between the mean archaeomagnetic vector in the flue with the UK Master Curve 1000 B.C. to 600 A.D. Numbers represent the date in centuries. Error bars are based on the circular standard error of Table 1.

## APPENDIX A

### Principles of Magnetic Dating

Magnetic dating is based on comparing the remanent magnetisation in an archaeological structure with a calibrated reference curve for the geomagnetic secular variation. Two distinct methods have evolved. The intensity technique relies on obtaining estimates of the past strength of the Earth's magnetic field while directional magnetic dating uses archaeomagnetic measurements to derive the orientation of the geomagnetic vector in antiquity. Intensity dating can only be applied to fired materials which have acquired a thermoremanent magnetisation upon cooling from high temperatures ( $>600^{\circ}\text{C}$ ) while the directional method enables the age of a broader range of archaeological materials to be determined. For example, sediments and soils may have acquired a dateable 'detrital remanence' if magnetic grains had been aligned by the ambient field during deposition. The growth of magnetic minerals during diagenesis or as a result of manufacturing processes can also give rise to a magnetisation which may enable materials such as iron-rich mortars, for example, to be dated. However hearths, kilns and other fired structures are the most common features selected for magnetic dating primarily because their thermoremanence is generally strong, stable and sufficiently homogeneous that the ancient field can be determined with sufficient precision from a small set of specimens. An analysis of dated archaeomagnetic directions, largely from fired structures, together with lake sediment and observatory records has enabled a master curve for the UK region to be synthesised for the period 2000 B.C. to the present (Clark, Tarling & Noel, 1988).

For directional magnetic dating it is essential to obtain specimens of undisturbed archaeological material whose orientation with respect to a geographic coordinate frame is known. A number of sampling strategies have evolved, enabling specimens to be recovered from a range of archaeological materials with orientations being recorded relative to topographic features, the direction of the sun, magnetic or geographic north. For this feature the miniaturised 'button method', illustrated overleaf, was employed. Modern archaeomagnetic magnetometers are sufficiently sensitive that only small volumes of material ( $\sim 1\text{ml}$ ) are required for an accurate remanence measurement. This has the advantage of reducing the impact of sampling on archaeological features - of particular significance if they are scheduled for conservation and display.