

**Land at Catesby Business
Park, Balby Carr,
Doncaster, South
Yorkshire:**

**an archaeological evaluation
2002**

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Doncaster, South Yorkshire:
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By
Laurence Jones

with contributions by Marina Ciaraldi, Dr. James Greig and Annette Hancocks

For further information please contact:
Simon Buteux or Iain Ferris (Directors)
Birmingham University Field Archaeology Unit
The University of Birmingham
Edgbaston
Birmingham B15 2TT
Tel: 0121 414 5513
Fax: 0121 414 5516
E-Mail: BUFAU@bham.ac.uk
Web Address: <http://www.bufau.bham.ac.uk>

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Land at Catesby Business Park, Balby Carr, Doncaster, South Yorkshire: an archaeological evaluation 2002

1.0 Non-technical summary

Eighteen archaeological trial-trenches were excavated during April 2002, within an area of 6.3 hectares of former agricultural land at Catesby Business Park, Balby Carr, Doncaster, South Yorkshire (centred on NGR SE 5862 0058, Figs. 1 & 2). The work was carried out by Birmingham University Field Archaeology Unit on behalf of B&Q PLC and was undertaken in advance of detailed planning approval for a retail development and construction of an associated access road.

The purpose of the trial-trenches was to test for the survival of significant archaeological remains within part of the Catesby Business Park site, and to provide an indication of the importance, date and extent of such remains.

Previous archaeological work at the site comprised a desk-top assessment of existing archaeological knowledge including air photo assessment and geophysical survey. The desk-top assessment revealed that the only known below-ground remains within the site are those of a late 19th/early 20th-century farm, Balby Carr Farm, situated in the northwest corner of the site. However, the surrounding area is known through aerial photography, geophysical survey and archaeological excavation, to be rich in occupation sites dating to the late Iron Age and Romano-British periods. These sites include enclosures and extensive 'brickwork' pattern field systems visible on aerial photographs as cropmarks. In the wider area there is a concentration of Romano-British pottery kiln sites and the Roman town of Danum (modern Doncaster) lies less than 3km to the north. Several finds of Roman-British pottery and coins have also been recorded in the vicinity of the site. It was thought that, during the Romano-British period, early attempts were made to drain Potteric Carr, of which Balby Carr is a part. Throughout the post-medieval (and possibly medieval) period, various attempts were made to drain the Carr by cutting long deep drains, still visible today. An undated soil mark, possibly forming an enclosure was also recorded on aerial photographs, to the east of the site.

Given the high concentration of cropmark sites, finds of Romano-British artefacts close to the site, the proximity to the Roman town of Danum and the Roman-British pottery kilns sites in the surrounding area there appeared to be good potential for the existence of significant archaeological features and deposits within the site, particularly remains dating to the Iron Age and Romano-British periods. The geophysical survey revealed no clearly defined anomalies suggestive of buried archaeological remains, although a few pit-like anomalies were noted, which could possibly be of archaeological origin.

The results of the trial-trenching revealed that several possible field boundary ditches, or perhaps enclosure ditches, not detected by geophysical survey or visible as crop-marks, existed within the site. These possible field boundary ditches appear to be concentrated in the southern part of the site and were found in Trenches 4, 6 10, 17 and 18. There was little dating evidence, but one ditch contained a fragment of waterlogged wood, from which a radiocarbon date of was obtained. The radiocarbon date suggests this ditch dates to Iron Age or Romano-British periods. It is possible that some or all of the other possible field boundary or enclosure ditches could be a continuation of the network of Iron Age or Romano-British field boundary ditches and enclosures, present to the north

and south of the site, highlighted in the desk-based assessment (BUFAU 2002a), and/or a continuation of an undated soil mark feature visible on aerial photographs, to the east of the site.

The lack of animal bone and the paucity of evidence from the environmental samples for charred plant remains indicate the potential for any possible future excavations to provide evidence of the economy by these means was limited. However, pollen was fairly well-preserved and could provide evidence of the palaeoenvironment. Evidence from the plant remains indicates that the archaeological features were subject to waterlogging and the recovery of waterlogged wood suggests there is considerable potential for the survival of organic remains. Insect remains are abundant and well preserved and have a high potential for understanding of the palaeoenvironment

The evaluation has provided information concerning the existence of a previously unknown network of possible field boundary or enclosure ditches. Information was gained on their character, date, quality of survival, significance and archaeological potential. In the other areas of the site all the trenches proved to be either archaeologically sterile or contained drainage and/ or boundary features of probable post-medieval date.

It is concluded that the site is of local and regional archaeological importance and, as such, an archaeological mitigation strategy of the kind suggested in paragraph 30 of PPG16 (DoE 1990) may be applicable in this situation. The decision on any mitigation strategy rests with South Yorkshire Archaeology Service.

2.0 Introduction

This report describes the results of an archaeological evaluation, by means of trial-trenching, carried out by Birmingham University Field Archaeology Unit (BUFAU), of land at Catesby Business Park, Balby Carr, Doncaster, South Yorkshire (Fig. 1, hereafter referred to as the site). The work was carried out on behalf of B&Q PLC in advance of detailed planning approval submitted to Doncaster Metropolitan Borough Council for the construction of a new retail store (Planning application number: 01/31/2567/P/FUL).

This evaluation is part of a programme of archaeological work recommended by South Yorkshire Archaeology Service (SYAS), of which this report forms the third stage, stages 1 and 2 being desk-based assessment (BUFAU 2002a) and geophysical survey (GSB 2002) respectively. The evaluation adheres to the guidelines set down in the *Standard and Guidance for Archaeological Field Evaluation* (Institute of Field Archaeologists 2001) and is in accordance with a brief prepared by SYAS (SYAS 2002) and a project proposal document by BUFAU (BUFAU 2002b), approved by SYAS.

On 18th April and 24th April 2002 site visits were made by Roy Sykes of SYAS, for the purpose of monitoring the fieldwork. The project was carried out in accordance with PPG 16 (DoE 1990).

The finds and paper archive will be deposited with the Doncaster Museum within a reasonable period after the completion of the fieldwork.

3.0 Site location and description (Figs. 1 and 2)

The site is located approximately 3km southeast of Doncaster (centred on NGR SE 5862 0058). The main part of the site is bordered by a ditch running parallel to the White Rose Way in the east, the Division Drain to the south, which runs east-west across this area of the Carr, and arbitrary borders defined by the limits of the site and the location of proposed access roads to the west and north. The study area covers an area of approximately 6.3 hectares and comprises two fields of former agricultural land, currently left as rough pasture and separated by a drainage ditch. The site is fairly flat with a very slight gradual downward slope to the north, with a height of approximately 4-5m above Ordnance Datum.

The underlying geology consists of drift deposits consisting of alluvial clay. Below these are solid deposits comprising the Bunter Sandstone of the Permian-Triassic (British Geological Survey, 1:50,000 map sheet 88). Under these are Carboniferous rocks, including productive Coal Measures. The overlying soils are generally brown clayey sand or sandy clay.

Information from a geotechnical report (Thomas and Callington 2001) on the site indicated the topsoil in the south of the site was underlain, in places, by dark brown-grey soils 0.55-0.70m thick, possibly indicating made ground.

4.0 Archaeological background

Prior to the evaluation, which is the subject of this report, a desk-based assessment of the site was carried out (BUFAU 2002a).

4.1 Desk-based assessment

The findings of the assessment were that although no finds or features of archaeological interest are known within the site itself, a high concentration of occupation sites dating to the late Iron Age and Romano-British periods, visible on aerial photographs as cropmarks, exist near to the site, to the north and south. These include enclosures and extensive 'brickwork' pattern field systems. An undated soil mark feature to the east of the site which could be interpreted as an enclosure was also visible on aerial photographs. Finds of Romano-British artefacts have also been recorded close to the site. Given this concentration of sites nearby, the proximity of the Roman town of *Danum* and the presence of Roman-British pottery kiln sites in the surrounding area, it was thought that there was good potential for the existence of significant archaeological features within the site.

4.2 Geophysical survey

Subsequent geophysical survey by Geophysical Surveys of Bradford (GSB 2002) revealed no clearly defined anomalies suggestive of buried archaeological remains. However, a few pit-like anomalies were noted (Fig. 3), which could possibly be of archaeological origin. Many weak ploughing trends were visible, one of which was noticeably more magnetic, possibly indicating more magnetically enhanced deposits brought to the surface by ploughing.

5.0 Aims

The aims of the evaluation, as stated in the evaluation proposal (BUFAU 2002b) were to:

- establish the likely presence or absence of any archaeological deposits and features within the site.
- define the nature, date, extent and significance of surviving deposits and features.
- provide information to allow the formulation of a mitigation scheme for further investigation in advance of development, where appropriate, or for other mitigation through scheme design etc.

These aims were achieved through the excavation of eighteen archaeological trial-trenches. Some of the trenches were located to test anomalies found by the geophysical survey (Trenches 4, 5, 7 and 14, fig. 3) and the rest were evenly distributed throughout the rest of the available area of the site, and are speculative in nature. A proposed trench location plan is attached. The locations of the trenches were agreed in consultation with Roy Sykes of SYAS.

6.0 Method

In order to achieve the aims of the evaluation a total of 20 trial-trenches, 50m in length, were to be excavated, representing approximately a 3% sample of the total area of the site. In practice only approximately 4.75 hectares of the site was available for trial-trenching (Fig. 2) and eighteen trial-trenches were excavated (Fig. 3) covering a total of 1530 sq. metres. Trial-trenches were surveyed-in using an EDM total station. A tracked 360° mechanical excavator, fitted with a 1.7m wide toothless ditching bucket, was used to remove the topsoil and/or modern overburden.

Mechanical excavation was monitored by an archaeologist at all times. Machining ceased at the top of the uppermost archaeological deposit or at the top of the natural subsoil if no archaeological deposits were present. Any subsequent cleaning and excavation was by hand. Discrete archaeological features, such as pits and post-holes, were to be half sectioned in the first instance. Generally, a minimum of 20% of the length of linear features, or a minimum of a 1m sample section, if the feature was less than 10m in length. Junctions and terminals of linear features were sample excavated to determine the stratigraphic relationships between features.

Recording was by means of pre-printed pro-formas for contexts and features, supplemented by plans (at 1:20 and 1:50), sections (at 1:10 and 1:20), monochrome print and colour slide photography. The vertical stratigraphy of all trenches was recorded.

A representative sample of datable archaeological features were selected for the collection of 20 litre soil samples for the recovery of charred plant remains. Suitable samples were taken for scientific dating and this was undertaken, after consultation with SYAS. The environmental sampling policy followed the broad guidelines contained in the BUFAU Guide to On-Site Environmental Sampling. Marina Ciaraldi, BUFAU Environmental Officer, visited the site to advise on sampling strategy.

Recovered finds were cleaned, marked and remedial conservation work was to be undertaken, as necessary. Treatment of all finds conformed to guidance contained within *A strategy for the care and investigation of finds* published by English Heritage and the document *Guidelines for the preparation of excavation archives for long term storage* published by UKIC. If appropriate, ferrous objects and a selection of non-ferrous objects were to be x-radiographed. Any finds which are 'treasure' with reference to the Treasure Act 1997 were to be reported to the Coroner and the appropriate procedures were to be followed. Any human remains uncovered were only to be excavated following receipt of the appropriate Home Office licence.

7.0 Summary of results (Fig. 3)

This section is only intended as a summary. The detailed results of the trial-trenching are described below (Appendix 1). The underlying natural subsoil was mainly yellow alluvial clay. In some of the trenches particularly in Trenches 5, 6, 11, 12 and 15 tree boles and tree root holes disturbed the natural subsoil. This was sealed by dark brown sandy clay topsoil which varied in depth between 0.15m and 0.35m.

The natural subsoil in the extreme south part of the site was overlain by a layer of dark brown silty clay (1001 and 3001), sealed by the topsoil, containing late post-medieval pottery, present in Trenches 1 and 3, up to 0.25m thick. The presence of this layer may possibly be associated with the construction of the adjacent Division Drain during the post-medieval period and is probably the 'made ground' referred to in a geo-technical report on the site (Thomas and Callington 2001).

In Trench 4 (Fig. 4) was a linear ditch (F400, Plate 4), 1.46m wide and 0.58m deep, orientated north-south. Ditch F400 corresponded approximately with the location of a geophysical anomaly. However, the geophysical anomaly suggested the presence of a pit-like feature rather than a linear feature.

In Trench 6 (Fig. 4) was a linear ditch (F600, Plate 2) 1.24m wide and at least 0.50m deep, orientated north-south. Ditch F600 was cut by a shallow narrow curvilinear ditch (F601), 0.60m wide and 0.22m deep, aligned northeast-southwest and terminating to the northeast. Ditch F601 was cut by a later recut of Ditch F600 (F603). West of F600 was a terminal of a linear gully (F602), 0.40m wide and 0.10m deep, orientated northwest-southeast. Further west was an irregular hollow or pit (F604), at least, 0.70 x 0.83m x 0.18m deep. This feature may be associated with tree root disturbance, as is F605 to the west, although it is possible that it formed the base of a truncated pit.

In Trench 10 (Fig. 5) was a linear ditch (F1000, Plate 3), 2.20m wide and 0.54m deep, aligned east-west with steeply sloping sides and a 'V'-shaped cut at the base. The primary fill of the 'V'-shaped cut was a black peat (10011).

In Trench 14 (Fig. 5) was the terminal of an extremely regular well-defined linear ditch (F1400), 0.55m wide and 0.30m deep, aligned east-west. This feature may be associated with the post-medieval drainage ditches mentioned below.

In Trench 17 (Fig. 5) was a linear ditch (F1700, Plate 4), 1.20m wide and at least 0.60m deep, aligned east-west. It was filled with a grey sandy silty clay (17004) containing a

fragment of waterlogged wood. A calibrated radiocarbon date of 400BC-350AD (Wk 10973; 1999 ± 123 BP, Appendix 2) was obtained from the waterlogged wood. Ditch F1700 was later recut by a ditch (F1701), 1.1m wide and 0.40m deep. The primary fill of F1700 was a black peat (17003).

In Trench 18 (Fig. 6) was a linear ditch (F1802, Plate 6), 0.81m wide and at least 0.35m deep, aligned east-west with steeply sloping sides and a slightly rounded base. Ditch F1802 was later recut by a ditch (F1801) of a similar width, 0.21m deep, filled with a black peat (18002). To the south of F1802 was another linear ditch (F1804, Plate 5), 1.30m wide and at least 0.81m deep, aligned east-west. Ditch F1804 contained three fills the second of which was rich in peat. Ditch F1804 was recut by another ditch (F1803), 0.90m wide and 0.38m deep. This recut was filled with a black peat (18003).

In Trench 5 (Fig. 6) a shallow hollow (F500), 2.60m wide and 0.32m deep, was filled with a primary fill of humic brown silty sand (5003) and a secondary fill of dark brown peaty silt-sand (5004). This feature is probably of natural origin, although it is possible, if unlikely that it could have been deliberately dug. Several features which appeared to be hollows in the natural subsoil and contained grey silty clays were investigated and none of these proved to be of archaeological origin. No other significant archaeological features were recorded.

In all trenches with the exception of Trench 15 and perhaps Trench 14 regularly spaced linear ditches on similar alignments with similar widths and identical peaty loam fills were recorded. Several of these ditches were sample excavated in Trenches 9 and 16 and were found to have mainly vertical sides, often with flat bases. No finds were recovered from these features, apart from F900, Trench 9 which contained an unidentifiable fragment of animal bone and F1603, Trench 16 which contained modern ceramic tile and coal fragments.

8.0 The finds

8.1 The pottery by Annette Hancocks

Eleven sherds (45g) of post-medieval pottery were recovered. Diagnostic pieces were rare, although blue and white transfer printed wares were recognised and a large fragment of manganese ware. These were provisionally spot-dated to the late 18th/19th century, (Table 1).

8.2 Other finds by Annette Hancocks

A small and undiagnostic assemblage of ceramic roof tile, glass and slag represent the remaining find types recovered. These compliment the dating evidence provided by the Post-medieval pottery assemblage. The majority of the finds were recovered from evaluation Trenches 9 and 15. A single unidentifiable fragment of animal bone was recovered from F900, Trench 9.

Table 1: Finds quantification

Trench	Context	Feature	Finds summary	Spot-date
1	1001	layer	3x post-medieval pottery (9g)	Late 18 th /19 th century
9	9002	F900	Animal bone (12g)	
9	9005	plough furrow	2x modern ceramic tile fragments (4g)	Modern
9	9008	plough furrow	3x modern ceramic tile fragments (1g); 1x coal (<1g)	Modern
9	9010	plough furrow	2x modern ceramic tile fragments (1g); 1x roof slate fragment (<1g); slag (1g); 1x coal (1g)	Modern
13	13015	F1301	3x modern ceramic tile fragments (6g); 1x coal (1g)	Modern
15	15002	root disturbance	1x post-medieval pottery (3g)	Late 18 th /19 th century
15	15005	root disturbance	1x post-medieval pottery (<1g); 1x clay pipe stem (<1g)	Late 18 th /19 th century
15	15006	plough furrow	2x ceramic brick fragments (2g); 2x Post-medieval pottery (8g); slag (1g)	Late 18 th /19 th century
15	15008	plough furrow	1x post-medieval pottery (15g); 1x clay pipe bowl (3g); 1x window glass (3g)	Late 18 th /19 th century
15	15010	modern disturbance	3x post-medieval pottery (9g); 1x vessel glass (9g); 1x window glass (<1g); 1x coal (1g)	Late 18 th /19 th century
16	16007	F1603	1x modern ceramic tile (2g); 2x coal (<1g)	Modern
17	17004	F1700	1x waterlogged wood	Iron Age/ Romano-British

8.3 The plant remains

8.3.1 Seeds by Marina Ciaraldi and James Greig

Two waterlogged soil samples were collected from the bottom of the Ditch F1700 (17004) and from the re-cut of the ditch (F1701, 17003). The plant macro-remains recovered from the two samples are summarised here. A twig of *Betula/Alnus*, with a human-made cut at one end was collected from the context 17004 and produced a calibrated radiocarbon date of 400BC-350AD (Wk 10973; 1999 ± 123 BP, Appendix 2).

Methods

A small sub-sample of 300 ml of soil was broken down in water and wet-sieved on a set of sieves (respectively 1mm, 0.5 mm and 0.3 mm). The material retained in the meshes was scanned in water under a x10 stereo microscope and the plant remains identified and checked with the writer's own reference collections (J.G.). The results are listed in taxonomic order (Kent 1992) in Table 2.

Sample 17004 (400BC-350 AD calib.)

The soil matrix of this sample was of sandy silt and organic remains were visible with the naked eye. Well-preserved seeds and insect remains were present in the sediment together with small fragments of wood. Seeds were not very abundant and belonged to a restricted

flora. Most of the plant species identified (Table 2), particularly *Alisma* (water plantain), *Ranunculus aquatilis* L. (common water-crowfoot), *R. flammula* L. (lesser spearwort) and *Juncus* (rush), are from aquatic environment and indicate that water was present in the ditch. Minute charcoal fragments provide evidence of human activity in the vicinity of the ditch.

Sample 17003

The soil matrix of this sample was very peaty and had a dark brown colour. At a closer examination, it appeared to be formed mainly by minute fragments of wood. Seeds were present (Table 2) but in fairly small numbers and with a somewhat restricted flora. Charcoal fragments provide evidence of human activity. The macrofossils show most sign of wetland, and as seeds do not travel as far as pollen, this wetland seems to have been local, growing in the ditch itself. The wetland plants include possible *Oenanthe* sp. (water dropwort), *Glyceria* sp., Alismataceae (water plantain), and *Juncus* (rush).

Fragments of insects and water flea's eggs were also abundant. The abundance of wood fragments and the absence of seeds could indicate that the area nearby was wooded. This evidence seems to be supported by the pollen evidence (see Greig in this report). The insect remains are abundant and well preserved and have a high potential for understanding of the palaeoenvironment close to the ditch.

Recommendations

The preservation of the organic material in the two samples recovered from the ditch suggests that there is high potential to answer questions related to changes which occurred in the surrounding palaeoenvironment. It will be possible to answer important questions as to whether the ditch was part of a field system and, if so, whether it enclosed a wooded area or a cultivated field. The plant remains from the two samples show a change in the vegetation in the ditch as well as in its surroundings. The increase of wood fragments in the later context (17004) suggests that it might correspond to an expansion of woodland, perhaps following a change in land use or as a consequence of a natural event. It is therefore recommended that an extensive sampling strategy is put in place if further excavations take place, in order to recover organic remains, particularly from waterlogged deposits.

Table 2: Quantification of plant seeds, (names and order according to Kent (1992).

Taxa	context 17004	context 17003	Name
<i>Urtica dioica</i> L.		1	common nettle
<i>Ranunculus flammula</i> L.	3		Lesser spearwort
<i>Ranunculus aquatilis</i> L.	10+		common water-crowfoot
<i>Ranunculus acris/repens</i>	1		buttercups
? <i>Salix</i> sp. bud		1	willow
<i>Oenanthe</i> sp.		14	water-dropwort
Alismataceae		1	water-plantain
<i>Juncus</i> sp.	3	10+	Rush
<i>Carex</i> sp.	2		Sedges
larger Poaceae nfi		15	Grasses
other remains			
Water flea's eggs	+	++	
Charcoal fragments	+	+	
insect remains	+	++	

8.3.2 Preliminary analysis of archaeobotanical material (pollen and plant macrofossils) by Dr. James Greig

Two samples from the fill of a ditch F1700, 17004 - dated to cal. 400-350 AD and 17003, were submitted for assessment of pollen and seeds.

Method

The pollen sample was processed using the standard method; about 1 cm³ subsample was dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on microscope slides in glycerol jelly. Counting was done with a Leitz Dialux microscope. Identification was using the writer's pollen reference collection, seen with a Leitz Lablux microscope. Standard reference works were used, notably Fægri and Iversen (1989) and Andrew (1984). The nomenclature and order of the taxa follow Bennett (1994) and Kent (1992) respectively, in Table 3.

Results

Pollen was scarce and of difficult identification in context 17004 but abundant and well-preserved in context 17003. The large flora present in this sample is discussed below.

Crops and weeds

Cereal-type pollen was present, and the size of some of the pollen grains suggests that cereals are probably represented, as opposed to certain wild grass taxa which overlap with this size range. A few weeds can be recognised among the pollen, such as *Chenopodiaceae* (goosefoot), and *Spergula* (corn spurrey).

Grassland

Poaceae (grass) is the most abundant both as a pollen type, and as seeds, although this does not necessarily represent grassland, as grasses grow in all habitats. Other grassland indicators are rather scarce, such as a trace record of *Plantago lanceolata* (ribwort plantain). *Pteridium* (bracken) is also present.

Woodland and scrub

These show up well as pollen, and trees and shrubs were nearly as abundant as grasses and herbs, suggesting the presence of woodland or scrub. Some of this may have been growing on relatively dry land, with *Quercus* (oak), *Fagus* (beech), *Tilia* (elm) and *Ulmus* (elm). More local carr woodland seems to be represented by *Alnus* (alder) and a trace of *Salix* (willow).

Correlation with other sites

A considerable amount of work has been done on the Humberhead levels sites just to the east of Doncaster, such as Thorne moors, Hatfield Crowle and Rawcliffe and Goole (Smith 1985).

Recommendations

The initial results show that pollen is preserved and shows evidence of human activity in the area. The possible late Roman or sub Roman date of the ditch, although the it could

equally be prehistoric, makes the results from this site especially important, since there is evidence of a period with very little tree ring growth around AD 540 suggesting some natural catastrophe (Baillie 2001). There appears to be pollen evidence of a sharp reduction in signs of human activity, which may be at the same period. Any further excavations should carry out a programme of sampling of ditch deposits for pollen and plant macrofossils. These ditch deposits should be studied to see if a significant time sequence is represented, and if it covers any of this crucial period leading up to AD 540 or after. Further samples from datable contexts should be studied to see whether there are changes in the pollen and seed floras.

Table 3: quantification of pollen and spores in context 17003

Spores/ pollen	Quantity	Name
<i>Pteridium</i>	7	bracken
<i>Polypodium</i>	1	polypody
<i>Pinus</i>	2	pine
<i>Ranunculus-tp.</i>	2	buttercup, crowfoot
<i>Ulmus</i>	1	elm
<i>Quercus</i>	13	oak
<i>Betula</i>	1	birch
<i>Alnus</i>	19	alder
<i>Corylus</i>	5	hazel
Chenopodiaceae	+	goosefoot
<i>Spergula-tp.</i>	+	corn spurrey
<i>Rumex-tp.</i>	2	docks and sorrels
<i>Tilia</i>	3	lime
<i>cf. Frangula alnus</i>	2	? alder buckthorn
<i>Geranium</i>	+	cranesbill
<i>Hedera</i>	?	ivy
Apiaceae	2	umbellifers
<i>Plantago lanceolata</i>	+	ribwort plantain
Rubiaceae	+	bedstraws
<i>Cirsium-tp</i>	2	thistles
Lactuceae	4	a group of composites
<i>Aster-tp</i>	1	daisies etc
Cyperaceae	18	sedges
Poaceae	49	grasses
Cerealia-tp.	2	cereals

Key: + present ++ abundant

9.0 Discussion

The earliest evidence for the use of the site comes from east-west aligned ditch F1700, Trench 17. A calibrated radiocarbon date of 400BC-350AD (Wk 10973; 1999 ± 123 BP, appendix 2) was obtained from a fragment of cut waterlogged wood recovered from the primary fill (17004) of this feature. The recut of this ditch (F1701) may be only slightly later than primary ditch F1700.

Other undated ditches on north-south or east-west alignments in Trenches 4 (F400), Trench 6 (F600 and F603) and Trench 18 (F1801-1804) appear to have similar profiles and/or show evidence of a similar episode of recutting. On these grounds, the other

undated linear ditches, on north-south or east-west orientations could be of similar Iron Age or Romano-British date as ditch F1700. Although the profile of the undated ditch F1000 in Trench 10 has a dissimilar profile to the rest of these ditches, it is possible that this feature could also be of similar date and function. These features may be interpreted as a network of ditches possibly functioning as field or enclosure ditches. They may have also functioned as drainage ditches. No internal features were identified, with the possible exception of F604. However, such features are often difficult to identify in trial trenches. The peat-rich fills of some of these features and the survival of waterlogged wood may attest to the boggy, wet low-lying nature of the site in the Iron Age or Romano-British periods.

A narrow gully (F602) in Trench 6 appears to be stratigraphically earlier and on a different alignment to possible Iron Age/Romano-British field boundary or enclosure ditch F600, and may be evidence of an earlier phase of activity on the site. Narrow ditch F602, also in Trench 6, is also on a different alignment to F600, and may also be part of an earlier phase of activity. A shallow irregular hollow or pit (F604) in Trench 6, the fill of which contained charcoal, may be a tree bole similar to others encountered in this trench. Its charcoal-rich fill (6012) could be the result of tree clearance by burning. Alternatively, F604 could possibly be the remains of a truncated pit and may be evidence of occupation within an enclosure, although the former interpretation appears more likely, in view of the irregular shape of this feature.

The lack of artefacts recovered from the ditches may suggest a limited material culture, could be evidence of a lack of a pottery industry or may indicate that these possible field boundaries/ enclosures were not close to settlement sites. The network of ditches appears to be concentrated in the southern part of the site and could possibly be associated with soil marks noted during the air photo assessment (Cox 2002), carried out as part of the desk-based assessment (BUFAU 2002a). These soil marks are located to the east of the site and were interpreted as either a possible enclosure or former drainage or boundary features. The ditches recorded during the evaluation, in Trenches 4, 6, 10, 17 and 18, may be a part of the extensive cropmarked 'brickwork' pattern field systems dating to the of the Iron Age/Romano-British periods documented through aerial photography (Riley 1980) in North Nottinghamshire and South Yorkshire. Similar cropmark complexes, comprising of small enclosures set among extensive patterns of field boundaries are located to the north and south of the site. The nearest of these cropmark complexes is situated about 1km to south of the site, close to Junction 3 of the M18 motorway and the features at Balby Carr may be a continuation of these.

The lack of animal bone and the paucity of charred plant remains indicate the potential for any possible future excavations to provide evidence of the economy by these means is limited. However, pollen and insect remains were well preserved and could provide evidence of the paleoenvironment, provided dating evidence is present. Evidence from the plant remains indicates that the archaeological features were subject to waterlogging and the recovery of waterlogged wood suggests there is considerable potential for the survival of organic remains.

The site may have been covered by peat deposits, probably until the post-medieval period when it was drained. Subsequent drainage and intensive modern agriculture may have degraded the peat resulting in the truncation of archaeological features. Evidence of a regular system of drainage ditches, of probable post-medieval date, was encountered in

most of the evaluation trenches. Deep plough furrows were visible in all the evaluation trenches, cutting into the subsoil and the top of archaeological features.

A tree bole in Trench 5, was the only feature to be identified by the geophysical survey. No archaeological features encountered during this evaluation were visible as geophysical anomalies or crop-marks. The pit-like anomalies, recorded during the geophysical survey (GSB 2002) did not correspond with archaeological features and may be due to local variations in the natural subsoil. Some of the anomalies interpreted as ploughing trends may correspond with the regular system of post-medieval drainage ditches.

The trial-trenching at Balby Carr, together with the preceding stages of the evaluation, provide a good picture of the nature, significance and quality of the archaeological remains within the proposed development site. It is concluded that the site is of local and regional archaeological importance and, as such, an archaeological mitigation strategy of the kind suggested in paragraph 30 of PPG16 (DoE 1990) may be applicable in this situation. The final decision on any mitigation strategy rests with Roy Sykes, Archaeologist for South Yorkshire Archaeology Service in discussion with the client.

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11.0 References

Andrew, R 1984 *A practical pollen guide to the British flora*. Quaternary Research Association, Technical Guide 1, Cambridge.

Baillie, M. 2001 The A.D. 540 event. *Current Archaeology* **174**: 26-269

Bennett, K.D. 1994 Annotated catalogue of pollen and pteridophyte spore types of the British Isles. unpublished report.

BUFAU 2002a *Catesby Buisness Park, Balby Carr, Doncaster, South Yorkshire: an archaeological desk-based assessment*. Report No. 895

BUFAU 2002b *Catesby Buisness Park, Balby Carr, Doncaster, South Yorkshire. Evaluation proposal for archaeological trial-trenching*.

- Cox C. 2002 *Balby Carr, Doncaster: Aerial Photographic Assessment*. CgMs project no. 3142
- DoE 1990 *Planning Policy Guidance Note 16: Archaeology and Planning*. Department of the Environment.
- Fægri, K. and Iversen, J. (1989) *Textbook of pollen analysis* (4th edn.), by K. Fægri, P.E. Kaland and K. Krzywinski, Wiley, Chichester.
- GSB 2002 *Balby Carr, Doncaster: Geophysical Report.2002/24*.
- Kent, D.H. 1992 *List of vascular plants of the British Isles*. Botanical Society of the British Isles, London.
- Riley D.N. 1980 *Early Landscape from the Air: Studies of Crop Marks in South Yorkshire and North Nottinghamshire*. University of Sheffield
- Smith, B.M. 1985 A palaeoecological study of raised mires in the Humberhead levels. Doctoral thesis, University of Wales
- SYAS 2002 *Brief for an archaeological evaluation: Catesby Buisness Park, Balby Carr, Doncaster*. South Yorkshire Archaeology Service
- Thomas H.L. and Callington H.W. 2001 *Ground Investigation for Land at Catesby Business Park, Doncaster* Roscoe Capita Ltd. Report Ref:L2001J-HWC-01-972-R

Appendix 1: Detailed results of trial trenching

Trench 1

Aim: speculative

Stratigraphy: the natural subsoil (1002) consisted of a yellow brown clay cut by linear drains. In the southern end of the trench this was sealed by a layer of dark brown silty clay (1001), up to 0.25m deep becoming deeper to the south and extending beyond the south end of the trench, containing sherds of Post-Medieval pottery. Layer 1001 and natural subsoil in the northern half of the trench was overlain by 0.25m of topsoil (1000).

Features: No archaeological features were recorded.

Unexcavated contexts:

1003 - black peaty loam fill of northeast-southwest aligned drain.

1004 - black peaty loam fill of northeast-southwest aligned drain.

1005 - black peaty loam fill of northeast-southwest aligned drain.

1006 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-Medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16. Layer 1001 is similar to layer 3001, Trench 3 and may be associated with the construction of Division Drain, during the Post-Medieval period, immediately to the south and is probably the 'made ground' mentioned in the geo-technical report (see above).

Trench 2

Aim: speculative

Stratigraphy: the natural subsoil (2001) consisted of a yellow clay. This was overlain by 0.25m of topsoil (2000).

Features: No archaeological features were recorded.

Unexcavated contexts:

2002 - black peaty loam fill of northeast-southwest aligned drain.

2003 - black peaty loam fill of northeast-southwest aligned drain.

2004 - black peaty loam fill of northeast-southwest aligned drain.

2005 - black peaty loam fill of northeast-southwest aligned drain.

2006 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 3

Aim: speculative

Stratigraphy: the natural subsoil (3002) consisted of a yellow brown clay cut by linear drains. In the southern end of the trench this was sealed by a layer of dark yellowish brown silty clay (3001), up to 0.20m deep becoming deeper to the south and extending beyond the south end of the trench. Layer 3001 and natural subsoil 3002, in the northern half of the trench was overlain by 0.20m of topsoil (3000).

Features: No archaeological features were recorded.

Unexcavated contexts:

3003 - black peaty loam fill of northeast-southwest aligned drain.

3004 - black peaty loam fill of northeast-southwest aligned drain.

3005 - black peaty loam fill of northeast-southwest aligned drain.

3006 - black peaty loam fill of northeast-southwest aligned drain.

3007 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16. Layer 3001 is similar to layer 1001, trench 1 and may be associated with the construction of Division Drain, during the Post-medieval period, immediately to the south and is probably the 'made ground' mentioned in the geo-technical report (see above).

Trench 4

Aim: to investigate pit-like geophysical anomaly

Stratigraphy: the natural subsoil (4001) consisted of a yellow clay. Above this was 0.15-0.25m of topsoil (4000).

Features:

F400 - linear ditch, 1.46m wide and 0.58m deep, aligned north-south with steeply sloping sides and a narrow flat base. Filled with a grey silty clay (4007).

Unexcavated contexts:

4002 - black peaty loam fill of northeast-southwest aligned drain.

4003 - black peaty loam fill of northeast-southwest aligned drain.

4004 - black peaty loam fill of northeast-southwest aligned drain.

4005 - black peaty loam fill of northeast-southwest aligned drain.

4006 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: feature F400 is of uncertain date, but its profile is similar to that of F1700, Trench 17, and it may be of similar date and function. The location of a geophysical anomaly corresponded approximately with the position of feature F400, but this feature is linear in plan rather than a pit-like feature. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same post-

medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 5

Aim: to investigate geophysical anomaly interpreted as a ploughing trend, which may have disturbed deeper more magnetically enhanced soils

Stratigraphy: the natural subsoil (5001) consisted of a yellow clay, disturbed by a deep tree bole at the north end of the trench and by plough furrows. Above this was 0.35m of topsoil (5000).

Features:

F500 - hollow, 2.60m wide and 0.32m deep, aligned east-west with a steeply sloping south side, a gently sloping north side and a wide flat base. Filled with a primary fill of humic brown silty sand (5003) and a secondary fill of dark brown peaty silt-sand (5004).

Unexcavated contexts:

5005 - black peaty loam fill of northeast-southwest aligned drain.

5007 - black peaty loam fill of northeast-southwest aligned drain.

5008 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: feature F500 is probably a natural hollow. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16. The geophysical anomaly appears to correspond with a deep tree bole, which has been disturbed by plough furrows.

Trench 6

Aim: speculative

Stratigraphy: the natural subsoil (6001) consisted of a yellow clay, disturbed in places by shallow tree boles and roots. Above this was 0.15m of topsoil (6000).

Features:

F600 - linear ditch, 1.24m wide and at least 0.50m deep, aligned north-south with steeply sloping sides and a narrow flat base. Filled with a yellowish brown sandy silty clay (6018).

F601 - curvi-linear ditch, 0.60m wide and 0.22m deep, aligned northeast-southwest with steeply sloping sides and a narrow flat base. Cuts linear ditch F600. Filled with a greyish brown sandy silt-clay (6018).

F602 - terminal of linear gully, 0.40m wide and 0.10m deep, aligned northwest-southeast with steeply sloping sides and a flat base. Filled with a greyish brown silty clay (6020).

F603 - linear ditch recut, 1.12m wide and 0.40m deep, aligned north-south with steeply sloping sides and a narrow flat base. Recut of linear ditch F600 also cuts F601. Filled with a primary fill of greyish brown sandy silty clay with some yellowish brown mottling (6021). This was sealed by a dark brown silty clay (6010).

F604 - irregular hollow or pit, at least 0.70m x 0.83m and 0.18m deep, with irregular sides and base and extending beyond the edge of the trench. Filled with a greysilty sand (6016) and a dark brown silty clay (6012) containing charcoal.

Unexcavated contexts:

6002 - black peaty loam fill of northeast-southwest aligned drain.

6003 - black peaty loam fill of northeast-southwest aligned drain.

6004 - black peaty loam fill of northeast-southwest aligned drain.

6007 - black peaty loam fill of northeast-southwest aligned drain.

6008 - black peaty loam fill of northeast-southwest aligned drain.

6009 - black peaty loam fill of northeast-southwest aligned drain.

6011 - black peaty loam fill of northeast-southwest aligned drain.

6013 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: feature F600 is of uncertain date, but its profile is similar to that of ditch F1700, Trench 17, and it has a similar recut. This may indicate it may be of similar date and function to F1700. The function of shallow curvi-linear ditch F601 is not clear, although it is obviously later than ditch F600, but earlier than the recut of F600 (F603). Gully F602 may possibly be associated with F601, although the relationship with F601 and F600 was not visible within the trench. Undated irregular hollow or pit F604 may be a tree bole similar to others encountered in this part of the trench and its charcoal-rich fill (6012) could be the result of tree clearance by burning. Alternatively, F604 could possibly be the remains of a truncated pit, although the former interpretation appears more likely. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 7

Aim: to investigate pit-like geophysical anomaly

Stratigraphy: the natural subsoil (7001) consisted of a yellow clay. This was overlain by 0.15-0.20m of topsoil (7000).

Features: No archaeological features were recorded.

Unexcavated contexts:

7002 - black peaty loam fill of northeast-southwest aligned drain.

7003 - black peaty loam fill of northeast-southwest aligned drain.

7004 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16. No features were recorded which corresponded with the position of the geophysical anomaly.

Trench 8

Aim: speculative

Stratigraphy: the natural subsoil (8001) consisted of a yellow clay with grey mottling in places and patches of greyish brown sand (8002). This was overlain by 0.15m of topsoil (8000).

Features: No archaeological features were recorded.

Unexcavated contexts:

8004 - black peaty loam fill of northeast-southwest aligned drain.

8005 - black peaty loam fill of northeast-southwest aligned drain.

8006 - black peaty loam fill of northeast-southwest aligned drain.

8008 - black peaty loam fill of northeast-southwest aligned drain.

8009 - black peaty loam fill of northeast-southwest aligned drain.

8010 - black peaty loam fill of northeast-southwest aligned drain.

8012 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 9

Aim: speculative

Stratigraphy: the natural subsoil (9001) consisted of a yellow clay, disturbed by deep plough furrows containing topsoil (9005, 9008 and 9010). Above this was 0.15-0.20m of topsoil (8000).

Features:

F900 - linear ditch, 0.40m wide and 0.13m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (9002) containing a fragment of animal bone.

F901 - linear ditch, 0.33m wide and 0.28m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (9004).

F902 - linear ditch, 0.40m wide and 0.28m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (9006).

F903 - linear ditch, 0.32m wide and 0.13m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (9007).

F904 - linear ditch, 0.30m wide and 0.10m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (9011).

Unexcavated context:

9009 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: ditches F900-904 appear to have mainly similar profiles, contain identical fills and be on similar alignments, generally spaced 7m apart. They run parallel to the drain on the west side of the field and are drainage features, probably joining Division Drain to the south and Mother Drain to the north. Similar features were revealed in most of the evaluation trenches, but were only sample excavated in this

trench and Trench 16. They are interpreted as part of a Post-medieval land drainage system. The nature and orientation of the unexcavated context 9009 indicates it is the fill of a drain belonging to the same Post-medieval land drainage system.

Trench 10

Aim: speculative

Stratigraphy: the natural subsoil (10001) consisted of a yellow clay. Above this was 0.25m of topsoil (10000).

Features:

F1000 - linear ditch, 2.20m wide and 0.54m deep, aligned east-west with steeply sloping sides and a 'V'-shaped cut at the base. The 'V'-shaped cut was filled with a black peat (10011), which was sealed by a grey silty clay (10008). This was partly overlain by a black peat (10010).

Unexcavated contexts:

10002 - black peaty loam fill of northeast-southwest aligned drain.

10007 - black peaty loam fill of northeast-southwest aligned drain.

10009 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: feature F1000 is of uncertain date and function, and its profile is unlike other archaeological features, which could form a network of ditches in Trenches 4, 6, 17 and 18. However, it may perhaps be contemporary with these ditches or alternatively may possibly be a post-medieval drainage ditch. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 11

Aim: speculative

Stratigraphy: the natural subsoil (11001) consisted of a yellow clay. Above this was 0.15-0.25m of topsoil (11000).

Features:

F1100 - natural hollow, 1.50m wide and 0.30m deep, with gently sloping sides and a slightly rounded base. Contained a grey silty clay (11005).

F1101 - irregular tree root disturbance, 0.40-0.70m wide and 0.40m deep, steep sides and irregular base. Contained a grey silty clay (11004).

Unexcavated contexts:

11002 - black peaty loam fill of northeast-southwest aligned drain.

11003 - black peaty loam fill of northeast-southwest aligned drain.

11006 - black peaty loam fill of northeast-southwest aligned drain.

11009 - black peaty loam fill of northeast-southwest aligned drain.

11010 - black peaty loam fill of northeast-southwest aligned drain.

11011 - black peaty loam fill of northeast-southwest aligned drain.

11012 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: features F1100 and F1101 are almost certainly not of archaeological origin. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 12

Aim: speculative

Stratigraphy: the natural subsoil (12001) consisted of a yellow clay. Above this was 0.15-0.20m of topsoil (12000).

Features:

F1200 - irregular tree root disturbance, 0.40m wide and 0.20m deep, steep sides and irregular base. Contained a grey silty clay (12003).

F1202 - irregular negative feature, 2.0m long, 0.65-0.90m wide and 0.25-0.40m deep, steep sides and irregular base. Contained a grey silty clay (12006).

Unexcavated contexts:

12002 - black peaty loam fill of northeast-southwest aligned drain.

12007 - black peaty loam fill of northeast-southwest aligned drain.

12008 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: features F1200 and F1202 are almost certainly not of archaeological origin and are probably caused by tree root disturbance. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 13

Aim: speculative

Stratigraphy: the natural subsoil (13001) consisted of a yellow clay. Above this was 0.20m of topsoil (13000).

Features:

F1300 - hollow, 1.72m wide and 0.08m deep, steep sides and irregular base. Contained a grey brown silty clay (13014).

F1301 - shallow linear ditch, 0.80m wide and 0.18m deep, steep sides and a rounded base. filled with a dark brown silty clay (13015) containing modern ceramic tile fragments.

Unexcavated contexts:

13002 - black peaty loam fill of northeast-southwest aligned drain.

13004 - black peaty loam fill of northeast-southwest aligned drain.

13006 - black peaty loam fill of northeast-southwest aligned drain.

13007 - black peaty loam fill of northeast-southwest aligned drain.

13010 - black peaty loam fill of northeast-southwest aligned drain.

13011 - black peaty loam fill of northeast-southwest aligned drain.

13013 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: feature F1300 is almost certainly a natural hollow and ditch F1301 is of modern date. The nature of the fill, orientation and spacing of the unexcavated contexts indicates they are part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 14

Aim: to investigate pit-like geophysical anomaly

Stratigraphy: the natural subsoil (14001) consisted of a yellow clay, disturbed by plough furrows, in places. Above this was 0.15-0.25m of topsoil (14000).

Features:

F1400 - linear ditch terminal, 0.55m wide and 0.30m deep, aligned east-west with a well defined regular 'V'- shaped profile. Filled with a yellowish brown silty clay (14003) and a dark brown silty clay(14002).

Interpretation: feature F1400 is of uncertain date, but its profile is extremely regular and well defined and it runs parallel with a drainage ditch, which divides the two fields. It appears to be more similar to ditches belonging to the Post-medieval land drainage system than to other archaeological features, which may form a network of ditches, excavated in Trenches 4, 6, 17 and 18 and possibly in Trench 10. No features were found which corresponded with the location of the geophysical anomaly.

Trench 15

Aim: speculative

Stratigraphy: the natural subsoil (15001) consisted of a yellow clay, disturbed in places by tree boles, tree roots, plough furrows and shallow scoops all filled with topsoil (15002, 15005, 15006, 15008, 15010) which frequently contained modern finds. Above this was 0.20m of topsoil (15000).

Features: no archaeological features were identified.

Trench 16

Aim: speculative

Stratigraphy: the natural subsoil (16001) consisted of a yellow clay disturbed in places by recent wheel ruts. This was overlain by 0.20-0.25m of topsoil (16000).

Features:

F1600 -shallow hollow, 0.95m wide and 0.10m deep, aligned east-west with irregular sides and base. Contained a grey sandy silt (16006)

F1601 - linear ditch, 0.70m wide and 0.38m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (16009).

F1602 - linear ditch, 0.60m wide and 0.40m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (16005).

F1603 - linear ditch, 0.80m wide and 0.48m deep, aligned northeast-southwest with vertical sides and a flat base. Filled with a black peaty loam (16007) containing a fragment of ceramic tile.

Interpretation: ditches F1601-1603 appear to have mainly similar profiles, contain identical fills and be on similar alignments, generally spaced 7m apart. They run parallel to the drain on the west side of the field and are drainage features, probably joining Division Drain to the south and Mother Drain to the north. Similar features were revealed in most of the evaluation trenches, but were only sample excavated in this trench and Trench 9. They are interpreted as part of a Post-medieval land drainage system. Hollow F1600 is unlikely to be of archaeological origin and is probably an undulation in the natural subsoil.

Trench 17

Aim: speculative

Stratigraphy: the natural subsoil (17001) consisted of a yellow clay. Above this was 0.25m of topsoil (17000).

Features:

F1700 - linear ditch, 1.20m wide and at least 0.60m deep, aligned east-west with steeply sloping sides and a flat base. Filled with a primary fill of grey sandysilty clay (17004) containing a fragment of waterlogged wood.

F1701 - linear ditch recut, 1.1m wide and 0.40m deep, aligned east-west with steeply sloping sides and a slightly rounded base. Recut of linear ditch F1700. Filled with a primary fill of black peat (17003). This was sealed by a dark brown humic silty clay (17002).

Unexcavated context:

17005 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: A calibrated radiocarbon date of 400BC-350AD (Wk 10973; 1999 ± 123 BP, Appendix 2) was obtained from the waterlogged wood recovered from context 17003 filling ditch F1700. Its profile is similar to that of ditch F400, Trench 4, and it has a similar profile and recut and is on a similar alignment to F1804. This may indicate these ditches may be of similar date and function to F1700. Ditch F600, Trench 6 also has a recut and approximately similar profile. These ditches may form a network of field boundary or drainage ditches. The nature of the fill, orientation and spacing of the unexcavated context indicates it is part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Trench 18

Aim: speculative

Stratigraphy: the natural subsoil (18001) consisted of a yellow clay. Above this was 0.15m of topsoil (18000).

Features:

F1801 - linear ditch recut, 0.81m wide and 0.21m deep, aligned east-west with steeply sloping sides and a rounded base. Recut of linear ditch F1802. Filled with a black peat (18002).

F1802 - linear ditch, 0.81m wide and at least 0.35m deep, aligned east-west with steeply sloping sides and a slightly rounded base. Filled with a grey silty clay (18010)

F1803 - linear ditch recut, 0.90m wide and 0.38m deep, aligned east-west with steeply sloping sides and a rounded base. Recut of linear ditch F1804. Filled with a black peat (18003).

F1804 - linear ditch, 1.30m wide and at least 0.81m deep, aligned east-west with steeply sloping sides and a rounded base. Filled with a primary fill of bluish grey sandy clay (18013). This was sealed by a peat-rich dark grey silty clay (18012). Sealing this was a light grey clay (18011).

Unexcavated context:

18005 - black peaty loam fill of northeast-southwest aligned drain.

18006 – dark brown clay silt containing modern bottle glass and other modern finds.

18007 - black peaty loam fill of northeast-southwest aligned drain.

Interpretation: ditch F1804 is undated, but has a similar profile and is on a similar alignment to ditch F1700, Trench 17. The recut of Ditch F1804 (F1803) is also similar to the recut of F1700 (F1701) making it possible that the two features may be part of the same ditch. Other ditches in Trench 4 and Trench 6 (F400 and F600) and possibly in Trench 10 (F1000) may form a network of similar ditches of the same date and function, possibly forming field boundary or drainage ditches. Undated ditch (F1802) and its recut (F1801) could be part of this network of ditches. The nature of the fill, orientation and spacing of the unexcavated contexts indicates it is part of the same Post-medieval land drainage system, with drains usually spaced at 7m intervals. These drains were recorded in the majority of trenches and were sample excavated in Trenches 9 and 16.

Appendix 2: Radiocarbon date

The University of Waikato
Radiocarbon Dating Laboratory



Private Bag 3105
Hamilton,
New Zealand.
Fax +64 7 838 4192
Ph +64 7 838 4278
email c14@waikato.ac.nz
Head: Dr Alan Hogg

Report on Radiocarbon Age Determination for Wk-

10973

Submitter M Ciaraldi
Submitter's Code BCD02 F1700 (17004)
Site & Location Doncaster, South Yorkshire, United Kingdom
Sample Material Alnus/Betula/Corylus
Physical Pretreatment Surfaces scraped clean and washed in ultrasonic bath. The wood was chopped up into small splinters.
Chemical Pretreatment Sample was washed in hot 10% HCl, rinsed and treated with hot 1% NaOH. The NaOH insoluble fraction was treated with hot 10% HCl, filtered, rinsed and dried.

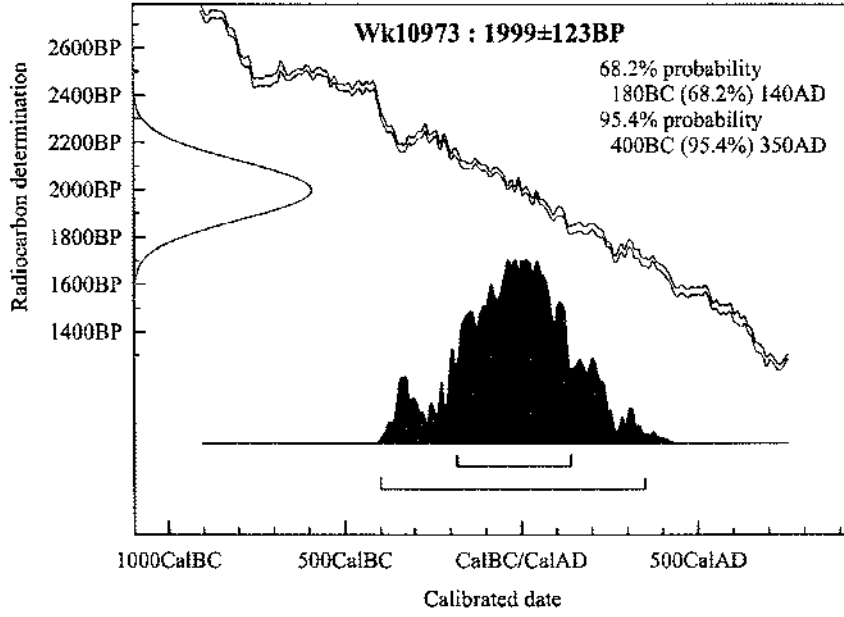
$\delta^{14}\text{C}$	-224. ± 9.7	‰
$\delta^{13}\text{C}$	-27. ± 0.2	‰
D^{14}C	-220. ± 11.9	‰
% Modern	78. ± 1.2	%
Result	1999 ± 123 BP	

Comments

14/05/02

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier of 1.217 .
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- Results are reported as % *Modern* when the conventional age is younger than 200 yr BP.

Atmospheric data from Stuiver et al. (1998); OxCal v3.5 Bronk Ramsey (2000); web: r4.s4-12.2000.usg.chrome



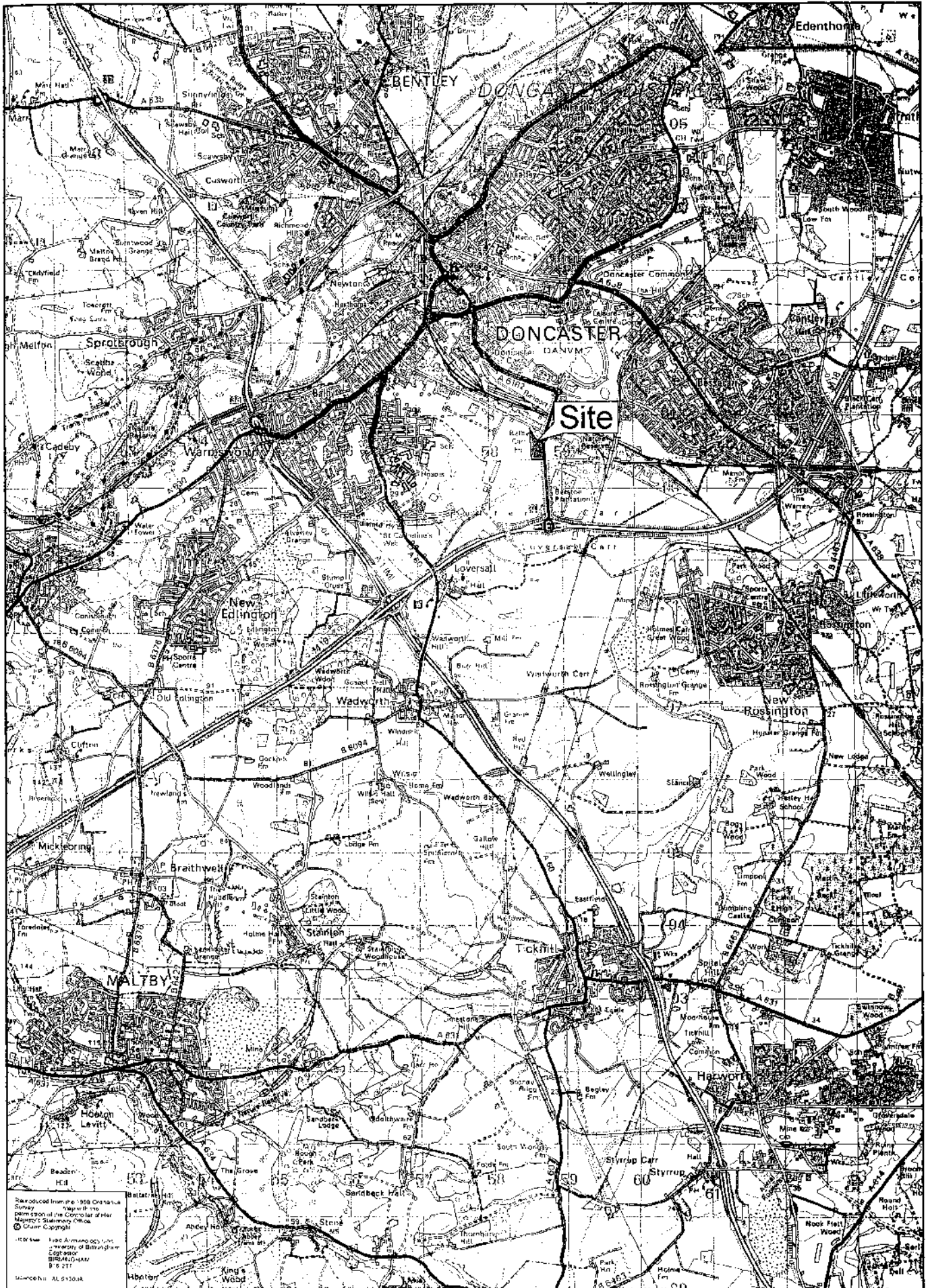


Fig.1

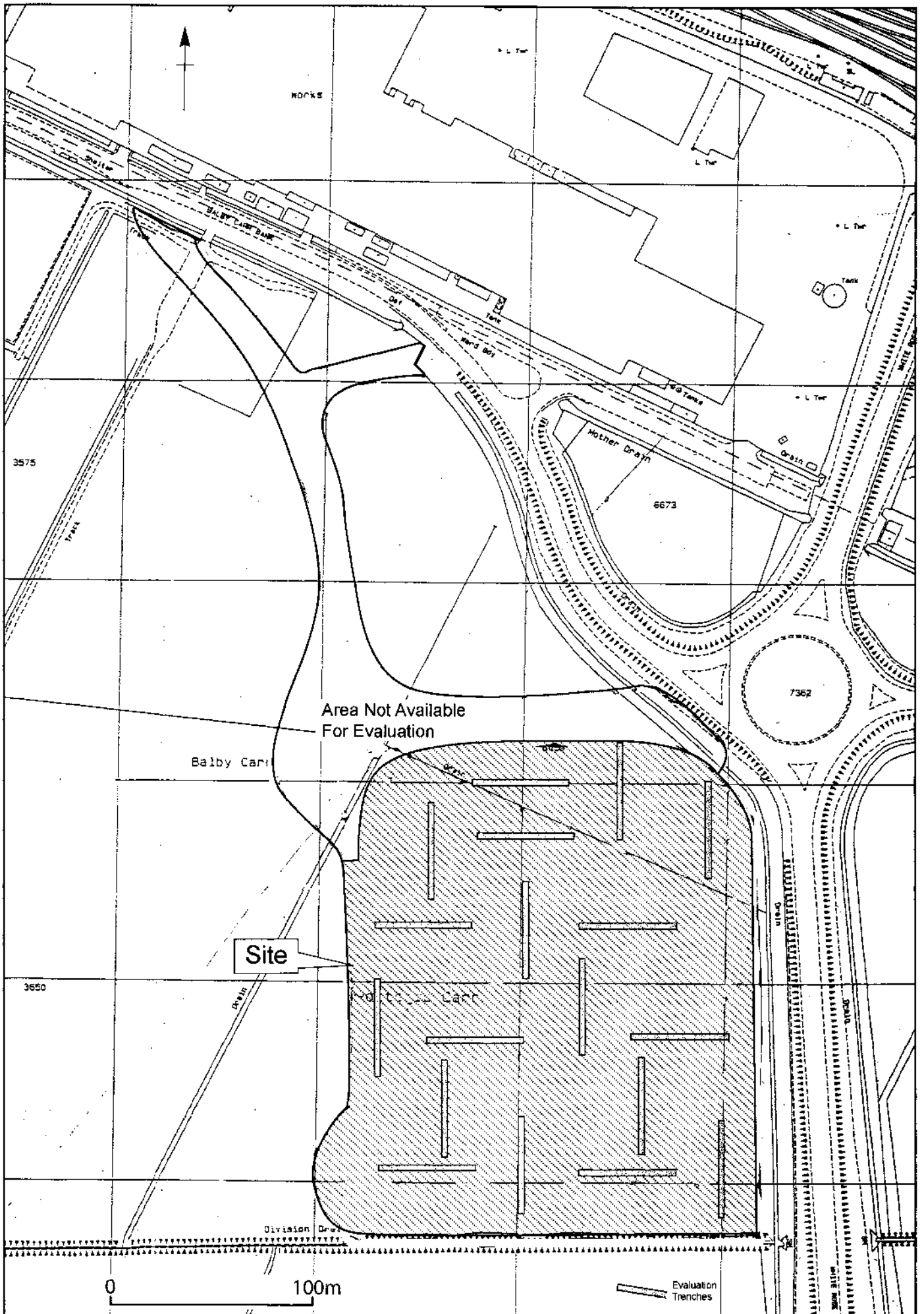


Fig.2

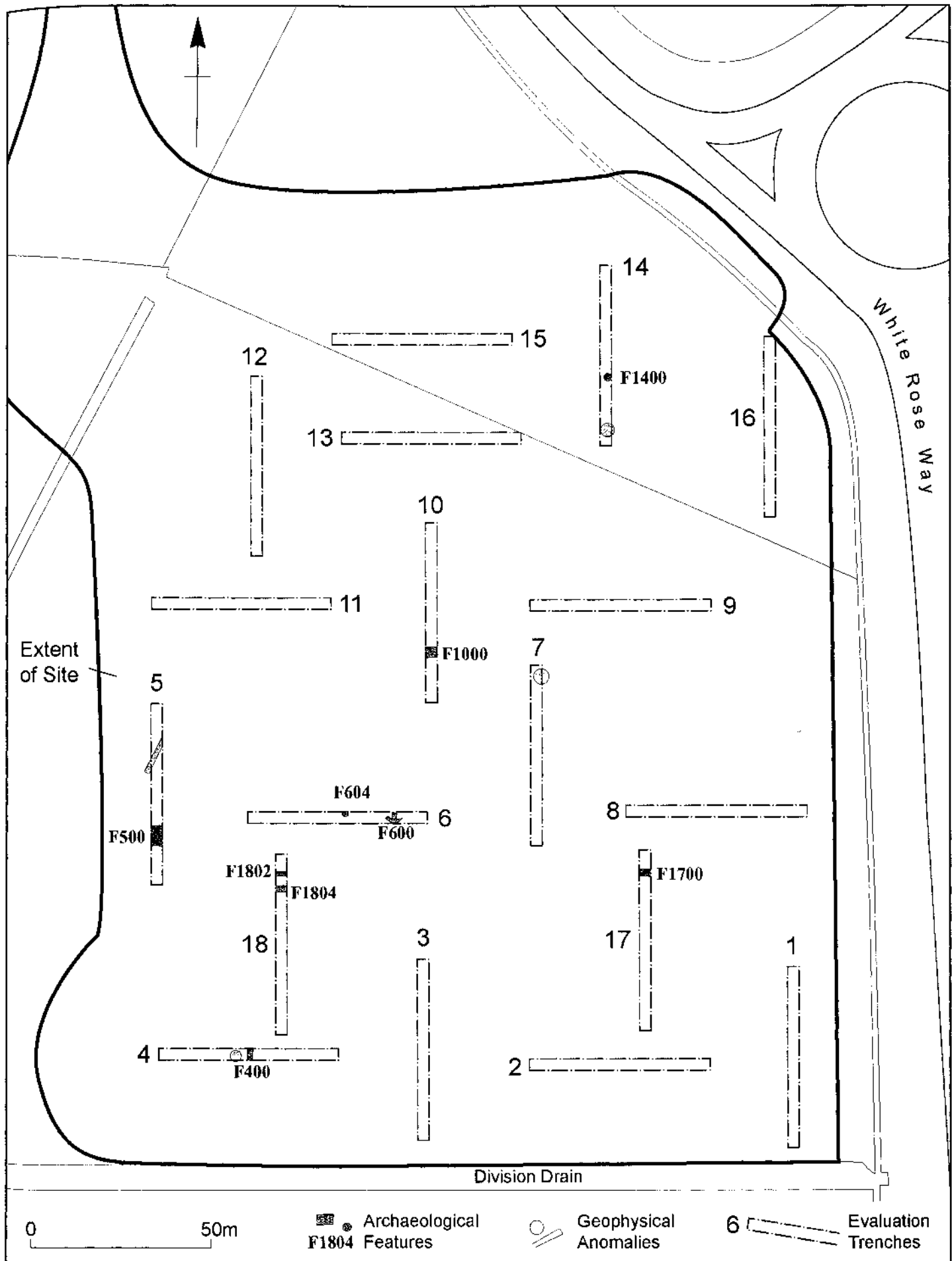


Fig.3

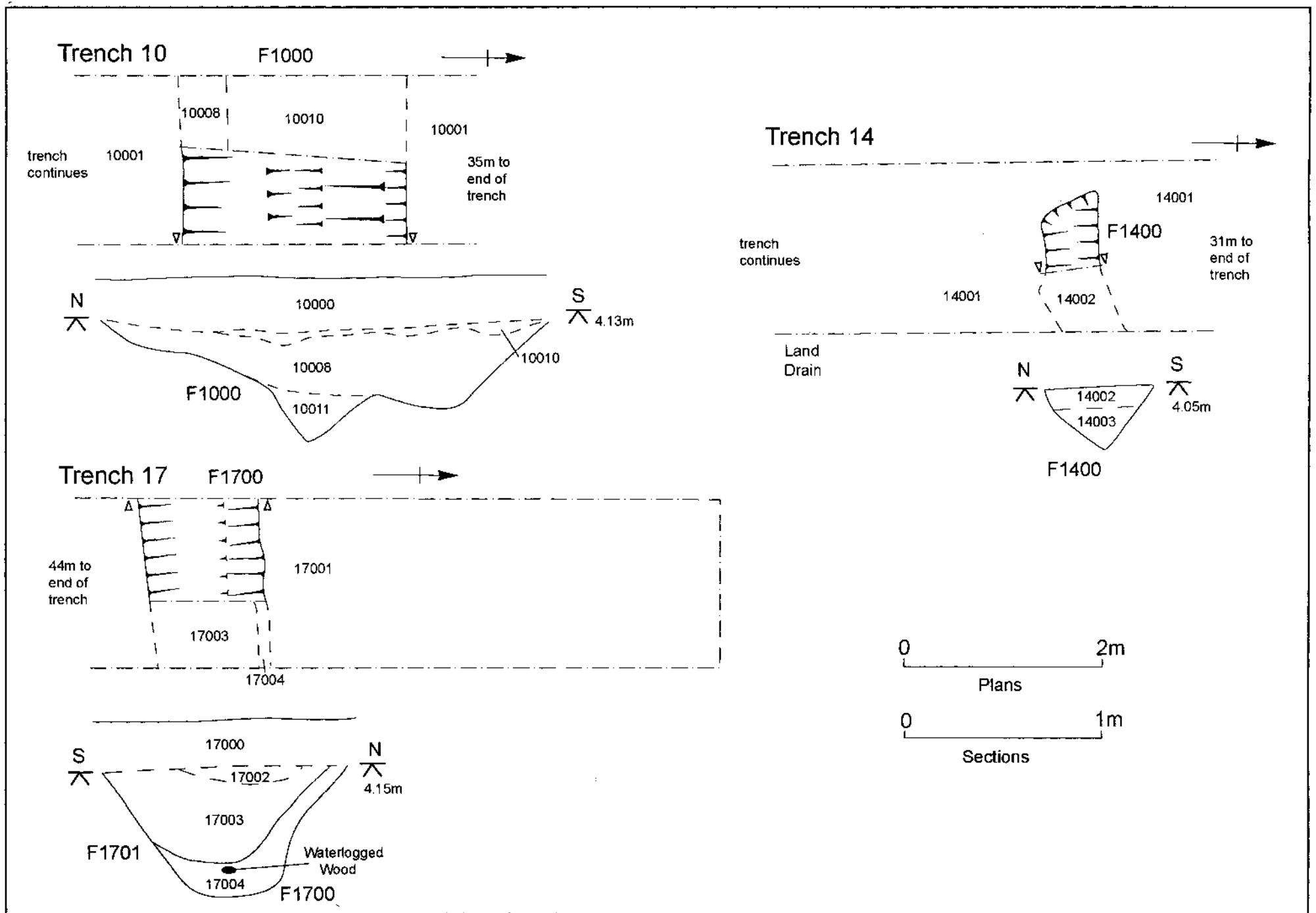


Fig.5

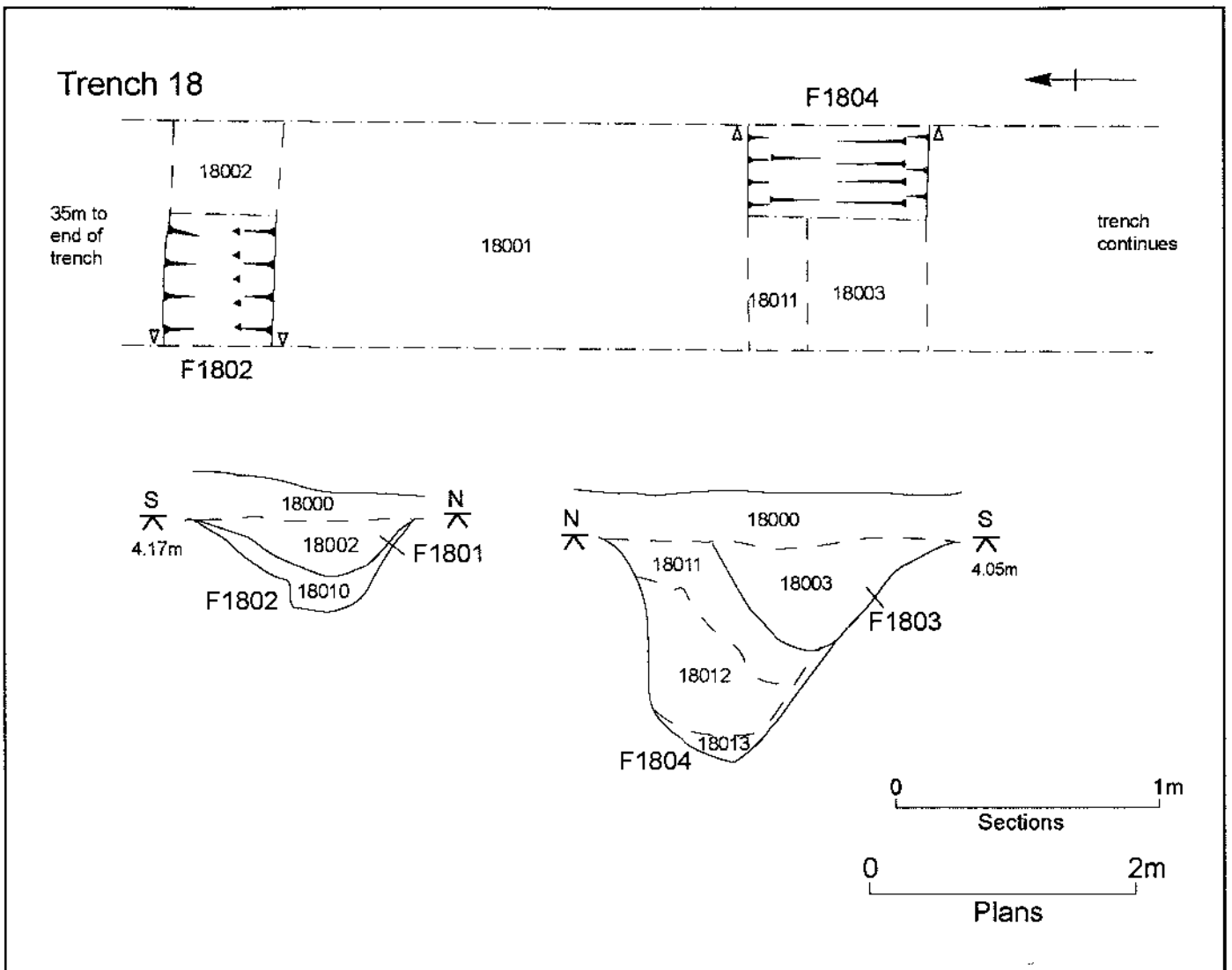


Fig.6

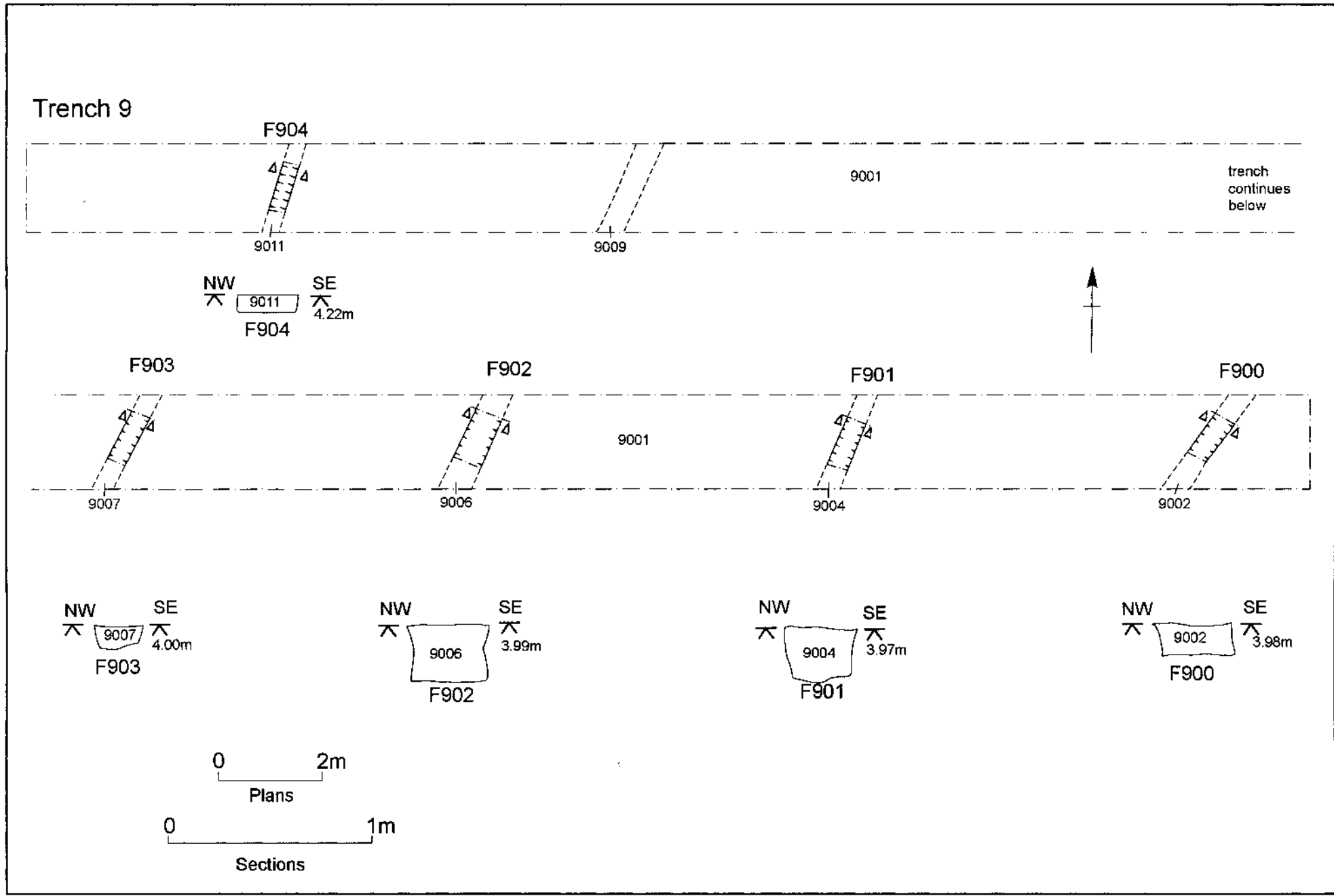


Fig.7

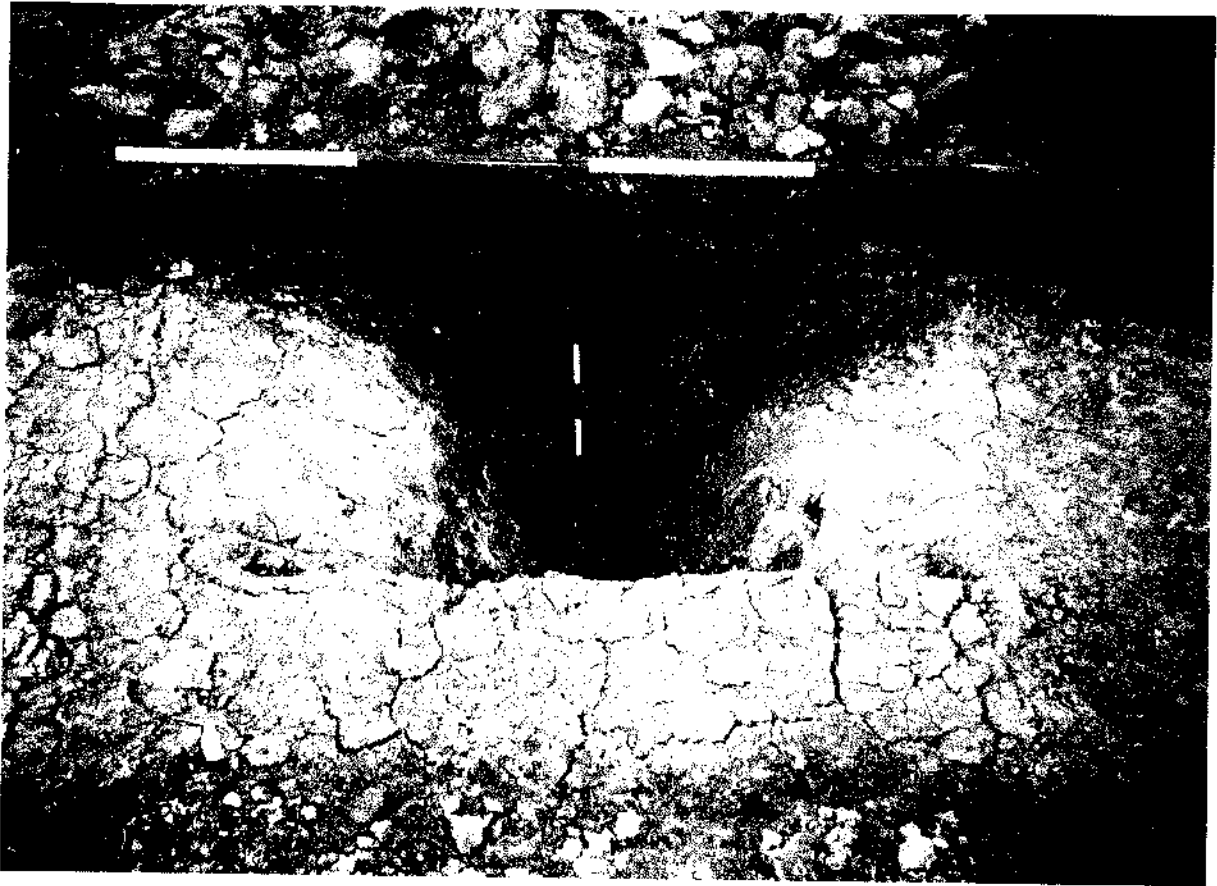


Plate 1

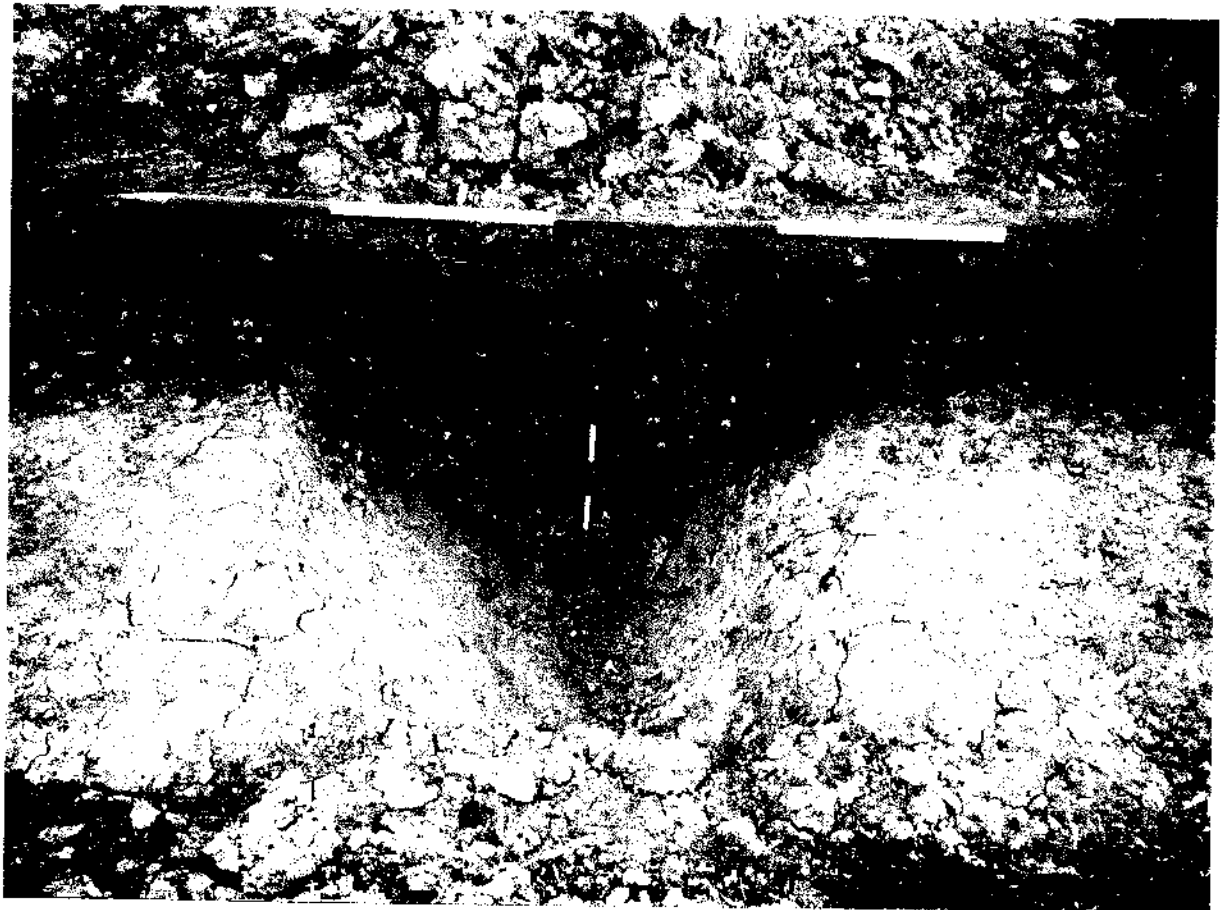


Plate 2



Plate 3

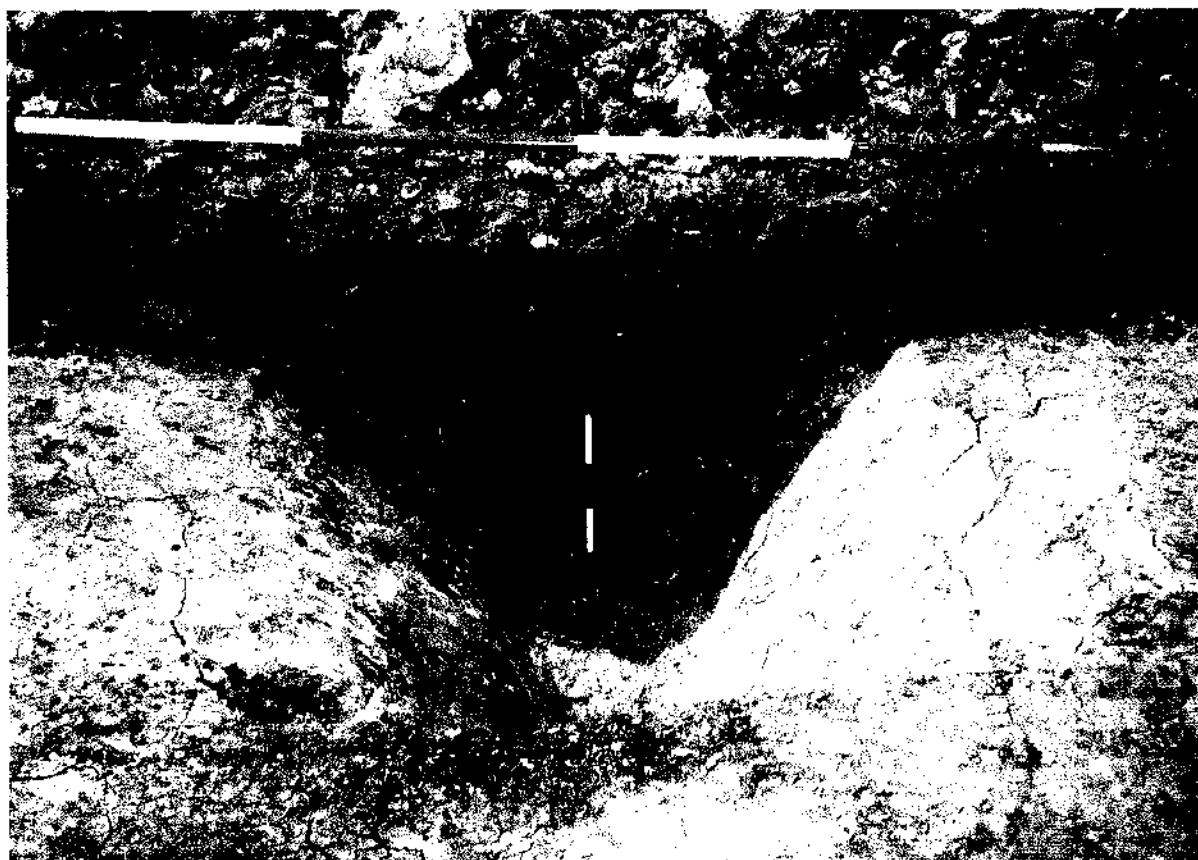


Plate 4

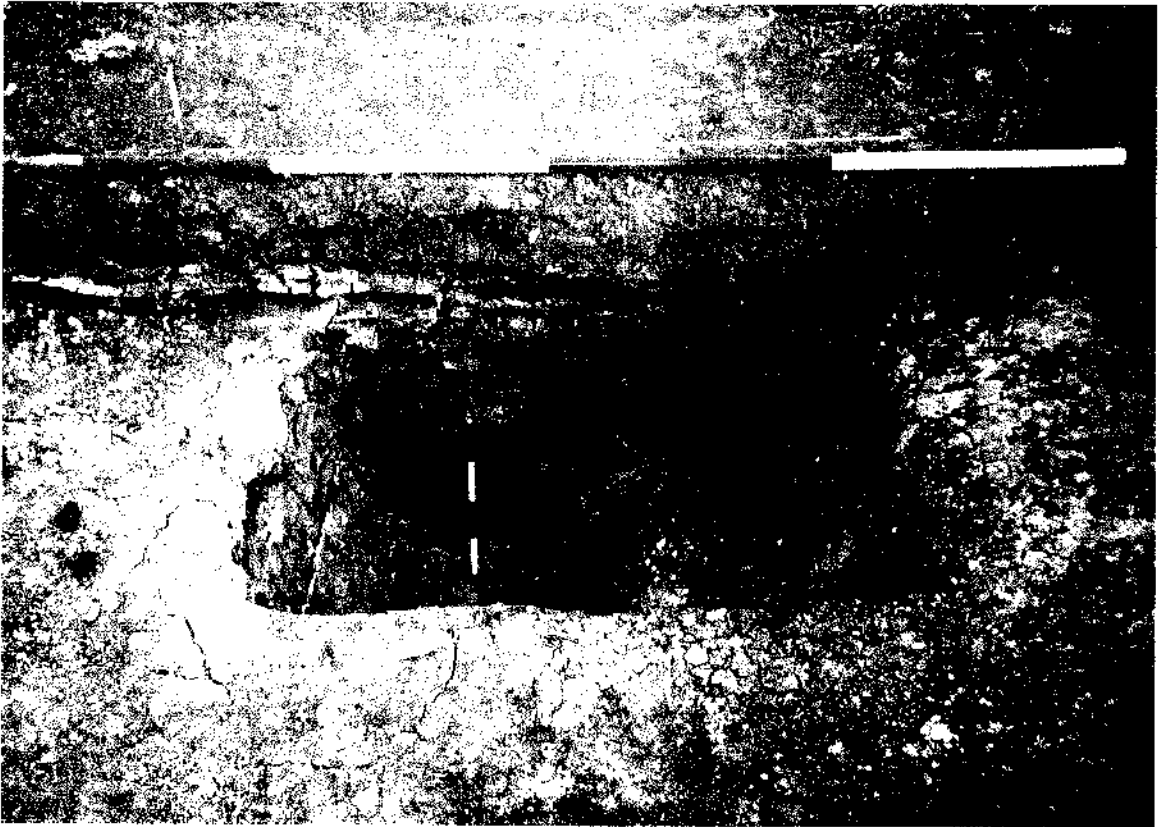


Plate 5



Plate 6