98/17.

AN ARCHAEOLOGICAL EVALUATION ON THE SITE OF GLENTHAM RESIDENTIAL DEVELOPMENT BARFF LANE, GLENTHAM, LINCOLNSHIRE

Site Code GRD 98

National Grid Reference (NGR) SK 99995 91040

on behalf of:

GLENTHAM FARMING COMPANY

October 1998

AOC
ARCHAEOLOGY
GROUP

COPY 2

EVENTS 43735 43737
SOURCES 48405 48406
81022 Roman
81053 Medieval
54795 21 83860 ? MESO
54796 4 83862 ~~Medieval~~ Early Saxon

On Behalf of: Glentham Farming Company

Commissioned by: CAD Associates
102 - 104 Newland
Lincoln
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Accession Number: 193.98

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Post excavation and report preparation
26/9/98 - 9/10/98

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1 SUMMARY

An archaeological evaluation was undertaken by AOC Archaeology on behalf of Glentham Farming Company following the submission of a planning application for the construction of residential dwellings on land to the South of Barff Lane, Glentham. Nine trenches of between 10 and 20 metres in lengths were excavated.

A total of eleven features were encountered during these investigations, ten of which contained pottery dating to the 11th, 12th and 13th century. One feature however contained pottery dating to the early Saxon period. These features are thought to represent field boundaries and other associated agricultural activity.

2 INTRODUCTION

2.1 Site Location (Fig. 1)

Glentham lies to the North of Lincoln in the district of West Lindsey. The application site lies to the south-east of the junction of Bishop Norton Road and Barff Lane. The fields are currently in use as rough grazing and occupy a roughly rectangular area enclosing approximately 0.9ha. Whilst the eastern part of the site is relatively level at 21mOD, the ground surface falls to the west towards Bishop Norton Road.

The site lies to the South of Barff Farm (SK 9993 9101) and the underlying geology as shown on the British Geological Survey 1: 625 000 map, consists of Oxford Clay and Kellaway Beds.

2.2 Planning Background

A planning application has been made to West Lindsey District Council, for the development of residential units.

The Archaeological Section of Lincolnshire County Council have taken into account the potential archaeological importance of the site and requested the developer to commission an archaeological evaluation of the area. AOC Archaeology were commissioned by the agent of the developer to submit a *Written Scheme of Investigation* for the evaluation, in line with Government Planning Guidance (PPG 16: Archaeology and Planning), to the Council's Archaeological Advisor, Mr J. Bonner.

Following approval by Mr J. Bonner, AOC Archaeology carried out an archaeological field evaluation, the results of which are contained within.

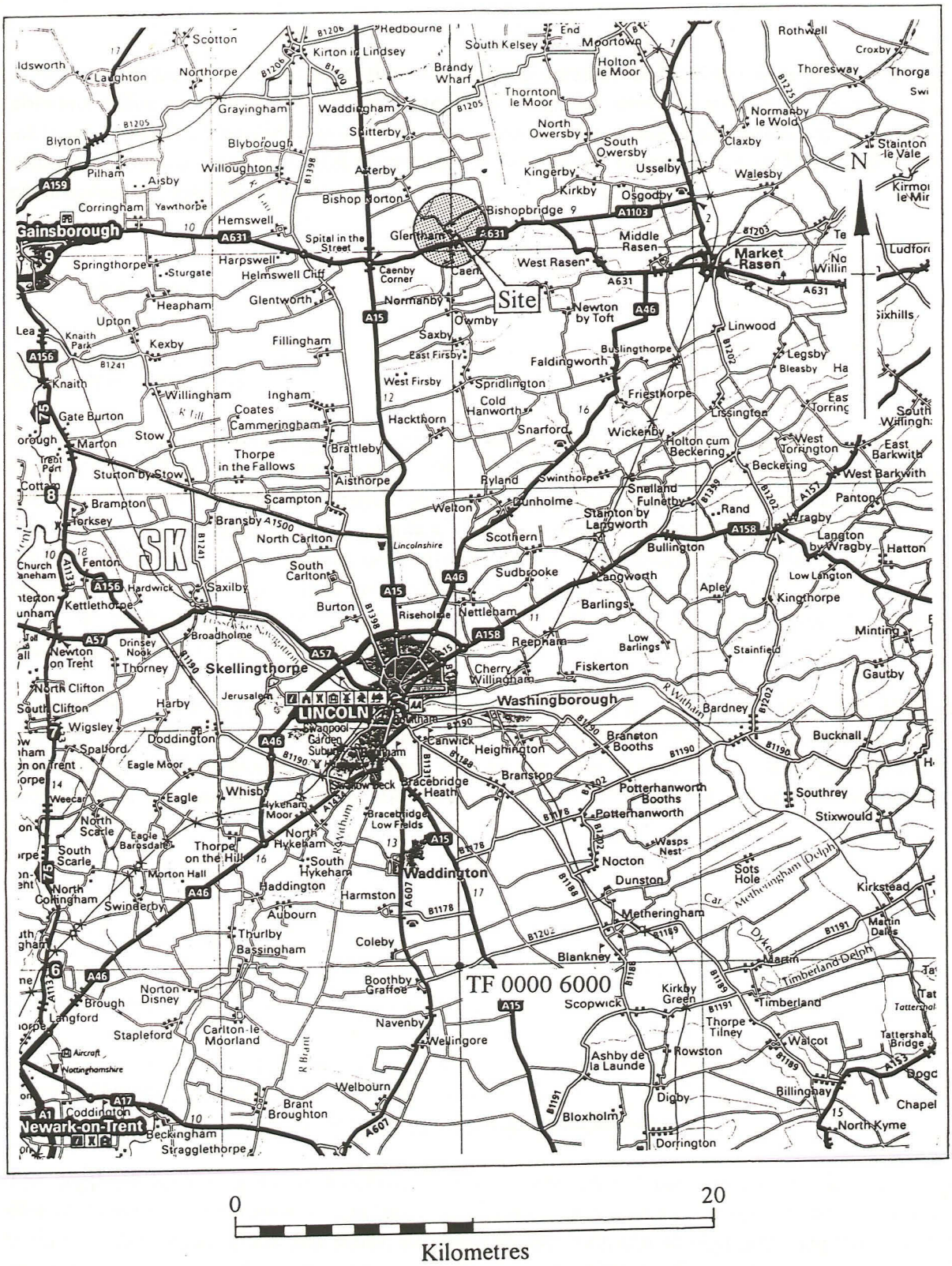

Figure 1: Site Location.

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2.3 Archaeological and Historical Background

A desk top archaeological study of the site has been carried out by CAD Associates Ltd. This concluded that prehistoric, Roman and medieval finds and sites are present in the vicinity. In addition Roman and medieval pottery has been found on the site. Undulations of the surface, observed during a site visit, whilst preparing the desk based assessment, may be the remains of earthworks, or possibly of quarrying.

3 STRATEGY

3.1 Research Design

A *Written Scheme of Investigation* was provided by AOC Archaeology to the Lincolnshire County Council Archaeological Section. Two phases of investigation were employed on this site. Firstly a non-intrusive geophysical survey was commissioned by AOC and conducted by Stratascan over the majority of the application site. On the basis of the results of this survey together with an analysis of aerial photographs of the development area, nine trenches were targeted to investigate potential archaeological features. Initial excavation was carried out using a mechanical excavator. Archaeological deposits exposed were cleaned, partially excavated and recorded in order to establish their date, character and extent.

Provision was made for post excavation analysis and a report to Level 3 as outlined by English Heritage in *Management of Archaeological Projects (1991)*, Lincolnshire County Council Archaeology Section Handbook, Chapter 14 and the *Written Scheme of Investigation (AOC 1998)*. Work was carried out to the standard specified by the Institute of Field Archaeologists (1994).

3.2 Methodology (Fig. 2)

Trenches 1, 2, 3, 5 and 9 were 10m in length, trenches 4 and 6 were 15m in length and trenches 7 and 8 were 20m in length. All were 1.65m wide.

Initial excavation was carried out using a JCB 3CX excavator operated by a qualified driver. The machine was equipped with a 5ft. ditching bucket and excavation extended to the surface of the underlying natural under constant archaeological supervision.

The depth of the trenches varied between 0.59m in Trenches 3 and 7 and 0.94m in the south-east of Trench 6. The trenches were machined in spits of not more than 0.3m, down onto the surface of the natural clays and sands. In order to ascertain the stratigraphic sequence of the natural material, a sondage was excavated within a number of the excavated trenches. All trenches were hand cleaned and a photographic record was made using both colour reversal and black and white film. A proportion of any exposed archaeological deposit was excavated by hand. A written record of all deposits was produced and was supported by measured drawings both of the vertical section and in plan.

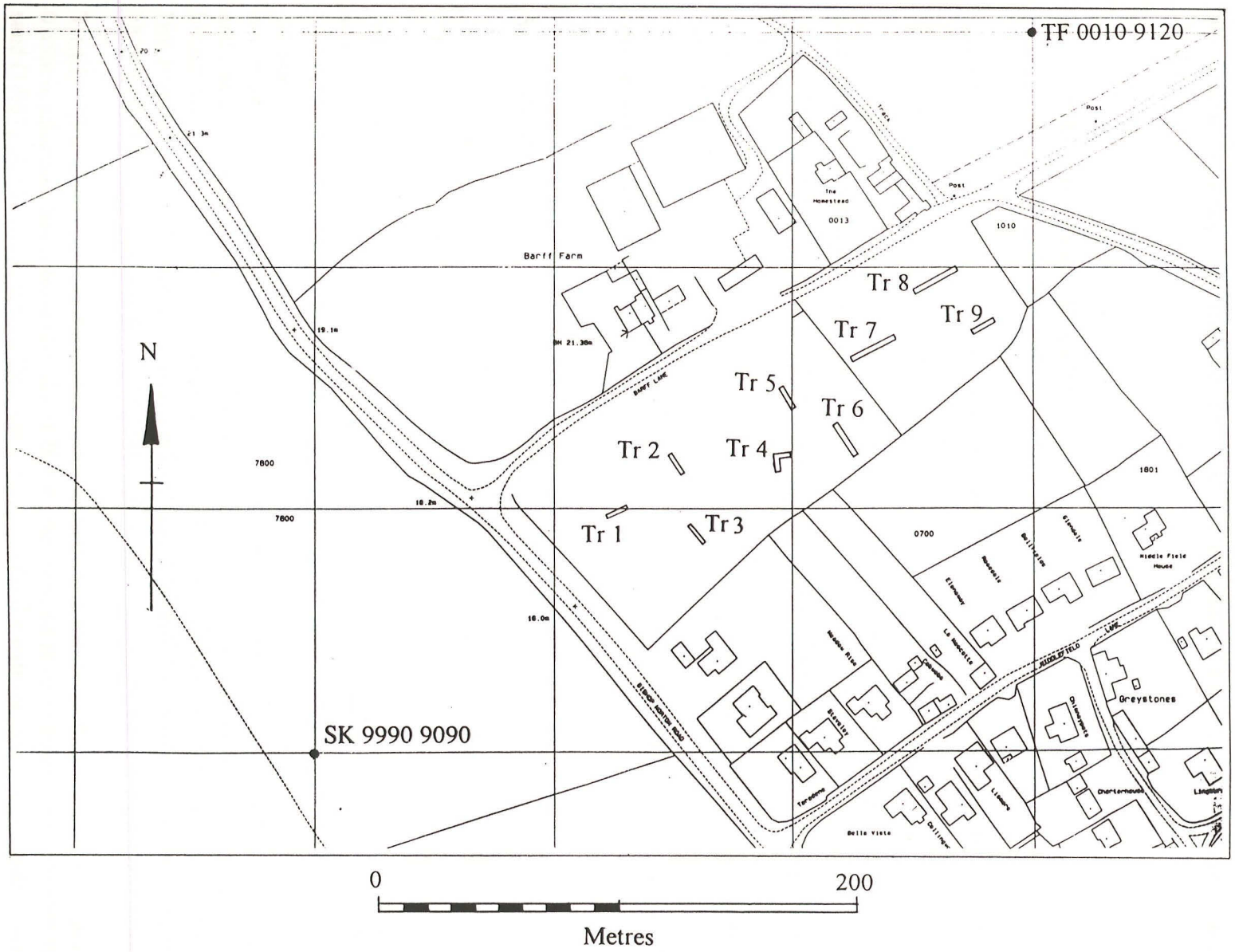

Figure 2: Trench location plan

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Levels for each context were established, relative to Ordnance Datum (OD), using a Bench Mark on Seggimore Bridge established at 12.96m OD. Trenches were backfilled following excavation, recording and consultation with Jim Bonner of Lincolnshire County Council Archaeology Section.

4 AIMS OF INVESTIGATION

The aims of investigation as set out in the *Written Scheme of Investigation* were as follows:

To establish the presence/absence of archaeological remains within the site.

To determine the extent, condition, nature, character, quality and date of any archaeological remains encountered.

To assess the ecofactual and environmental potential of the archaeological features and deposits.

In particular to determine whether remains relating to Roman or medieval settlement are present on the site.

To make available to interested parties the results of the investigation subject to any confidentiality restrictions.

5 RESULTS

5.1 Archaeology Present

All trenches extended through a topsoil of mid grey brown silt 3/001, 9/001) sand which supported mixed grasses with occasional patches of thistle and nettle. In Trenches 3 and 9, both of which measured 10m in length, this topsoil overlay a subsoil of dark yellowish brown silt sand (3/002, 9/002). This deposit varied in thickness from 0.2m to 0.5m and resembled a buried agricultural soil. Pottery recovered from this layer dated to the 19th and 20th century and was mixed with residual medieval sherds. Underlying this material was natural pale yellow brown sands (3/004, 9/004). No features of archaeological significance were exposed in these two trenches. However, Trench 3 contained a ridge of natural sandstone (3/003) which gave an indication of the solid geology in the local area.

Trench 1 (Fig. 3 and 4) also measured 10m in length and extended through topsoil (1/001), 0.35m in thickness and subsoil (1/002), 0.28m in thickness to reveal natural orange brown silt sand (1/007). At the north-east of this trench and cut into the natural sand was a shallow ditch (1/004) oriented north-east - south-west, 0.13m deep, 0.5m wide and contained a single fill of grey brown silty sand (1/003). No artefacts were recovered from this fill. Approximately 3.3m from the north-east end of the trench, 1/004 was truncated completely by a terrace cut into the natural sand and running north-west - south-east.

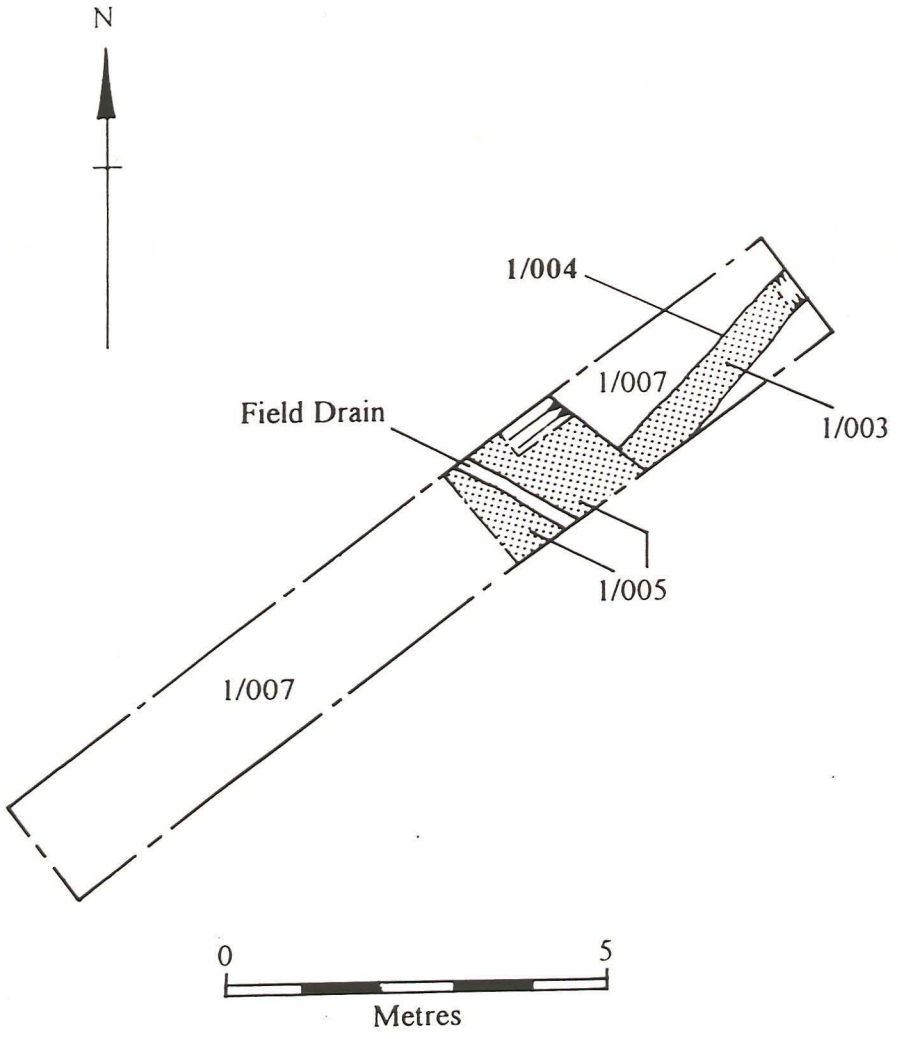


Figure 3: Trench 1, Post excavation plan

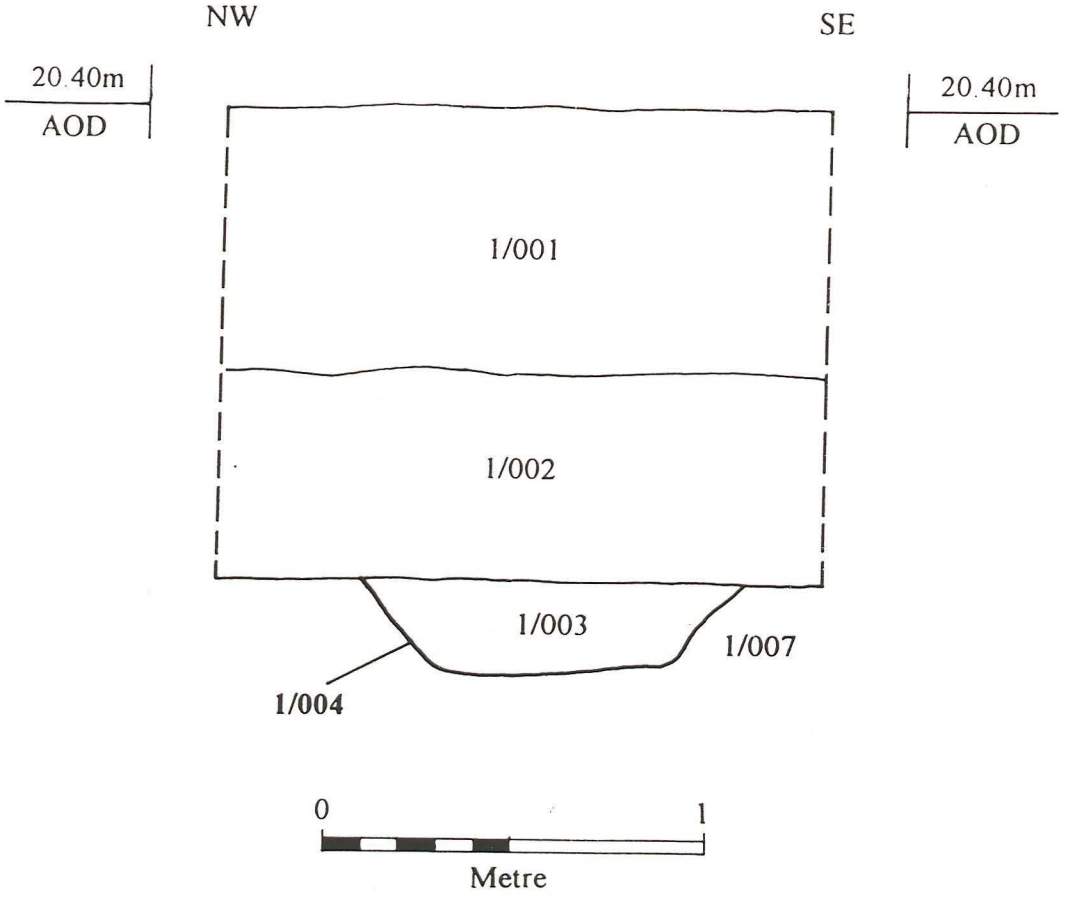


Figure 4: Trench 1, south-west facing section through 1/004

This terrace was filled with subsoil and was therefore thought to be an agricultural feature dating to the 19th/20th century. Underlying the fill of this feature the natural sand was undulating and irregular suggesting the activity of tree roots or burrowing animals.

Trench 2 (Fig. 5, 6 and 7) also extended through a topsoil (2/001) of 0.3m in thickness and a subsoil (2/002) of 0.13m in thickness. Although the composition of these soils was very similar to those in Trench 1, here and in all the remaining trenches, they were found to be more compacted. It may be that the strata excavated in Trench 1 has been more recently disturbed. The natural material exposed at c.20.25m OD in Trench 2 consisted of medium yellow and white sands (2/003) and was cut into by two features (Plate 1). The first of these was a ditch (2/006) of which, 4.5m was exposed. On excavation this was found to be 0.3m deep with a stepped north-east side and containing two discrete fills. The primary fill (2/005), was recorded as a yellow brown sandy silt and is likely to represent a silting event whilst the feature was in use. The upper fill (2/004) consisted of dark grey brown silty sand and produced pottery dating to the 12th/13th century. This fill was 0.18m thick and was disturbed by animal activity. The most likely interpretation for this ditch was thought to be as a boundary associated with agricultural activity.

The second feature (2/009) was only partially exposed in this trench and may represent the butt end of a ditch or part of a pit. The primary fill (2/008) was concentrated in the north-west of the base of 2/009 and consisted of yellow brown silt sand. At 0.8m wide, 0.65m long and 0.24m thick, this deposit did not produce any artefacts and was thought to represent a silting layer. The upper fill (2/007) of this feature measured 1.95m wide, 1.34m long and 0.3m thick and consisted of a loose brown silt sand. Pottery recovered from this deposit was dated to the 11th century.

Trench 4 (Fig. 8 and 9) was excavated in an 'L' shape totalling 15m in length in order to target possible linear cropmarks in the East -West arm and a large geophysical anomaly to the South of the North -South arm. Excavation extended through topsoil (4/001), 0.36m thick and subsoil (4/002) of equal thickness consisting of grey brown silt sand. The natural sand (4/005) was pale orange brown in colour, contained some ferric mineralization and was encountered at c.20.4m OD. Neither of the features targeted were evident in the base or section, however, a feature was seen to cut across the north-west corner of this trench. Excavation revealed a shallow cut (4/004), 0.18m in depth (Plate 2) and containing a single fill of grey brown silt sand (4/003). Although the fill produced one sherd of early Saxon pottery, this feature was not sufficiently exposed to determine its nature.

Trench 5 (Fig. 10 and 11) measured 10m in length and extended through 0.44m of topsoil (5/001) and 0.16m of subsoil (5/003). It was noted at the north-west end of the trench that the lower 0.14m of topsoil (5/002) was distinct in colour and texture from the material above and it was thought likely that this represented a buried topsoil deriving from previous agricultural use. Natural yellow brown sand (5/004) was encountered at c.20.15m OD. In this trench, the targeted geophysical anomaly was located cutting 5/004 (Plate 3). Excavation showed this feature (5/006) to be a shallow ditch, 2.9m wide, 0.42m deep and running across the trench, oriented north-east -south-west. The ditch contained a single fill of grey/yellow brown sandy silt (5/005) which produced 13th century pottery, animal bone and burnt stone. The profile of this ditch was indicative of a larger feature, truncated by subsequent agricultural activity and may represent a major boundary.

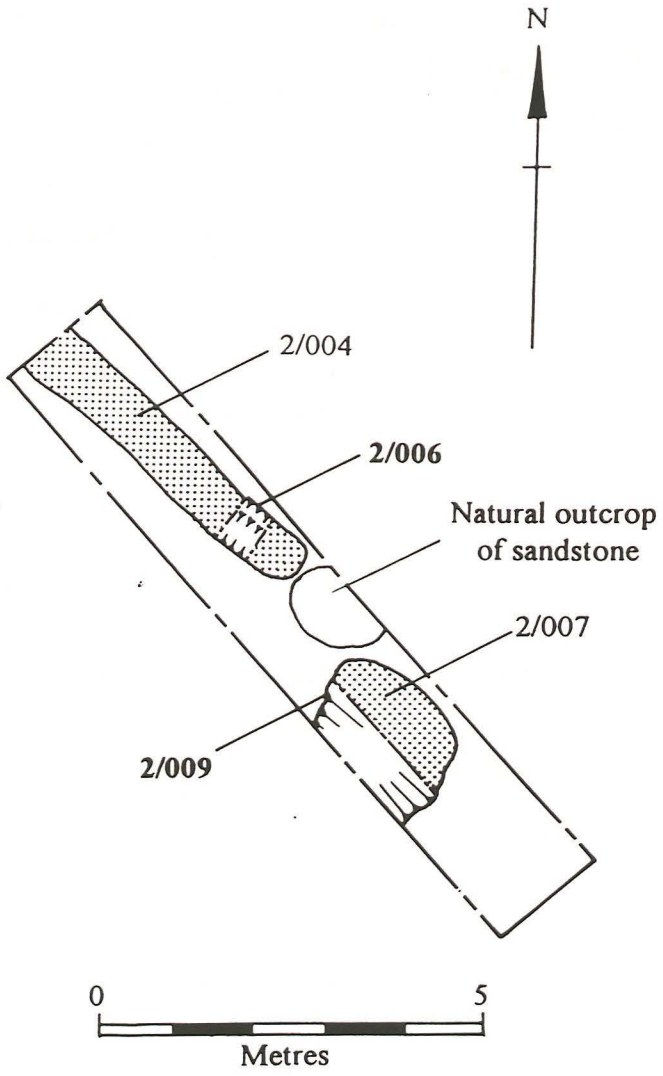


Figure 5: Trench 2, post excavation plan

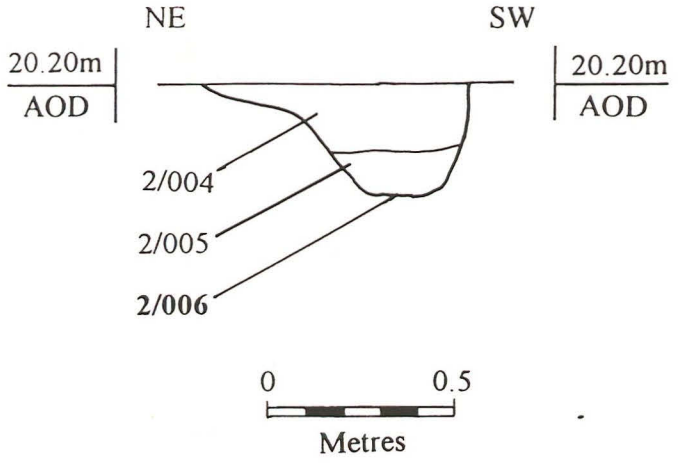


Figure 6: **Trench 2, north-west facing section through 2/006**

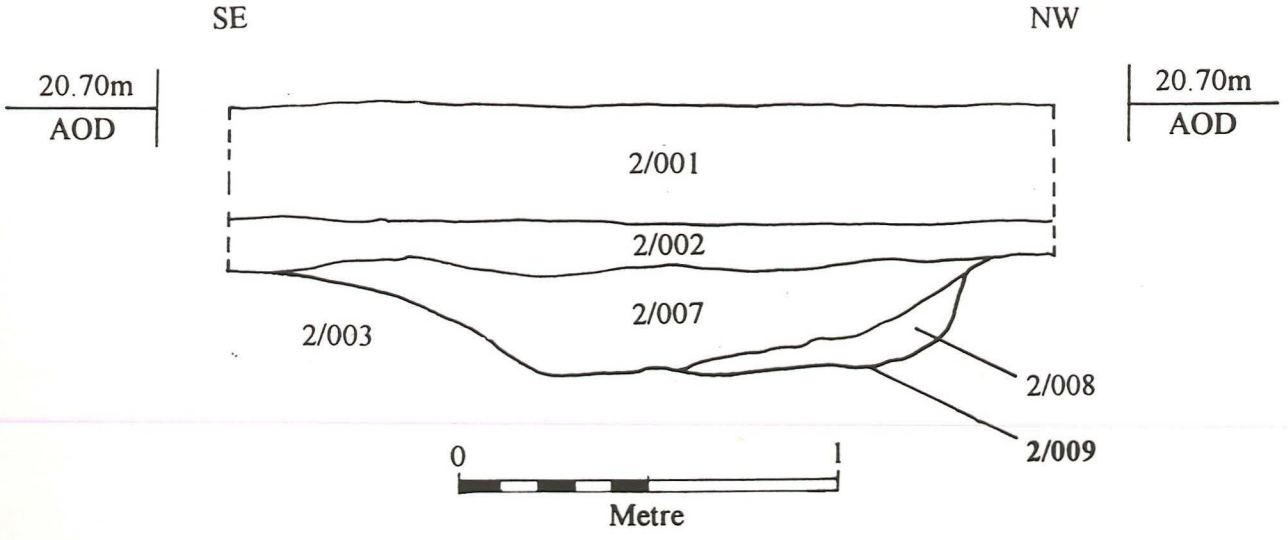


Figure 7: **Trench 2, north-east facing section through 2/009**

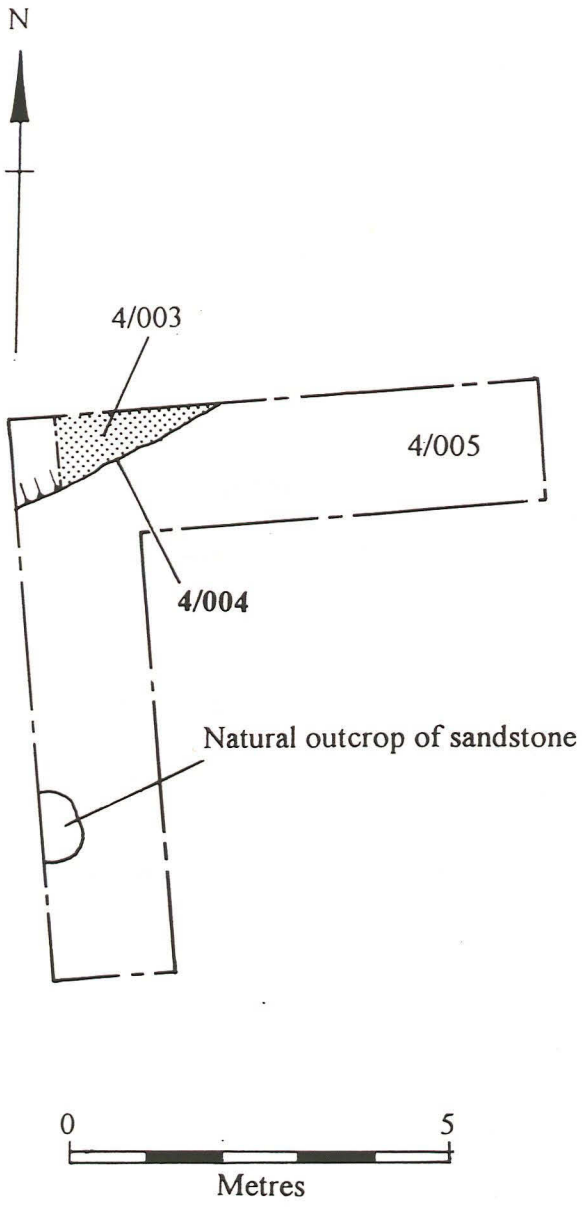


Figure 8: Trench 4, post excavation plan

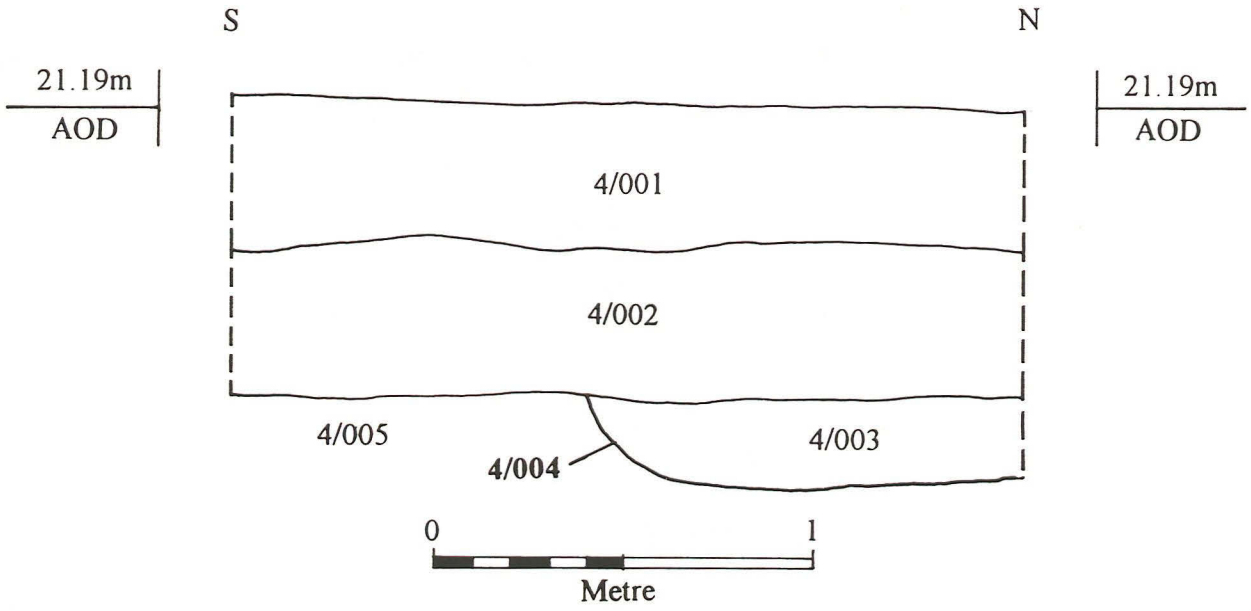


Figure 9: Trench 4, East facing section through 4/004

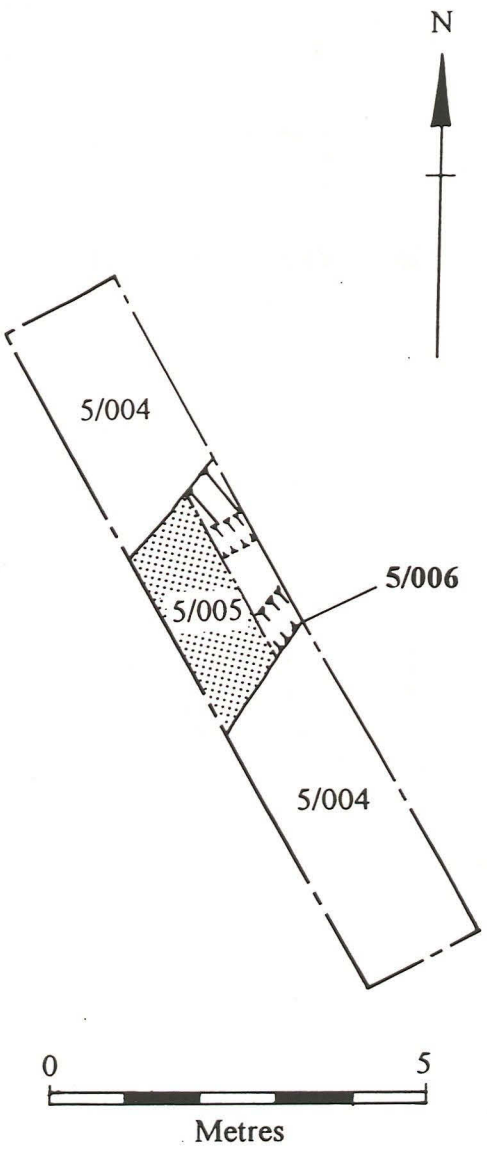


Figure 10: Trench 5, post excavation plan

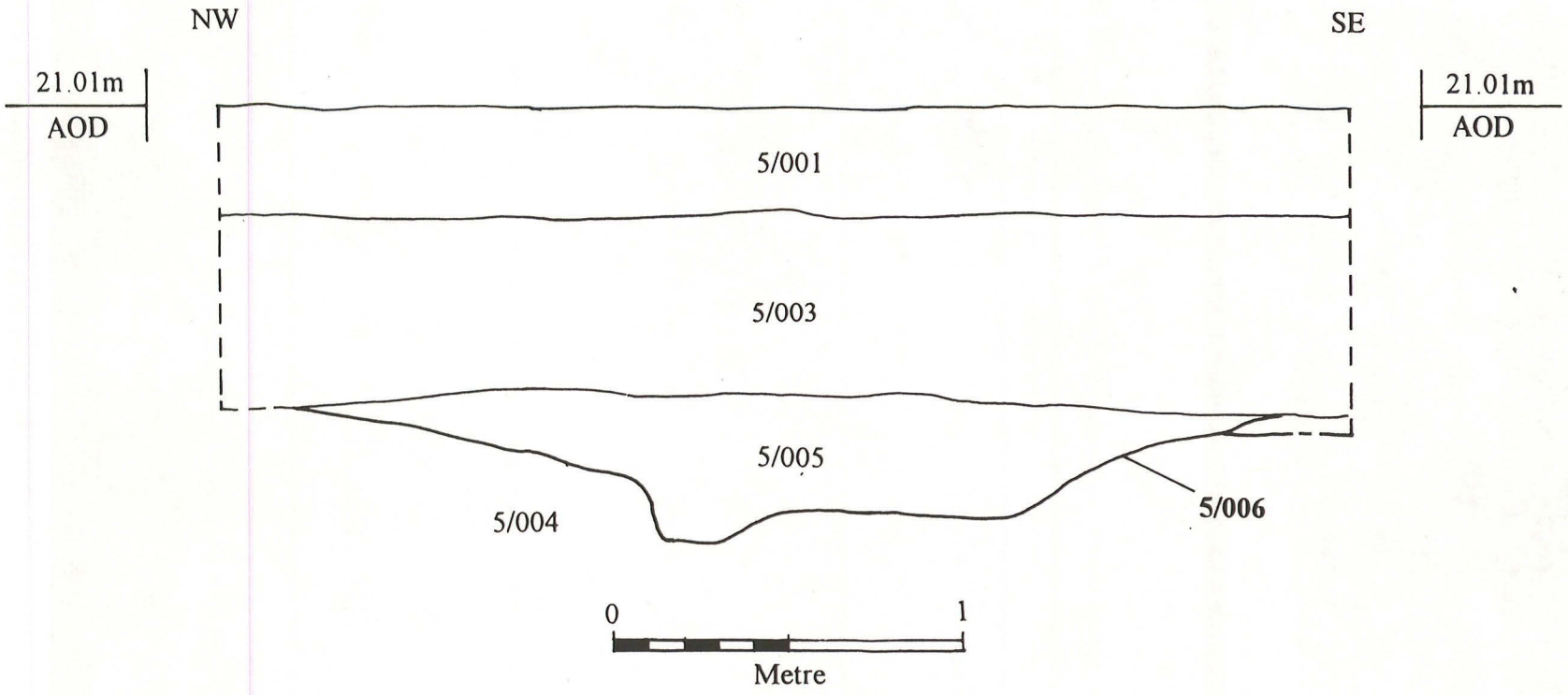


Figure 11: Trench 5, south-west facing section through 5/006

Plate 1: Trench 2, showing excavated features

Plate 2: Trench 4, showing 4/004

Plate 3: **Trench 5, south-west facing section through 5/006**

At 15m in length, Trench 6 (Fig. 12 and 13) extended through 0.4m of topsoil (6/001) and 0.45m of grey brown silt sand subsoil (6/002). The pale brown silty sand natural (6/004) was encountered at c.19.9m OD. One linear feature (6/005) was exposed in the north-west of the trench running North - South. This proved to be very shallow and 'U' shaped in profile, 0.32m in depth and 1.5m in width, with a single homogenous fill of grey brown silty sand (6/003). Although no artefacts were recovered from this material it was thought likely that this represented a boundary.

Trench 7 (Fig. 14 and 15) was excavated to a length of 20m through a dark grey brown sandy silt topsoil, 0.25m thick. This gave way to a subsoil (7/002) of very dark yellowish brown silty sand 0.22m thick. The natural yellow sand (7/007) was encountered at c.19.61m OD. Three features were cut into this sand, however the fills of two narrow linear features, 7/008 and 7/009 produced modern pottery and it was thought likely that these were the result of recent agricultural activity. The third feature was encountered in the Eastern extreme of the trench and was only partially exposed. It was therefore unclear as to whether this represented a pit or the terminus of a ditch. Excavation showed this to contain three fills. The primary fill (7/005) consisted of yellow brown silt sand, 0.08m thick. It was thought likely that this represented silting of the feature whilst still in use. This was overlain by a mixed deposit of dark grey burnt sand and clean yellow sand (7/004). 12th/13th century pottery was recovered from this layer and visual inspection of a sample taken from it revealed pieces of charcoal but no evidence of seed. At 0.2m thick it is possible that this represented the cleaning out of a hearth or fireplace with burnt natural sand, some unburnt natural sand mixed with remnants of the fire itself. The upper deposit (7/003) consisted of dark yellowish brown sandy silt, 0.4m - 0.5m thick and contained 12th/13th century pottery. The base of this feature was reached at 19.36m OD.

Finally Trench 8, located to the north-east of Trench 7 measured 20m long and extended through topsoil (8/001 and 8/002), 0.4m - 0.5m thick. Underlying this, the natural yellow sand was encountered at 19.35m OD. Cut into this were four features, the first of these was a rounded rectangular scoop (8/004) containing a single fill of dark yellow brown silt sand (8/003). This was 1.9m long, 0.95m wide, 0.3m thick and produced 12th/13th century pottery. The pottery from the 13th century was highly decorated. No explanation could be found for such a shallow feature, however it is possible that this may represent very localised quarrying of the course sand for individual needs. The remaining features consisted of two ditches whose termini were connected by a small gully. Following excavation through of one of these ditches (8/009) and the gully (8/008) the relationship between the two remained unclear and it may be that they are contemporary. 8/008 extended 8m long, 0.35m wide and 0.14m deep whilst 8/009 measured 1.4m wide, 0.35m deep, with a length of 0.85m exposed. Both features were filled with a dark yellow brown silt sand, 8/007 the fill of the ditch, producing a sherd of medieval pottery and a corroded iron blade. Although 8/010 was not excavated it was clear from its shape in plan and the dark yellow brown silt sand fill (8/006) that this feature was related to the gully in the same way as 8/009 and it is possible that collectively these features represent drainage or irrigation of the immediate area.

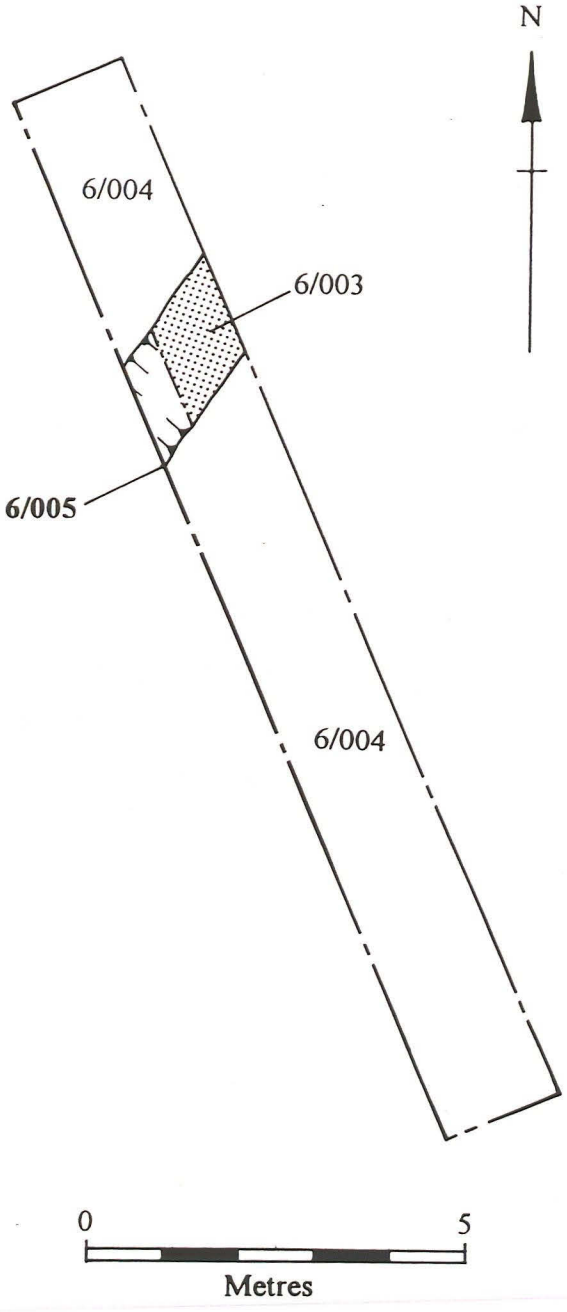


Figure 12: Trench 6, post excavation plan

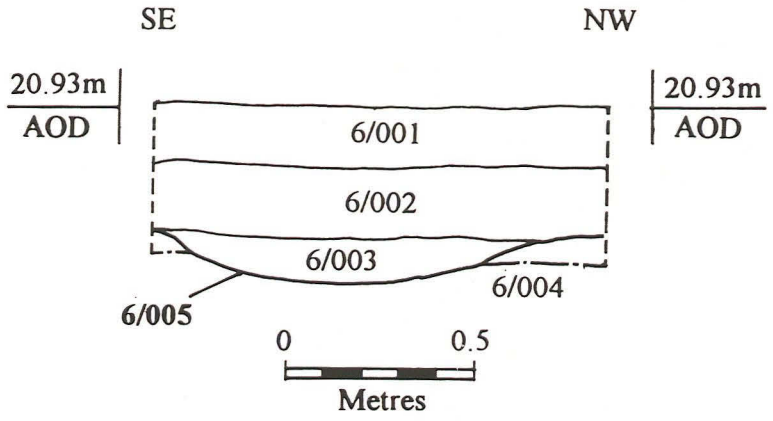


Figure 13: Trench 6, north-east facing section through 6/005

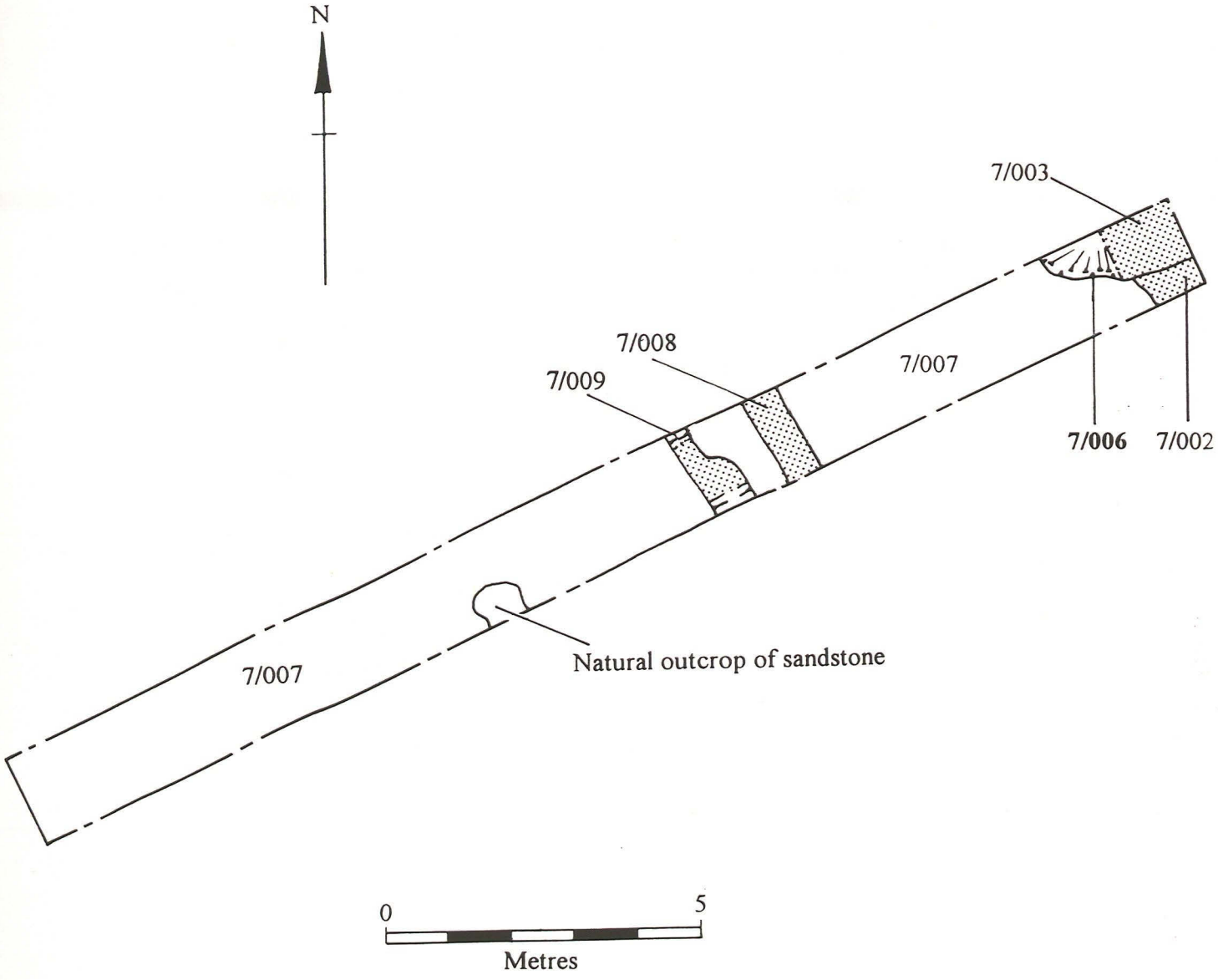


Figure 14: Trench 7, post excavation plan

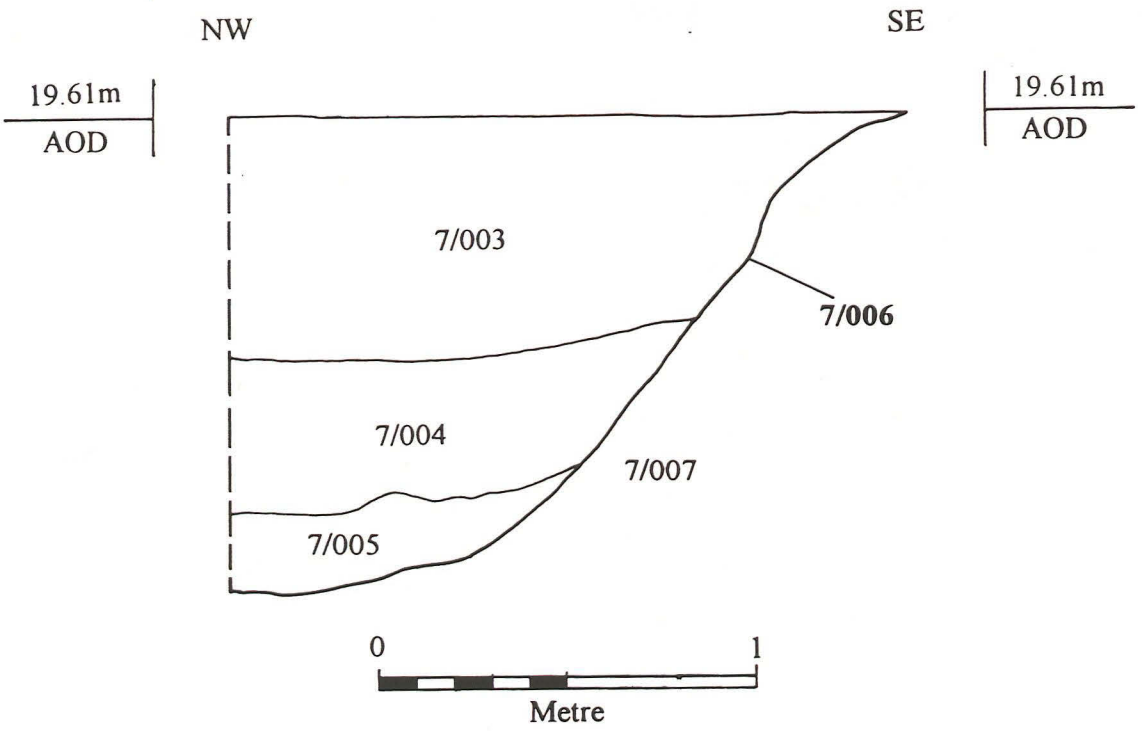


Figure 15: Trench 7, south-west facing section through 7/006

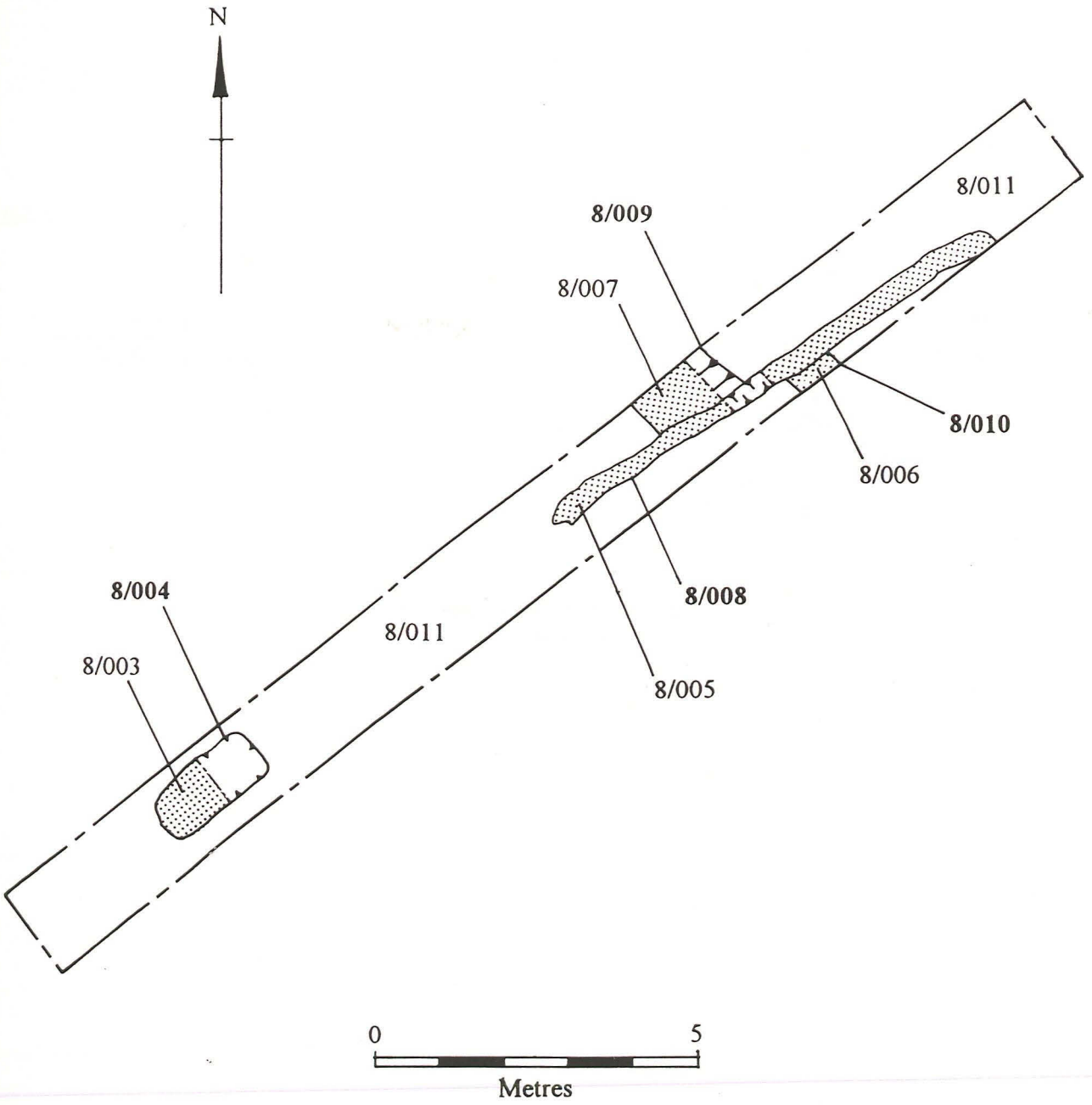


Figure 16: Trench 8, post excavation plan

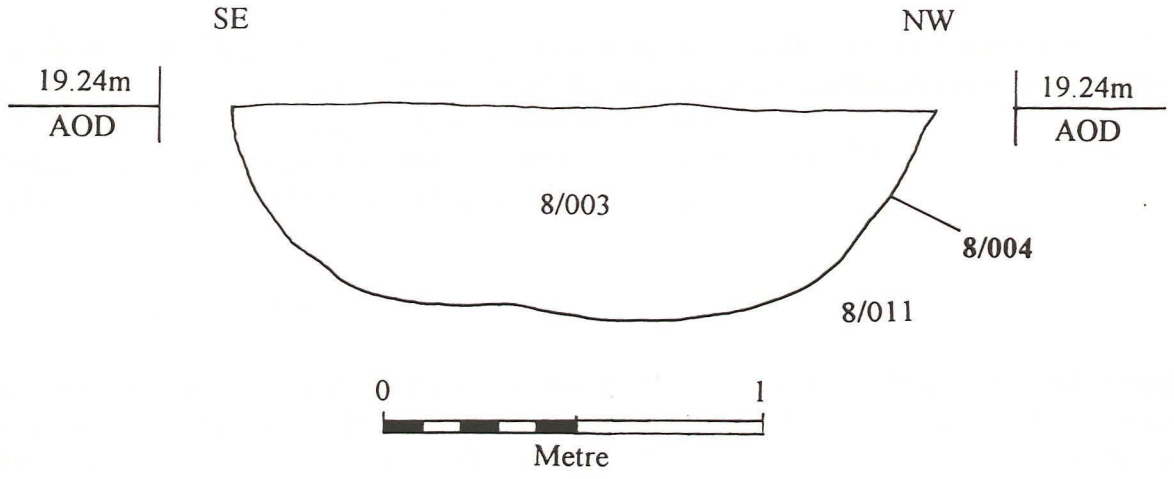


Figure 17: Trench 8, north-east facing section through 8/004

5.2 Finds

The detailed analysis of the artefacts recovered from these investigations can be found in the appendices of this report. In general however, with the exception of one partially exposed feature in Trench 4, all the pottery recovered from discrete archaeological features was dated to between the 11th and 13th century AD. The pottery recovered from 4/003 was dated to the early Saxon period between the 5th and 7th centuries. The fresh appearance of this pottery indicated that it had originated nearby and had not been disturbed following deposition. Other finds of animal bone may indicate at least temporary occupation of the site, or settlement nearby.

6 CONDITIONS

During the three days of field investigation the weather was dry, overcast and windy. Upon exposure deposits were damp but well drained providing good conditions for recognition and excavation of archaeological features. Following exposure the natural silt sand baked producing a hard crust within a day. For this reason archaeological deposits were excavated and recorded immediately after the trenches were opened.

7 CONCLUSIONS

The objectives of the Research Design have been addressed and the nature of the archaeology in the area of the proposed development has been established The archaeological features and the pottery contained within them indicate that two main periods of activity on the site are likely to have occurred. Firstly during the early Anglo-Saxon period and secondly, probably following a lengthy period of abandonment, during the early to mid medieval period. This later occupation would appear to have been the most active with evidence of prosperity in the first quarter of the 13th century.

The precise nature of this activity, remains to some extent unclear. With only a single feature of Anglo Saxon date excavated it is uncertain whether it represents occupation of the site. The majority of the medieval remains were in the form of ditches and suggest boundaries or drainage features within the agricultural landscape. The relative frequency of pottery and bone within these features would suggest that these fields are in close proximity to an associated settlement. This may have resulted from the medieval village of Glentham extending further to the North than it does presently.

Whilst any decision regarding further archaeological investigation must rest with the County Councils Archaeological Advisor, Mr Jim Bonner and with the relevant planning authority, it is the recommendation of the author and of AOC Archaeology that additional fieldwork is required unless a suitable mitigation strategy can be devised to limit disturbance by groundworks associated with any proposed development.

8 BIBLIOGRAPHY

AOC Archaeology (1998) — *Barff Lane, Glentham. Archaeological Evaluation. Written Scheme of Investigation*

Institute of Field Archaeologists (1994) — *Standard and Guidance for Archaeological Field Evaluations*

Lincolnshire County Council (1998) — *Archaeological Handbook*

APPENDIX A

Context List

Context	Type	Length	Width	Depth	Finds
1/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.35m	
1/002	Mid Grey Brown Silty Sand - Subsoil	Trench	Trench	0.28m	
1/003	Mid Grey Brown Silty Clay - Fill of 1/004	3.2m	0.4m	0.1m	
1/004	Linear Cut - Possible Boundary Ditch	3.2m	0.4m	0.1m	
1/005	Stepped Edge - Possible Modern Terrace	1.65m	-	0.2m	
1/006	Irregular Area of Disturbed Natural - Tree Bole	-	Trench	0.2 - 0.35m	
1/007	Silty Sand with Flint Gravel - Natural	Trench	Trench	-	
2/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.31m	Pot
2/002	Mid Grey Brown Silty Sand - Subsoil	Trench	Trench	0.13m	Pot
2/003	Yellow and White Sand - Natural	Trench	Trench	-	
2/004	Grey Brown Silty Sand - Secondary Fill of 2/006	4.6m	0.64m	0.19m	Bone, Pot
2/005	Yellowish Brown Sandy Silt - Primary Fill of 2/006	0.51m	0.34m	0.12m	
2/006	Linear Cut - Possible Boundary Ditch	4.6m	0.64m	0.31m	
2/007	Mid Brown Silty Sand - Secondary Fill of 2/009	1.65m	1.34m	0.3m	Bone, Pot
2/008	Yellow Brown Silty Sand - Primary Fill of 2/009	0.95m	0.65m	0.24m	
2/009	Feature Cut - Pit/Linear (Butt end)	1.9m	1.34m	0.3m	
3/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.3m	
3/002	Dark Yellow Brown Silty Sand - Subsoil	Trench	Trench	0.2 -0.3m	
3/003	Natural Sandstone Outcrop	2.2m	1.55m	-	
3/004	Yellow and White Sand - Natural	Trench	Trench	-	

Context	Type	Length	Width	Depth	Finds
4/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.36m	Flint Tool
4/002	Mid Grey Brown Silty Sand - Subsoil	Trench	Trench	0.39m	Pot
4/003	Mid Grey Brown Silty Sand - Fill of 4/004	3.0m	1.1m	0.24m	Pot
4/004	Possible Linear Cut	3.0m	1.1m	0.24m	
4/005	Pale Orange Brown Sand -Natural	Trench	Trench	-	
5/001	Mid Brown Silt Sand - Turf and Topsoil	Trench	Trench	0.3m	
5/002	Grey Brown Silty Sand - Buried Topsoil	Trench	Trench	0.14m	
5/003	Yellowish Brown Fine Sand - Subsoil	Trench	Trench	0.16m	
5/004	Yellow and Brown Sand - Natural	Trench	Trench	-	
5/005	Mid Brown Silt Sand - Fill of 5/006	1.65m	2.9m	0.42m	Bone, Burnt Flint
5/006	Linear Cut - Defensive ? Boundary Ditch	1.65m	2.9m	0.42m	
6/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.4m	
6/002	Mid Grey Brown Silty Sand - Subsoil	Trench	Trench	0.45m	
6/003	Mid Grey Brown Silty Sand - Fill of 5/005	1.65m	1.5m	0.32	
6/004	Orange Brown Silt Sand - Natural	Trench	Trench	-	
6/005	Linear Cut - Ditch ?	1.65m	1.5m	0.32m	
7/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.25m	Pot
7/002	Dark Yellow Brown Silty Sand - Buried Topsoil	Trench	Trench	0.22m	Pot
7/003	Dark Yellow Brown Sand Silt - Upper Fill of 7/006	2.13m	0.9m	0.4 - 0.5m	Pot
7/004	Black/Grey Silty Sand - Secondary Fill of 7/006	0.65m	0.65m	0.2m	Pot
7/005	Yellowish Brown Silty Sand - Primary Fill of 7/006	0.47m	0.47m	0.1m	
7/006	Sub Circular Cut - Pit/Ditch Terminus	0.65m	0.65m	0.8m	
7/007	Yellow Medium Sand - Natural	Trench	Trench	-	
7/008	Area of Disturbed Natural - Plough Scar	1.65m	0.5m	-	
7/009	Area of Disturbed Natural - Plough Scar	1.65m	0.3 - 0.7m	0.22m	

Context	Type	Length	Width	Depth	Finds
8/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.31m	Pot
8/002	Dark Yellow Brown Silty Sand - Buried Topsoil	Trench	Trench	0.20m	
8/003	Dark Yellow Brown Silty Sand - Fill of 8/004	1.9m	0.95m	0.3m	Bone, Pot
8/004	Rectangular Cut - Pit	1.9m	0.95m	0.3m	
8/005	Dark Yellow Brown Silty Sand - Fill of 8/008	8.2m	0.35m	0.15m	
8/006	Dark Yellow Brown Silty Sand - Fill of 8/010	0.25	0.75m	Unexcavated	
8/007	Dark Yellow Brown Silty Sand - Fill of 8/009	0.9m	0.94m	0.35m	Iron Knife Blade, Pot
8/008	Linear Cut - Gully/Ditch	8.2m	0.35m	0.15m	
8/009	Linear Cut - Butt end of Ditch	0.9m	0.94m	0.35m	
8/010	Linear Cut - Butt end of Ditch	0.25m	0.75m	Unexcavated	
9/001	Dark Grey Brown Silty Sand - Turf and Topsoil	Trench	Trench	0.36m	
9/002	Dark Yellow Brown Silty Sand - Buried Topsoil	Trench	Trench	0.4 - 0.5m	
9/003	Natural Iron Mineralisation	-	-	-	
9/004	Orange Brown Silt Sand - Natural	Trench	Trench	-	

APPENDIX B

Geophysical Survey Report

1 SUMMARY OF RESULTS

The survey has revealed a number of magnetic anomalies including both linear and discrete features. Some of these features may be of archaeological interest.

2 INTRODUCTION

2.1 Background synopsis

This survey was commissioned as part of an archaeological assessment of the site prior to a possible development.

2.2 Site location

The site is located on the north side of the village of Glentham being some 20km north of Lincoln.

The OS Reference for the site is SK 99995 91040.

2.3 Description of site

The site covers an area of approximately 1.6ha of level grassland and is divided by a fence as shown on Figure 3.

The soils are Calcareous fine loamy soils over Jurassic limestone and clay.

2.4 Site history and archaeological potential

No history of the site was available to us at the time of the survey.

2.5 Survey objectives

The objective of the survey was to assess the site for areas of potential archaeological interest.

2.6. Survey methods

The single technique of magnetometry was used which is described in a little more detail below.

3 METHODOLOGY

3.1 Date of fieldwork

The fieldwork was carried out on 1 September 1998.

3.2 Grid locations

The location of the survey grids and their referencing has been plotted onto Figure 3.

3.3 Description of techniques and equipment configurations

3.3.1 *Magnetometer*

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanotesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using an FM36 Fluxgate Gradiometer, manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

3.4 Sampling interval, depth of scan, resolution and data capture

3.4.1 Sampling interval

Magnetometer
Readings were taken at 0.5m centres along traverses lm apart. This equates to 800 sampling points in a full 20m x 20m grid. All traverses are surveyed in a "parallel" rather than "zigzag" mode.

3.4.2 Depth of scan and resolution

Magnetometer
The FM36 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. The collection of data at 0.5m centres provides an optimum resolution for the technique.

3.4.3 Data capture

Magnetometer
The readings are logged consecutively into the data logger which in turn is daily downloaded into a portable computer whilst on site. At the end of each job, data is then transferred to the office for processing and presentation.

3.5 Processing, presentation of results and interpretation

3.5.1 *Processing*

Magnetometer
Processing is performed using specialist software known as *Geoplot 2.* This can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out further processing which may include low pass filtering to reduce "noise' in the data and hence emphasise the archaeological or man-made anomalies..

The following schedule shows the basic processing carried out on all processed magnetometer data used in this report:

Zero mean grid	*Threshold = 0.25 std. dev.*
Zero mean traverse	*Last mean square fit = off*
Despike	*X radius = 1 Y radi us* = 1
	Threshold = 3 std. dev.
	Spike replacement = mean

3.5.2 Presentation of results and interpretation

Magnetometer
The presentation of the data for each site involves a print-out of the raw data both as grey scale and trace plots, together with grey scale plots of the processed data, and, if appropriate, after further processing to emphasise various aspects within the data. Magnetic anomalies have been identified and plotted onto the 'Abstraction of Anomalies' drawing for the site (Figure 8), numbered for ease of reference.

4 RESULTS

4.1 Categorisation of anomalies

The anomalies found by the survey can be divided into two categories namely discrete and linear.

The discrete anomalies can also be broken down into several sections as shown below:

- Strong thermoremnent anomalies
- Scatters of magnetic debris probably of burnt material including small ferrous objects
- Positive discrete anomalies

Similarly the linear anomalies have been categorised as follows:

- Positive linear anomalies
- Weak positive linear anomalies
- Weak negative linear anomalies

4.2 *Discrete Anomalies*

Towards the western end of the survey area the results become rather noisy with several strong spikes from buried ferrous objects. The most prominent of these is feature 3 but features 16, 17 & 18 have also been picked out as being smaller ferrous objects.

The large area of disturbance 26 is the effect of the modern fence. It is assumed that the discrete anomaly 23 is associated with the fenceline.

In addition to the ferrous spikes there are a number of positive discrete anomalies which are consistent with the response for pits or possibly the sites of fires. Some are quite large such as 13, 14, 15 & 29 being up to 4m across. Others such as 21, 22, 24, 25 & 26 are smaller and weaker in character being under 2m across. It would be advisable to investigate some of these to confirm whether they are archaeological or natural phenomena.

There are several areas of magnetic noise which have been interpreted as burnt debris including small iron objects. The largest is 2 with two smaller areas 27 & 28 in the north western corner.

4.3 *Linear anomalies*

Five clear rectilinear positive anomalies are crossing the western end of the site and have been collectively labelled 15. These are interpreted as modem drainage.

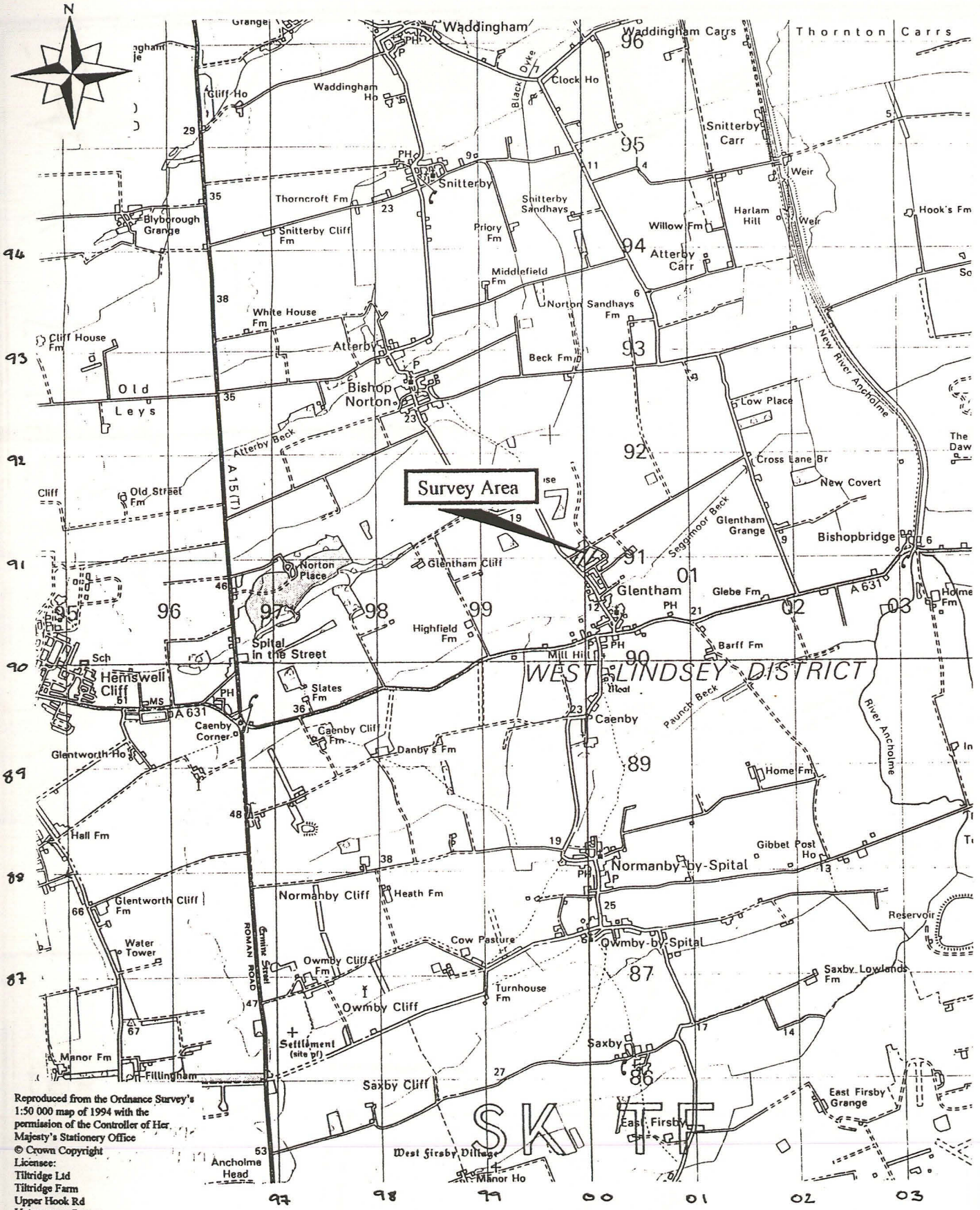
At right angles to 15 are several weaker rectilinear positive anomalies which extend north-east to south-west across the site. These have been labelled 1, 4, 5, 6, 7, 8, 9 & 10.

9 & 7 along with 10 & 8 appear to be co-linear. All these are thought to be archaeological with features 1 & 6 being possible boundary ditches and 4, 5, 7, 8, 9 & 10 being more like historic agricultural features.

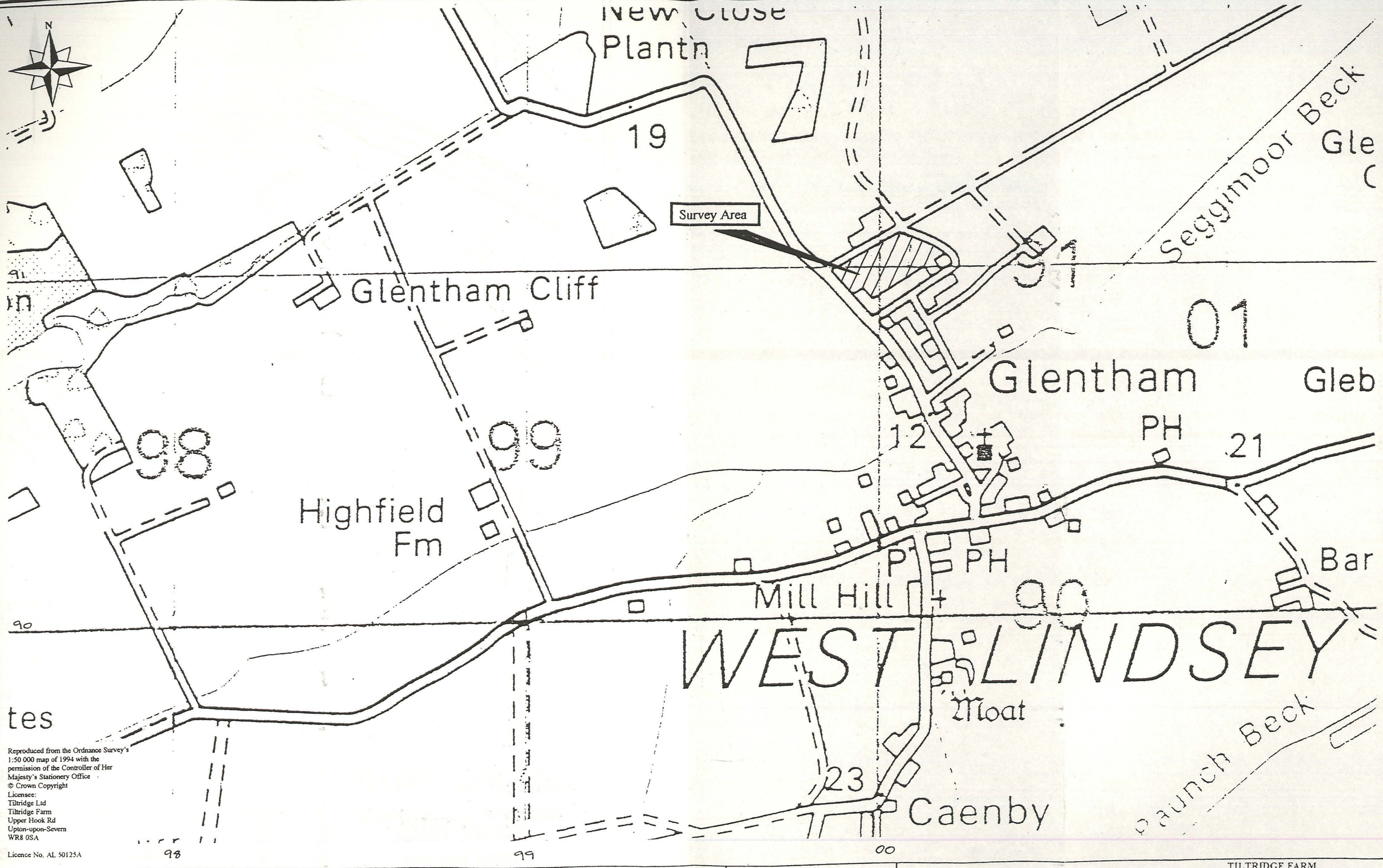
At the eastern end of the site are two curvilinear features 11 and 12. Both are very weak and consequently interpretation of them has to be tentative. 11 is a weak positive anomaly suggesting a wide shallow ditch. 12 is even more ephemeral being two negative anomalies which may be related. Being negative would suggest a ploughed-out embankment. It would be advisable to test these interpretations with trenching.

5 CONCLUSIONS AND RECOMMENDATIONS

Several of the features found by the magnetometer survey may be interpreted as being modern such as land drainage. However, there are a number of discrete and linear anomalies which are more likely to be archaeological in nature. It would be prudent to verify these interpretations through trenching.



Date August 1998	Client AOC ARCHAEOLOGY	STRATASCAN™
Scale 1 : 50 000	Subject Geophysical Survey Glentham, Lincs General Site Plan	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142
Figure 1		



DATE: August 1998	CLIENT: AOC ARCHAEOLOGY	FIGURE: 2
SCALE: 1 : 10 000	SUBJECT: Geophysical Survey Glentham, Lincs Detailed Site Plan	

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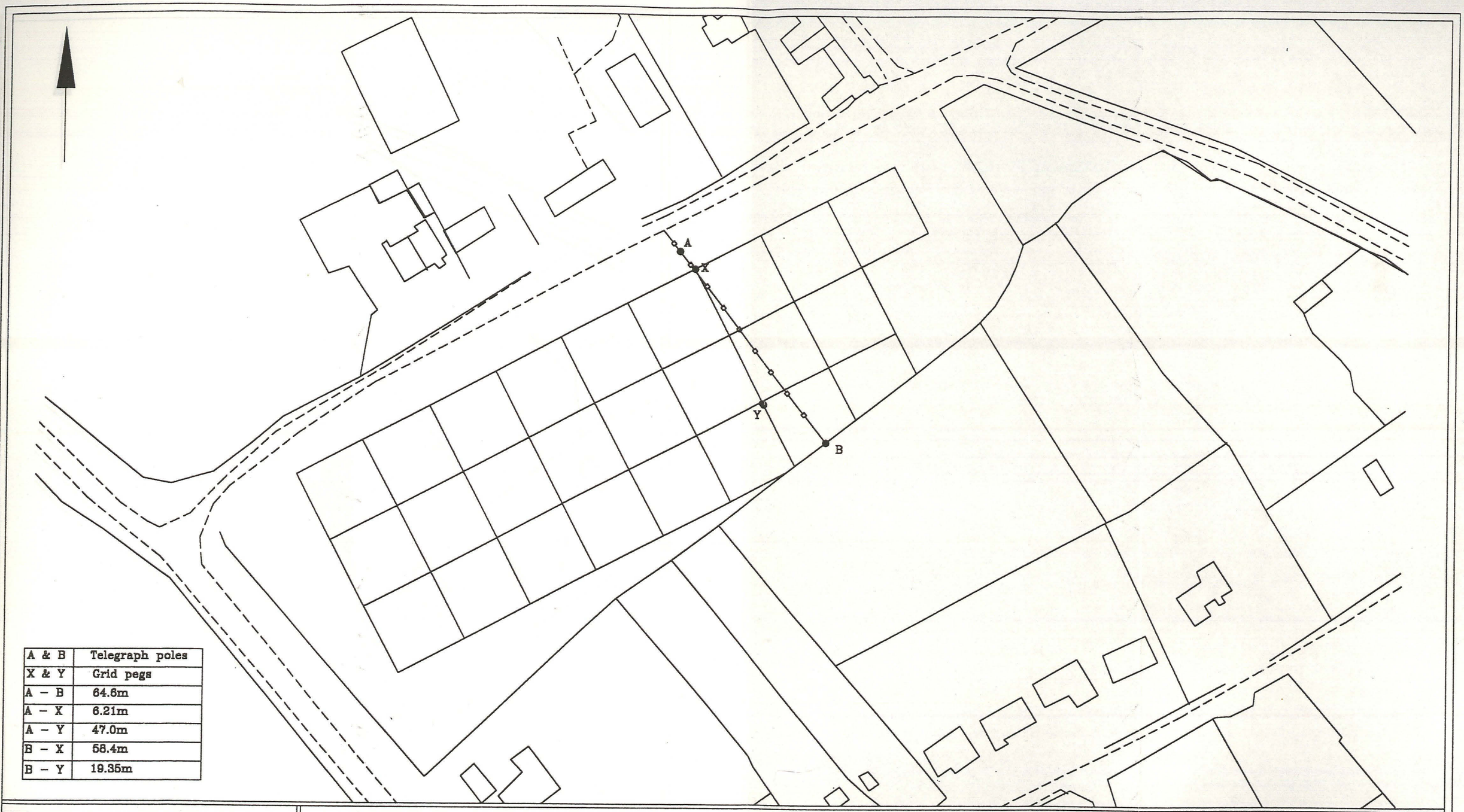

A & B	Telegraph poles
X & Y	Grid pegs
A – B	64.6m
A – X	6.21m
A – Y	47.0m
B – X	58.4m
B – Y	19.35m

Date : September 1998

Scale : 1:1000

Figure : 3

Client : AOC ARCHAEOLOGY

Subject : Geophysical Survey
Glentham, Lincs.
Site plan showing location of survey grids and referencing

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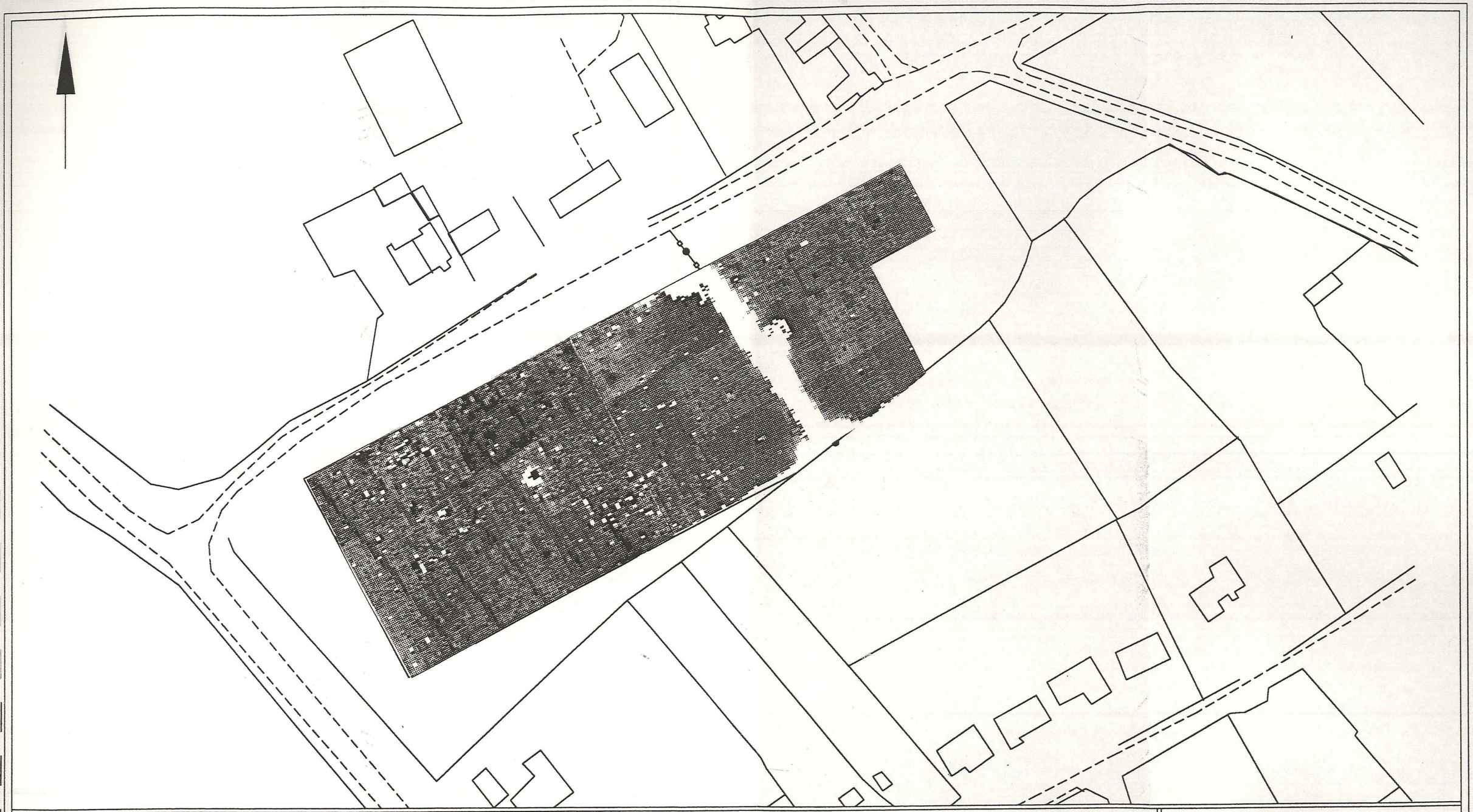

Date : September 1998	Client : AOC ARCHAEOLOGY		
Scale : 1:1000	Subject :	Geophysical Survey Glentham, Lincs. Plot of raw magnetometer data Plotting parameters Minimum −1nT (white) Maximum +8nT (black)	
Figure : 4			

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Date : September 1998	Client : AOC ARCHAEOLOGY		
Scale : 1:1000	Subject :	Geophysical Survey Glentham, Lincs. Trace plot of raw magnetometer data showing positive values only Plotting parameters +31.5mT/cm (Hidden lines have not been plotted) Positive values displace above the trace line	
Figure : 5			

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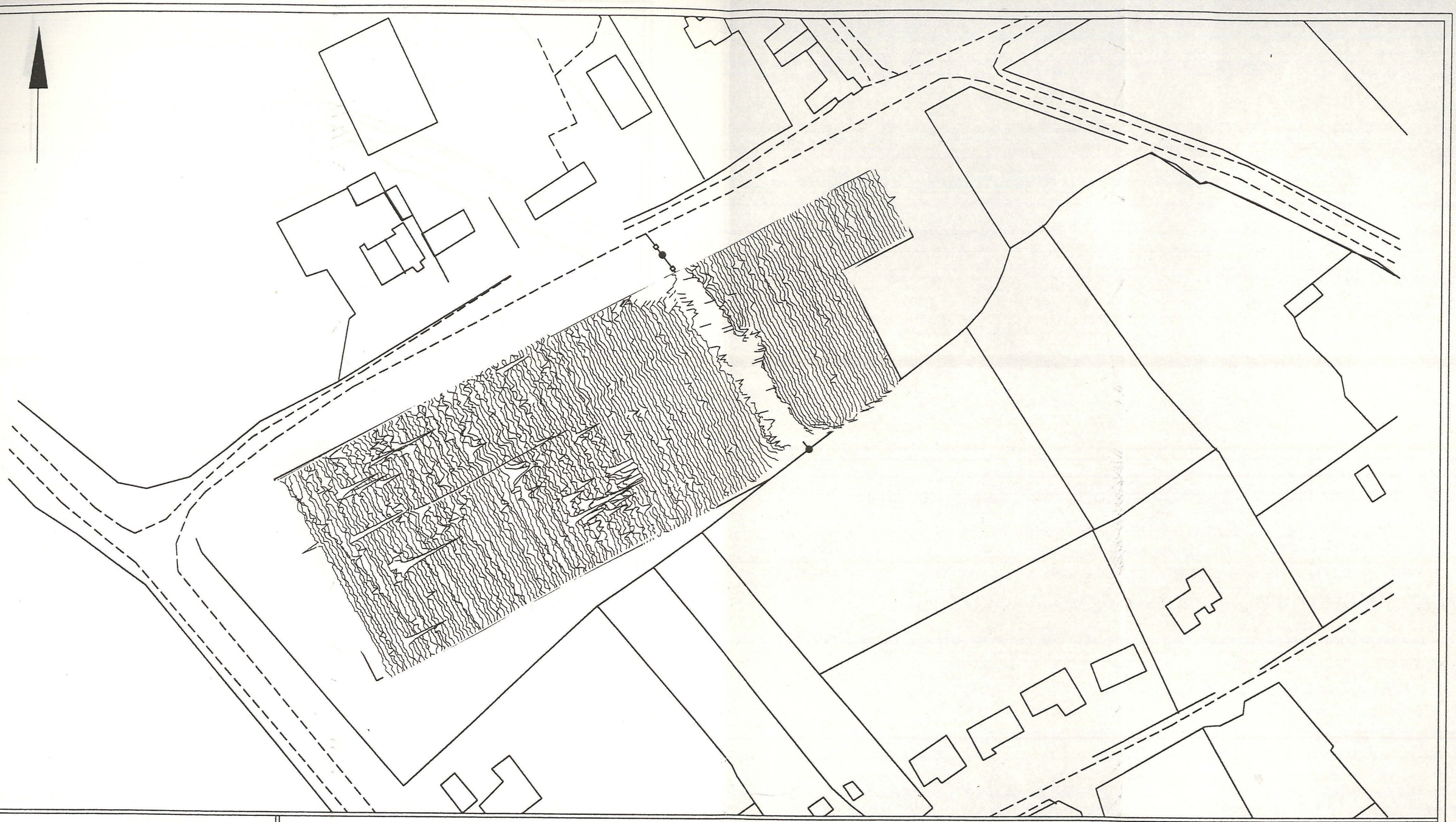

Date : September 1998	Client : AOC ARCHAEOLOGY	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES	
Scale : 1:1000	Subject : Geophysical Survey Glentham, Lincs. Trace plot of raw magnetometer data showing negative values only Plotting parameters −31.5nT/cm (Hidden lines have not been plotted) Negative values displace above the trace line		
Figure : 6			

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Scale : 1:1000	Subject : Geophysical Survey Glentham, Lincs. Plot of processed magnetometer data Plotting parameters Minimum −3nT (white) Maximum +3nT (black)		
Figure : 7			

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Date : September 1998	Client : AOC ARCHAEOLOGY	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES	
Scale : 1:1000	Subject : Geophysical Survey Glentham, Lincs. Abstraction of anomalies		
Figure : 8			

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APPENDIX C

Assessment Report on the Post-Roman Pottery

By Jane Young

1. Introduction

A small group of 37 sherds of mixed pottery were recovered from the GRD98 site, dating to between the Roman and the early modern periods.

2. Condition

The pottery recovered was of mixed condition, including both fresh and worn material. Several of the shell-tempered sherds were partially or completely leached. Some of the material was fragmentary and it was not always possible to determine the vessel form.

3. Overall Chronology and Source

A single well worn Roman sherd was recovered from 8/001. Three Anglo-Saxon sherds were found on the site, two Charwood type (CHARN) and one local quartz tempered fabric. Two of the sherds were small and fragmentary, the third vessel however, was of medium size and of fresh appearance indicating that it had originated from nearby and had not been too disturbed after deposition (context 4/003).

Two shell-tempered vessels (LFS) from context 2/007 indicate 11th century activity, although it is just possible that they may belong to the early part of the 12th century. Only one sherd (NSP from context 7/002) can be confidently attributed to the 12th century, although all of the vessels in the shell-tempered LEMS fabric could date as early as the mid 12th century.

A small but contemporary group of sherds dating to the first quarter of the 13th century came from context 8/003. The assemblage is comprised mainly of 13th century Glazed Lincoln ware (LSW2) jugs, but also includes Lincolnshire shell-tempered wares (LEMS and MEDLOC fabric A) and a Beverley ware vessel (BEVO). A further contemporary jug sherd (LSW2) with iron-stained decoration came from context 5/005. Other medieval or late medieval sherds were found residually in contexts 2/004A and 7/001.

Only one post-medieval (BL) vessel and one early modern (LPM) sherd were recovered from the site.

4. Conclusions

The material suggests that occupation may have started in the Roman period with a definite Anglo-Saxon presence, followed by a hiatus in activity in the area until at least the 11th century. Pottery from the first quarter of the 13th century is well represented and at least two of the vessels are elaborately decorated.

It is recommended that all of this material is kept and is deposited with the appropriate museum to enable it to be studied as part of any regional survey of Anglo-Saxon or medieval pottery.

POST-ROMAN POTTERY ARCHIVE: GRD98 HORIZON DATING

Context	Earliest horizon	Latest horizon	Probable horizon	Date range
2/004	MHI	MH4	-	12th to early/mid 13th
2/004A	PMH4	PMH7	-	17th
2/007	ASHII	MH3	ASH11-ASH14	11th
4/003	ASH1	ASH2	ASHI	5th to 7th
5/005	MH4	MH4	MH4	early to early/mid 13th
7/001	EMH	EMH	-	19/20th
7/002	MHI	MH4	MHI-MH3	12th
7/003	MHI	MH4	-	12th to early/mid 13th
7/004	MHI	MH4	-	12th to early/mid 13th
8/001	MHI	MH4	-	12th to early/mid 13th
8/003	MH4	MH4	MH4	early to early/mid 13th
8/007	MHI	MH4	-	12th to early/mid 13th

POST-ROMAN POTTERY ARCHIVE: GRD98 WARE TYPES BY CONTEXT

Context	Ware	Sherds	Form	Comments
TR9;U/S	ESAXLOC	1	-	COULD BE A SST; SMALL FRAGMENT
TR9;U/S	HUMB	1	JUG/JAR	FINE LIGHT BROWN UNGLZE SHERD;MED TO PMED
2/004	LEMS	1	BOWL?	BS
2/004	LEMS	1	COOKPOT	BS
2/004A	BL	3	JUG/JAR	MP TYPE;INT & EXT GLZE;17TH
2/004A	HUM	1	JUG	BS
2/004A	LEMS	1	?	BS;SCRAP
2/004A	LEMS	1	?	BS;SCRAP
2/004A	LEMS	1	COOKPOT	BS;SOOT
2/004A	LEMS	1	COOKPOT	BS;SOOT
2/004A	LSW2	1	JUG	BS;POCKED GLZE
2/007	CHARN	1	-	FABRIC INCLUDES CHAFF
2/007	LFS	1	JAR	WORN;PART LEACHED SURFACES; 11TH
2/007	LFS	3	JAR?	WORN & LEACHED; ? ID OR LEMS; 1 I- 12TH
4/003	CHARN	1	SMALL GLOBULAR VESSEL	BS;FRESH MEDIUM SIZED SHERD
5/005	LSW2	1	JUG	BS;APPLIED FE STRIP DECORATION
7/001	HUMB	1	JUG	BASE;WORN;LATE MED?

Context	Ware	Sherds	Form	Comments
7/001	HUMB	1	JUG	BS;WELL WORN; EMED/MED A FEW SPOTS OF GLZE LEFT
7/001	LPM	1	-	WHITE EARTHEN WARE
7/001	misc	1	-	WELL WORN LEACHED FRAGMENT;SHELL TEMPERED;? LEMS
7/002	NSP	1	JUG/PITCHER	SPL GLZE;WORN
7/003	LEMS	1	BOWL	RIM;SOOT;LEACHED
7/004	LEMS	1	BOWL?	RIM;SOOT;SURFACES LEACHED
8/001	LEMS	1	COOKPOT	SOOT;LEACHED
8/001	R	1	-	WELL WORN;FRESH BREAK
8/003	BEVO	1	JUG?	BS;NO GLZE;? ID
8/003	LEMS	1	?	SCRAP;WORN
8/003	LSW2	1	JAR/SMALL JUG	SPLAYED BASE;SOOTED
8/003	LSW2	1	JUG	BS
8/003	LSW2	1	JUG	CORRUGATED NECK
8/003	LSW2	1	JUG	LOCAL COPY OF NORTH FRENCH? OR ODD FRENCH FABRIC, APPLIED DIAGONAL STRIPS
8/003	MEDLOC	1	COOKPOT?	SHELLY FABRIC A
8/007	LEMS	1	COOKPOT	RIM;LEACHED

APPENDIX D

CONSERVATION ASSESSMENT OF AN IRON SMALL FIND

Work requested

X-radiography and a brief conservation assessment report.

Summary

The iron find was received correctly packed in a perforated plastic finds bad inside a polypropylene box desiccated with silica gel. The find was in four fragments which appeared to join together. The fragments were adhered together to be x-rayed. An acrylic adhesive was used, *Paraloid B72*™, which can be quickly and easily reversed if further treatment is not requested.

The fragments were x-radiographed. The fragments appear to belong to a knife blade. An estimate has been prepared for the conservation of the fragments.

The fragments have been re-packed with fresh silica gel to desiccate the environment and is suitable for long term storage if further work is not requested.

Description

X-ray 4356 reveals the four fragments to be a probable knife blade.

The radiograph reveals that the blade appears to have a pointed tang with the tip missing. The blade tip is also not apparent, though a possible square rivet hole is visible. In the centre of the shoulder of the blade there appears to be a circular shaped definition, this may be a cutlers mark, or simply a corrosion blister.

X-ray 4356 reveals a strong white edge along the shoulder, and possibly along the blade, this may be a dissimilar metal, possibly tinning or a steel edge. X-ray 4357, radiographed at a higher voltage does not reveal any further information.

Condition

The fragments are disfigured by an orange brown voluminous iron corrosion product possibly composed of iron oxides and carbonates, and is typical of the appearance of iron from a damp aerated burial environment.

The object appears to have been recently broken in to four fragments. Post excavation corrosion is evident on the broken edges though no voluminous corrosion is apparent, suggesting that the breaks are recent rather than during burial.

The x-radiographs reveal that much of an original surface is retained within the thick iron corrosion product and that some dense metal remains.

List of artefacts

Area Code	Feature No.	Description	X-ray No.
8	007	4 Iron knife blade fragments	4356
8	007	4 Iron knife blade fragments	4357

List of x-rays

X-ray	Volts (KeV)	Time (Mins)	Finds No.
4356	60	2.0	8/007
	70	1.5	8/007
4357	75	1.5	8/007
	85	1.0	8/007

Recommended treatment

Full cleaning is not considered necessary unless the item is requested for display purposes, or possibly illustration, though a possible cutlers mark and a dissimilar metal is apparent on the shoulder of the blade fragments according to X-ray 4356 and 4357. Cleaning is recommended to investigate these possible features.

It is recommended the knife blade fragments are investigatively cleaned using air abrasion with aluminium oxide powder to remove the disfiguring corrosion. The respective x-rays will be used for guidance.

The blade has been adhered together using *Paraloid B72*™ to give a more precise image of the blade for the x-radiograph, and will also be useful if investigative cleaning is requested. The adhesive can be easily and quickly reversed using Acetone if investigative cleaning is not requested.

Passive stabilisation is recommended for the long term preservation of the remaining ironwork. Passive stabilisation of iron is mainly confined to the avoidance of moisture and contamination by organic acids. This is achieved by storing the objects in a polypropylene box which does not contain materials which give off organic vapours, and desiccating the environment to a very low Relative Humidity (<15 RH%) using silica gel.

Estimated time

The estimated time for the cleaning of the iron blade and a conservation report will be;
7.5 hours

Handling and storage requirements

Wear gloves when handling iron objects to avoid: a) contamination from the objects b) contamination of the objects.

Objects should be examined on a smooth padded surface.

Objects should be kept in the individual packaging provided when not being examined to avoid confusion since the objects are not individually marked.

Iron items should be kept in perforated plastic finds bags to allow air circulation and desiccation of the environment within the polypropylene box.

Iron work should be kept in a desiccated environment using silica gel in a sealed polypropylene box at all times other than during examination.

The polypropylene box should be closed and sealed immediately once an object is removed for examination to protect the desiccant from becoming damp.

The Relative humidity indicator strip should be visible and should remain blue at all times; if the strip starts to turn pink this is an indication that the silica gel needs to be changed. **This should be monitored regularly.**

Health and safety considerations

After handling archaeological material, wash hands immediately; do not allow food, drink or food preparation areas to become contaminated with soil or other debris.

APPENDIX E OTHER FINDS.

Flint.

Identification by Pippa Bradley.

A single Backed bladelet of probably Mesolithic date was recovered from topsoil 4/001.

Fill 5/005, dated by pottery as 11th -13th century, contained two fragments of lightly burnt flint.

Bone.

A small quantity of animal bone was also recovered during the course of the evaluation, tabulated below.

Context	No. of Fragments.
2/004	1
2/007	2
5/005	6
8/003	1