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**LAND OFF WILLOUGHBY RD  
ANCASTER  
LINCOLNSHIRE  
(AWD04)**

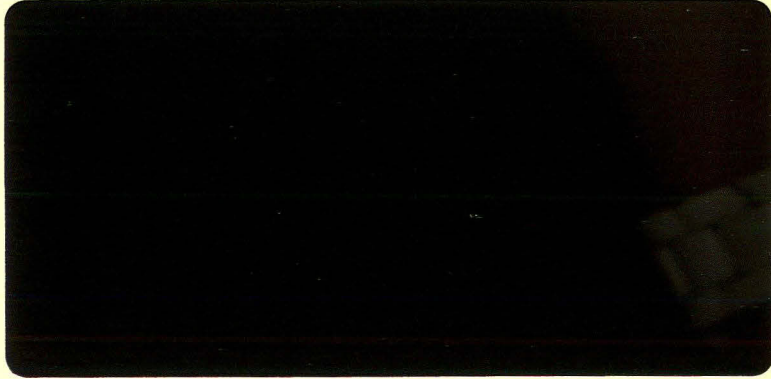
**Work Undertaken For  
Lincolnshire County Council**



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**ARCHAEOLOGICAL DESK BASED  
ASSESSMENT OF  
LAND OFF WILLOUGHBY RD  
ANCASTER  
LINCOLNSHIRE  
(AWD04)**

**Work Undertaken For**  
Lincolnshire County Council

August 2004

Report Compiled by  
Mark Williams

National Grid Reference: ~~SK 984 434~~ SK 9800 4345

**ARCHAEOLOGICAL PROJECT SERVICES**



APS Report No. 119/04

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## 1. SUMMARY

*A desk-based assessment was undertaken to determine the archaeological implications of proposed development of land adjacent to Willoughby Road, Ancaster.*

*The proposed development area lies within an area of high archaeological potential lying south and west of the historic town of Ancaster. Archaeological remains dating from the Mesolithic to the Roman Period have been recovered from the vicinity.*

*Geophysical survey on the site revealed a small number of anomalies, which could be modern in origin.*

## 2. INTRODUCTION

### 2.1 Definition of an Archaeological Desk-Based Assessment

An Archaeological Desk-Based Assessment is defined as '*an assessment of the known or potential archaeological resource within a specified area or site on land, inter-tidal zone or underwater. It consists of a collation of existing written, graphic, photographic and electronic information in order to identify the likely character, extent, quality, and worth of the known or potential archaeological resource in a local, regional, national, or international context as appropriate*' (IFA 1999).

### 2.2 Planning Background

Lincolnshire County Council plan to construct a Winter Maintenance Depot at Willoughby Road, Ancaster. The Archaeology Section at Lincolnshire County Council requested a geophysical

survey (Appendix I) and desk based assessment in order to allow a suitable mitigation strategy to be developed for the site.

### 2.3 Site Location

Ancaster is located 10km north-east of Grantham in the district of South Kesteven. The proposed development is located in the south of the village of Ancaster adjacent to Willoughby Road A153 at NGR SK984 434 (Fig.1).

### 2.4 Topography and Geology

Ancaster lies in a gap in the area of Limestone uplands, which extends from the Humber to Stamford in Lincolnshire. Ancaster is one of only two gaps in this area, the other being the Lincoln gap some 10km to the north. The Ancaster gap was formed by a former course of the River Trent.

Local soils are predominantly of the Blackwood Association, deep permeable sandy and coarse loamy soils in glaciofluvial drift with Ruskington Association gleyic brown calcareous earths, and with Elmton 1 Association, shallow brown rendzinas (Hodge *et al.* 1984, 127; 179 and 304). Beneath these deposits is a solid geology of Oolitic Limestone and Upper Lincolnshire Limestone.

## 3. AIMS

The purpose of the desk-based assessment is to obtain information about the known and potential archaeological resource within the vicinity of the proposed development site. In addition to the above, statutory and advisory heritage constraints were identified.



#### 4. METHODS

The research undertaken in the compilation of this archaeological desk-based assessment involved the examination of all available primary and secondary sources relevant to Ancaster and the immediate surrounding area. These sources consisted of:

- Historical documents held in the Lincolnshire Archives Office
- Enclosure, tithe, parish, and other maps and plans, held in the Lincolnshire Archives Office
- Ordnance Survey maps
- Lincolnshire Sites and Monuments Record
- Parish files held by Heritage Lincolnshire
- Aerial photographs
- Secondary sources, in the form of periodical articles and books, held at the Lincolnshire Archives Office, Lincolnshire Library, and Heritage Lincolnshire

This research was supplemented by a walkover survey of the land, undertaken to assess the current ground conditions, land-use patterns, and to ascertain the presence of any surface finds of an archaeological character, and of features that might indicate the presence of archaeological remains. The results of the archival and field examinations were committed to scale plans of the area.

No geotechnical information relevant to

the proposed development site was available.

#### RESULTS

##### 5.1 Historical Evidence

Ancaster is first mentioned in a Danelaw charter of Henry II (1154-1189 A.D.) and again in a Feet of Fines of 1196 (a record of a transaction involving the changing of hands of a freehold property). The town is referred to as 'Anecastre' and seems to be derived from 'Ana's Roman Station' (Cameron 1998). There is no record of the town in the Domesday Survey of 1086, although West Willoughby is recorded as having two churches, one of which was possibly located in Ancaster. The land was owned by St Peter of Burg (Peterborough), Colsvain and Robert De Vici (Foster and Longley 1976).

A fair had been granted to Ancaster during the medieval period and was in existence until at least the mid-18<sup>th</sup> century. White's Directory of 1842 mentions that the village had a population of 480, not indicative of a large settlement.

##### 5.2 Cartographic Evidence

Maps of the county of Lincolnshire show the area south of Willoughby Road as undeveloped until the 1881 6" Ordnance Survey Map of Lincolnshire which records a farm to the east of the development site. This is the same on the 1904 6" Map. There was no modern disturbance located on any of the maps, except the earthwork feature extending into the approximate centre of the site (Fig. 2), which does not appear on any of the maps until the 20<sup>th</sup> century. It is likely that this mound is the result of ground clearance for modern structures to the west.

No other maps were found at the Lincolnshire archive, the majority of the historic maps focus on the area of the main development of the town to the north.

### 5.3 Aerial Photographic Evidence

Although there are some aerial photographs for the area it lies within restricted airspace in the vicinity of an air base (Carter 1998, 97). This has meant that there hasn't been the extensive coverage that has been afforded to other areas in the region.

No features are shown on aerial photographs within the proposed development area. Approximately 1.5km southwest of the site route-ways and enclosures are recorded on the NMP overlays at Lincolnshire County Council SMR. This form of feature has been traditionally dated to the Iron Age and Roman period.

### 5.4 Geophysical Survey

As part of this programme of works a geophysical survey was undertaken on the proposed development site (EAS 2004 Appendix 3). Coverage was hampered slightly by trees in the area but anomalies were revealed. A linear anomaly running through the site was identified as a road (visible also on the surface as a lighter area of grass). Two features identified running parallel to the modern road may be field boundaries of post medieval date. Of note were ferrous responses, which are usually indicative of iron present in the ground. Often these represent modern material.

Extensive geophysical survey to the north and east of the proposed development during a programme of works carried out by the Time Team (television archaeology

programme) revealed extensive features in the area of the Roman town and north of the known cemetery. This suggests that the soils are conducive to geophysical survey.

### 5.4 Archaeological Data

Records of archaeological sites and finds are held in the Lincolnshire County Sites and Monuments Record and the parish files maintained by Heritage Lincolnshire. Other, secondary sources were also examined. Details of archaeological remains falling within c. 1.0km of the proposed development site are collated in Table 1 and located on Figure 3. The plan is heavily focused on the north east, there being no recorded archaeological remains to the immediate south and west.

PRN	Description	NGR
30300	Norman Church with 13 <sup>th</sup> 14 <sup>th</sup> and 15 <sup>th</sup> century works	SK98274356
30301	Medieval chapel and hermitage	SK98384350
30302	Medieval village cross	SK9840343845
30303	Post medieval / modern well	SK98384327
30305	Mid Bronze Age cremation	SK97614357
30306	Late bronze Age pottery	SK98234332
30309	Modern Silver ring	SK98204374
30312	Roman Coin	SK986434
30314	Mesolithic flint	SK97334378
30315	Early Mesolithic to Early Bronze Age artefact scatter	SK976438
30321	Edward I Penny	SK983440
30323	Roman features indicating possible camp	SK982436
30327	Roman cemetery (more than 300 adult burials) including lead coffin.	SK982436
30328	Iron Age settlement containing many	SK98244350



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	quality artefacts	
30329	Roman pottery and 9 inhumations	SK983437
30330	Roman cemetery two complete burials and one disturbed	SK98144341
30331	Two Roman buildings	SK986435
30332	At least two stone buildings (Robbed)	
30333	11 inhumation burials with heads to the west	SK98604360
30334	Anglo Saxon cremation cemetery	SK98254330
30335a	Anglo Saxon Brooch, pre 500	SK98574359
30335b	Stamped Pottery	SK986433
30335c	AS Brooch (Trefoil headed short long)	SK98614352
30336	Post medieval dovecote	SK983437
30339	Medieval building	SK984436
30340	Iron Age settlement remains	SK987433
30341	Roman Kiln and 6+ inhumation burials	SK98644426
30343	Roman inhumations	SK97714357
30353	Roman inhumations and structural remains	SK97574350
34206	Iron Age inhumations finds include Fantail Brooch and Gallo Belgic Ware	SK98134342
34986	Votive stone possibly representing Goddess Minerva or Brigantia	SK98324383
35235	Mesolithic flint blade	SK97774351
35374	Roman Pottery (Two Samian bases with stamps)	SK98104350

Table 1: Known archaeological sites and finds within the vicinity

In general the site lies within an area of dense utilisation since the early prehistoric period. Its situation within the gap, as well as being militarily strategic would also have been important for socio economic links.

### Prehistoric Archaeology

Although earlier prehistoric activity has been recognised in the form of artefacts, no settlement remains have been found. A Mesolithic blade (35235) was located 100m west of the site and further Mesolithic and Bronze age artefacts have been located approximately 500m east between Ancaster and Willoughby (30315, 30305) on Willoughby Moor

Approximately 50m east of the proposed development site burials have been found which have been dated to both the Iron Age and Romano British periods (34206/30330). Iron Age burials are extremely rare in Lincolnshire (as elsewhere).

By the Iron Age (700 - 54BC) there is settlement evidence (30328) in the form of enclosure ditches and hut circles 100m to the north of the proposed development. Finds from the settlement suggest it was of some importance although the limited nature of the excavation and the subsequent disturbance by later Roman occupation made interpretation of the features difficult (May 1976, 133 and Todd 1981).

Ancaster quarry is located approximately 600m to the east of the development site and overlooks the gap. This site has evidence of middle Iron Age occupation being highlighted as one of the most important in the region (Willis 2001).

By conventional typology the crop marks revealed by aerial photographs to the southwest of the site conform to Iron Age Romano-British landscape features (although this typology is being reassessed).

It seems that in the Iron Age the site was



part of an extensively utilised landscape with a focal point in and around Ancaster.

#### **Romano-British Archaeology**

Significant Romano-British archaeology is known from the area. A Roman temporary fort has been identified through aerial photography to the northwest of Ancaster (30322) This was probably constructed by the legion *IX Hispana* as an overnight refuge on their march to Lincoln in the 40s or 50s A.D. A more permanent fort was constructed later, in what is now the centre of the village, possibly to house troops who were involved in the construction of Ermine Street, but also to monitor movement through the Ancaster gap.

The fort was abandoned as the Roman army moved north. By that time a vicus (civilian settlement) had grown up outside the fort and formed the nucleus of the later fort.

This settlement appears to be one of a number in the East Midlands which have Iron Age predecessors, although its development is little known. It is interesting that the development of the town does not follow a linear pattern and it is suggested that parts of the site may have developed prior to the formation of the road. Any opportunity to investigate areas off Ermine Street is important in understanding this development.

Structural remains together with inhumation burials have been found at Twelve Acre Close approximately 100m to the west of the site (30353).

Roman burials have been found mainly to the north and south of the town flanking Ermine Street but burials have also been found to the west of the town (30327 and Whitwell 1970, 67). Burials have also been

found to the southwest of the Roman town, with seeming outliers within a few hundred metres to the east and west of the site (30330, 30353, 30343). Rural burials in the Roman period are rare and poorly understood for the region and their potential recovery from the site is of importance (Taylor 2001).

The 1904 Ordnance Survey Map records a findspot of Roman coins (found AD 1841) to the northeast of the proposed development. Further to the east on the eastern side of Ermine Street the same map records a tessellated floor and Roman coins as being found.

#### **Saxon Archaeology**

A Saxon cemetery is recorded approximately 100m east of the site. There was no evidence of burials of this date at Ant House Farm, which possibly means that the cemetery did not extend to the current development site. It is possible Ermine Street formed the boundary to the cemetery.

No evidence of Saxon occupation has been found in the area but the ephemeral nature of such features makes them very difficult to identify. Settlement evidence is recorded from in the SMR from the north-west of the Anglo-Saxon cemetery but the findspots are two brooches and stamped pottery which could be funerary.

#### **Medieval Archaeology**

Ancaster was a relatively minor settlement in the medieval period (1066-1500). The Church of St Martin has 12<sup>th</sup> century stonework within it (Pevsner 1989) and the chapel of St Mary stood in the field opposite. Ancaster was divided between the Parishes of Wilsford and Sudbrooke and only became a parish in its own right in the 19<sup>th</sup> century.



The proposed development site appears to have been located beyond the medieval and post medieval core of the village.

### 5.5 Walkover Survey

The walk-over survey was conducted on 31<sup>st</sup> May 2004. Weather was overcast but visibility was clear. The ground slopes from south to north towards the road, a drop of several metres.

The site is currently under rough pasture with trees forming all the borders except the eastern boundary which is open towards the factory buildings.

The only significant observation was that a crop mark, visible as an area of slightly lighter crop corresponded with the 'road' identified on the geophysical survey. It extended from the modern field entrance towards the industrial buildings to the east.

A couple of small surface disturbances were noted – possibly animal disturbance. This revealed a reddy brown topsoil with fragments of limestone. There was no obvious evidence of modern disturbance but only small areas were visible, no artefacts were visible.

### 5.7 Previous Archaeological Intervention

A geophysical survey has been carried out on the site (see 4.3).

No other archaeological intervention has taken place on the proposed development site, although a number of investigations have taken place in the vicinity which make Ancaster an 'extremely important data set' (Taylor 2001). But much of the material remains unpublished.

## 6 CONSTRAINTS

### 6.1 Heritage Constraints

There are two known scheduled sites within the immediate vicinity of the site. The Temporary Roman fort (SAM 295, 30322) lies almost a kilometre to the north. It is unlikely that proposed development will have any direct impact on the SAM.

The second, SAM 105 (The Roman Town and Anglo Saxon cemetery) lies a little more than 100 meters east of the site. Features associated with the SAM may continue into the development area.

### 6.2 Other Constraints

No services are known to cross the site. The possibility of human remains on the site is noted and it will be necessary to obtain a Home Office licence if these are to be exhumed.

## 7. ASSESSMENT OF SIGNIFICANCE

The criteria used to assess the significance of the remains present within the assessment area were adopted from the *Secretary of States Criteria for Scheduling Ancient Monuments* (Department of the Environment 1990, Annex 4; see Appendix 1).

### Period

The archaeological remains in the area are multi period but focus on Iron Age through to the Early Saxon period.

Cropmark enclosures and field boundaries are typical of the prehistoric and Romano-British periods.

### Rarity

The importance of the site relates not just to the individual features present, but on the nature of the continuity of the site as a focal point from the Iron Age to the Early Saxon period.

Cropmarks, defining enclosures and settlement, are relatively common, although may contain rare or unusual features. Additionally, they are generally undisturbed by later development.

#### **Documentation**

Records of archaeological sites and finds made in the assessment area are kept in the Lincolnshire Sites and Monuments Record.

There is no contemporaneous documentation with the archaeological remains on the site but the literature on the previous investigations means that information from this phase of work can be incorporated with the evolving model for the development of Ancaster.

#### **Group Value**

The archaeological remains have high group value with contemporaneous material. The walled town is one of a number in late Roman Britain.

The early medieval cemetery is one of a number in the vicinity which are little understood due to lack of modern investigation and publication.

#### **Survival/Condition**

The archaeological remains on the site are in an unknown condition although relatively well preserved archaeological remains have been found in the area.

#### **Fragility/Vulnerability**

All archaeological deposits present on the site would be vulnerable to disturbance from proposed development of the site.

#### **Diversity**

Period diversity is represented by archaeological remains of prehistoric, Roman and medieval date occurring in close proximity to the investigation area. High functional diversity is provided by sites and remains relating to settlement, cemeteries and military structures in the vicinity.

#### **Potential**

There is a moderate potential for burials to be present on the site. Inhumation burials dated to the Roman and Saxon period have been found in the surrounding area.

### **8. ASSESSMENT OF IMPACT**

The proposed development involves the construction of a Winter Maintenance Depot with associated salt barn garage and hard standing. The main impact of the development will be the significant landscaping that will be undertaken for the construction of the facilities. This will involve the reduction of ground surface to the rear of the development by up to 3m which would mean the total destruction of any archaeological remains on this part of the site.

The geophysical survey has raised tantalising questions. Anomalies were recorded which may relate to archaeological features but the results are far from certain. A road/track was identified running northeast-southwest through the development site. This is faintly visible on the ground and may be of recent origin. An area of high readings in the north-east of the development site may indicate the presence of archaeologically significant deposits as may the high ferrous readings shown as individual spikes in the area.



Individual burials are generally too small to be picked up using traditional magnetometer methodology but it is possible that artefacts accompanying certain burials might show up as ferromagnetic spikes.

Other features existed parallel to the road and may be field boundaries. However these are of unknown antiquity, and may be significant in dating the development of this part of Ancaster.

## 9. OVERVIEW

Investigation of the archaeological potential of the site has revealed the close proximity of features dating to the Iron Age, Roman and Medieval periods. Iron Age, Roman and Anglo Saxon burials are located at several points around the proposed development site, and it is possible that features of such date may be present on the development site.

## 10. CONCLUSIONS

An archaeological desk-based assessment of land at Willoughby Road, Ancaster, Lincolnshire, was undertaken in order to determine the archaeological implications of the proposed development of the site.

Investigation of the archaeological potential of the site has revealed the close proximity of features dating to the Iron Age, Roman and Early Saxon periods. It is possible that associated features will extend into this area.

The presence of Iron Age, Roman and Anglo Saxon burials in the vicinity (to the northeast and west of the development) highlight a potential for these features to be located on the proposed development

site. Only the Anglo Saxon cemetery could be argued to have identifiable limits as no burials of this date have been identified west of Ermine Street but even this is conjectural.

The geophysical survey did not identify significant archaeological remains on the site. It may be that burials (which are perhaps the most likely features to be located in the area) were not detected.

## 11. ACKNOWLEDGEMENTS

Archaeological Project Services would like to thank Mr Alan Aistrup of Lincolnshire County Council who commissioned this report. This work was coordinated by Mark Williams and the report was edited by Gary Taylor and Tom Lane. Access to the County Sites and Monuments Record was kindly provided by Mark Bennet and Sarah Grundy of the Archaeology Section, Lincolnshire County Council. Thanks are also due to the staff of Lincolnshire Archives Office and Lincoln Central Library. Jenny Young permitted examination of the parish files and library maintained by Heritage Lincolnshire.

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[http://www.le.ac.uk/archaeology/pdf\\_files/emidiron.pdf](http://www.le.ac.uk/archaeology/pdf_files/emidiron.pdf)

### 13. ABBREVIATIONS

APS	Archaeological Project Services
BGS	British Geological Survey
DoE	Department of the Environment
HMSO	Her Majesties= Stationery Office
IFA	Institute of Field Archaeologists
LAO	Lincolnshire Archives Office
SMR	Sites and Monuments Record



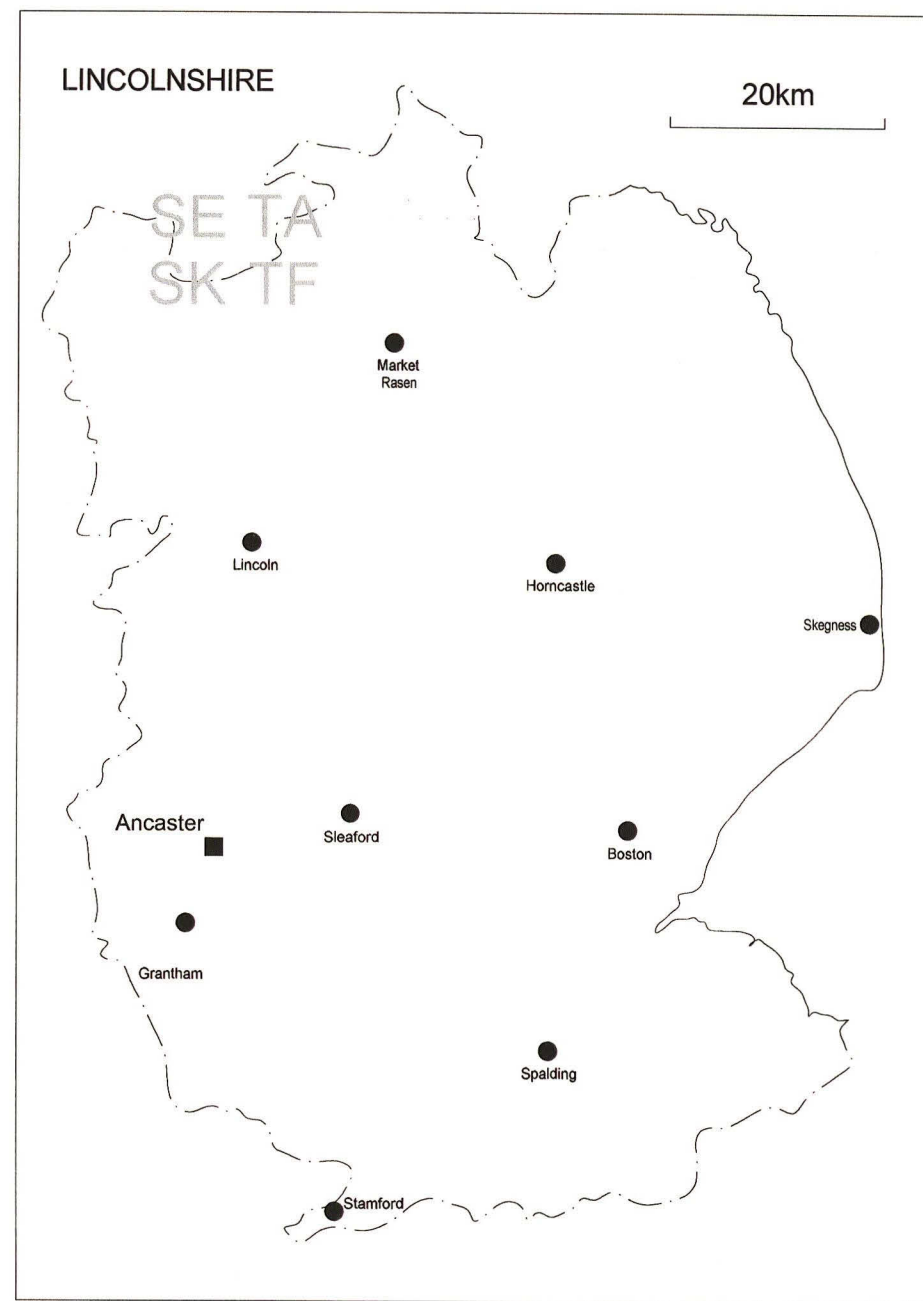


Figure 1 General Location Plan



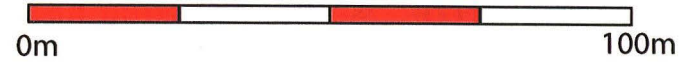
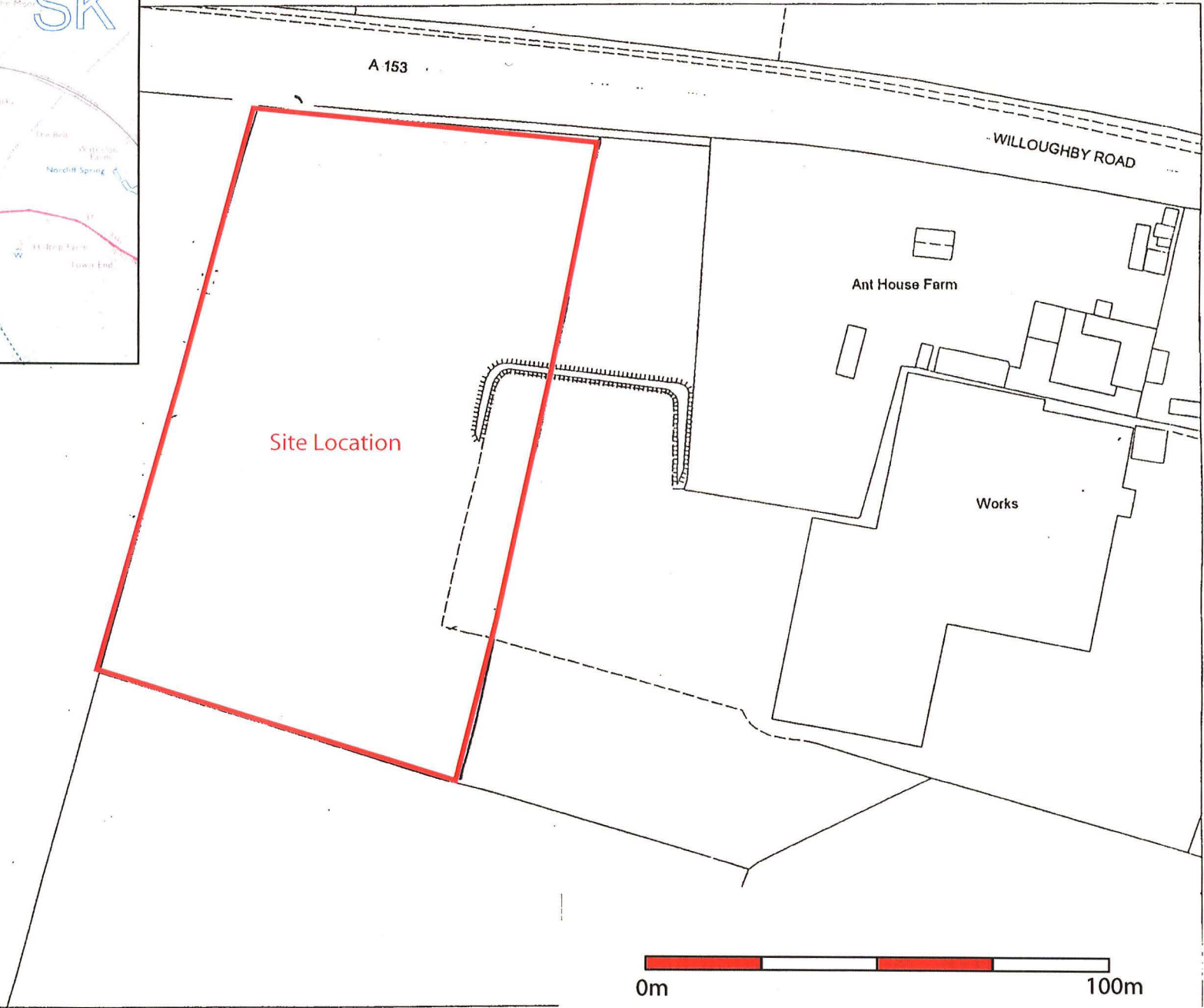
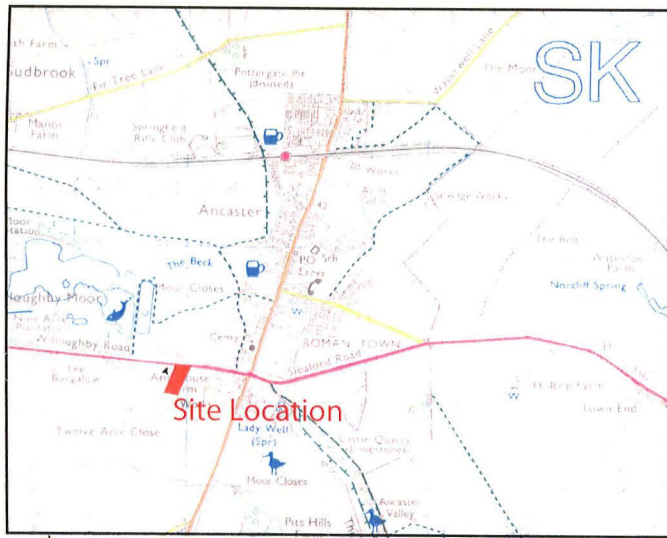


Fig. 2 Location of development





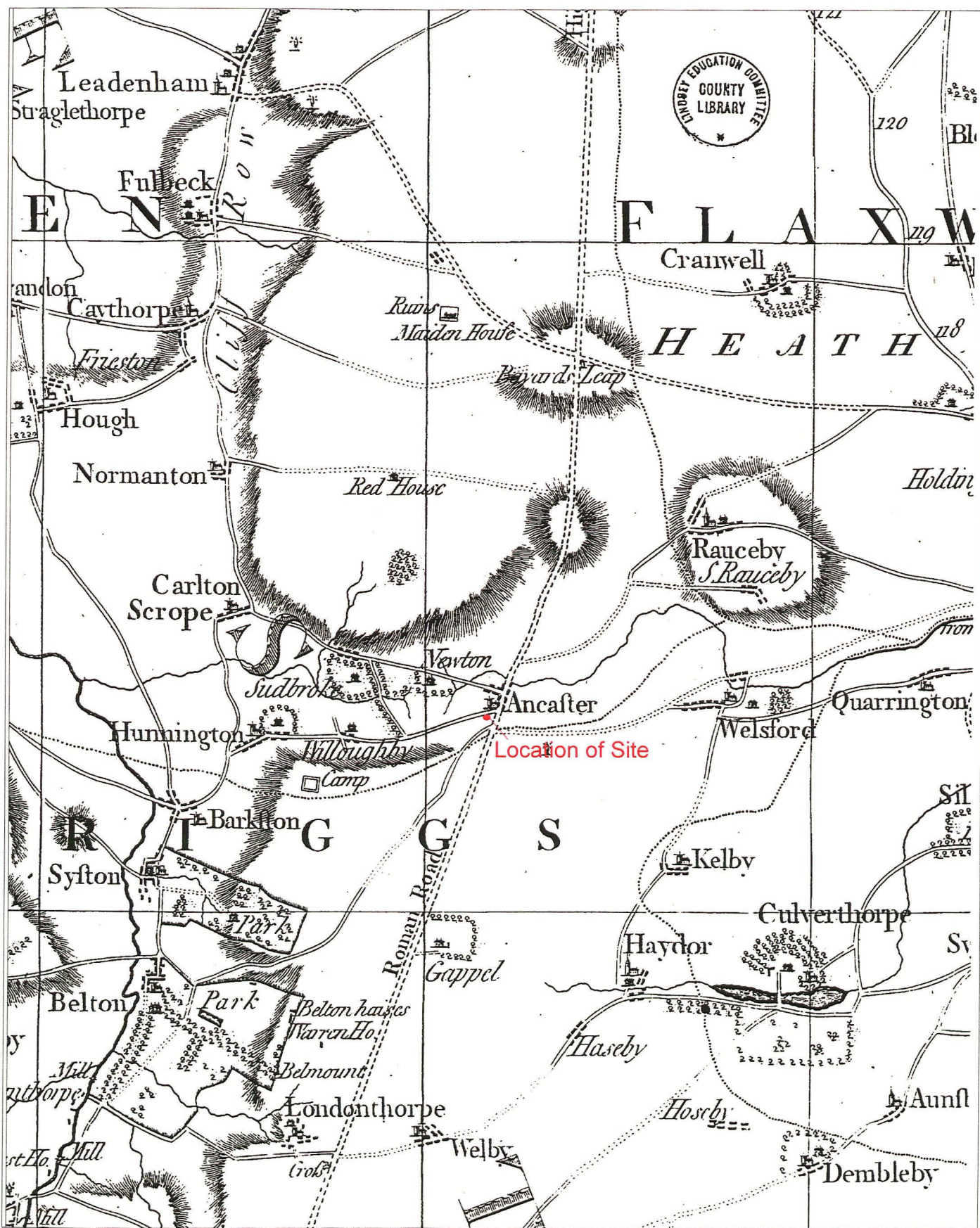


Figure. 4 Extract from Armstrongs Map of Lincolnshire 1778







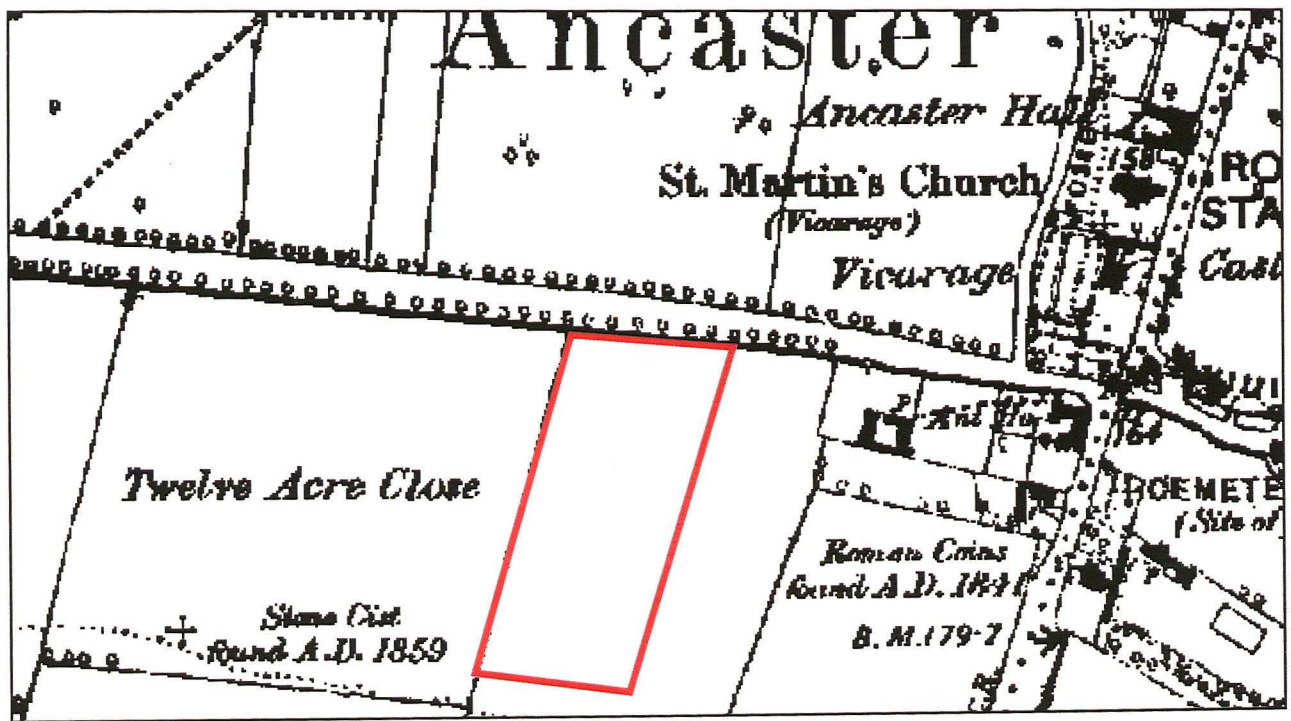


Fig.6 Extract from the 1881 O.S Map of Lincolnshire



Fig. 7 Extract from the 1904 Ordnance Survey Map





Plate 1, View of Site looking north



Plate 2, View of Site looking South



## Appendix 1

### SECRETARY OF STATE'S CRITERIA FOR SCHEDULING ANCIENT MONUMENTS - extract from *archaeology and planning* DoE planning policy guidance note 16, November 1990

The following criteria (which are not in any order of ranking), are used for assessing the national importance of an ancient monument and considering whether scheduling is appropriate. The criteria should not however be regarded as definitive; rather they are indicators which contribute to a wider judgement based on the individual circumstances of a case.

- i *Period:* all types of monuments that characterise a category or period should be considered for preservation.
- ii *Rarity:* there are some monument categories which in certain periods are so scarce that all surviving examples which retain some archaeological potential should be preserved. In general, however, a selection must be made which portrays the typical and commonplace as well as the rare. This process should take account of all aspects of the distribution of a particular class of monument, both in a national and regional context.
- iii *Documentation:* the significance of a monument may be enhanced by the existence of records of previous investigation or, in the case of more recent monuments, by the supporting evidence of contemporary written records.
- iv *Group value:* the value of a single monument (such as a field system) may be greatly enhanced by its association with related contemporary monuments (such as a settlement or cemetery) or with monuments of different periods. In some cases, it is preferable to protect the complete group of monuments, including associated and adjacent land, rather than to protect isolated monuments within the group.
- v *Survival/  
Condition:* the survival of a monument's archaeological potential both above and below ground is a particularly important consideration and should be assessed in relation to its present condition and surviving features.
- vi *Fragility/  
Vulnerability:* highly important archaeological evidence from some field monuments can be destroyed by a single ploughing or unsympathetic treatment; vulnerable monuments of this nature would particularly benefit from the statutory protection that scheduling confers. There are also existing standing structures of particular form or complexity whose value can again be severely reduced by neglect or careless treatment and which are similarly well suited by scheduled monument protection, even if these structures are already listed buildings.
- vii *Diversity:* some monuments may be selected for scheduling because they possess a combination of high quality features, others because of a single important attribute.
- viii *Potential:* on occasion, the nature of the evidence cannot be specified precisely but it may still be possible to document reasons anticipating its existence and importance and so to demonstrate the justification for scheduling. This is usually confined to sites rather than upstanding monuments.



## Appendix 2

### GLOSSARY

<b>Cropmark</b>	A mark that is produced by the effect of underlying archaeological features influencing the growth of a particular crop.
<b>Geophysical Survey</b>	Essentially non-invasive methods of examining below the ground surface by measuring deviations in the physical properties and characteristics of the earth. Techniques include magnetometry and resistivity survey.
<b>Iron Age</b>	A period characterised by the introduction of Iron into the country for tools, between 800 BC and AD 50.
<b>Medieval</b>	The Middle Ages, dating from approximately AD 1066-1500.
<b>Neolithic</b>	The 'New Stone Age' period, part of the prehistoric era, dating from approximately 4500-2250 BC.
<b>Post-medieval</b>	The period following the Middle Ages, dating from approximately AD 1500-1800.
<b>Prehistoric</b>	The period of human history prior to the introduction of writing. In Britain the prehistoric period lasts from the first evidence of human occupation about 500,000 BC, until the Roman invasion in the middle of the 1 <sup>st</sup> century AD.
<b>Romano-British</b>	Pertaining to the period dating from AD 43-410 when the Romans occupied Britain.
<b>Saxon</b>	Pertaining to the period dating from AD 410-1066 when England was largely settled by tribes from northern Germany.
<b>Toft</b>	Elongated and parallel plots of land containing a dwelling.

### Appendix 3

#### LIST OF SOURCES CONSULTED

Lincolnshire County Sites and Monuments Record, parish of Kettlethorpe

Aerial Photographs held in the Lincolnshire County Sites and Monuments Record

Lincolnshire Archives: Cartographic Sources, Secondary Sources (Books and Journals)

Plans and Maps for the parish of Kettlethorpe, held at the Lincolnshire Archives

Lincoln Central Reference Library

Heritage Trust of Lincolnshire Library

Ordnance Survey Maps *c.* 1887, 1921, 1980

#### **Sources Not Consulted**

Geotechnical information

Cursory examination was made of primary historical documentation held at Lincolnshire Archives—experience has shown that the consultation of primary historical documents is extremely time-consuming, and only fortuitously affords information relevant to archaeological inquiries.



*Survey Commissioned  
by  
Archaeological Project Services*

*Surveyed  
by  
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*registered in England  
N° 2869678*

*Land Off Willoughby Road (A153)  
Ancaster, Lincolnshire  
Geophysical Survey*

*May 2004*

*EAS Client Report 2004/7*

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# Willoughby Road, Ancaster, Geophysical Survey -Results:

## **NGR**

**Centred on SK 97970 43433**

## **Location and Topography (Figure 1)**

The survey site was to the south of the A 153, Willoughby Road, approximately 260 m west of the junction with Ermine Street (B 6403). It was bounded on the south by the A 153, on the east by Ant House Farm and the yard for a metal fabrication works; and on the west and north by farmland. The fabrication yard has been levelled so that its southern end had been cut into the hillside and the northern end had been built up, thereby forming a bank above the survey area.

The site slopes gently down to the north with a relatively flat area adjacent to the A 153. The field was under short grass with trees along the western edge of the survey area.

## **Archaeological Background**

The town of Ancaster is the centre of significant archaeological activity. It is the site of an Iron Age Settlement, Roman fort, Roman town and Early Medieval cemetery. At least some of these sites are protected as Scheduled Ancient Monuments. There are also isolated finds dating to the prehistoric period within the immediate area.

Whilst the survey site is outside the scheduled areas it lies immediately to the south of the Early Medieval cemetery and to the south west of the Roman town.

## **Aims of Survey**

To gather sufficient information to establish the location and extent of any archaeological features within the development area and, if possible, to characterise the archaeology located.

## **SUMMARY OF RESULTS**

Only a limited number of magnetic anomalies were recorded. The line of an abortive, modern, road was defined together with areas of modern disturbance. Two linear anomalies were probably old field boundaries. An area of marked magnetic disturbance was also located in the northern section of the survey area. The origins of this area of disturbance is uncertain but it may be the result of past industrial activity.

## Methods

The Fluxgate Gradiometer survey was undertaken using parts of nine 30 x 30 m grid squares laid out as in Figure 2. Readings were taken at 0.5 m intervals along transects 1 m apart. These transects were walked in a zigzag pattern.

The survey was carried out using a Geoscan FM 36 Fluxgate Gradiometer with a ST 1 sample trigger. Grey Scale and X - Y Plots were produced using Geoscan Research "Geoplot" v. 3.00e.

## Survey Results:

### Area

The development area covers approximately 1.0 Ha, of which 0.6 Ha was available for study.

### Display

The results are displayed as Grey Scale Image and as X-Y Trace Plots. Figures 3 and 4.

## Results:

Very few anomalies of possible archaeological origins were located. The clearest anomaly is an area of magnetic disturbance (Anomaly A, Figure 5) This was approximately 30 x 15 m in size and was at the base of the bank formed by the fabrication yard. Whilst it is possible that this is the result of metallic rubbish rolling down the slope from the yard the extent and form is similar to industrial activity and may be archaeological in origins.

Two linear anomalies (Anomalies B and C, Figure 5) run roughly parallel to the A 153 and therefore probably represent old field boundaries. A third, short length of linear anomaly (Anomaly D) runs at a rough right angle to Anomalies B and C and may also be an old field boundary, although this interpretation is uncertain.

The broad band of magnetic disturbance crossing the survey from NNW TO SSE (Anomaly E) is the result of a previous access road into the plot

which had to be abandoned because of a lack of planning permission.

Two areas of ferromagnetic anomalies are shown (Anomalies F and G) which are probably the result of modern disturbance. Anomaly F corresponds with an area of nettles within the field which may be the site of a modern bonfire. Anomaly G is the result of a large metal sign just outside the survey area.

## Magnetic Susceptibility

It was possible to take soil samples in order to assess the magnetic susceptibility of the soils. It was also possible to obtain a subsoil sample for comparison.

Sample	Volume susceptibility $\chi_v$	Mass susceptibility $\chi_m$
Grid 1	82	84.5
Grid 2	129	129.0
Grid 3	135	142.1
Grid 4	125	125.0
Grid 5	134	145.7
Subsoil	96	63.2

In general, the susceptibilities, as measured, are of moderate to high levels and there is a significant difference between the subsoil and topsoil values, suggesting that magnetic conditions were ideal.

The enhanced levels recorded from Grid 5 would support the increased magnetic activity recorded from this grid square and suggest increased archaeological activity in this area. It is more difficult to assign a similar correlation with the increased values in Grid 3, although there is a very slight disturbance in the grey scale plot. Unfortunately the level of this disturbance is not sufficient to define any magnetic anomalies.



## Willoughby Road, Ancaster, Geophysical Survey - Technical Information:

### *Conclusions*

*It is a fundamental axiom of archaeological geophysics that the absence of features in the survey data does not mean that there is no archaeology present in the survey area only that the techniques used have not detected it.*

*One area of possible archaeological activity was located on the flat area of the field towards the north of survey area. Whilst it is possible that this area may be the result of modern metallic rubbish rolling down the slope from the yard above, this is considered to be the least likely option. The extent, nature and enhanced magnetic susceptibility readings from this area would tend to suggest an archaeological origin for the anomaly and its form may suggest some sort of industrial activity.*

*The linear anomalies, with the exception of Anomaly E, are probably the result of old field boundaries, whilst Anomaly E records the position of a modern, abortive road across the site.*

*The very slight disturbance in the grey scale plot and the increased magnetic susceptibility readings for Grid 3 may suggest some sort of archaeological activity in this area, although this may also be a result of geological factors.*

## **Techniques of Geophysical Survey:**

### **Magnetometry:**

*This relies on variations in soil magnetic susceptibility and magnetic remanence which often result from past human activities. Using a Fluxgate Gradiometer these variations can be mapped, or a rapid evaluation of archaeological potential can be made by scanning.*

### **Resistivity:**

*This relies on variations in the electrical conductivity of the soil and subsoil which in general is related to soil moisture levels. As such, results can be seasonally dependant. Slower than Magnetometry this technique is best suited to locating positive features such as buried walls that give rise to high resistance anomalies.*

### **Resistance Tomography**

*Builds up a vertical profile or pseudosection through deposits by taking resistivity readings along a transect using a range of different probe spacings*

### **Magnetic Susceptibility:**

*Variations in soil magnetic susceptibility occur naturally but can be greatly enhanced by human activity. Information on the enhancement of magnetic susceptibility can be used to ascertain the suitability of a site for magnetic survey and for targeting areas of potential archaeological activity when extensive sites need to be investigated. Very large areas can be rapidly evaluated and specific areas identified for detailed survey by gradiometer.*

## **Instrumentation:**

- 1. Fluxgate Gradiometer - Geoscan FM36**
- 2. Resistance Meter - Geoscan RM4/DL10**
- 3. Magnetic Susceptibility Meter - Bartington MS2**
- 4. Geopulse Imager 25 - Campus**

## **Methodology:**

*For Gradiometer and Resistivity Survey 20m x 20m or 30m x 30m grids are laid out over the survey area. Gradiometer readings are logged at either 0.5m or 1m intervals along traverses 1m apart. Resistance meter readings are logged at 1m intervals. Data is down-loaded to a laptop computer in the field for initial configuration and analysis. Final analysis is carried out back at base.*

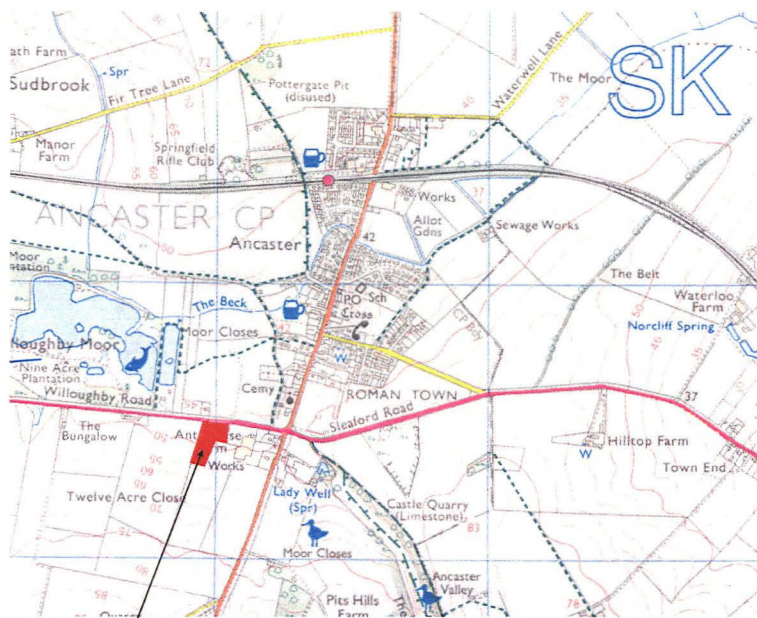
*For scanning transects are laid out at 10m intervals. Any anomalies noticed are where possible traced and recorded on the location plan.*

*For Magnetic Susceptibility survey a large grid is laid out and readings logged at 20m intervals along traverses 20m apart, data is again configured and analysed on a laptop computer.*

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Survey

Figure 1: Land South of  
Willoughby Road, Ancaster.  
Location  
Scale 1:25,000

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Figure 2: Land South of  
Willoughby Road, Ancaster.  
Location of Survey  
Scale 1:1,500

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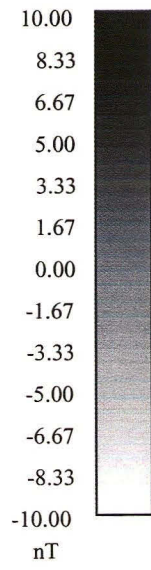


Figure 3: Land South of  
Willoughby Road, Ancaster.  
Grey Scale Plot

Scale 1:1,000

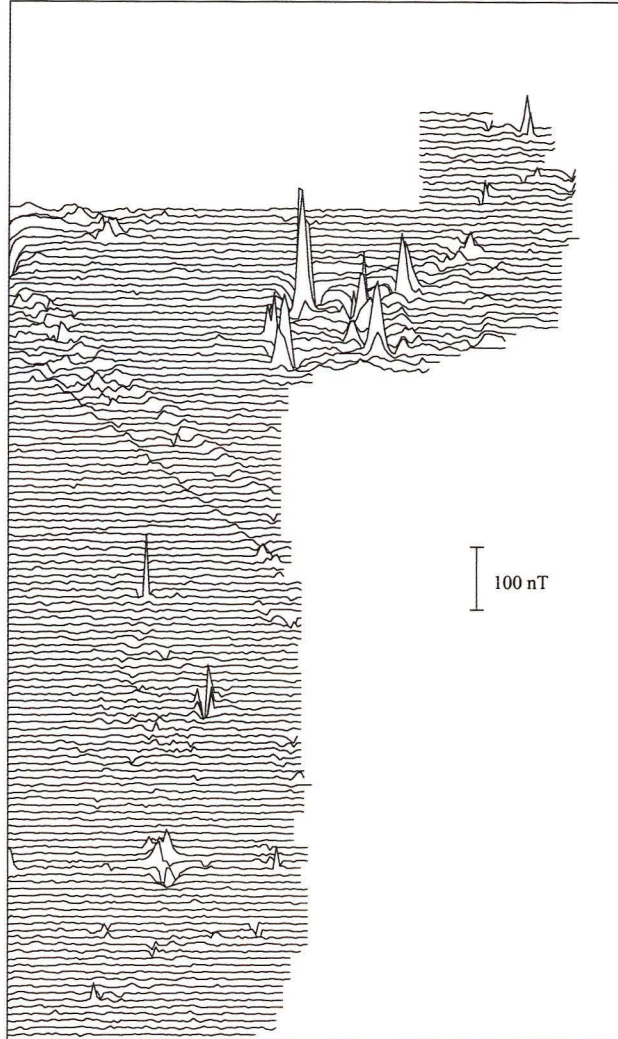
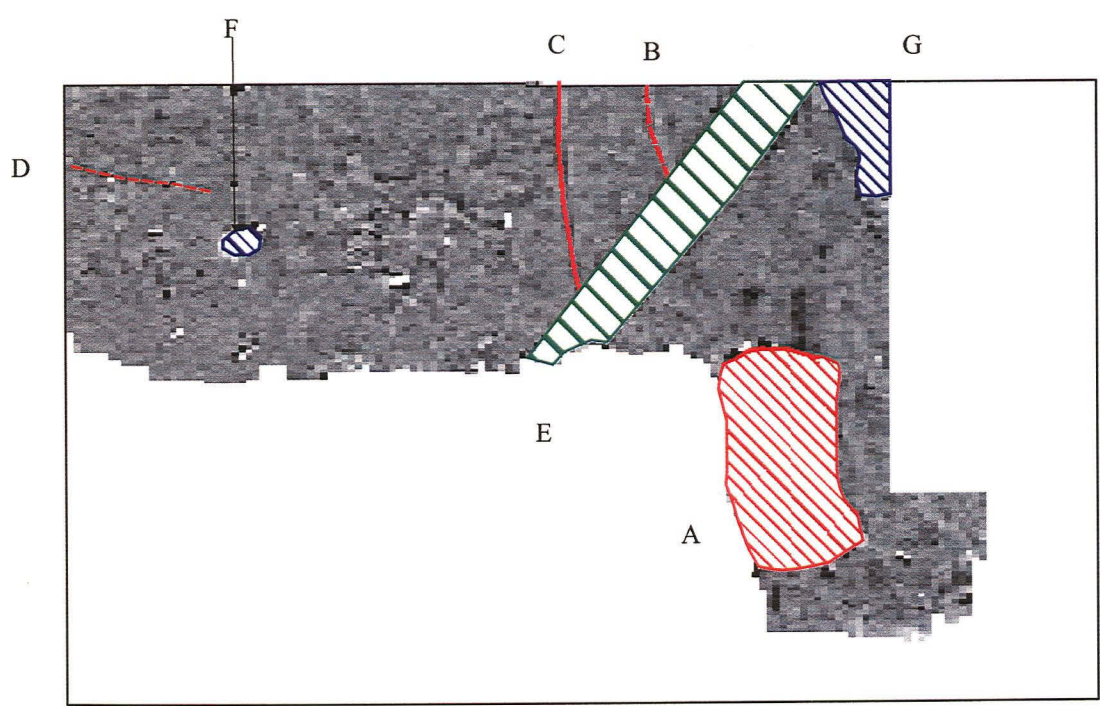
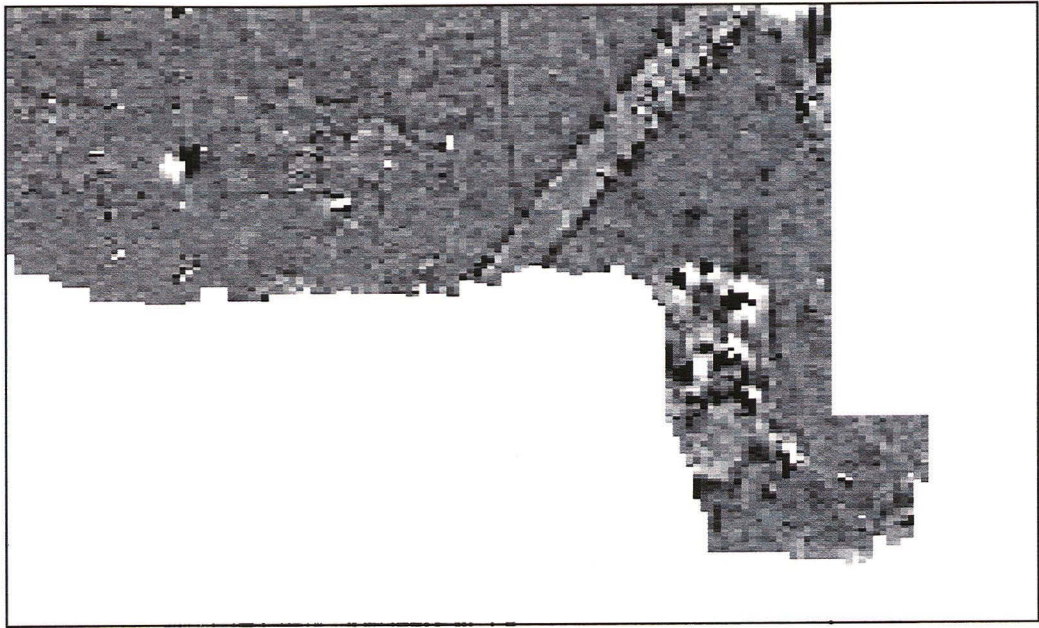


Figure 4: Land South of  
Willoughby Road, Ancaster.  
X - Y Plot

Scale 1:1,000





- |   |                        |   |                         |
|---|------------------------|---|-------------------------|
|  | Possible archaeology   |  | Linear anomaly          |
|  | Abortive road          |  | Possible linear anomaly |
|  | Ferromagnetic response |   |                         |

Figure 5: Land South of Willoughby Road, Ancaster.  
Interpretation

Scale 1:1,000

