



# Northamptonshire Archaeology

Archaeological geophysical survey of land at  
Whittlesey Road, Thorney, Peterborough May 2011



## Northamptonshire Archaeology

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Northamptonshire  
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Report 11/113

May 2011



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QUALITY CONTROL

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Verified by	<i>Adrian Butler</i>		
Approved by	<i>Andy Chapman</i>		

**OASIS REPORT FORM**

<b>PROJECT DETAILS</b>		
Project title	Archaeological geophysical survey of land at Whittlesey Road, Thorney, Peterborough May 2011	
Short description	Northamptonshire Archaeology was commissioned by Myk Flitcroft of CgMs Consulting, on behalf of Davidsons Development, to conduct a detailed geophysical survey of a proposed development site at Whittlesey Road, Thorney, Peterborough. Survey has revealed an area of possible archaeological significance: an area of high resistance could indicate demolition rubble or a buried earthwork platform of a former building. The survey also identified a former track or path, a former field boundary and a ferrous pipeline.	
Project type	Geophysical Survey	
Site Status	None	
Previous work	Desk-Based Assessment (Flitcroft 2011)	
Current land use	Agricultural: Arable & Pasture	
Future work	Unknown	
Monument type and period		
<b>PROJECT LOCATION</b>		
County	Peterborough	
Site address	Land off Whittlesea Road, Thorney	
Post code		
OS co-ordinates	TF 285 039	
Area	6.2ha	
Height aOD		
<b>PROJECT CREATORS</b>		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	Peterborough City Council	
Project Design originator	CgMs Consulting	
Director/Supervisor	Ian Fisher (NA)	
Project Manager	Adrian Butler (NA)	
Sponsor or funding body	Davidsons Developments	
<b>PROJECT DATE</b>		
Start date	09 May 2011	
End date	11 May 2011	
<b>ARCHIVES</b>	<b>Location (Accession no.)</b>	<b>Contents</b>
Physical	NA store	Site records
Paper		Client report PDF
Digital		Survey data
<b>BIBLIOGRAPHY</b>	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Archaeological geophysical survey of land at Whittlesey Road, Thorney, Peterborough May 2011	
Serial title & volume	Northamptonshire Archaeology Reports 11/113	
Author(s)	Adrian Butler & Ian Fisher	
Page numbers		
Date		

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**ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND AT  
WHITTLESEY ROAD, THORNEY, PETERBOROUGH  
MAY 2011**

**Abstract**

*Northamptonshire Archaeology was commissioned by Myk Flitcroft of CgMs Consulting, on behalf of Davidsons Development, to conduct a detailed geophysical survey of a proposed development site at Whittlesey Road, Thorney, Peterborough. Survey has revealed an area of possible archaeological significance: an area of high resistance could indicate demolition rubble or a buried earthwork platform of a former building. The survey also identified a former track or path, a former field boundary and a ferrous pipeline.*

**1 INTRODUCTION**

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting Ltd to conduct a detailed geophysical survey of a proposed development site at Whittlesey road, Thorney, Peterborough (centred on TF 285 039, Fig 1). Two fields, totalling 6.2ha, were investigated by a combination of detailed magnetometer and earth resistance survey, to determine the possible archaeological impacts of the development.

**2 TOPOGRAPHY AND GEOLOGY**

The proposed development site comprises 6.2ha of land located on the southern edge of Thorney, Peterborough (Fig 1). Two fields were surveyed: Field 1 had an area of 5.8ha and Field 2, 0.4ha.

The B1040 Whittlesey Road forms the western boundary of the site. A drain bounds the north of Fields 1 and 2, beyond which is Thorney Park. The same drain divides both fields. Field 1 comprises the northern section of a much larger field and so its notional southern boundary runs along the edge of Thorney cemetery to the south-western corner of the arable field to the east. Field 2 is situated between two properties: Thorneycroft house to the south and Tracey House to the north. The road is to the west and drain to the east and north-east.

At the time of survey Field 1 was under an arable regime and contained low wheat seedlings whilst Field 2 was pasture. Prior to the survey (9-11 May 2011) there was a long period of hot weather leading to very dry ground conditions. However, wet weather in the two days before, and during, the survey enabled a slight rehydration of the soil. The site slopes slightly to the south-west and lies between c 5 - 6m above Ordnance Datum (aOD). Thorney itself is situated on a raised gravel island above the surrounding fens. The geology of the site consists of Sand and Gravels of the edge of the island, overlying undifferentiated deposits of the Kellaways and Oxford Clay formation (BGS, GeolIndex 2011).

### 3 ARCHAEOLOGICAL BACKGROUND

The archaeological background of the whole site and a surrounding 1 km radius area has been the subject of a desk-based assessment (Flitcroft 2011). This revealed that no archaeological sites have been found within the development area.

In 2006, a geophysical survey and community project was conducted at Abbey Fields to the south of Abbey House, west of Whittlesey Road (Howe and Mortimer 2007). The survey consisted of a resistivity and magnetometer survey with the aim of detecting any archaeological features, of medieval date, relating to Thorney Abbey and associated settlement activities.

The 2006 community archaeology project also revealed the varied land use of the Abbey Fields over the past 700 years, the most recent being pasture and a 1970s zoo. A large portion of the Abbey Fields survey area was occupied by formal gardens and ornamental water features. The fish ponds were controlled by ditch systems and are possibly situated within earlier structural elements. A possible wall surrounds an aisled structure and other buildings. The aisled building was truncated by a large pipeline.

### 4 METHODOLOGY

The magnetometer survey was conducted with *Bartington Grad 601-2*, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

A tape measure and optical square were used to divide each field into 30m grid squares, which formed the basic units of survey. The grid was then located by means of a *Leica System 1200 dGPS*. The gradiometers were carried at a brisk but steady pace through each grid, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per grid.

Earth resistance survey in Field 2 was carried out utilising a *Geoscan Instruments RM15* resistance meter in twin-probe configuration (0.5m separation). Field 2 was divided into 20m grid squares, for ease of survey. Data was then collected at 1m intervals along 1m - spaced traverses thus totalling 400 measurements per grid.

All fieldwork methods complied with the specification, and guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA forthcoming).

All survey data was processed using Geoplot 3.00v software.

*Magnetometer*: Striping, caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed as necessary.

The processed data are presented in this report in the form of greyscale plots (scale +4nT to -4nT black ~ white) which have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative plot has been produced and overlaid on the data in Figure 3.

*Earth Resistance*: Differences in background resistances between individual grids were removed using the 'Edge Match' function. Outlying data was statistically removed with 'De-Spike'. The processed data was interpolated to 0.5m x 0.5m providing a smoother and more consistent appearance to the greyscale plot. This plot was geo-rectified onto mapping in Figure 4 and an interpretation included in Figure 5.

## 5 SURVEY RESULTS

### Field 1

#### *Magnetometer* (Figs 2 & 3)

The survey identified a single positive linear magnetic anomaly, orientated north-west to south-east, representing a former field boundary. No other significant anomalies were detected.

### Field 2

#### *Magnetometer* (Figs 2 & 3 and 4 & 5)

The survey detected a positive linear magnetic anomaly, aligned north-north-west to south-south-east. The feature leads to a gate on the south-east edge of the survey area and suggests that the anomaly represents the magnetised metting (mill waste, brick hardcore) of a former track/pathway. Parallel to this a chain of intense alternating positive and negative magnetic anomalies is likely to reflect a known modern sewer pipe. A single ferrous anomaly was recorded in the east part of the survey area in the middle of an area of magnetic noise that probably indicates ground disturbance.

#### *Earth Resistance* (Figs 4 & 5)

The two linear resistance anomalies were identified corresponding to the anomalies detected in the west of the magnetometer survey. The low resistance anomaly probably indicates the sewer pipe trench whilst the high resistance anomaly parallel to the east represents the solid surface of the former track or path. Three high resistance anomalies were detected in the north-west of Field 2, representing solid subsurface features.

An area of high resistance was identified in a broad U-shape in the eastern part of the survey area; this corresponds to the area of magnetic noise in the magnetometer data (above). The anomaly could indicate a rubble spread or conceivably a buried earthwork platform. Two high resistance anomalies located on the south-eastern and western corners of the resistive area are suggestive of solid masonry.

## 6 CONCLUSION

The geophysical survey was successful in identifying anomalies that may be significant archaeologically. In Field 2 the resistance survey detected a possible former building, in the form of demolition rubble or an earthwork. Both techniques located a sewer pipe and probable buried trackway in Field 2. Field 1 did not yield any such anomalies, although the historical field boundary in the south was located.

The magnetic anomalies identified in both fields indicate that, were archaeological features of any size present in Field 1, it is likely that they would have been detected. It is axiomatic that features smaller than the survey resolution (1.0m x 0.25m) such as post holes, are unlikely to be revealed unless particularly magnetically enhanced.

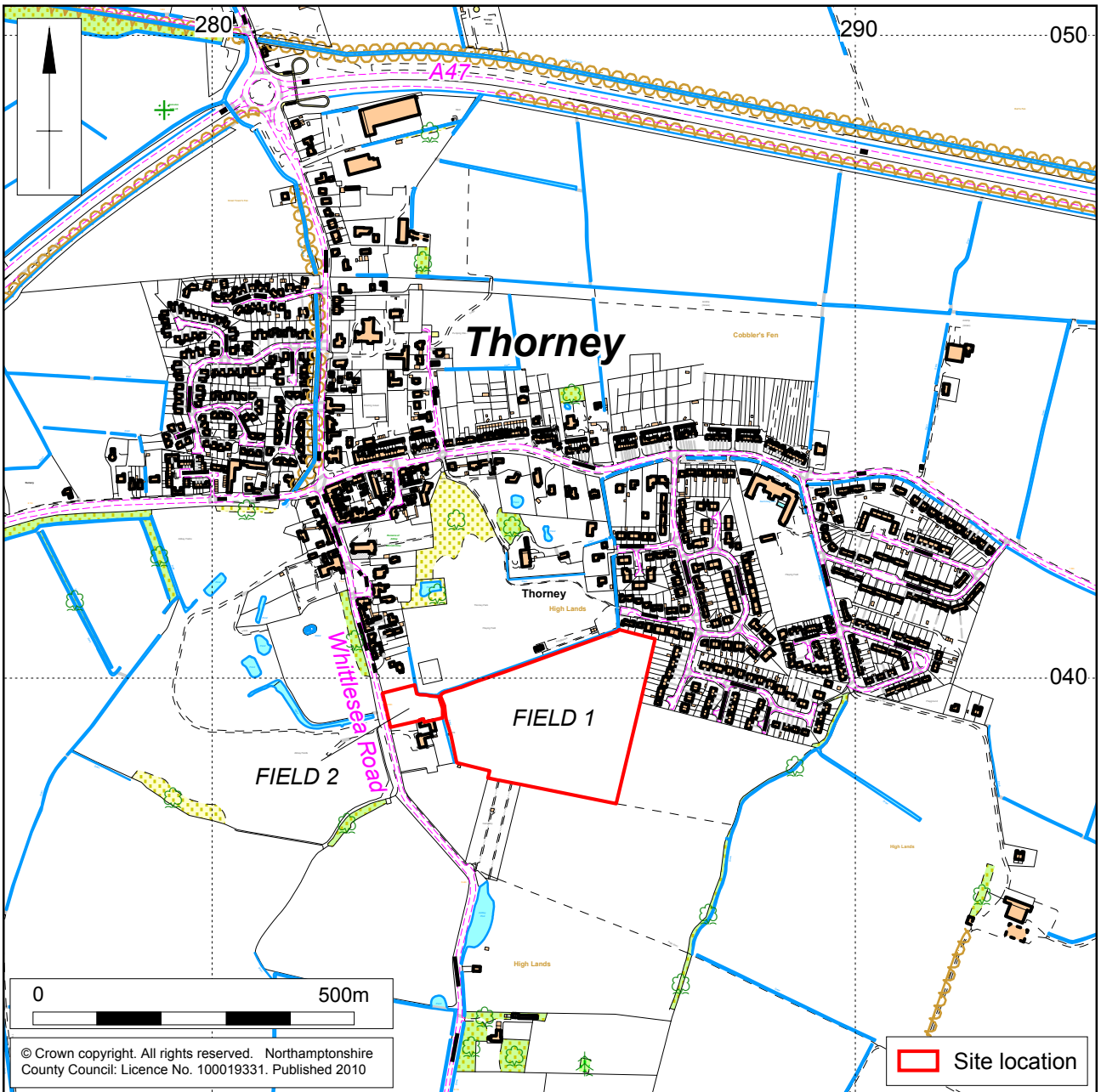
## BIBLIOGRAPHY

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- Flitcroft, M, 2011 *Archaeological Desk Based Assessment Land off Whittlesey Road Thorney*
- IfA *forthcoming (2011) Standard and Guidance for Archaeological Geophysical Survey*, Institute for Archaeologists Technical Paper



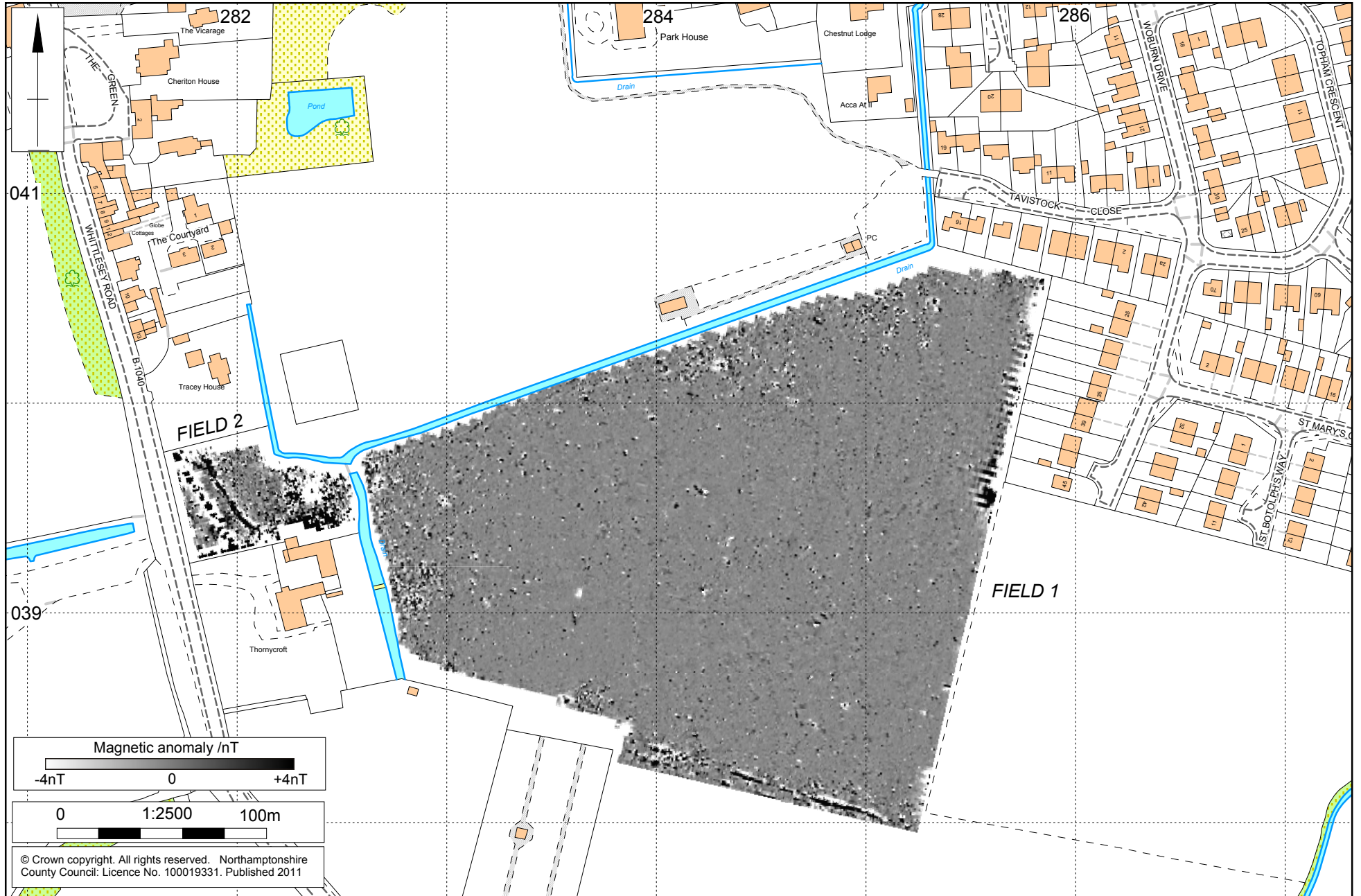
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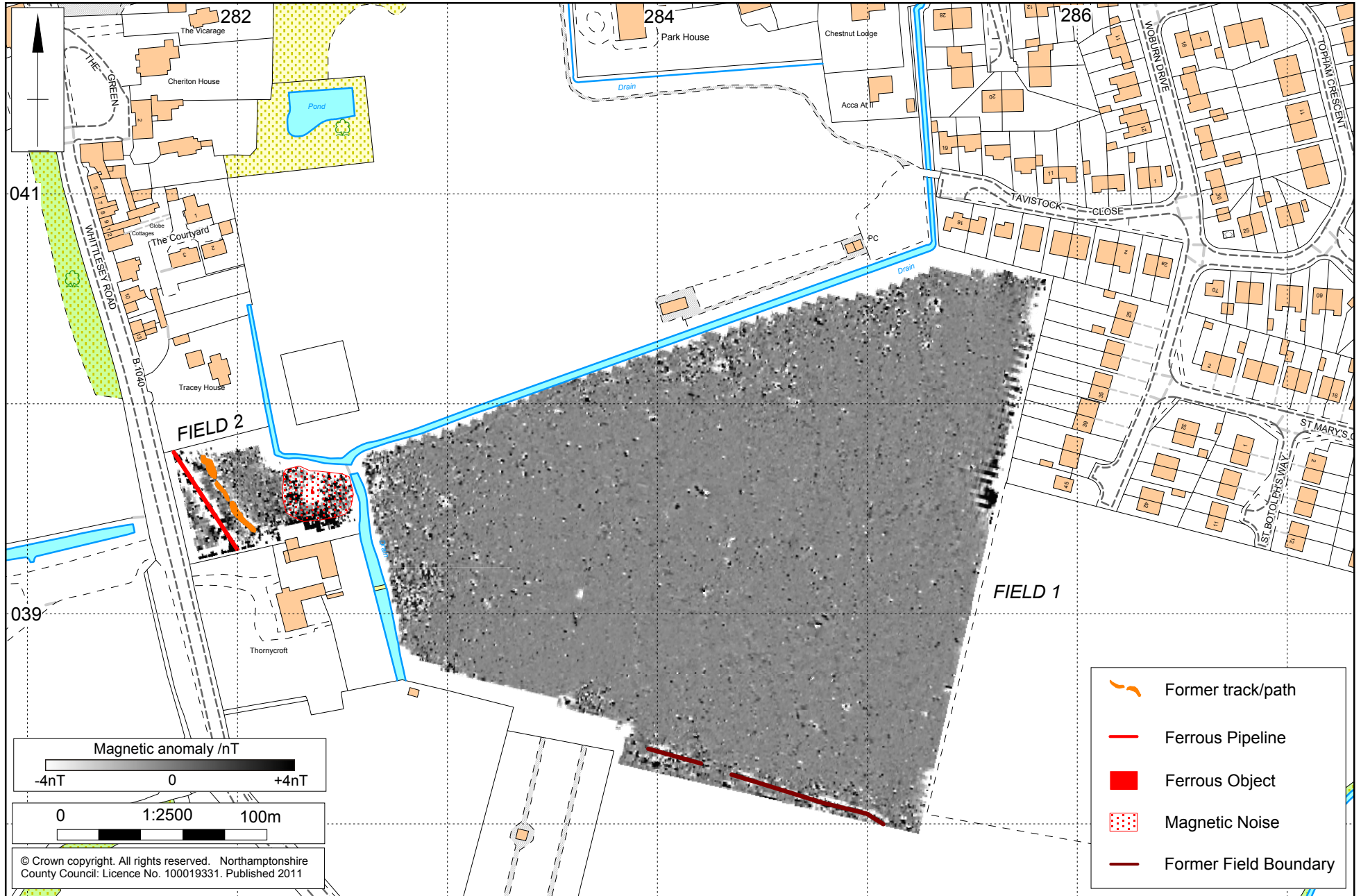
Scale 1:10,000

Site Location Fig 1



Scale 1:2500

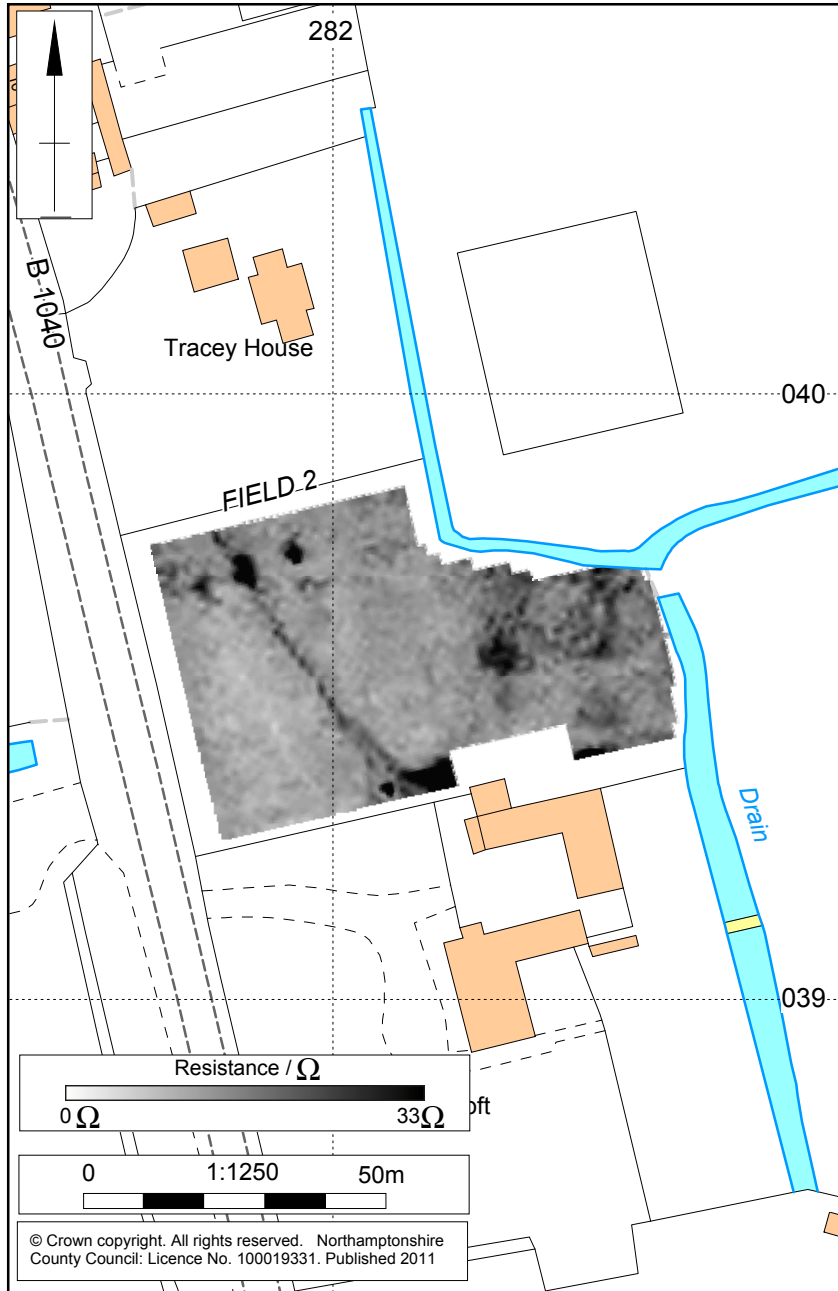
Magnetometer Survey Results Fig 2



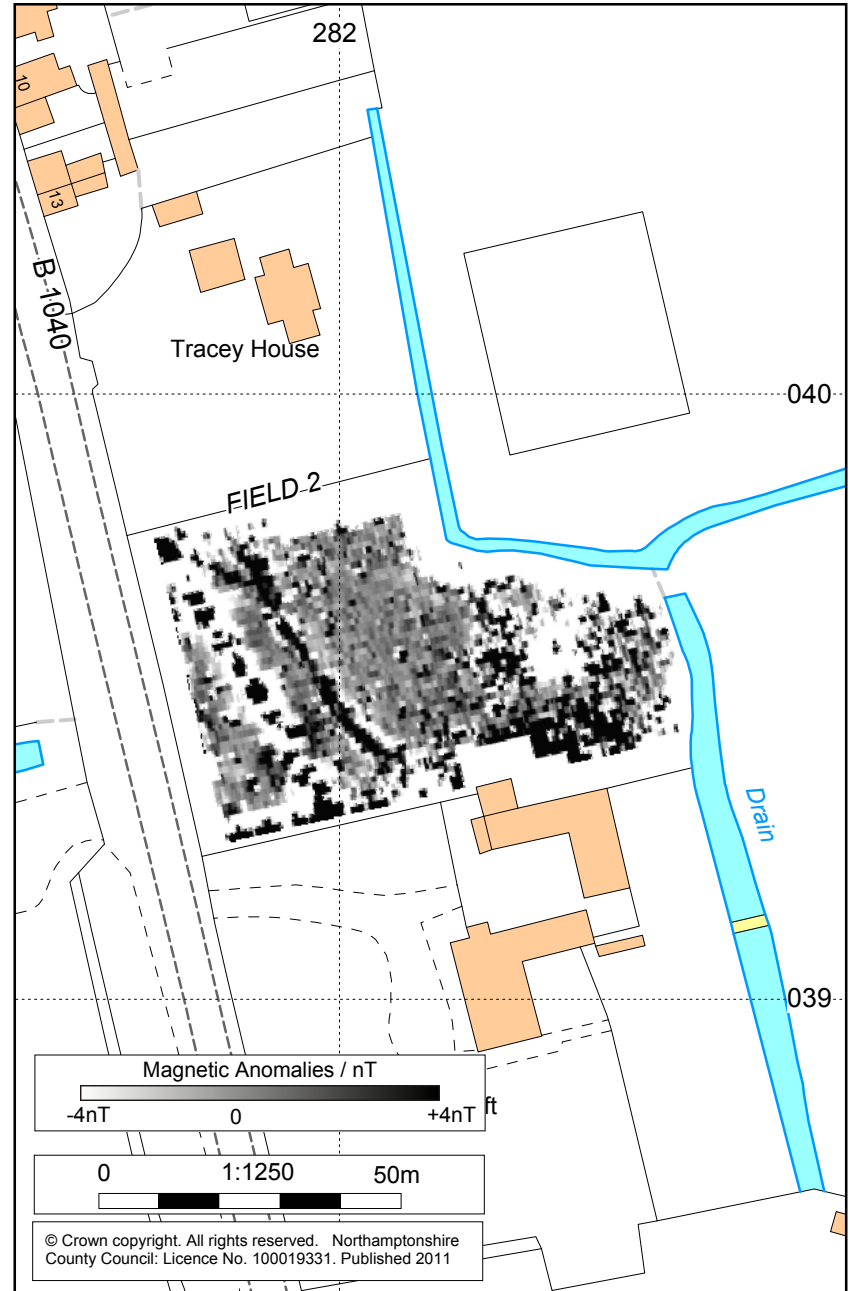
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Magnetometer Survey Interpretation Fig 3

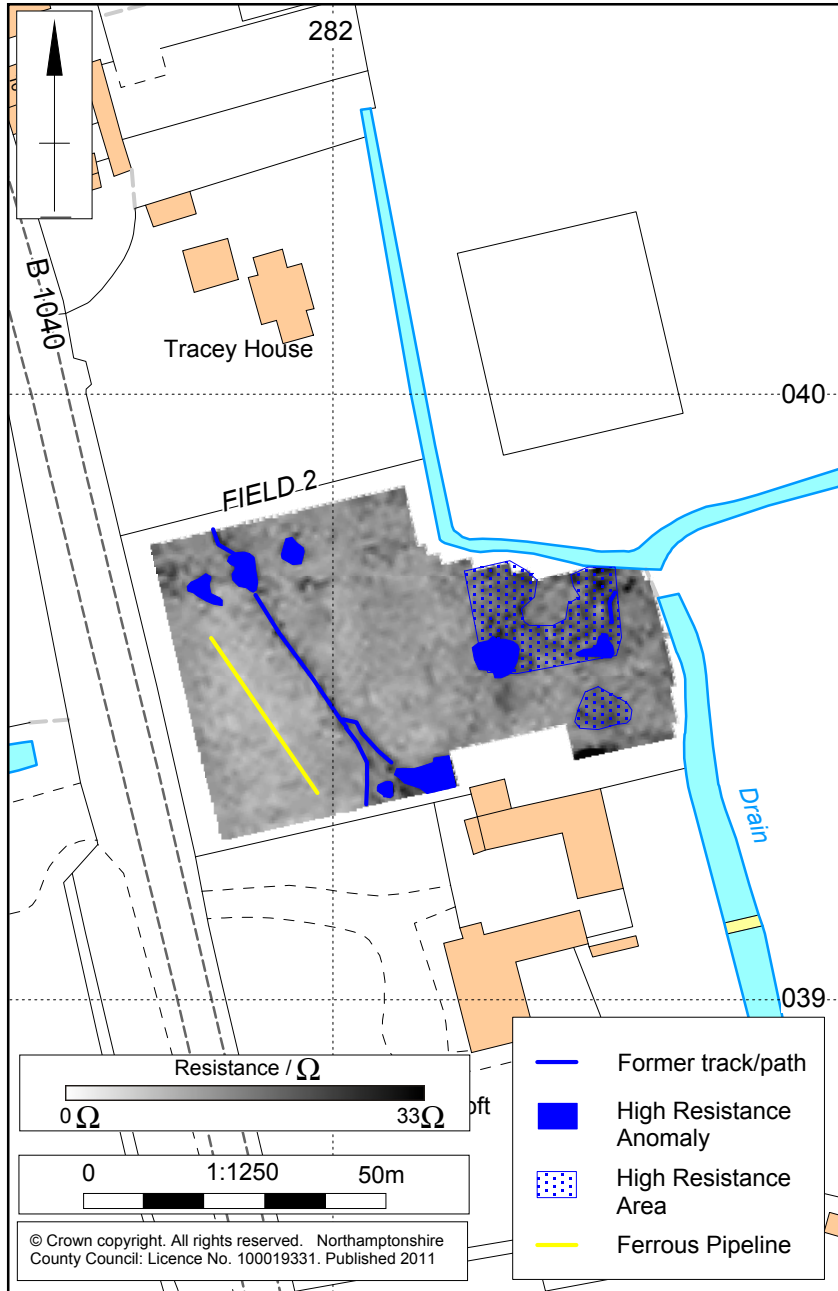




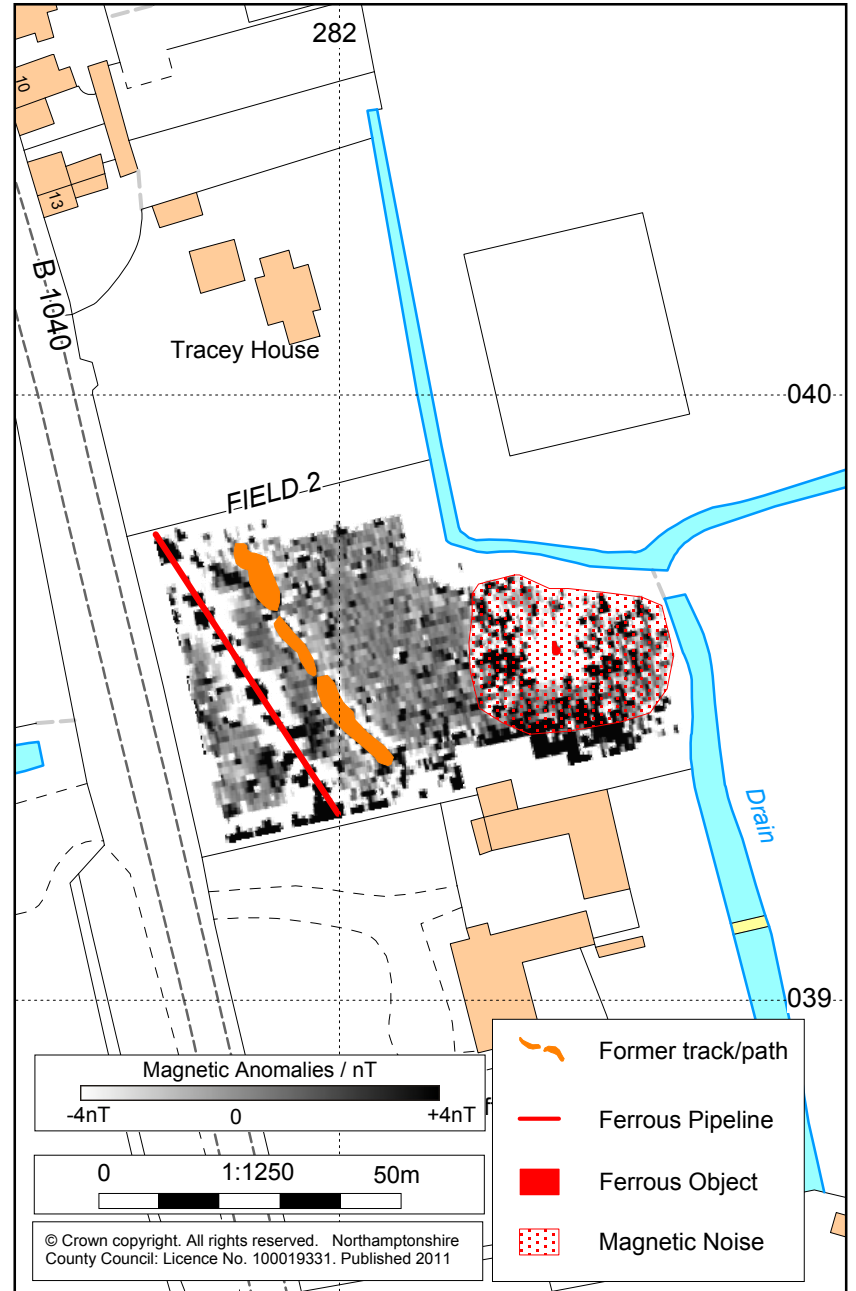
Scale 1:1250



Earth Resistance and Magnetometer Survey Results, Field 2 Fig 4



Scale 1:1250



Earth Resistance and Magnetometer Survey Interpretation, Field 2 Fig 5



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