

# Northamptonshire Archaeology

A509 Isham to Wellingborough Improvement  
Archaeological Geophysical survey  
May-October 2006



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& Mark Holmes

December 2006

Report 06/180

## Northamptonshire Archaeology

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## QUALITY CONTROL

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**OASIS REPORT FORM**

<b>PROJECT DETAILS</b>		
Project name	A509 Isham to Wellingborough Improvement: Archaeological Geophysical Survey	
Short description (250 words maximum)	Northamptonshire Archaeology, was commissioned by Atkins Heritage, working on behalf of Northamptonshire County Council, to undertake a geophysical evaluation of the proposed route of the A509 Isham to Wellingborough road improvement scheme. The survey revealed enclosures of likely Iron Age or Romano-British date and also medieval ridge and furrow cultivation and trackways of indeterminate date. The extent and layout of the sites were found to correlate broadly with pre-existing cropmark evidence.	
Project type (eg DBA, evaluation etc)	Geophysical Survey	
Site status (none, NT, SAM etc)	None	
Previous work (SMR numbers etc)		
Current Land use	Arable	
Future work (yes, no, unknown)	Unknown	
Monument type/ period	Iron Age/Romano-British enclosures, medieval ridge and furrow, Undated trackways	
Significant finds (artefact type and period)		
<b>PROJECT LOCATION</b>		
County	Northamptonshire	
Site address (including postcode)	Proposed new route of A509 from Niort Way (Wellingborough) to Hill Top Road (Little Harrowden).	
Study area (sq.m or ha)	c40 ha (magnetometer scanning) c13.3 ha (detailed magnetometer survey)	
OS Easting & Northing (use grid sq. numbers)	SP 874, 706	
Height OD	c60-90m	
<b>PROJECT CREATORS</b>		
Organisation	Northamptonshire Archaeology	
Project brief originator	Atkins Heritage	
Project Design originator		
Director/Supervisor	Andy Mudd, Northamptonshire Archaeology	
Project Manager	Adrian Butler, Northamptonshire Archaeology	
Sponsor or funding body		
<b>PROJECT DATE</b>		
Start date	October 2006	
End date	December 2006	
<b>ARCHIVES</b>		
	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical		
Paper		
Digital	Northamptonshire Archaeology	Geophysical data, GIS mapping
<b>BIBLIOGRAPHY</b>		
	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	A509 Isham to Wellingborough Improvement: Archaeological Geophysical Survey	
Serial title & volume	NA Reports 06/	
Author(s)	John Walford	
Page Numbers		
Date	December 2006	

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# **A509 ISHAM TO WELLINGBOROUGH IMPROVEMENT**

## **ARCHAEOLOGICAL GEOPHYSICAL SURVEY**

**MAY TO OCTOBER 2006**

### **ABSTRACT**

*Northamptonshire Archaeology was commissioned by Atkins Heritage, working on behalf of Northamptonshire County Council, to undertake a geophysical evaluation of the proposed route of the A509 Isham to Wellingborough road improvement scheme. The survey revealed enclosures of likely Iron Age or Romano-British date and also medieval ridge and furrow cultivation and trackways of indeterminate date. The extent and layout of the sites were found to correlate broadly with pre-existing cropmark evidence*

## **1 INTRODUCTION**

Northamptonshire Archaeology was commissioned by Atkins Heritage to conduct geophysical surveys to investigate the proposed route of the A509 Isham to Wellingborough road improvement scheme. An initial magnetometer scanning survey was performed in May 2006. Some fields were inaccessible at that time and so were surveyed in August, following the harvest. The total area scanned was approximately 40ha (Fig 1). Selected sample areas, with a combined extent of 13.3ha, were investigated by detailed magnetometer survey during October 2006.

## **2 BACKGROUND**

### **2.1 Topography And Geology**

The proposed route extends over an undulating landscape. Two stream valleys at *c* 60-70 m above Ordnance Datum are tributaries which flow eastwards to the River Ise. At the southern end of the route, and at Orlingbury Road and Hill Top Road further north, the land rises to plateaux at *c* 90m.

The underlying geology is complex and comprises Estuarine Series limestones with some silts and clay on the highest ground. The underlying Northampton Sand and Upper Lias Clay are exposed in the valley sides but masked by alluvial deposits in the valley bottoms.

### **2.2 Archaeological Background**

An earlier proposed route, similar but not identical to that currently under investigation, was the subject of a desk-top survey (Steadman 1992; Shaw and Steadman 1992) whilst the an SMR search for the current route has been undertaken by Atkins Heritage (Atkins 2006). Fifty-two sites are recorded within or just outside the footprint of the proposed carriageway. A number of these sites

are elements of cropmark complexes which cover the high ground south of Orlingbury Road. These are generally recorded as being prehistoric and Romano-British in date. There is also a cropmark enclosure, recorded as being of Iron Age date, at the southern end of the route near the proposed junction with Niort Way.

### 3 METHODOLOGY

All fieldwork was carried out in accordance with the guidelines issued by English Heritage and by the Institute of Field Archaeologists (EH 1995 & Gaffney, Gater and Ovendon 2002).

Several types of instrument were used during the survey. Scanning was carried with Geoscan FM series instruments. Both these and Bartington Grad601-2s were used during the detailed survey. These two types of instruments are both fluxgate gradiometers, the former having a single sensor and the latter a dual sensor array. The data they produce is of similar quality and fully compatible.

The scanning was undertaken along transects at 10m intervals. Where anomalous readings (i.e. >3nT above the background) were encountered, their immediate surroundings were scanned to investigate their extent and anomaly-form. Anomalies of ferrous origin were ignored, but all others were marked and their locations recorded.

Following the scanning, and taking cropmark evidence into account, five sample areas, with a combined area of 13.3ha, were chosen for detailed survey. The corners of these blocks were recorded to an accuracy of +/- 0.05m in relation to Ordnance Survey National Grid by use of a Leica System 1200 GPS.

Each survey block was divided into 30m x 30m grid-squares, within each of which 3600 measurements were taken. The magnetometers were carried at a brisk but steady pace along 1m spaced traverse lines, with the measurements being automatically triggered every 0.25m.

The data was analysed using Geoplot 3.00s software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. In accordance with our procedures, minimal processing was carried out on the data. The 'Zero Mean Traverse' function was applied as a standard in order to balance the data to zero. Other functions were applied as necessary.

The processed data is presented here in the form of greyscale graphics highlighting the magnetic anomalies (scale +5nT / -5nT or +3nT / -3nT , black ~ white, Figs 3, 5, & 7). It was considered that other plotting regimes such as 'stacked trace' would be uninformative for the majority of this survey. Interpretative plots (Figs 4,6 & 8) have been generated from the greyscales to aid in the discussion.

## 4 SURVEY RESULTS

Scanning with the magnetometers identified several areas with a large number of apparently anthropogenic anomalies (Fig 2). These areas coincided, for the most part, with sites already known from cropmarks.

Detailed survey was undertaken in five survey blocks, chosen on the basis of scanning results and cropmark evidence. Data and interpretation plots of these areas are presented in Figures 3-8. These should be viewed in conjunction with the following discussion.

### **Field 2** (Figs 3-4)

The survey in this field revealed a complex of small ovoid and sub-rectangular ditched enclosures and also at least five pits. These are believed to represent part of an Iron Age settlement site.

Parallel curvilinear anomalies occur across the whole of this survey area, indicating the ploughed out remains of medieval ridge and furrow cultivation.

A linear negative magnetic anomaly in the south western corner of the survey area is of uncertain origin but may represent a modern plastic or concrete pipeline.

### **Fields 6, 7, 9 and 10** (Figs 5-6)

The archaeology revealed in this survey area appears to comprise several discrete units. Ditched enclosures at the southern end of Field 10 and in Field 7 are probably settlement features of Iron Age or Romano-British date, whilst in Field 6 the weaker anomalies in a rectangular configuration of ditches, are more likely to mark the boundaries of small paddocks or cultivation plots of the type loosely referred to as 'Celtic' fields.

Towards the western end of the survey block in Field 7 there is a north-south aligned linear anomaly incorporating an area of unusually enhanced magnetic response (up to *c*40nT). This is most probably an old ditch or similar feature containing a thermoremnant deposit of fired clay or other industrially produced debris. Ridge and furrow is evident in the eastern half of the survey.

In the part of the road-line surveyed turning towards the east, two adjacent discrete high intensity anomalies may indicate fired features such as ovens, kilns or furnaces.

Bands of magnetic noise along the modern field edges reflect the presence of farm tracks, containing brick hardcore, and possibly also interference from wire fences.

At the southern end of this survey area, two faint and diffuse linear anomalies are likely to be of geological origin.

### **Field 12** (Figs 7-8)

Three double linear anomalies are believed to be trackways are apparent in this data. There is no

evidence on which a date for these can be suggested.

**Field 14** (Figs 7-8)

Linear anomalies representing ditches, occur in this survey area. The two parallel ones are probably the side ditches of a trackway; the rest cannot be interpreted in detail. Other, fainter linear anomalies appear to indicate modern plough furrows but could also indicate earlier ridge and furrow.

A buried steel pipeline anomaly can be seen at the northern end of this survey area.

**5 CONCLUSIONS**

The survey identified and mapped several areas of probable Iron Age and Romano-British archaeology, both confirming and adding to the pre-existing cropmark data. The anomalies from the probable settlement sites were generally clear and well defined, but those representing elements of a possible field system were more ephemeral. Poor enhancement of such features is a recognised limitation of magnetometer survey (Gaffney & Gater 2003: 126) and in this case it may be that they are more extensive than the survey results would suggest.

**6 BIBLIOGRAPHY**

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EH 1995 *Geophysical Survey in Archaeological Field Evaluation, English Heritage, Research and Professional Services Guideline 1*

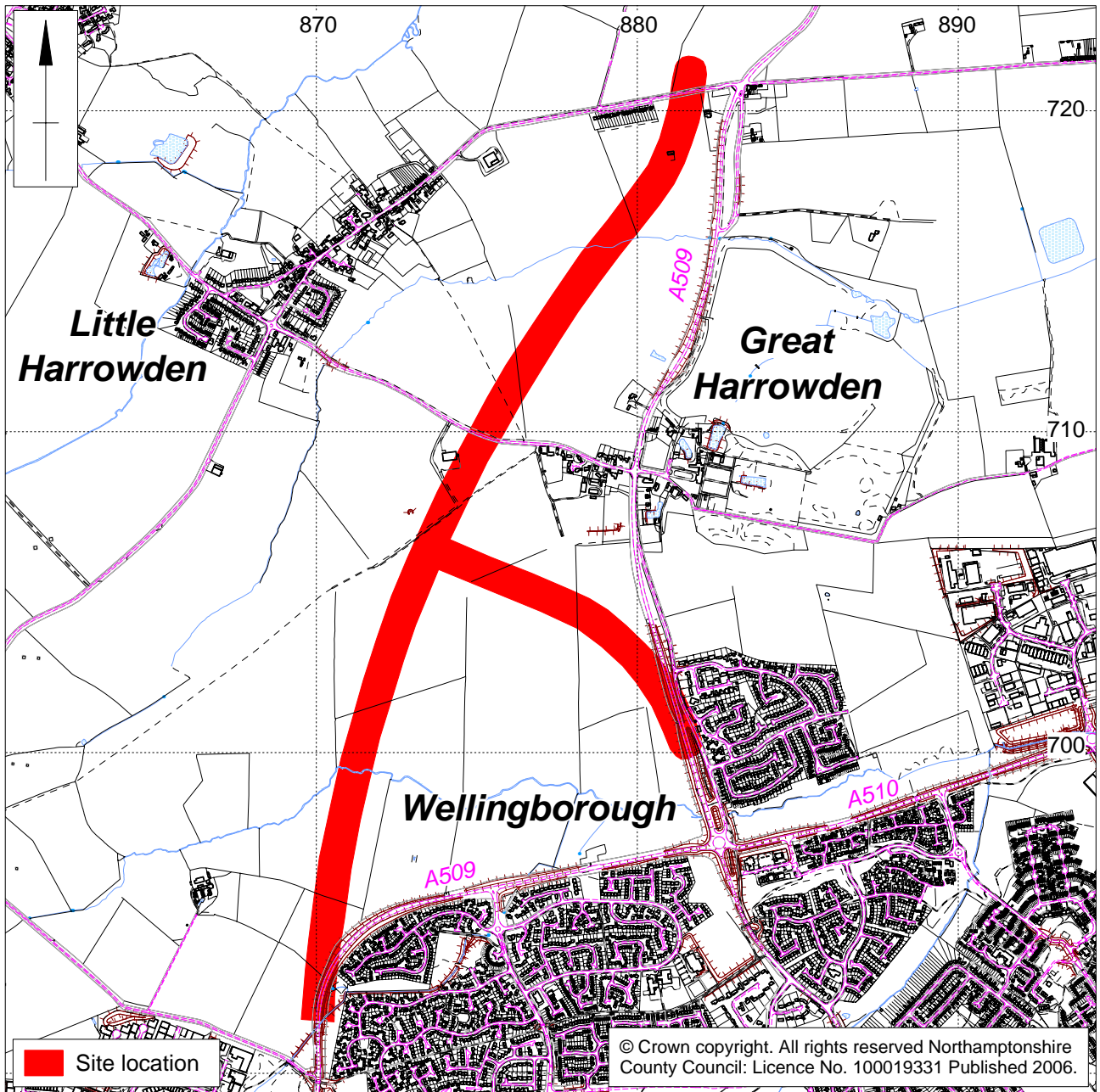
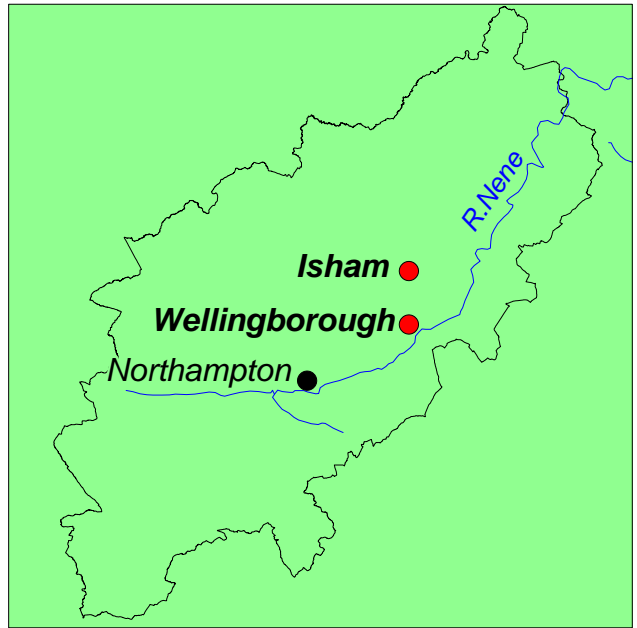
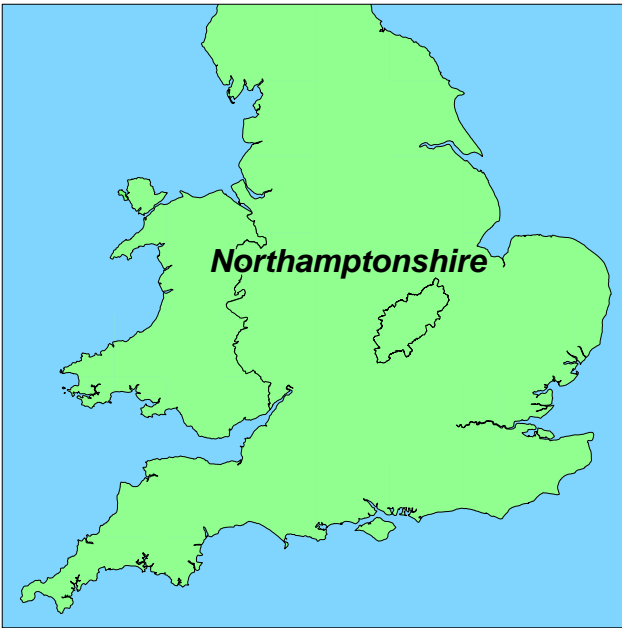
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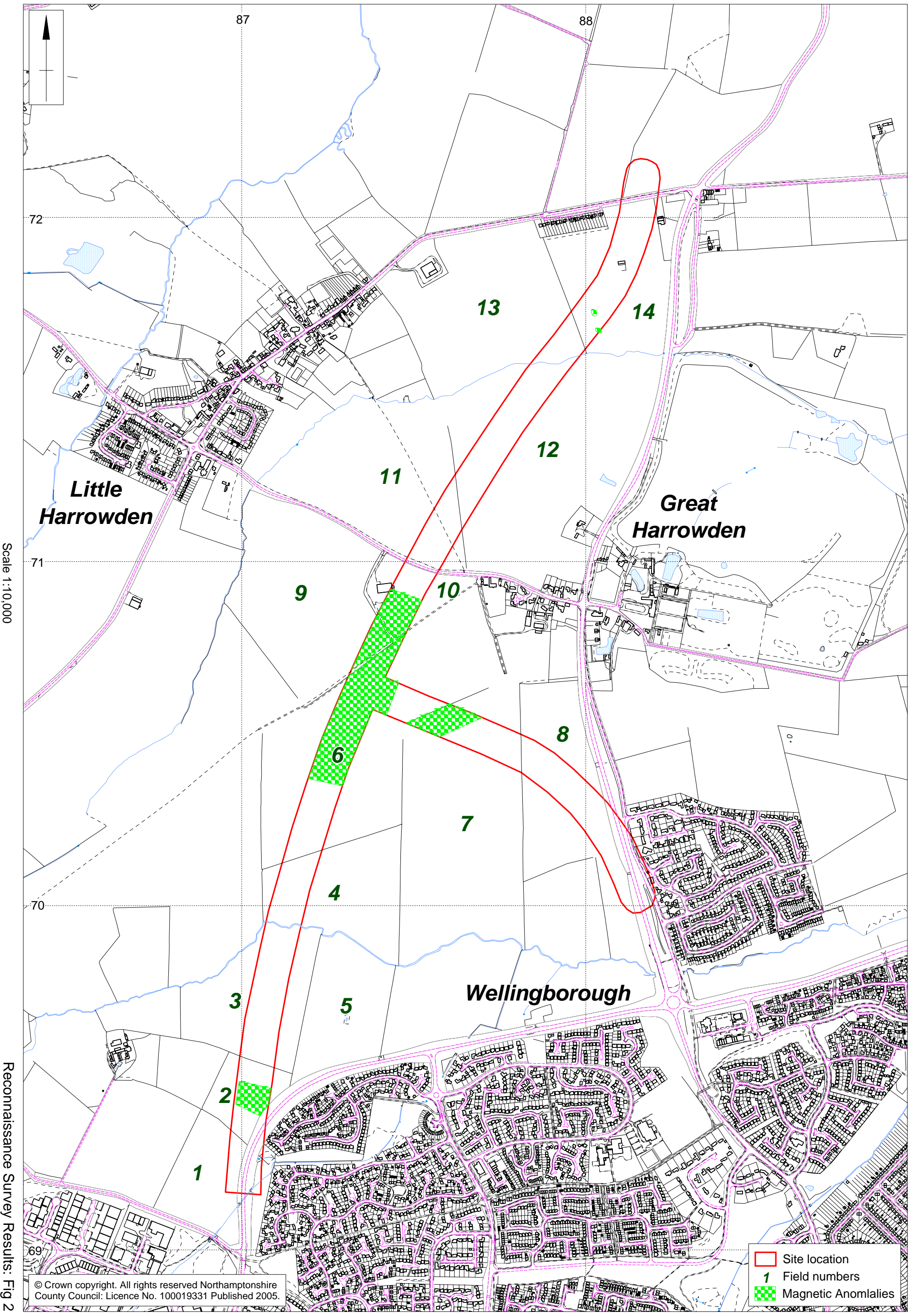
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Survey Location Fig 1

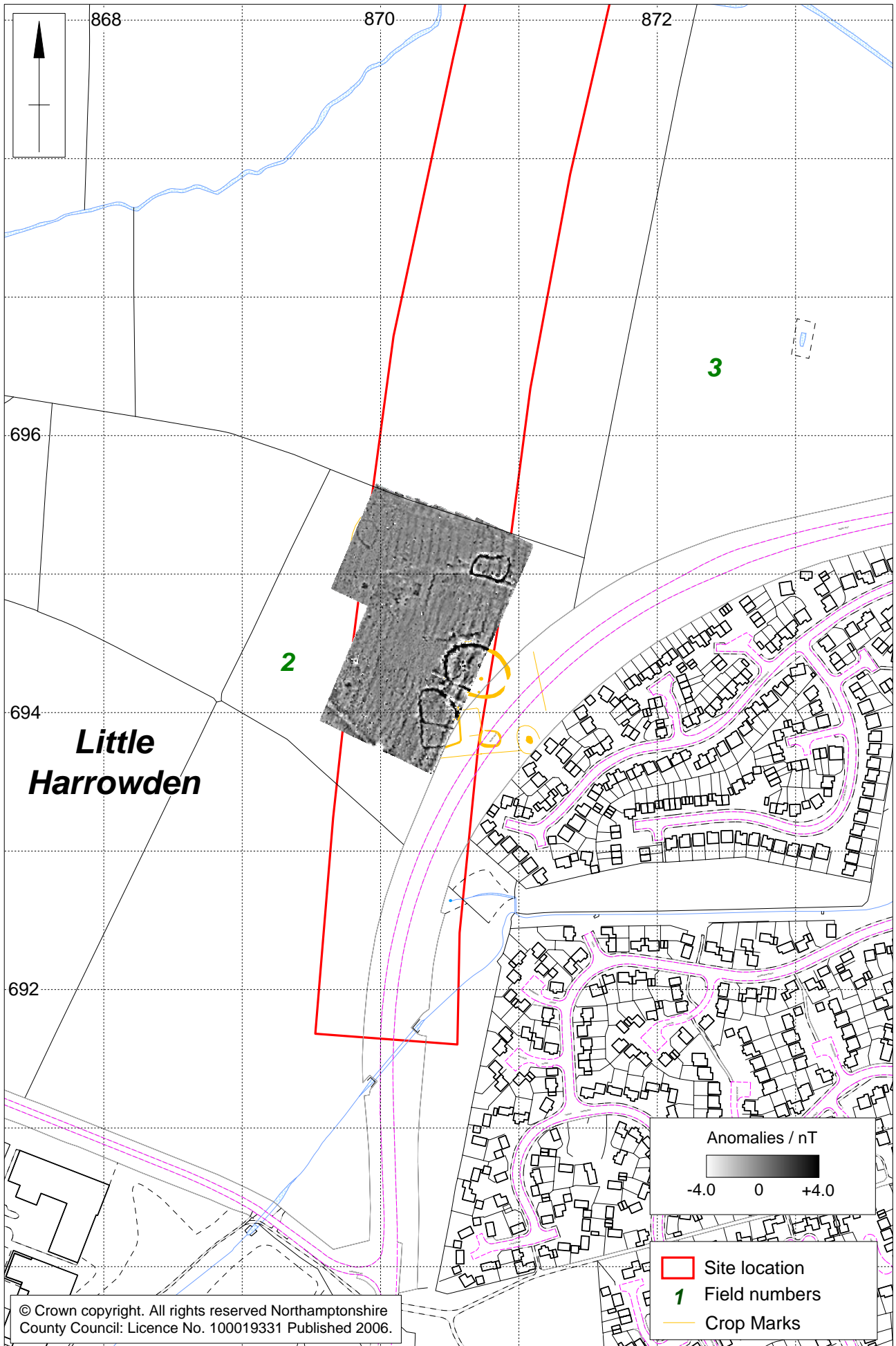


Scale 1:10,000

Reconnaissance Survey Results: Fig 2

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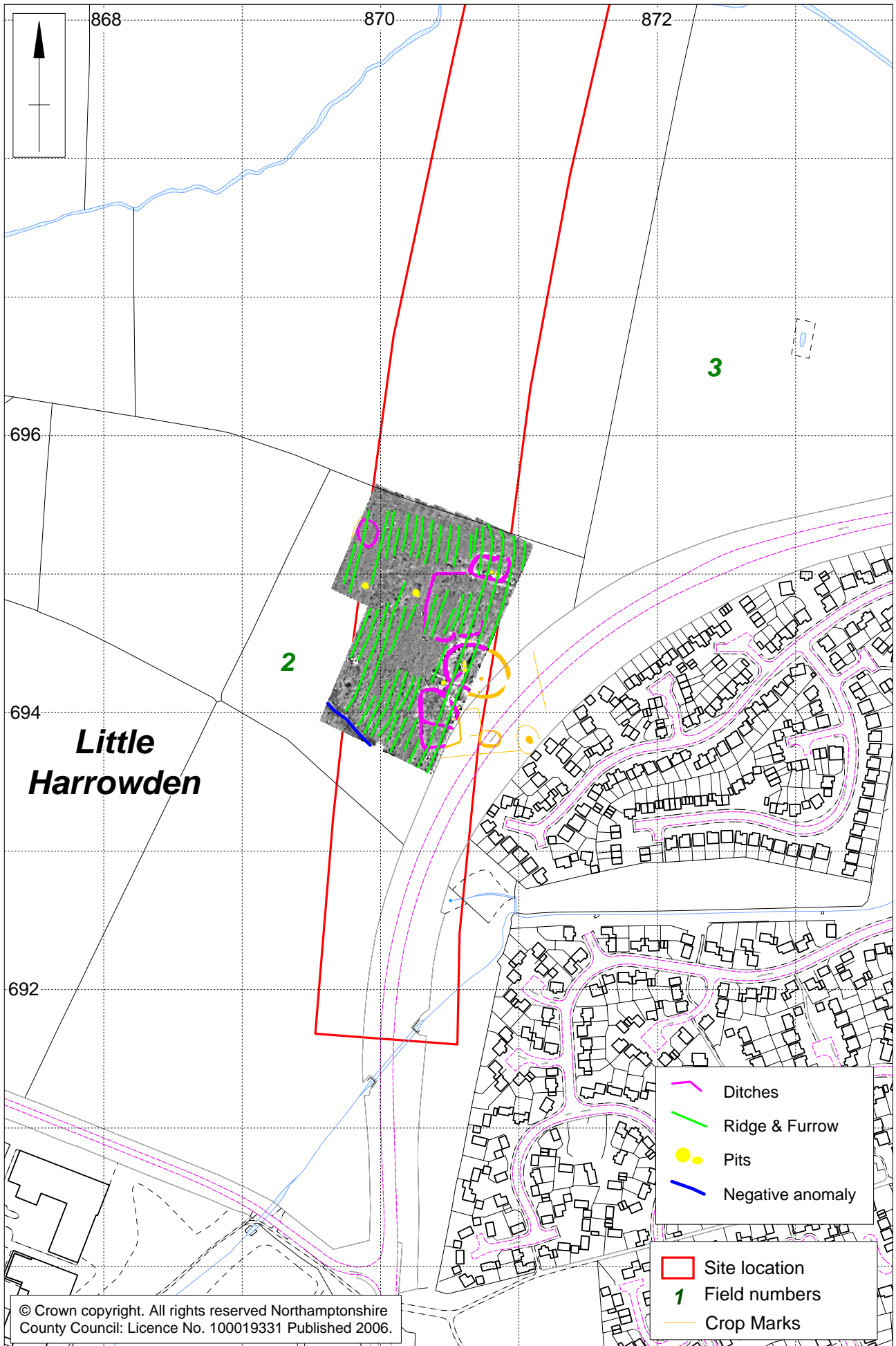
- Site location
- 1 Field numbers
- Magnetic Anomalies



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Scale 1:2,500

Gradiometer Survey Results Field 2 Fig 3



Scale 1:2,500

Gradiometer Survey Interpretation Field 2 Fig 4



Scale 1:2,500 @ A3 Portrait

Gradiometer Survey Results Fields 6, 7, 9 & 10 Fig 5

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**Anomalies / nT**

-4.0 0 +4.0

Site location  
 1 Field numbers  
 Crop Marks

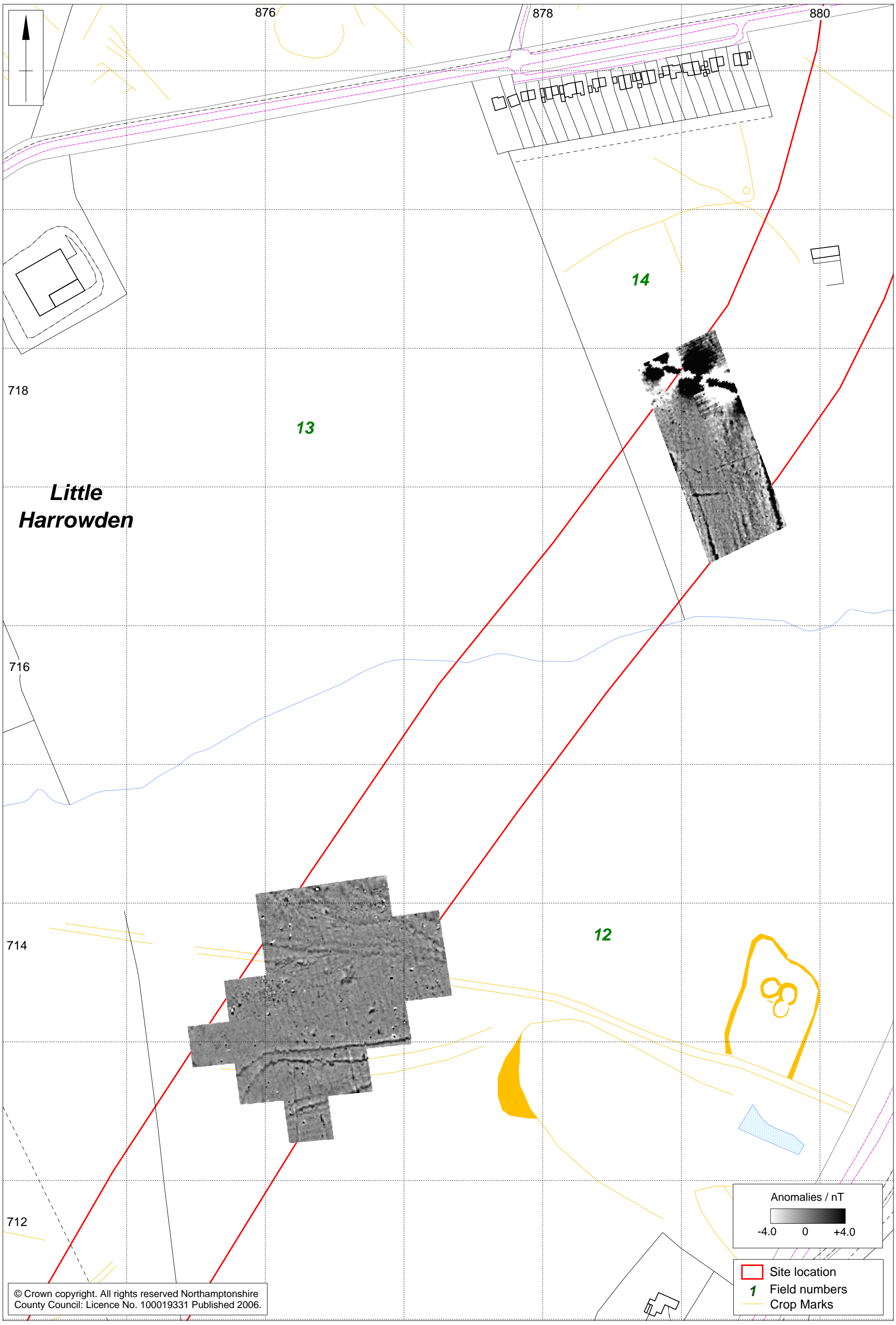


Scale 1:2,500 @ A3 Portrait

Gradiometer Survey Interpretation Fields 6, 7, 9 & 10 Fig 6

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-  Ditches
  -  Ridge & Furrow
  -  Pits
  -  Kilns / Ovens?
  -  Disturbed
  -  Geological
- 
-  Site location
  -  Field numbers
  -  Crop Marks



**Little Harrowden**

Scale 1:2,500 @ A3 Portrait

Gradiometer Survey Results Fields 12 & 14 Fig 7

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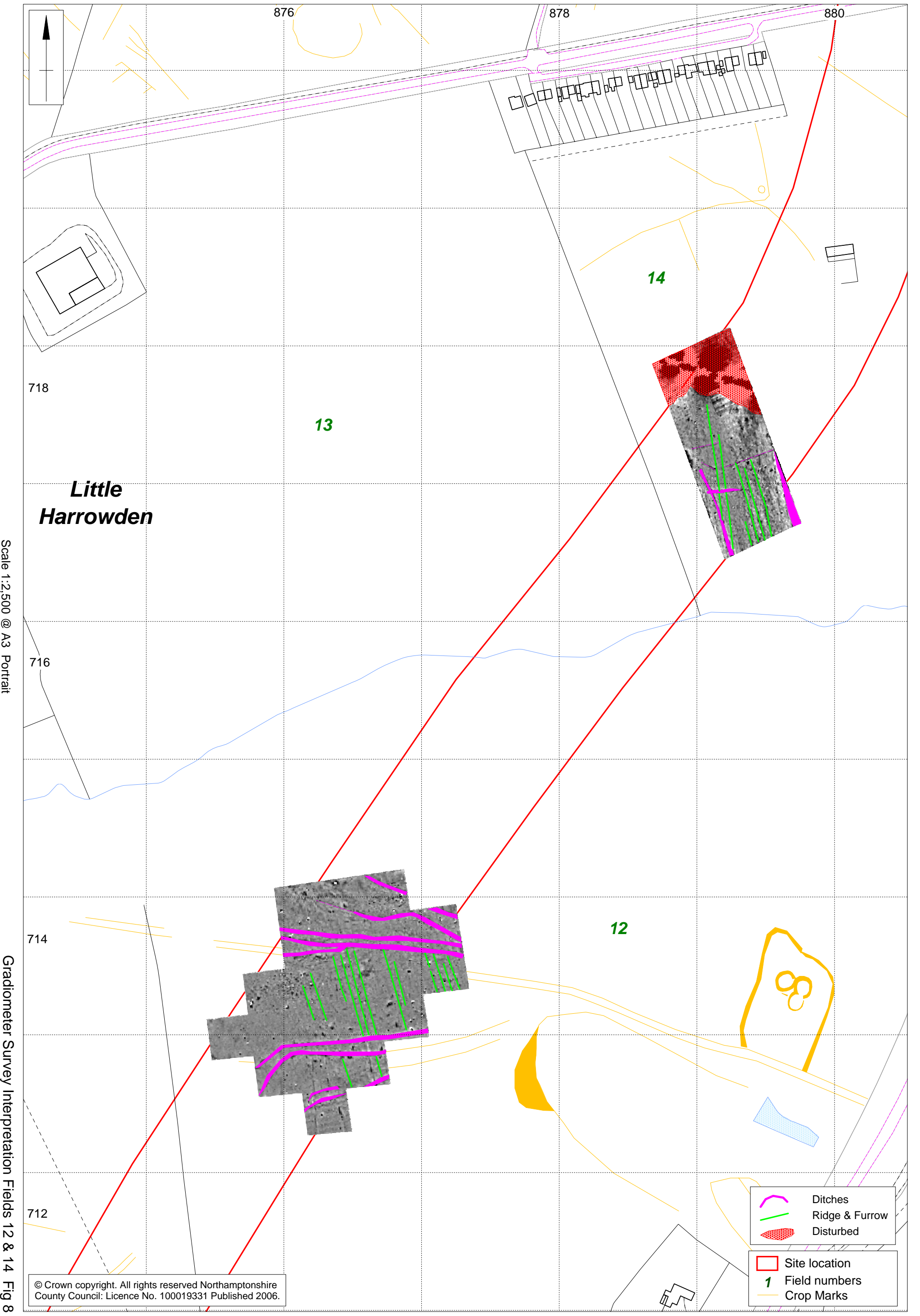
**Anomalies / nT**

-4.0 0 +4.0

Site location

Field numbers







Crop Marks



Scale 1:2,500 @ A3 Portrait

Gradiometer Survey Interpretation Fields 12 & 14 Fig 8

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-  Ditches
-  Ridge & Furrow
-  Disturbed
-  Site location
-  Field numbers
-  Crop Marks