

**Archaeological geophysical survey of
land north of Rothwell,
Northamptonshire
October 2006 and
January to April 2015**

Event Number: ENN107902

Report No. 15/71

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Illustrator: John Walford



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NGR: SP 805 815

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OASIS REPORT

PROJECT DETAILS		Oasis No. molanort1-209801
Project name	Archaeological geophysical survey of land north of Rothwell, Northamptonshire	
Short description	In 2006, Northamptonshire Archaeology was commissioned by CgMs Consulting to conduct a sample geophysical survey across parts of a proposed development site north of Rothwell, Northamptonshire. Magnetometer scanning and detailed magnetometer survey lead to the discovery of an extensive settlement complex of presumed Iron Age or Roman date, overlain by medieval ridge and furrow, a post-medieval barn and other agricultural remains. In 2015 MOLA Northampton, the successor organisation to Northamptonshire Archaeology, was commissioned by CgMs Consulting to survey the remaining parts of the development area. Further remains of probable Iron Age or Roman date were found, lying to the east of the previously discovered site.	
Project type	Geophysical survey	
Site status	None	
Previous work	None	
Current Land use	Arable and pasture	
Future work	Unknown	
Monument type/ period	Iron Age to Roman settlement, medieval ridge and furrow, post-medieval fields and barn	
Significant finds	None	
PROJECT LOCATION		
County	Northamptonshire	
Site address	Land north of Rothwell	
Study area	c 33.5ha	
OS Easting & Northing	SP 805 815	
Height OD	c 125 – 135m aOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology / MOLA Northampton	
Project brief originator	Northamptonshire County Council	
Project design originator	Northamptonshire Archaeology / MOLA Northampton	
Director/Supervisor	Ian Fisher (2006 / 2015) and Olly Dindol (2015)	
Project Managers	Adrian Butler (2006) and John Walford (2015)	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	16 October 2006	
End date	8 April 2015	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton & ADS	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey of land north of Rothwell, Northamptonshire, October 2006 and February to April 2015	
Serial title & volume	MOLA Northampton Reports 15/71	
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ABSTRACT

In 2006, Northamptonshire Archaeology was commissioned by CgMs Consulting to conduct a sample geophysical survey across parts of a proposed development site north of Rothwell, Northamptonshire. Magnetometer scanning and detailed magnetometer survey lead to the discovery of an extensive settlement complex of presumed Iron Age or Roman date, overlain by medieval ridge and furrow, a post-medieval barn and other agricultural remains. In 2015 MOLA Northampton, the successor organisation to Northamptonshire Archaeology, was commissioned by CgMs Consulting to survey the remaining parts of the development area. Further remains of probable Iron Age or Roman date were found, lying to the east of the previously discovered site.

1 INTRODUCTION

MOLA was commissioned by CgMs Consulting to conduct a geophysical survey on a proposed development site located to the north of Rothwell, Northamptonshire (NGR SP 805 815; Fig 1). This survey was intended to follow on from and complete a sample survey which Northamptonshire Archaeology, the predecessor organisation of MOLA Northampton, had undertaken on the same site in October 2006.

The current phase of fieldwork was undertaken from February to April 2015, following liaison with Lesley-Ann Mather, the Northamptonshire County Council Archaeological Advisor. It has been recorded on Northamptonshire Historic Environment Record (HER) as event number ENN107902. No event number was allocated to the 2006 fieldwork, as such numbers were not routinely issued at that time.

This report presents a combined account of the survey results from 2006 and 2015, insofar as they relate to the currently proposed development area. A separate phase of survey in 2007 is briefly noted, but is not discussed in detail as it relates to land entirely outside of the present development boundary. Full details of the 2007 work can be found in Walford 2007.

2 BACKGROUND

2.1 Location and geology

The proposed development area is located immediately north of Rothwell and extends to either side of the B576 Desborough Road (Fig 1). It occupies the relatively flat crest of a ridge between two north-east trending stream valleys and lies largely between the 125m and 135m contours. Immediately to its north the natural topography has been significantly disturbed by nineteenth and twentieth century quarrying.

The drift geology of the proposed development area comprises boulder clay, and this deposit almost entirely masks the underlying bedrock layers of Grantham Formation (Lower Estuarine) limestone and Northampton Sand Formation ironstone (BGS 2015).

2.2 Historical and archaeological background

Archaeological material was found during quarrying in the vicinity of Rothwell Wood, slightly outside the proposed development area. The county SMR lists finds of Bronze Age, Roman and Saxon date from near SP802817 (Shaw & Sharman 1992: 5) and the Archaeological Data Service has a record of several Saxon interments in the same general area (ADS 2006). More precise detail on these finds is not readily available.

Other archaeological geophysical survey work has been undertaken to the west and east of the proposed development area. To the west, a survey identified a small complex of ditched enclosures on the line of the A6 Rothwell and Desborough bypass, and excavation of these prior to road construction proved that they dated from the Iron Age (Mudd & Hindmarch 2001, Mudd 2002). To the east a survey in 2007 identified a complex of ditches defining enclosures or field systems of pre-medieval date. Plots of both these data sets have been incorporated into Figure 3 of this report.

Medieval ridge and furrow extends widely across the proposed development area, but most has been levelled by later ploughing. The only surviving earthworks are in the small pasture fields to the east of Desborough Road. Post-medieval agricultural remains are also known in the proposed development area, and the first edition Ordnance Survey 6" map of c 1885 (Fig 2) records a number of former field boundaries and a former farm track leading to two now-demolished barns.

3 METHODOLOGY

The original, 2006, survey was preceded by scanning with Geoscan FM series magnetometers (FM36 / FM256). This work was fully described in the original project report (Walford 2006) and the results are not of sufficient value to merit repeated discussion.

The detailed survey in 2006 was conducted with a combination of Geoscan FM series and Bartington Grad 601-2 magnetometers. All the fieldwork in 2015 was conducted with the latter instruments, and those areas previously covered with the Geoscan magnetometers were re-surveyed to ensure a consistent data-set across the whole site. The Bartington Grad 601-2 is a standard instrument for archaeological survey. It comprises a pair of vertical component fluxgate gradiometer sensors mounted at a 1m separation on a carrying bar, and is capable of resolving magnetic variations to a precision of 0.1 nanoTesla (nT) (Bartington and Chapman 2003).

Both the 2006 and 2015 surveys were conducted across survey grids divided into 30m squares. A separate grid was established for each field or survey block within the proposed development area, and the location of each grid was recorded with a survey grade GPS system (Leica 1200 in 2006 and Leica Viva in 2015). The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square.

Each episode of fieldwork was conducted in accordance with the various standards and guidance in force at the relevant time (EH 1995; Gaffney, Gater and Ovendon 2002; EH 2008; ClfA 2014). The 2015 fieldwork was also conducted in accordance with a standard survey methodology agreed with Lesley-Ann Mather the Northamptonshire County Council Archaeological Advisor.

The survey data from both phases of work was processed using Geoplot 3.00 software. Striping, caused by slight imbalances between the sensor probes, was removed using

the 'Zero Mean Traverse' function and destaggering of the data was performed where necessary. The processed data is presented in this report in the form of greyscale plots at a range of +4nT (black) to -4nT (white). These have been scaled, rotated and resampled (georectified) for display against Ordnance Survey base mapping (Figs 3, 4 & 6) and are shown with an interpretative overlay in Figures 5 and 7. Separate plots of the unprocessed data are presented in Figures 8 and 9.

4 SURVEY RESULTS

The survey has detected an extensive archaeological site in the north-western part of the proposed development area, three much smaller archaeological sites to the east, and a few other minor features of possible archaeological interest. In addition, it has detected medieval ridge and furrow cultivation and various post-medieval to modern agricultural features.

4.1 Prehistoric to Roman features

The north-western archaeological site (Figs 4-5)

The north-western archaeological site is represented by a complex arrangement of linear and curvilinear magnetic anomalies covering an area of between 4 and 5 hectares. The anomalies are very variable in strength, and in places they become quite weak and disjointed, suggesting that the full detail of the site layout is not magnetically detectable.

The focal element of the site is an ovoid ditched enclosure, measuring c 40m across, within which lies a smaller sub-circular feature, c 10m across. These features are encompassed by a much larger, sub-rectangular ditched enclosure measuring c 85m by 120m across. The perimeter of this outer enclosure is not entirely clear from the survey data, but can be more certainly established from cropmark evidence (see back cover image).

On the southern edge of the rectilinear enclosure there is a rectangular annex, measuring c 26m by 18m, with a possible entrance gap at its south-eastern corner. South and west of this, the survey has detected four more or less well defined curvilinear anomalies which are diagnostic of roundhouses. Three comparable roundhouse anomalies have been detected elsewhere across the north-western site, and there are very slight and inconclusive indications that others may also be present.

To the east of the main rectilinear enclosure there are various linear anomalies arranged in a rather incoherent manner. These represent further ditches, possibly defining elements of outlying enclosures or field boundaries. To the north there is a much more regular set of anomalies defining parts of two fields or enclosures which evidently continue northwards beyond the boundary of the proposed development area.

The westernmost part of the north-western archaeological site contains a diffuse and weak but nonetheless persistent linear anomaly, oriented south-east to north-west, which may indicate the line of a former trackway. This appears to pass through opposed entrance gaps in an irregularly-shaped ditched enclosure, the exact form of which is partially obscured by modern field boundaries. Other linear anomalies extend north and west from this enclosure, representing ditches which may define part of a conjoined enclosure.

Small, discrete, positive and dipolar anomalies have been detected at various locations across the north-western site. The weaker examples could represent pits and the moderately enhanced ones either pits or small burnt features (ovens, hearths, etc),

whereas the most intense examples are diagnostic of small pieces of modern ferrous debris within the ploughsoil. The larger and more diffuse dipolar anomalies which have been detected in the small north-western field are thought to have a different cause, possibly relating to a seam of ironstone outcropping from beneath the boulder clay.

The overall appearance and arrangement of the archaeological features described above would be consistent with an Iron Age or Roman rural settlement having, quite possibly, more than one phase of occupation. However, the central ovoid enclosure is atypical of these periods and might prove to have an earlier origin. Possible interpretations could include a Neolithic to early Bronze Age henge or a small example of a later Bronze Age ringwork, but any such suggestions must remain speculative in the absence of any firm dating evidence.

Other archaeological sites and features (Figs 4-7)

Immediately east of Desborough Road, opposite the health centre, the survey has detected a set of linear anomalies representing a substantial part of a rectilinear ditched enclosure (Figs 6-7). Within this there are two small positive anomalies which could represent pits or small burnt features. Part of another rectilinear enclosure has been detected c 200m further north, but it is less clearly defined and its southern edge appears to be disrupted by a modern field drain. It is likely that both of these enclosures are of Iron Age or Roman date, and thus broadly contemporary with the main site in the field to the west.

Another small archaeological site has been detected near the northern edge of the survey area, straddling the line of Desborough Road (Figs 6-7). The main elements are three unenclosed Iron Age or Roman roundhouses, represented by small and fragmentary curvilinear anomalies. These are associated with one linear anomaly, probably representing a ditch, on the western side of the road. Two very weak linear anomalies further to the west may also represent associated ditches, but this is less certainly the case.

Apart from the sites described above, the survey has detected three very weak isolated anomalies of possible, but uncertain, archaeological interest (Figs 4-5). One appears to represent a curving section of ditch lying at the western edge of the survey area and truncated by the A6 bypass. The other two possibly represent lengths of ditch near the southern edge of the main field. However, the latter anomalies are not particularly diagnostic and could alternatively represent modern field drains.

4.2 Medieval to modern features (Figs 4-7)

The survey has detected sets of well-defined parallel linear anomalies in the southern part of the survey area, and also in the two pasture fields to the east of Desborough Road. These represent medieval to early post-medieval ridge and furrow, which survives as upstanding earthworks in the pasture fields but has been flattened by later ploughing elsewhere. Weaker ridge and furrow anomalies have been detected in some other parts of the proposed development area, with the relative weakness of these anomalies reflecting either a greater truncation of the surviving furrows or else localised variations in the magnetic characteristics of the subsoil and ploughsoil.

A number of anomalies have been detected which can be related to historic features depicted on the first edition Ordnance Survey map (Fig 2). These include, most conspicuously, a band of intense magnetic disturbance which represents a residual scatter or hardcore and other debris from a former farm track. This extends westwards from the Desborough Road and terminates in an expanded area of disturbance where a barn and yard surface formerly stood. Coincidentally, this area of disturbance almost

exactly overlies the ovoid enclosure at the centre of the north-western archaeological site.

Four linear anomalies extend perpendicularly north and south from the former track, corresponding to the recorded locations of former field boundaries. Another linear anomaly runs parallel with the track to its north, and, although not corresponding to any recorded feature, seems likely to represent a further part of the same system of boundaries.

In the southernmost field of the proposed development area, the line of another former field boundary is represented by a slight linear concentration of small dipolar anomalies. These indicate where small pieces of hardcore and scrap metal accumulated at the margins of the former fields. A similar but denser band of magnetic disturbance bisects the pasture field east of Desborough Road and probably represents the line of yet another historic boundary or farm track.

A very intense positive linear anomaly flanked by negative halos represents a modern pipe clipping across the southernmost corner of the fields east of Desborough Road. In the next field to the north, a series of three much weaker linear anomalies with alternating magnetic polarities are diagnostic of modern field drains.

5 CONCLUSION

The surveys conducted in 2006 and 2015 show that the proposed development area contains archaeological remains of probable Iron Age or Roman date, as well as agricultural features dating from the medieval and post-medieval periods. The principal area of archaeological interest is in the north-west of the survey area, where a complex of enclosures and round-houses covers an area of between 4 and 5 hectares. Other archaeological remains have been detected alongside and to the east of Desborough Road, where the survey has identified at least one, and possibly two, rectilinear ditched enclosures and a group of at least two unenclosed roundhouses.

It seems likely that the survey results give a good indication of the overall distribution of archaeological remains within the proposed development area, but it should be noted that the magnetic responses are not uniformly strong, and do not clearly show the full detail and complexity of the sites that have been detected. Some additional detail can be discerned from cropmark evidence (see back cover image) and the presence of further details can be inferred in the areas where the geophysical anomalies have an obviously disjointed and incomplete layout.

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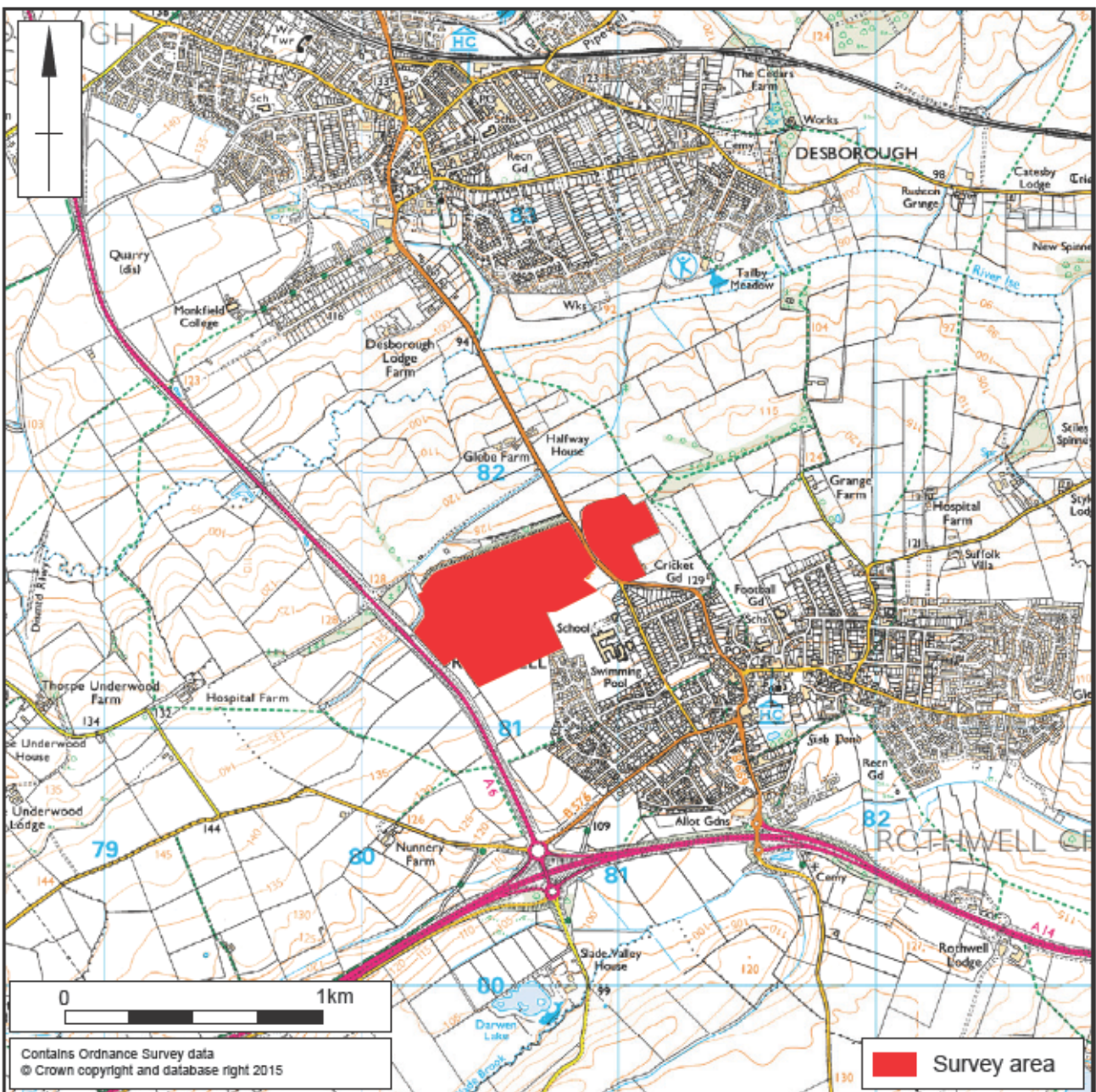
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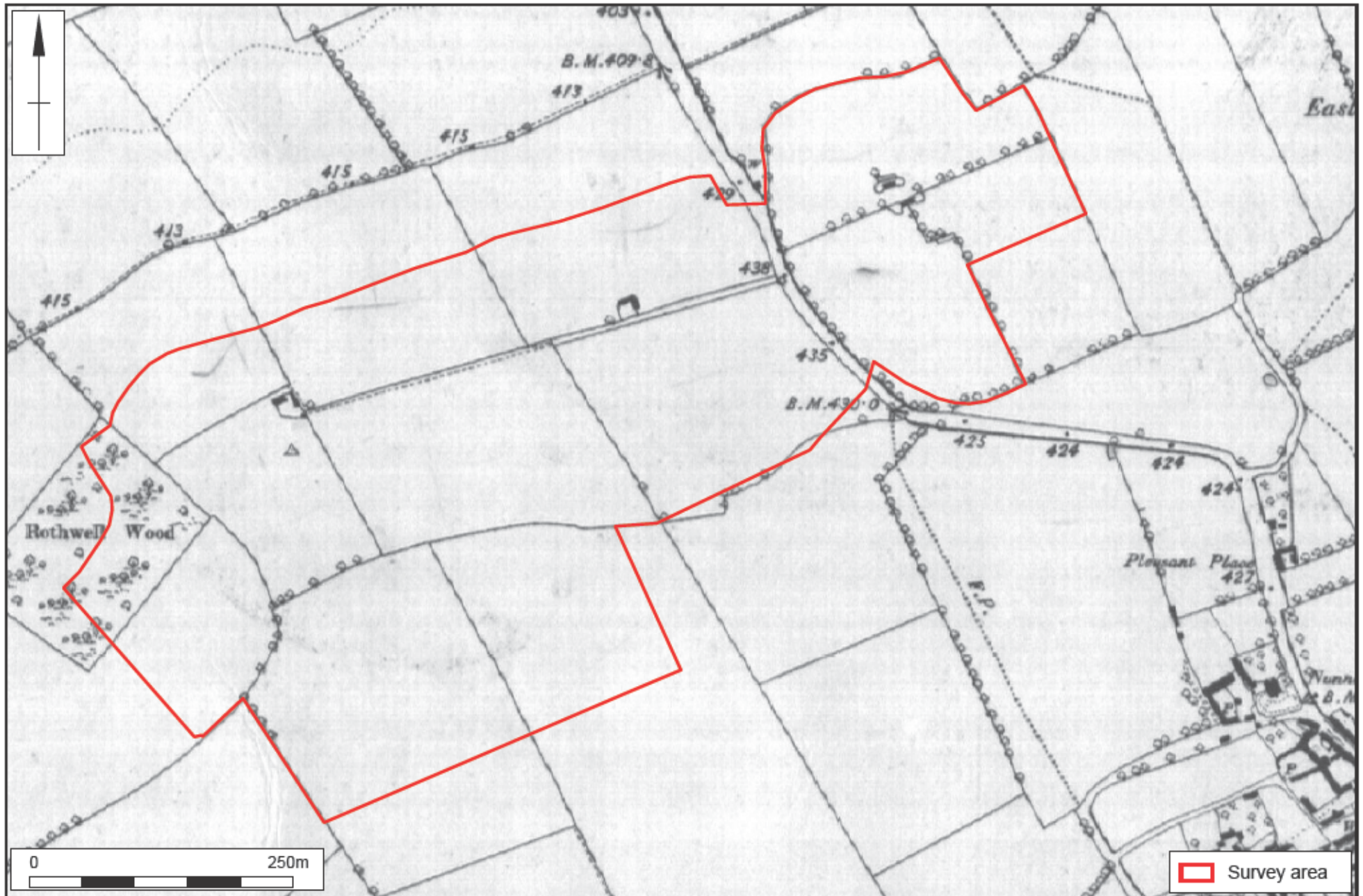
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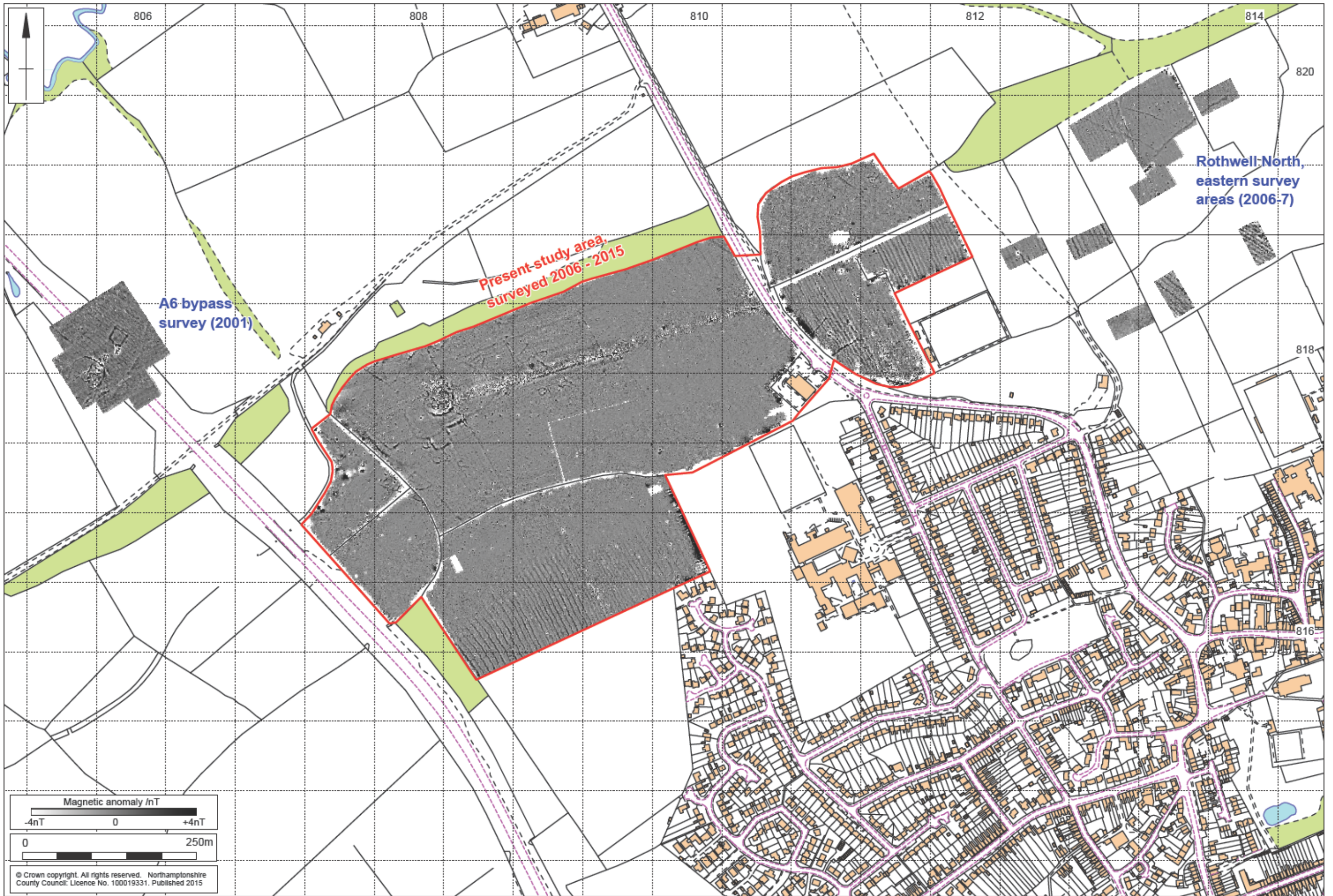
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Site location Fig 1



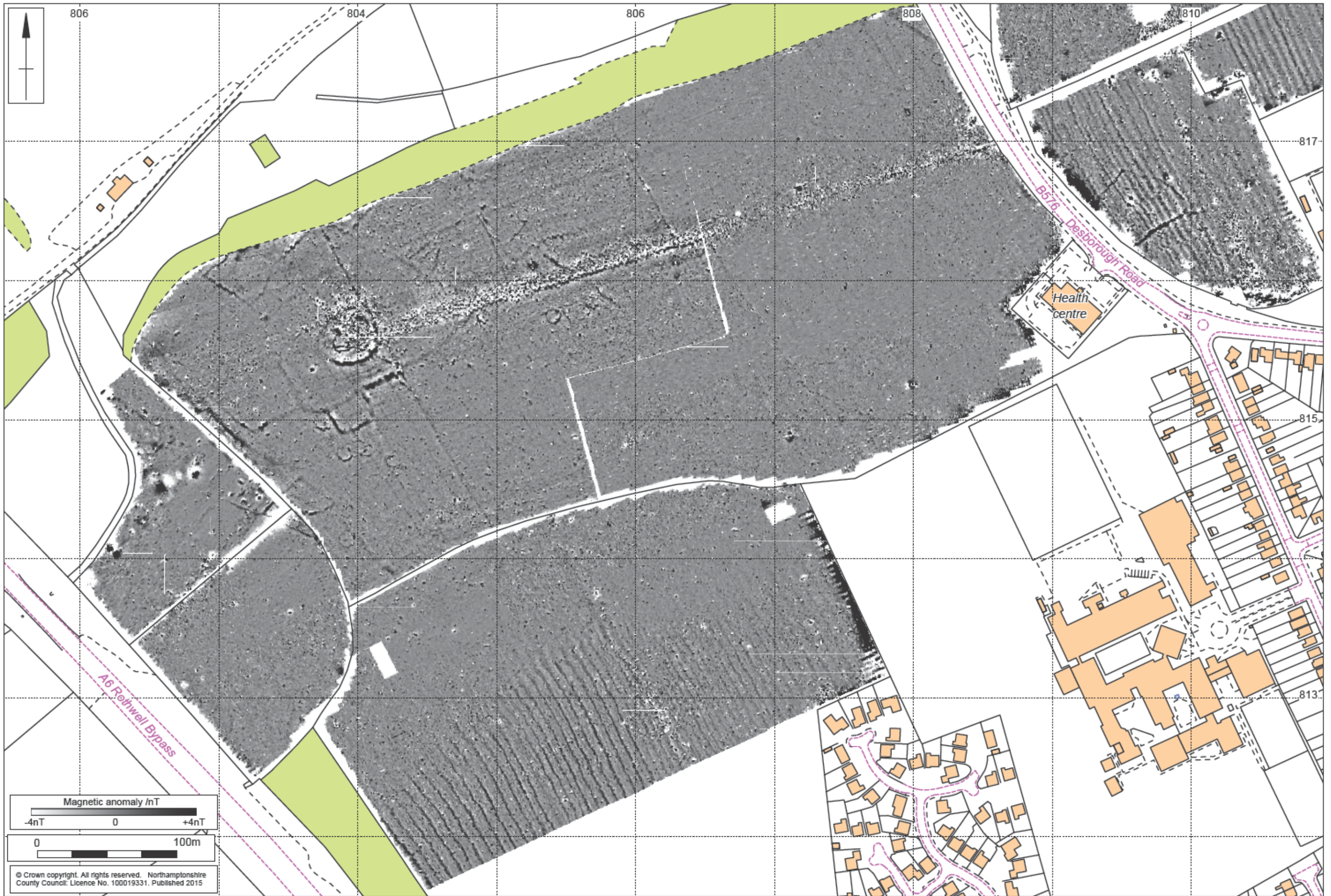
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First edition Ordnance Survey 6" map Fig 2



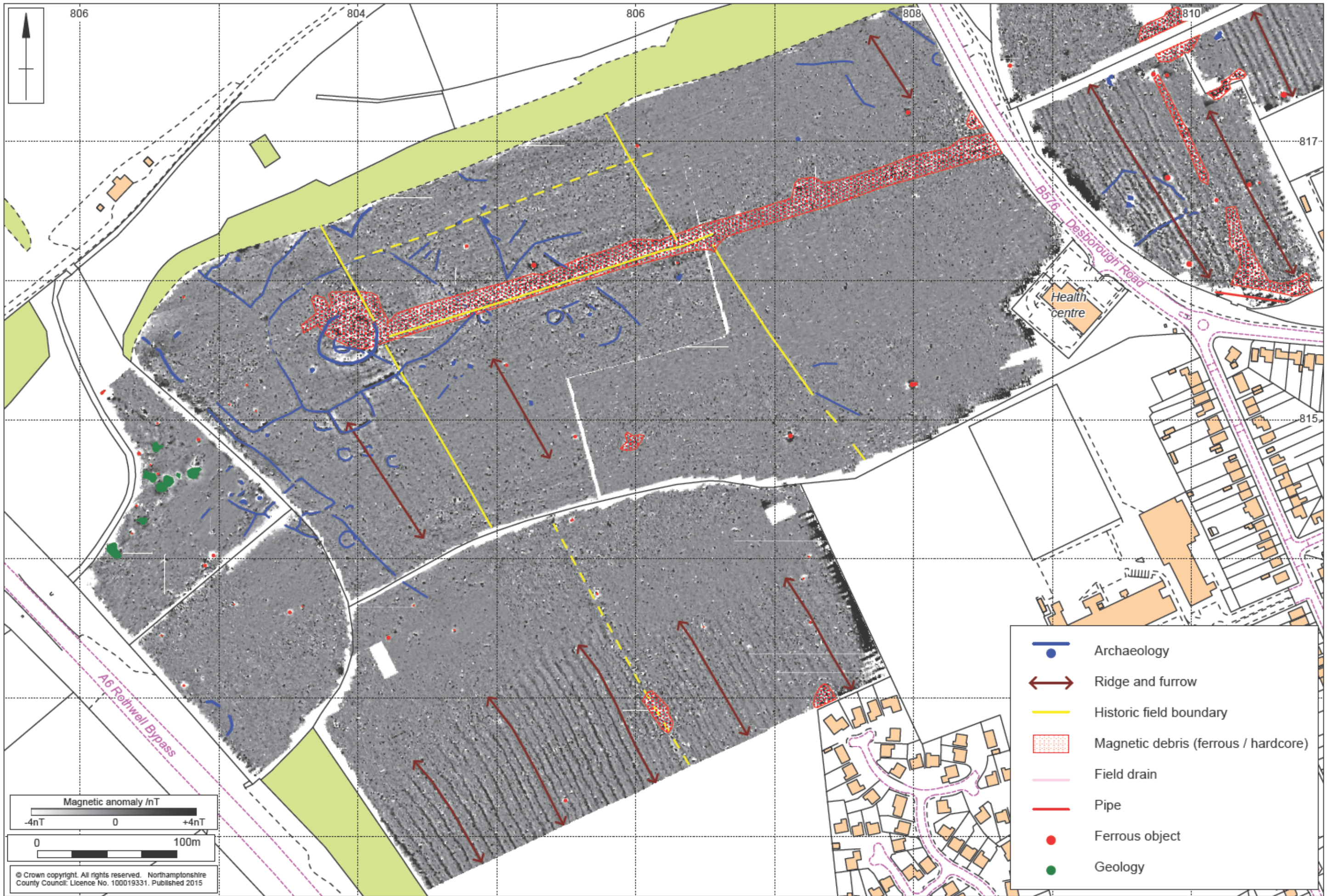
Scale 1:5000 (A3)

Overview of magnetometer survey results, including 2001 and 2007 data Fig 3



Scale 1:2500 (A3)

Magnetometer survey results (West) Fig 4



Scale 1:2500 (A3)

Magnetometer survey interpretation (West) Fig 5



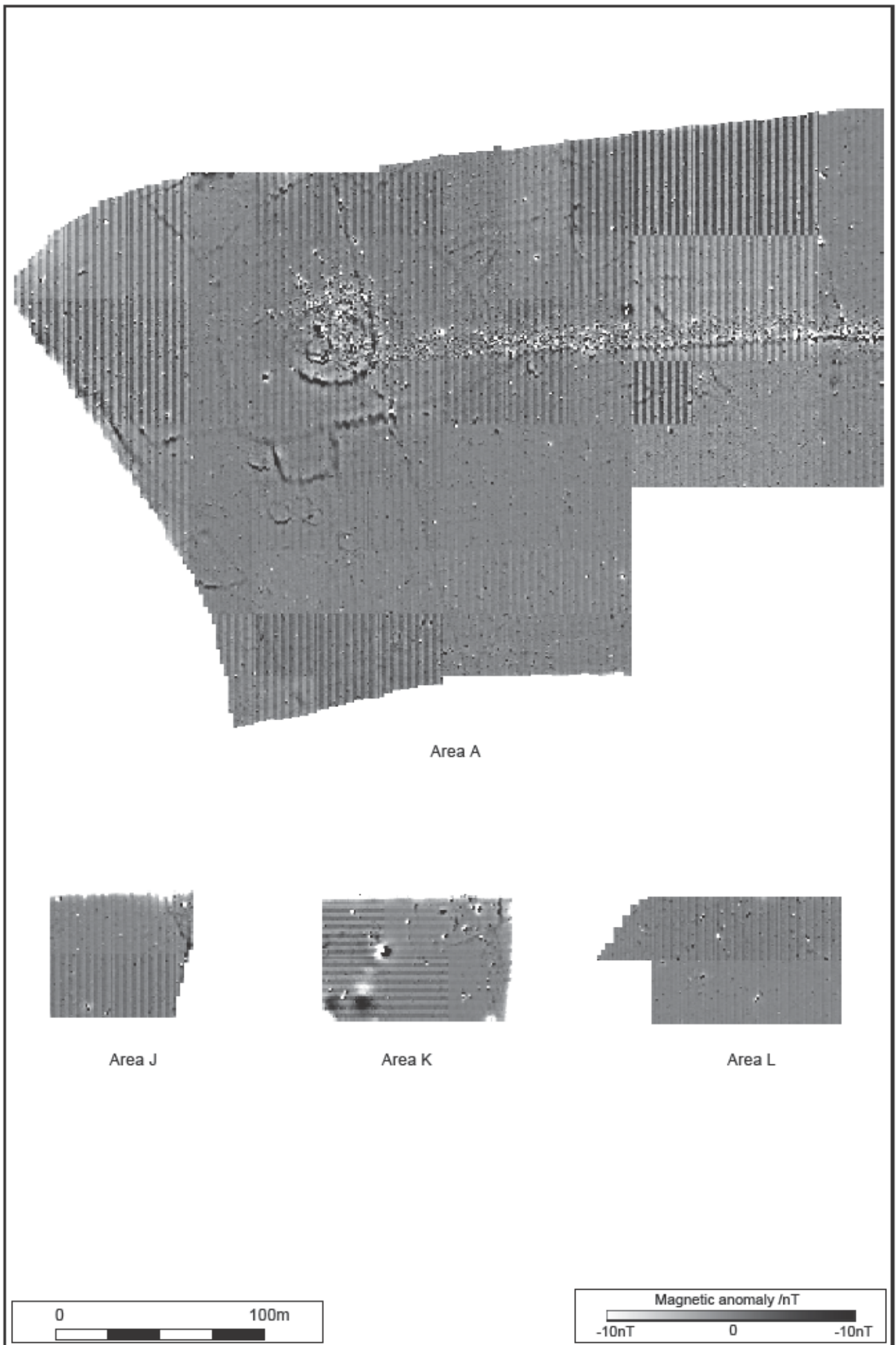
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Magnetometer survey results (East) Fig 6



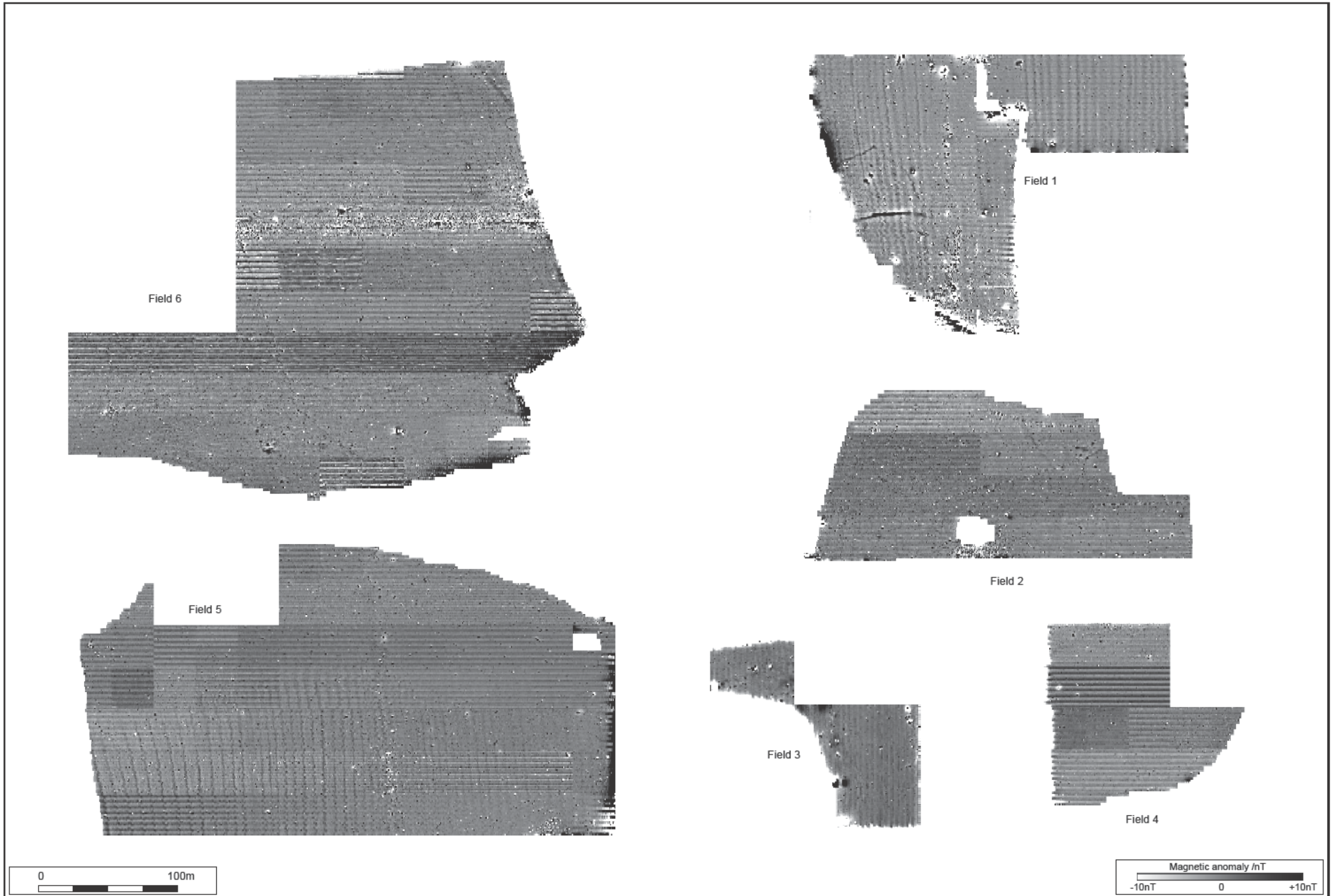
Scale 1:2500 (A4)

Magnetometer survey interpretation (East) Fig 7



1:2500

Unprocessed magnetometer data (2006 survey) Fig 8





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