Northamptonshire County Council

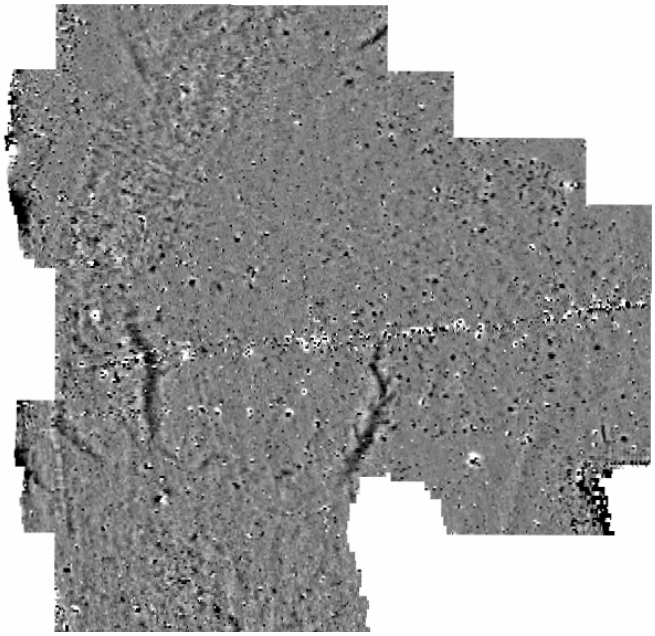
Northamptonshire Archaeology

An Archaeological Geophysical Survey

of the proposed Birstall Park and Ride Site

Leicester

October 2009



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November 2009

Report 09/153

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QUALITY CONTROL

	Print name	Signature	Date
Checked by	Pat Chapman	*PC*	3/11/2009
Verified & Approved by	Andy Chapman	*AC*	4/11/2009

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey of the proposed Birstall Park and Ride, Leicester.	
Short description	Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services (ULAS) to conduct magnetic gradiometer survey across 7.5ha of arable land located immediately east of the A6 in the parish of Birstall, Leicester. The survey detected various anomalies, some of which could conceivably indicate archaeological features. The majority, however, are of recent or geological origin.	
Project type	Geophysical survey	
Site status	None	
Previous work	Magnetic susceptibility survey (Butler 2001)	
Current Land use	Arable	
Future work	Unknown	
Monument type/ period	Possible pits and ditches of unknown date.	
Significant finds	None	
PROJECT LOCATION		
County	Leicestershire	
Site address	Land Adjacent to A6, Birstall, Leicester.	
Study area	*c* 6.5ha (of 7.5ha total area)	
OS Easting & Northing	SK 5934 1049	
Height OD	*c* 65-75m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	ULAS	
Project Design originator	NA	
Director/Supervisor	Paul Clements	
Project Manager	Adrian Butler	
Sponsor or funding body	ULAS	
PROJECT DATE		
Start date	19th October 2009	
End date	21st October 2009	
ARCHIVES	**Location**	**Content**
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey of the Proposed Birstall Park and Ride, Leicester.	
Serial title & volume	Northamptonshire Archaeology Reports 09/153	
Author(s)	John Walford	
Page numbers	4	
Date	3/11/2009	

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ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF THE PROPOSED BIRSTALL PARK AND RIDE, LEICESTER

OCTOBER 2009

ABSTRACT

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services (ULAS) to conduct magnetic gradiometer survey across 6.5ha of arable land located immediately east of the A6 in the parish of Birstall, Leicester. The survey detected various anomalies, some of which could conceivably indicate archaeological features. The majority, however, are of recent or geological origin.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services (ULAS) to conduct an archaeological geophysical survey across 7.5ha of arable land lying adjacent to the A6 in the parish of Birstall (NGR SK 5934 1049). The purpose of this survey was to investigate the presence or absence of archaeological remains prior to the proposed development of a new park and ride site.

2 TOPOGRAPHY AND GEOLOGY

The survey area is located on the northern edge of Leicester, between the suburb of Birstall and the A46. It occupies the south-western flank of a shoulder of land, the crest of which stands at *c* 75m AOD. The ground slopes down from here to a minimum elevation of *c* 65m along the southern boundary. The western edge of the area is defined by the A6, and its southern edge abuts the grounds of Longslade Community College.

The solid geology of the site comprises deposits of the Mercia mudstone group, overlain in most places by sands and gravel of fluvio-glacial origin (BGS 2009).

At the time of the survey, an oilseed rape crop stood in the south-eastern corner of the field, reducing the available survey area to *c* 6.5ha.

3 ARCHAEOLOGICAL BACKGROUND

The survey area has been previously investigated by a topsoil magnetic susceptibility survey, the results of which did not suggest the presence of archaeological remains (Butler 2001). However, an Iron Age enclosure was identified on the opposite side of the A6 and slightly to the south, at SK 591 100, during the same programme of work. Another Iron Age enclosure was excavated at SK 5969 1113 prior to construction of the A46 (Beamish 1998). To the south, a Saxon cemetery was discovered on the site of Longslade Community College in 1958-60 (ADS 2009).

4 METHODOLOGY

The 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).

The site was divided up into 30m x 30m grid squares, which formed the basic unit of survey. These were set out manually by tape measure and optical square and tie-in measurements were taken to the field edges. 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.

All fieldwork was carried out in accordance with the guidelines issued by English Heritage, and by the Institute for Archaeology (EH 2008; Gaffney, Gater and Ovendon 2002).

The data was processed using Geoplot 3.00u software. 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 is presented in this report in the form of a greyscale plot (scale +4nT to -4nT black ~ white). This has been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative plot has been produced and is shown overlain onto the data in Figure 3.

5 SURVEY RESULTS

The survey detected several anomalies which could be of archaeological origin, although none is diagnostic enough to interpret with complete confidence. These comprise several disjointed linear anomalies, which may be consistent with ditches, and a small discreet anomaly which is tentatively identified a pit.

At the north of the survey area are two parallel curving linear anomalies which might indicate the side ditches of a trackway. Further south, and close to the western edge of the survey area, two further possible ditches occur. A third such feature, which is better defined but considerably shorter than the other two, occurs near the south-eastern corner of the site. All these features tend towards north-south alignments.

In the far south west of the site there are two adjacent anomalies which appear to define half of a small ring-shaped feature. There is a slight possibility that this represents part of a prehistoric round-house gully. Close by to the south-east, is a single discreet anomaly with a slight halo, which quite probably represents a large pit. Many other pit-like anomalies occur, especially in the central and eastern parts of the data, but these are generally less well defined and it is impossible to determine which, if any, are archaeological and which are the product of natural hollows or geologically derived magnetic clasts.

Other anomalies can more confidently be attributed to a geological cause. In particular there are a series of broad linear features, running downslope, which appear to indicate minor erosion channels. There is also a large area of subtle magnetic patterning in the north-western part of the site, which probably reflects periglacial structures within the underlying sediment.

Several discreet dipolar anomalies occur, indicating small pieces of ferrous material (bolts, horseshoes, etc) within the ploughsoil. A linear scatter of such anomalies bisects the site from east to west. This almost certainly indicates the course of a former field boundary, infilled, in part, with pieces of junk. Other ferrous anomalies occur at points around the edges of the site due to adjacent fences and gates.

6 CONCLUSION

The survey has identified a few anomalies of possible archaeological origin, but these are for the most part scattered, disjointed and impossible to interpret with great confidence. It is reasonable to conclude that there are no substantial archaeological features on the site. However, relatively ephemeral features, such as inhumations or post-built structures, rarely give clear magnetic responses (EH 2008, table 3) and only intrusive investigation could reliably determine the presence or absence of features such as these.

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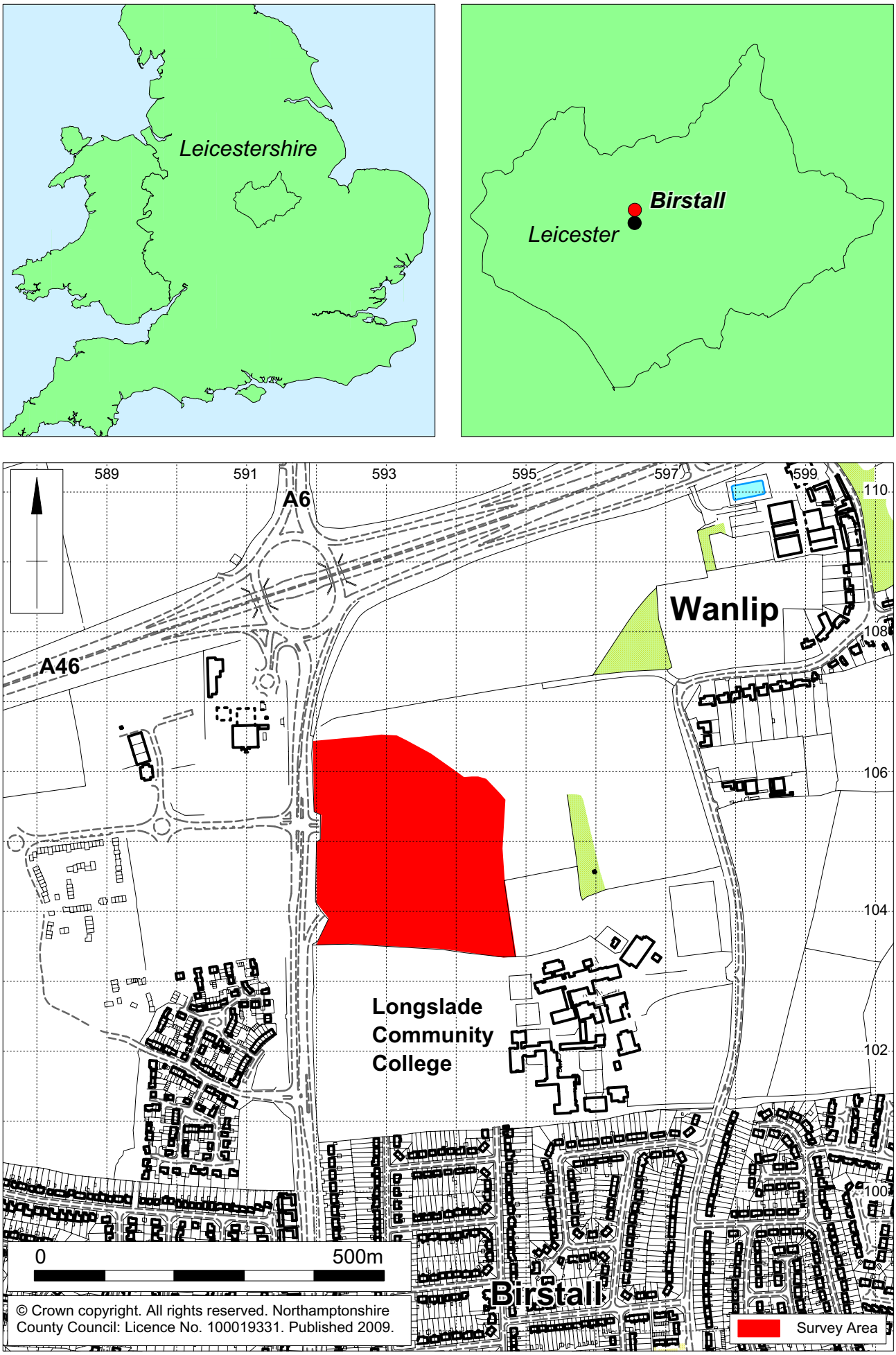
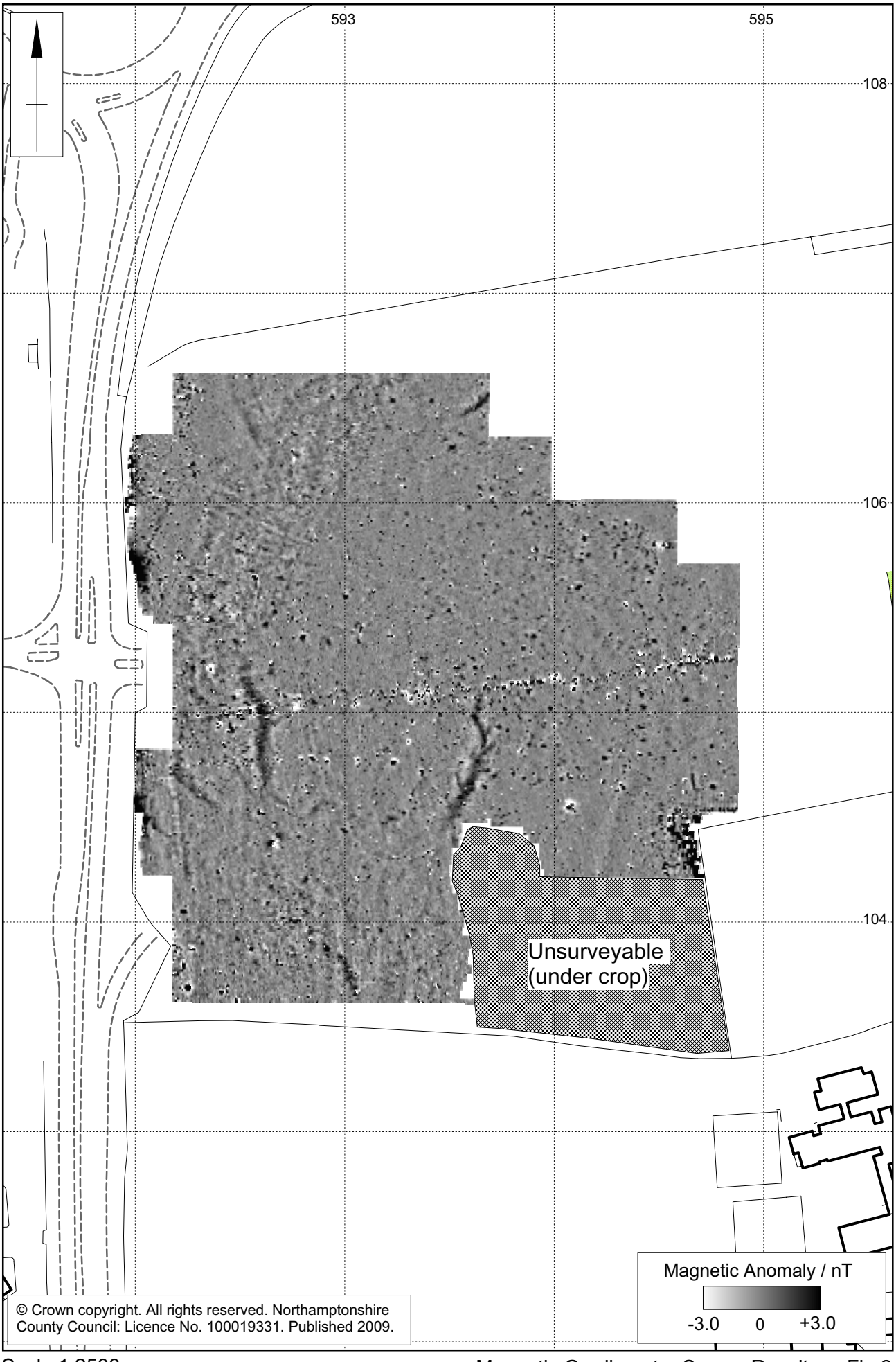


Scale 1:7500

Site Location Fig 1



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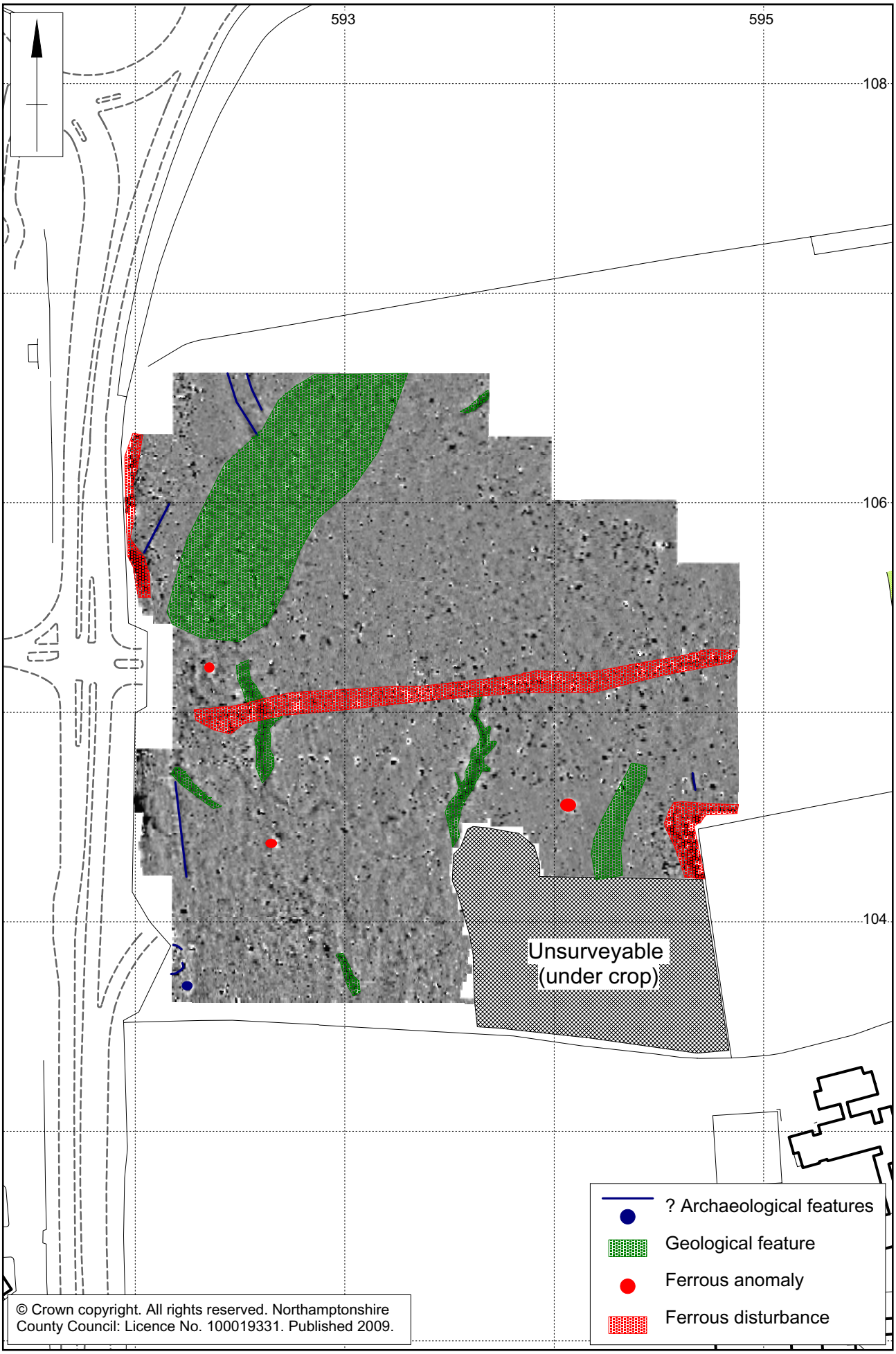
Magnetic Gradiometer Survey Results Fig 2



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Magnetic Gradiometer Survey Interpretation Fig 3

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