Northamptonshire Archaeology

Archaeological geophysical survey of land at Long Lane, Mulbarton, Norfolk April 2013

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QUALITY CONTROL

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Verified by	*Mark Holmes*	*MH*	30/04/2013
Approved by	*Andy Chapman*	*AC*	01/05/2013

OASIS REPORT FORM

PROJECT DETAILS	**OASIS No: 149287**	
Project name	Archaeological geophysical survey of land at long Lane, Mulbarton, Norfolk	
Short description	Northamptonshire Archaeology was commissioned by CgMs Consulting to carry out a magnetometer survey in advance of a residential development at Long Lane, Mulbarton, Norfolk. The survey detected linear anomalies relating to old boundaries and field drains, and other anomalies suggestive of burnt soil or ceramic debris. Three of the latter were associated with a hollow which may represent a small quarry pit. The fourth, which stands in isolation, is very tentatively interpreted as a kiln.	
Project type	Geophysical survey	
Site status	None	
Previous work	Desk-based assessment (Howe Malcolm 2011)	
Current Land use	Meadow	
Future work	Not known	
Monument type/ period	None	
Significant finds	None	
PROJECT LOCATION		
County	Norfolk	
Site address	Long Lane, Mulbarton	
Study area	13.5ha	
OS Easting & Northing	TM 196 999	
Height OD	*c* 47m - 51m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting	
Project Design originator	NA	
Director/Supervisor	John Walford	
Project Manager	Mark Holmes	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	22 April 2013	
End date	2 May 2013	
ARCHIVES	Location	Content
Physical		
Paper	ENF131298	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey of land at long Lane, Mulbarton, Norfolk, April 2013	
Serial title & volume	Northamptonshire Archaeology Reports 13/73	
Author(s)	John Walford	
Page numbers	5	
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ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND AT LONG LANE, MULBARTON, NORFOLK APRIL 2013

ABSTRACT
Northamptonshire Archaeology was commissioned by CgMs Consulting to carry out a magnetometer survey in advance of a residential development at Long Lane, Mulbarton, Norfolk. The survey detected linear anomalies relating to old boundaries and field drains, and other anomalies suggestive of burnt soil or ceramic debris. Two of the latter were associated with a hollow which may represent a small quarry pit.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting to carry out an archaeological geophysical survey in advance of a residential development on land at Long Lane, Mulbarton, Norfolk (NGR TM 196 999, Fig 1). The aim of the survey was to investigate whether there were any archaeological remains present which might be affected by the development works.

The fieldwork was conducted from 22 April to 25 April 2013 and comprised the detailed magnetometer survey of *c* 13.5ha of land.

2 TOPOGRAPHY AND GEOLOGY

The survey area is located on the south-eastern edge of Mulbarton, to the east of Long Lane and to the south of 'The Rosery'. It is a compact block of land, *c* 13.5ha in extent, which slopes gently northwards from 51m to 47m aOD. At present it is divided into four hay meadows, with a pond on its eastern edge and the overgrown remains of a second pond in its north-western corner.

The geology of the area is mapped as Lowestoft Formation glacial drift overlying chalk (Howe Malcolm 2011).

3 ARCHAEOLOGICAL BACKGROUND

The survey area has been the subject of an archaeological desk-based assessment, (DBA) which concluded that there were "unlikely to be any assets of significance at the site" (Howe Malcolm 2011, 21). It stated that there were few archaeological sites in the vicinity, with the nearest being a probable Bronze Age round barrow on the Common, *c* 1km to the north of the survey area, and a deserted medieval settlement at Kenningham, *c* 0.5km to the east. Roman and Saxon activity in the area was represented only by sparse metal detecting finds.

The Norfolk Historic Environment Record (HER) includes a record for "an undated linear ditch cropmark" within the north-eastern part of the survey area (NHER 54630). This feature is not noted in the DBA, presumably because it was added to the HER after the DBA was undertaken.

Although the survey area lies well away from the historic core of Mulbarton, it is located just to the south of 'the Rosery', a small hamlet which appears to have developed in the nineteenth century. The surveyors draft for the one inch Ordnance Survey map (1818) shows one building located just outside the survey area, and the Mulbarton tithe map (1840) shows a single large property, perhaps a farmhouse, standing in the north-western corner of the survey area, and a string of smaller properties lying along the road to the north. The farmhouse appears to have been demolished by the late nineteenth century, as it does not appear on the first edition of the 6 inch Ordnance Survey map.

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).

Each field within the survey area was sub-divided into a system of 30m grid squares, which were established by means of a tape measure and optical square. The grids were tied into the national grid by means of a Leica 1200 dGPS. 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 grid. In accordance with the written scheme of investigation (NA 2013), one grid was surveyed twice each day to demonstrate the repeatability of the results (Fig 4).

All fieldwork methods complied with the written schemes of investigation for the respective phases of the project (NA 2013) and with guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; I*f*A 2011).

The survey data were largely processed using Geoplot 3.00v software. Most of the striping was removed using the 'Zero Mean Traverse' function but some areas had to be de-striped separately, using a spreadsheet based routine, in order to preserve a linear anomaly lying parallel to the traverse direction. Destaggering of the data was performed where necessary.

The processed data is presented in this report in the form of greyscale plots (+/- 4nT black/white) which have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). Interpretative overlays have been produced and are shown in Figure 3. The repeated survey grids are shown as greyscale plots in Figure 4.

5 SURVEY RESULTS

Three positive linear anomalies cross the survey area on various alignments. The most distinct of these bisects the south-eastern field on a west-south-west to east-north-east alignment. To its north, a second anomaly extends on a north-north-easterly heading, continuing as a very weak anomaly across the adjacent field. To its west there is a third anomaly which bisects the south-western field from east to west. The northern anomaly closely corresponds with the linear cropmark (NHER 54630) mentioned above in Section 3.

It is probable that these anomalies represent former boundary ditches, perhaps of medieval or post-medieval date. None of them match with field boundaries depicted on the tithe map of 1840, or on subsequent Ordnance Survey maps, but their layout is broadly conformable with that of the wider landscape. For instance, the anomaly which crosses the south-eastern field has a similar alignment to existing field boundaries to the

north and south, and the anomaly to its north trends in a similar direction to field boundaries on the northern side of the Rosery.

The survey data contains four large dipolar anomalies with intensities in the range of *c*10nT to *c*100nT. Three lie close together in the north-western field, within the confines of a pronounced hollow which may indicate an old quarry pit. The fourth anomaly, which has a distinctly rectangular shape, is located in the south-western field. Considering their sizes and intensities, all four anomalies are thought to be of 'thermo-remnant' origin.

Thermo-remnant anomalies are often difficult to interpret with confidence, because similar-looking anomalies may have a range of different causes. With that caveat in mind, it is tentatively suggested that the group of three anomalies in the north-western field represent a fired clay component (brick rubble or burnt soil) within the backfill of the possible quarry pit. The isolated anomaly in the south-western field is harder to explain, and the possibility that it represents a kiln cannot be entirely dismissed.

At the southern end of the survey area there are many weakly positive linear anomalies: one set of which are aligned from east to west and the other set from south-east to north-west. Their regular arrangement and spacing strongly suggests that they represent modern field drains.

There is an area of magnetic 'noise' in the north-western corner of the survey area, on or close to the site of the former farmhouse. It arises, at least in part, from a spread of modern hardcore (pers obs) and whilst demolition rubble or other nineteenth century material may also be present, this cannot be reliably determined from the survey data.

A smaller area of magnetic noise occurs at the eastern edge of the south-western field. It probably represents the backfill of a small pond, shown in this location on the first edition of the 6 inch Ordnance Survey map. A narrow band of noise along the southern edge of the same field represents a modern grass track reinforced with hardcore. A third area of noise, located adjacent to the pond in the south-eastern field, probably also represents a deposit of hardcore.

The small dipolar anomalies which are distributed at random across the survey area represent a low-density scatter of ferrous debris within the topsoil. Three larger dipolar

anomalies, arrayed in a line across the southern fields, mark the locations of three telegraph poles.

6 CONCLUSION

The survey has detected a few features of low or indeterminate archaeological significance. There are some linear anomalies which probably represent boundary ditches of medieval to post-medieval date, and some thermo-remnant anomalies which appear to represent areas of burning or concentrations of ceramic material. Three of the latter anomalies are associated with a surface hollow, which may be the vestige of an old quarry pit. The fourth is of unknown significance, but there is a slight possibility that it represents a former kiln.

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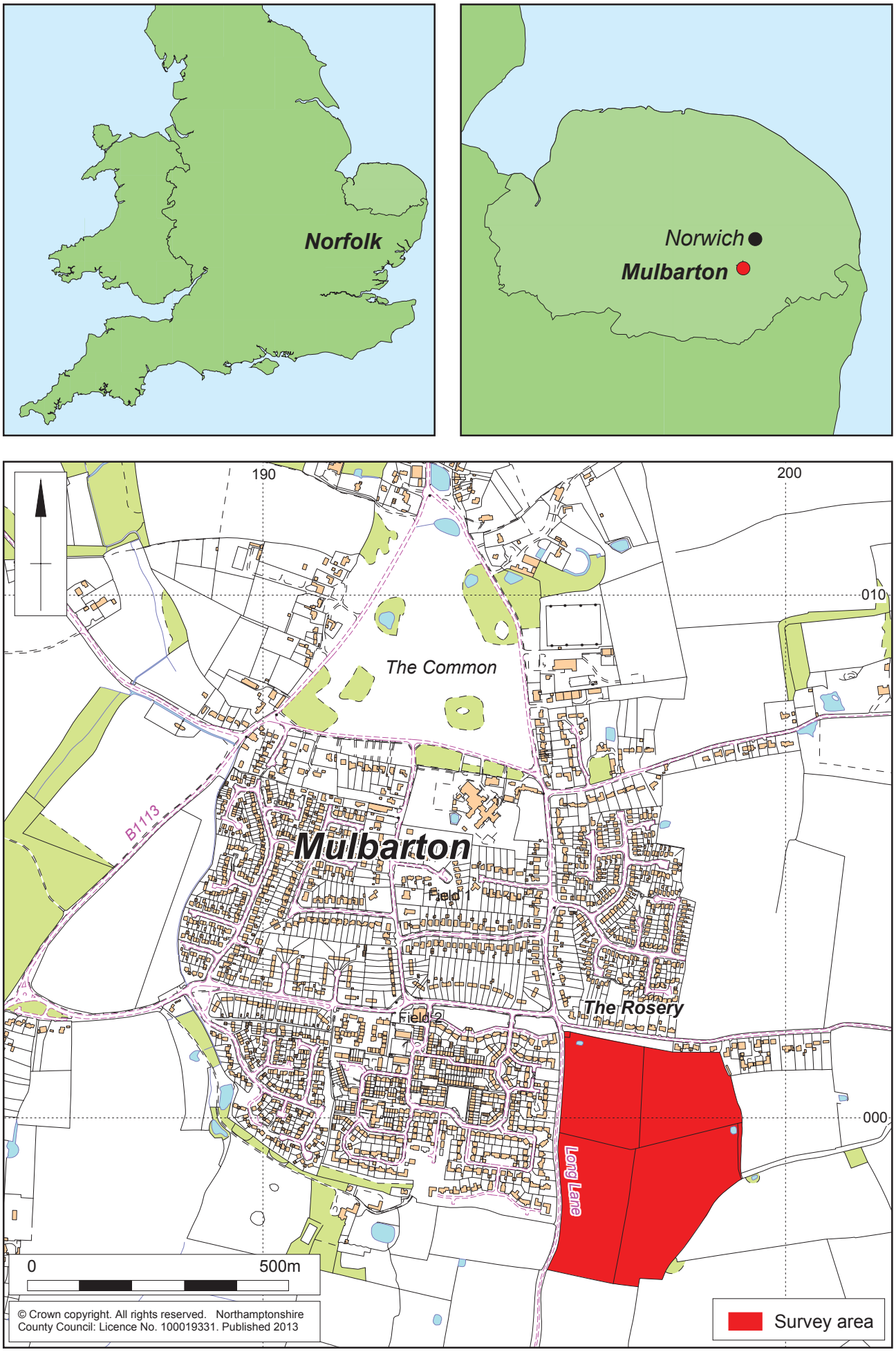
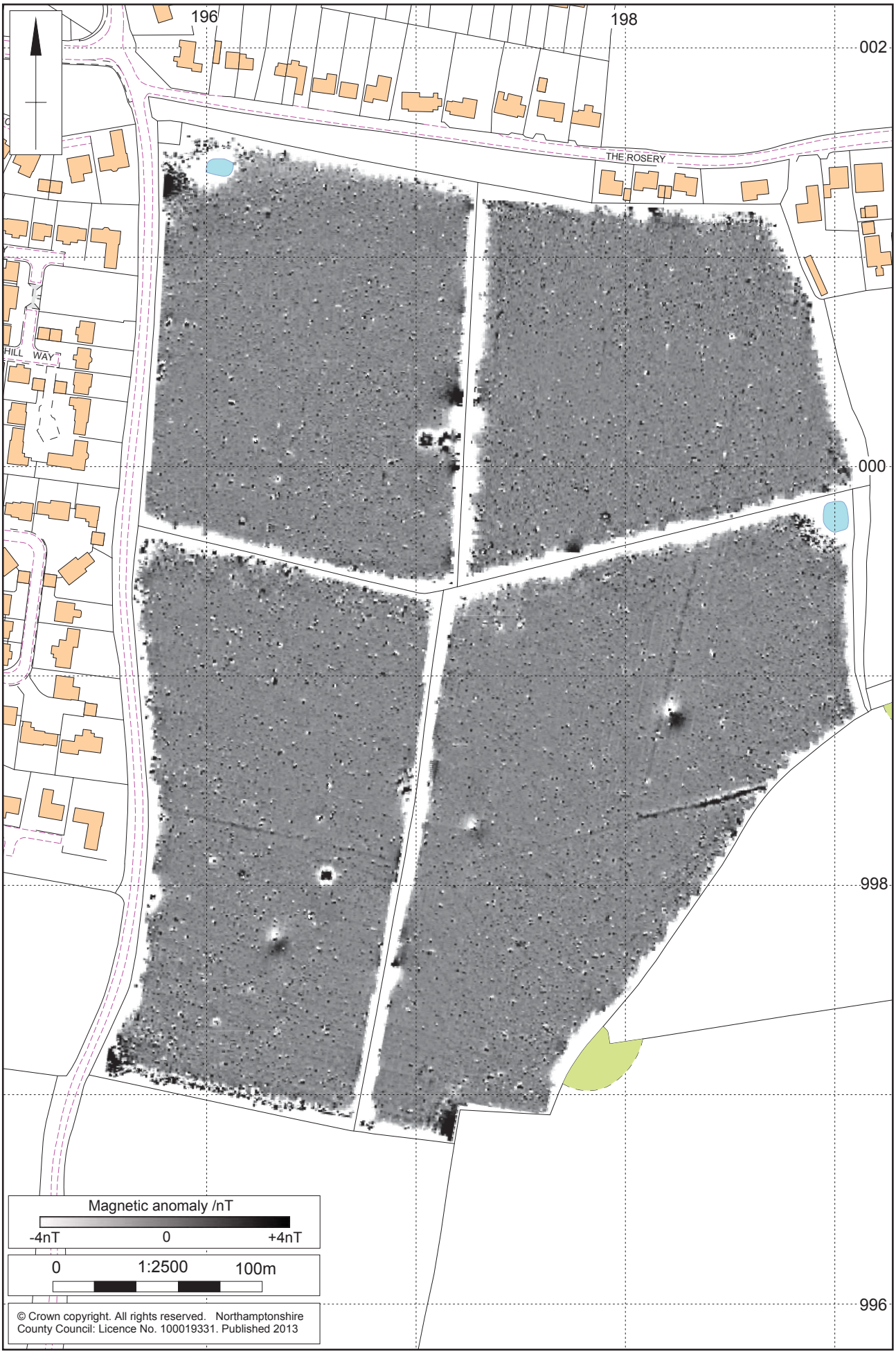
A Service of Northamptonshire County Council 2 May 2013



Scale 1:10,000

Site location Fig 1



1:2500 (A4)

Magnetometer survey results Fig 2

1:2500 (A4)

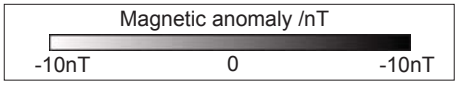
Magnetometer survey interpretation Fig 3

Monday 22/4/2013

Tuesday 23/4/2013

Wednesday 24/4/2013

Thursday 25/4/2013



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Unprocessed magnetometer data Fig 4

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