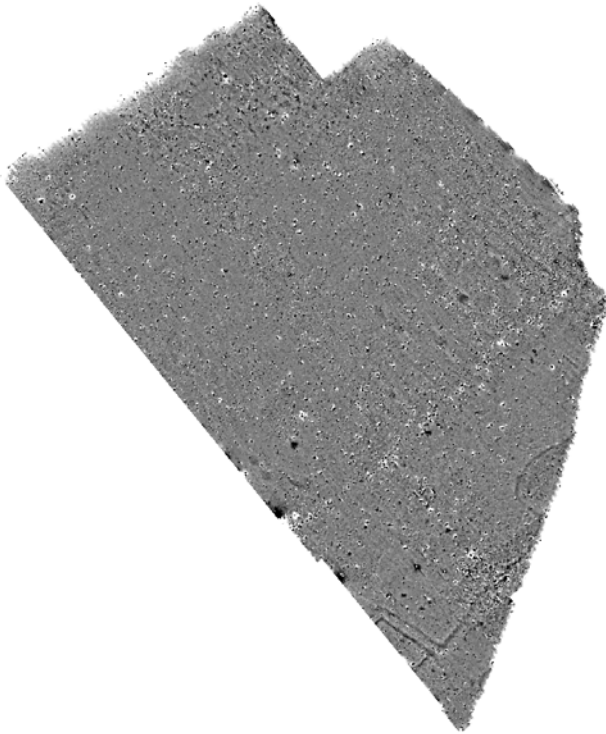




Northamptonshire Archaeology

Archaeological Geophysical Survey of land at Moreteyne Farm, Marston Moretaine, Bedfordshire



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Report 11/49

February 2011



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Checked by	<i>Pat Chapman</i>	<i>PC</i>	25 February 2011
Approved by	<i>Steve Parry</i>	<i>SP</i>	28 February 2011

OASIS REPORT FORM

PROJECT DETAILS		
Project title	Archaeological Geophysical Survey on land at Morteyne Farm, Marston Moretaine, Bedfordshire	
Short description	Northamptonshire Archaeology was commissioned by CgMs Consulting Ltd to carry out a magnetometer survey on 22.8ha of land at Moreteyne Farm, Marston Moretaine, Bedfordshire. The survey identified parts of at least two enclosures in the south-eastern part of the site possibly connected with Iron Age or Romano-British remains adjacent to the east. Evidence of medieval ridge and furrow cultivation was also identified.	
Project type	Geophysical Survey	
Site Status	None	
Previous work	None	
Current land use	Mixed arable, pasture and fallow	
Future work	Unknown	
Monument type and period	Enclosures, medieval ridge and furrow	
Significant finds	None	
PROJECT LOCATION		
County	Bedfordshire	
Site address	Morteyne Farm, Wood End, Marston Moretaine	
Post code	MK43 0NY	
OS co-ordinates	SP 989415	
Area	22.8 ha	
Height aOD	45-50m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting Ltd	
Project Design originator	NA	
Director/Supervisor	John Walford (NA)	
Project Manager	Adrian Butler (NA)	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	10 February 2011	
End date	28 February 2011	
ARCHIVES	Location (Accession no.)	Contents
Physical	NA store	Site records
Paper		Client report PDF
Digital		
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Archaeological Geophysical Survey on land at Moreteyne Farm, Marston Moretaine, Bedfordshire	
Serial title & volume	11/49	
Author(s)	John Walford and Paul Clements	
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ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND AT MORETEYNE
FARM, MARSTON MORETAINE, BEDFORDSHIRE,
FEBRUARY 2011

Abstract

Northamptonshire Archaeology was commissioned by CgMs Consulting Ltd to carry out a magnetometer survey on 22.8ha of land at Moreteyne Farm, Marston Moretaine, Bedfordshire. The survey identified parts of at least two enclosures in the south-eastern part of the site possibly connected with Iron Age or Romano-British remains adjacent to the east. Evidence of medieval ridge and furrow cultivation was also identified.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting Ltd to carry out an archaeological geophysical survey on land at Moreteyne Farm, Marston Moretaine, Bedfordshire (centred on NGR: SP 989415; Fig 1). A total area of 22.8ha was investigated by detailed magnetometer survey. The fieldwork took place in February 2011.

2 TOPOGRAPHY AND GEOLOGY

The survey area comprises an approximately triangular block of land on the northern side of Marston Moretaine (Fig 1). It is bounded to the south-east by the former A421 Bedford Road, to the west by Wood End Road and to the north-west by the newly constructed A421 dual carriageway. The land within this area consists of two arable fields, two smaller pasture fields, and several small corners of land which have been cut off by the new road and are lying fallow. There is also a small compound, about 0.3ha in extent, which was unsurveyable due to the presence of large muck-heaps.

In topographic terms, the site consists of two relatively flat terrace surfaces separated by a pronounced slope. The higher terrace, which stands at about 50m aOD, extends along the south-eastern part of the site, along the line of the former A421. From there, the ground slopes down quite steeply towards a lower terrace in the north-west. The elevation of the lower terrace is about 45m aOD.

The solid geology of the site comprises Oxford Clay. This is overlain on the terrace surfaces by fluvial deposits, up to c 2m deep, which range in composition from clay to clayey, gravelly sand (JPA 2007, 18-19).

3 ARCHAEOLOGICAL BACKGROUND

Several archaeological sites are known within the immediate vicinity of the present survey area. In particular, fieldwork ahead of housing development identified a

complex of Iron Age and Romano-British settlement features located to the west of Moat Farm, at SP 991413, and further Iron Age remains at SP 992415 (Bedfordshire HER, 17713 & 16140).

It also appears, from aerial photographic evidence, that there have been archaeological excavations 200m to the west of Moreteyne Farm, ahead of the construction of the new A421 (Google Earth imagery, 2 June 2009). Unfortunately, no details of this work are yet available from any of the usual online resources.

To the east of the present survey area, at SP 993413, there is a late medieval moated farmstead, known as Moat Farm. Another moated site, Beancroft Farm, stands at SP 990420. However, the only medieval or post-medieval remains known within the survey area itself are some ridge and furrow earthworks which survive in Field 3 (pers obs).

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).

Each field within the survey area was divided into 30m grid squares by means of a tape measure and optical square. The grids were tied into the Ordnance Survey national grid by measurement to field boundaries and other points of detail. 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 methods complied with the guidelines issued by English Heritage, and by the Institute for Archaeology (EH 2008; Gaffney, Gater and Ovendon 2002).

The survey data was processed using Geoplot 3.00v 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 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 is shown overlain onto the data in Figure 3.

5 SURVEY RESULTS

Field 1

The northern part of this field contains a series of positive linear magnetic anomalies on a north-west to south-east alignment. These probably represent medieval ridge and furrow cultivation, although the possibility that they represent modern field drains cannot be entirely excluded.

Within this same area as the ridge and furrow there is a concentration of large ferrous anomalies. One group of four anomalies, arranged in a square configuration probably represents the footings of a former electricity pylon. Another group of anomalies, located almost against the field boundary, coincides with the location of a very recently removed pylon, which is still shown on the most recent Ordnance Survey mapping. However, the central group of anomalies does not relate to a pylon. Instead it coincides with the location of a former pond, mapped on the first edition Ordnance Survey map, and probably indicates a concentration of scrap metal accumulated within the backfill of this feature.

Elsewhere within this field there are a number of slightly positive localised magnetic anomalies. These could represent infilled pits or hollows, but it is thought more likely that they relate to pockets of iron minerals within the underlying geology.

Field 2

The majority of the archaeological remains discovered during the survey occur in the south-eastern part of this field. A series of linear positive magnetic anomalies define parts of two possible ditched enclosures that may be linked by a ditch, on the southern and eastern boundaries. These features extend beyond the limits of the survey area, and may be contiguous with the remains previously excavated on the opposite side of the former A421 (Section 3, above).

At the south-western end of this group of features, there is what appears to be part of a double-ditched enclosure of broadly rectilinear form. This continues beyond the survey area, into the adjacent horse paddocks. A ditch extends north-eastwards from this enclosure for about 110m, before looping abruptly north-westwards, as though forming one side of a second enclosure. Another ditch, much shorter than the first, lies very close to the edge of the fields south-east corner, against the former A421. It is possible that this defines the edge of a third enclosure.

Elsewhere in the field there are several relatively small positive magnetic anomalies. As with the similar anomalies in Field 1, any of these could represent infilled pits, but only one is particularly convincing as such. The others, which are generally weaker or less well defined, are more likely to represent natural hollows or pockets of iron minerals within the underlying geology.

Some very weak parallel linear anomalies occur throughout the data, most obviously in the eastern part of the field, near the pedestrian footbridge. These anomalies represent traces of ploughed out ridge and furrow of probable medieval origin

There are two linear trends in the data which are defined by scatters of small ferrous anomalies. These trends coincide with the locations of former field boundaries recorded on the first edition Ordnance Survey map. It is probable that they represent concentrations of ferrous debris (horseshoes, plough shares, etc) which accumulated along these former boundaries.

Field 3

Although this field contains ridge and furrow earthworks, these features are not particularly distinct in the data, appearing only as slight and fragmentary linear anomalies. This largely due to a side-effect of surveying, whereby traversing approximately along the furrows can reduce the appearance of anomalies aligned with the grid axis.

One small but moderately strong magnetic anomaly occurs near the northern end of the field. It attains a maximum enhancement of c 60nT. An anomaly of this strength would be most consistent with a thermo-remnant feature, containing a concentration

of burnt sediment. It might represent either an *in-situ* structure, such as a kiln or a hearth, or else a pit containing significant amounts of burnt material.

Slightly east of this anomaly, there is a large but irregularly-shaped ferrous anomaly. This, like the similar example in Field 1, may represent a concentration of iron scrap within the backfill of a former pond.

Two large ferrous halos, occurring at the northern end of Field 3, relate to two metal gates. A similar anomaly in the southern field corner presumably relates to the adjacent footbridge.

Field 4

There are two moderately strong positive magnetic anomalies at the north-western edge of this field. The western of the two attains a maximum enhancement of *c* 20nT and the eastern has a maximum enhancement of *c* 60nT. These two anomalies are comparable to the possible thermo-remnant anomaly identified in Field 3, and may also represent small kilns, hearths or pits full of burnt material.

The data from this field also contains a set of parallel linear anomalies, aligned south-east to north-west, with very slight 'reversed-S' curves. These represent the ploughed out remnants of ridge and furrow cultivation.

Field 5

This field contains one small positive magnetic anomaly, which probably represents a pit, and a weak linear anomaly of alternating polarity which probably indicates a field drain or very small pipe. No other significant anomalies occur.

Field 6

This field contains one small positive magnetic anomaly which probably represents a pit. There is also one very slight linear anomaly which perhaps indicates a field drain. The remainder of the anomalies are predominantly ferrous in origin. Most indicate small pieces of near-surface debris, whilst the larger halo along the western edge of the field perhaps suggests the presence of a pipe under the adjacent farm track.

Field 7

The data from this field contains a cluster of weakly positive localised magnetic anomalies of uncertain significance. Whilst they might be taken to indicate a group of pits, their overall appearance is also similar to the magnetic patterning which can occur in low-lying alluvial contexts. The latter interpretation is more likely in this case, but the former cannot be entirely excluded.

6 CONCLUSION

The survey has identified a concentration of archaeological remains at the south-eastern edge of the survey area. These seem likely to form a continuation of the Iron Age to Romano-British settlement site previously excavated on the opposite side of the former A421 (Bedfordshire HER, 17713). Elsewhere in the survey area, ridge

and furrow cultivation, a few possible pits and two possible thermo-remnant features have been identified.

Whilst this survey has successfully identified a number of archaeological features, the reader should keep in mind the limitations of magnetometer survey. The technique is generally able to detect features such as pits and ditches but is less effective in identifying small and ephemeral remains such as post-built structures or cremation burials. For this reason, it cannot be assumed that the 'blank' areas in the present survey data are necessarily devoid of all archaeological remains.

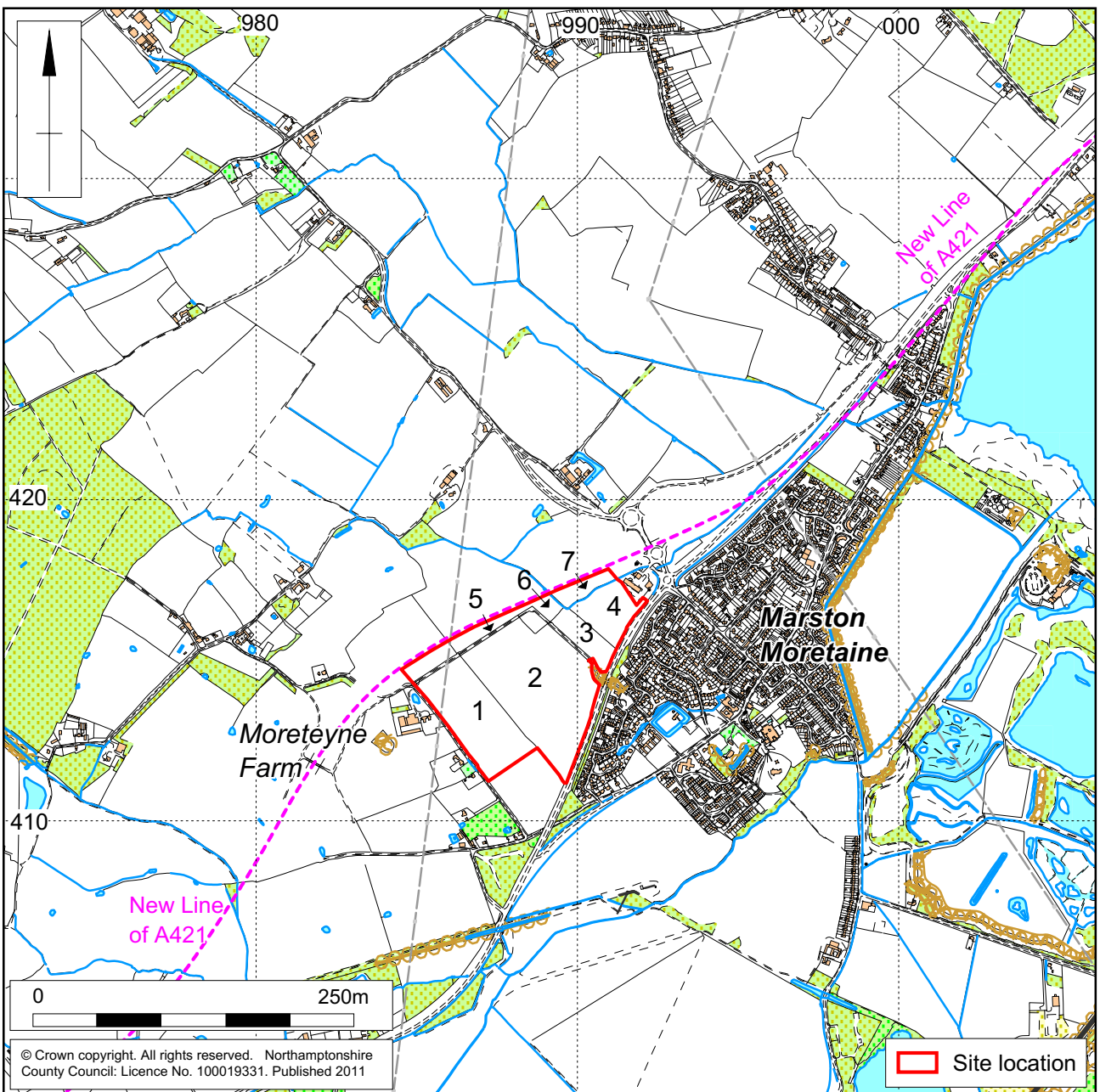
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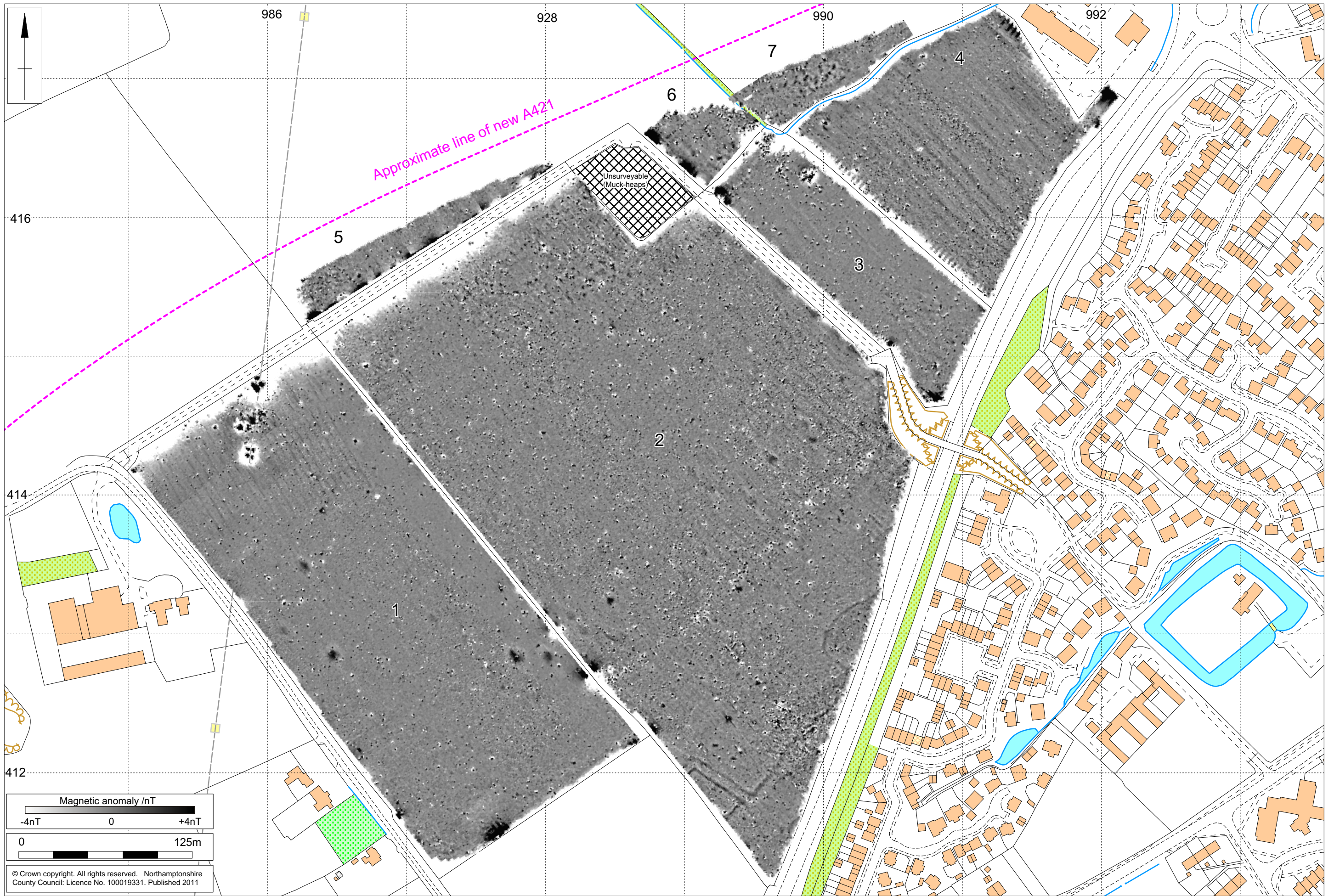
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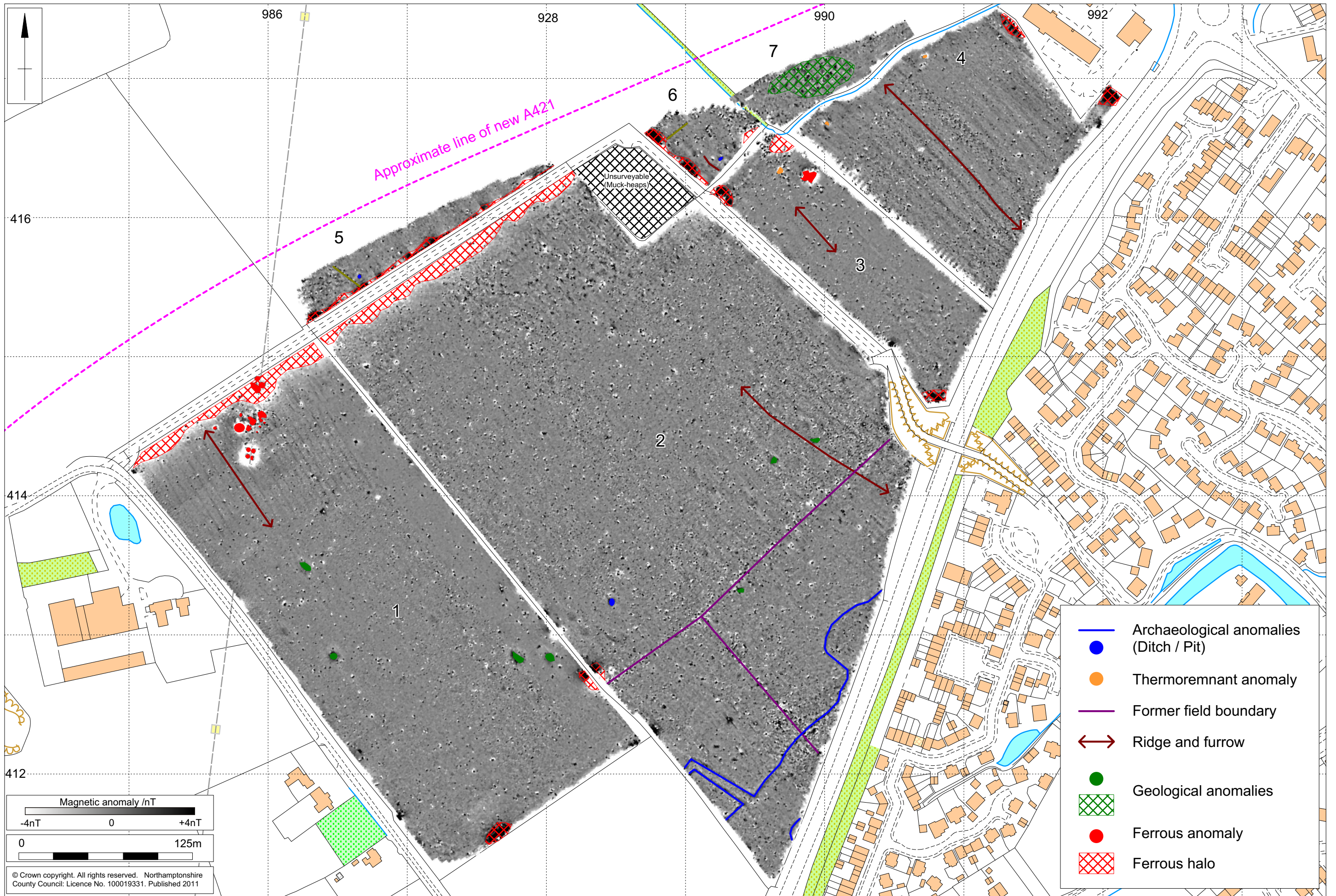
Scale 1:20,000

Site Location Fig 1



Scale 1:2,500

Magnetometer survey results Fig 2



Scale 1:2,500

Magnetometer survey interpretation Fig 3

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