

**Archaeological geophysical survey at
Little Chalfield
Wiltshire
May 2014**

Report No. 14/118

Author: John Walford

Illustrator: John Walford



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Author: John Walford

Illustrator: John Walford

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MOLA
Bolton House
Wootton Hall Park
Northampton
NN4 8BN
01604 700 493
www.mola.org.uk
sparry@mola.org.uk

STAFF

Project Manager: Mark Holmes BA MA MifA

Fieldwork: Ian Fisher BSc
Laura Cogley BA
Olly Dindol BSc
Adam Meadows BSc
Adam Reid MSc

Text: John Walford MSc

Illustrations: John Walford

OASIS REPORT

| | | | |
|---------------------------|---|-------------------------------|--|
| PROJECT DETAILS | | Oasis No. molanort1-180410 | |
| Project name | Archaeological geophysical survey at Little Chalfield, Wiltshire | | |
| Short description | MOLA was commissioned to carry out a detailed magnetometer survey on land at Little Chalfield, Wiltshire. The survey detected traces of enclosures and a field system which probably date from the Iron Age or Romano-British period. Various post-medieval to modern agricultural features were also detected. | | |
| Project type | Geophysical survey | | |
| Site status | None | | |
| Previous work | Archaeological desk-based assessment (EDP 2014) | | |
| Current Land use | Arable | | |
| Future work | Unknown | | |
| Monument type/ period | Iron Age or Romano-British enclosures and field system | | |
| Significant finds | None | | |
| PROJECT LOCATION | | | |
| County | Wiltshire | | |
| Site address | Little Chalfield | | |
| Study area | c 26ha | | |
| OS Easting & Northing | ST 848 645 | | |
| Height OD | c 60m - 65m aOD | | |
| PROJECT CREATORS | | | |
| Organisation | MOLA Northampton | | |
| Project brief originator | The Environmental Dimension Partnership | | |
| Project design originator | MOLA Northampton | | |
| Director/Supervisor | Ian Fisher | | |
| Project Manager | Mark Holmes | | |
| Sponsor or funding body | The Environmental Dimension Partnership | | |
| PROJECT DATE | | | |
| Start date | 12 May 2014 | | |
| End date | 16 May 2014 | | |
| ARCHIVES | Location | Content | |
| Physical | N/A | | |
| Paper | MOLA Northampton | Site survey records | |
| Digital | | Geophysical survey & GIS data | |
| BIBLIOGRAPHY | Journal/monograph, published or forthcoming, or unpublished client report | | |
| Title | Archaeological geophysical survey at Little Chalfield, Wiltshire, May 2014. | | |
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Contents

| | | |
|----------|---|----------|
| 1 | INTRODUCTION | 1 |
| 2 | BACKGROUND | 1 |
| | 2.1 Topography and geology | 1 |
| | 2.2 Historical and archaeological background | 1 |
| 3 | METHODOLOGY | 2 |
| 4 | SURVEY RESULTS | 2 |
| 5 | CONCLUSION | 4 |
| | BIBLIOGRAPHY | 4 |

Figures

| | | |
|-------|---|----------|
| Cover | Magnetometer survey results | |
| Fig 1 | Site location | 1:15,000 |
| Fig 2 | Magnetometer survey results (overview) | 1:3000 |
| Fig 3 | Magnetometer survey results (west) | 1:2000 |
| Fig 4 | Magnetometer survey results (east) | 1:2000 |
| Fig 5 | Magnetometer survey interpretation (west) | 1:2000 |
| Fig 6 | Magnetometer survey interpretation (east) | 1:2000 |

Archaeological geophysical survey at Little Chalfield, Wiltshire May 2014

ABSTRACT

MOLA was commissioned to carry out a detailed magnetometer survey on land at Little Chalfield, Wiltshire. The survey detected traces of enclosures and a field system which probably date from the Iron Age or Romano-British period. Various post-medieval to modern agricultural features were also detected.

1 INTRODUCTION

MOLA was commissioned by The Environmental Dimension Partnership (EDP) to conduct a geophysical survey on a proposed solar farm development site at Little Chalfield, Wiltshire (NGR ST 848 645; Fig 1). A detailed magnetometer survey was undertaken on 12th – 16th May 2014, covering a total area of approximately 26ha.

2 BACKGROUND

2.1 Topography and geology

The survey area comprises a roughly triangular block of arable land located approximately 1km to the north of Little Chalfield and 400m south-west of Ganbrook Farm (Fig 1). It lies on a very gentle south-east facing slope, straddling the 60m and 65m contours. Its underlying geology is mapped as Cornbrash limestone, with no superficial drift deposits (BGS 2014).

At the time of the fieldwork, the majority of the proposed development area had been recently harrowed. However, a well-developed rape crop extended slightly into the southern edge of the area, rendering a small part of it unsuitable for survey.

2.2 Historical and archaeological background

A desk-based assessment of the survey area (EDP 2014) has noted that it contains cropmarks which probably represent enclosures and a field system of Iron Age or Romano-British date (Fig 1). Other cropmarks of broadly similar character are known in the surrounding landscape, but there is little other evidence for nearby archaeology.

The survey area lies approximately half a mile from the hamlet of Little Chalfield and is remote from any other site of medieval or post-medieval settlement. The Ordnance Survey draft map of 1808 shows it as empty and unenclosed land. Subsequent editions of the Ordnance Survey, dating from 1886 onwards, show the land divided into arable fields but otherwise undeveloped.

3 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).

A network of 30m grid squares was established across the entire survey area. The grid was set out with a tape measure and optical square and was tied in to the Ordnance Survey National Grid by means of a Leica Viva RTK GPS. 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. All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 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 linear anomalies lying parallel to the traverse direction. Destaggering of the data was performed where necessary.

The processed data is presented in this report at two separate display ranges. The overview plot presented in Figure 2 shows the data at a range of -20nT to +20nT (black - white), suppressing the visual effects of the low amplitude noise. The larger scale plots (Figs 3 & 4) show the same data at a range of +8nT to -8nT, emphasising the weaker anomalies. The data is also presented with an interpretative overlay in Figures 5 and 6.

4 SURVEY RESULTS

The survey data contains a large number of linear anomalies on various alignments. Some of these can be associated with archaeological features, as described below, but the majority relate to more recent agricultural activity. In particular, there are many tightly spaced parallel linear anomalies running south-east to north-west, indicating the modern pattern of cultivation. These give the data a cluttered and noisy appearance, and hinder the recognition of other features sharing a similar alignment.

The majority of the archaeological anomalies occur in a loose cluster, located slightly north-east of the centre of the survey area. Several of those at the centre of the cluster seem to define parts of a rectangular ditched enclosure (Fig 5, no.1), measuring c 50m x 100m, with a double ditch along its southern edge. This corresponds to the one of the previously identified cropmarks (Fig 1). Close to its south-western corner there is a small C-shaped anomaly, c 8m in diameter, which possibly represents a roundhouse gully (Fig 5, no.2). The other anomalies in the cluster share a broadly similar alignment to the enclosure, and may represent ditches defining parts of an associated field system

Close to the southern end of the survey area there is a round-cornered anomaly which protrudes only slightly into the edge of the data-set (Fig 5, no.3). This represents one corner of an irregular enclosure, the full extent of which is revealed by the cropmarks (Fig 1). To its south-east there is a much slighter linear anomaly which may represent a ditch and appears also to correspond with a cropmark (Fig 5, no.4).

Towards the western end of the field there is an indistinct curvilinear anomaly with a maximum diameter of c 20m (Fig 5, no.5). This could possibly represent a small oval

enclosure or an irregular ring ditch, but the evidence is far from conclusive. Elsewhere in the field there are a few widely dispersed linear anomalies which may represent sections of ditch, and a few small positive anomalies which may either represent pits or natural hollows in the bedrock. None of these are diagnostic enough to merit individual discussion.

Also near the western end of the field, there is an indistinct group of very weakly negative linear anomalies (Fig 5, no.6). These seem to define part of a rectangle, 15m long, with a projection continuing to the north-west. There is a slight chance that they represent a set of building footings, but the suggestion is a very tentative one and it is more probable that they represent a chance patterning of the background noise.

A series of broad and moderately strong linear anomalies extend across the survey area, dividing it into large blocks. Some of these anomalies correspond to former field boundaries depicted on the first edition Ordnance Survey map (1886), and the remainder, although not matching with historically attested boundaries, clearly form parts of the same system. Two much weaker linear anomalies may also be related, as they seem to form coherent sub-divisions within one of the former fields.

Two sets of very weak parallel anomalies have been detected, one in the west of the survey area and one extending south from its northern boundary. In each case the anomalies are regularly spaced, with a separation of about 10m. Their interpretation is uncertain, but the most likely options are that they represent field drains or very broadly spaced ridge and furrow. Definite examples of field drains have been detected in three other places across the survey area. They can be recognised by their regular spacing, common alignments and the acute angle at which they meet with the former field boundaries.

Two other sets of anomalies are associated with modern episodes of ploughing. There are closely spaced linear anomalies running through the whole survey area from south-east to north-west, indicating the current direction of cultivation, and there are other anomalies on a perpendicular alignment which are thought to indicate residual disturbance from a recent ploughing competition (Anthony Fuller *pers com*). The latter anomalies are confined to a rectangular block, approximately 80m wide by 400m long, extending across the centre of the survey area.

Three very large ferrous anomalies with broad negative halos form an evenly spaced row across the centre of the survey area. They mark the buried footings of three former electricity pylons (depicted on the 1960 edition of the Ordnance Survey map). To their south, a similarly sized negative halo indicates the site of an extant pylon at the end of a set of overhead wires. Much smaller ferrous anomalies occur at random across the survey area, representing a random scatter of scrap metal objects (horseshoes, ploughshares, etc) within the ploughsoil. A line of intense ferrous anomalies at the extreme southern edge of the survey area probably represents a pipe following the line of one of the former field boundaries.

5 CONCLUSION

The magnetometer survey has detected parts of enclosures and a field system which probably date to the Iron Age or Romano-British period. Whilst these remains have previously been identified from cropmarks, the correspondence between the survey results and the cropmark plot is not perfect and each source of evidence shows a number of features not attested by the other.

As well as the archaeological remains, the survey has detected various agricultural features and the bases of three former electricity pylons. The latter should be noted as possible obstructions to any trial trenching or other groundworks which may subsequently occur.

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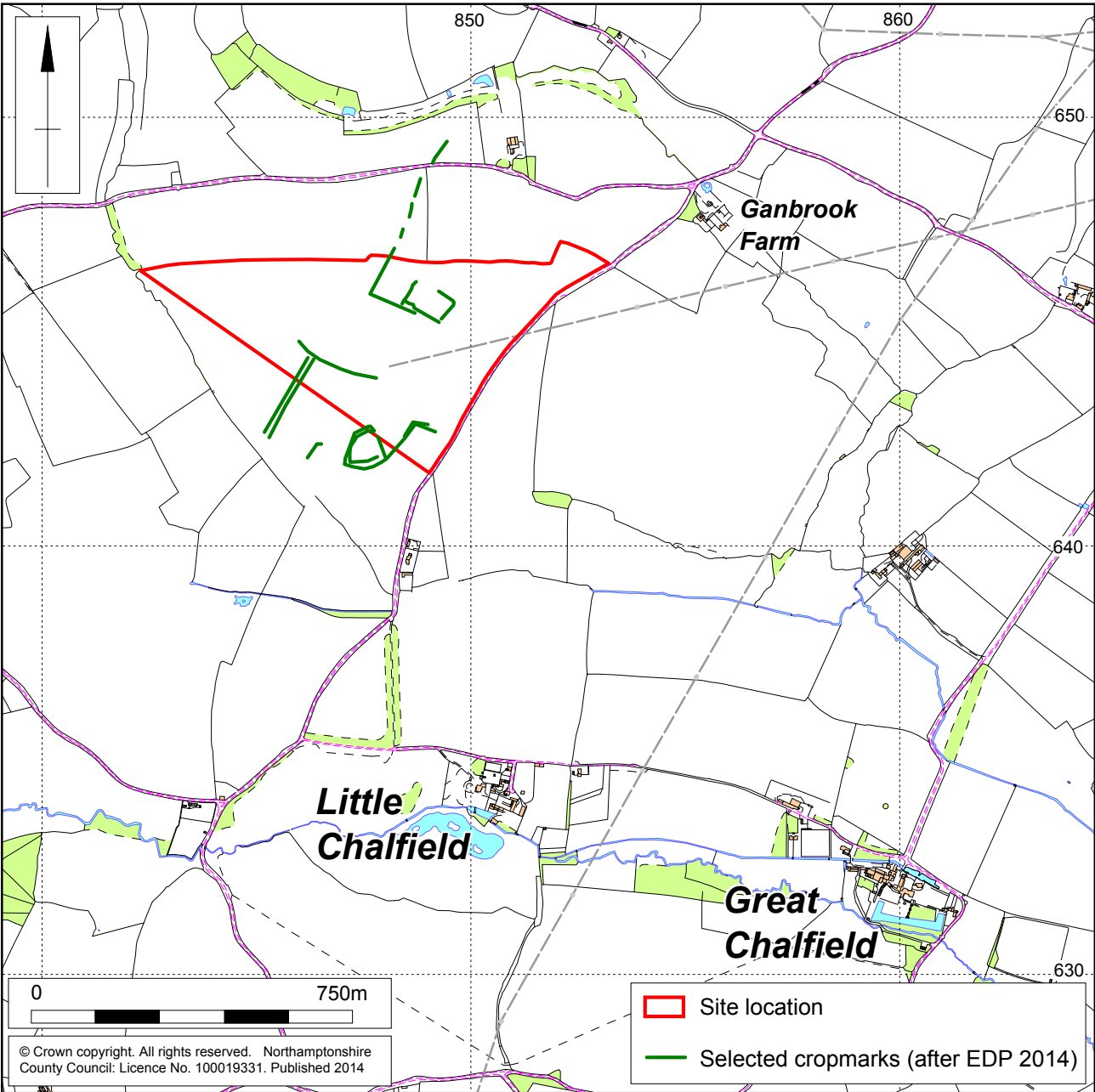
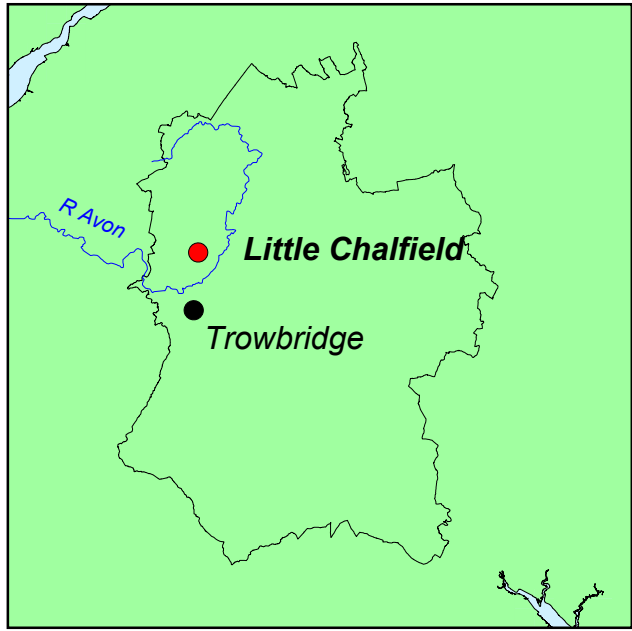
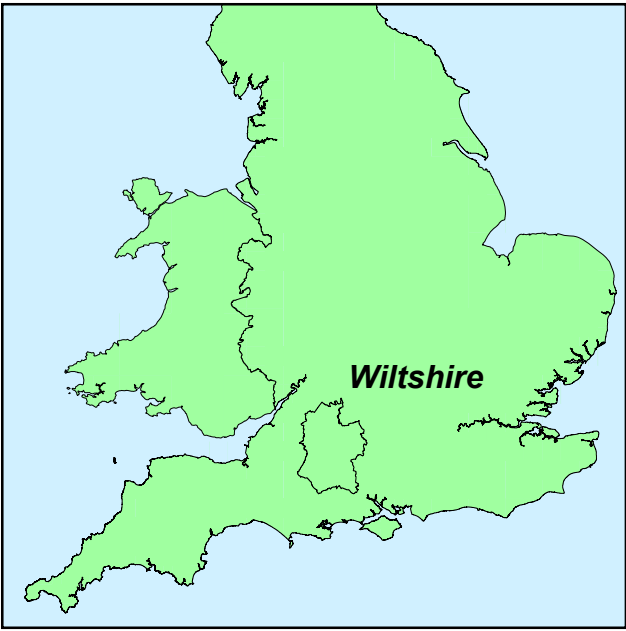
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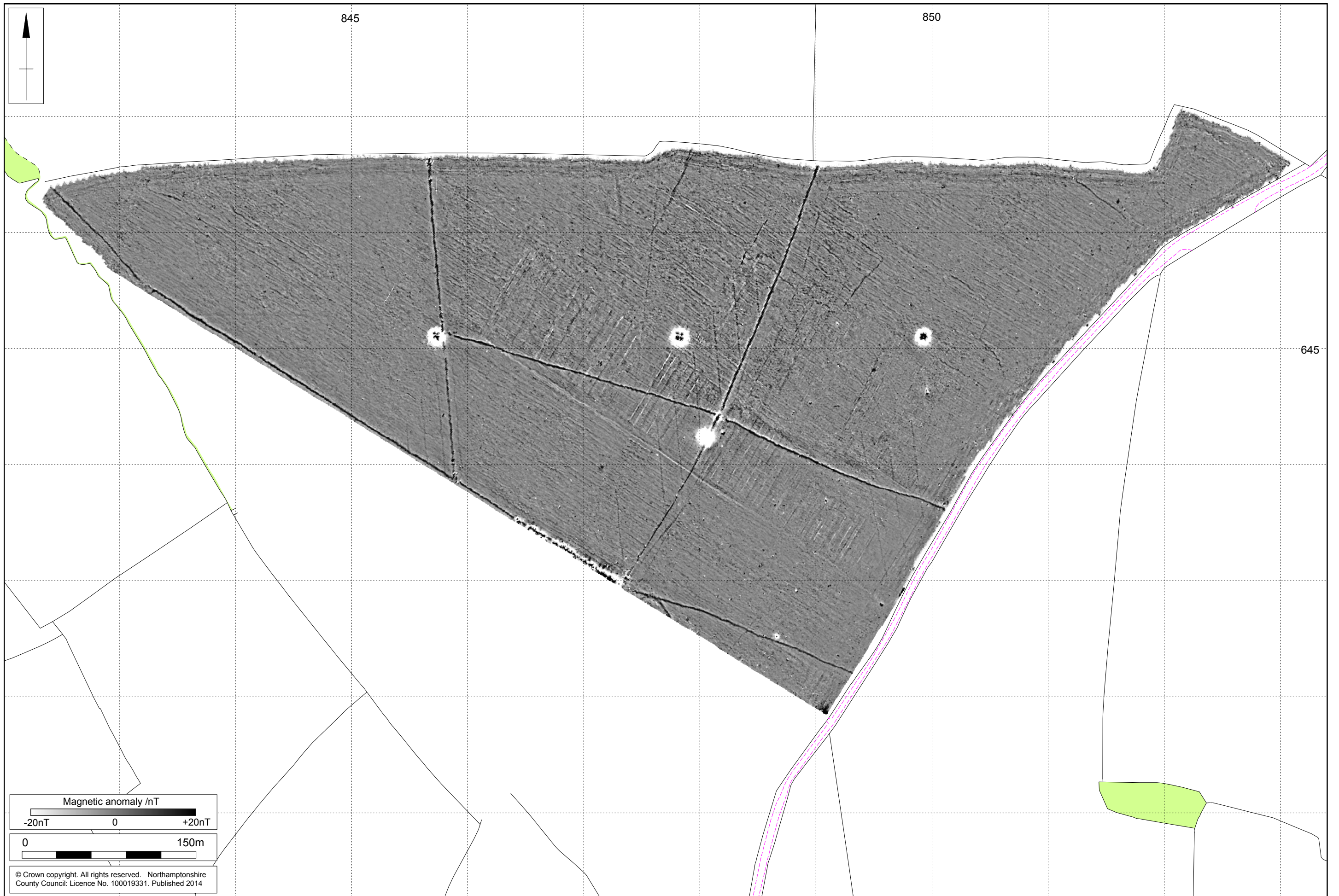
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3 June 2014



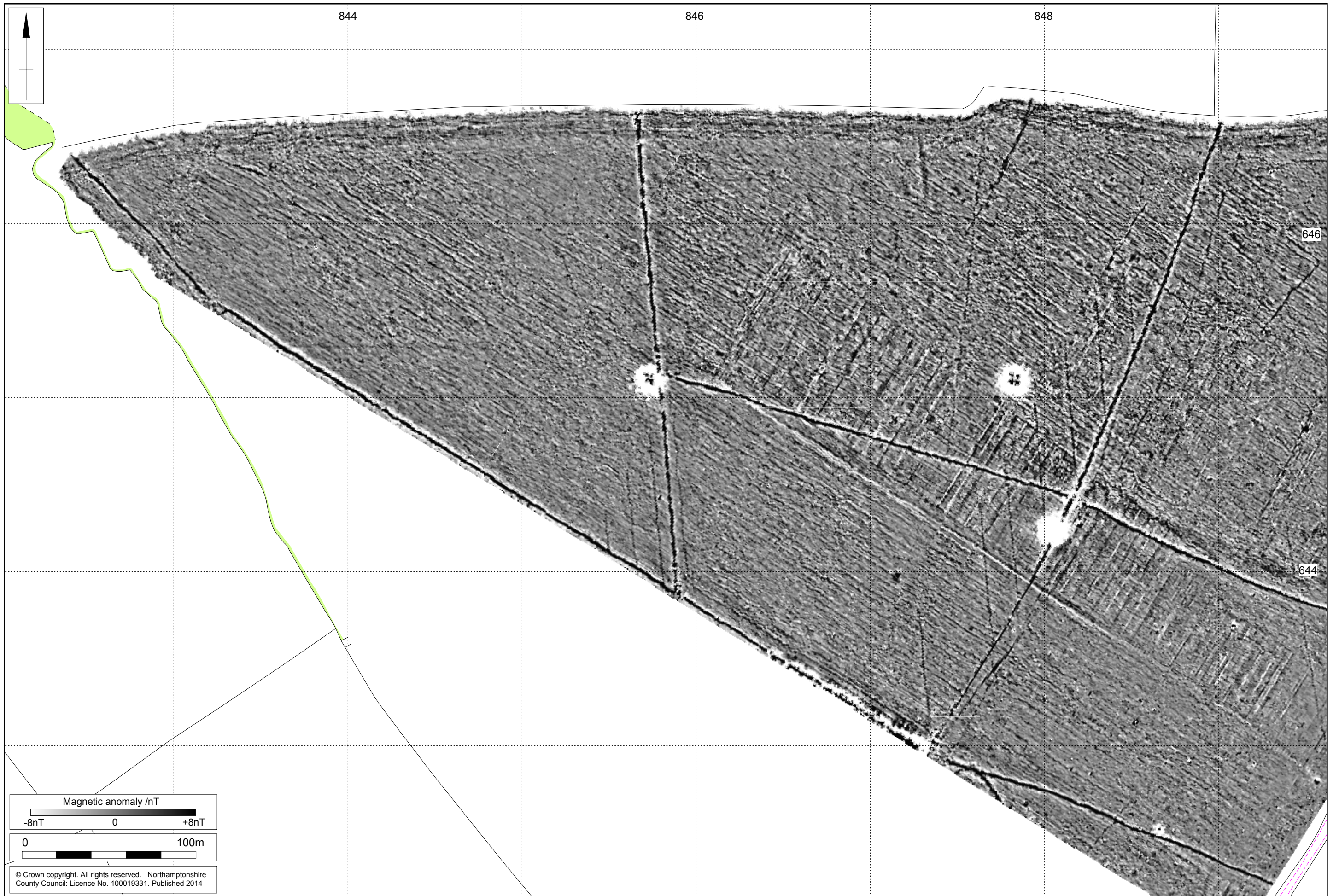
Scale 1:15,000

Site location Fig 1



Scale 1:3000 (A3)

Magnetometer survey results (overview) Fig 2



Scale 1:2000 (A3)

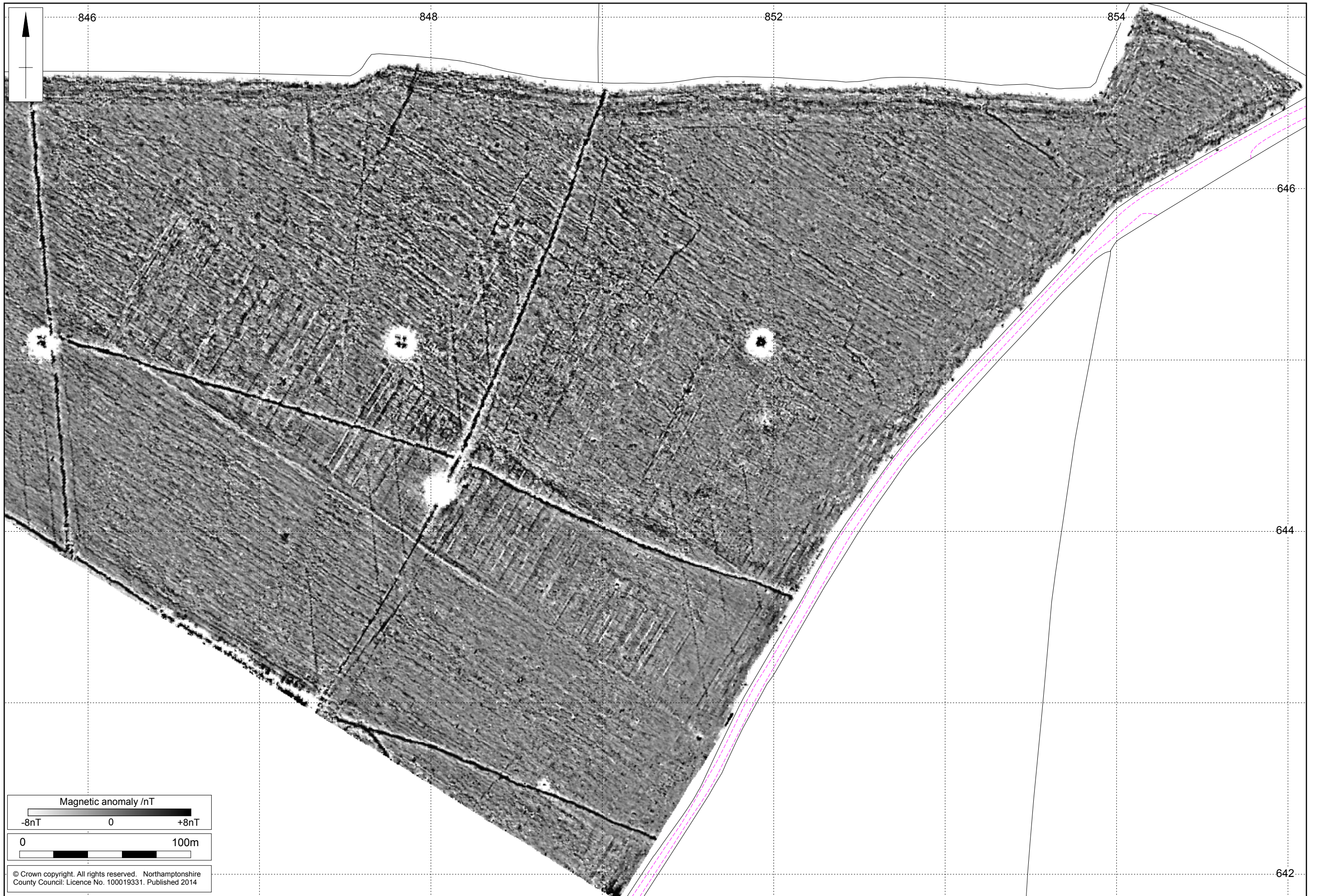
Magnetometer survey results (west) Fig 3

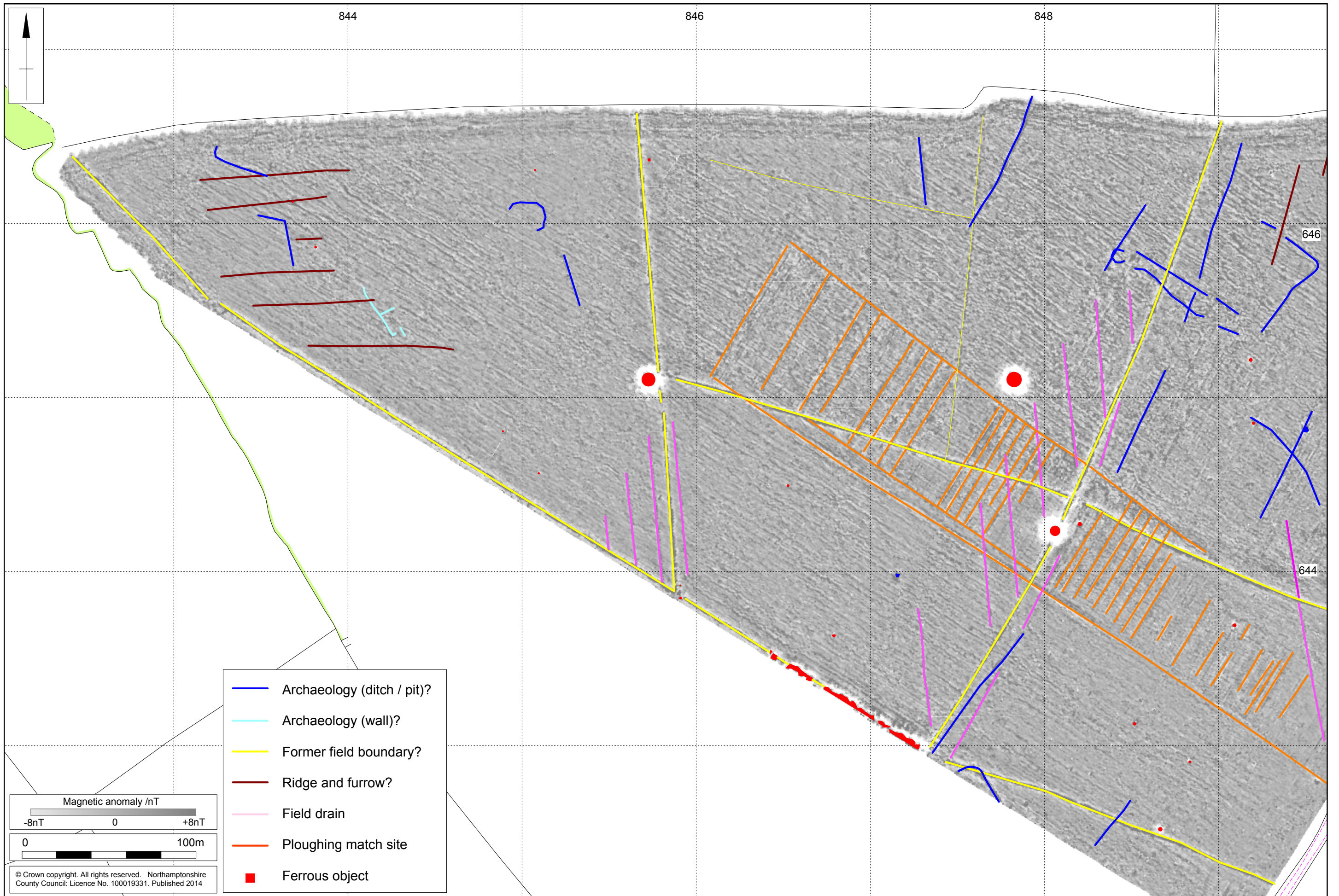
Magnetic anomaly /nT

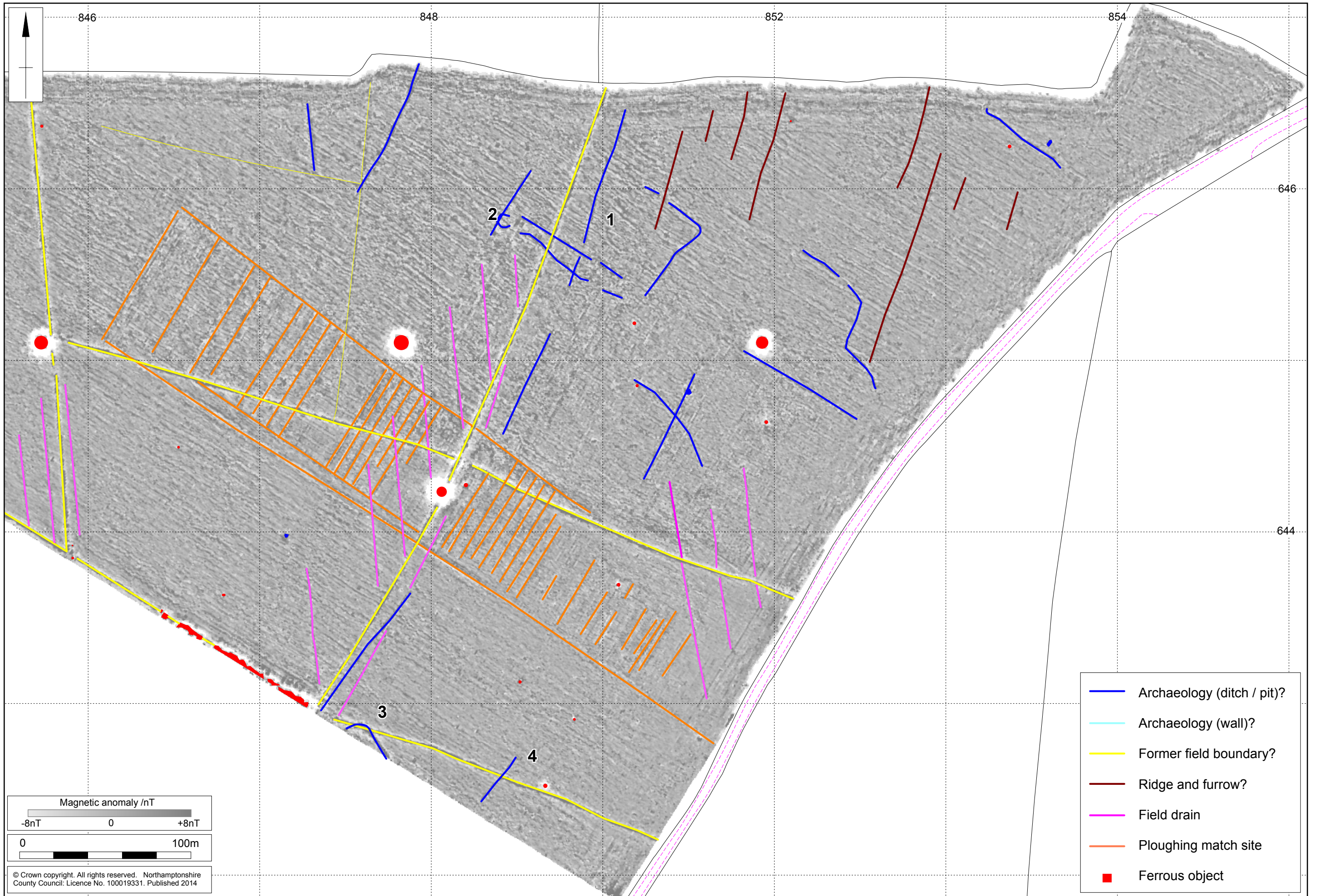
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0 100m

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MOLA
Bolton House
Wootton Hall Park
Northampton
NN4 8BN
01604 700 493
www.mola.org.uk
business@mola.org.uk