

Archaeological geophysical survey on land east of Northampton Road, Market Harborough, Leicestershire September 2021

Accession No. X.A89.2021

Report No. 21/083

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Illustrator: Adam Meadows



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Project Manager: Mo Muldowney
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NGR: SP 742 857

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Project: Land east of Northampton Road, Market Harborough		OASIS No: molanort1- 502363	
ACTIVITY TYPE			
Project/Activity type	Geophysical survey		
Reason for investigation	Planning: Between application and determination		
Development type	Residential development		
Planning reference ID	20/00891/FUL		
PROJECT LOCATION			
National grid ref	SP 742 857		
Site name	Land east of Northampton Road, Market Harborough		
REVIEWERS/ ADMIN			
HER for project	Leicestershire		
National organisation	-		
WORK UNDERTAKEN			
Methodological summary	Magnetometer survey with a cart-mounted array of Bartington Grad-01-100L fluxgate gradiometers.		
Previous work?	None	Future works?	Unknown
Dates - Start date:	01-09-21	End date:	02-09-21
GEOPHYSICS			
Geology	Charmouth Mudstone Formation. River terrace deposits and alluvium in places		
Land use (i.e. arable)	Arable		
Survey type	Magnetometer survey		
Size of survey area	c14ha		
Instrumentation	Bartington Grad-01-1000L	Fluxgate – Multiple sensor	
Configuration	Pushed cart survey (8-probe)		
Spatial resolution	Traverse spacing	0.5m	Reading interval 0.225m
Resolution (data values)	0.1nT		
BIBLIOGRAPHY			
Title	Archaeological geophysical survey on land east of Northampton Road, Market Harborough, Leicestershire, September 2021		
Author(s)	Adam Meadows		
Publisher / place / date	MOLA Northampton / Northampton / 2021		
Report number	21/083		
Report release delay?	6 months		
PEOPLE			
Organisation	MOLA		
Project manager	Mo Muldowney		
Project supervisor	Adam Meadows		
Funding body	RPS Group		
KEYWORDS			
Monuments found/ date	Settlement – Iron Age or Roman Ridge and furrow - Medieval		
RESULTS			
Description of outcomes	The survey identified two concentrations of archaeological remains linked by a linear ditch. The shape and form of these remains look typical of settlements originating from the Iron Age to Roman periods. Two small outlying enclosures were also identified.		
ARCHIVES			
Accession ID	X.A89.2021		
Finds archive repository	None	Expected date of submission:	-
Paper archive repository	Leicestershire Museums	Expected date of submission:	TBC
Digital archive repository	TBC	Expected date of submission:	TBC

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ABSTRACT

MOLA (Museum of London Archaeology) was commissioned by RPS Group to conduct an archaeological geophysical survey on land east of Northampton Road, Market Harborough, Leicestershire.

The survey identified two concentrations of archaeological remains linked by a linear ditch. The shape and form of these remains look typical of settlements originating from the Iron Age to Roman periods. Two small outlying enclosures were also identified. Medieval ridge and furrow cultivation was present throughout much of the site, though seemingly absent from its western field.

1 INTRODUCTION

MOLA (Museum of London Archaeology) was commissioned by RPS Group to undertake an archaeological geophysical survey across land to the east of Northampton Road, Market Harborough, Leicestershire (NGR SP 742 857). This was to map out and identify any remains of archaeological interest that may be affected by a proposed residential development.

The magnetometer survey took place on 1st and 2nd September 2021 and followed the methodology outlined in the Written Scheme of Investigation (Arkley 2021). The survey was also conducted in accordance with Chartered Institute for Archaeologists and European Archaeological Council guidelines (ClfA 2014 and Schmidt *et al* 2015).

The Leicestershire Museum Service has been informed of the survey and will receive the project archive under accession number X.A89.2021.

2 BACKGROUND

2.1 Location, geology and topography

The site is located south of Market Harborough and divided into three discrete fields separated by hedge-lined ditches (Fig 1). The fields are bound by a disused railway line turned footpath to the east, modern residential properties to the north and Compass Point business park to the west. Further agricultural land is located to the south.

The site lies at an elevation between 87-90m above Ordnance Datum. The highest point is situated in the north-west, sloping down to the south-east where it meets a drainage ditch that channels a tributary of the River Jordan.

The geology of the area comprises rocks of the Charmouth Mudstone Formation. These are overlain in the south-east by river terrace deposits and alluvium originating from the tributary stream (BGS 2021).

2.2 Historical and archaeological background

RPS Group has conducted a desk-based heritage assessment for this site, including land within a 500m radius of its centre (Dawson 2019). What follows is a summary of their findings.

There are no recorded heritage assets known within the survey area. Trial trenching conducted on the adjacent Compass Point and Eady Drive sites to the north-west encountered evidence of medieval or post-medieval ridge and furrow (Winterburn 2006, Gilbert 2006, Kipling 2012). Although LIDAR surveys have covered the current area of interest, no surface evidence of this cultivation is observable.

Excavations uncovered several pits and postholes by Braybrooke Road, c 800m to the north-east of the survey, beyond the River Jordan (MLE16165). These contained flint artefacts, which may imply Neolithic occupation in that area. Further evidence towards this hypothesis comes from flint artefacts recovered to the east of Little Bowden (MLE 17880, 20635, 22740, 22742).

Earlier geophysical surveys on sites located east of Braybrook Road and near Harborough Road identified numerous enclosures, ring ditches and linear features that later excavations showed to be Iron Age to Roman in date (MLE 17633, MLE22518, Baker *et al* 2015, Walker 2016).

3 METHODOLOGY

The magnetometer survey was undertaken with a Bartington magnetometer cart. This is a two-wheeled, lightweight sensor platform designed to be pushed by hand. It incorporates a bank of eight vertically-mounted Bartington Grad-01-1000L magnetic sensor tubes, spaced at half-metre intervals along a bar aligned crossways to the direction of travel. It also incorporates a Leica Geosystems Viva GPS antenna mounted on the central axis, 1.02m astern of the sensors. The magnetic sensors each output data at a rate of eight readings per second and the GPS antenna outputs NMEA format data (GGA messages) at a rate of one position per second. These data streams are compiled into a single raw data file by MultiGrad601 logging software.

The cart was propelled along straight and parallel traverses across the survey area, with data logging being manually toggled on and off at the start and end of each traverse to avoid the collection of spurious data whilst turning. Traverse ends were marked with ranging poles to aid even coverage, and the evenness of coverage was further checked by monitoring the positional trace plotted in real time by the MultiGrad601 logging software. The average speed of coverage was c1.8m/s, with an effective data resolution thus approximated to better than 0.225m x 0.50m.

The raw survey data was initially processed with MLGrad601 software, which calculated an actual UTM co-ordinate for each data point by interpolating the GPS readings and applying offset corrections based on the array geometry and calculated heading direction. This produced an output file in XYZ format which could be imported into TerraSurveyor software for data visualisation and further processing.

The raw data exhibited minor striping caused by slight mis-matches in the calibration of the individual magnetic sensors (Fig 4). This was removed in TerraSurveyor by applying the median de-stripe function to runs of data from each sensor.

The processed survey data is presented in this report as greyscale raster images which have been rotated and scaled to fit against Ordnance Survey base-mapping. The processed results are presented at a scale of $\pm 3nT$ (Fig 2), with interpretive overlays for the data plots presented over the results at the same scale (Fig 3). Minimally

processed data plots are presented at a scale of +/-10nT (Fig 4) as a comparison to the final destriped results (Fig 2).

4 SURVEY RESULTS

4.1 Archaeology

A concentration of linear and curvilinear anomalies is present in the eastern portion of the survey area (Fig 3, 1). These are likely to represent part of a system of enclosure ditches and penannular gullies, probably relating to a former settlement.

A fragmented linear anomaly, representing a ditch, extends out westwards from just south of the eastern field (Fig 3, 2). It leads towards a second group of magnetic anomalies in the western half of the central field that is likely to represent another area of settlement. To the north of the ditch there is a tight cluster of curvilinear anomalies (Fig 3, 3a), probably representing a group of ring gullies, whilst to the south there is a pattern of much weaker linear anomalies indicating a rectilinear system of ditches, perhaps part of a field system (Fig 3, 3b).

Two square-shaped anomalies have been detected by this survey, one located in the north, near to the crest of the hill, the other part way down the slope near the middle of the central field (Fig 3, 4a & 4b). Both are likely to represent small, ditched enclosures, although their specific purposes are not discernible.

A large curvilinear is present in the eastern portion of the central field (Fig 3, 5). This may represent part of a large enclosure associated with the settlement in the eastern field or it may be a geological anomaly resulting from a past meander of the adjacent stream.

A short curvilinear anomaly is present by the eastern limit of the western field near the more definitive archaeological remains in the central field (Fig 3, 6a). This anomaly appears less distinct than other archaeological anomalies and may prove to be geological in origin. One other, similar weak curvilinear feature occurs approximately 100m further west (Fig 3, 6b).

4.2 Ridge and furrow

The central and eastern fields show a pattern of evenly spaced, positively magnetic linear anomalies. The spacing and gently curving profiles of these are typical for the remains of medieval ridge and furrow cultivation.

There is no clear evidence for ridge and furrow in the western field. It is uncertain whether this reflects a genuine absence or is the result of some factor which may have rendered the furrows less readily detectable.

4.3 Old field boundaries and ponds

The survey has detected traces of several old field boundaries and ponds that feature on Ordnance Survey mapping dating up until 1995. The boundaries appear in the data as fragmented linear anomalies with of strong dipolar (ferrous) anomalies scattered along their lines. One of them crosses the northern point of the central field on a west-north-west to east-south-east orientation the other parcels off the eastern portion of the same field.

Three backfilled ponds have been identified within this survey area, all located in the central field. Each pond is marked by a concentration of strong magnetic anomalies,

resulting from heightened quantities of modern material found within the backfilled soil. Historic Ordnance Survey maps suggest that the northernmost pond was filled in by 1900 and the others filled at some point after 1995.

4.4 Geology

Diffuse positive anomalies have been detected along the boundary separating the eastern and central fields. Often elongated in form and universally irregular in shape, these originate from variations in the natural geology. Many of them are likely to represent former channels and meanders of the stream which currently flows along the field boundary.

In the south-east of the central field there is a dense concentration of small, moderately intense anomalies. These are probably geological, but their exact cause is uncertain and an interpretation as man-made pits cannot be completely ruled out.

4.5 Modern agricultural features

Weak, magnetically alternating linear anomalies have been detected running in parallel across the western and central fields. These follow the topography and are likely to represent modern ceramic field drains.

Thin, magnetically negative parallel linear anomalies have been detected within the western and central fields. These correspond to modern agricultural tramlines.

4.6 Ferrous objects

The data exhibits a random scatter of magnetic dipoles of varying size across the survey area. These anomalies are typically caused by small modern ferrous objects located within the ploughsoil. Three larger anomalies of a similar description lie in a straight line across the central field, corresponding to a row of standing telegraph poles.

5 CONCLUSION

The survey has identified two concentrations of archaeological remains linked by a linear ditch. One group, in the eastern field looks to represent part of a settlement defined by a system of enclosures, with one penannular gully perhaps marking the site of a roundhouse. It seems probable that more of this site lies outside the survey area, in the field immediately south and potentially also beyond the disused railway line to the east. The irregular and apparently unplanned layout of the site suggests it may be a small Iron Age or Roman farmstead.

The western group of features, located in the central field, has two distinct elements. To the north there is a cluster of small irregular and penannular gullies, perhaps representing a group of roundhouses. To the south is a more uniform system of larger rectilinear enclosures or small fields. These might also be Iron Age or Roman, though it is unclear whether both elements of the site would have been in concurrent use.

Apart from these remains, the survey has detected two small, square-shaped enclosures which could also be of Iron Age or Roman date. Their function is unknown, though their small size, isolation and lack of associated features suggest that they may not have been for domestic purposes.

Medieval ridge and furrow cultivation is present within the survey area, covering much of the central and eastern field. The preservation of these remains suggests that the

survey area must have been largely or solely in agriculture use from the medieval period to the present day.

The western field appears more magnetically stable than the other two. It lacks any clear evidence of ridge and furrow or other archaeological features, the detected archaeology in the central field stopping abruptly at the modern field boundary. This apparent absence might be explained by change in soil type, with the soils of the western field being less favourable for magnetic survey. Alternatively, they may indicate that some form of recent ground disturbance has concealed or erased the expected remains.

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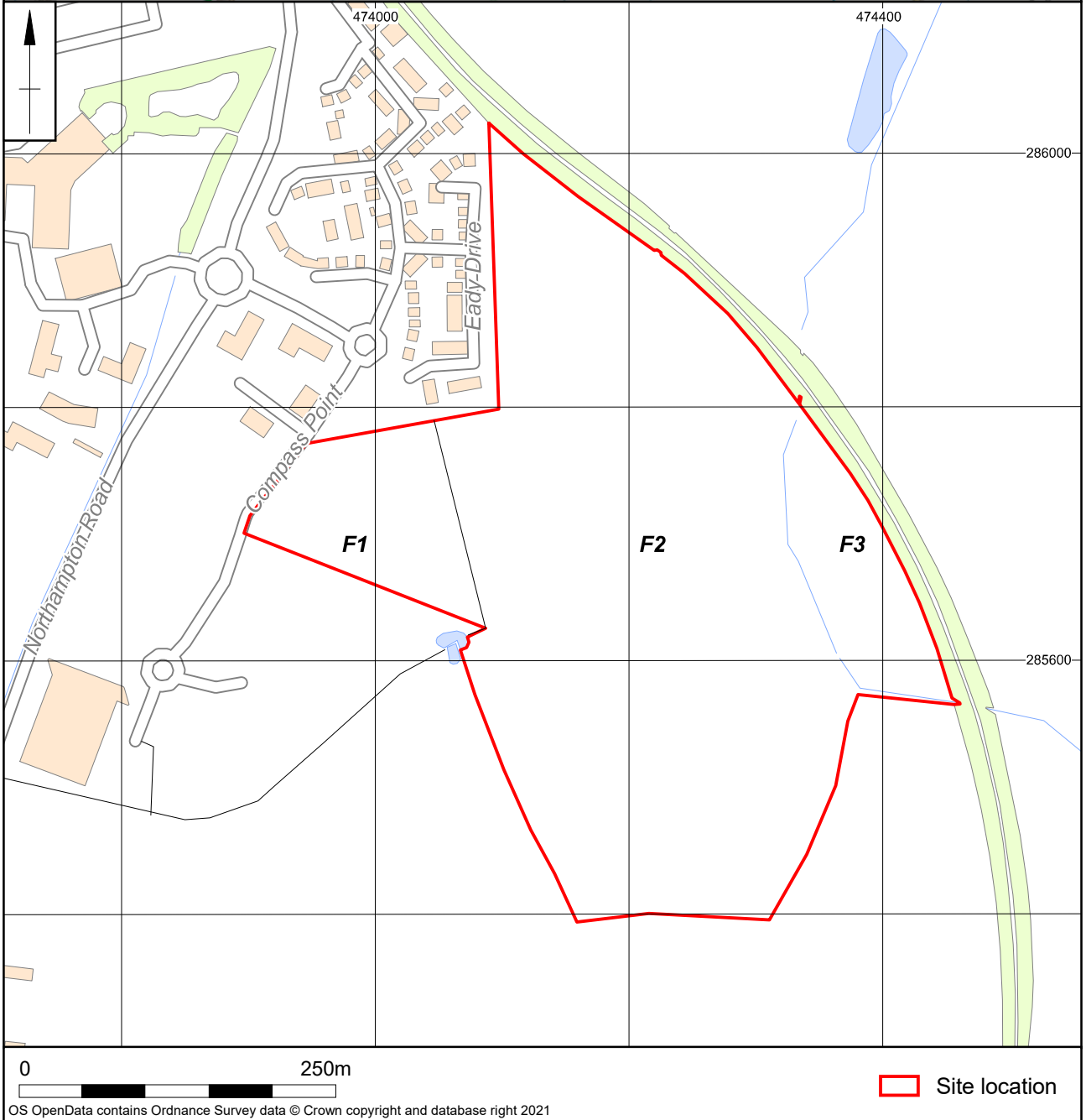
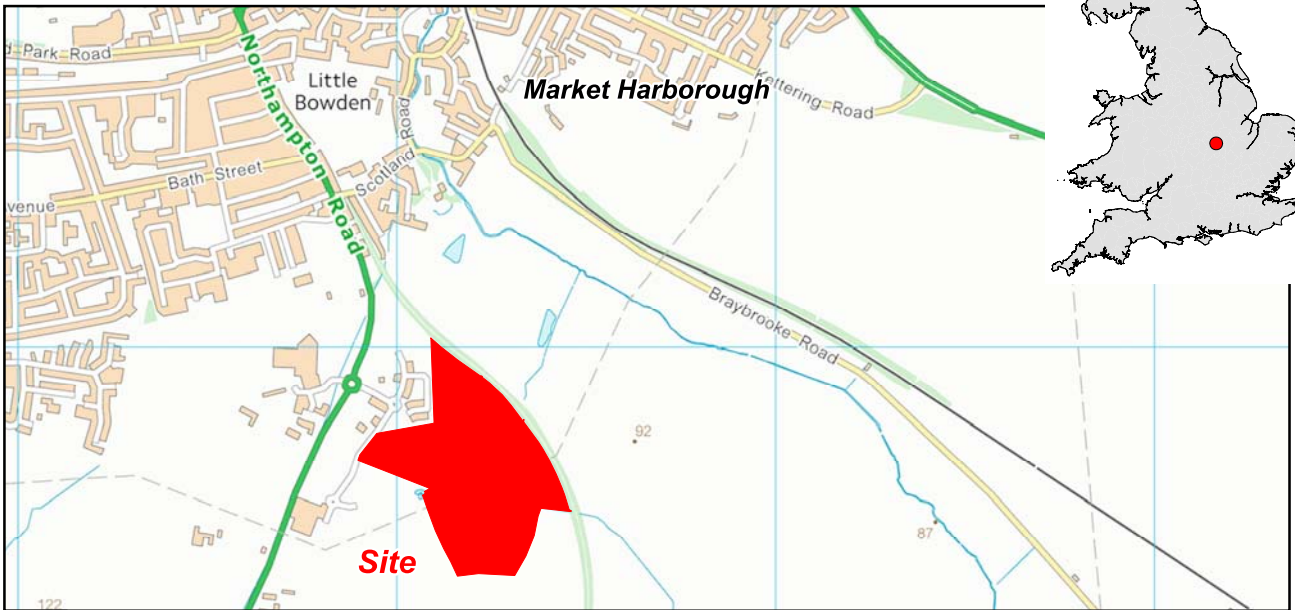
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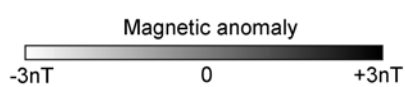
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29th September 2021



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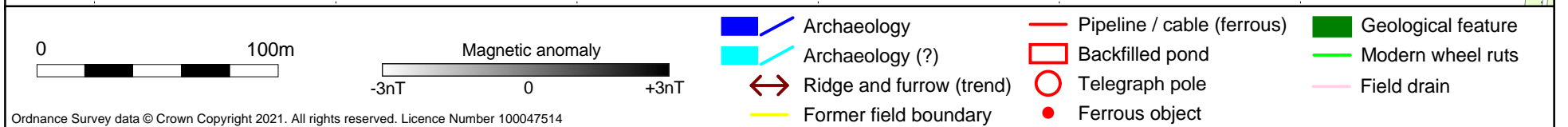
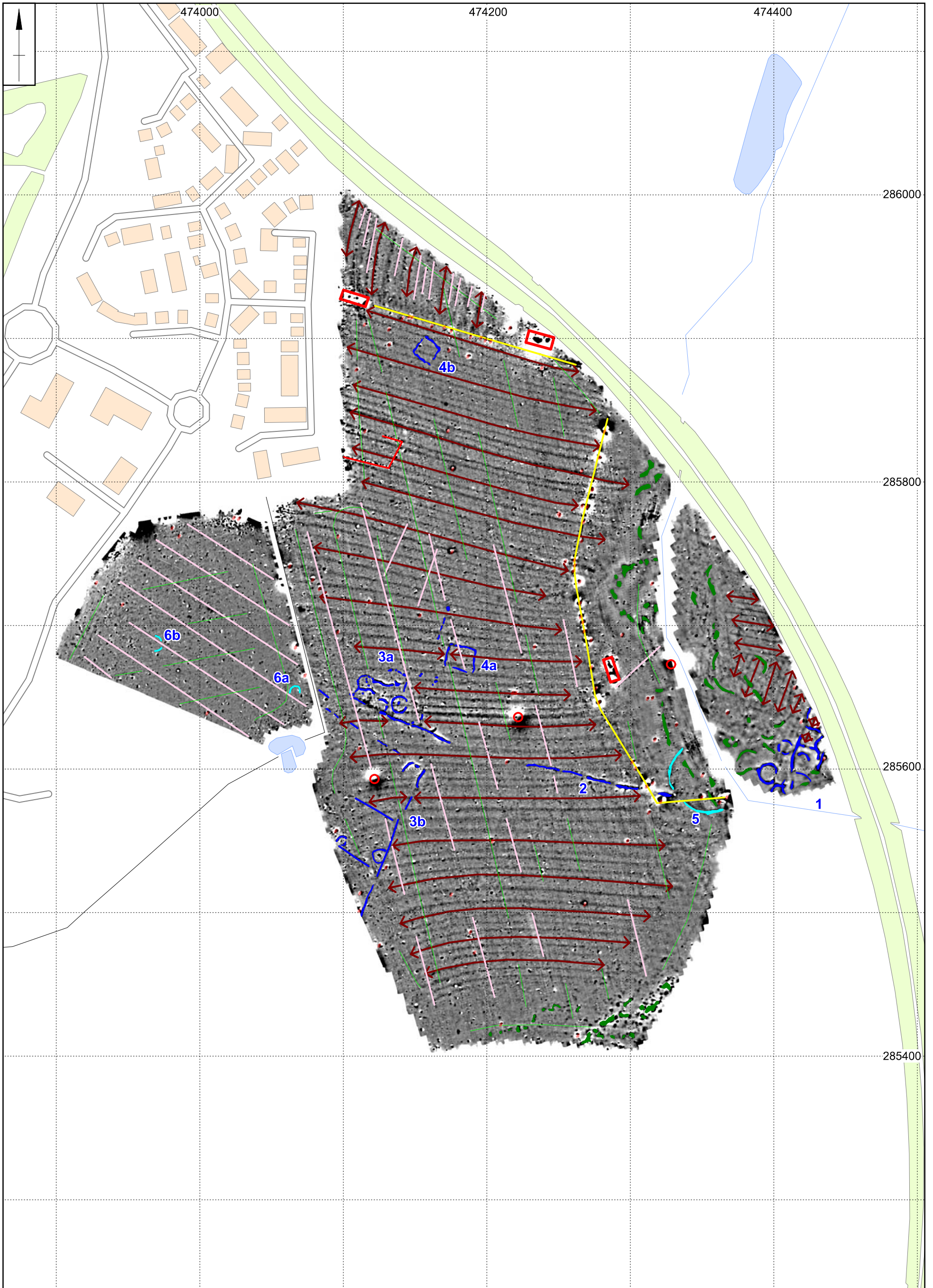
Site location and field numbers Fig 1



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Scale 1:2500

Magnetometer survey data Fig 2



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Scale 1:2500

Magnetometer survey interpretation Fig 3





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