

**Archaeological geophysical survey on land
at the Weldon Park Development Area
Corby, Northamptonshire
September 2015**

Report No. 15/227
Event Number: ENN108146

Authors: John Walford
Adam Meadows

Illustrators: Ian Fisher
Adam Meadows



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Project Manager: John Walford
Event Number: ENN108146
NGR: SP 935 897

MOLA
Bolton House
Wootton Hall Park
Northampton
NN4 8BN 01604 809 800
www.mola.org.uk
sparry@mola.org.uk

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Authors: John Walford
Adam Meadows

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MOLA
Bolton House
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Northampton
NN4 8BN
01604 809 800
www.mola.org.uk
sparry@mola.org.uk

STAFF

Project Manager: John Walford MSc

Fieldwork: Adam Meadows BSc
George Everest-Dine BA MA
Karolina Hruby
Piotr Kieca MA
Chris Pennell BA
Pawel Szczepanik BA
Piotr Szczepanik BA

Text: John Walford
Adam Meadows

Illustrations: Ian Fisher BSc
Adam Meadows

OASIS REPORT

PROJECT DETAILS		Oasis No. molanort1-235477	
Project name	Archaeological geophysical survey on land at the Weldon Park Development Area, Corby, Northamptonshire.		
Short description	MOLA Northampton was commissioned to carry out a detailed magnetometer survey on land at the Weldon Park Development Area, Corby, Northamptonshire. The survey identified several linear and curvilinear ditches and a number of probable pits of possible archaeological interest. Evidence of potential small-scale ironstone quarrying and medieval ridge and furrow cultivation was also identified.		
Project type	Geophysical survey		
Site status	None		
Previous work	Geophysical survey (ASC 2005a & b; GSB2007), Desk-based assessment (Dawson 2007), Trial trench evaluation (Jones 2009), Strip map and sample (Fairclough 2015).		
Current Land use	Arable		
Future work	Trial trench evaluation		
Monument type/ period	Undated linear and curvilinear ditches, pits, quarries and medieval ridge and furrow cultivation		
Significant finds	None		
PROJECT LOCATION			
County	Northamptonshire		
Site address	Oundle Road, Weldon Park, Corby		
Study area	c 39ha		
OS Easting & Northing	SP 935 897		
Height OD	c 79m – 100m aOD		
PROJECT CREATORS			
Organisation	MOLA Northampton		
Project brief originator	Northamptonshire County Council Archaeological Advisor		
Project design originator	MOLA Northampton		
Director/Supervisor	Adam Meadows		
Project Manager	John Walford		
Sponsor or funding body	Persimmon Homes		
PROJECT DATE			
Start date	14 September 2015		
End date	24 September 2015		
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 on land at the Weldon Park Development Area, Corby, Northamptonshire, September 2015.		
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ABSTRACT

MOLA Northampton was commissioned to carry out a detailed magnetometer survey on land at the Weldon Park Development Area, Corby, Northamptonshire. The survey identified several linear and curvilinear ditches and a number of probable pits of possible archaeological interest. Evidence of potential small scale ironstone quarrying and medieval ridge and furrow cultivation was also identified.

1 INTRODUCTION

MOLA Northampton was commissioned by Persimmon Homes to conduct a geophysical survey on c 39ha of arable land at the Weldon Park Development Area, Corby (NGR SP 935 897; Fig 1). A detailed magnetometer survey was undertaken on 14 to 24 September 2015, following consultation with Northamptonshire County Council's Archaeological Planning Officer. This fieldwork has been recorded on the Northamptonshire Historic Environment Record (HER) under event number ENN1081146.

2 BACKGROUND

2.1 Location and geology

The survey area forms the northern half of a larger development area that covers c 76ha of arable land on the eastern edge of Weldon, its northern and southern boundaries reaching the A43 and A427 respectively. The survey area itself covers c 39ha and comprises six arable fields set to the north-east of Weldon. It is part bounded to the north-west by Stamford Road (A43) and bounded by other arable fields on the remaining sides.

The survey area lies between 75-103m aOD. It is situated predominantly upon a north-west facing slope which rises sharply from Willow Brook becoming more gentle near to the crest. Willow Brook passes through the survey area near to the north-west boundary and has exposed a series of Jurassic aged strata from the Whitby Mud Stone group in the valley bottom to Rutland Formation Mudstones on the hilltop. Between these formations lies a deposit of Northampton Sand Formation sand and ironstone which was quarried extensively to the west of the survey area, beyond the A43. These deposits are overlain by Oadby member glacial till (BGS 2015).

2.2 Historical and archaeological background

There are no designated archaeological monuments or listed buildings recorded within the development area. A number of archaeological studies have been carried out on the development area, mostly focusing on the phase 1 development site south of the present survey area. These works include a desk-based assessment (Dawson 2007), geophysical surveys (ASC 2005a & b; GSB 2007), a trial trench evaluation (Jones 2009) and a 'strip map and sample' excavation (Fairclough 2015).

A full archaeological background can be found in the archaeological desk-based assessment. This report concludes that the development site is located within an area of archaeological interest for the prehistoric and Roman periods. However, there is no significant evidence for either period within the development site itself (Dawson 2007).

A geophysical survey conducted in 2007 covered c 39ha of land south of the current survey area. This revealed undated enclosures, field boundaries and a number of undefined anomalies, some of which may relate to modern agriculture (GSB 2007).

The 2009 trial trench evaluation targeted features identified in the 2007 geophysical survey. Three of the trenches identified ditches of Roman date located in the south-western part of the development area. The upper fill of one of these ditches contained early to middle Saxon pottery. There was a Roman pit in the northern area of this study (Jones 2009).

A strip map and record carried out in the southern part of the development area found a number of linear features. Only one of them could be associated with features found in the 2009 trenching, and no dating evidence was uncovered (Fairclough 2015).

The site of a Second World War American airbase lies east of the survey area. The resting place of a crashed B-17 aircraft is thought to potentially be located within one of the southern fields of the development area.

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 within each of the fields. The grids were set out with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by means of a Leica Viva 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 square. All fieldwork methods complied with the guidelines issued by Historic England and by the Chartered Institute for Archaeologists (HE 2015; CIfA 2014).

The survey data was processed using Geoplot 3.00v software. The striping was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed where necessary. The processed data is presented in this report in the form of greyscale plots at a range of +4nT (black) to -4nT (white). These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base

mapping (Figs 2 and 4) and are shown with an interpretative overlay in Figures 3 and 5. Separate plots of the unprocessed data are presented in Figures 6 and 7.

4 SURVEY RESULTS

4.1 Field 1 (Figs 2-3)

There are two linear anomalies orientated west-north-west to east-south-east in the eastern corner of the field. A short curvilinear anomaly is also present in the western half of this field. These features are likely to represent the partial remains of undated ditches.

A long sinuous linear anomaly present in the north-eastern part of the field, aligned predominantly north-west to south-east, leads from a pond within the eastern field boundary into the ditch at the northern boundary. This feature correlates with a stream which is marked on modern Ordnance Survey maps but is no longer evident on the ground. Nearby there are some short weak linear anomalies running more or less in parallel; these are likely to represent parts of historic channels pre-dating the most recent course of the stream.

In the western corner of the field there is a diffuse positive linear anomaly. This corresponds with a dry valley that feeds down to Willow Brook, and probably arises from a band of colluvium on the valley floor.

Medieval ridge and furrow cultivation is represented in the data by weakly positive linear anomalies, running in parallel, aligned north-east to south-west. One of these linears is more pronounced than the others and is likely to represent a field drain running in tandem with the ridge and furrow. The ridge and furrow has only been detected south of the former stream, which would have formed an obvious natural boundary to the ploughing.

Dipolar magnetic anomalies are present across the field, representing small metallic objects littered within the plough soil. In the north-eastern corner of the survey there is a magnetically alternating linear anomaly that turns northwards from the eastern edge. This represents a metal pipeline.

4.2 Fields 2 and 3 (Figs 2-3)

The only thing of potential archaeological interest within the data is a short, straight, very weak linear anomaly located in the western half of Field 3. This may represent the partial remains of a ditch aligned north-north-west to south-south-east.

The data from both of these fields displays a series of weakly positive linear anomalies representing medieval ridge and furrow. The furrows are aligned north-north-east to south-south-west in Field 2 and east to west in Field 3.

Small dipolar anomalies are present within both of these fields, representing a random scatter of metallic objects within the plough soil. A linear anomaly has also been detected along the eastern edge of Field 2 and is likely to represent a metal pipe as it has provided a similar response to the metal pipe in Field 1.

4.3 Field 4 (Figs 4 and 5)

In the southern portion of this field there is a curvilinear anomaly that may represent a corner section of an enclosure ditch. This feature appears as a weak positive anomaly

within the processed data plot (Fig 3), but is more clearly defined within the raw data plot (Fig 7).

There are two linear anomalies present in this field that are likely to represent old field boundaries. One is positioned in the northern area of the field, represented by a fragmented linear anomaly. It is aligned north-west to south-east, running parallel to the northern field boundary and is aligned with an existing boundary on the other side of Willow Brook. The other potential field boundary runs through the centre of this field. It is aligned north-west to south-east, aligning with a field boundary to the east, and corresponds with a field boundary featuring on a 1585 map separating two open fields, Nether Field and Little Field.

Medieval ridge and furrow cultivation is represented by some very weak negative linear trends. Two of these anomalies are bold enough to be highlighted on the interpretation map (fig 5). They are aligned north-west to south-east, running parallel to and south of the historic field boundary. The data has also detected some very thin negative linear anomalies that relate to modern agricultural tramlines. These are orientated north-north-west to south-south-east, obliquely to the medieval furrows.

Along the western edge of the field, there is an overgrown steeply-cut hollow, which the 1900 Ordnance Survey map identifies as an old quarry pit. The survey data north of this shows an area of magnetic disturbance tapering towards the north. This could represent an overspill of quarry waste or, alternatively, an area of quarry backfill containing ferrous debris, slag or other magnetic materials. Other magnetic disturbance further to the north may also be associated with this quarry. A separate area of magnetic disturbance to the east, suggests another concentration of modern magnetic debris, but cannot be interpreted more specifically than this.

There are multiple small dipolar ferrous anomalies dispersed throughout the survey data, representing ferrous objects within the plough soil. There is also a strong magnetically alternating linear located along the north-eastern edge of the field representing a metal pipeline.

The survey data from the south-western corner of the field, alongside Willow Brook, has a mottled appearance which is characteristic of alluvial soils. The precise cause of this mottling is not well understood, but it probably reflects the localised mineralogical variations that result from gleying and iron panning of seasonally waterlogged sediments.

4.4 Field 5 and 6 (Figs 4 and 5)

The survey has detected a number of small, sub-circular positive anomalies that may represent pits. These are positioned in three clusters, one near to the north-western edge of Field 5 and two clusters along the western edge of Field 6. Between the clusters in Field 6 there is a short curvilinear anomaly perhaps representing the partial remains of a ditch. A second curvilinear feature appears faintly and fragmented near to the southern boundary of the survey area and may represent another archaeological feature.

A further two linear anomalies have been detected. One of these is aligned north-north-east to south-south-west and is located to the north-east of Field 6. A shorter linear anomaly is present in Field 5 aligned north-east to south-west, positioned to the north of the field. These two linear anomalies are likely to represent sections of ditch; possibly two portions of the same one.

Medieval ridge and furrow cultivation has been detected across the southern portion of Field 6. It is represented by a series of weak linear anomalies running in parallel, aligned north-west to south-east.

The area of intense magnetic disturbance located in the eastern portion of Field 6 coincides with an elongated hollow that descends fairly steeply to the east before rising gently, levelling out before Willow Brook. This part of the data is displayed in an inset on Figure 5 at a range of -50nT to +50nT, reducing the visual impact of the large magnetic halo on the data and allow for individual features to be more clearly distinguished.

The core of this magnetic disturbance comprises two discrete elements, a very broad, magnetically positive linear anomaly and a more amorphous zone of intense and densely intermingled dipolar anomalies. The former element would be most consistent with a cut feature that either exposes a band of ironstone or has been backfilled with a relatively uniform deposit of highly magnetic sediment. The latter element is very different in character, and clearly indicates a concentration of ferrous scrap; most likely a recent dump of rubbish partially backfilling the hollow. To the east, there are two massive dipolar anomalies with wide negative halos, each of which is likely to represent a very large buried ferrous object.

A potential field boundary is present along the western edge of this disturbance. It is a positive linear anomaly aligned north-east to south-west. It aligns with a fractured linear in Field 5 and matches a field boundary that features on Ordnance Survey maps dating prior to the 1964 edition.

The survey has detected a metal pipeline aligned south-west to north-east, south of the potential quarry feature. This appears as a strongly positive linear anomaly surrounded by a negative halo. A second alternating linear anomaly is present in the north-eastern corner of Field 5 and also represents a pipe.

5 CONCLUSION

The magnetometer survey has mapped a number of potential pits, linear and curvilinear ditches, but these features are widely dispersed and lack any diagnostic elements which might suggest a specific function or date. This conforms to the results from the previous investigations to the south, which also found sparse and widely dispersed archaeological remains (ASC 2005a & b; GSB 2007; Jones 2009; Fairclough 2015). Evidence for medieval ridge and furrow and probable post-medieval ironstone quarrying has also been detected.

BIBLIOGRAPHY

BGS 2015 *Geoindex*, <http://www.bgs.ac.uk/geoindex/home.html>, British Geological Survey, consulted 2 June 2015

Bartington, G, and Chapman, C, 2003 A high-stability fluxgate magnetic gradiometer for shallow geophysical survey applications, *Archaeological Prospection*, **11**, 19-34

CIfA 2014 *Standard and Guidance for Archaeological Geophysical Survey*, Chartered Institute for Archaeologists

Fairclough, J, 2015 *Strip, map and record at Weldon Park, Corby, Northamptonshire August/November 2015*, Mola Northampton report, **15/144**

GSB 2007 *Land at Weldon Park, Corby: Geophysical Survey Report*, **2009/32**, GSB Prospection

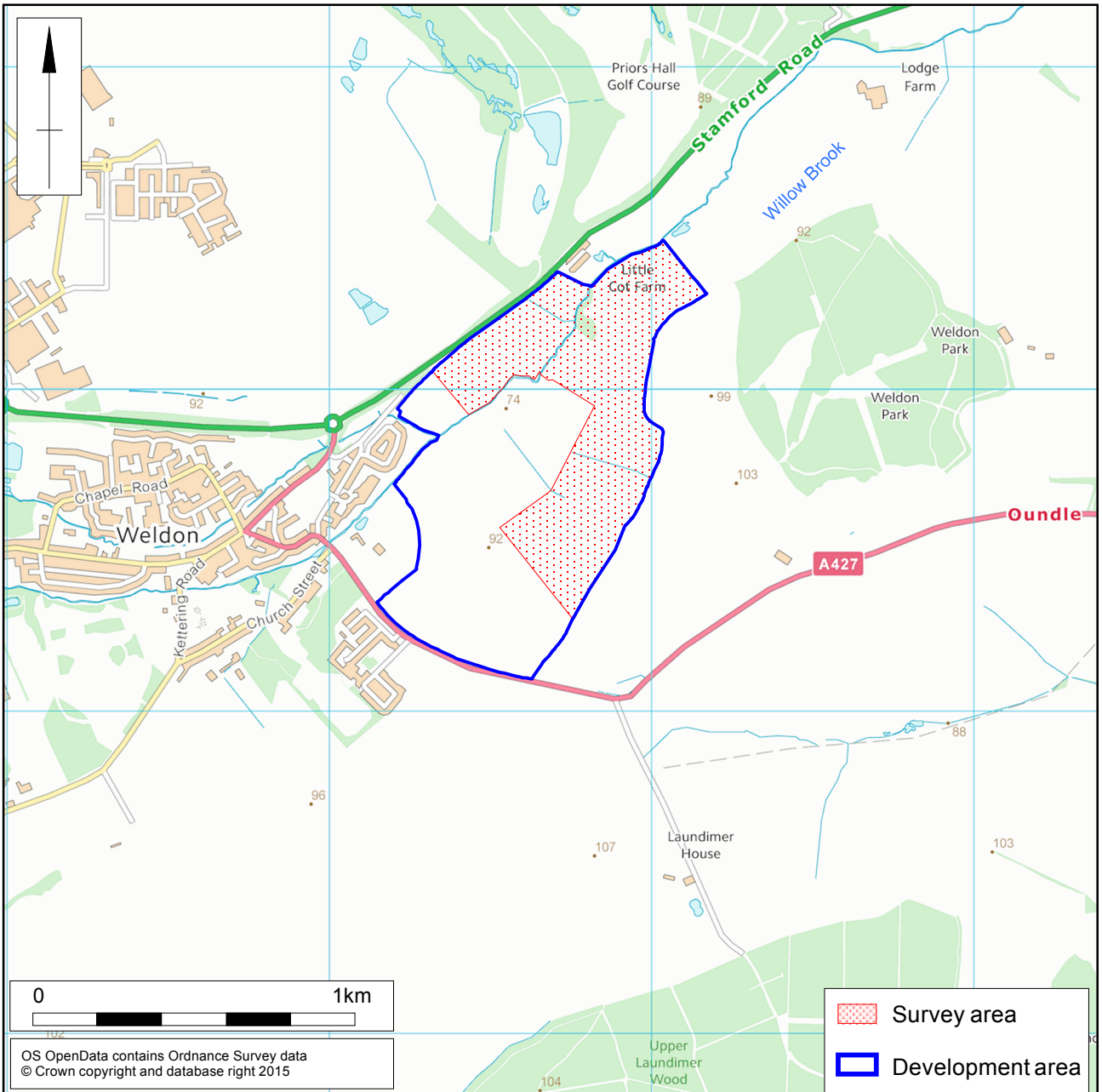
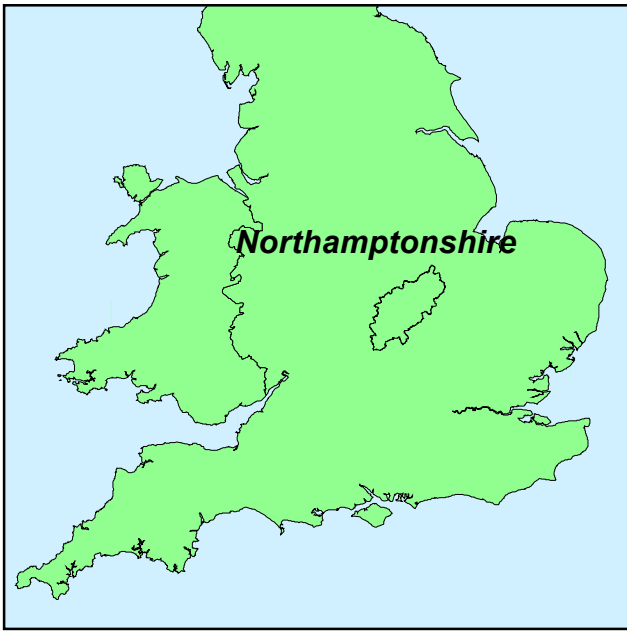
HE 2015 *Geophysical Survey in Archaeological Field Evaluation*, Historic England

Hancock, A, 2005 *Phase 1 Geophysical Survey: Land East of Weldon, Corby, Northamptonshire*, Archaeological Services and Consultancy Ltd report

Jones, C, 2009 *Archaeological trial trench evaluation at Oundle Road, Weldon, Northamptonshire*, Northamptonshire Archaeology report, **09/171**

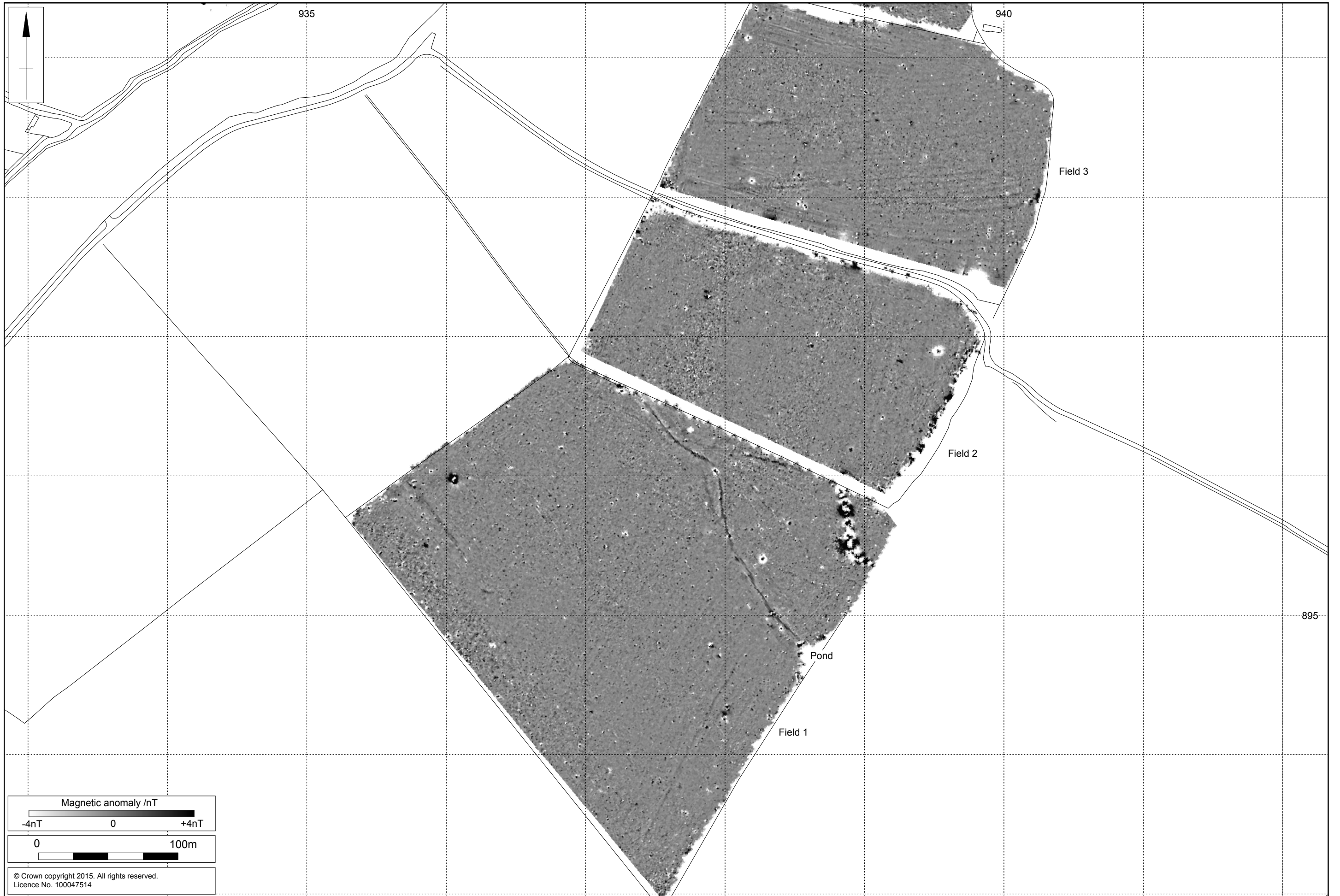
www.old-maps.co.uk, consulted 17 November 2015

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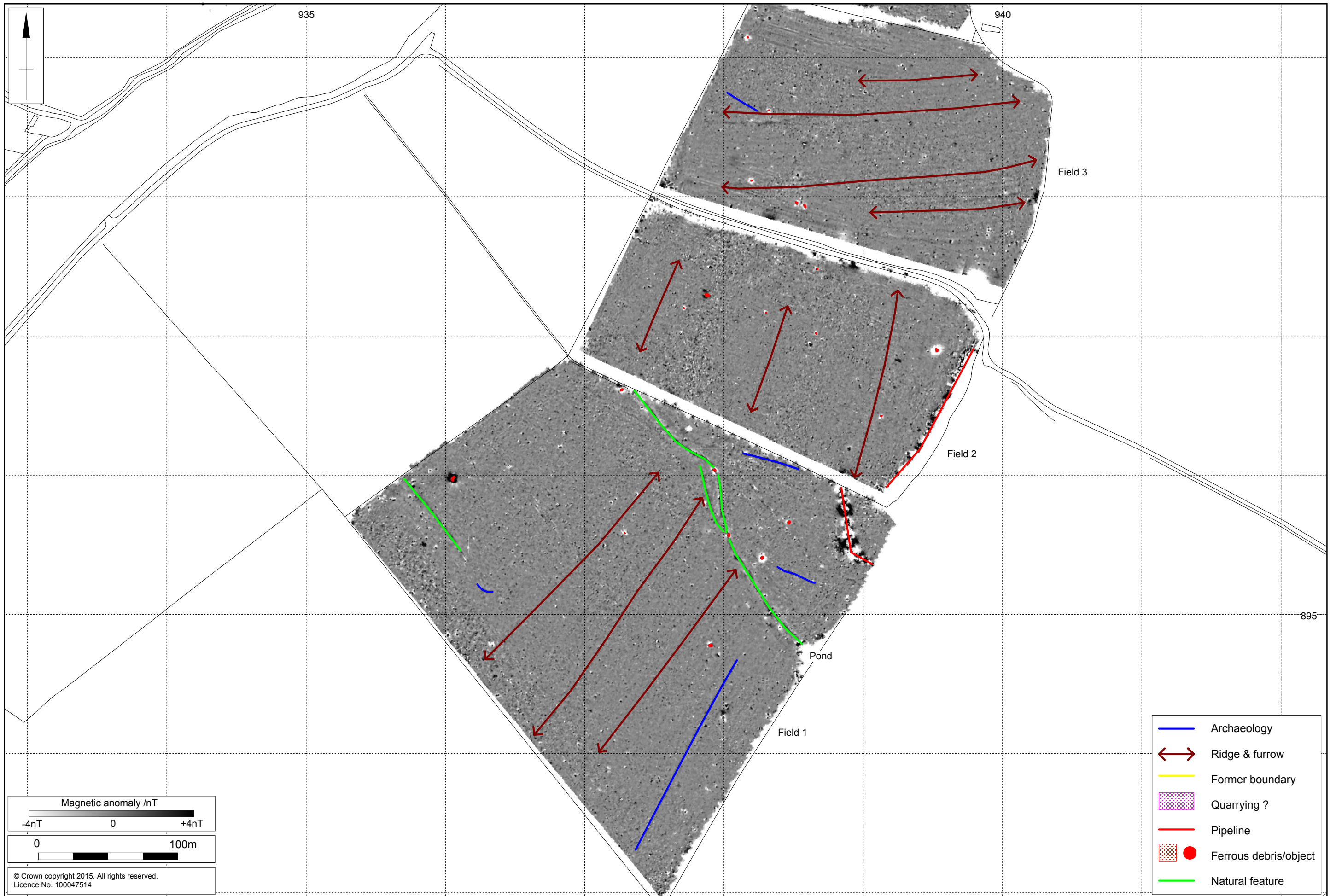
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Site location Fig 1



Scale 1:2500

Magnetometer survey results (south) Fig 2



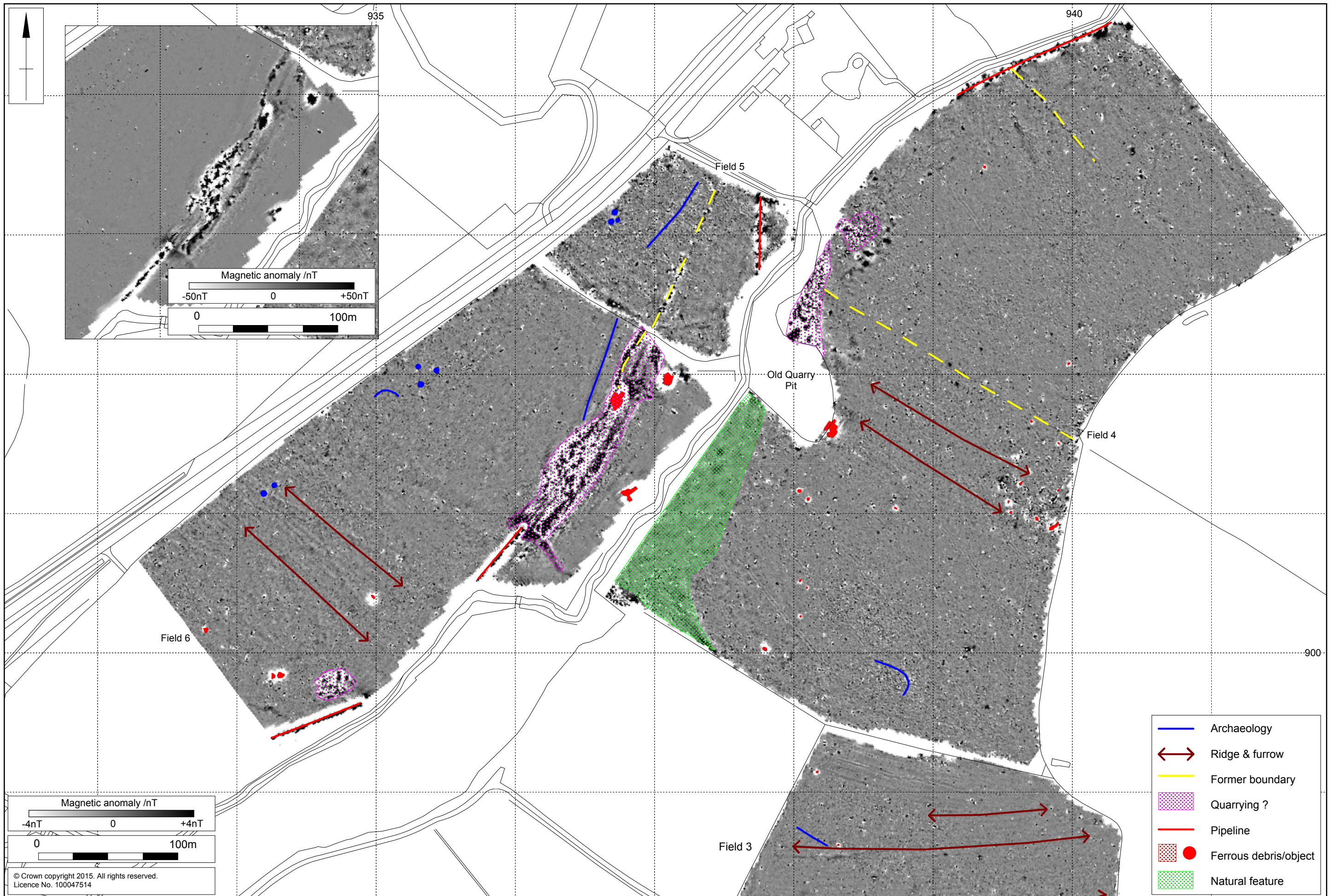
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Magnetometer survey interpretation (south) Fig 3



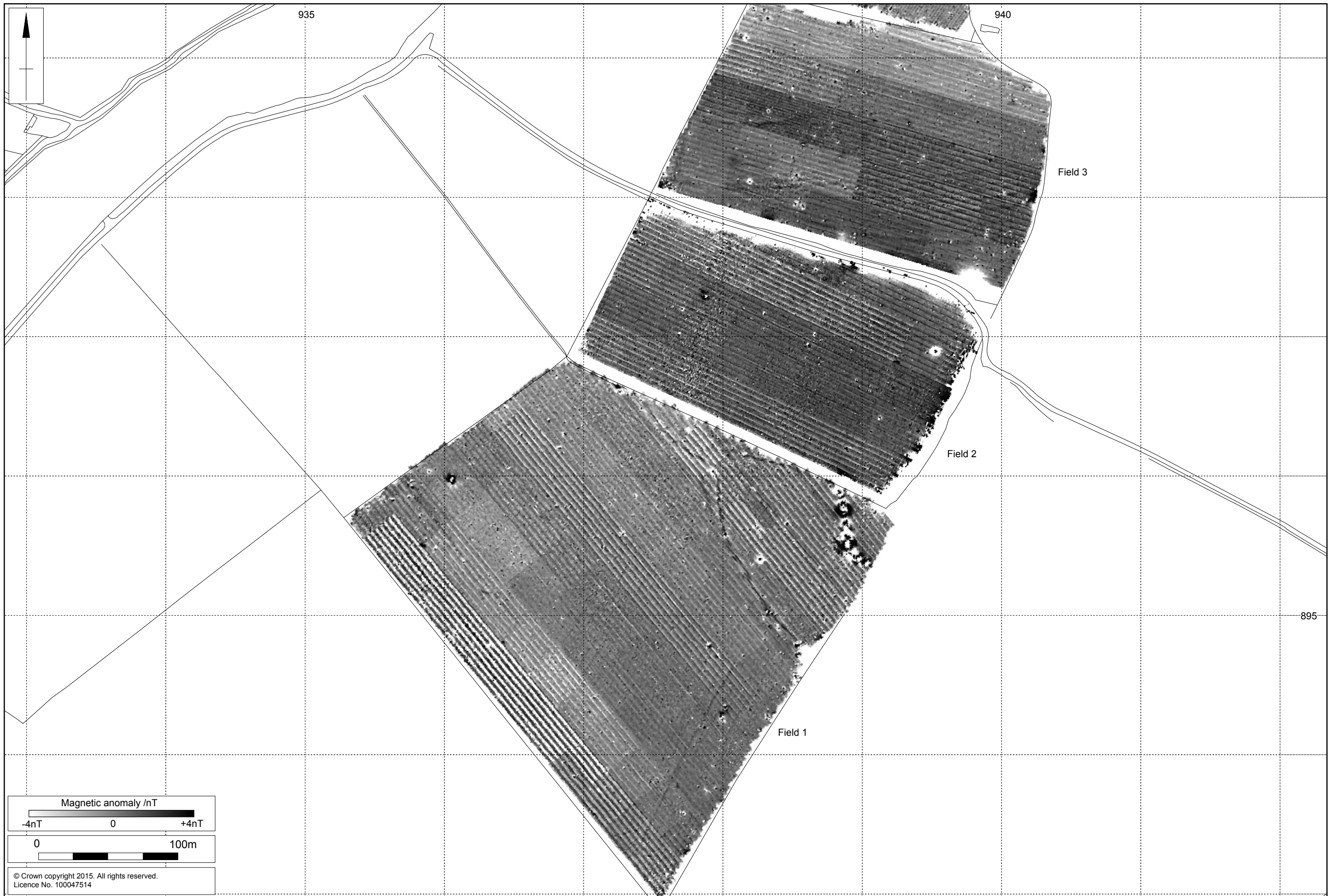
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Magnetometer survey results (north) Fig 4



Scale 1:2500

Magnetometer survey interpretation (north) Fig 5



Scale 1:2500

Unprocessed magnetometer data (south) Fig 6



Scale 1:2500

Unprocessed magnetometer data (north) Fig 7



MOLA
Bolton House
Wootton Hall Park
Northampton
NN4 8BN
01604 809 800
www.mola.org.uk
sparry@mola.org.uk