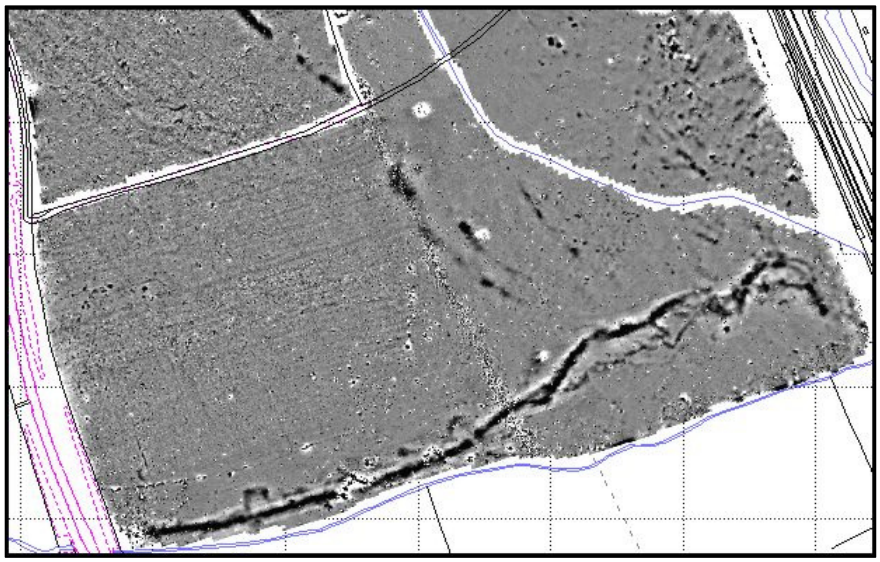

Archaeological geophysical survey at Plot B, Pytchley Lodge Farm, Kettering Northamptonshire August 2015

Event No: ENN108093

Report No: 15/174

Author: John Walford

Illustrator: John Walford

Project Manager: John Walford
Event number: ENN108093
NGR: SP 882 752

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Quality control and sign off**:**

Issue No.	Date approved:	Checked by:	Verified by:	Approved by:	Reason for Issue:
1	15/10/2015	Pat Chapman	-	Andy Chapman	Client approval

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OASIS REPORT

PROJECT DETAILS	Oasis No. molanort1-226633	
Project name	Archaeological geophysical survey at Plot B, Pytchley Lodge Farm, Kettering, Northamptonshire	
Short description	MOLA Northampton was commissioned to carry out a detailed magnetometer survey on a parcel of land, referred to as Plot B, at Pytchley Lodge Farm, Kettering, Northamptonshire. The survey identified two principal areas of archaeological interest, one of which contains a rectilinear pattern of ditches and the other of which may contain a pit cluster. These remains are tentatively dated to the late prehistoric or Roman periods. Medieval ridge and furrow, post-medieval field boundaries, an abandoned stream channel and other features of possible minor archaeological interest were also detected.	
Project type	Geophysical survey	
Site status	None	
Previous work	Desk-based assessment (Walker 2014)	
Current land use	Arable	
Future work	Unknown	
Monument type/ period	Possible undated ditches and pits	
Significant finds	None	
PROJECT LOCATION		
County	Northamptonshire	
Site address	Pytchley Lodge Farm, Kettering	
Study area	*c* 54ha	
OS Easting & Northing	SP 882 752	
Height OD	*c* 80m - 54m aOD	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	Liz Mordue, Northamptonshire Assistant Archaeological Advisor	
Project design originator	MOLA Northampton	
Director/Supervisor	Ian Fisher and Olly Dindol	
Project Manager	John Walford	
Sponsor or funding body	Peter Brett Associates	
PROJECT DATE		
Start date	10 August 2015	
End date	27 August 2015	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton and ADS	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey at Plot B, Pytchley Lodge Farm, Kettering, Northamptonshire, August 2015	
Serial title & volume	MOLA Northampton Reports 15/174	
Author(s)	John Walford	
Page numbers	6	
Date	15 October 2015	

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ABSTRACT

MOLA Northampton was commissioned to carry out a detailed magnetometer survey on a parcel of land, referred to as Plot B, at Pytchley Lodge Farm, Kettering, Northamptonshire. The survey identified two principal areas of archaeological interest, one of which contains a rectilinear pattern of ditches and the other of which may contain a pit cluster. These remains are tentatively dated to the late Prehistoric or Roman periods. Medieval ridge and furrow, post-medieval field boundaries, an abandoned stream channel and other features of possible minor archaeological interest were also detected.

1 INTRODUCTION

MOLA Northampton was commissioned by Peter Brett Associates to conduct a geophysical survey on a 54ha parcel of land at Pytchley Lodge Farm, Kettering, Northamptonshire (NGR SP 882 752; Fig 1). This land, which is referred to as Plot B, lies almost immediately south-east of a 17ha field (Plot A) which was surveyed for the same client in 2014 (Walford and Meadows 2014). The present phase of fieldwork was undertaken from 10th to 27th August 2015 and has been recorded on the Northamptonshire Historic Environment Record (HER) under event number ENN108093.

2 BACKGROUND

2.1 Topography and geology

The survey area is located to the south of Kettering, *c* 500m east of Pytchley Lodge Farm. It is almost rectangular in shape and is bounded to the north by the A14 Kettering Bypass, to the west by the A509, to the south by a tributary stream of the River Ise and to the east by a railway line (Fig 1). The land-use is predominantly arable, although there is a small copse in the north-west of the area and an overgrown fallow field in the north-east.

The survey area lies almost adjacent to the River Ise and encompasses parts of the floodplan and the western flank of the river valley. A dry valley crosses the centre of the area, leading down to the floodplain, and a stream flows eastwards along the southern boundary. The elevation of the survey area ranges from 80m aOD in the north-eastern corner to 54m aOD across much of the floodplain.

The solid geology of the survey area is mapped as Northamptonshire Sand and Ironstone on the upper slopes and Whitby Mudstone (Lias) on the lower slopes. Recent alluvium occurs across the floodplain and alluvial fan deposits are present at the mouth of the dry valley (BGS 2015).

2.2 Historical and archaeological background

The survey area has been the subject of a recent desk-based heritage assessment (Walker 2014), upon which the following summary is based. This assessment considered all relevant sources, including historic maps and data from the Northamptonshire HER.

The westernmost part of the survey area was investigated by archaeological fieldwalking in 1996 in advance of an abortive scheme to re-route the A605. This work resulted in the discovery of ten worked flints, four Roman potsherds and two medieval potsherds (HER No. 9783). The significance of these finds is uncertain, but they may comprise a background scatter of lost or discarded material instead of deriving from a clearly defined archaeological site.

Historic maps of the survey area show how it developed through the 19th and 20th centuries. There was a general trend towards the amalgamation of fields, with a consequent removal of hedges and boundary ditches, and the two watercourses that crossed the area were both modified. The River Ise was diverted in the mid-19th century so that it flowed entirely on the east side of the railway, with a large meander that encroached into the survey area being straightened and reduced to a drainage ditch. The stream along the southern edge of the area was also straightened, apparently sometime around 1950.

A previous phase of geophysical survey was undertaken at Pytchley Lodge Farm, Plot A, to the north-west of the present survey area. This mapped a large complex of archaeological remains focused around a large, double-ditched rectilinear enclosure of probable Iron Age date. Whilst these remains were previously known from cropmarks the survey added much extra detail which had not been previously identified (Walford and Meadows 2014).

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).

An independent network of 30m grid squares was established across each of the fields to be surveyed. These 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 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 Historic England and by the Chartered Institute for Archaeologists (HE 2015; CIfA 2014).

The processing of the data comprised two steps, de-striping to remove the effects of sensor imbalances, and de-staggering to compensate for traverses walked marginally too fast or slow. Most of the processing was undertaken with Geoplot 3.00v software, but some grids of data had to be de-striped with an 'in-house' spreadsheet routine to preserve significant anomalies running parallel to the traverse direction. The same routine was also used on some data from the floodplain, as this had a non-uniform magnetic background which did not respond well to Geoplot's 'zero mean traverse' de-striping function. Unfortunately the latter data could not be perfectly processed, even

with the spreadsheet routine, and so some slight residual striping is apparent in the final data plots.

The processed data is presented in this report as greyscale plots (range +4nT to -4nT / black to white), rotated and scaled for display against the Ordnance Survey base mapping (Figs 2 and 4). Interpretative overlays are presented in Figures 3 and 5, and plots of the unprocessed data in Figures 6 and 7.

4 SURVEY RESULTS

The survey has identified two groups of magnetic anomalies which may be of archaeological interest, both occurring on the higher ground overlooking the floodplain. One is a largely rectilinear arrangement of weakly positive anomalies near the north-western corner of the survey area, which may represent a set of enclosures or part of a field system (Fig 3, Site A). The other is a concentration of small, localised positive anomalies in the south-western field, possibly representing a pit cluster (Fig 5, Site B). Medieval ridge and furrow, post-medieval field boundaries and a few other features of possible minor archaeological interest have also been detected.

Site A comprises two, or possibly three, elements the relationships between which are obscured by the intense magnetic responses from a network of modern pipes. A 'T' shaped set of anomalies in the west and a further set of anomalies in the east appear to represent parts of a coherent pattern of boundary or enclosure ditches. It is possible that these may be related to a group of four parallel, evenly spaced linear anomalies lying to the south, but the significance of the latter is unsure. They could represent a set of cultivation trenches, or they could have a more modern cause such as field drains, but in either case their apparently restricted extent is not readily explicable.

Site B is represented by an unevenly distributed cluster of small, localised positive anomalies. These are most likely to arise from a group of pits, although a geological cause for such anomalies is also possible. An angled linear anomaly which passes through the same area may represent a ditch; however this runs parallel with medieval ridge and furrow (see below) for much of its course and can only be securely distinguished where it turns south-eastwards and runs obliquely across the furrow direction.

Neither Site A nor Site B has any diagnostic features that might give a firm indication of their dates. However, a broad date range of late prehistoric to Roman seems most likely for both, based on general analogies and the relative ubiquity of sites from dating from these periods.

Traces of medieval to early post-medieval ridge and furrow cultivation have been detected across much of the western half of the survey area, on the slope overlooking the floodplain. The clearest instance is in the south-western field, where the ridge and furrow is represented by an extensive tract of closely spaced parallel linear anomalies. Similar anomalies continue into the field to the north but are much more disjointed and indistinct.

Three linear anomalies at the southern end of the survey area correspond to former field boundaries depicted on the first edition Ordnance Survey map and a fourth corresponds to a boundary on the 1849 estate map (Walker 2014, fig 13). Two of these are narrow linear anomies, representing ditches, but the other two are diffuse linear clusters of small magnetic dipoles and monopoles ('magnetic noise') indicating concentrations of magnetic debris (scrap metal, brick rubble, *etc*) accumulated at the field margins through

dumping and field clearance. One other former field boundary, also indicated by a band of ferrous noise, has been detected in the northern end of the survey area. Additionally, the survey has detected a large ferrous dipole in the northern spur of the southern field, in a location where historic maps show a small enclosed yard. A weak linear anomaly runs east from this, perhaps representing an unmapped field boundary ditch.

Two linear anomalies aligned north-south abut the one of the former field boundaries at right angles, and a third anomaly follows the same alignment but stops further to the north. Whilst these anomalies do not correspond to boundaries recorded on the historic mapping, their regular arrangement and evident association with a known boundary suggests that they could represent boundaries which were removed prior to the first detailed mapping of the area in 1849.

A small sub-circular zone of magnetic noise, approximately 20m across, occurs near the western edge of the north-western field. This might be indicative of a spread of burnt soil (for instance the debris from a bonfire) or it could have a geological cause. Within the noise there are some small rectangular elements which could conceivably have a structural origin, although it is more likely they are no more than random patterning of the data.

At the northern end of the survey area there is an extensive zone of magnetic noise suggesting a concentration of modern debris (ferrous scrap and hardcore). Its cause is unknown, but it could plausibly be related to construction works for the A14. Elsewhere across the survey area there are many small dipolar anomalies indicating isolated pieces of scrap metal (horsehoes, plough fittings, etc) within the ploughsoil.

Four modern pipelines have been detected within the survey area. One runs parallel to the railway line at the eastern edge of the area, two others cross the north-western corner of the area from north-east to south-west, and the fourth crosses the northern half of the survey area on a roughly east-west alignment. Strong magnetic responses have also been recorded from the set of telegraph poles which carry overhead cables down the central axis of the survey area.

A broad, positive linear anomaly extends along the southern edge of the survey area, becoming more braided and complex in form as it approaches the floodplain of the River Ise. It represents a former stream channel which must pre-date the 19th century as it does not correspond to the position and shape of the stream channel depicted on the historic maps of the area (Walker 2014, figs 11-15). In fact, two of the meanders of the historically-attested channel have been detected as very distinct and intense anomalies that cut across the main channel anomaly. The intensity of these indicates that they have been backfilled with spoil containing abundant scrap metal or other magnetic debris, in contrast to the earlier channel which is more likely to have a naturally silted fill.

A distinctive feature of the stream channel is a narrow break approximately half-way along its length (Fig 5). Whilst this could have a natural origin, it could also represent a deliberate modification of the channel: perhaps a stone-surfaced ford or a small earthen causeway constructed across the channel after it had ceased to be an active watercourse. This suggestion, although speculative, is slightly strengthened by the presence of a small positive linear anomaly, perhaps representing a ditch, which intersects the stream channel perpendicularly at the same location.

The eastern half of the survey area is dominated by linear and amorphous anomalies of alluvial origin. These cannot be interpreted in detail, as they are the product of a complex interplay of groundwater process and redox reactions, influenced in part by variations in the texture and composition of the alluvium. However, there is a general

trend for the most pronounced and intricate responses to occur along the former course of the River Ise, and their appearance suggests that a variety of gravel bars and cut-off meanders may be present in this area.

A broad chevron-shaped positive anomaly extends across the greater part of the north-eastern field, with its apex in the dry valley and its arms flaring out to the north-east and south-east along the lines of the contours. This almost certainly represents the position of a geological outcrop; either the lower edge of the Northamptonshire Sand and Ironstone or else a particularly iron-rich seam within the Lias. The ill-defined band of magnetic noise which runs across the centre of the field is also geological in origin. Its line coincides with the line of the dry valley, and it seems likely to reflect a concentration of detrital ironstone within the associated alluvial fan deposits. Within it there are a number of convoluted linear anomalies which probably indicate the courses of small erosional channels formed during periods of heavy surface run-off.

5 CONCLUSION

The survey has detected two sites of possible archaeological interest. A rectilinear pattern of ditches near to the north-western corner of the survey area appears to define parts of a field system or a set of enclosures and there may be a cluster of pits in the south-western field of the survey area. Although neither of these sites can be closely dated, both have been tentatively attributed to either the later prehistoric or the Roman period. Other features including medieval to early post-medieval ridge and furrow and later post-medieval field boundaries have also been detected, but the archaeological significance of these is relatively minor.

As well as archaeological features, the survey has detected evidence for two former watercourses. An infilled stream channel, pre-dating the 19th century, crosses the southern end of the survey area and relict features of the River Ise underlie the modern floodplain to the east.

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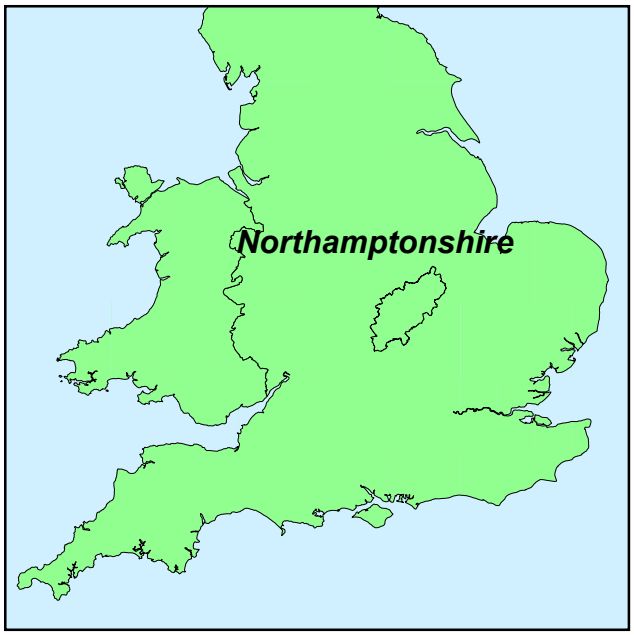
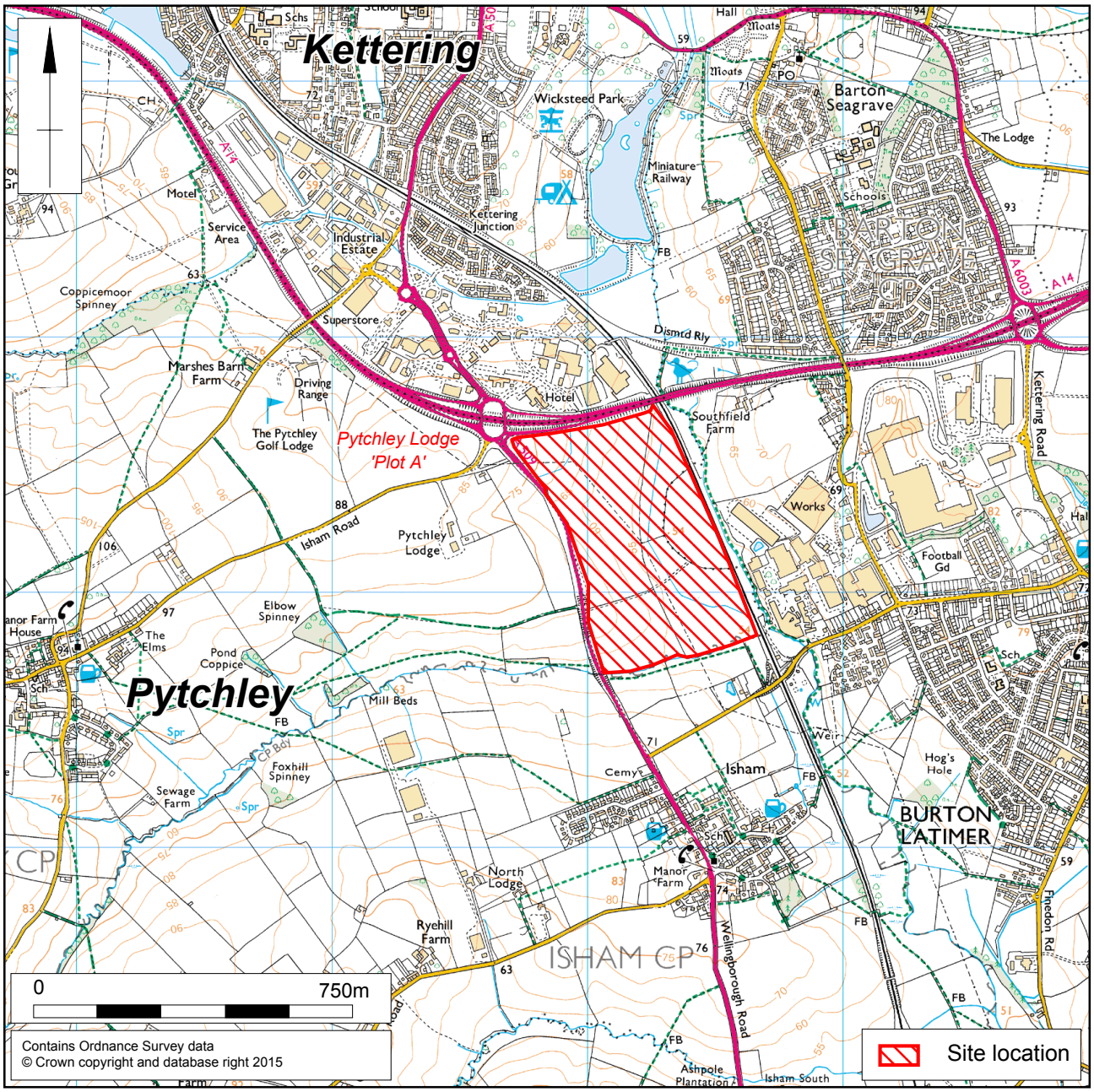
MOLA
15 October 2015





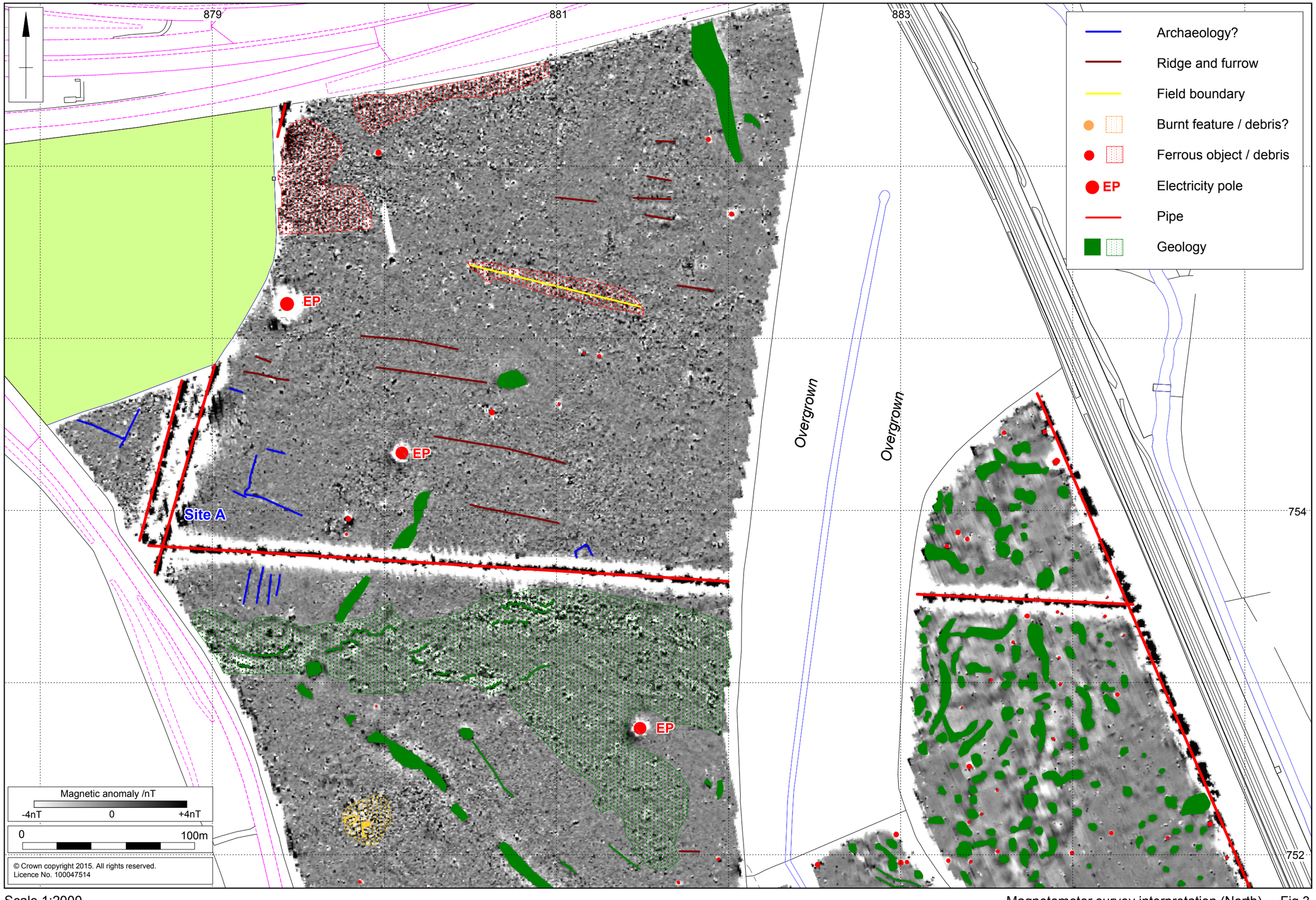
Scale 1:25,000

Site location Fig 1

879
881
883
885
756
754
752
Overgrown
Overgrown
Magnetic anomaly /nT
-4nT 0 +4nT
0 100m

Scale 1:2000

Magnetometer survey results (North) Fig 2



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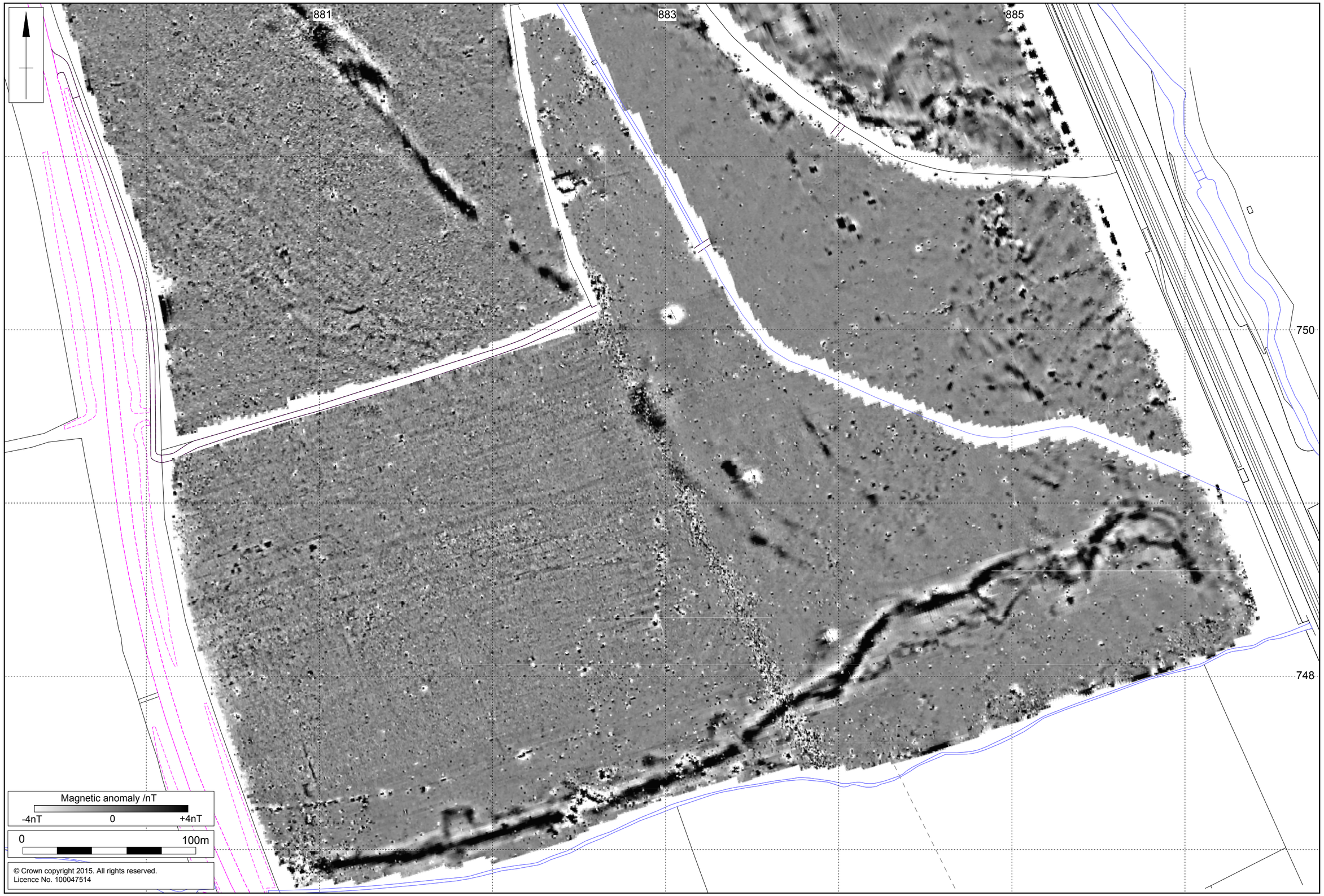
Magnetometer survey interpretation (North) Fig 3



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Magnetometer survey results (South) Fig 4

881
883
885
750
748
EP
EP
EP
EP
Site B
'Gap' in stream channel
Magnetic anomaly /nT
-4nT 0 +4nT
0 100m

Archaeology?
Ridge and furrow
Field boundary
Burnt feature / debris?
Ferrous object / debris
EP Electricity pole
Pipe
Geology

Scale 1:2000

Magnetometer survey interpretation (South) Fig 5

879

881

883

Overgrown

Overgrown

754

752

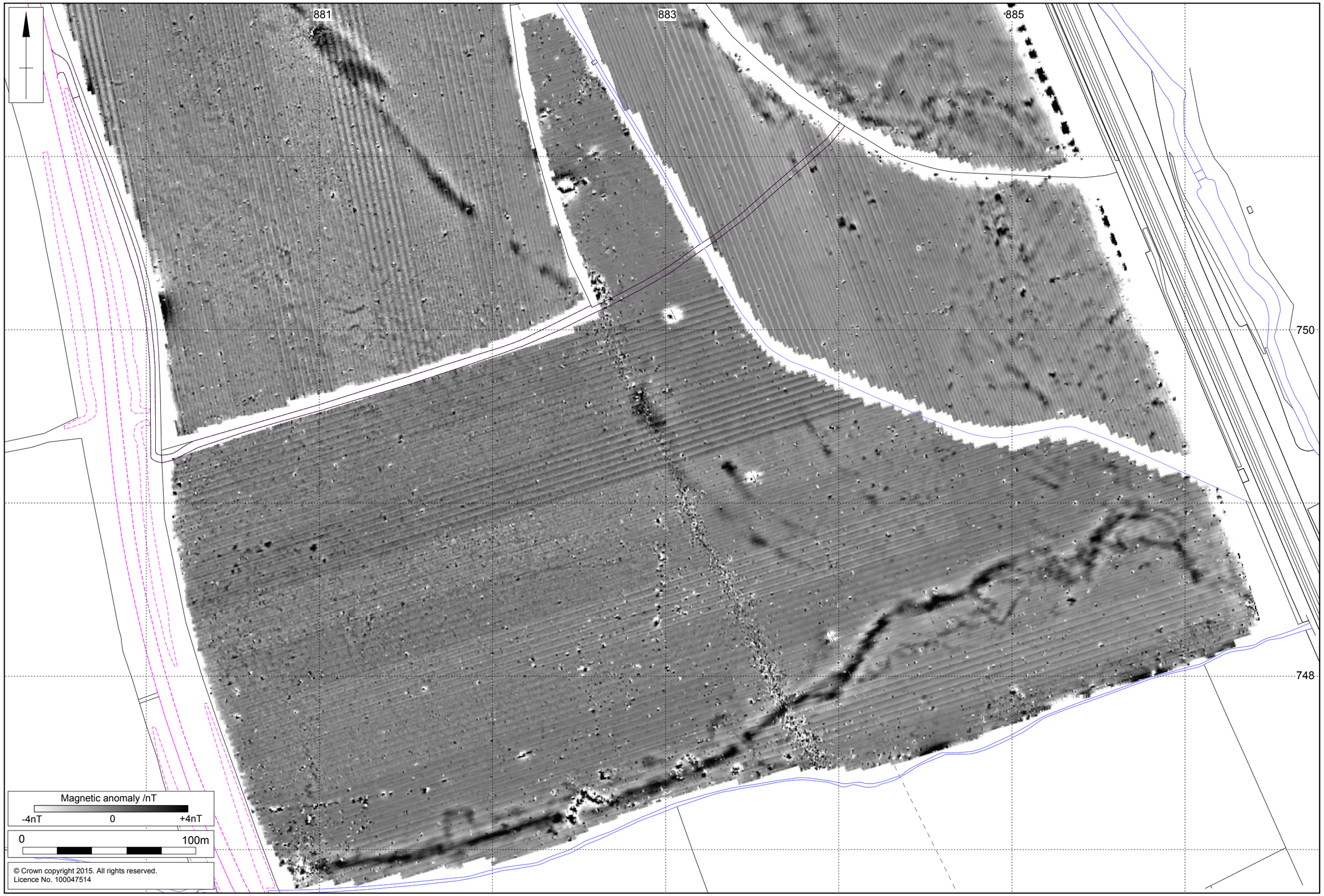
Magnetic anomaly /nT

-4nT 0 +4nT

0 100m

Scale 1:2000

Unprocessed magnetometer data (North) Fig 6



Scale 1:2000

Unprocessed magnetometer data (Sorth) Fig 7

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