EOSW/01

LAND EAST OF SWINDON, WILTSHIRE

GEOPHYSICAL SURVEY

commissioned by Capital Land Management Group

November 2016

HEADLAND ARCHAEOLOGY

REGISTERED CIfA ORGANISATION

LAND EAST OF SWINDON, WILTSHIRE

GEOPHYSICAL SURVEY

commissioned by Capital Land Management Group

November 2016

project info

HA JOB NO.	EOSW/01
NGR	SU 20307 86806
PARISH	South Marston
LOCAL AUTHORITY	Wiltshire Council
OASIS REF.	Headland5-269125

project team

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A. Webb

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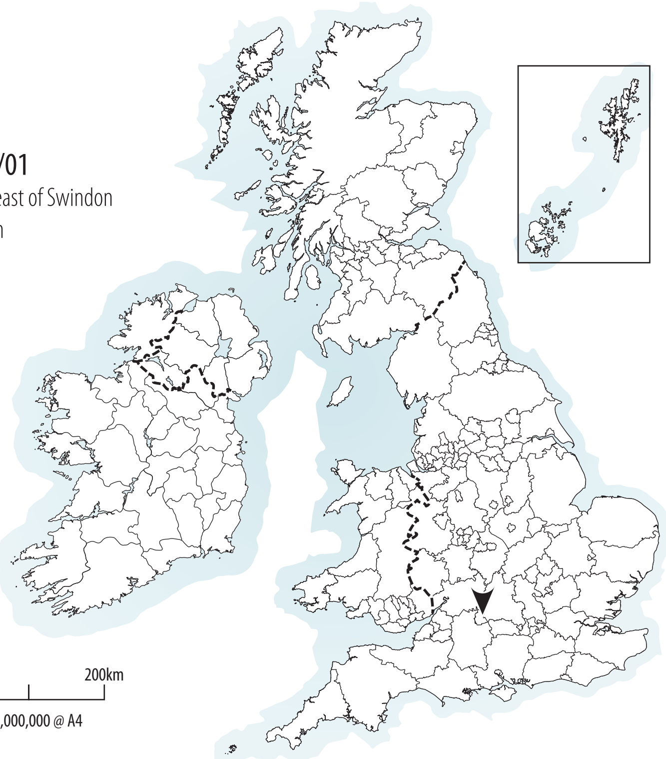
PROJECT SUMMARY

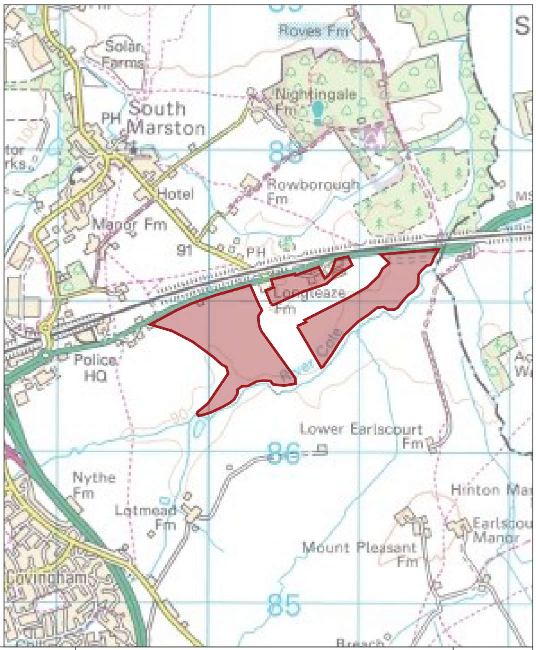
Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey covering approximately 60 hectares east of Swindon, Wiltshire, to inform future archaeological strategy in advance of a proposed development. The survey has identified an area of probable industrial activity, including five probable kilns, close to the disused nineteenth century Wiltshire and Berkshire Canal. Further south, close to the River Cole, at least five circular anomalies have been identified, perhaps indicating round barrows. Elsewhere anomalies consistent with historic agricultural activity including ridge and furrow cultivation have been identified across the site which may be of local historical interest. Therefore, based solely on the results of the geophysical survey, the archaeological potential of the site is assessed as low but locally moderate to high in the vicinity of the area of kilns and possible barrows.

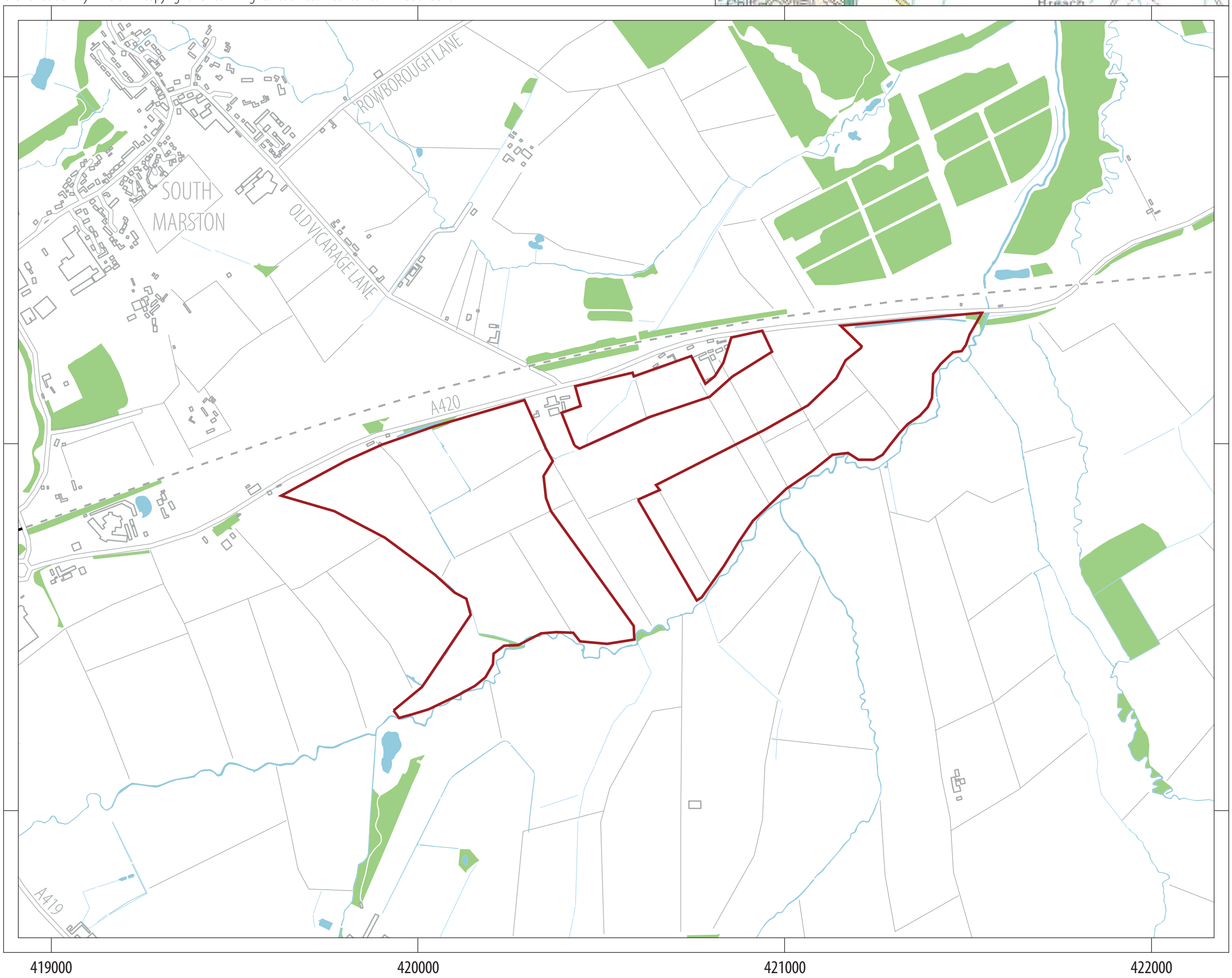
CONTENTS

LIST OF ILLUSTRATIONS

EOSW/01
land at east of Swindon
Swindon







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400m
1:20,000 @ A4

KEY
proposed development area

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ILLUS 1 Site location

LAND EAST OF SWINDON, WILTSHIRE

GEOPHYSICAL SURVEY

1 INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned by Capital Land Property Group to undertake a geophysical (magnetometer) survey on land east of Swindon, Wiltshire (see Illus 1). The survey will inform forthcoming archaeological strategy in advance of the proposed development of the site.

The work was undertaken in accordance with a Written Scheme of Investigation (Headland Archaeology 2016) which was submitted to and approved by Melanie Pomeroy-Kellinger (Wiltshire Council), with guidance contained within the National Planning Policy Framework (DCLG 2012) and in lin23e with current best practice (English Heritage 2008).

The survey was carried out between May 23rd and June 9th 2016 in order to provide information on the archaeological potential of the proposed development area (PDA).

1.1 SITE LOCATION, TOPOGRAPHY AND LAND-USE

The PDA comprises parts of 24 fields totalling approximately 60 hectares to the south, east and west of Longleaze Farm. It is bound to the north by the disused Wiltshire and Berkshire canal beyond which runs the A420 between Swindon and Oxford. The south and eastern boundaries are formed by the River Cole. Mature field boundaries form the western survey limit, beyond which extends arable farmland.

The topography generally slopes gently from the north to the south being at 94m above Ordnance Datum (AOD) at Longleaze Farm and at 90m AOD along the River Cole.

At the time of the survey the majority of the fields were under mixed pasture/silage (see Illus 2 – Illus 6), whilst Field 4 and Field 7 had been recently harrowed. A small area within the west of Field 12 and Field 13 was overgrown and unsuitable for survey (see Illus 7).

1.2 GEOLOGY AND SOILS

The underlying bedrock geology consists Ampthill Clay Formation and Kimmeridge Clay Formation. No superficial deposits are recorded across the majority of the PDA although alluvium – clay, silt, sand and gravel, is recorded along the course of the River Cole (NERC 2016).

The soils are classified in the Soilscape 18 association, characterised as slowly permeable, seasonally waterlogged loams and clays (Cranfield University 2016).

2 ARCHAEOLOGICAL BACKGROUND

The PDA is located within a landscape of high archaeological potential which has been the subject of numerous archaeological investigations including geophysical surveys (Archaeological Surveys University of Durham 2006, 2008 and 2015; Bartlett-Clark Consultancy 2013), an Environmental Statement (BMD 2013) and trial trench evaluations (Thames Valley Archaeological Services 2014; Headland Archaeology 2015). The extent of these investigations are shown on Illus 8, which also depicts previously idenitfied geophysical anomalies of obvious archaeological potential which occur in close proximmity to the current survey area.

3 AIMS, METHODOLOGY AND PRESENTATION

The main aim of the geophysical survey was to provide sufficient information to enable an assessment to be made of the impact of any proposed development on any potential sub-surface archaeological remains.

The general archaeological objectives of the geophysical survey were:

- to provide information about the nature and possible interpretation of any magnetic anomalies identified;
- to therefore model the presence/absence and extent of any buried archaeological features; and
- to prepare a report summarising the results of the survey.

ILLUS 2 General view of Field 1 (north), looking north-west **ILLUS 3** General view of Field 5, looking south-west **ILLUS 4** General view of Field 15, looking south-west

3.1 MAGNETOMETER SURVEY

Magnetic survey methods rely on the ability of a variety of instruments to measure very small magnetic fields associated with buried archaeological remains. A feature such as a ditch, pit or kiln can act like a small magnet, or series of magnets, that produce distortions (anomalies) in the Earth's magnetic field. In mapping these slight variations, detailed plans of sites can be obtained as buried features often produce reasonably characteristic anomaly shapes and strengths (Gaffney and Gater, 2003). Further information on soil magnetism and the interpretation of magnetic anomalies is provided in Appendix 1.

The survey was undertaken using two Headland Multi-Sensor Frame (HMSF) systems which each comprise four Bartington Grad601 sensors mounted at 1m intervals (1m traverse interval) onto a rigid carrying frame. The system is programmed to take readings at a frequency of 10Hz (allowing for a 10–15cm sample interval) on roaming traverses 4m apart. These readings are stored on an external weatherproof laptop and later downloaded for processing and interpretation. The system is linked to a Trimble R8s Real Time Kinetic (RTK) differential Global Positioning System (dGPS) outputting in NMEA mode to ensure a high positional accuracy for each data point.

MLGrad601 and MultiGrad601 (Geomar Software Inc.) software has been used to collect and export the data. Terrasurveyor V3.0.28.4 (DWConsulting) software has been used to process and present the data.

Marker canes were laid out using a Trimble VRS differential Global Positioning System (Trimble GeoXR model).

3.2 REPORTING

A general site location plan is shown in Illus 1 at a scale of 1:20,000. Illus 2 – Illus 6 are general site condition photographs. A large scale (1:7,500) survey location plan showing the processed greyscale magnetometer data is shown in Illus 7. Illus 8 displays the location and facing-direction of the site condition photographs (Illus 2 – Illus 6) and the location of previous archaeological investigations (south of the A420) at the same scale. Illus 9 is an overall interpretation of the data showing the location of the 1:1000 Insets (Illus 22 – Illus 33), also at 1:7,500).

Detailed data plots (greyscale and XY trace) and interpretative illustrations are presented at a scale of 1:2,500 in Illus 10 to Illus 21 inclusive with 1:1,000 plots and interpretations of areas of possible and probable archaeological potential displayed in Illus 22 to Illus 33 inclusive.

Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the site archive. A copy of the OASIS entry (Online Access to the Index of Archaeological Investigations) is reproduced in Appendix 4.

The survey methodology, report and any recommendations comply with the Written Scheme of Investigation (Headland Archaeology 2016) and guidelines outlined by Historic England (English Heritage 2008) and by the Chartered Institute for Archaeologists (CIfA 2014). All illustrations reproduced from Ordnance Survey mapping are with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

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6

ILLUS 5 General view of Field 13, looking west **ILLUS 6** General view of Field 21, looking south-west

The illustrations in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All illustrations are presented to most suitably display and interpret the data from this site based on the experience and knowledge of management and reporting staff.

4 RESULTS AND DISCUSSION

Generally the results of the survey show low to moderate levels of background magnetic variation across the site, apparent in the data as evenly distributed discrete areas of magnetic enhancement. This is likely to be due to the homogenous properties of the mudstone bedrock. This background is overlain by several higher magnitude linear anomalies which are indicative of anthropogenic activity. These are discussed below and cross-referenced to specific examples on the interpretive figures, where appropriate.

4.1 FERROUS ANOMALIES

Ferrous anomalies, characterised as individual 'spikes', are typically caused by ferrous (magnetic) material, either on the ground surface or in the plough-soil. Little importance is normally given to such anomalies, unless there is any supporting evidence for an archaeological interpretation, as modern ferrous debris or material is common on most sites, often being present as a consequence of manuring or tipping/infilling. Larger ferrous spikes, TP, within the north of the PDA (Field 3 and Field 9) are caused by telegraph poles.

Within the east of Field 9 (see Illus 16–18) a rectilinear alignment of 'spikes', A, is caused by an extant fence.

In the south-west corner of Field 3 (see Illus 10–12) the broad area of magnetic disturbance, B, is caused by an animal feeding trough, whilst areas of disturbance, C–F, in the north-west of Field 8 are due to dumping and/or areas of modern ground disturbance.

A broad area of magnetic disturbance, G, is recorded within the north of Field 1 (see Illus 22–24). The disturbance is thought to be due to a spread of ferrous material, such as bricks, concrete and other demolition material, and may be associated with the disused canal to its immediate north. Further east, within Field 21, another broad area of magnetic disturbance, H, is identified adjacent to the former canal. This disturbance is lower in magnitude than G but is also thought to be caused by a modern spread of enhanced material, probably being associated with the canal.

Other areas of magnetic disturbance around the perimeter of the survey area and individual field edges can be attributed to the proximity of post and wire fencing and/or other ferrous material within the boundaries.

4.2 AGRICULTURAL ANOMALIES

Several linear anomalies are identified across the survey area that are interpreted as being caused by agricultural activity.

Broadly-spaced, parallel linear trend anomalies can be seen across Field 3, Field 6, Field 9 and Fields 14–18. These are characteristic of the medieval and post-medieval practice of ridge and furrow cultivation. The anomalies are caused by the contrast between the soil-filled furrows and the surrounding soils. More frequently spaced parallel trends in F14, aligned east/west, are caused by more recent ploughing.

In F15 a linear anomaly aligned south-west to north-east (I – see Illus 16–18) corresponds with a former field boundary recorded on the first edition OS mapping (1882). Within the north-east of Field 1, two parallel linear anomalies, J and K, are identified on a north-west/south-east orientation. The anomalies do not appear on early OS maps but are aligned parallel with the existing pattern of land division. Therefore they are interpreted as possible former field boundaries, perhaps bounding or enclosing the industrial anomalies discussed below (Section 4.4).

Low magnitude linear anomalies within the north of Field 6 are characteristic of field drains whilst the linear anomaly within the north-west corner of Field 3 (see Illus 10–12) is depicted as a culvert/drain on the first edition OS map.

4.3 GEOLOGICAL ANOMALIES

Across the PDA the magnetic background is largely the same, being characterised by evenly distributed discrete areas of magnetic enhancement. Broad and sinuous anomalies along the course of the River Cole (Field 5 and Fields 22–24; see Illus13–15) are caused by the accumulation of gravels within former river channels.

4.4 ARCHAEOLOGICAL AND POSSIBLE ARCHAEOLOGICAL ANOMALIES

A clear area of archaeological potential has been identified in the north of Field 1, centred at NGR 419900 186897 (see Inset 1 Illus 22–24). Five high magnitude rectangular anomalies, L – P are identified on a north-west/south-east alignment, parallel with the existing pattern of field division. The anomalies each measure approximately 11m x 4.5m and are thought to be due to brick kilns, probably being associated with the construction of the adjacent Wiltshire and Berkshire canal between 1796 and 1810. Several parallel linear anomalies and discrete areas of enhancement are visible extending south-eastwards from the kilns and are obviously associated with the manufacture of bricks. These are thought to be due to soil-filled ditches. The area of industrial activity is bound roughly by possible boundary anomalies, J and K.

Six circular anomalies have been identified within Field 15 (see Inset 2 Illus 25–27). Four of the anomalies, Q – T are relatively high in magnitude and are almost certainly archaeological in origin. Anomalies U and V are less clear, being lower in magnitude and therefore are interpreted as being of possible archaeological potential. The anomalies are very similar in appearance, each measuring between 6m and 8m in diameter, they are interpreted as probable barrows. Pit-type anomalies are identified within the interior of Q and S.

Two further sub circular barrow-type anomalies are identified within the south of Field 2 as possible round barrows, W and X (see Inset 3 Illus 28–30). The anomalies are isolated and low in magnitude but an archaeological origin seems likely.

Within the north of Field 21, several curvilinear and rectilinear anomalies, Y – Ad, are identified within an area of increased background response, H, measuring 100m in diameter (see Inset 4 Illus 31–33). No coherent archaeological pattern is visible. Nevertheless, an archaeological origin is considered possible and the anomalies may be due to a cluster of small enclosures, perhaps being masked or obscured by later disturbance or spreads of modern material – although this interpretation cannot be corroborated by any cartographic source. Within the south-west of this field faint linear, Ae, and curvilinear anomalies, Af, may also be of archaeological potential, perhaps being due to ditches. However, again no clear archaeological pattern is visible and interpretation is tentative. It is worth noting that the anomalies lie a short distance north of alluvial deposits associated with the River Cole (see Illus 8) and it is possible, depending upon the depth and composition of deposits, that weaker anomalies of archaeological potential may not manifest with clarity in the data at this location.

A single north-south aligned linear anomaly, Ag, within the west of Field 6 has been ascribed a possible archaeological interpretation based upon the orientation of the anomaly being oblique to the surrounding plough trends (see Illus 13–15). However, no archaeological pattern is discernible and it is possible that the anomaly is due to a field drain.

5 CONCLUSION

The geophysical survey has successfully evaluated the proposed development area and identified two areas of clear archaeological potential. An area of probable industrial activity, including five kilns, is identified in the north-west. The limits of the industrial area appear to be defined by parallel linear anomalies.

A concentration of six possible round barrows has been identified towards the River Cole in the south of the PDA, and two more identified further north. At the eastern extent of the site several rectilinear and curvilinear anomalies within a dense cluster of anomalies, may be due to archaeological activity, perhaps being masked by the spreading of modern enhanced material.

The impact of alluvial deposits on the identification of anomalies of archaeological potential within the site is unclear. Agricultural anomalies within those areas overlain by alluvium appear weaker and lower in magnitude, although possible round barrows have been identified within this magnetic background. It is possible that weaker isolated anomalies of archaeological potential may not manifest with clarity in the data.

Anomalies consistent with historical agricultural activity, including ridge and furrow cultivation and a former field boundary have been identified across the site.

Therefore, based solely on the results and interpretation of the geophysical data, the archaeological potential of the site is assessed as low, but locally moderate to high in the vicinity of the area of probable industrial activity and possible round barrows.

6 REFERENCES

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7 APPENDICES

APPENDIX 1 MAGNETOMETER SURVEY

Magnetic susceptibility and soil magnetism

Iron makes up about 6% of the Earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haematite. These minerals have a weak, measurable magnetic property termed magnetic susceptibility. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms so that by measuring the magnetic susceptibility of the topsoil, areas where human occupation or settlement has occurred can be identified by virtue of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently comes to fill features, such as ditches or pits, localised isolated and linear magnetic anomalies can result whose presence can be detected by a magnetometer (fluxgate gradiometer).

In general, it is the contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of topsoils, subsoils and rocks into which these features have been cut, which causes the most recognisable responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or the bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background soil levels. Discrete feature, such as pits, can also be detected.

The magnetic susceptibility of a soil can also be enhanced by the application of heat. This effect can lead to the detection of features such as hearths, kilns or areas of burning.

Types of magnetic anomaly

In the majority of instances anomalies are termed 'positive'. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as 'negative' anomalies that, conversely, means that the response is negative relative to the mean magnetic background.

Where it is not possible to give a probable cause of an observed anomaly a '?' is appended.

It should be noted that anomalies interpreted as modern in origin might be caused by features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the feature causing the anomaly.

The types of response mentioned above can be divided into five main categories that are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes)

These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance

These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Linear trend

This is usually a weak or broad linear anomaly of unknown cause or date. These anomalies are often caused by agricultural activity, either ploughing or land drains being a common cause.

Areas of magnetic enhancement/positive isolated anomalies

Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an increased response (sometimes only visible on an XY trace plot) on two or three successive traverses. In neither instance is there the intense dipolar response characteristic exhibited by an area of magnetic disturbance or of an 'iron spike' anomaly (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post-holes or by kilns. They can also be caused by pedological variations or by natural infilled features on certain geologies. Ferrous material in the subsoil can also give a similar response. It can often therefore be very difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear anomalies

Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing trends, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

APPENDIX 2 SURVEY LOCATION INFORMATION

An initial survey base station was established using a Trimble VRS differential Global Positioning System (dGPS). The magnetometer data was georeferenced using a Trimble RTK differential Global Positioning System (Trimble R8s model).

Temporary sight markers were laid out using a Trimble VRS differential Global Positioning System (Trimble R8s model) to guide the operator and ensure full coverage. The accuracy of this dGPS equipment is better than 0.01m.

The survey data were then super-imposed onto a base map provided by the client to produce the displayed block locations. However, it should be noted that Ordnance Survey positional accuracy for digital map data has an error of 0.5m for urban and floodplain areas, 1.0m for rural areas and 2.5m for mountain and moorland areas. This potential error must be considered if coordinates are measured off hard copies of the mapping rather than using the digital coordinates.

Headland Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party.

APPENDIX 3 GEOPHYSICAL SURVEY ARCHIVE

The geophysical archive comprises:

an archive disk containing the raw data in XYZ format, a raster image of each greyscale plot with associate world file, and a PDF of the report

The project will be archived in-house in accordance with recent good practice guidelines (http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_3). The data will be stored in an indexed archive and migrated to new formats when necessary.

APPENDIX 4 OASIS DATA COLLECTION FORM: ENGLAND

OASIS ID: headland5-269125

PROJECT DETAILS	
Project name	Land east of Swindon, Wiltshire
Short description of the project	Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey covering approximately 60 hectares east of Swindon, Wiltshire, to inform future archaeological strategy in advance of a proposed development. The survey has identified an area of probable industrial activity, including five probable kilns, close to the disused nineteenth century Wiltshire and Berkshire Canal. Further south, close to the River Cole, at least five circular anomalies have been identified, perhaps indicating round barrows. Elsewhere anomalies consistent with historic agricultural activity including ridge and furrow cultivation have been identified across the site which may be of local historical interest. Therefore, based solely on the results of the geophysical survey, the archaeological potential of the site is assessed as low but locally moderate to high in the vicinity of the area of kilns and possible barrows.
Project dates	Start: 23-05-2016 End: 09-06-2016
Previous/future work	Yes / Yes
Any associated project reference codes	EOSW-01 - Contracting Unit No.
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 4 - Character Undetermined
Monument type	N/A None
Monument type	N/A None
Significant Finds	N/A None
Significant Finds	N/A None
Methods & techniques	"Geophysical Survey"
Development type	Not recorded
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded
Solid geology	AMPTHILL AND KIMMERIDGE CLAY
Drift geology	ALLUVIUM
Techniques	Magnetometry

PROJECT LOCATION	
Country	England
Site location	WILTSHIRE SWINDON SOUTH MARSTON Land east of Swindon
Postcode	SN3 4RT
Study area	60 Hectares
Site coordinates	SU 2058 8697 51.58074037205 -1.702958709545 51 34 50 N 001 42 10 W Point

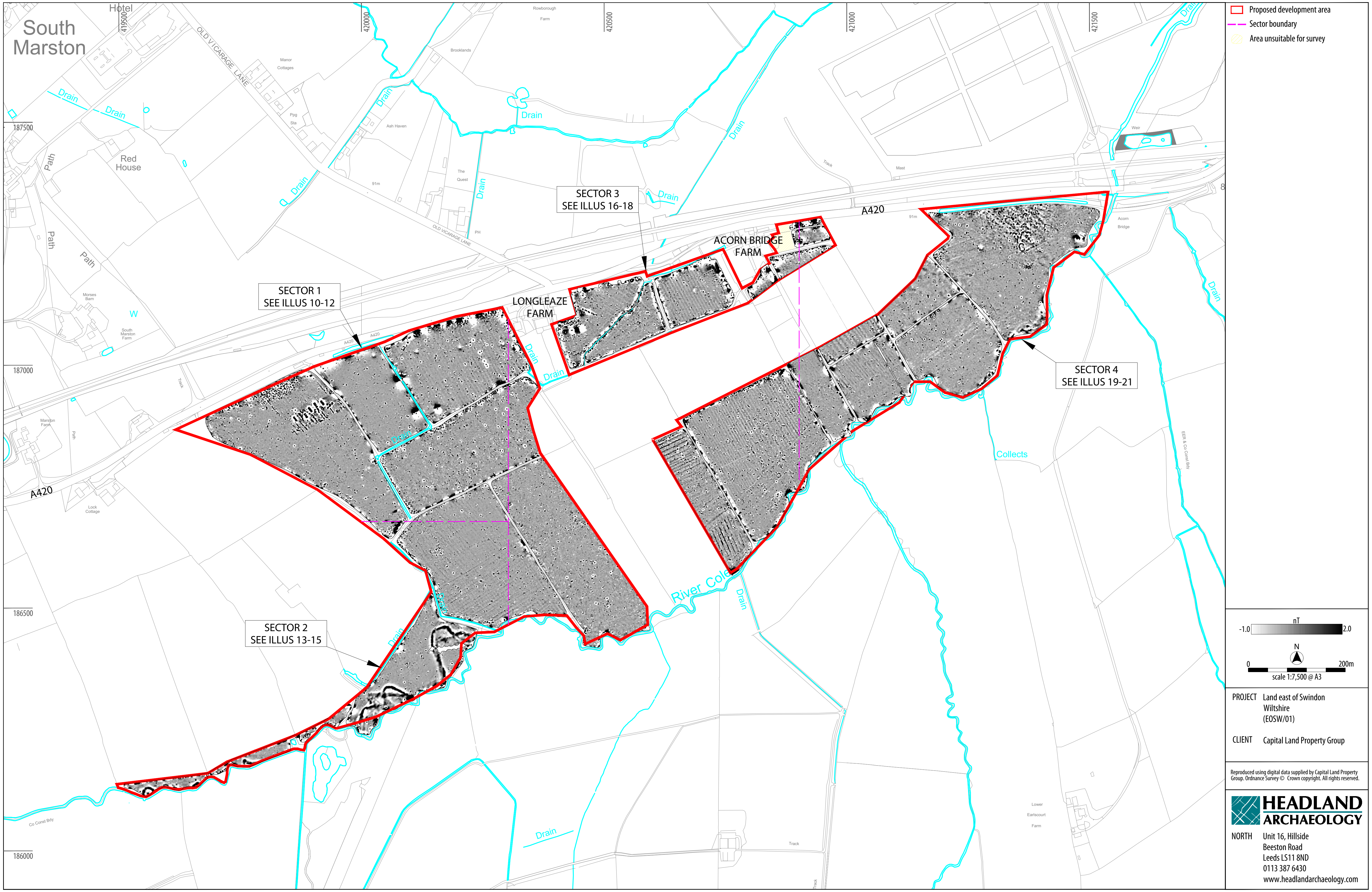
PROJECT CREATORS	
Name of Organisation	Headland Archaeology
Project brief originator	Headland Archaeology
Project design originator	Headland Archaeology
Project director/manager	Alistair Webb

Project supervisor	Bishop, R
Type of sponsor/funding body	Developer

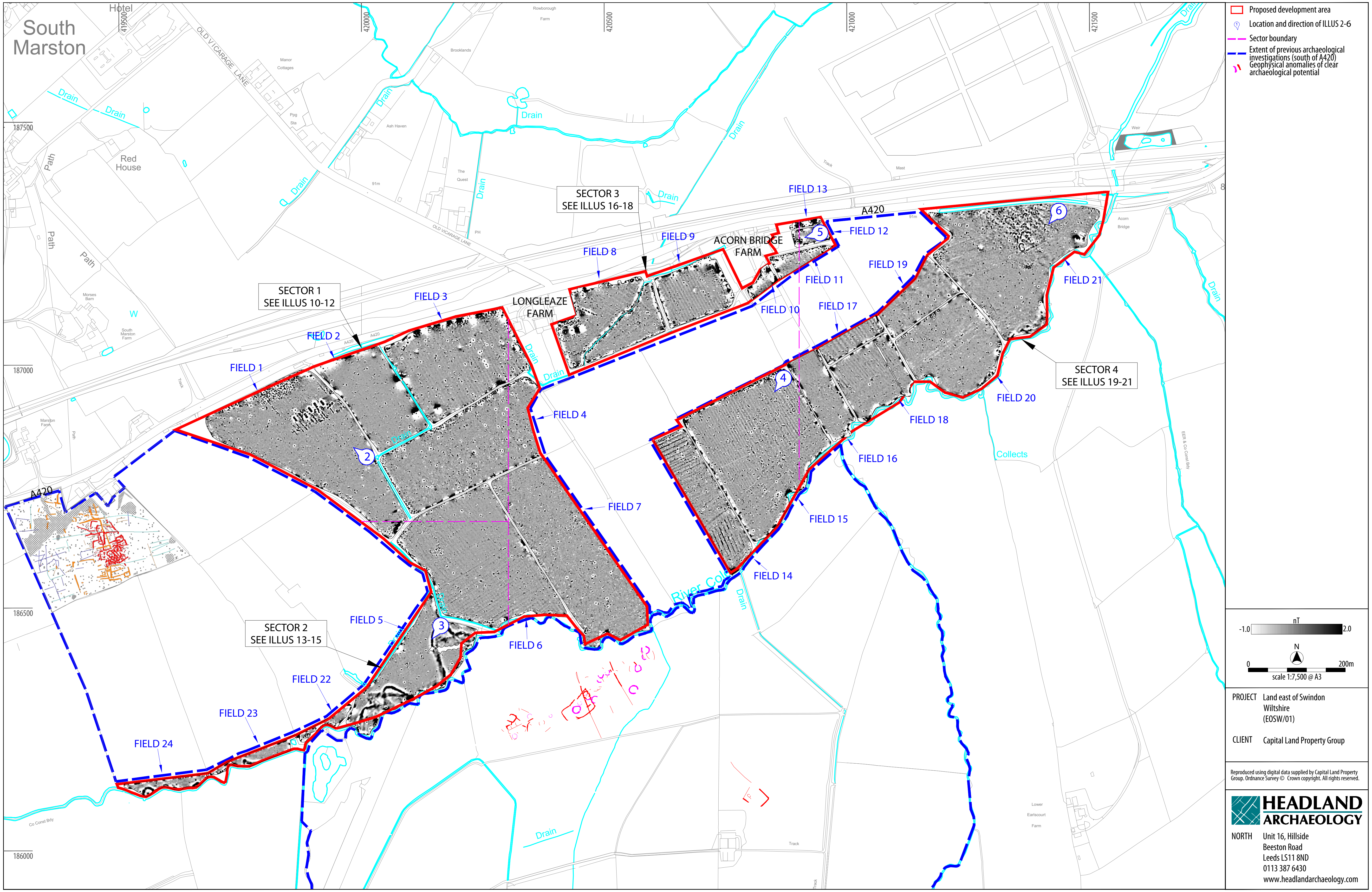
PROJECT ARCHIVES	
Physical Archive Exists?	No
Digital Archive Exists?	No
Digital Media available	"Geophysics"
Paper Archive Exists?	No
Paper Media available	"Report"

PROJECT BIBLIOGRAPHY 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Land east of Swindon, Wiltshire; Geophysical Survey
Author(s)/Editor(s)	Harrison, D.
Date	2016
Issuer or publisher	Headland Archaeology
Place of issue or publication	Leeds
Description	A4 bound report

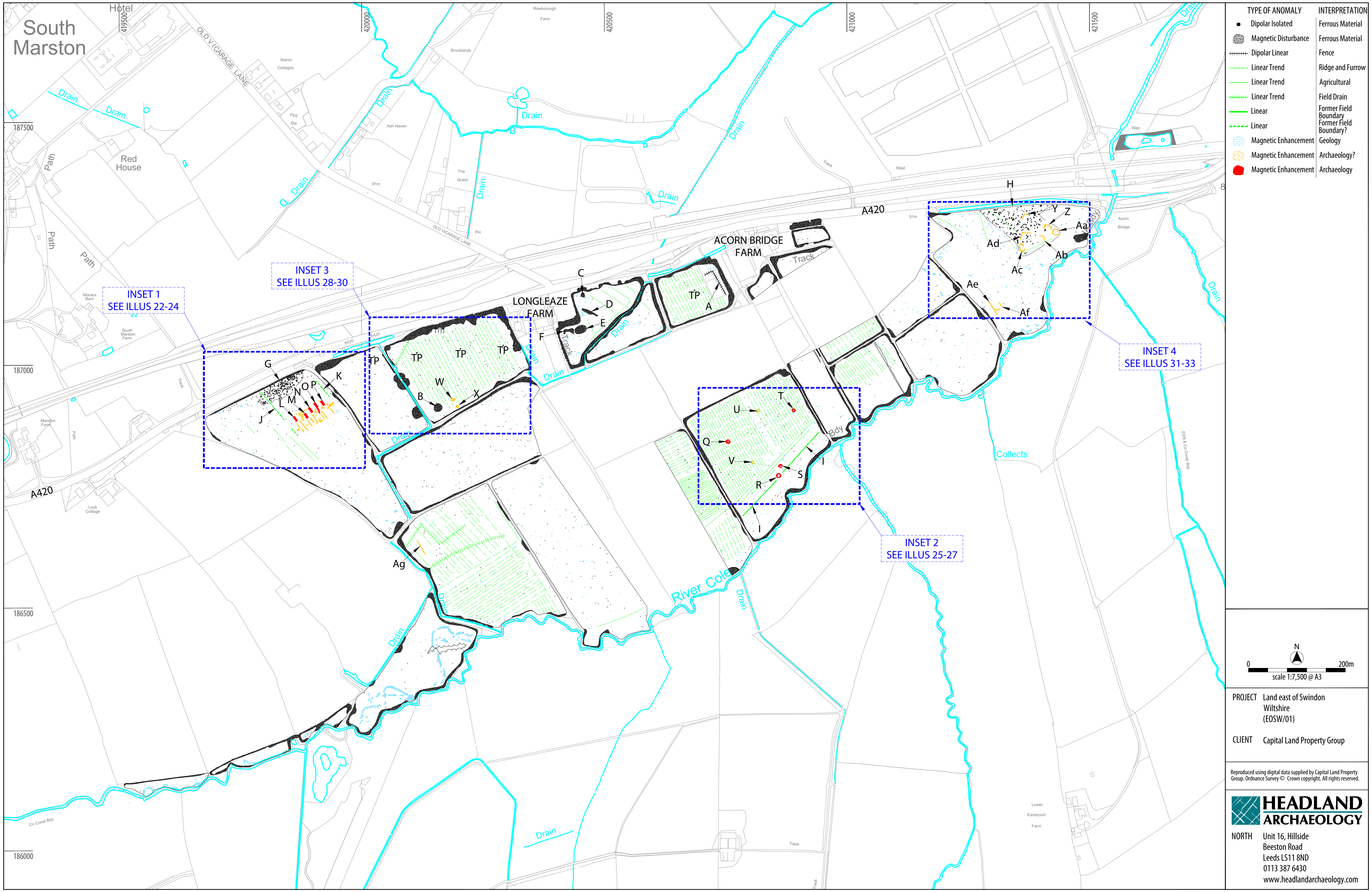
Entered by	David Harrison (david.harrison@headlandarchaeology.com)
Entered on	18 November 2016



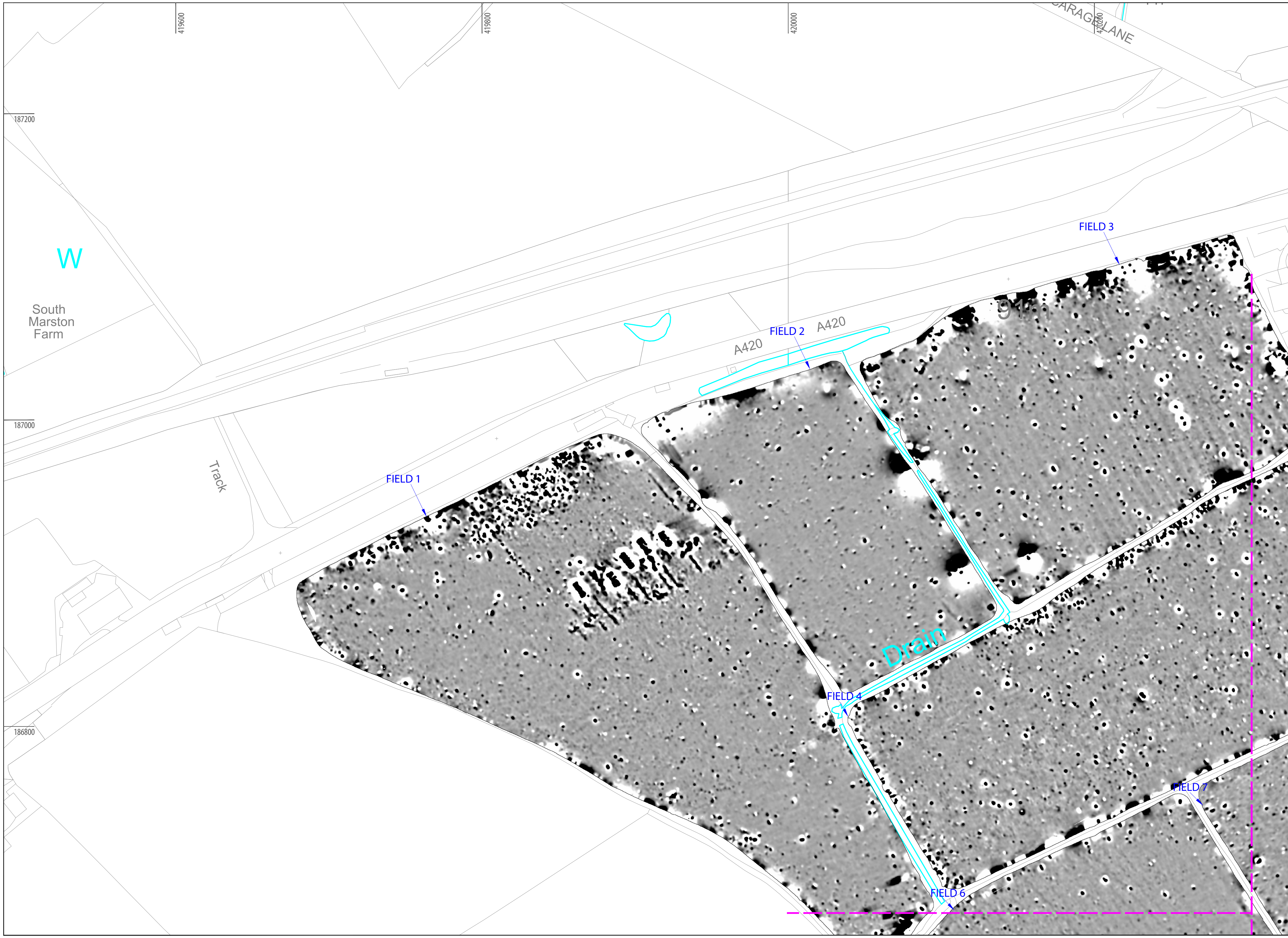
Illus 7
Survey location showing processed greyscale magnetometer data



Illus 8
Processed greyscale magnetometer data showing location and direction of Illus 2 - Illus 6 and location of previous archaeological investigations



Illus 9
Overall interpretation of magnetometer data showing location of 1:1000 Insets (Illus 22 - Illus 33)



Sector boundary

nT

-1.0 2.0

N

0 50m

scale 1:2,500 @ A3

PROJECT Land east of Swindon
Wiltshire
(EOSW/01)

CLIENT Capital Land Property Group

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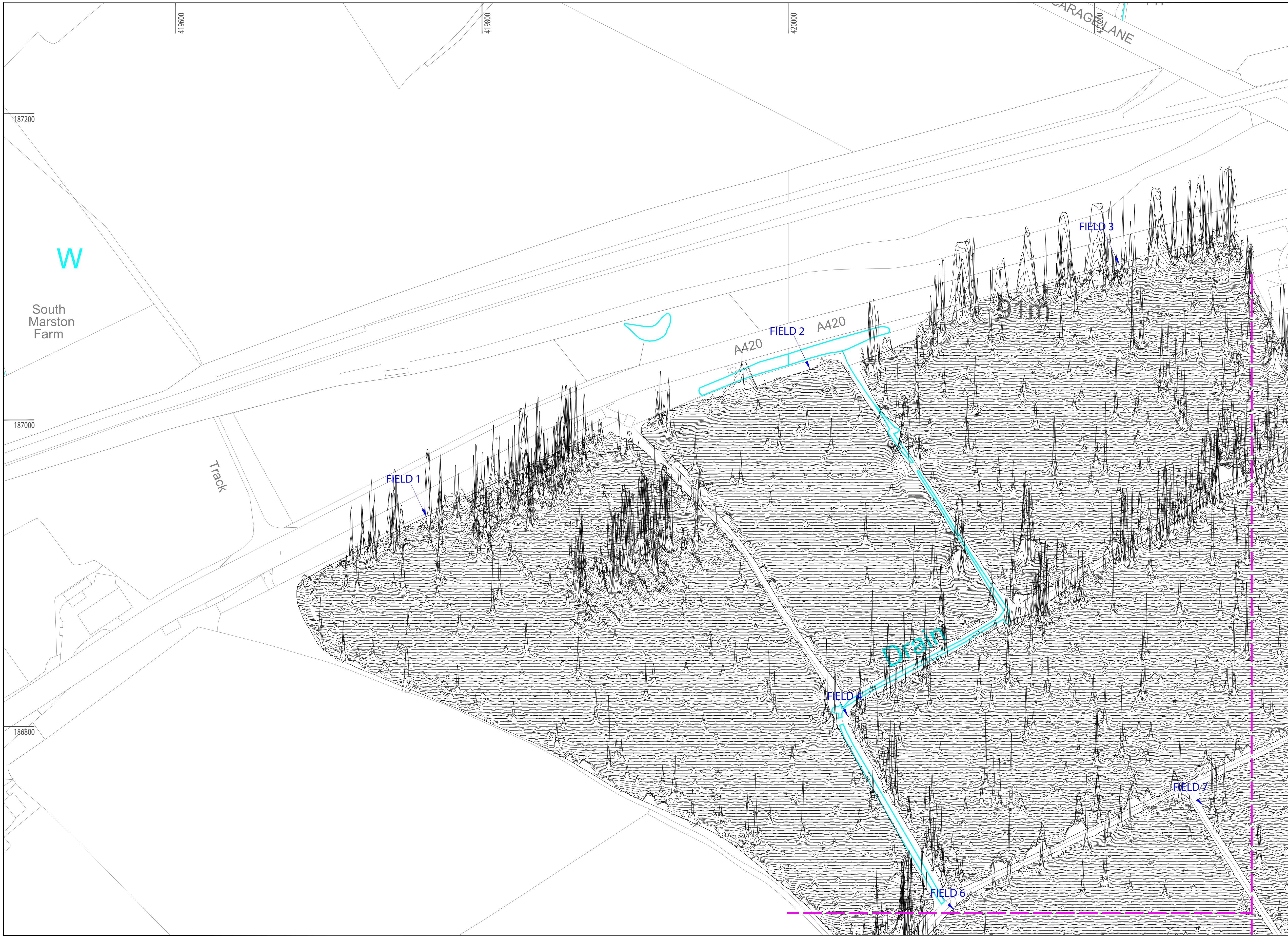
Illus 10
Processed greyscale magnetometer data; Sector 1



Sector boundary

10.0nT/cm

N

0 50m

scale 1:2,500 @ A3

PROJECT Land east of Swindon
Wiltshire
(EOSW/01)

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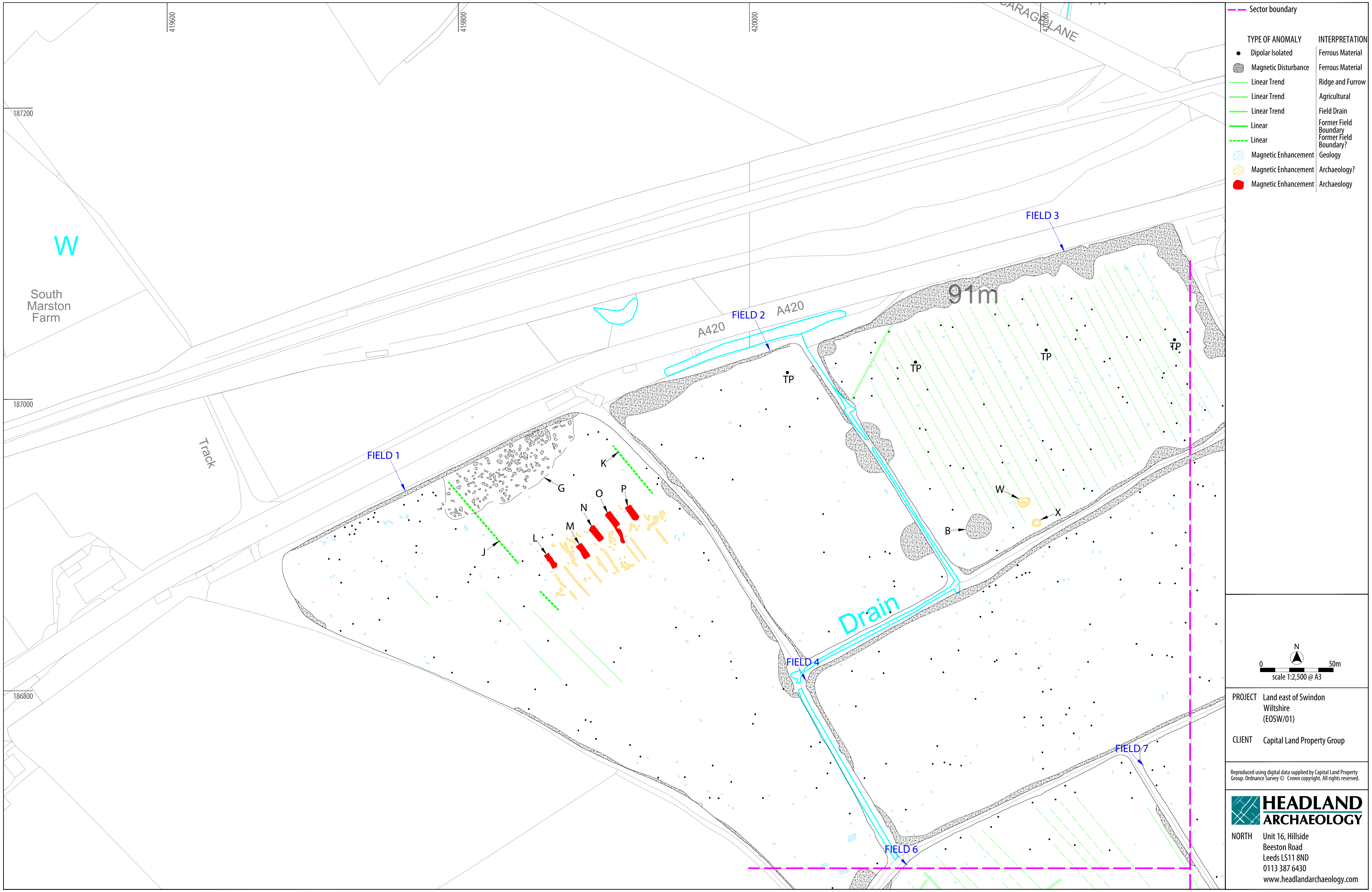
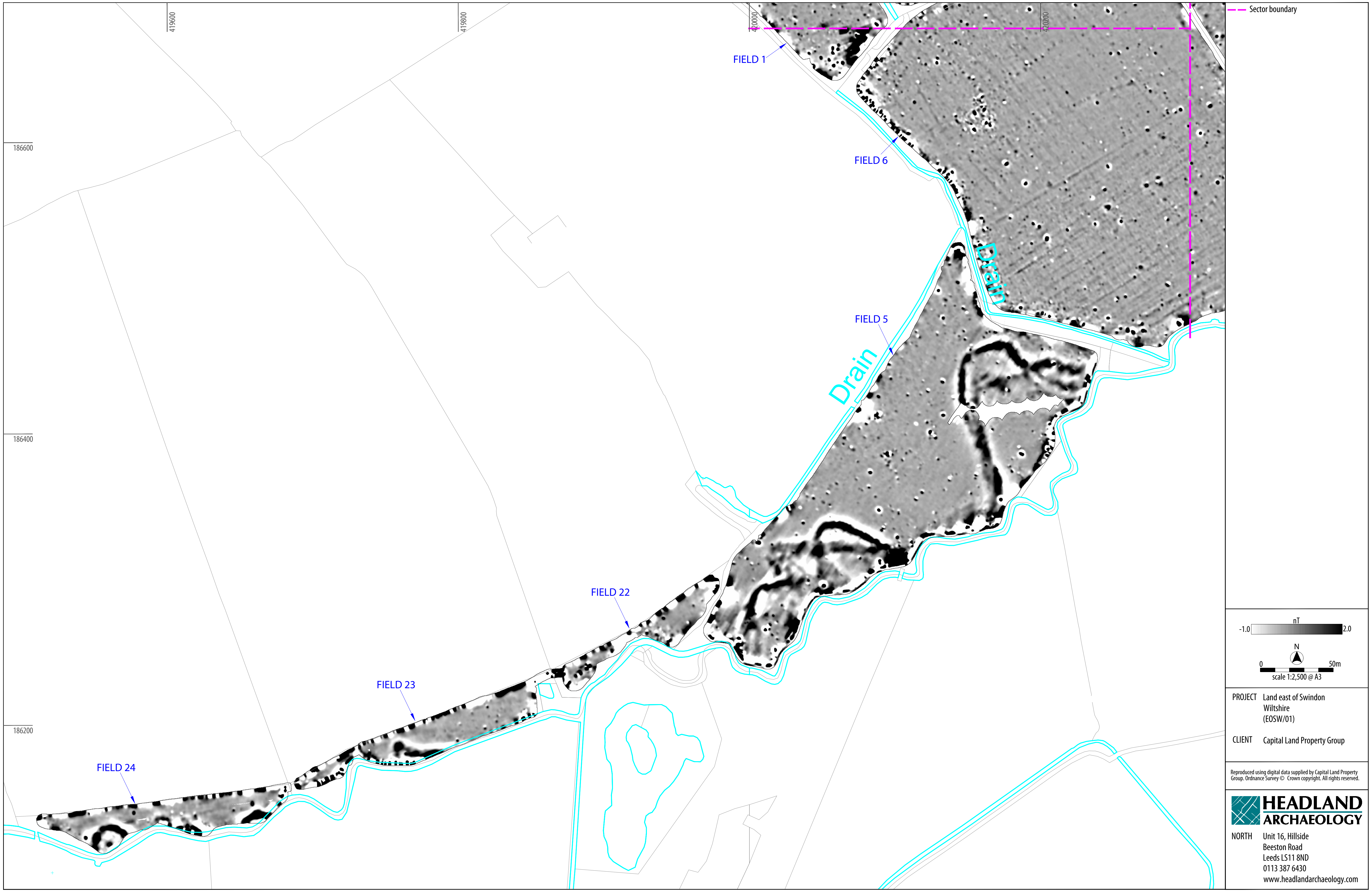
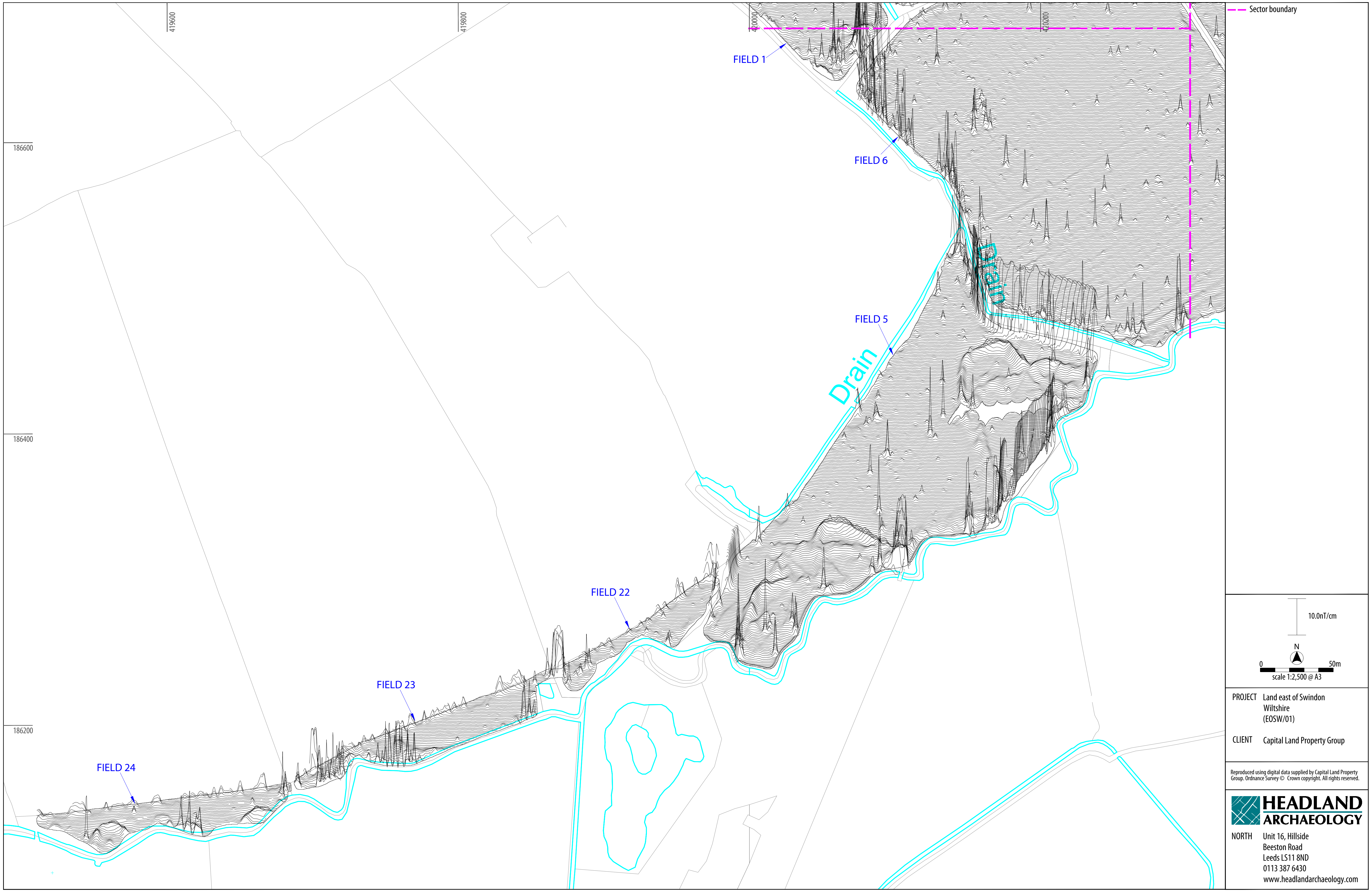
Illus 11
XY trace plot of magnetometer data; Sector 1



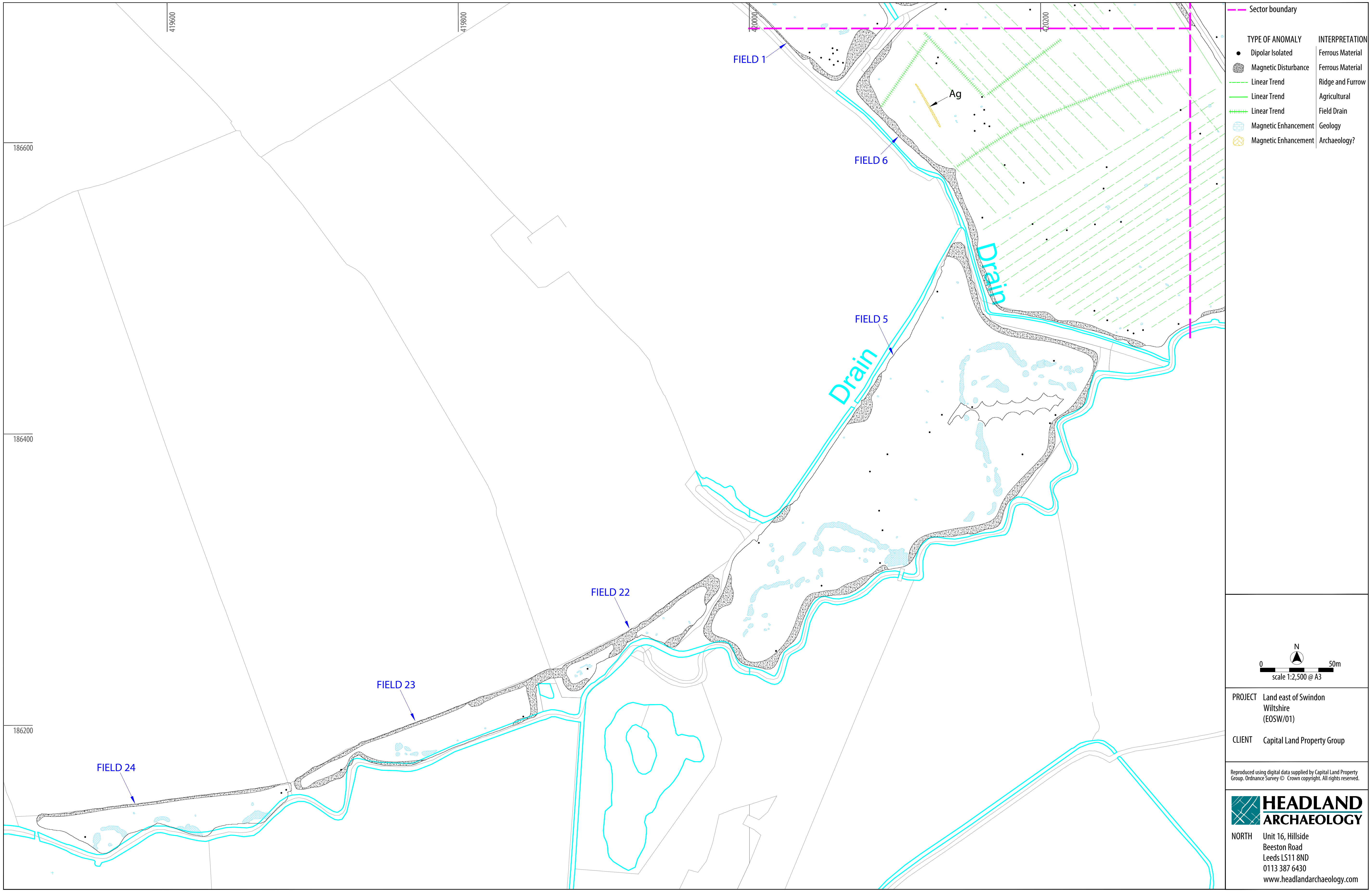
Illus 12
Interpretation of magnetometer data; Sector 1



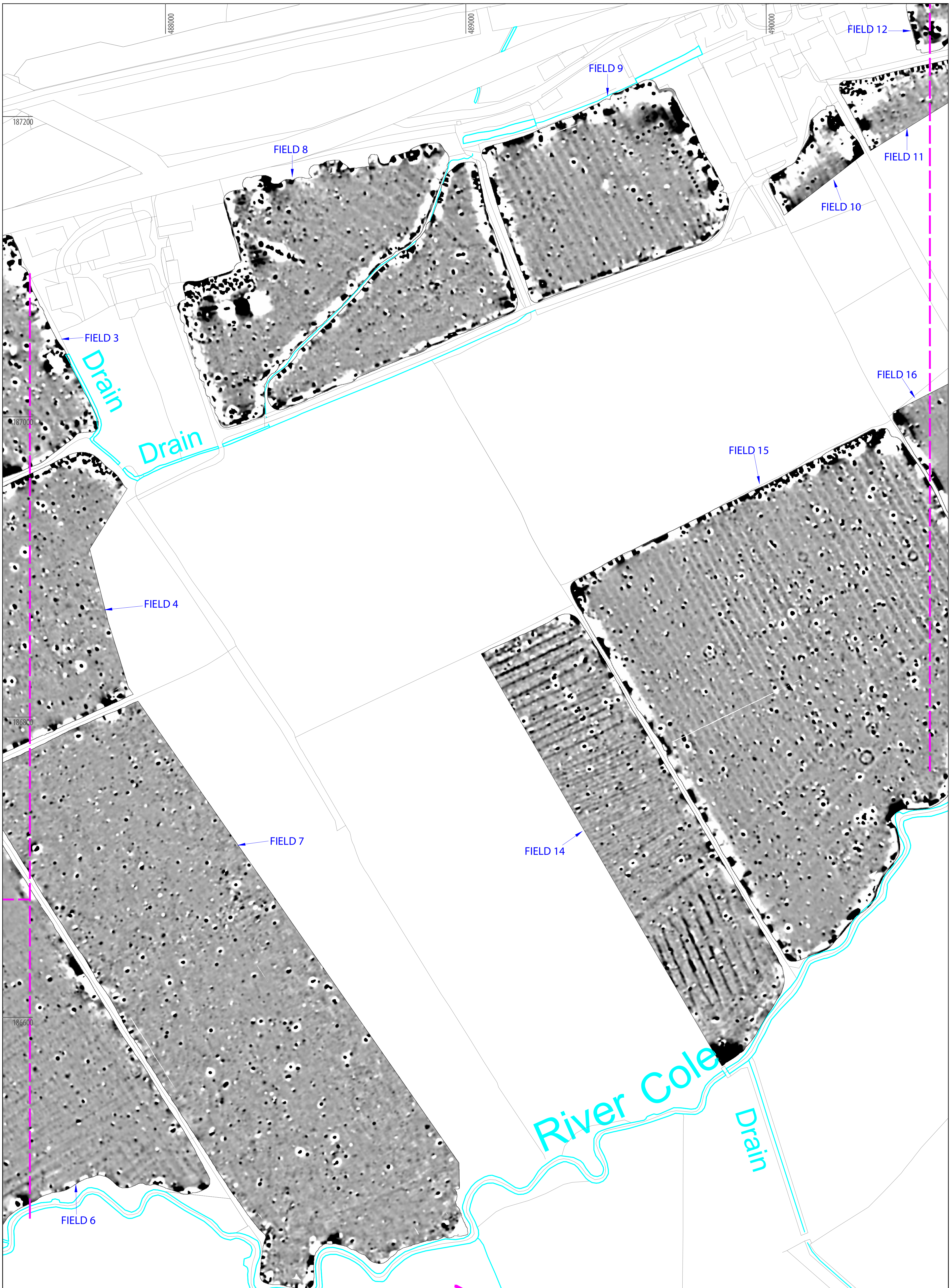
Illus 13
Processed greyscale magnetometer data; Sector 2



Illus 14
XY trace plot of magnetometer data; Sector 2



Illus 15
Interpretation of magnetometer data; Sector 2



Sector boundary

nT
-1.0
2.0

N
0
50m
scale 1:2,500 @ A3

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CLIENT Capital Land Property Group

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Illus 16
Processed greyscale magnetometer data; Sector 3

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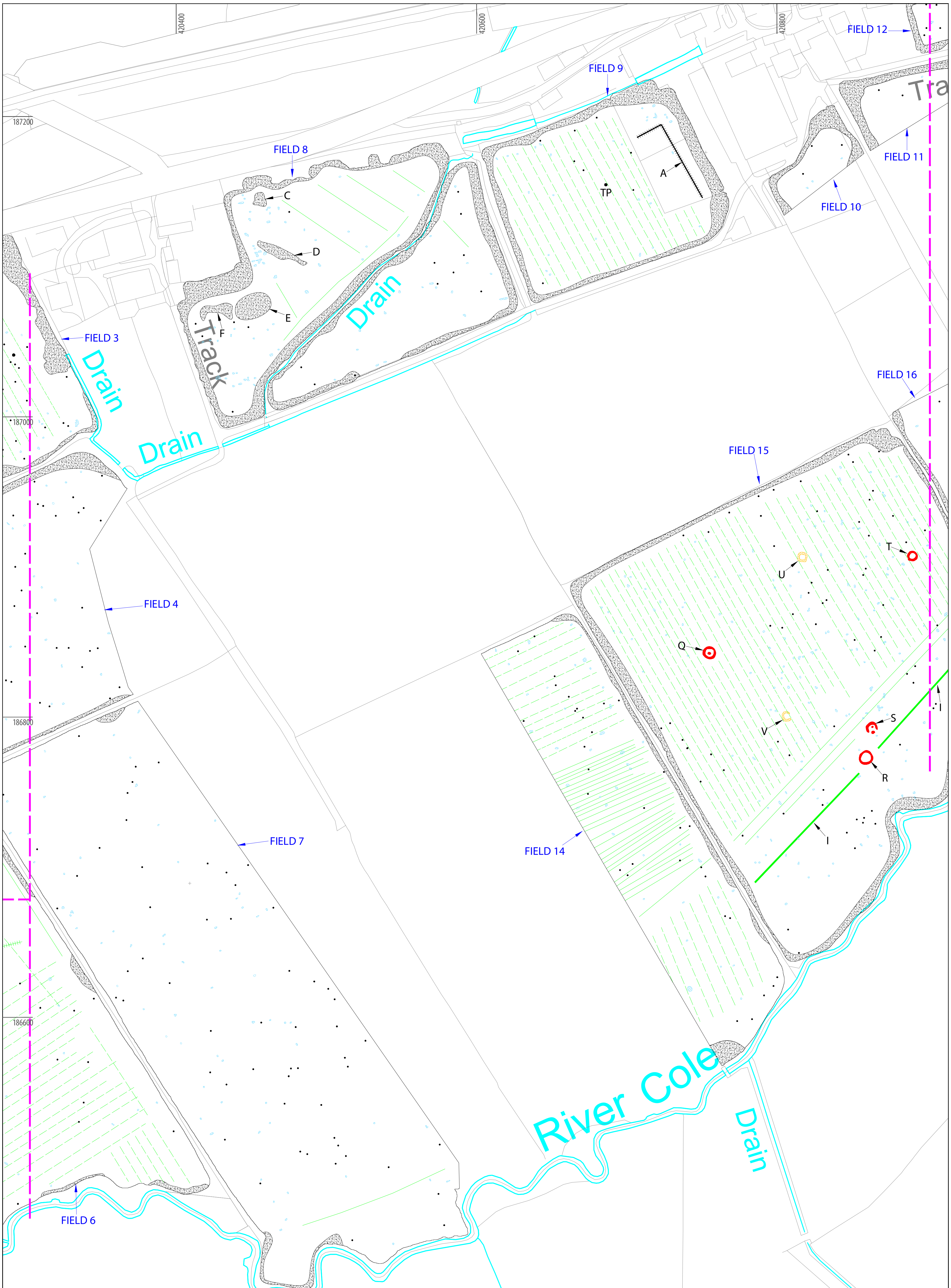
Illus 17
XY trace plot of magnetometer data; Sector 3



Sector boundary

TYPE OF ANOMALY	INTERPRETATION	TYPE OF ANOMALY	INTERPRETATION
Dipolar Isolated	Ferrous Material	Linear	Former Field Boundary
Magnetic Disturbance	Ferrous Material	Magnetic Enhancement	Geology
Dipolar Linear	Fence	Magnetic Enhancement	Archaeology?
Linear Trend	Ridge and Furrow	Magnetic Enhancement	Archaeology?
Linear Trend	Agricultural		
Linear Trend	Field Drain		

N

0 50m

scale 1:2,500 @ A3

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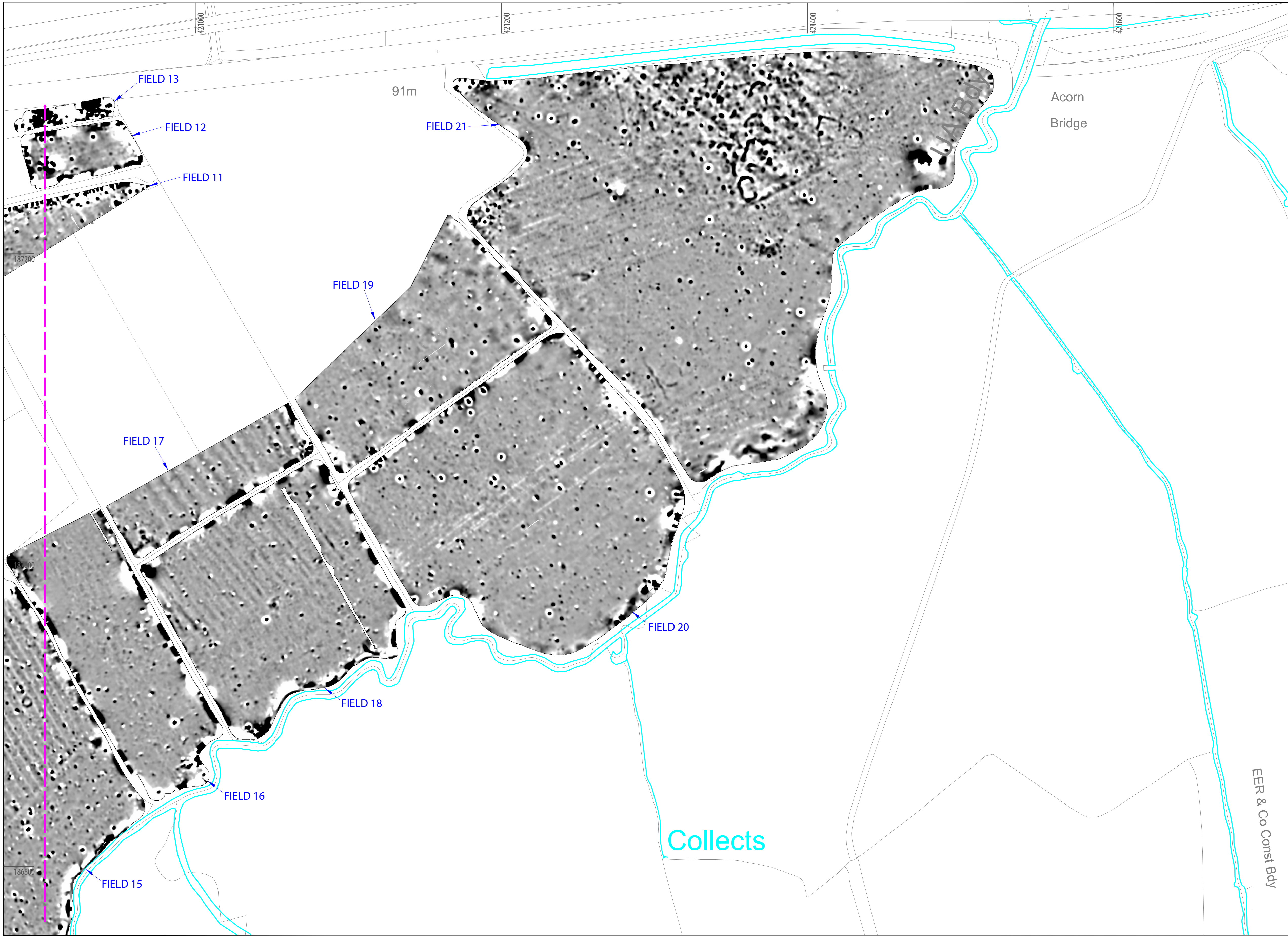
Illus 18
Interpretation of magnetometer data; Sector 3



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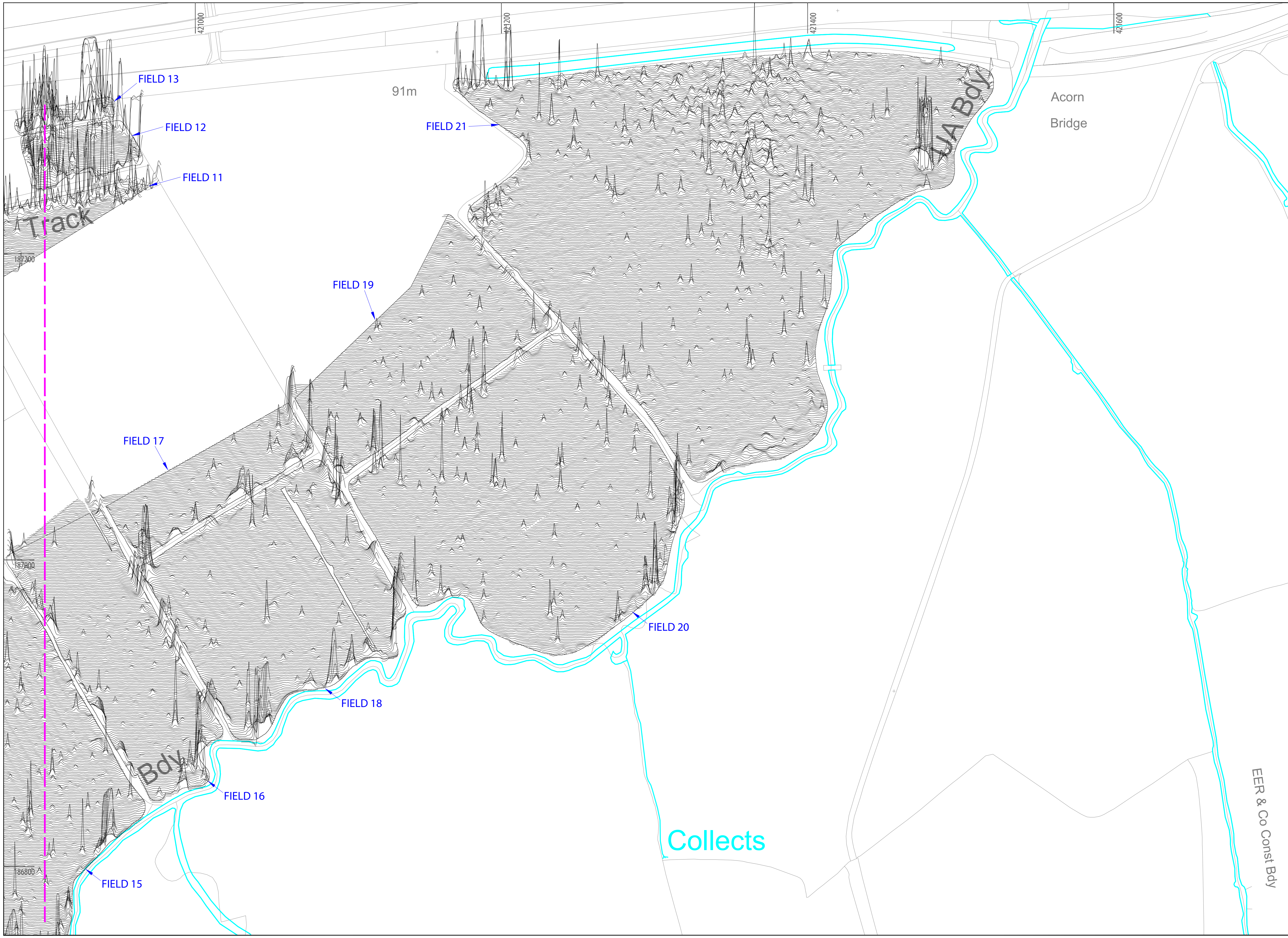
Illus 19
Processed greyscale magnetometer data; Sector 4



Sector boundary

10.0nT/cm

N

0 50m

scale 1:2,500 @ A3

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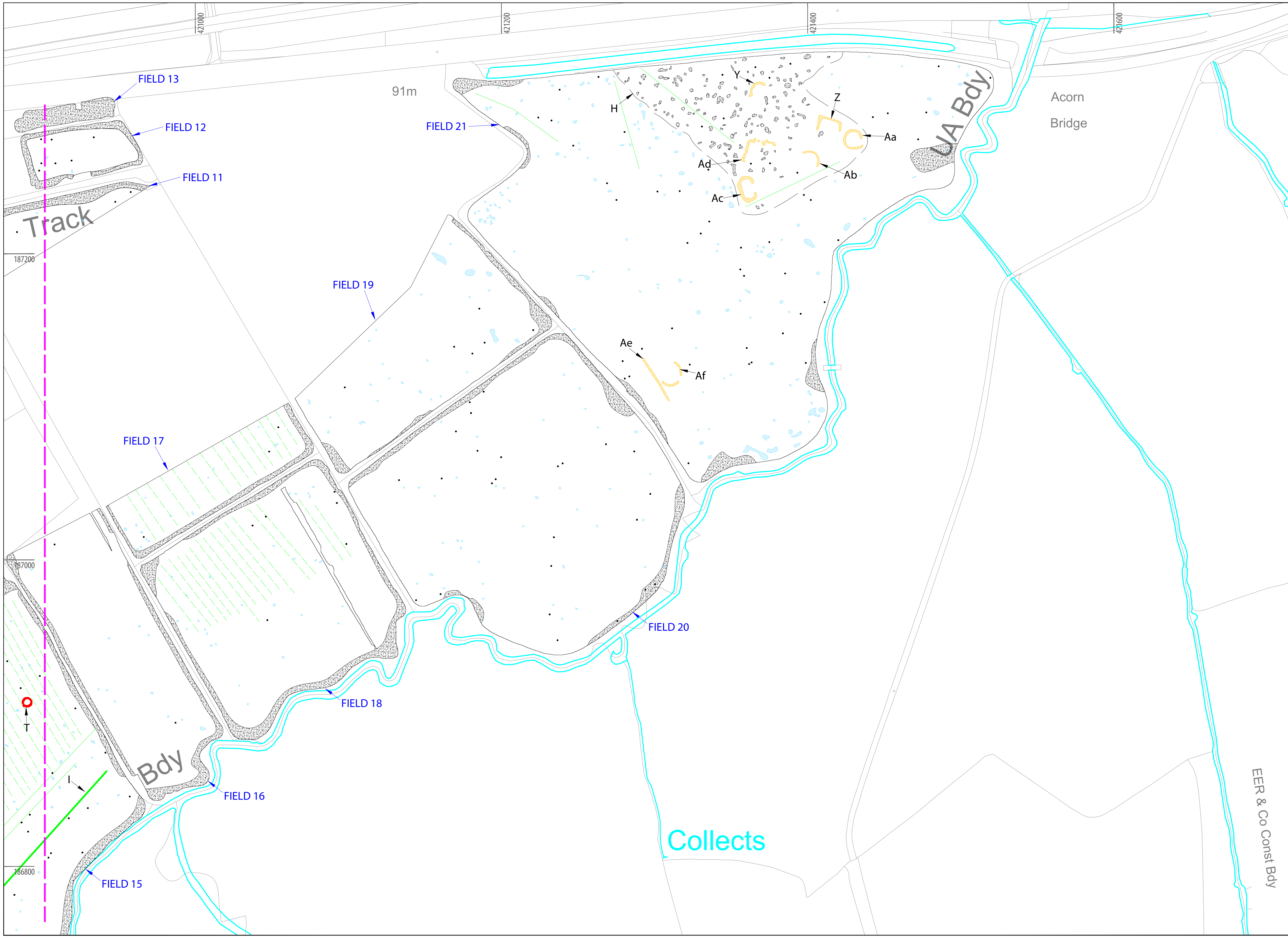
Illus 20
XY trace plot of magnetometer data; Sector 4



Sector boundary

TYPE OF ANOMALY	INTERPRETATION
Dipolar Isolated	Ferrous Material
Magnetic Disturbance	Ferrous Material
Linear Trend	Ridge and Furrow
Linear Trend	Agricultural
Linear	Former Field Boundary
Magnetic Enhancement	Geology
Magnetic Enhancement	Archaeology?
Magnetic Enhancement	Archaeology?

N

0 50m

scale 1:2,500 @ A3

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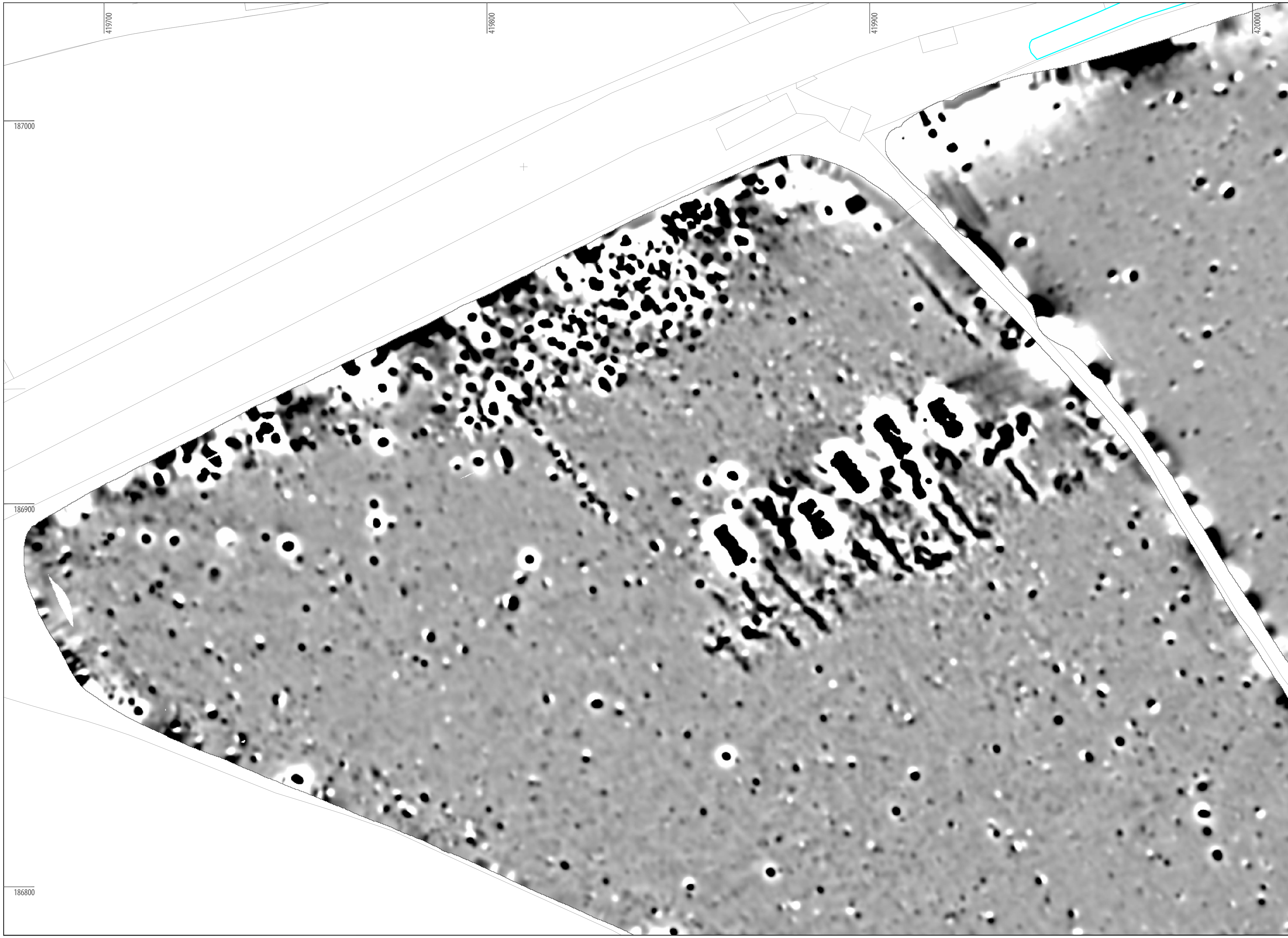
Illus 21
Interpretation of magnetometer data; Sector 4



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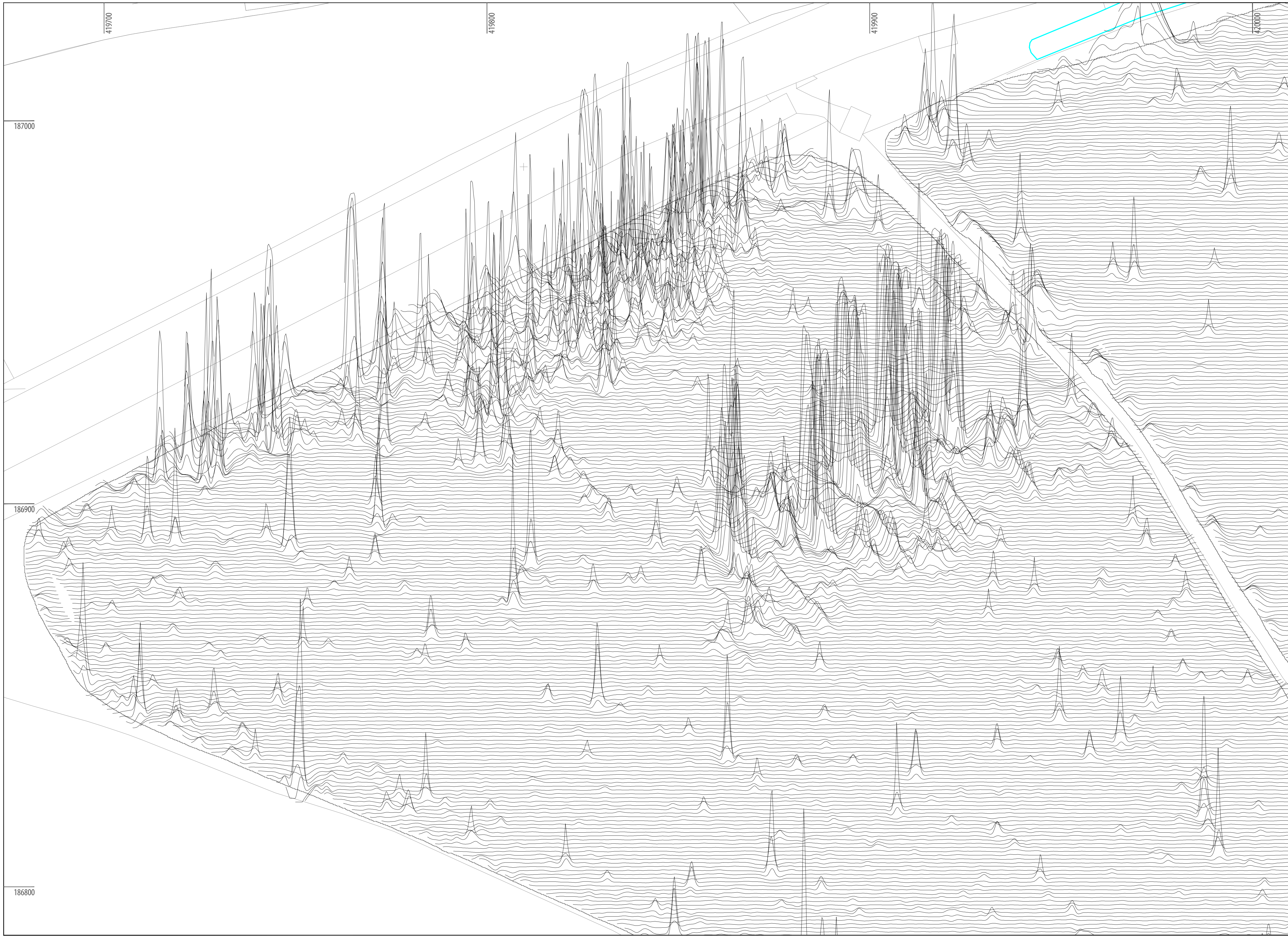
Illus 22
Processed greyscale magnetometer data; Inset 1



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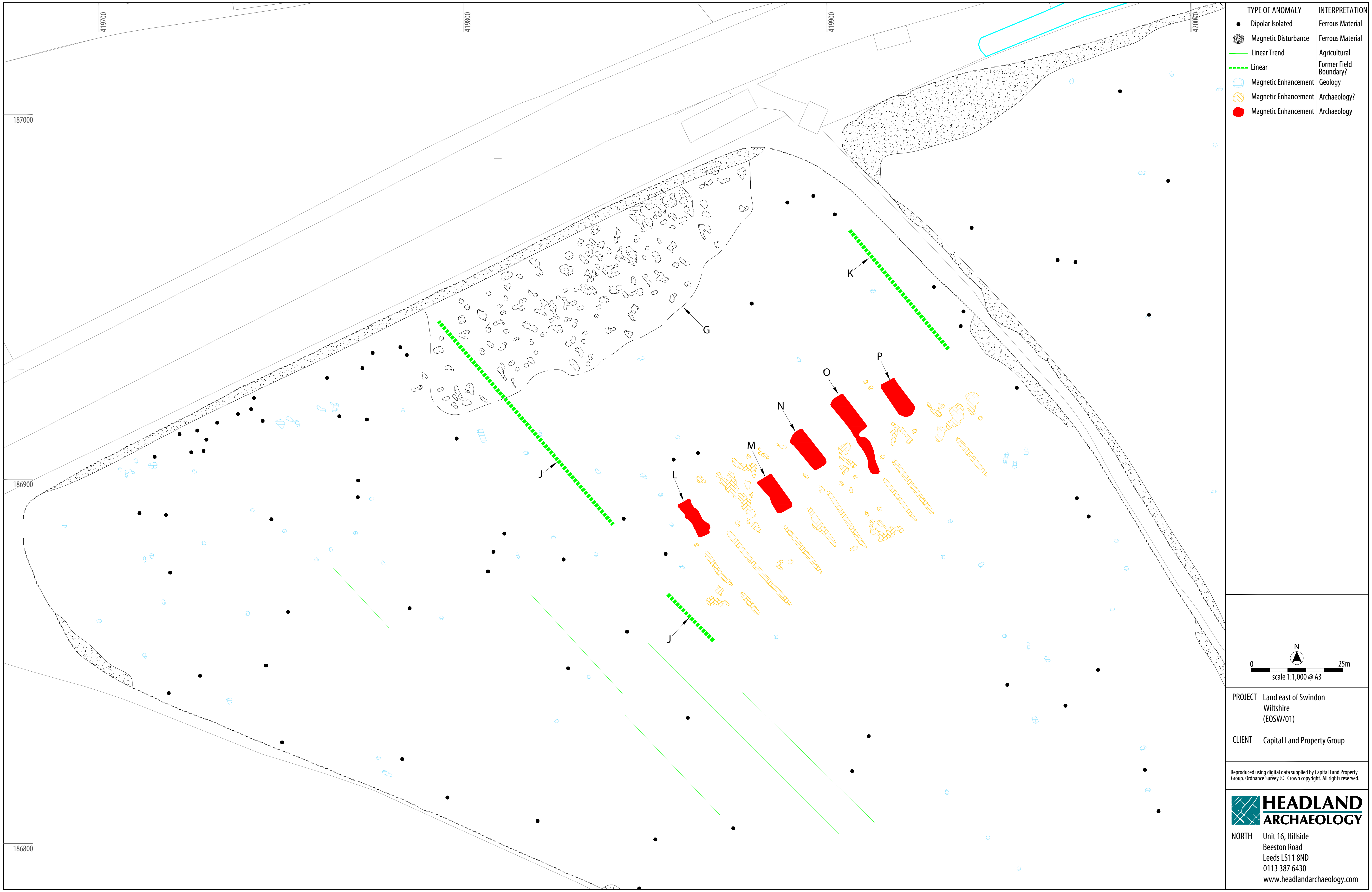
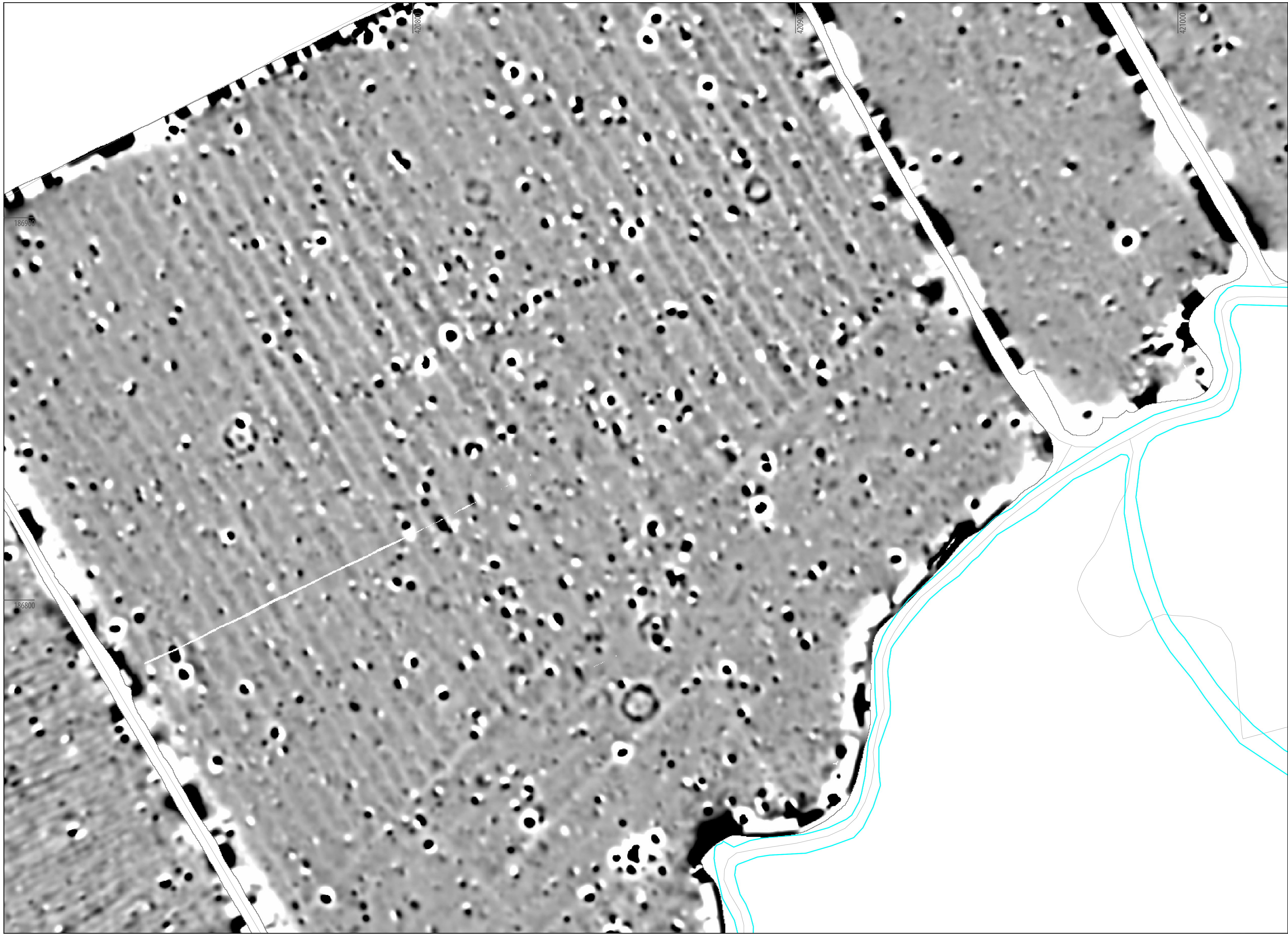
Illus 23
XY trace plot of magnetometer data; Inset 1



Illus 24
Interpretation of magnetometer data; Inset 1



nT

-1.0 2.0

N

0 25m

scale 1:1,000 @ A3

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Illus 25
Processed greyscale magnetometer data; Inset 2

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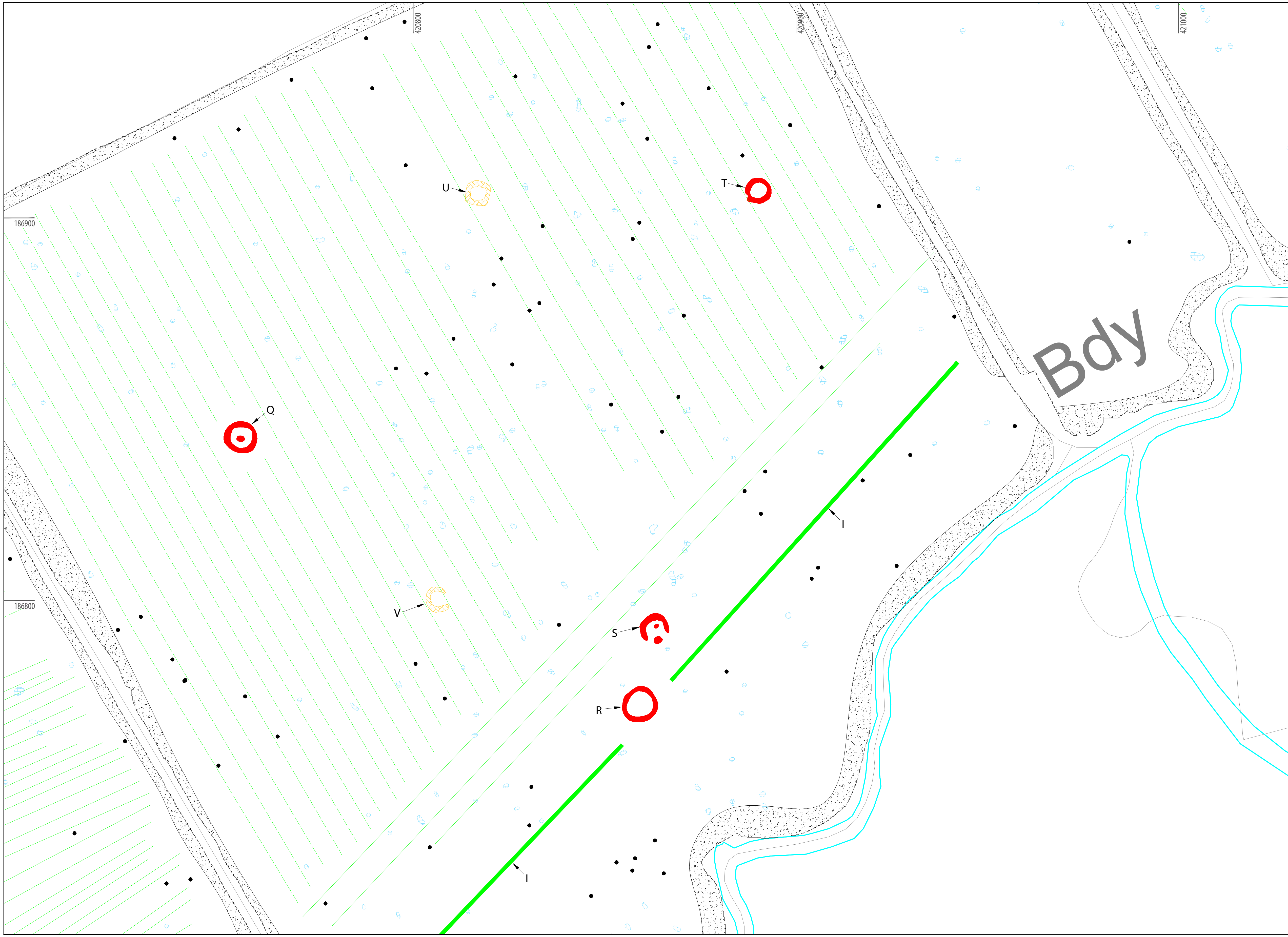
Illus 26
XY trace plot of magnetometer data; Inset 2



TYPE OF ANOMALY	INTERPRETATION
Dipolar Isolated	Ferrous Material
Magnetic Disturbance	Ferrous Material
Linear Trend	Agricultural
Linear Trend	Ridge and Furrow
Linear	Former Field Boundary
Magnetic Enhancement	Geology
Magnetic Enhancement	Archaeology?
Magnetic Enhancement	Archaeology

N

0 25m

scale 1:1,000 @ A3

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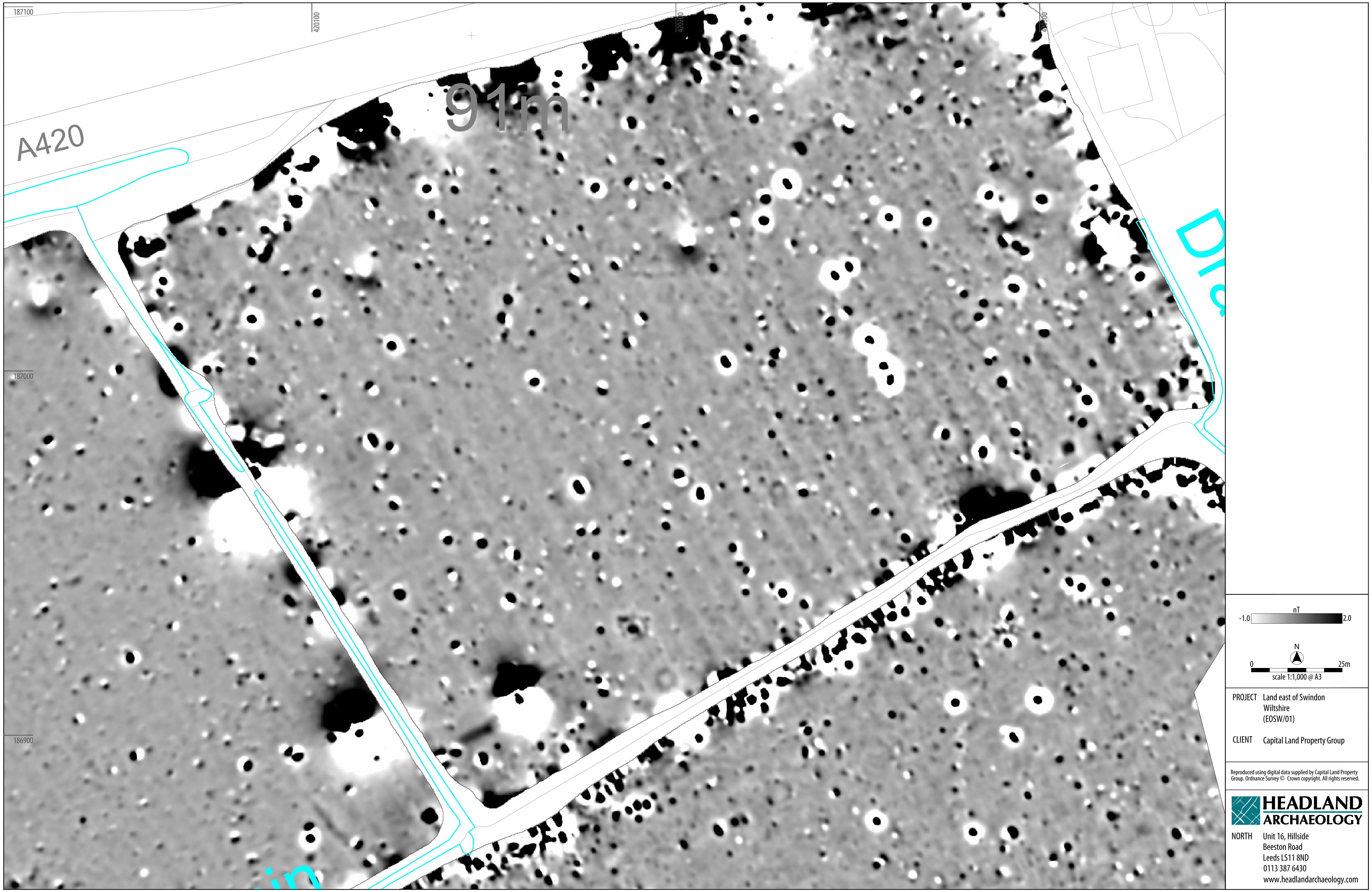
Illus 27
Interpretation of magnetometer data; Inset 2



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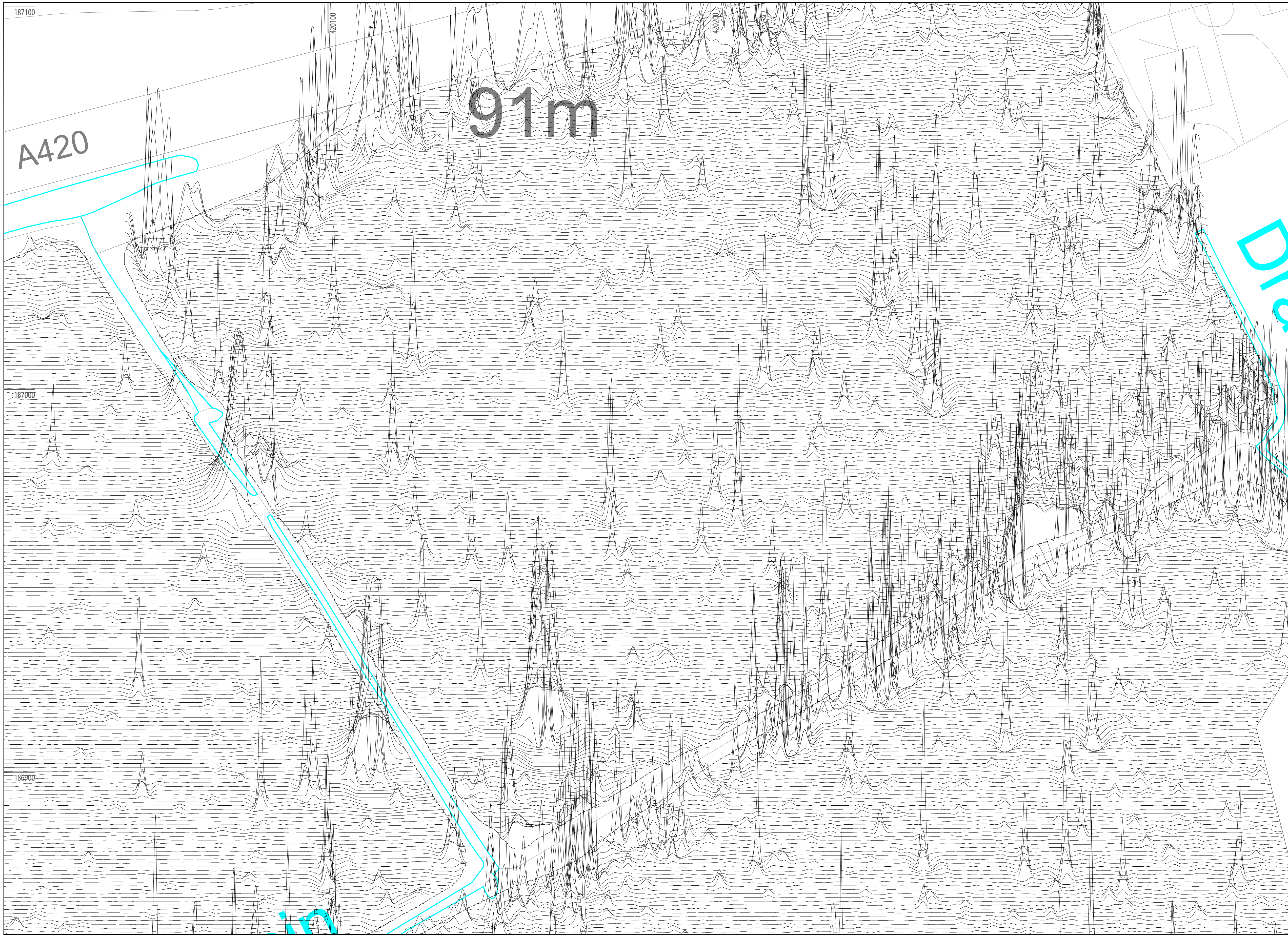
Illus 28
Processed greyscale magnetometer data; Inset 3



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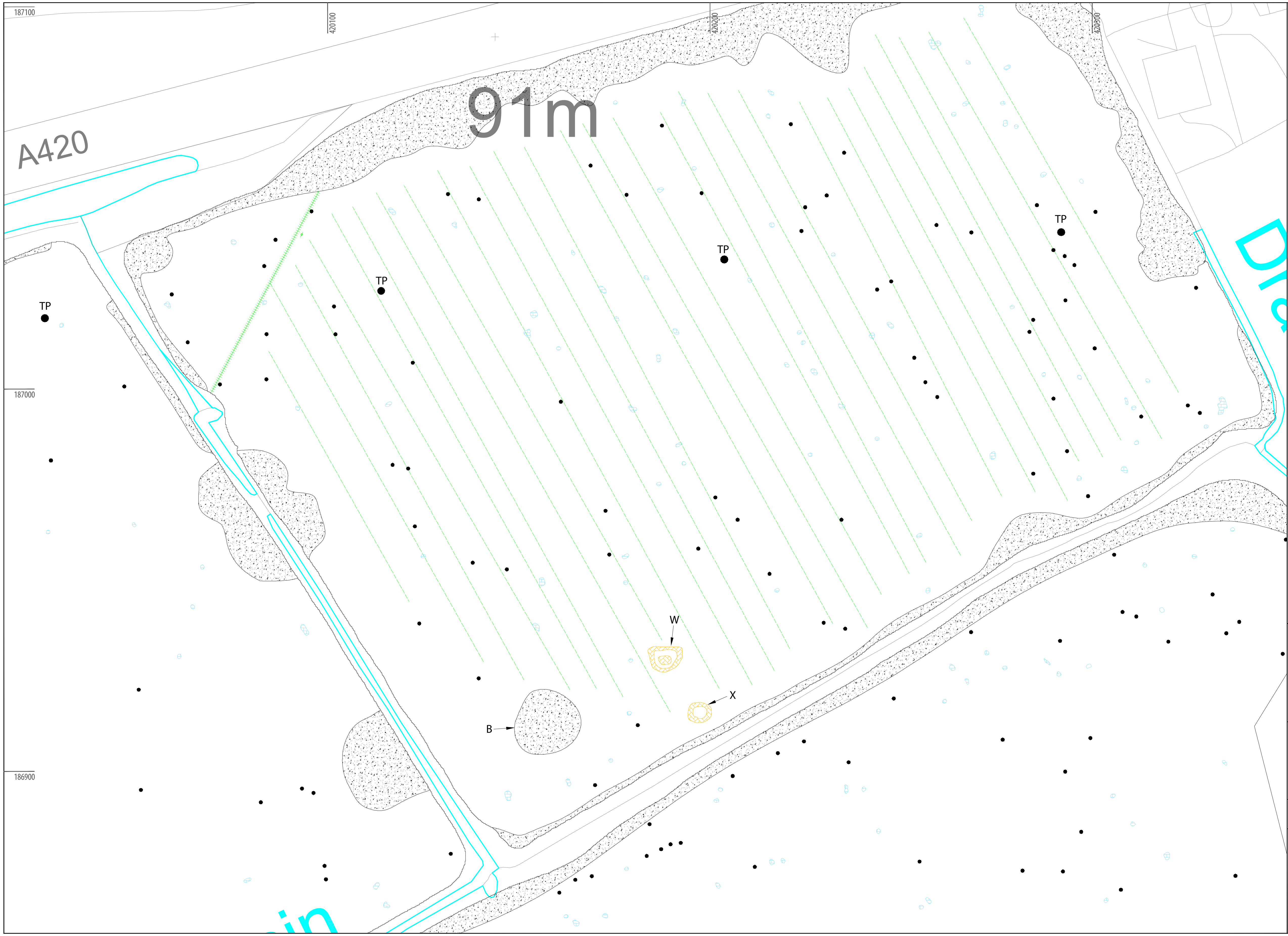
Illus 29
XY trace plot of magnetometer data; Inset 3



	TYPE OF ANOMALY	INTERPRETATION
●	Dipolar Isolated	Ferrous Material
	Magnetic Disturbance	Ferrous Material
	Linear Trend	Ridge and Furrow
	Linear Trend	Field Drain
	Magnetic Enhancement	Geology
	Magnetic Enhancement	Archaeology?

N

0 25m

scale 1:1,000 @ A3

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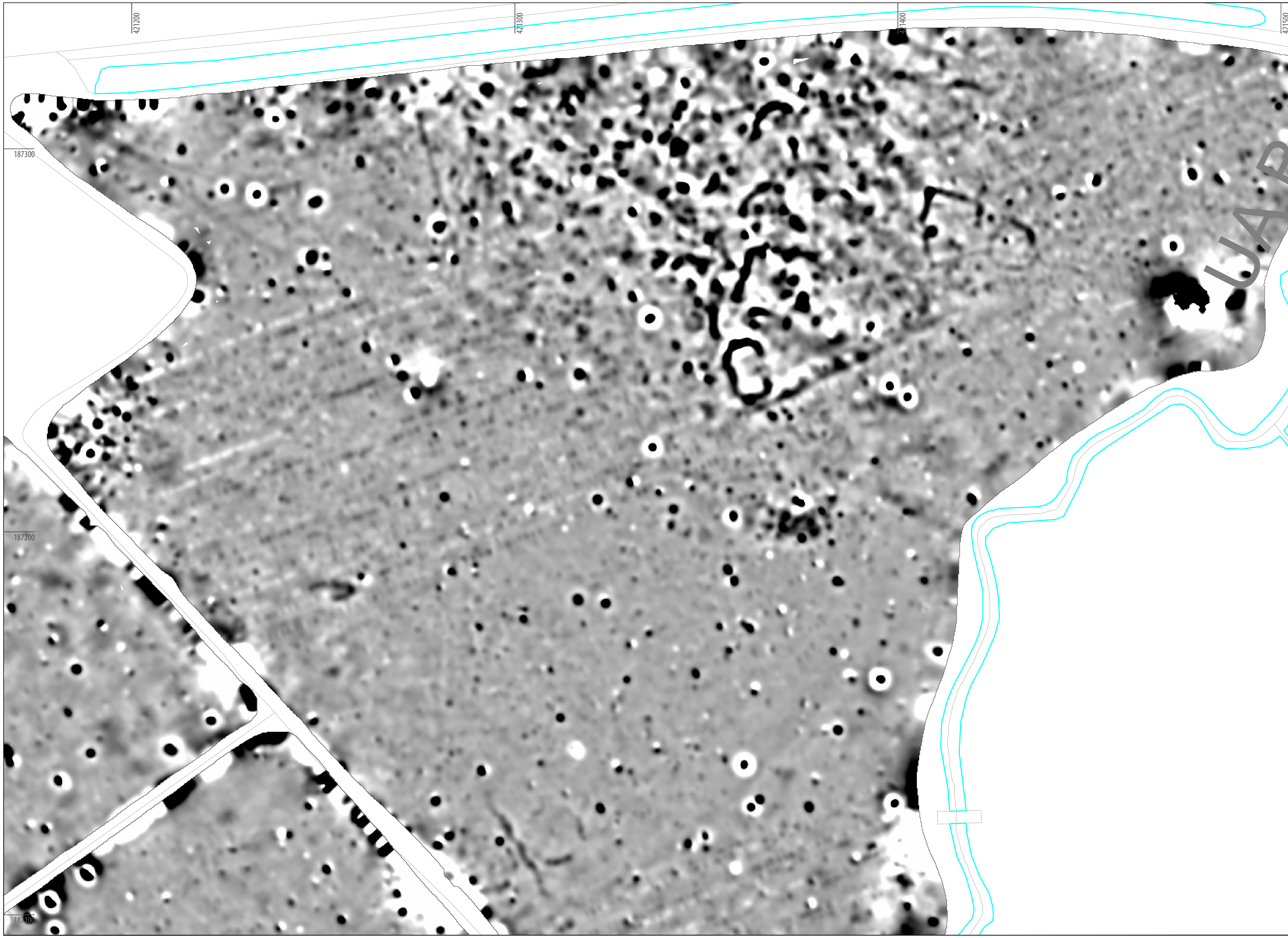
Illus 30
Interpretation of magnetometer data; Inset 3



nT

-1.0 2.0

N

0 25m

scale 1:1,000 @ A3

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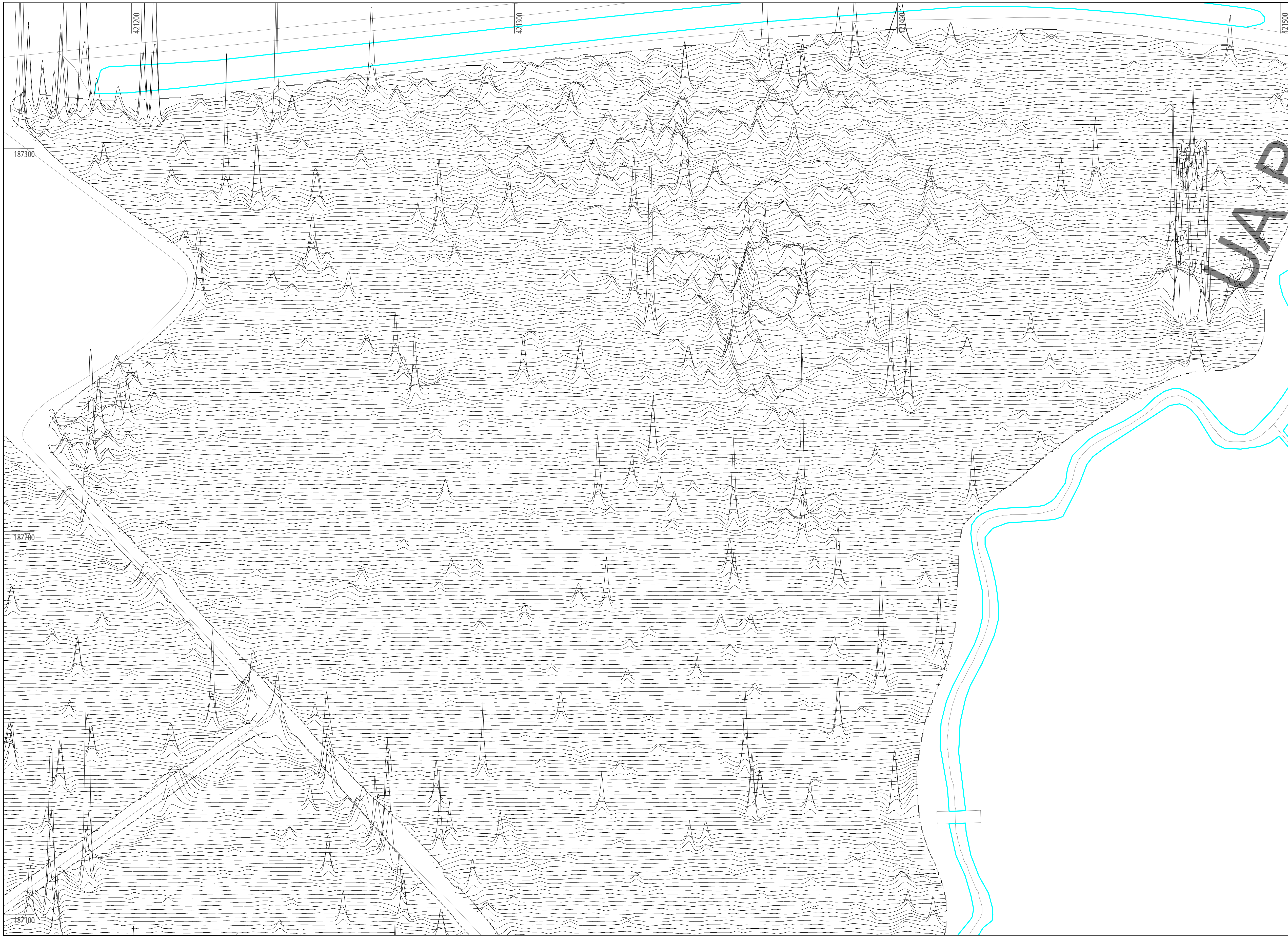
Illus 31
Processed greyscale magnetometer data; Inset 4



10.0nT/cm

N

0 25m

scale 1:1,000 @ A3

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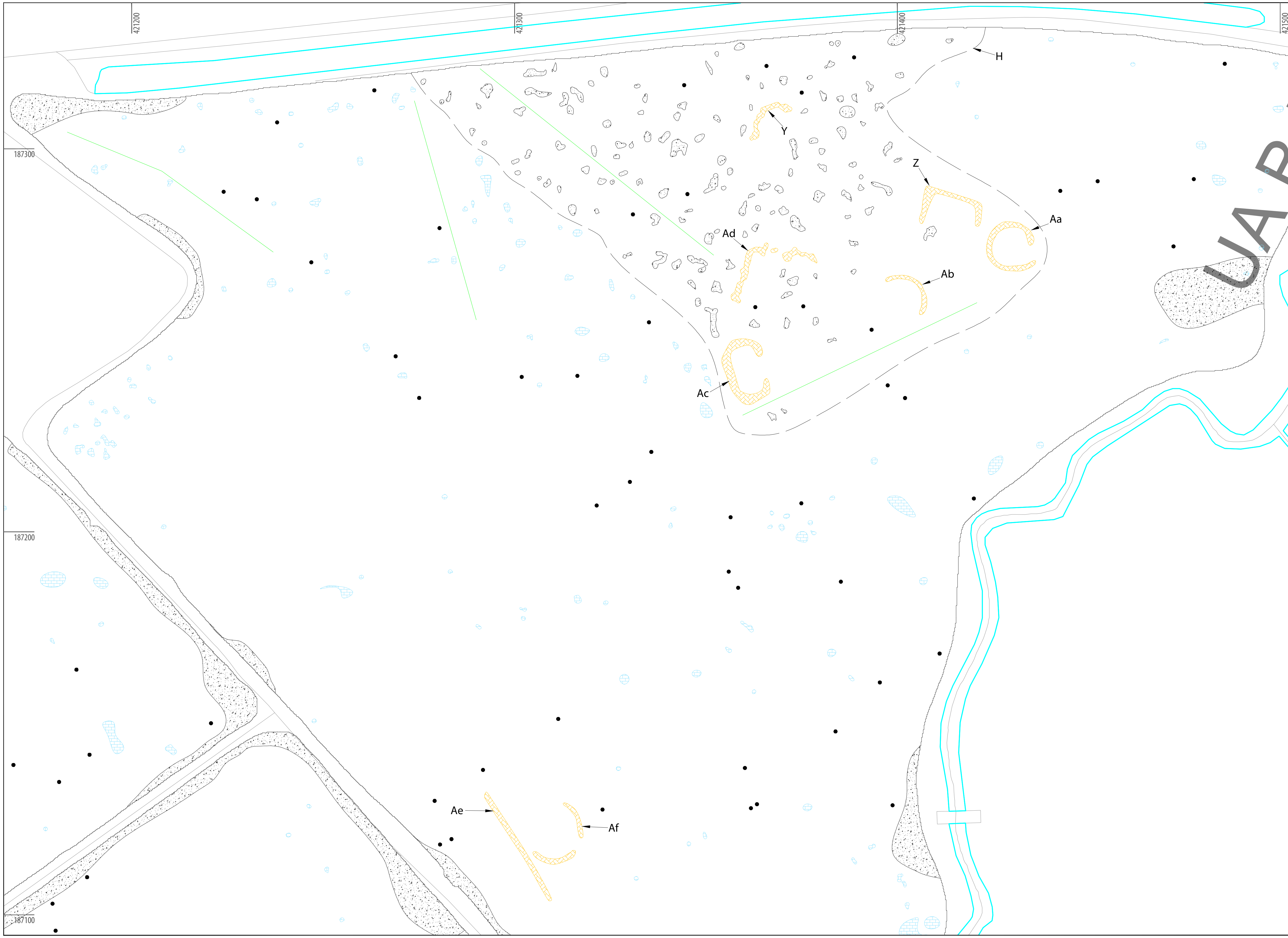
Illus 32
XY trace plot of magnetometer data; Inset 4



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Illus 33
Interpretation of magnetometer data; Inset 4

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