

LDFT/01



DUNSTALL FARM, TAMWORTH, STAFFORDSHIRE

GEOPHYSICAL SURVEY

commissioned by ADAS

Pre-application

May 2016

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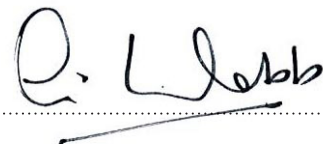
May 2016

project info

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PROJECT SUMMARY

Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey, covering approximately 61 hectares on land adjacent to Dunstall Farm, Staffordshire, to provide baseline information on the archaeological potential of the site prior to the determination of a planning application for a proposed residential development. Many of the anomalies can be confidently interpreted as being associated with post-medieval and modern agricultural activity, specifically the rationalisation and formalisation of fields and the attempts to improve drainage and the effects of flooding. This supports the conclusions of a desk-based assessment (forthcoming). Linear anomalies locating former boundaries and various pipes and drains and by ridge and furrow and more recent cultivation have been identified. Areas of magnetic disturbance are also likely to have a relatively modern origin and may also be due to ground disturbance associated with improving drainage. A former pond is also located as an area of disturbed responses. Variations in the composition and depth of the superficial deposits of till and alluvium account for the broad amorphous anomalies and the generally variable magnetic background recorded across the site. No anomalies of obvious archaeological potential have been identified. Therefore, based solely on the results of the geophysical survey the archaeological potential of the site is assessed as low.

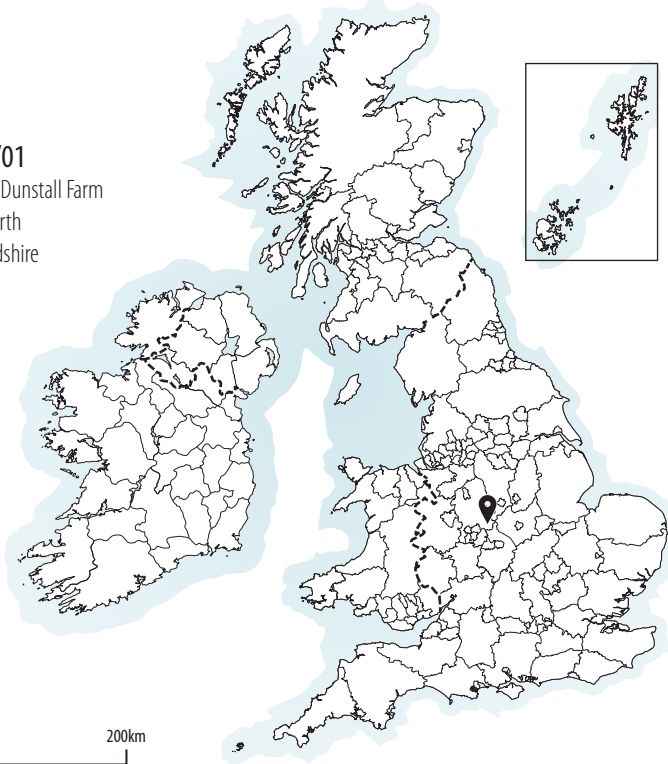
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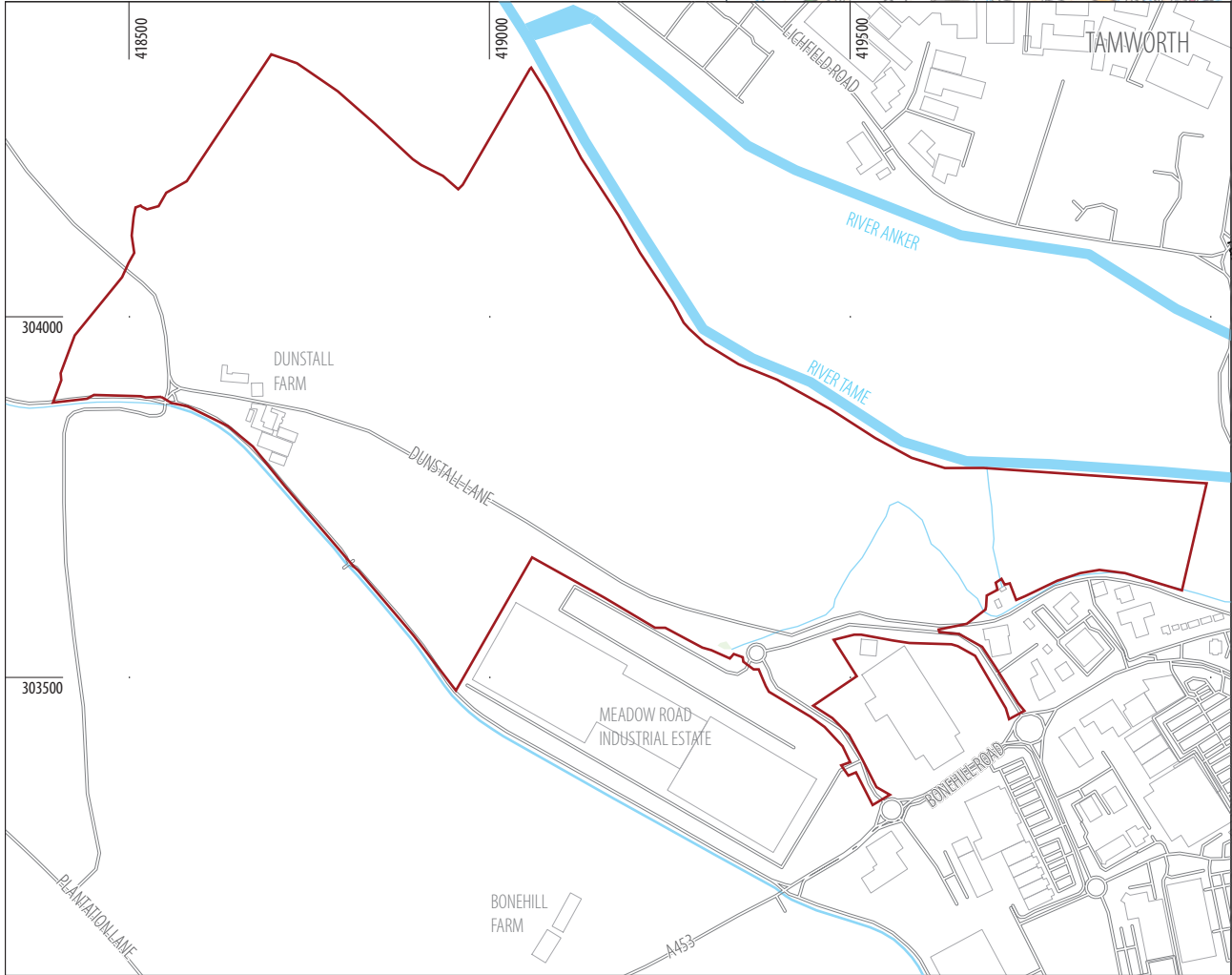
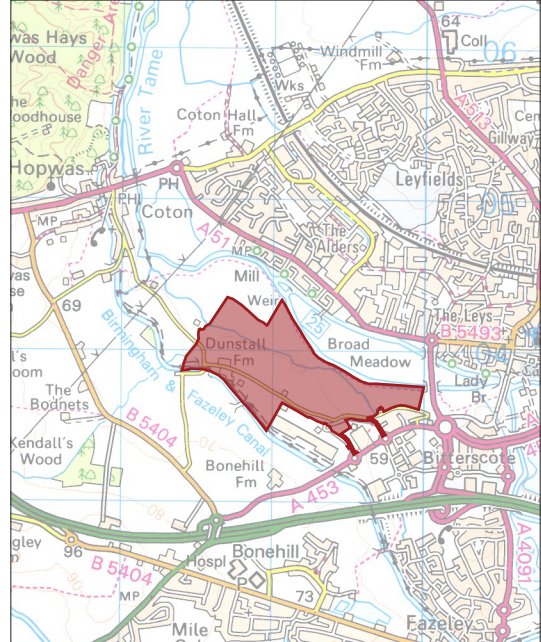
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 land at Dunstall Farm
 Tamworth
 Staffordshire

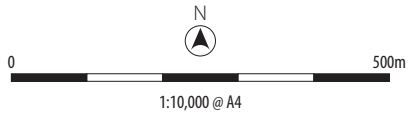


0 200km



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KEY
 proposed development boundary



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ILLUS 1 site location

DUNSTALL FARM, TAMWORTH, STAFFORDSHIRE

GEOPHYSICAL SURVEY

1 INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned by ADAS UK Ltd to undertake a geophysical (magnetometer) survey of a block of land on the western periphery of Tamworth. The survey forms part of a baseline study (including a Desk-based Assessment) being carried out by the Client in order to assess the potential constraints to development within the site.

The work was undertaken in accordance with a Written Scheme of Investigation (Headland Archaeology 2016), provided to the Client, with guidance contained within the National Planning Policy Framework (DCLG 2012) and in line with current best practice (David et al. 2008).

The survey was carried out between April 18th and April 22nd 2016 in order to provide information on the archaeological potential of the site.

1.1 SITE LOCATION, TOPOGRAPHY AND LAND-USE

The site covers a 61 hectare block of land (centred at 418873, 303957), located between the River Thame and a canalised Flood Relief Channel, which forms the northern site boundary, and Dunstall Lane and the Birmingham to Fazeley Canal to the south. Meadow Road and Ventura Park Industrial Estates lie to the immediate east of the site.

The site comprises 17 fields of varying size, most of which are currently in agricultural production being under a mixture of winter wheat and permanent pasture (see *ILLUS 2* to *ILLUS 9*). Fields 3, 9, 10 and 12 were overgrown, as was a strip around the northern perimeter of F8. These areas were not surveyed.

The site is situated on flat land, at approximately 60m above Ordnance Datum. The northern part of the site lies on the flood plain of the River Thame.

1.2 GEOLOGY AND SOILS

The underlying bedrock geology comprises Mudstone of the Mercia Mudstone Group overlain by superficial deposits of till (diamicton)

in the southern half of the site and with alluvial deposits of clay, silt, sand and gravel closer to the river (British Geological Survey 2016).

To the north of the site the soils are classified in the Soilscape 20 association which are characterised as loamy and clayey floodplain soils with naturally high groundwater. In the south of the site soils classified in the Soilscape 180 association are present. These soils are described as slowly, permeable, seasonally wet slightly acid but base rich loamy and clayey soils (LandIS 2016).

2 ARCHAEOLOGICAL BACKGROUND

A desk-based assessment (DBA) of the site (ADAS 2016 forthcoming) identified that Dunstall Farmstead (HER No 57961) is located between Fields 4, 9 and 10 within the development area. A World War II pillbox (HER No 5612) is located within Field 16 and an area of possible post-medieval water meadow (HER No 54421) may have existed in Field 7 and Field 16, although no surface trace of these meadows are visible today.

A walkover survey of the site and analysis of historic mapping, aerial photographs and LIDAR data for the site revealed no other evidence for structures, deposits or artefacts of archaeological significance on the site apart from possible traces of ridge and furrow cultivation/drainage channels in Field 17. Background documentary research indicated that the site is likely to have been in agricultural use since at least the medieval period.

The DBA concluded that the site has a high potential to contain sub-surface remains which date to the post-medieval period. These remains are most likely to be settlement and agricultural remains associated with the historic farmstead of Dunstall Farm and are considered to have a low or local historical and archaeological significance. The remains of the World War II pillbox and the possible post-medieval water meadow are also considered to have a local archaeological significance. The site is considered to have a low potential for containing buried archaeological remains and artefacts of all other periods.



ILLUS 2 General view of Field 1, looking north **ILLUS 3** General view of Field 6, looking north-west **ILLUS 4** General view of Field 7, looking south-east
ILLUS 5 General view of Field 8, looking east

Analysis of historic mapping from the early 20th century shows only minor changes in land-use including the removal of several 19th century boundaries depicted on the First Edition Ordnance Survey maps of 1884–1890. Additional field boundaries were added in the 20th century to sub-divide the fields bordering Dunstall Lane.

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.

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



6



7



8



9

ILLUS 6 General view of Field 11, looking south-east **ILLUS 7** General view of Field 13, looking south-east **ILLUS 8** General view of Field 16, looking west
ILLUS 9 General view of Field 17, looking south-east

3.2 REPORTING

A general site location plan is shown in **ILLUS 1** at a scale of 1:10,000. **ILLUS 2** to **ILLUS 9** are general site condition photographs. A large scale (1:5,000) survey location plan showing the processed greyscale magnetometer data is presented in **ILLUS 10**. **ILLUS 11** is an overall interpretation of the data at the same scale.

Detailed data plots (greyscale and XY trace) and interpretative illustrations are presented at a scale of 1:1,500 in **ILLUS 12** to **ILLUS 29** 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 2015) and guidelines outlined by English Heritage (David et al. 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).

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

At first glance the overall data plot (**ILLUS 10**) present a confusing picture with numerous linear anomalies, areas of enhanced or disturbed magnetic response and variable magnetic background. However, all of these anomalies can be confidently interpreted as being due to agricultural and other modern activity or to variations within the superficial deposits of till and alluvium. The types of anomalies and their origins 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.

High magnitude dipolar linear anomalies are recorded in F11 (**ILLUS 11** and **ILLUS 23** – A), crossing F2, F5, F8 and F14 (**ILLUS 11** and **ILLUS 14**, **ILLUS 24** and **ILLUS 27** – B), F5 (**ILLUS 11** and **ILLUS 14** – C) and F17 (**ILLUS 11**

and ILLUS 29 – D). These anomalies are caused by sub-surface pipes.

Seven high magnitude discrete anomalies, (ILLUS 11 and ILLUS 23 and ILLUS 26 – E), describing an arc across F8, F12 and F13, locate electricity poles (ILLUS 5 and ILLUS 7).

Extensive spreads of highly magnetic responses are recorded at several locations. To the immediate east of Dunstall House anomaly F (ILLUS 11 and ILLUS 14) locates a former pond, recorded on historic mapping until 1958, which has been infilled with magnetic debris. On the western edge of the site in F1 a more extensive cluster of magnetic disturbance, (ILLUS 11 and ILLUS 14 – G), located between the pipe anomaly B and Dunstall Lane, is probably due to modern activity (tipping or infilling) possibly associated with the installation of the pipe; a second smaller cluster, H (ILLUS 11 and ILLUS 14), is also recorded just to the south-west of F. Only ferrous responses are recorded in F4, immediately west of Dunstall Farm. This also suggests deliberate tipping or infilling.

In the east of the site a linear band of disturbance, I (ILLUS 11 and ILLUS 29), is recorded either side of the stream which forms the boundary between F16 and F17. This is also likely to be due to modern disturbance associated with the water course which leads from/to the Flood Relief Channel and which forms the northern site boundary.

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

4.2 AGRICULTURAL ANOMALIES

Numerous linear anomalies are identified throughout the site, all of which are interpreted as being caused by agricultural activity, either locating former field boundaries and/or field drains or indicating the orientation of post-medieval (ridge and furrow) or more recent ploughing. In some instances it is difficult to be certain which of the three possible origins is the cause of the anomaly. However, all are considered to be related to agricultural activity.

Analysis of historical mapping indicates that the pattern of land division within the site has altered with at least eight boundaries recorded on the first edition Ordnance Survey mapping having been removed over the last 120 years. These former boundaries manifest as linear magnetic anomalies J to Q (ILLUS 11 and ILLUS 14, ILLUS 17, ILLUS 20, ILLUS 26 and ILLUS 29).

Of the remaining linear anomalies the majority are due to ploughing. The more widely spaced parallel anomalies, such as recorded in F7, are more likely to be caused by the post-medieval practice of ridge and furrow ploughing. Here the response is due to the magnetic contrast between infilled furrows and former ridges. The more closely spaced parallel linear anomalies, such as recorded in F13, reflect the orientation of recent ploughing regimes.

Those remaining linear anomalies that are not caused by ploughing or former boundaries are likely to locate field drains, many of which connect between field boundaries (which were probably also defined by ditches or have been since replaced by a pipe) and which

feed into the watercourse (ILLUS 4) which runs on a south-easterly bearing through the centre of the site and the open drains which form field boundaries at the eastern end of the site.

The exception to this assessment are curvilinear anomalies, R and S (ILLUS 11 and ILLUS 20, ILLUS 23 and ILLUS 26), which define a broad strip across the central part of the site in F8 and F11. These anomalies define an area under short grass (ILLUS 7) with the cultivated arable cropped areas to the north-east and south-west. The magnetic background under the grassed area is noticeably more uniform than in the cultivated areas either side.

4.3 GEOLOGICAL ANOMALIES

Throughout the site the magnetic background is variable, particularly to the south of the watercourse aligned north-west/south-east, which crosses the site. This stream (ILLUS 4) marks the boundary between the till deposits to the south from the alluvial deposits to the north. The magnetic variability is predominantly a consequence of the mixed and unsorted nature of the till deposits (diamicton) with pockets of more magnetic material, such as gravels, causing the observed responses. A single extensive area of magnetically enhanced readings, T (ILLUS 11 and ILLUS 23), has been highlighted in F11.

To the north of the stream more extensive areas of enhancement, (ILLUS 11 and ILLUS 17 and ILLUS 20 – U and V) to the north-west of the site and W (ILLUS 11 and ILLUS 29) to the east of the site, are, on the balance of probability, assessed as of likely geological origin although the strength of response and the linearity of (particularly) U and V could be indicative of modern activity.

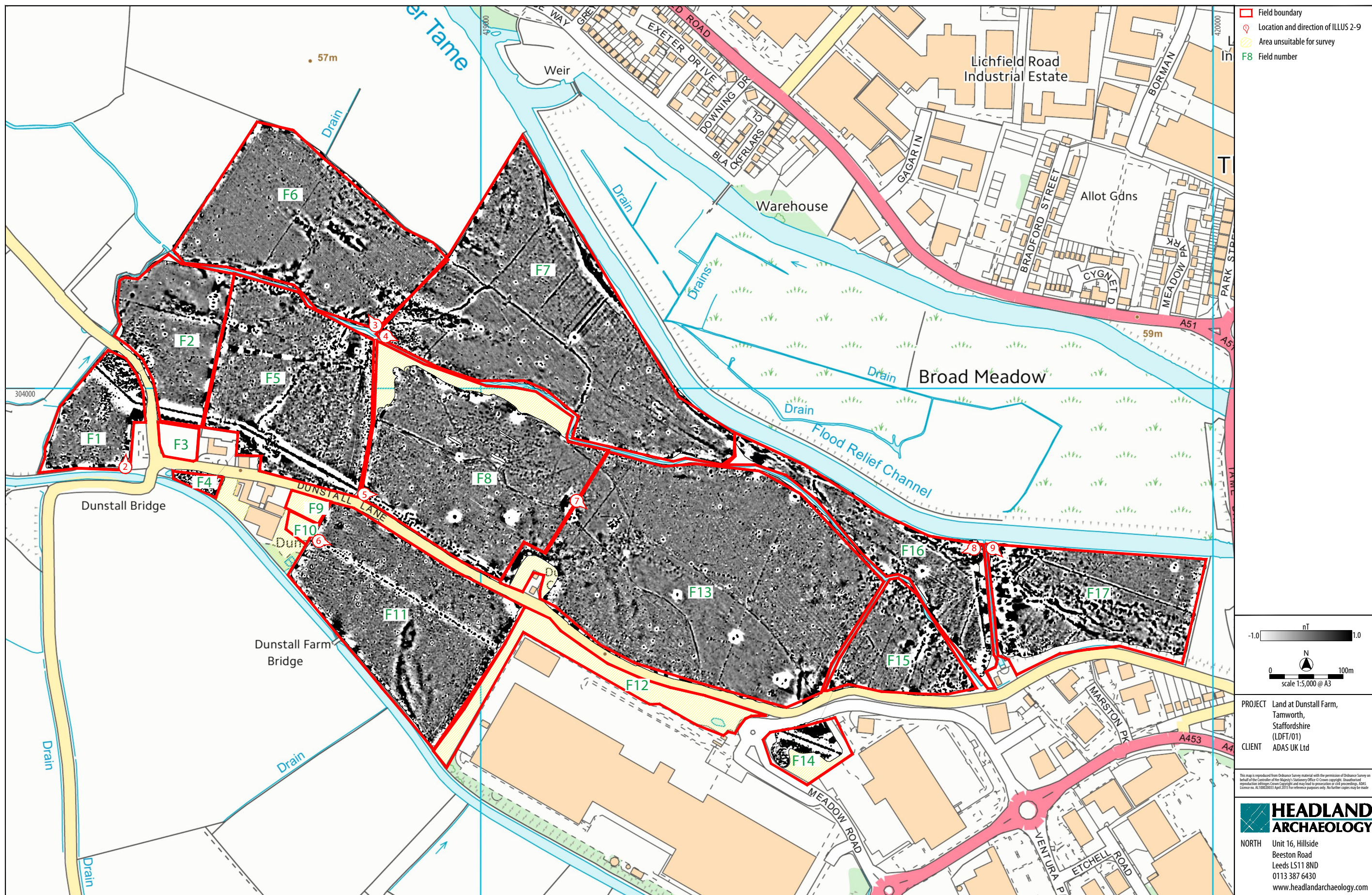
5 CONCLUSION

The results of the geophysical survey have identified anomalies consistent with agricultural activity over the past 200 years. Over this period the low lying land of the flood plain and adjacent areas have been enclosed and drained changing the marginal traditional water meadows into more productive pasture and arable land. More recently the fields have been rationalised leaving the pattern of field division extant today. Anomalies locating drains, former boundaries and post-medieval and more recent ploughing have all been identified. These results are consistent with the archaeological background set out in the DBA (ADAS forthcoming). No anomalies indicative of human activity from any earlier period have been identified.

Therefore, based solely on the results and interpretation of the geophysical data, the archaeological potential of the site is assessed as low.

6 REFERENCES

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- British Geological Survey 2016 Website Available: www.bgs.ac.uk/discoveringGeology/geology_ofBritain/viewer.html Accessed: May 6th 2016.
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- Gaffney, C & Gater, J 2003 *Revealing the Buried Past* Tempus Publishing.
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Illus 10
 Site location showing processed greyscale magnetometer data and field boundaries

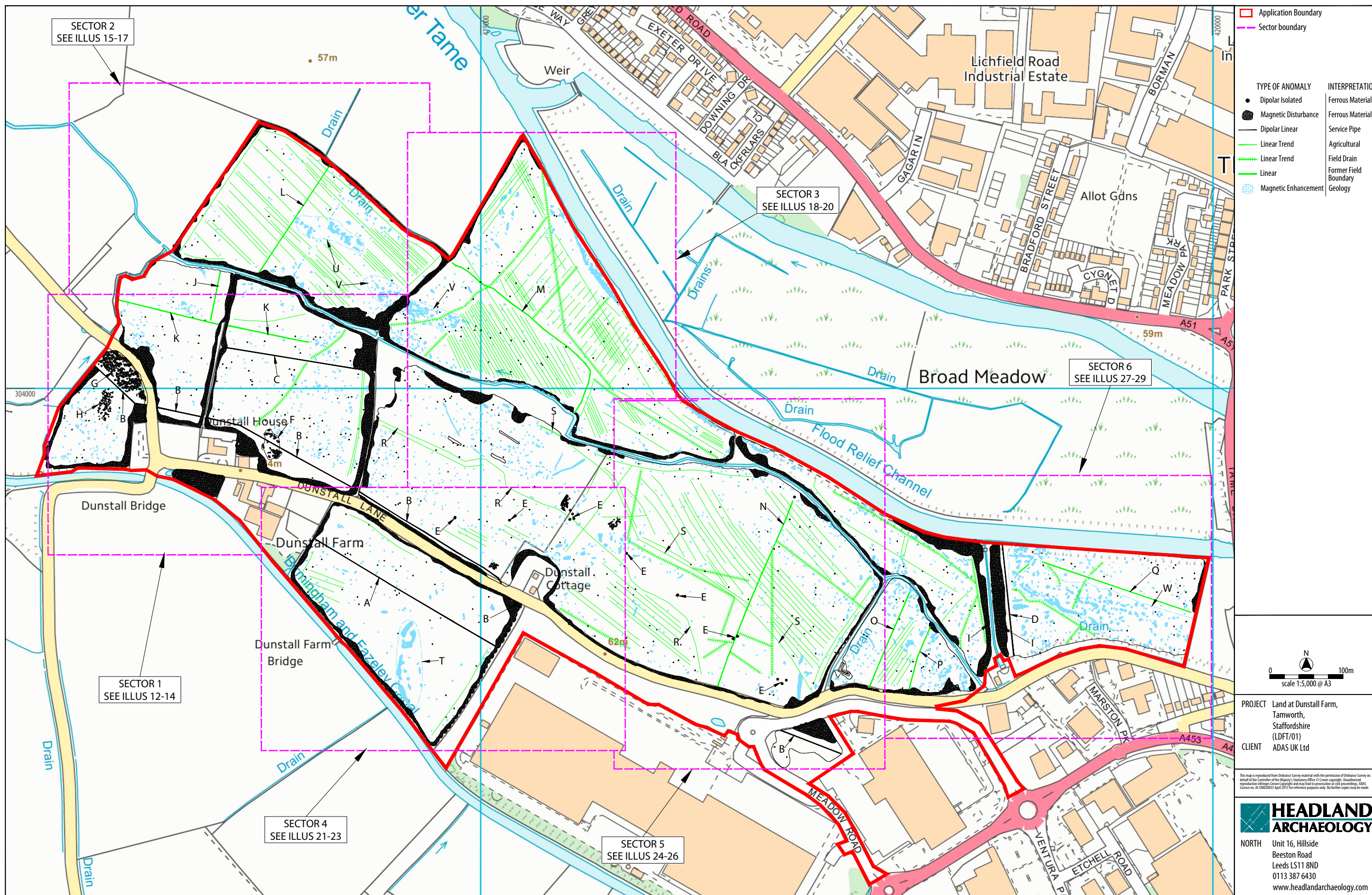
□ Field boundary
● Location and direction of ILLUS 2-9
 Area unsuitable for survey
F8 Field number

-1.0 1.0
 N
 0 100m
 scale 1:5,000 @ A3

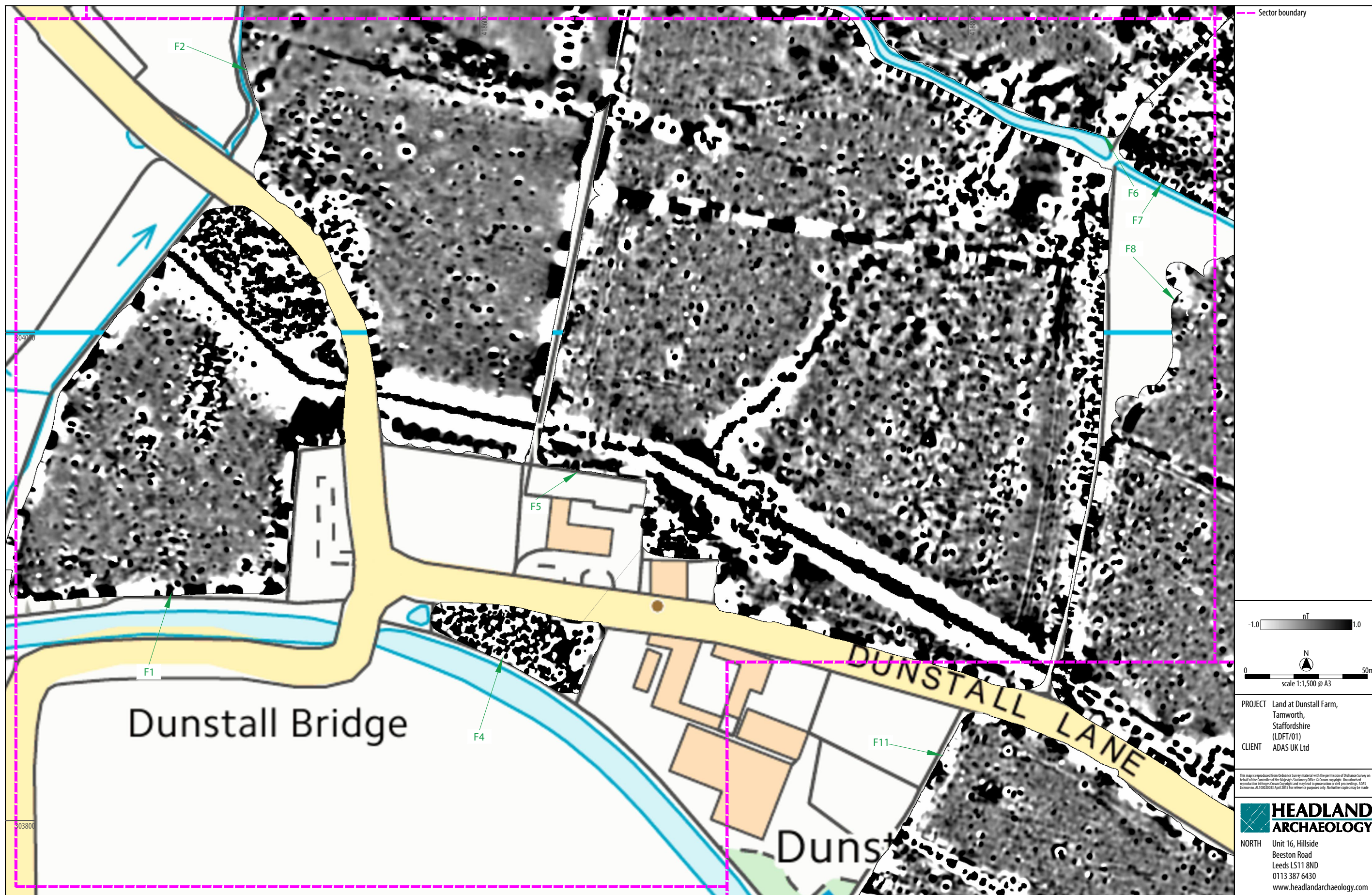
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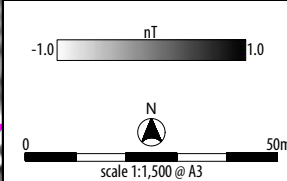
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Illus 11
Overall interpretation of magnetometer data showing sector boundaries



— Sector boundary



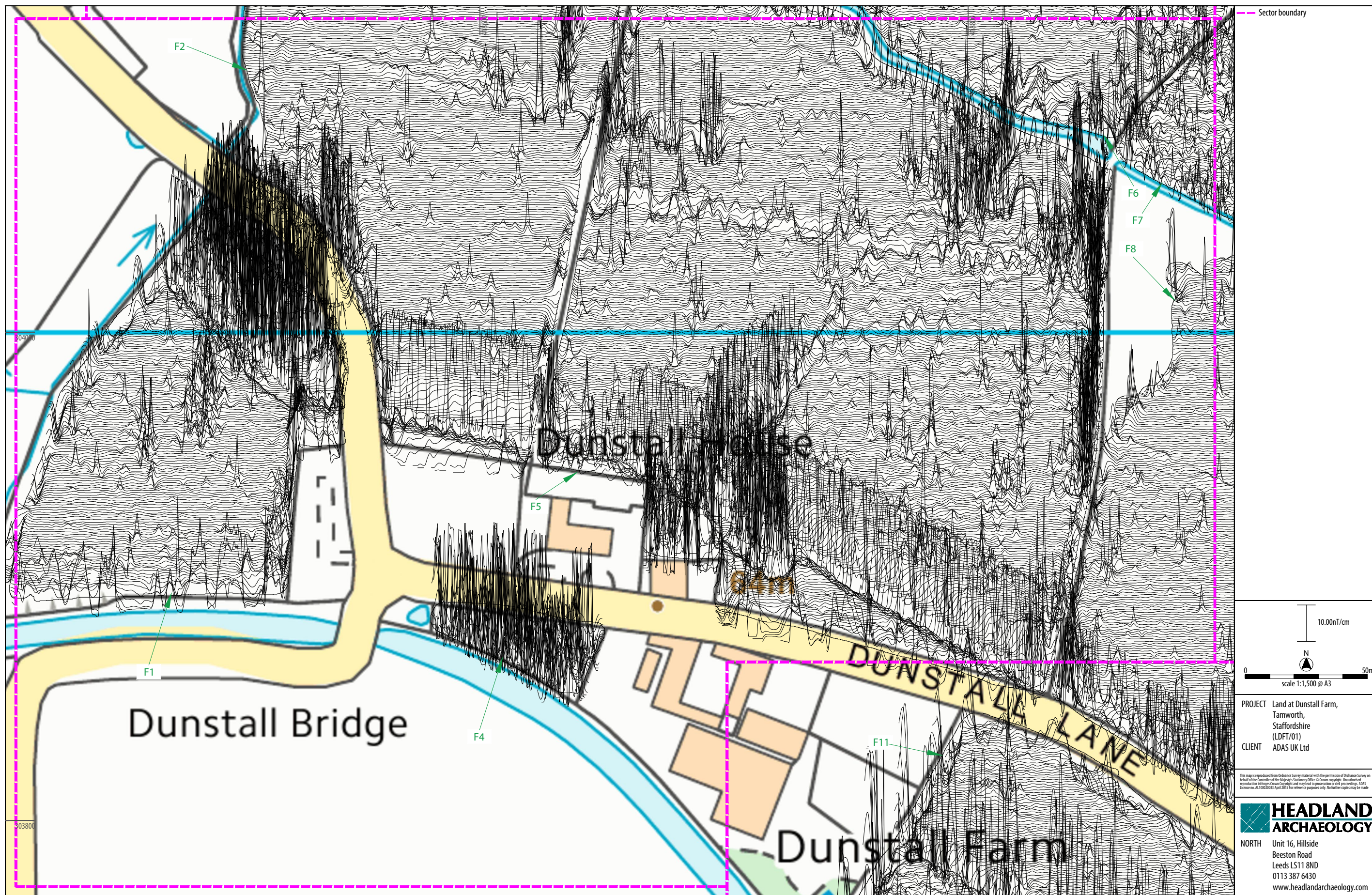
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Illus 12
Processed greyscale magnetometer data; Sector 1



Illus 13
XY trace plot of magnetometer data; Sector 1

Sector boundary

10.00nT/cm

0 50m

scale 1:1,500 @ A3

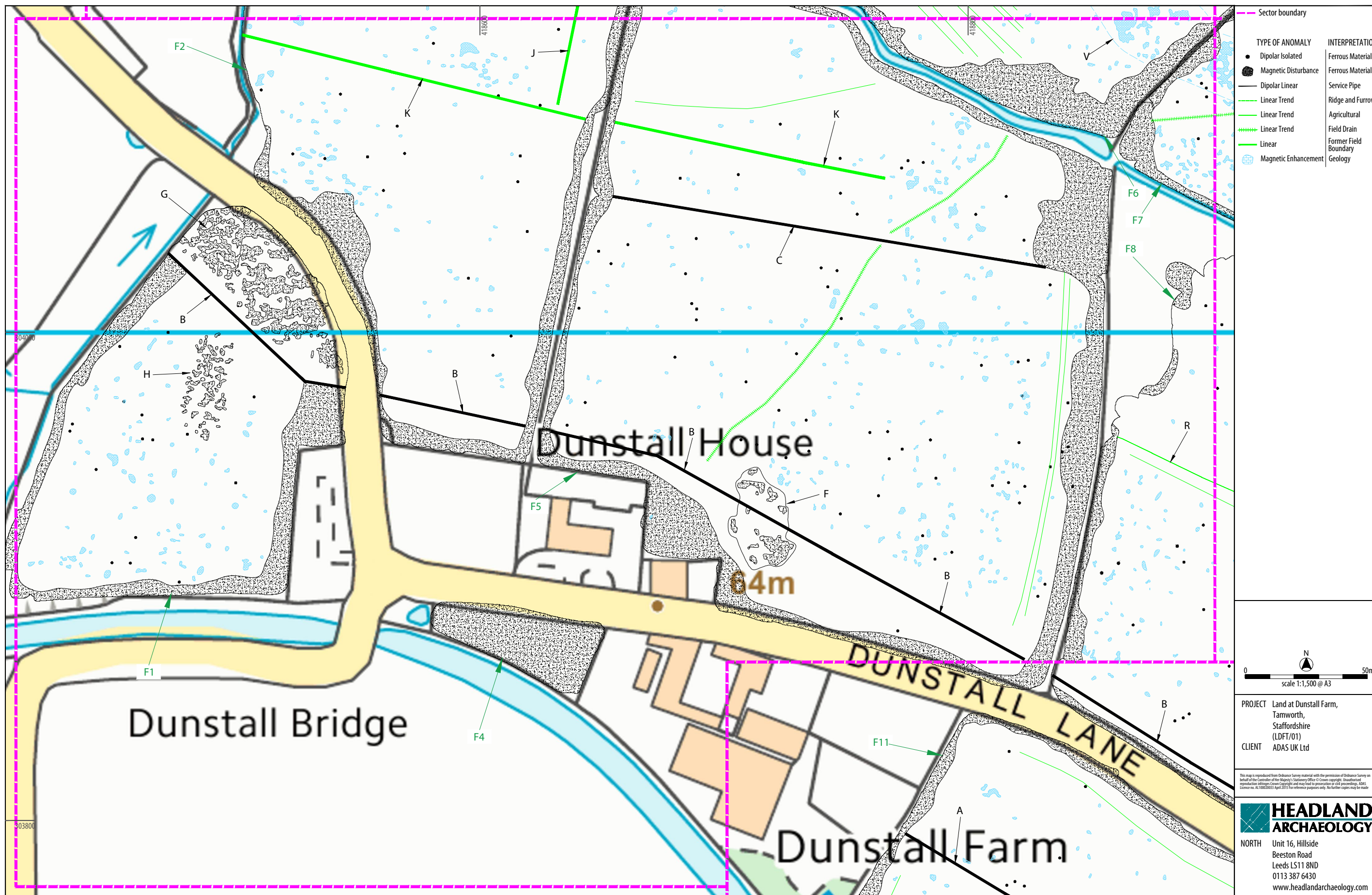
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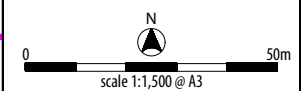
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TYPE OF ANOMALY	INTERPRETATION
• Dipolar Isolated	Ferrous Material
• Magnetic Disturbance	Ferrous Material
— Dipolar Linear	Service Pipe
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
• Magnetic Enhancement	Geology

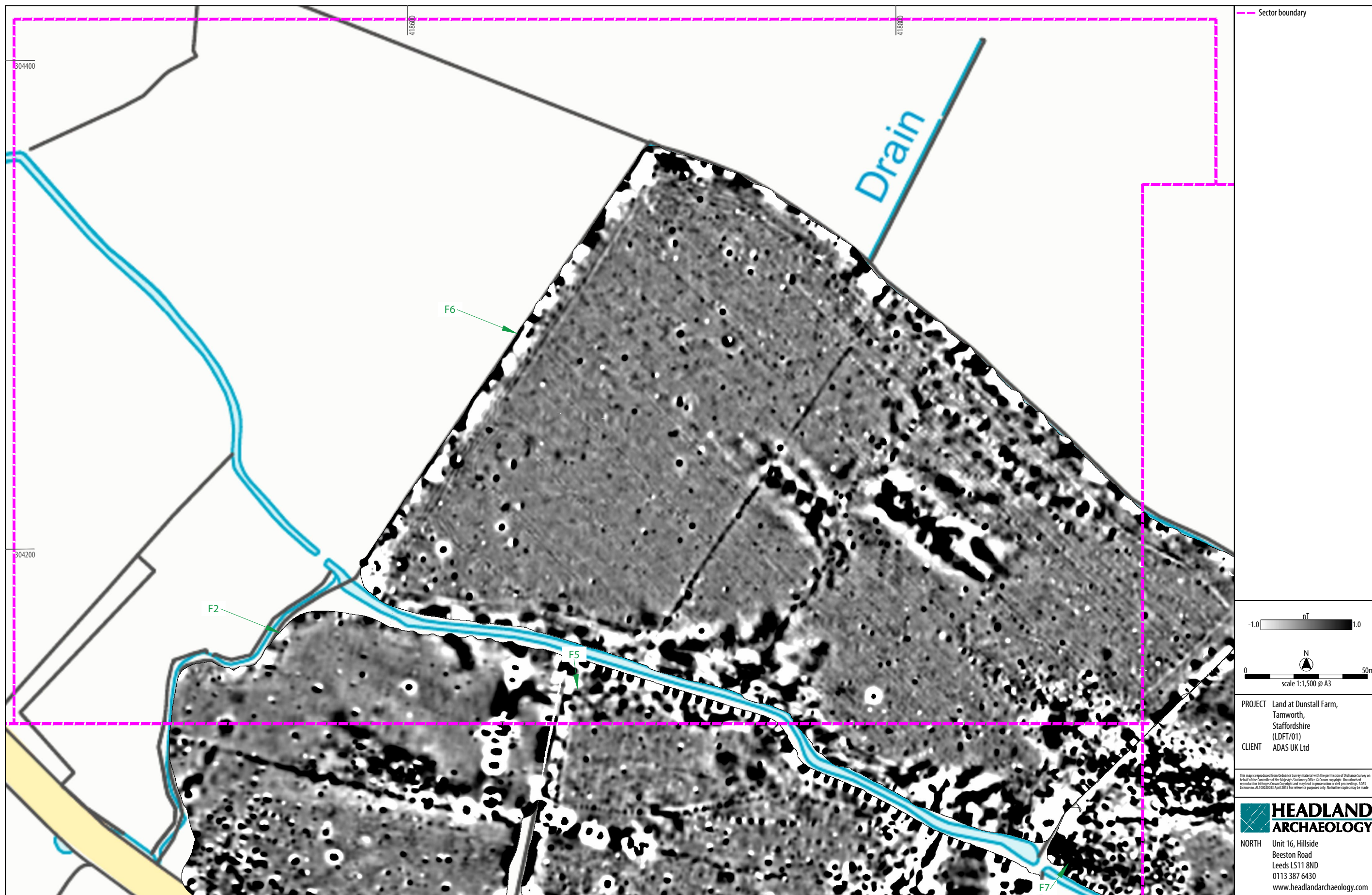


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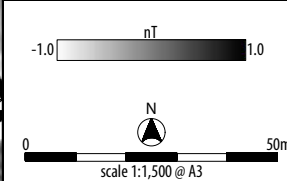
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Illus 14 Interpretation of magnetometer data; Sector 1



— Sector boundary

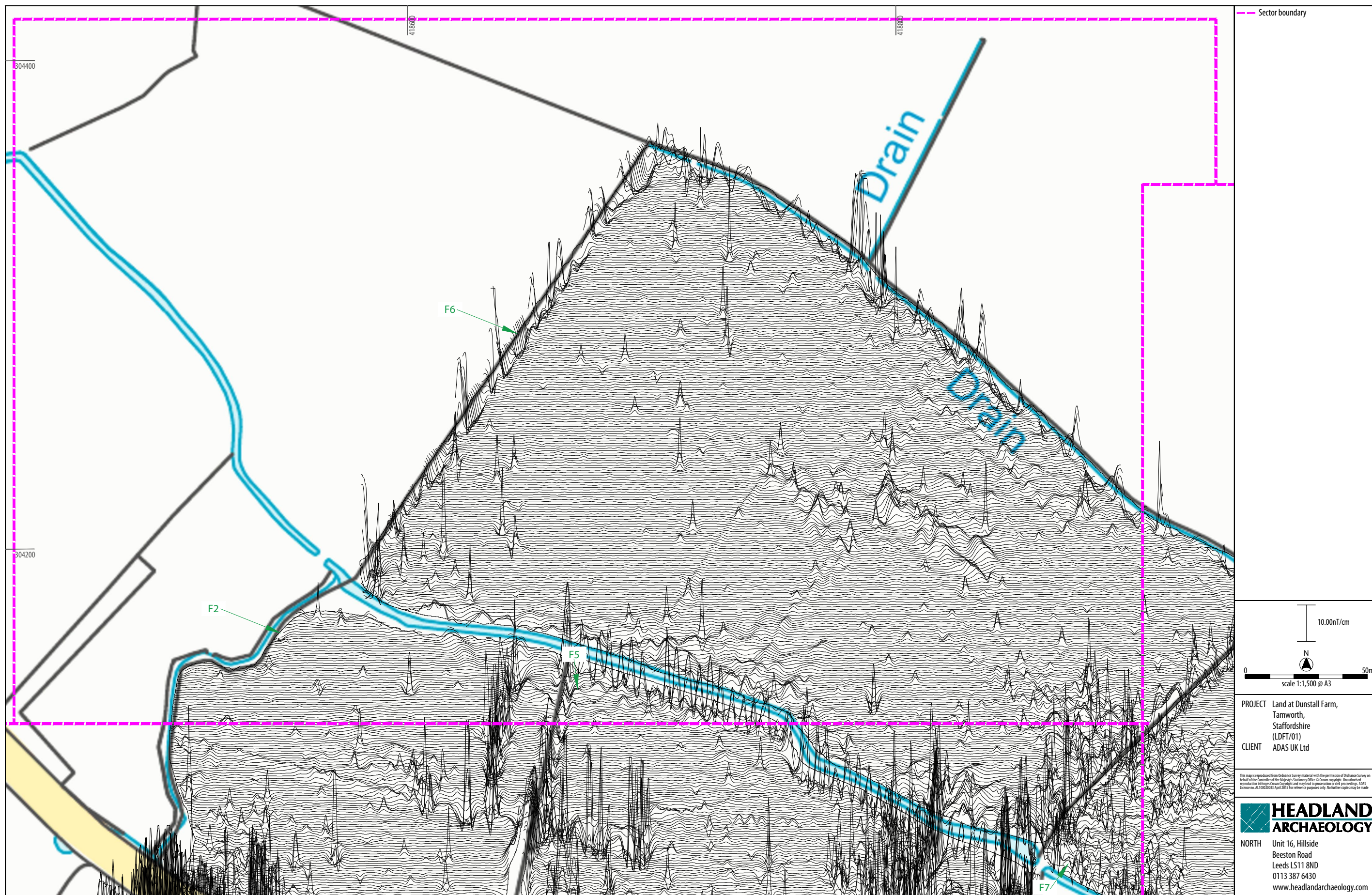


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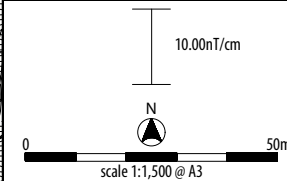
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Illus 15
Processed greyscale magnetometer data; Sector 2



— Sector boundary

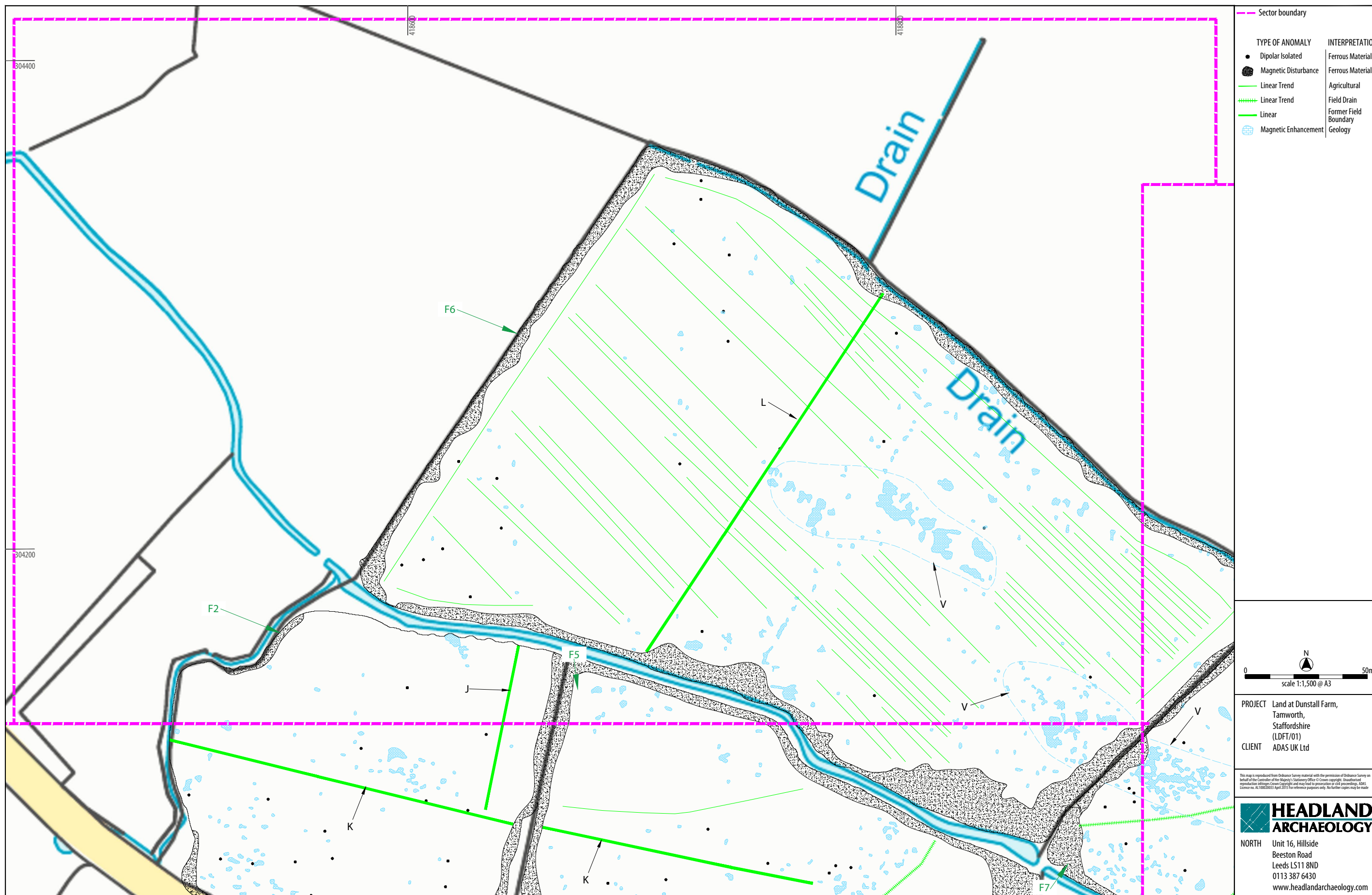


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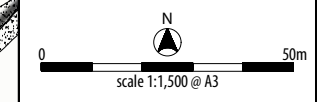
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Illus 16
XY trace plot of magnetometer data; Sector 2



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology



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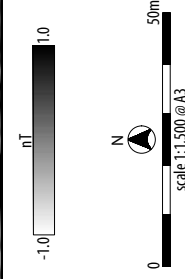
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Illus 17
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--- Sector boundary



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 Staffordshire
 (LD17 0T)

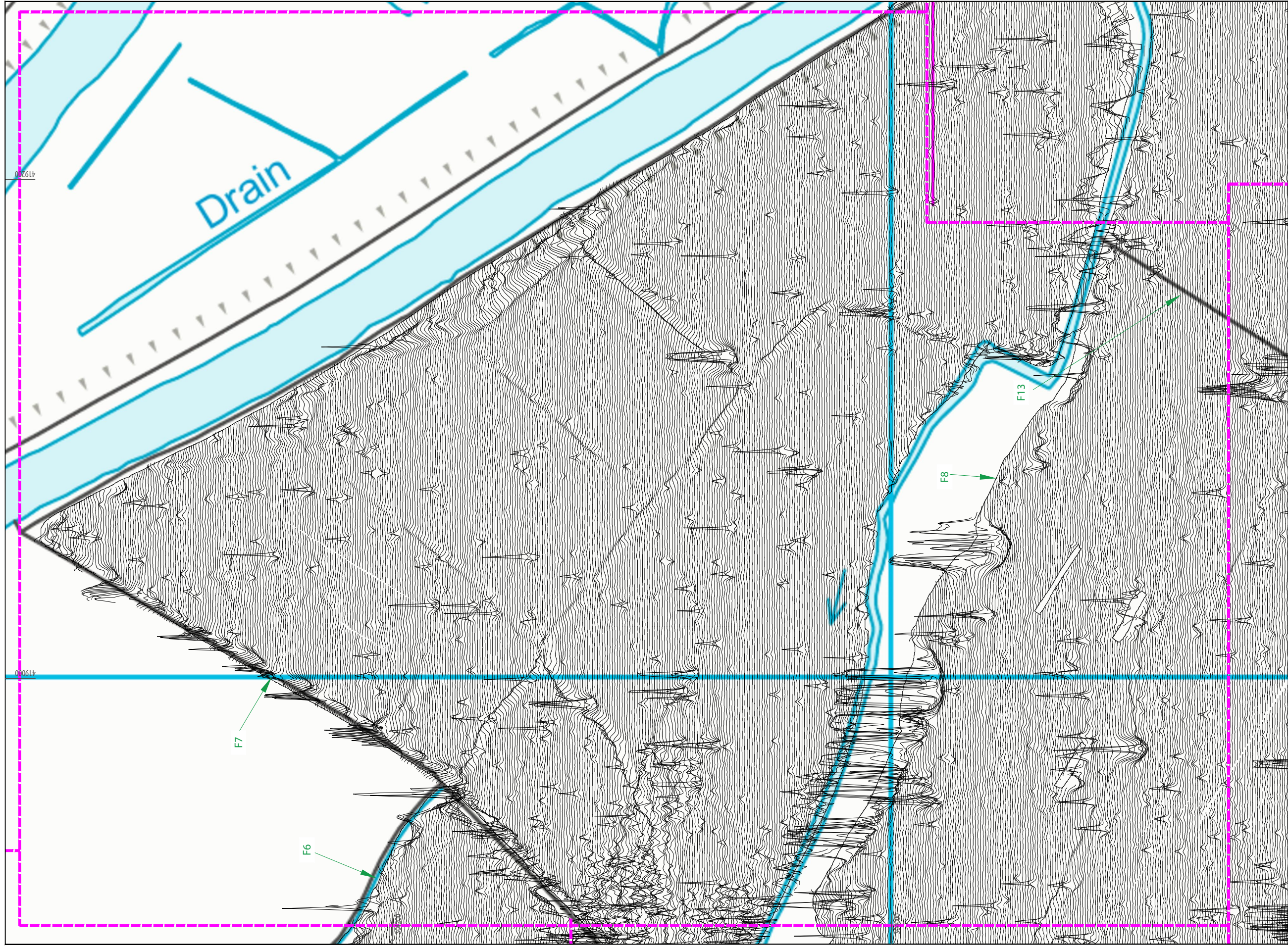
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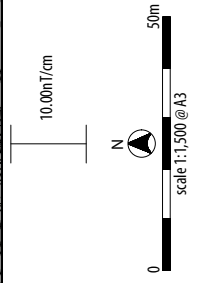
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Illus 18
 Processed greyscale magnetometer data; Sector 3



--- Sector boundary

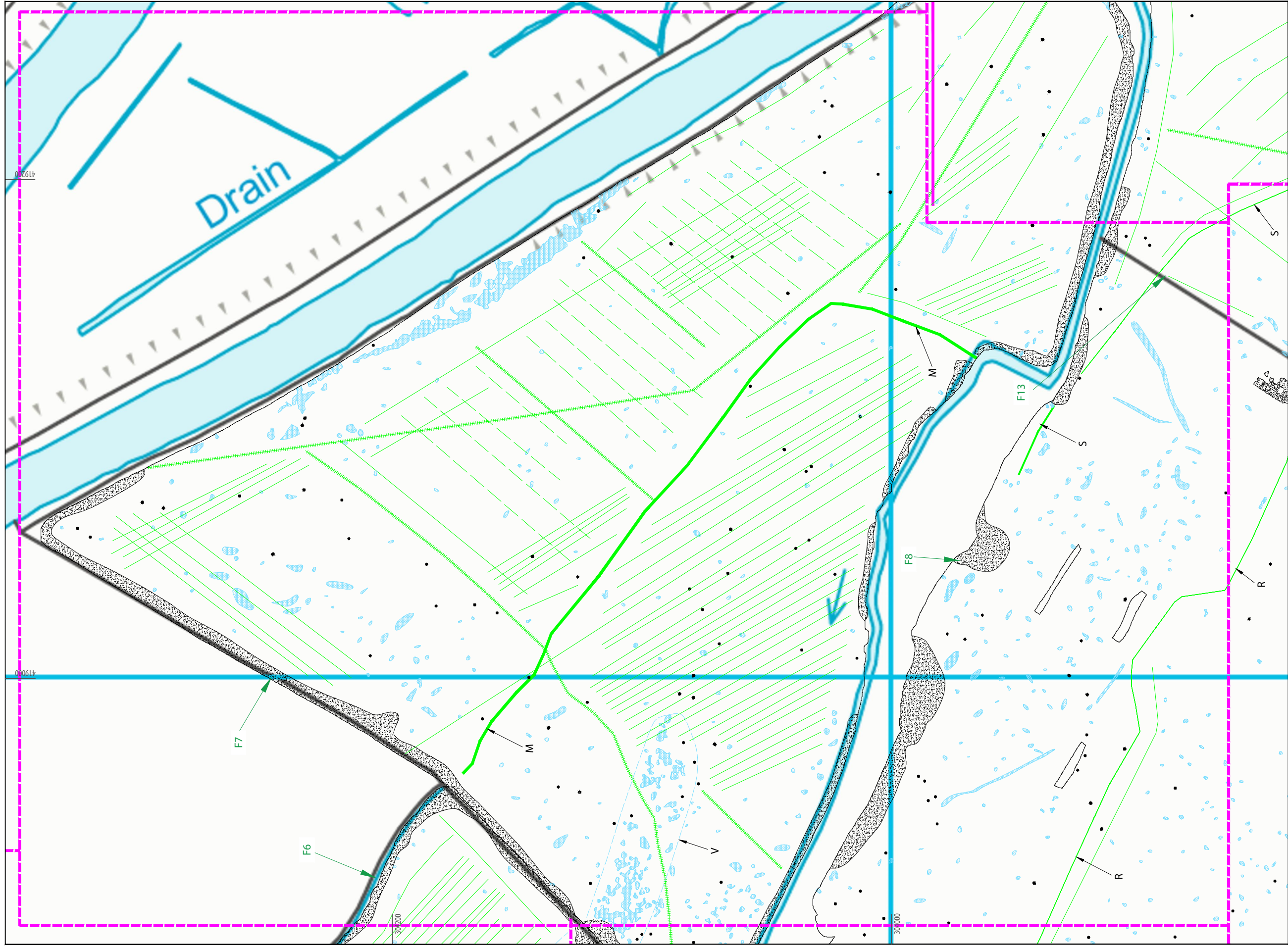
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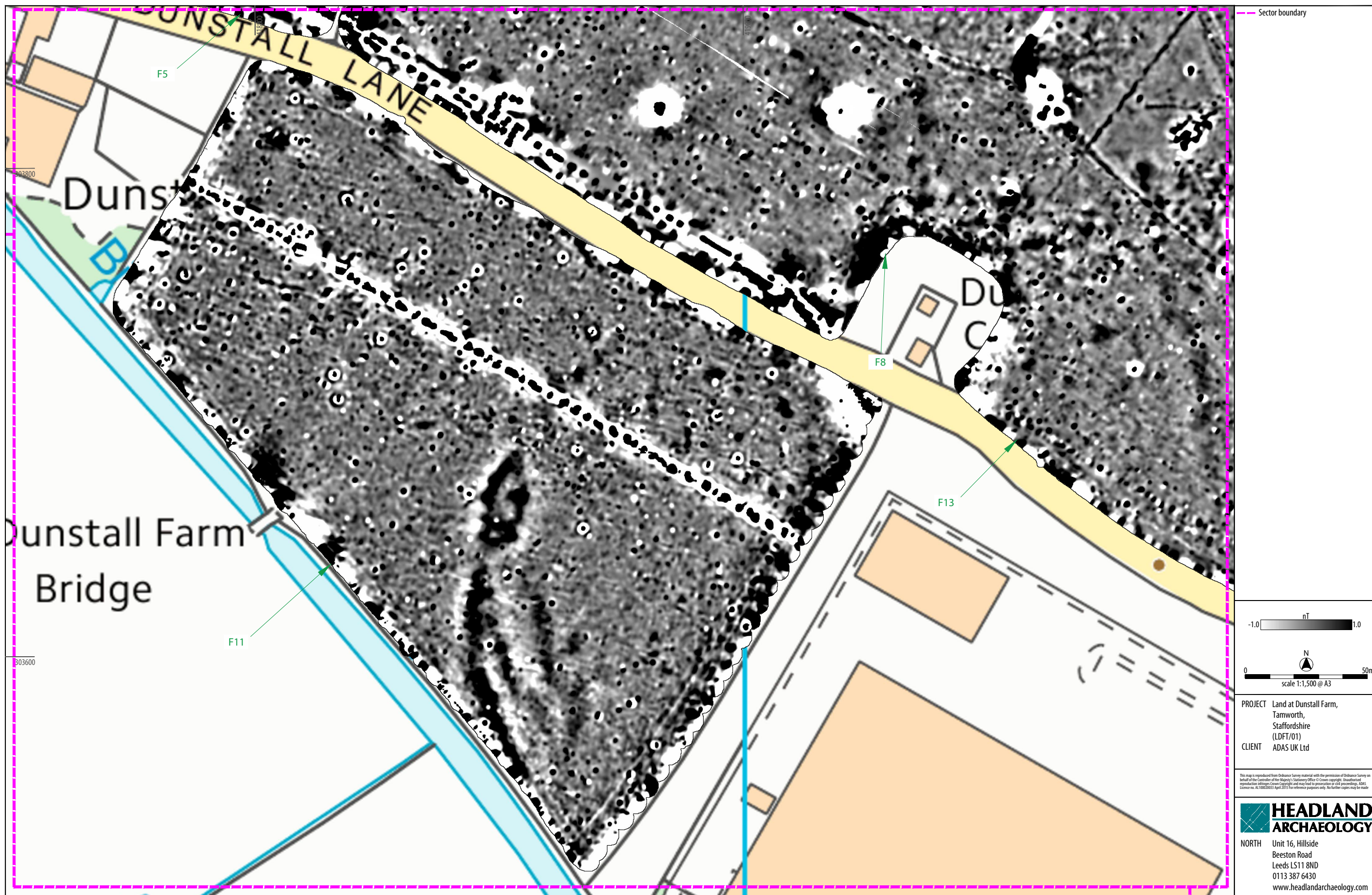
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Illus 19
 XY trace plot of magnetometer data; Sector 3



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<p>0 50m scale 1:1,500 @A3</p>	<p>0 50m scale 1:1,500 @A3</p>														
<p>--- Sector boundary</p>	<table border="1"> <thead> <tr> <th>TYPE OF ANOMALY</th> <th>INTERPRETATION</th> </tr> </thead> <tbody> <tr> <td>• Dipolar Isolated</td> <td>Ferrous Material</td> </tr> <tr> <td>• Magnetic Disturbance</td> <td>Ferrous Material</td> </tr> <tr> <td>— Linear Trend</td> <td>Agricultural</td> </tr> <tr> <td>— Linear Trend</td> <td>Field Drain</td> </tr> <tr> <td>— Linear</td> <td>Former Field Boundary</td> </tr> <tr> <td>— Magnetic Enhancement</td> <td>Geology</td> </tr> </tbody> </table>	TYPE OF ANOMALY	INTERPRETATION	• Dipolar Isolated	Ferrous Material	• Magnetic Disturbance	Ferrous Material	— Linear Trend	Agricultural	— Linear Trend	Field Drain	— Linear	Former Field Boundary	— Magnetic Enhancement	Geology
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• Dipolar Isolated	Ferrous Material														
• Magnetic Disturbance	Ferrous Material														
— Linear Trend	Agricultural														
— Linear Trend	Field Drain														
— Linear	Former Field Boundary														
— Magnetic Enhancement	Geology														

Illus 20 Interpretation of magnetometer data; Sector 3



Illus 21
Processed greyscale magnetometer data; Sector 4

Sector boundary

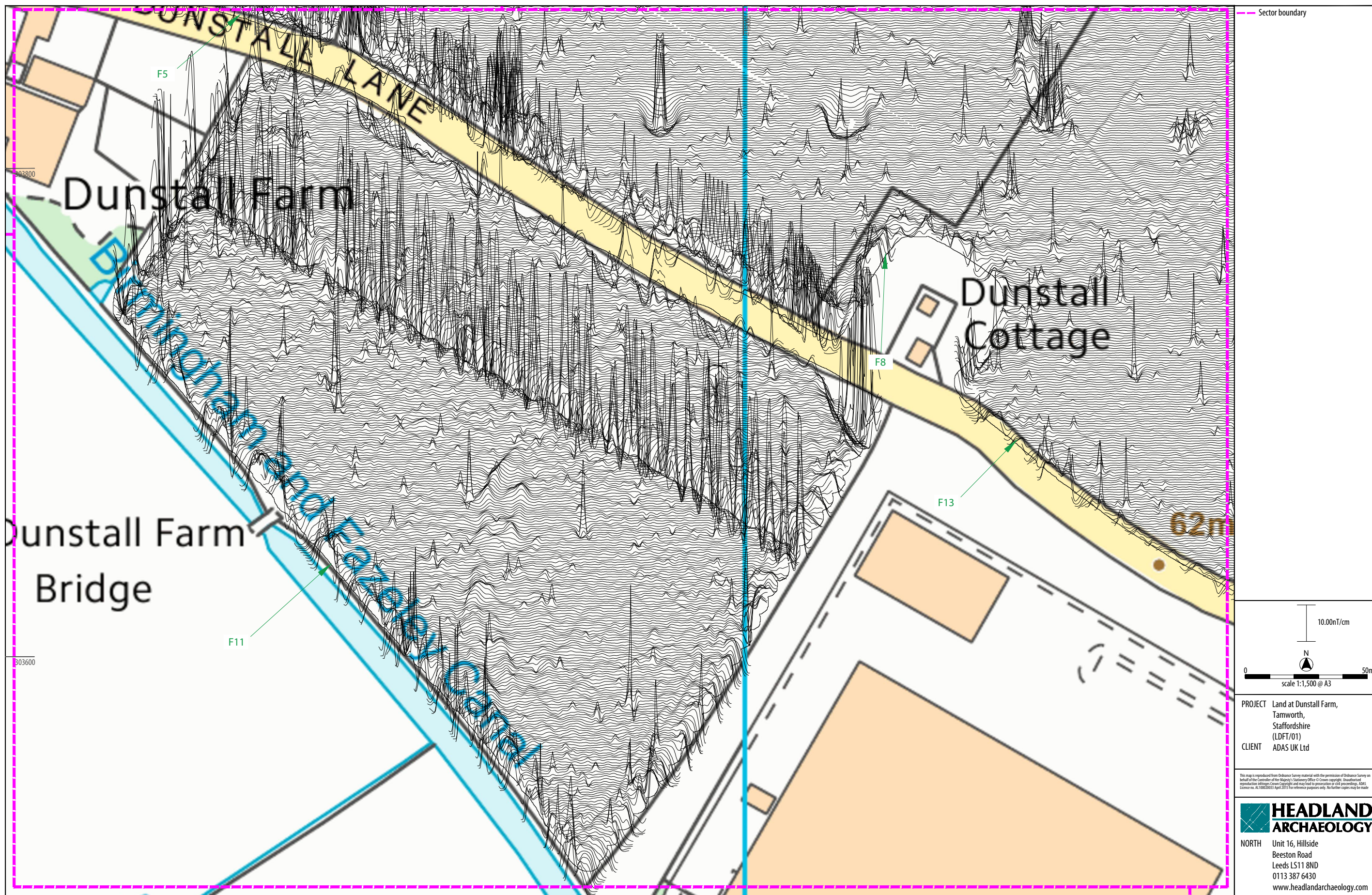
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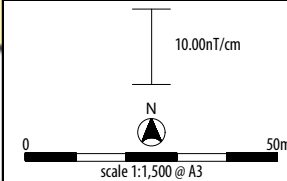
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Sector boundary



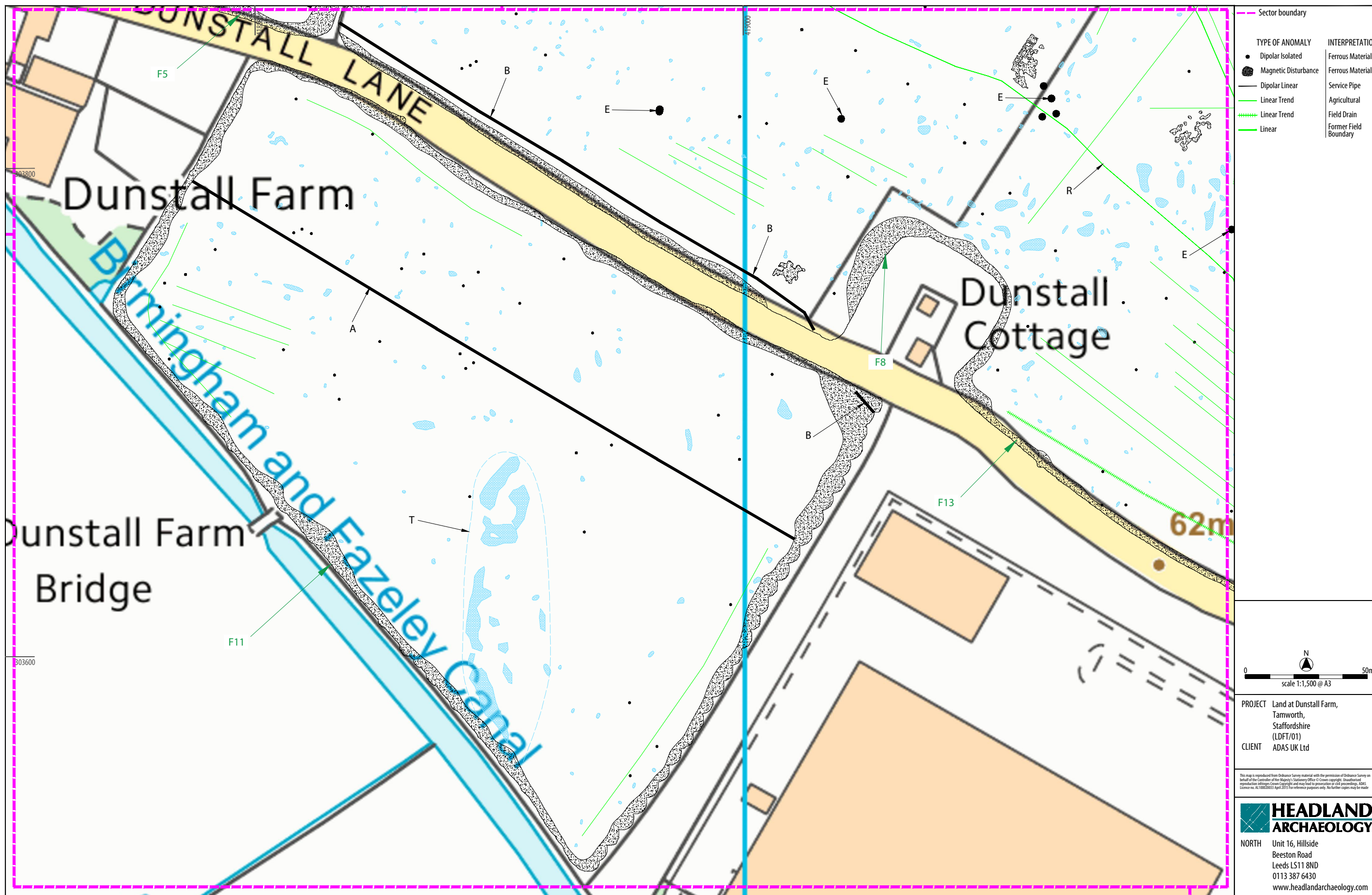
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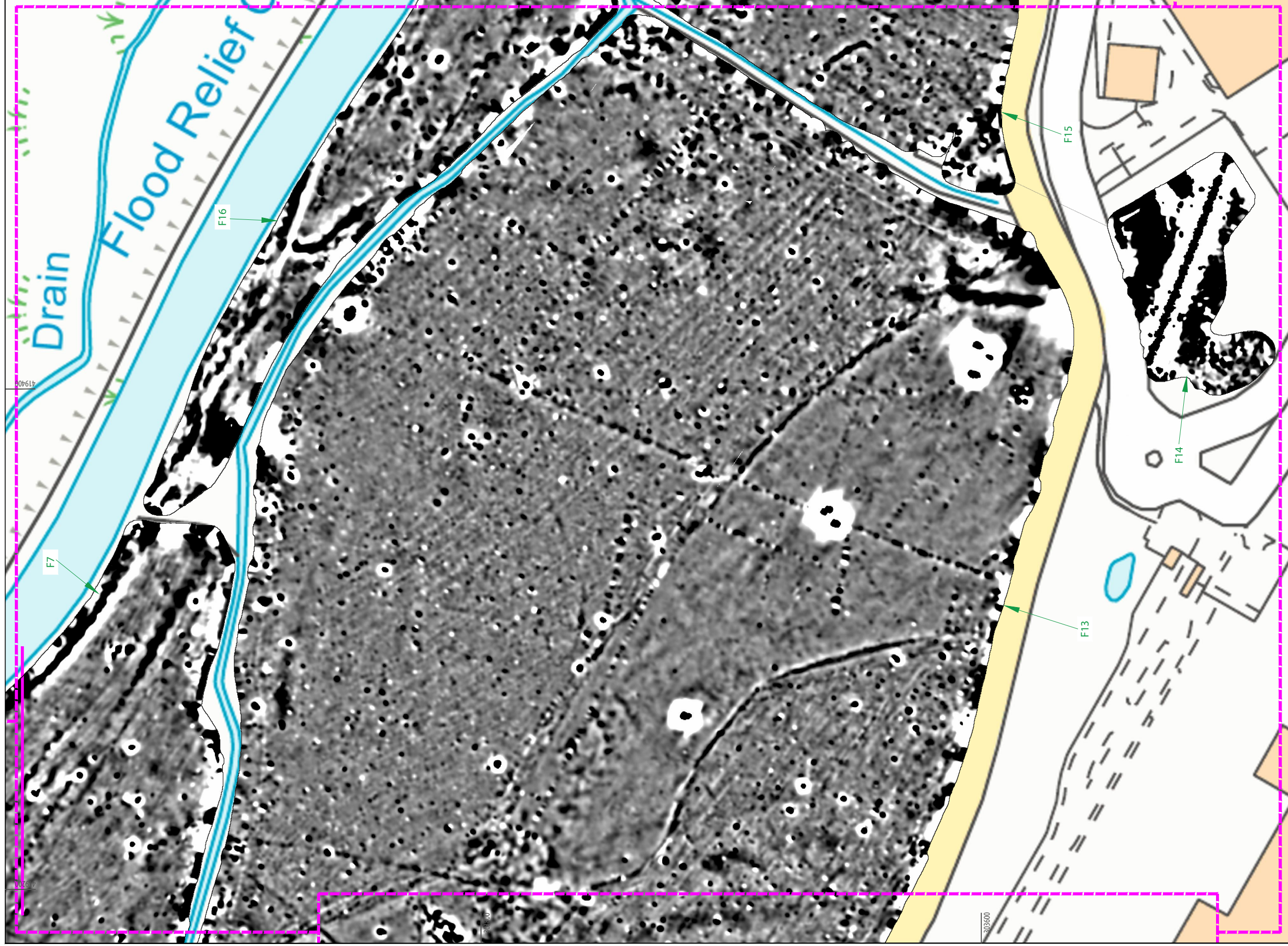
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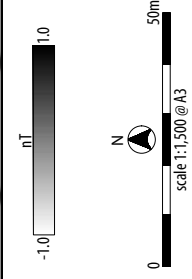
Illus 22
XY trace plot of magnetometer data; Sector 4



Illus 23
 Interpretation of magnetometer data; Sector 4



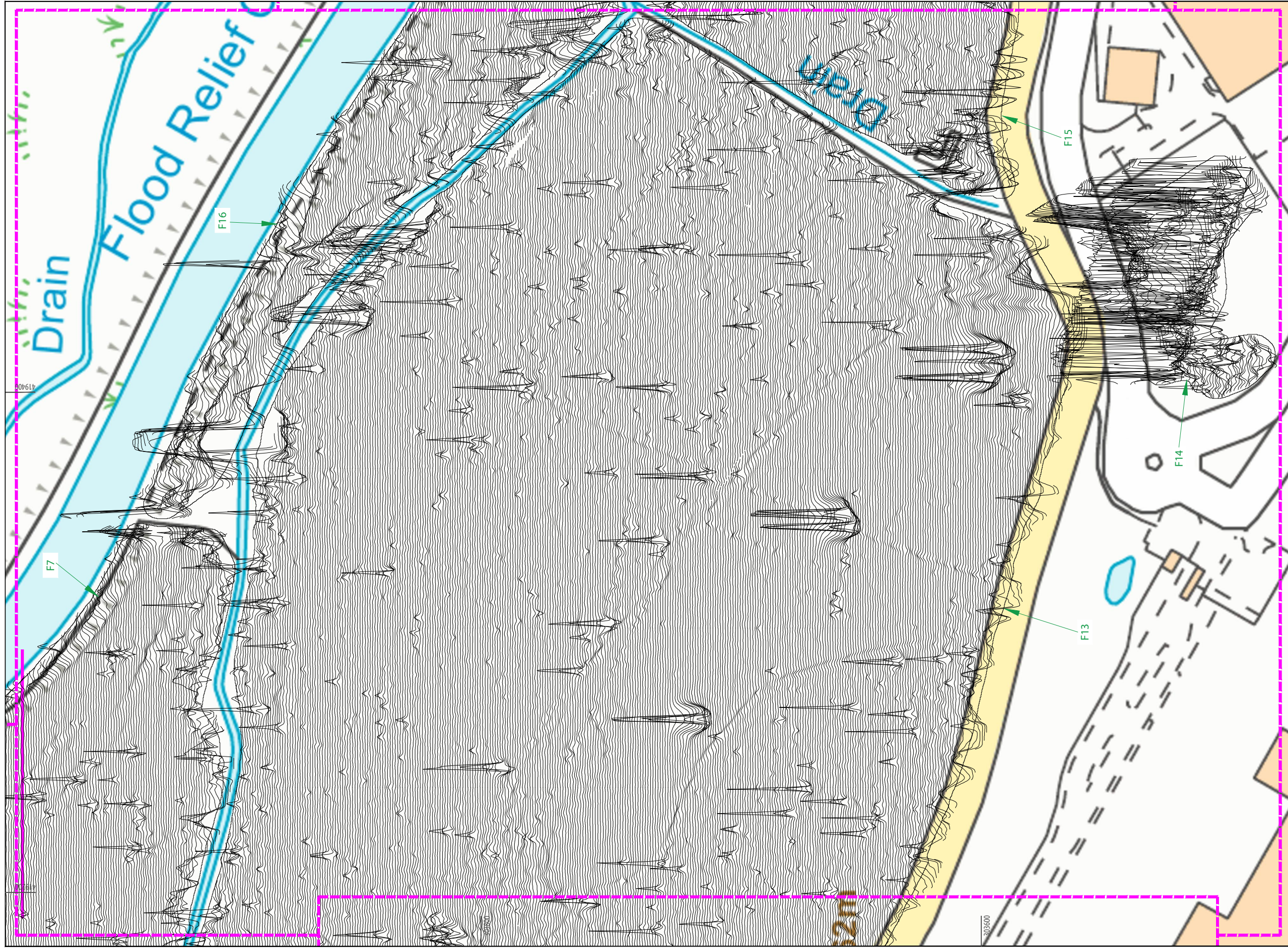
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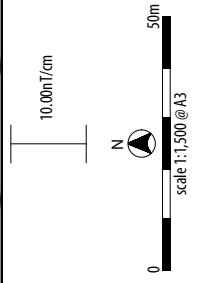
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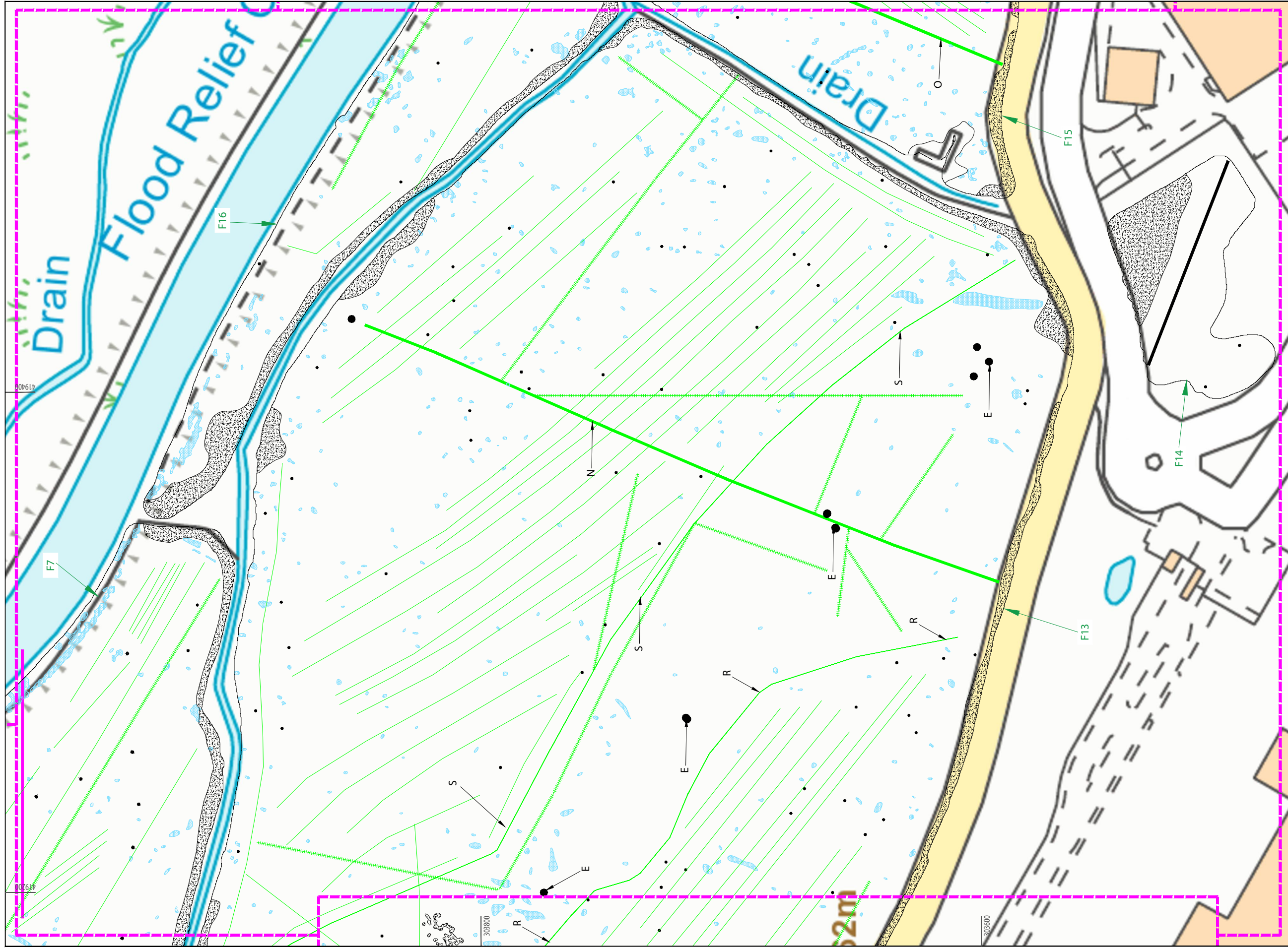
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illus 25
 XY trace plot of magnetometer data; Sector 5



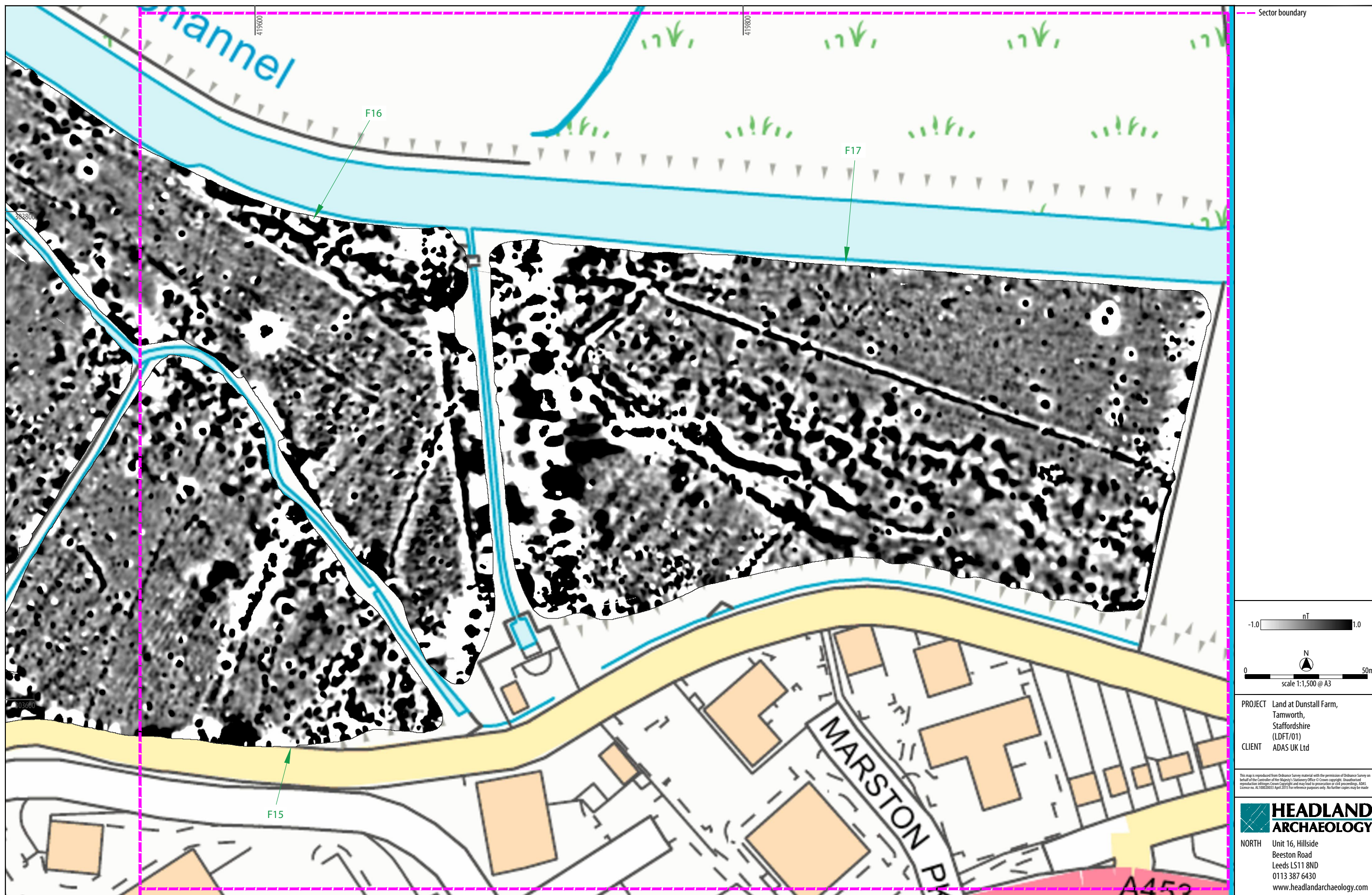
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<p>PROJECT Land at Dunstall Farm, Tamworth, Staffordshire (LDP7/01)</p>	<p>CLIENT ADAS UK Ltd</p>
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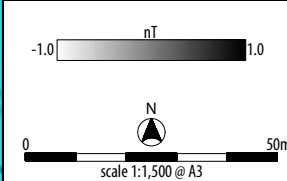
TYPE OF ANOMALY	INTERPRETATION	TYPE OF ANOMALY	INTERPRETATION
• Dipolar Isolated	Ferrous Material	• Dipolar Isolated	Ferrous Material
• Magnetic Disturbance	Ferrous Material	• Magnetic Disturbance	Ferrous Material
— Dipolar Linear	Service Pipe	— Dipolar Linear	Service Pipe
— Linear Trend	Agricultural	— Linear Trend	Agricultural
— Linear Trend	Field Drain	— Linear Trend	Field Drain
— Linear	Former Field Boundary	— Linear	Former Field Boundary

— Sector boundary

Illus 26
 Interpretation of magnetometer data; Sector 5



Sector boundary



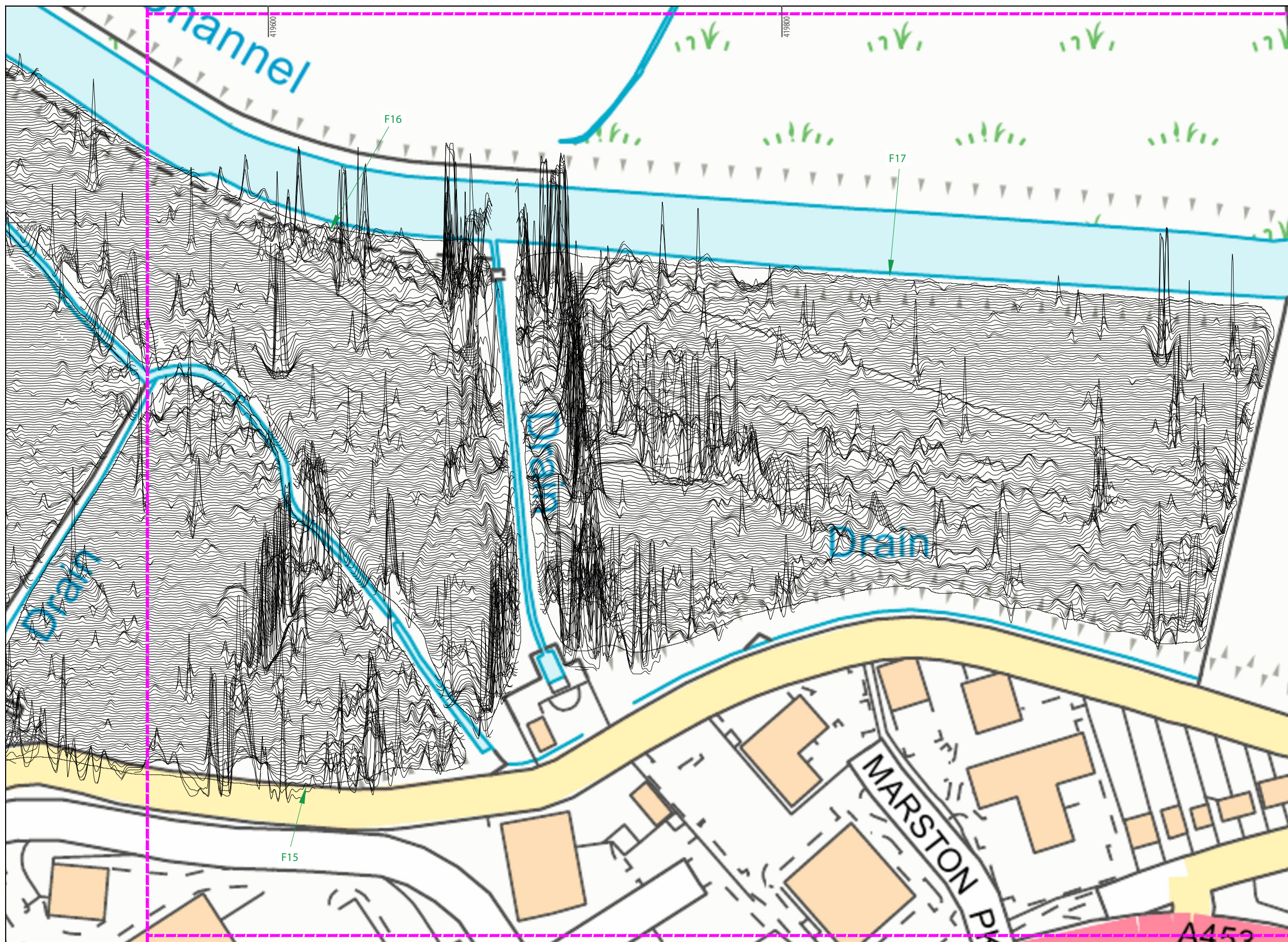
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Illus 27
Processed greyscale magnetometer data; Sector 6



Sector boundary

10.00nT/cm

0 50m

scale 1:1,500 @ A3

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Staffordshire
(LDFT/01)

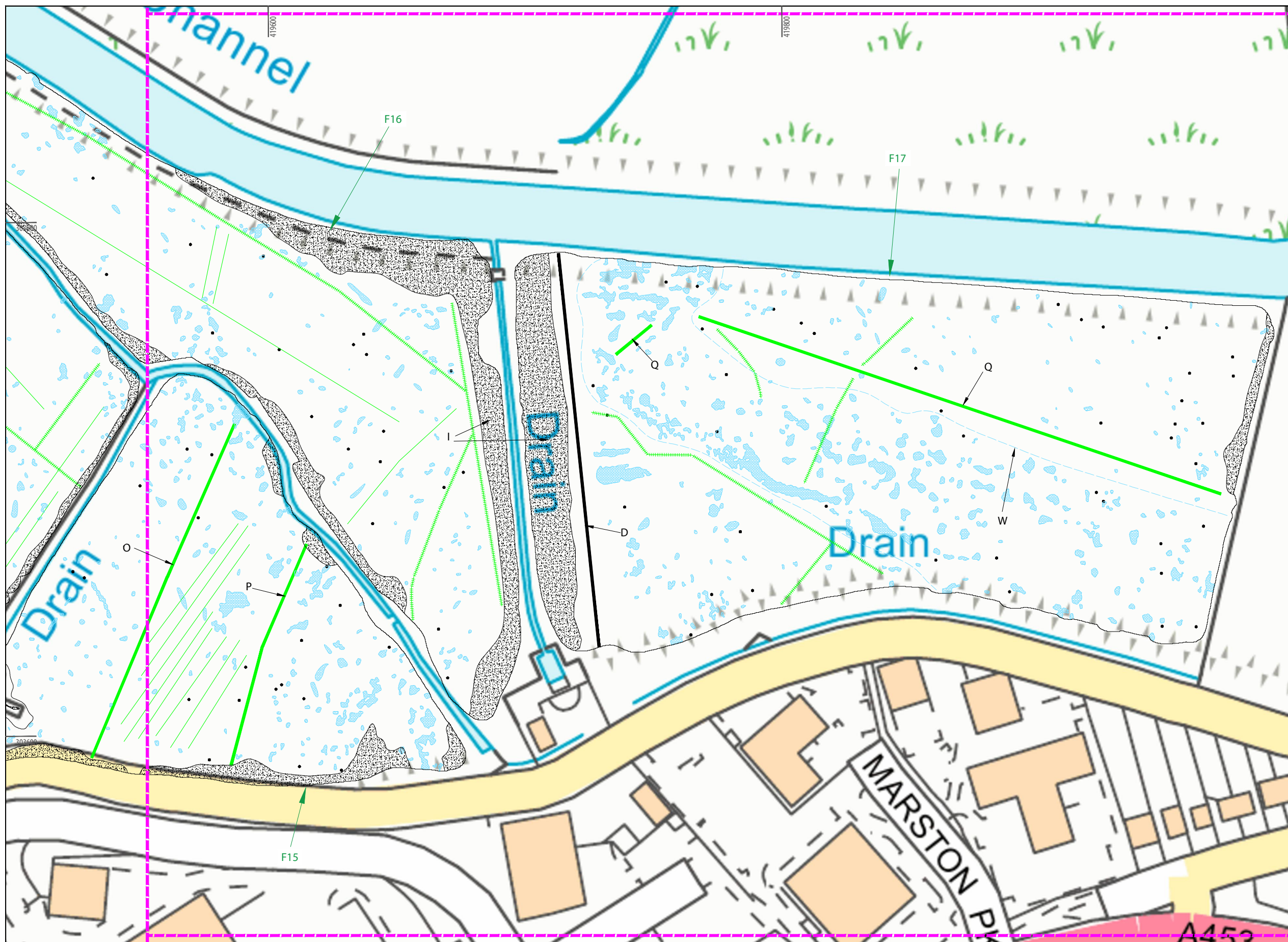
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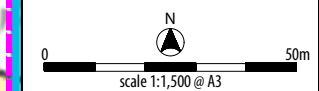
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Illus 28
XY trace plot of magnetometer data; Sector 6



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
— Dipolar Linear	Service Pipe
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology



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Illus 29
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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: headland5-251112

PROJECT DETAILS	
PROJECT NAME	Dunstall Farm, Tamworth
SHORT DESCRIPTION OF THE PROJECT	Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey, covering approximately 61 hectares on land adjacent to Dunstall Farm, Staffordshire, to provide baseline information on the archaeological potential of the site prior to the determination of a planning application for a proposed residential development. Many of the anomalies can be confidently interpreted as being associated with post-medieval and modern agricultural activity, specifically the rationalisation and formalisation of fields and the attempts to improve drainage and the effects of flooding. This supports the conclusions of a desk-based assessment (forthcoming). Linear anomalies locating former boundaries and various pipes and drains and by ridge and furrow and more recent cultivation have been identified. Areas of magnetic disturbance are also likely to have a relatively modern origin and may also be due to ground disturbance associated with improving drainage. A former pond is also located as an area of disturbed responses. Variations in the composition and depth of the superficial deposits of till and alluvium account for the broad amorphous anomalies and the generally variable magnetic background recorded across the site. No anomalies of obvious archaeological potential have been identified. Therefore, based solely on the results of the geophysical survey the archaeological potential of the site is assessed as low.
PROJECT DATES	Start: 18-04-2016 End: 22-04-2016
PREVIOUS/FUTURE WORK	Not known / Not known
ANY ASSOCIATED PROJECT REFERENCE CODES	LDFT16/01 - Contracting Unit No.
TYPE OF PROJECT	Field evaluation
SITE STATUS	None
CURRENT LAND USE	Cultivated Land 1 - Minimal cultivation
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	Pre-application
SOLID GEOLOGY (OTHER)	Mercia Mudstone Group
DRIFT GEOLOGY (OTHER)	Till
TECHNIQUES	Magnetometry
PROJECT LOCATION	
COUNTRY	England
SITE LOCATION	STAFFORDSHIRE TAMWORTH TAMWORTH Dunstall Farm, Tamworth
STUDY AREA	61 Hectares
SITE COORDINATES	SK 54900 01500 52.608148073316 -1.189180417639 52 36 29 N 001 11 21 W Polygon

PROJECT CREATORS

NAME OF ORGANISATION	Headland Archaeology
PROJECT BRIEF ORIGINATOR	Headland Archaeology
PROJECT DESIGN ORIGINATOR	Headland Archaeology
PROJECT DIRECTOR/MANAGER	Harrison, S
PROJECT SUPERVISOR	Schmidt, A
TYPE OF SPONSOR/FUNDING BODY	Developer

PROJECT ARCHIVES

PHYSICAL ARCHIVE EXISTS?	No
DIGITAL ARCHIVE RECIPIENT	In house
DIGITAL CONTENTS	"other"
DIGITAL MEDIA AVAILABLE	"Geophysics"
PAPER ARCHIVE EXISTS?	No

PROJECT BIBLIOGRAPHY 1

PUBLICATION TYPE	Grey literature (unpublished document/manuscript)
TITLE	Dunstall Farm, Tamworth, Staffordshire: Geophysical Survey
AUTHOR(S)/EDITOR(S)	Webb, A.
OTHER BIBLIOGRAPHIC DETAILS	Project Code LDFT16/01
DATE	2016
ISSUER OR PUBLISHER	Headland Archaeology
PLACE OF ISSUE OR PUBLICATION	Edinburgh
DESCRIPTION	Digital PDF
ENTERED BY	Sam Harrison (sam.harrison@headlandarchaeology.com)
ENTERED ON	11 May 2016



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