BERR22

Berrington Solar Farm, Shropshire

GEOPHYSICAL SURVEY REPORT

Headland Archaeology Yorkshire & North
Units 23–25 & 15 | Acorn Business Centre | Balme Road | Cleckheaton BD19 4EZ

for RSK ADAS Ltd.

07/02/2023

HEADLAND ARCHAEOLOGY

PROJECT INFORMATION:

PROJECT NAME	Berrington Solar Farm, Shropshire
TYPE OF WORK	Geophysical Survey
PLANNING REF.	n/a
PARISH NO.	n/a
CONSULTANT/AGENT	n/a
CLIENT	RSK ADAS Ltd
PROJECT CODE	BERR22
NGR	SJ 52311, 06484
PARISH	Berrington
LOCAL AUTHORITY	Shropshire County Council
FIELDWORK DATES	16/01/2023 – 20/01/2023
OASIS REF.	Headland1- xxxxxxx
ARCHIVE REPOSITORY	Headland Archaeology

PROJECT TEAM:

PROJECT MANAGER	Christian Adams
AUTHOR	Ross Bishop
FIELDWORK	Rich McGregor-Edwards, Nathan Crozier, Abigail Calvert,
GRAPHICS	Ross Bishop, Matthew Berry

PROJECT SUMMARY

Headland Archaeology (UK) Ltd was commissioned by RSK ADAS Ltd (the Client), to undertake a geophysical (magnetometer) survey covering approximately 38 hectares at the proposed site of Berrington Solar Farm, Shropshire, to support a planning application for a proposed solar photovoltaic (PV) array and associated infrastructure. The results will also inform future archaeological strategy, if required.

The survey has identified a range of anomalies across the proposed development area (PDA). These anomalies are mostly due to geological variation and to post-medieval and modern agricultural practice (ridge and furrow and modern cultivation, field drainage, boundary removal and small-scale extraction). In addition, one small square enclosure with possible internal discrete features and a possible ditch extending from its eastern corner has been recorded in the western half of the PDA. Small scale extraction may have removed much of the south-eastern side of the enclosure.

Based on the results of the survey the archaeological potential of the PDA is assessed as low except in the area immediately surrounding the enclosure where it is assessed as moderate.

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BERRINGTON SOLAR FARM, SHROPSHIRE

GEOPHYSICAL SURVEY REPORT

1. INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned by RSK ADAS Ltd (the Client), to undertake a geophysical (magnetometer) survey at the proposed site of Berrington Solar Farm, Shropshire, (Illus 1).

This geophysical survey report will be submitted in support of a planning application for the proposed solar farm and associated infrastructure development. The results will also inform future archaeological strategy at the site, if required.

The scheme of work was undertaken in accordance with the requirements of the National Planning Policy Framework (MHCLG 2021) and with the Written Scheme of Investigation for Geophysical Survey (WSI) (Headland Archaeology 202 which was approved by Dr Andy Wigley, Policy and Environment Manager at Shropshire Council on 21st December 2022.

The WSI was produced to the standards laid down in the European Archaeological Council's guideline publication EAC Guidelines for the Use of Geophysics in Archaeology (Europae Archaeologia Consilium 2016), the Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Archaeological Geophysical Survey (CIfA 2014). The survey was also carried out in line with the same best practice guidelines.

The survey was carried out between January 16th and January 20th, 2023.

1.1. SITE LOCATION, TOPOGRAPHY AND LAND-USE

The Proposed Development Area (PDA) is located approximately 0.75km south-west of Berrington and 7km south-east of Shrewsbury. It comprises a single irregularly shaped block of land covering two large contiguous agricultural fields (F1 and F2) that were under a germinating arable crop at the time of survey (Illus 2 to Illus 5). The PDA is bounded to the south by hedgerows and further agricultural fields, to the west by Shrewsbury Road, to the north by Cliff Hollow Road, and to the east by an unnamed road. A man-made reservoir is located immediately to the north of F1. The PDA is centred at SJ 52311, 06484 and covers an area of approximately 38 hectares.

Topographically, the PDA generally slopes from north to south ranging from 89m Above Ordnance Datum (AOD), to 69m AOD, although many undulations are present throughout both fields resulting in a landscape of frequently changing higher and lower ground.

1.2. GEOLOGY AND SOILS

The bedrock geology underlying the PDA is recorded as mudstone, sandstone and conglomerate of the Salop Formation. The superficial deposits across the majority of the PDA consist of Till – Diamicton with a significant band of sand and gravel along the western edge of F1 which extends as far east as the man-made reservoir (UKRI 2021).

Most of the soils overlying the PDA are classified in the Soilscape 8 Association, described as slightly acid loams and clays with impeded drainage (Cranfield University 2021).

2. ARCHAEOLOGICAL BACKGROUND

The text below is a summary of the conclusions of the known archaeological potential of the PDA as reported in an archaeological desk-based assessment (RSK ADAS, 2022).

No known evidence of prehistoric activity is recorded in the vicinity of the PDA. Two records potentially of Roman origin are recorded. These are a possible Roman road between Allfield and Exfords Green 640m west of the PDA and a postulated Roman site at Stanchester, 500m to the south-east. This site is the postulated location of a villa with a field marked with ridges in the Roman fashion for vineyards.

Evidence of medieval activity is recorded within the PDA in the form of ridge and furrow cultivation visible on aerial photographs. Further evidence of medieval activity in the surrounding area includes earthwork remains of a moated site 580m to the north-east, a deserted medieval settlement 400m to the west, a former water mill 40m to the south and the Grade I listed Church of All Saints 550m to the north-east.

Cartographic evidence shows little activity or change to the PDA since the publication of the first edition Ordnance Survey (OS) map in 1882. The PDA has been in agricultural use since this date although several boundaries recorded in 1882 have since been removed to create larger, more regularly shaped fields.

3. AIMS, METHODOLOGY & PRESENTATION

3.1. AIMS & OBJECTIVES

The principal aim of the geophysical survey was to gather information to establish the presence/absence, character, and extent of any archaeological remains within the PDA. This will enable an assessment to be made of the impact of the proposed development on any sub-surface archaeological remains, if present, and thereby inform any further investigation strategies, as appropriate.

The specific archaeological objectives of the geophysical survey were:

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

3.2. METHODOLOGY

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 & Gater 2003). Further information on soil magnetism and the interpretation of magnetic anomalies is provided in Appendix 1.

Magnetometry is the most widely used geophysical survey technique in archaeology as it can quickly evaluate large areas and, under favourable conditions, identify a wide range of archaeological features including infilled cut features such as large pits, gullies and ditches, hearths, and areas of burning and kilns and brick structures. It is therefore good at locating settlements of all periods, prehistoric field systems and enclosures and areas of industrial or modern activity, amongst others. It is less successful in identifying smaller features such as post-holes and small pits (except when using a non-standard sampling interval), unenclosed (prehistoric) settlement sites and graves/burial grounds. However, magnetometry is by far the single most useful technique and was assessed as the best non-intrusive evaluation tool for this site.

The survey was undertaken using four Bartington Grad601 sensors mounted at 1m intervals (1m traverse interval) onto a rigid frame. The system was programmed to take readings at a frequency of 10Hz (allowing for a 10-15cm sample interval) on roaming traverses (swaths) 4m apart (Illus 6). These readings were stored on an external weatherproof laptop and later downloaded for processing and interpretation. The system was linked to a Trimble R12 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 was used to collect and export the data. Terrasurveyor V3.0.37.0 (DWConsulting) software was used to process and present the data.

3.3. DATA PRESENTATION & TECHNICAL DETAIL

A general site location plan is shown in Illus 1 at a scale of 1:10,000. Illus 2 to Illus 5 inclusive are site condition photographs. Illus 6 shows the GPS swaths and the location and direction of the site condition photographs at 1:4,000. The fully processed (greyscale) data and interpretative plot overviews of the whole of the PDA are presented, also at 1:4,000, in Illus 7 and Illus 8. Fully processed (greyscale) data, minimally processed data (XY trace plot) data and interpretative plots are presented, by Sector, at a scale of 1:2,500, in Illus 9 to Illus 14 inclusive. Fully processed (greyscale) data, minimally processed data (XY trace plot) data and interpretative plot of the Area of Archaeological Activity (AAA) are presented at a scale of 1:1,000 in Illus 15 to Illus 17 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. Data processing details are presented in Appendix 4. The OASIS Reference is included as Appendix 5.

The survey methodology, report and any recommendations comply with the Written Scheme of Investigation (Headland Archaeology 2022), guidelines outlined by Europae Archaeologia Consilium (EAC 2016) and by the Chartered Institute for Archaeologists (CIfA 2014). All illustrations from Ordnance Survey (OS) mapping are reproduced with the permission of the controller of His Majesty's Stationery Office (© Crown copyright).

The illustrations in this report have been produced following analysis of the data in 'raw' (minimally processed) and processed formats and over a range of different display levels. All illustrations are presented to display and interpret the data to best effect. The interpretations are based on the experience and knowledge of Headland management and reporting staff.

4. RESULTS AND DISCUSSION

4.1. SITE CONDITIONS

Magnetometer survey is generally recommended over any sedimentary bedrock (English Heritage 2008; Table 4) although the presence of overlying superficial deposits, as are present here, can lead to variability of results. Nevertheless, magnetometry was still assessed as being the most appropriate non-intrusive geophysical technique for evaluating the PDA, taking account of the limitations noted in Section 3.2 above.

Surface conditions were generally good across the PDA with both fields under young arable cereal crops (Illus 2 to Illus 5). Data quality was also good with only minimal post-processing required. No problems were encountered during the fieldwork.

Generally, the magnetic background to the data across the PDA is relatively uniform, resulting in an even spread of discrete, low magnitude anomalies likely due to variation within the superficial deposits.

In the west and south of F1, several broad and sometimes sinuous low magnitude anomalies are recorded where the superficial deposits comprise the sands and gravels. The more sinuous anomalies may locate the former course of Cround Brook or reflect the accumulation of superficial material in the hollows and undulations in the landscape.

Similar but far fewer similar anomalies are also recorded in the east of the PDA where the superficial deposits comprise till.

Against this magnetic background numerous other non-geological anomalies of agricultural, modern, and archaeological origin have been recorded (Illus 8). This confirms that the soils and geology were suitable for magnetometry and that the results likely provide a reasonably good indication of the extent of sub-surface archaeological features within the PDA notwithstanding the limitations of magnetometer survey to identify the types, sizes, and period of archaeological feature described in Section 3.2.

The anomalies are discussed below according to their interpreted origin.

4.2. FERROUS AND MODERN 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 is common on most sites, often being introduced into the topsoil during manuring or tipping/infilling. There is no obvious clustering to the ferrous anomalies across the PDA more generally which might indicate an archaeological origin. Far more probable is that the 'spike' responses are likely caused by the random distribution of ferrous debris in the upper soil horizons.

Bands or small areas of magnetic disturbance are also recorded along or adjacent to some of the current field boundaries, roads and entrances. This magnetic disturbance is typically due to the accumulation of ferrous debris at field margins, or to barbed wire or mesh in the boundary itself and to the tipping of material in gateways to improve access to/from fields.

No buried services are recorded in the data set.

4.3. AGRICULTURAL ANOMALIES

Analysis of historical mapping shows that several field boundaries have been removed since the late 19th century. Some of these former boundaries are identified in F2, as low magnitude linear anomalies or as clusters of magnetically enhanced material (Illus 12 to Illus 14 - F1, F2 and F3) used in the infilling of the boundaries to create larger fields.

In the west of the PDA magnetic evidence for 19th century boundaries is less obvious. A single low magnitude linear anomaly (Illus 8 and Illus 17 - FB4?) aligned north/south in the centre of F1, also partly correlates with a former boundary; it is possible that the southern section recorded as an anomaly may be due to an earlier boundary no longer extant at the time of the first edition mapping. Two discontinuous parallel anomalies, FB5 and FB6 (Illus 8 and Illus 17) are possibly also due to part of a mapped former boundary.

Parallel low magnitude linear anomalies in F2 are interpreted as agricultural in origin being either due to field drains or recent ploughing.

Parallel linear anomalies are also recorded in F1, predominantly aligned south-west/north-east. These anomalies correlate with the location of ridge and furrow cultivation strips that are recorded on the Shropshire Historic Environment Record although it is not clear whether the recorded anomalies are due to the below ground remnants of the former ploughing technique or perhaps to later land drains aligned in the direction of ploughing.

Many faint, closely spaced, linear trend anomalies generally aligned with the extant field boundaries, particularly in F2 (Illus 7-9) are due to modern ploughing.

4.4. ANOMALIES OF NATURAL/GEOLOGICAL ORIGIN

Many anomalies interpreted as of natural or geological origin above the general magnetic background are recorded across the PDA (see Section 4.1),

4.5. ANOMALIES OF UNCERTAIN ORIGIN

Two clusters of discrete anomalies (Illus 9 – U1 and U2) are interpreted as of uncertain origin. Both are recorded in F1 and both correspond with poorly drained areas in the field that are not always cultivated, as can be seen on satellite images taken from the 1980s to the present day. It is considered likely, but not certain, that these two clusters may locate infilled former small extraction pits, although there is no record of this on the historic mapping. In the case of U2 this could explain why part of the south-eastern side of the enclosure E1 (see below) does not manifest as a magnetic anomaly; this corner of the enclosure may already have been destroyed by localised extraction.

In the east of F1, on the western edge of a small copse, a magnetically enhanced discrete anomaly (Illus 8 - U3) is recorded. The cause of this anomaly is uncertain although it is parallel with, although of much higher magnitude than, the ploughing and field drains recorded just to the north-west. It is therefore interpreted as most likely of modern origin.

4.6. ANOMALIES OF PROBABLE OR POSSIBLE ARCHAEOLOGICAL ORIGIN

In the west of F1, a magnetically enhanced sub-square anomaly indicative of a small enclosure approximately 55m by 51m is recorded. As indicated above (Section 4.5) part of the southern side cannot be detected possibly due to post-medieval quarrying/extraction. Several discrete anomalies within the enclosure are interpreted as of possible archaeological potential although some of these responses may be geological in origin. A single ditch like response, D1, is also recorded possibly extending from the eastern corner of the enclosure. These anomalies/features, presented as AAA1 (Area of Archaeological Activity), may support the conclusions of the DBA indicating Roman activity in the wider landscape.

5. CONCLUSION

The survey has identified a range of anomalies consistent with modern activity and agricultural usage of the proposed development area (PDA). It has also identified anomalies of probable and possible archaeological origin.

By far the most common anomalies are those interpreted as of geological and agricultural origin. Three former field boundaries, regular patterns of drainage and anomalies indicative of modern ploughing techniques, in addition to many sinuous and/or broad, low magnitude geological anomalies are recorded across most of the PDA.

One small sub-square enclosure with internal pit-like responses is recorded towards the western side of the PDA.

Based on the results of the survey the archaeological potential of the PDA is assessed as low but moderate in and immediately around the probable enclosure.

6. REFERENCES

Chartered Institute for Archaeologists (CIfA) 2014 Standard and guidance for archaeological geophysical survey (Reading) https://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_3.pdf accessed 25th January 2023

Cranfield University 2020 Cranfield Soil and Agrifood Institute Soilscapes http://www.landis.org.uk/soilscapes/ accessed 25th January 2023

English Heritage 2008 Geophysical Survey in Archaeological Field Evaluation

Europae Archaeologia Consillium (EAC) 2016 EAC Guidelines for the Use of Geophysics in Archaeology: Question to Ask and Points to Consider (Namur, Belgium) https://www.europae-archaeologiae-consilium.org/eac-guidlines accessed 25th January 2023

Gaffney, C & Gater, J 2003 Revealing the Buried Past: Geophysics for Archaeologists Stroud

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RSK ADAS 2022 Archaeological Desk-Based Assessment: Solar Farm on land south of Berrington REF ART69105-928

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 the topsoil, subsoil, and rock, 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 most 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 introduced into the topsoil during 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 and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Lightning-induced remnant magnetisation (LIRM)

LIRM anomalies are thought to be caused in the near surface soil horizons by the flow of an electrical current associated with lightning strikes. These observed anomalies have a strong bipolar signal which decreases with distance from the spike point and often appear as linear or radial in shape.

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 DATA PROCESSING

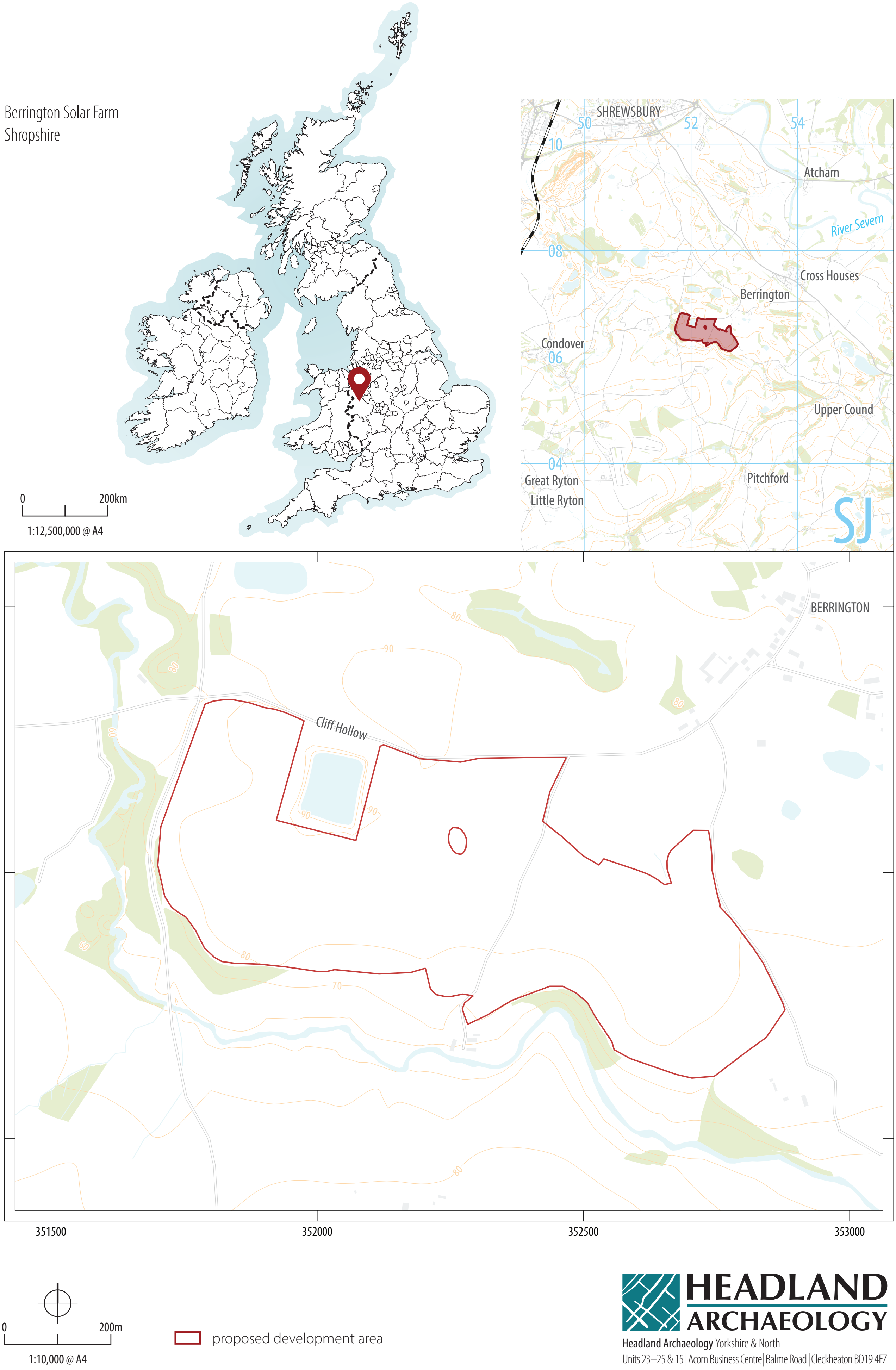
The gradiometer data has been presented in this report in processed greyscale and minimally processed XY trace plot format.

Data collected using RTK GPS-based methods cannot be produced without minimal processing of the data. The minimally processed data has been interpolated to project the data onto a regular grid and de-striped to correct for slight variations in instrument calibration drift and any other artificial data.

A high pass filter has been applied to the greyscale plots to remove low frequency anomalies (relating to survey tracks and modern agricultural features) to maximise the clarity and interpretability of the archaeological anomalies.

The data has also been clipped to remove extreme values and to improve data contrast.

APPENDIX 5 OASIS



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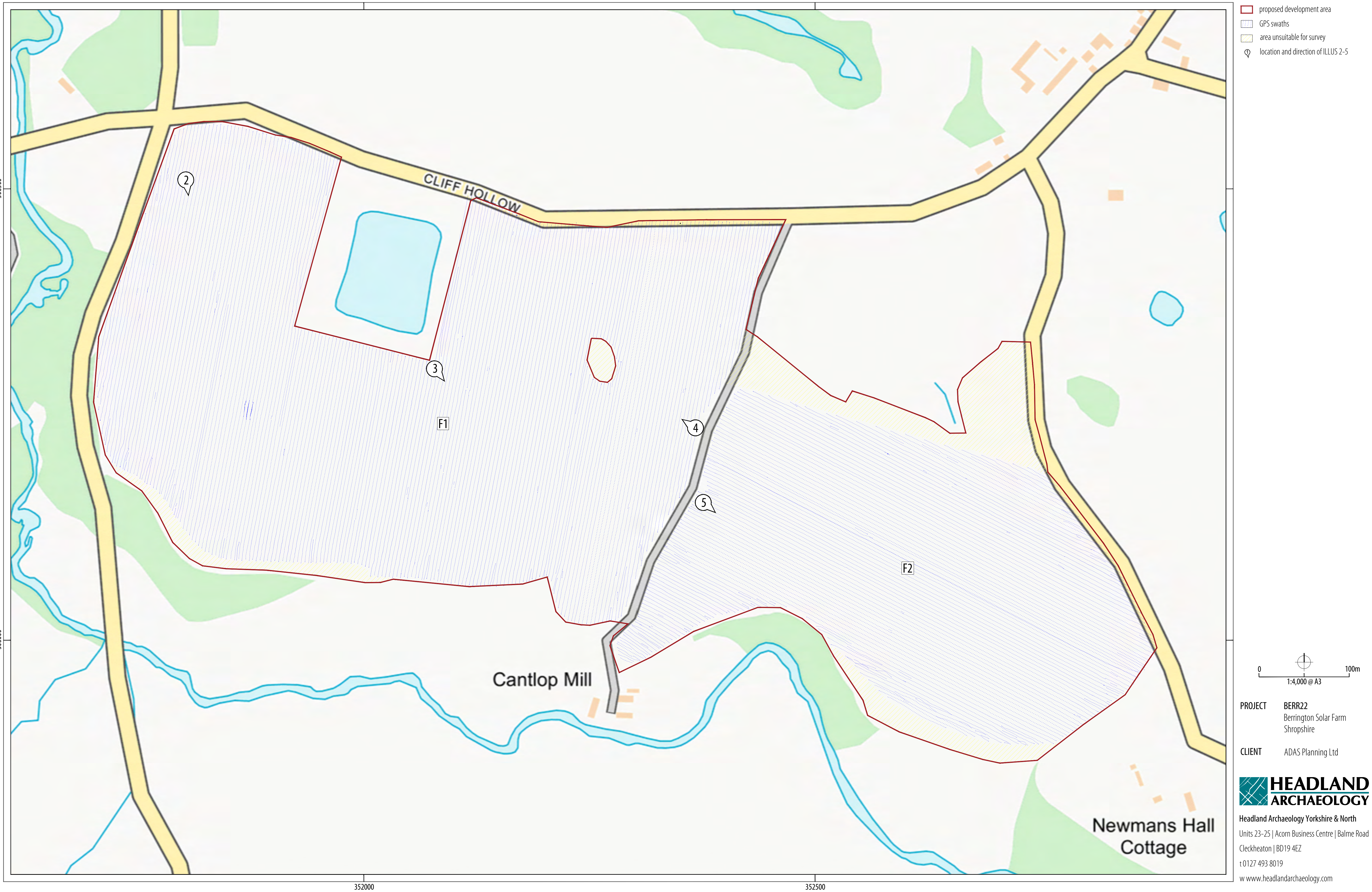
ILLUS 1 Site location

Illus 2 F1, looking south-east

Illus 3 F1, looking south-east


Illus 4 F1, looking north-west


Illus 5 F2, looking south-east



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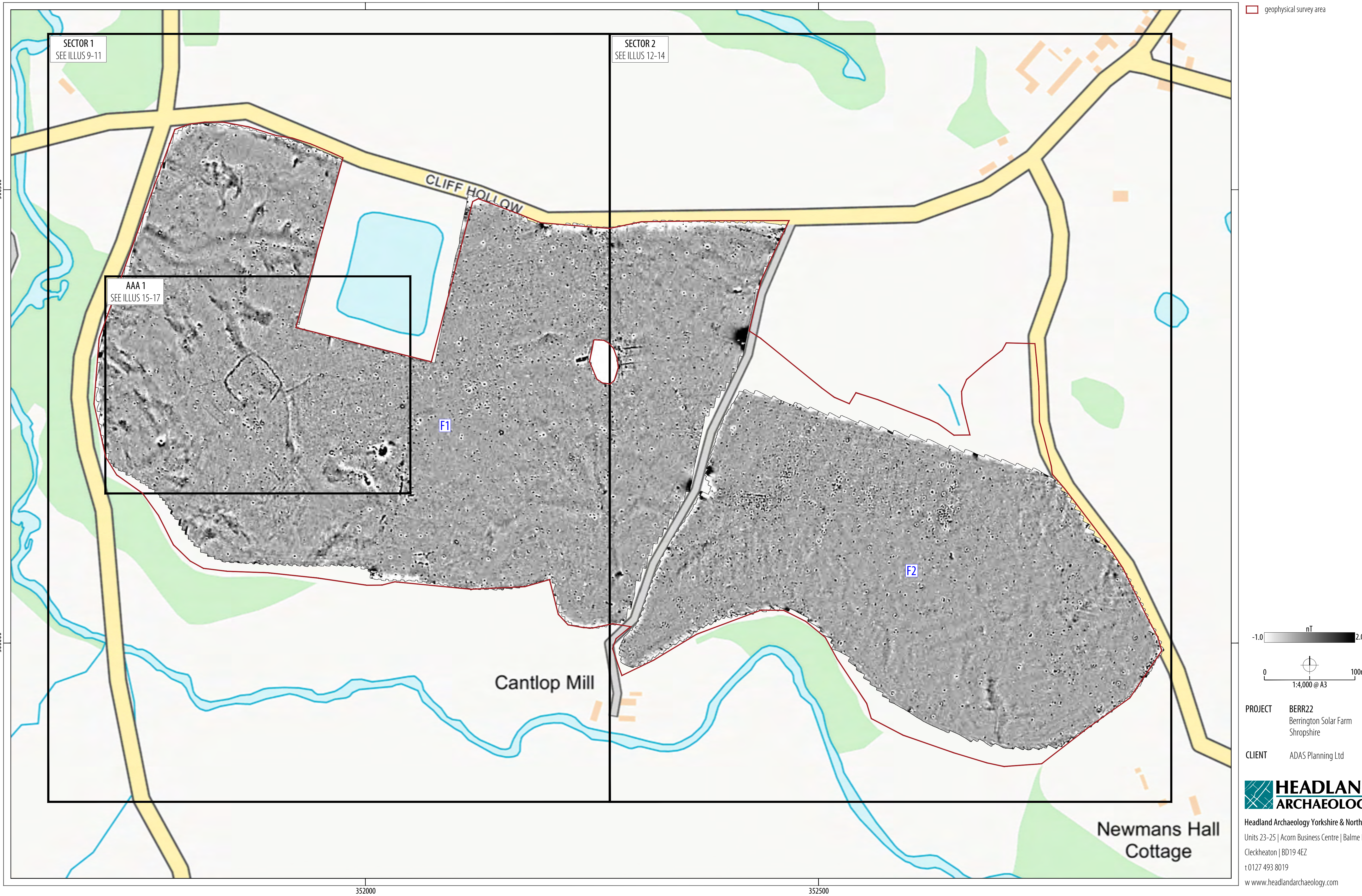
ILLUS 6 Survey location showing GPS swaths and photgraph locations



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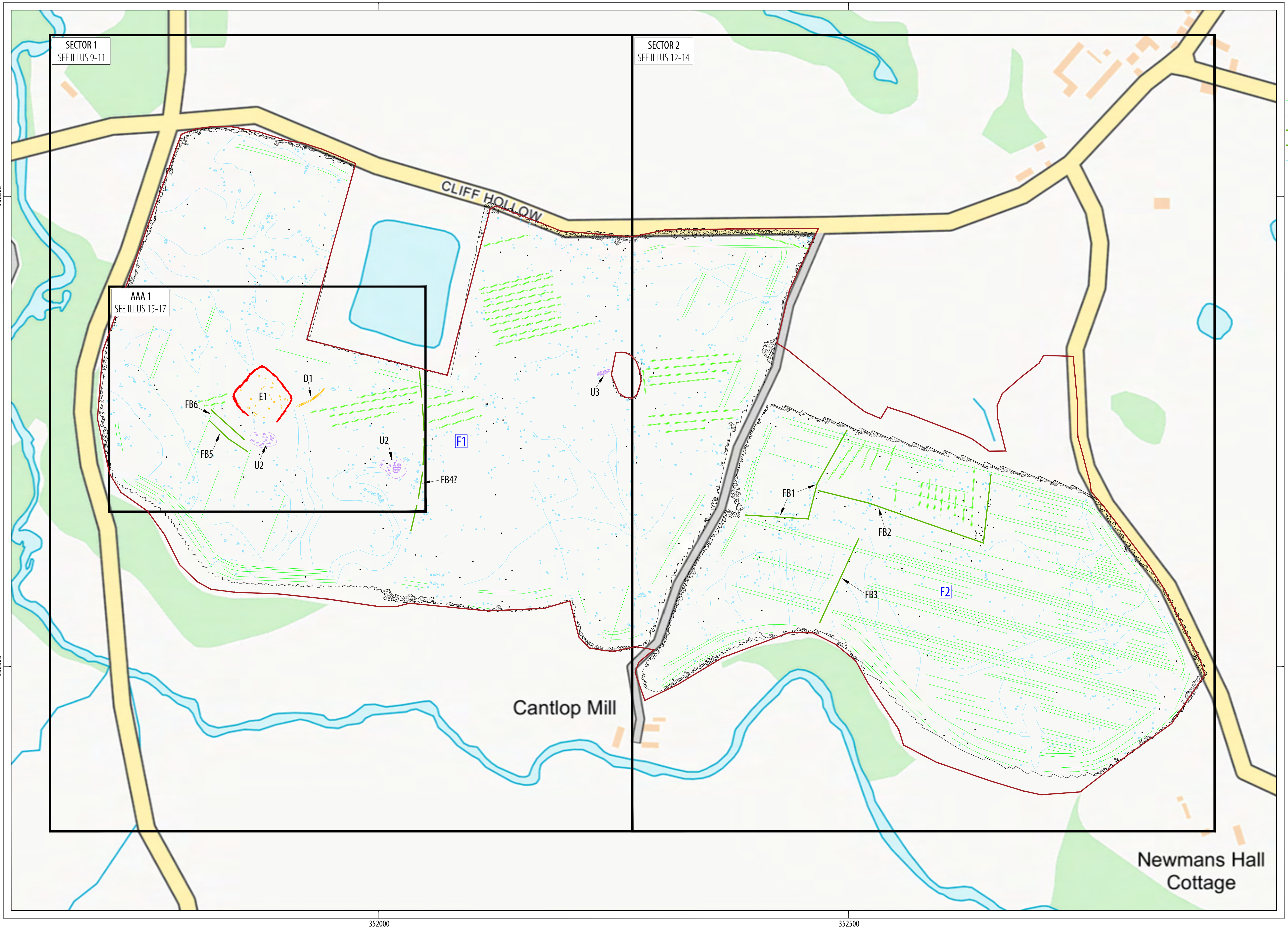
ILLUS 7 Overall greyscale plot of processed magnetometer data



propsed development area

TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
magnetic enhancement	uncertain
linear trend	agricultural
linear trend	field drain
linear	former field boundary
linear	former field boundary?
linear trend	geological variation
magnetic enhancement	geology
magnetic enhancement	archaeology?
magnetic enhancement	archaeology

ABBREVIATIONS

D - ditch
E - enclosure
FB - former boundary
FB? - former boundary?
U - uncertain

0 100m
1:4,000 @ A3

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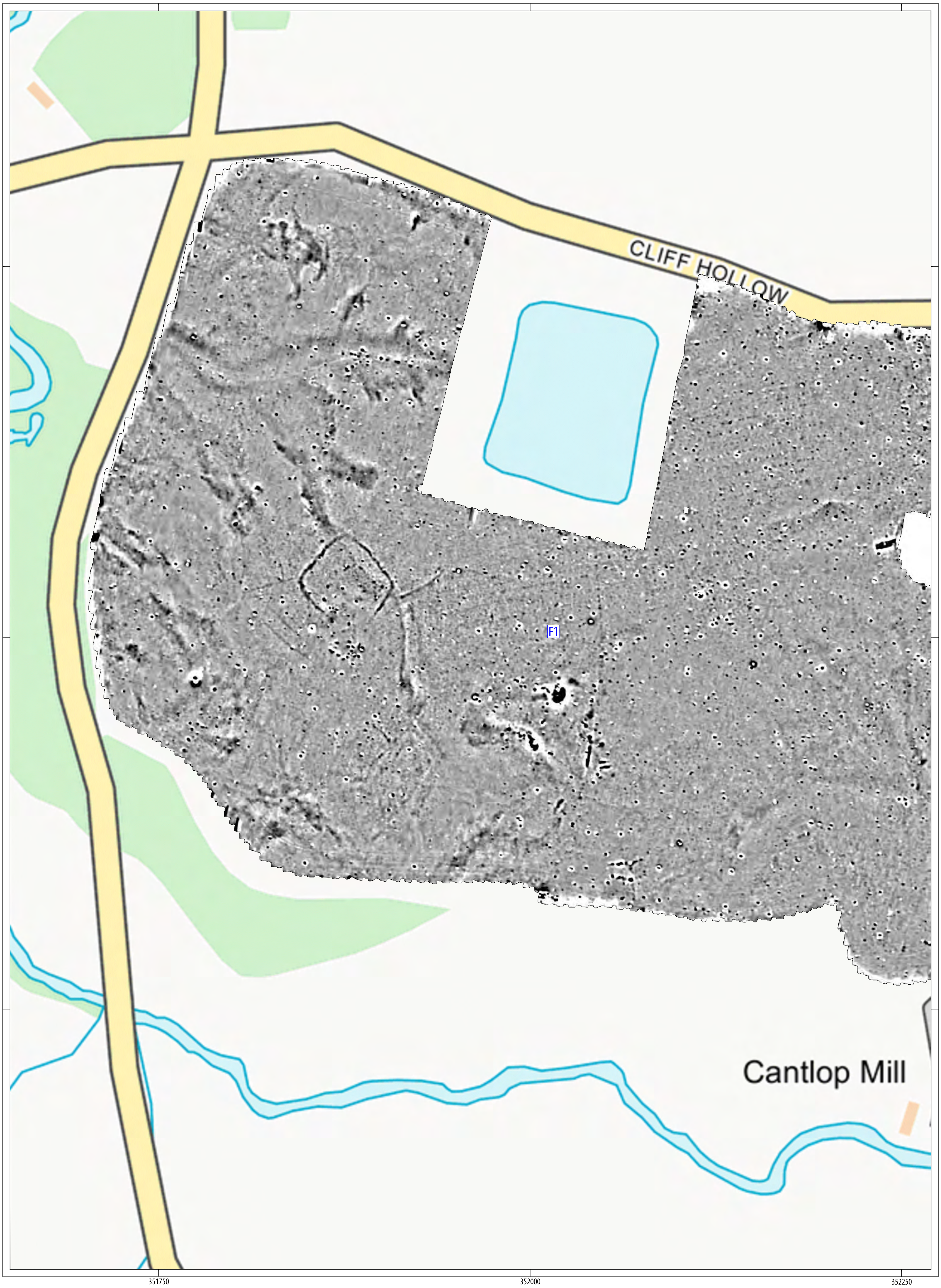
ILLUS 8 Overall interpretation of magnetometer data



nT
-1.0 2.0

0 50m
1:2,500 @ A3

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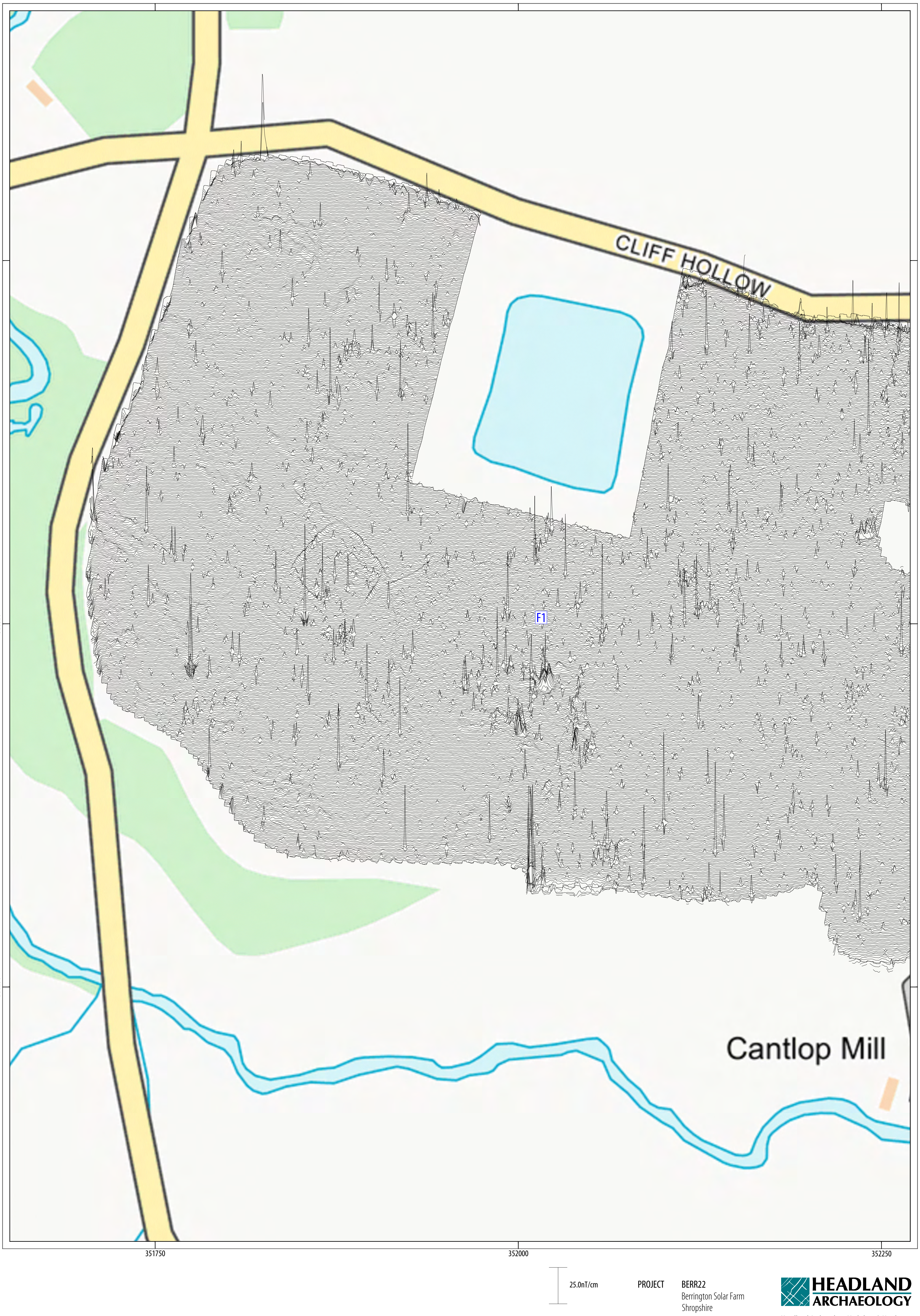
ILLUS 9 Processed greyscale magnetometer data; Sector 1



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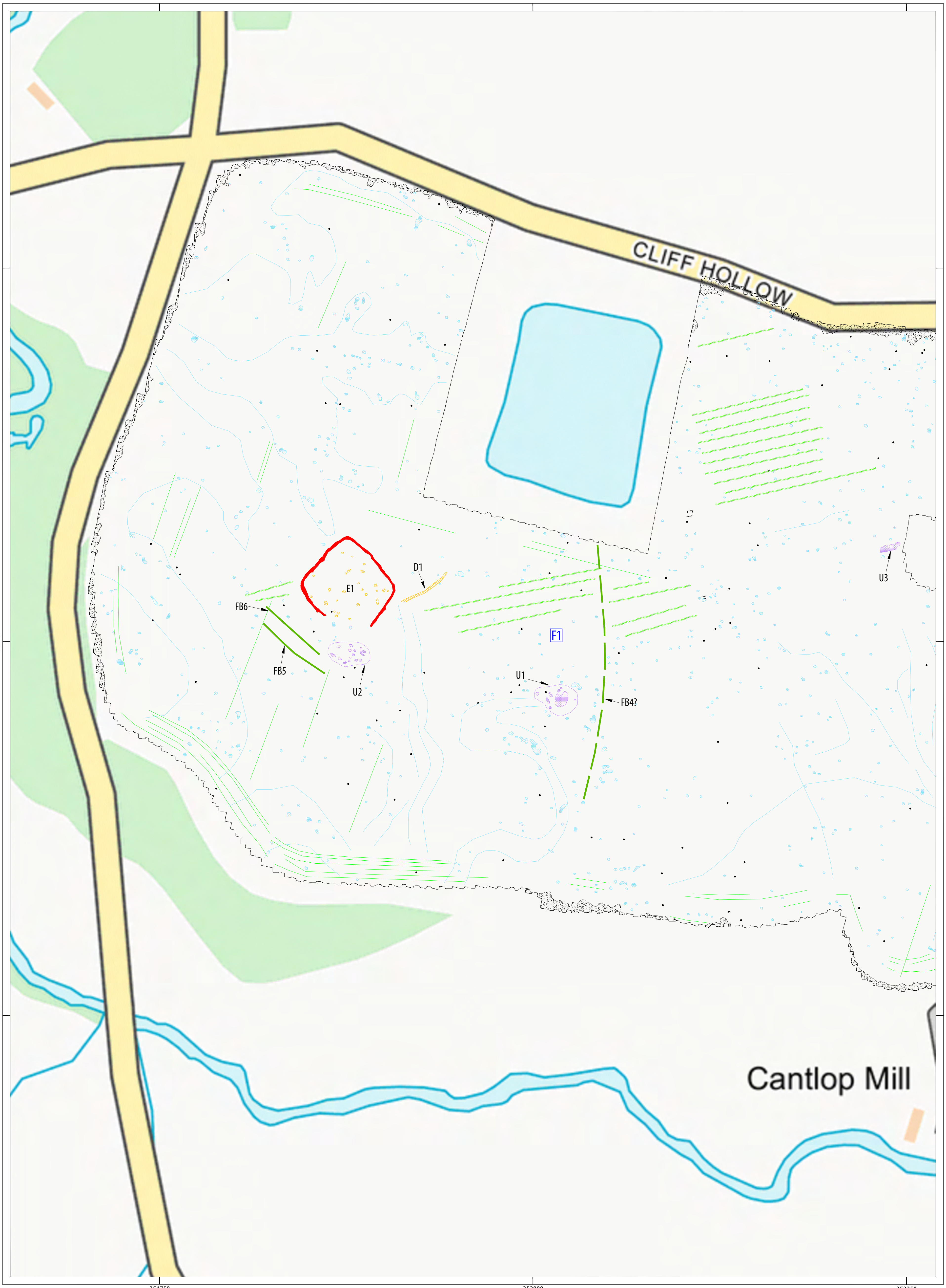
ILLUS 10 XY trace plot of minimally processed magnetometer data; Sector 1



TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
magnetic enhancement	uncertain
linear trend	agricultural
linear trend	field drain
linear trend	geological variation

TYPE OF ANOMALY	INTERPRETATION
magnetic enhancement	geology
magnetic enhancement	archaeology?
magnetic enhancement	archaeology

ABBREVIATIONS

D - ditch
E - enclosure
FB? - former boundary?
U - uncertain

0 50m
1:2,500 @ A3

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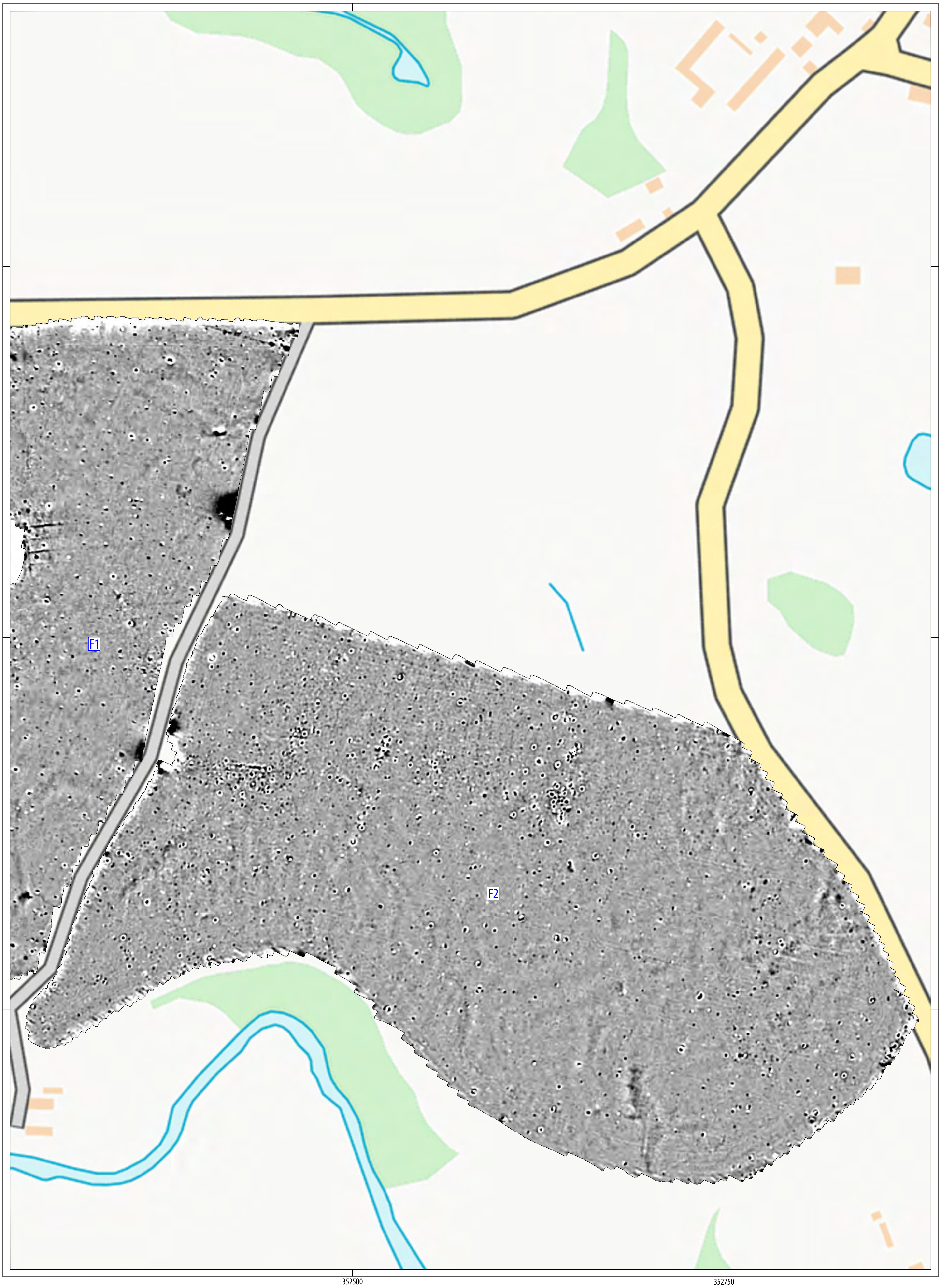
ILLUS 11 Interpretation of magentometer data; Sector 1



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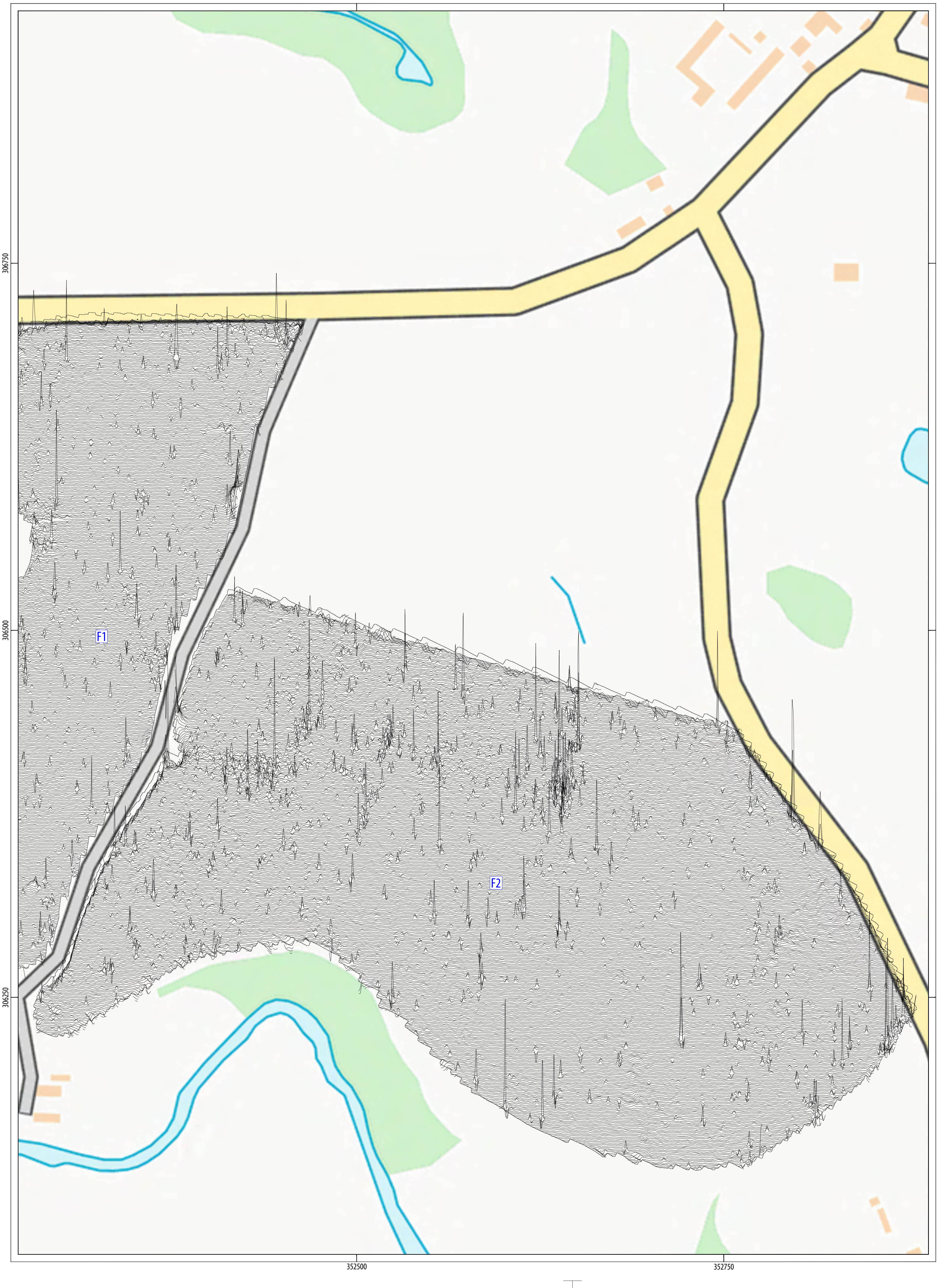
ILLUS 12 Processed greyscale magnetometer data; Sector 2



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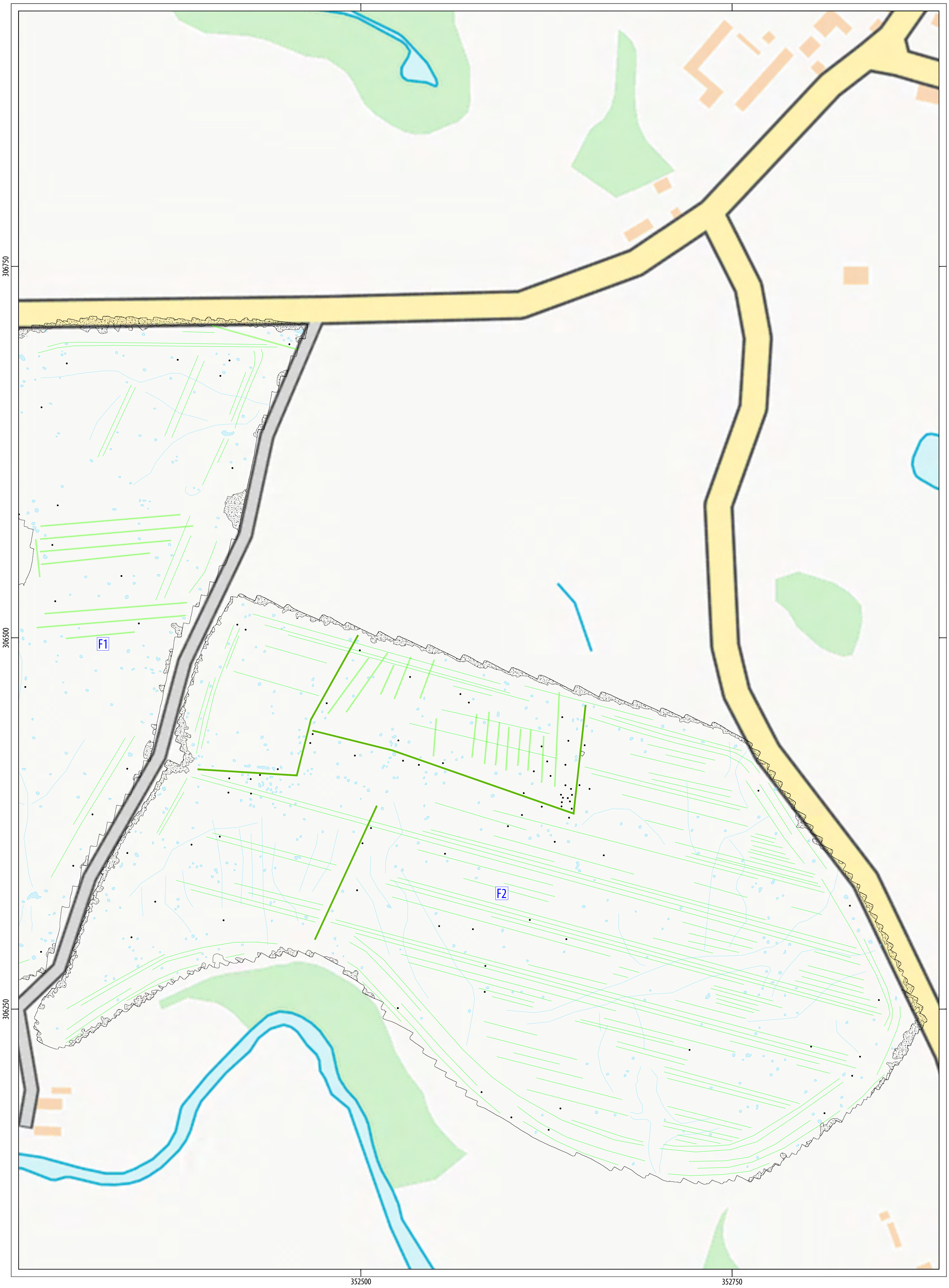
ILLUS 13 XY trace plot of minimally processed magnetometer data; Sector 2



TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
linear trend	agricultural
linear trend	field drain
linear	former field boundary
linear trend	geological variation

TYPE OF ANOMALY	INTERPRETATION
magnetic enhancement	geology

ABBREVIATIONS

FB - former boundary

0 50m

1:2,500 @ A3

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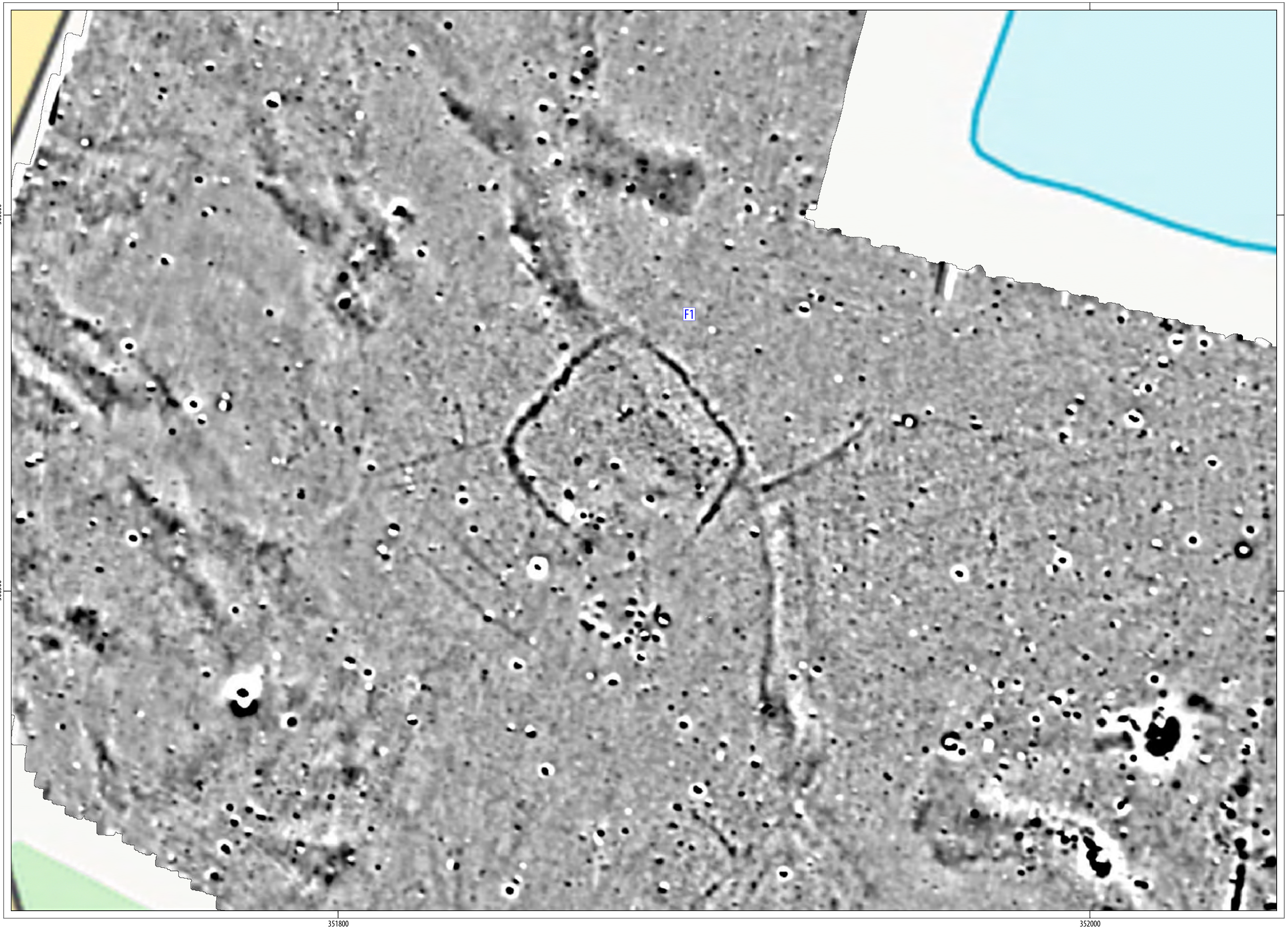
ILLUS 14 Interpretation of magnetometer data; Sector 2



-1.0 nT 2.0

0 25m
1:1,000 @ A3

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ILLUS 15 Processed greyscale magnetometer data; AAA1

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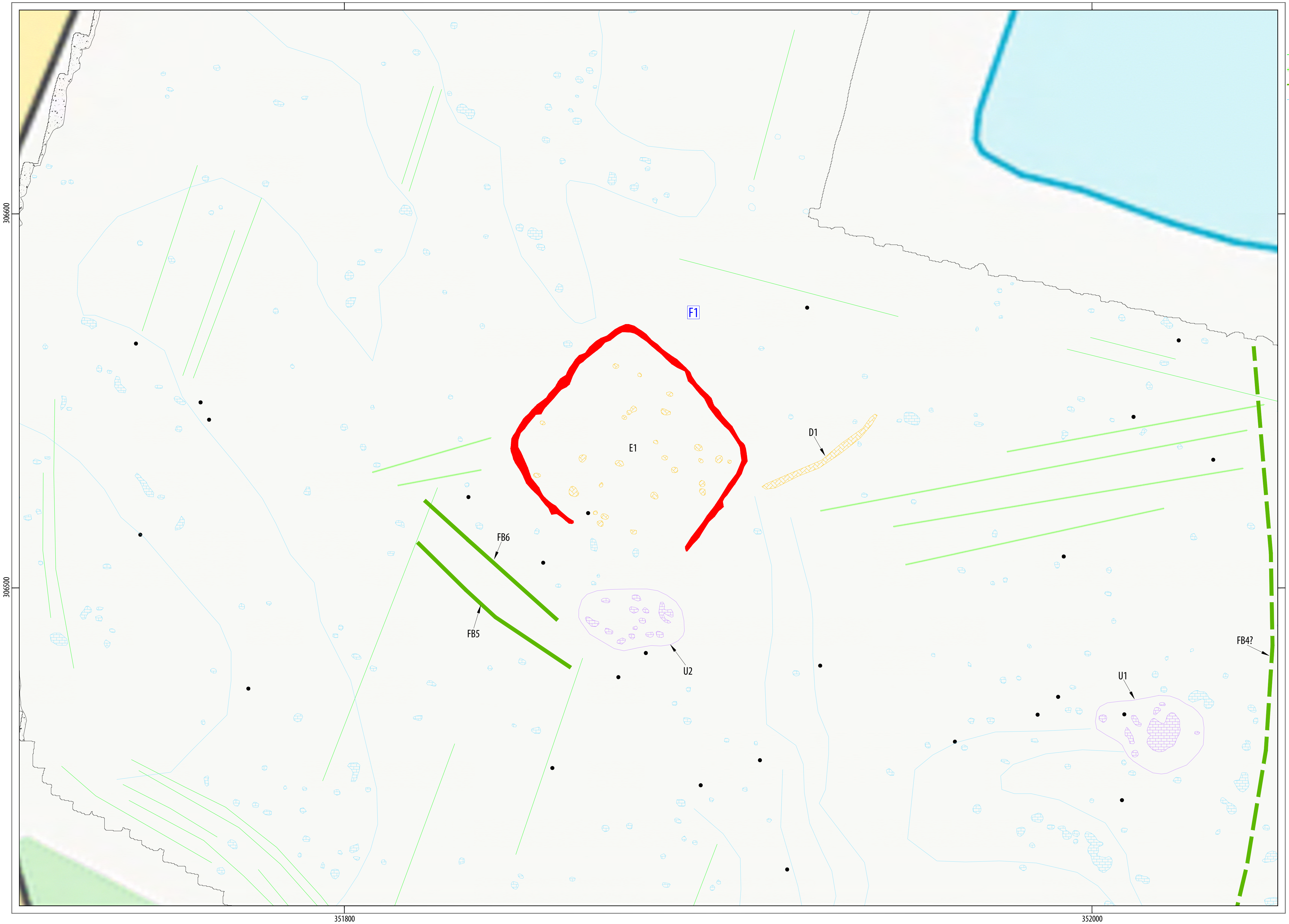
ILLUS 16 XY trace plot of minimally processed magnetometer data; AAA1



TYPE OF ANOMALY | INTERPRETATION
dipolar isolated | ferrous material
magnetic disturbance | ferrous material
linear trend | agricultural
linear trend | field drain
linear | former field boundary?
linear trend | geological variation
magnetic enhancement | geology
magnetic enhancement | archaeology?
magnetic enhancement | archaeology
magnetic enhancement | uncertain

ABBREVIATIONS
D - ditch
E - enclosure
FB? - former boundary?

0 25m
1:1,000 @ A3

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ILLUS 17 Interpretation of magnetometer data; AAA1