Heckington Fen Solar Park

ENO10123

Environmental Statement | Volume 3: Technical Appendices
Appendix 10.4: Geophysical Survey Report of Cable Route Corridor

Applicant: Ecotricity (Heck Fen Solar) Limited

Document Reference: 6.3.10.4
Pursuant to: APFP Regulation 5(2)(a)

February 2023

Planning Act 2008

APPENDIX 10.4 - GEOPHYSICAL SURVEY REPORT OF CABLE ROUTE CORRIDOR

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HFCC22

Heckington Fen Solar Park, Cable Corridors, Lincolnshire

GEOPHYSICAL SURVEY REPORT

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

Pegasus Group for Ecotricity (Heck Fen Solar) Ltd
04/11/2022

HEADLAND ARCHAEOLOGY

PROJECT INFORMATION:

PROJECT NAME	Heckington Fen Solar Park, Cable Corridors, Lincolnshire
TYPE OF WORK	Geophysical Survey
PROJECT ACCESSION NO.	
SITE CODE	HFCC22
CONSULTANT/AGENT	Pegasus Group
CLIENT	Ecotricity (Heck Fen Solar) Ltd
PROJECT CODE	HFCC22
NGR	NGR 521005,344002
PARISH	Heckington
LOCAL AUTHORITY	Lincolnshire County Council; North Kesteven District Council
FIELDWORK DATES	10/08/2022 – 04/11/2022
OASIS REF.	headland1-510859
ARCHIVE REPOSITORY	ADS

PROJECT TEAM:

PROJECT MANAGER	Alistair Webb
AUTHOR	Alistair Webb, Ross Bishop
FIELDWORK	Ross Bishop Neil Paveley, Nathan Crozier, Toby O'Donoghue, Thomas Jenkins, Max McShane
GRAPHICS	Ross Bishop

PROJECT SUMMARY

Headland Archaeology (UK) Ltd was instructed by Pegasus Group on behalf of Ecotricity (Heck Fen Solar Ltd - the Client) to undertake a geophysical (magnetometer) survey on land at Heckington Fen, midway between Sleaford and Boston in Lincolnshire, where Ecotricity intend to make a Development Consent Order (DCO) application for a solar park comprising ground-mounted solar panels and an energy storage facility with a below-ground grid connection to Bicker Fen substation, and all associated infrastructure works.

The land to the north of the A17 has already been subject to geophysical survey; one quadrant was surveyed by Headland Archaeology. The present geophysical survey area (GSA) covers approximately 130 hectares, comprising broad corridors centred on two alternative cable routes from the solar park to the grid connection at Bicker Fen Substation. The results of the geophysical survey will be submitted in support of the DCO application for the project and will also inform future archaeological strategy at the site, if required.

The data throughout is dominated by anomalies of a geological/natural origin which are due to the nature of the fenland landscape prior to the draining of the fen and/or the effects of the presence of the tidal flat superficial deposits. The nature of this former environment is clearly visible with several sinuous anomalies clearly locating former channels meandering across the landscape.

Through this abundance of geological anomalies, however, those with agricultural, modern, and possibly archaeological origin are also recorded including field drains and anomalies derived from modern cultivation techniques, former field boundaries as well as one former pond. One area in F17, where the magnetic background is largely homogenous, contains a small complex of low magnitude, interconnecting linear ditch-type anomalies. The anomalies appear to respect the former watercourses also recorded in the same field, which indicate the two types of feature may be contemporaneous, adding weight to a potential archaeological origin although an intricate pattern of drains is perhaps equally plausible.

Based on the geophysical survey results the archaeological potential of the GSA is assessed as low except for within F17, where possible enclosures and a ditch complex are assessed as of moderate archaeological potential. However, it is acknowledged that some types and sizes of features may not be detectable under the prevailing pedological and geological conditions, as evidenced from the results from the geophysical survey and subsequent trial trench evaluation of the solar park site north of the A17.

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GEOPHYSICAL SURVEY REPORT

1. INTRODUCTION

Headland Archaeology (UK) Ltd was instructed by Pegasus Group on behalf of Ecotricity (Heck Fen Solar Ltd he Client) to undertake a geophysical (magnetometer) survey on land at Heckington Fen, midway between Sleaford and Boston in Lincolnshire (Illus 1), where Ecotricity intend to make a Development Consent Order (DCO) application for ground mounted solar panels and an energy storage facility (Heckington Fen Solar Park - HFSP) with a below ground grid connection to Bicker Fen substation.

The land to the north of the A17, comprising the proposed land take for the solar park, has already been subject to geophysical survey by four geophysical survey contractors, including one quadrant which was surveyed by Headland Archaeology (Headland Archaeology 2022). The current geophysical survey area (GSA) covered the limits of the DCO boundary as a minimum and comprised broad corridors centred on two alternative cable routes from the HFSP to the grid connection (GC).

The results of the geophysical survey will be submitted in support of the DCO application for the future development of the land and may 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).

The survey was undertaken in accordance with a Written Scheme of Investigation for Geophysical Survey (WSI) (Headland Archaeology 202), submitted to Lincolnshire County Council prior to the commencement of the work, and was carried out in line with current best practice (Chartered Institute for Archaeologists 2014, Europae Archaeologia Consilium 2016).

The survey was carried out in the period between August 10th, 2022, and November 4th 2022, as crops were harvested and accesses agreed.

1.1. SITE LOCATION, TOPOGRAPHY AND LAND-USE

The GSA covers two alternative cable routes from the proposed HFSP to the Bicker Fen Substation. The narrowest section, to the west of Villa Farm at Bicker Fen, was 40m in width; this exceeds the 30m minimum width recommended in the EAC Guidelines.

One cable route leaves the main solar park site in the south east corner, at approximately NGR 521005, 344002, before crossing the A17, the main east/west railway line and the South Forty Foot Drain.

The second cable route leaves the main solar park site near the proposed site entrance at approximately NGR 519775, 344107, before crossing the A17, the main east/west railway line and the South Forty Foot Drain.

After crossing the South Forty Foot Drain the cable routes converge briefly before adopting separate but parallel routes leading towards the proposed Grid Connection Point at Bicker Fen Substation, approximately 4km to the south at NGR 519548, 338455 (Illus 1).

The combined area of the GSA is approximately 130 hectares.

The GSA comprised parts or all of 35 arable fields which were under differing agricultural regimes, necessitating the staged approach to the survey. Most fields were under a variety of arable cereal crops (Illus 2 to Illus 5 inclusive), with a few fields of potatoes and a single field of sugar beet. F21 comprised wild bird cover and was unsuitable for survey (Illus 6). Other areas (F32, F34 and F35) were de scoped as the route option was refined by other specialist survey work. Access was not granted to F27 during the period of fieldwork and the ground surface in F28 had been broken up and was also unsuitable for survey. At the northern end of the GSA, in F5 and F8, the haul road and compound area constructed to enable the installation of the Viking Link Offshore Windfarm grid connection reduced the available survey area.

Topographically the land along both route options is flat, lying at between 2m and 4m Above Ordnance Datum (AOD).

1.2. GEOLOGY AND SOILS

The underlying bedrock geology comprises West Walton Formation (Mudstone and Siltstone) and Oxford Clay Formation (Mudstone), sedimentary bedrock formed approximately 153 to 165 million years ago in the Jurassic Period in a local environment previously dominated by shallow seas. These rocks were formed in shallow seas with mainly siliciclastic sediments (comprising of fragments or clasts of silicate minerals) deposited as mud, silt, sand, and gravel. The whole of the GSA is overlain by superficial Tidal Flat Deposits comprising Clay and Silt formed up to 3 million years ago in the Quaternary Period in a local environment previously dominated by shorelines (NERC 2022).

The soils are classified in the Soilscape 21 Association being described as loamy and clayey soils of coastal flats with naturally high groundwater (Cranfield University 2021).

2. ARCHAEOLOGICAL BACKGROUND

The following archaeological background has been provided by Pegasus Group. It is based on an initial review of Lincolnshire Historic Environment Record (LHER) data, historic aerial photographs, and historic mapping of the part of the DCO redline area that encompasses the GSA (referred to below as 'the Grid Connection GC).

Geophysical surveys, trial trenching and targeted excavations have been carried out for the Viking Link and Triton Knoll onshore cable routes, which run through part of the GC before terminating at Bicker Fen Substation.

Several other investigations are recorded within and adjacent to the southern part of the GC. These comprise a walkover survey, geophysical surveys and archaeological watching briefs carried out for Bicker Fen Wind Farm between 2001 and 2004 and in 2008 (ELI5737, ELI4340-41, ELI4343, ELI5568, ELI8696); and trial trenching and a watching brief carried out at Bicker Fen Substation in 2005 and 2007 (ELI6030, ELI7682, ELI8379).

More recently, a desk based assessment has been undertaken for a proposed solar farm at Bicker Fen, abutting the far south eastern corner of the GC. A geophysical survey has also been undertaken on land west and south of Bicker Wind Farm, extending into the far south western corner of the GC.

Evidence of prehistoric and Roman activity is recorded in the vicinity of the Grid Connection. Neolithic and Bronze Age tools and Roman pottery have been discovered near Swineshead (MLI12570, MLI12574, MLI12569, MLI12590). Other findspots of Roman pottery are recorded within and close to the central section of the Grid Connection at West Low Grounds (MLI2573) and Holthills Farm (MLI122410). A possible saltern is suggested by the finds from Holthills. A Roman saltern is recorded at Helpringham Fen, approximately 1.8km west of the southern boundary of the GC (1004962, MLI60710, MLI90020 21).

The HER records cropmarks of probable Iron Age and Romano British settlement near Broadhurst Farm approximately 1.4km west of the central section of the GC (MLI89968), East Low Grounds approximately 750m east of the central section of the GC (MLI90812), Bicker Fen within and close to the southern end of the GC (MLI12525, MLI90808, MLI90811), and to the north of Donnington between approximately 1km and 1.4km south of the GC (MLI90719, MLI20042, MLI87319).

Additional cropmarks, recently transcribed by Pegasus Group from their own georeferenced digital copies of aerial prints held by Historic England Archives, are recorded adjacent to the GSA, most

notably within and bordering the survey undertaken in F17 (see Section 4.5, para. 2 below).

Most recently trial trenching carried out across the HFSP (Wessex Archaeology 2022) has identified localised areas of Romano British activity, comprising evidence of salt working and indications of occupation, although no settlement features were recorded.

3. AIMS, METHODOLOGY & PRESENTATION

3.1. AIMS & OBJECTIVES

The principal aim of the programme of geophysical survey was to gather information to establish the presence/absence, character, and extent of any archaeological remains within the DCO limits for the GC. This will enable an assessment to be made of the impact of any proposed development on any sub surface archaeological remains.

The overall objective was to inform the DCO application and thereby inform any further investigation strategies, as appropriate.

The specific archaeological objectives of the geophysical survey were:

- to gather enough information to inform the extent, condition, character, and date (as far as circumstances permit) of any archaeological features and deposits within the DCO limits,
- to obtain information that will contribute to an evaluation of the significance of the scheme upon cultural heritage assets, 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 although it is acknowledged that certain types and sizes of features may be difficult to identify in the prevailing soils and geology.

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 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 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 1:50,000. Illus 2 to Illus 6 inclusive are site condition photographs. Illus shows the GPS swaths and photograph locations at 1:1 ,500. Overall greyscale magnetometer data and interpretation are displayed at 1:1 ,500 in Illus 8 and Illus 9 respectively. Fully processed (greyscale) data, minimally processed data (XY trace plot) data and interpretative plots are presented, at a scale of 1:2,500, by Sector, in Illus 10 to Illus 51 inclusive. Fully

processed (greyscale) data, minimally processed data (XY trace plot) data and interpretative plots of AAA1 are presented, at a scale of 1:1,000, in Illus 52 to Illus 54 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. A copy of the OASIS entry (Online Access to the Index of Archaeological Investigations) is reproduced in Appendix 5.

The survey methodology, report and any recommendations comply with the Written Scheme of Investigation (Headland Archaeology 202), 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 Her 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 o 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 can generally be recommended over any sedimentary bedrock, (English Heritage 2008; Table 4), although in this case the Quaternary Tidal Flats superficial deposits comprising clays and silts are more likely to be the primary determinant of the success or otherwise of the technique. Nevertheless, magnetometry is the most appropriate geophysical technique for evaluating the GSA taking account of the limitations noted above and in Section 3.2.

Surface conditions across the GSA were generally good throughout, excepting the areas where survey was not possible, and subsequently data quality was also good with only minimal post processing required. No problems were encountered during the fieldwork.

The data is dominated by the effects of the tidal flat superficial deposits and the nature of the fenland landscape prior to the draining of the fen. The effects of these deposits are discussed in more detail in Section 4. below.

4.2. GEOLOGICAL/NATURAL ANOMALIES

The magnetic background varies along the route corridors but is largely dominated by anomalies reflecting the marginal tidal and inter tidal environments from which they arise, or homogenous backgrounds (resulting in a 'smoother' appearance) associated with the deposition of the silts and clays derived from the tidal flat superficial deposits.

The nature of this former environment is clearly visible in the data. Many sinuous anomalies locate former channels or watercourses meandering across the GSA, examples of which are recorded in F11, F7, and F18 (Illus 9). Occasionally areas where the magnetic background is completely homogenous, such as in F17 and F22, are recorded. In both these fields, clear geological boundaries separate the homogenous and more variable backgrounds, in the south of F17 and the centre of F22.

Whilst anomalies of geological origin predominate, numerous other anomalies of agricultural, modern, and possibly archaeological derivation are also recorded and are described below according to their interpreted origin.

4.3. 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 recorded ferrous anomalies anywhere within the GSA that would suggest an archaeological origin was likely. It is far more probable that the 'spike' responses are caused by the random distribution of ferrous debris in the upper soil horizons.

Six linear dipolar anomalies (SP1 to SP6 – Illus 9) are recorded. These anomalies are due to sub surface pipes.

A single discrete area of magnetic enhancement within F4 (FP1 – Illus 9) locates a former pond as recorded on the first edition, and later, OS maps.

Broad areas of magnetic interference (null value) are recorded where the buried electricity cables associated with the Triton Knoll cable route are present. The route continues to a new substation before terminating at Bicker Fen Substation and is recorded within F7, F15, F16 and F26. The magnitude of the interference is such that it would likely mask any weaker responses.

Bands or small areas of magnetic disturbance are also recorded along or adjacent to some of the current boundaries and drains, such as along the western boundary of F8 and the southern boundary of F7. This disturbance is typically due to the accumulation of ferrous debris around field margins or drains. One further area of magnetic disturbance is recorded in F33 and is due to the proximity to a high voltage electrical pylon.

4.4. AGRICULTURAL ANOMALIES

Ten low magnitude linear anomalies are recorded throughout the GSA (FB1 to FB10 inclusive – Illus 9). These anomalies are due to former boundaries which are recorded on the first edition and later OS maps.

Other linear trends recorded across the GSA are also due to agricultural activity and either reflect the orientation of modern or recent cultivation or land drains, such as those in F1, F2 and F4. These anomalies are ubiquitous across all survey areas.

4.5. ANOMALIES OF POSSIBLE ARCHAEOLOGICAL ORIGIN

As described in Section 4.2 the data across much of the GSA is dominated by geological/natural anomalies. However, there are areas where the magnetic background is homogenous, such as in F17. Against this homogenous background numerous interconnected, linear anomalies of low magnitude are recorded (Illus 52 to Illus 54 – AAA1). Here, at least three possible 'enclosures' (Illus 54 E1, E2, E3) are recorded, and further possible ditches on various alignments are also identified.

Sinuous geological anomalies, interpreted as palaeochannels, are also prominent in F17 and the linear anomalies do appear to respect or terminate, start from, or connect between the palaeochannels, suggesting the palaeochannels were still extant at the same time as the potentially archaeological features. Furthermore, these anomalies are oblique in orientation to any nearby extant boundaries and given the proximity to probable Iron Age/ Romano British cropmarks detailed in the DBA (approximately 750m to the east of AAA1 MLI90812), an archaeological interpretation should be considered. There is also a broad correlation between recently identified cropmarks both within and immediately bordering the GSA in F17 (see Section 2, para. 7 above) and the recorded anomalies. Nevertheless, perhaps equally plausibly, these anomalies could also be due to an intricate pattern of drains.

It should be highlighted that these potentially archaeological features unusually (mostly) manifest as weakly negative anomalies, meaning that the fill of the feature is less magnetic than the surrounding soils. Any anomalies of similarly weak magnetic response, positive or negative, may be extremely difficult or impossible to identify in areas where the magnetic background is elevated and much more heterogenous than it is in F17.

5. CONCLUSION

The data throughou the GSA is dominated by anomalies of a geological/natural origin which are due to the nature of the fenland landscape prior to the draining of the fen and/or the effects of the presence of the tidal flat superficial deposits. The nature of this former environment is clearly visible with several sinuous anomalies clearly locating former channels meandering across the landscape.

Through this abundance of geological anomalies, however, those with agricultural, modern, and possibly archaeological origin are also recorded including field drains and anomalies caused by recent cultivation, former field boundaries and one former pond. One area in F17, where the magnetic background is largely homogenous, contains a small complex of low, negative magnitude, interconnecting linear ditch-type anomalies. The anomalies appear to respect the former watercourses (identified as palaeochannels) within the same field, which may indicate a contemporaneous existence of the two features, and further gives weight to an interpretation of possible archaeological in origin although an intricate pattern of drains is perhaps equally plausible.

Based on the geophysical survey results the archaeological potential of the GSA is assessed as low except for within F17, where possible enclosures and a ditch complex is assessed as of moderate archaeological potential. However, it is acknowledged that some types and sizes of features may not be detectable under the prevailing pedological and geological conditions, as evidenced from the results from the geophysical survey results and subsequent trial trench evaluation of the HFSP site north of the A17.

6. REFERENCES

Chartered Institute for Archaeologists (CIfA) 2014 Standard and guidance for archaeological geophysical survey (Reading) [redacted]

Cranfield University 2020 Cranfield Soil and Agrifood Institute Soilscapes [redacted]

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) [redacted]

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

Headland Archaeology 202 Heckington Fen Solar Park, Cable Corridors, Lincolnshire Written Scheme of Investigation for Geophysical Survey Unpublished Client Document Ref. HFCC

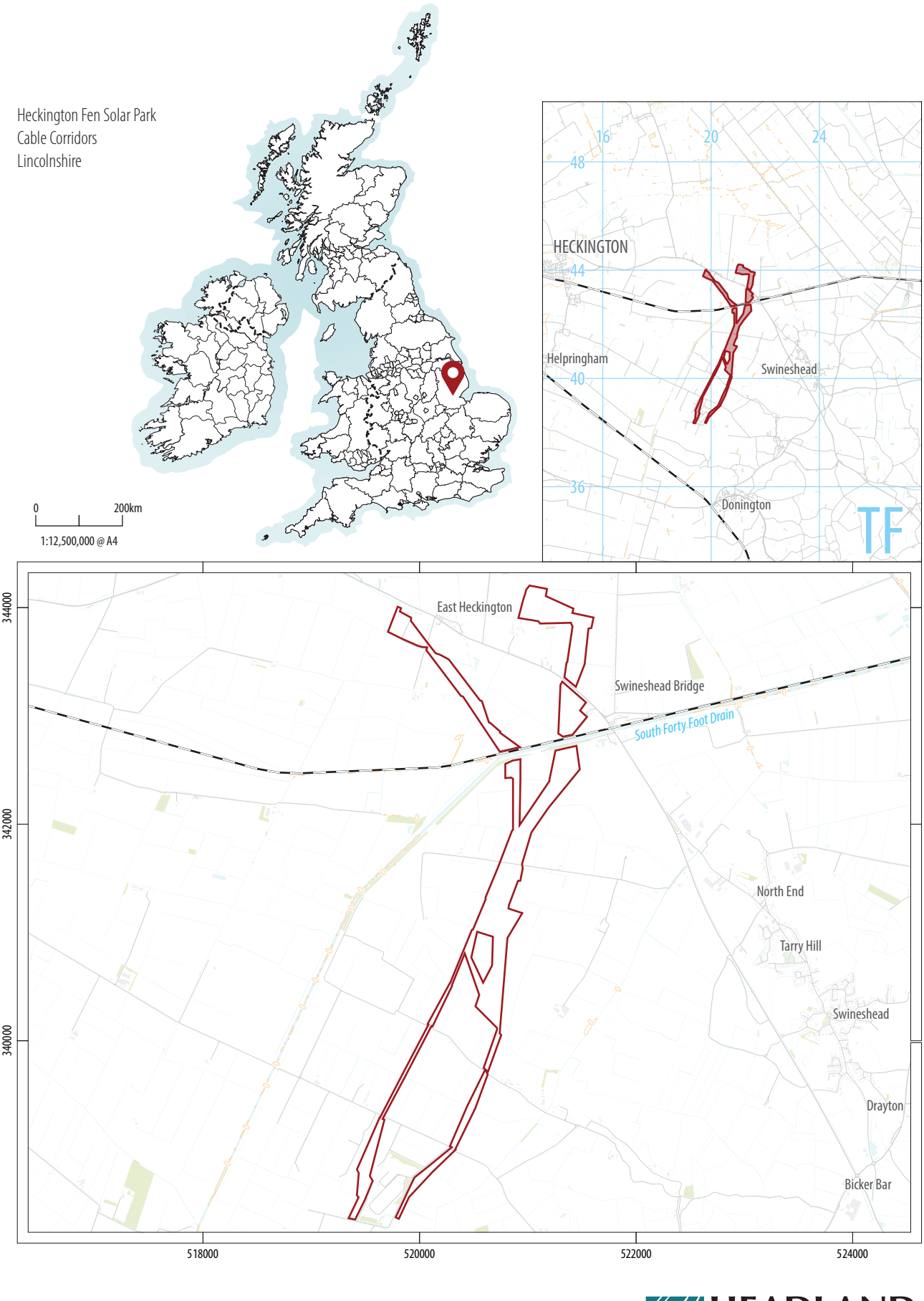
Ministry of Housing, Communities and Local Government (MHCLG) 2021 National Planning Policy Framework https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf accessed th 2022

Natural Environment Research Council (BGS) 2022 British Geological Survey [redacted] accessed th 202

Pegasus Group 202 Heckington Fen Solar Park Heritage Desk Based Assessment Unpublished client document Ref P20 2370

Wessex Archaeology 2022 Heckington Fen Solar Park Trial Trench Evaluation (forthcoming)

Heckington Fen Solar Park
Cable Corridors
Lincolnshire



HEADLAND ARCHAEOLOGY
Headland Archaeology Yorkshire & North
Units 23–25 & 15 | Acorn Business Centre | Balme Road | Cleckheaton BD19 4EZ
t 0127 493 8019
e yorkshireandnorth@headlandarchaeology.com
w www.headlandarchaeology.com

ILLUS 1 Site location

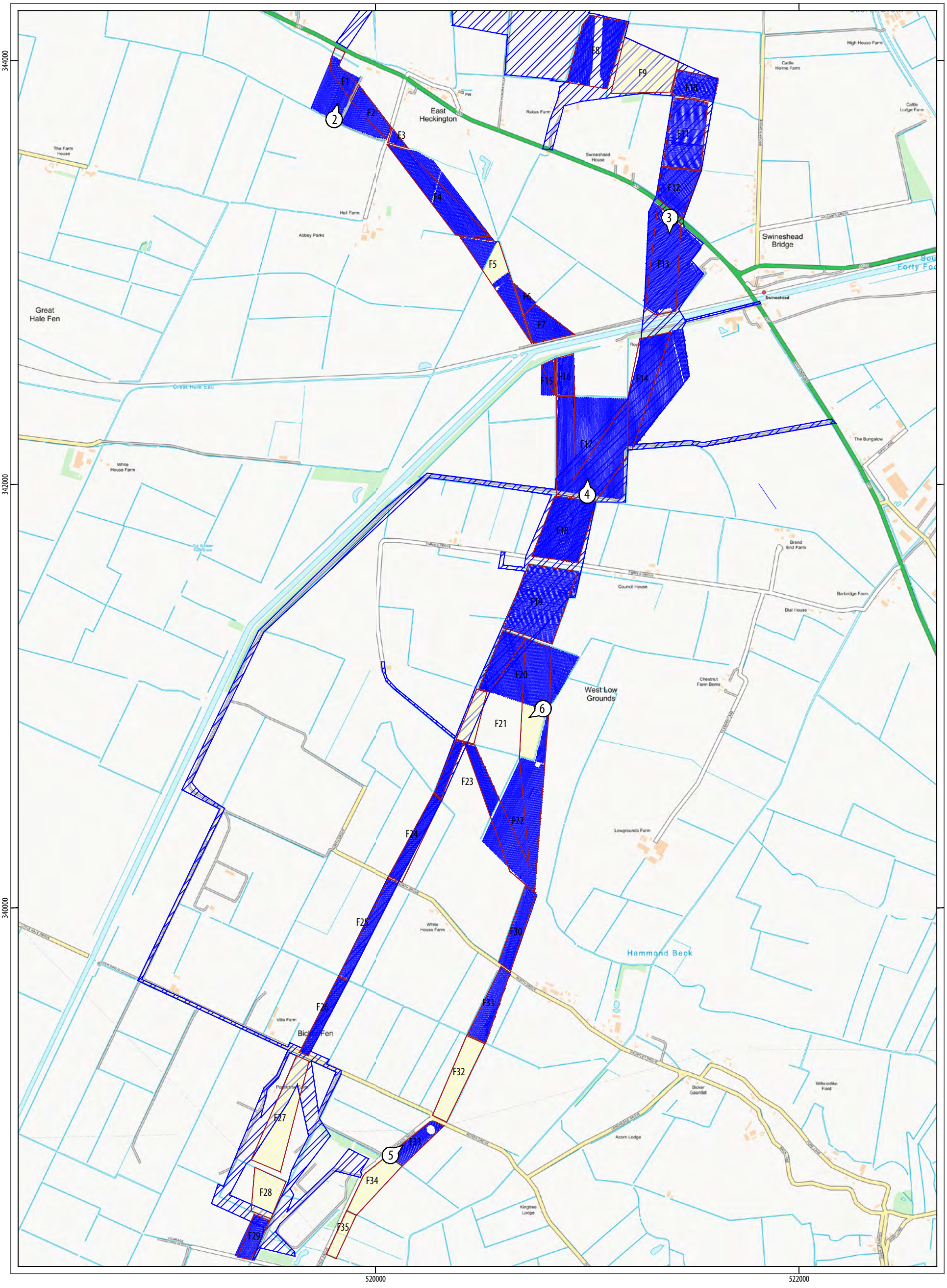
Illus 2 F1, looking north

Illus 3 F13, looking south

Illus 4 F17, looking north

Illus 5 F33, looking north-east

Illus 6 F21, unsuitable for survey, looking south-west



geophysical survey area
proposed cable route
GPS swaths
area unsuitable for survey
location and direction of ILLUS 2-6

0 350m
1:17,500 @ A3

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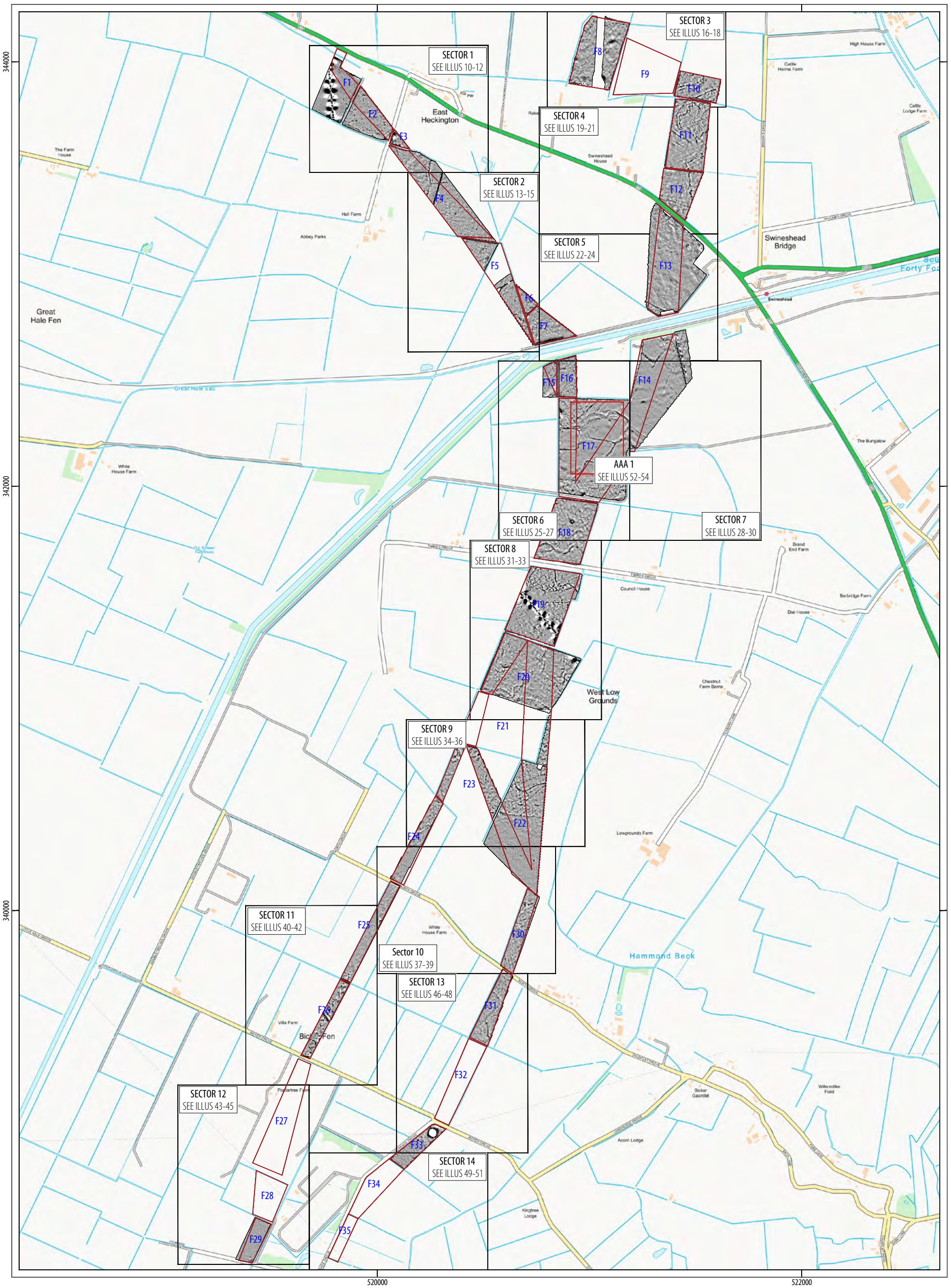
Cleckheaton | BD19 4EZ
t 0127 493 8019
w www.headlandarchaeology.com

ILLUS 7 Geophysical survey location showing GPS swaths and photograph locations



geophysical survey area

nT
-1.0 2.0

0 350m
1:17,500 @ A3

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Cleckheaton | BD19 4EZ
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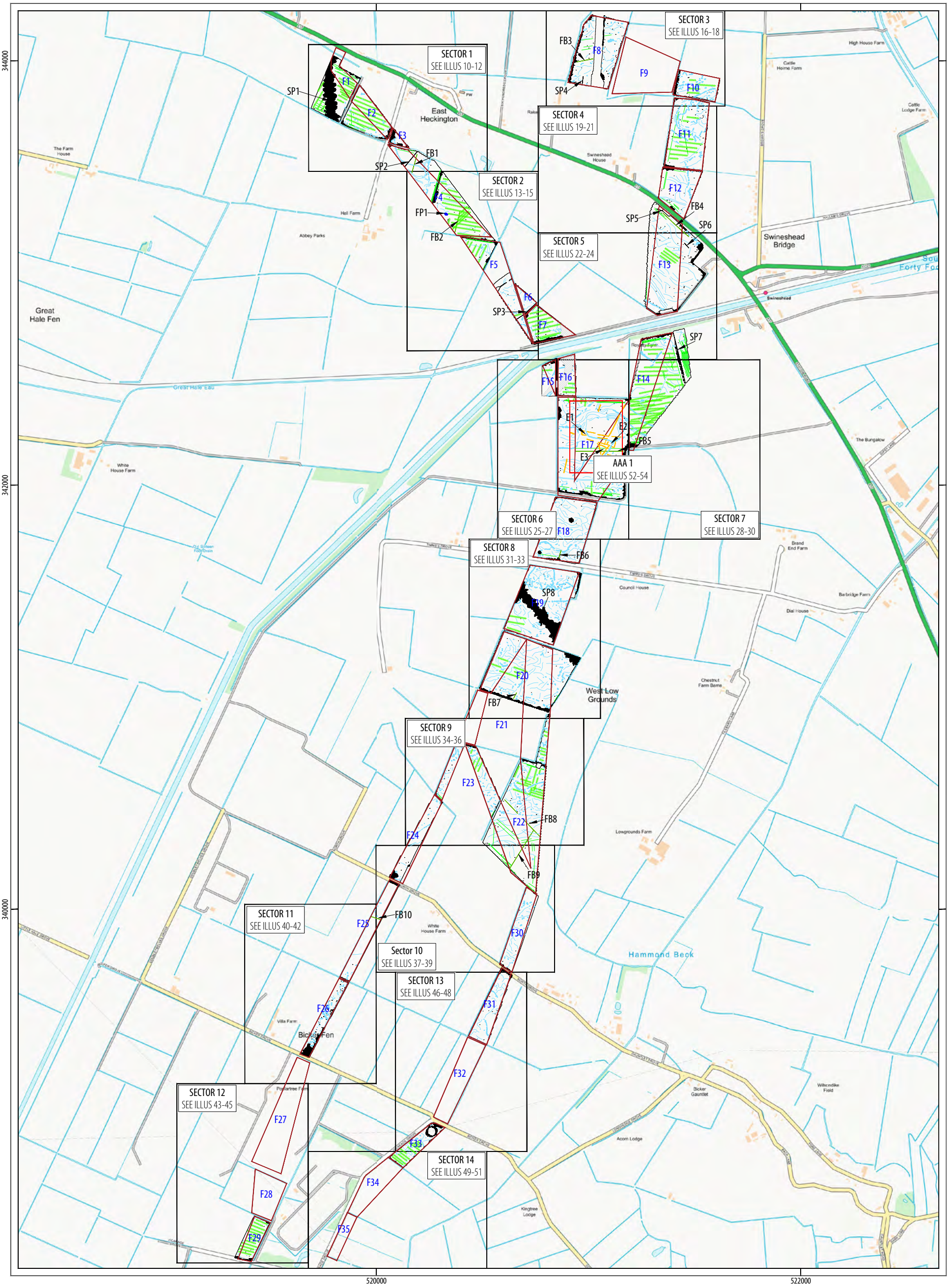
w www.headlandarchaeology.com

ILLUS 8 Overall greyscale plot of processed magnetometer data



geophysical survey area

TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
dipolar linear	service pipe
null value	buried cables

TYPE OF ANOMALY	INTERPRETATION
magnetic enhancement	former pond
linear trend	agricultural
linear trend	field drain
linear	former field boundary
linear trend	geological variation
magnetic enhancement	geology

TYPE OF ANOMALY	INTERPRETATION
magnetic enhancement	archaeology?

ABBREVIATIONS

E - enclosure
FB - former boundary
FP - former pond
SP - service pipe

0 350m
1:17,500 @ A3

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t 0127 493 8019
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ILLUS 9 Overall interpretation of magnetometer data

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t 0127 493 8019
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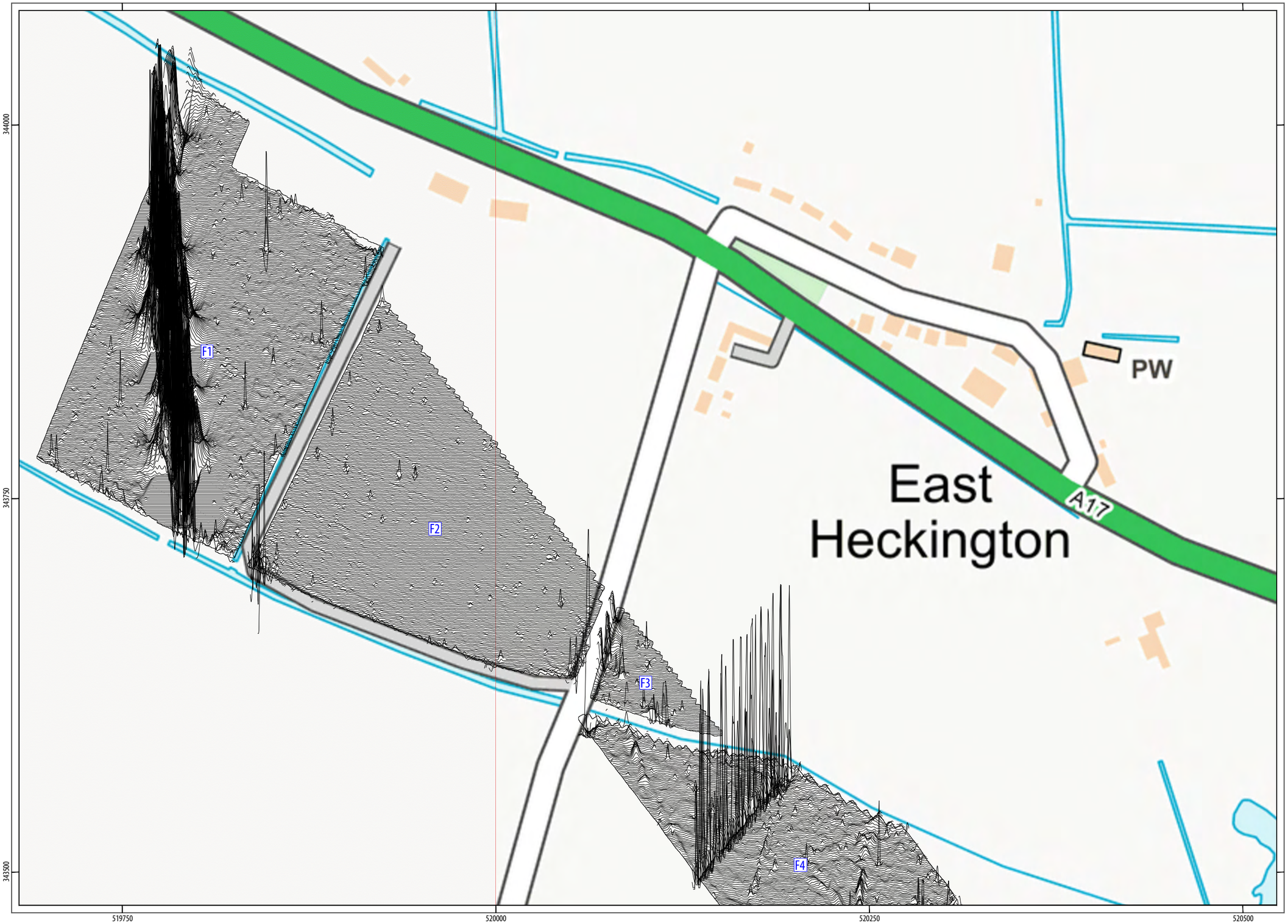
ILLUS 10 Processed greyscale magnetometer data; Sector 1



25.0nT/cm

0 50m

1:2,500 @ A3

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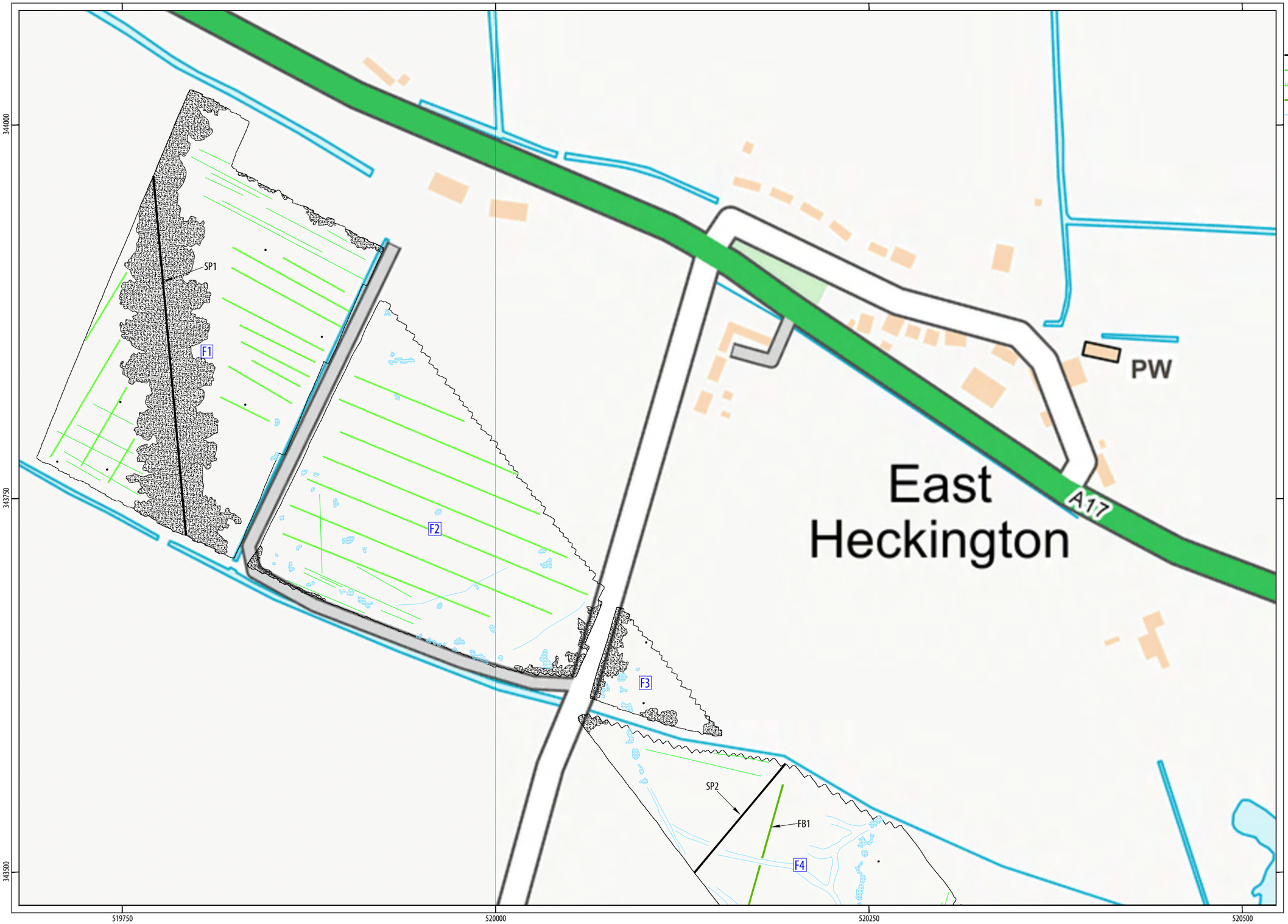
t 0127 493 8019
w www.headlandarchaeology.com

ILLUS 11 XY trace plot of minimally processed magnetometer data; Sector 1



TYPE OF ANOMALY / INTERPRETATION

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
linear trend	geological variation
magnetic enhancement	geology

ABBREVIATIONS

FB - former boundary

SP - service pipe

0 50m

1:2,500 @ A3

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Headland Archaeology Yorkshire & North

Units 23-25 | Acorn Business Centre | Balme Road

Cleckheaton | BD19 4EZ

t 0127 493 8019

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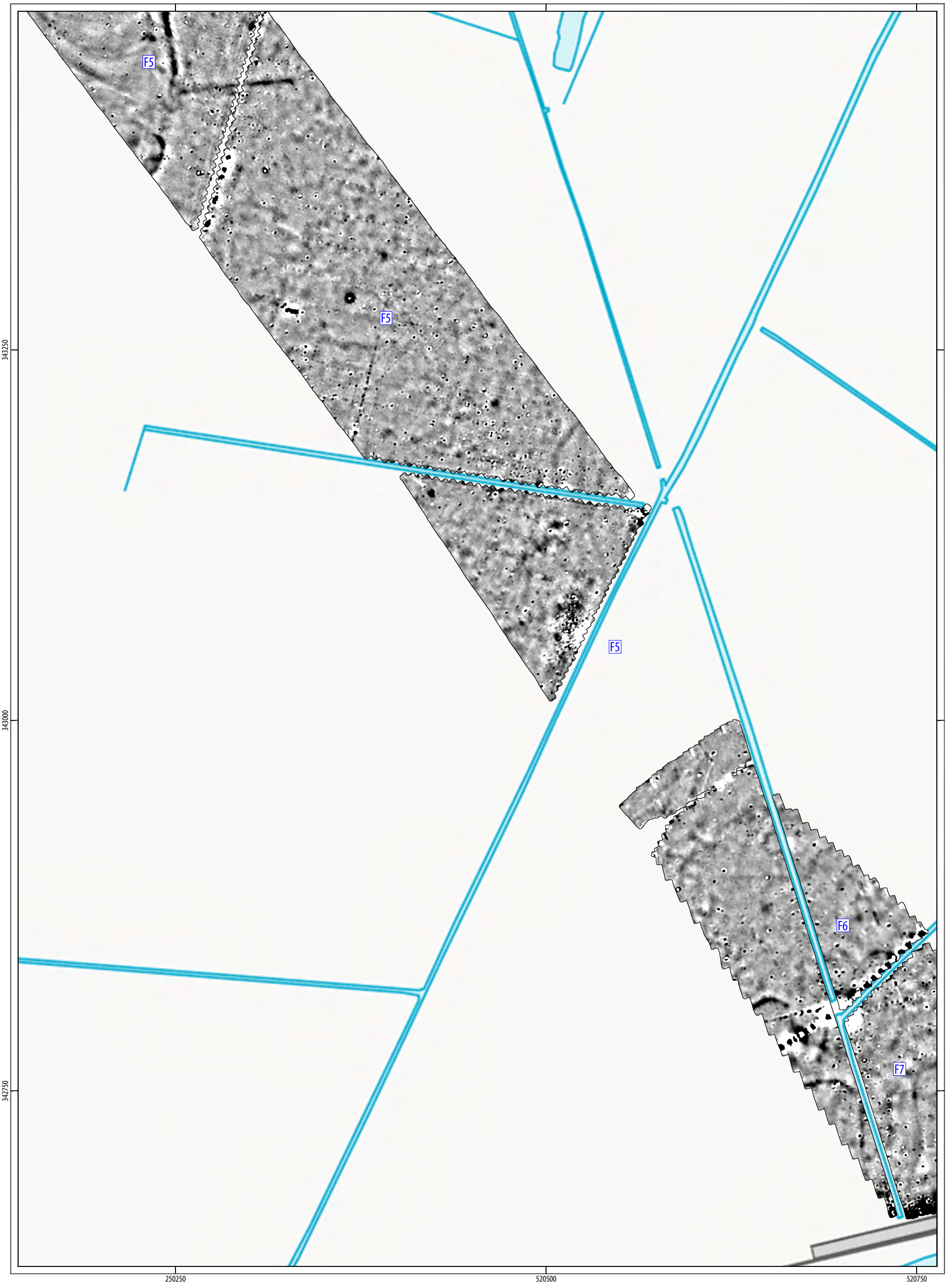
ILLUS 12 Interpretation of magnetometer data; Sector 1



nT
-1.0
2.0

0
50m
1:2,500 @ A3

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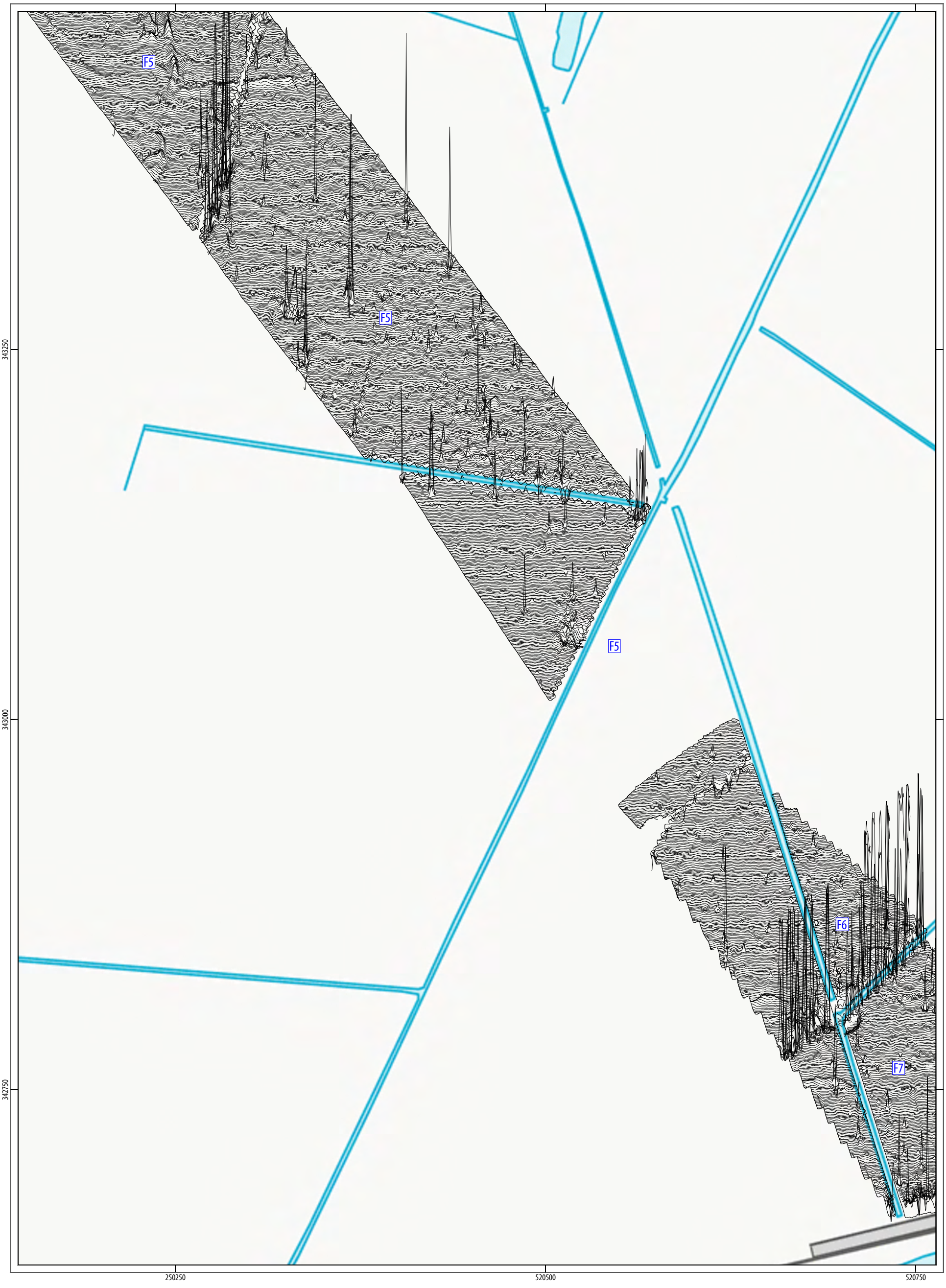
ILLUS 13 Processed greyscale magnetometer data; Sector 2



25.0nT/cm

0 50m

1:2,500 @ A3

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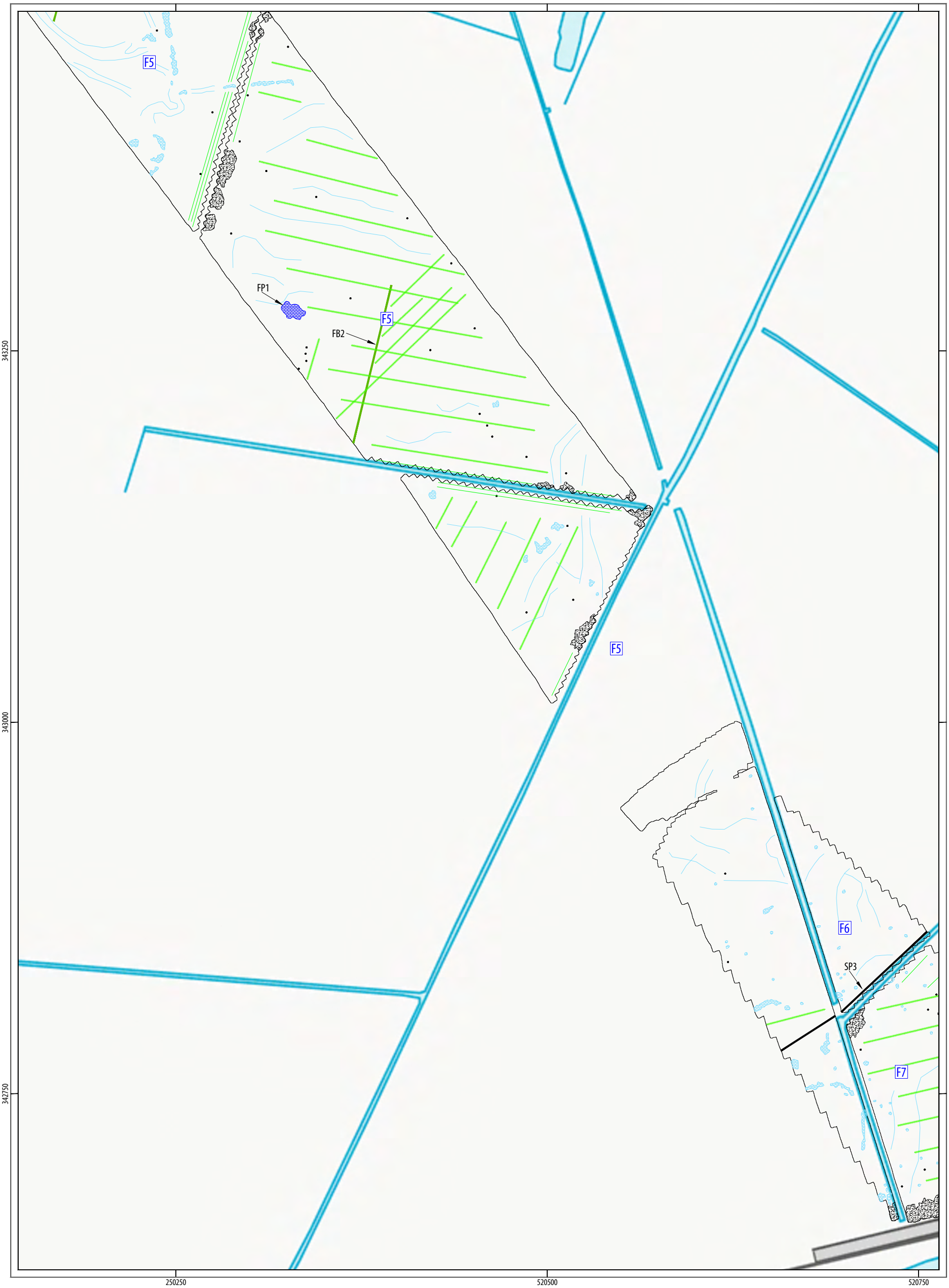
ILLUS 14 XY trace plot of minimally processed magnetometer data; Sector 2



TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
dipolar linear	service pipe
magnetic enhancement	former pond
linear trend	agricultural
linear trend	field drain

TYPE OF ANOMALY	INTERPRETATION
linear	former field boundary
linear trend	geological variation
magnetic enhancement	geology

ABBREVIATIONS

FB - former boundary

FP - former pond

SP - service pipe

0 50m

1:2,500 @ A3

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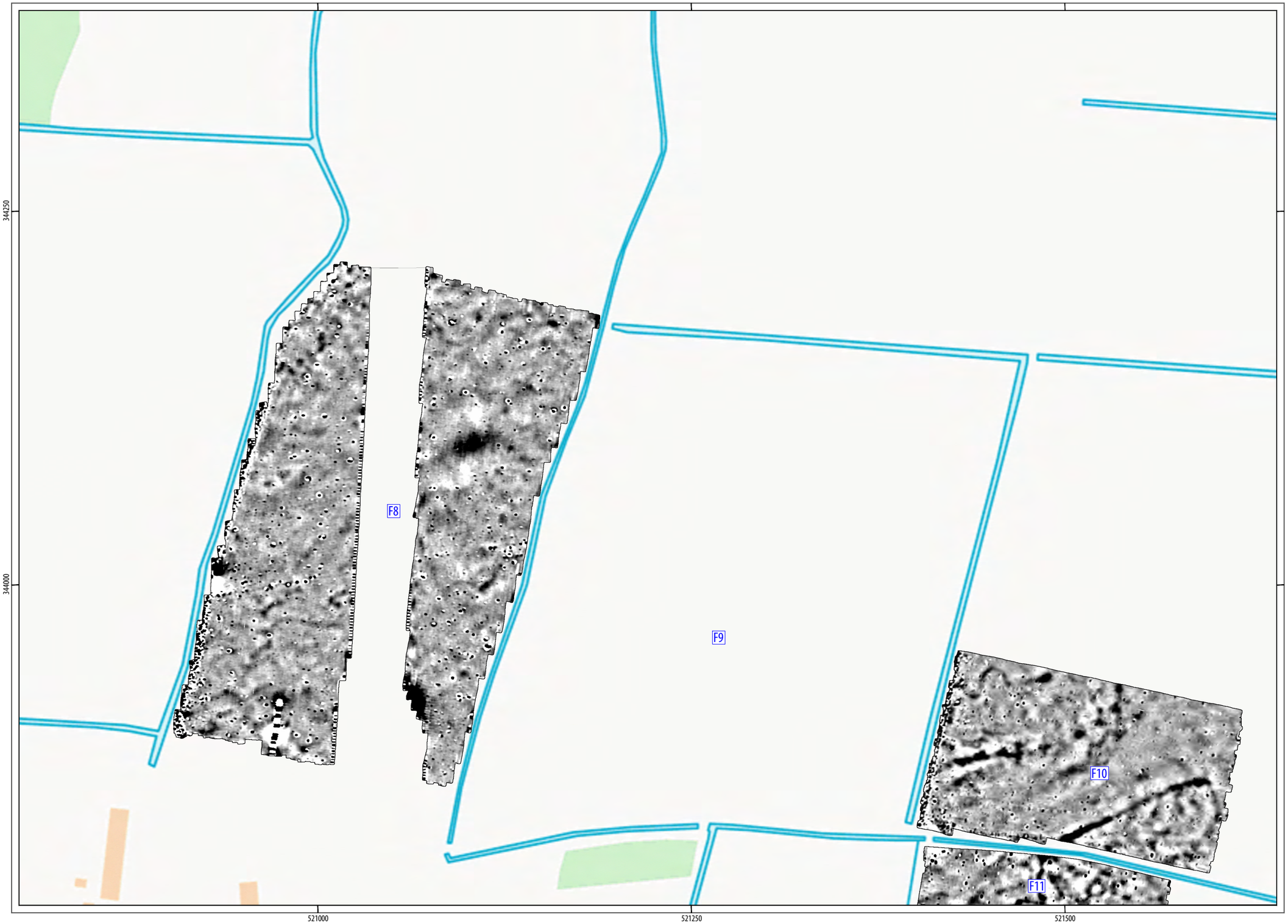
ILLUS 15 Interpretation of magnetometer data; Sector 2



ILLUS 16 Processed greyscale magnetometer data; Sector 3

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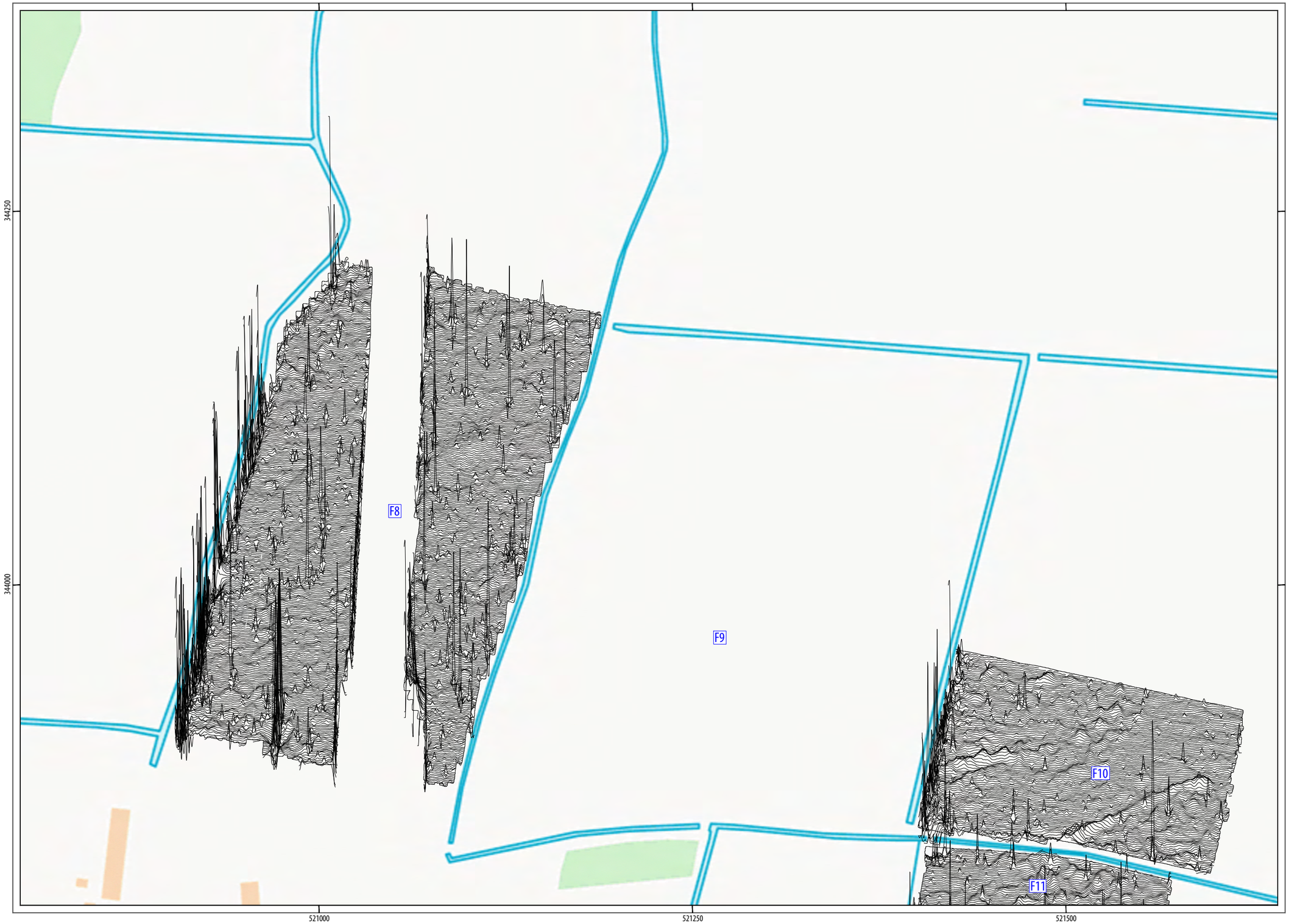

25.0nT/cm

0 50m

1:2,500 @ A3

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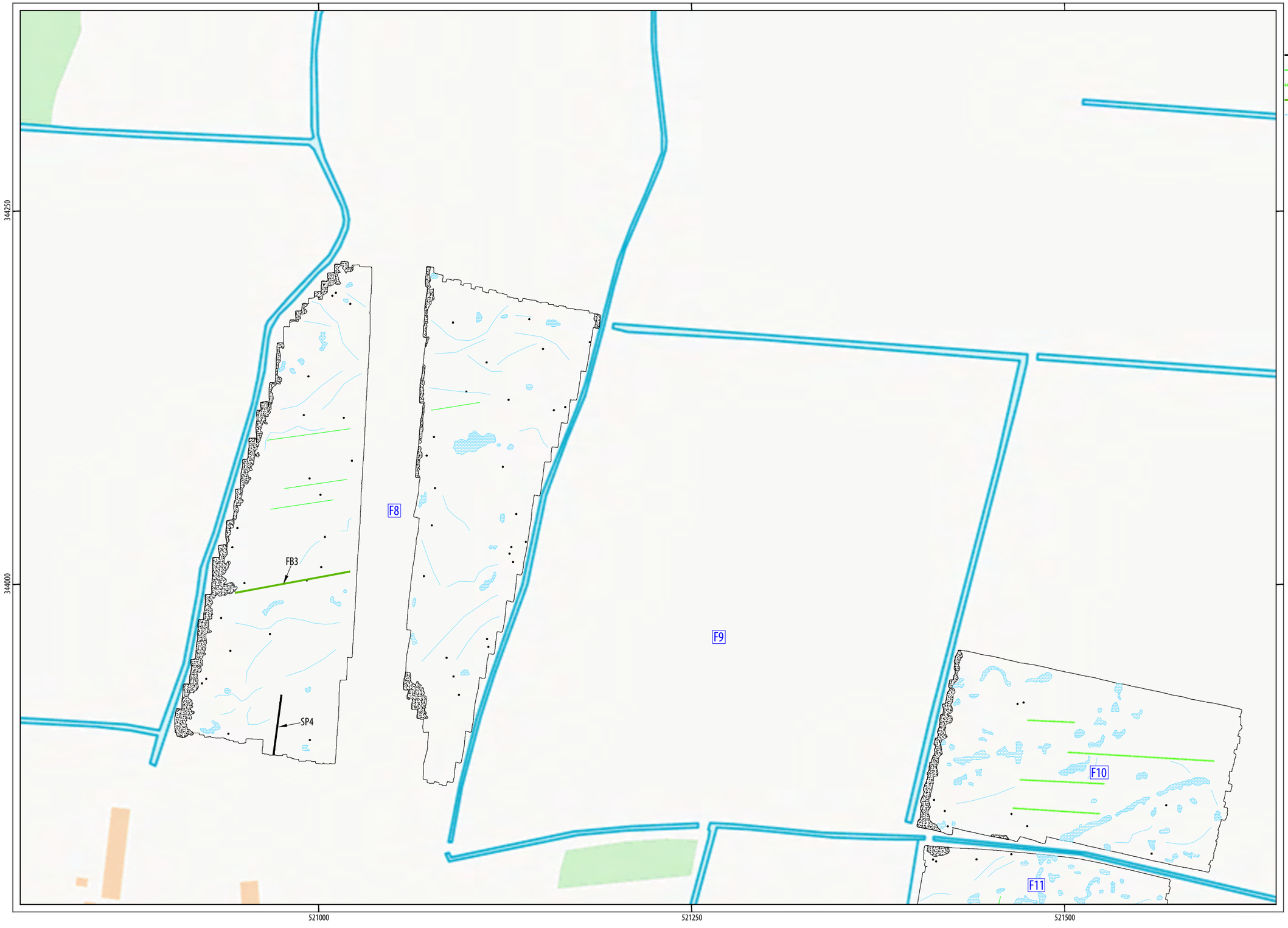
ILLUS 17 XY trace plot of minimally processed magnetometer data; Sector 3



TYPE OF ANOMALY / INTERPRETATION

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
linear trend	geological variation
magnetic enhancement	geology

ABBREVIATIONS

FB - former boundary

SP - service pipe

0 50m

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

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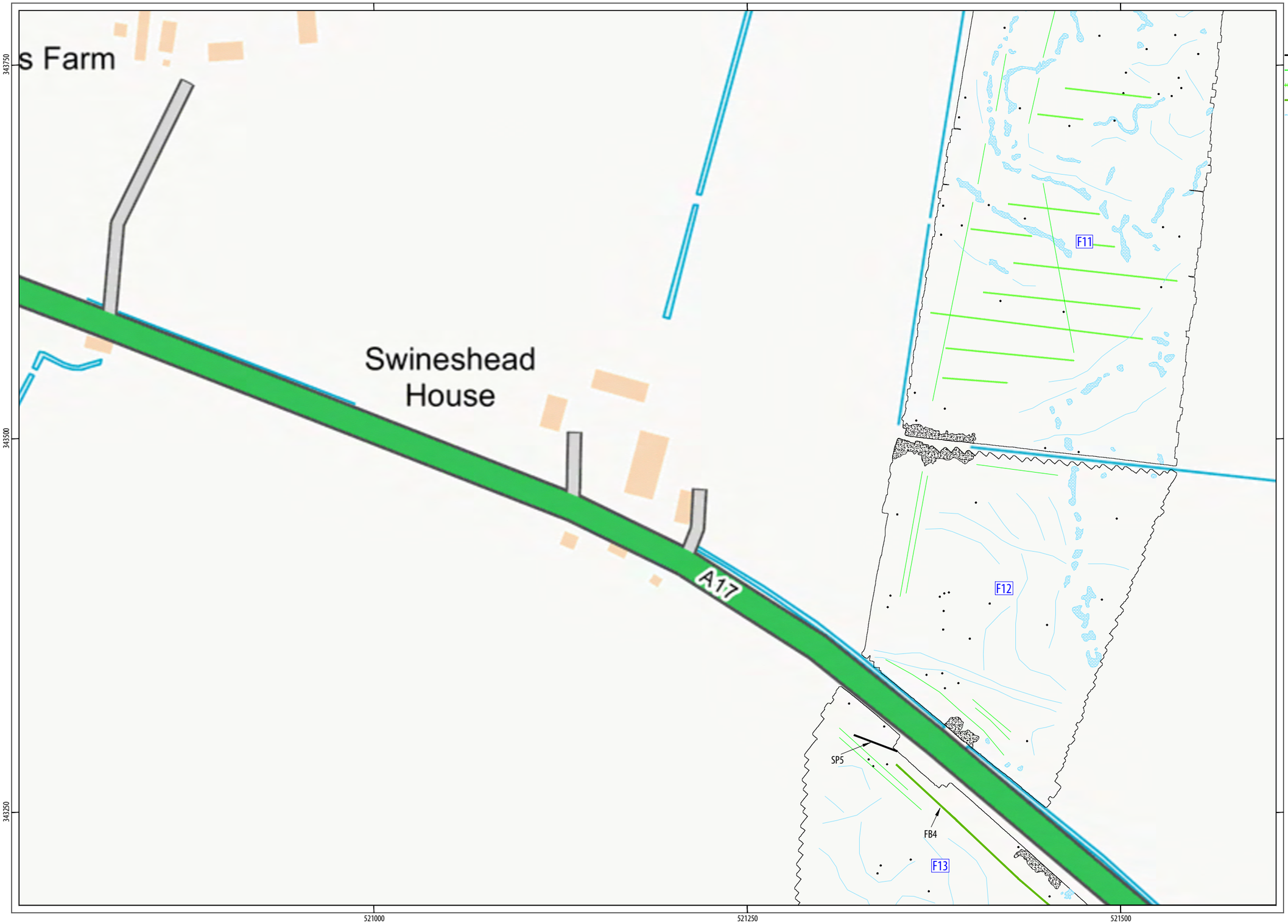
ILLUS 20 XY trace plot of minimally processed magnetometer data; Sector 4



TYPE OF ANOMALY / INTERPRETATION

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
linear trend	geological variation
magnetic enhancement	geology

ABBREVIATIONS

FB - former boundary

SP - service pipe

0 50m

1:2,500 @ A3

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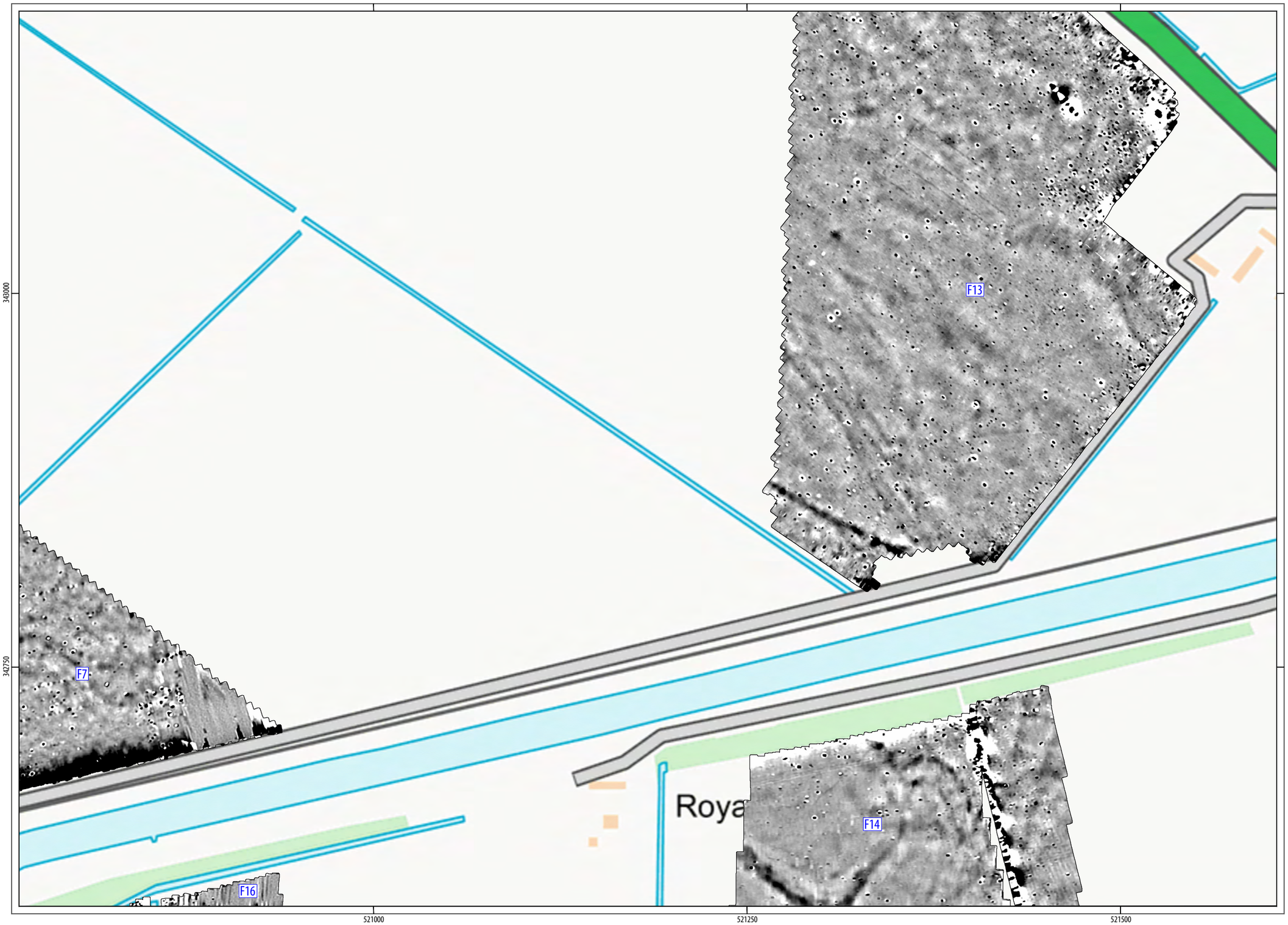
ILLUS 21 Interpretation of magnetometer data; Sector 4



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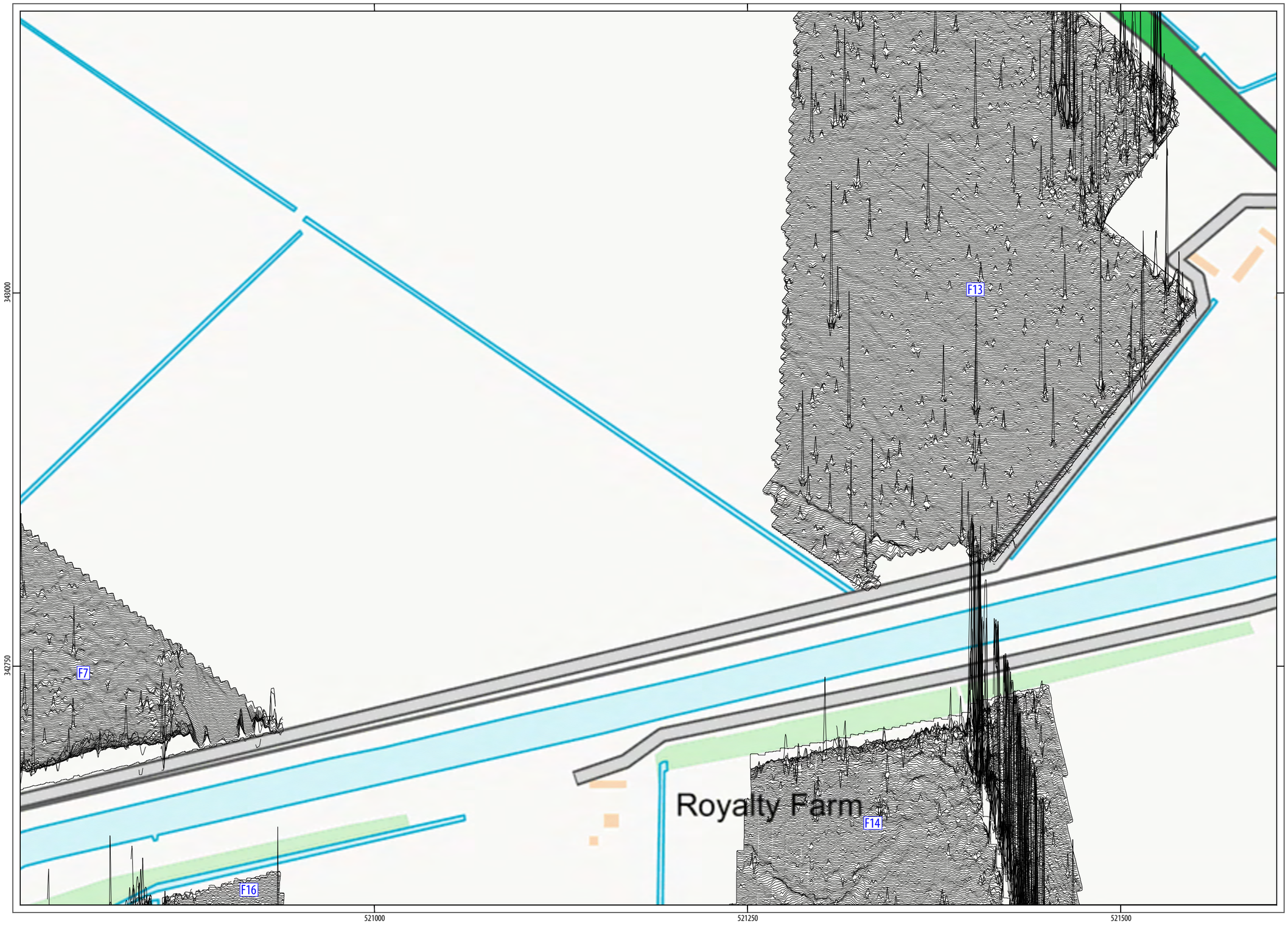
ILLUS 22 Processed greyscale magnetometer data; Sector 5



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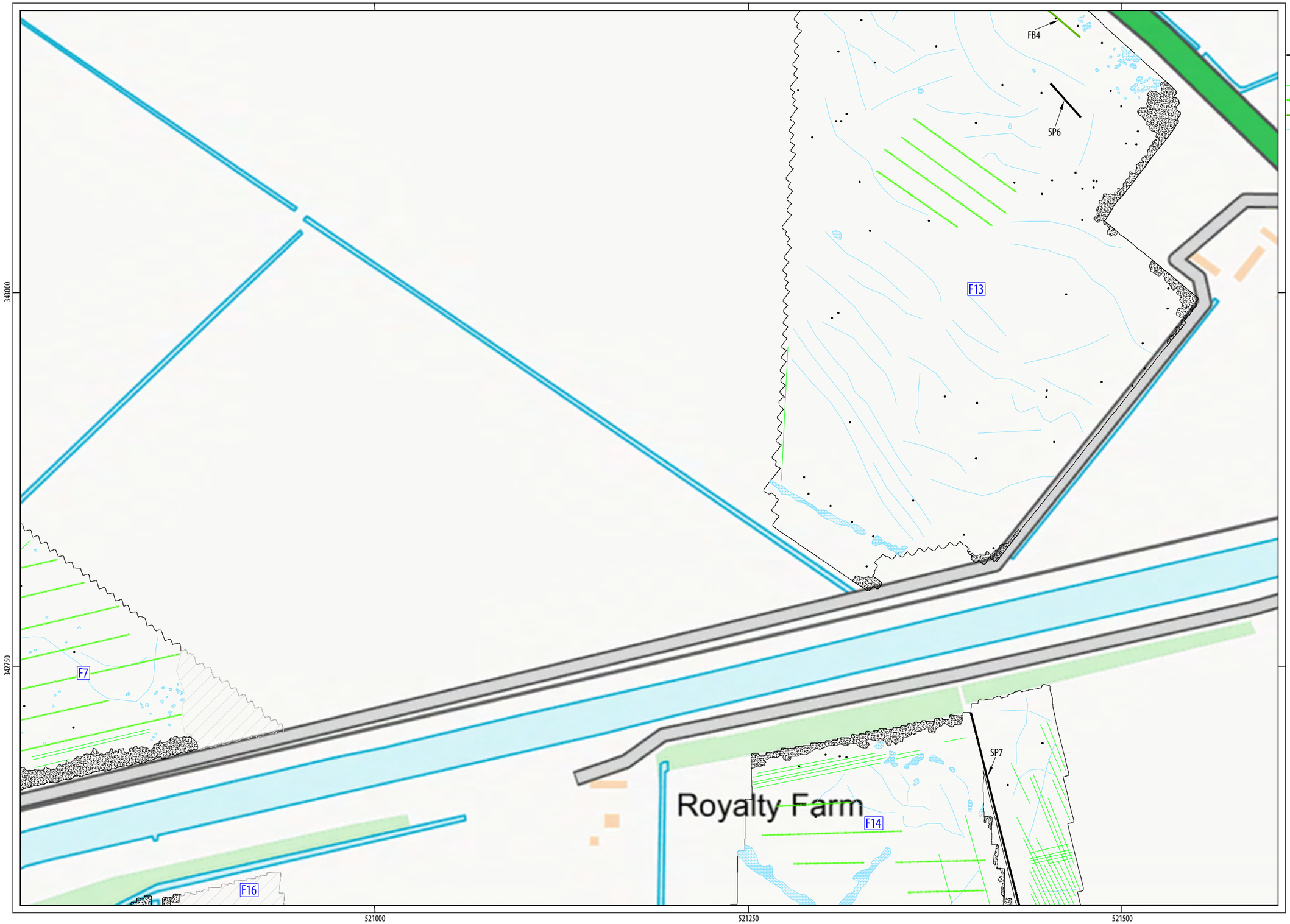
ILLUS 23 XY trace plot of minimally processed magnetometer data; Sector 5



TYPE OF ANOMALY | INTERPRETATION

- dipolar isolated | ferrous material
- magnetic disturbance | ferrous material
- dipolar linear | service pipe
- null value | buried cables
- linear trend | agricultural
- linear trend | field drain
- linear | former field boundary
- linear trend | geological variation
- magnetic enhancement | geology

ABBREVIATIONS

FB - former boundary

SP - service pipe

0 50m

1:2,500 @ A3

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ILLUS 24 Interpretation of magnetometer data; Sector 5