

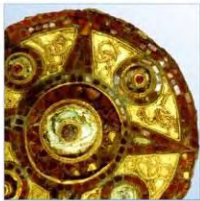
Proposed Bicker Fen Solar Farm Bicker, Lincolnshire

Archaeological Geophysical Survey

National Grid Reference: TF 20641 38018

AOC Project No: 40312

Date: June 2022



AOC
Archaeology
Group

ARCHAEOLOGY

| HERITAGE

| CONSERVATION

Proposed Bicker Fen Solar Farm

Bicker, Lincolnshire

Archaeological Geophysical Survey

On Behalf of:

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Well House Barns
Chester Road
Bretton
Chester
CH4 0DH**

National Grid Reference (NGR): TF 20641 38018

AOC Project No: 40312

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Date of survey: 4th April – 22nd April 2022

Surveyors: S. O'Connor, A. Galt, K. Hall, R. Martin, M. Hall

This document has been prepared in accordance with AOC standard operating procedures.

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Date: 15th June 2022

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Date: 16th June 2022

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Date: 17th June 2022

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Contents

Contents	ii
List of Plates	iii
List of Figures	iii
Non-Technical Summary	iv
1 Introduction	1
2 Site Location and Description.....	1
3 Archaeological Background.....	1
4 Aims	1
5 Methodology.....	4
6 Results and Interpretation	5
Probable Archaeology	5
Possible Archaeology	5
Unclear Origins	6
Agricultural	6
Non - Archaeology	7
7 Conclusion	7
8 Statement of Indemnity	8
9 Archive Deposition	8
10 Bibliography	9
11 Plates	10
12 Figures	12
Appendix 1: Survey Metadata.....	A
Appendix 2: Archaeological Prospection Techniques, Instrumentation and Software Utilised.....	B
Appendix 3: Summary of Data Processing	C
Appendix 4: Technical Terminology	D

List of Plates

Plate 1	Field 2, facing northwest, taken from the southern boundary
Plate 2	Field 3, from the south, taken from the northern boundary
Plate 3	Field 6, facing northwest, from the east
Plate 4	Field 7, facing west, from the east

List of Figures

Figure 1	Site Location
Figure 2	Location of survey areas - 1:7500
Figure 3	Summary greyscale - 1:7500
Figure 4	Summary interpretation - 1:7500
Figures 5.1 – 5.13	Processed gradiometer survey results - greyscale plot - 1:1250
Figures 6.1 – 6.13	Interpretation of gradiometer survey results - 1:1250
Figures 7.1 – 7.13	XY traceplot of minimally processed gradiometer data - 1:1250

Non-Technical Summary

AOC Archaeology Group was commissioned by AXIS PED to undertake an archaeological geophysical gradiometer survey on in March 2022 to investigate the potential for buried archaeological remains ahead of a proposed development at Bicker Fen, Lincolnshire (centred at TF 20641 38018).

A total of 95 hectares were surveyed and the results of the survey have identified the following.

Evidence of probable archaeological occupation has been identified and localised within Fields 3 and 5, which corresponds with the subtle changes in the topography of the site and conforms with the roddons detailed in the Desk-Based Assessment (DBA) of the site.

These probable archaeological responses take the form of regular distinctive negative anomalies, which may have the appearance of a Romano-British type building (Field 3), which exploits the natural topography of the site. These negative responses potentially represent evidence of fired building material (i.e. walls) rather than ditch filled material, which would give a positive response.

In addition, a collection of anomalies have been identified which are thought to be probably archaeological in origin, again because they exploit the natural, albeit subtle, topography of the survey area (Field 5).

Areas of unclear disturbance have been identified which might be archaeological in origin, although alternatives origins, such as modern agricultural or geological are as likely if not more likely the origin of these anomalies.

Former field boundaries have been identified, in collaboration with historic mapping of the area, most prominently in the southwestern field (Field 2) of the survey area, where cartographic evidence show that the landscape has changed and developed significantly over time.

Evidence of palaeo-channels and the underlying geology of the area has been recorded throughout. These anomalies are quite sinuous in nature and interwoven between fields.

Magnetically enhanced anomalies which are indicative of agricultural activity, including field drainage and modern ploughing regimes, have also been revealed throughout the dataset.

A number of areas of magnetic disturbance, most likely the result of modern activity, were also recorded particularly around field boundaries.

1 Introduction

- 1.1 AOC Archaeology Group was commissioned by Axis PED to undertake an archaeological geophysical gradiometer survey of a site at Bicker Fen, Bicker, Lincolnshire. The survey was conducted throughout April 2022 as part of a wider scheme of archaeological assessment in advance of the proposed development of the site.
- 1.2 Archaeological geophysical survey uses non-intrusive and non-destructive techniques to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or deposits, as far as is reasonably possible (CIfA, 2014).
- 1.3 The survey was carried out to provide information on the extent and significance of potential buried archaeological remains within the proposed development site.

2 Site Location and Description

- 2.1 The Site is located on land at Bicker Fen (NGR TF 20641 38018). The Site is situated across agricultural land which is bound by Cowbridge Road to the East and North Ing Drove to the South (see Figure 1).
- 2.2 The Site totals approximately 95 ha and consists of 13 fields. The ground level within the site is level, situated at around 3m above Ordnance Datum (aOD).
- 2.3 The site is located on the Oxford Clay Formation, with the bedrock being Mudstone. This is overlain by tidal deposits of clay and silt (BGS, 2022).
- 2.4 The soils within the Site are classed as loamy and clayey soils of coastal flats with naturally high groundwater (Soilscapes, 2022).
- 2.5 Gradiometer survey is suggested to provide a variable response over sedimentary rocks; for example, the results can be good over certain sandstones and average over mudstones, the tidal deposits may also have an impact upon the results (David *et al.* 2008, 15).

3 Archaeological Background

- 3.1 The archaeological background is summarised from three sources, the Lincolnshire Heritage Explorer, the Historic Environment Desk Based Assessment of the nearby Site of Vicarage Drove, produced by AOC Archaeology in August 2021 (AOC, 2021) and the baseline information from the Cotswold Archaeology assessment in advance of the Viking Link Interconnector project, immediately to the west of the southern fields of the scheme.
- 3.2 The Eastern Fens Landscape Character Zone (FEN2) is described as having nucleated settlements scattered throughout the character zone, located on ridges of slightly higher ground. There are also some linear settlements, which are formed by the infilling of several dispersed settlement types. All other settlements in the character zone comprise a combination of isolated farmsteads and ragged linear settlements along the main roads. It is generally possible to see several farmsteads or other houses in every direction from any position within the character zone. Much of the planned enclosure landscape survives to this day, although this survival is probably due to the necessity of retaining field boundary drains to ensure the continued viability of the agricultural land.

Prehistoric and Roman (8000 BC-AD 410)

- 3.3 There is little evidence for occupation in this character zone during the Prehistoric, but extensive evidence that the land within it was utilised at this time. There have been many artefacts finds made throughout the zone from the Prehistoric period. There is evidence of settlement on the ridge of higher ground around Stickney and Sibsey, and in the Pinchbeck area. Outside of the areas of possible settlement, any settlement was probably isolated and associated with seasonal use of the fen for grazing or salt production. Before drainage, the fens landscape consisted of rivers, meres, and seasonally inundated land. This shaped the agricultural regimes, which would have been dominated by seasonal grazing, fishing, and wild fowl hunting.
- 3.4 Further prehistoric or evidence recorded in proximity to the Site includes a Neolithic flint scraper that was found during an archaeological evaluation in 2005 in advance of the construction of the Bicker Fen substation. This did not come from any of the five evaluation trenches that were excavated but was found within disturbed soil close to a geotechnical borehole which had been dug as part of a separate geotechnical investigation. It was noted that the flint had retained part of its cortex, indicating that it had not laid exposed within the topsoil, and was likely from a deeper buried deposit disturbed during the geotechnical investigation. These geotechnical investigations had also identified a layer of peat at c.2m below ground level (NAA, 2005).
- 3.5 Several archaeological features were identified 1km north of the Site on a substation development, including multiple enclosures which were attached to a double ditched trackway (Ladder settlement type) as well as storage structures and several ring-gullies thought to date from the Late Iron Age through to the Roman period. It is therefore possible that the remains that were excavated on the substation site may continue southwards onto the present Site.
- 3.6 One heritage asset dating to the Romano-British period was identified 1km to the northwest of the site. An artefact scatter of briquetage (the ceramic debris from the vessels and hearths used in heating brine) thought to be evidence for the remains of a Romano-British Saltern. Elsewhere within the Study area six assets dating to the Roman period were identified including the Scheduled remains of a Roman saltern on Helpringham Fen. The Site of the former saltern being described as a series of mounds some 30-40ft across and standing 4-5ft high. The mounds were red hills, piles of briquetage and salt-panning debris which had accumulated.
- 3.7 Four other areas of cropmarks were identified 1km northwest of the study area. These cropmarks are recorded in the HER as undated but again appear on morphological grounds to relate to late prehistoric (Iron Age) or Romano British settlement. These cropmarks overlie the area investigated during the excavation of the Triton Knoll Substation which identified evidence of a late Iron Age through to mid to late Roman farming landscape.

Early Historic and Medieval (AD 410-1600)

- 3.8 The placename 'Bicker' is believed to be derived from Old Norse and refer to a farmstead or village (by) near to a marsh overgrown with brushwood ('kjarr'). The Grade I Listed Church of St. Swithin stands within the historic core of Bicker within the northern part of the Bicker Conservation Area and is described within the listing (List No. 1062014) as retaining 12th through to 16th century architectural elements despite being extensively restored between 1876 and 1911.
- 3.9 Late Saxon Pottery was found in Bicker in 1972 during redevelopment, along with a collection of cockleshells (MLI12969).
- 3.10 Bicker is recorded in the Domesday Book of 1086 in the ownership of five different landowners and had a recorded population of 59 households. This places it within the largest 20% of settlements

recorded in Domesday and suggests the rich Fenland soils had supported a prosperous economy from an early date. Domesday records at least 24 salt-houses (Salterns) at Bicker, which was at that time located at the head of a navigable waterway, Bicker Haven, and its location was important for trade. Over the centuries Bicker Haven gradually silted up and the channel could not be maintained. Over time Bicker diminished in importance as a trading centre as nearby Swineshead and Donington became more prevalent due to being on more useful west to east land routes, which Bicker was not.

- 3.11 Prior to the large-scale irrigation of the fens fishing and wildfowl hunting would have provided a good source of food. There was also excellent grazing for sheep and cattle in the summer months. The natural growth of reeds and the ready availability of thick mud would also have provided the raw material for house building.
- 3.12 Whilst there is no direct evidence for any early medieval or medieval archaeological remains within the Site it is possible that some of the later post-medieval drainage features had medieval precursors. However, it is more likely that the Site was located within seasonally exploited wetlands.

Post-medieval (AD 1600-1900)

- 3.13 There are several farms and farm buildings which are recorded within and nearby the Site dating from the 19th century, including Cowbridge Farm (MLI116643) and Ing Farm (MLI116649).
- 3.14 A scatter of 17th century coins and tokens was found 1km south of the Site, these consisted of coinage struck during the reign of James I (MLI23222).

Previous Investigations

- 3.15 Headland Archaeology undertook a programme of geophysics in 2017, in locations to the immediate west of the proposed red line boundary, which are summarised in Figures 3 and 7 of the Cotswold Heritage assessment.
- 3.16 To the immediate west of the southern fields of the proposed scheme, a Heritage Assessment was undertaken in advance, of a yet to be reported, archaeological work undertaken by Cotswold Archaeology for the Viking Link Project. The assessment was able to identify a military crash from 1943, along with elements of prehistory.
- 3.17 Remains of Roman ditches, pits and butchery were identified via nearby archaeological investigations, along with later prehistoric/Roman enclosures that extended into the Viking Link Site.
- 3.18 Medieval features in the landscape include drainage features and established farmsteads.
- 3.19 In 2021 AOC Archaeology undertook a programme of geophysical survey, approximately 1km to the northwest of the proposed survey at Bicker Fen. The gradiometer survey did not identify any definitive archaeological features, although several the anomalies identified have forms that appear to be characteristic of archaeological remains, including two or three well-defined pit type anomalies. These anomalies are comparatively large measuring approximately 12m in diameter and could potentially represent the remnants of salterns. The survey also identified two sets of parallel linear anomalies, which could potentially be natural, although, in plan their form appears to be reminiscent of trackways bounded by ditches on either side.

4 Aims

- 4.1 The aim of the geophysical survey was to identify any potential archaeological anomalies that would enhance the current understanding of the archaeological resource within the proposed survey area.
- 4.2 Specifically, the aims of the gradiometer survey were;
- To locate, record and characterise any surviving sub-surface archaeological remains within the survey area,
 - To provide an assessment of the potential significance of any identified archaeological remains in a local, regional and (if relevant) national context,
 - To produce a comprehensive site archive (Appendix 1) and report.

5 Methodology

- 5.1 The geophysical survey was undertaken throughout April 2022.
- 5.2 All geophysical survey work was carried out in accordance with recommended good practice specified in the EAC guideline documents published by Historic England (Schmidt et al. 2016) and the Chartered Institute for Archaeologists Standard and Guidance for archaeological geophysical survey (2014).
- 5.3 Parameters and survey methods were selected that were suitable for the prospective aims of the survey and in accordance with recommended professional good practice (Schmidt et al. 2016).
- 5.4 Digital photographs of every survey parcel were taken before, during and after geophysical survey to show any changes to field conditions following the programme of works. The photos were downloaded and stored off site.
- 5.5 The gradiometer survey was carried out using a Bartington Non-Magnetic Cart. The cart system utilises six Grad-01 fluxgate gradiometer sensors mounted upon a carbon fibre frame 1m apart, along with data logging equipment and batteries (see Appendix 2). Before each session of use, the cart system was balanced around a single set up point within the Site specifically chosen for being magnetically quiet. In balancing the machine around this point, it produces a more uniform dataset throughout and allows all data to be plotted with ease.
- 5.6 Data was collected using zig-zag traverses alongside a constant stream of GPS data collected through a Trimble R10 GPS, enabling the collected data to be spatially georeferenced without the need for a pre-determined grid system. The data was collected through a laptop mounted to the cart using Geomar MLGrad601 software.
- 5.7 A total of 95ha were surveyed using the Bartington cart.
- 5.8 Care was taken to attempt to avoid metal obstacles present within the survey area, such as metal fencing around hedge boundaries as gradiometer survey is affected by 'above-ground noise' and avoiding these improves the overall data quality and results obtained.
- 5.9 The data was downloaded from MLGrad601 and converted into a .xyz file in Geomar MultiGrad601 before being processed along with the GPS data in TerraSurveyor v3.0.34.10. The details of these processed can be found in Appendices 1 - 4.
- 5.10 Interpretations of the data were created in ArcGIS Pro and the technical terminology used to describe the identified features can be found in the relevant Appendix.

6 Results and Interpretation

- 6.1 The gradiometer survey results have been visualised accordingly; Figure 2 displays the surveyed areas at a scale of 1:7500, followed by with an overall processed greyscale image as Figure 3 at the same scale, and an overall interpretation figure at 1:7500 as Figure 4. Processed greyscale plots, plotted at -1nT to 2nT are displayed at 1:1250 in Figures 5.1 to 5.13. The corresponding interpretations, can be seen in Figures 6.1 to 6.13 at the same scale, with a minimally processed XY traceplots in Figures 7.1 to 7.13, plotted at 20nT per cm range.
- 6.2 For the most part, only trends of a probable, possible archaeological or historical origin have been assigned an anomaly number on the interpretation figures.
- 6.3 Trends that are integral to the discussion have also been assigned anomaly numbers.
- 6.4 Anomaly identification will start with the field number followed by an anomaly letter, i.e.. 1A would be the first anomaly discussed in Field 1.
- 6.5 Discussion will focus upon anomaly categorisation, identifying which Fields and which Figures are appropriate, for Archaeology, Possible Archaeology and Unclear anomalies.

Probable Archaeology

- 6.6 Probable archaeological anomalies has been identified in two main areas (Fields 3 and 5, Figs 5.6, 5.8 and 6.6 and 6.8)
- 6.7 Several negatively enhanced linear anomalies (**3A**), (Fig. 6.6) have been identified in the south of Field 3. The responses appear to form a series of rectangular linear anomalies. Their orientation and alignment suggest that this complex may continue beyond the limits of the Site, into the field to the south. It measures approximately 90m x 140m and has the appearance of a large rectangular defined space, with internal square 'rooms' or spaces.
- 6.8 These responses are located on the the higher ground of the site, identified in supplementary investigations in the accompanying DBA. The DBA identified that archaeological remains are predominantly located upon these higher points, known locally as roddons. These are subtly higher topographically, which makes them less prone to flooding, hence a more favourable place to settle.
- 6.9 These negative anomalies suggest a possible stone built feature, rather than infilled ditches. It is potentially suggests a Roman structure, for example a villa or a bath-house due to its form and appearance on known sites elsewhere.
- 6.10 The anomalies located within Field 5 by contrast are positively enhanced magnetic anomalies (**5A**) (Fig. 6.8).
- 6.11 These have been interpreted as probable archaeology because of their shape and form. located approximately 200m to the east, yet have a pattern, which suggests a series of small square-type enclosures. These may be contemporaneous with 3A, however my alternatively form a different settlement type dating to the earlier Iron Age or contemporary Roman periods and potentially industrial in nature. In this location salt making sites are often located in similar locations and provide similar results in geophysical data plots.

Possible Archaeology

- 6.12 Anomalies of a possible archaeological origin have been identified in Fields 1 and 3 (Figs. 5.1, 5.6 and 5.8 and 6.1, 6.6 and 6.8), close to the archaeological anomalies recorded above.
- 6.13 Three small anomalies have been identified with Field 1 (**1A**). These are located to the west of a historic feature, and whilst it is likely that they are geological in origin, their alignment and magnetic

characterisation suggest that these responses may have a possible archaeological origin, perhaps a series of pits or postholes. However, as they are located close to geological responses and the former field boundary, it is feasible that they have a comparable origin to these as well.

- 6.14 In the northeast of Field 3, on a distinctive geological headland, magnetically enhanced anomalies have been detected (**3B** and **3C**) (Figures 6.8). Whilst no cohesive shape or form can be determined, the distinctive magnetic signatures, comparable to those of **5A** 200m to the east, suggest ditch-filled anomalies.

Unclear Origins

- 6.15 Distinctive unclear anomalies have been identified throughout the dataset
- 6.16 Three areas of unclear magnetic disturbance (**1B**) have been identified within Field 1 (Figs. 6.1 and 6.2). It is likely that these responses correspond with the removal of the former field boundary where material is likely to have been disturbed, rather than being archaeological or geological in origin.
- 6.17 Anomalies close to the eastern boundary (**1C**) may also have an origin associated with the removal of historic features, however a geological origin cannot be dismissed for these features.
- 6.18 To the south of 1C, a linear trend has been detected (**1D**), aligned west to east which may be associated with the removal of a former field boundary, however it is strongly thought to be a remnant agricultural scar, caused by later modern day ploughing.
- 6.19 Areas of magnetic disturbance, likely to be caused by the removal of former field boundaries has also be detected in Field 2 (**2A** and **2B**) (Figs. 6.3 and 6.5) and Field 12 (**12A**) in Figures 6.12 and 6.13.
- 6.20 Orientated on a north to south alignment, a linear trend (**4A**) (Fig 6.7), has been identified and interpreted as unclear in origin. This feature has a close association with the geological features in the landscape. It may also be associated with the removal of the former field boundary recorded on mapping of the area.
- 6.21 A small area of magnetic enhancement has been detected within Field 7 (**7A**) (Figure 6.9), which is thought to be geological in origin. Yet the shape and size of the response may suggest an anthropogenic origin of something which at the moment is undefined. Ergo an unclear interpretation has been reached.
- 6.22 Linear trends have been identified in the north of Field 8 (**8A**). These are crescent-like in its nature, with a spur, to the south. Whilst these features may be archaeological in nature, their relationship with clearly defined agricultural anomalies to the south suggest a similar origin. A natural geological origin can also not be dismissed.
- 6.23 These features continue to the west, which collectively may be part of a fragmented larger defined, archaeological space exploiting the natural water course provided by the palaeo-channel that runs through this area, but again the evidence to support this currently is sparse from this survey.

Agricultural

- 6.24 Predominantly within Field 1, evidence of former field boundaries have been detected. When compared against early OS mapping, this particular field is recorded as having many sub-divisions. Former field boundaries have also identified within Fields 10 and 13.
- 6.25 Ploughing trends, likely modern in age and generally orientated north to south have been identified throughout the Site, respecting the current orientation of the field system.

- 6.26 There is evidence of relatively modern field drains, identified by their distinct magnetic signature, spacing and characterisation, notably in Field 2, where a “herring-bone” effect can be alluded to, which is most often associated with field drainage.

Non - Archaeology

- 6.27 Throughout the dataset there is evidence of the underlying geology. This is in the form of paleo-channels, which weave between fields, throughout the survey areas.
- 6.28 These may allow for an understanding of how the landscape might have been utilised in the past but more information from other studies would be required.
- 6.29 These channels are complex in parts of this site with many sinuous channels inter weaving to produce quite a complex interwoven set of patterns and shapes.
- 6.30 Magnetic disturbance is visible around the periphery of the Site and relates to modern metallic boundary fencing, adjacent infrastructure, and modern debris at the field edges.
- 6.31 A moderate level of isolated dipolar anomalies (ferrous / iron spikes) are visible throughout the dataset which are likely modern in origin.

7 Conclusion

- 7.1 The gradiometer survey has identified anomalies or features of a probable archaeological nature.
- 7.2 The probable archaeological activity, as defined by the shape and form and location of the magnetic (both positive and negative) responses are predominantly located within a concentrated area of approximately 8ha in size, within Fields 3 and 5.
- 7.3 In Field 5 the shaping and size of these anomalies, it is suggested they could relate to an Iron Age or Roman settlement, positioned to exploit the natural resources and potentially industrial in nature related to salt making. In Field 3 the responses are most likely related to buildings, potentially Roman in date given their comparable form and structure to sites elsewhere in the country. Given the dimensions, it is possible that this was a villa complex or bathhouse, again exploiting the natural resource.
- 7.4 However, it must be stressed that this interpretation is only probable, more recent unrecorded buildings might provide such clear rectilinear anomalies similar to these responses. However, we would expect these to be visible on historic mapping.
- 7.5 Across several of the fields a number of trends were identified which are likely to be archaeological in origin. However, without the support of LiDAR, aerial photographic evidence or HER data, they cannot be definitively confirmed as being archaeological in nature.
- 7.6 No evidence of a World War II aircraft impact site has been revealed in Field 1, suggesting that this feature is likely to be outside of the survey area or significantly cleared from the site.
- 7.7 Although the area of high magnetic enhancement in Field 3 may be an alternative location, however it is thought to be unlikely as many crash sites are well known and accurately recorded.
- 7.8 A number of agricultural ploughing trends have been identified throughout the site. Several areas of magnetic disturbance of a likely modern date were also detected.
- 7.9 In comparison to the archaeological baseline, the anomalies detected add to the archaeological understanding of the landscape. Furthermore, they reinforce the understanding, that anomalies occur on roddons, subtle higher rises in the landscape.

- 7.10 Several Geophysical surveys have been conducted nearby to this site. The anomalies are comparable to those discovered, namely the underlying palaeo-channels and positively enhanced magnetic anomalies which occur in isolation and have a shape and form which suggest the presence of a wider archaeological landscape.
- 7.11 In assessing the results of the geophysical survey against the specific aims set out in Section 4;
- The survey has succeeded in locating, recording and characterising surviving sub-surface remains within the Site, though more remains may be present that are not suitable for detection through magnetometry;
 - It is not possible to provide an assessment of the potential significance of the identified remains in a local, regional or national context as it has not been possible to definitively characterise the nature of the anomalies identified through survey alone;
 - The survey has resulted in a comprehensive report and archive.
- 7.12 The geophysical survey has produced good quality gradiometer results which have successfully helped to clarify whether archaeological or uncertain remains are present across the Site. There is a high confidence level that the methodology and survey strategy chosen were appropriate to assess the archaeological potential across the Site.

8 Statement of Indemnity

- 8.1 Although the results and interpretation detailed in this report have been produced as accurately as possible, it should be noted that the conclusions offered are a subjective assessment of collected data sets.
- 8.2 The success of a geophysical survey in identifying archaeological remains can be heavily influenced by several factors, including geology, seasonality, field conditions and the properties of the features being detected. Therefore, the geophysical interpretation may only reveal certain archaeological features and not produce a complete plan of all the archaeological remains within a survey area.

9 Archive Deposition

- 9.1 In accordance professional standard practice an 'Online Access to the Index of archaeological investigations' ('OASIS') record will be completed for submission to the HER and Archaeological Data Service (ADS) (Appendix 2).
- 9.2 One digital and hard copy of the report and data will be submitted to the relevant Historic Environment Record (HER) at the Client's discretion.
- 9.3 A digital copy of the report and data will also be submitted to the ADS at the Client's discretion.

10 Bibliography

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11 Plates



Plate 1. Field 2 facing northwest, taken from the southern boundary



Plate 2. Field 3, facing south, taken from the northern boundary



Plate 3. Field 6, facing northwest, from the east



Plate 4. Field 7, facing west, from the east

12 Figures

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Temporary
Construction
Access Route

Creaser Office: Well House Barns Bretton Chatter CH4 6DH		South Manchester Office: Canfield House 76 Water Lane Wintilow S93 6BB		axis	
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project: BICKER FEN SOLAR FARM					
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date: MAY 2022			drawn by:	checked:	
drawing number:			SM	PR	
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planning environment design					

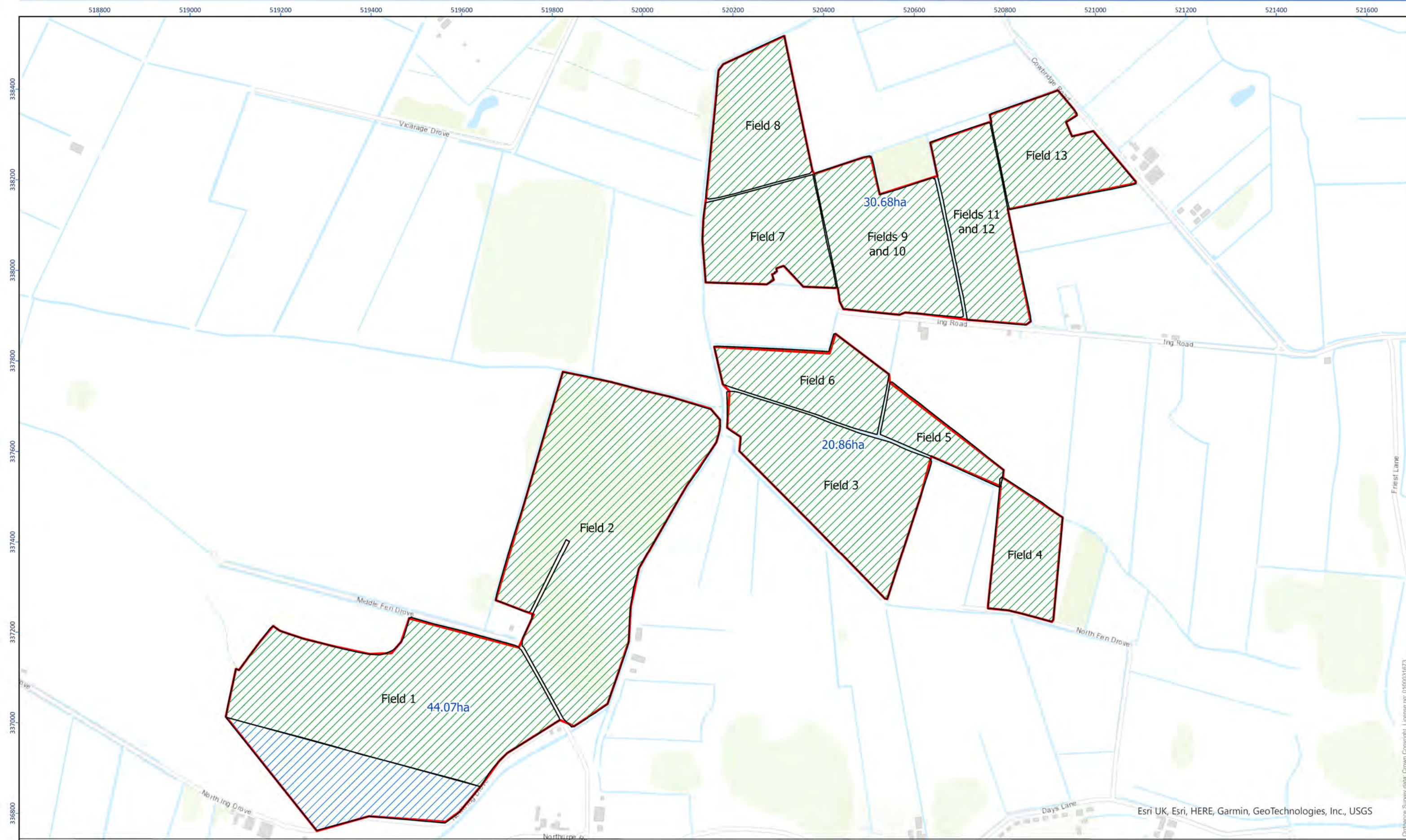


Figure
02

Red Line Boundary Survey Outline Unsuitable
Field Areas Surveyed

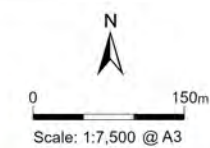
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Figure
03



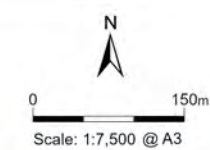
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Approved by: JL	Date: 17/06/2022



Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS

Interpretation summary

- | | | |
|---|---|---------------------------------|
| Linear Trend (Probable Archaeology) | Enhanced Magnetism (Modern) | Linear Trend (Drainage) |
| Enhanced Magnetism (Probable Archaeology) | Linear Trend (Possible Archaeology) | Linear Trend (Historic Feature) |
| Geology/Natural | Enhanced Magnetism (Possible Archaeology) | Trend (Unclear Origin) |
| Enhanced Magnetism (Historic Feature) | Enhanced Magnetism (Unclear Origin) | |
| Linear Trend (Historic Feature) | Linear Trend (Unclear Origin) | |



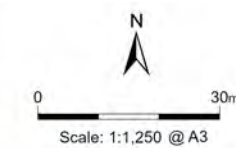
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Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

519200

519400

MIDDLE FEN DROVE

Processed gradiometer data (greyscale)

Figure
5.1

Drawing Number: 05/40312/GEO/5.1/01

Created by: CS Date: 10/06/2022

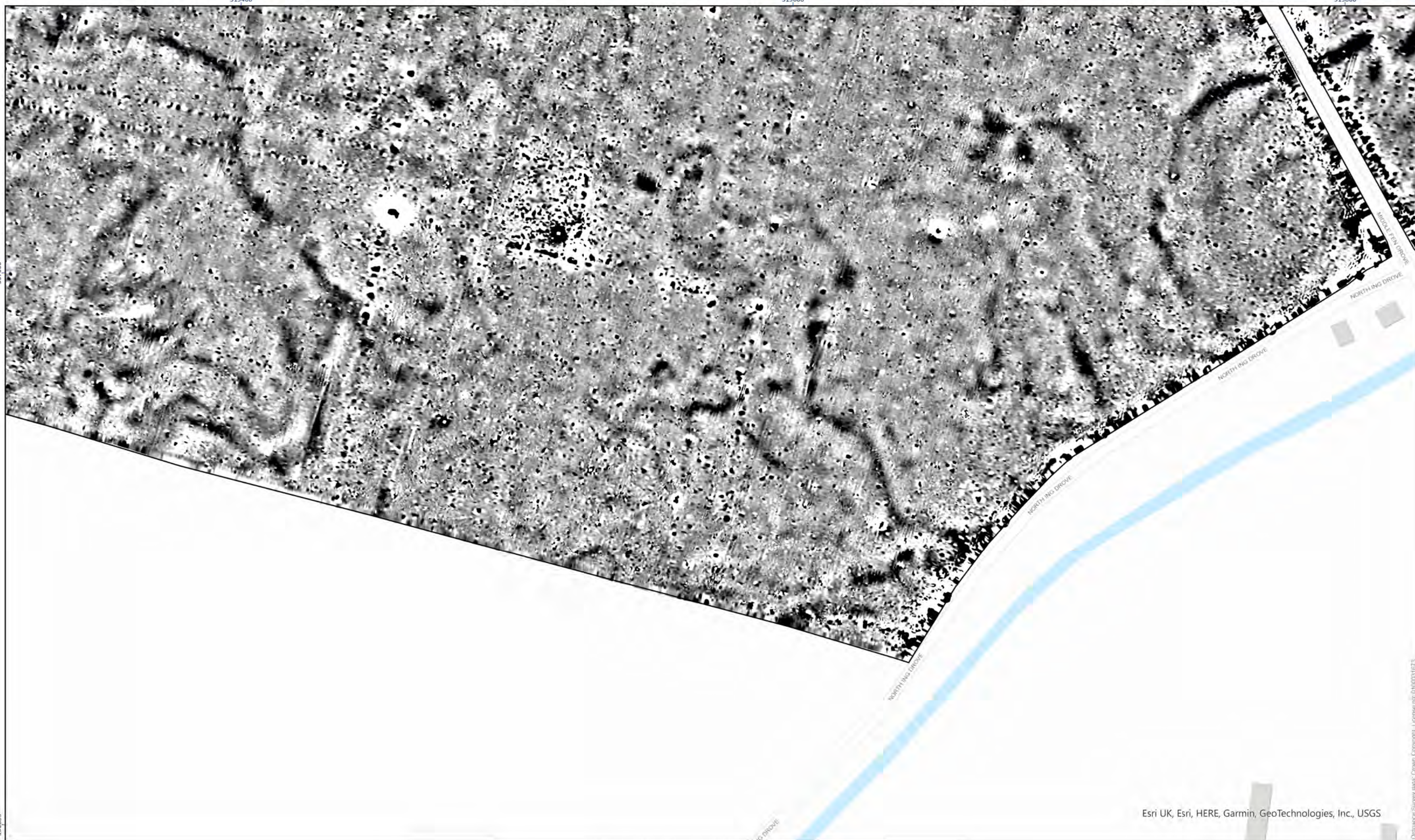
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Approved by: JL Date: 17/06/2022

519400

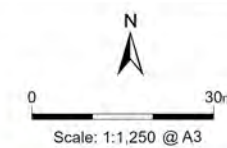
519600

519800



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Processed gradiometer data (greyscale)

Figure
5.2

Drawing Number: 05/40312/GEO/5.2/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

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519600

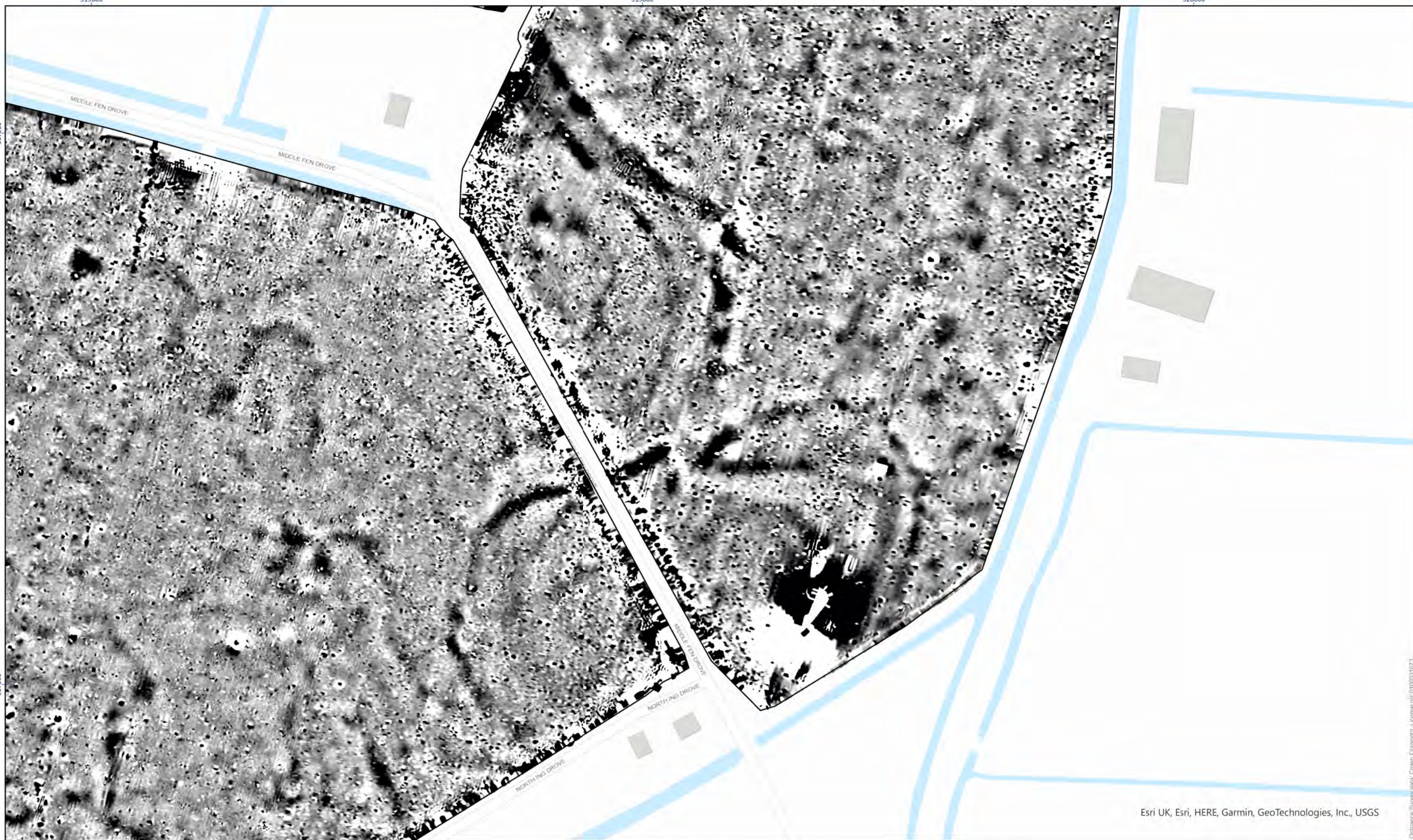
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520000

337200

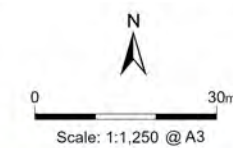
337000

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Processed gradiometer data (greyscale)

Figure
5.3

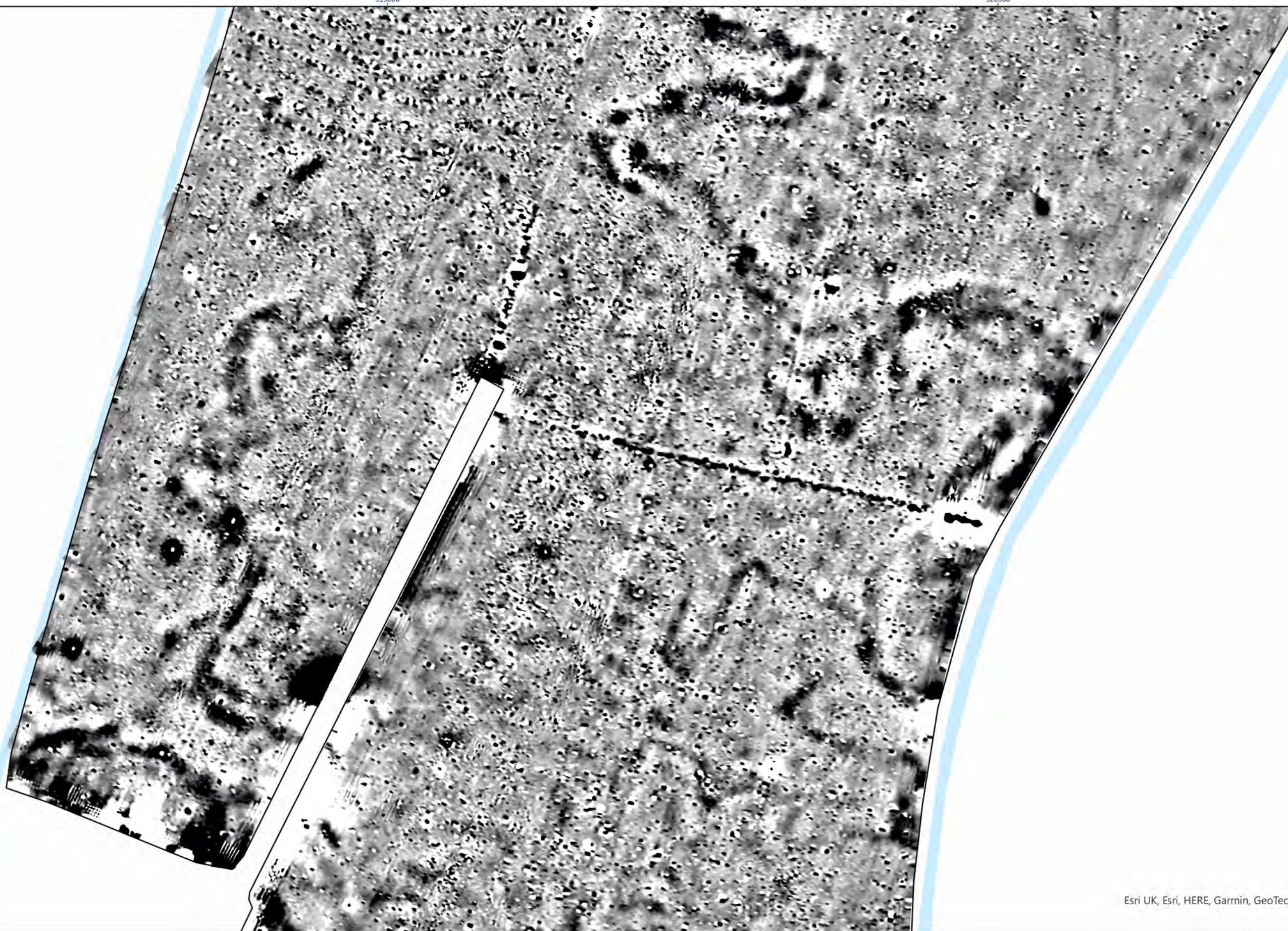
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Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022



519800

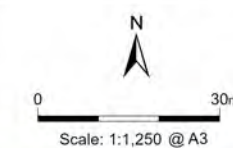
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337400



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Processed gradiometer data (greyscale)

Figure
5.4

Drawing Number: 05/40312/GEO/5.4/01	
Created by: CS	Date: 10/06/2022
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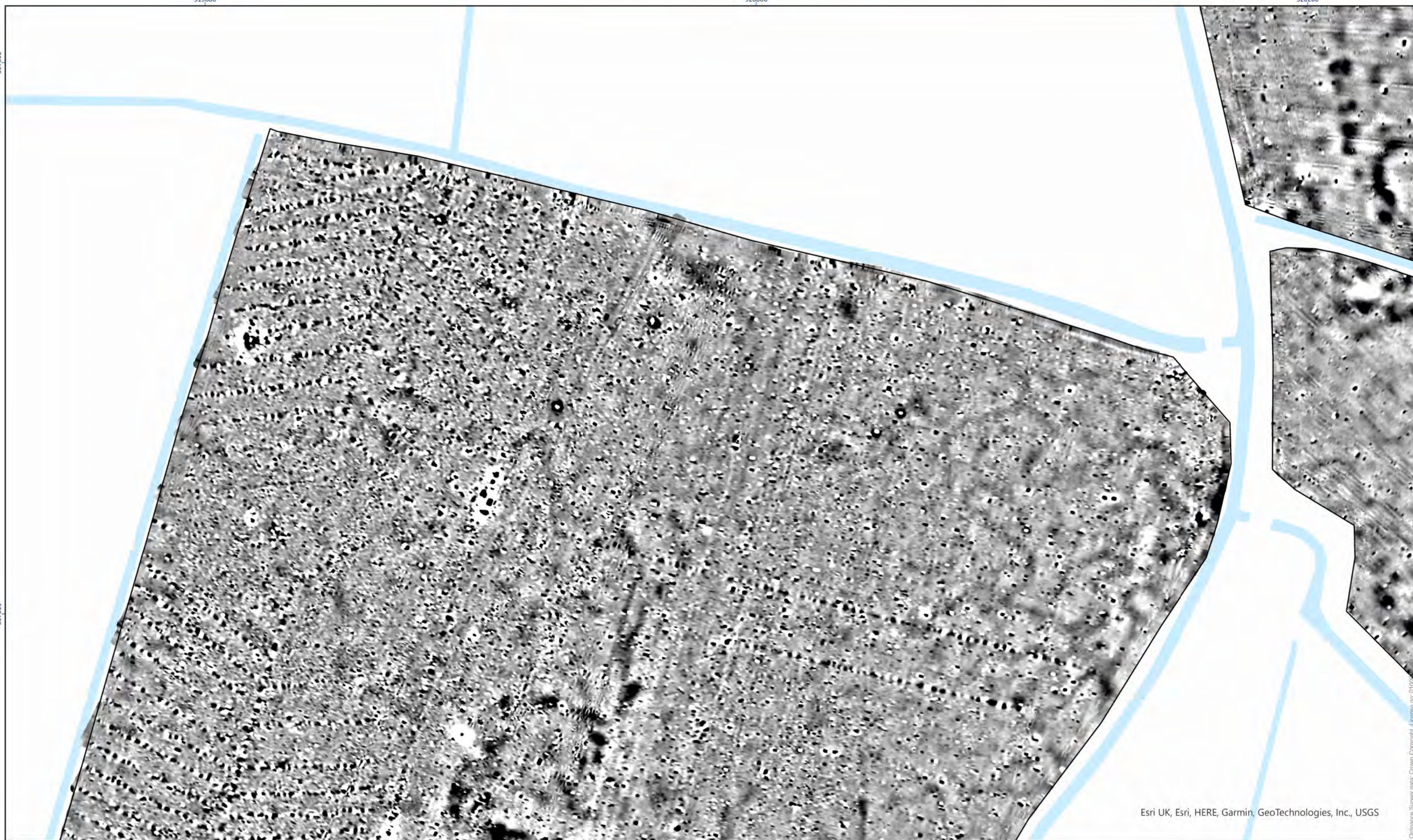
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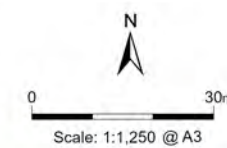
337800

337600



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Processed gradiometer data (greyscale)

Figure
5.5

Drawing Number: 05/40312/GEO/5.5/01

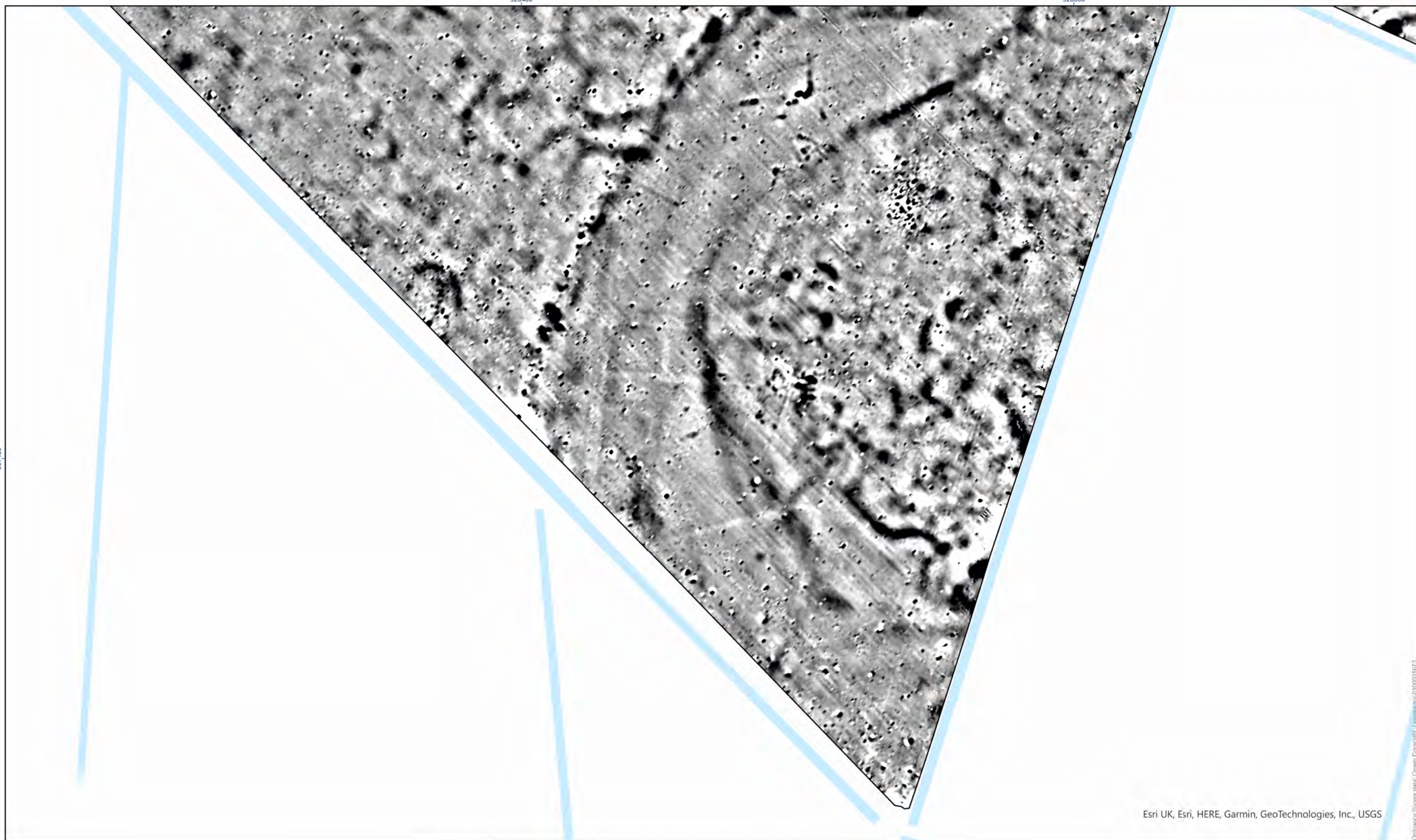
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Checked by: JL Date: 17/06/2022

Approved by: JL Date: 17/06/2022

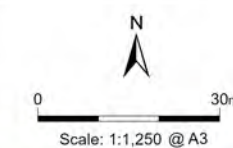
520400

520600



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Processed gradiometer data (greyscale)

Figure
5.6

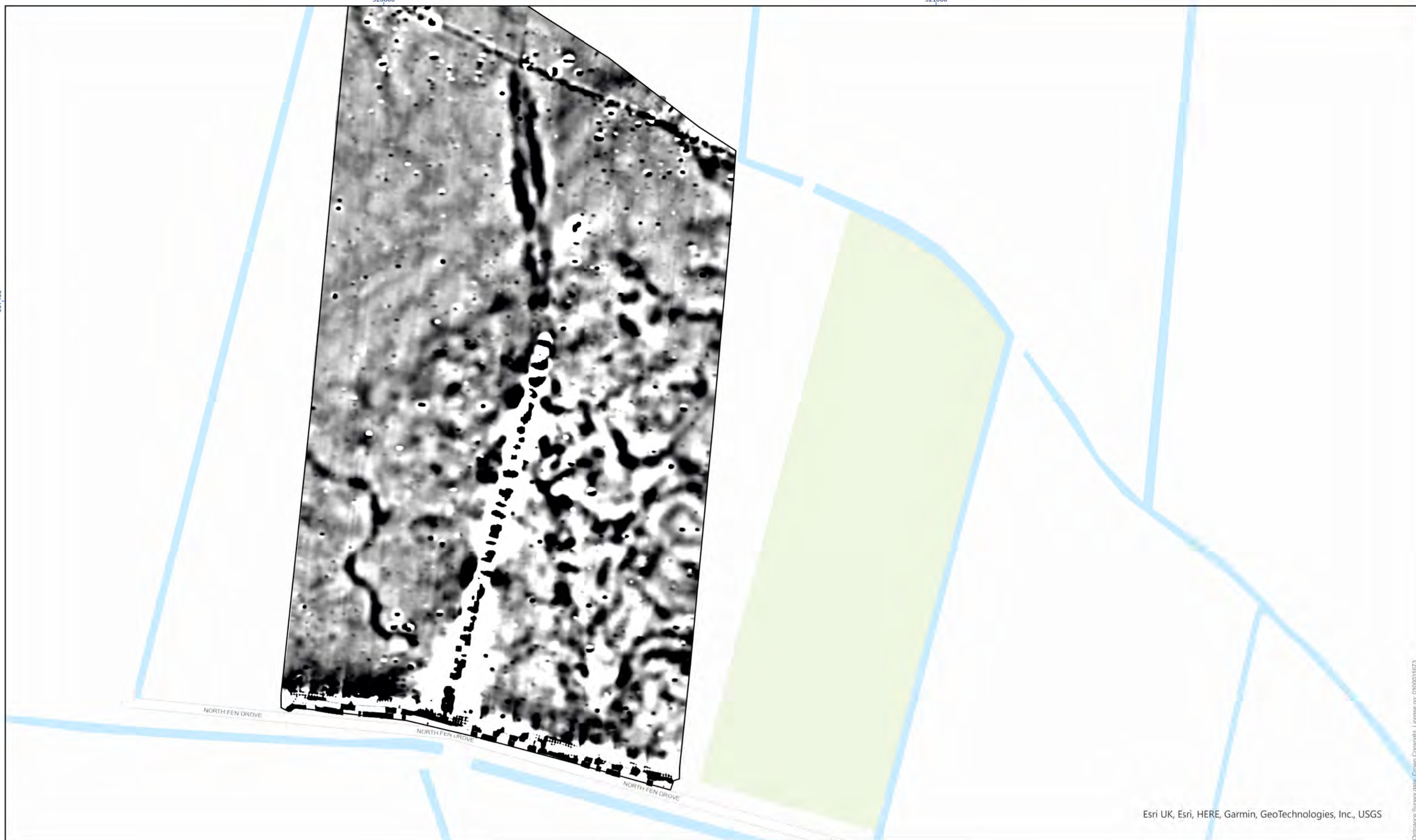
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Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

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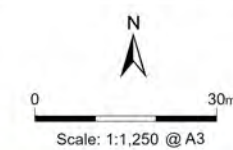
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337400



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Processed gradiometer data (greyscale)

Figure
5.7

Drawing Number: 05/40312/GEO/5.7/01	
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Approved by: JL	Date: 17/06/2022

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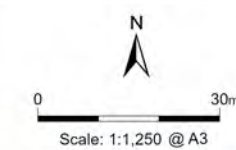
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520800

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Processed gradiometer data (greyscale)

Figure
5.8

Drawing Number: 05/40312/GEO/5.8/01	
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Approved by: JL	Date: 17/06/2022

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520200

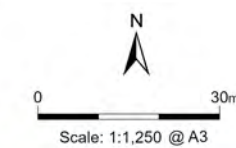
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337800

337600

Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS

Processed gradiometer data (greyscale)

Figure
5.9

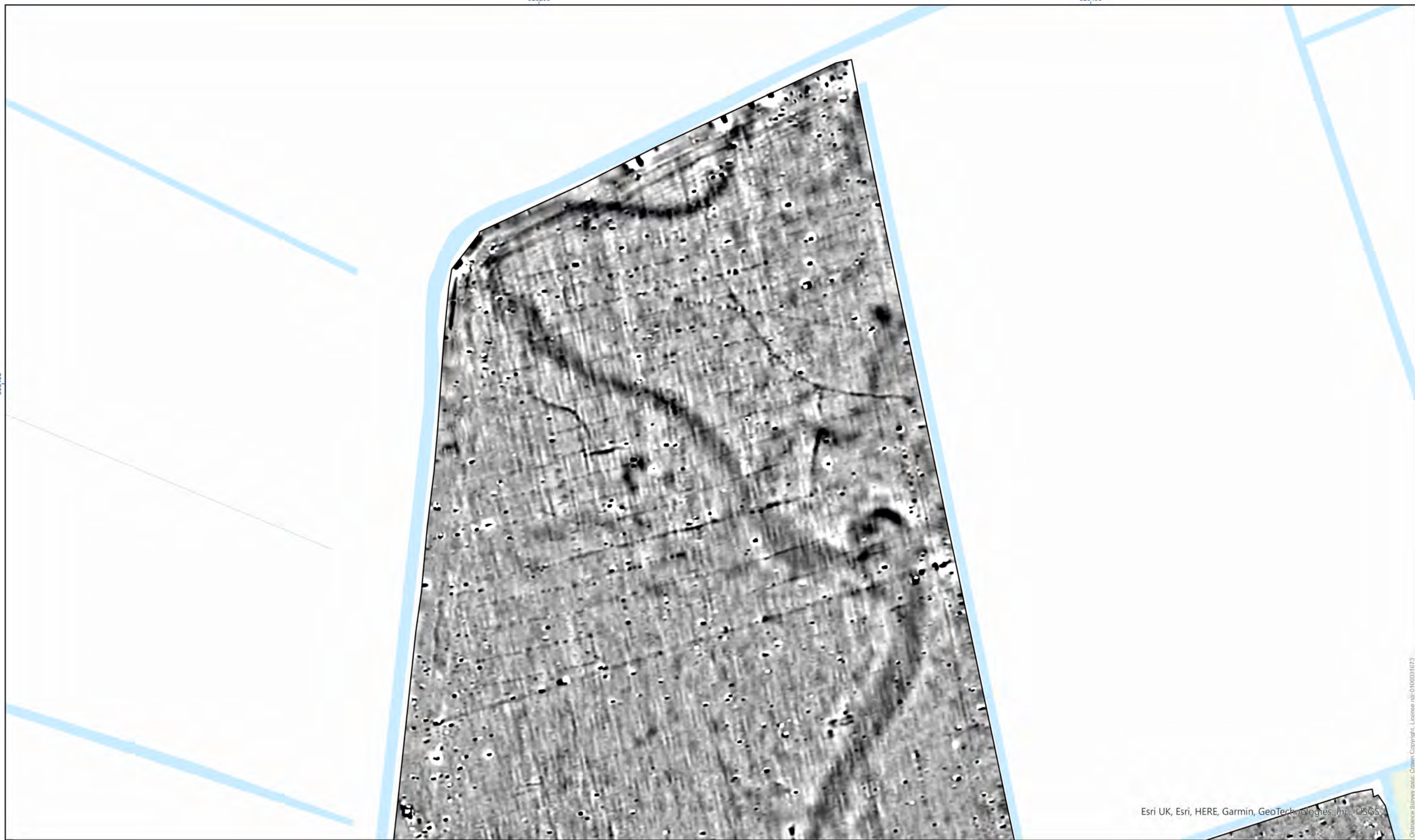
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Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

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520200

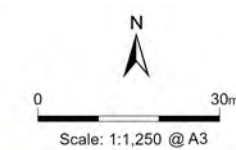
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338400



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Processed gradiometer data (greyscale)

Figure
5.10

Drawing Number: 05/40312/GEO/5.10/01	
Created by: CS	Date: 10/06/2022
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Approved by: JL	Date: 17/06/2022

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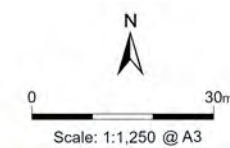
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520400



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Processed gradiometer data (greyscale)

Figure
5.11

Drawing Number: 05/40312/GEO/5.11/01	
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Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

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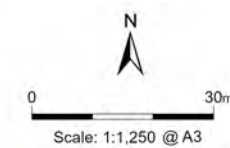
520600

520800

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Processed gradiometer data (greyscale)

Figure
5.12

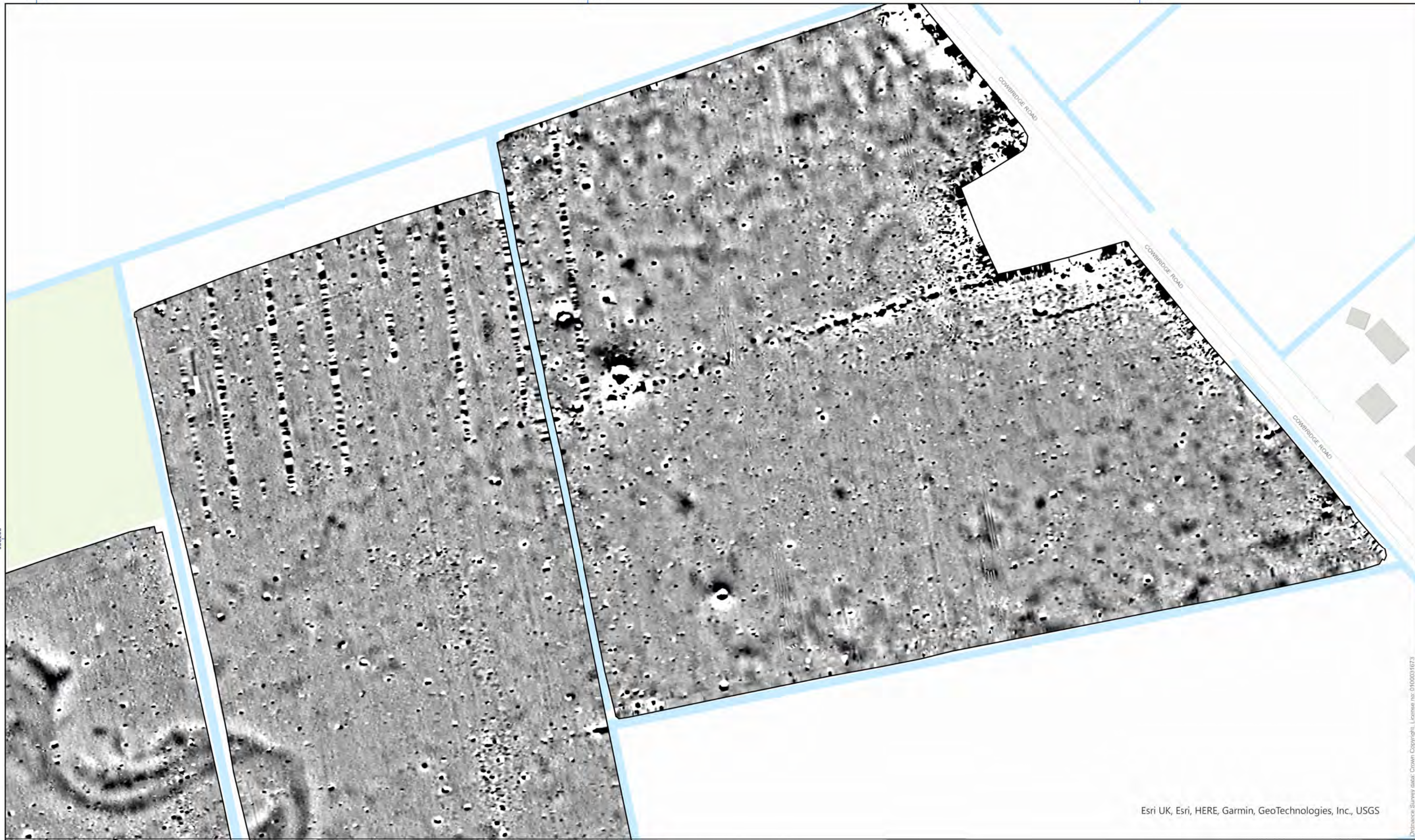
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Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

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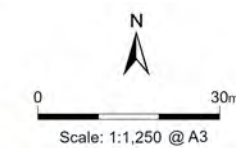
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521000



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Processed gradiometer data (greyscale)

Figure
5.13

Drawing Number: 05/40312/GEO/5.13/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022



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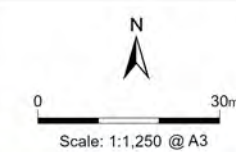
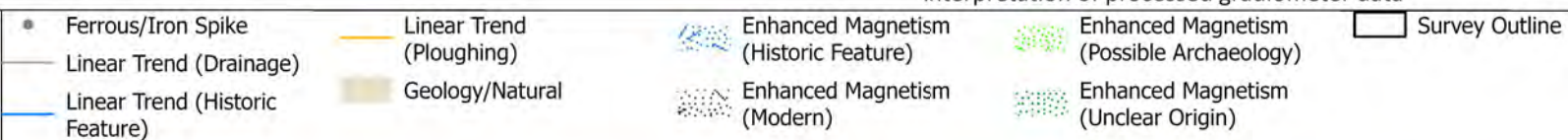
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MIDDLE FEN DROVE

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Figure
6.1



Drawing Number: 05/40312/GEO/6.1/01	
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Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

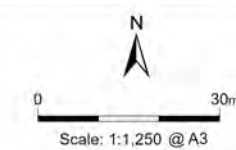


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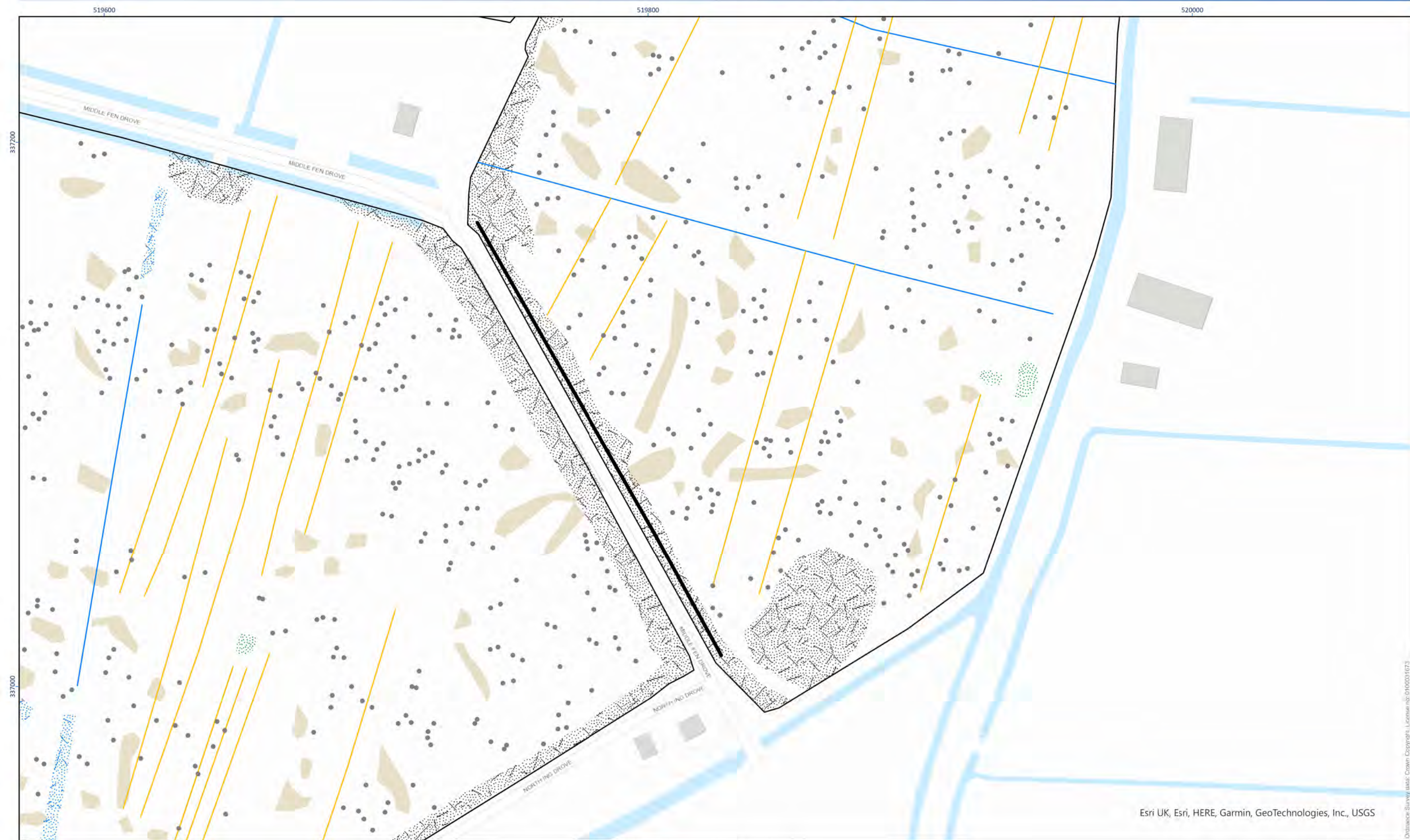
Ordnance Survey data: Crown Copyright. Licence ref: 010031673

Figure
6.2

Interpretation of processed gradiometer data				
• Ferrous/Iron Spike	Linear Trend (Ploughing)	Geology/Natural	Enhanced Magnetism (Possible Archaeology)	
— Linear Trend (Drainage)	Linear Trend (Utility)	Enhanced Magnetism (Historic Feature)	Enhanced Magnetism (Unclear Origin)	
— Linear Trend (Historic Feature)	Trend (Unclear Origin)	Enhanced Magnetism (Modern)	Survey Outline	



Drawing Number: 05/40312/GEO/6.2/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

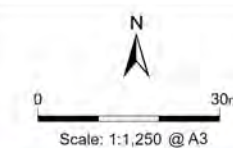


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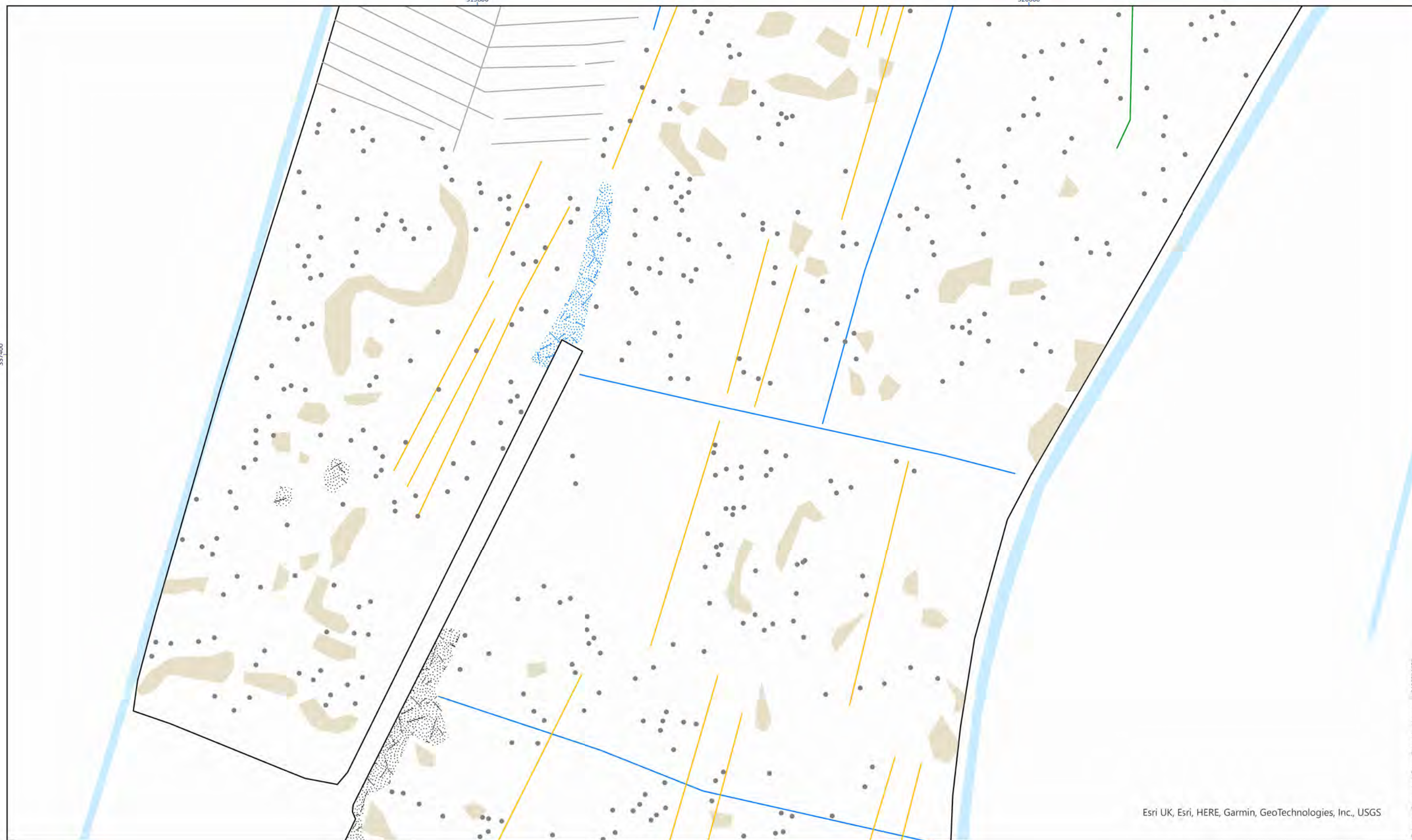
Figure
6.3

- Interpretation of processed gradiometer data
- | | | | |
|-----------------------------------|----------------------------|---------------------------------------|-------------------------------------|
| • Ferrous/Iron Spike | — Linear Trend (Ploughing) | Enhanced Magnetism (Historic Feature) | Enhanced Magnetism (Unclear Origin) |
| — Linear Trend (Historic Feature) | — Linear Trend (Utility) | Enhanced Magnetism (Modern) | □ Survey Outline |
| | ■ Geology/Natural | | |



Drawing Number: 05/40312/GEO/6.3/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

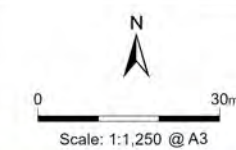




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Figure
6.4

- Interpretation of processed gradiometer data
- Ferrous/Iron Spike
 - Linear Trend (Drainage)
 - Linear Trend (Historic Feature)
 - Linear Trend (Ploughing)
 - Trend (Unclear Origin)
 - Geology/Natural
 - Enhanced Magnetism (Historic Feature)
 - Enhanced Magnetism (Modern)
 - Survey Outline



Drawing Number: 05/40312/GEO/6.4/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

519800

520000

520200



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Figure
6.5

• Ferrous/Iron Spike
— Linear Trend (Drainage)

— Linear Trend (Historic Feature)
— Linear Trend (Ploughing)

— Trend (Unclear Origin)
■ Geology/Natural

■ Enhanced Magnetism (Unclear Origin)
□ Survey Outline

0 30m
Scale: 1:1,250 @ A3

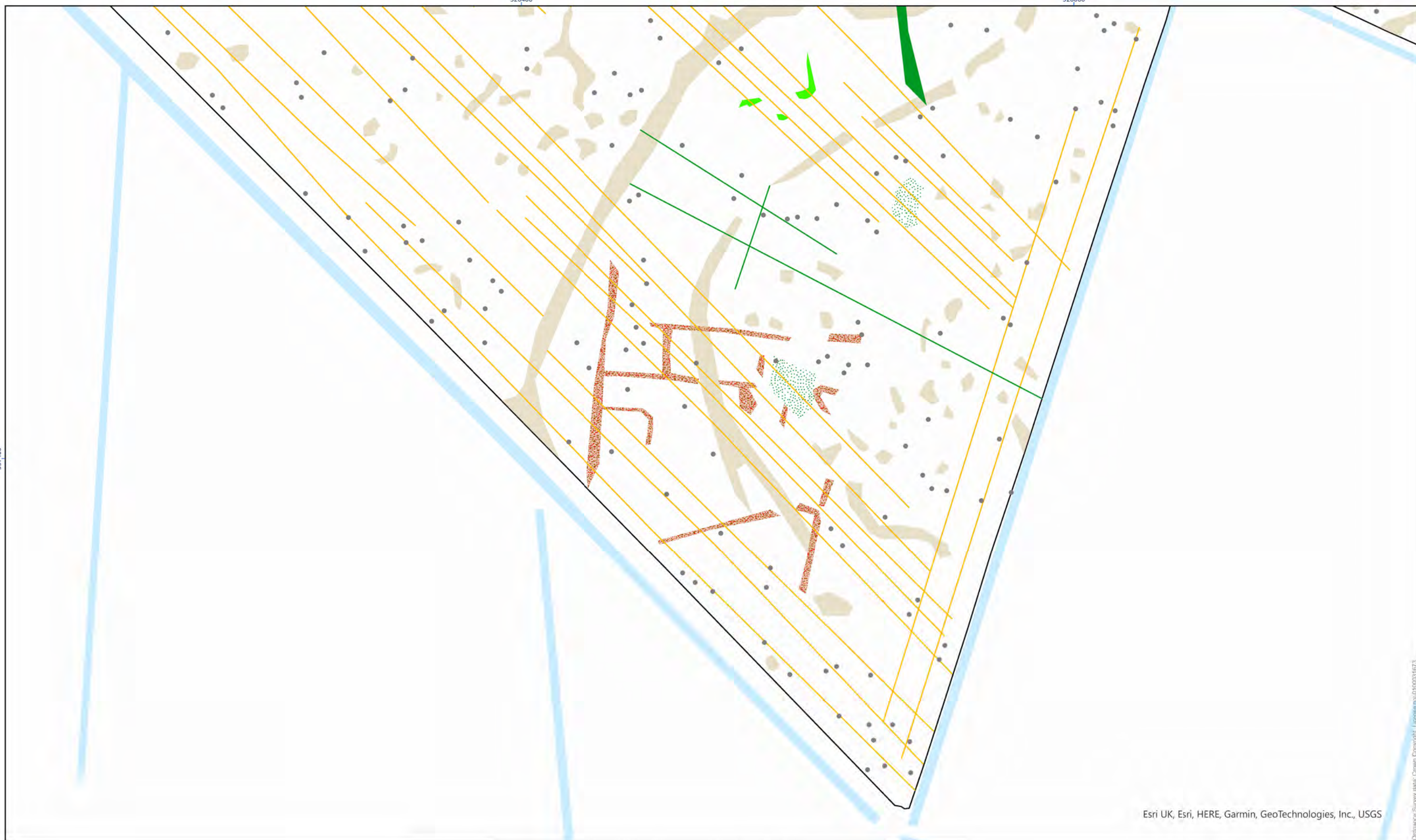
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Checked by: JL Date: 17/06/2022
Approved by: JL Date: 17/06/2022

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Archaeology
Group

520400

520600

337400



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Figure
6.6

• Ferrous/Iron Spike
— Linear Trend
(Ploughing)
— Trend (Unclear Origin)

Enhanced Magnetism
(Archaeology)
Geology/Natural

Linear Trend (Possible
Archaeology)
Enhanced Magnetism
(Unclear Origin)

Linear Trend (Unclear
Origin)
Survey Outline

Interpretation of processed gradiometer data

N
0 30m
Scale: 1:1,250 @ A3

Drawing Number: 05/40312/GEO/6.6/01
Created by: CS Date: 10/06/2022
Checked by: JL Date: 17/06/2022
Approved by: JL Date: 17/06/2022

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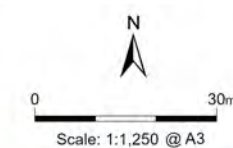
Figure
6.7

- Ferrous/Iron Spike
- Linear Trend (Ploughing)
- Geology/Natural

- Enhanced Magnetism (Historic Feature)
- Linear Trend (Unclear Origin)

□ Survey Outline

Interpretation of processed gradiometer data



Drawing Number: 05/40312/GEO/6.7/01	
Created by: CS	Date: 10/06/2022
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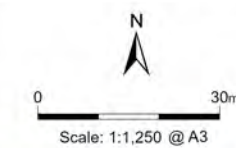
520600

520800



Figure
6.8

- Ferrous/Iron Spike
- Linear Trend (Ploughing)
- Linear Trend (Unclear Origin)
- Linear Trend (Archaeology)
- Geology/Natural
- Enhanced Magnetism (Historic Feature)
- Linear Trend (Possible Archaeology)
- Enhanced Magnetism (Unclear Origin)
- Linear Trend (Unclear Origin)
- Survey Outline



Drawing Number: 05/40312/GEO/6.8/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

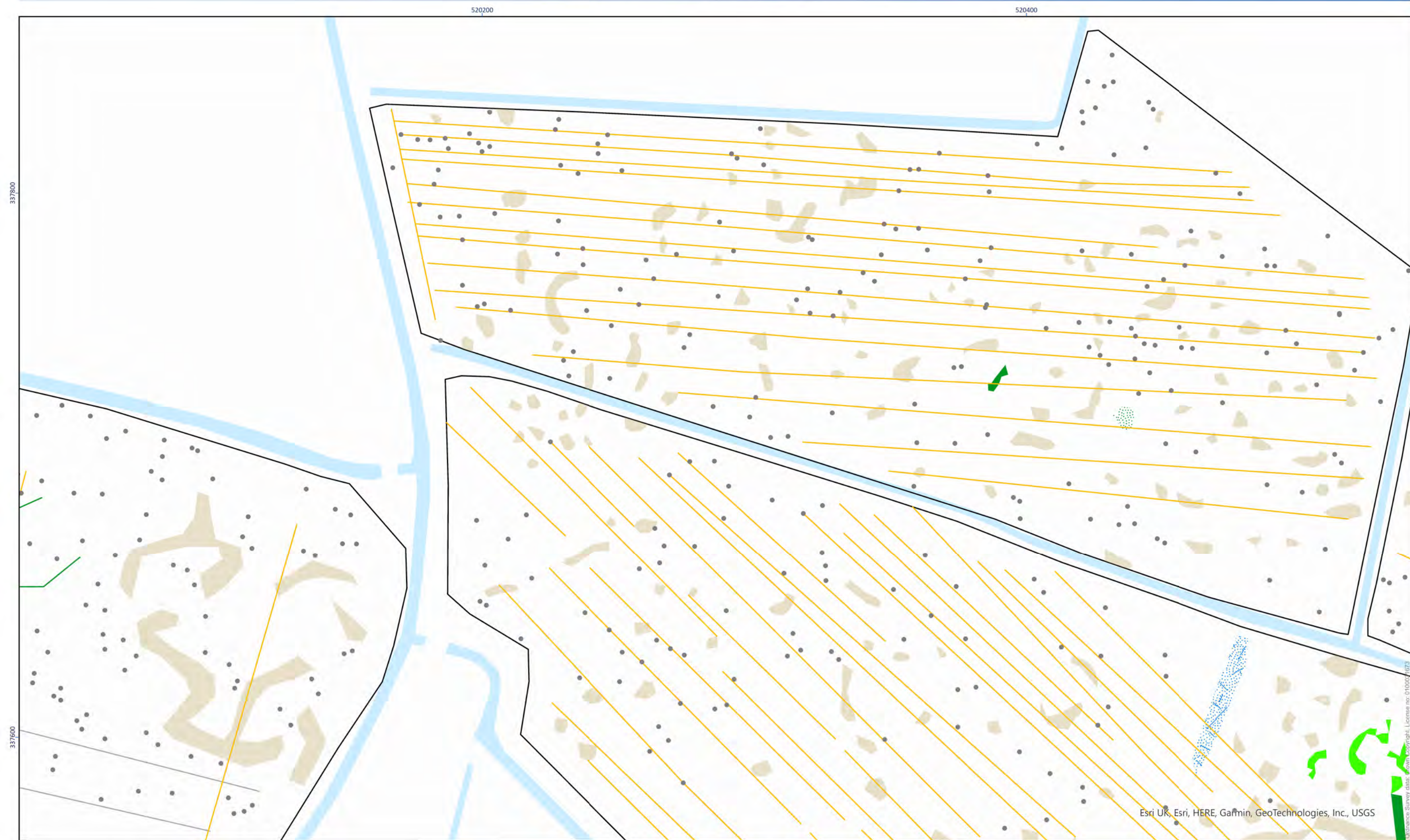
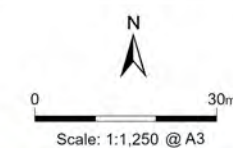


Figure
6.9

- Interpretation of processed gradiometer data
- Ferrous/Iron Spike
 - Linear Trend (Drainage)
 - Linear Trend (Ploughing)
 - Trend (Unclear Origin)
 - Geology/Natural
 - Enhanced Magnetism (Historic Feature)
 - Linear Trend (Possible Archaeology)
 - Enhanced Magnetism (Unclear Origin)
 - Linear Trend (Unclear Origin)
 - Survey Outline

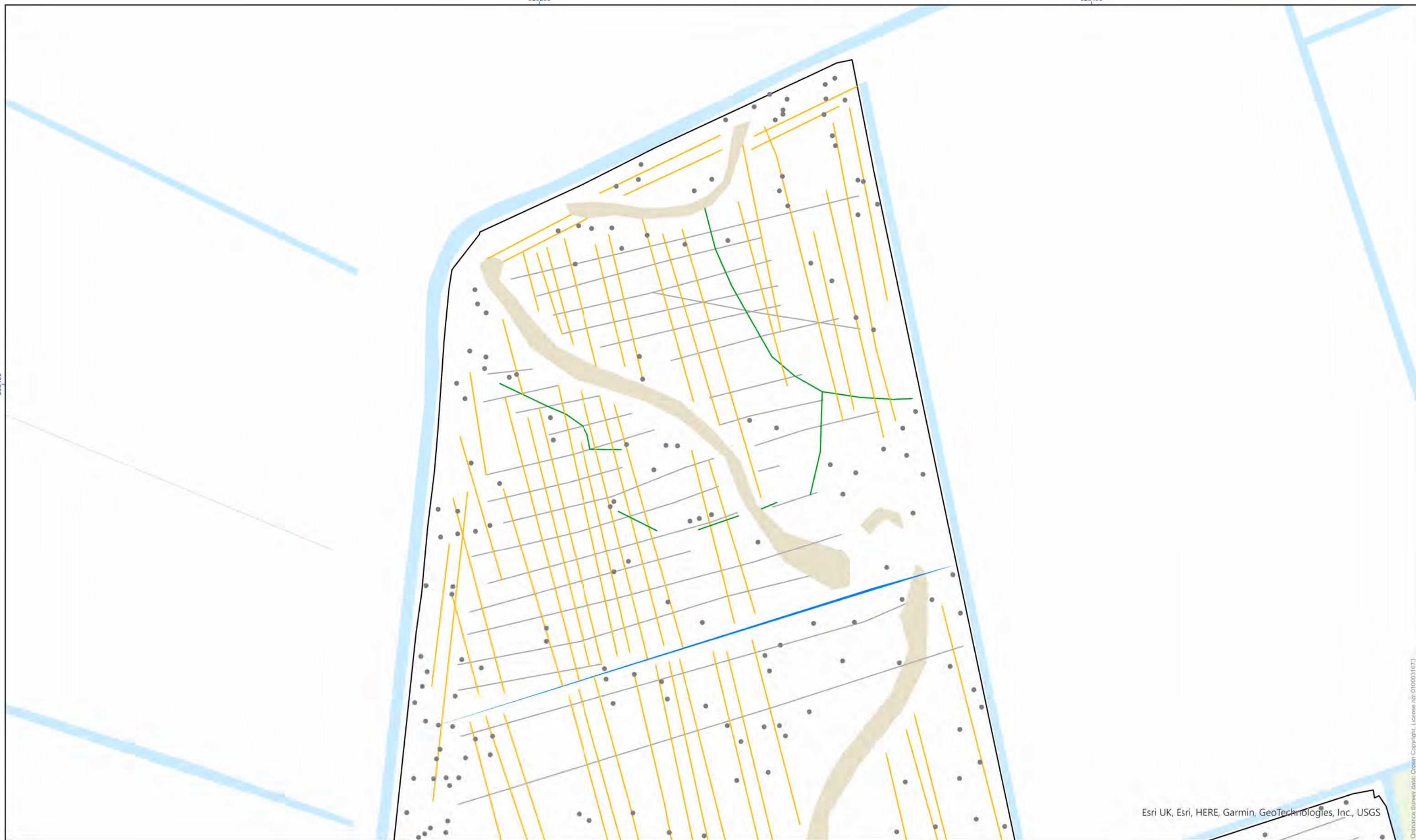


Drawing Number: 05/40312/GEO/6.9/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
Approved by: JL	Date: 17/06/2022

520200

520400

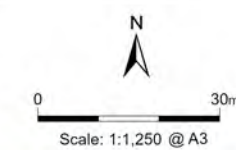
338400



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Interpretation of processed gradiometer data

- Ferrous/Iron Spike
- Linear Trend (Drainage)
- Linear Trend (Ploughing)
- Trend (Unclear Origin)
- Geology/Natural
- Linear Trend (Historic Feature)
- Survey Outline



Drawing Number: 05/40312/GEO/6.10/01
 Created by: CS Date: 10/06/2022
 Checked by: JL Date: 17/06/2022
 Approved by: JL Date: 17/06/2022

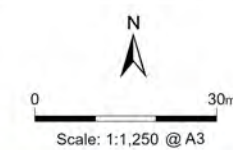


Figure
6.10



Figure
6.11

- Interpretation of processed gradiometer data
- Ferrous/Iron Spike
 - Linear Trend (Drainage)
 - Linear Trend (Ploughing)
 - Trend (Unclear Origin)
 - Geology/Natural
 - Enhanced Magnetism (Historic Feature)
 - Enhanced Magnetism (Modern)
 - Survey Outline



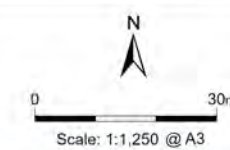
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 Checked by: JL Date: 17/06/2022
 Approved by: JL Date: 17/06/2022



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Figure
6.12

- Interpretation of processed gradiometer data
- Ferrous/Iron Spike
 - Linear Trend (Drainage)
 - Linear Trend (Ploughing)
 - Geology/Natural
 - Enhanced Magnetism (Historic Feature)
 - Enhanced Magnetism (Modern)
 - Enhanced Magnetism (Unclear Origin)
 - Survey Outline



Drawing Number: 05/40312/GEO/6.12/01
 Created by: CS Date: 10/06/2022
 Checked by: JL Date: 17/06/2022
 Approved by: JL Date: 17/06/2022

520600

520800

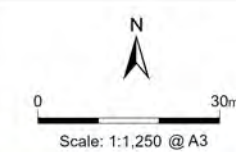
521000

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Interpretation of processed gradiometer data

- | | | | |
|----------------------------|---------------------------------------|-------------------------------------|----------------|
| • Ferrous/Iron Spike | — Trend (Unclear Origin) | Enhanced Magnetism (Modern) | Survey Outline |
| — Linear Trend (Drainage) | Geology/Natural | Enhanced Magnetism (Unclear Origin) | |
| — Linear Trend (Ploughing) | Enhanced Magnetism (Historic Feature) | | |



Drawing Number: 05/40312/GEO/6.13/01	
Created by: CS	Date: 10/06/2022
Checked by: JL	Date: 17/06/2022
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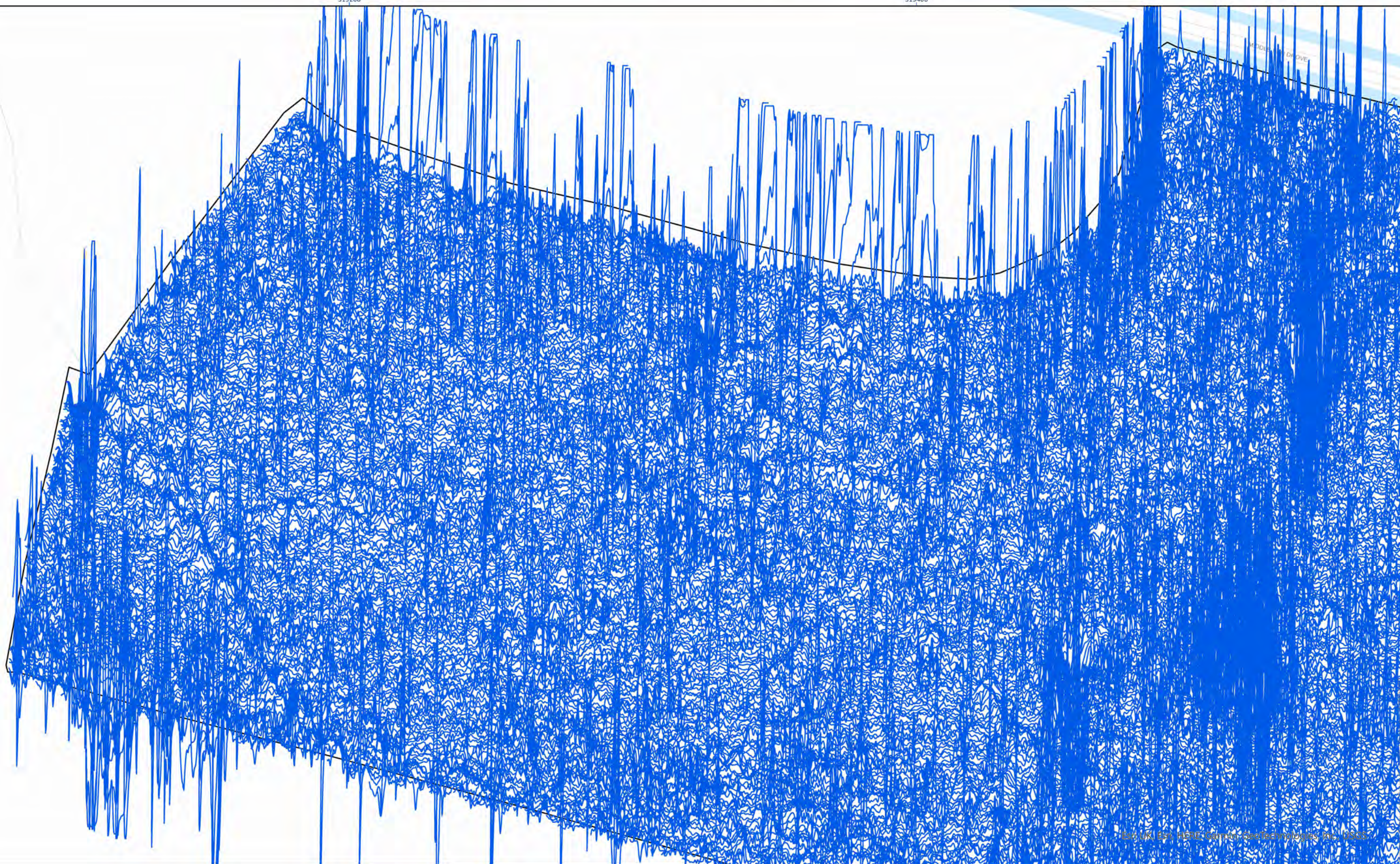
Figure
6.13

519200

519400

337200

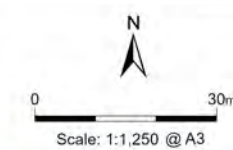
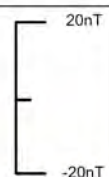
337000



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XY traceplot of minimally processed gradiometer data

Figure
7.1



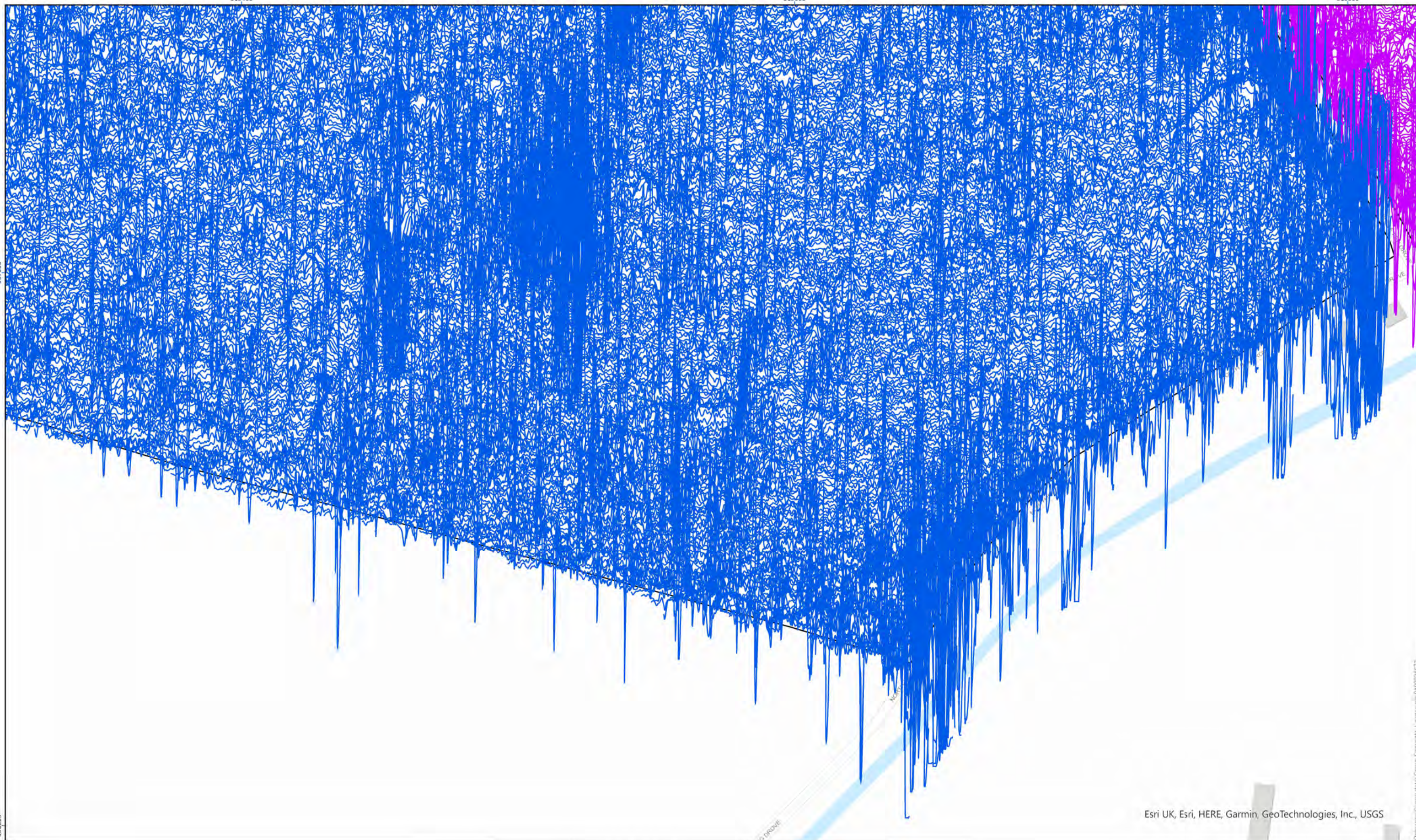
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Approved by: JL	Date: 17/06/2022

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519400

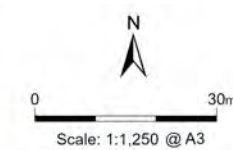
519600

519800



Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS

XY traceplot of minimally processed gradiometer data

Figure
7.2

Drawing Number: 05/40312/GEO/7.2/01	
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