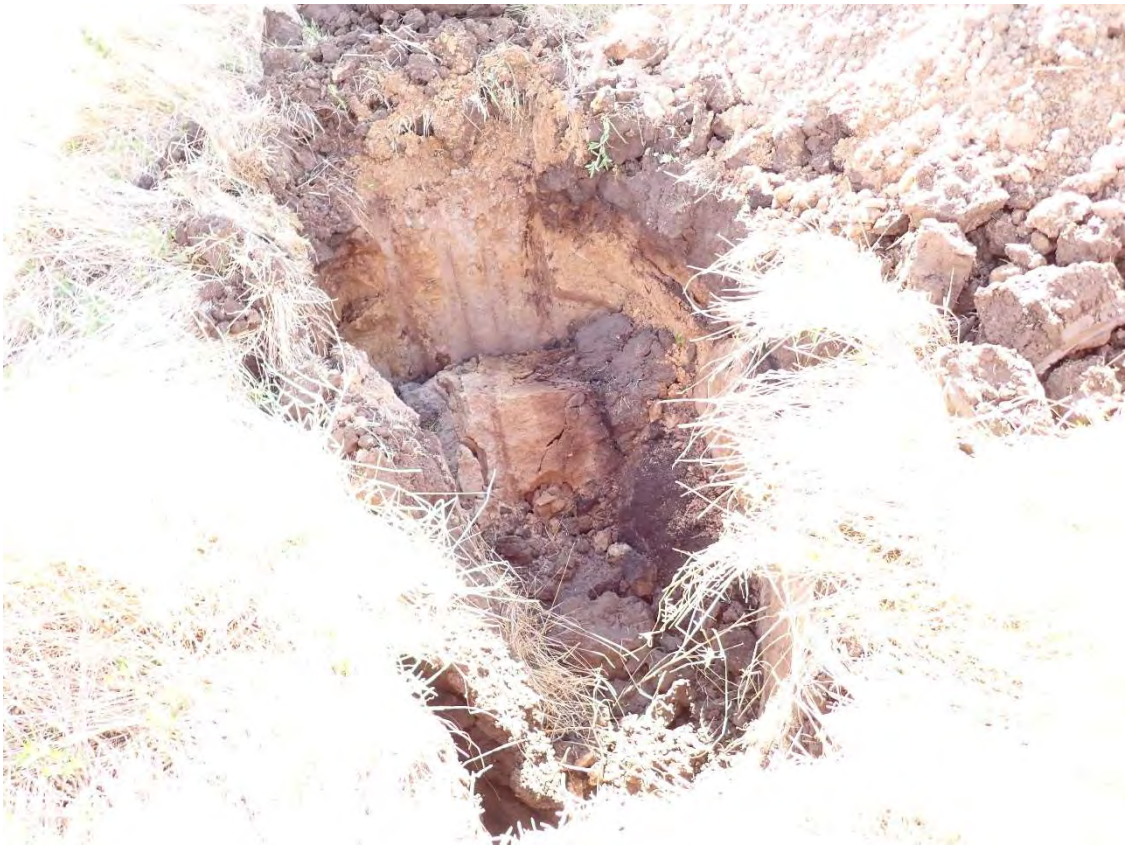
General shot of deposits in TP46

Section through deposits in TP46

General shot of deposits in TP47



Section through deposits in TP47

General shot of deposits in TP48

Section through deposits in TP48

General shot of deposits in TP53

Section through deposits in TP53

General shot of deposits in TP54

Section through deposits in TP54

General shot of deposits in TP55

Section through deposits in TP55

APPENDIX 7: Geophysical Survey Report 2024

magnitude surveys

Geophysical Survey Report

Lincolnshire Lakes

For

BWB Consulting

Magnitude Surveys Ref: MSSE1894

November 2024

3 Captain Street

Bradford

BD1 4HA

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Report By:

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Report Approved By:

Finnegan Pope-Carter BSc (Hons) MSc FGS

Issue Date:

26 November 2024

Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of c. 61.3ha of arable land at Lincolnshire Lakes, Lincolnshire. The survey was successfully conducted across c. 59.8ha, with c. 1.5ha unable to be surveyed due to obstructions and waste. The survey did not identify any anomalies clearly suggestive of archaeological activity. The survey has primarily identified anomalies related to the post-medieval water management of the site. These anomalies align with earthworks and drainage channels directly connected to the warping drain running to the north of the site. This type of water management might have contributed to the varied magnetic background caused by the deposition of clays and silts. Further agricultural anomalies, relating to former field boundaries and drainage regimes were also identified, in addition to anomalies of an undetermined origin.

Contents

List of Figures

1. Introduction

1.1. Magnitude Surveys Ltd (MS) was commissioned by BWB Consulting to undertake a geophysical survey over a c. 61.3ha area of arable land at Lincolnshire Lakes, Scunthorpe, Lincolnshire (SE 86507 09781).

1.2. The geophysical survey comprised quad-towed, cart-mounted GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David *et al*., 2008).

1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David *et al*., 2008), the Chartered Institute for Archaeologists (CIfA, 2020) and the European Archaeological Council (Schmidt *et al.,* 2015).

1.4. It was conducted in line with a WSI produced by MS (Stead, 2024).

1.5. The survey commenced on 7th October 2024 and took 5 days to complete. An additional 15ha was later added to the project and surveyed on 20th October 2024 and took one day to complete.

2. Quality Assurance

2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).

2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and has served as the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CIfA, has been a member of the ISAP Management Committee since 2015, and is currently the Chair of the Archaeological Prospection Community of the European Archaeological Association.

2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

3.1. The objective of this geophysical survey was to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The survey area was located c. 1km west of Scunthorpe, Lincolnshire (Figure 1). Gradiometer survey was undertaken across 7 fields of arable land. The survey area was located between the M181 motorway and the Westcliff area of Scunthorpe (Figure 2). An area of c. 1.5ha of land was not accessible for survey due to obstructions and waste.

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Flat arable field	The survey area was bordered by shallow ditches with sparse hedgerow to the north and west, a shallow ditch backing on to Brumby Common Lane to the south and no physical boundary to the east.
2	Flat arable field	The survey area was surrounded by a ditch and trackway to the north and south, and hedgerows to the west and east.
3	Flat arable field	The survey area had no physical border to the east and was bordered by hedges to the north, south and west.
4	Flat arable field	The survey area was bordered by hedges to the northwest and southeast. No physical boundary was present in the northeast. Furthermore, southern border had a trackway.
5	Flat arable field	The survey area was bordered by hedges to the northwest, east and south. A trackway bordered the area to the north and no physical boundary was present in the northeast corner.
6	Flat arable field	The survey area was bordered by trees along the northern, eastern and western borders except the southern edge. In the southern side, hard surface was present.
7	Flat arable field	The survey area was bordered by hedges along all sides.

4.3. The underlying geology comprises mudstone of the Mercia Mudstone Group across the whole survey area. Superficial deposits comprise Warp Clay and Silt across the majority of the survey area, with a small band of sand of the Sutton Sand Formation in the east of Areas 2-4 and the southeast of Area 7. A small zone of alluvial clay silt, sand and gravel was also present in the southeast of Area 7 (British Geological Survey, 2024).

4.4. The soils consist of loamy and clayey soils of coastal flats with naturally high groundwater across the majority of the survey area, with freely draining very acid sandy and loamy soils in the east of Areas 1 and 3, the north of Areas 4 and 6 and the southeast of Area 7 (Soilscapes, 2024).

5. Archaeological Background

5.1. Awaiting Background Information (DBA or other) from Client

6. Methodology

6.1. Data Collection

6.1.1. Magnetometer surveys are generally the most cost effective and suitable geophysical technique for the detection of archaeology in England. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

6.1.2. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.3. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.4. The magnetic data were collected using MS' bespoke quad-towed cart GNSS-positioned system.

6.1.4.1. MS' hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.4.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.4.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to the EAC and Historic England guidelines for 'minimally enhanced data' (see Section 3.8 in Schmidt *et al.*, 2015: 33 and Section IV.2 in David *et al.,* 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen *et al*. (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3.Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 13, 16, 19, 22 & 25). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2024) was also consulted, to compare the results with recent land use.

6.3.3. Geodetic position of results – All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

7. Results

7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible, an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports, as well as reports from further work, to constantly improve our knowledge and service.

7.2. Discussion

7.2.1. The geophysical results are presented in combination with satellite imagery and historical maps (Figures 5 & 9).

7.2.2. The fluxgate gradiometer survey responded well to the environment of the survey area and was successfully completed across most of the survey area, with c. 1.5ha unable to be surveyed due to waste materials and obstructions. The geophysical survey detected no anomalies suggestive of archaeological activity. Anomalies associated with water management, as well as those of natural, agricultural, and undetermined origins were detected across the survey area. Magnetic interference is present as disturbance and is limited to field boundaries.

7.2.3. Evidence for land and water management areas has been detected in Areas 2-7 (Figures 12, 15, 18, & 21). Historical mapping shows that warping drains crossed the survey area. The survey has detected anomalies related to the drains as well as the banks and ditches associated with them. (Figures 5 & 9). A weakly enhanced anomaly, distinct from the surrounding background was identified in the centre of Area 7 (Figures 12, 15, 18, & 21). These correspond with an area recorded on historical mapping indicating marshy ground surrounding the warping drain.

7.2.4. Multiple weakly enhanced linear anomalies have been identified within Areas 4–6 (Figures 12, 15, & 21). These anomalies correspond to mapped field boundaries visible on historical mapping (Figure 5). Within Areas 4, 5 and 7 further linear trends interpreted as drainage features have been identified.

7.2.5. Across the survey area amorphous zones have been identified (Figures 12, 15, 18, 21, & 24). These display an enhancement different from the surrounding area and is most visible in the Total Field plots (Figures 3 & 7). These features are likely related to the warping drains and controlled periodic flooding of the area.

7.2.6. Weakly and strongly enhanced anomalies of linear and curvilinear morphology were detected across the survey areas (Figures 12, 15, 18, 21, & 24). The origins of these anomalies remain undetermined, and whilst they are likely caused by natural or agricultural processes, an archaeological origin cannot be ruled out. Several outstanding discrete and rectilinear anomalies presenting a strong signal have been identified within Areas 4, 5 & 7. The rectilinear anomaly (Area 5) corresponds to an area of marshy land depicted on historical maps. The discrete anomalies in Area 4 do not correspond to any visible features on satellite imagery.

7.3.Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

7.3.1.2. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.

7.3.1.3. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.

7.3.1.4. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as 'Magnetic Disturbance'. These magnetic 'haloes' will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.

7.3.1.5. **Undetermined** – Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally distinct from those caused by ferrous sources.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Agricultural (Strong & Weak)** – Linear anomalies displaying strong and weak enhancement have been identified in Areas 4-6 (Figures 12, 15, & 21). These anomalies are suggestive of cut features containing a magnetically enhanced fill. The anomalies in Areas 5 and 6 correspond to field boundaries recorded on historical mapping, however, the two anomalies in Area 4 do not, suggesting they could be unrecorded field boundaries.

7.3.2.2. **Water Management –** A series of weakly positive curvilinear and linear anomalies have been identified in the north of Area 6 (Figure 12). These anomalies correspond to a series of embankments and ditches depicted on

historical mapping following the course of a former warping drain. Other anomalies displaying a similar enhancement are visible in the north of Areas 2-5 & 7 (Figures 12, 15, 18, & 21) and these also align with former warping drains or banking visible on historical mapping.

7.3.2.3. **Modern/ Industrial Spread (Pond) –** A diffuse amorphous anomaly is located in the centre of Area 7 (Figure 20), this anomaly is located in close proximity to another warping drain and marshy area visible on historical mapping, so is likely related to the infill of this.

7.3.2.4. **Natural (Spread) –** Across the survey area, amorphous zones of enhanced material have been identified (Figures 11-28). The survey area is situated on superficial deposits of Warp Clay and Silt, Sutton Formation Sand and alluvial clay, silt sand and gravel (see section 4.4). It is likely that these anomalies represent variations within these deposits and the underlying mudstone bedrock. Owing to the proximity of former and current warping drains visible on historical mapping and satellite imagery, it is also likely that these zones relate to variations caused by deposition of material from the warping drains.

7.3.2.5. **Undetermined (Strong) –** In the centre of Area 5 a strongly positive rectilinear anomaly has been identified (Figures 5, 6, 21 & 22). This anomaly corresponds with an area of marshy ground visible on historical mapping but is distinctly stronger than an anomaly in Area 7 located over a similar feature.

7.3.2.6. **Undetermined (Strong) –** Several strongly positive, discrete anomalies have been identified in the north of Area 4 (Figures 14 & 15). They present a distinct signal from the surrounding background. These anomalies do not correspond to any features recorded on historical mapping or in satellite imagery.

7.3.2.7. **Undetermined (Strong & Weak) –** Several anomalies of linear, curvilinear and discrete morphologies, displaying strong and weak enhancement have been identified in Area 7. These anomalies do not correspond to any features visible in either historical mapping or on satellite imagery.

7.3.2.8. **Drainage Feature –**Linear anomalies with weakly negative enhancement have been identified across Areas 4, 6 and 7 (Figures 14, 15, 23 & 24). These anomalies are orientated roughly east to west, and their morphology and enhancement are characteristic of drainage systems.

8. Conclusions

8.1. A fluxgate gradiometer survey was successfully conducted across c. 55.1ha of land at Lincolnshire Lakes, Lincolnshire. An area of c. 1.5ha was unable to be surveyed due to obstructions and waste. Modern interference in the data was present in the form of field boundaries and buried services.

8.2. No anomalies that can be confidently attributed an archaeological origin was identified.

8.3. Anomalies suggestive of land management relating to former warping drains visible on historical mapping were identified. A further anomaly relating to the infill of an area surrounding the drainage courses has also been identified.

8.4. Agricultural anomalies relating to the past historical utilisation of the survey area have been identified in the form of former mapped and unmapped field boundaries, and drainage features.

8.5. Variations in the superficial deposits likely relating to the former warping drains have been detected.

8.6. Anomalies of an undetermined origin have also been identified within the survey area. Whilst this are likely of a natural or agricultural origin, an archaeological source cannot be wholly excluded.

9. Archiving

9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.

9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to any dictated time embargoes.

10. Copyright

10.1. Copyright and intellectual property pertaining to all reports, figures and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

11. References

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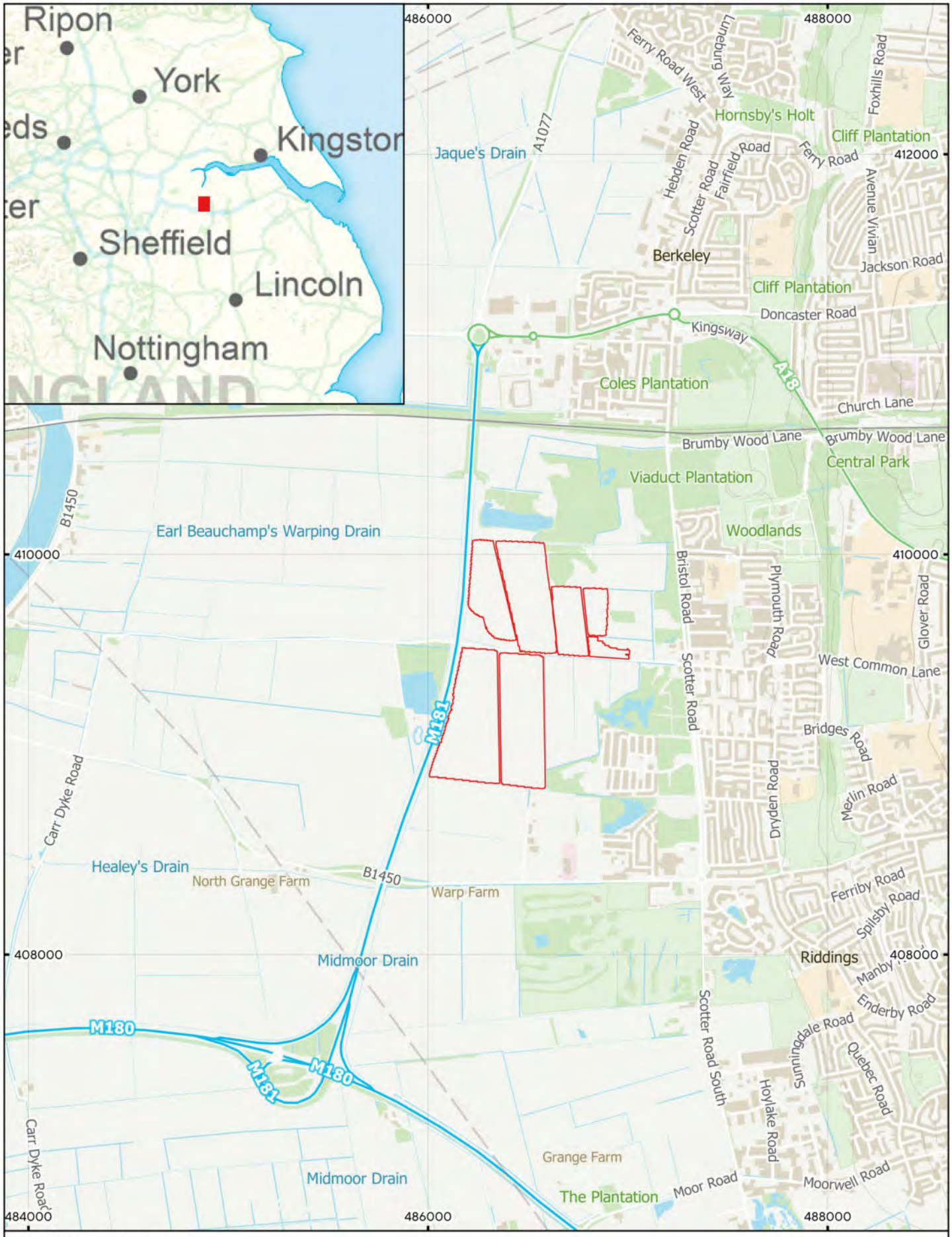
Written Scheme of Investigation for Geophysical Survey at Lincolnshire Lakes (Stead, 2024)

12. Project Metadata

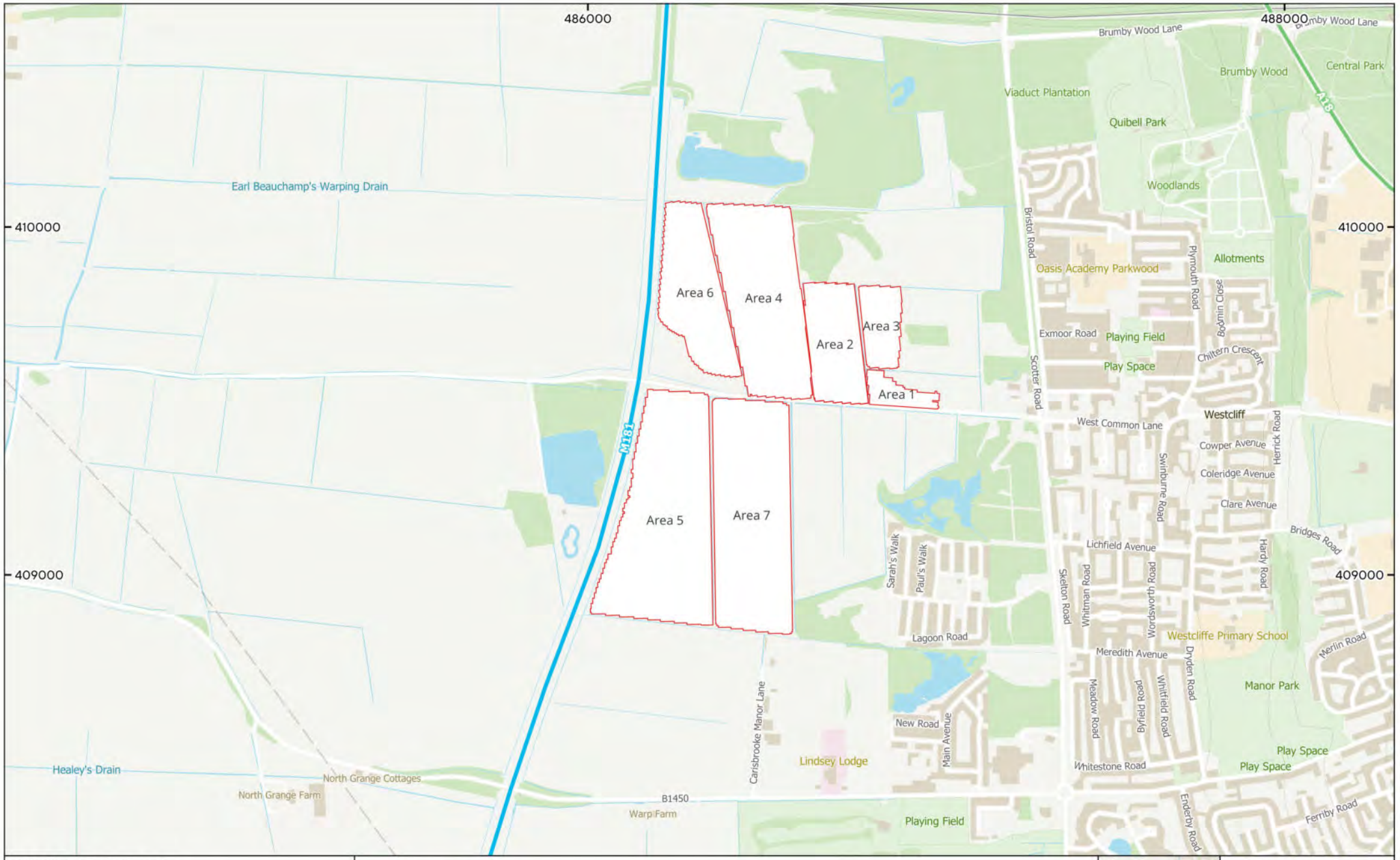
MS Job Code	MSSE1894
Project Name	Lincolnshire Lakes
Client	BWB Consulting
Grid Reference	SE 86507 09781
Survey Techniques	Magnetometry
Survey Size (ha)	61.3ha
Survey Dates	2024-10-07 to 202-10-11 and 2024-11-20 to 2024-11-20
Project Lead	Matthew Stead BA (Hons) MA
Project Officer	Matthew Stead BA (Hons) MA
HER Event No	TBC
OASIS No	TBC
S42 Licence No	n/a
Report Version	0.4

13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	ms	KD	28 October 2024
0.2	Corrections following review	MS	PSJ	01 November 2024
0.3	Addition of Deployment B	HC	MS	25 November 2024
0.4	Corrections			



MSSE1894 - Lincolnshire Lakes
Figure 1 - Geophysical Survey Location
1:25,000 @ A4

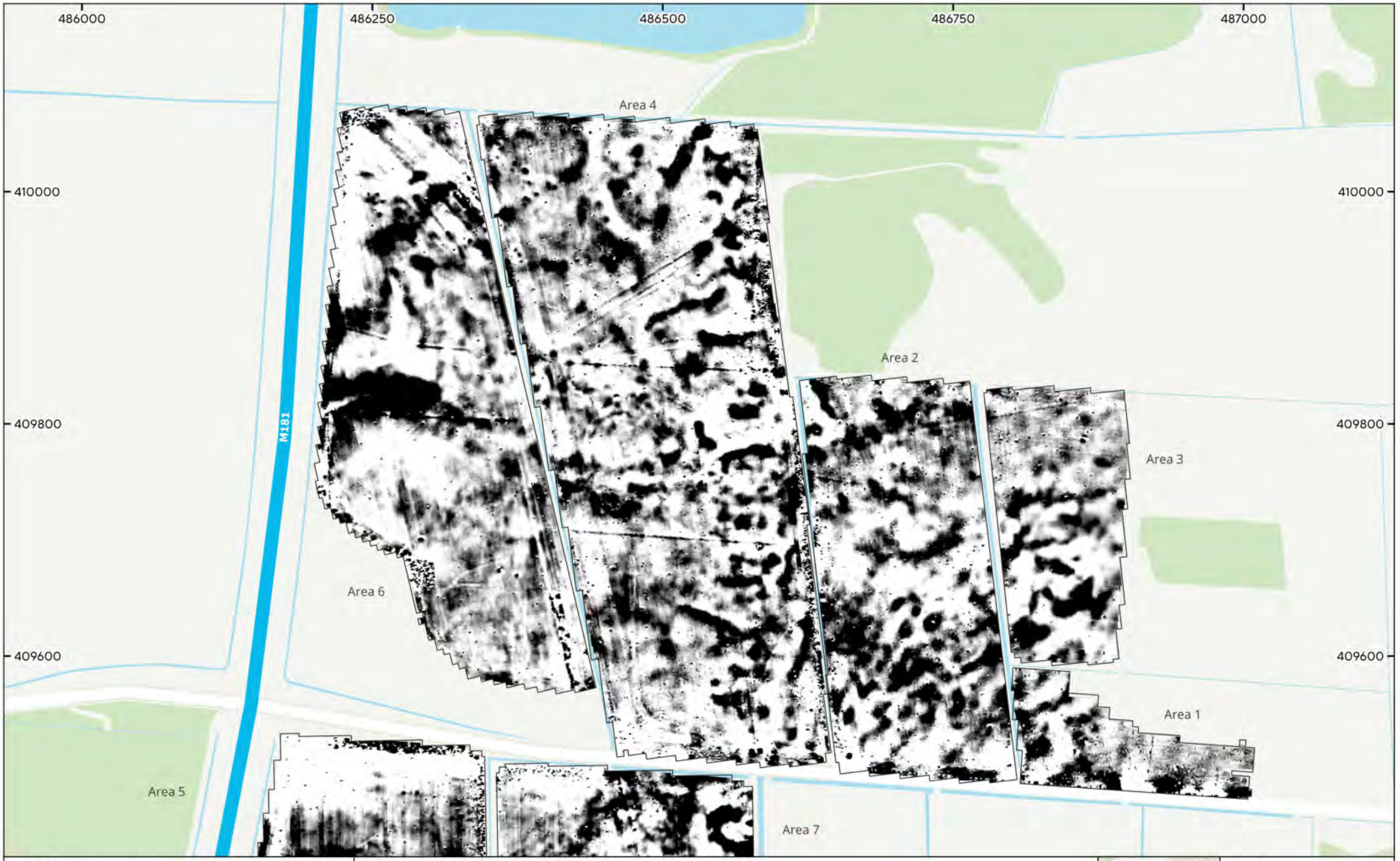


MSSE1894 - Lincolnshire Lakes
Figure 2 - Geophysical Survey Location
1:10,000 @ A3

Survey Extent

Magnitude Surveys

0 100 200 300 400 m



MSSE1894 - Lincolnshire Lakes
Figure 3 - Magnetic Total Field (Lower Sensors) (Areas 1 - 4, 5 (North), 6 & 7 (North))
1:3,000 @ A3

48,997 nT 49,005

Magnitude Surveys

0 30 60 90 120 m

MSSE1894 - Lincolnshire Lakes
Figure 4 - Magnetic Gradient (Areas 1 - 4, 5 (North), 6 & 7 (North))
1:3,000 @ A3

Magnitude Surveys

MSSE1894 - Lincolnshire Lakes
Figure 5 - Magnetic Interpretation over Historical Mapping and Satellite Imagery (Areas 1 - 4, 5 (North), 6 & 7 (North))
1:3,000 @ A3

- Agricultural (Strong)
- Agricultural (Weak)
- Magnetic Disturbance
- Ferrous/Debris (Spread)
- Natural (Spread)
- Undetermined (Strong)
- Undetermined (Weak)
- Water Management
- Data Artefact
- Drainage Feature
- Ferrous (Spike)

Magnitude Surveys

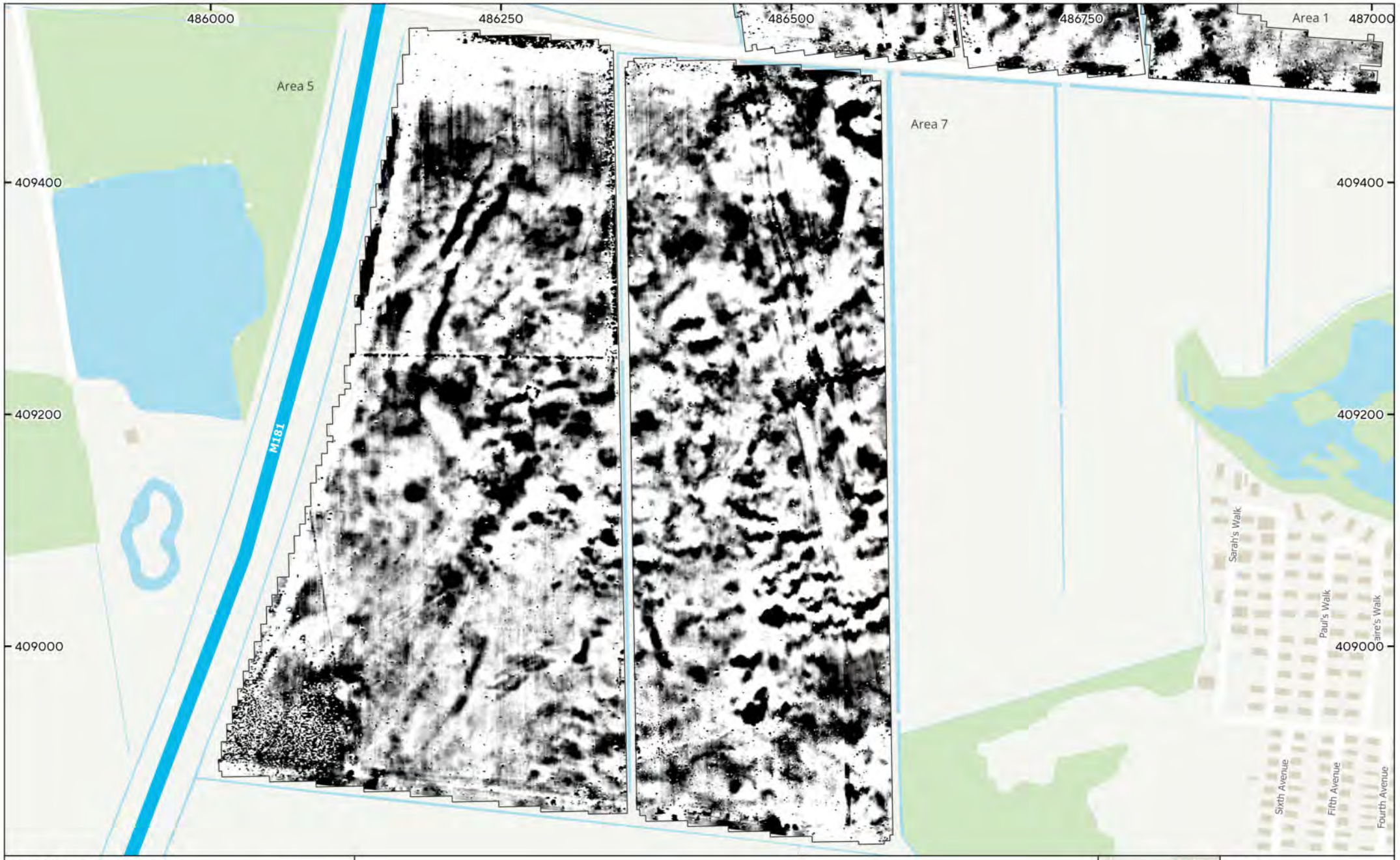
0 30 60 90 120 m

MSSE1894 - Lincolnshire Lakes
Figure 6 - GNSS Trace Plot (Areas 1 - 4, 5 (North), 6 & 7 (North))
1:3,000 @ A3

GNSS Trace

Magnitude Surveys

0 30 60 90 120 m

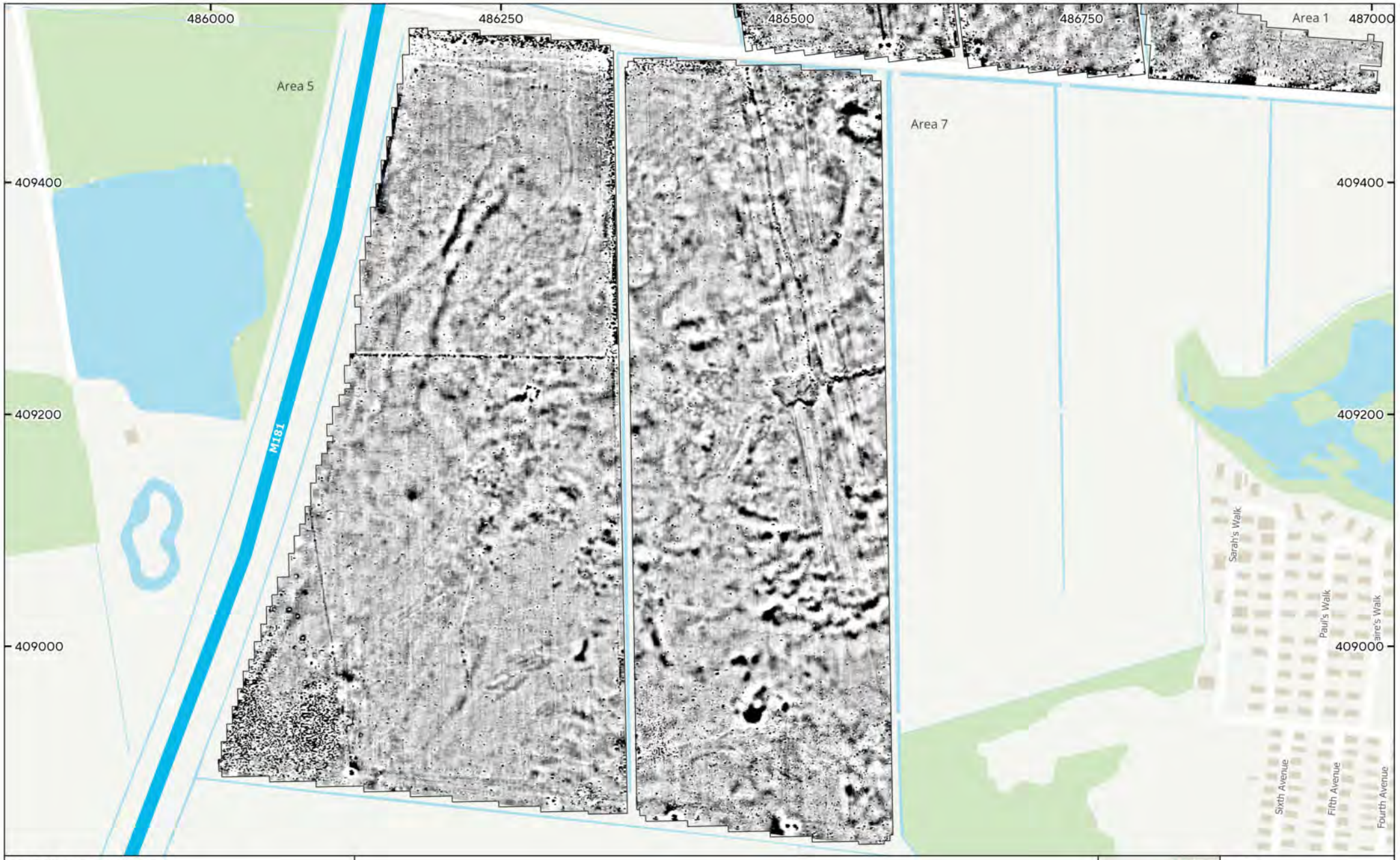


MSSE1894 - Lincolnshire Lakes
Figure 7 - Magnetic Total Field (Lower Sensors) (Area 5 & 7)
1:3,000 @ A3

48,997 nT 49,005

Magnitude Surveys

0 30 60 90 120 m



MSSE1894 - Lincolnshire Lakes
Figure 8 - Magnetic Gradient (Area 5 & 7)
1:3,000 @ A3

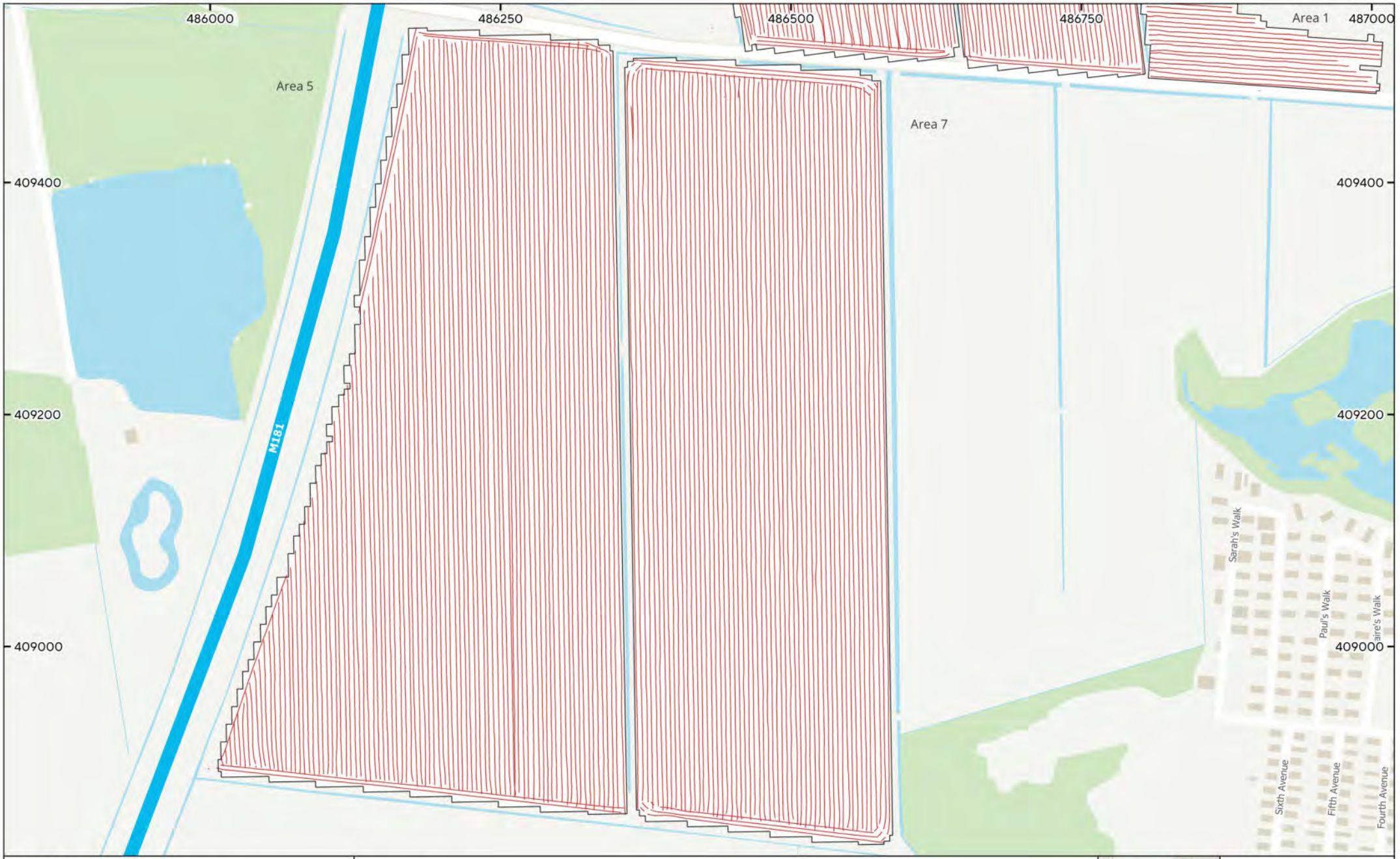
Magnitude Surveys

MSSE1894 - Lincolnshire Lakes
Figure 9 - Magnetic Interpretation over Historical Mapping and Satellite Imagery (Area 5 & 7)
1:3,000 @ A3

- Agricultural (Weak)
- Magnetic Disturbance
- Ferrous/Debris (Spread)
- Natural (Spread)
- Natural (Weak)
- Undetermined (Strong)
- Undetermined (Weak)
- Industrial/Modern (Spread)
- Water Management
- Data Artefact
- Drainage Feature
- Ferrous (Spike)

Magnitude Surveys

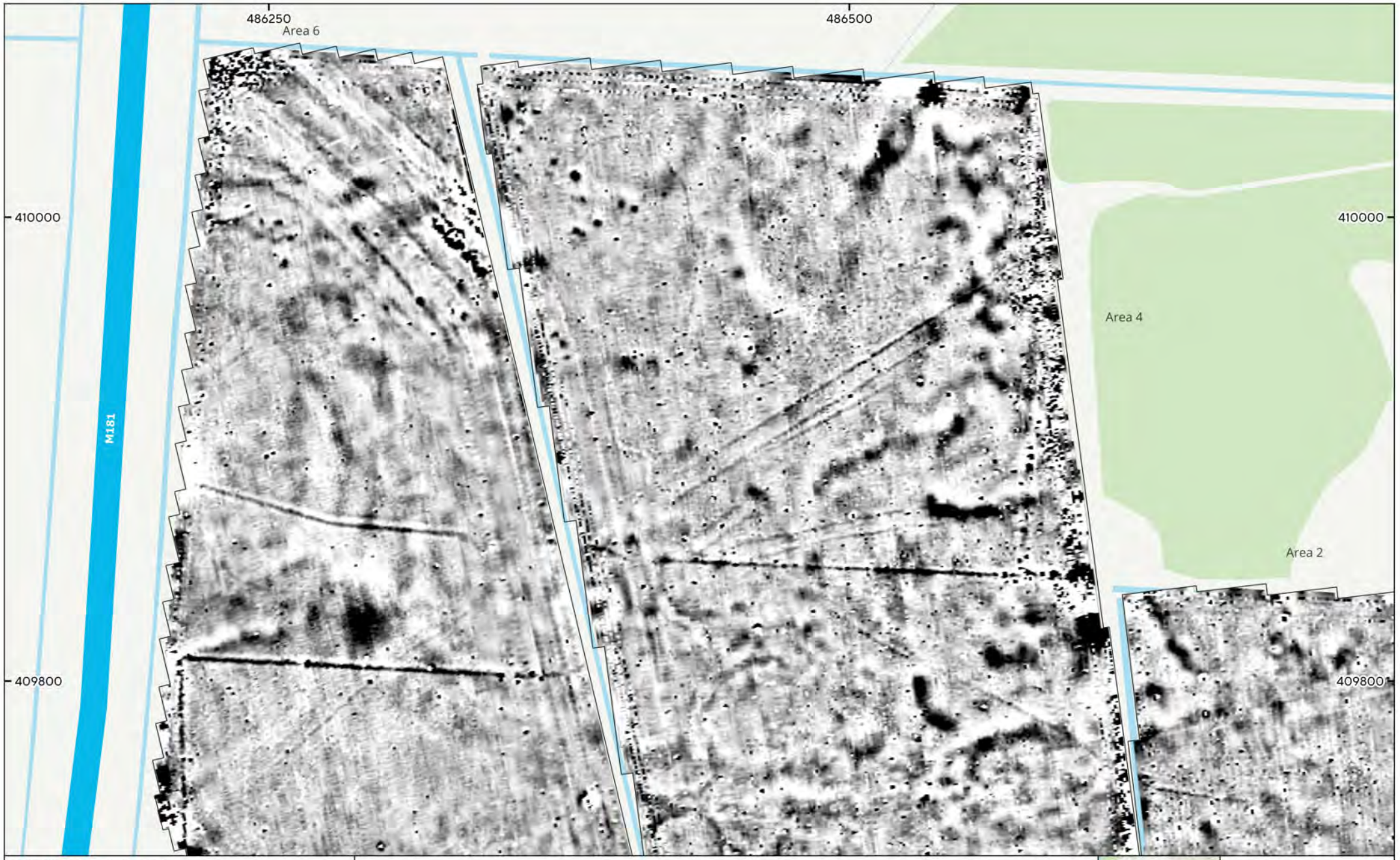
0 30 60 90 120 m



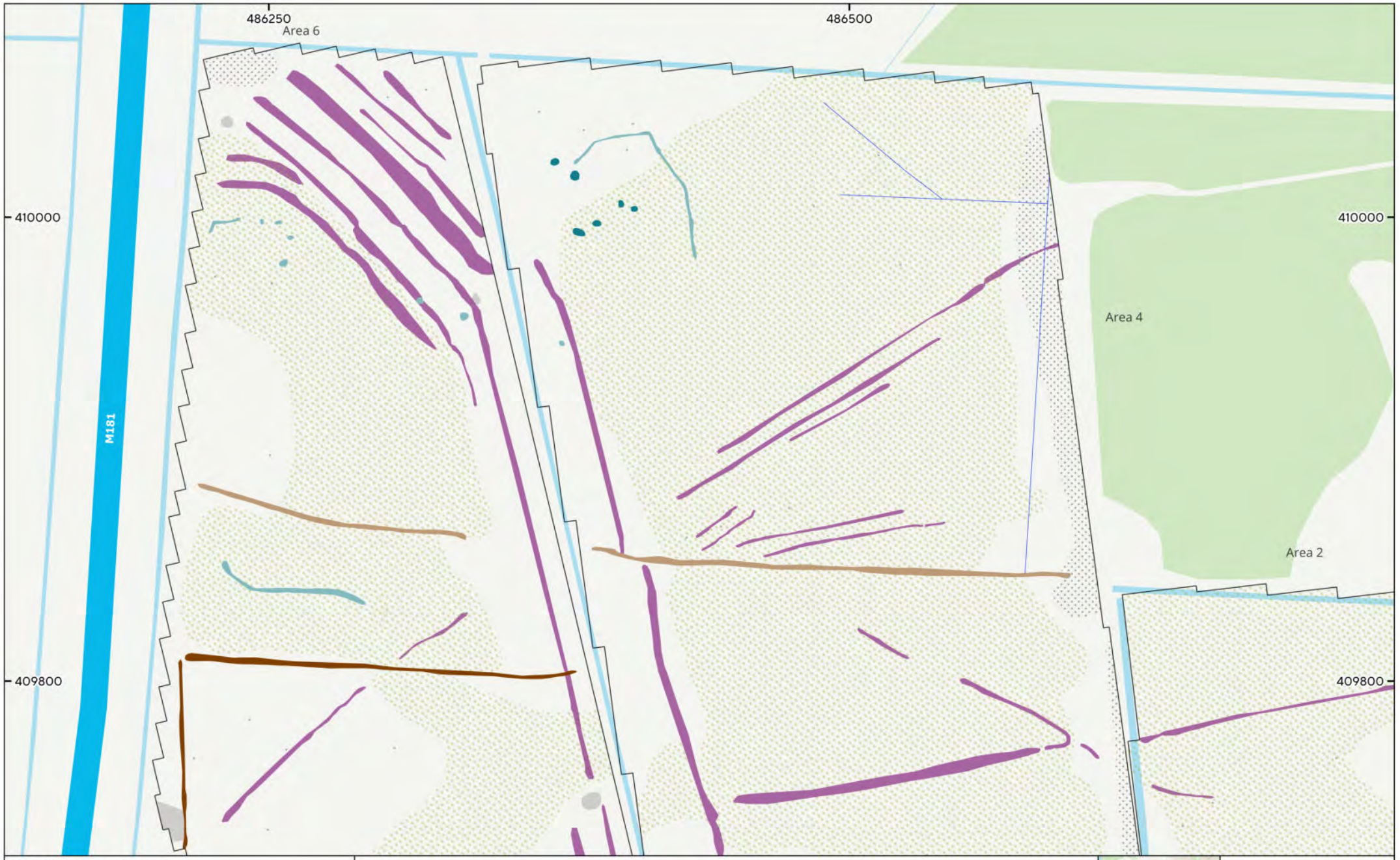
MSSE1894 - Lincolnshire Lakes
Figure 10 - GNSS Trace Plot (Area 5 & 7)
1:3,000 @ A3

GNSS Trace

Magnitude Surveys



MSSE1894 - Lincolnshire Lakes
Figure 11 - Magnetic Gradient (Areas 2, 4 & 6 (North))
1:1,500 @ A3

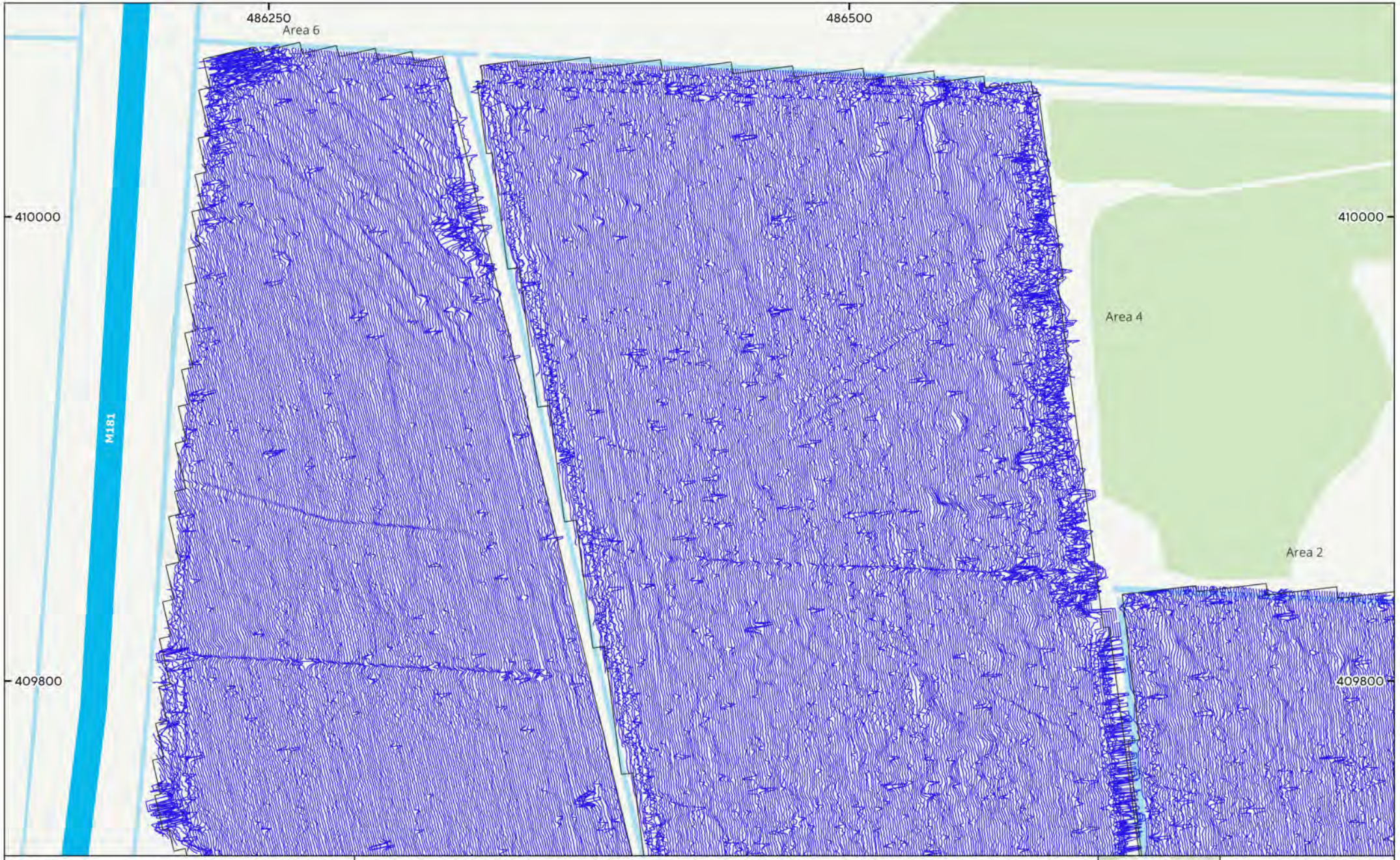


MSSE1894 - Lincolnshire Lakes
Figure 12 - Magnetic Interpretation (Areas 2, 4 & 6 (North))
1:1,500 @ A3

- Agricultural (Strong)
- Agricultural (Weak)
- Magnetic Disturbance
- Ferrous/Debris (Spread)
- Natural (Spread)
- Undetermined (Strong)
- Undetermined (Weak)
- Water Management
- Drainage Feature
- Ferrous (Spike)

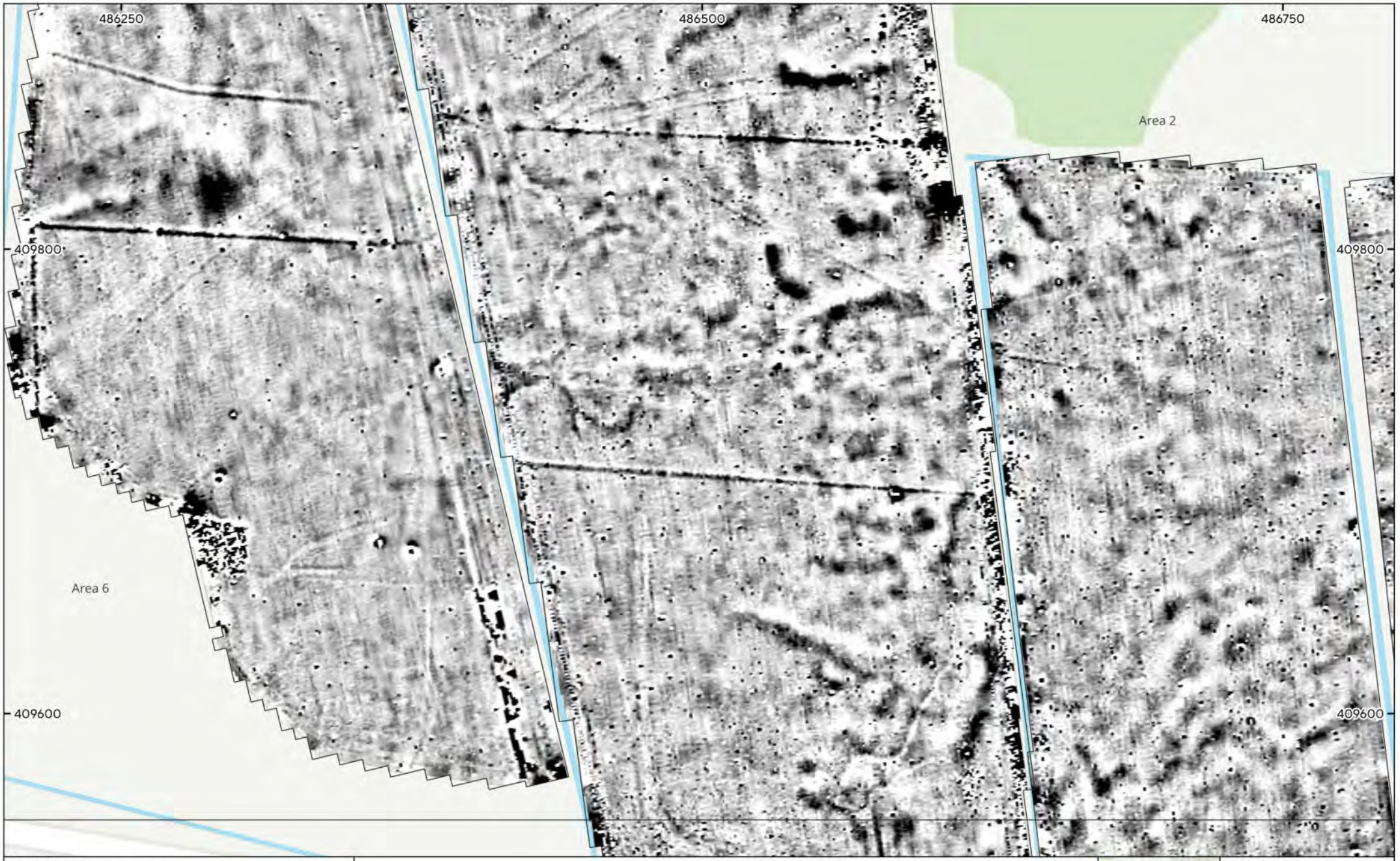
Magnitude Surveys

0 15 30 45 60 m



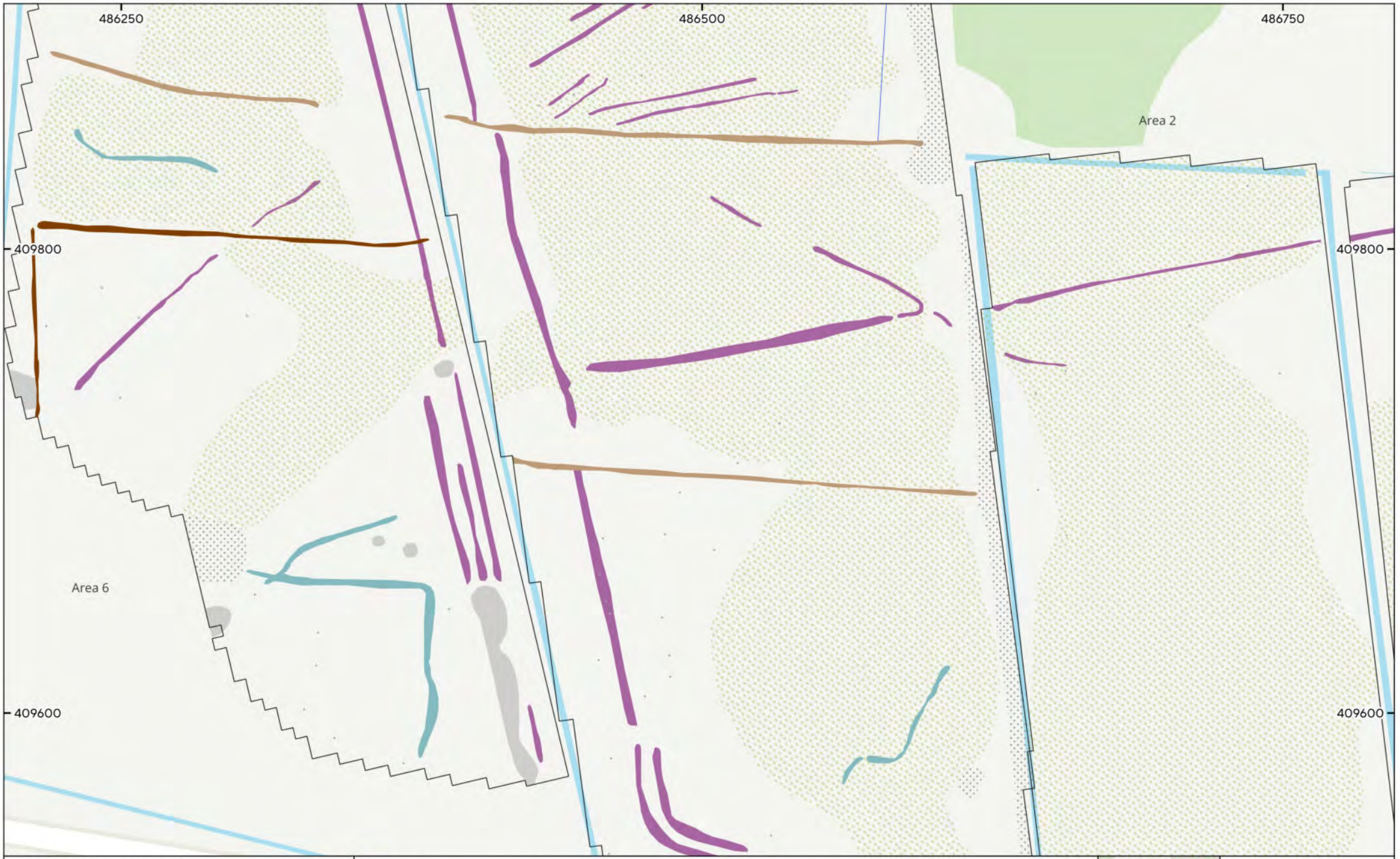
MSSE1894 - Lincolnshire Lakes
Figure 13 - XY Trace Plot (Areas 2, 4 & 6 (North))
30nT/cm at 1:1,500 @ A3

Magnitude Surveys



MSSE1894 - Lincolnshire Lakes
Figure 14 - Magnetic Gradient (Areas 2, 4 (South) & 6 (West))
1:1,500 @ A3

Magnitude Surveys

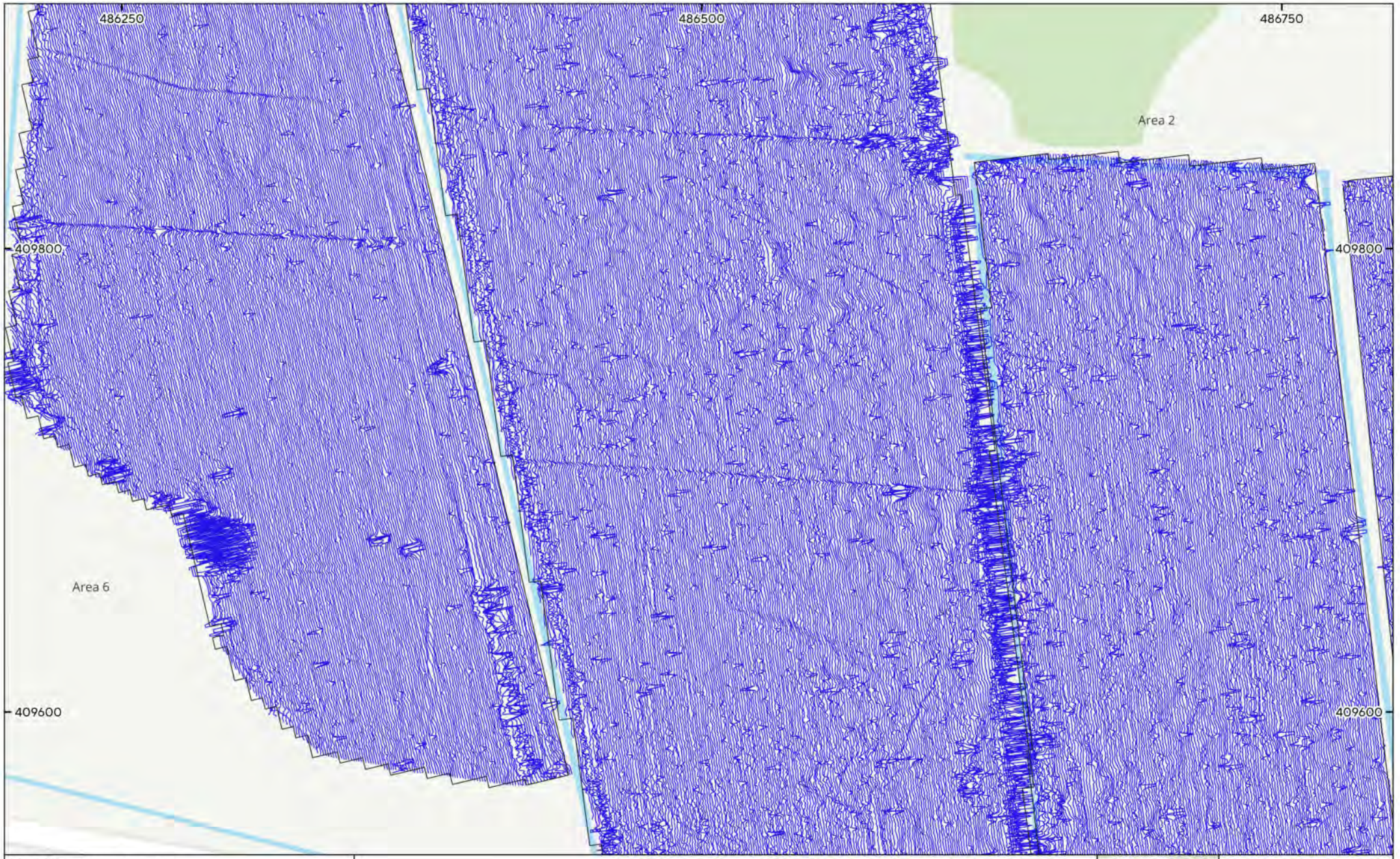


MSSE1894 - Lincolnshire Lakes
Figure 15 - Magnetic Interpretation (Areas 2, 4 (South) & 6 (West))
1:1,500 @ A3

Agricultural (Strong)
Agricultural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Natural (Spread)
Undetermined (Weak)
Water Management
Drainage Feature
Ferrous (Spike)

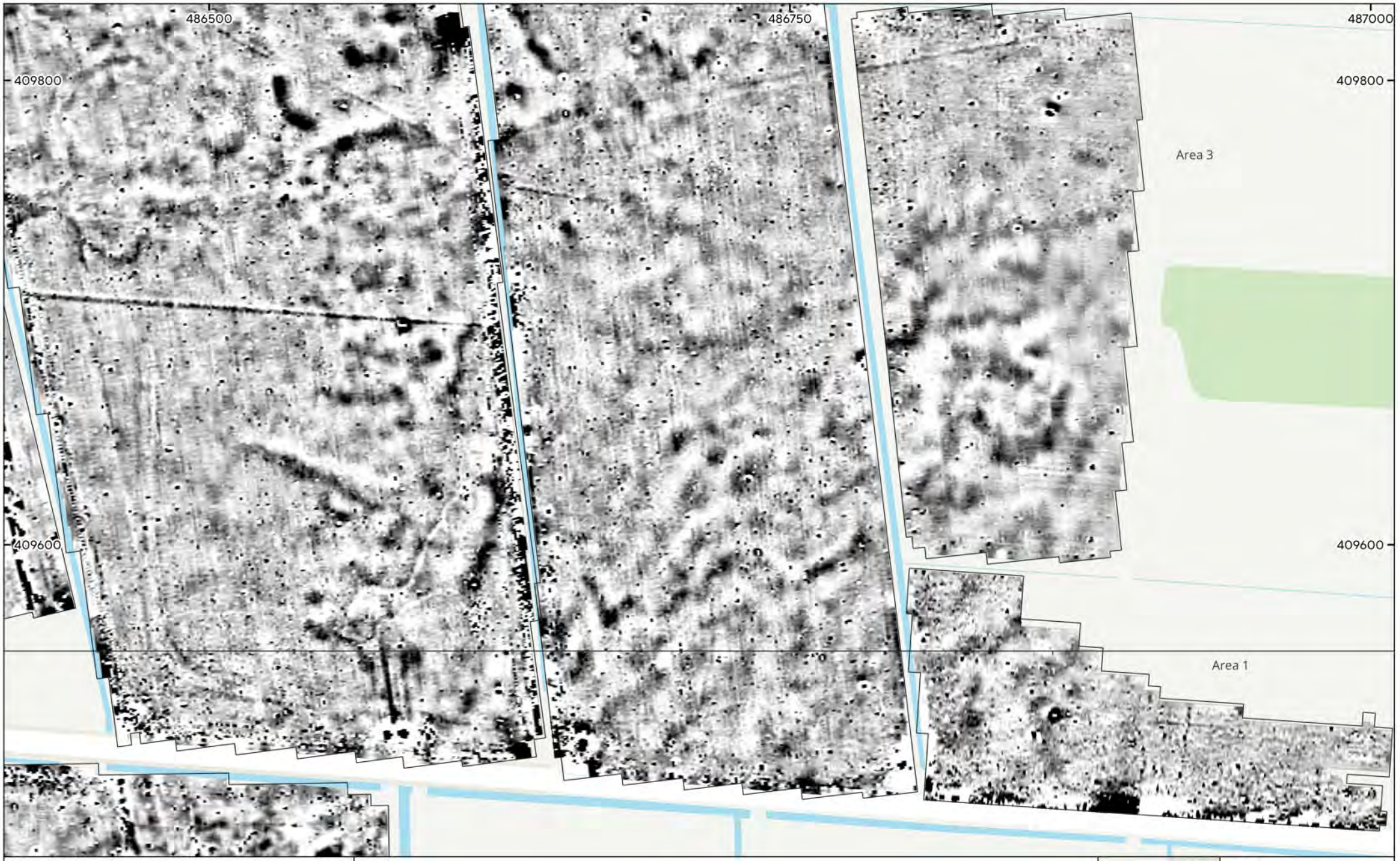
Magnitude Surveys

0 15 30 45 60 m



MSSE1894 - Lincolnshire Lakes
Figure 16 - XY Trace Plot (Areas 2, 4 (South) & 6 (West))
30nT/cm at 1:1,500 @ A3

Magnitude Surveys



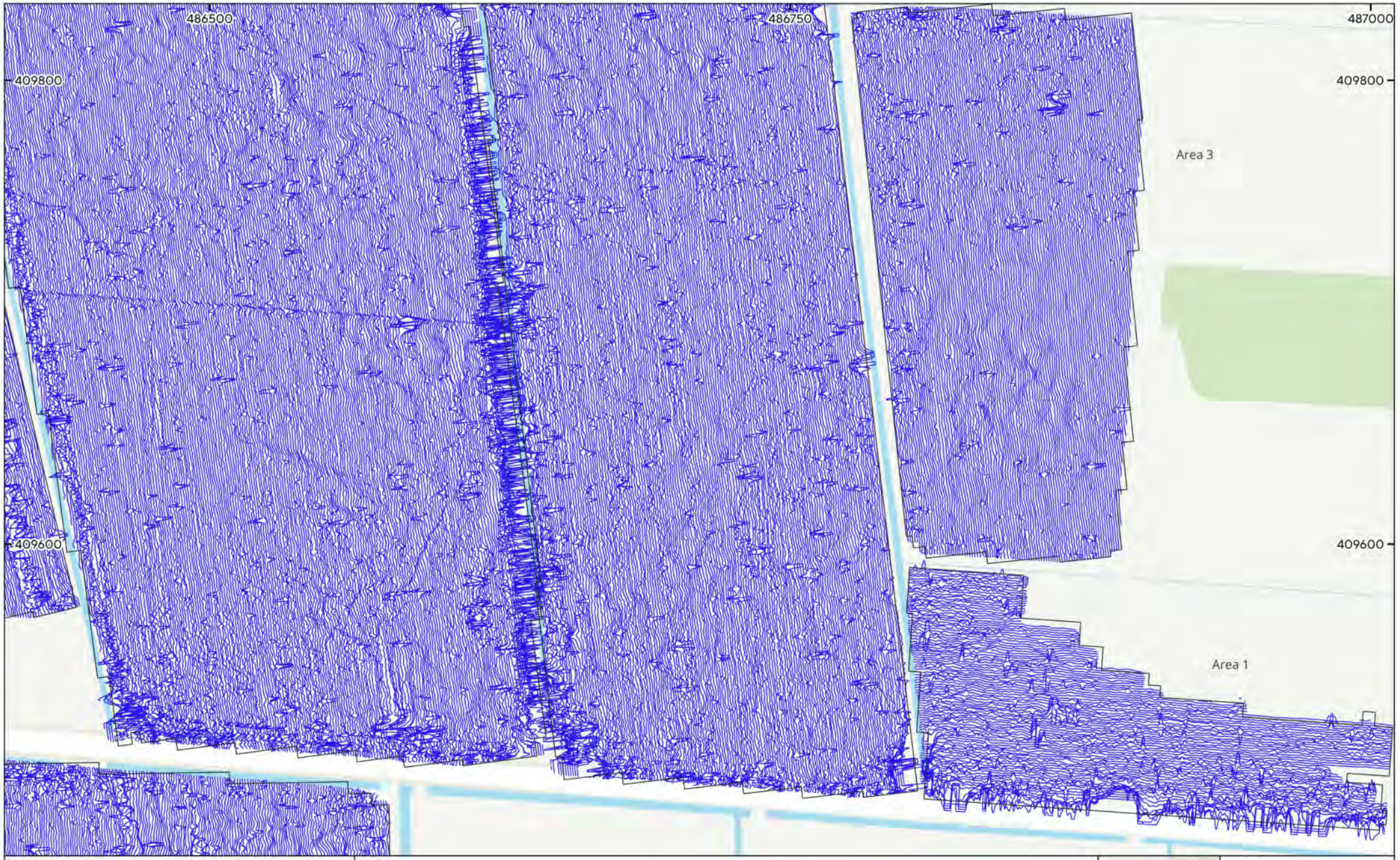
MSSE1894 - Lincolnshire Lakes
Figure 17 - Magnetic Gradient (Areas 1 - 3)
1:1,500 @ A3

MSSE1894 - Lincolnshire Lakes
Figure 18 - Magnetic Interpretation (Areas 1 - 3)
1:1,500 @ A3

Agricultural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Natural (Spread)
Undetermined (Strong)
Undetermined (Weak)
Water Management
Data Artefact
Drainage Feature
Ferrous (Spike)

Magnitude Surveys

0 15 30 45 60 m

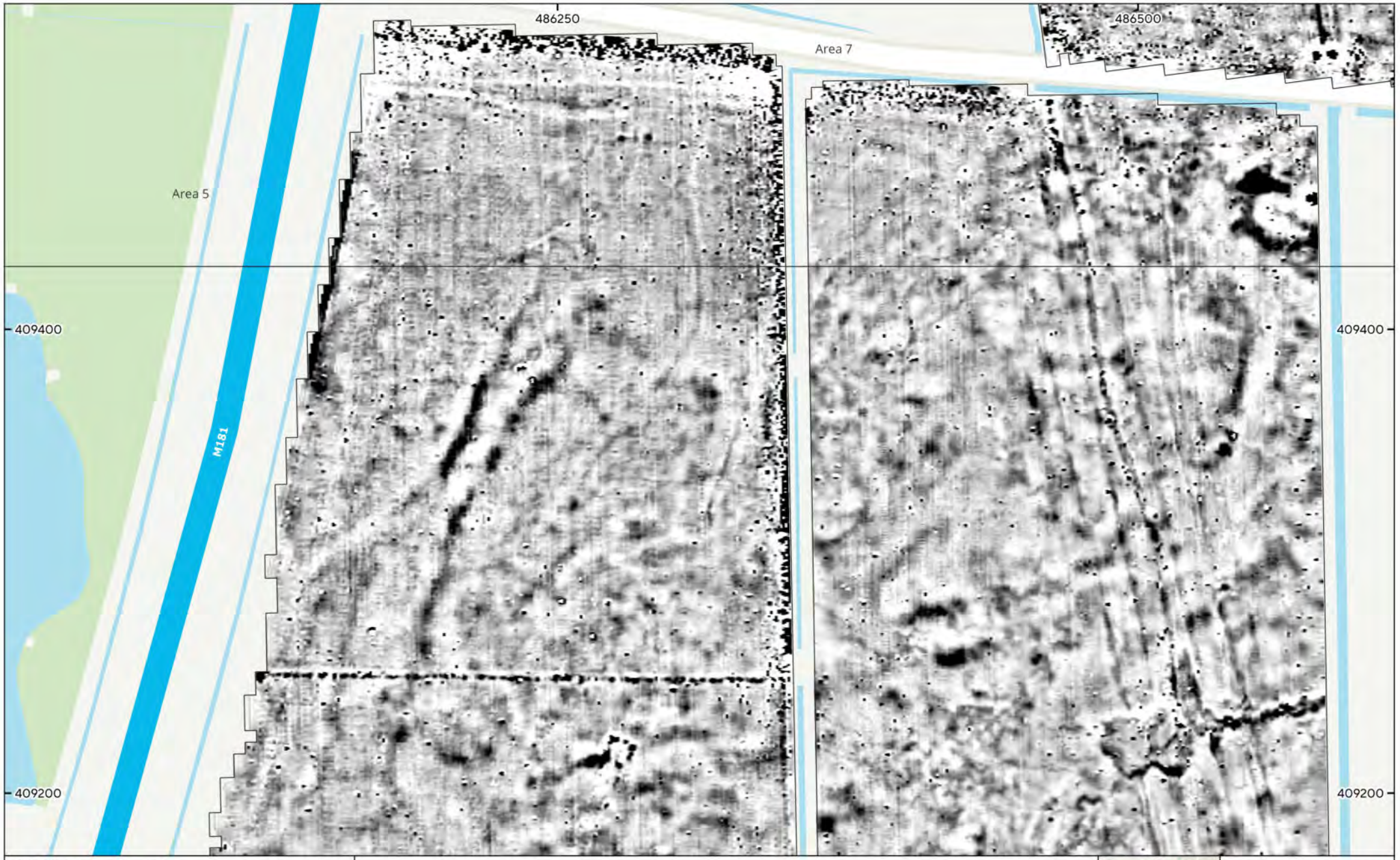


MSSE1894 - Lincolnshire Lakes
Figure 19 - XY Trace Plot (Areas 1 - 3)
30nT/cm at 1:1,500 @ A3

-1 nT 2

Magnitude Surveys

0 15 30 45 60 m

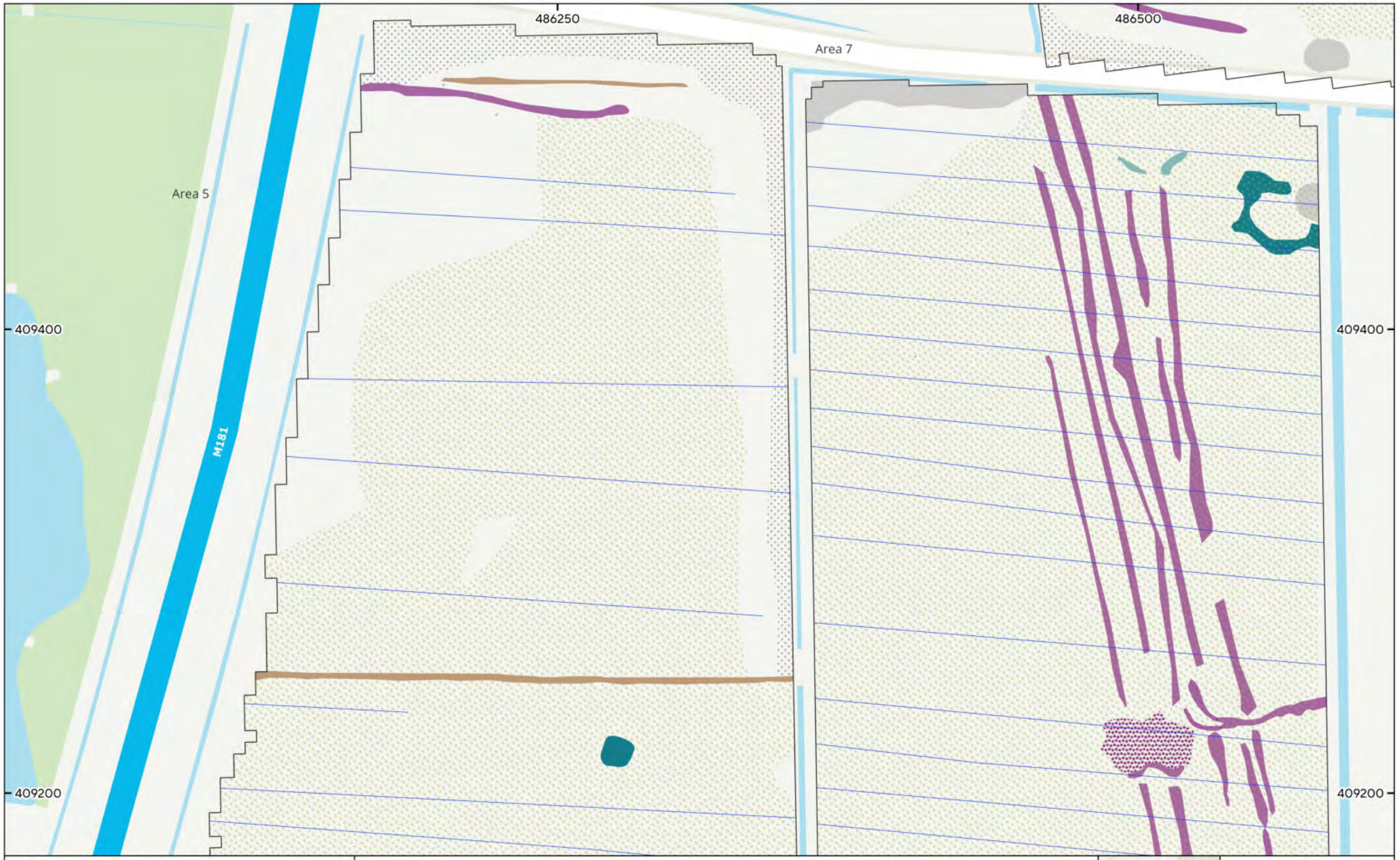


MSSE1894 - Lincolnshire Lakes
Figure 20 - Magnetic Gradient (Area 5 & 7 (North))
1:1,500 @ A3

-1 nT 2

Magnitude Surveys

0 15 30 45 60 m

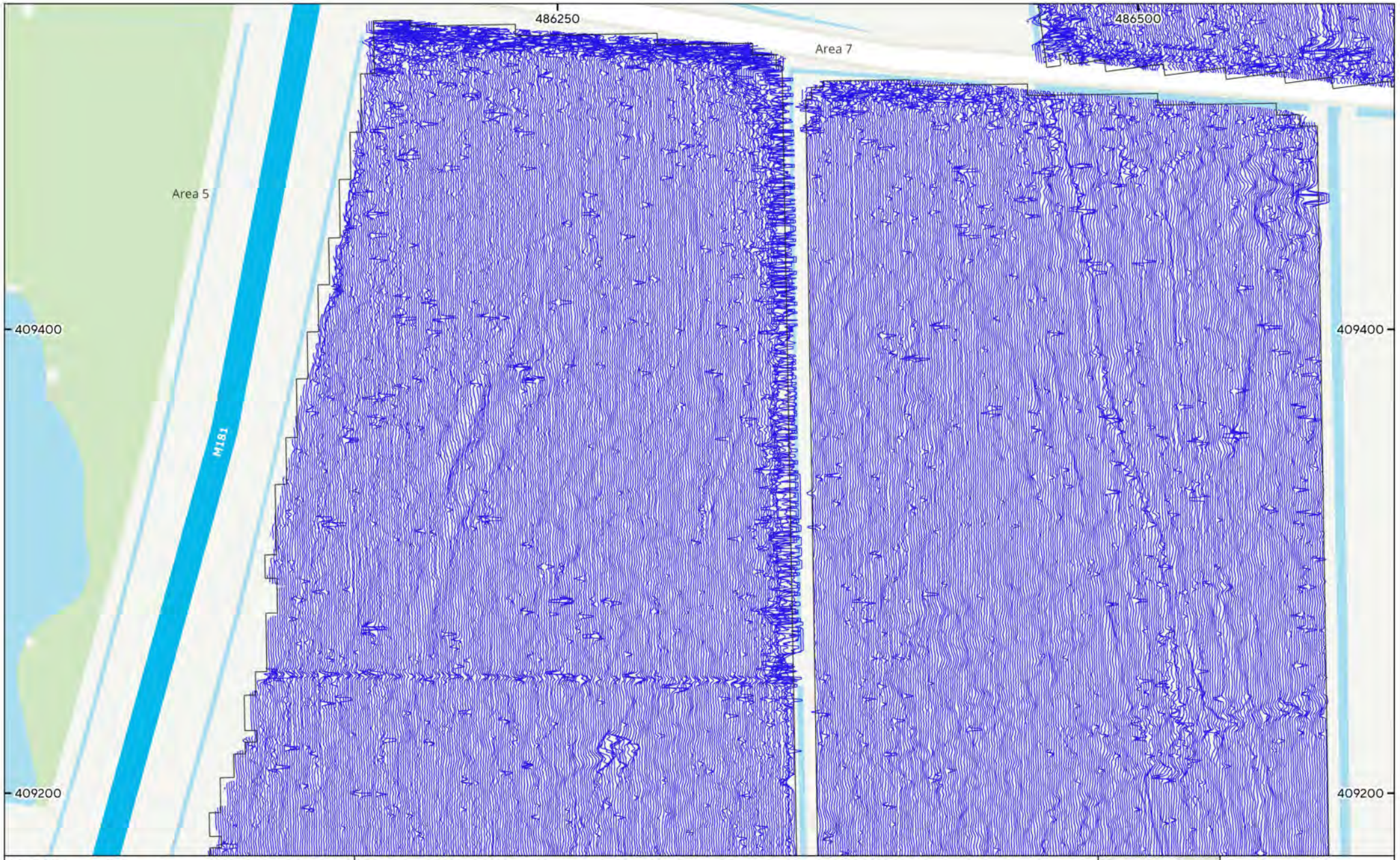


MSSE1894 - Lincolnshire Lakes
Figure 21 - Magnetic Interpretation (Area 5 & 7 (North))
1:1,500 @ A3

Agricultural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Natural (Spread)
Undetermined (Strong)
Undetermined (Weak)
Industrial/Modern (Spread)
Water Management
Drainage Feature
Ferrous (Spike)

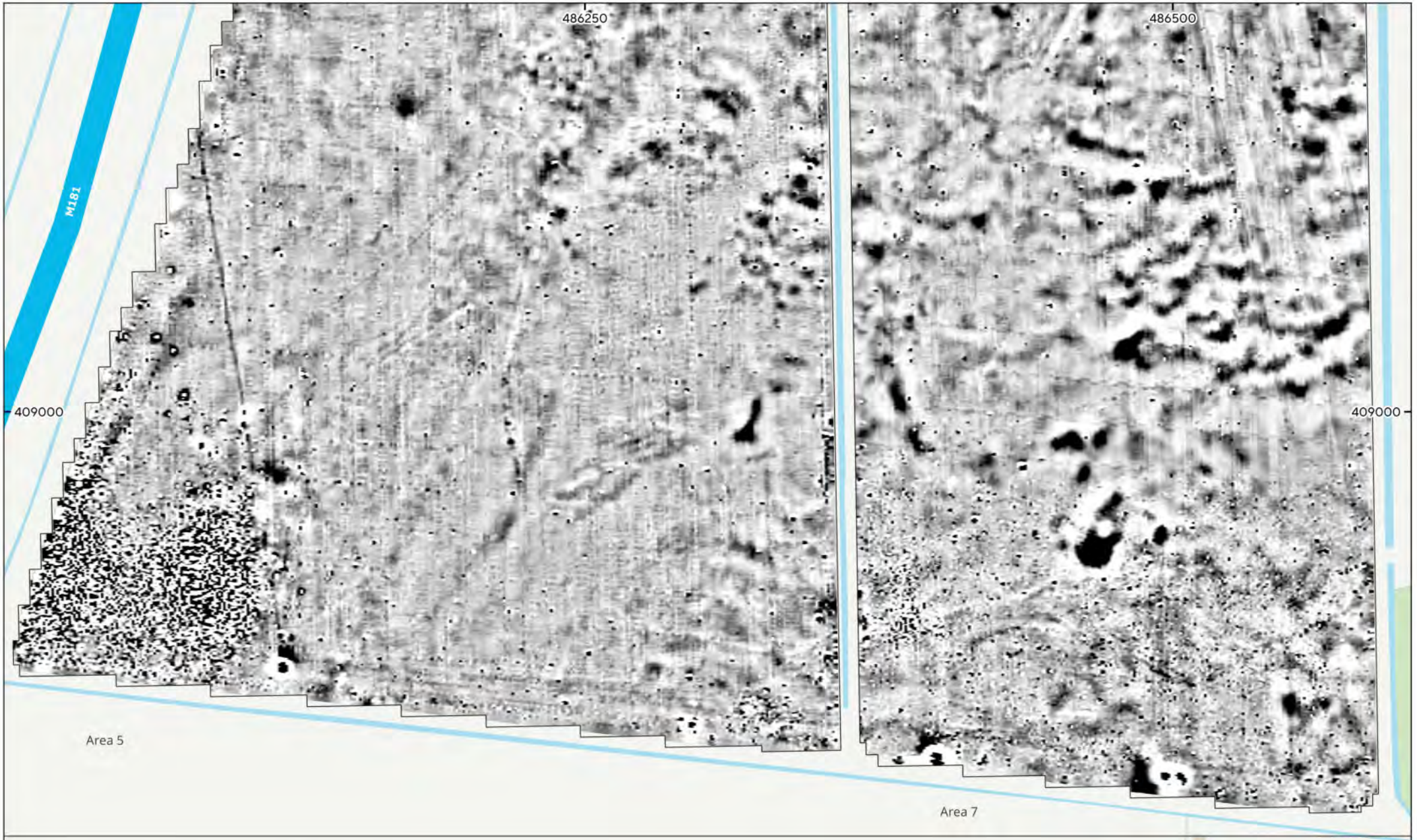
Magnitude Surveys

0 15 30 45 60 m



MSSE1894 - Lincolnshire Lakes
Figure 22 - XY Trace Plot (Area 5 & 7 (North))
30nT/cm at 1:1,500 @ A3

Magnitude Surveys



MSSE1894 - Lincolnshire Lakes
Figure 23 - Magnetic Gradient (Area 5 & 7 (South))
1:1,500 @ A3

-1 nT 2

Magnitude Surveys

0 15 30 45 60 m

MSSE1894 - Lincolnshire Lakes
Figure 24 - Magnetic Interpretation (Area 5 & 7 (South))
1:1,500 @ A3

Agricultural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Natural (Spread)
Natural (Weak)
Undetermined (Strong)
Undetermined (Weak)
Water Management
Drainage Feature
Ferrous (Spike)

Magnitude Surveys

0 15 30 45 60 m