Great North Road Solar and Biodiversity Park

Environmental Statement

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DETAILED GRADIOMETER SURVEY REPORT

LAND TO THE WEST OF A1, NORTH OF STAYTHORPE, NOTTINGHAMSHIRE

CULTURAL HERITAGE REPORT NUMBER: MSSK1485

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1 EXECUTIVE SUMMARY

The document comprises a report on detailed gradiometer surveys on the site north of Staythorpe between 1 February 2023 and 14 April 2023. Magnitude Surveys was commissioned by ERM with the aim of establishing the presence, or otherwise, and nature of detectable archaeological features to assess the archaeological potential of land parcels and their suitability for development.

A fluxgate gradiometer survey has successfully been undertaken across c. 542ha of land. The survey responded well to the environment of the survey area with a range of anomalies of archaeological, agricultural, modern and unknown origin identified throughout. Increased magnetic response was visible at field perimeters and in proximity to troughs, farming equipment, pylons, overhead cables, extant structures and buried services. In the eastern and northeastern extent of the site the survey has also identified areas of enhanced background which appear to have been caused by the spread of green waste. This type of magnetic background has the potential to obscure any weaker anomalies of anthropogenic origin, if present.

A large number of archaeological anomalies have been identified, with 7 Areas of Archaeological Activity defined by high densities of possible and probable archaeological features distributed across the survey area. The majority of these areas appear to form settlement complexes focussed on the eastern extent of the survey area in proximity to the valley of the River Trent.

Anomalies relating to the historical and modern agricultural use of the landscape are evident across the survey area in the form of ridge and furrow cultivation regimes, modern ploughing trends, mapped and unmapped former field boundaries and former ponds. Multiple anomalies indicative of modern drainage are visible across the survey area, predominately in poorly drained upland soils. A number of geological variations have been detected across the survey area that may indicate the presence of colluvial material and a change in the superficial deposits.

In addition, a number of anomalies have been classified as undetermined, these are of uncertain date and function and have little supporting context.

2 INTRODUCTION

2.1 Project Background

ERM commissioned Magnitude Surveys to conduct a geophysical survey on land to the north of A167 and the west of A1, Nottinghamshire. The survey area covers approximately 542 ha and comprise a detailed gradiometer survey intended to assess the archaeological potential of land parcels and their suitability for development. The survey area comprised Areas 108-111, 119, 121-123, 152-162, 164-170, 180-184, 248, 250, 254-256, 273, 279-280, 284-293, 295, C16-18, C22-24, C42-43, C45-49, C93-98 and C101 (Figures 2-3).

2.2 Scope of document

This report presents a brief description of the overall site details, archaeological background and methodology. This is followed by detailed survey results and the archaeological interpretation of the geophysical data for each land parcel.

3 SITE LOCATION, GEOLOGY AND TOPOGRAPHY

The following gives an overview of the site:

The site consists of multiple land parcels extending along two arms, north-east and north-west of Staythorpe, in the county of Nottinghamshire, west of the River Trent and extending from 4 km north-west of Newark-on-Trent. The north-east route of the survey is 7 km long, extending from Staythorpe and running towards the villages of North Muskam, and Cromwell. The north-west route is 11 km long extending from Staythorpe towards Kersall, and heading towards Kneesall wood.

The bedrock geology across the site is principally Mercia Mudstone[1]. Superficial deposits comprising Holme Pierrepont sand and gravel, and undifferentiated Alluvium are recorded on the western edge of the River Trent floodplain. Alluvial deposits are also recorded adjacent to Moorhouse Beck, at the northern end of the eastern route, and between Caunton and Kersall in the west.

Soils derived from the above geological parent material have been shown to produce magnetic contrasts acceptable for the detection of archaeological remains through magnetometer survey. However, in areas where thick deposits of superficial material (e.g. Alluvium) are recorded, archaeological remains may be too deeply buried to be identified through this geophysical technique[2].

The general topography varies of across the site, but the slope is generally gradual in most areas. The lowest-lying region is the area associated with the floodplain of the River Trent at the eastern extent of the survey area, which ranges between 10 and 16 m above Ordnance Datum (aOD)[2]. The minor tributaries extending west from this also occupy moderately low-lying areas (30 – 45 m aOD), between Kersall and Caunton and alongside Moorhouse Beck.

4 ARCHAEOLOGICAL BACKGROUND

4.1 Introduction

No desk-based assessment of the survey area has yet been undertaken. However, HER data for the survey site and a 1.5 km study area around the survey site has been obtained. The following gives an overview of the site, with further details presented for the individual land parcels.

[1] Geology of Britain viewer. http://mapapps.bgs.ac.uk/geologyofbritain/home.html (Accessed on 29/11/2023)
[2] United Kingdom Topographic Map. https://en-gb.topographic-map.com/maps/iu/United-Kingdom/ (Accessed 29/11/2023

4.2 Previous Investigations

There are few records of previous intrusive investigations within the site. With the exception of **ENT486**, which encountered post-medieval remains, none of the other intrusive surveys found evidence of archaeology (**ENT486**, **ENT1034**, **ENT3871**, **ENT3756** and **ENT3888**).

A detailed survey aerial photograph analysis exercise was undertaken along the route of the A1 and main settlements within the region (**ENT738** and **ENT1125**). A wealth of potential archaeological features were identified that reside within the site boundary or lie adjacent to it [3]. These are discussed in **section 4.3**.

Many archaeological surveys have been completed within the study area with concentrations found within the historic settlements of North Muskham, South Muskham, Little Carlton, Averham, and Cromwell. Some of the investigations have uncovered archaeological remains, which are discussed in **section 4.3** below.

4.3 Historical and archaeological background

4.3.1 Prehistoric

The Nottingham Historic Environment Record (NHER) holds limited evidence of Palaeolithic activity, mainly confined to Staythorpe to the south of the site, comprising the recovery of worked antler and bison bones (**MNT5596** and **MNT11139**). The only other Palaeolithic dated material is a handaxe found 1.5 km north-west of the site (**MNT4164**).

With the exception of the possible site of a Neolithic henge, all of the NHER records for the Neolithic comprise of lithic (flint) finds, with a particular concentration on land directly west of the site just north of North Muskham. The quantity of material recovered would imply a permanent presence within the landscape rather than reflecting seasonal migration of peoples. This fits with the current historical narrative, which indicates that the River Trent Valley was a focus of activity during the period[4]. However, it is possible that fine-grained minerogenic deposits of Holocene alluvium that are likely located within the floodplain of the River Trent, may have deeply buried further evidence of this.

Alluvium is recorded in the eastern part of the site, on the floodplain of the River Trent. Previous studies within the Trent valley on alluvial deposits confirmed the presence of deeply buried organic material, offering the potential for the preservation of paleoenvironmental evidence[4]. Trenching around Staythorpe Power Station identified three paleochannels that, based on recovered organic evidence, provided four dates of between 6640 ± 60 BP. Together with pollen and insect data, this show that during the latter half of the Mesolithic period, the area was a mixture of alder, willow and aspen carr, with limited grassland and a background of oak, elm, and lime on the adjacent gravel terraces. The later Mesolithic deposits also yielded a human femur and animal bones from a range of species including roe deer and aurochs.

For the Bronze Age, there is a more defined permanent presence evidenced by the construction of several barrow cemeteries (**MNT3597**, **MNT14748**, **MNT17094**, **MNT17127**, and **MNT8542;** NHLE list entry 1003492) and the identification of enclosures, hut circles/ring ditches and other features associated with land management during the aerial photography mapping exercises. These features are found on both sides of the river.

100 m to the east of the site lies the Site of Pit Alignments scheduled monument (NHLE list entry 1003493). The listing of the scheduled monument is based on the old county number

[3] Historic England, Aerial Archaeology Mapping Explorer, https://historicengland.org.uk/research/results/aerial-archaeology-mapping-explorer/ (Accessed 12/09/2022)

[4] Cooper, N (ed) 2006. The Archaeology of the East Midlands. Available at: https://researchframeworks.org/emherf/

(OCN) scheduling record and provides no further information on the pit alignment itself. The recent arial photography mapping exercise has, however, identified further pits around the scheduled monument (**MNT17099**). Although the pits have not been intrusively investigated, such features are typically of late prehistoric origin, although their use remains poorly understood[5].

The exploitation of the River Trent Valley becomes clearer with the transition into the Iron Age. Several settlements, including a scheduled monument (NHLE list entry 1003494), have been found close to South and North Muskham (**MNT17097**, **MNT14313**, **MNT17091**, **MNT11991**, and **MNT14315**), while an isolated small riverside settlement was found near Cromwell (**MNT25849**). The Cromwell barrow cemetery also remained in use during the Iron Age (**MNT15145**). In addition to the above, the aerial mapping exercises have also recorded a plethora of field enclosures, boundaries, pit alignments, hut circles/ring ditches, and linear features that may be of late prehistoric origin. Overall, there is a wealth of evidence that shows that this part of the River Trent Valley was heavily settled and exploited during the Iron Age.

4.3.2 Romano-British

Based on the current evidence, the Romano-British period is marked by a general abandonment of the earlier settlement pattern and establishment of new settlements within the landscape. The land around South Muskham, North Muskham, and Little Carlton continued to be the focus for habitation with seven settlements discovered (**MNT17089**, **MNT17090**, **MNT8243**, **MNT8265**, **MNT17098**, **MNT8290**, and **MNT14318**). However, similar levels of activity appear around Cromwell with a possible Romano-British villa located 430 m to the east of the site and an extra-mural settlement, designated a scheduled monument (NHLE list entry 1003490), discovered 60 m west of the site.

Four of the settlements discussed above fall within the site (**MNT8243**, **MNT8265**, and **MNT17089**), including the Scheduled settlement discussed above (NHLE list entry 1003490). However, the aerial mapping exercises also identified a large number of regular enclosures which could be of Romano-British origin within the site's boundaries.

4.3.3 Anglo-Saxon

The Domesday Book of 1086 can be used to identify settlements that existed prior to the Norman Conquest. South Muskham, North Muskham, Little Carlton, Cromwell, Kneesall (referred to as 'Cauton'), Kelham, and Averham, all of which sit with the 1.5 km study area, are documented as being in existence in 1066 and would have had their origins in at least the Late Anglo-Saxon period.

Most of the NHER records relate to finds recovered during fieldwalking exercises completed on the fields that surround known Anglo-Saxon centres, such as North Muskham and South Muskham (**MNT11098**, **MNT11050**, **MNT11732**, **MNT11047**, **MNT8286**, **MNT2881**, **MNT11042**, and **MNT3098**) and Kneesall (**MNT12174**, **MNT8556**, **MNT17128**, and **MNT12172**). The recovery of the material helps define the main areas of activity during the period showing that landscape use may have been confined to the immediate hinterland of known settlements.

4.3.4 Medieval

The medieval period is characterised by an intensification in settlement activity and landscape use within the River Trent valley. The NHER has mapped many former medieval villages/hamlets located in the study area, most represented as shrunken or deserted villages, alongside known sites of medieval manors and deer parks (some of the manor sites are designated as Scheduled Monuments). One of these, the medieval deserted village of Little Carlton, which is a scheduled monument, falls partially within the site (**MNT14312**; NHLE list entry 1019870).

Similar to the proceeding periods, most of the archaeological evidence for medieval activity takes the form of finds recovered during fieldwalking exercises. While the material could reflect further areas of settlement, it was common practice to add pottery to fields as part of the arable farming regime. This data at least shows a wider utilisation of the study area for agricultural uses, and it is possible that some of the features identified during the aerial mapping exercises are of medieval origin.

4.3.5 Post-medieval and Modern

The post-medieval period was a time of continuity and development for the River Trent valley. Until the passing of Enclosures Acts, much of the landscape was not too dissimilar to what had been created during the medieval period. The medieval interspersed settlement pattern remained with the local peoples still relying on agriculture for employment. However, the period was also marked by the rise of the landed gentry and development of large estates. Within the study area are four parks of varying size associated with an existing or former large country house, and include Ossington Hall (**MNT26679**), Kelham Hall (**MNT26671**), Averham Park (**MNT26653**), Winkburn Park (**MNT26694**), and Beesthorpe Hall (**MNT26658**).

Of the parks discussed above, Averham Park falls within the site (**MNT26653**). The park is first shown on Chapman's map of 1774 and was described in 1835 as "park which was heretofore an ornament to the neighbourhood, and a splendid appendage to the mansion ... on it remains the keeper's house and a few of the park fence". Little is known of the original layout of the parkland as Chapman's map is of limited detail and later Ordnance Survey (OS) mapping shows the land as fields. Lost parkland features may fall within the site.

According to the NHER, two brick yards fell within the site. The first brick yard is located south-west of Little Carlton and was created during the post-medieval period (**MNT14403**). After it fell out use, woodland was planted over the brick yard, which is first shown on the 1st edition OS map. The second brick yard is of modern date and located northeast of Upton (**MNT14432**). The brickworks fell out of use by 1915.

Post-medieval mapping shows that the site was located within post-enclosure field systems by the end of the 19th century. Few changes have occurred to the field system since. In the study area, the main changes illustrated comprise the construction of the Great Northern Railway line, development of industrial sites and expansion of the villages/settlements.

The majority of the NHER records of post-medieval and modern date relate to former or existing structures found throughout the study area. They comprise of farmsteads, residential buildings, structures associated with the railway, estate structures, and former industrial sites.

4.3.6 Undated

As discussed above, aerial mapping exercises have identified a large number of cropmarks/features within the study area, many of which fall within the site's boundaries. The NHER entries for each designated set of cropmarks provided little detail about them, other than their general shape and form (i.e., regular enclosures, hut circles, linear etc). Apart from the hut circles/ring ditches, which are associated with prehistoric settlement practices, the rest of the cropmarks/features could be of any date prior to the establishment of the post-enclosure field systems.

5 METHODOLOGY

5.1 Introduction

The geophysical survey was undertaken between 1 February 2023 – 14 April 2023. An overall coverage of 542 ha was achieved.

The methods and standards employed throughout the geophysical survey conform to that set out in the Written Scheme of Investigation[6] (WSI), as well as to current best practice, and guidance outlined by the Chartered Institute for Archaeologists[7] and European Archaeologiae Consilium[8].

5.2 Aims and objectives

The aims of the survey comprise the following:

- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices; and
- To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

In order to achieve the above aims, the objectives of the geophysical survey are:

- To conduct a geophysical survey covering as much of the specified area as possible, allowing for on-site obstructions;
- To clarify the presence/absence of anomalies of archaeological potential; and
- Where possible, to determine the general nature of any anomalies of archaeological potential.

5.3 Fieldwork Methodology

The magnetic data were collected using Magnitude Surveys' bespoke quad-towed cart system and hand-carried GNSS-positioned system.

MS' cart and 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.

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.

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] ERM, 2022 Written Scheme of Investigation: Geophysical Survey Land to the West of A1, North of Staythorpe, Nottinghamshire. Report ref. 22036

[7] Chartered Institute for Archaeologists [CIfA] 2014a Standards and guidance for archaeological geophysical survey. Reading, CIfA

[8] Schmidt, A, Linford, P, Linford, N, David, A, Gaffney, C, Sarris, A and Fassbinder, J. 2015 Guidelines for the use of geophysics in archaeology: questions to ask and points to consider. EAC Guidelines 2, Belgium: European Archaeological Council.

5.4 Data processing

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[9].

Further details of the geophysical and survey equipment, methods and processing are described in **Appendix 1**.

6 DATA PRESENTATION

This report presents the gradient of the sensors' total field data as greyscale images, [as well as the total field data from the upper 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 114, 117, 120, 123, 126, 129, 132, 135, 138, 141 and 144). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

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 was also consulted, to compare the results with recent land use.

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 LAND PARCELS 108-111, 119, 121-123, 152-162, 164-170, 180-184, 248, 250, 254-256, 273, 279-280, 284-293, 295, C16-18, C22-24, C42-43, C45-49, C93-98 AND C101

7.1 Site details

A detailed gradiometer survey was carried out over Areas 108-111, 119, 121-123, 152-162, 164-170, 180-184, 248, 250, 254-256, 273, 279-280, 284-293, 295, C16-18, C22-24, C42-43, C45-49, C93-98 and C101, (centred on NGR SK 75388 55305) (**Figures 2-3).**

The lowest-lying region is the area associated with the floodplain of the River Trent at the eastern extent of the survey area, which ranges between 10 and 16 m above Ordnance Datum (aOD)[9]. The minor tributaries extending west from this also occupy moderately low-lying areas (30 – 45 m aOD), between Kersall and Caunton and alongside Moorhouse Beck.

7.2 Detailed gradiometer survey results

The detailed gradiometer survey was carried out on 1 February 2023 – 14 April 2023 and covered 524ha. The survey has identified seven areas of archaeological activity.

Results are presented as a series of greyscale plots and archaeological interpretations, at a scale of 1:3000 (**Figures 4-111**). The interpretation of the datasets highlights the presence of potential archaeological anomalies, ferrous, burnt or fired objects, and magnetic trends. Detailed figures presenting Areas of Archaeological Activity (AAA) at a scale of 1:1,500 have also been created (**Figures 112-144**).

[9] United Kingdom Topographic Map. https://en-gb.topographic-map.com/maps/iu/United-Kingdom/ (Accessed 29/11/2023

7.2.1 Area of Archaeological Activity 1: Archaeology and Possible Archaeology

- Located in Areas 254 and 256 numerous linear, rectilinear and curvilinear anomalies have been detected **[254a] [256a]** (Figures 112-114). These anomalies display strong and weak magnetic enhancement, with **[256a]** having a stronger enhancement. The anomalies **[256a]** are comprised of numerous rectilinear anomalies abutting an east-west trending linear anomaly. In the western section of this cluster of anomalies the abutting anomalies appear to form a series of enclosures with internal divisions and discrete anomalies that might be suggestive of possible pits and hearths. Within these rectilinear anomalies, gaps in the signal are present which are suggestive of entranceways. Further to the west linear anomalies appear to form larger partial rectilinear enclosures that are suggestive of field divisions. However, their full extent cannot be identified due to their truncation by former ridge and furrow regimes and field drains. Located c. 210m to the west, a series of weak curvilinear anomalies have also been identified. These anomalies **[254a]**, which have a similar alignment to **[256a]** have also been interpreted as partial enclosures, however due to their faint magnetic signal and the presence of enhanced drains a possible rather than probable classification has been assigned.

7.2.2 Area of Archaeological Activity 2: Possible Archaeology

- Located in Areas 182 and 183 a number of linear, curvilinear and rectilinear anomalies, exhibiting a weak magnetic signal, have been identified **[182a] [183a]** (Figures 115-117). The anomalies**[182a]** appear to form an open sided enclosure covering c. 1ha with internal subdivisions. Approximately 200m to the northwest, a second enclosure**[183a]** has been identified. This enclosure which has a weak magnetic signal, does not appear on any of the historical OS mapping (Figure 39). However, due to their weak magnetic signal and the presence of ridge and furrow cultivation it has been assigned a possible archaeological origin.

7.2.3 Area of Archaeological Activity 3: Archaeology and Possible Archaeology

Located in the north of Area 164 a small group of weak, linear and rectilinear anomalies have been detected **[164a]** (Figures 118-120). Some of the rectilinear anomalies form enclosures along a roughly trending east-west anomaly. To the south of **[164a]** a number of weak linear and curvilinear anomalies have been identified. These anomalies are obscured by drainage features and historical cultivation. The southernmost anomaly is characterised by the presence of two parallel anomalies running in a differing alignment to the ridge and furrow regimes. This anomaly has been interpreted as a possible partial trackway or unrecorded field boundary.

7.2.4 Area of Archaeological Activity 4: Archaeology and Possible Archaeology

- Located in Area C16 numerous rectilinear, curvilinear and linear anomalies have been detected **[C16a]** (Figures 121-123). These anomalies display strong and weak positive magnetic enhancement and roughly correspond with cropmarks seen in historical satellite imagery. The rectilinear anomalies from a series of enclosures, with the largest in the centre of Area C16, having a number of internal subdivisions. The placement of the anomalies is suggestive of an enclosure settlement. The anomalies are obscured by drainage features, a modern service as well as the magnetically enhanced background.

7.2.5 Area of Archaeological Activity 5: Archaeology and Possible Archaeology

- Located in Areas 279, 280, 288, 291 and 292 a multitude of rectilinear, curvilinear and linear anomalies have been detected **[279a] [279b] [280a] [288a] [291a]** (Figures 124-132). These anomalies display strong and weak positive magnetic enhancement and roughly correspond with a number of cropmarks seen in historical satellite imagery. Within this group of anomalies, the largest series encapsulates an area of c. 4.5ha within the centre of Area 288 and the east of Area 291, containing multiple rectilinear and linear anomalies **[288a] [291a]** (Figures 124-129). These rectilinear anomalies are roughly parallel to each other and form a ladder type arrangement, on the same orientation and possibly extending towards **[C16a]**. Within individual anomalies gaps are present which is suggestive of entranceways. These anomalies are obscured by an enhanced magnetic background, and in the south of Area 191 by historical cultivation and a modern service.
- Approximately 230m to the east, a curvilinear anomaly has been detected **[279a]** (Figures 127-132). This anomaly displays strong and weak magnetic enhancement. The nature of the anomaly's oval shape and its semi-spiral entrance is characteristic of a possible livestock enclosure.
- Further to the east in Areas 279 and 280, a number of linear and curvilinear anomalies have been detected **[279b] [280a]** (Figures 127-132). These anomalies display both strong and weak magnetic enhancement and roughly correspond with cropmarks visible in historical satellite imagery. The anomalies in Area 280 are primarily represented by two sets of parallel anomalies trending in a rough east-west orientation towards the River Trent. They have a c. 6m spacing **[280a]**, which is suggestive of a double ditch lined trackway. In Area 279, further linear and curvilinear anomalies have been identified. These anomalies, which are not recorded on the historical OS mapping appear to be obscured by the enhanced magnetic background. However, they appear to form partial enclosures and linear ditch-like anomalies. They have been given a possible archaeological classification as their full extent cannot be established due to the presence of green waste contamination within the field.

7.2.6 Area of Archaeological Activity 6: Archaeology and Possible Archaeology (Possible Settlement Activity)

- Located across Areas 119 and 123 a multitude of rectilinear, curvilinear and linear anomalies, have been detected **[123a]** (Figures 133-141). These anomalies roughly correspond with crop marks visible in historical satellite imagery. Within this group of anomalies, the largest series encapsulates an area of c. 3.5ha within the south of Areas 119 and 123, containing multiple rectilinear and linear anomalies within its bounds, representing numerous probable enclosures **[123a]** (Figures 133-135). In the centre of this group of anomalies is a linear anomaly which roughly trends east-west, which is suggestive of a trackway or a boundary. Small scale enclosures with internal divisions and possible entrances have been noted to both the north and south of it. Even though these anomalies have been obscured by a buried service and ridge and furrow cultivation their morphological characteristics suggest the presence of a large-scale settlement complex with associated trackway and field systems.
- To the north and northeast more linear, curvilinear and discrete anomalies **[119a] [119b] [121a]** have been identified in in Areas 119 and 121 (Figures 137 and 140). These anomalies which exhibit a weaker magnetic signal than **[123a]**, appear to form a series of interconnected enclosures trackways and field systems. In close proximity to these anomalies numerous linear and curvilinear anomalies have bee identified. However due to their weak magnetic signal and the lack of any morphological traits they have been assigned possible archaeological and unknown classifications.

7.2.7 Area of Archaeological Activity 7: Archaeology and Possible Archaeology (Enclosure complex)

- Located in Area 108 a series of strong positive rectilinear, curvilinear and linear anomalies forming an enclosure complex have been detected **[108a]** (Figures 142-144). These anomalies which roughly correspond with cropmarks visible in historical satellite imagery are obscured by historical cultivation and green waste enhancement. However, despite this the survey has been able to identify numerous abutting rectilinear enclosures aligned along a central square. Within these enclosures a number of linear, curvilinear and discrete anomalies have been identified which have been interpreted as internal divisions and possible pits and hearths. Approximately 360m to the southeast, an excavation identified a number of features associated with an Iron-Age and Romano-British settlement which may relate to the anomalies identified in Area 108.

7.2.8 Possible Archaeology

- Across the survey area several positive, weak, linear, curvilinear and strong, discrete anomalies have been identified (Figures 4-111). Most of these anomalies have the potential to be anthropogenic in origin, and therefore a possible archaeological categorisation has been given. These anomalies could form trackways, former field systems or parts of enclosures, yet they lack clear characteristics or context that would allow for a confident interpretation.

7.2.9 Former Field Boundaries

- Across the survey area a multitude of strong and weak linear anomalies have been identified (Figures 4-111). The majority of these roughly correspond with field boundaries recorded on 2nd Edition Ordnance Survey (OS) mapping, or with footpaths visible on satellite images. Other anomalies have been interpreted as being unmapped field boundaries due to their similarities in magnetic signal and alignment to the mapped field boundaries.

7.2.10 Historical Agriculture

- Arrangements of regularly spaced parallel weak linear and curvilinear anomalies have been identified in Areas 108, 123, 164, 167, 183, 256, 286, 291, C49 (Figures 4-111). These anomalies are indicative of ridge-and-furrow regimes following numerous different alignments, that for the most part do not align with modern field boundaries and crop directions. These anomalies are emblematic of medieval field systems, with those in Area 123 being in close proximity to the medieval village of Little Carlton, and those in Areas 164 and 167 being nearby to Averham Park. In many areas it is difficult to distinguish between ploughing trends and ridge and furrow, however, those anomalies exhibiting a characteristic parallel-S-shaped curvilinear morphology and consistent positive magnetic signal have been categorised as Historic Cultivation.
- Across the survey area (Areas 119, 152, 164, 167, 169, 170, 183, 184, 250, 255, 256, 284, 285, 286, 287, 291, 292 C23,24 C43, C46 and C101) a multitude of strong and weak linear anomalies and linear spreads of ferrous material have been identified. (Figures 4-111). The majority of these roughly correspond with field boundaries recorded on 2nd Edition Ordnance Survey (OS) mapping, footpaths or other mapped features visible on satellite images (Figures 4-111). Others have been interpreted as being unmapped field boundaries due to their similarities in magnetic signal and alignment to the mapped field boundaries.
- Located throughout the survey area are multiple spreads of strongly enhanced ferrous material (Figures 6 to 113). These spreads roughly correlate with historical features recorded on OS mapping. These include former ponds in Areas 161 and 293, the

remnants of a historical field boundary in Area 170, a small enclosed wooded area in Area 284, mapped trackways in Areas 284, 285 and 288a, and the remains of a former airfield visible on OS maps and satellite imagery in Area 285.

7.2.11 Modern Agriculture

- Located in Areas 169 and 184, a linear and discrete anomaly of varying magnetic enhancement have been detected (Figures 32-36 and 48-51). These anomalies are likely the result in changes to modern field boundaries or crop management and as such have been categorised as modern agricultural features.
- Weak linear trends have been identified across the survey area. These anomalies correspond with modern ploughing visible on satellite imagery, in many parts of the survey area it was difficult to distinguish them from drainage and ridge and furrow cultivation (Figures 4-111).

7.2.12 Natural

- Across the survey area, various anomalies have been identified that relate to variations within the geological background (see Section 3). These variations are most evident in the Total Field data (Figures 4-111). Some of the more coherent geomorphological anomalies for example hill wash and palaeochannel deposits have been identified in the elevated and the low-lying areas in the topography respectively.

7.2.13 Modern

- A multitude of linear anomalies, on multiple alignments in Areas 154, 155, 156, 158,159, 160, 162, 164, 165, 167a-b, 168, 170, 180-184, 248, 254-56, 273, 279, 284-287, C16, C82, C97, have been detected. Three types of magnetic responses have been recorded. The first type of response consists of strong, positive, linear signals. The second kind of anomaly consist of weak positive linear signals. The third type of anomalies have a weak, dipolar signal indicative of modern ceramic drains (Figures 4-111). The drainage features are arranged on a variety of alignments, ranging from the typical closely spaced herringbone pattern to wide rectilinear organisation terminating at the field edges. In Areas 164, 180-183 and 254-56, drains with a dipolar signal are present in areas of historical cultivation, indicating the repurposing of historical cultivation for modern drainage features.
- Ferrous Areas Located in Areas 109-11 are spreads of positive anomalies likely caused by ferrous materials, characteristic of green waste. 'Green waste' refers to organic garden waste, which is composted and sold as a soil fertiliser (Figures 104-111). Green waste is contaminated with metal and other domestic waste, and so can impact the effectiveness of magnetic survey, as this material can exhibit a strong magnetic signal which introduces noise across the results. Throughout the survey area spreads of magnetically enhanced material have been detected and categorised as ferrous debris (Figures 6 to 113). 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.
- Throughout the survey area numerous strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as 'Magnetic Disturbance' (Figures 4-111). 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.
- Modern services have been detected in Areas 110, 122-123, 162, 165, 167b, 255, 285, 286 291,292, C16, c22-24, C41-43, C47, C95, C98 (Figures 4-111). These linear anomalies, comprising repeating strong dipolar anomalies, are characteristic of buried

services; their strength and spread has contributed to the obscuring of probable archaeological anomalies in places and obscuring weaker anomalies if present.

7.2.14 Unknown Feature

- Multiple linear, curvilinear, and discrete anomalies have been identified across the survey area (Figures 4-111). These anomalies do not have any supporting contextual evidence and may be partially obscured by the spreads of anomalies resulting from geological variation or ferrous debris across the area. These anomalies are themselves likely to be the result of geological or agricultural processes, but in these cases an archaeological origin cannot be entirely ruled out. A number of discrete anomalies, characterised by strong, inverted dipolar signals have been identified. These types of anomalies might be representative of in-situ burning activity and due to their proximity to archaeological anomalies, have been given an unknown feature categorisation.

8 DISCUSSION

8.1 The geophysical results are presented in combination with satellite imagery and historical maps (Figures 7, 11, 15, 19, 23, 27, 31, 35, 39, 43, 47, 51, 55, 59, 63, 67, 71, 75, 79, 83 87, 91, 95, 99, 103, 107 and 111).

8.2 A fluxgate gradiometer survey was carried out at land west of A1, north of Staythorpe, Nottinghamshire. An area of approximately 542ha was surveyed. The survey area has generally responded well to the environment of the survey area. Areas of increased magnetic response from modern activity are present at the edges of the survey areas along with further interference present along the routes of buried services, extant fencing, overhead cables and troughs. The effect on the data caused by this interference is limited but locally significant. In the west of the survey are in Areas 108, 109, 110, 111 160, 161, 279, 280, 289 and 291, the survey has detected an enhanced magnetic background consisting of a spread of tightly spaced discrete dipolar anomalies. This type of magnetic signal is likely caused by the use of enhanced material such as green waste as soil conditioner. These responses have the ability to obscure weaker anomalies of anthropogenic origin. However, despite this, anomalies of archaeological, agricultural, modern and undetermined origin have been identified throughout the survey area.

8.3 The survey has expanded upon the current available HER evidence within the scope of the proposed Solar Farm. The survey has corroborated the cropmark evidence within the area by identifying numerous anomalies of archaeological origin, evidence of historical and modern cultivation. The geophysical survey has identified 7 Areas of Archaeological Activity. Within these areas primarily weak and strong linear, curvilinear, rectilinear and discrete anomalies, with defined edges emblematic of cut features such as ditches have been detected. While there are variances in signal strength and morphology among these anomalies, they are consistent and identifiable as probable and possible archaeological features. Despite the presence of drainage features, historical cultivation and green waste spreads across the site, the results were able to identify the extent and morphology of most of the archaeological anomalies. The majority of the archaeological foci consist of complexes of closely spaced abutting enclosures, predominantly situated in low lying areas in the topography close to the river valley of the Trent, however three main foci have also been located in the elevated areas to the west of the river valley.

8.4 The morphology of AAAs 4-7 (Figures 121 to 124) were distinctive enough to allow tentative dating of the anomalies. A general later prehistoric/Romano-British date is suggested for many of these enclosure complexes based on their consistent magnetic signal and straight rectilinear morphology and contextual association with similarly dated features known in the surroundings of the survey area. Possible settlement activity and enclosures located in Areas C16, 108, 119, 123, 288 and 291 have been ascribed a Romano-British provenance, evidenced by the regular organisation, rectilinear morphology and ladder-like alignment of the enclosures.

8.5 Anomalies exhibiting properties less-clearly characteristic of anthropogenic activity, yet with some potential to be the result of anthropogenic actions in antiquity have been detected throughout the survey area and characterised as 'possible archaeology (Figures 4-111). Although these anomalies are most likely to result from the presence of archaeological features, a clear origin cannot be determined through signal of these anomalies alone.

8.6 The survey area is extensively covered by a series of drainage regimes predominantly situated in the western extent of the survey area at elevated locations within the topography. This suggests the presence of seasonally waterlogged fenland landscape that, on the evidence of the multiple alignments of drains present in the geophysical results has been continuously drained in the post-medieval and modern periods. Information from the Soilscapes database corroborates this, with seasonally wet soils with impeded drainage recorded in these areas.

8.7 Former mapped and unmapped field boundaries have been identified throughout the survey area. These are identified as both strong and weak, linear anomalies of magnetically enhanced material which align with features marked on 2nd Edition OS mapping (Figures 4-111). A number of anomalies with similar magnetic signature and alignment have also been identified throughout the survey area. Even though they do not correspond with features identified on the historical OS mapping, the have been ascribed an agricultural origin as they continue from or otherwise align with mapped boundaries suggesting they are remnants of field divisions not depicted on available mapping.

8.8 Groups of parallel linear and curvilinear anomalies occur across almost the whole of the survey area and are typical of historical cultivation such as ridge and furrow regimes. These have been identified on multiple different orientations. Some of these appear to truncate probable archaeological anomalies and may obscure their full extent (Figures 4-111).

8.9 Modern Agricultural Features have been detected across the survey area as a changes in modern field boundaries, crop management as well as footpaths and modern ploughing trends.

8.10 The magnetic data has also detected geological and geomorphological variations sporadically located across the survey area, which appear to reflect changes in the superficial deposits.

8.11 Throughout most of the survey area, anomalies that have been classified as 'Unknown Feature' have been identified. All of these anomalies have limited context or lack any clear pattern or morphology to enable a confident interpretation, although an archaeological origin cannot be entirely excluded.

9 PRELIMARY CONCLUSIONS

9.1 A fluxgate gradiometer survey has successfully been undertaken across c. 542ha of land. The survey responded well to the environment of the survey area with a range of anomalies of archaeological, agricultural, modern and unknown origin identified throughout. Increased magnetic response was visible at field perimeters and in proximity to troughs, farming equipment, pylons, overhead cables, extant structures and buried services. In the eastern and northeastern extent of the site perimeter the survey has also identified areas of enhanced background which appear to have been caused by the spread of green waste. This type of magnetic background has the potential to obscure any weaker anomalies of anthropogenic origin, if present.

9.2 Nevertheless, the survey has detected an extensive series of archaeological anomalies distributed across the survey area, with seven major areas of archaeological activity identified. These anomalies are indicative of probable and possible cut features, containing anthropogenically enhanced fill. The features include ditched enclosures, trackways and former field systems. Taken together, these anomalies represent an extensive multi-period archaeological landscape, with settlements predominantly located in the low-lying topography within the Trent Valley, and likely to have existed through multiple phases of occupation.

9.3 Long-term agricultural use of the land within the survey area has been detected in the form of extensive historical cultivation such as ridge and furrow cultivation, former mapped and unmapped historical field boundaries, drainage features, footpaths and ploughing trends identified in the magnetic data.

9.4 Natural variations have been detected sporadically throughout the survey area, particularly as geomorphological features such as hill wash deposits and changes in the superficial deposits.

9.5 Several anomalies have been classified as 'Unknown Feature' due to lack of context, or any clear pattern or morphology which would enable a confident interpretation. Nevertheless, an archaeological origin for these cannot be excluded.

10 APPENDICES

10.1 Appendix 1: Data Collection

Magnetometer surveys are generally the most efficient and suitable geophysical technique for the detection of archaeology in Wales. 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.

The magnetic data were collected using MS' bespoke hand-pulled or quad-towed cart system and hand-carried GNSS-positioned system.

Magnitude Survey's cart and hand-carried system were comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna Real Time Kinematic (RTK) Global Positioning System (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.

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.

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.

Data Processing

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[11].

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al [10].

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.

Data Visualisation and Interpretation

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 114, 117, 120, 123, 126, [i]129, 132, 135, 138, 141 and 144). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

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.

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.

10.2 Appendix 2: Geophysical Interpretation

The following categories have been used for interpretation of the data throughout the report.

Archaeology

Used when the form, nature, and pattern of the anomaly are indicative of archaeological material. Further sources of information such as aerial photographs may also have been incorporated in providing the final interpretation.

Possible Archaeology

Used for anomalies that conform to the Archaeology category but have a lower level of confidence due to lack of form, pattern, or nature.

Historical Landscape Feature

Used for anomalies that correspond with features other than historical field boundaries on available mapping. This can include, but is not limited to, park and garden features, areas of woodland, ponds, and extraction pits.

Historical Cultivation

Used to denote historical cultivation regimes that differ from existing modern cultivation. They may differ due to size, orientation, or distribution in the landscape. If possible, LiDAR, aerial, and HER data should be consulted to corroborate results.

Former Field Boundary

Used anomalies that correspond to the position of boundaries marked on available mapping, visible on aerial photographs, or form clear extensions of existing boundaries.

Modern Agricultural feature

Used to identify any anomalies that are representative of modern ploughing or agricultural activity.

Geology

Used to denote natural variations is soils, superficial geology, or bedrock.

Geomorphology

Used to identify anomalies associated with more coherent geomorphological features. This may include, but is not limited to, paleochannels, solution hollows, and former high ground.

Increased Magnetic Response

Used for areas dominated by indistinct anomalies with increased magnetic values. While these may have some archaeological potential they may also relate to natural or modern features.

Modern Service

Used for anomalies indicative of services or service trenches. These are usually magnetically strong linear anomalies but can also be seen as weak anomalies in the case of plastic services where only disturbance associated with the trench is visible.

Drain

Used for anomalies thought to relate to drainage features either due to their nature or corresponding with features on available mapping.

Ferrous

Used for anomalies caused by ferrous material. These anomalies are likely to be of modern origin.

Unknown Feature

Used for anomalies that, due to their nature, pattern, or form, cannot be confidently interpreted. These may have some archaeological potential.

Trend

Used for low amplitude or indistinct linear anomalies that cannot be confidently interpreted. These may have some archaeological potential.

10.3 Appendix 3: Archiving and Copyright

Archiving

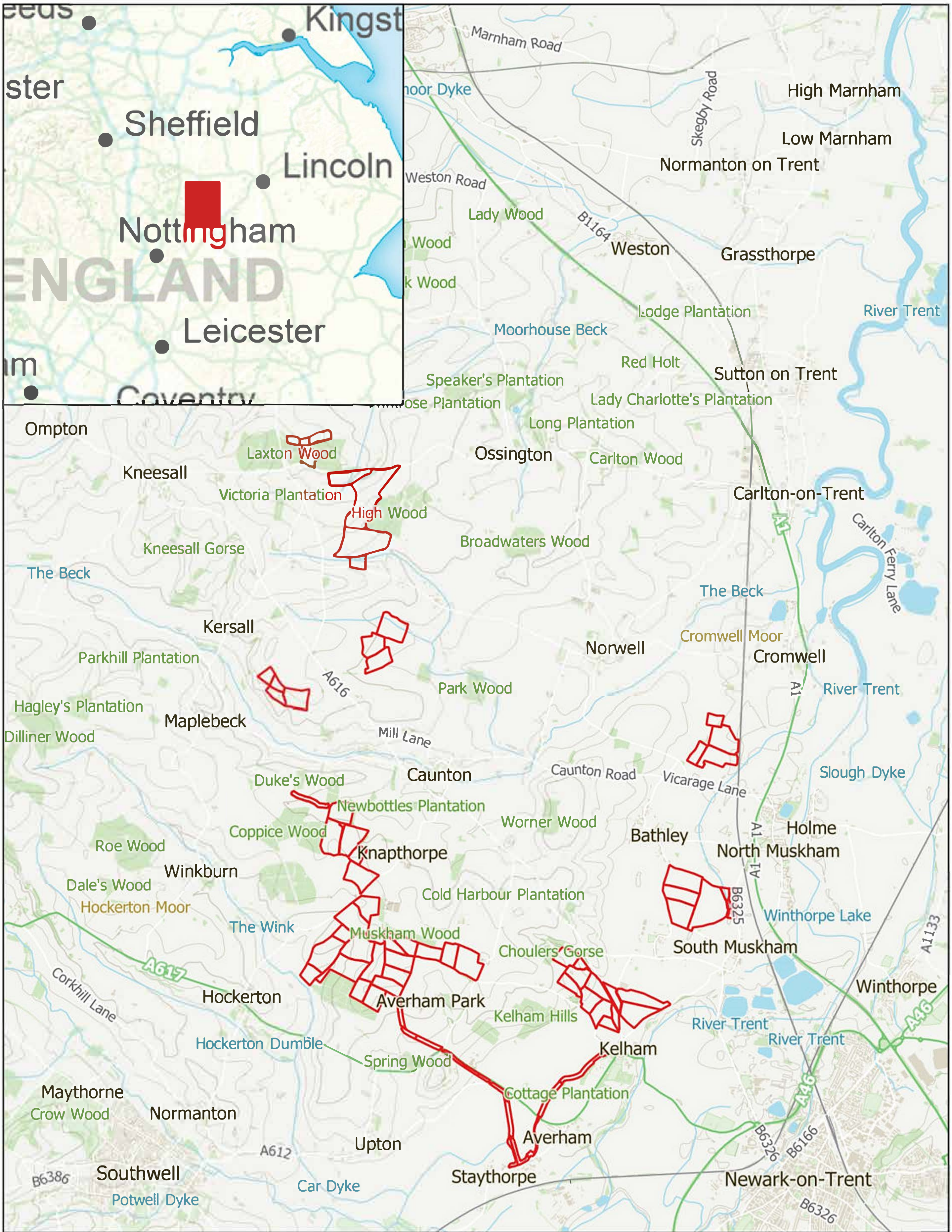
Magnitude Surveys maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to any dictated time embargoes.

Copyright

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.

[10] Olsen, N., Toffner-Clausen, L., Sabaka, T.J., Brauer, P., Merayo, J.M.G., Jorgensen, J.L., Leger, J.M., Nielsen, O.V., Primdahl, F., and Risbo, T., 2003. Calibration of the Orsted vector magnetometer. Earth Planets Space 55: 11-18

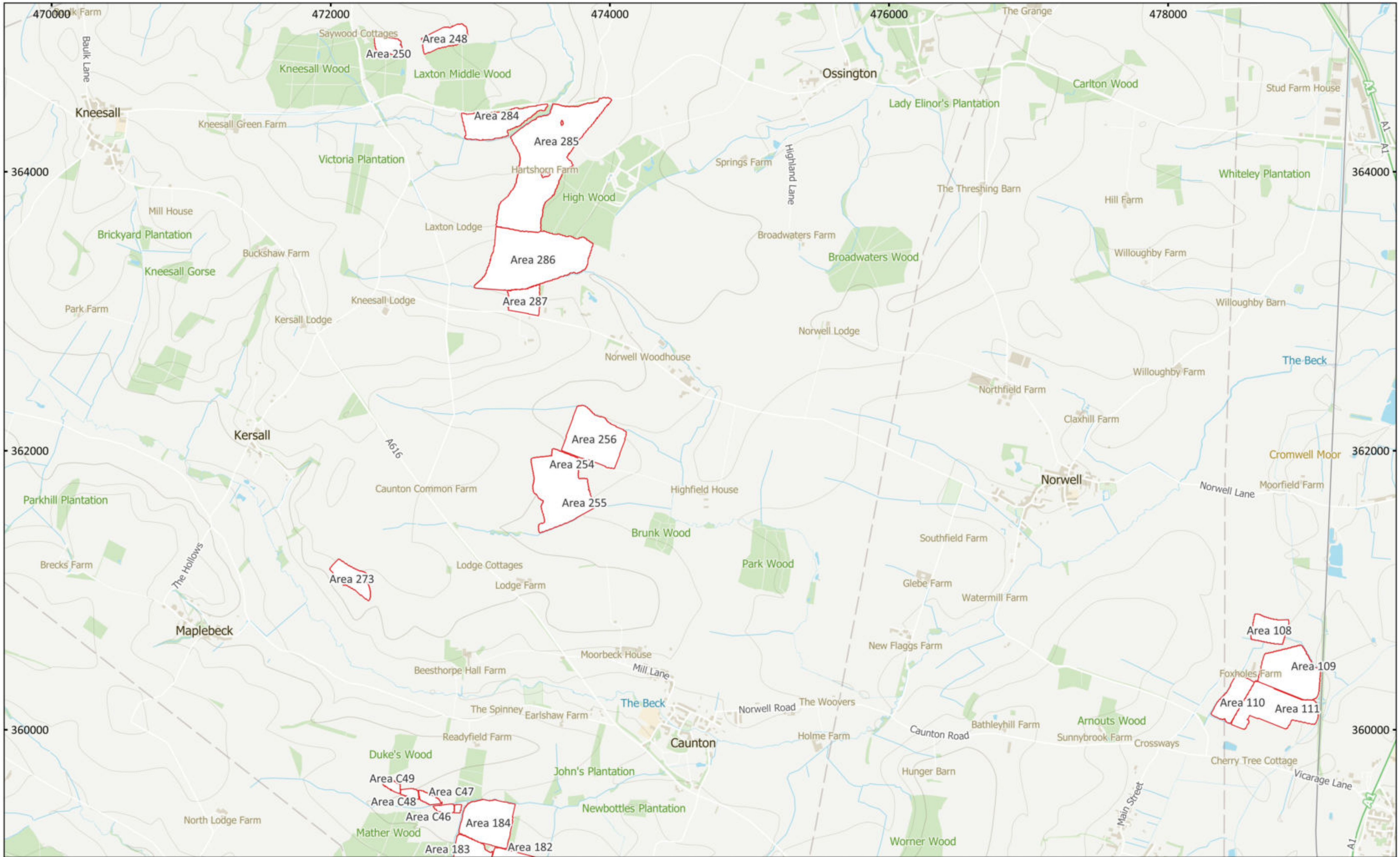
[11] Schmidt, A. and Ernenwein, E., 2013. Guide to good practice: geophysical data in archaeology (2nd edition). Oxbow Books: Oxford.



MSSK1485 - Staythorpe Solar Farm
Figure 1 - Site Location
1:25,000 @ A4

Geophysical Survey Area

magnitude surveys



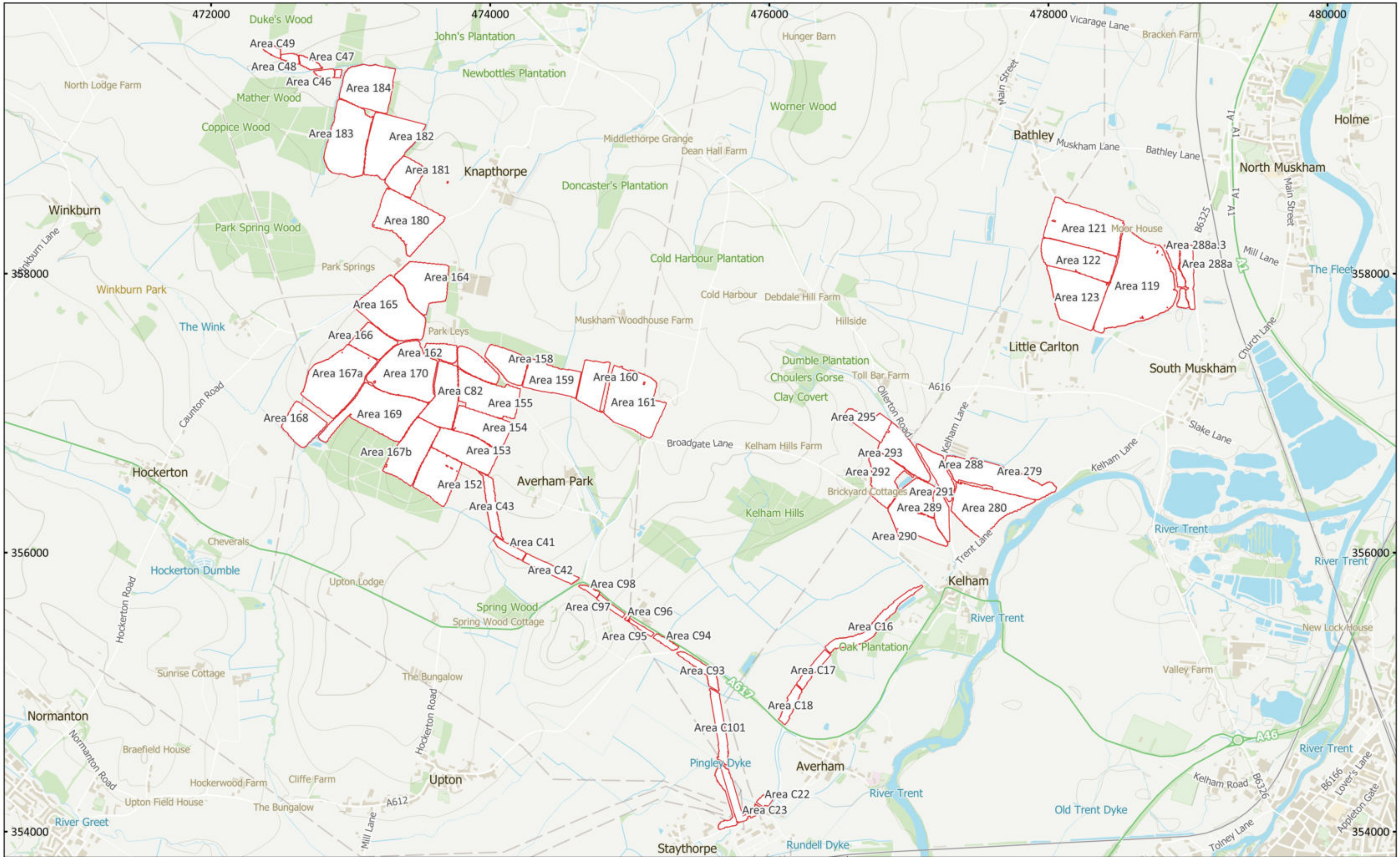
MSSK1485 - Staythorpe Solar Farm
Figure 2 - Location of Survey Areas (North)
1:25,000 @ A3

Surveyed Extent

N

0 500 1,000 1,500 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 3 - Location of Survey Areas (South)
1:25,000 @ A3

Surveyed Extent

N

0 500 1,000 1,500 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 4 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 248 & 250)
1:3,000 @ A3

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 5 - Magnetic Gradient (Overview) (Areas 248 & 250)
1:3,000 @ A3

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 6 - Magnetic Interpretation (Areas 248 & 250)
1:3,000 @ A3

Former Field Boundary
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Drain
Ferrous (Spike)

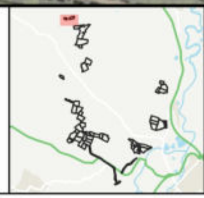
N

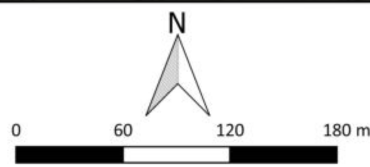
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 7 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 248 & 250)
1:3,000 @ A3
Copyright Magnitude Surveys Ltd 2024
Contains historical mapping © CLS Data 2024: Ordnance Survey, 6" 2nd edition c. 1882-1913
Contains Satellite Imagery © Bing 2023

Former Field Boundary
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Drain
Ferrous (Spike)





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 8 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 284 & 285)
1:3,000 @ A3

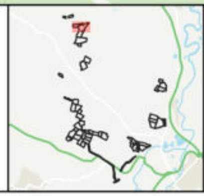
48,998 nT 49,003

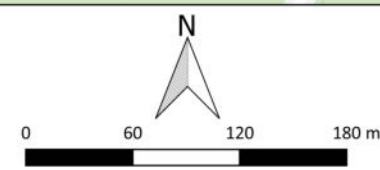
N

0 60 120 180 m

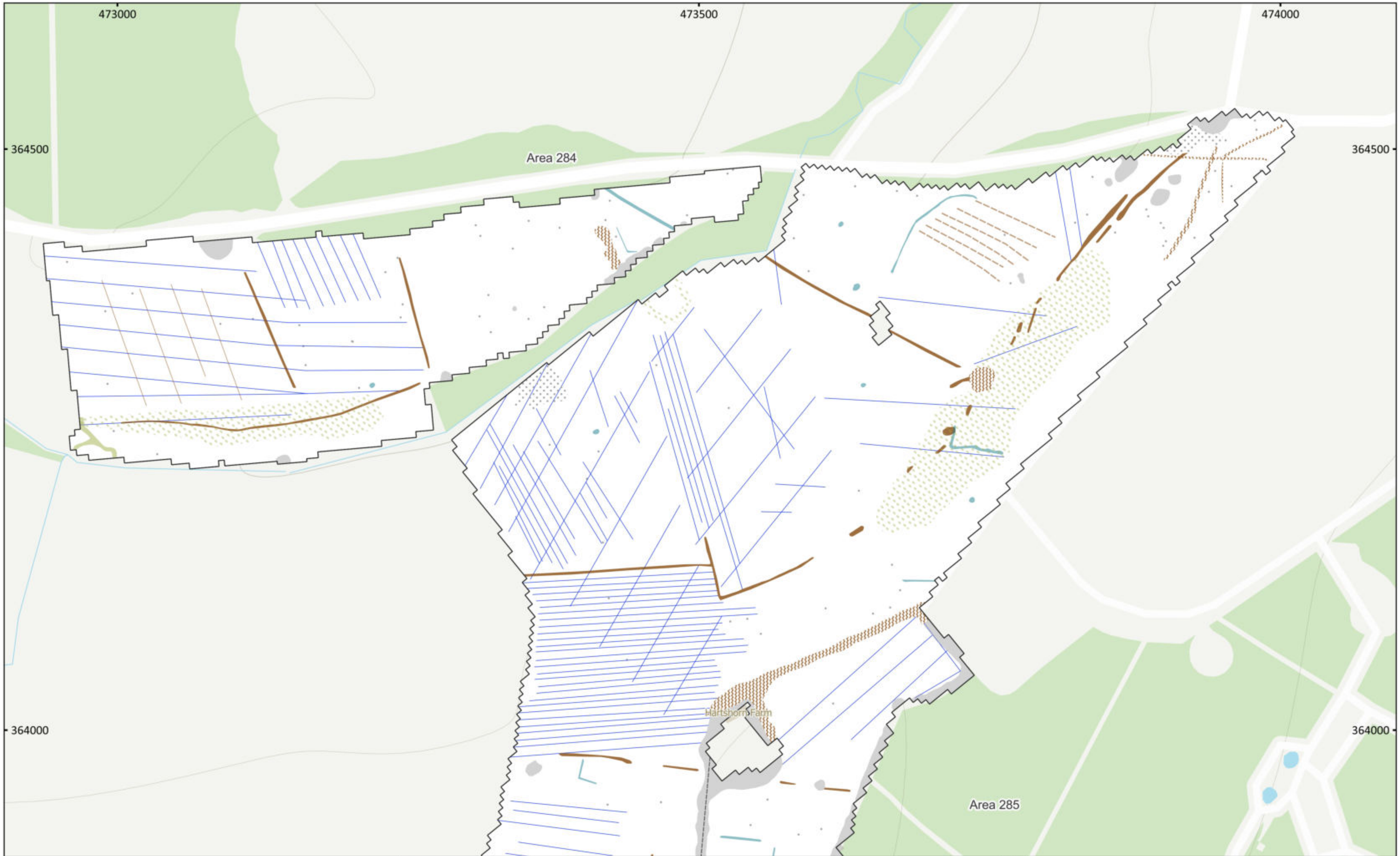
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 9 - Magnetic Gradient (Overview) (Areas 284 & 285)
1:3,000 @ A3



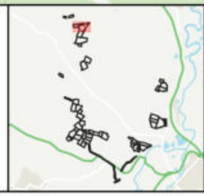


magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 10 - Magnetic Interpretation (Areas 284 & 285)
1:3,000 @ A3

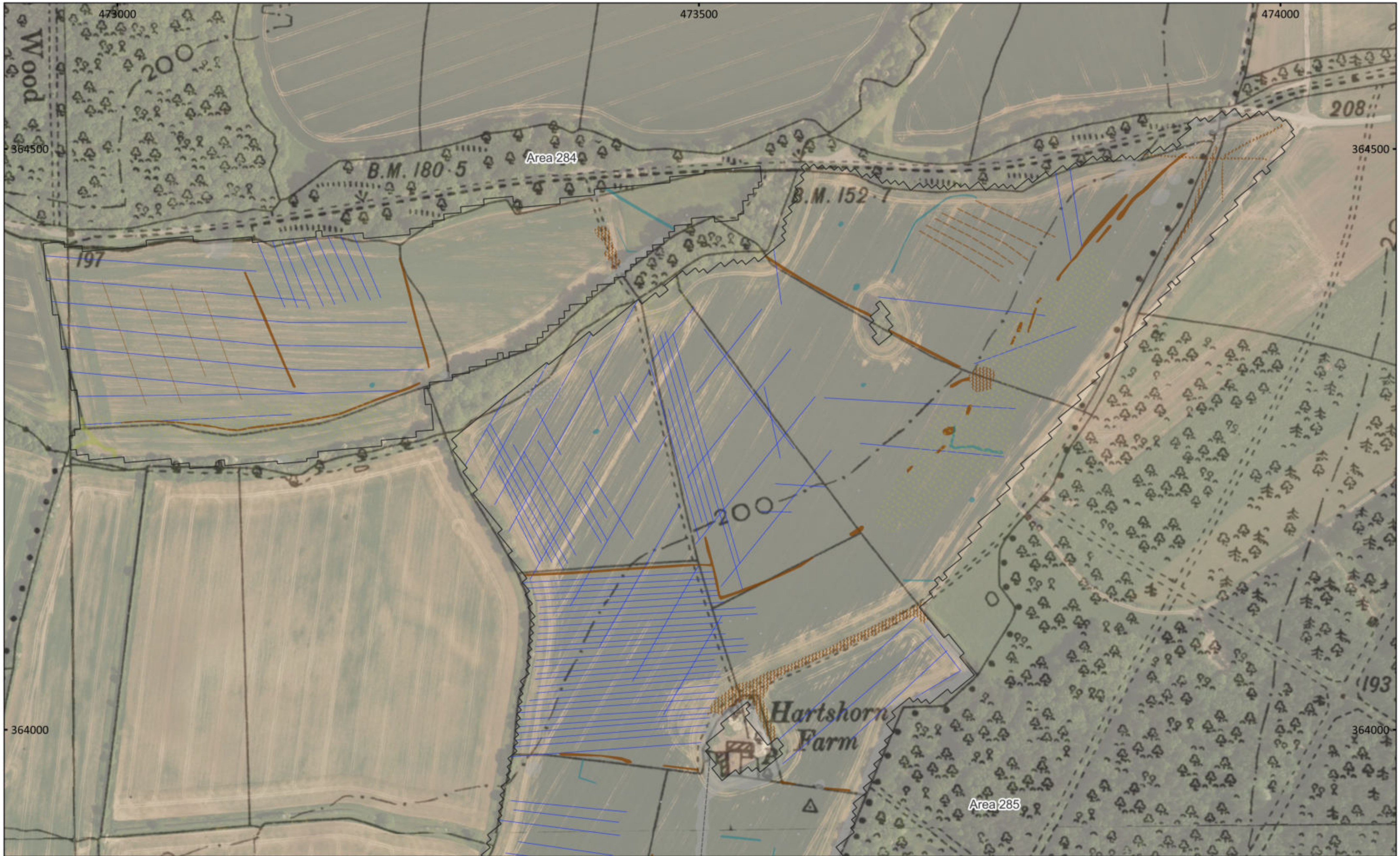
Former Field Boundary
Historic Landscape Feature
Unknown Feature
Geology
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)



N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 11 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 284 & 285)
1:3,000 @ A3

Former Field Boundary
Historic Landscape Feature
Unknown Feature
Geology
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 12 - Magnetic Total Field (Lower Sensor) (Overview) (Area 285)
1:3,000 @ A3

48,998 nT 49,003

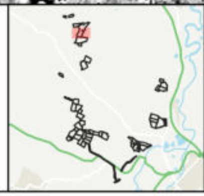
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 13 - Magnetic Gradient (Overview) (Area 285)
1:3,000 @ A3

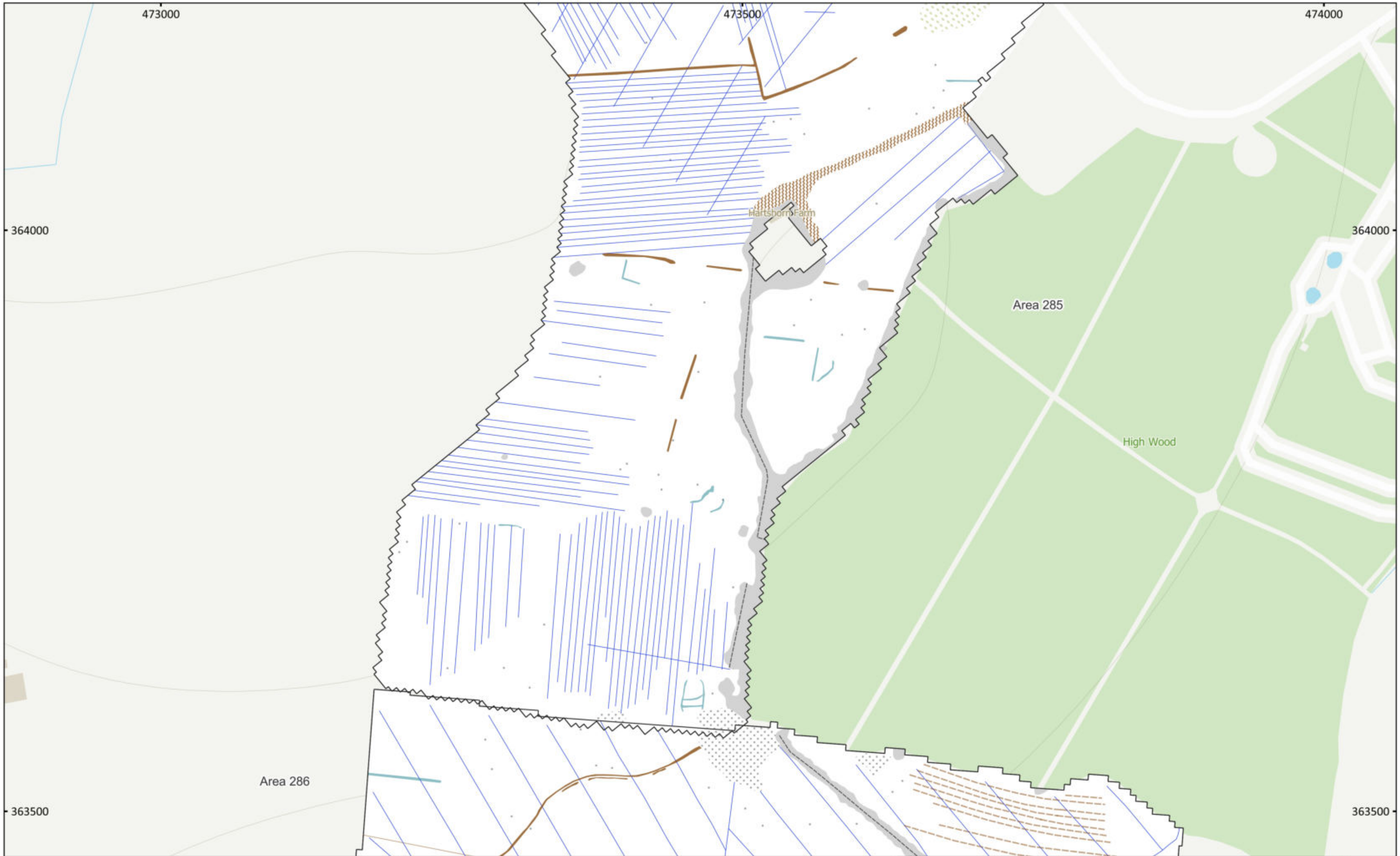
-1 nT 2



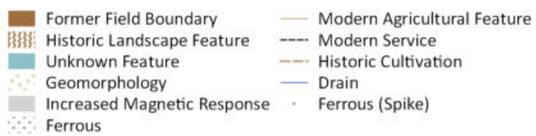
N

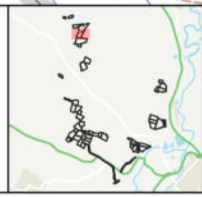
0 60 120 180 m

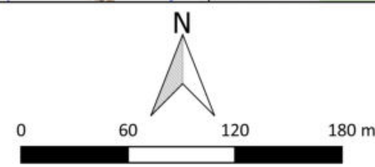
magnitude surveys



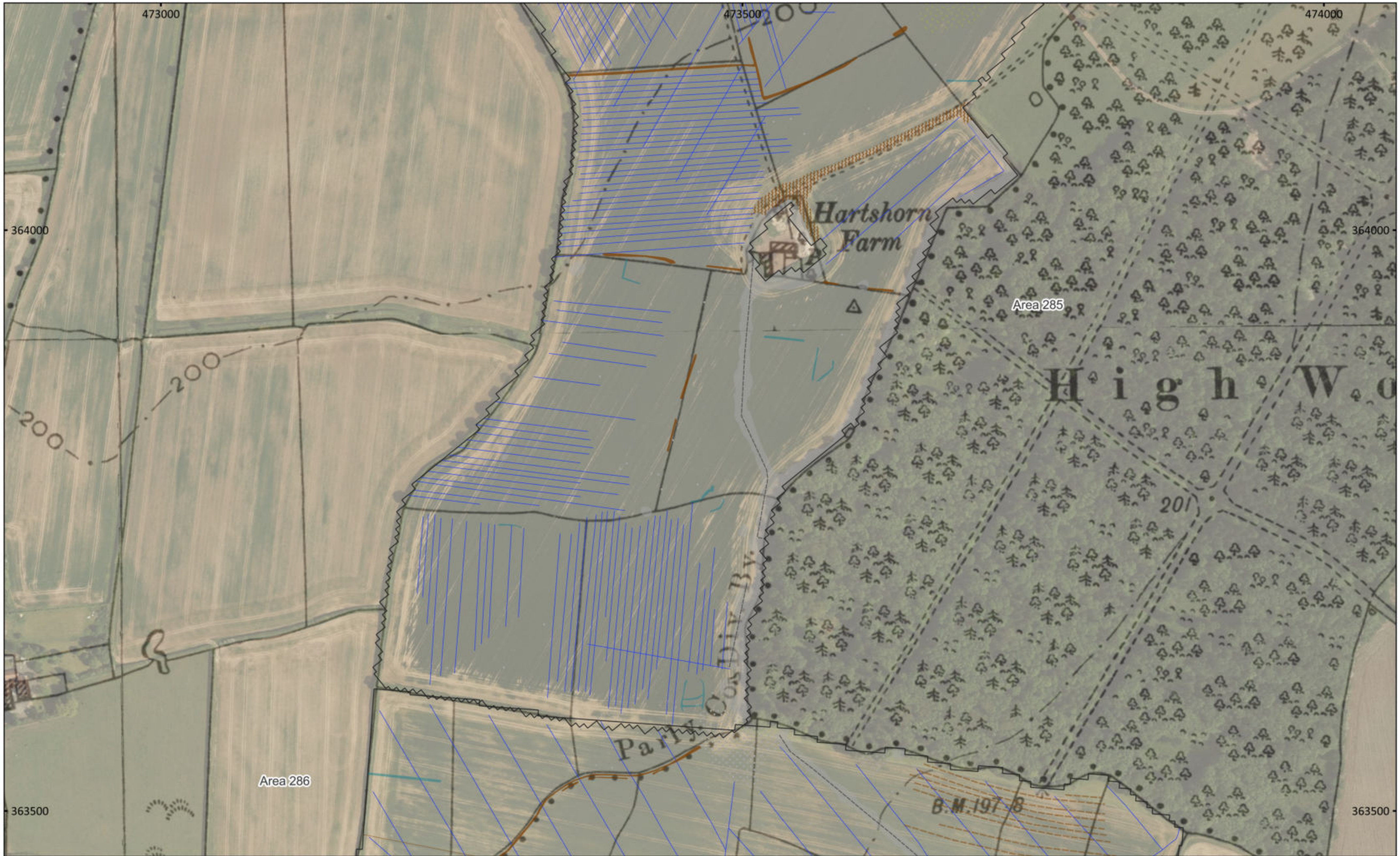
MSSK1485 - Staythorpe Solar Farm
Figure 14 - Magnetic Interpretation (Area 285)
1:3,000 @ A3







magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 15 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Area 285)
1:3,000 @ A3

Former Field Boundary
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

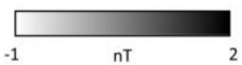
0 60 120 180 m

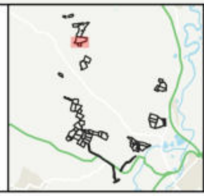
magnitude surveys

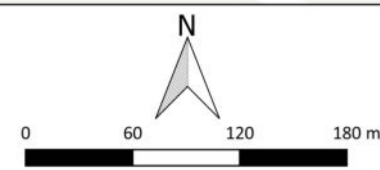
MSSK1485 - Staythorpe Solar Farm
Figure 16 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 286 & 287)
1:3,000 @ A3

magnitude surveys

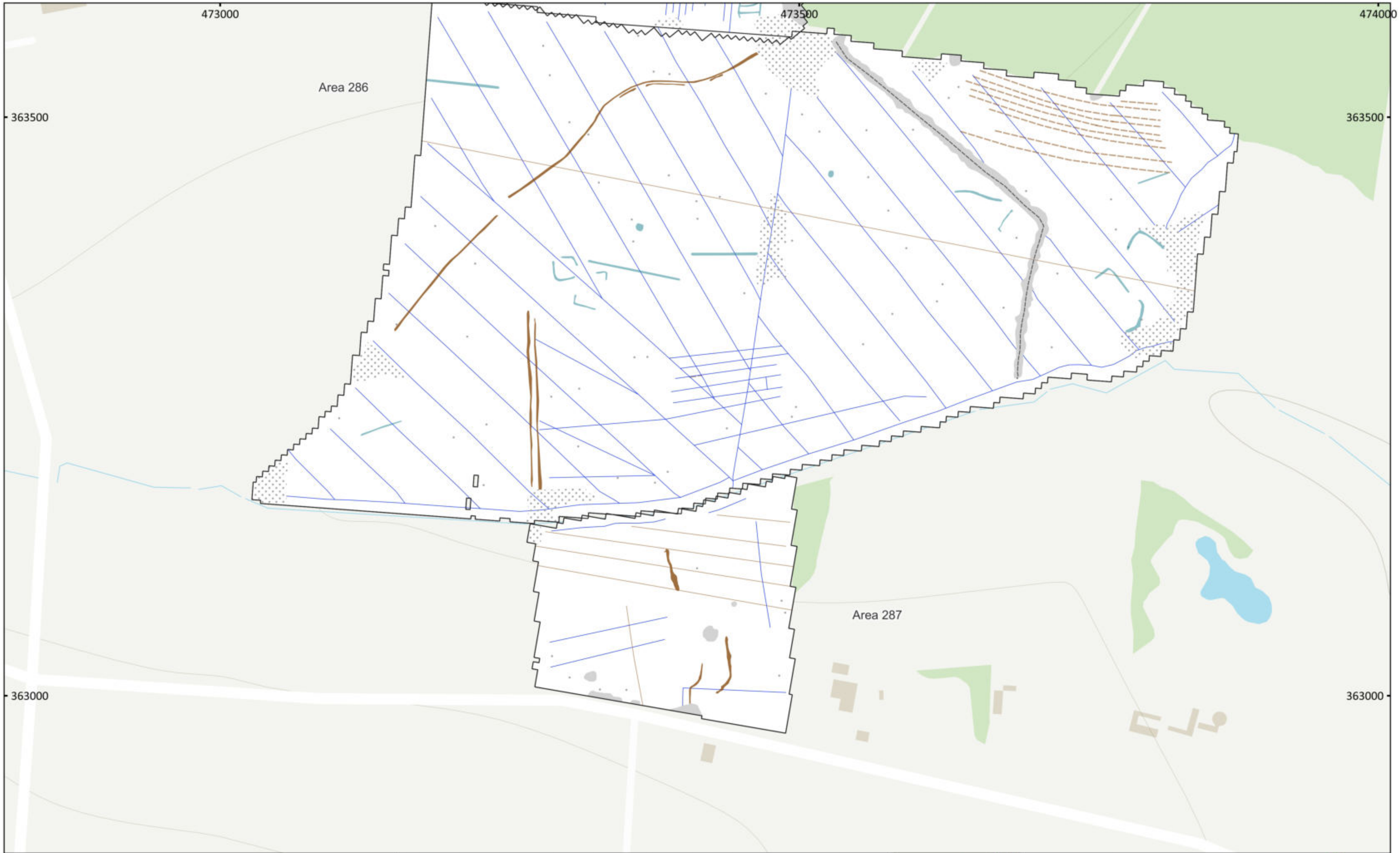
MSSK1485 - Staythorpe Solar Farm
Figure 17 - Magnetic Gradient (Overview) (Areas 286 & 287)
1:3,000 @ A3







magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 18 - Magnetic Interpretation (Areas 286 & 287)
1:3,000 @ A3

Former Field Boundary
Unknown Feature
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 19 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 286 & 287)
1:3,000 @ A3
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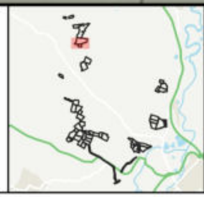
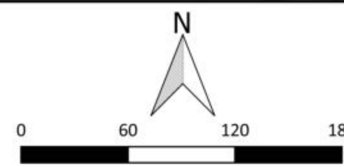
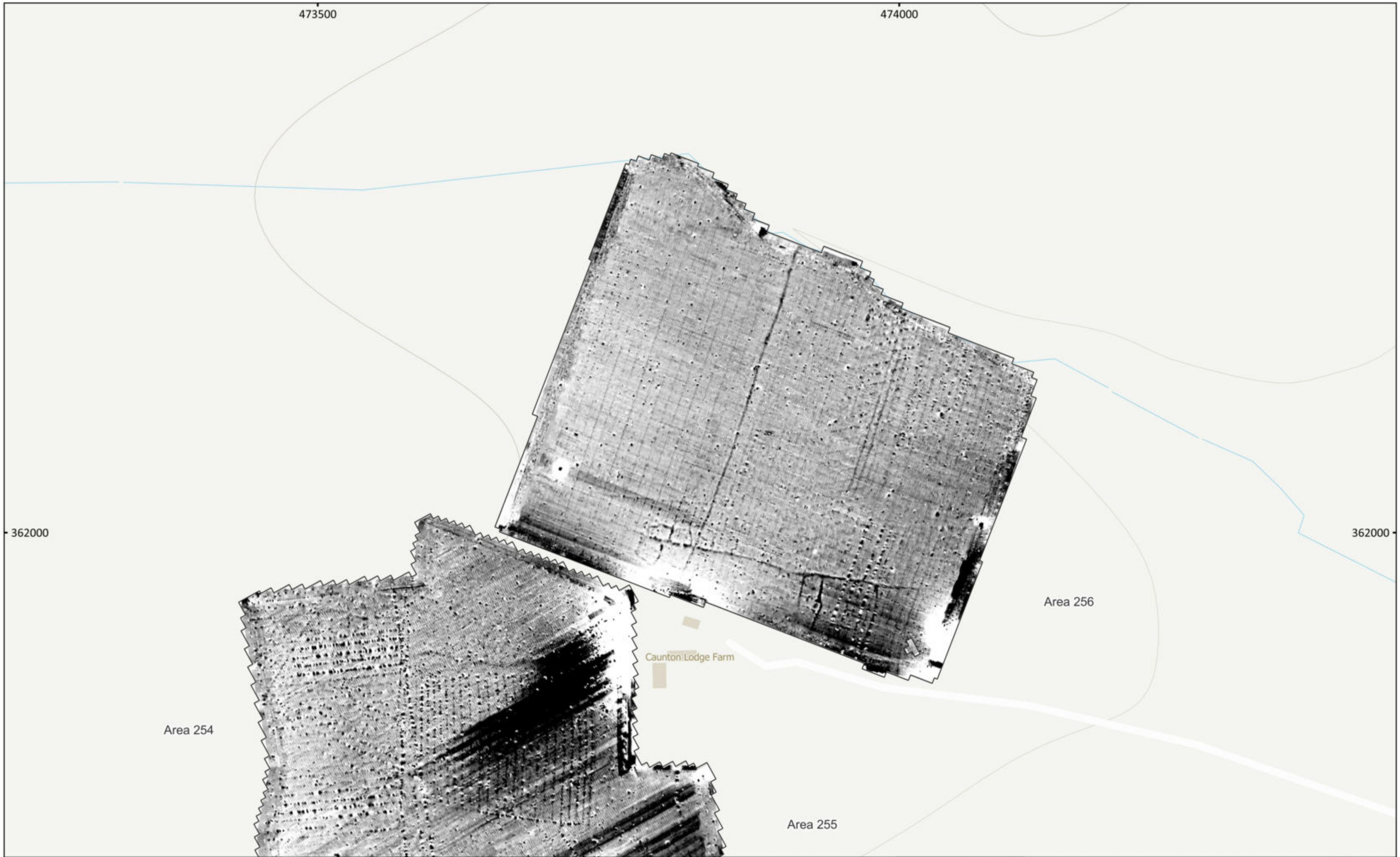
Contains historical mapping © CLS Data 2024: Ordnance Survey, 6" 2nd edition c. 1882-1913
Contains Satellite Imagery © Bing 2023

- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)



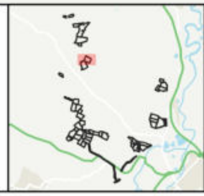


magnitude surveys



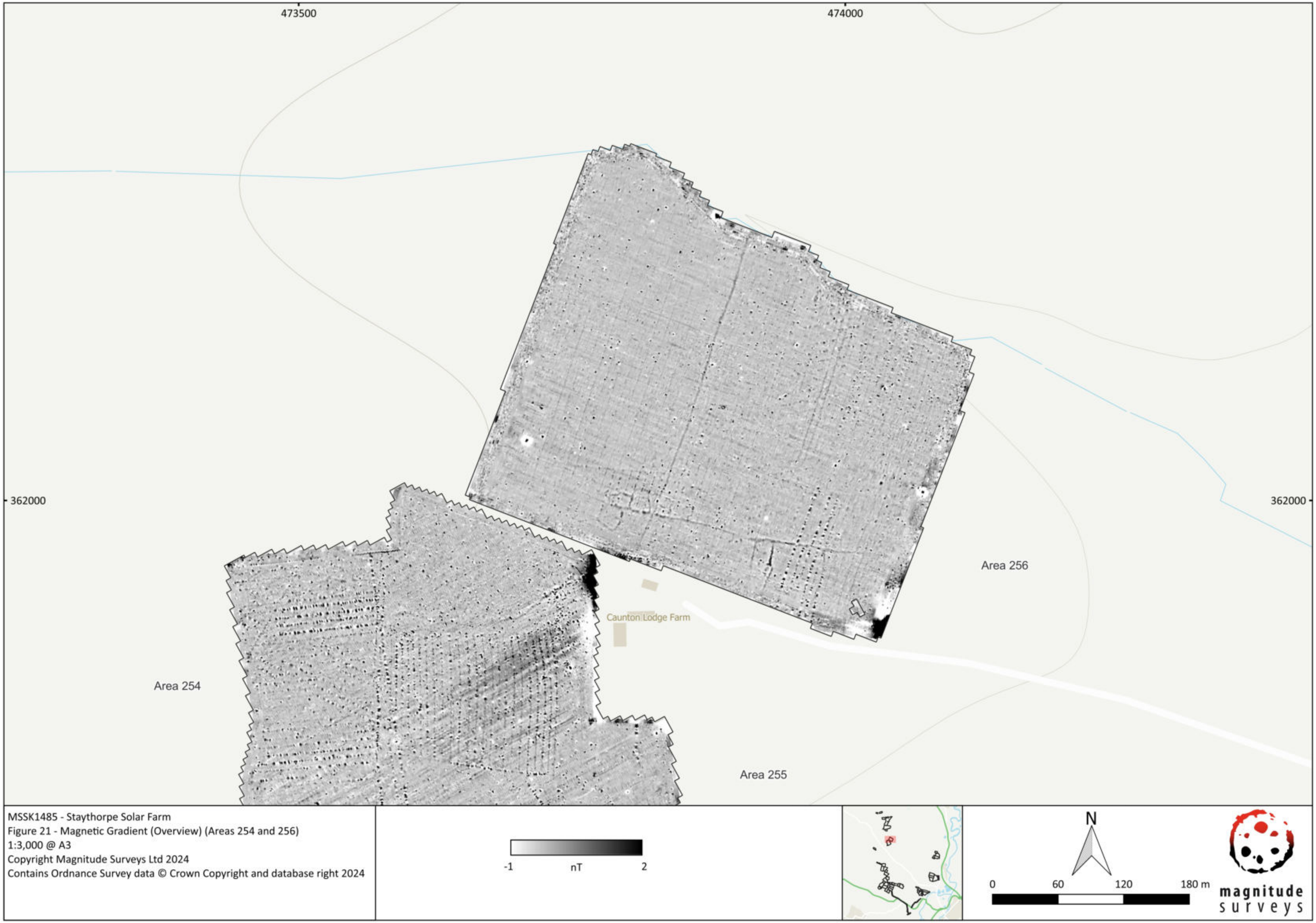
MSSK1485 - Staythorpe Solar Farm
Figure 20 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 254 & 256)
1:3,000 @ A3

48,998 nT 49,003

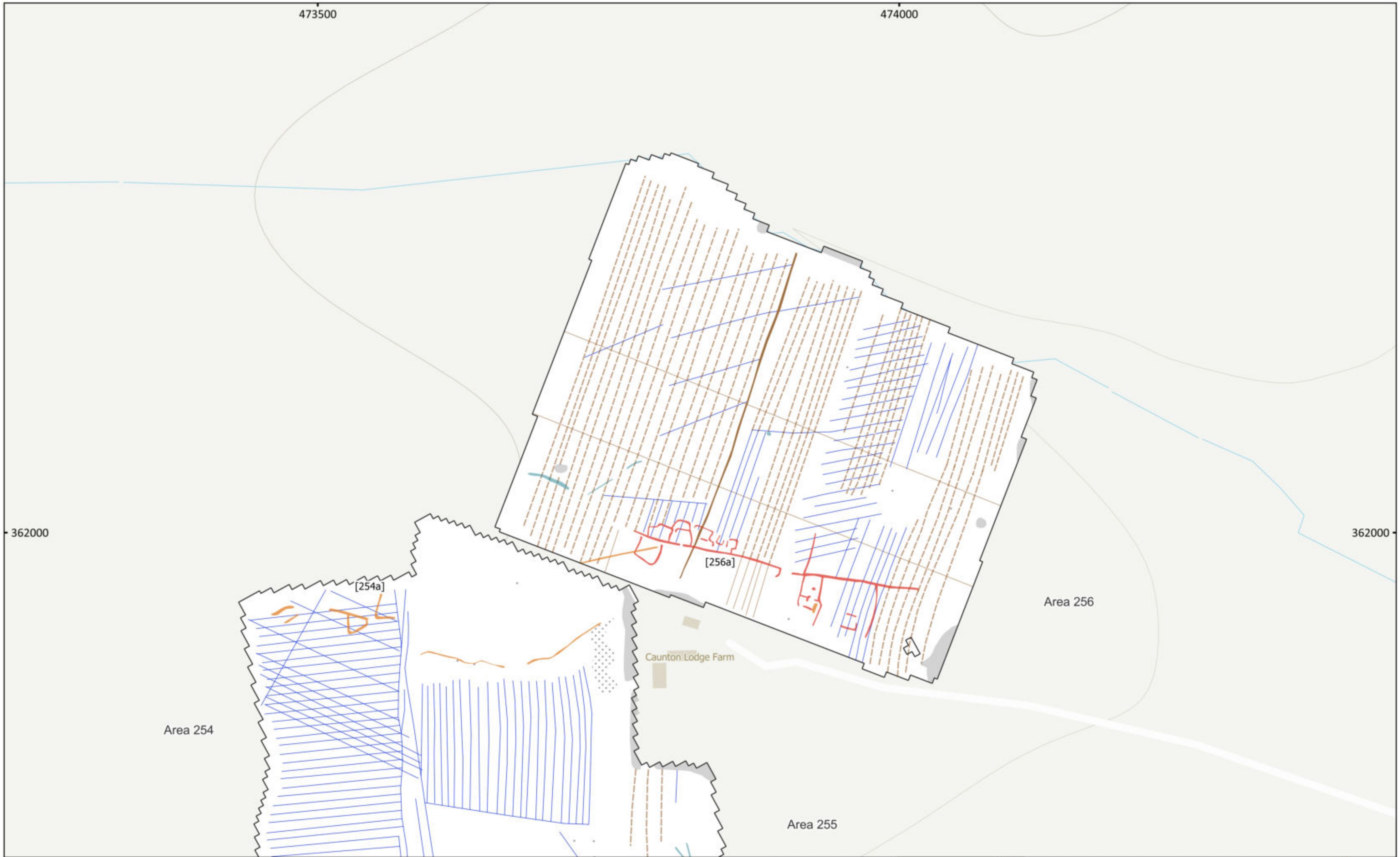


N
0 60 120 180 m

magnitude surveys

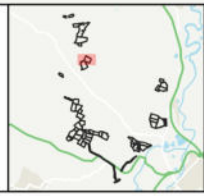


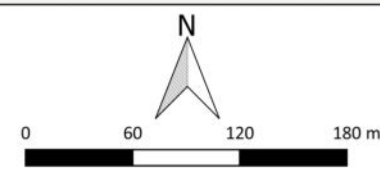
MSSK1485 - Staythorpe Solar Farm
Figure 21 - Magnetic Gradient (Overview) (Areas 254 and 256)
1:3,000 @ A3



MSSK1485 - Staythorpe Solar Farm
Figure 22 - Magnetic Interpretation (Areas 254 & 256)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Historic Cultivation
- Drain
- Ferrous (Spike)





magnitude surveys

MSSK1485 - Staythorpe Solar Farm

Figure 23 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 254 & 256)

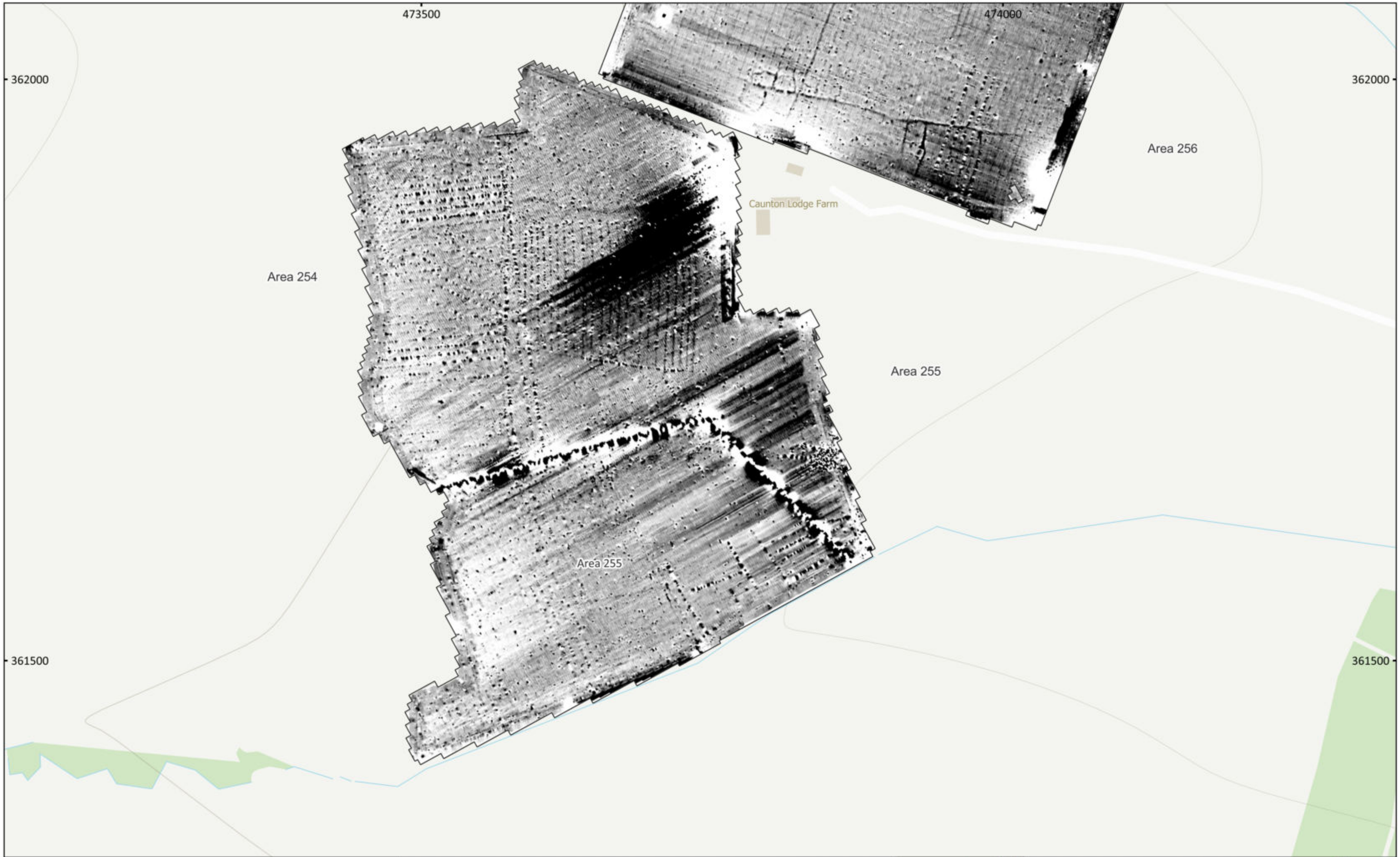
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

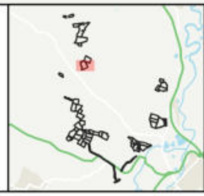
magnitude surveys

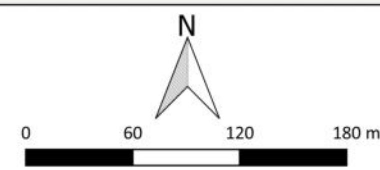


MSSK1485 - Staythorpe Solar Farm
Figure 24 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 254 & 255)
1:3,000 @ A3

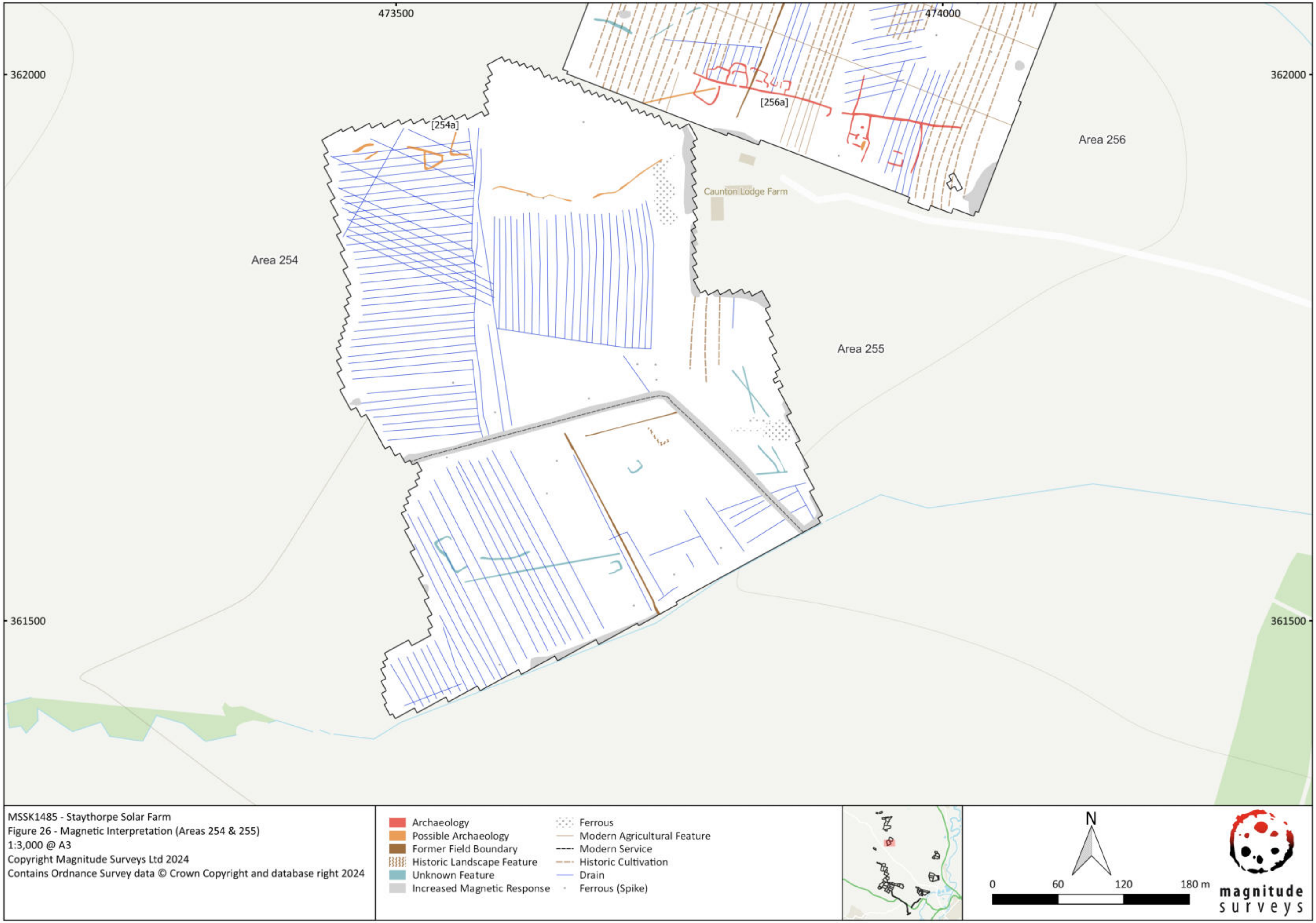
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 25 - Magnetic Gradient (Overview) (Areas 254 & 255)
1:3,000 @ A3





magnitude surveys

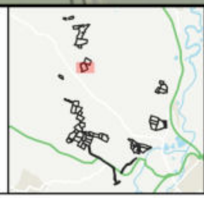


MSSK1485 - Staythorpe Solar Farm
Figure 26 - Magnetic Interpretation (Areas 254 & 255)
1:3,000 @ A3

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 27 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 254 & 255)
1:3,000 @ A3

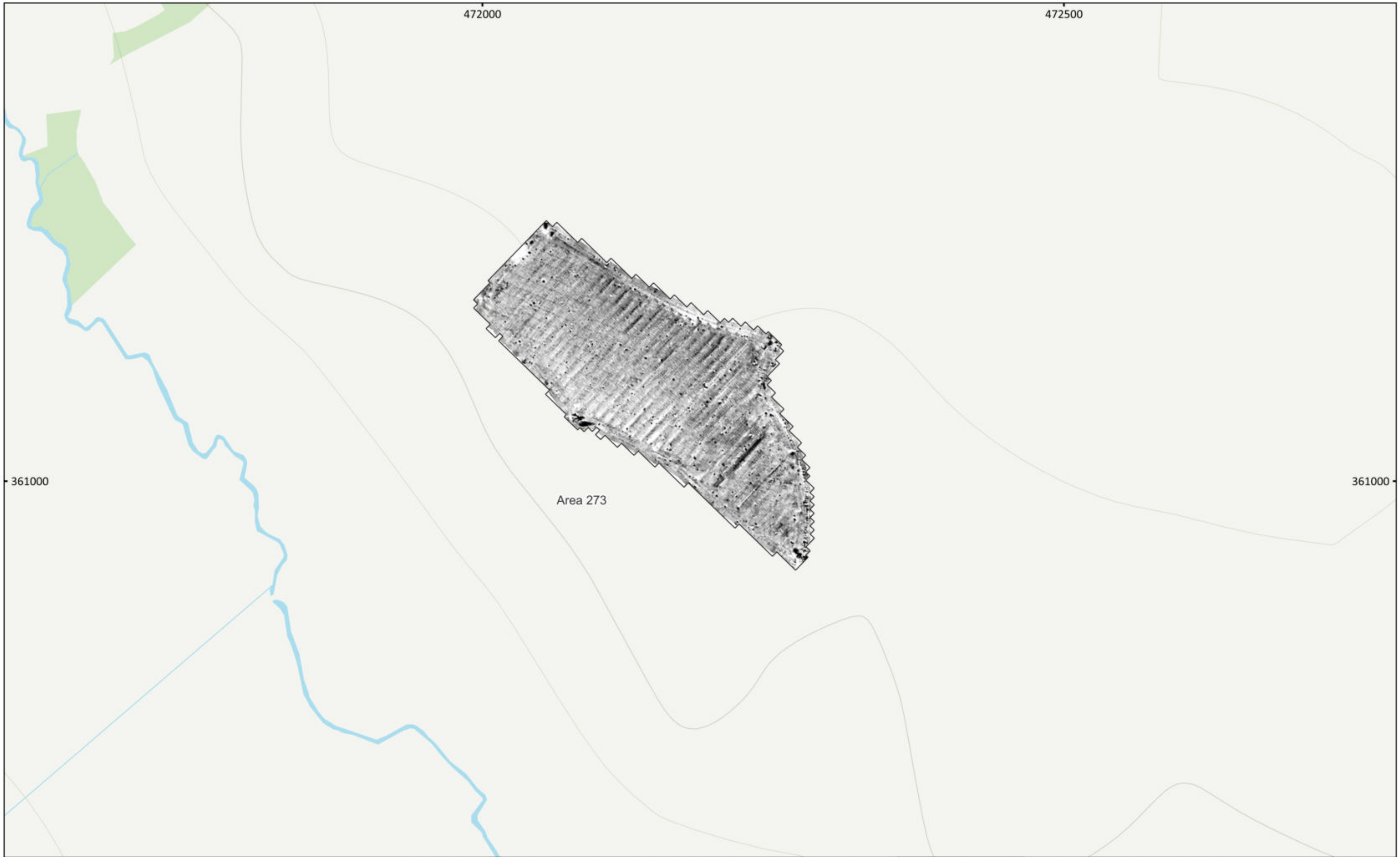
- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)



N

0 60 120 180 m

magnitude surveys



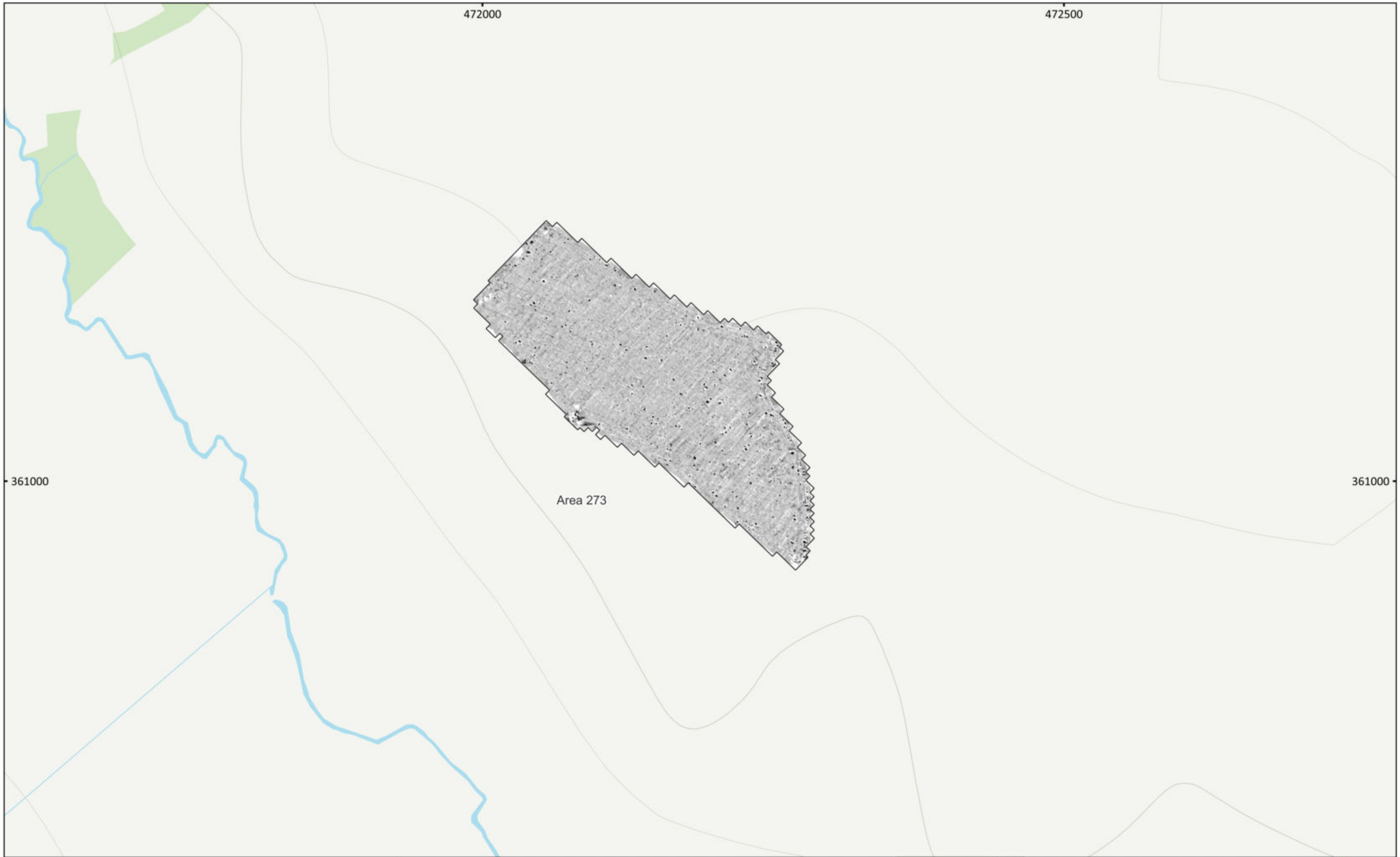
MSSK1485 - Staythorpe Solar Farm
Figure 28 - Magnetic Total Field (Lower Sensor) (Overview) (Area 273)
1:3,000 @ A3

48,998 nT 49,003

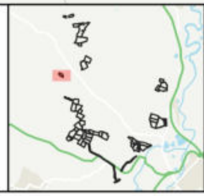
N

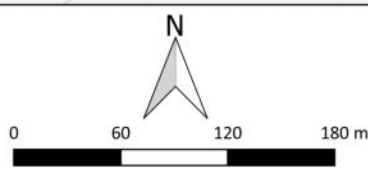
0 60 120 180 m

magnitude surveys

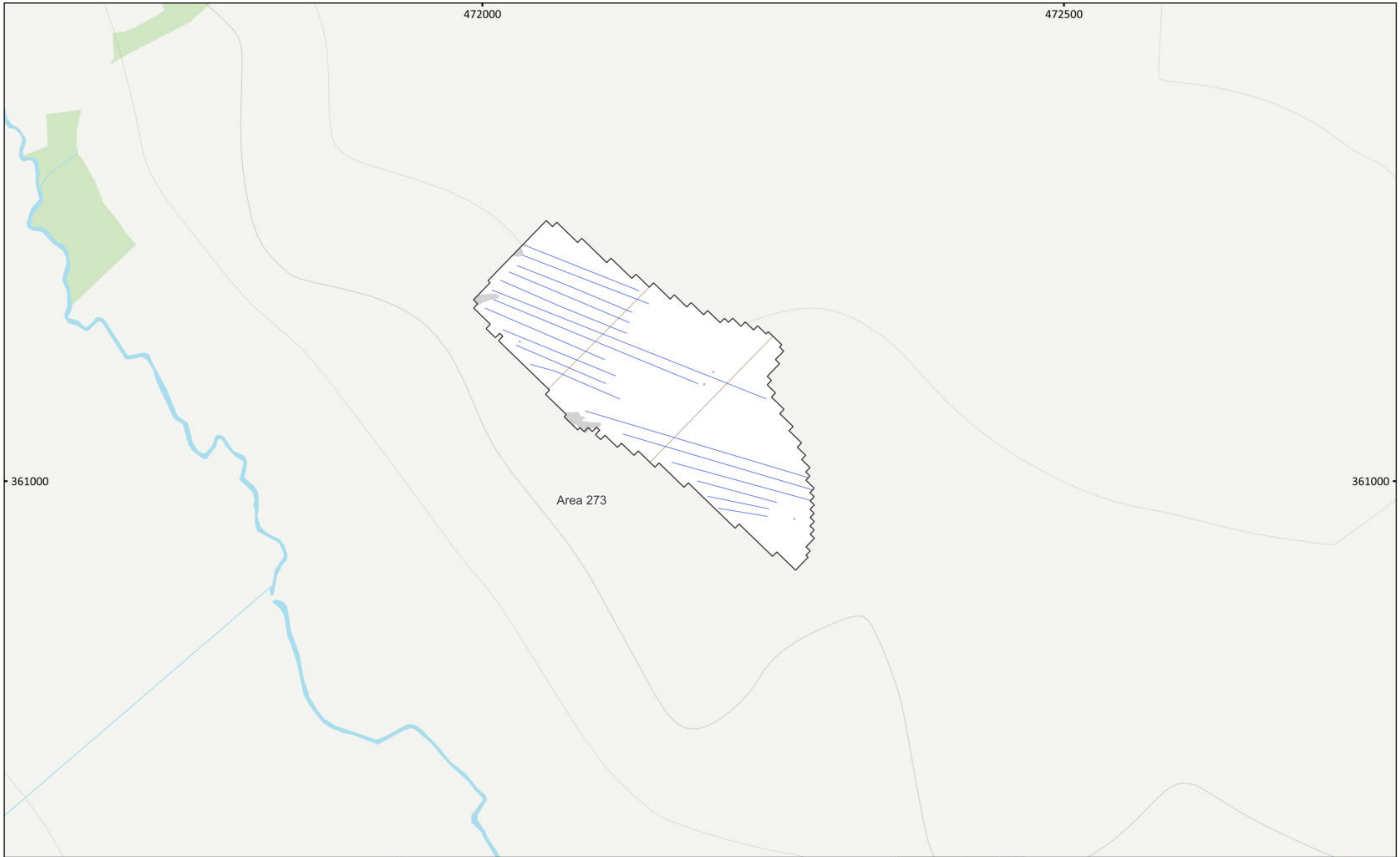


MSSK1485 - Staythorpe Solar Farm
Figure 29 - Magnetic Gradient (Overview) (Area 273)
1:3,000 @ A3



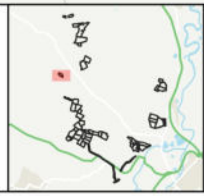


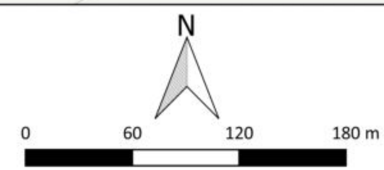
magnitude
surveys



MSSK1485 - Staythorpe Solar Farm
Figure 30 - Magnetic Interpretation (Area 273)
1:3,000 @ A3

Increased Magnetic Response
Modern Agricultural Feature
Drain
Ferrous (Spike)





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 31 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Area 273)
1:3,000 @ A3

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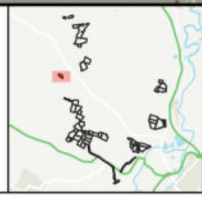
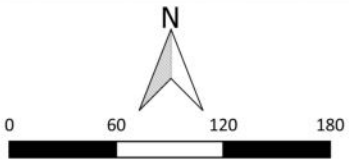
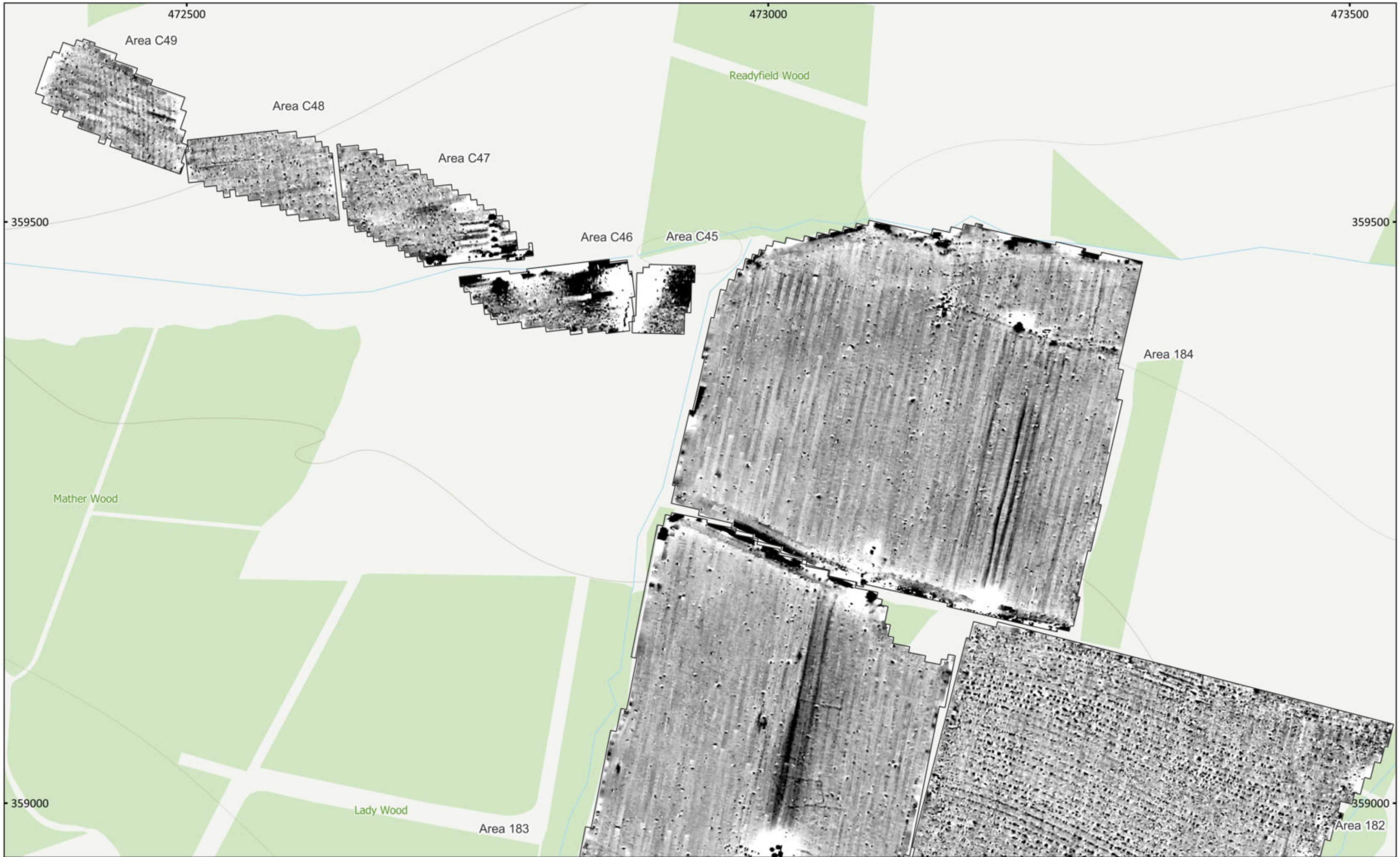
Contains Satellite Imagery © Bing 2023

Increased Magnetic Response
Modern Agricultural Feature
Drain
Ferrous (Spike)



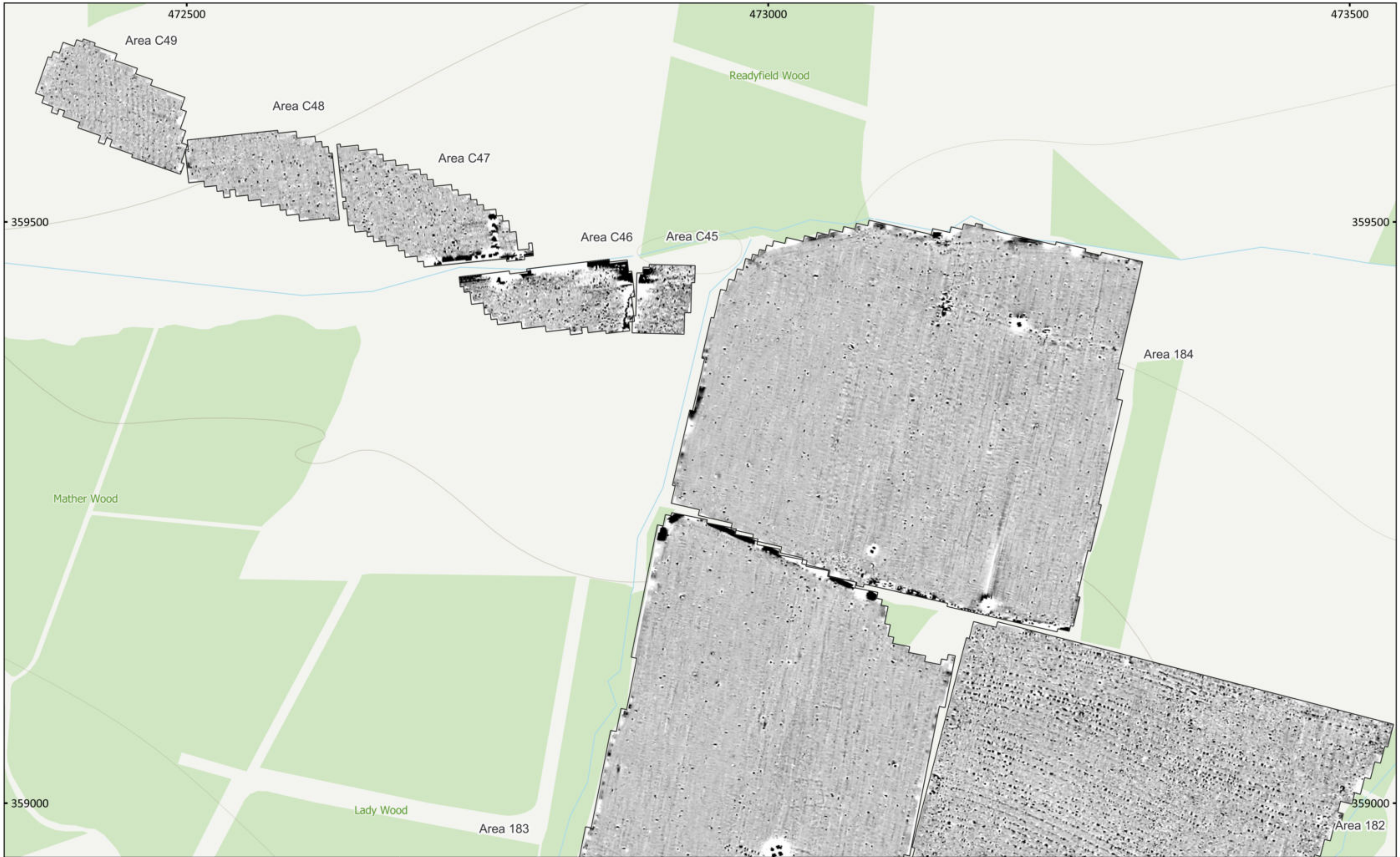


magnitude surveys

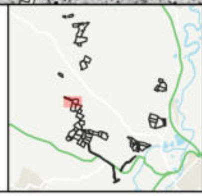


MSSK1485 - Staythorpe Solar Farm
Figure 32 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C45-49 & 182-184)
1:3,000 @ A3

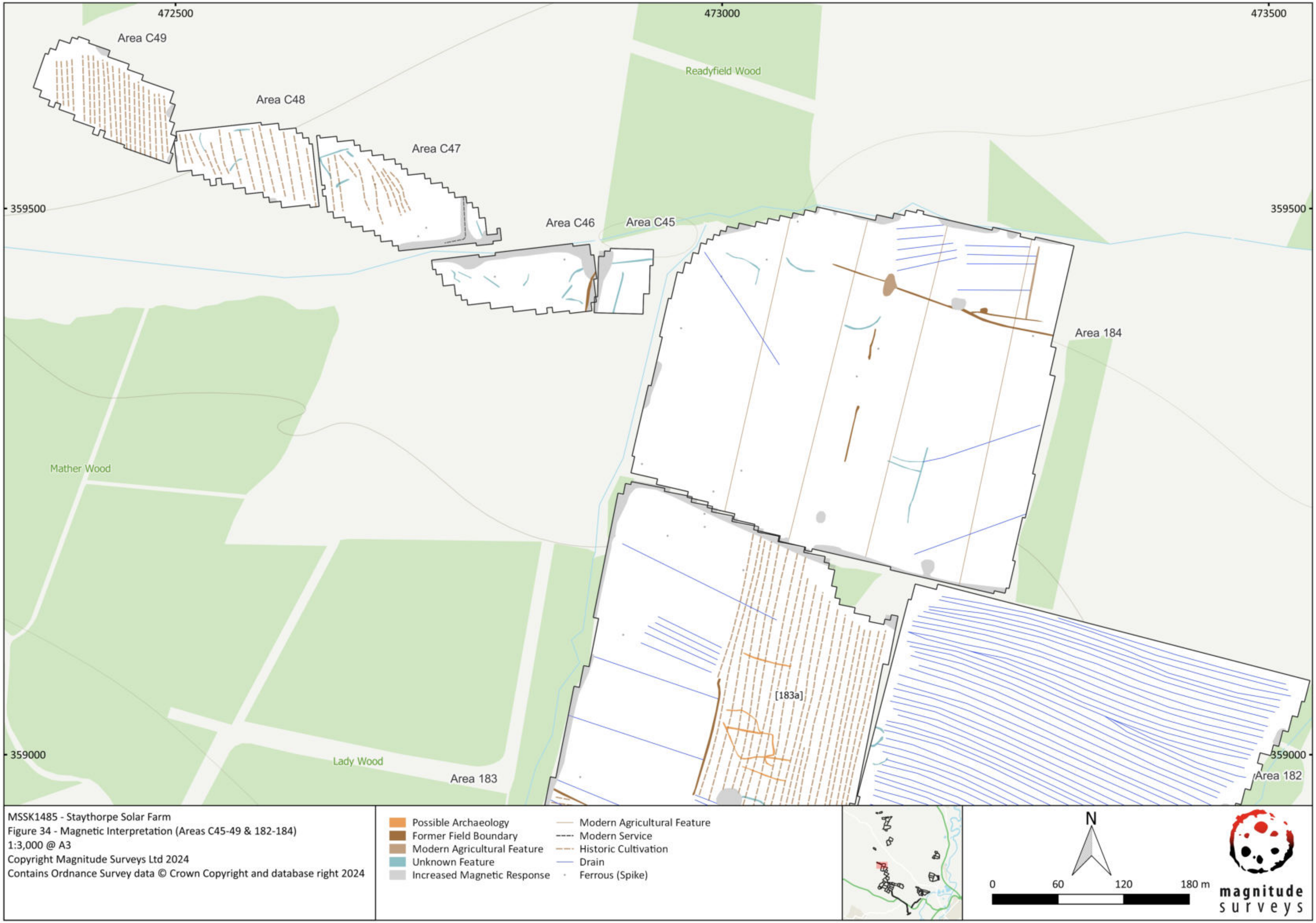
magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 33 - Magnetic Gradient (Overview) (Areas C45-49 & 182-184)
1:3,000 @ A3



magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 34 - Magnetic Interpretation (Areas C45-49 & 182-184)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 35 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C45-49 & 182-184)
1:3,000 @ A3
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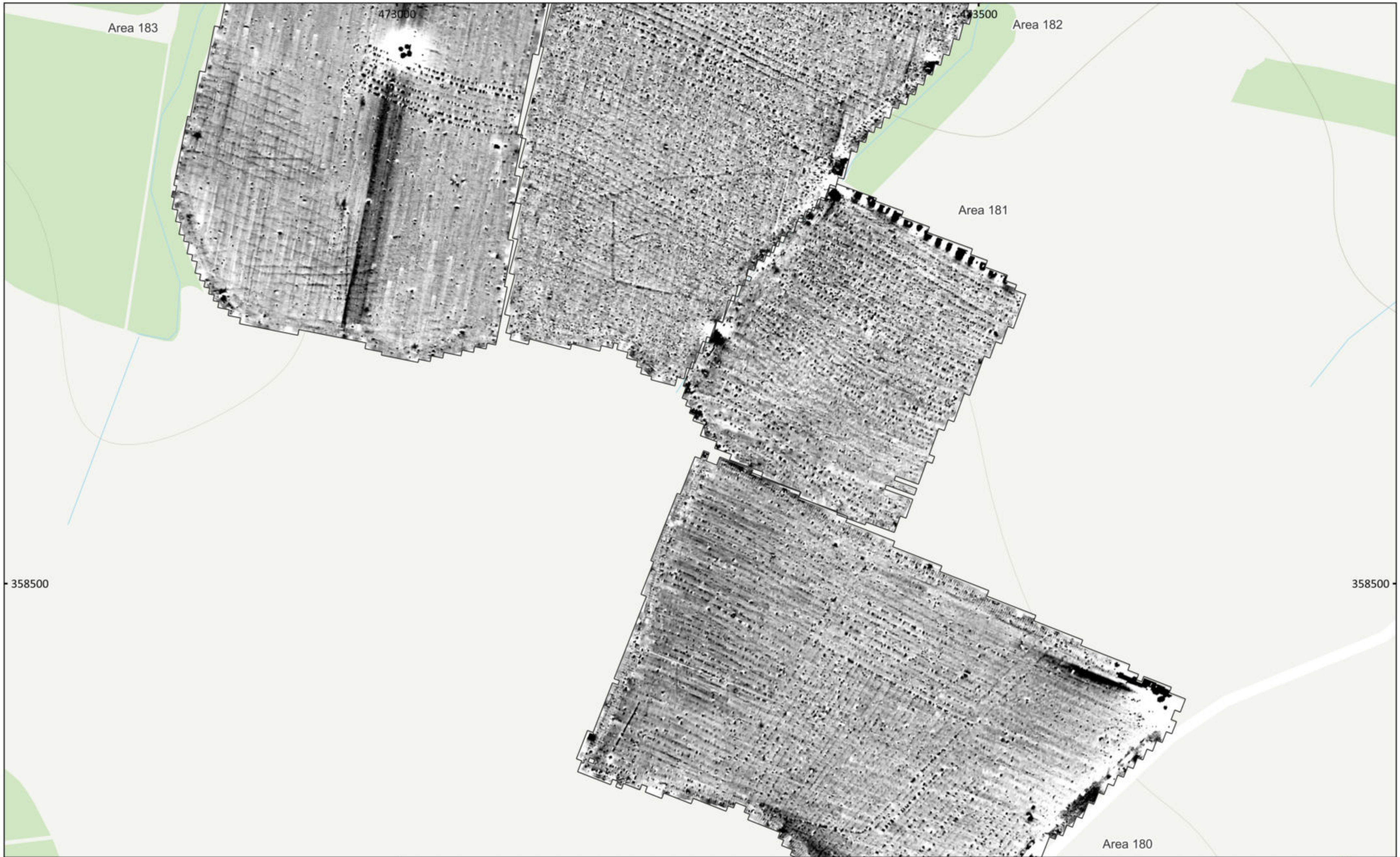
Contains Satellite Imagery © Bing 2023

Possible Archaeology
Former Field Boundary
Modern Agricultural Feature
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N
0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 36 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 180-183)
1:3,000 @ A3

magnitude surveys

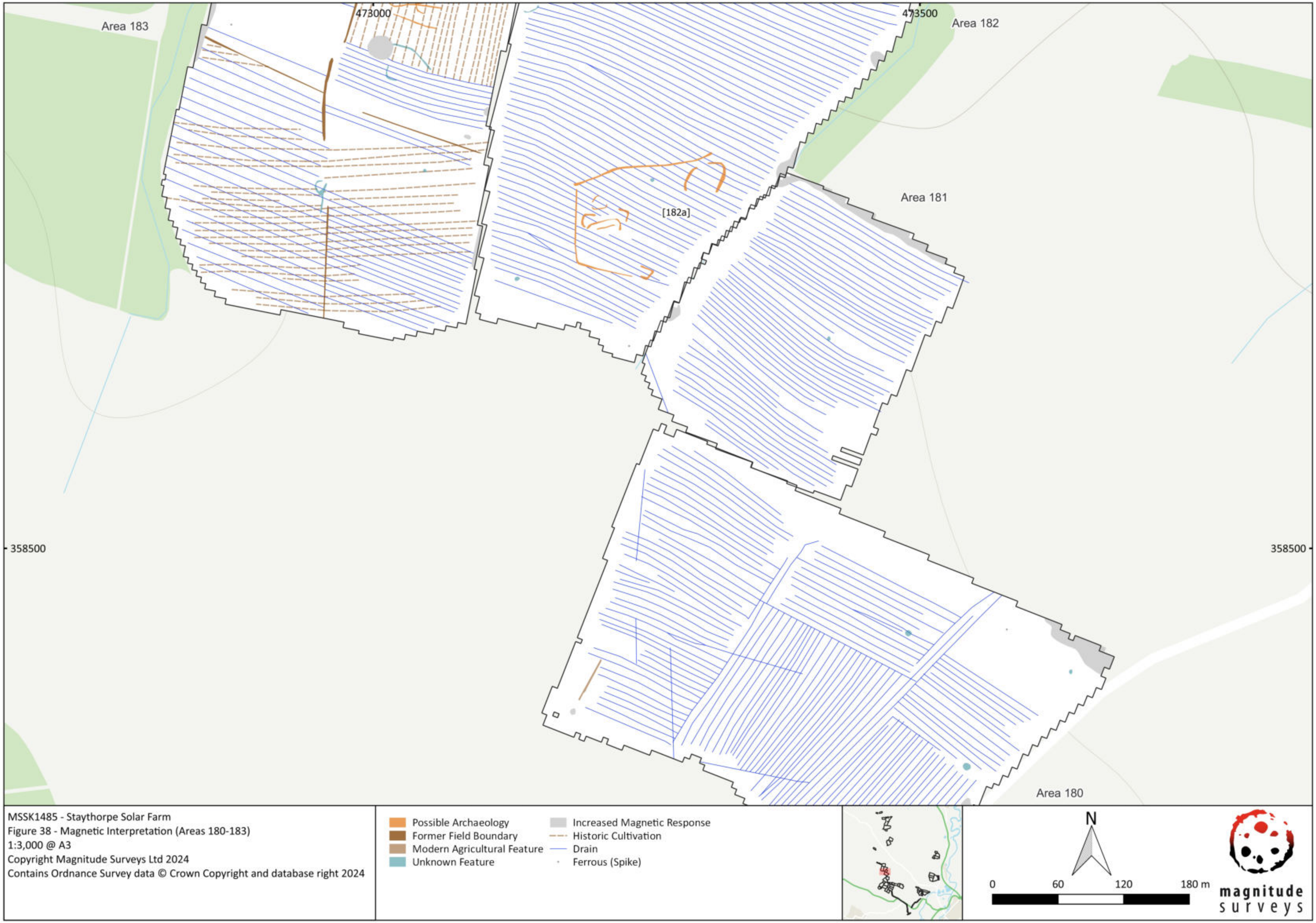
MSSK1485 - Staythorpe Solar Farm
Figure 37 - Magnetic Gradient (Overview) (Areas 180-183)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 38 - Magnetic Interpretation (Areas 180-183)
1:3,000 @ A3

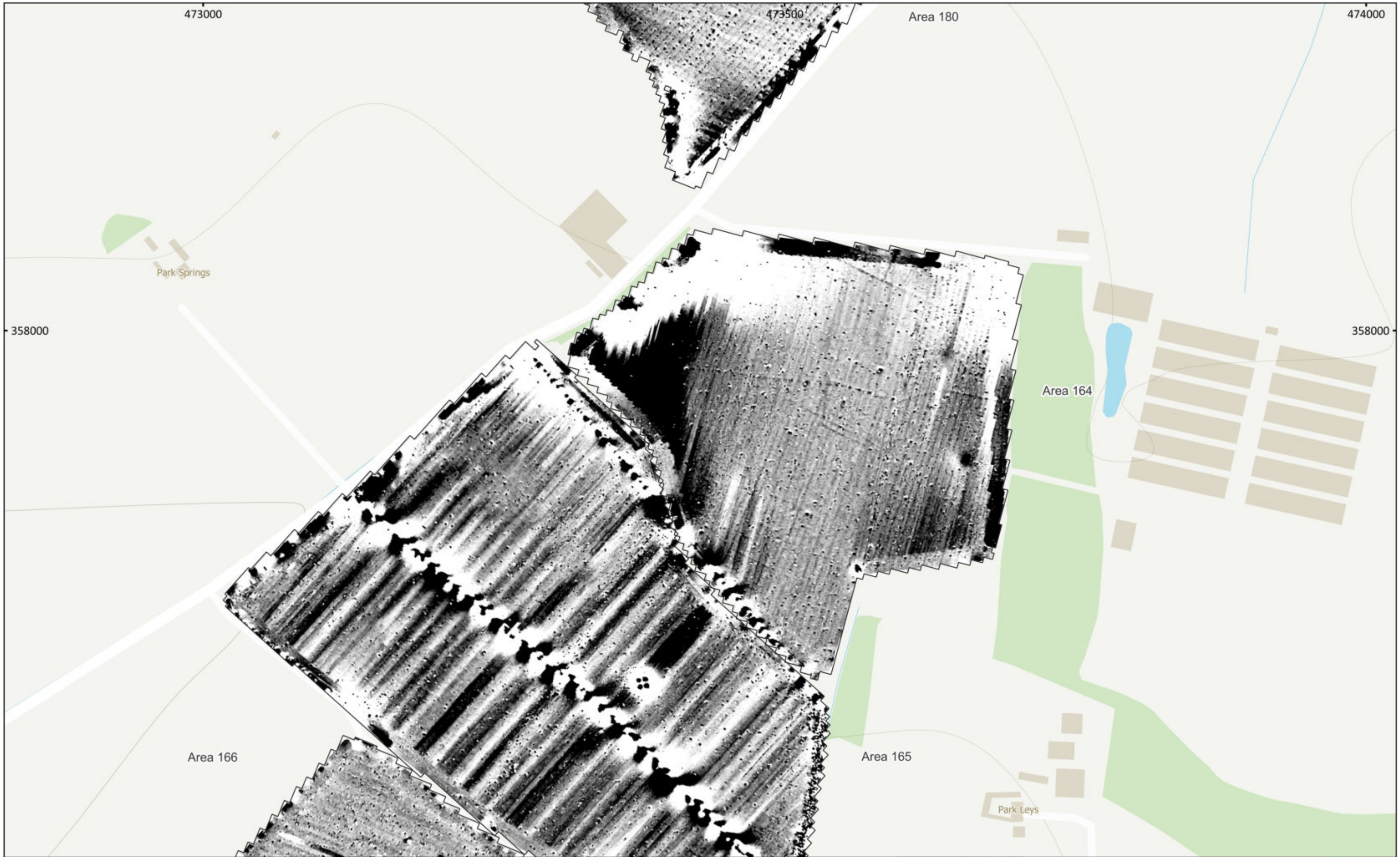
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 39 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 180-183)
1:3,000 @ A3

Possible Archaeology
Former Field Boundary
Modern Agricultural Feature
Unknown Feature
Increased Magnetic Response
Historic Cultivation
Drain
Ferrous (Spike)

N
0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 40 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 164-165 & 180)
1:3,000 @ A3

48,998 nT 49,003

N

0 60 120 180 m

magnitude surveys

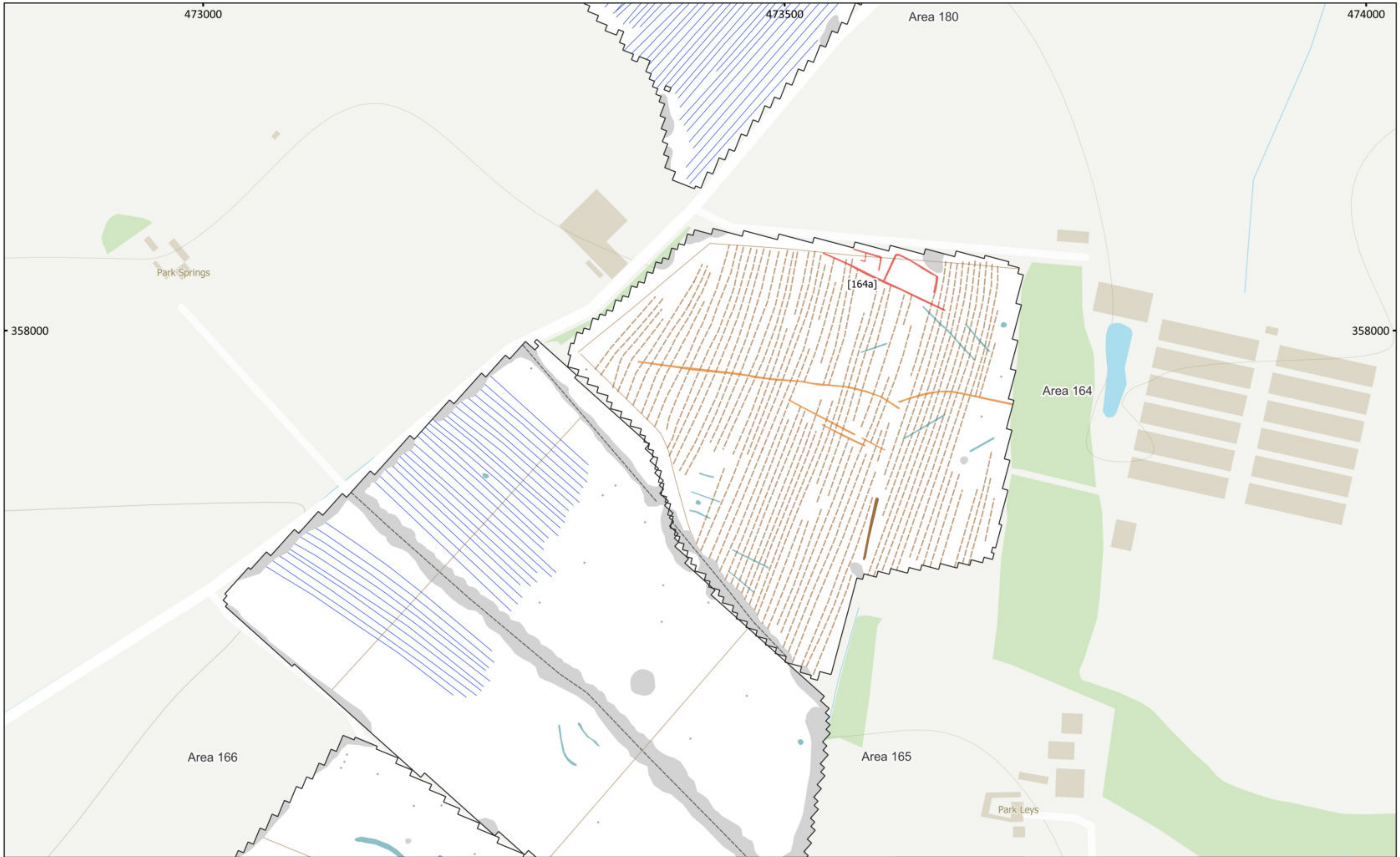
MSSK1485 - Staythorpe Solar Farm
Figure 41 - Magnetic Gradient (Overview) (Areas 164-165 & 180)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 42 - Magnetic Interpretation (Areas 164-165 & 180)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

magnitude surveys

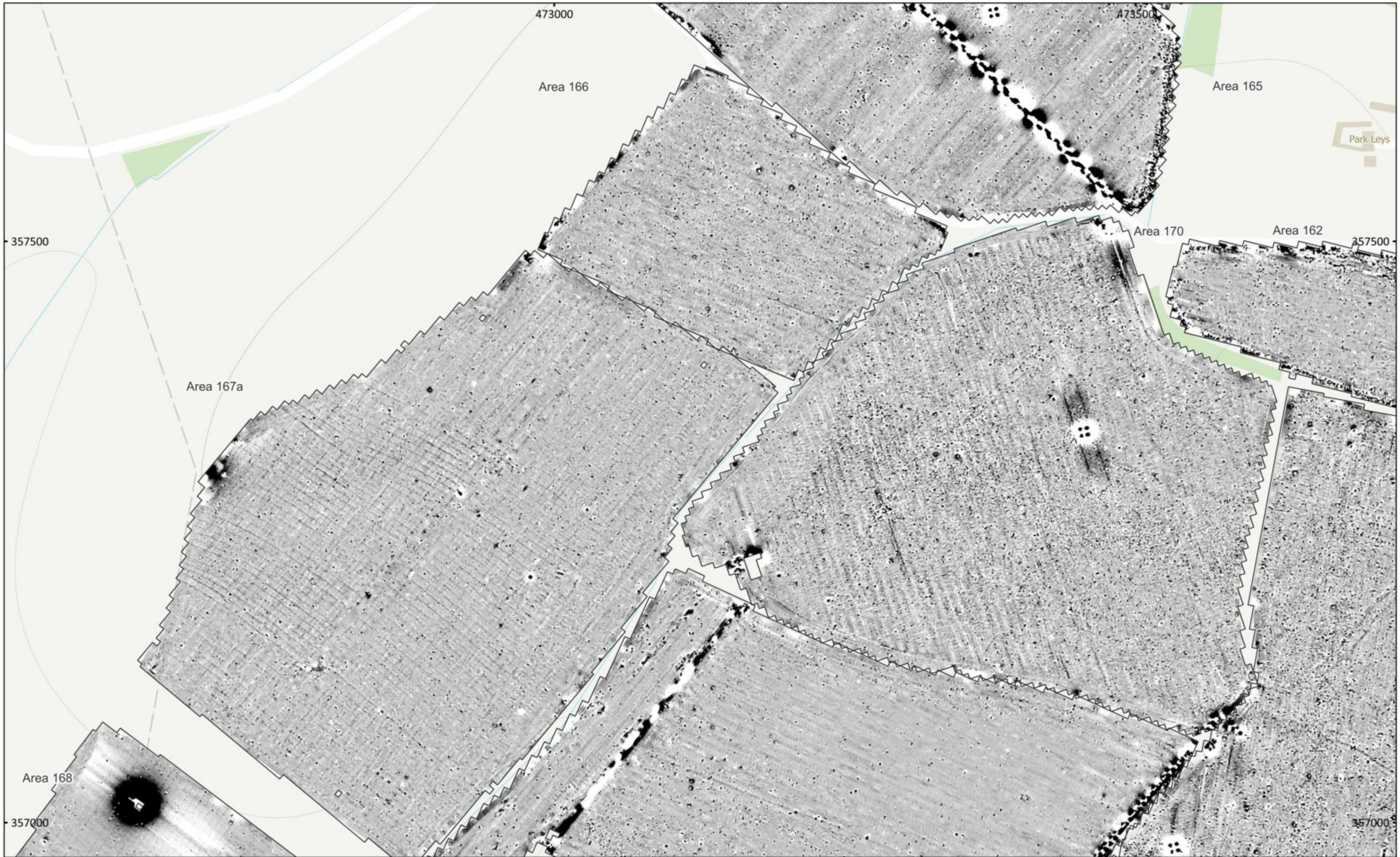
MSSK1485 - Staythorpe Solar Farm
Figure 43 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 164-165 & 180)
1:3,000 @ A3

Archaeology
Possible Archaeology
Former Field Boundary
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N
0 60 120 180 m

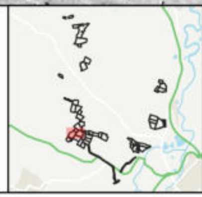
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 44 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 166, 167a, 168-169 (North) and 170)
1:3,000 @ A3



MSSK1485 - Staythorpe Solar Farm
Figure 45 - Magnetic Gradient (Overview) (Areas 166, 167a, 168-169 (North) and 170)
1:3,000 @ A3

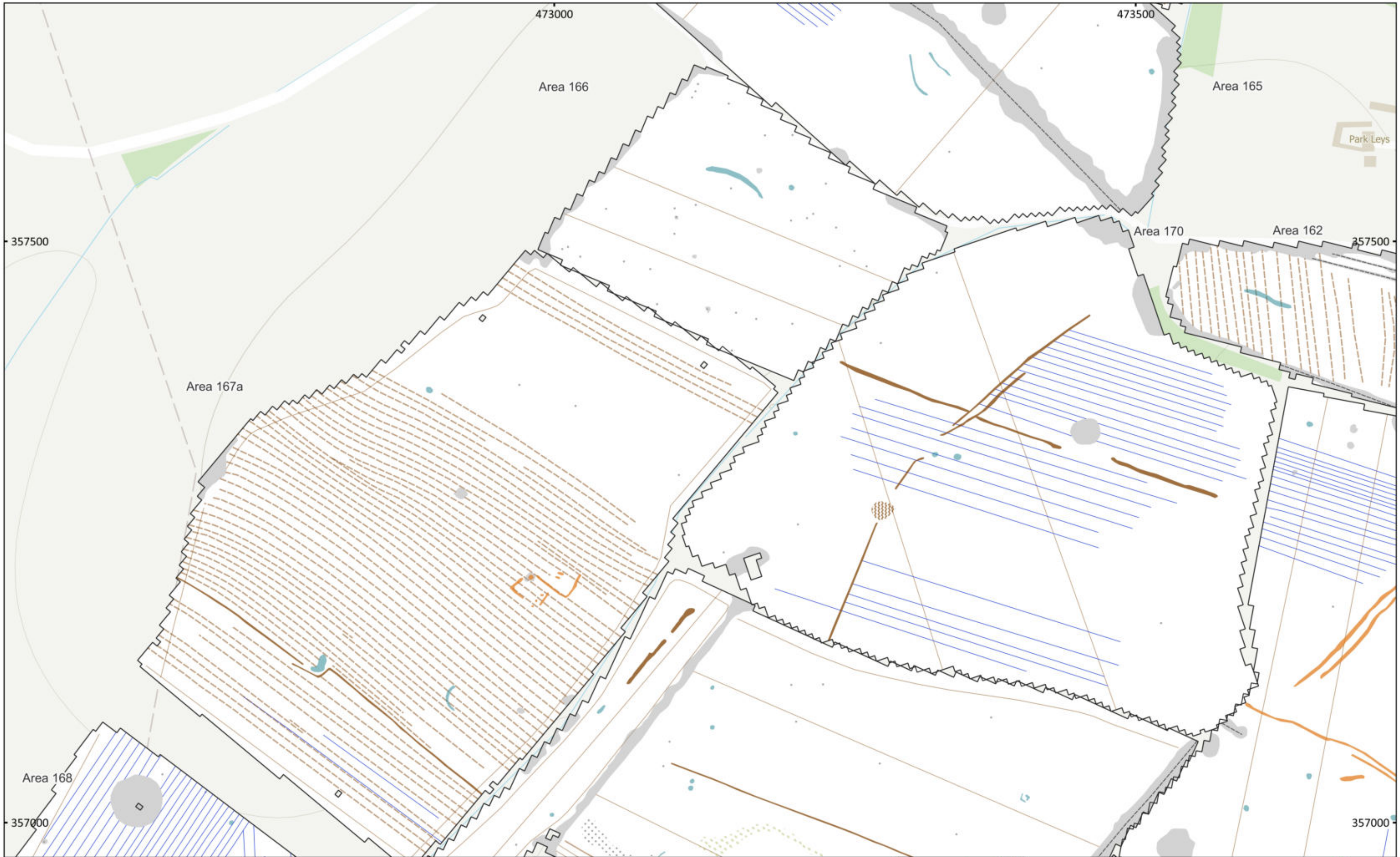
-1 nT 2



N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 46 - Magnetic Interpretation (Areas 166, 167a, 168-169 (North) and 170)
1:3,000 @ A3

Possible Archaeology
Former Field Boundary
Modern Agricultural Feature
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 47 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 166, 167a, 168-169 (North) and 170)
1:3,000 @ A3
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- Possible Archaeology
- Former Field Boundary
- Modern Agricultural Feature
- Historic Landscape Feature
- Unknown Feature
- Geomorphology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

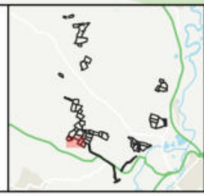
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 48 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 152, 167b & 168-169)
1:3,000 @ A3

48,998 nT 49,003



N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 49 - Magnetic Gradient (Overview) (Areas 152, 167b & 168-169)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys

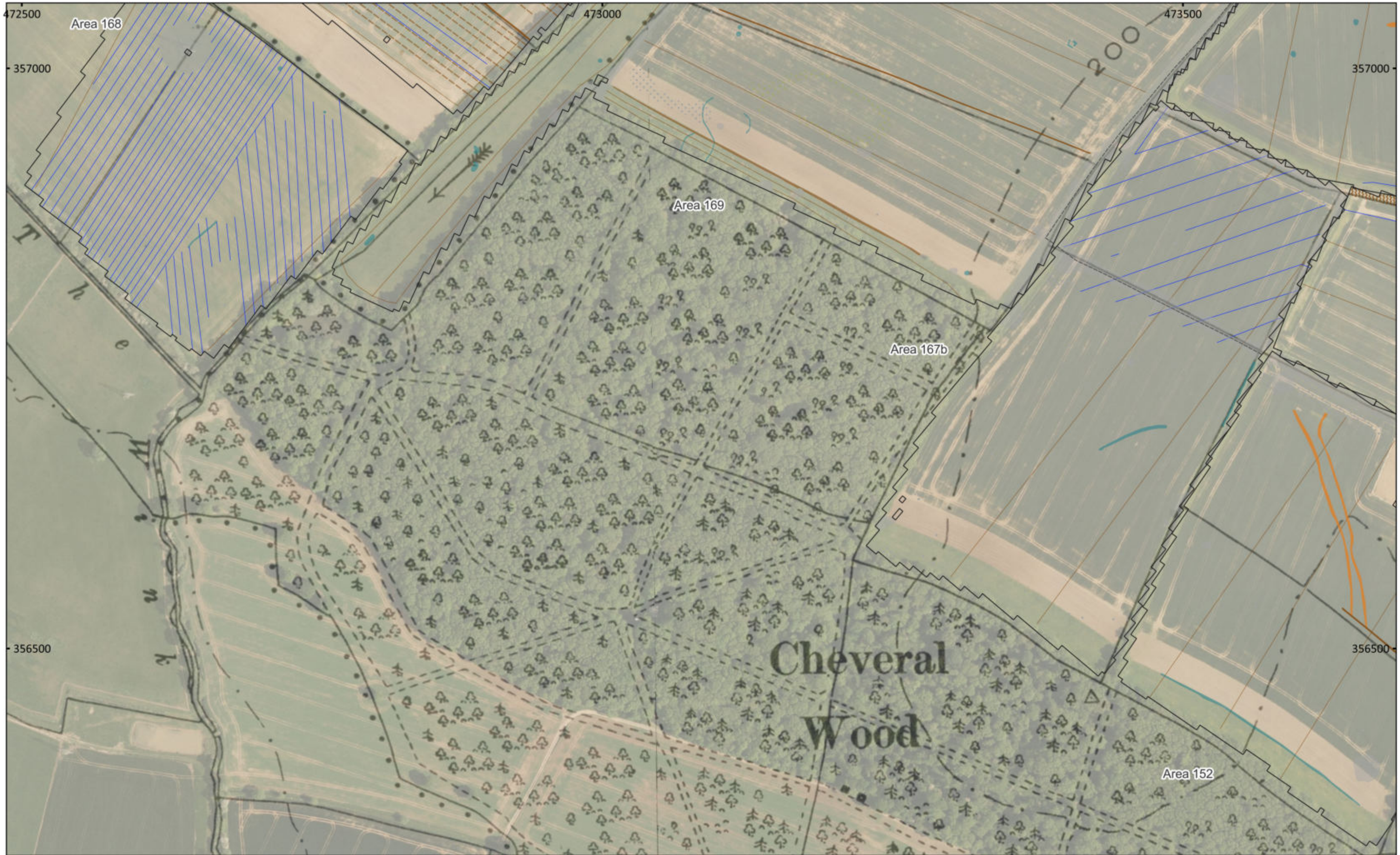
MSSK1485 - Staythorpe Solar Farm
Figure 50 - Magnetic Interpretation (Areas 152, 167b & 168-169)
1:3,000 @ A3

Possible Archaeology
Former Field Boundary
Modern Agricultural Feature
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 51 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 152, 167b & 168-169)
1:3,000 @ A3

Possible Archaeology
Former Field Boundary
Modern Agricultural Feature
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

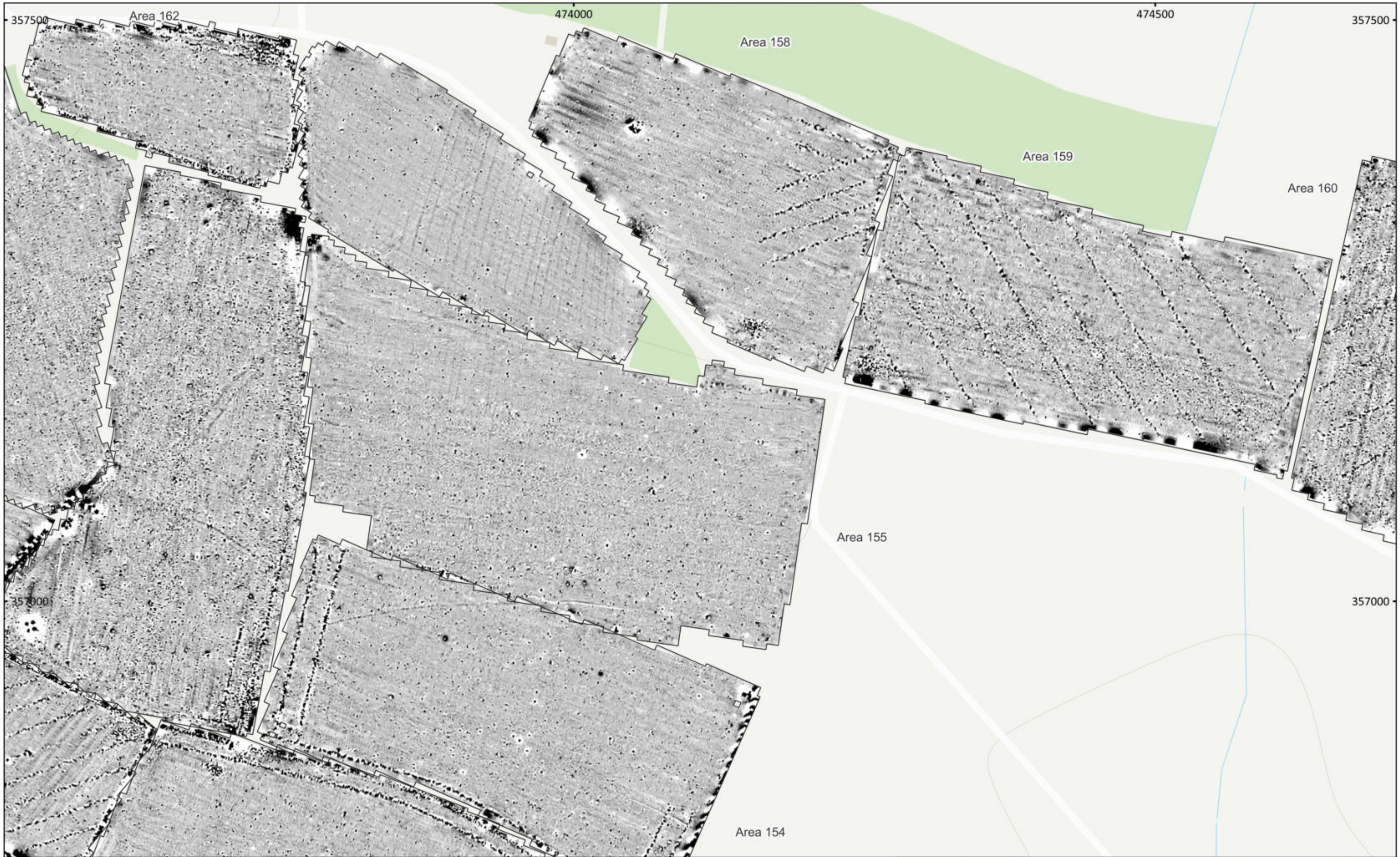
MSSK1485 - Staythorpe Solar Farm
Figure 52 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 153-156, 158-159, 162 & C82)
1:3,000 @ A3

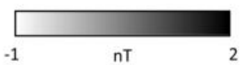
48,998 nT 49,003

N

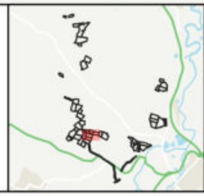
0 60 120 180 m

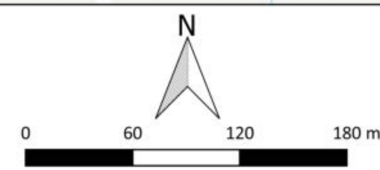
magnitude surveys





MSSK1485 - Staythorpe Solar Farm
Figure 53 - Magnetic Gradient (Overview) (Areas 153-156, 158-159, 162 & C82)
1:3,000 @ A3





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MSSK1485 - Staythorpe Solar Farm
Figure 54 - Magnetic Interpretation (Areas 153-156, 158-159, 162 & C82)
1:3,000 @ A3
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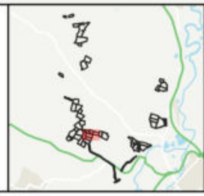
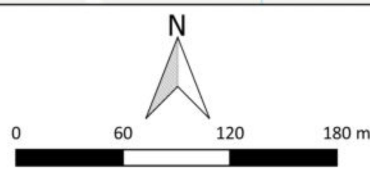
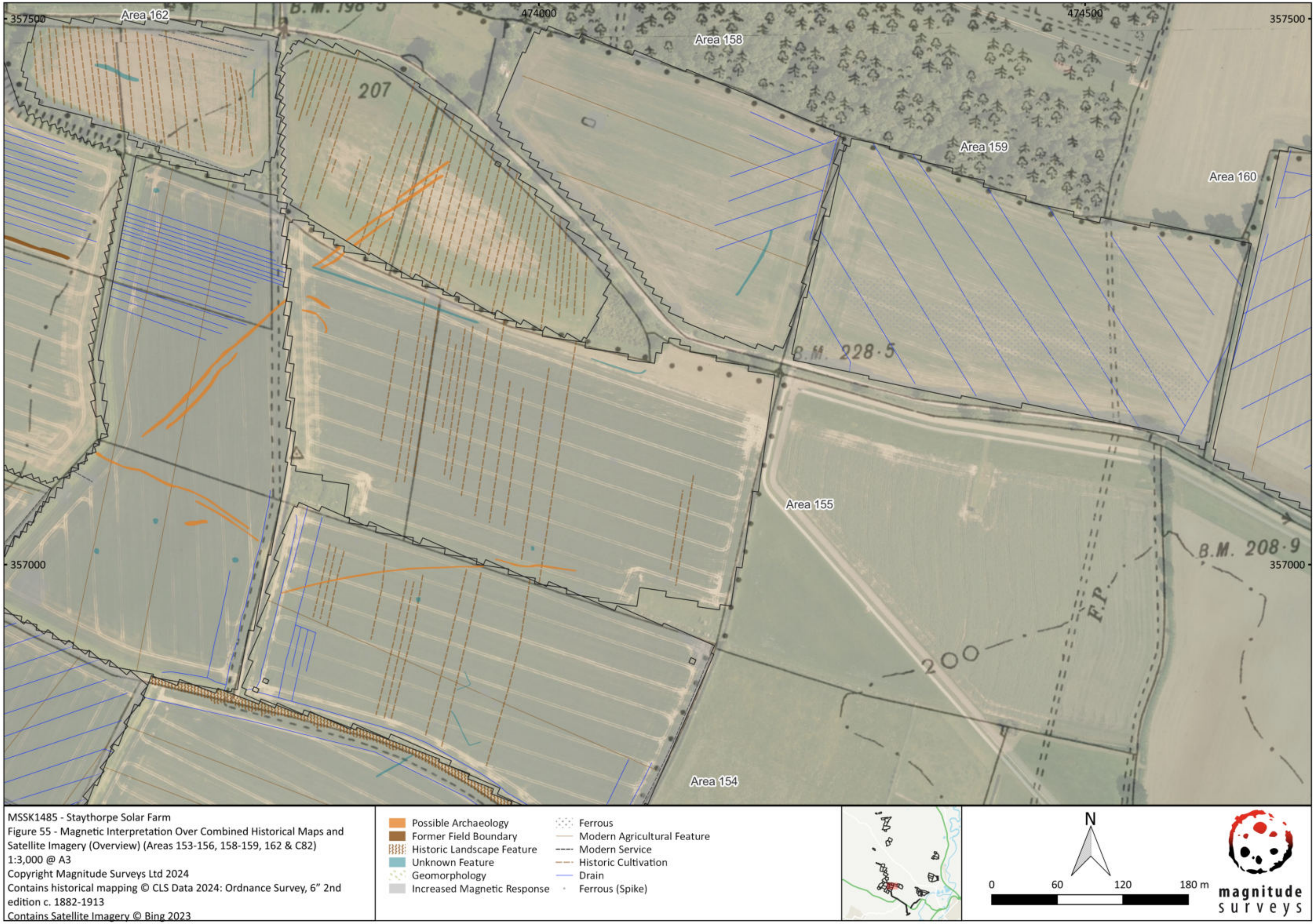
Possible Archaeology
Former Field Boundary
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

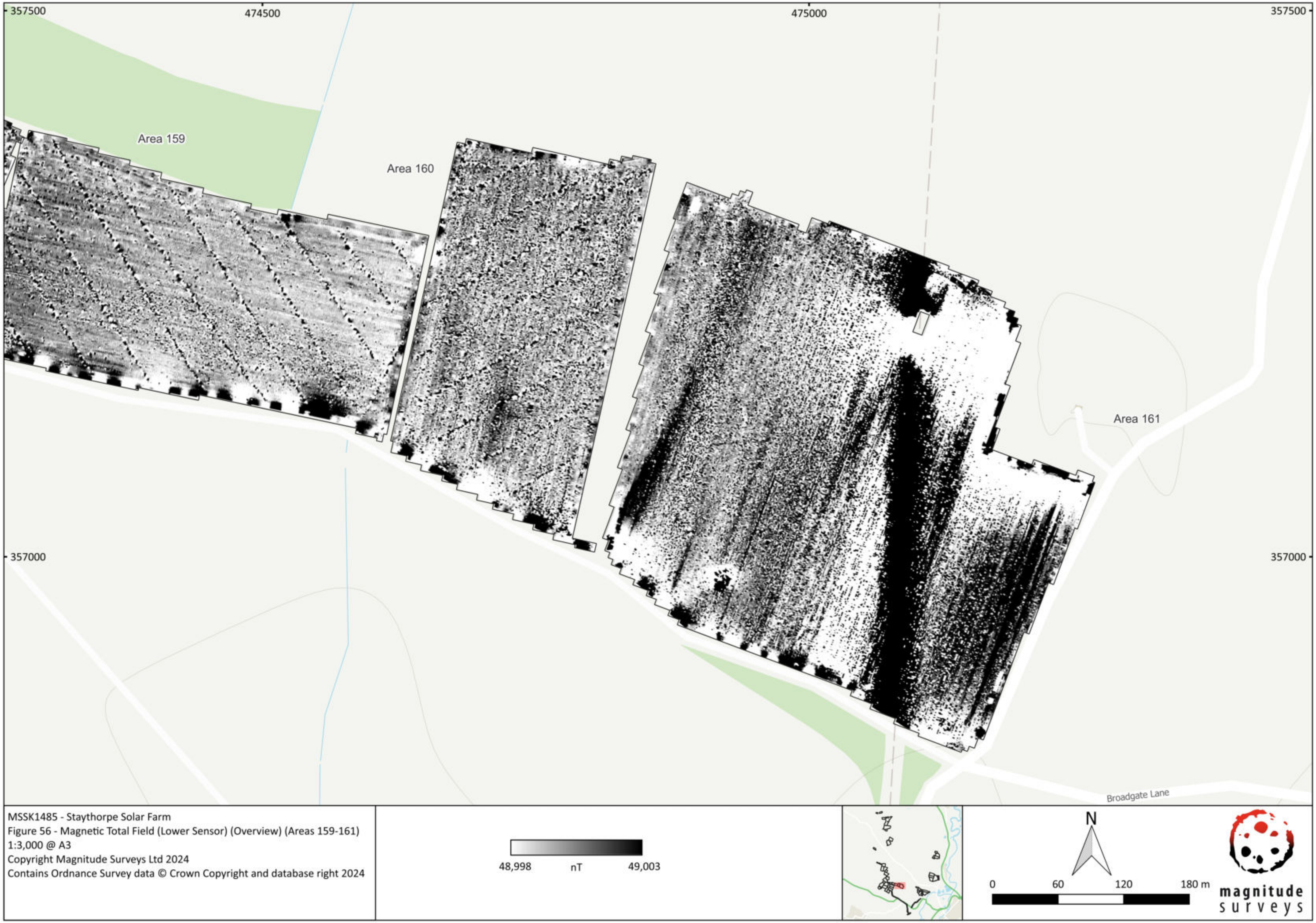




magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 55 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 153-156, 158-159, 162 & C82)
1:3,000 @ A3



MSSK1485 - Staythorpe Solar Farm
Figure 56 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 159-161)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 57 - Magnetic Gradient (Overview) (Areas 159-161)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 58 - Magnetic Interpretation (Areas 159-161)
1:3,000 @ A3

Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Drain
Ferrous (Spike)

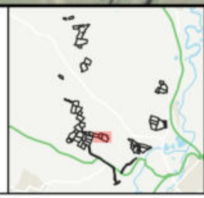
N

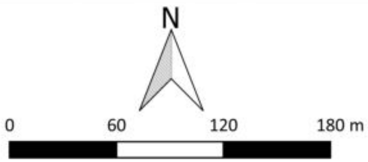
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 59 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 159-161)
1:3,000 @ A3

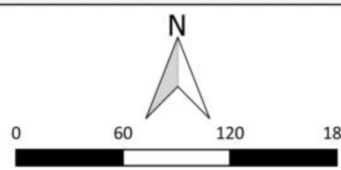
Historic Landscape Feature
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Drain
Ferrous (Spike)





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 60 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 152-153, 167b & C43)
1:3,000 @ A3



magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 61 - Magnetic Gradient (Overview) (Areas 152-153, 167b & C43)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 62 - Magnetic Interpretation (Areas 152-153, 167b & C43)
1:3,000 @ A3

- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 63 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 152-153, 167b & C43)
1:3,000 @ A3

Possible Archaeology
Former Field Boundary
Historic Landscape Feature
Unknown Feature
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 64 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C41-42 & C96-98)
1:3,000 @ A3

48,998 nT 49,003

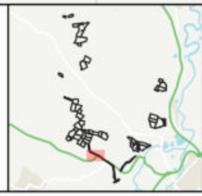
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 65 - Magnetic Gradient (Overview) (Areas C41-42 & C96-98)
1:3,000 @ A3

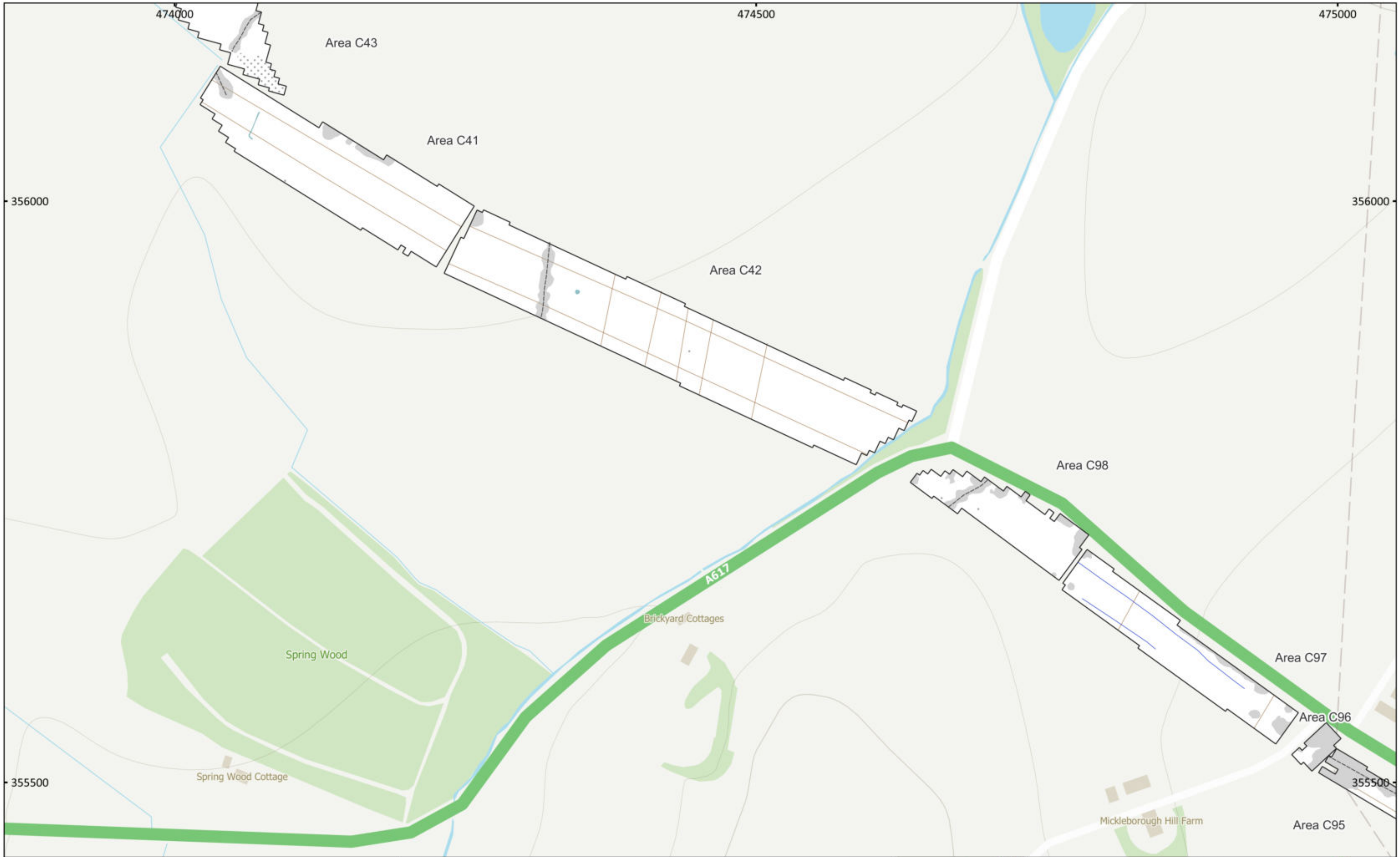
-1 nT 2



N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 66 - Magnetic Interpretation (Areas C41-42 & C96-98)
1:3,000 @ A3

Unknown Feature
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Drain
Ferrous (Spike)

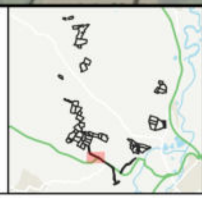
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 67 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C41-42 & C96-98)
1:3,000 @ A3

Unknown Feature
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Drain
Ferrous (Spike)



N

0 60 120 180 m

magnitude surveys

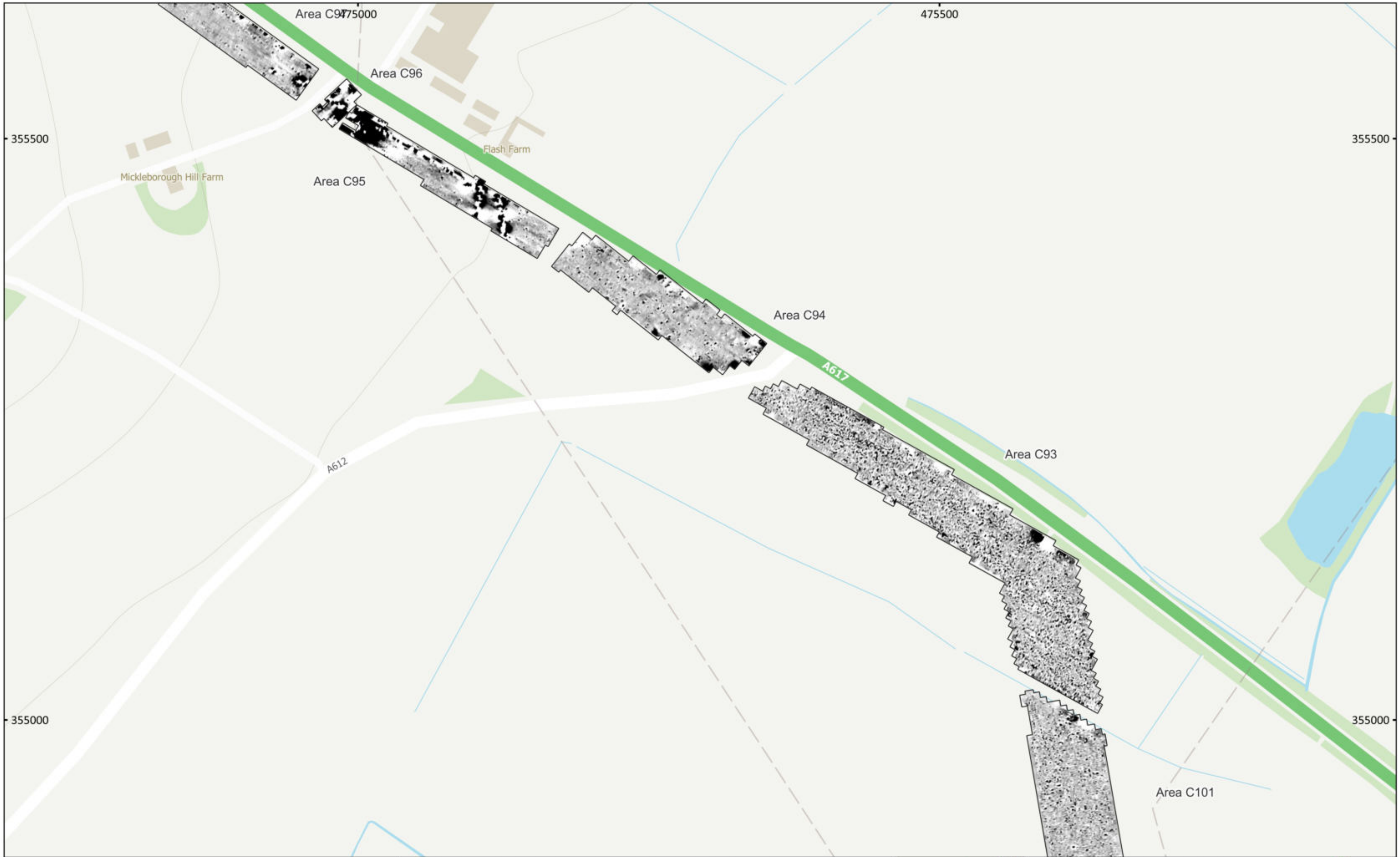
MSSK1485 - Staythorpe Solar Farm
Figure 68 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C93-96)
1:3,000 @ A3

48,998 nT 49,003

N

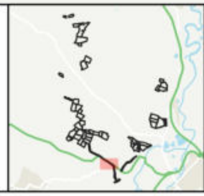
0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 69 - Magnetic Gradient (Overview) (Areas C93-96)
1:3,000 @ A3

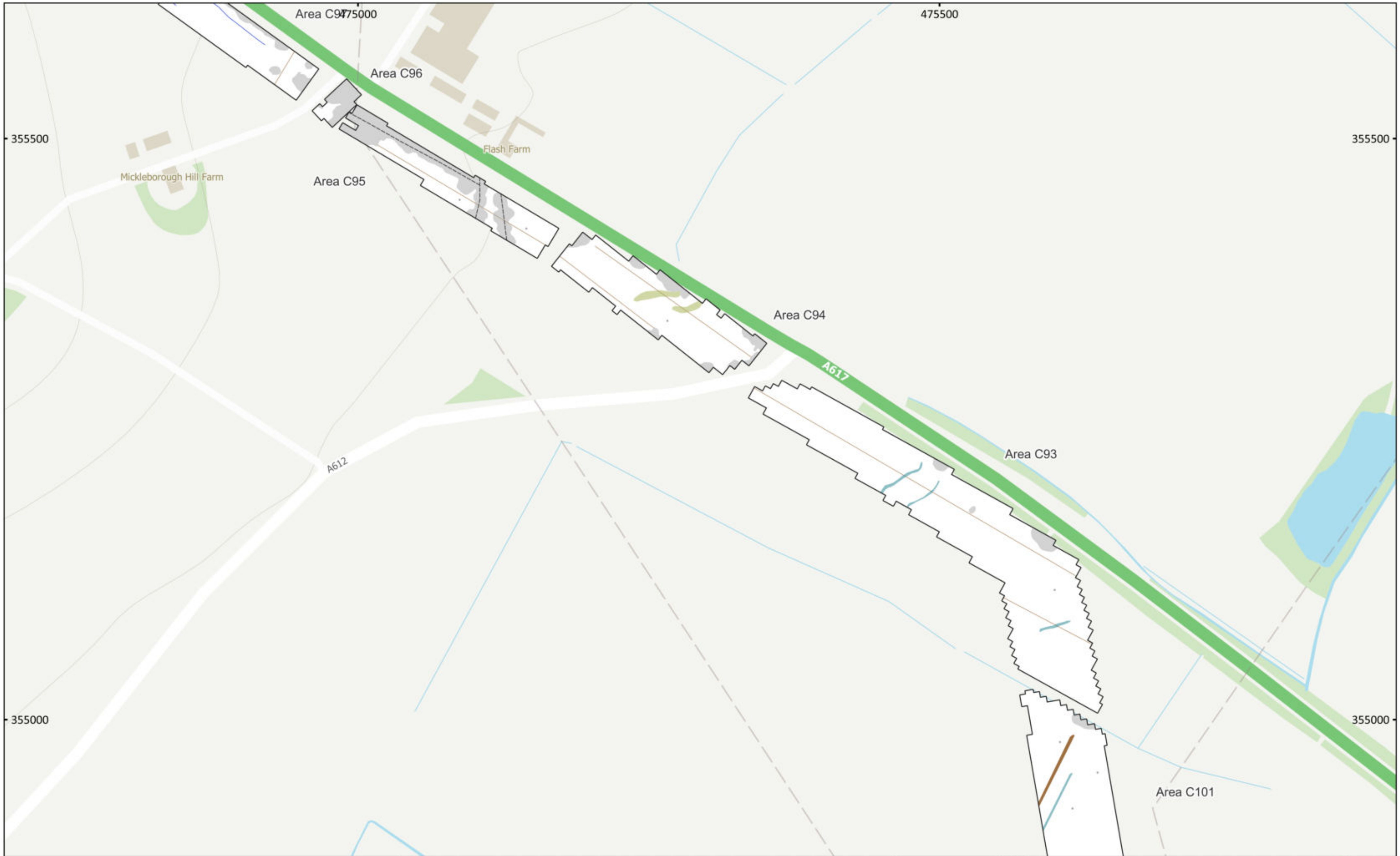
-1 nT 2



N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 70 - Magnetic Interpretation (Areas C93-96)
1:3,000 @ A3

Former Field Boundary
Unknown Feature
Geology
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Drain
Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 71 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C93-96)
1:3,000 @ A3
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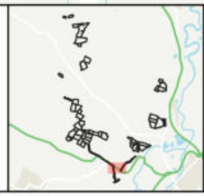
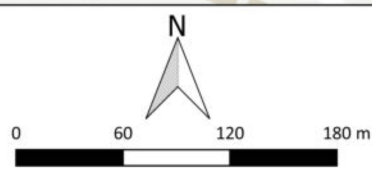
Contains historical mapping © CLS Data 2024: Ordnance Survey, 6" 2nd edition c. 1882-1913
Contains Satellite Imagery © Bing 2023

Former Field Boundary
Unknown Feature
Geology
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Drain
Ferrous (Spike)

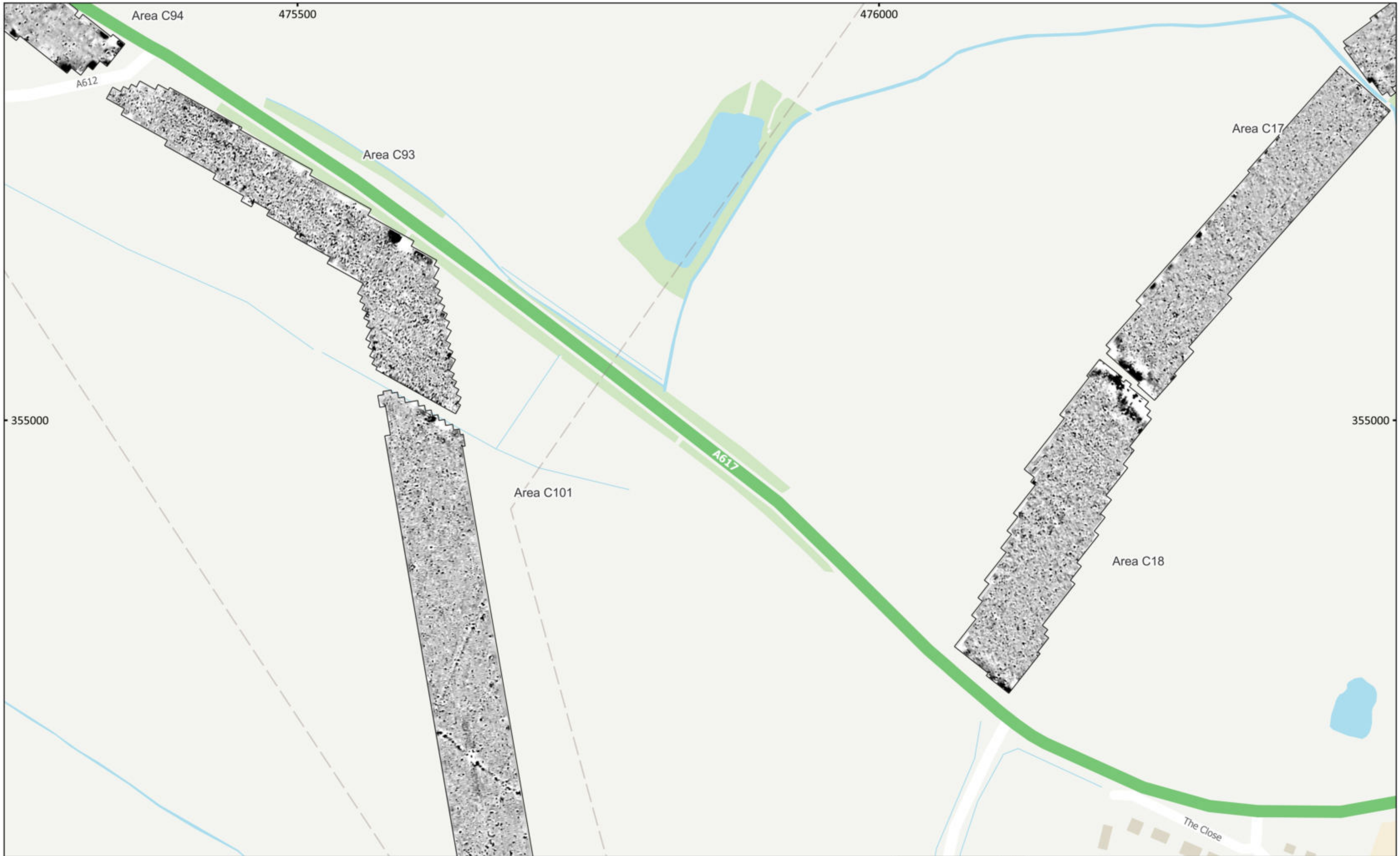
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 72 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C17-18 & C101)
1:3,000 @ A3





magnitude surveys



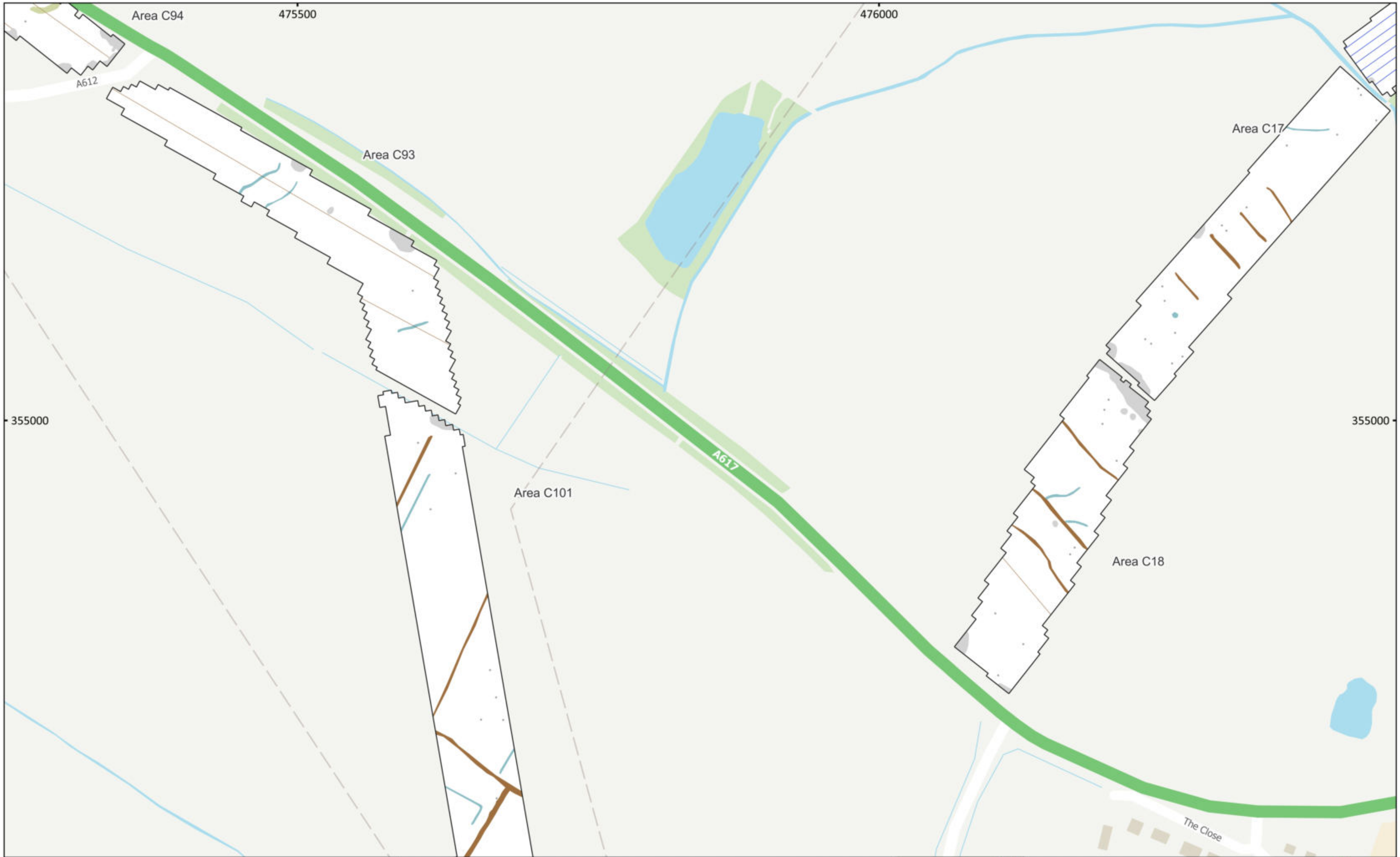
MSSK1485 - Staythorpe Solar Farm
Figure 73 - Magnetic Gradient (Overview) (Areas C17-18 & C101)
1:3,000 @ A3

-1 nT 2

N

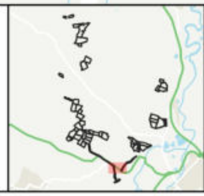
0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 74 - Magnetic Interpretation (Areas C17-18 & C101)
1:3,000 @ A3

Former Field Boundary
Unknown Feature
Geology
Increased Magnetic Response
Modern Agricultural Feature
Drain
Ferrous (Spike)

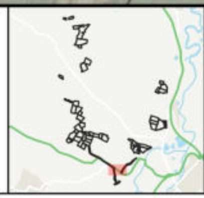


N
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 75 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C17-18 & C101)
1:3,000 @ A3

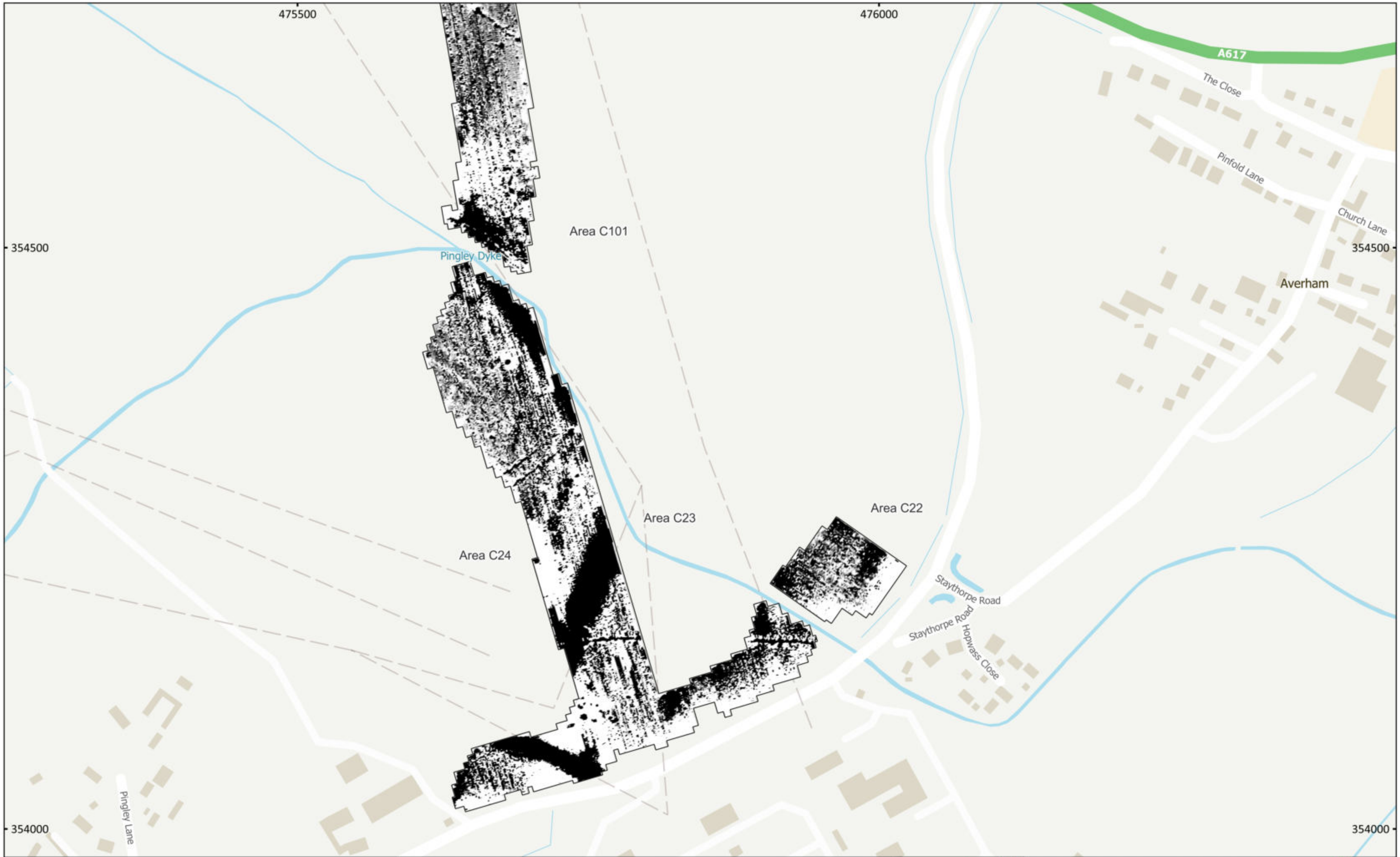
- Former Field Boundary
- Unknown Feature
- Geology
- Increased Magnetic Response
- Modern Agricultural Feature
- Drain
- Ferrous (Spike)



N

0 60 120 180 m

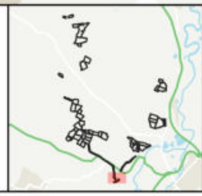
magnitude surveys

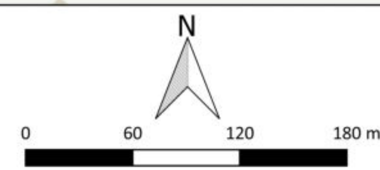


MSSK1485 - Staythorpe Solar Farm
Figure 76 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C22-24 & C101)
1:3,000 @ A3

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 77 - Magnetic Gradient (Overview) (Areas C22-24 & C101)
1:3,000 @ A3

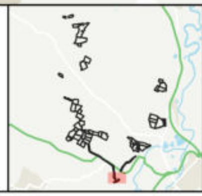




magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 78 - Magnetic Interpretation (Areas C22-24 & C101)
1:3,000 @ A3

- Former Field Boundary
- Unknown Feature
- Geology
- Geomorphology
- Increased Magnetic Response
- Modern Agricultural Feature
- Modern Service
- Ferrous (Spike)



N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 79 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C22-24 & C101)
1:3,000 @ A3
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Contains historical mapping © CLS Data 2024: Ordnance Survey, 6" 2nd edition c. 1882-1913
Contains Satellite Imagery © Bing 2023

Former Field Boundary
Unknown Feature
Geology
Geomorphology
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Ferrous (Spike)

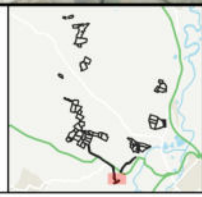
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 79 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C22-24 & C101)
1:3,000 @ A3

Former Field Boundary
Unknown Feature
Geology
Geomorphology
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Ferrous (Spike)



N
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 80 - Magnetic Total Field (Lower Sensor) (Overview) (Areas C16 & C17)
1:3,000 @ A3

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 82 - Magnetic Interpretation (Areas C16 & C17)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Modern Service
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 83 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas C16 & C17)
1:3,000 @ A3

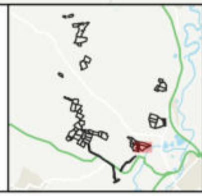
Archaeology
Possible Archaeology
Former Field Boundary
Unknown Feature
Increased Magnetic Response
Modern Service
Drain
Ferrous (Spike)

N
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 84 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 279-280, 288-291 & 293)
1:3,000 @ A3

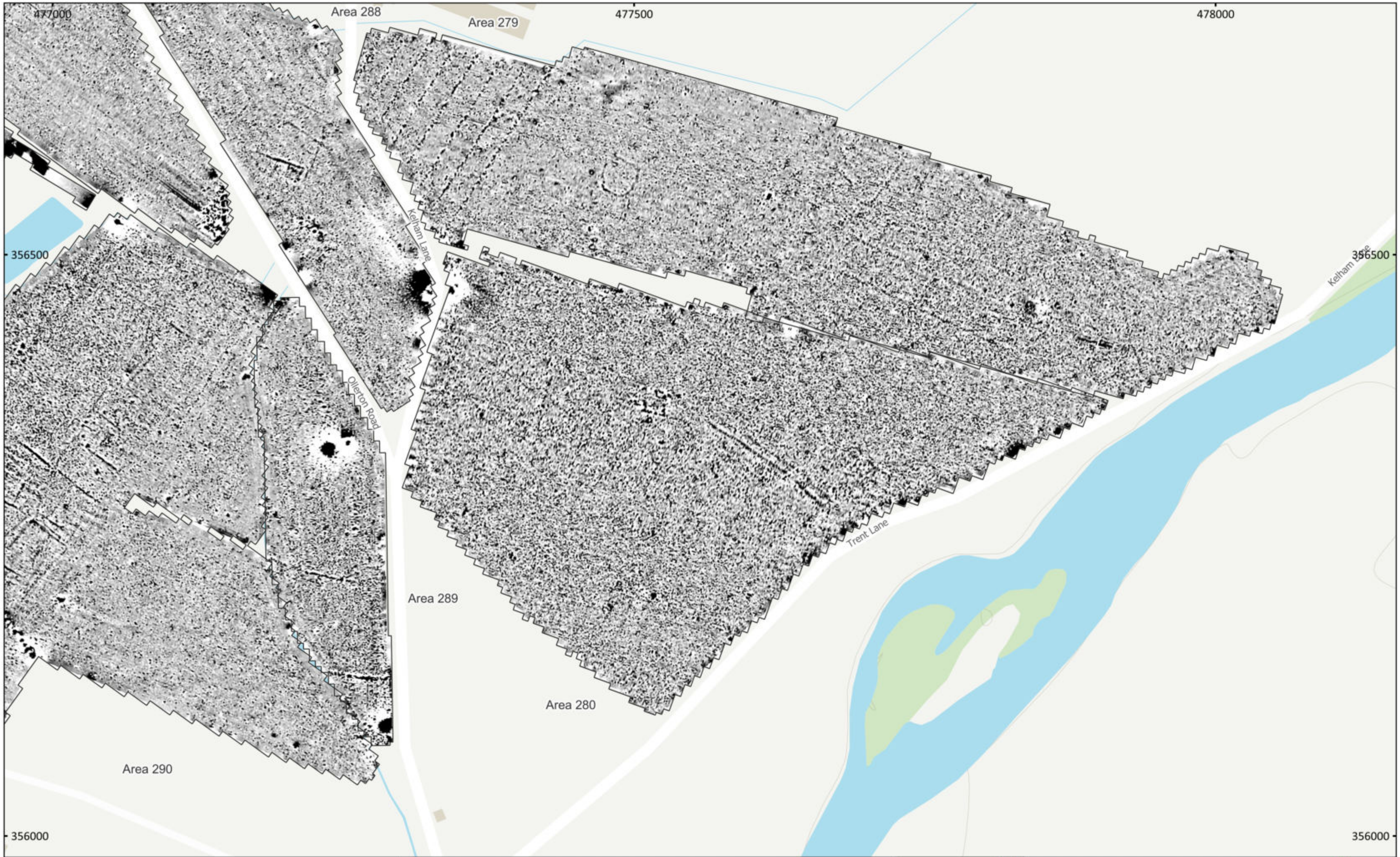
48,998 nT 49,003



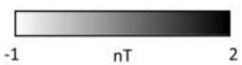
N

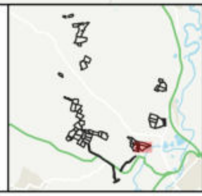
0 60 120 180 m

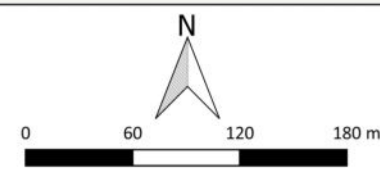
magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 85 - Magnetic Gradient (Overview) (Areas 279-280, 288-291 & 293)
1:3,000 @ A3







magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 86 - Magnetic Interpretation (Areas 279-280, 288-291 & 293)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Geology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 87 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 279-280, 288-291 & 293)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Geology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 88 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 279-280 & 288-293)
1:3,000 @ A3

48,998 nT 49,003

N

0 60 120 180 m

magnitude surveys

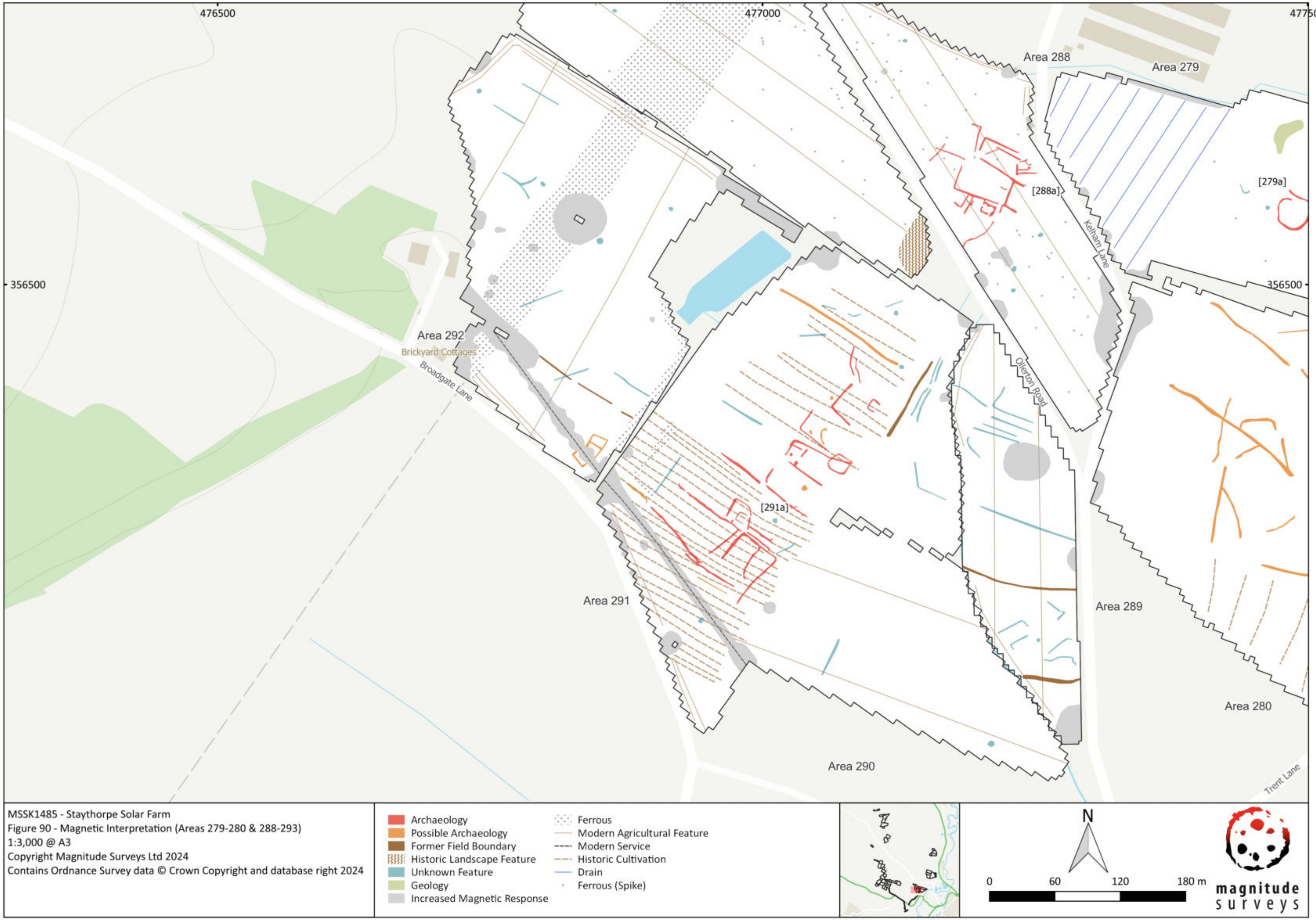
MSSK1485 - Staythorpe Solar Farm
Figure 89 - Magnetic Gradient (Overview) (Areas 279-280 & 288-293)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 90 - Magnetic Interpretation (Areas 279-280 & 288-293)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 91 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 279-280 & 288-293)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Geology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 92 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 288, 291-293 & 295)
1:3,000 @ A3

48,998 nT 49,003

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 93 - Magnetic Gradient (Overview) (Areas 288, 291-293 & 295)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 94 - Magnetic Interpretation (Areas 288, 291-293 & 295)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 95 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 288, 291-293 & 295)
1:3,000 @ A3

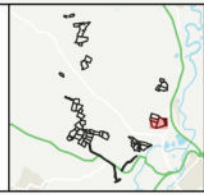
- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

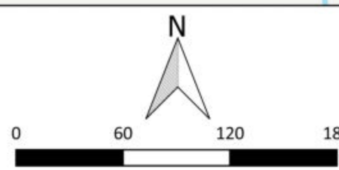
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 96 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 119, 122-123, 288a & 288a.3)
1:3,000 @ A3





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 97 - Magnetic Gradient (Overview) (Areas 119, 122-123, 288a & 288a.3)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 98 - Magnetic Interpretation (Areas 119, 122-123, 288a & 288a.3)
1:3,000 @ A3

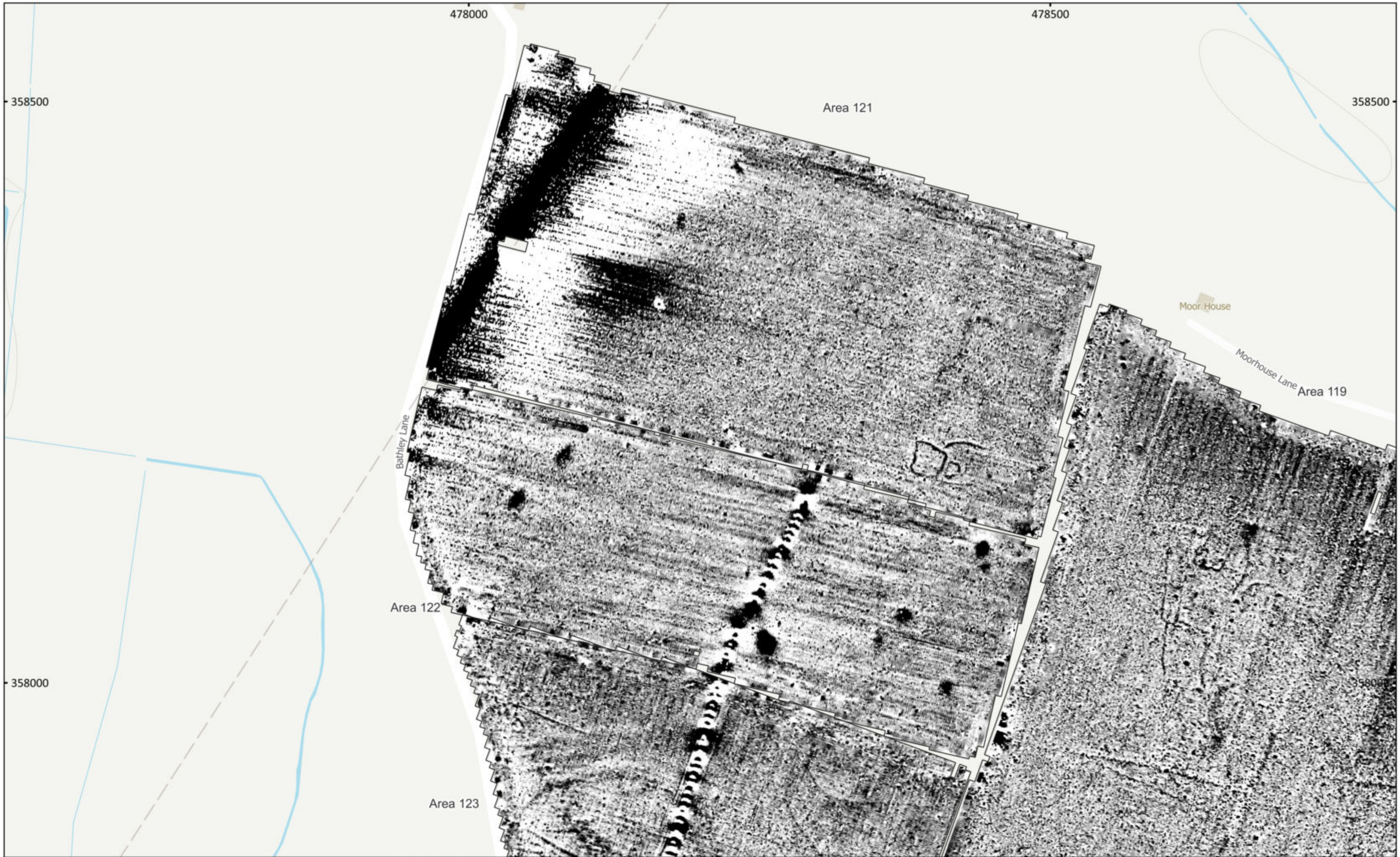
- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Geomorphology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Ferrous (Spike)

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 99 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 119, 122-123, 288a & 288a.3)
1:3,000 @ A3



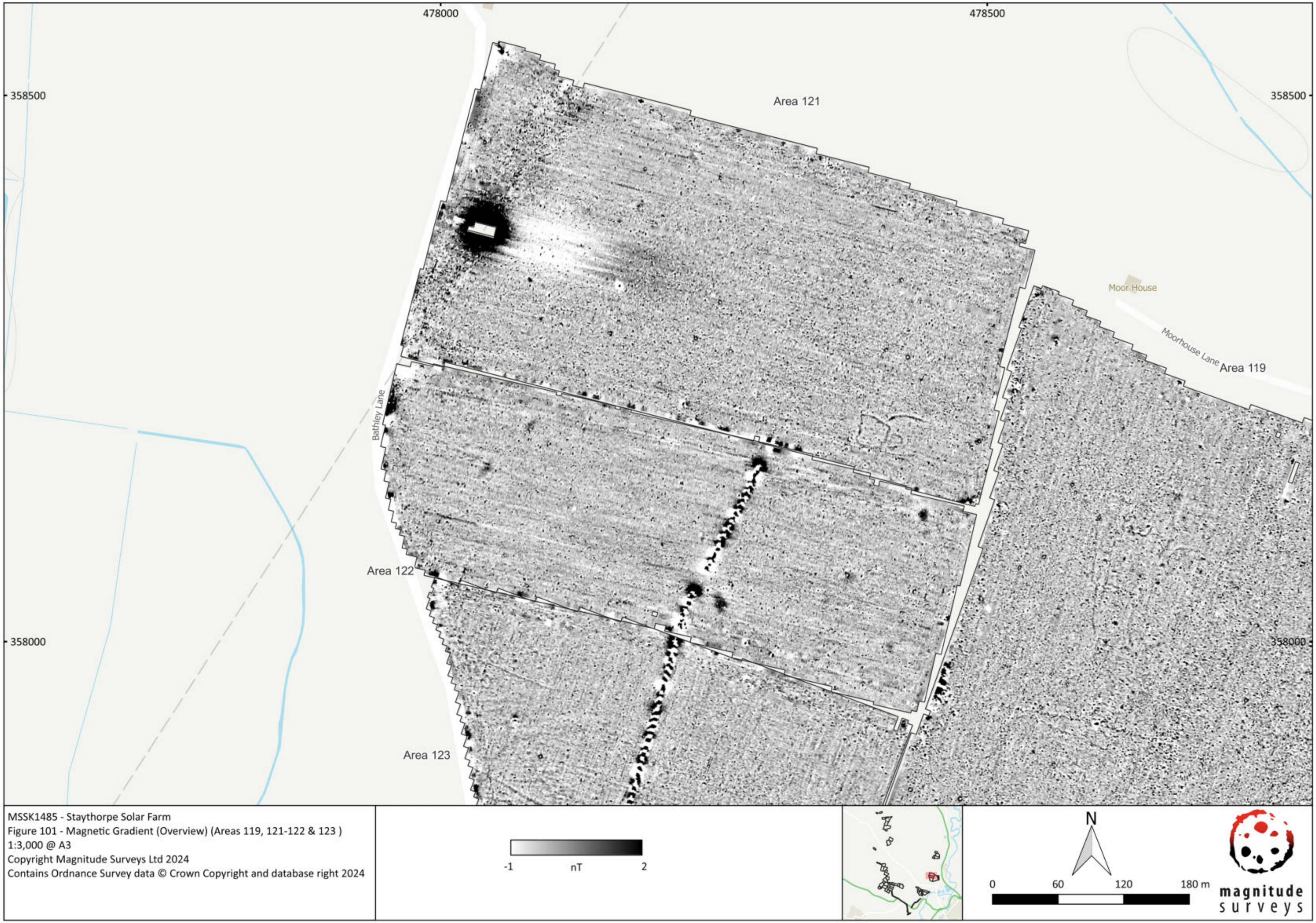
MSSK1485 - Staythorpe Solar Farm
Figure 100 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 119, 121-122 & 123)
1:3,000 @ A3

48,998 nT 49,003

N

0 60 120 180 m

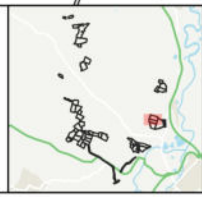
magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 101 - Magnetic Gradient (Overview) (Areas 119, 121-122 & 123)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 102 - Magnetic Interpretation (Areas 119, 121-122 & 123)
1:3,000 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Geomorphology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Ferrous (Spike)



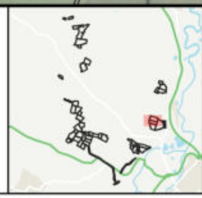
N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 103 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 119, 121-122 & 123)
1:3,000 @ A3

Archaeology
Possible Archaeology
Former Field Boundary
Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service
Historic Cultivation
Ferrous (Spike)



N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 104 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 109-111)
1:3,000 @ A3

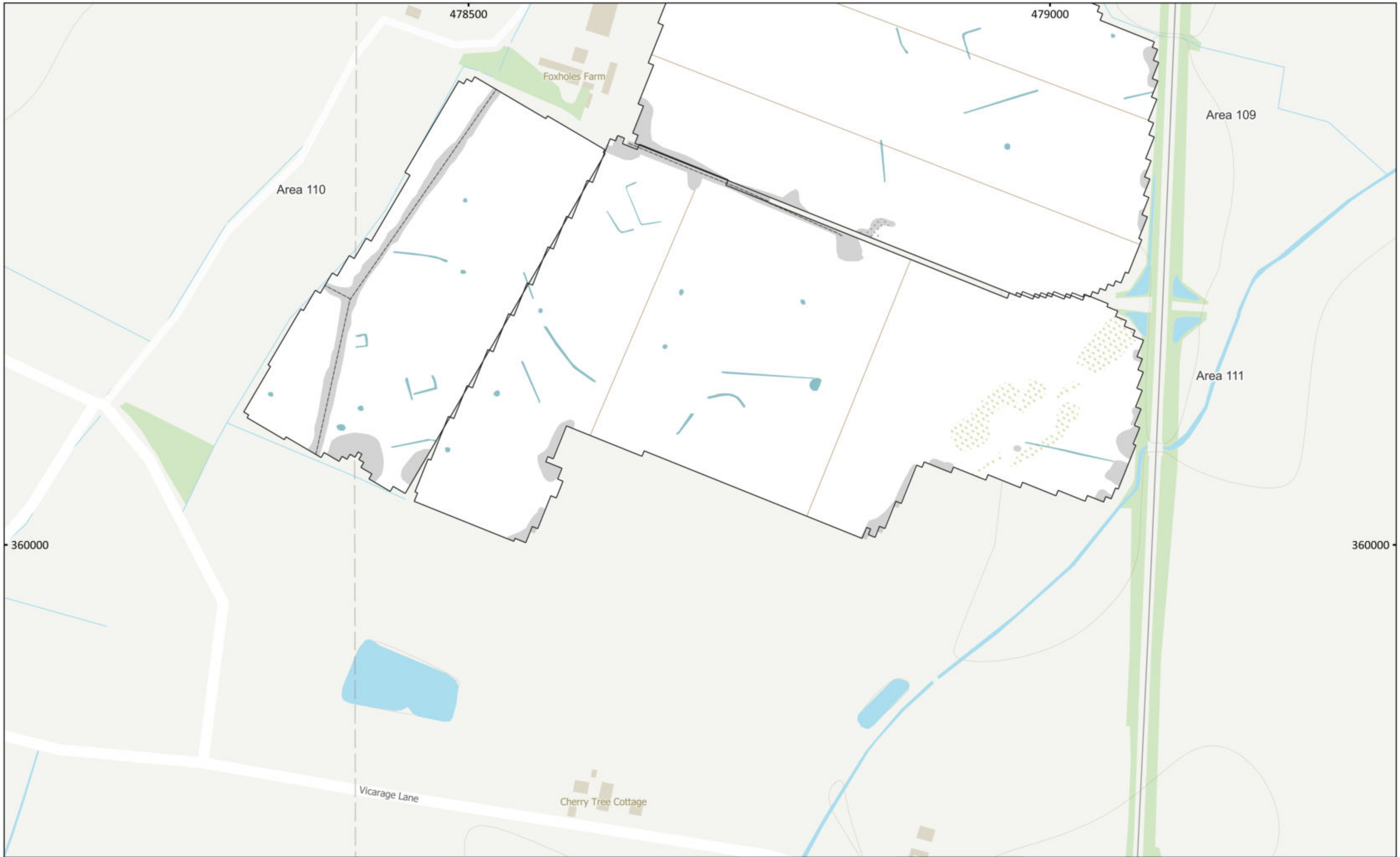
48,998 nT 49,003

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 105 - Magnetic Gradient (Overview) (Areas 109-111)
1:3,000 @ A3



MSSK1485 - Staythorpe Solar Farm
Figure 106 - Magnetic Interpretation (Areas 109-111)
1:3,000 @ A3

Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service

N

0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 107 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 109-111)
1:3,000 @ A3

Unknown Feature
Geomorphology
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Modern Service

N
0 60 120 180 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 108 - Magnetic Total Field (Lower Sensor) (Overview) (Areas 108-111)
1:3,000 @ A3

48,998 nT 49,003

N

0 60 120 180 m

magnitude surveys

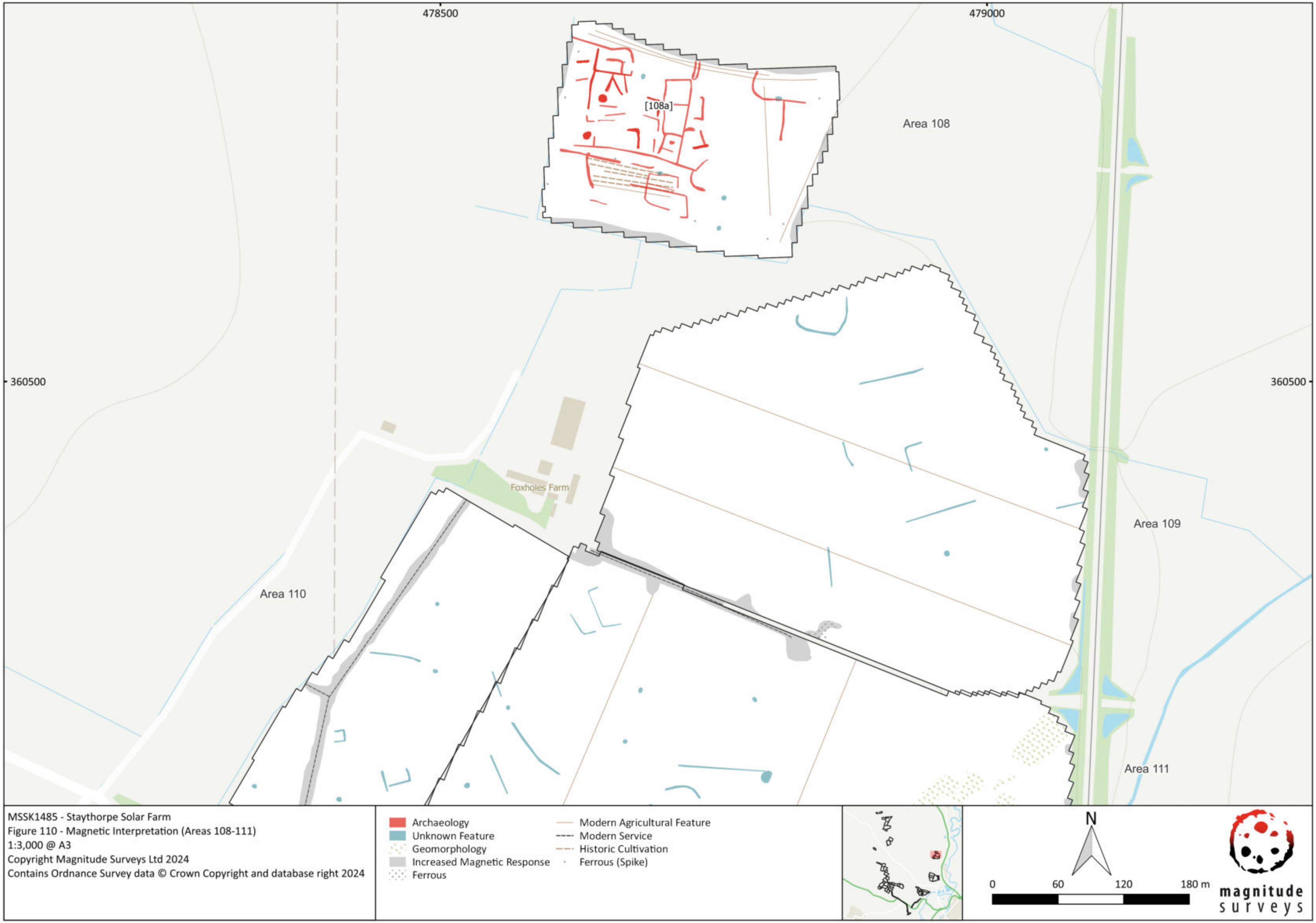
MSSK1485 - Staythorpe Solar Farm
Figure 109 - Magnetic Gradient (Overview) (Areas 108-111)
1:3,000 @ A3

-1 nT 2

N

0 60 120 180 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 110 - Magnetic Interpretation (Areas 108-111)
1:3,000 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 111 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Areas 108-111)
1:3,000 @ A3

- Archaeology
- Unknown Feature
- Geomorphology
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Ferrous (Spike)

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 112 - Magnetic Gradient (Area of Archaeological Activity 1 (Area 256))
1:1,500 @ A3

-1 nT 2

N

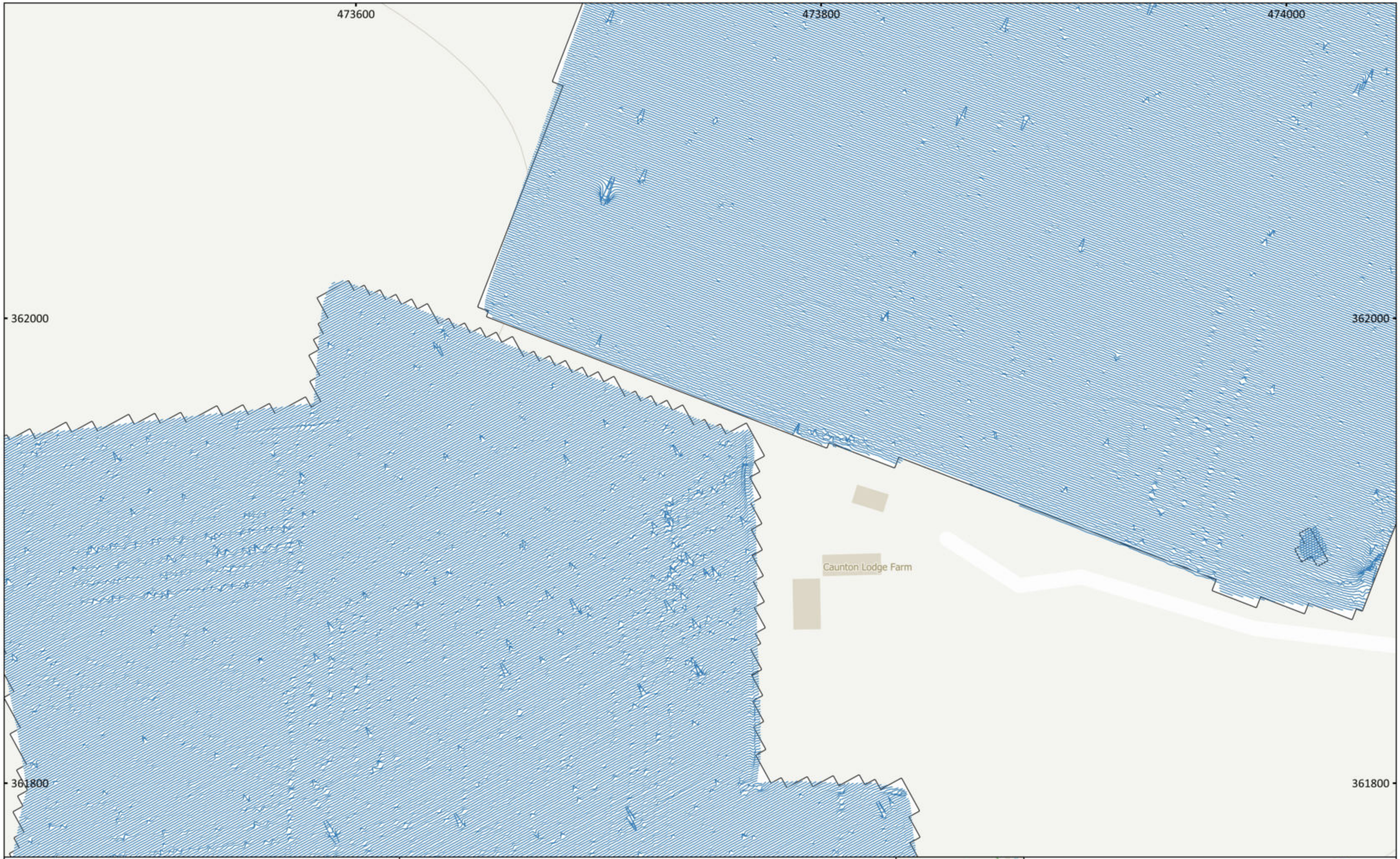
0 30 60 90 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 113 - Magnetic Interpretation (Area of Archaeological Activity 1 (Area 256))
1:1,500 @ A3

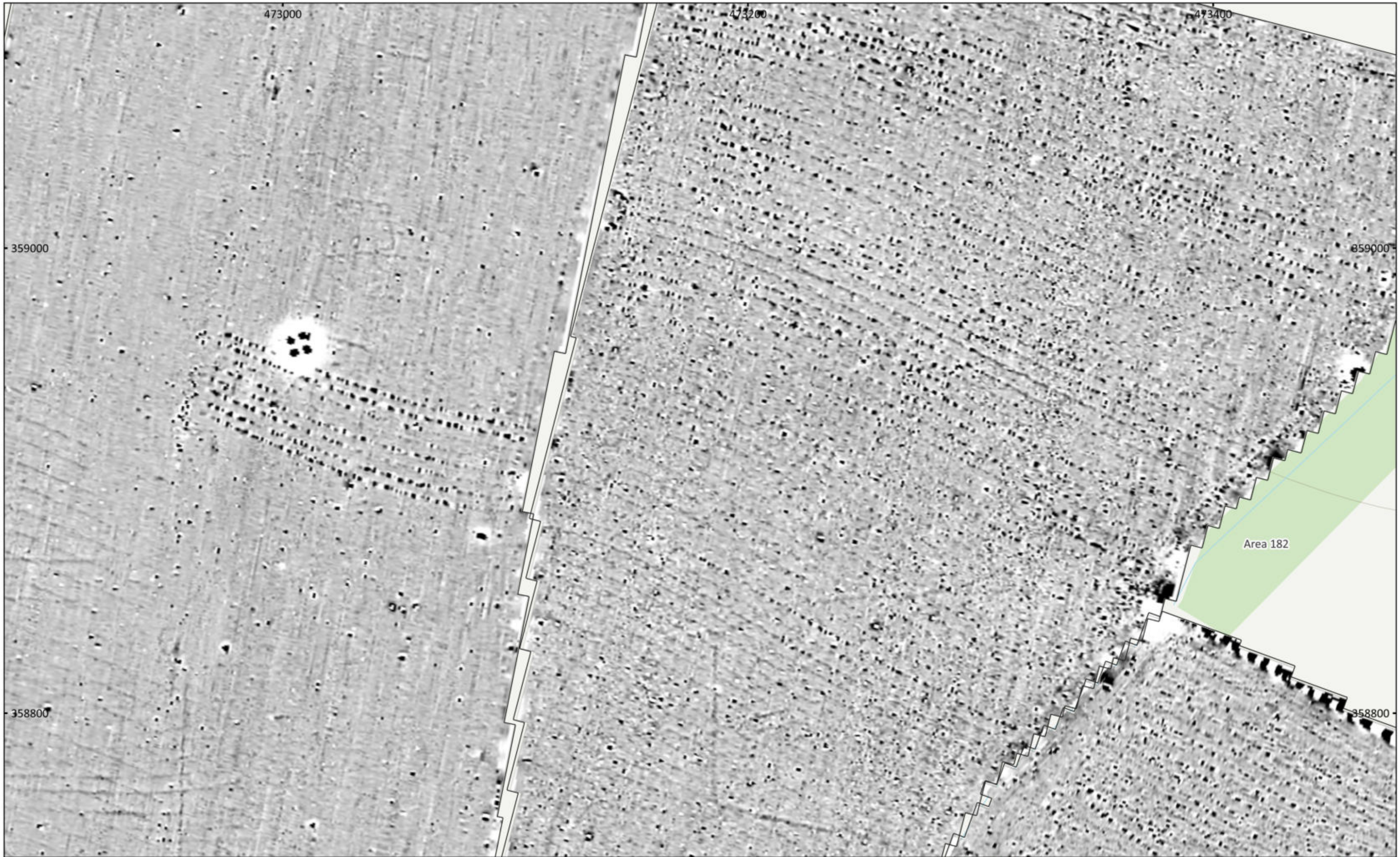
- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Historic Cultivation
- Drain
- Ferrous (Spike)

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 114 - XY Trace Plot (Area of Archaeological Activity 1 (Area 256))
30nT/cm at 1:1,500 @ A3

magnitude surveys



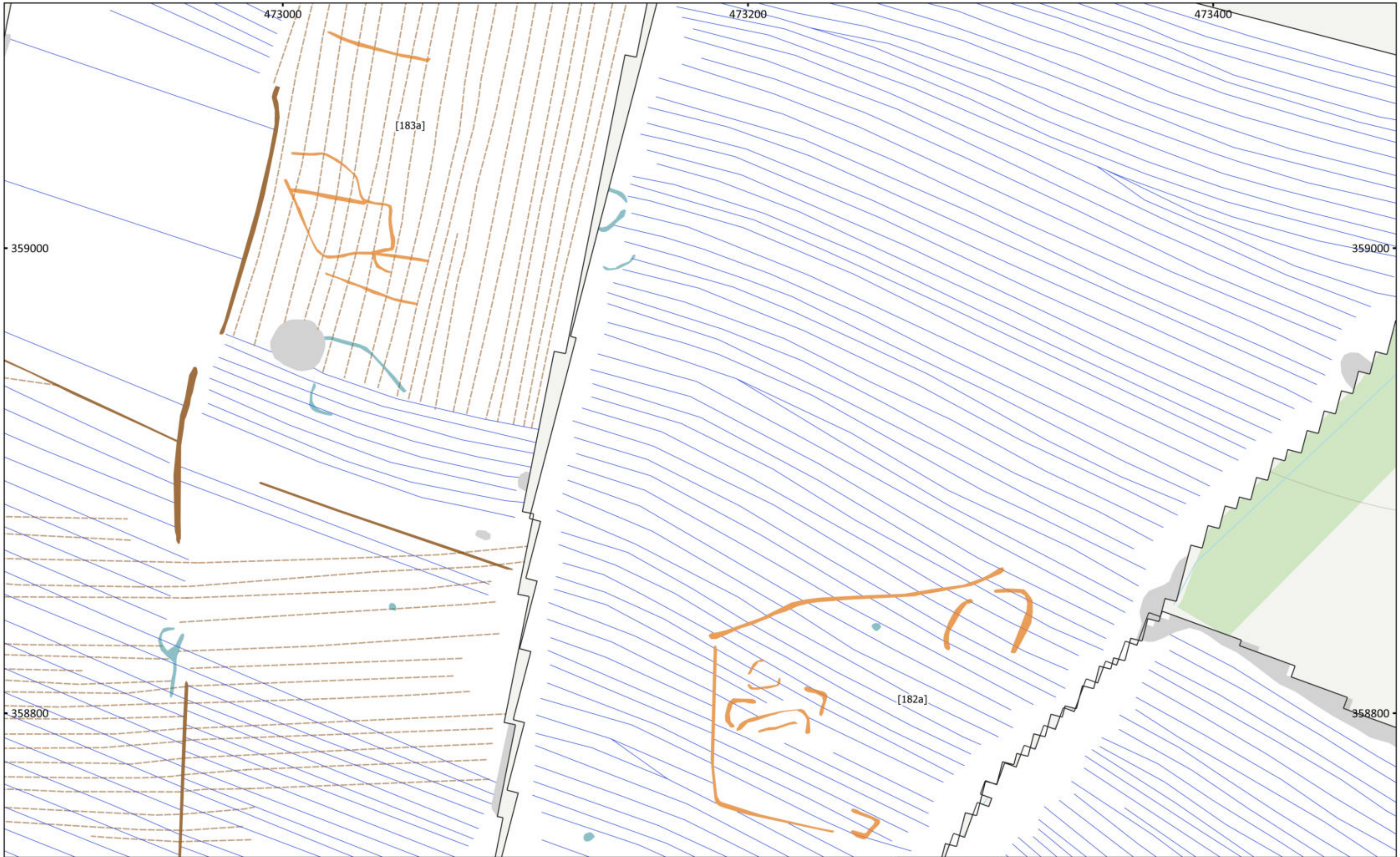
-1 nT 2

N

0 30 60 90 m

magnitude surveys

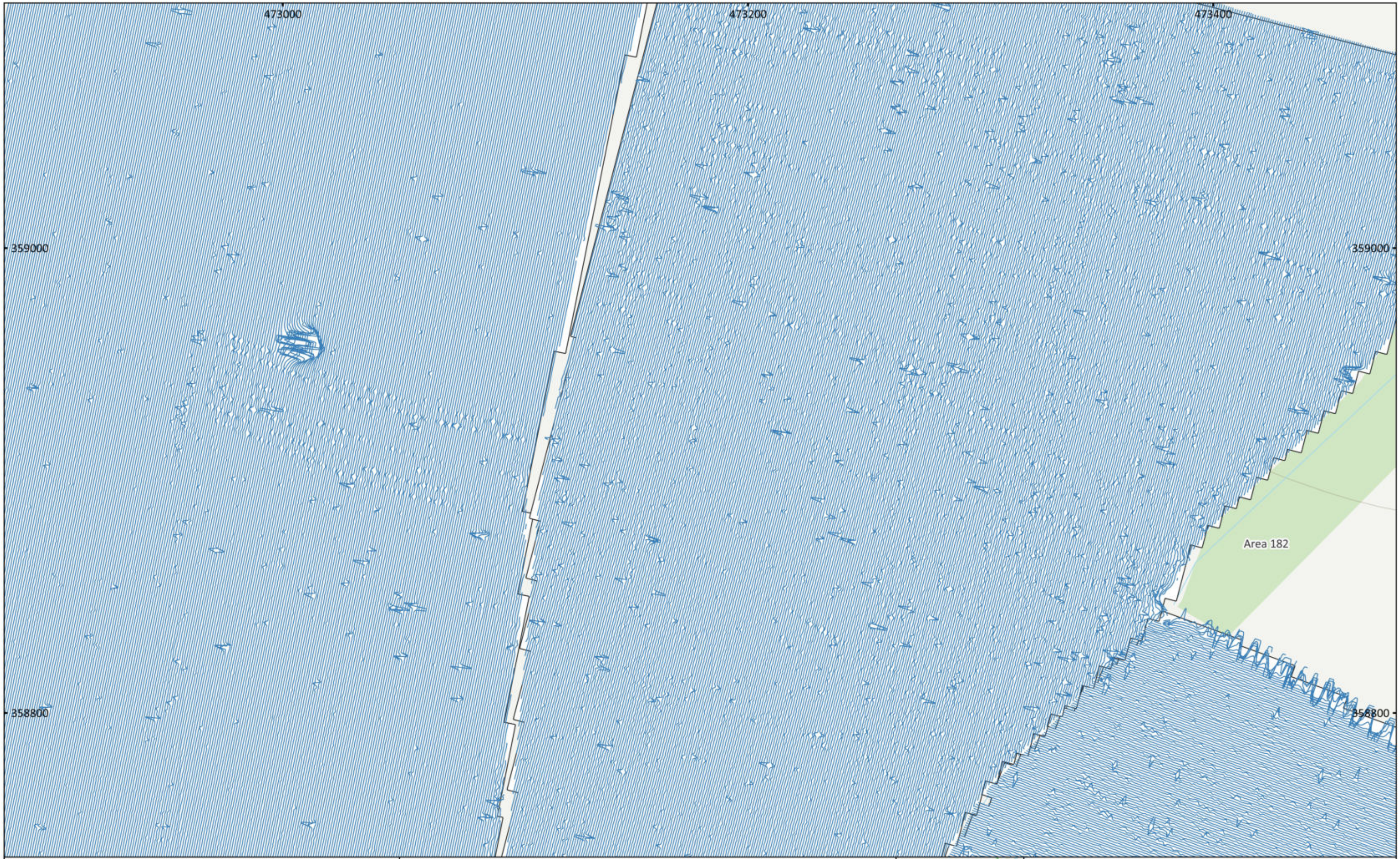
MSSK1485 - Staythorpe Solar Farm
Figure 115 - Magnetic Gradient (Area of Archaeological Activity 2 (Areas 182 and 183))
1:1,500 @ A3



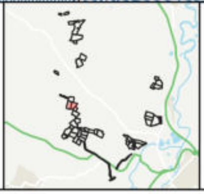
MSSK1485 - Staythorpe Solar Farm
Figure 116 - Magnetic Interpretation (Area of Archaeological Activity 2 (Areas 182 and 183))
1:1,500 @ A3

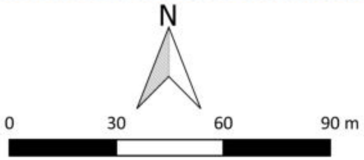
Possible Archaeology
Former Field Boundary
Unknown Feature
Increased Magnetic Response
Historic Cultivation
Drain

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 117 - XY Trace Plot (Area of Archaeological Activity 2 (Areas 182 and 183))
30nT/cm at 1:1,500 @ A3





magnitude surveys

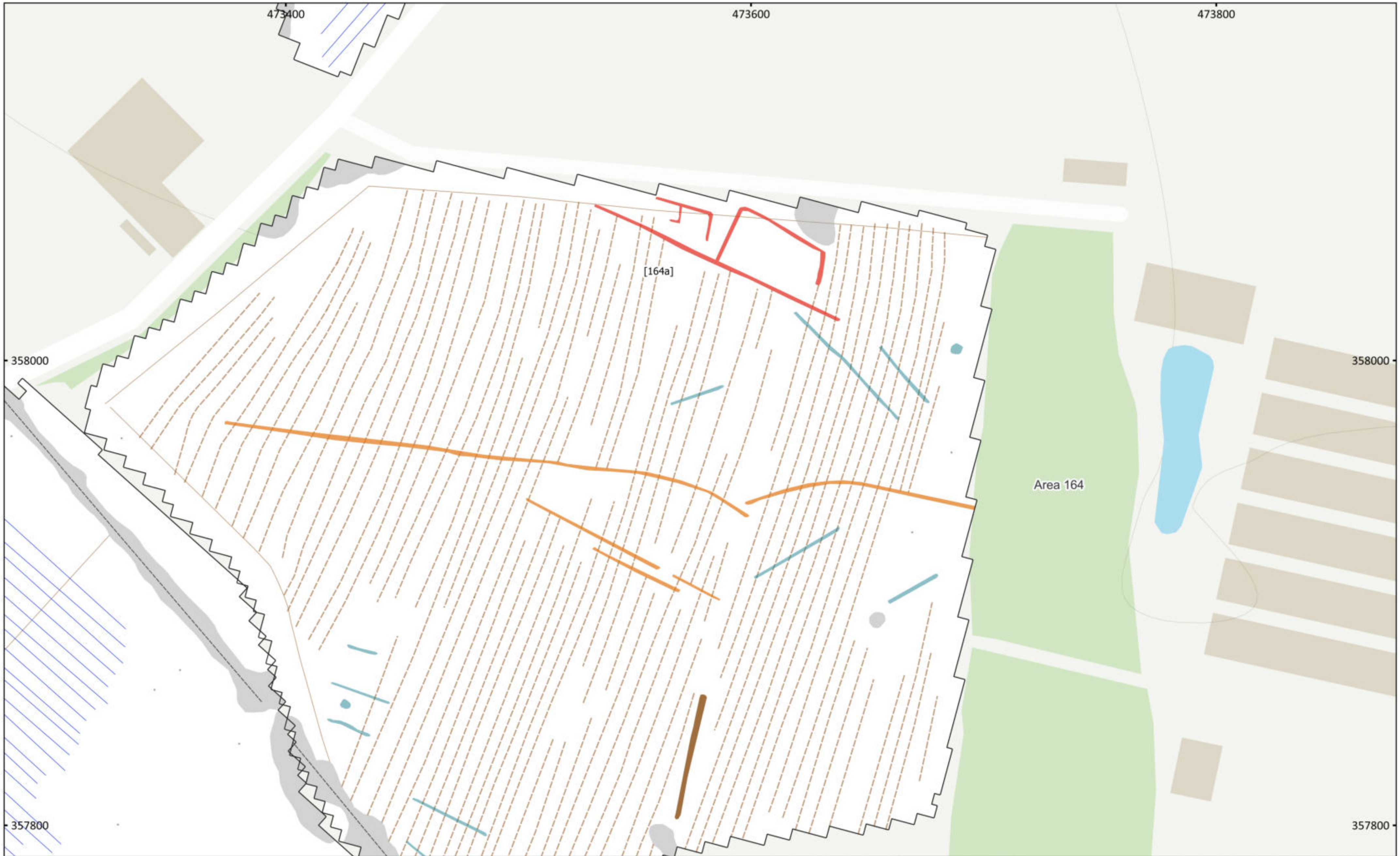
MSSK1485 - Staythorpe Solar Farm
Figure 118 - Magnetic Gradient (Area of Archaeological Activity 3 (Area 164))
1:1,500 @ A3

-1 nT 2

N

0 30 60 90 m

magnitude surveys



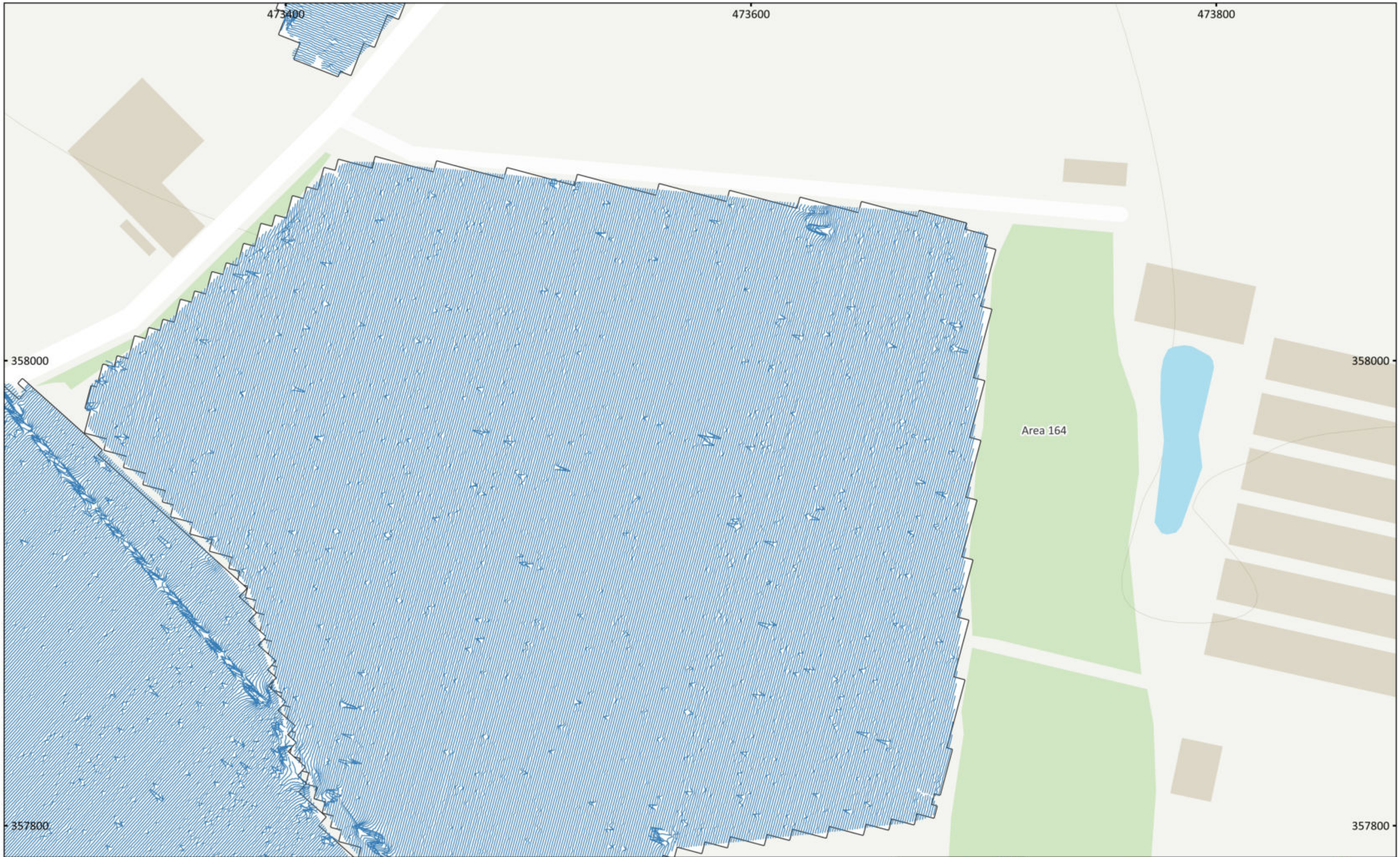
MSSK1485 - Staythorpe Solar Farm
Figure 119 - Magnetic Interpretation (Area of Archaeological Activity 3 (Area 164))
1:1,500 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Unknown Feature
- Increased Magnetic Response
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Drain
- Ferrous (Spike)

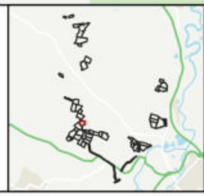
N

0 30 60 90 m

magnitude surveys

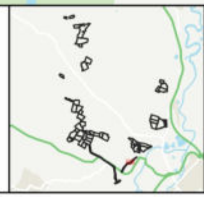


MSSK1485 - Staythorpe Solar Farm
Figure 120 - XY Trace Plot (Area of Archaeological Activity 3 (Area 164))
30nT/cm at 1:1,500 @ A3


magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 121 - Magnetic Gradient (Area of Archaeological Activity 4 (Area C16))
1:1,500 @ A3

-1 nT 2



N

0 30 60 90 m

magnitude surveys

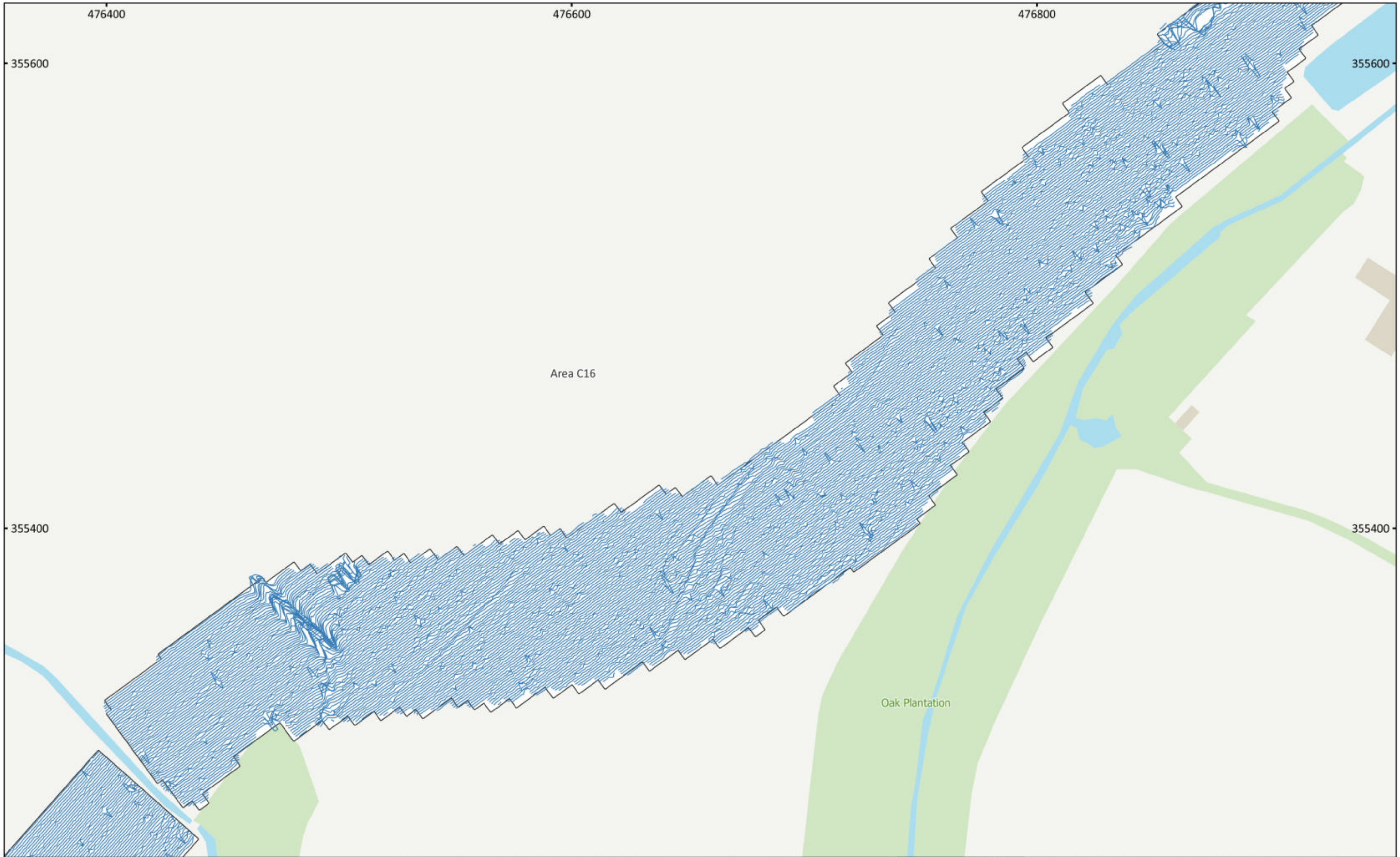
MSSK1485 - Staythorpe Solar Farm
Figure 122 - Magnetic Interpretation (Area of Archaeological Activity 4 (Area C16))
1:1,500 @ A3

Archaeology
Possible Archaeology
Increased Magnetic Response
Modern Service
Drain
Ferrous (Spike)

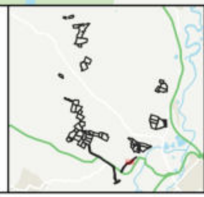
N

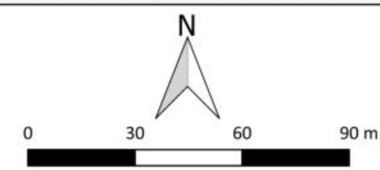
0 30 60 90 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 123 - XY Trace Plot (Area of Archaeological Activity 4 (Area C16))
30nT/cm at 1:1,500 @ A3





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 124 - Magnetic Gradient (Area of Archaeological Activity 5 (Areas 291 and 292))
1:1,500 @ A3

-1 nT 2

N

0 30 60 90 m

magnitude surveys

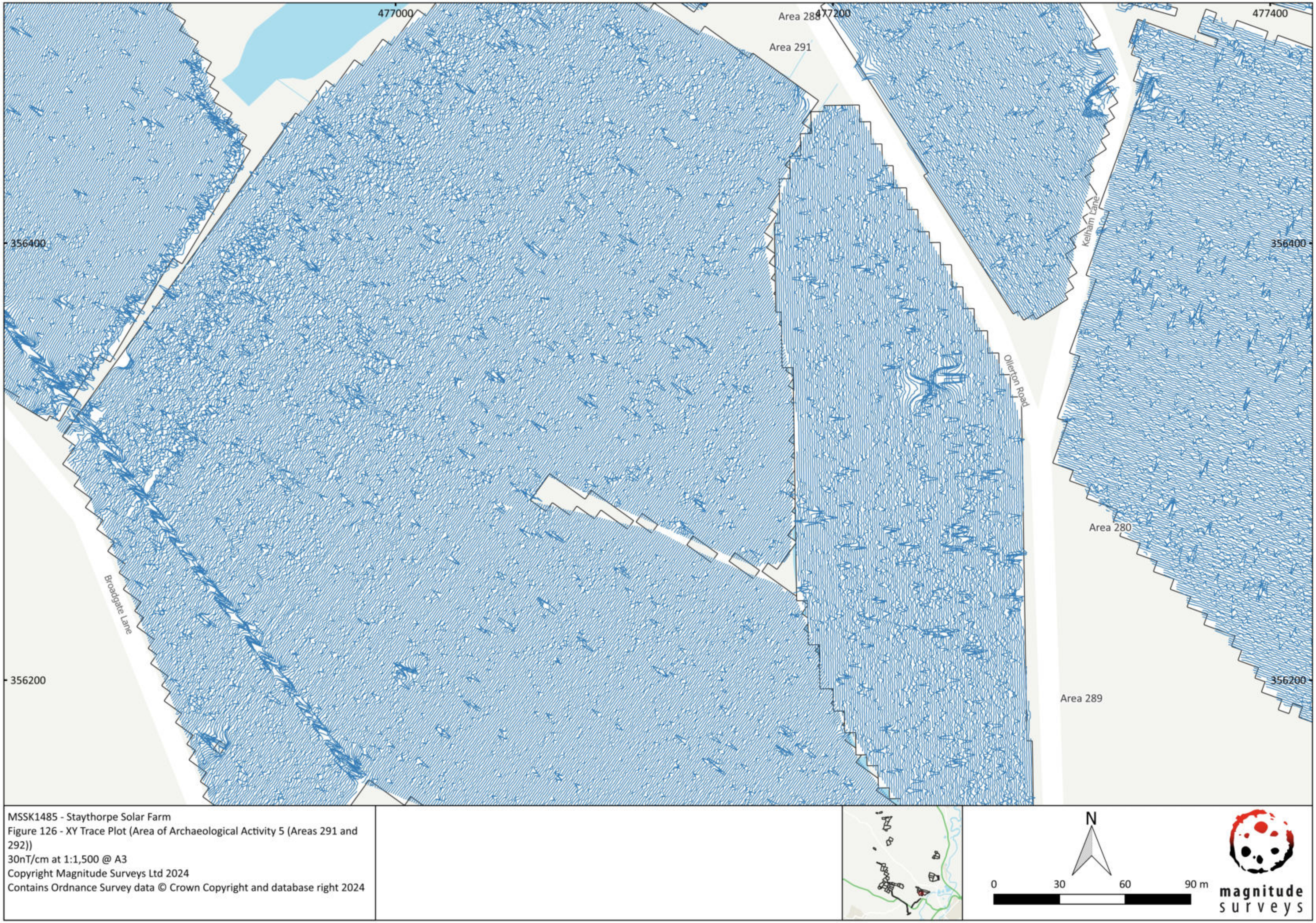
MSSK1485 - Staythorpe Solar Farm
Figure 125 - Magnetic Interpretation (Area of Archaeological Activity 5 (Areas 291 and 292))
1:1,500 @ A3

- Archaeology
- Possible Archaeology
- Former Field Boundary
- Historic Landscape Feature
- Unknown Feature
- Increased Magnetic Response
- Ferrous
- Modern Agricultural Feature
- Modern Service
- Historic Cultivation
- Ferrous (Spike)

N

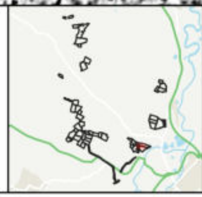
0 30 60 90 m

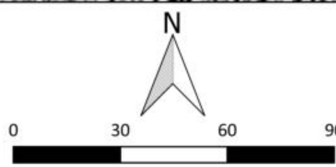
magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 126 - XY Trace Plot (Area of Archaeological Activity 5 (Areas 291 and 292))
30nT/cm at 1:1,500 @ A3

MSSK1485 - Staythorpe Solar Farm
Figure 127 - Magnetic Gradient (Area of Archaeological Activity 5 (Areas 279, 280 and 288))
1:1,500 @ A3





magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 128 - Magnetic Interpretation (Area of Archaeological Activity 5 (Areas 279, 280 and 288))
1:1,500 @ A3

Archaeology
Possible Archaeology
Former Field Boundary
Historic Landscape Feature
Unknown Feature
Geology
Increased Magnetic Response
Modern Agricultural Feature
Historic Cultivation
Drain
Ferrous (Spike)

N

0 30 60 90 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 129 - XY Trace Plot (Area of Archaeological Activity 5 (Areas 279, 280 and 288))
30nT/cm at 1:1,500 @ A3
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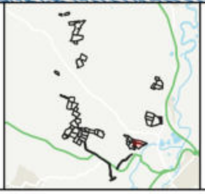
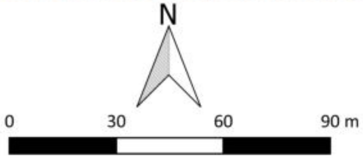




magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 130 - Magnetic Gradient (Area of Archaeological Activity 5 (Areas 279 and 280))
1:1,500 @ A3

-1 nT 2

N

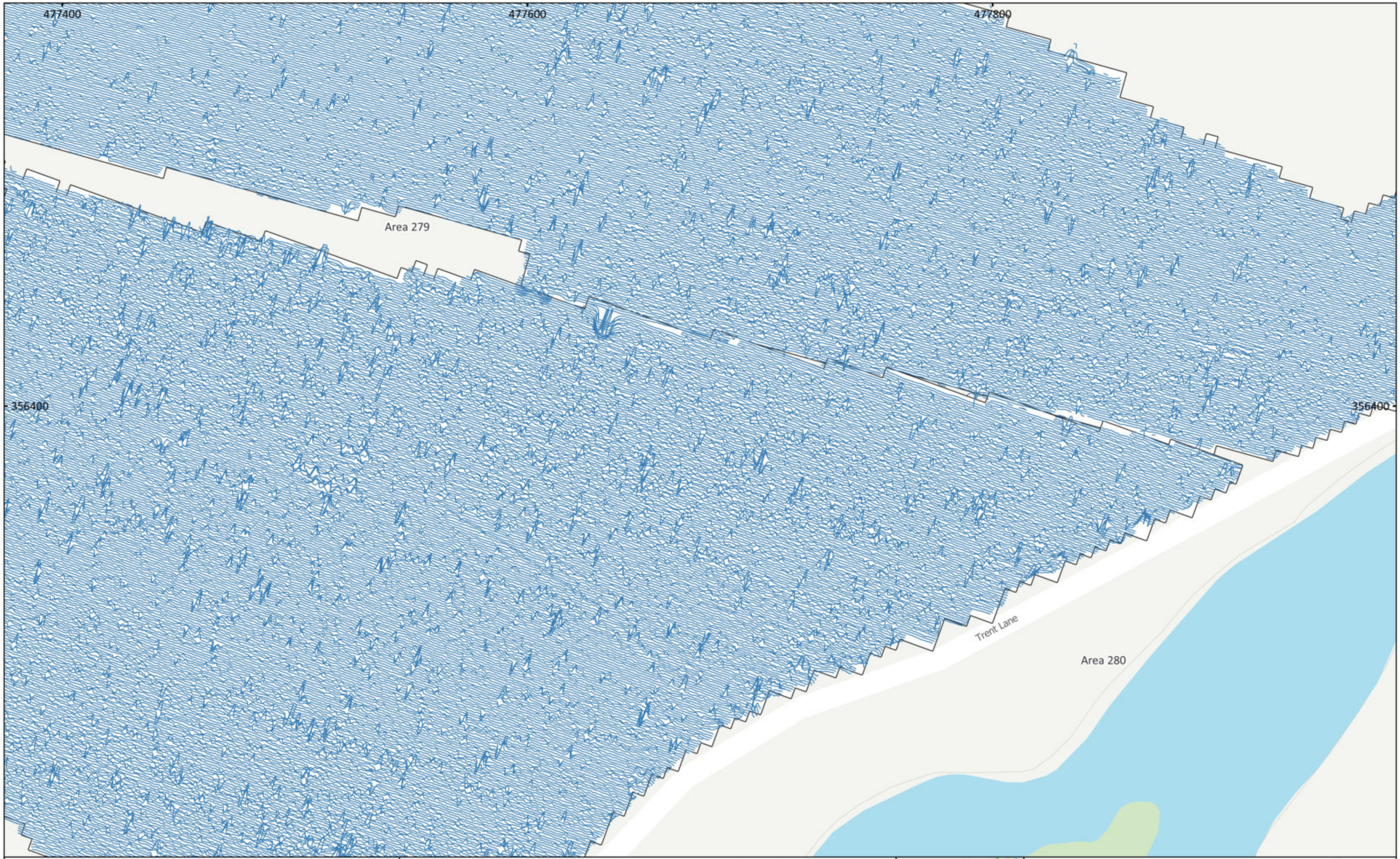
0 30 60 90 m

magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 131 - Magnetic Interpretation (Area of Archaeological Activity 5 (Areas 279 and 280))
1:1,500 @ A3

Archaeology
Possible Archaeology
Unknown Feature
Increased Magnetic Response
Historic Cultivation
Ferrous (Spike)

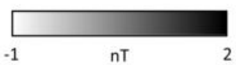
N
0 30 60 90 m
magnitude surveys

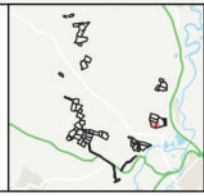


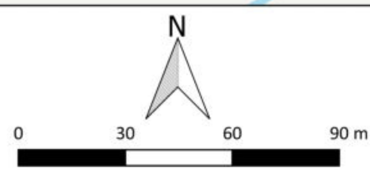
MSSK1485 - Staythorpe Solar Farm
Figure 132 - XY Trace Plot (Area of Archaeological Activity 5 (Areas 279 and 280))
30nT/cm at 1:1,500 @ A3

magnitude surveys

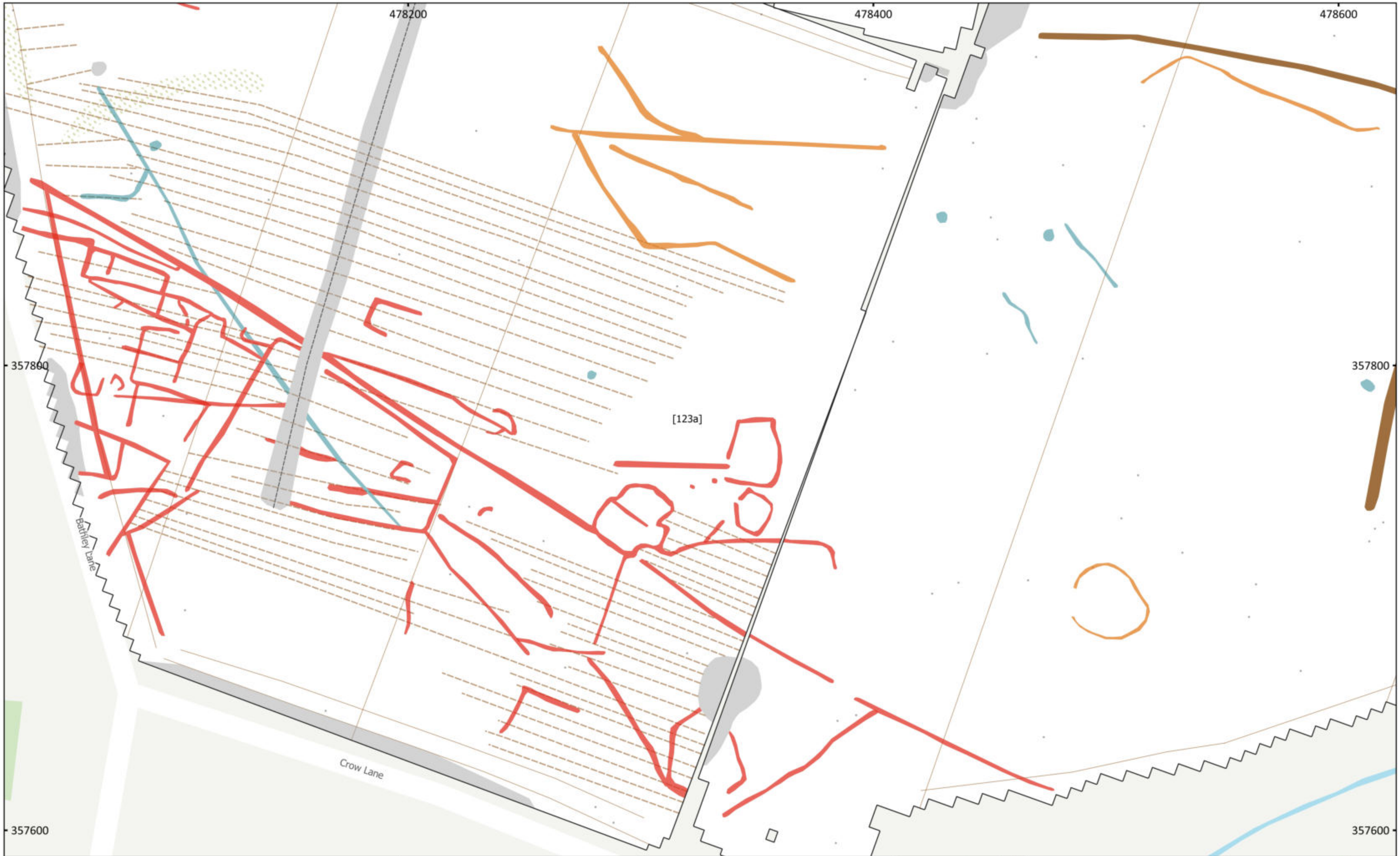
MSSK1485 - Staythorpe Solar Farm
Figure 133 - Magnetic Gradient (Area of Archaeological Activity 6 (Areas 119 and 123))
1:1,500 @ A3







magnitude surveys

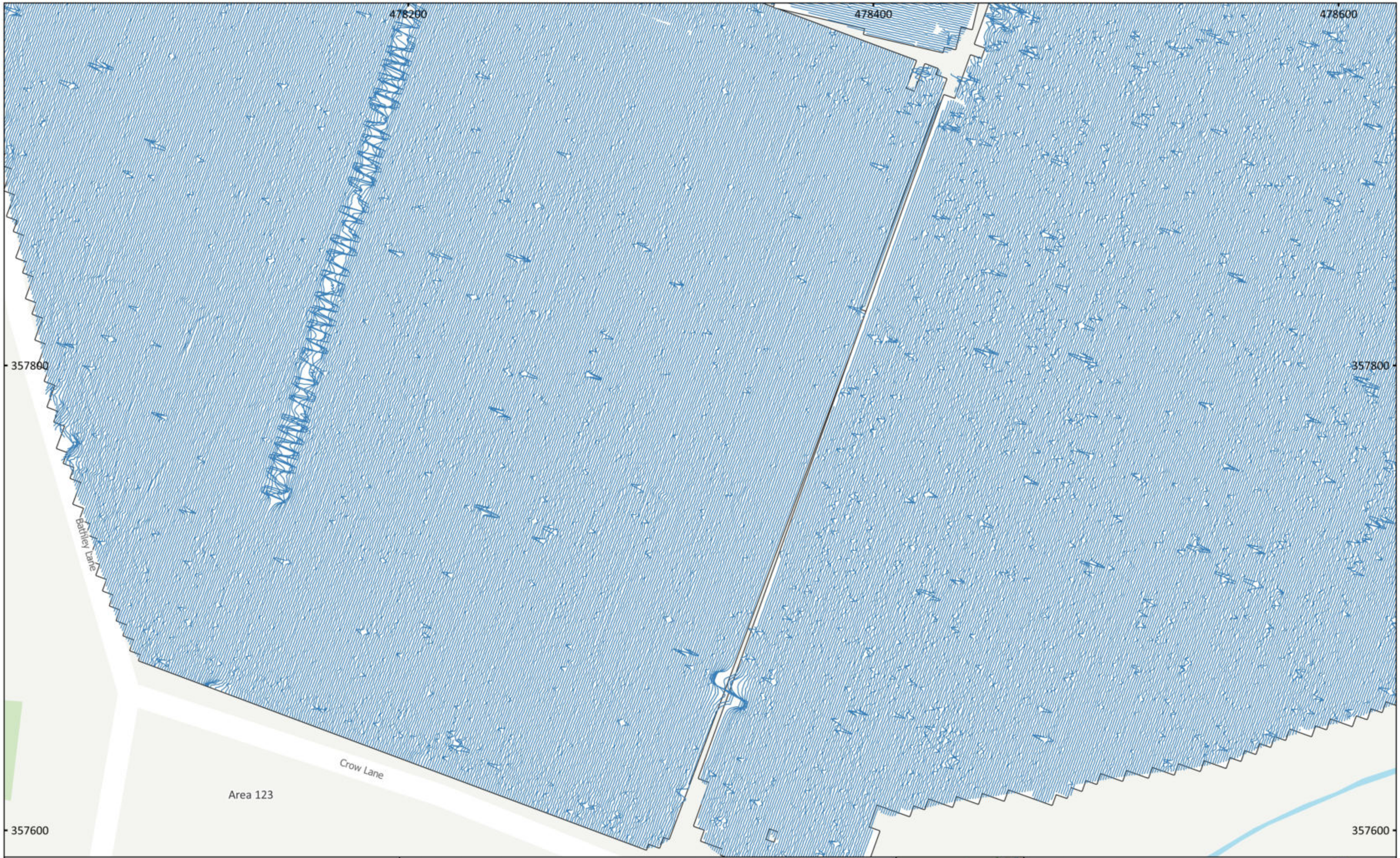


MSSK1485 - Staythorpe Solar Farm
Figure 134 - Magnetic Interpretation (Area of Archaeological Activity 6 (Areas 119 and 123))
1:1,500 @ A3

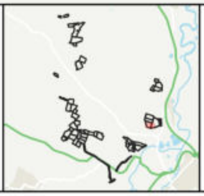
Archaeology
Possible Archaeology
Former Field Boundary
Unknown Feature
Geomorphology
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Historic Cultivation
Ferrous (Spike)

N
0 30 60 90 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 135 - XY Trace Plot (Area of Archaeological Activity 6 (Areas 119 and 123))
30nT/cm at 1:1,500 @ A3



magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 136 - Magnetic Gradient (Area of Archaeological Activity 6 (Area 119))
1:1,500 @ A3

-1 nT 2

N

0 30 60 90 m

magnitude surveys

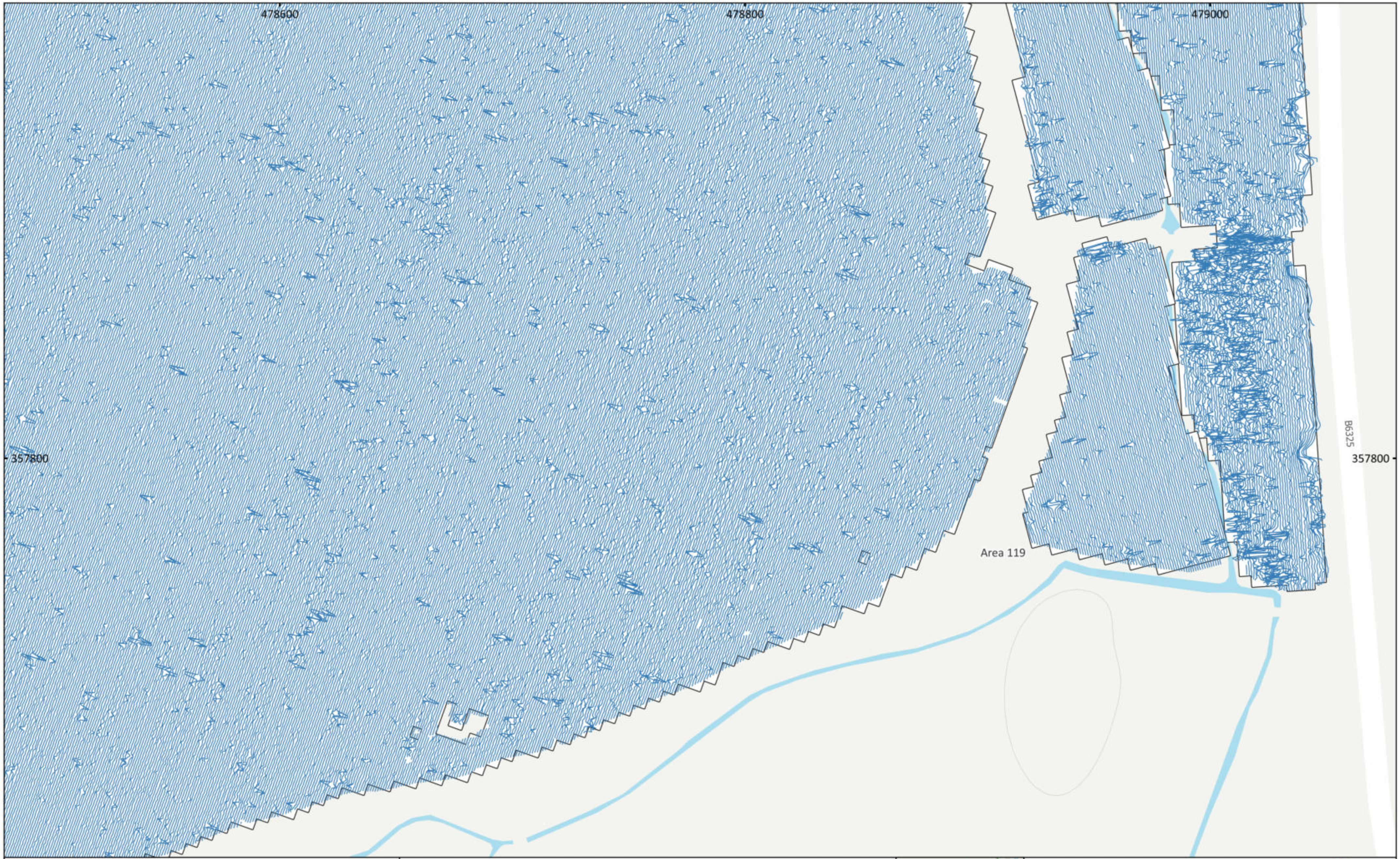
MSSK1485 - Staythorpe Solar Farm
Figure 137 - Magnetic Interpretation (Area of Archaeological Activity 6 (Area 119))
1:1,500 @ A3

Archaeology
Possible Archaeology
Former Field Boundary
Historic Landscape Feature
Unknown Feature
Increased Magnetic Response
Ferrous
Modern Agricultural Feature
Ferrous (Spike)

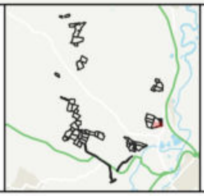
N

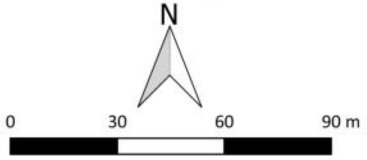
0 30 60 90 m

magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 138 - XY Trace Plot (Area of Archaeological Activity 6 (Area 119))
30nT/cm at 1:1,500 @ A3



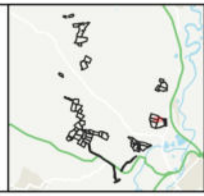


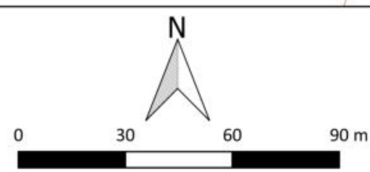
magnitude surveys

MSSK1485 - Staythorpe Solar Farm
Figure 139 - Magnetic Gradient (Area of Archaeological Activity 6 (Areas 119 and 121))
1:1,500 @ A3

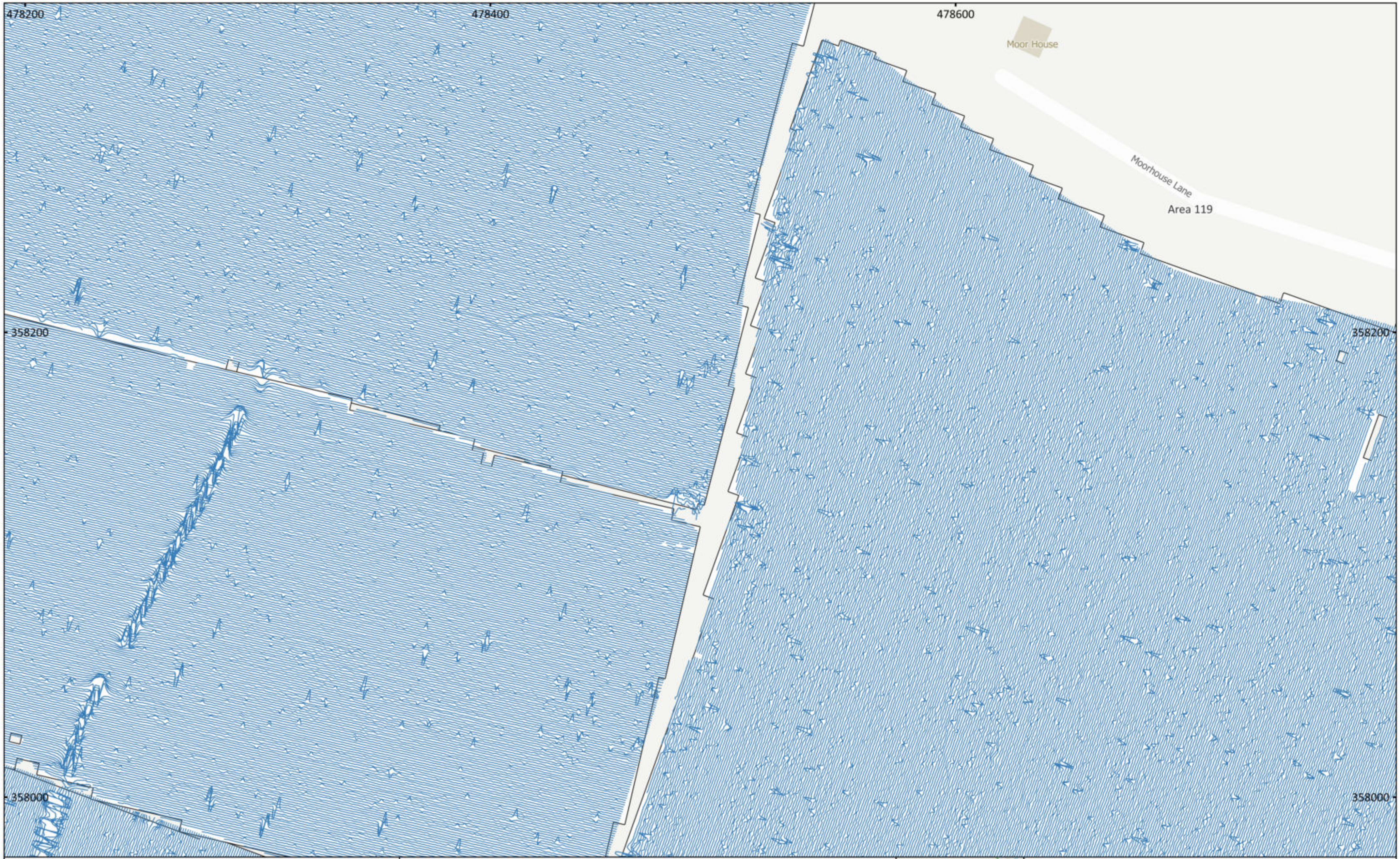
MSSK1485 - Staythorpe Solar Farm
Figure 140 - Magnetic Interpretation (Area of Archaeological Activity 6 (Areas 119 and 121))
1:1,500 @ A3

Archaeology
Possible Archaeology
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Modern Service
Ferrous (Spike)





magnitude surveys



MSSK1485 - Staythorpe Solar Farm
Figure 141 - XY Trace Plot (Area of Archaeological Activity 6 (Areas 119 and 121))
30nT/cm at 1:1,500 @ A3

N
0 30 60 90 m

magnitude surveys

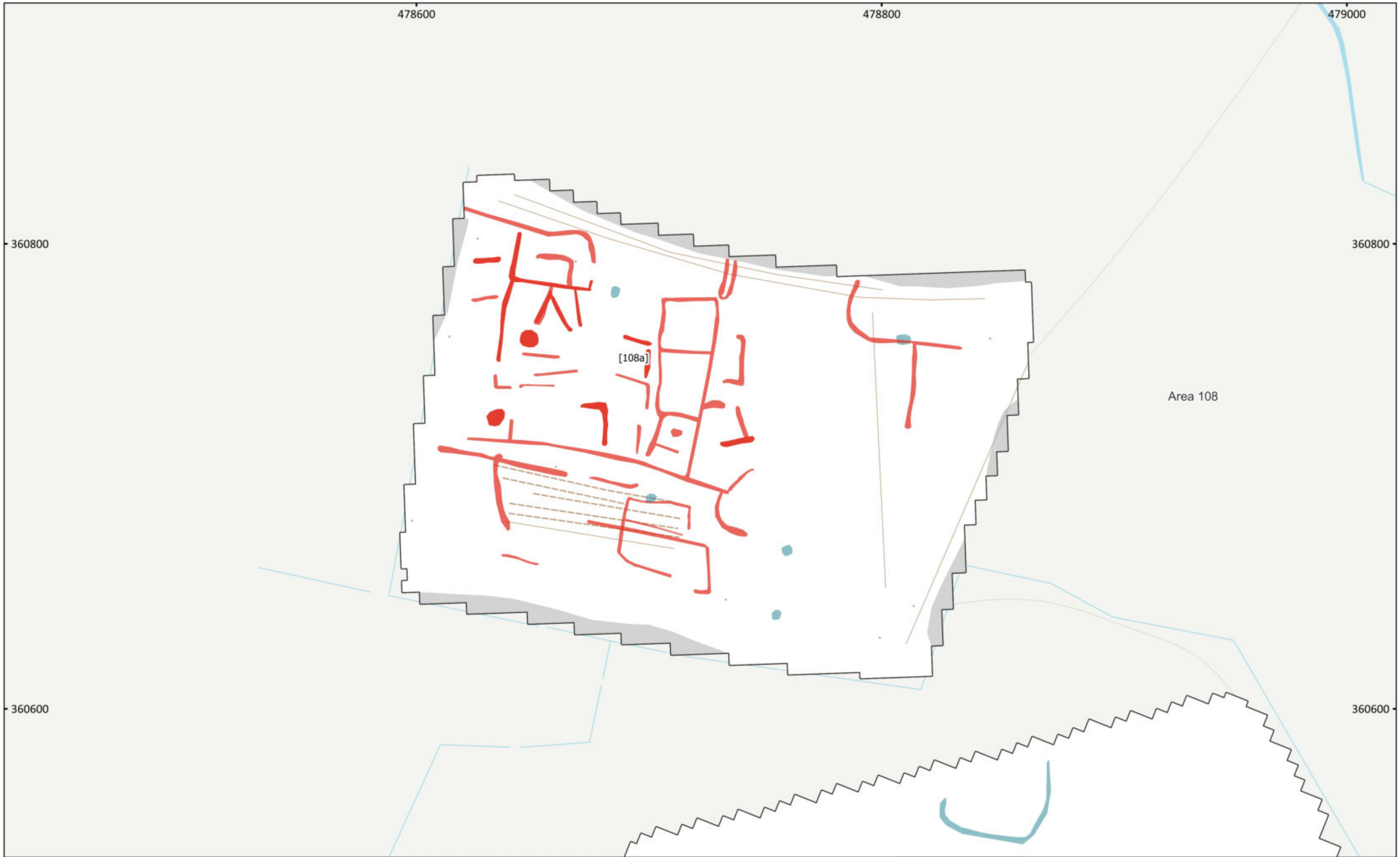
MSSK1485 - Staythorpe Solar Farm
Figure 142 - Magnetic Gradient (Area of Archaeological Activity 7 (Area 108))
1:1,500 @ A3

-1 nT 2

N

0 30 60 90 m

magnitude surveys

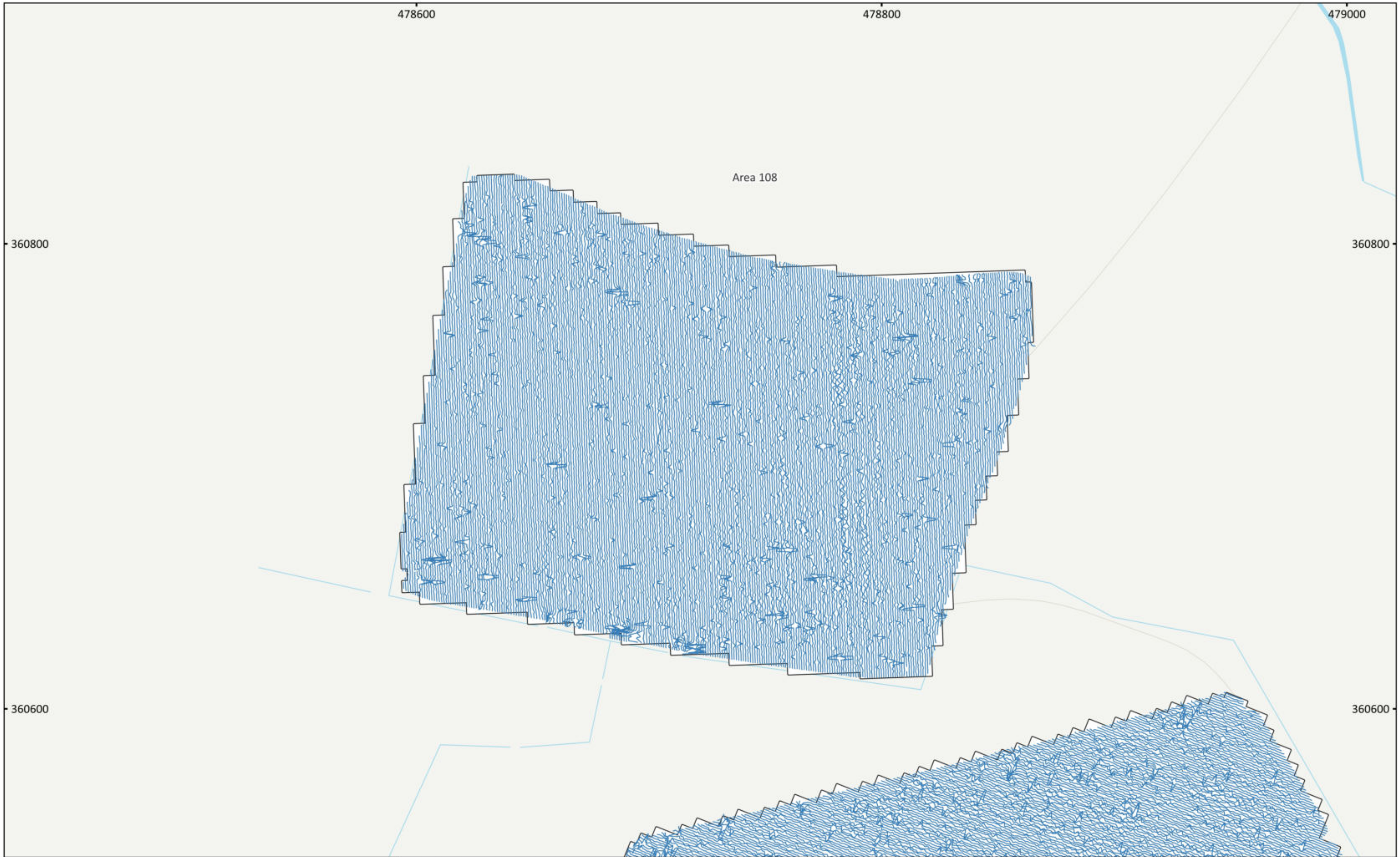


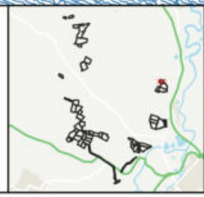
MSSK1485 - Staythorpe Solar Farm
Figure 143 - Magnetic Interpretation (Area of Archaeological Activity 7 (Area 108))
1:1,500 @ A3

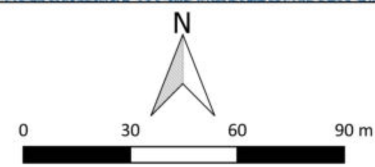
Archaeology
Unknown Feature
Increased Magnetic Response
Modern Agricultural Feature
Historic Cultivation
Ferrous (Spike)

N
0 30 60 90 m

magnitude surveys







MSSK1485 - Staythorpe Solar Farm
Figure 144 - XY Trace Plot (Area of Archaeological Activity 7 (Area 108))
30nT/cm at 1:1,500 @ A3

magnitude surveys