

Light Valley Solar

Environmental Statement Volume 3

Appendix 8.3: Geophysical Survey Results Part Bi

Document Reference: EN0110012/APP/LVS/06.03.08.03.01i

March 2026

Planning Inspectorate Reference: EN0110012
APFP Regulation: 5(2)(a)



Light Valley
Solar

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning
(Applications: Prescribed Forms and Procedure) Regulations 2009
(as amended)

Light Valley Solar

Development Consent Order 2025

Appendix 8.3: Geophysical Survey Results Part Bi

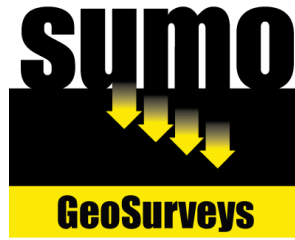
Regulation Reference	APFP Regulation 5(2)(a)
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Author	Light Valley Solar Limited

Version	Date	Status of Version
1.0	March 2026	DCO Submission

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Annex C Light Valley Site 3 Geophysical Survey Report



GEOPHYSICAL SURVEY REPORT

Light Valley Solar Project: Site 3

Client

Island Green Power UK Limited

Survey Report

16614-3

OASIS Ref. No.

sumogeop1-529934

Date

28 November 2024



Survey Report 16614-3: Light Valley Solar Project: Site 3

Survey dates	29-31 July & 1 August 2024
Field co-ordinator	Jelmer Wubs BA MA
Field Team	Morgan Potter
Report Date	28 November 2024
CAD Illustrations	Thomas Cockcroft MSc MCIfA
Report Author	Thomas Cockcroft MSc MCIfA
Project Manager	Thomas Cockcroft MSc MCIfA
Report approved	Dr John Gater BSc DSc(Hon) MCIfA FSA

SUMO GeoSurveys
Suite1
Deer Park Business Centre
Woollas Hill
Eckington
Pershore
Worcestershire
WR10 3DN
T: 01684 592266

geophysics@sumoservices.com

SUMO GeoSurveys is a trading name of SUMO Geophysics Ltd.

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3 SURVEY TECHNIQUE

3.1 Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site. All survey techniques followed the guidance set out by ClfA (2020) and the European Archaeology Council (EAC) (2016).

MACS Cart System (Foerster) Traverse Interval 1.0m Sample Interval 0.125m

The only processes performed on data are the following unless specifically stated otherwise:

Zero Mean Traverse	This process sets the background mean of each traverse within each grid to zero. The operation removes instrument striping effects and edge discontinuities over the whole of the data set.
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4 EXECUTIVE SUMMARY OF RESULTS

- 4.1 A magnetometer survey of land at the Light Valley Solar Project: Site 3 has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, apart from ridge and furrow cultivation which has been detected in both Areas. An uncertain discrete response in Area 1 could mark the location an infilled extraction pit or pond, while other uncertain anomalies have probably been caused by natural and agricultural processes. Former field boundaries, tramlines and land drains have also been detected in the survey. Natural anomalies have also been recorded, along with the route of a service pipe.

5 INTRODUCTION

- 5.1 **SUMO GeoSurveys** was commissioned to undertake a geophysical survey of an area outlined for development. This survey forms part of an archaeological investigation being undertaken by **Island Green Power UK Limited**.

- 5.2 This survey is part of the Light Valley Solar Project which is composed of a five separate magnetometer survey reports.

- 5.3 Site Details

NGR / Postcode	SE 51985 28593 / LS25 5HX
Location	The site is located 5km north-east Knottingley and 1.5km south-east of Monk Fryston. The survey area is bounded to the north by Hillam Common Lane and to the south by Stocking Lane.
HER	North Yorkshire HER
OASIS Ref. No.	sumogeop1-529934
District	N/a
Parish	Hillam Civil Parish
Topography	Falt
Land Use	Arable
Geology (BGS 2024)	Bedrock: Roxby Formation - Mudstone, calcareous Superficial: Brighton Sand Formation - Sand Hemingbrough Glaciolacustrine Formation - Clay, silty
Soils (CU 2024)	Soilscape 22: Loamy soils with naturally high groundwater
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	19.8 ha (1.3 ha unsurveyable)

- 5.4 ***Archaeological Background***

- 5.4.1 A search of the HER has revealed that no designated or non-designated heritage assets are recorded within the survey area. A previous geophysical survey has been undertaken in the vicinity of the site which identified several previous field boundaries, areas of former ridge and furrow ploughing, and modern cultivation trends (ENY9915). A series of anomalies were interpreted as potentially showing a trackway and enclosures, although it was noted that they might also show a geological feature such as a palaeochannel. Due west of the current survey area a watching brief on groundworks associated with a haul road at Hillam was carried it; due to the shallow depth of excavation no archaeological features or deposits were encountered (ENY8925). The HER notes cropmarks of recently grubbed-out field boundaries north of the site (MNY9898).

5.5 ***Aims and Objectives***

- 5.5.1 To locate and characterise any anomalies of possible archaeological interest within the study area.

6 **RESULTS**

- 6.1 *The survey has been divided into two survey areas (Areas 1-2) and specific anomalies have been given numerical labels [1] which appear in the text below, as well as on the Interpretation Figure(s). A land parcel in the west of Area 1 was overgrown at the time of the survey which rendered it unsurveyable.*

6.2 ***Probable / Possible Archaeology***

- 6.2.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation (see 6.3).

6.3 ***Ridge and Furrow***

- 6.3.1 Broad parallel linear anomalies have been detected in both survey areas which have been caused by historic ridge and furrow cultivation.

6.4 ***Uncertain***

- 6.4.1 A large discrete response [1] measuring 10m across has been recorded in the south-west of Area 1 and assigned to the category of *Uncertain*. It is unclear what has caused the response, but it does appear anthropogenic as opposed to natural in origin. It could be an infilled extraction pit or pond, though none are marked on recent mapping, or it could be associated with a bonfire pit or perhaps deeply buried ferrous material.
- 6.4.2 Other linear and curvilinear trends and discrete anomalies are visible across the survey which have also been assigned to the category of *Uncertain*. They generally lack the defined morphology of responses that would ordinarily warrant an archaeological interpretation. They have probably been caused by underlying geological variations or agricultural processes.

6.5 ***Former Field Boundary – Corroborated / Conjectural***

- 6.5.1 Linear anomalies have been detected in Areas 1 and 2 which correspond with the locations of former field boundaries that are visible on historic mapping (see Figures 10 and 11).
- 6.5.2 Five linear responses have been interpreted as conjectural former field boundaries. While they don't appear on available historic mapping, they have a similar magnetic signature to the corroborated field boundaries (see 6.5.1).

6.6 ***Agricultural – Land Drains / Tramline***

- 6.6.1 Numerous linear anomalies on varying alignment have been caused by land drains; some of them form herringbone patterns.
- 6.6.2 On the periphery of Areas 1 and 2 parallel linear responses are visible which have been caused by agricultural tramlines around the edges of the fields.

6.7 **Natural / Geological / Pedological**

6.7.1 Amorphous bands of increased response, including some stronger anomalies, are visible in the survey; they have probably been caused by variations in the underlying geology or weathering of the bedrock.

6.8 **Service**

6.8.1 In Area 2 a linear dipolar ferrous response has been recorded which marks the route of an underground pipe.

6.9 **Ferrous / Magnetic Disturbance**

6.9.1 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

7 **DATA APPRAISAL & CONFIDENCE ASSESSMENT**

7.1 Historic England Table 4 (EH 2008) states that the typical magnetic response on the local soils / geology is variable to poor. The results from this survey indicate the presence of ridge and furrow cultivation; consequently, there is no *a priori* reason why archaeological features would not have been detected, if present.

8 **CONCLUSION**

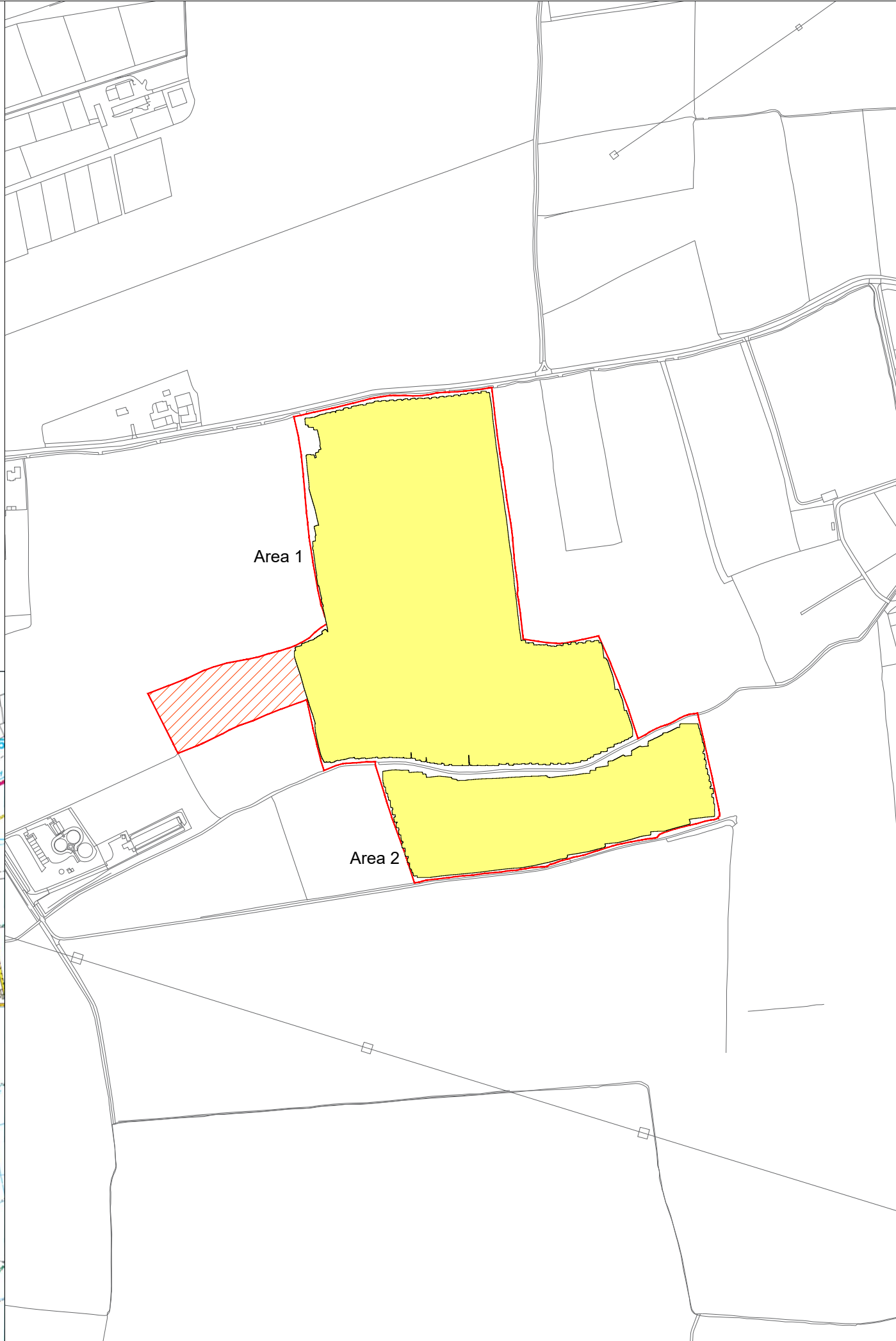
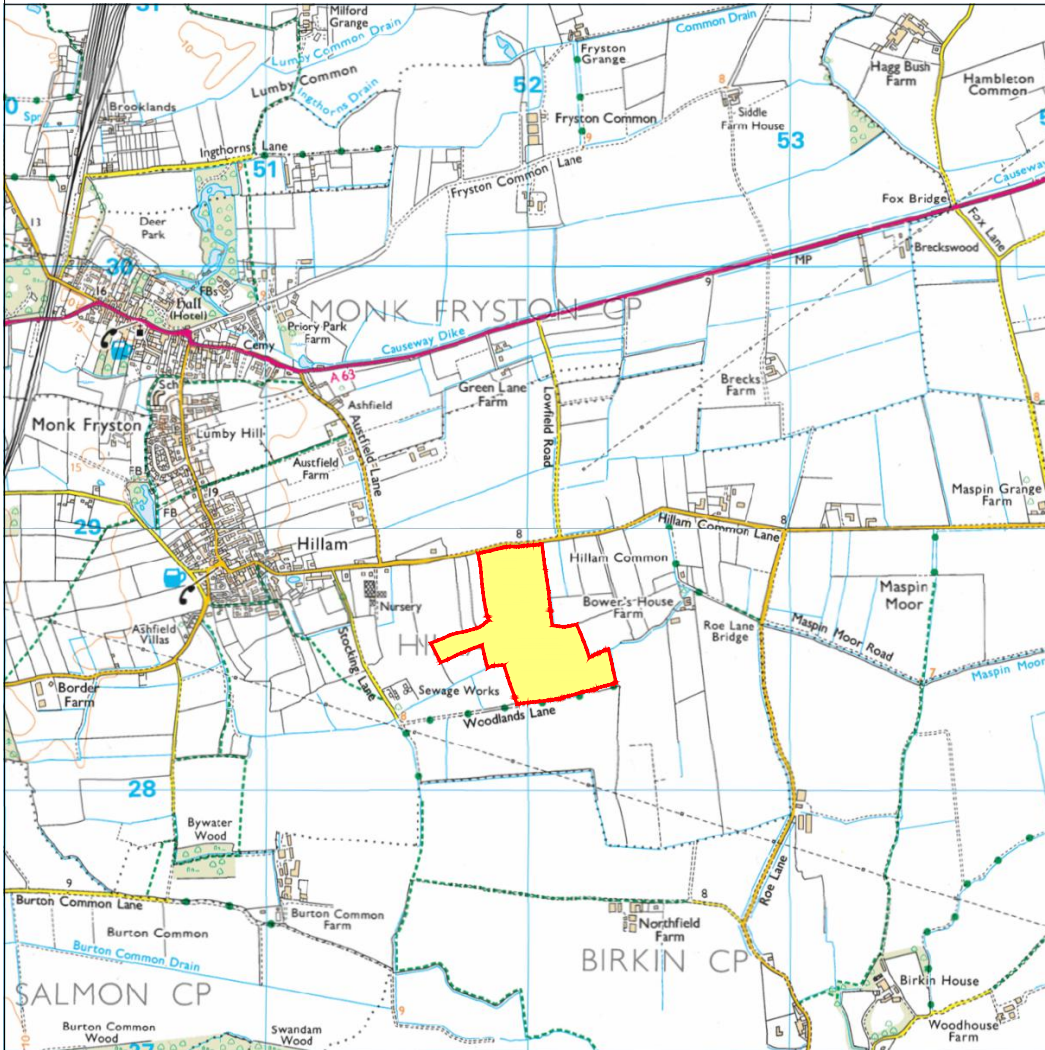
8.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation which is visible in both survey Areas. Numerous responses of uncertain origin have been marked across the survey; most have probably been caused by variations in the underlying geology or agricultural processes. One discrete uncertain response may mark the location of an infilled extraction pit or pond. Former field boundaries, tractor tramlines and land drains have also been detected in the survey. Natural anomalies have been recorded, along with the route of a service pipe.

9 REFERENCES

- BGS 2024 *Geology of Britain Viewer*, British Geological Survey, website:
[REDACTED]
- ClfA 2020 *Standard and Guidance for Archaeological Geophysical Survey*. 2014 amended 2020. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
[REDACTED]
- CU 2024 *The Soils Guide*. www.landis.org.uk. Cranfield University, UK. website:
[REDACTED]
- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon (now withdrawn, but used for evaluating suitability of soil types)

10 ARCHIVE

- 10.1 The minimally processed data, data images, XY traces and a copy of this report are stored in **SUMO GeoSurveys'** digital archive, on an internal RAID configured NAS drive in the Midlands Office. These data are also backed up to the Cloud for off-site storage.
- 10.2 The Grey Literature will be archived with OASIS and the relevant HER within a period of 12 months.



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- Survey Areas
- Unsurveyable Area

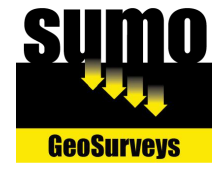
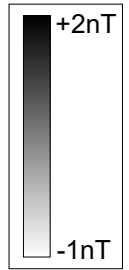


Title:		Site Location
Client:		Island Green Power UK Limited
Project:		16614-3 - Light Valley Solar Project: Site 3
Scale:	NOT TO SCALE	Fig No: 01



Area 1

Area 2



Title:
Magnetometer Survey - Greyscale Plots

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

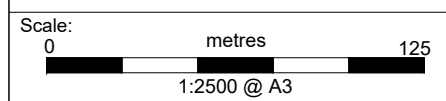
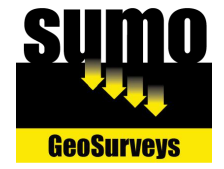
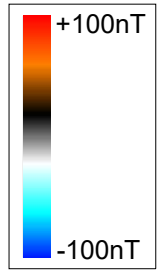


Fig No:
02



Area 1

Area 2



Title:
Magnetometer Survey - Colour Plots

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

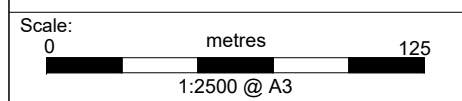
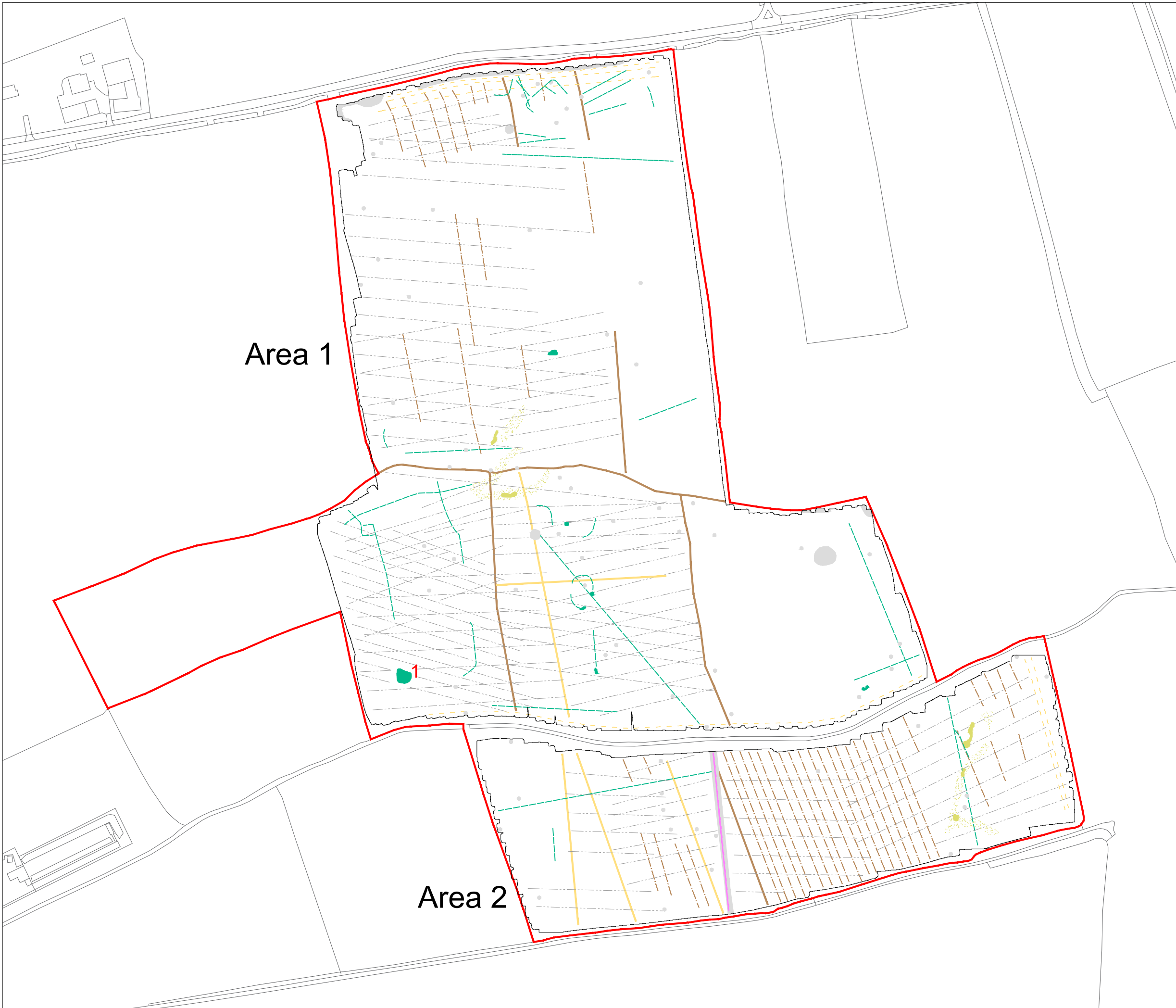
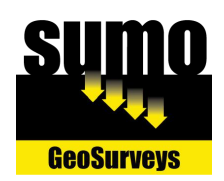


Fig No:
03



KEY

	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous



Title:
Magnetometer Survey - Interpretation

Client:
Island Green Power UK Limited

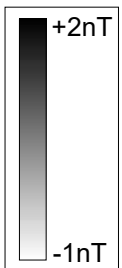
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Fig No:
04



Area 1



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Magnetometer Survey - Greyscale Plot (Area 1)

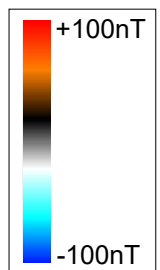
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Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

Scale:
0 metres 100
1:2000 @ A3

Fig No:
05

Area 1



Title:
Magnetometer Survey - Colour Plots (Area 1)

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

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Fig No:
06

Area 1



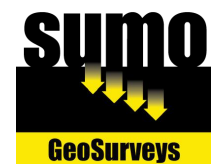
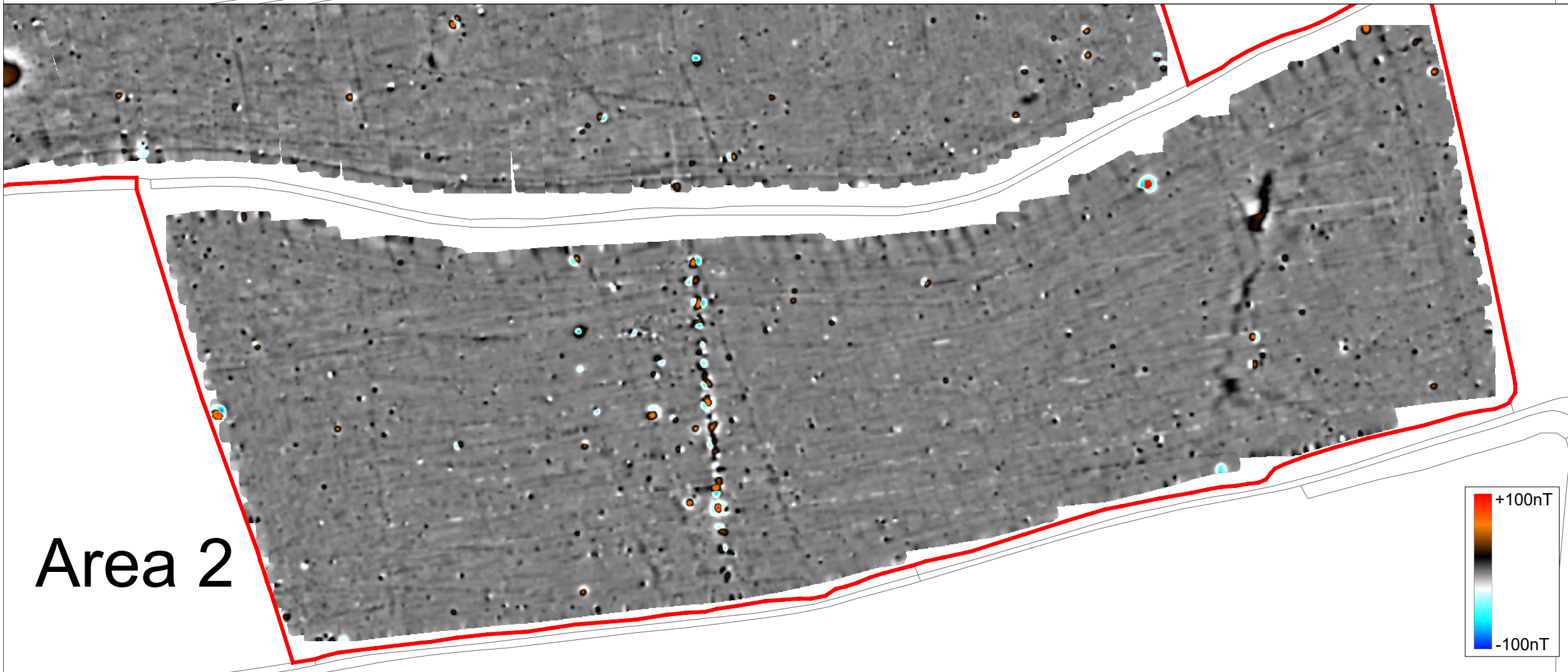
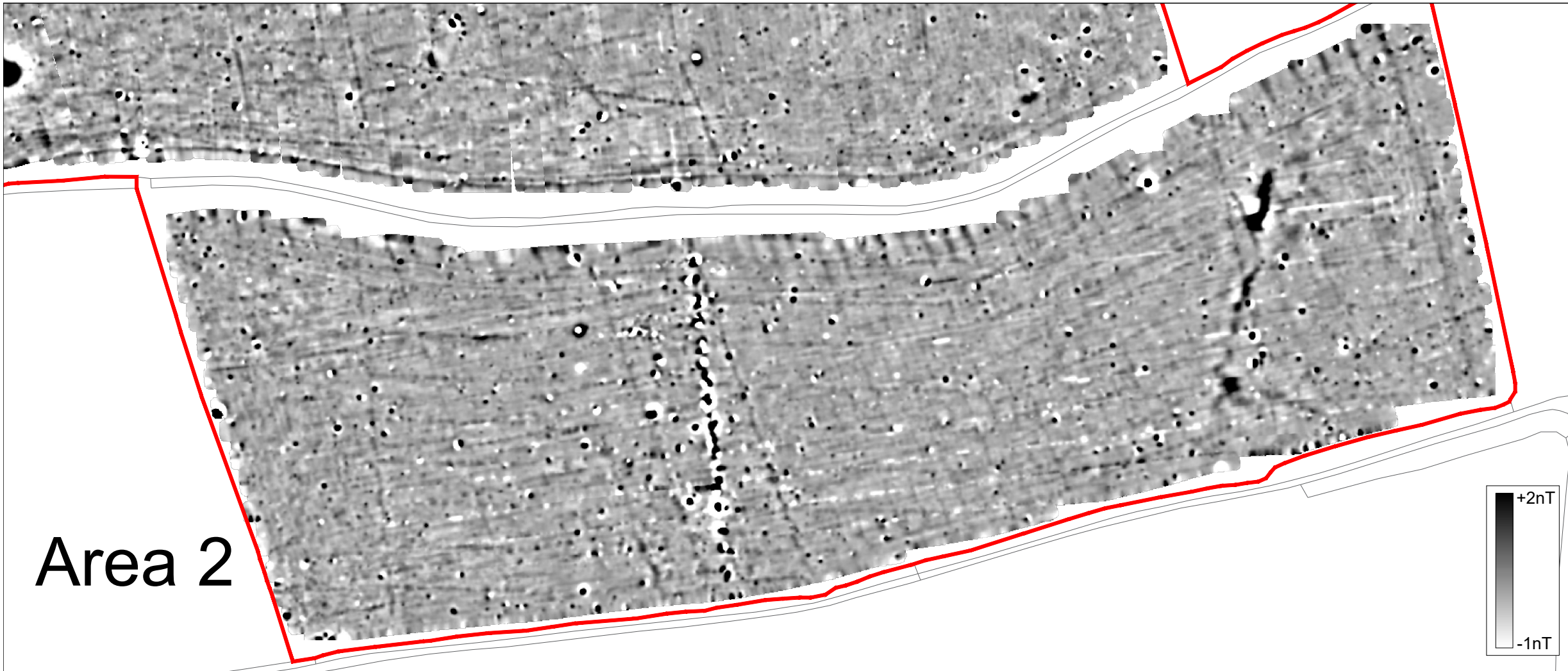
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	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous



Title: Magnetometer Survey - Interpretation
Client: Island Green Power UK Limited
Project: 16614-3 - Light Valley Solar Project: Site 3

Scale: 0 metres 100
1:2000 @ A3
Fig No: 07



Title:
Magnetometer Survey - Greyscale and Colour
Plots (Area 2)

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

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Fig No:
08

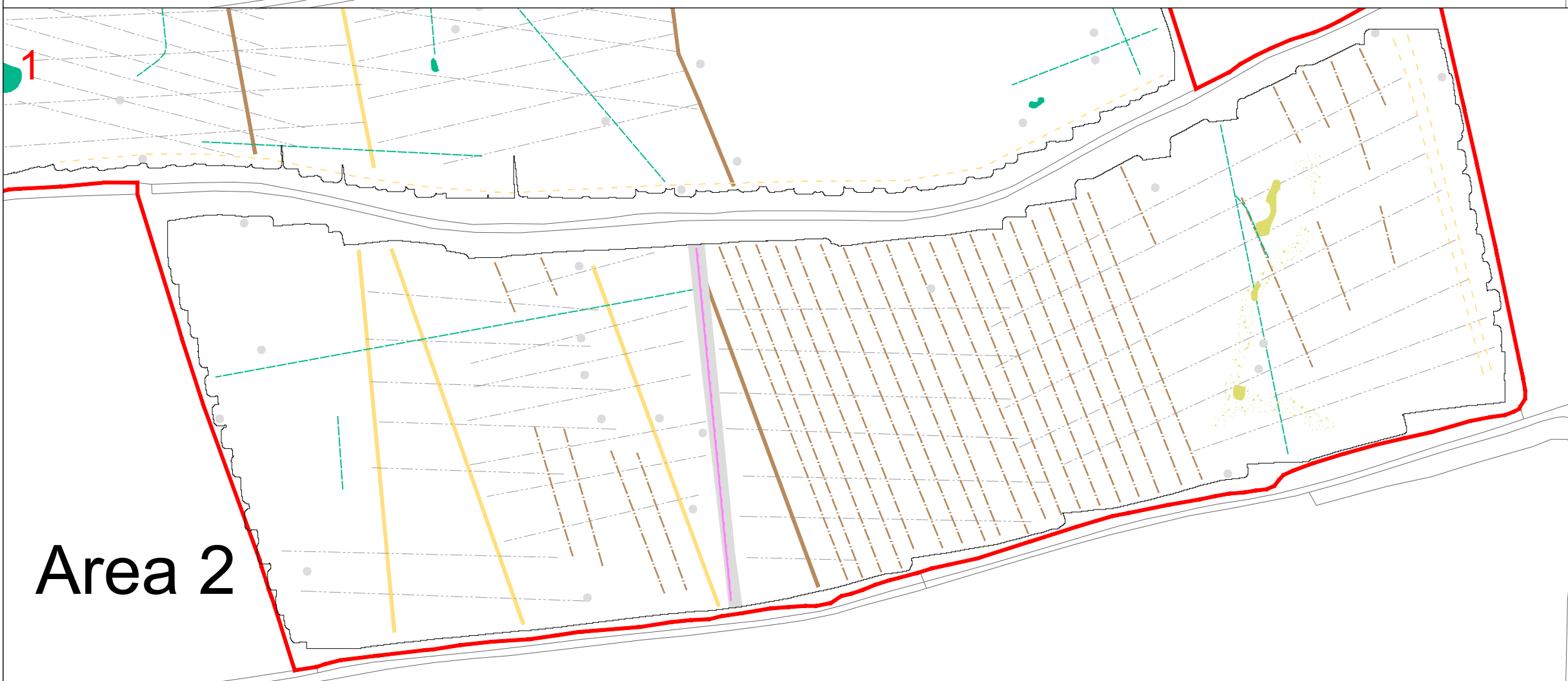


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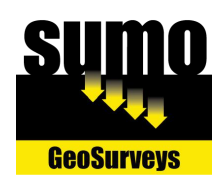


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	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous

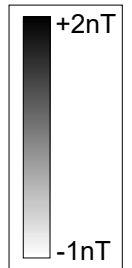
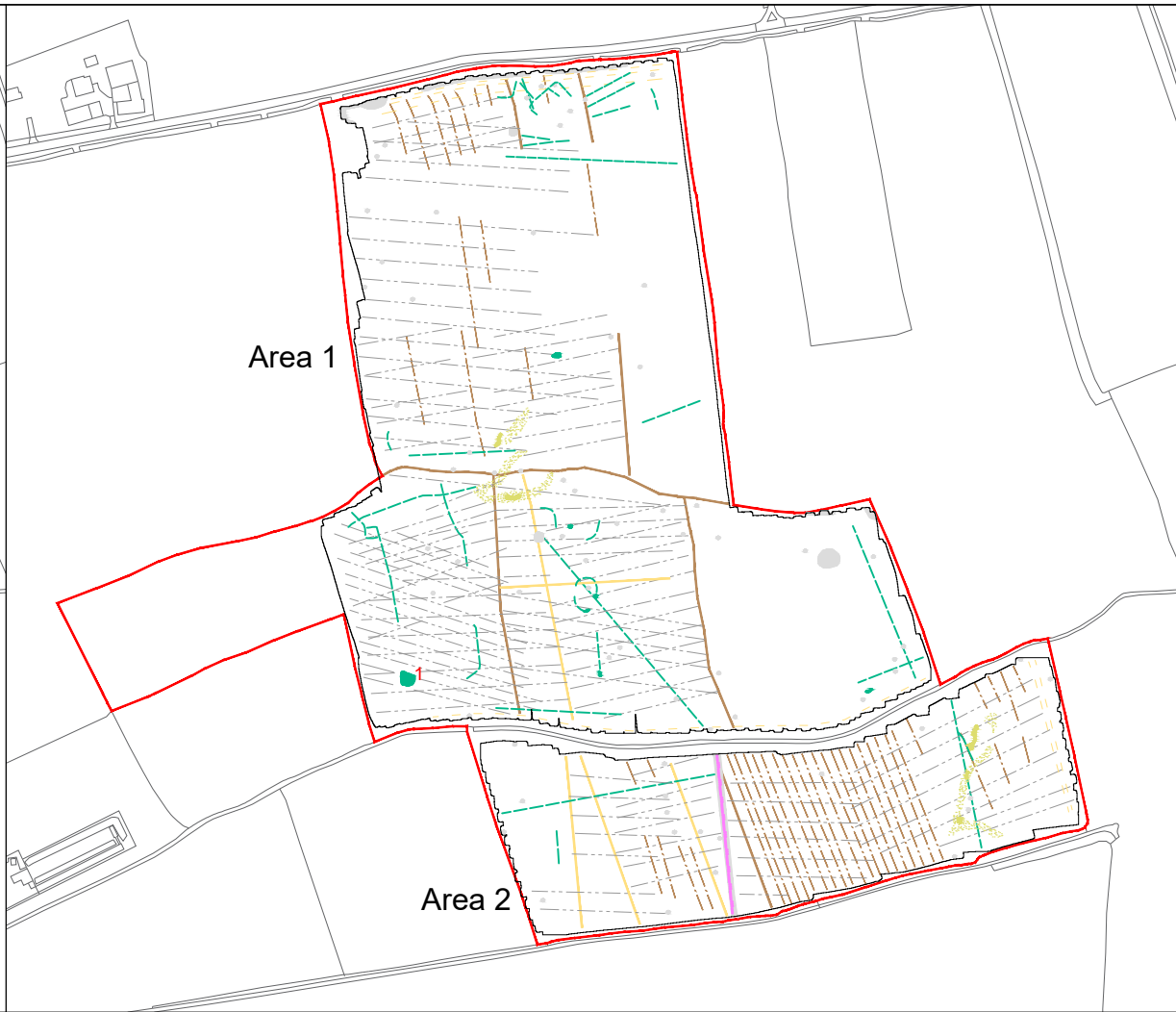


Area 2



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 Client: Island Green Power UK Limited
 Project: 16614-3 - Light Valley Solar Project: Site 3

Scale: 0 metres 75
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 Fig No: 09



KEY

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	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous

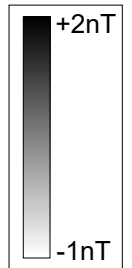
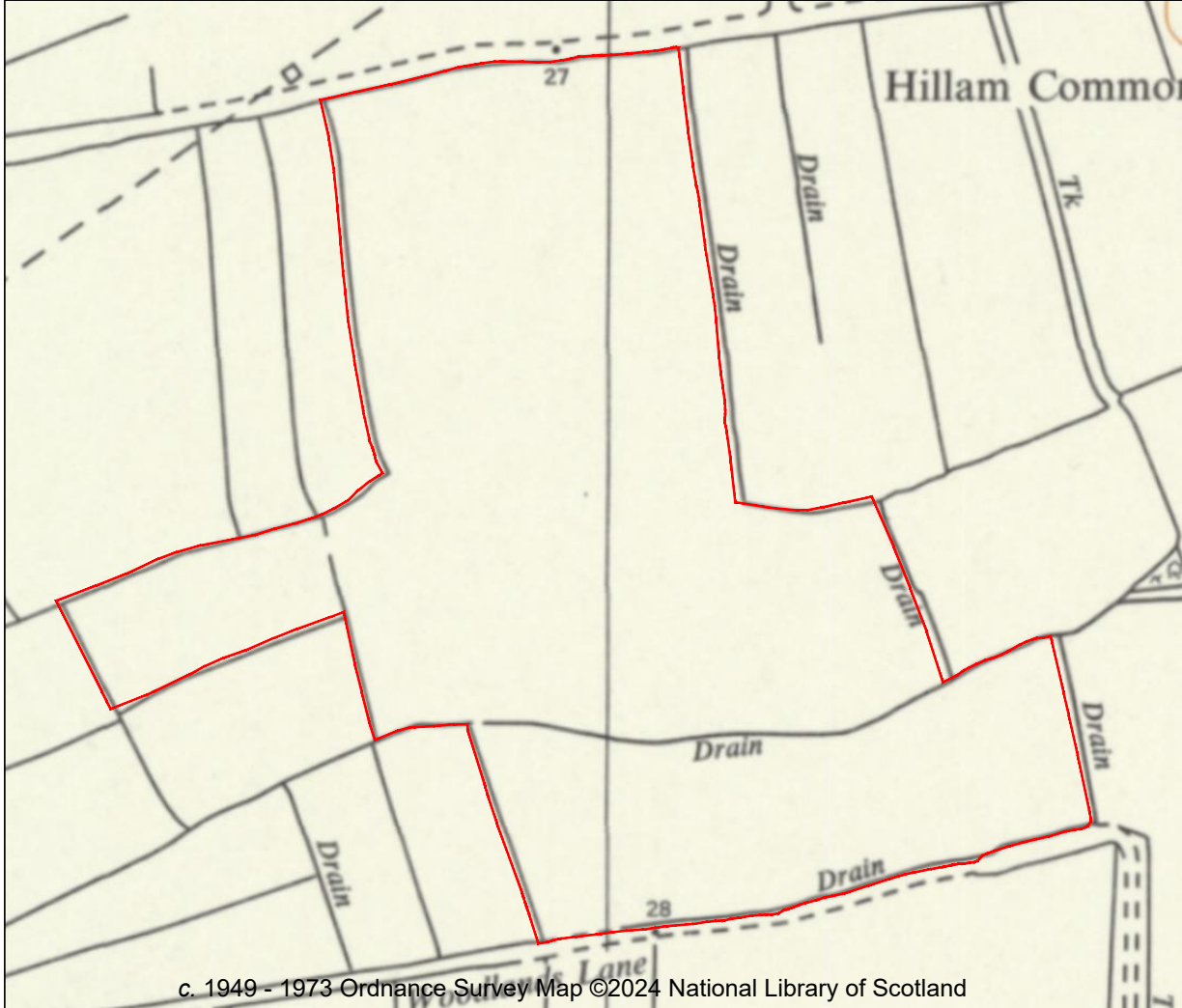
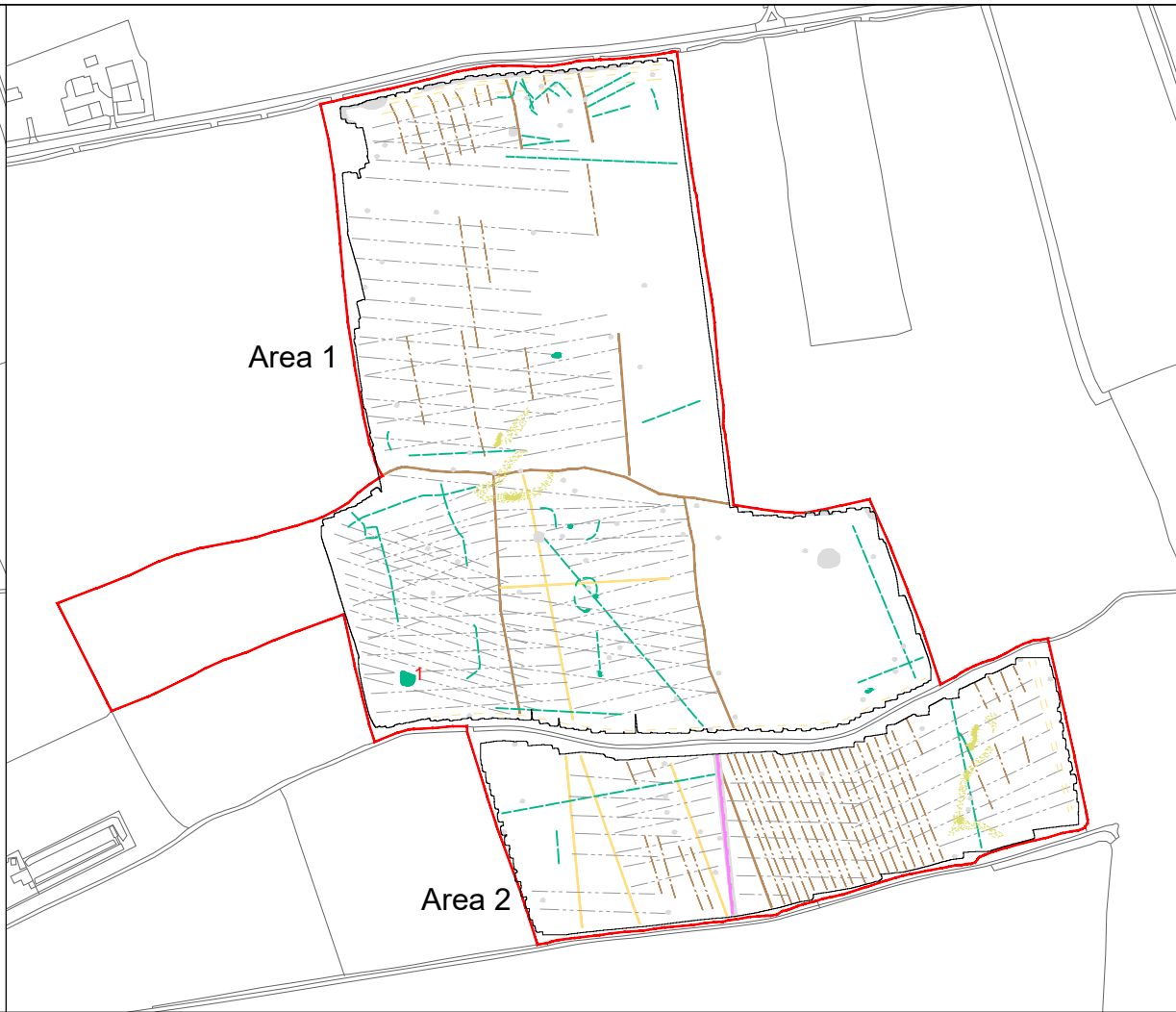


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Client: Island Green Power UK Limited

Project: 16614-3 - Light Valley Solar Project: Site 3

Scale: NOT TO SCALE Fig No: 10



KEY

	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Tramline
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous

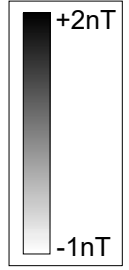
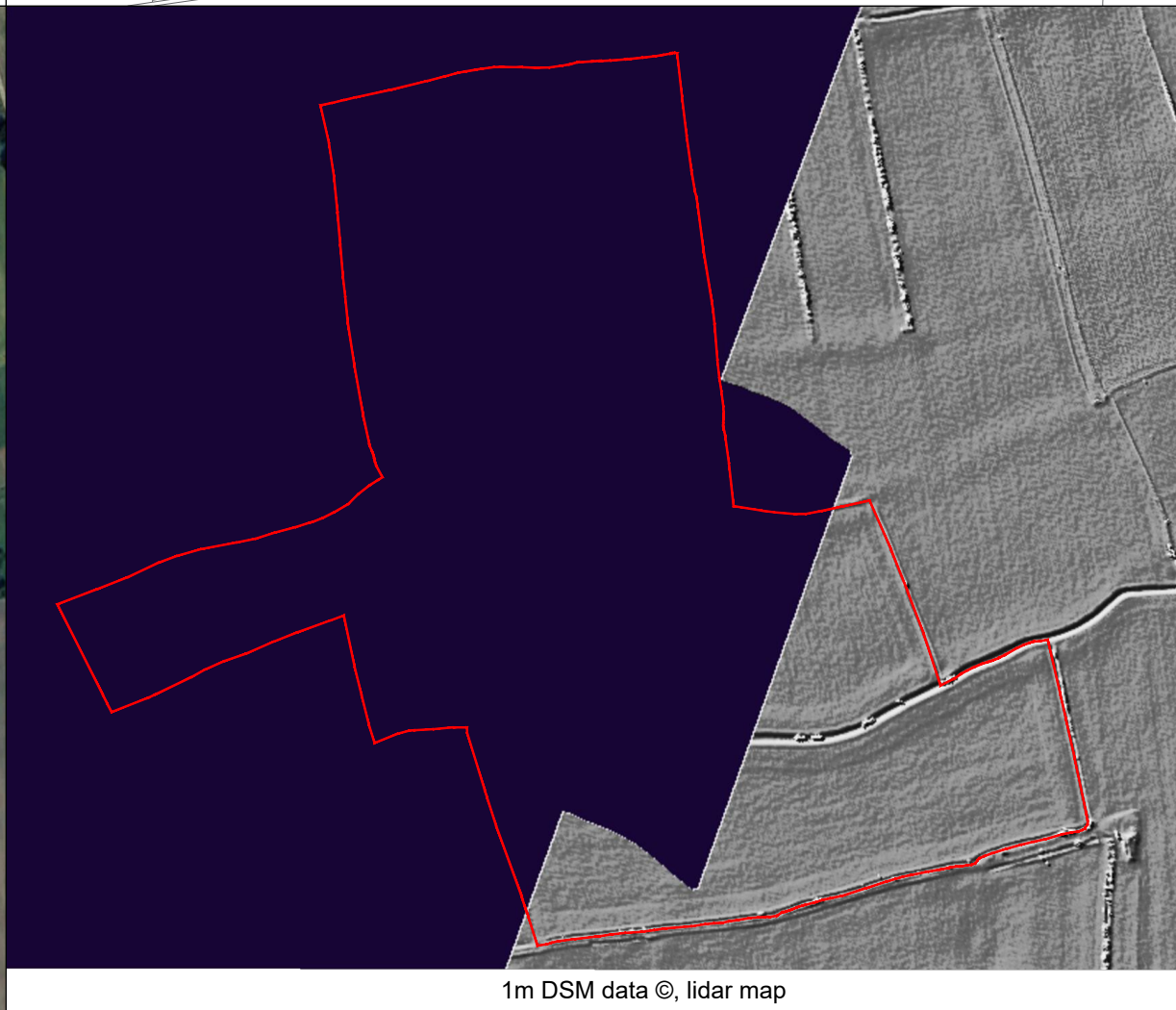
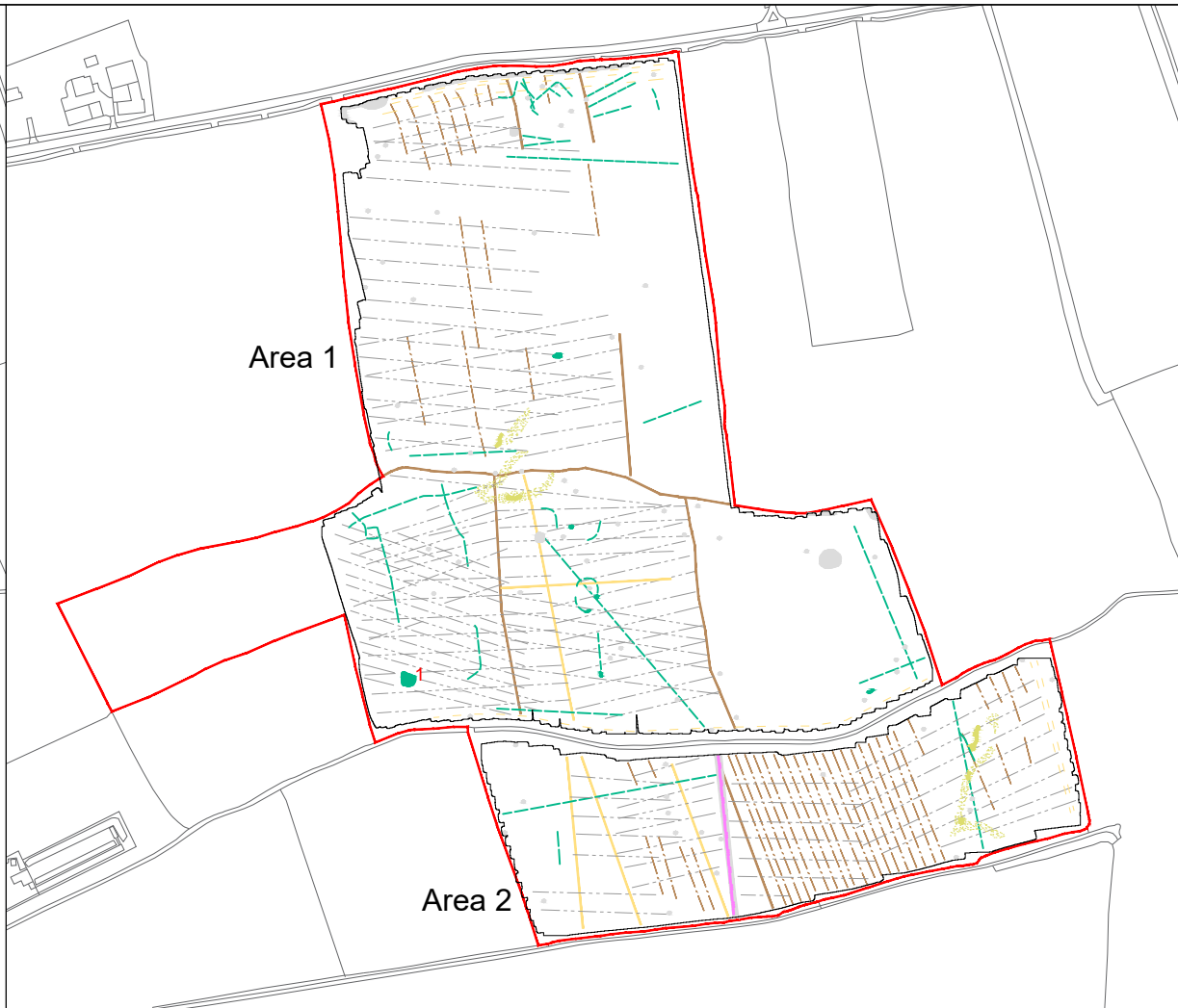


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Ordnance Survey Map / 2002 Aerial Image

Client: Island Green Power UK Limited

Project: 16614-3 - Light Valley Solar Project: Site 3

Scale: NOT TO SCALE Fig No: 11



KEY

	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Tramline
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Service
	Ferrous



Title: Greyscale Plots / Interpretation / 2023 Aerial Image / LiDAR Data Plot

Client: Island Green Power UK Limited

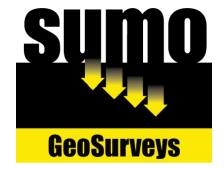
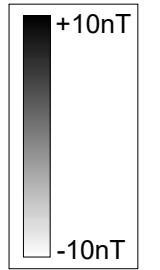
Project: 16614-3 - Light Valley Solar Project: Site 3

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Area 1

Area 2



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Minimally Processed Data - Greyscale Plots

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

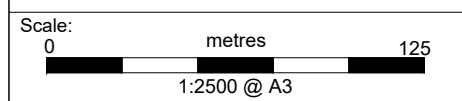


Fig No:
13

Area 1



Title:
XY Trace Plots (Area 1 clipped at +/-15nT)

Client:
Island Green Power UK Limited

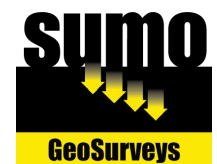
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Fig No:
14



Area 2



Title:
XY Trace Plots (Area 2 clipped at +/-15nT)

Client:
Island Green Power UK Limited

Project:
16614-3 - Light Valley Solar Project: Site 3

Scale:
0 metres 75
1:1500 @ A3

Fig No:
15

Appendix A - Technical Information: Magnetometer Survey Method

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1.0m	0.25m
Magnetometer	Bartington Cart System	1.0m	0.125m
Magnetometer	MACS Cart System (Foerster)	1.0m	0.125m

Instrumentation:

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted horizontally, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths.

Bartington Grad 601-2

Hand-Held: Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors and readings are logged at 0.25m centres along traverses 1.0m apart across 30m grids. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution as per Historic England guidelines

Bartington Cart System

Data will be collected using a cart carrying four paired Bartington magnetic sensors. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.

MACS Cart System (Foerster)

A multi-sensor array cart system (MACS) utilising 4 Foerster 4.032 Ferex CON 650 gradiometers, spaced at 1m intervals, with a control unit and data logger was used for the magnetic survey. Each data point is geographically referenced using an on-board RTK GNSS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.

Data Processing

Zero Mean	This process sets the background mean of each traverse within each grid to zero.
Traverse	The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/
Colourscale Plot

This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall, etc.*) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology / Probable Archaeology</i>	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable & possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge & Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
<i>Service</i>	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern.

Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.

Uncertain Origin

Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of *Possible Archaeology / Natural* or (in the case of linear responses) *Possible Archaeology / Agriculture*; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

Appendix C - OASIS Summary

OASIS ID (UID)	sumogeop1-529934
Project Name	Magnetometry Survey, Geophysical Survey at Light Valley Solar Project: Site 3
Sitename	Light Valley Solar Project: Site 3
Sitecode	16614-3
Project Identifier(s)	16614-3 - Light Valley Solar Project: Site 3
Activity type	Geophysical Survey, Magnetometry Survey, MAGNETOMETRY SURVEY
Planning Id	
Reason For Investigation	Planning requirement
Organisation Responsible for work	SUMO Geophysics Ltd.
Project Dates	29-Jul-2024 - 01-Aug-2024
Location	Light Valley Solar Project: Site 3 NGR: SE 51979 28595 LL: 53.75114292335284, -1.213219666180954 12 Fig: 451979,428595
Administrative Areas	Country: England County/Local Authority: North Yorkshire Local Authority District: North Yorkshire Parish: Hillam
Project Methodology	A temporary grid system was established over the site and marked out using canes. The location of the grid was set out using an RTK GPS system theoretically accurate to some 0.01m and referenced to OS co-ordinates. Data was collected using a cart carrying four paired Bartington magnetic sensors. Four sensors mounted 1m horizontally apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in

	<p>localised magnetic anomalies compared with the general magnetic background. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings were taken at 0.125m centres along traverses 1.0m apart. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.</p>
Project Results	<p>The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation which is visible in both survey Areas. Numerous responses of uncertain origin have been marked across the survey; most have probably been caused by variations in the underlying geology or agricultural processes. One discrete uncertain response may mark the location of an infilled extraction pit or pond. Former field boundaries, tractor tramlines and land drains have also been detected in the survey. Natural anomalies have been recorded, along with the route of a service pipe.</p>
Keywords	<p>Pit - UNCERTAIN - FISH Thesaurus of Monument Types Field Boundary - POST MEDIEVAL - FISH Thesaurus of Monument Types Drain - 20TH CENTURY - FISH Thesaurus of Monument Types Pipeline - 20TH CENTURY - FISH Thesaurus of Monument Types</p>
Funder	<p>Private or public corporation Island Green Power UK Limited</p>
HER	<p>North Yorkshire HER - unRev - STANDARD</p>
Person Responsible for work	<p>Thomas Cockcroft</p>
HER Identifiers	
Archives	

Report generated on: 28-11-2024:0940

Appendix D – Data Management Plan & Archive Selection Strategy

Data Management Plan

Project ID / OASIS ID

16614-3 / sumogeop1-529783

Project Name

Light Valley Solar Project: Site 3

Project Description

A magnetometer survey of 19.8 hectares of land at Site 3 of the Light Valley Solar Project

Client

Island Green Power UK Limited

Project Manager

Thomas Cockcroft

Field Leader

Jelmer Wubs

Date DMP created

26.03.2024

Date DMP last updated

28.11.2024

Version

2

Technique - data

Detailed magnetic survey.

Manual – cart - other

ATV/Cart magnetometers

Documentation and metadata

All documentation and data produced are stored on SUMO servers in a specific job file.

Data storage, access and back-up

- SUMO Secure server during the project life set up in a RAID configuration (a RAID configuration incorporates a level of data redundancy meaning if a single hard drive in fails data can still be restored).
- Snap shots of the data will be made at several intervals during the day to allow data to be restored for up to 30 days if changed / deleted.
- Once the final report has been completed data will be moved onto NAS drive set up in a RAID configuration.
- All data is backed up to an off-site location (Cloud storage).

Archive Selection Strategy

Digital Data

Selection

It is proposed that only the final version of all born digital documents (reports, images and CAD files) will be selected for inclusion in the Preserved Archive. All raw and processed survey data will be included in the preserved archive. Below is what will constitute the selected archive:

- Raw data in XYZ format .csv and .png plus .pgw world file
- Processed data as .png plus .pgw world file
- Final survey report .pdf
- CAD and Vector graphics (interpretations) in .dwg format

De-selected digital data

The de-selected material will be retained on the SUMO Secure server and Cloud storage.

Documents

Not applicable – no archive

Materials

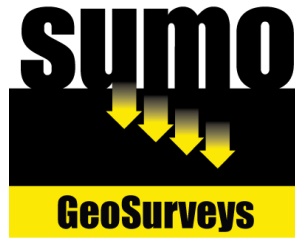
Not applicable – no archive



- Archaeological Geophysics
- Engineering Geophysics
- Measured Building Services
- Utility and Topographic Services
- Aerial Surveys
- Rail Surveys

SUMO GeoSurveys is a trading name of SUMO Geophysics Ltd.
SUMO Services Ltd, incorporated under the laws of England and Wales,
Company Registration No.4275993.
Registered Office Unit 8 Hayward Business Centre, New Lane, Havant, Hampshire, PO9 2NL

Annex D Light Valley Site 4 Geophysical Survey Report



GEOPHYSICAL SURVEY REPORT

Light Valley Solar Project: Site 4

Client

Island Green Power UK Limited

Survey Report

16614-4

OASIS Ref. No.

sumogeop1-531068

Date

22 January 2025



Survey Report 16614-4: Light Valley Solar Project: Site 4

Survey dates	22-30 April 2024 1-13 May 2024 29-31 July 2024 1-9 & 14-16 August 2024 2-9 September 2024
Field co-ordinator	Jelmer Wubs BA MA Simon Lobel BSc Robert Knight BA MA Liam Brice-Bateman BA
Field Team	Morgan Potter Janee Gagnon BSc BA MSc MA Craig Wakefield MSc Daniel Morris MSci William Vernon BA (Hons)
Report Date	22 January 2025
CAD Illustrations	Thomas Cockcroft MSc MCIfA
Report Author	Thomas Cockcroft MSc MCIfA
Project Manager	Thomas Cockcroft MSc MCIfA
Report approved	Dr John Gater BSc DSc(Hon) MCIfA FSA

SUMO GeoSurveys
Suite1
Deer Park Business Centre
Woollas Hill
Eckington
Pershore
Worcestershire
WR10 3DN
T: 01684 592266

geophysics@sumoservices.com

SUMO GeoSurveys is a trading name of SUMO Geophysics Ltd.

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Appendix A	Technical Information: Magnetometer Survey Methods, Processing and Presentation
Appendix B	Technical Information: Magnetic Theory
Appendix C	OASIS Data Collection Sheet
Appendix D	Data Management Plan & Archive Selection Strategy

3 SURVEY TECHNIQUE

3.1 Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site. All survey techniques followed the guidance set out by ClfA (2020) and the European Archaeology Council (EAC) (2016).

Bartington Grad 601-2	Traverse Interval 1.0m	Sample Interval 0.25m
Bartington Cart System	Traverse Interval 1.0m	Sample Interval 0.125m
MACS Cart System (Foerster)	Traverse Interval 1.0m	Sample Interval 0.125m

The only processes performed on data are the following unless specifically stated otherwise:

Zero Mean Traverse	This process sets the background mean of each traverse within each grid to zero. The operation removes instrument striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

4 EXECUTIVE SUMMARY OF RESULTS

- 4.1 A magnetometer survey of 340 hectares of land at Site 4 of the Light Valley Solar Project has recorded numerous magnetic responses that have been interpreted as being of archaeological interest. In the south-east of Field 4.14 and 4.15 ditches, pits and trends have been detected which are evidence of settlement activity. These responses likely reflect trackways, enclosures, ring ditches and settlement features. A D-shaped enclosures in Field 4.5 and a rectangular enclosure in Field 4.12 correspond with the locations of Medieval enclosures that are recorded in the HER (MNY9905 & MNY9907). Weaker and less well-defined responses in Fields 4.12, 4.14 and 4.17 could also have archaeological origins. Ridge and Furrow cultivation has been detected in many of the survey areas. Numerous uncertain responses have been plotted and the majority have probably been caused by underlying natural variations, agricultural processes or spreads of relatively modern debris. Former field boundaries, ploughing, land drains and tractor tramlines have also been detected. Bands of increased response and sinuous anomalies in Fields 4.2, 4.3 and 4.17 have been caused by variations in the underlying geology and alluvial deposits.

5 INTRODUCTION

- 5.1 **SUMO GeoSurveys** was commissioned to undertake a geophysical survey of an area outlined for development. This survey forms part of an archaeological investigation being undertaken by **Island Green Power UK Limited**.
- 5.2 This survey is part of the Light Valley Solar Project which is composed of a five separate magnetometer survey reports.
- 5.3 Site Details

NGR / Postcode	SE 53918 27596 / WF11 9LU
Location	The site is located 5km north-east of Knottingley and due north-east of Birkin. The survey area is bounded to the north by Hillam Common Lane, to the south by the River Aire and the fields are situated around Woodhouse Farm / Birkin House.
HER	North Yorkshire HER
OASIS Ref. No.	sumogeop1-531068
District	N/a
Parish	Birkin CP / West Haddlesey CP / Hillam CP
Topography	Generally flat
Land Use	Arable
Geology (BGS 2024)	Bedrock: Sherwood Sandstone Group - Sandstone Superficial: Alluvium - Clay, silt, sand and gravel Brighton Sand Formation - Sand Hemingbrough Glaciolacustrine Formation - Clay, silty
Soils (CU 2024)	Soilscape 20: Loamy and clayey floodplain soils with naturally high groundwater Soilscape 22: Loamy soils with naturally high groundwater
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	340 ha

5.4 **Archaeological Background**

5.4.1 See Below for table of non-designated heritage assets within Site 4.

Field No.	HER Record	Summary
4.5	MNY9905	Roe Field Moat: A medieval moat north of Birkin. This was shown as an earthwork on the 1905 25 OS sheet but by 1963 it was completely ploughed out. It shows as a very clear soilmark.
4.7	MNY9906	Low Cottage and enclosure, shown as an earthen bank on the 2nd edition 1907 25 OS sheet. low cottage now demolished was built inside an enclosure, the north-west & south sides were continuous; the east side was broken by the garden wall. possible entranceway at south-east corner?
4.12	MNY9907	A medieval moat east of Barkhouse Wood Lane. Originally identified on aerial photographs dating to July 1984, an entranceway midway along the south side was noted. LiDAR and Google Earth images submitted by Grace, S confirm that the earthworks are still visible in January 2020.
4.12	MNY7247	Undated field system. Soil marks within site of former wood showing a roughly rectilinear pattern of ditches which probably comprise part of a former field system. It appears to contain subdivision which could represent enclosures of some nature.
4.14	MNY9911	Find spot of Roman Coffin, Birkin. Gypsum coffin found in a field near Birkin and transferred to the churchyard. It is presumed Roman because of its similarity to other dateable coffins.
4.5, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12 & 4.13	ENY4483	In February and March 2009, Wessex Archaeology carried out a Magnetometry Survey at the proposed Wood Lane Windfarm Site. A number of anomalies were recorded, thought to mainly indicate field boundaries, enclosures or ridge and furrow remains.
4.9, 4.10, 4.11, 4.12 & 4.13	ENY8541	On 5th November 2018 Magnitude Surveys carried out a geophysical survey along the route of the proposed gas pipeline between Gateforth and Ferrybridge. An area of archaeological activity was identified in one part of the site, indicating a potential settlement and associated field system, probably dating from the Iron Age/Romano British period
4.17	ENY7941	During January 2013 Archaeological Services WYAS carried out phase 2 geophysical survey along the proposed Knottongley Gas pipeline. An area of 24 ha was surveyed. Several anomalies were identified intermittently along the route. Together the anomalies form agricultural field systems linked by trackways that probably date to the later prehistoric and/or Romano-British periods. One site of probable settlement activity has also been identified. The southern half of the corridor is assessed as moderate and locally high, the northern section has a lesser potential but it should be noted that the majority of the unsurveyed areas lie in this last section of the corridor.

5.5 **Aims and Objectives**

- 5.5.1 To locate and characterise any anomalies of possible archaeological interest within the study area.

6 **RESULTS**

- 6.1 *The survey has been divided into 18 survey areas (Fields 4.1 – 4.18) and specific anomalies have been given numerical labels [1] [2] which appear in the text below, as well as on the Interpretation Figure(s). Fields 4.16 and 4.18 were a coppice at the time of the survey which rendered those land parcels unsurveyable. Overhead cables in Fields 4.11, 4.12, 4.13 and 4.14 interfered with the sensors which has caused gaps in the data. Waterlogging and severe rutting in many of the fields caused parts of the fields to be unsurveyable.*

6.2 **Probable / Possible Archaeology**

- 6.2.1 Numerous magnetic responses have been detected throughout the site which have been interpreted as being of archaeological interest. They have been assigned to the categories of Probable and Possible Archaeology in accordance with their magnetic strengths.
- 6.2.2 In Field 4.5 (see Figures 9-11) discrete ditch-like anomalies [1] have been detected which form a D-shaped enclosure which measures 95m by 75m. A couple of discrete responses are visible within the enclosure which could indicate internal subdivisions. Breaks in the eastern and western outer ditches could indicate the locations of two entrances. The responses correspond with the location of Roe Field Moat (MNY9905); a Medieval moat which is shown as earthworks on several editions of historic mapping (see Figures 42).
- 6.2.3 In the west of Field 4.12 (see Figures 21-23) a rectangular enclosure [2] has been detected which measures 55m by 45m. There is a clear break in the southern ditch and possibly a second gap in the eastern ditch, however, it is close to an old field boundary and a strong ferrous response, so the evidence for a second entrance is less certain. The anomaly corresponds with a Medieval moat that is recorded in the HER (MNY9907) and originally identified on aerial photographs dating to July 1984; an entranceway midway along the south side was noted which corresponds well with the geophysics.
- 6.2.4 100m south-west of [2] (see 6.2.3), a number of ditch-like responses, pit-like anomalies plus linear and curvilinear trends [3] have been recorded (see Figures 21-23). The anomalies have tentatively been assigned to the category of *Possible Archaeology*, however, some of the responses may have modern origins. If archaeological, they could mark the locations of ditches, trackways and partial enclosures, though they might just be agricultural effects.
- 6.2.5 In the west of Field 4.14 (see Figures 27-29) a number of magnetically weak linear trends [4] which appear to form rectangular patterns have been detected. They have tentatively been assigned to the category of *Possible Archaeology*. They could be the remnants of enclosures: however, they may have also been caused by relatively modern agricultural processes. Hence, the tentative interpretation.
- 6.2.6 Numerous ditch-like responses, pits and trends [5] have been recorded in the south-east of Field 4.14 (see Figures 30-32). The anomalies form rectangular and circular, perhaps associated with a small farmstead which extends southwards and eastwards beyond the limits of the survey. The HER records find spot of a Roman Coffin in this approximate location (MNY9911).
- 6.2.7 In Field 4.15 (see Figures 33-35) numerous ditch-like responses and trends [6] which form multiple enclosures and fields / paddocks. There are many pits and curvilinear trends, including a couple of circular responses which may be ring ditches. There appear to be two cluster of activity, possibly indicating two farmsteads. The magnetic anomalies appear to extend

southwards and westwards beyond the limits of the survey, while to the north, in Field 4.14, a couple of weaker linear responses [7] could be further associated ditches.

- 6.2.8 In the north-west of Field 4.17 (see Figures 36-38) a couple of linear anomalies [8] have been recorded and assigned to the category of *Possible Archaeology*. They appear to form rectangular patterns and could mark the locations of an enclosure. However, they may have also been caused by relatively modern processes. Due south of these linear trends are number discrete responses [9] which could be extraction pits and have archaeological origins; however, they could also naturally magnetic pockets of gravel in the surrounding alluvial deposits or have modern origins.

6.3 ***Ridge and Furrow***

- 6.3.1 Broad and parallel linear anomalies have been recorded in Fields 4.9, 4.14 and 4.17 which have been caused by historic ridge and furrow cultivation. In places, it has been difficult to distinguish between the ridge and furrow cultivation and land drains (see 6.7.2)

6.4 ***Uncertain***

- 6.5 Numerous trends, discrete anomalies and zones of increased response have been detected throughout the survey which have been assigned to the category of *Uncertain* which is to be expected on a survey of this size. The majority of these responses have probably been caused by underlying natural variations, agricultural processes or spreads of relatively modern debris. However, archaeological origins for some of these anomalies cannot be discounted due to the proximity of archaeological responses that have been detected in the magnetic data.

6.6 ***Former Field Boundary – Corroborated / Conjectural***

- 6.6.1 Linear responses have been detected which correspond with the routes of former field boundaries that are recorded on several editions of historic mapping (see Figure 42).
- 6.6.2 In Fields 4.4, 4.5, 4.8, 4.9, 4.10 and 4.14 several conjectural former field boundaries have been marked. While they do not correspond with former field boundaries on available historic mapping, they have a similar magnetic signature to the corroborated boundaries (see 6.6.1), hence their categorisation.

6.7 ***Agricultural – Ploughing / Land Drains / Tramlines***

- 6.7.1 Parallel and closely spaced ill-defined anomalies are visible in Fields 4.6, 4.8, 4.9 and 4.11 which have been caused by modern ploughing.
- 6.7.2 In most of the survey areas widely spaced linear responses on multiple alignments have been recorded which have been caused by land drains. In places, the land drains have been difficult to distinguish from the ridge and furrow cultivation.
- 6.7.3 In Fields 4.5, 4.6, 4.8 and 4.15 sets of parallel trends mark the routes of agricultural tractor tramlines.

6.8 ***Natural / Geological***

- 6.8.1 Bands of increased response and sinuous anomalies have been detected in Fields 4.2, 4.3 and 4.17 which have been caused by variations in the underlying geology and alluvial deposits associated with adjacent River Aire. See also 6.2.8 re: potential pits and pockets of gravel.

6.9 **Service**

- 6.9.1 Strong linear dipolar ferrous anomalies in Fields 4.10, 4.11, 4.12, 4.13, 4.14 and 4.17 mark the routes of underground service pipes.

6.10 **Ferrous / Magnetic Disturbance**

- 6.10.1 A zone of magnetic disturbance [10] has been recorded in Field 4.7 (see Figures 12-14); it corresponds with the location of the former Low Cottage and enclosure which are recorded in the HER (MNY9906). Low cottage is now demolished, and the surrounding field boundaries have been removed. Spreads of demolition debris and subsequent landscaping is likely to have caused the magnetic disturbance. Other zones of disturbance have also been detected in the survey which have probably been caused by spreads of debris or relatively modern agricultural processes.
- 6.10.2 Ferrous responses close to boundaries are due to adjacent fences, gates, buildings, roads, pylons. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

7 **DATA APPRAISAL & CONFIDENCE ASSESSMENT**

- 7.1 Historic England Table 4 (EH 2008) states that the typical magnetic response on the local soils / geology is variable. The results from this survey indicate a range of archaeological anomalies; consequently, the survey is deemed to have worked well. In places, it has been difficult to interpret some of the weaker responses due to natural and agricultural effects.

8 **CONCLUSION**

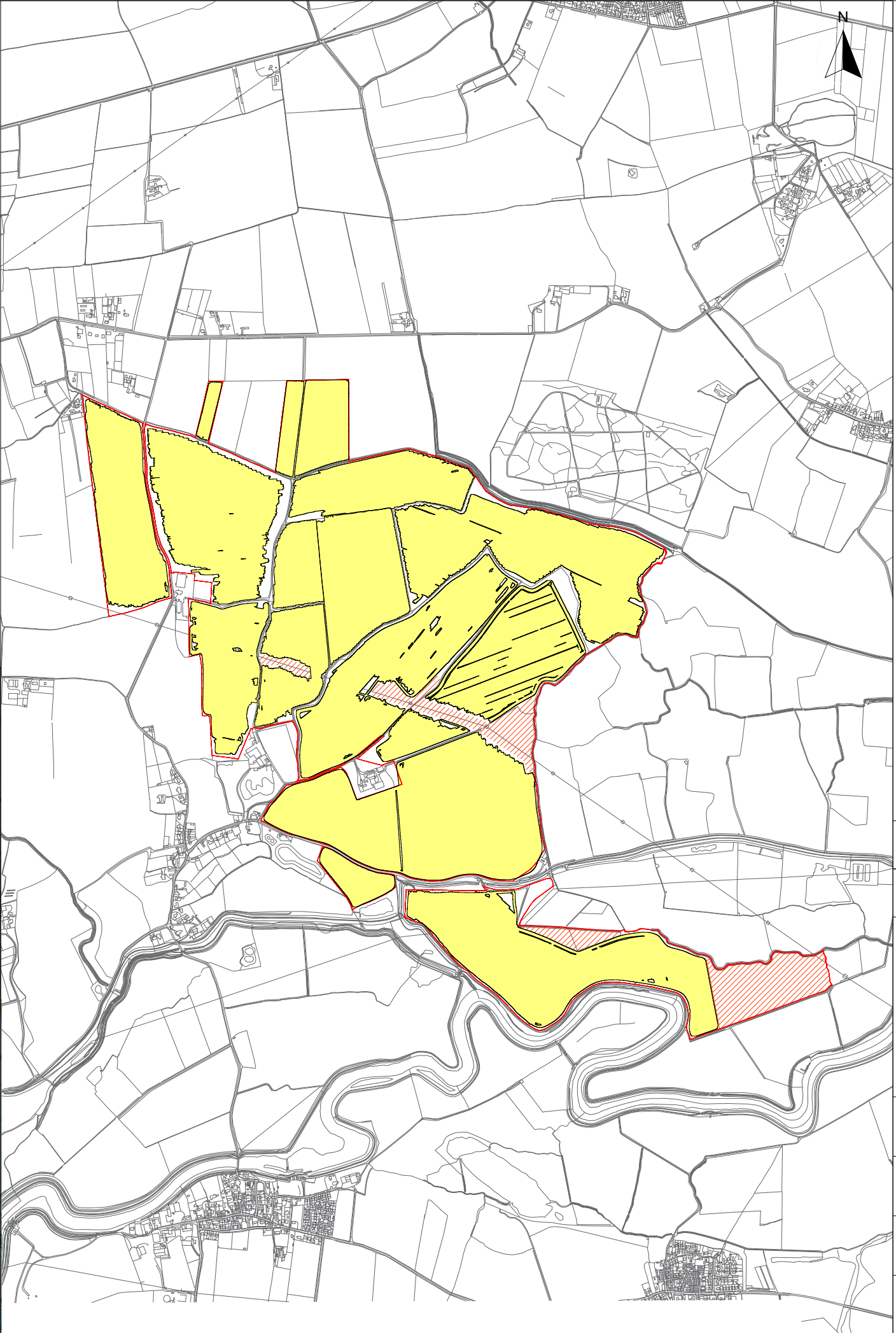
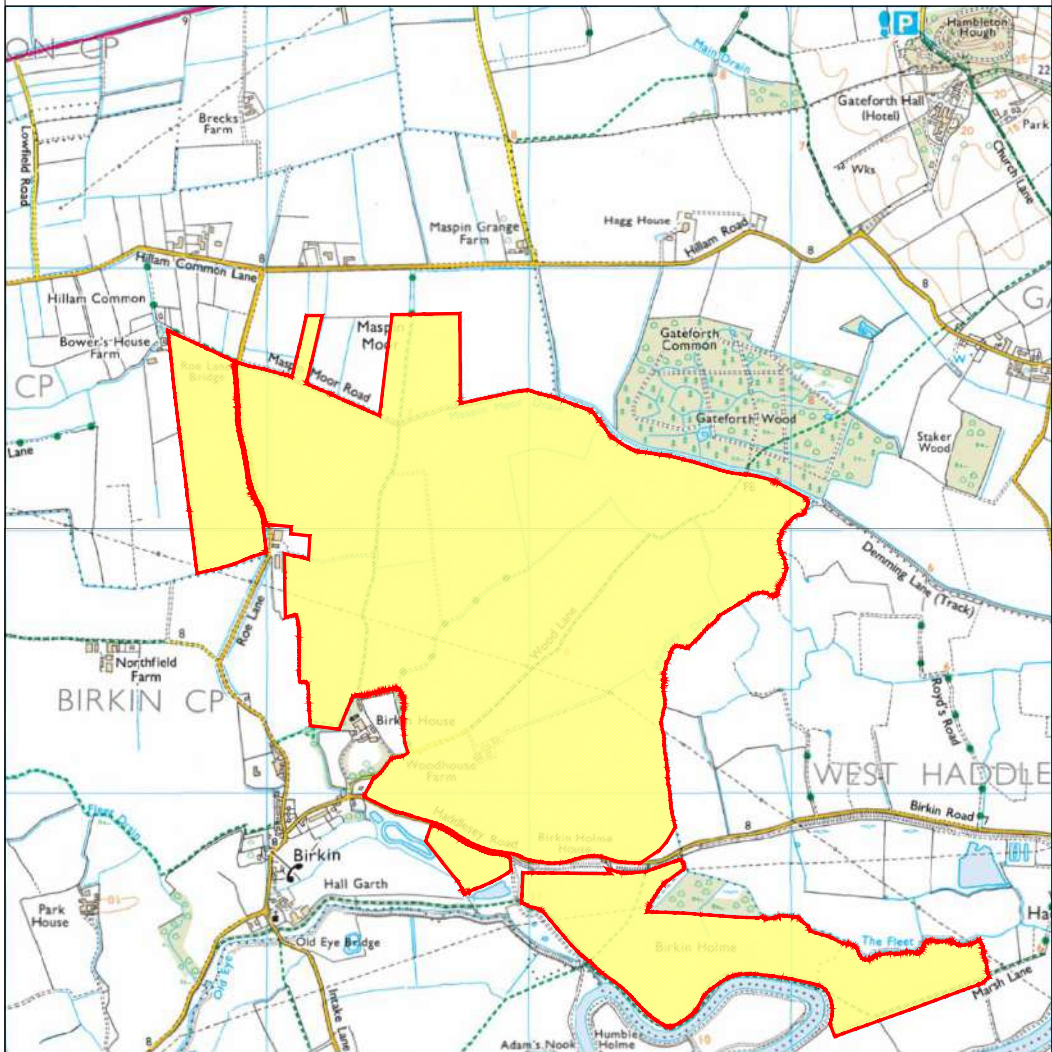
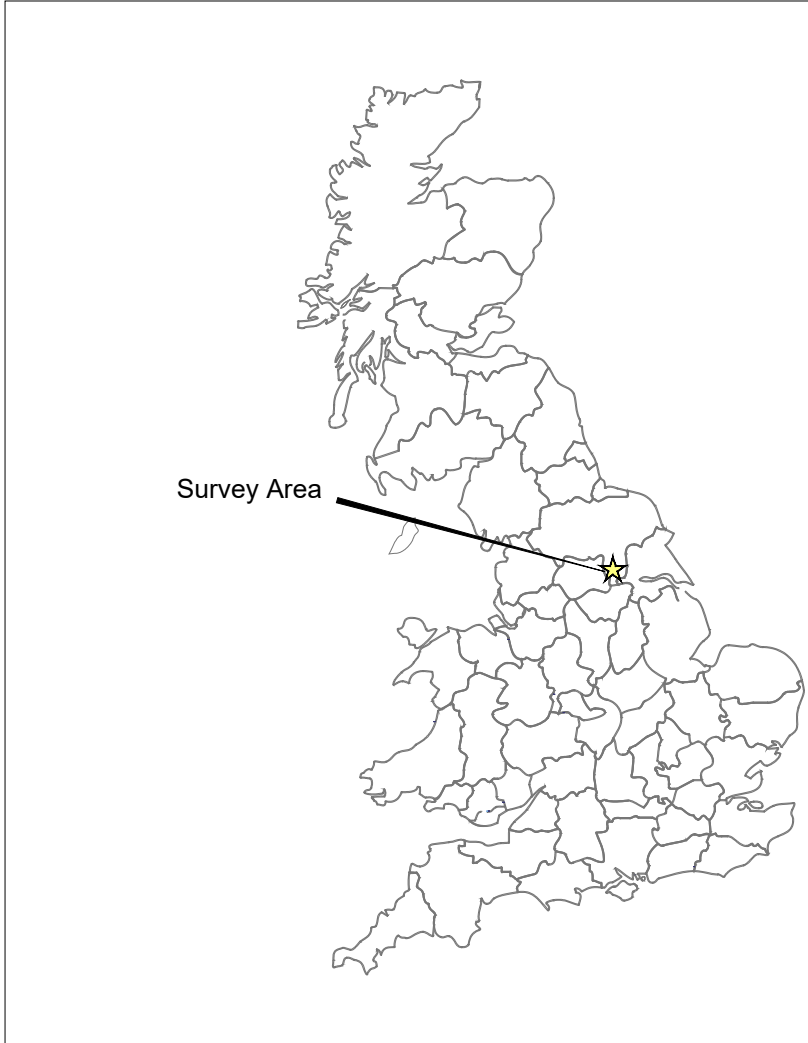
- 8.1 The magnetometer survey has recorded numerous magnetic responses that have been interpreted as being of archaeological interest. In the south-east of Field 4.14 and 4.15 ditches, pits and trends have been detected which are evidence of settlement activity. These responses likely reflect trackways, enclosures, ring ditches and settlement features. The responses in Field 4.14 correspond with the location of the findspot of a Roman coffin (MNY9911). A D-shaped enclosures in Field 4.5 and a rectangular enclosure in Field 4.12 correspond with the locations of Medieval enclosures that are recorded in the HER (MNY9905 & MNY9907). Weaker and less well-defined responses in the west of Field 4.12, west of 4.14 and in the west of 4.17 could also have archaeological origins. However, some of these responses may have been caused by variations in the underlying geology or agricultural processes.
- 8.2 Ridge and furrow cultivation has also been detected in the survey. Numerous trends, discrete anomalies and zones of increased response have been assigned to the category of uncertain which is to be expected on a survey of this size. The majority of these anomalies have probably been caused by underlying natural variations, agricultural processes or spreads of relatively modern debris. Former field boundaries, ploughing, land drains and tractor tramlines are also visible in the survey data. Bands of increased response and sinuous anomalies have been detected in Fields 4.2, 4.3 and 4.17 which have been caused by variations in the underlying geology and alluvial deposits. A zone of magnetic distance in Field 4.7 corresponds with the location of the now demolished Low Cottage (MNY9906).

9 REFERENCES

- BGS 2024 *Geology of Britain Viewer*, British Geological Survey, website:
██
- ClfA 2020 *Standard and Guidance for Archaeological Geophysical Survey*. 2014 amended
2020. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
██
- CU 2024 *The Soils Guide*. www.landis.org.uk. Cranfield University, UK. website:
██
- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological
Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon
(now withdrawn, but used for evaluating suitability of soil types)

10 ARCHIVE

- 10.1 The minimally processed data, data images, XY traces and a copy of this report are stored in **SUMO GeoSurveys'** digital archive, on an internal RAID configured NAS drive in the Midlands Office. These data are also backed up to the Cloud for off-site storage.
- 10.2 The Grey Literature will be archived with OASIS and the relevant HER within a period of 12 months.

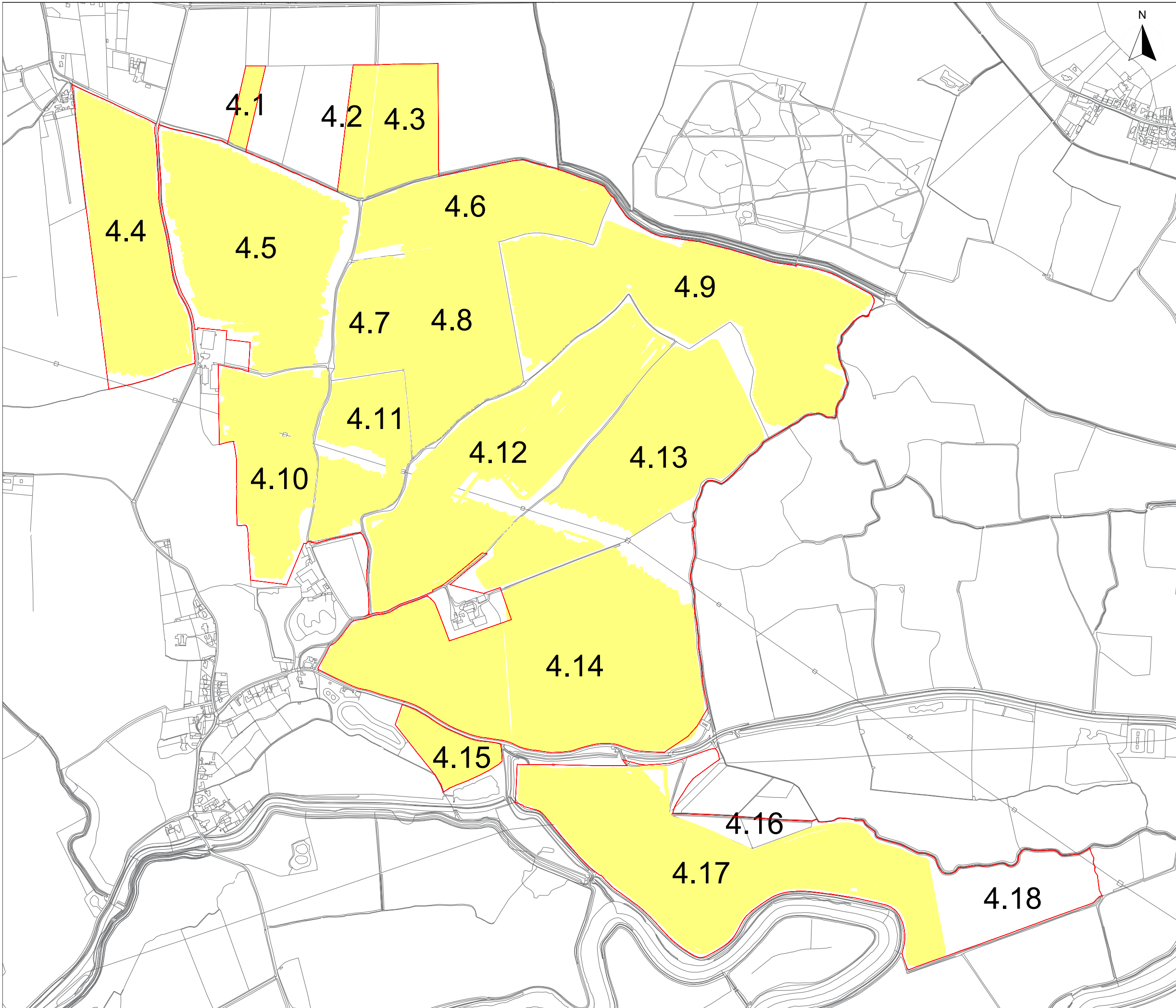


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- Survey Areas
- Unsurveyable Area

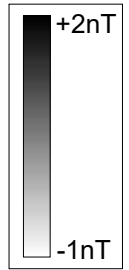
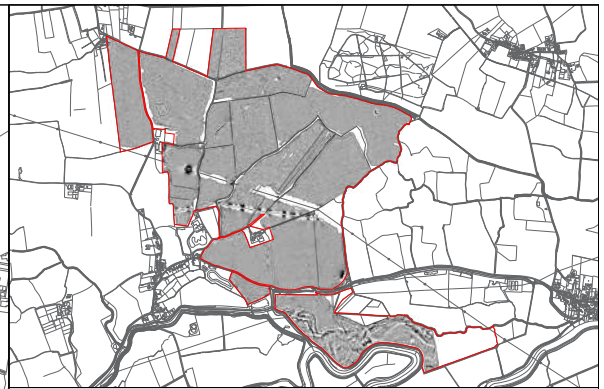
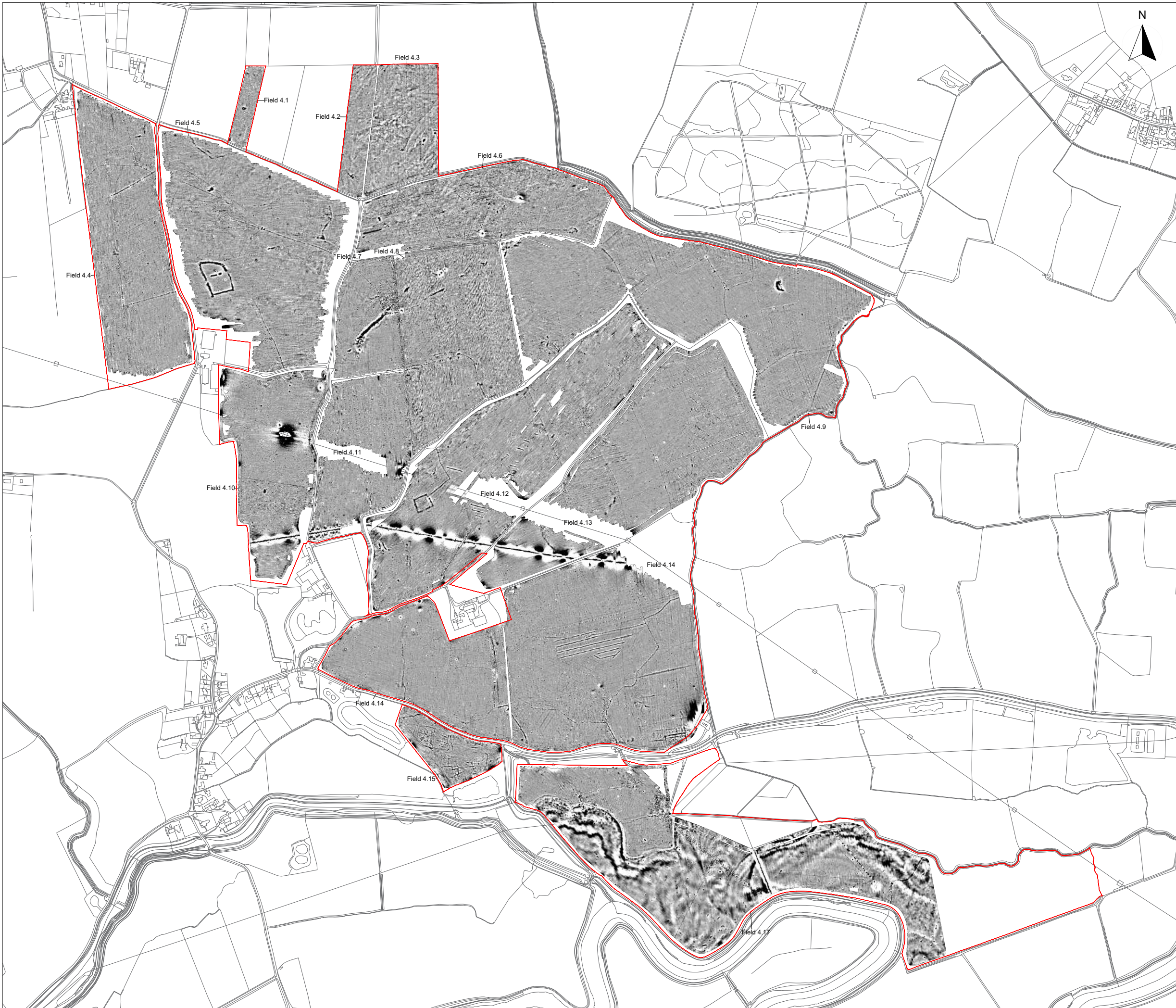


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Client:	Island Green Power UK Limited	
Project:	16614-4 - Light Valley Solar Project: Site 4	
Scale:	NOT TO SCALE	Fig No: 01



Title: Magnetometer Survey
Client: Island Green Power UK Limited
Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 550
1:11,000 @ A3
Fig No: 02



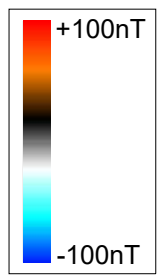
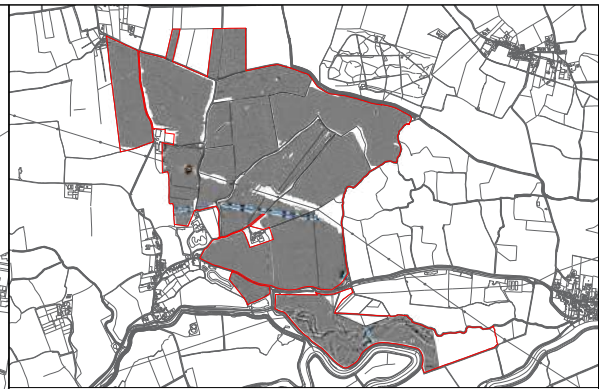
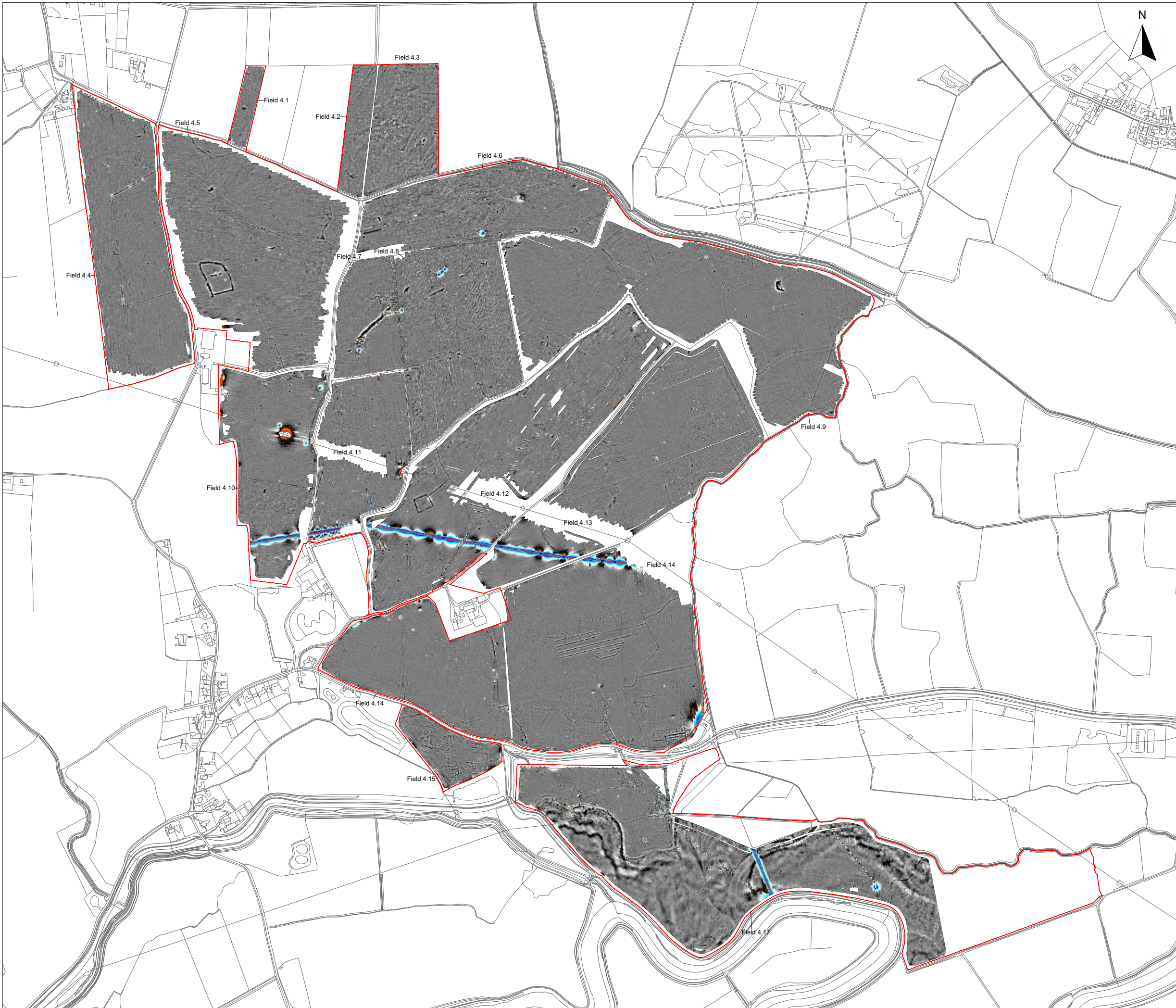
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Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 550
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Fig No: 03



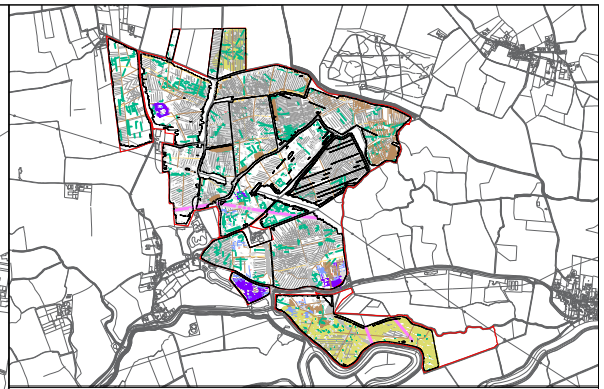
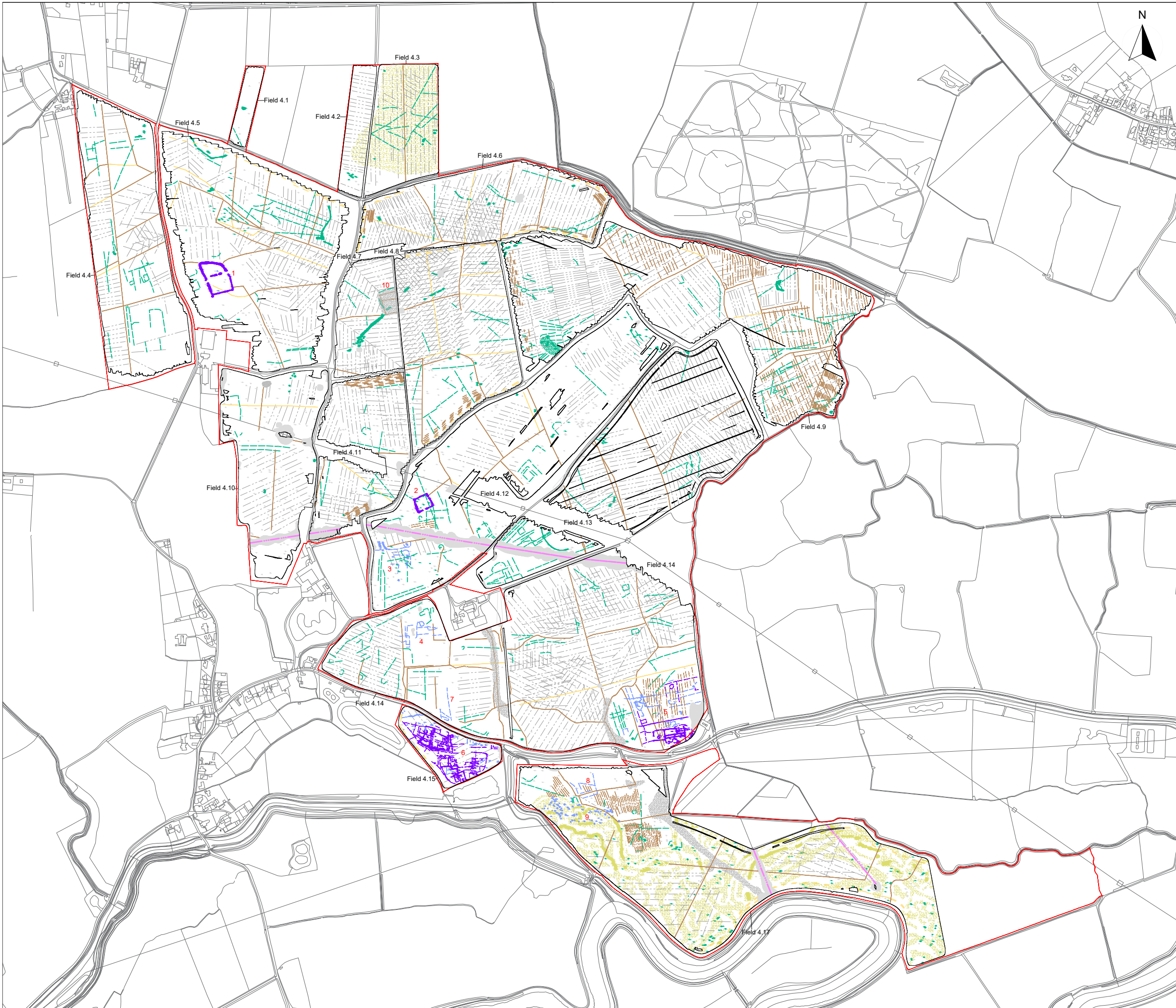
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Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 550
1:11,000 @ A3

Fig No: 04



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



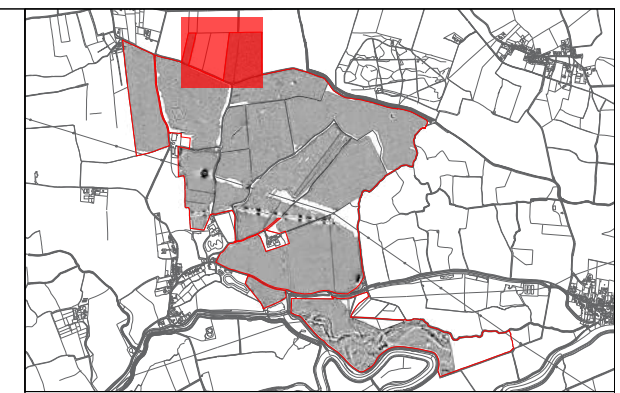
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Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

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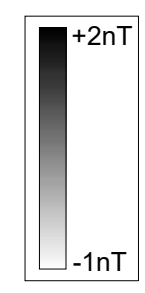
Fig No: 05



Field 4.3

Field 4.1

Field 4.2



Title: Magnetometer Survey - Greyscale Plots (Fields 4.1, 4.2 & 4.3)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

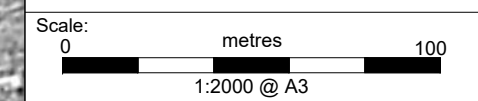
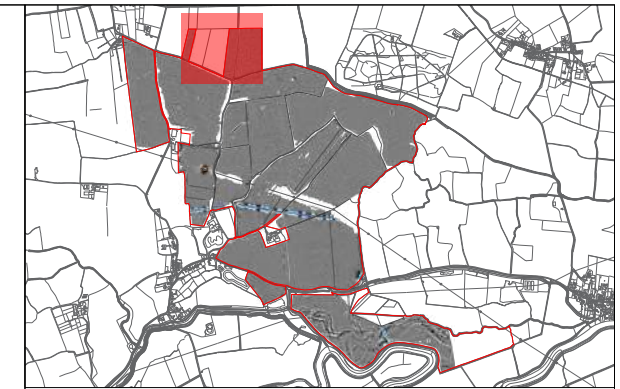
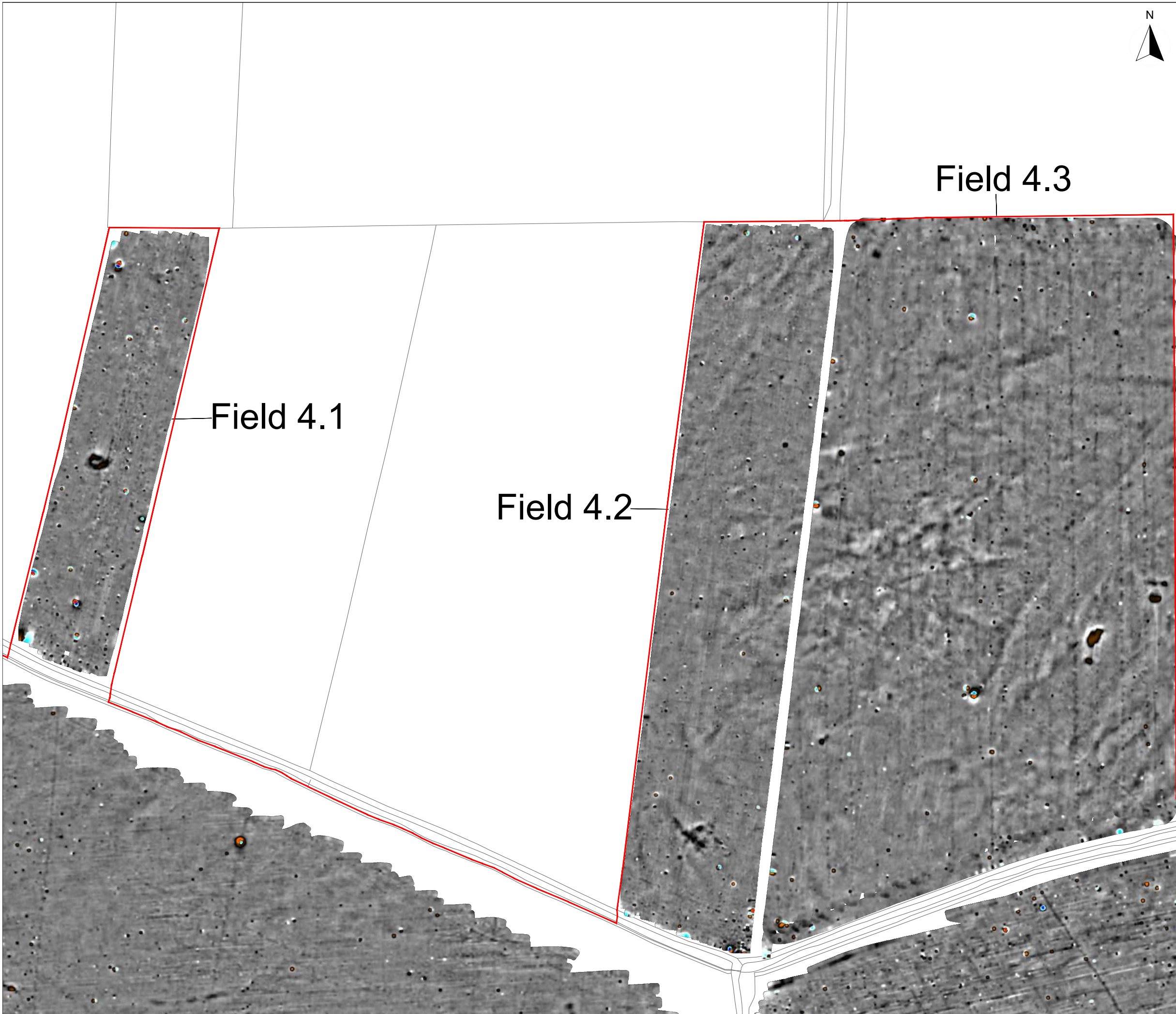


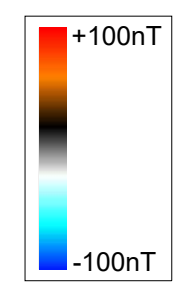
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Field 4.3

Field 4.1

Field 4.2



Title: Magnetometer Survey - Colour Plots
(Fields 4.1, 4.2 & 4.3)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

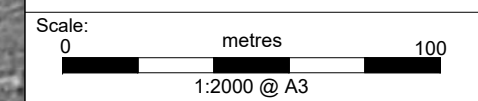
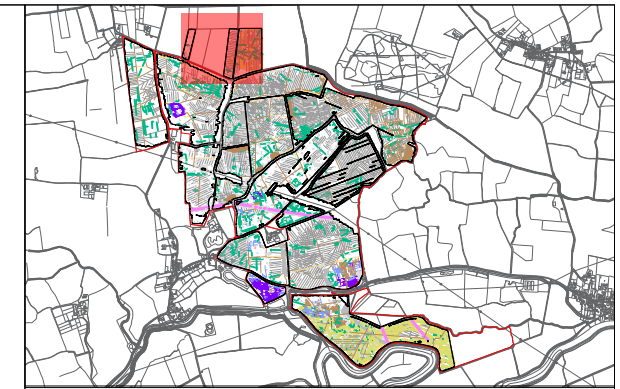
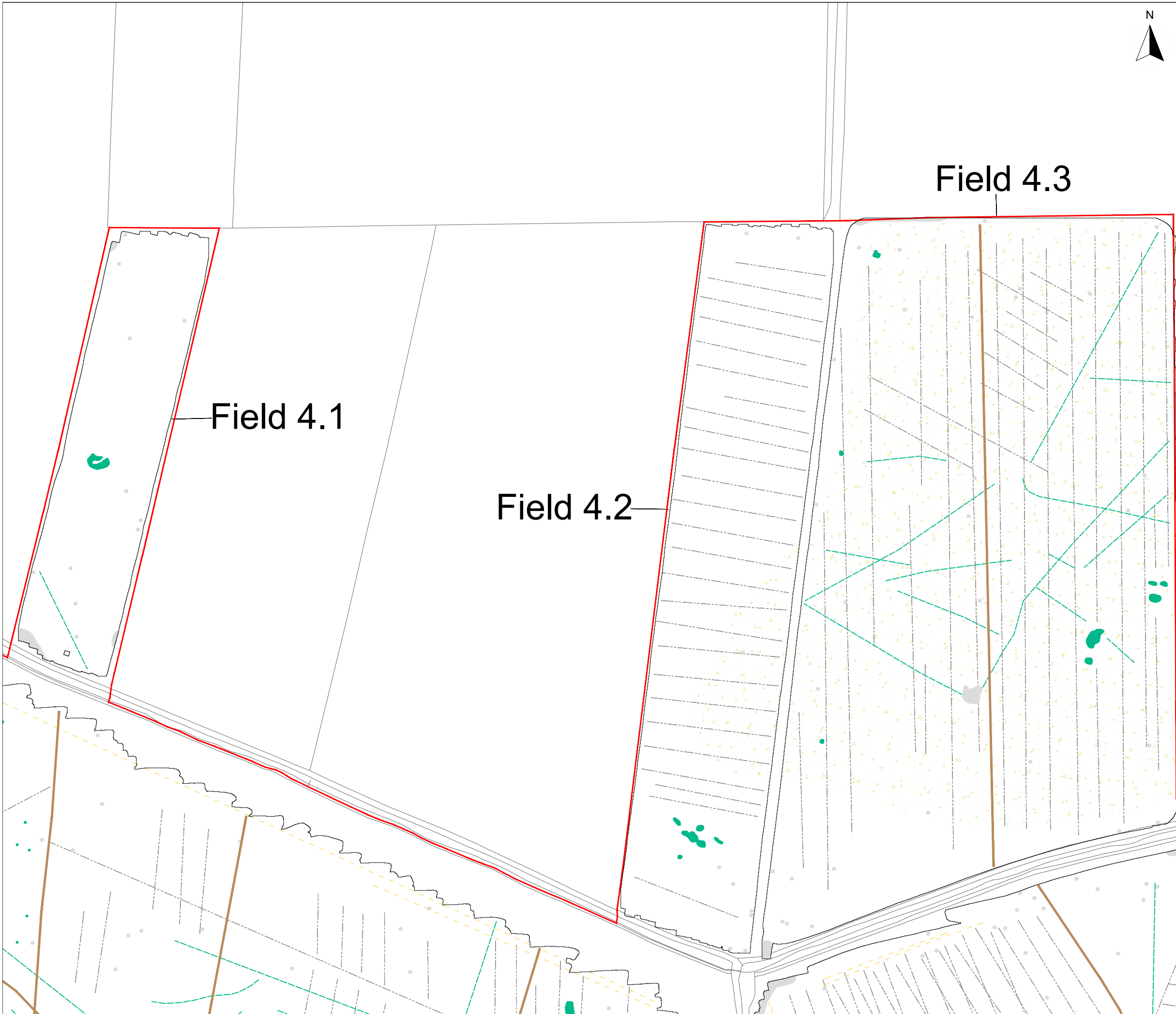


Fig No: 07



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Interpretation (Fields 4.1, 4.2 & 4.3)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

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Fig No: 08



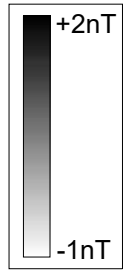
Field 4.4

Field 4.5

Field 4.1

Field 4.2

Field 4.7



Title: Magnetometer Survey - Greyscale Plots (Fields 4.4 & 4.5)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

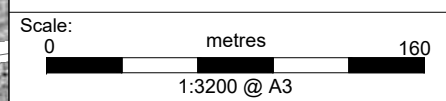
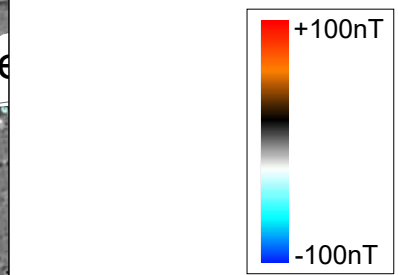


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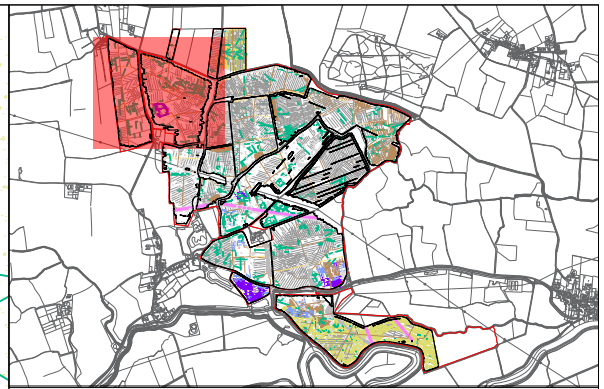
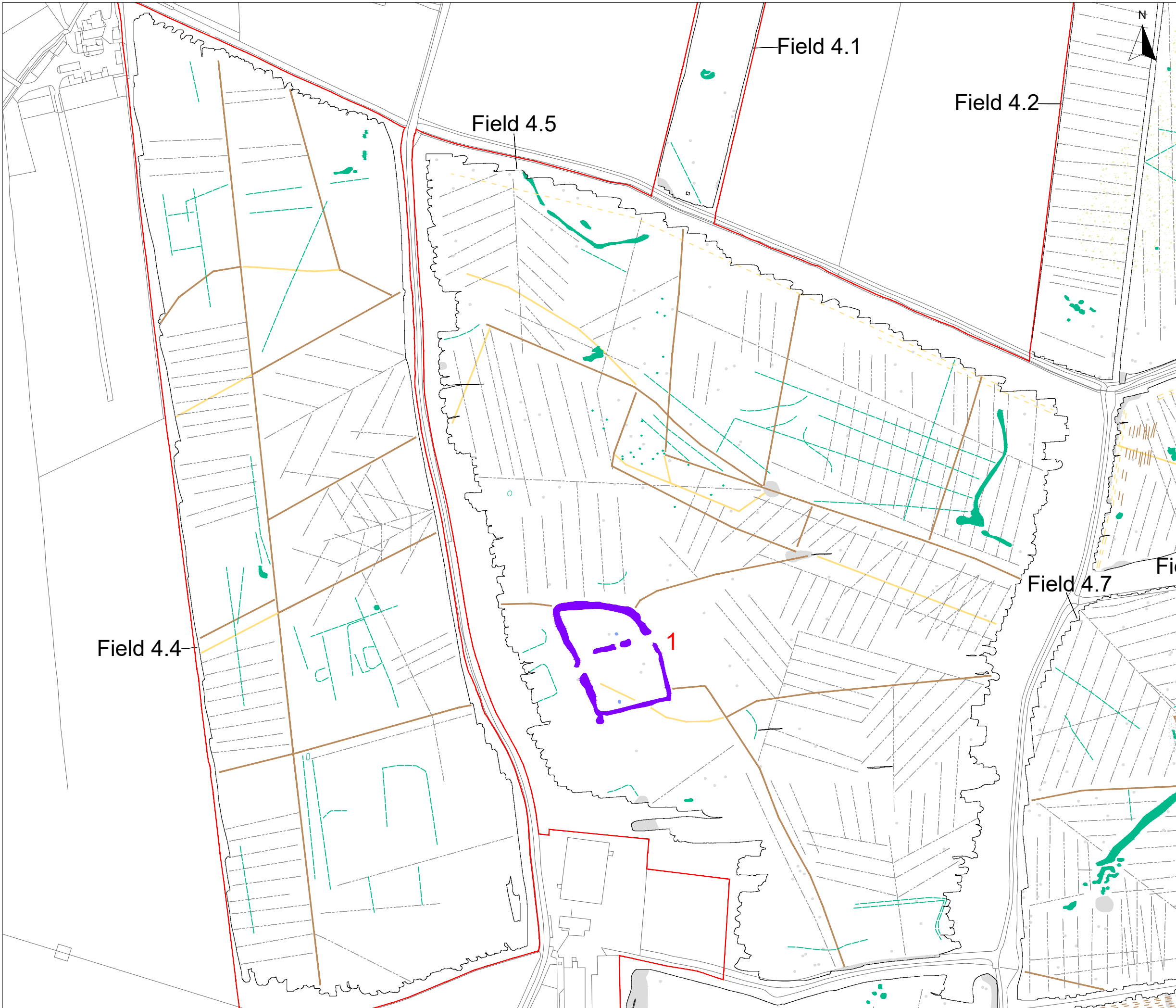
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(Fields 4.4 & 4.5)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

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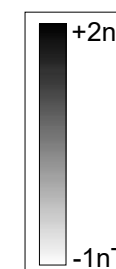
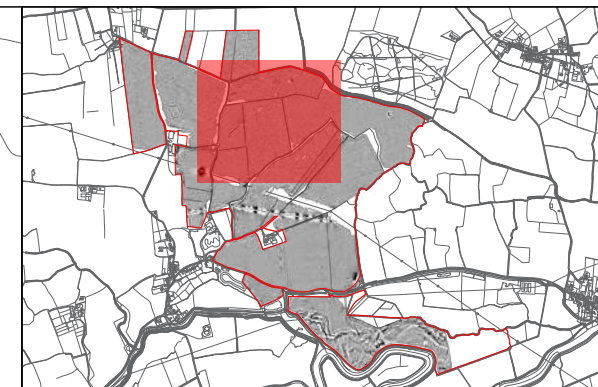
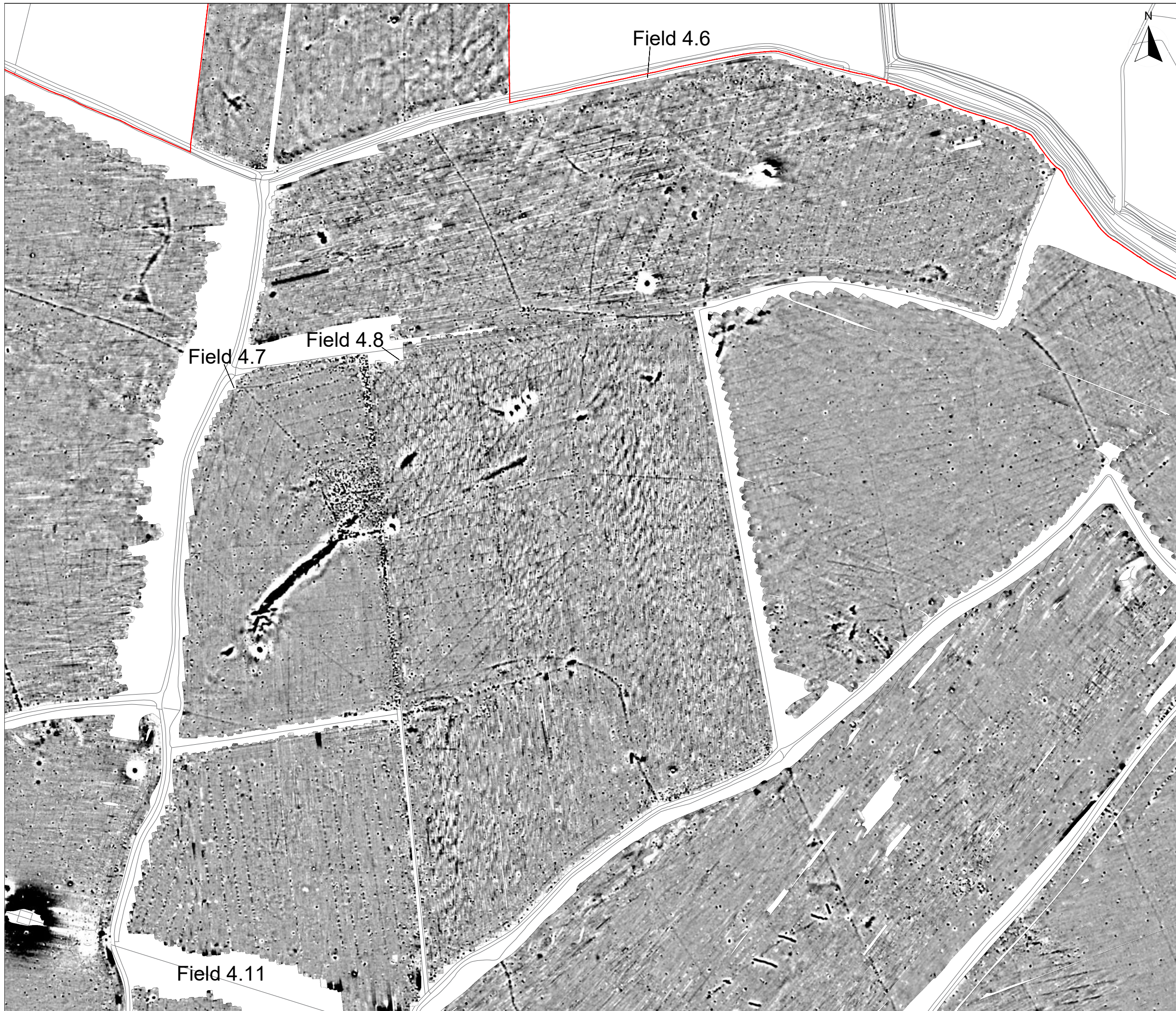
KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Interpretation (Fields 4.4 & 4.5)
 Client: Island Green Power UK Limited
 Project: 16614-4 - Light Valley Solar Project: Site 4

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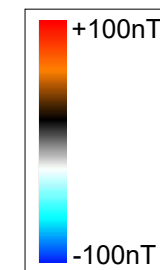
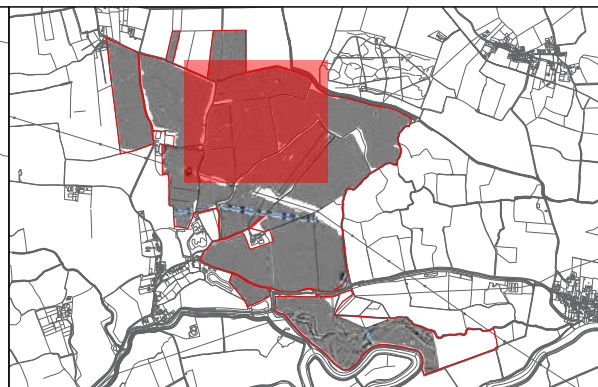
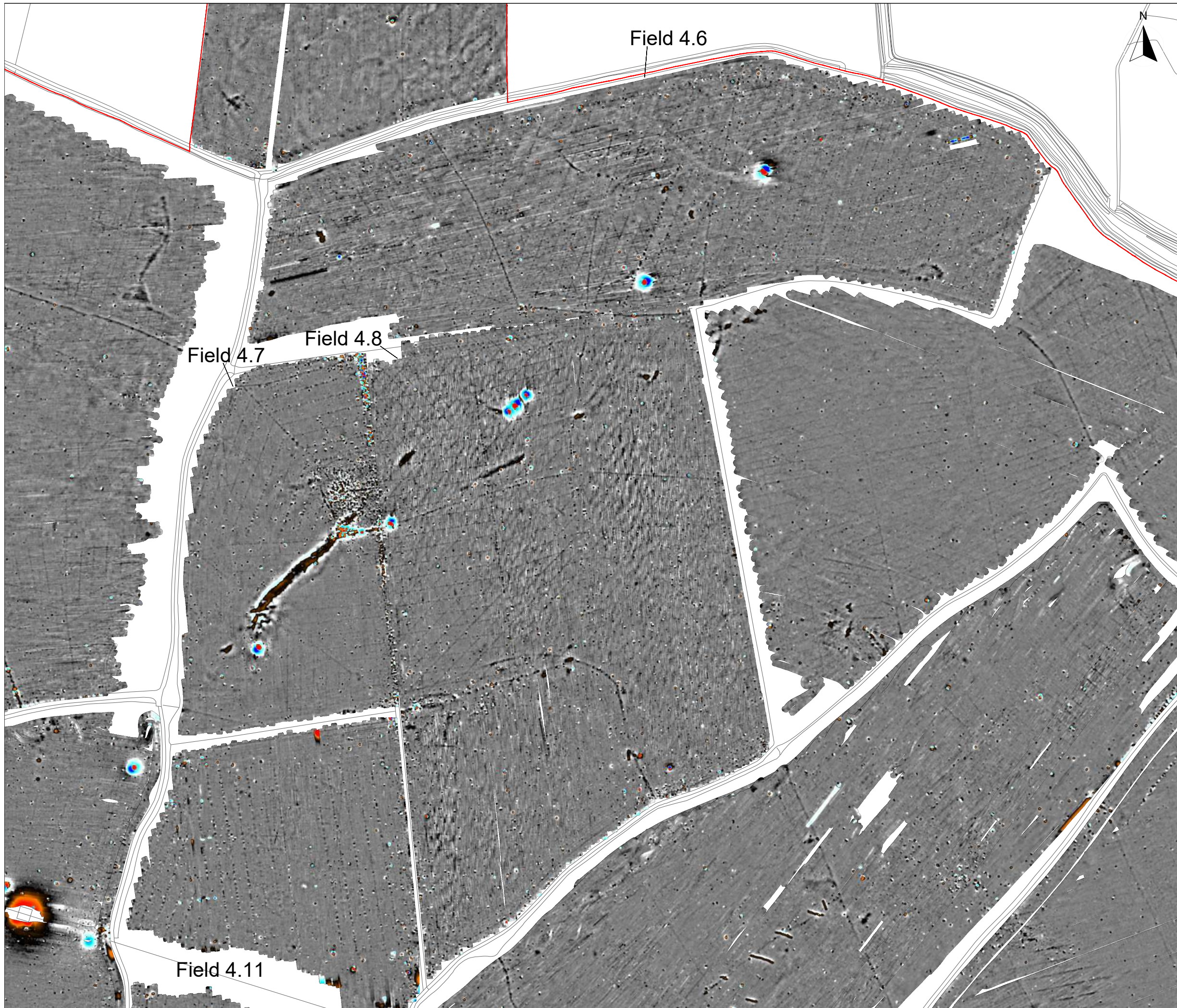
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Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

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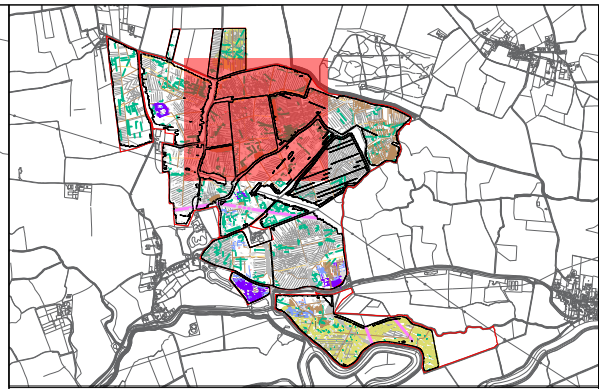
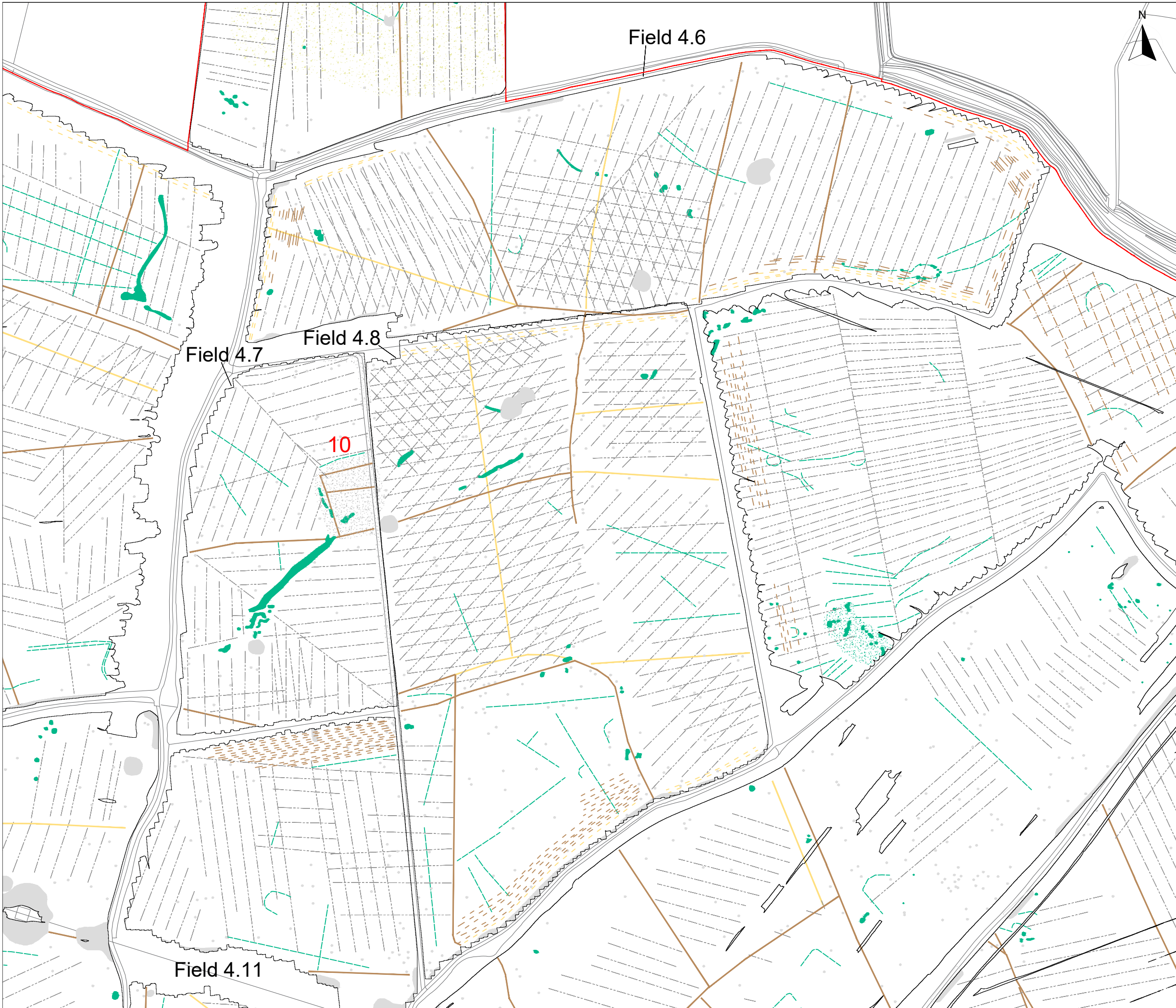
Title: Magnetometer Survey - Colour Plots
(Fields 4.6, 4.7 & 4.8)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 175
1:3500 @ A3

Fig No: 13



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



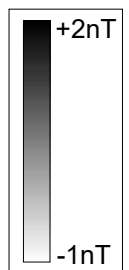
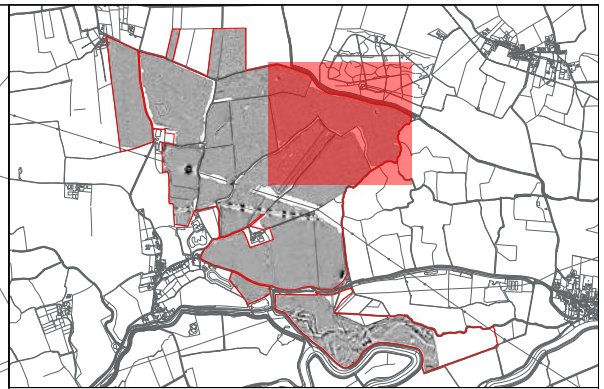
Title: Magnetometer Survey - Interpretation (Fields 4.6, 4.7 & 4.8)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 175
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Fig No: 14



Title: Magnetometer Survey - Greyscale Plot (Field 4.9)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

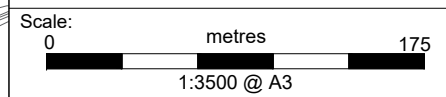
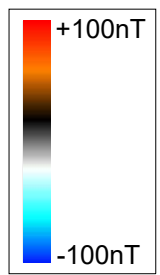
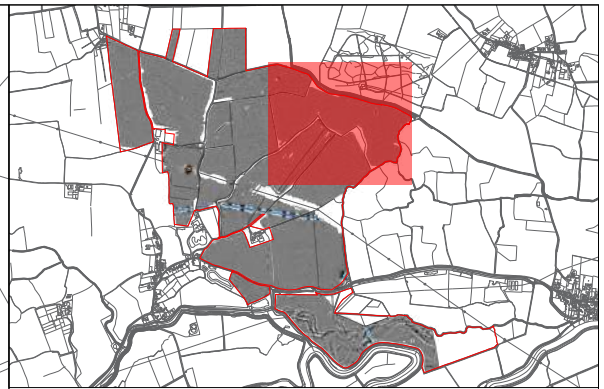
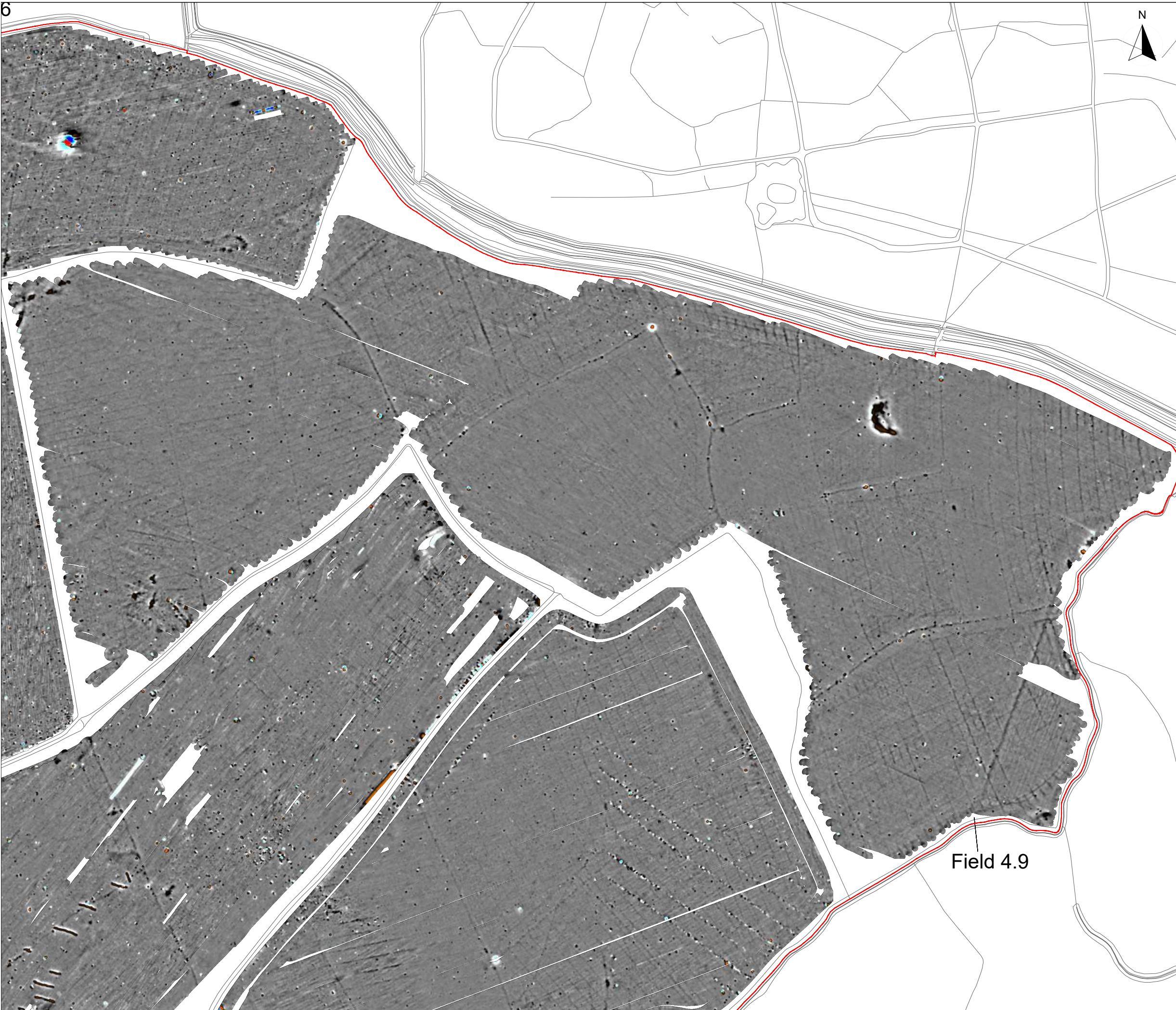


Fig No: 15

Field 4.9



Title: Magnetometer Survey - Colour Plot (Field 4.9)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

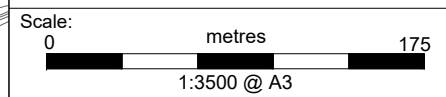
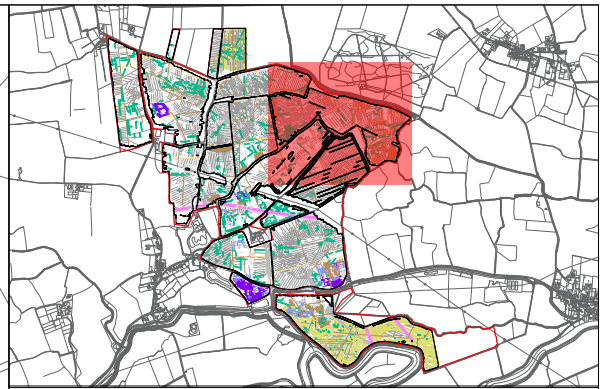
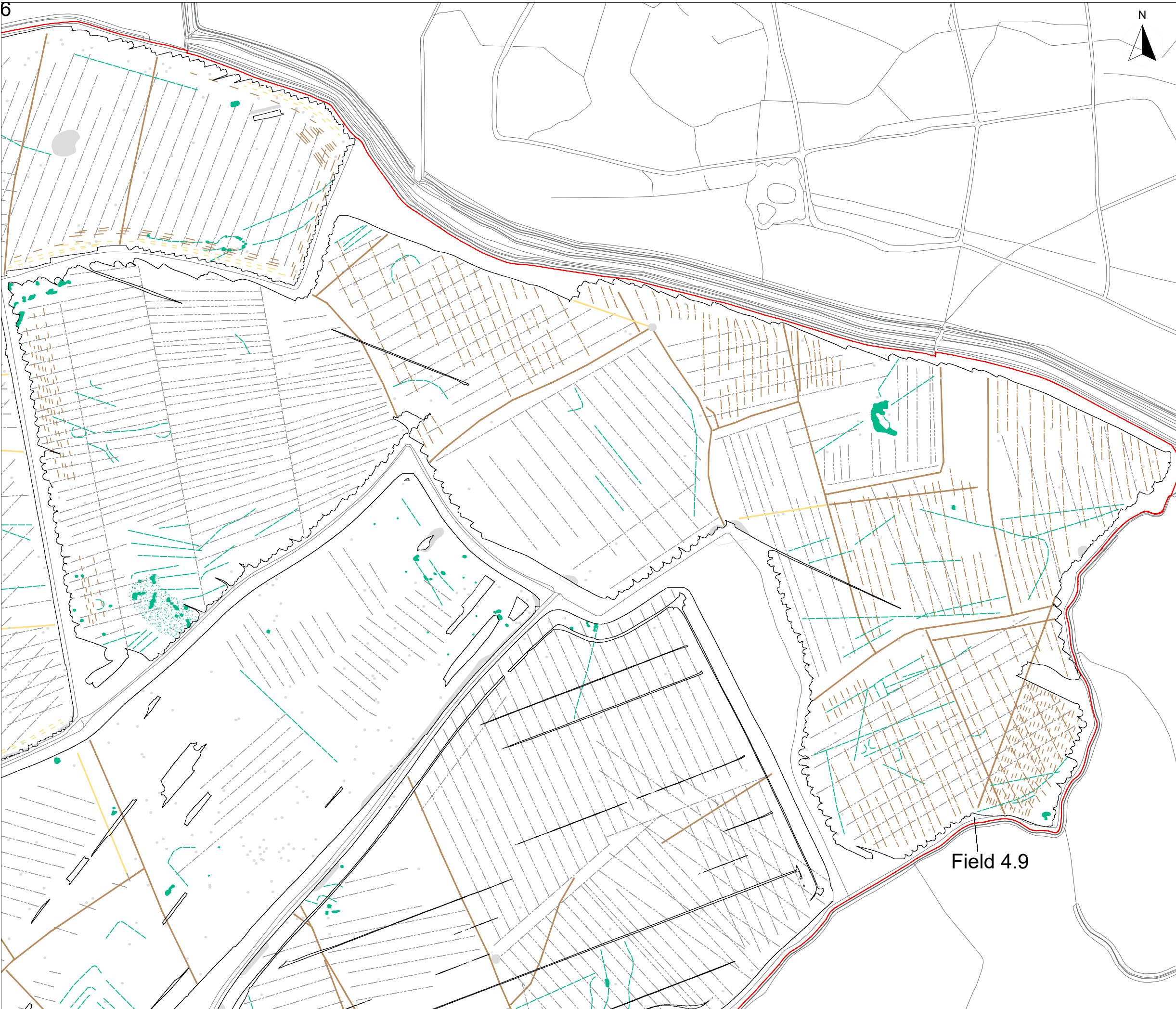


Fig No: 16



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



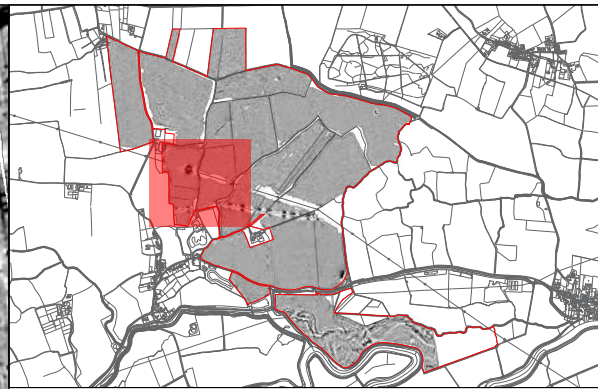
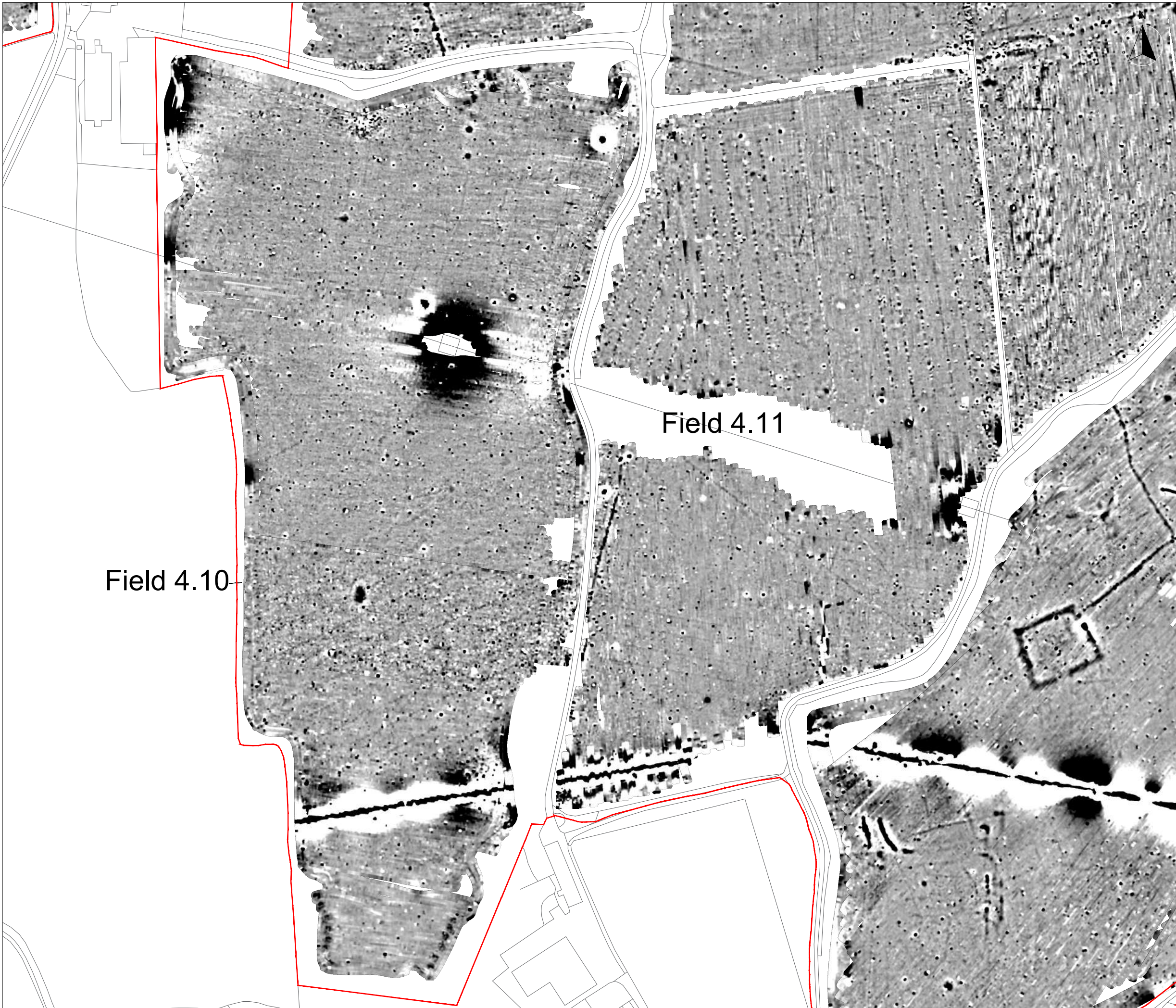
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Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

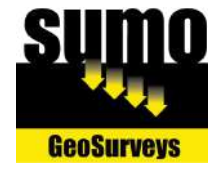
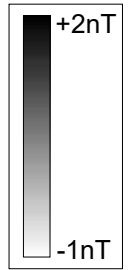
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Fig No: 17



Field 4.10

Field 4.11

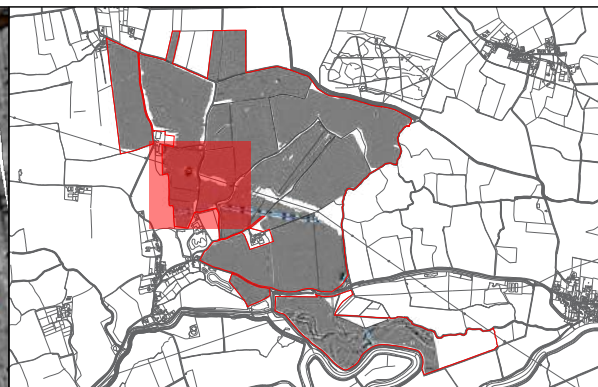
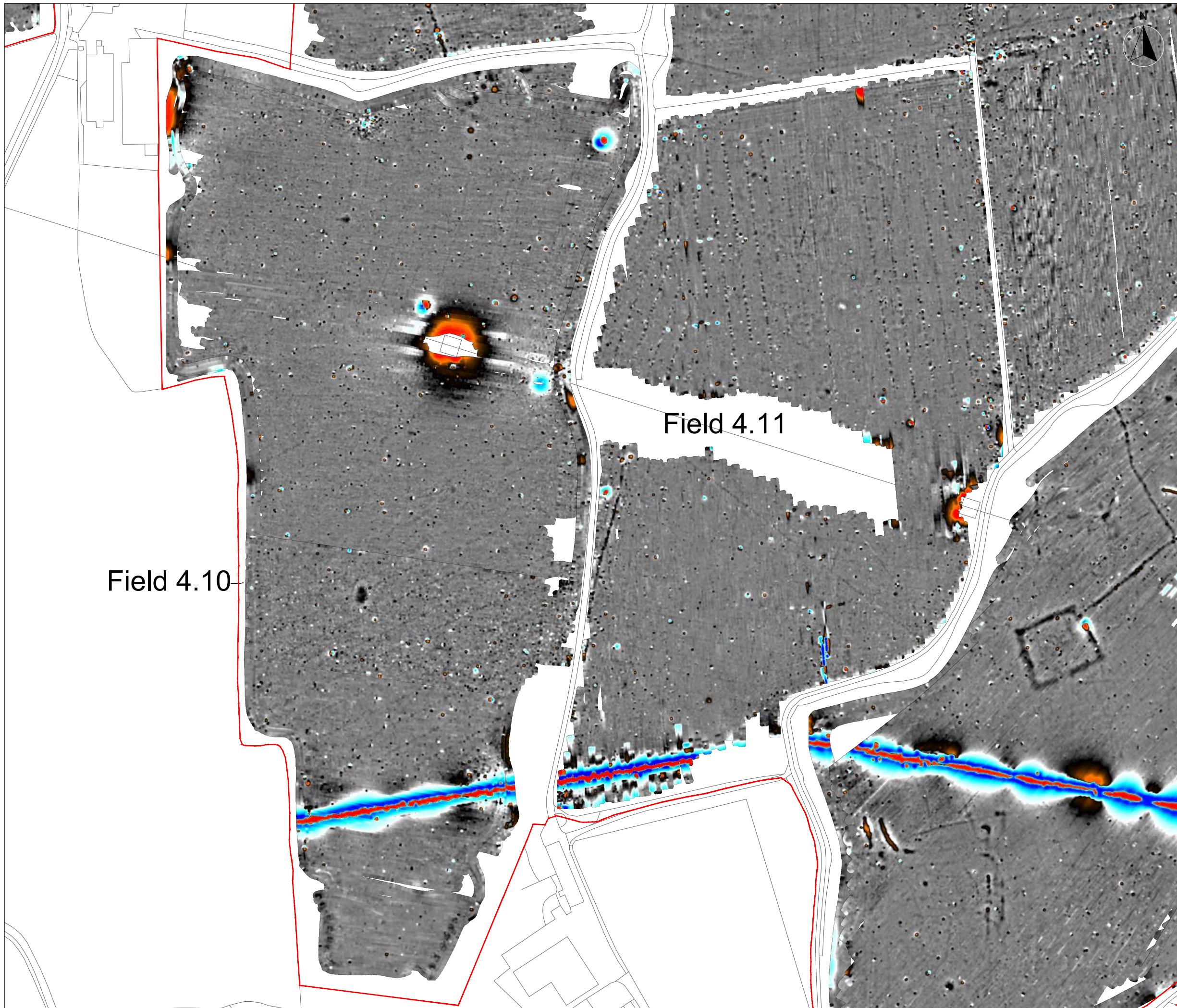


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Client: Island Green Power UK Limited

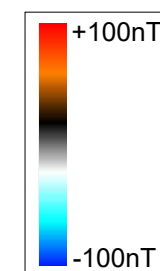
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Field 4.10

Field 4.11



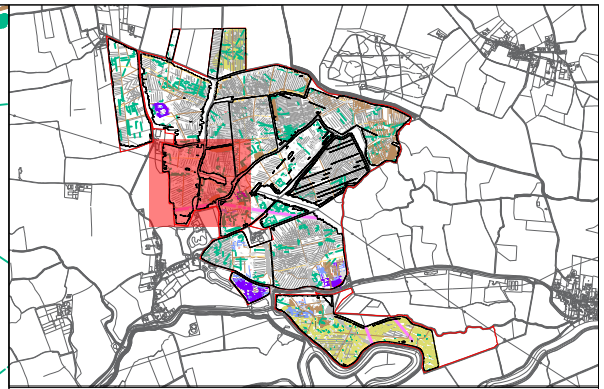
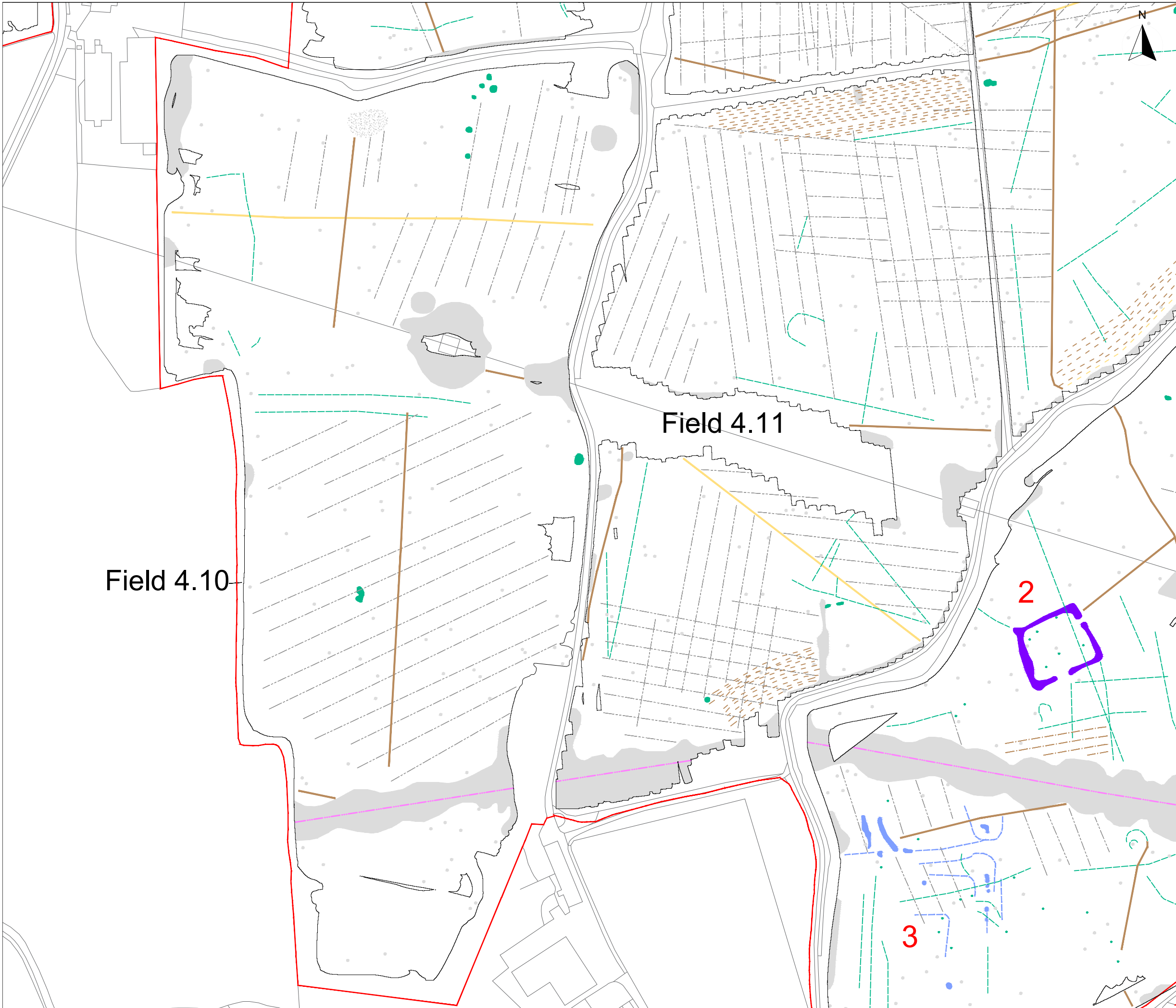
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(Fields 4.10 & 4.11)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
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Fig No: 19



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous

Field 4.10

Field 4.11

2

3



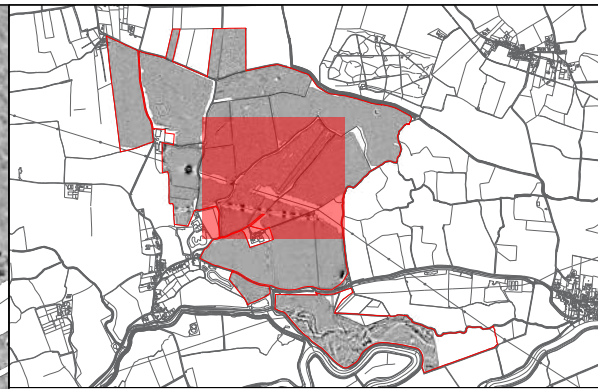
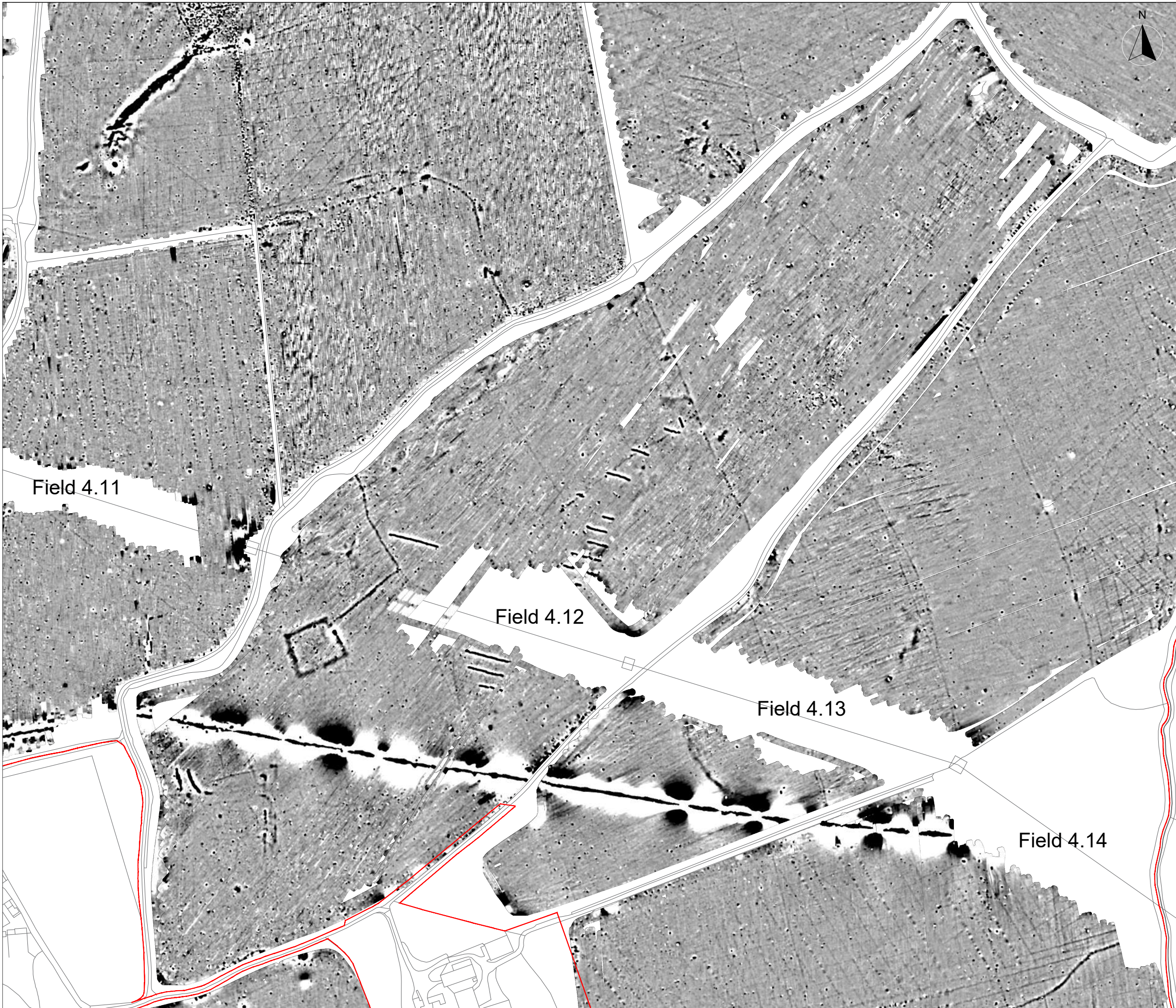
Title: Magnetometer Survey - Interpretation (Fields 4.10 & 4.11)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 20

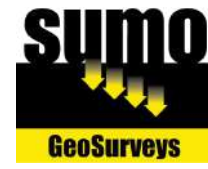
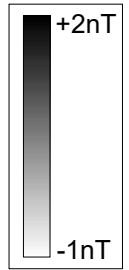


Field 4.11

Field 4.12

Field 4.13

Field 4.14



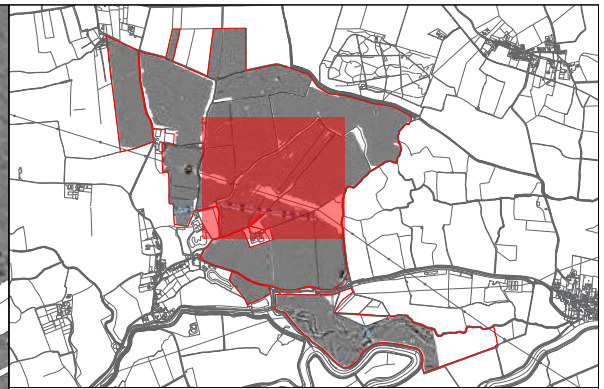
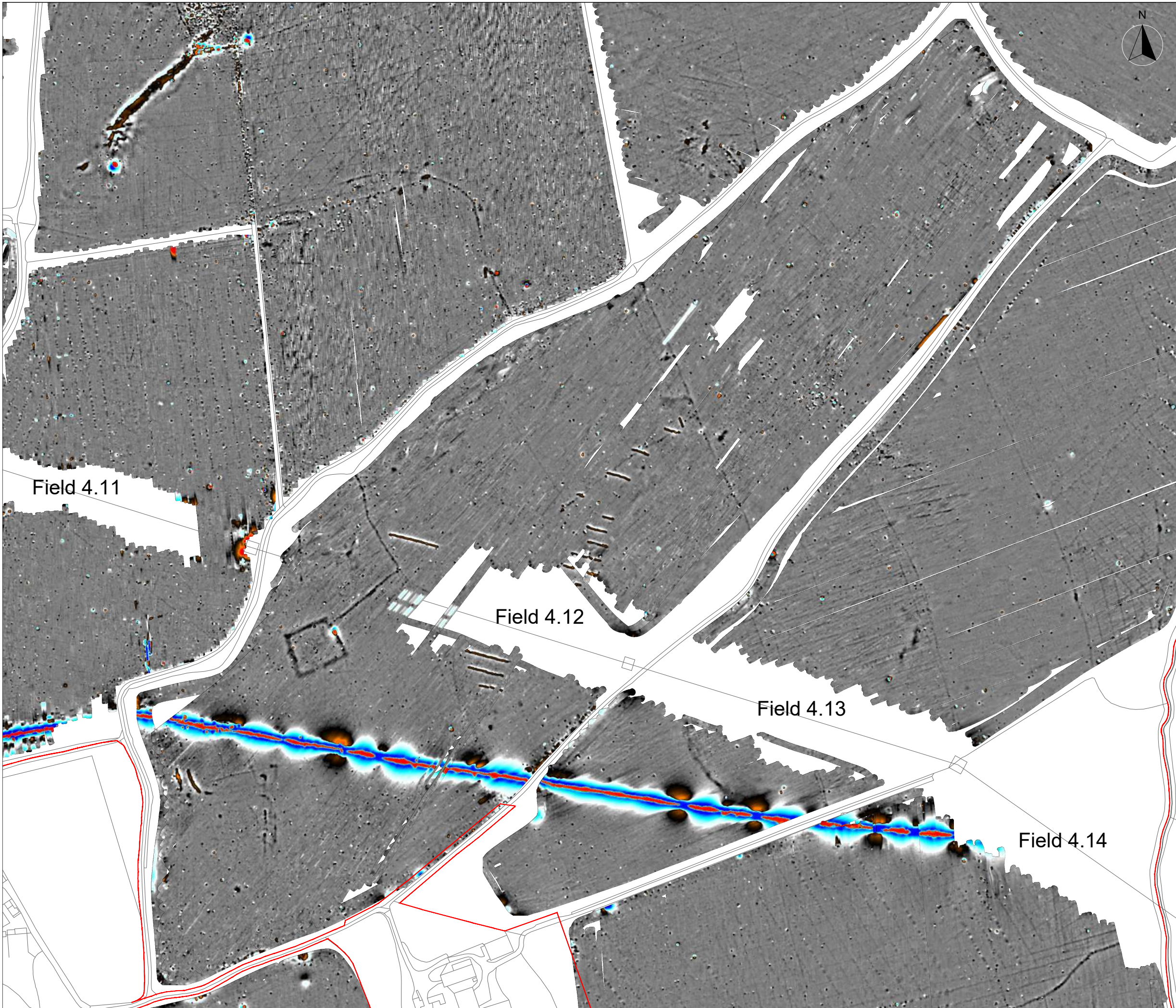
Title: Magnetometer Survey - Grayscale Plot
(Field 4.12)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 175
1:3500 @ A3

Fig No: 21

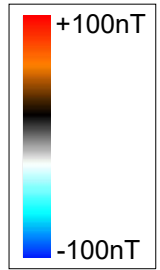


Field 4.11

Field 4.12

Field 4.13

Field 4.14



Title: Magnetometer Survey - Colour Plot (Field 4.12)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

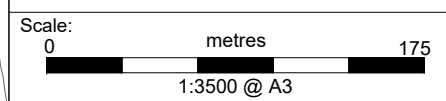
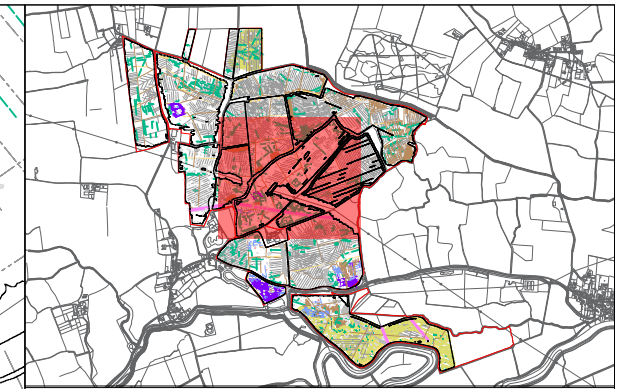
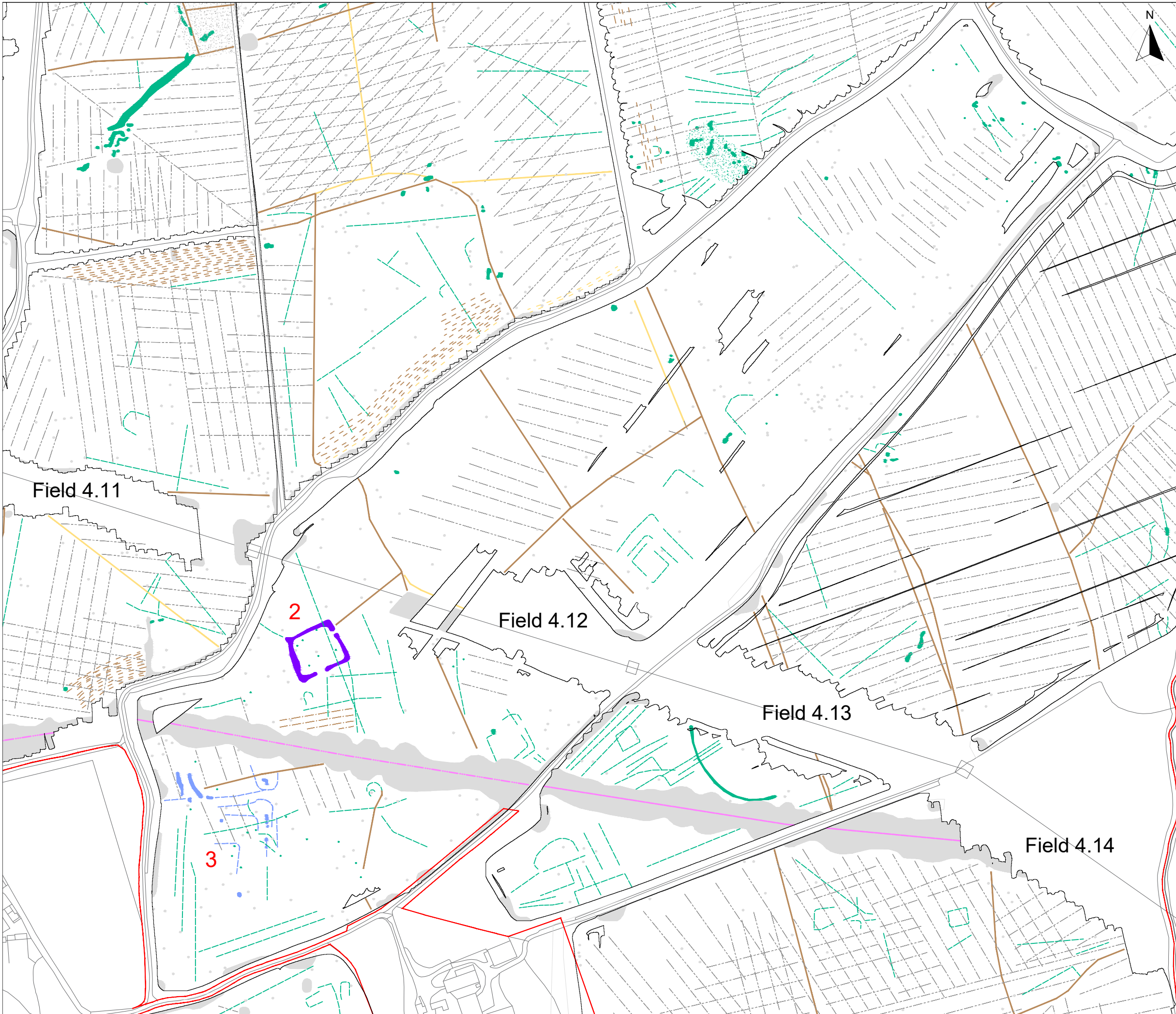


Fig No: 22



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



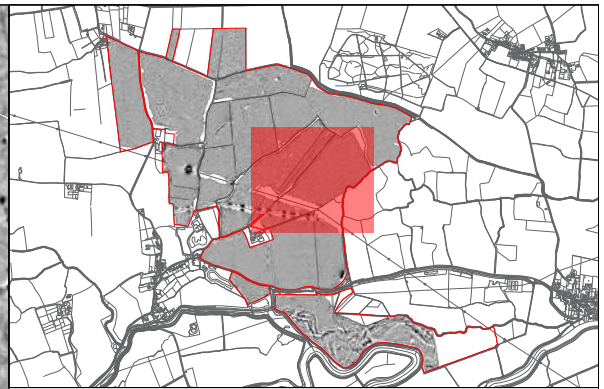
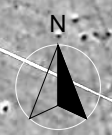
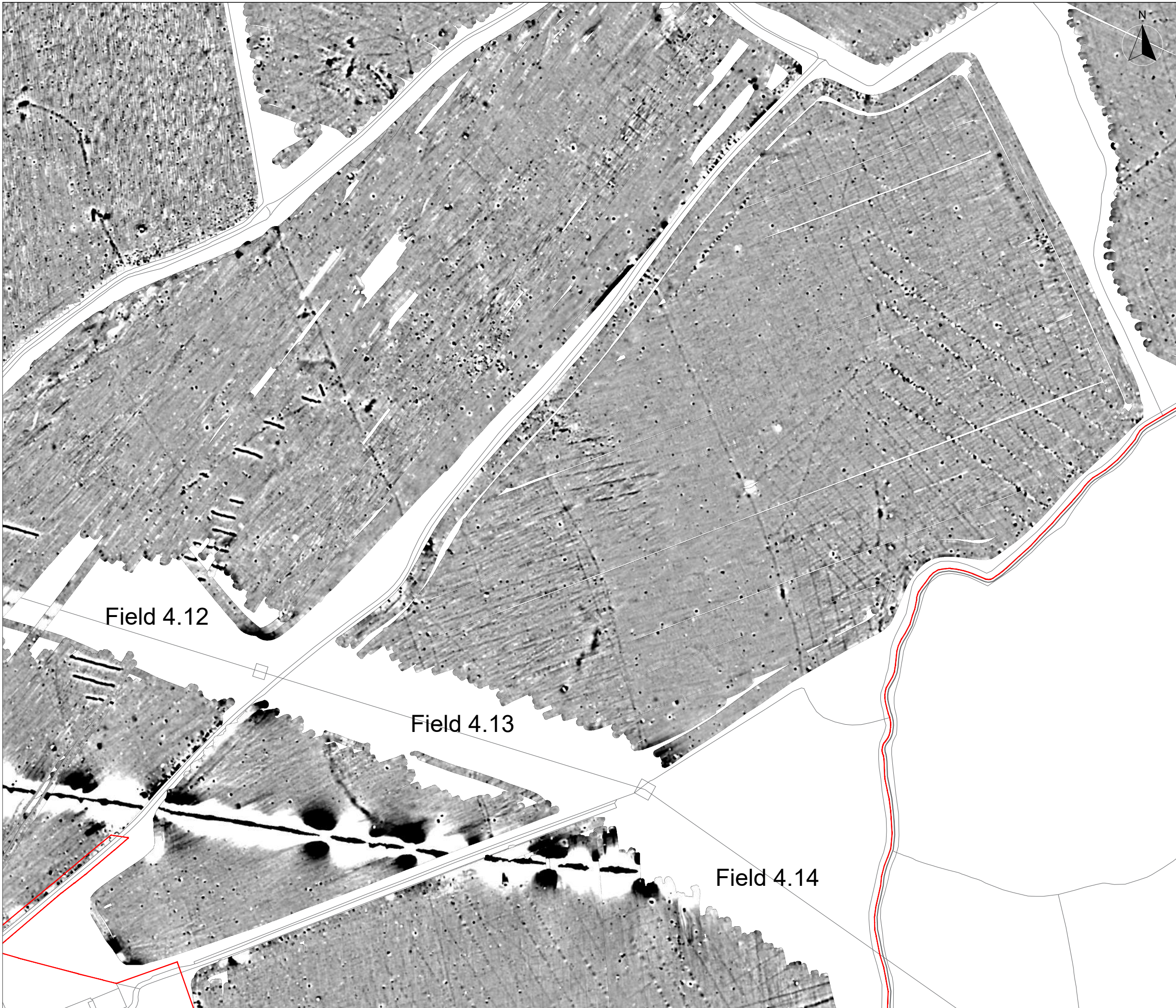
Title: Magnetometer Survey - Interpretation (Field 4.12)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 175 1:3500 @ A3

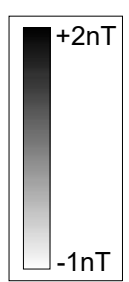
Fig No: 23



Field 4.12

Field 4.13

Field 4.14



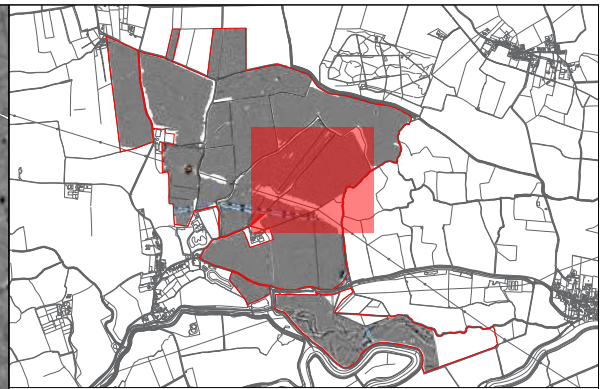
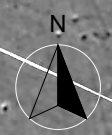
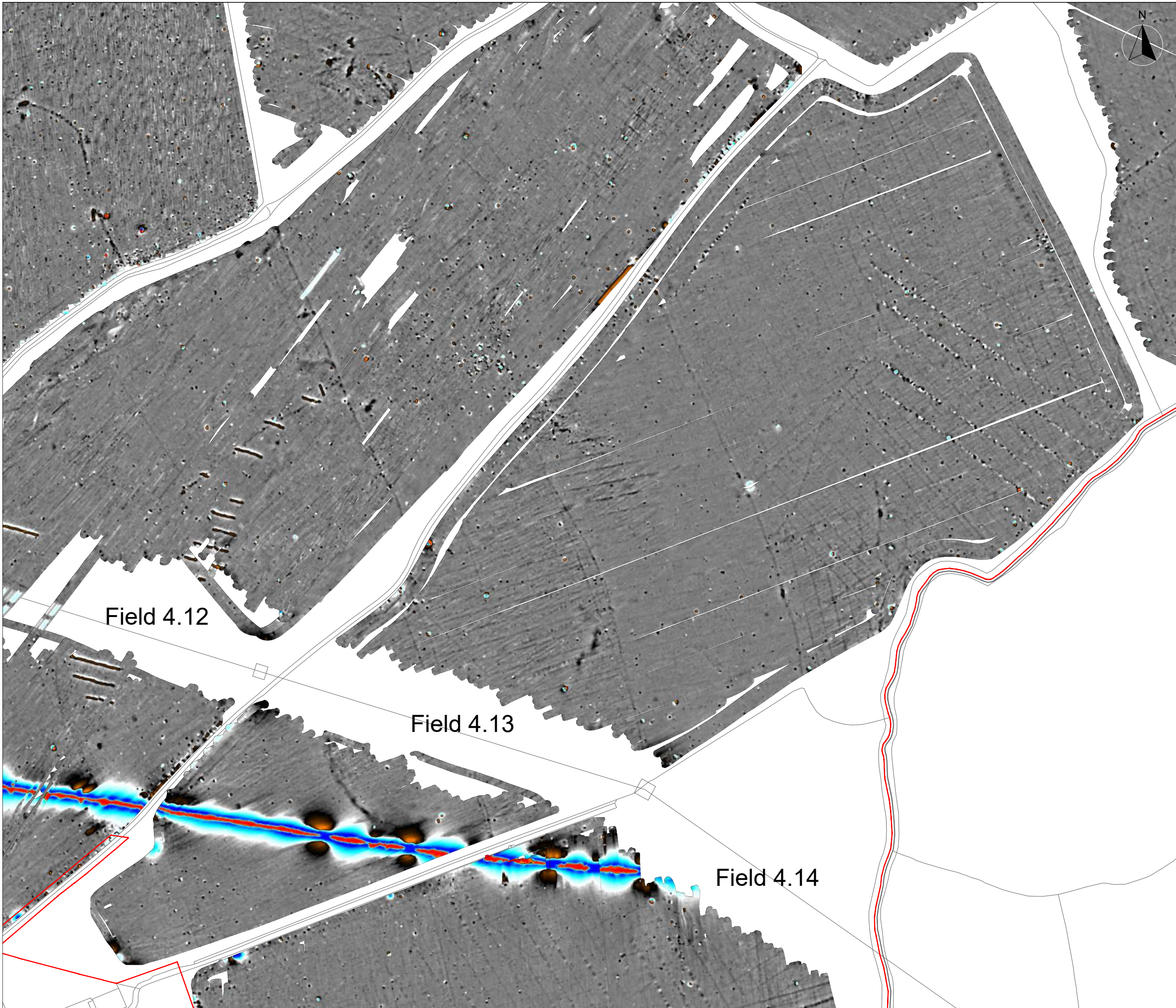
Title: Magnetometer Survey - Greyscale Plot (Field 4.13)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 150
1:3000 @ A3

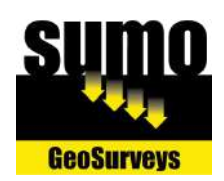
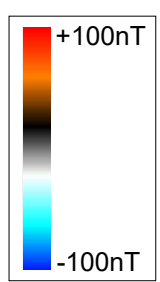
Fig No: 24



Field 4.12

Field 4.13

Field 4.14



Title: Magnetometer Survey - Colour Plot
(Field 4.13)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

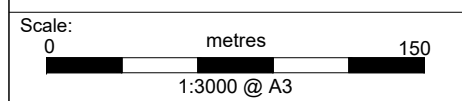
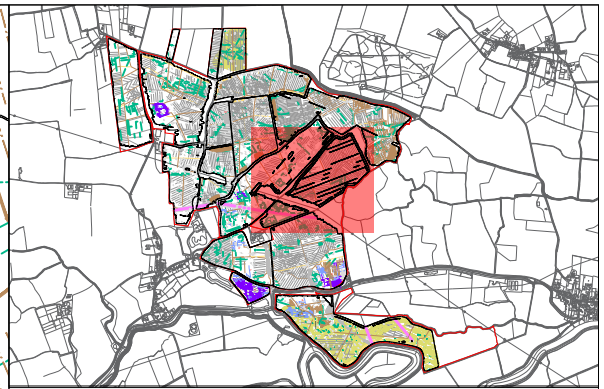
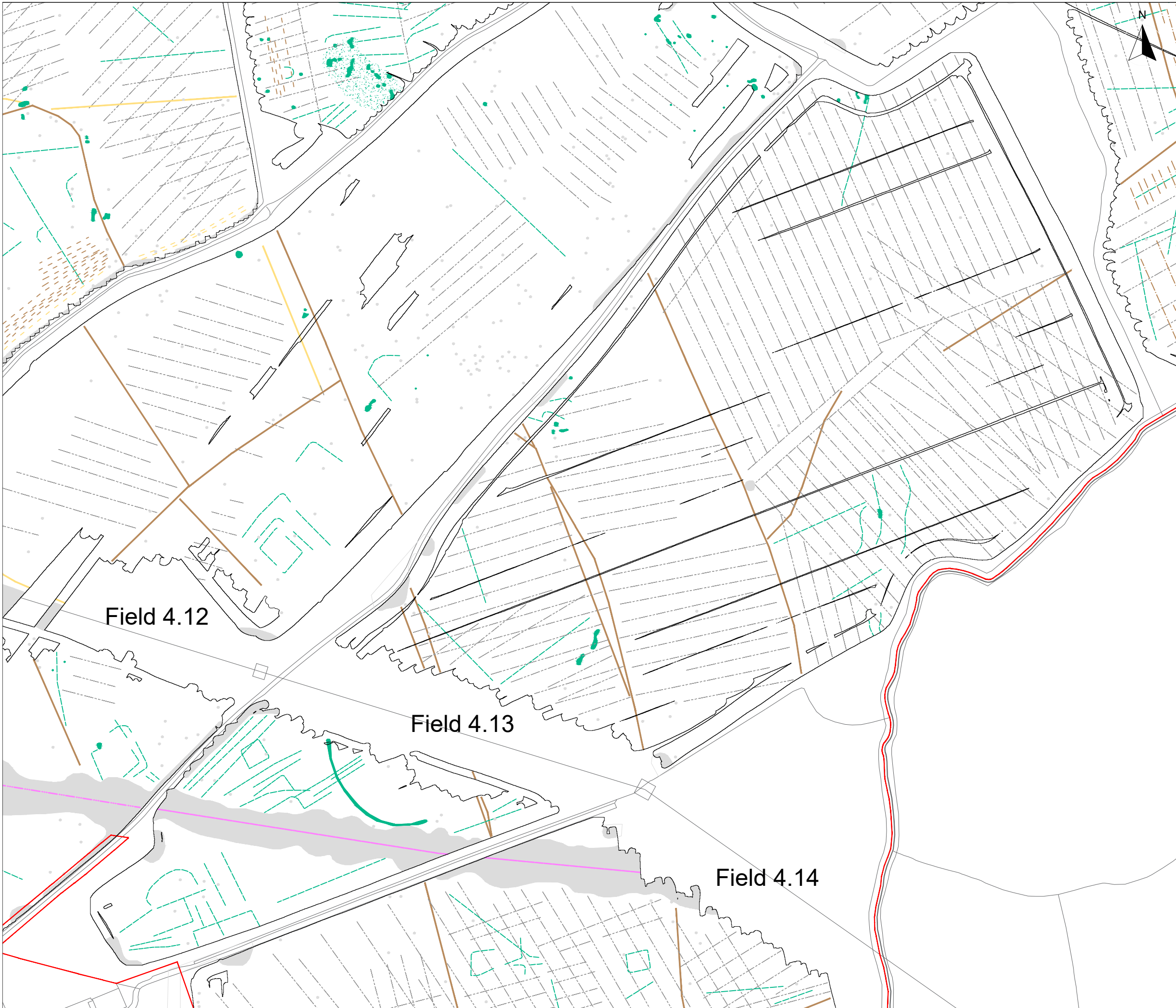


Fig No: 25



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous

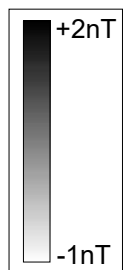
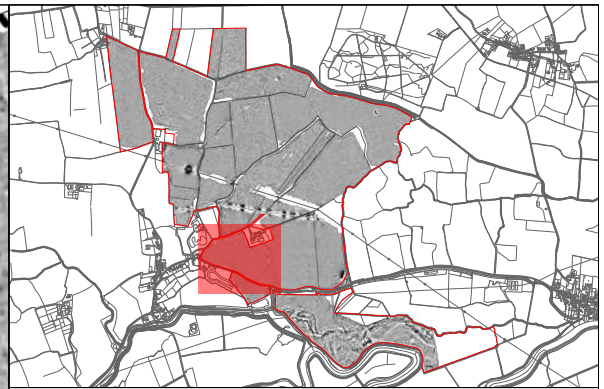
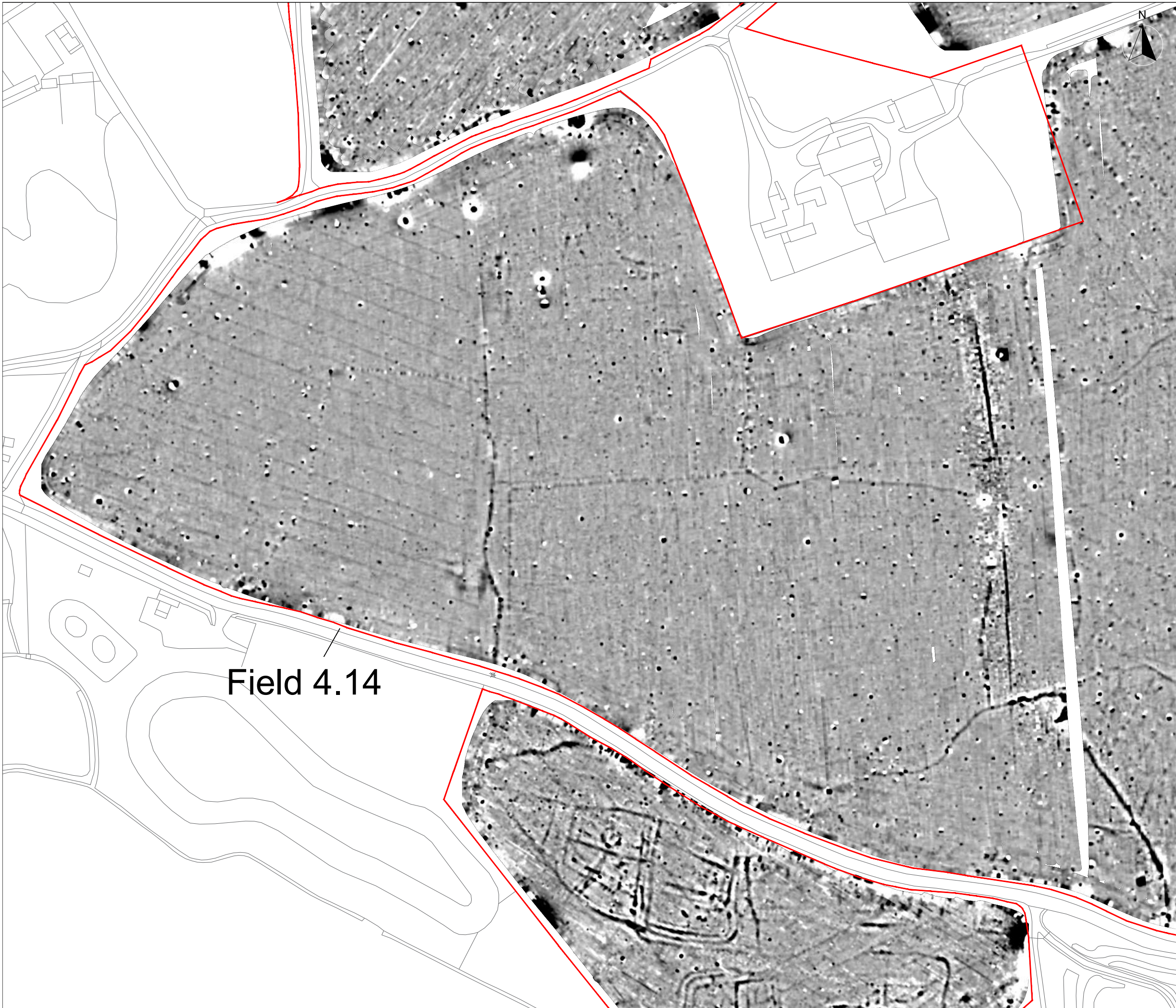
Field 4.12

Field 4.13

Field 4.14



Title: Magnetometer Survey - Interpretation (Field 4.13)	
Client: Island Green Power UK Limited	
Project: 16614-4 - Light Valley Solar Project: Site 4	
Scale: 0 metres 150 1:3000 @ A3	Fig No: 26



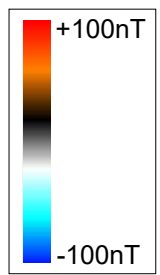
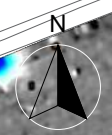
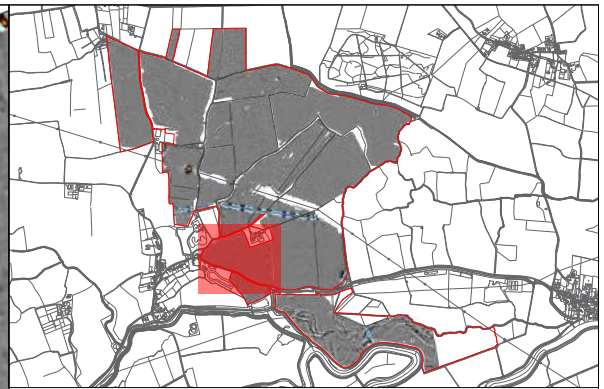
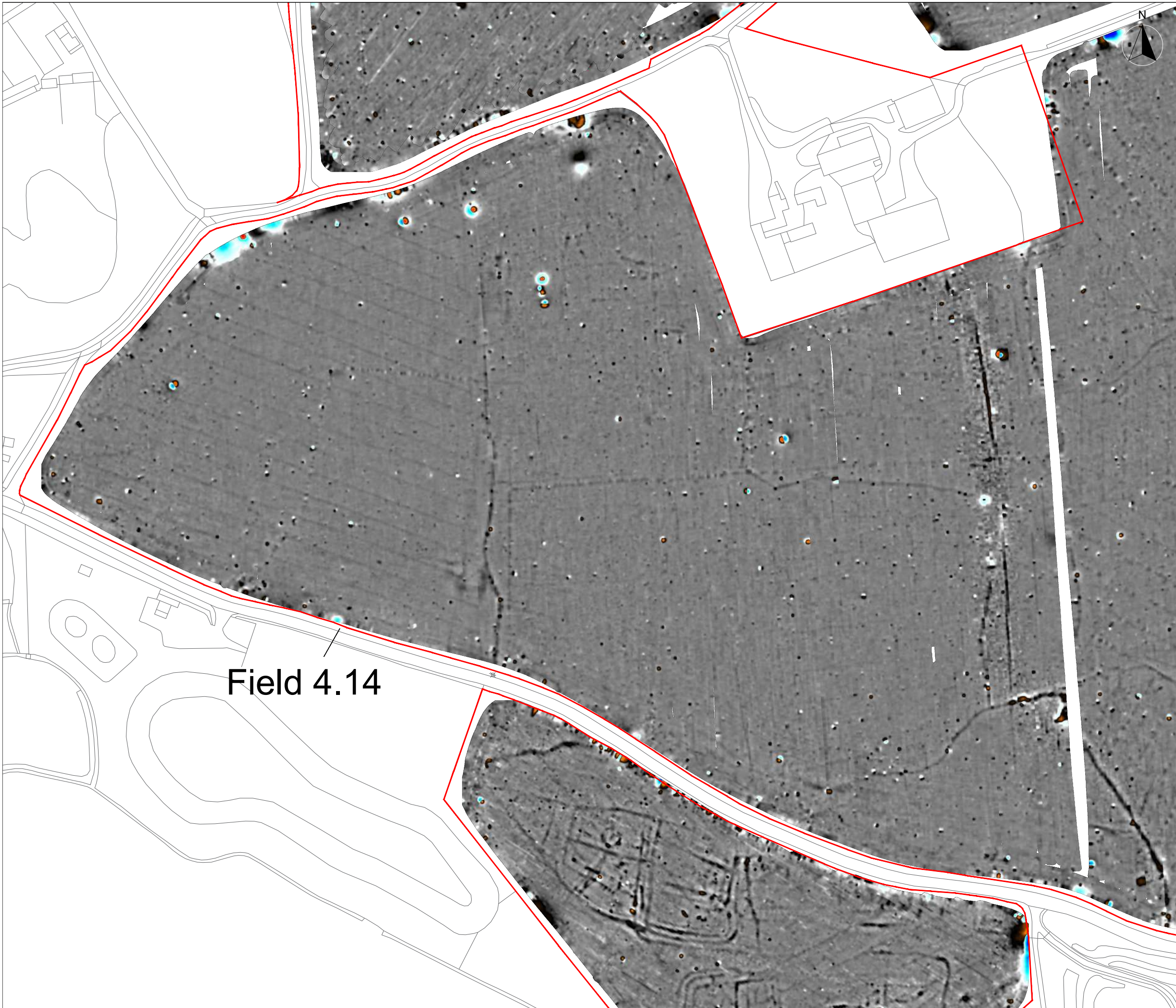
Title: Magnetometer Survey - Greyscale Plot
(Field 4.14 - west)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 100
1:2000 @ A3

Fig No: 27



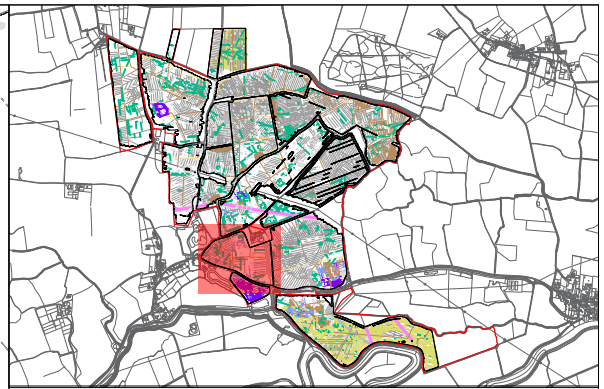
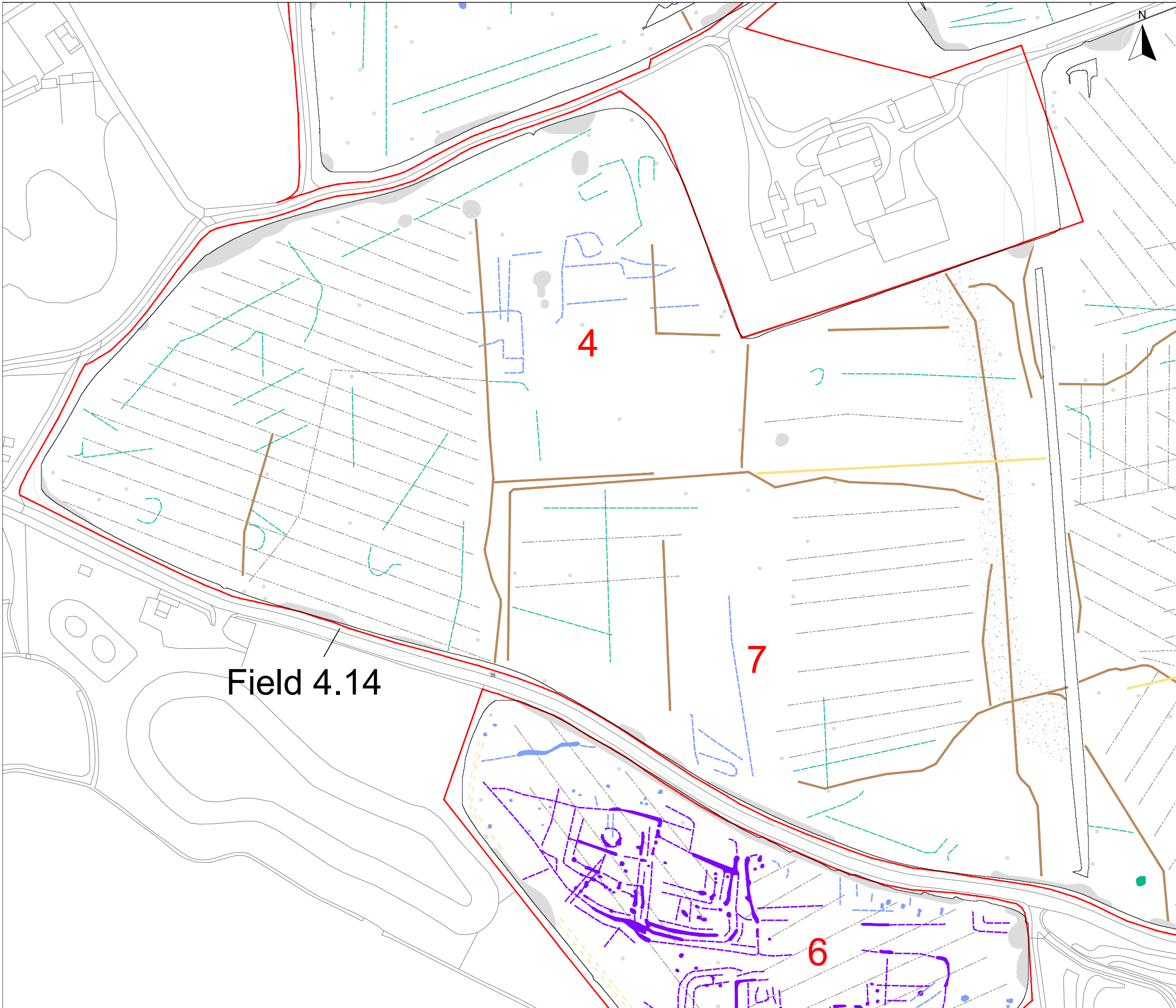
Title: Magnetometer Survey - Colour Plot
(Field 4.14 - west)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 100
1:2000 @ A3

Fig No: 28



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



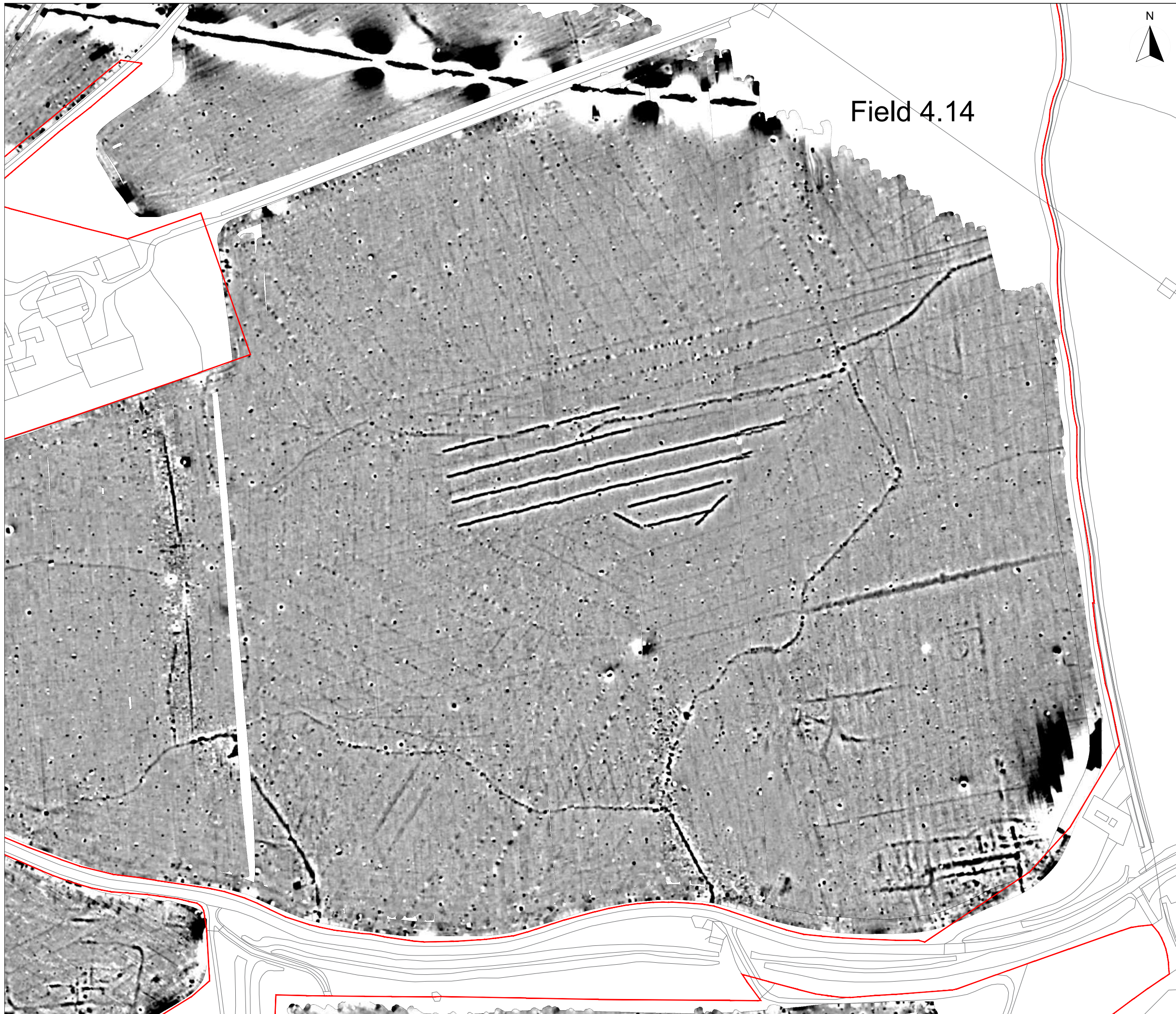
Title: Magnetometer Survey - Interpretation (Field 4.14 - west)

Client: Island Green Power UK Limited

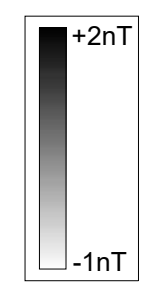
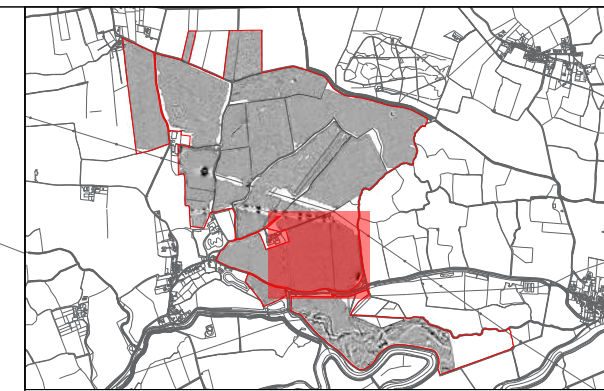
Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 100 1:2000 @ A3

Fig No: 29



Field 4.14

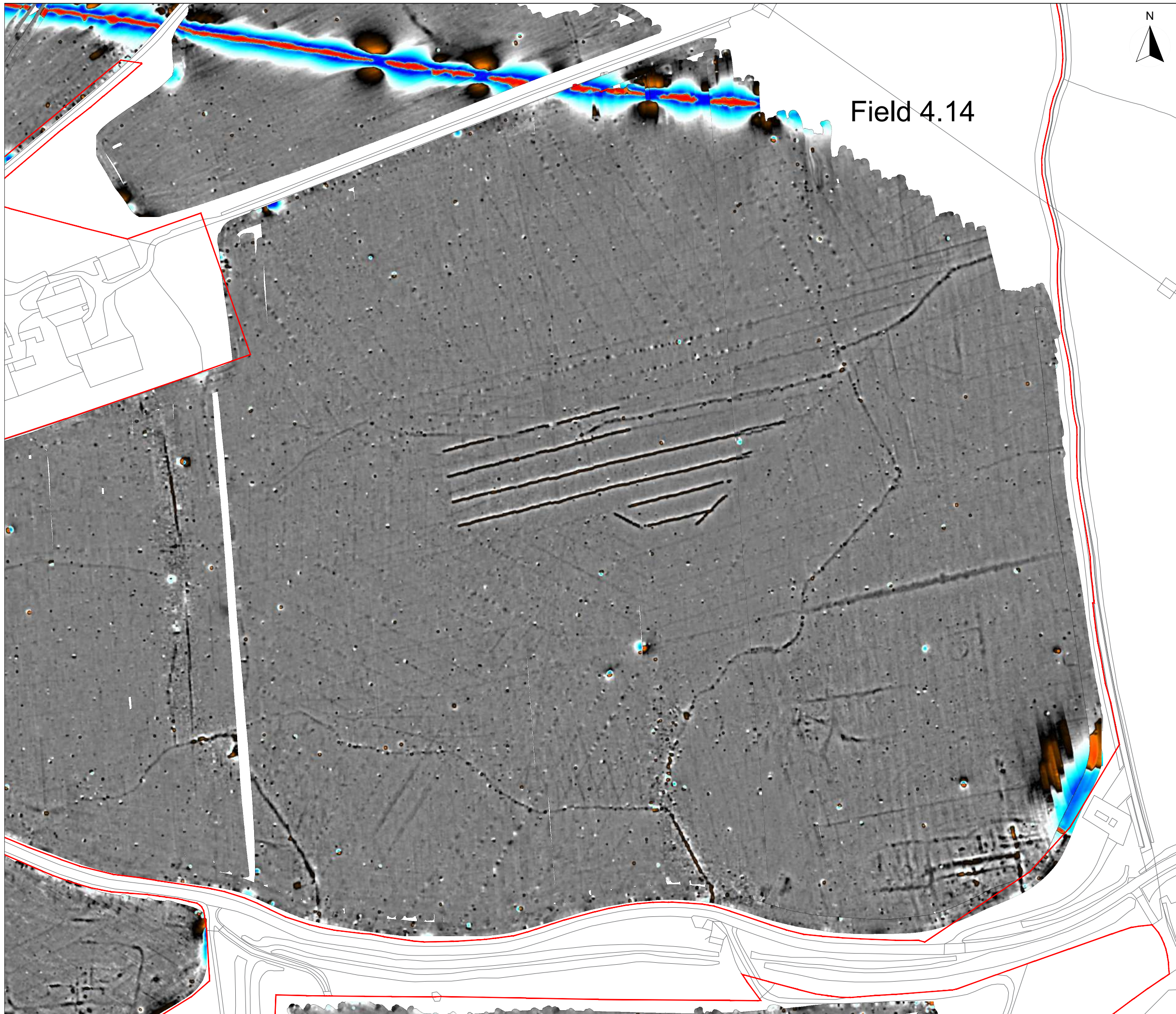


Title: Magnetometer Survey - Greyscale Plot
(Field 4.14 - east)

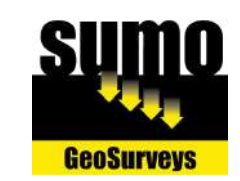
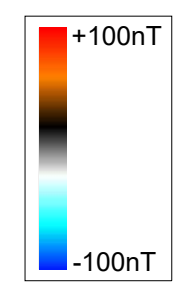
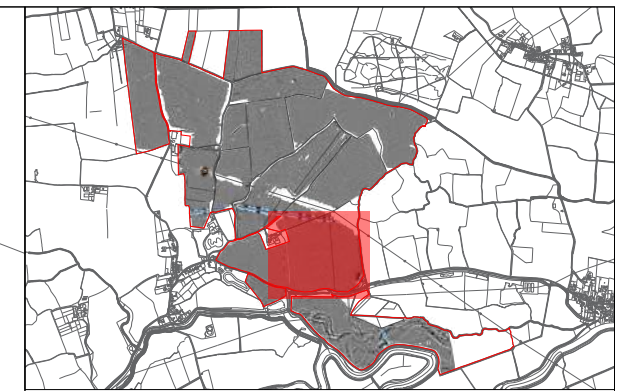
Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3 Fig No: 30



Field 4.14



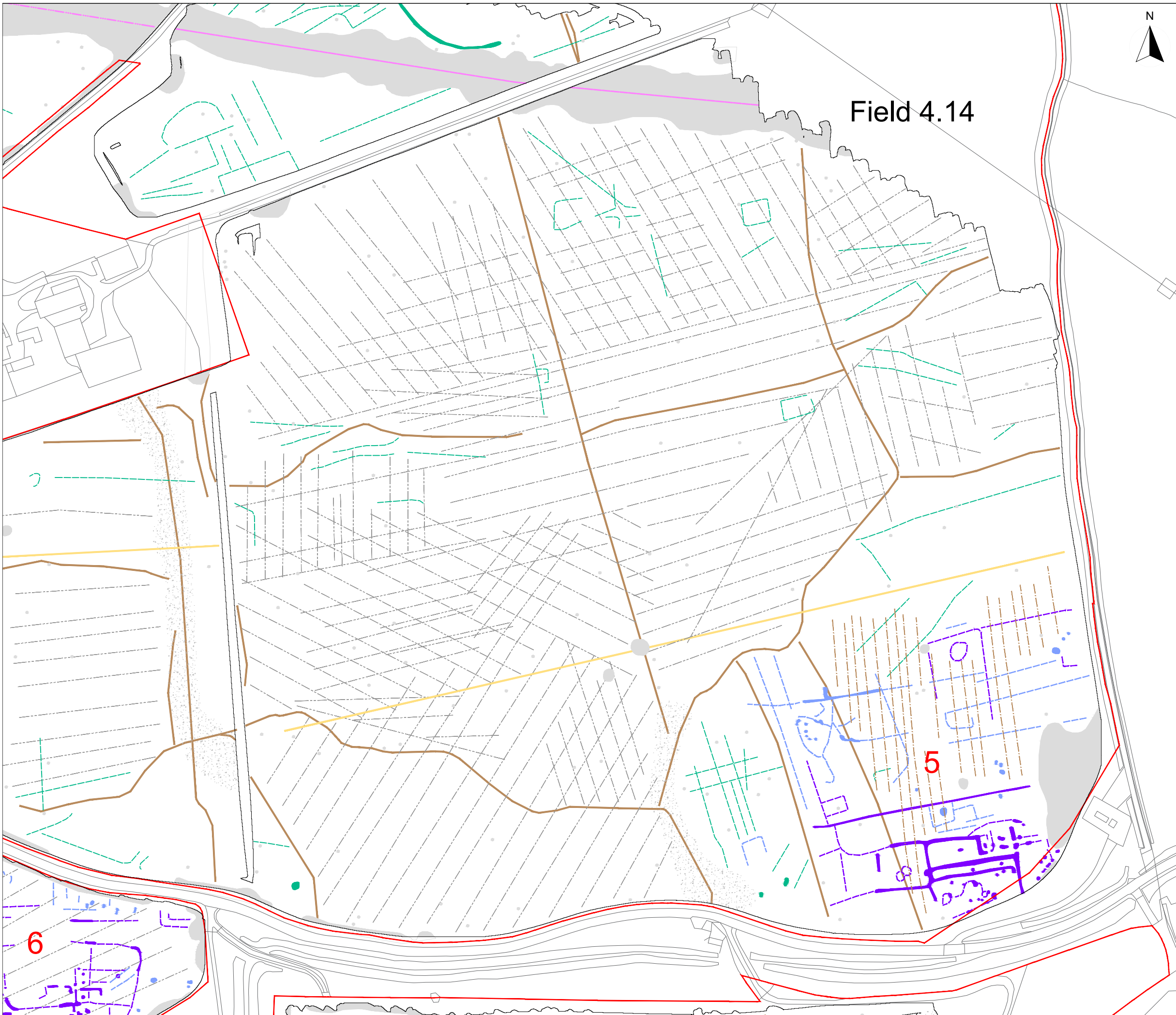
Title: Magnetometer Survey - Colour Plot
(Field 4.14 - east)

Client: Island Green Power UK Limited

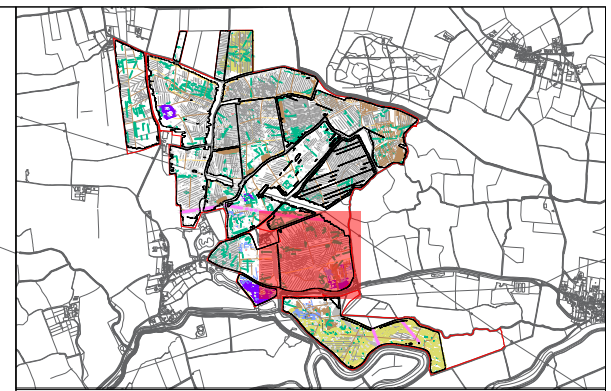
Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 31



Field 4.14



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Interpretation (Field 4.14 - east)

Client: Island Green Power UK Limited

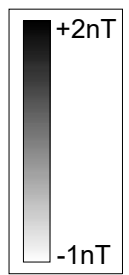
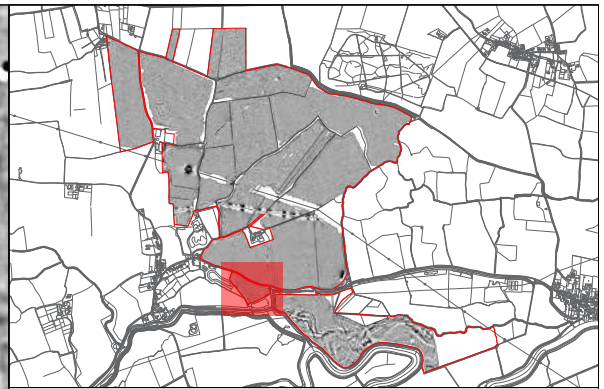
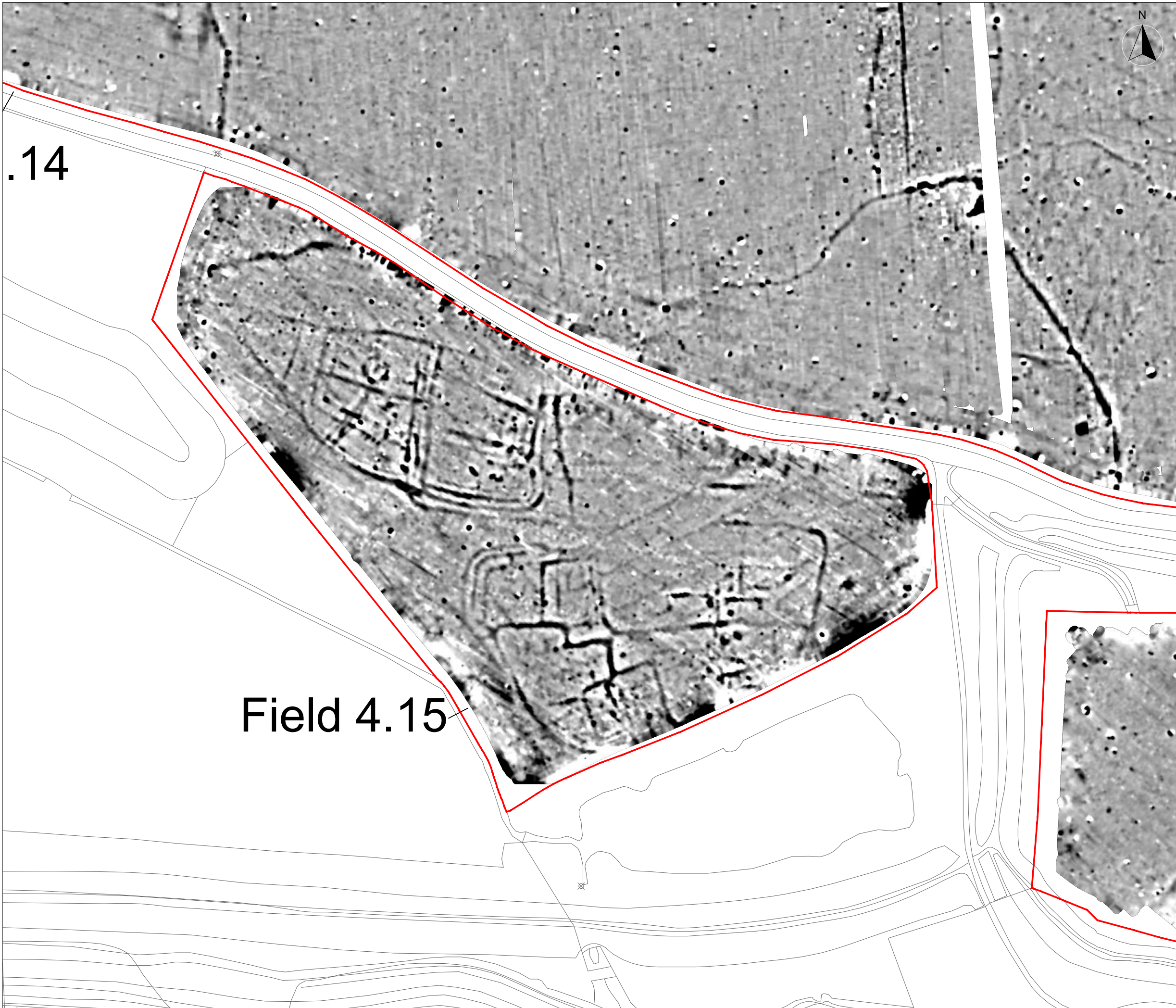
Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 32

6

5



Title: Magnetometer Survey - Greyscale Plot (Field 4.15)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

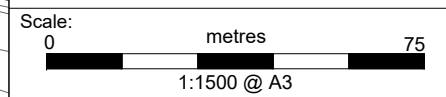
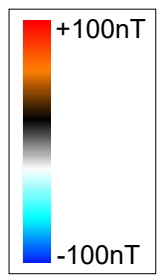
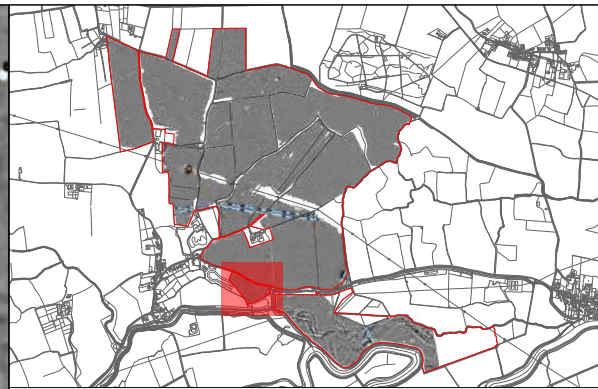
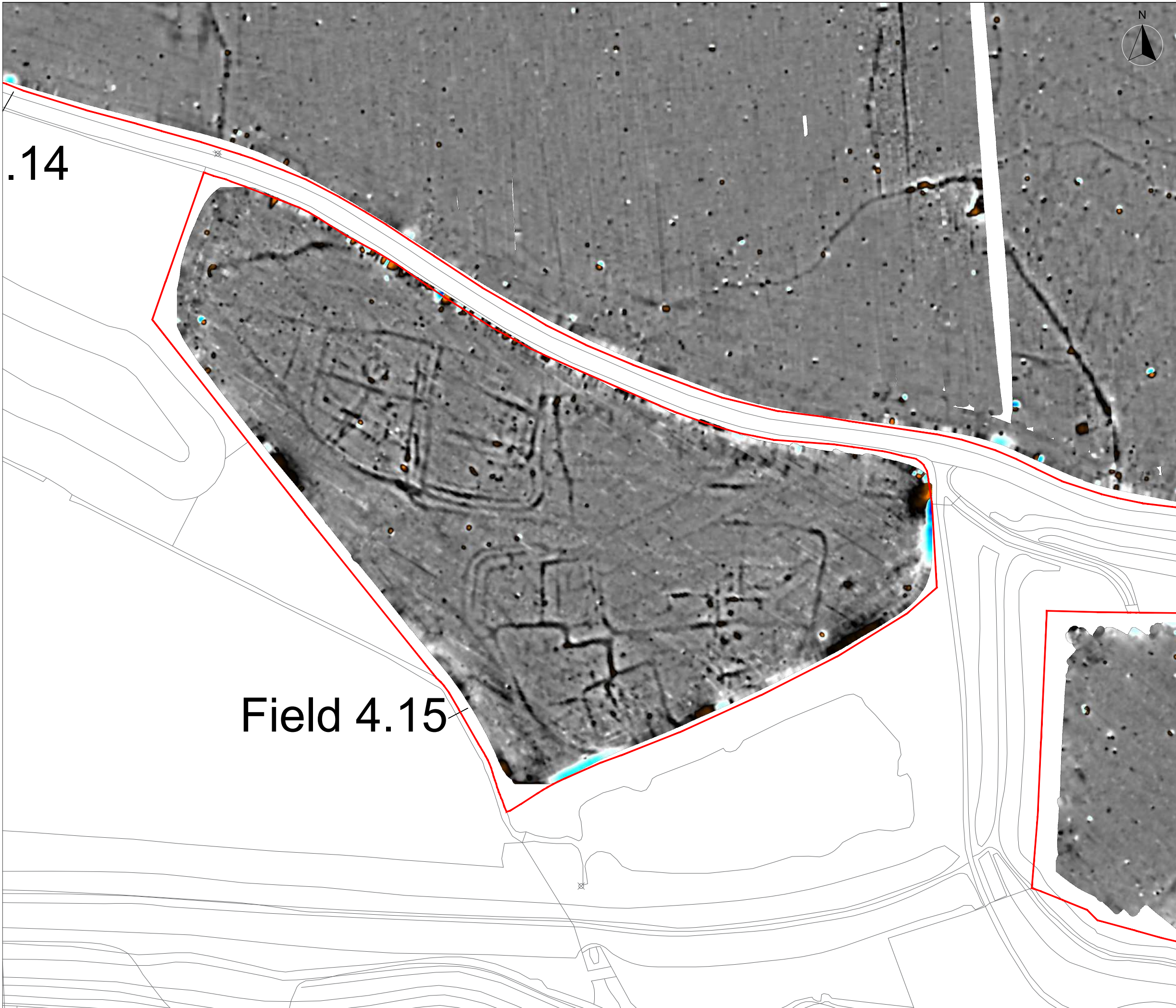


Fig No: 33



Title: Magnetometer Survey - Colour Plot (Field 4.15)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

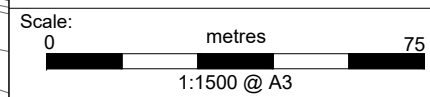
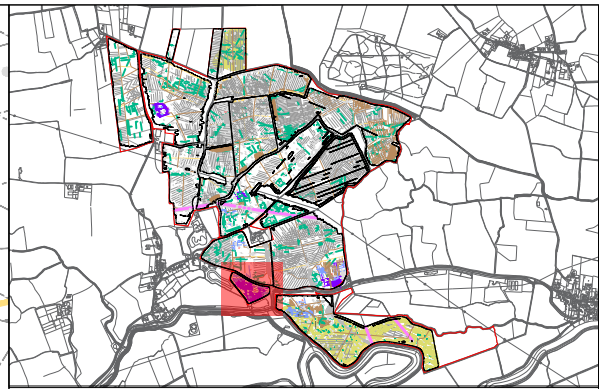
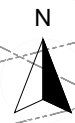
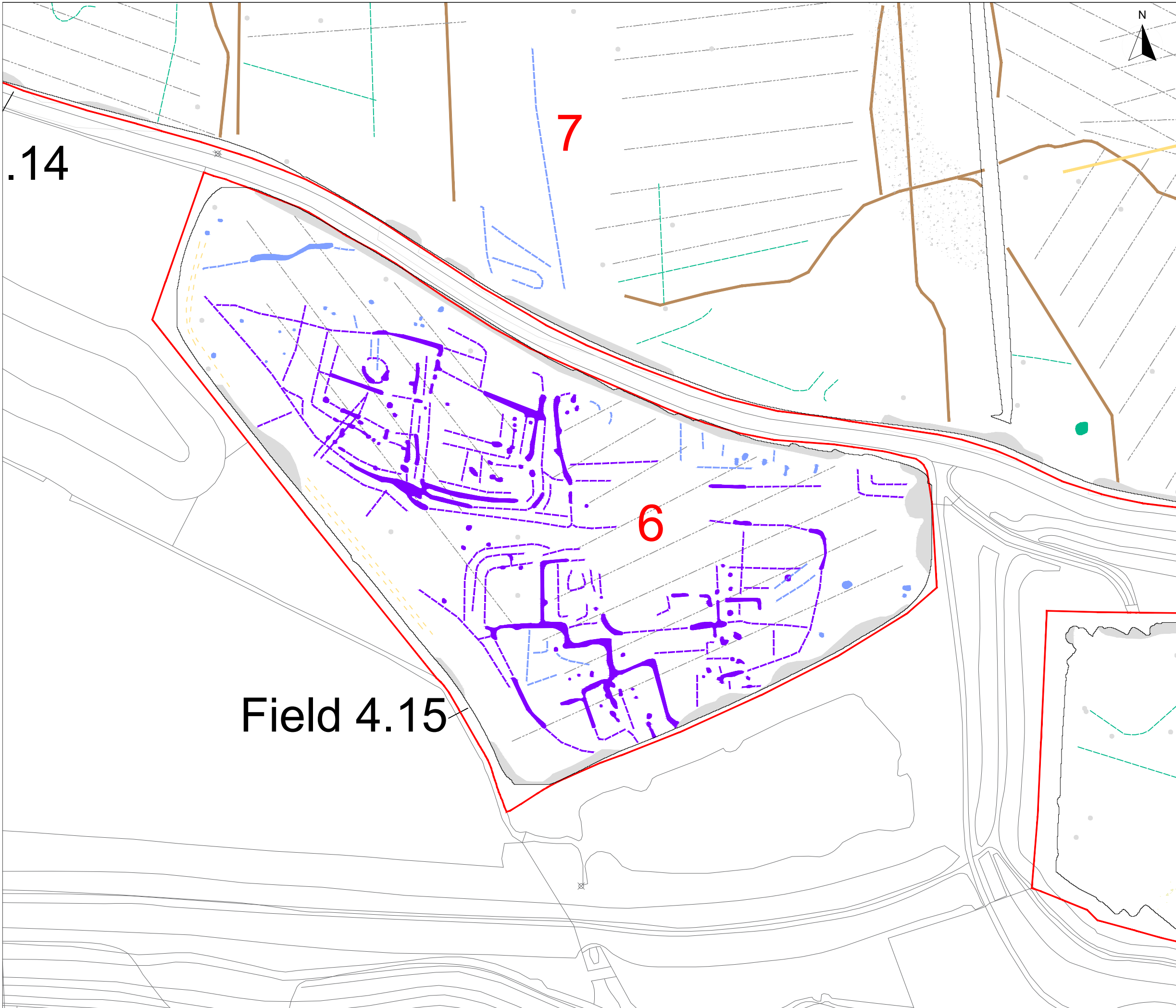


Fig No: 34



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



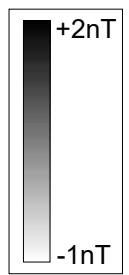
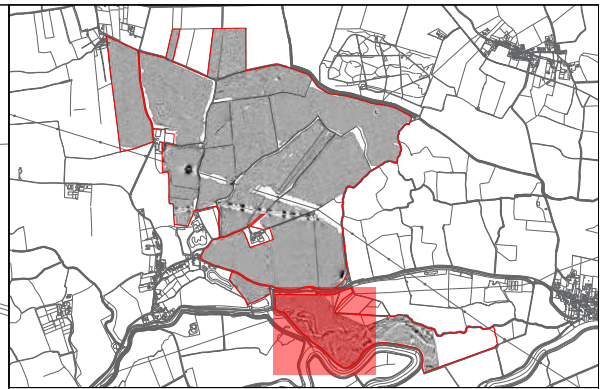
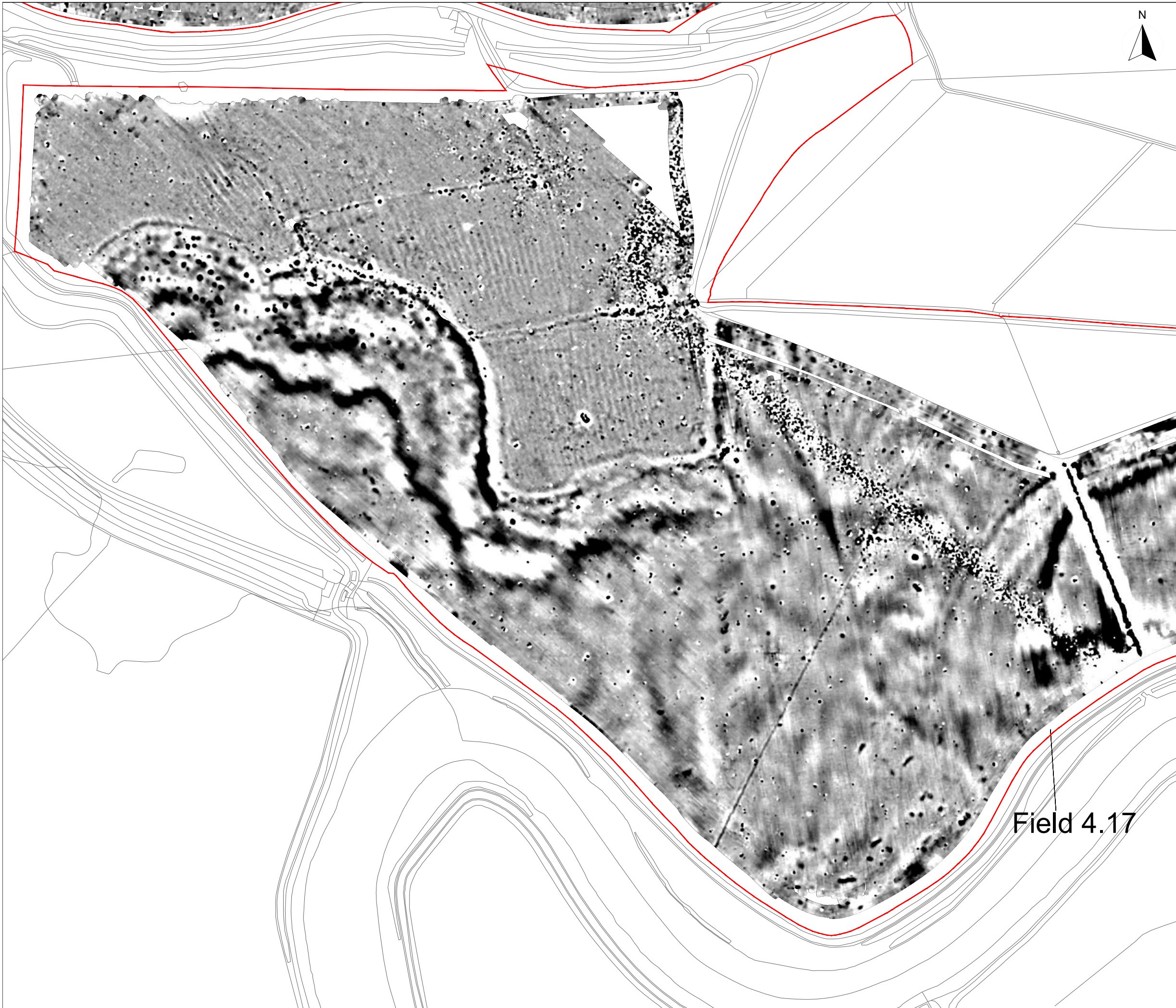
Title: Magnetometer Survey - Interpretation (Field 4.15)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 75
1:1500 @ A3

Fig No: 35



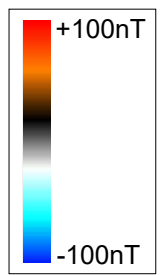
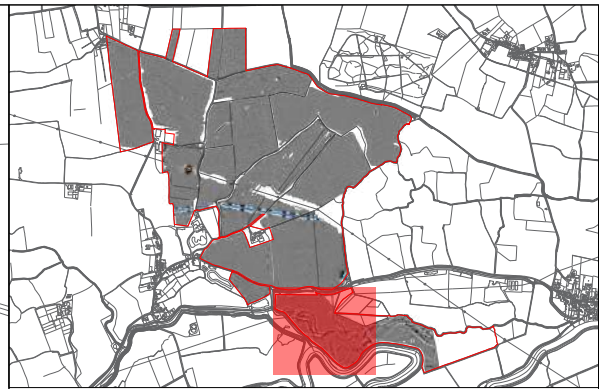
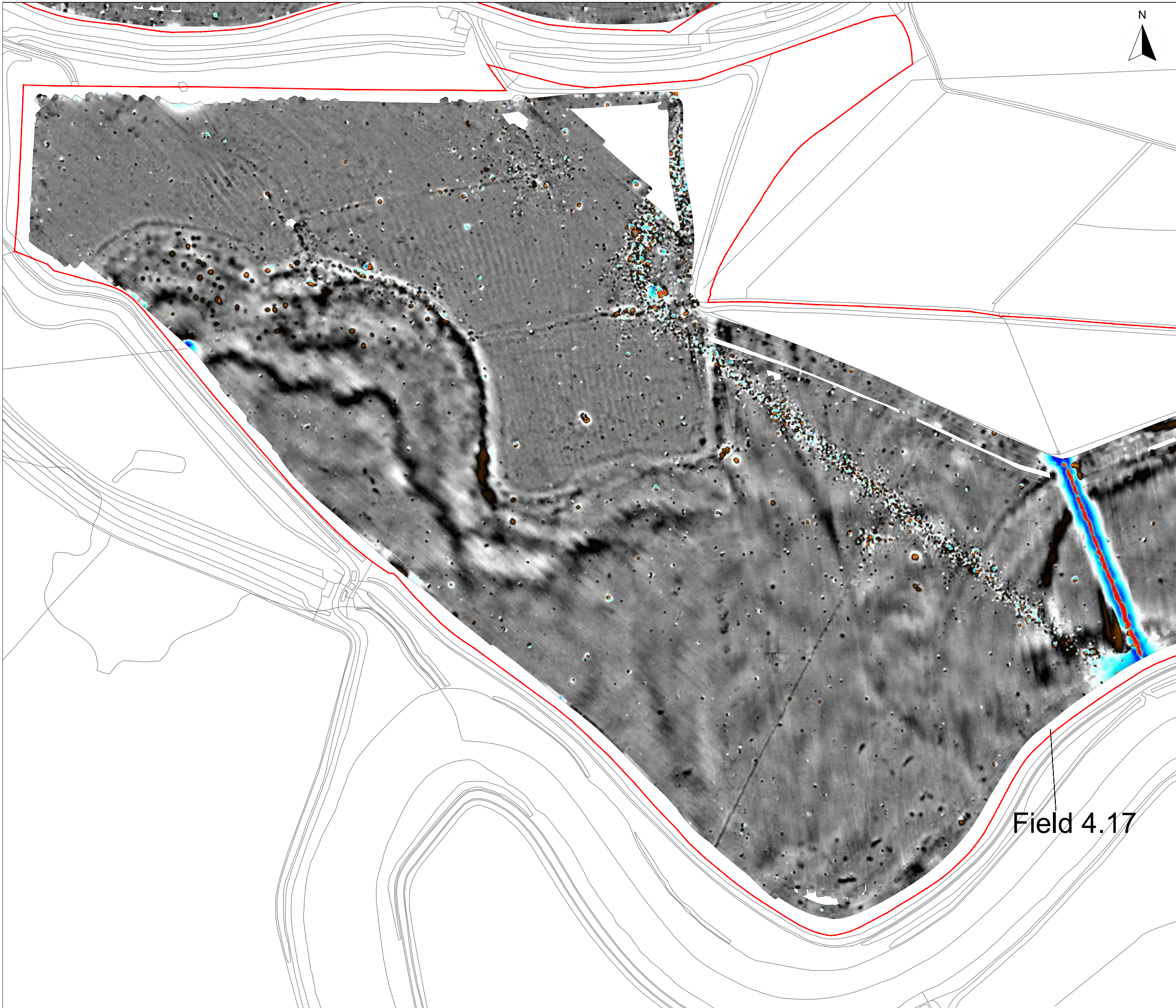
Title: Magnetometer Survey - Greyscale Plot
(Field 4.17 - west)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 36



Field 4.17

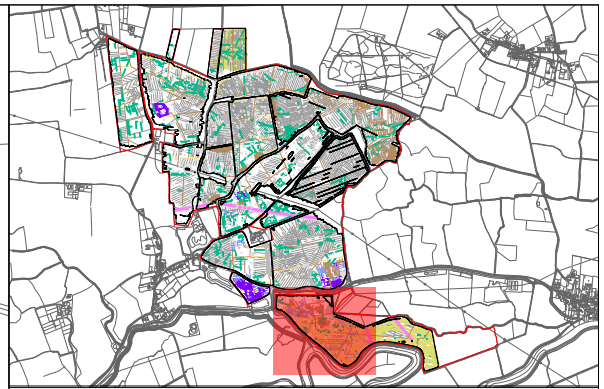
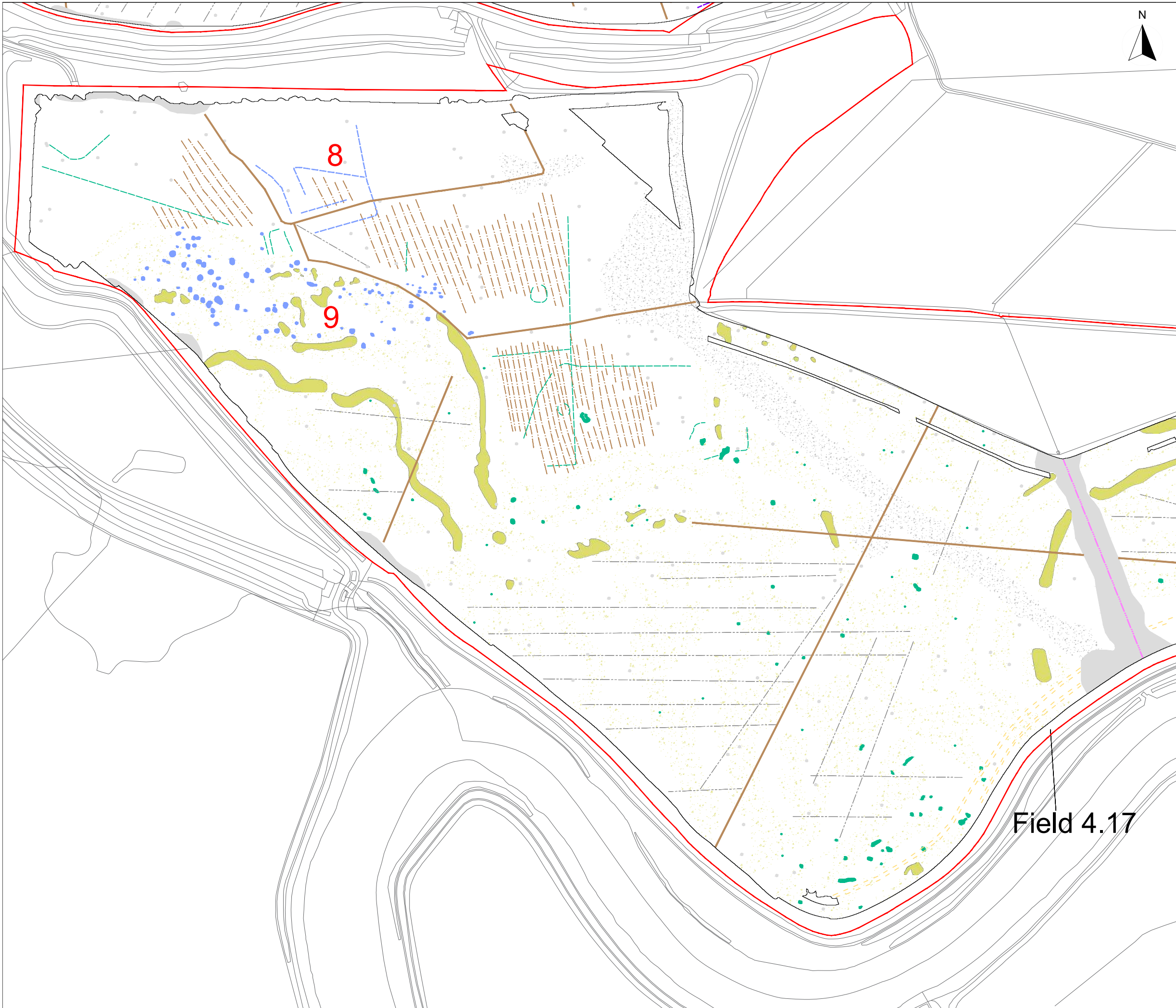
Title: Magnetometer Survey - Colour Plot
(Field 4.17 - west)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 37



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



Field 4.17

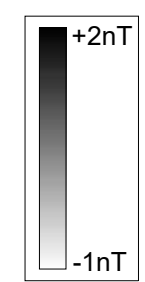
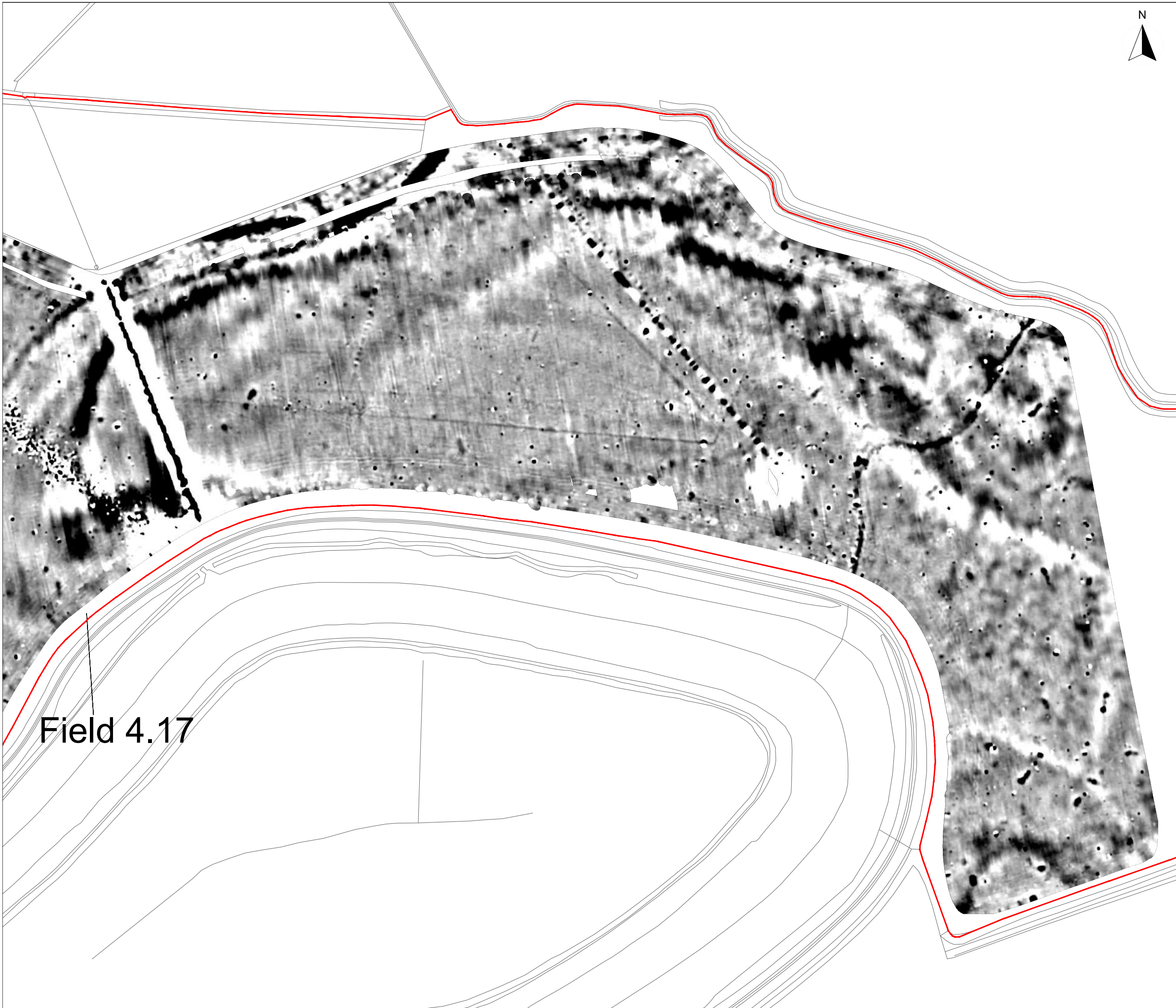
Title: Magnetometer Survey - Interpretation
(Field 4.17 - west)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 125
1:2500 @ A3

Fig No: 38



Field 4.17

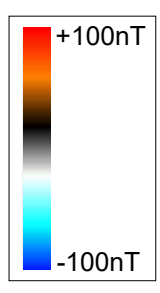
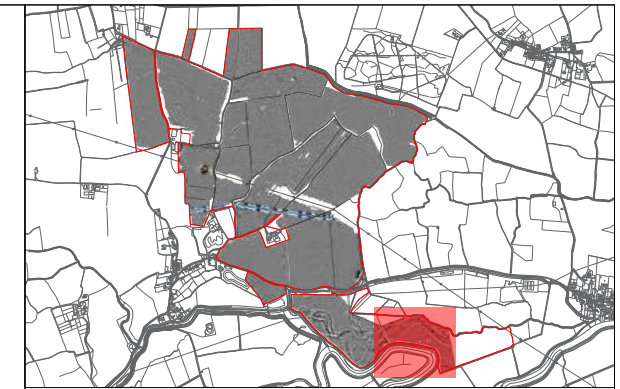
Title: Magnetometer Survey - Grayscale Plot
(Field 4.17 - east)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 100
1:2000 @ A3

Fig No: 39



Field 4.17

Title: Magnetometer Survey - Colour Plot
(Field 4.17 - east)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

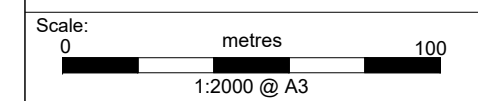
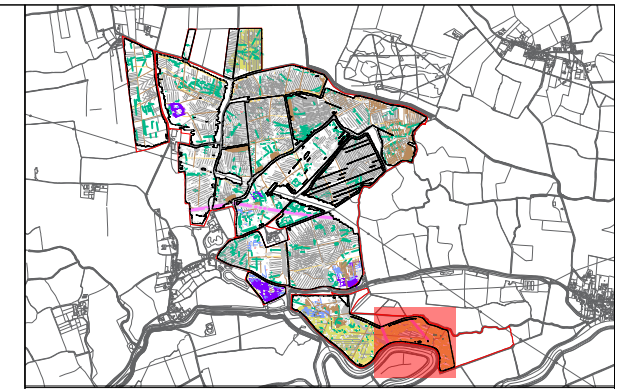
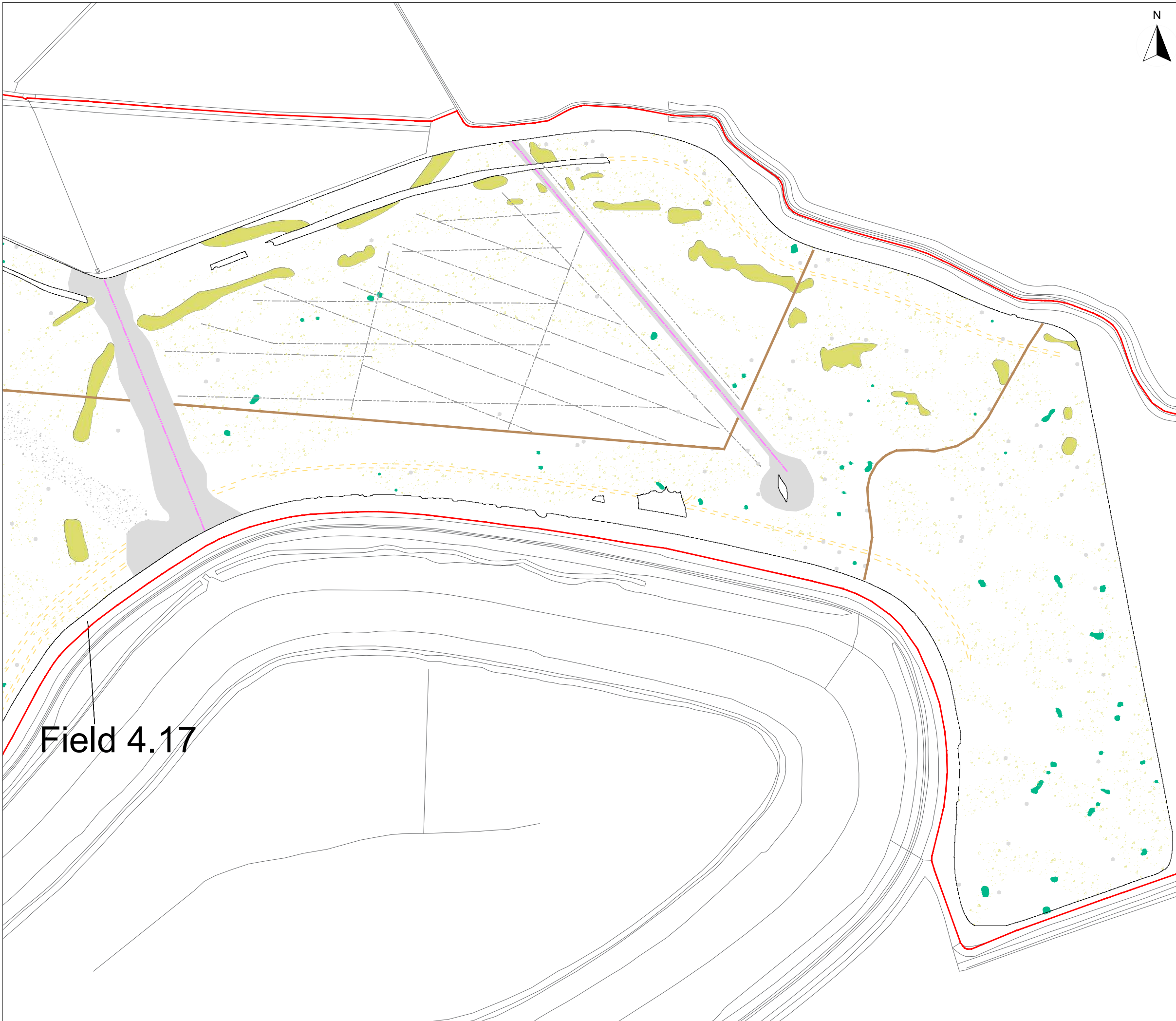


Fig No: 40



KEY

	Probable archaeology (discrete anomaly / trend / increased response)
	Possible archaeology (discrete anomaly / trend / increased response)
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Agriculture (tramline)
	Agriculture (land drain)
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Interpretation
(Field 4.17 - east)

Client: Island Green Power UK Limited

Project: 16614-4 - Light Valley Solar Project: Site 4

Scale: 0 metres 100
1:2000 @ A3

Fig No: 41



Light Valley
Solar

W: Lightvalleysolar.co.uk
E: info@lightvalleysolar.co.uk