



Craig Y Perthi Solar Farm Resubmission

Environmental Statement

Appendix 8.3 Geophysical Survey Report

Prepared for

RWE

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Document Control

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**magnitude
surveys**

Geophysical Survey Report

of

**Craig Y Perthi Solar
Wales**

For

JBM Solar

Magnitude Surveys Ref: MSST1080

HER Event Number: TBC

May 2022



**magnitude
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Abstract

Magnitude Surveys were commissioned to assess the subsurface archaeological potential of c. 219.9 ha of land at Craig Y Perthi Solar, Wales. A fluxgate gradiometer was successfully undertaken across the majority of the survey area with c. 22.3 ha unable to be surveyed because of access restrictions. Across the survey area a range of anomalies have been detected, with archaeological, agricultural, natural and modern origins. Anomalies of an archaeological origin have been identified in the form of probable and possible enclosures, trackways and field systems across the centre and northern part of the survey area. Agricultural activity has also been detected across the survey area in the form of field boundaries, ridge and furrow cultivation, field drains and ploughing trends. Natural variations as a result of superficial deposits and possible paleochannels have also been detected. While modern activity has been detected in the form of quarrying activity and a demolished walled garden. Anomalies of an undetermined origin have been identified, even though these anomalies could be of natural, modern or agricultural activity, an archaeological origin cannot be discounted. Modern interference as a result of metal fencing on survey edges, and buried services is generally limited, although locally significant.

Contents

Abstract.....	2
List of Figures	4
1. Introduction	8
2. Quality Assurance	8
3. Objectives.....	8
4. Geographic Background.....	9
5. Archaeological Background.....	15
6. Methodology.....	16
6.1. Data Collection	16
6.2. Data Processing	17
6.3. Data Visualisation and Interpretation	17
7. Results.....	18
7.1. Qualification	18
7.2. Discussion	18
7.3. Interpretation	20
7.3.1. General Statements	20
7.3.2. Magnetic Results - Specific Anomalies.....	20
8. Conclusions	23
9. Archiving	24
10. Copyright.....	24
11. References	24
12. Project Metadata	25
13. Document History	25

List of Figures

Figure 1:	Site Location	1:25,000 @ A4
Figure 2:	Location of Survey Areas	1:10,000 @ A3
Figure 3:	Magnetic Total Field (Lower Sensor) (Overview) (Northeastern Areas)	1:3,000 @ A3
Figure 4:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Northeastern Areas)	1:3,000 @ A3
Figure 5:	Magnetic Total Field (Lower Sensor) (Overview) (Eastern Areas)	1:3,000 @ A3
Figure 6:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Eastern Areas)	1:3,000 @ A3
Figure 7:	Magnetic Total Field (Lower Sensor) (Overview) (South-eastern Areas)	1:3,000 @ A3
Figure 8:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (South-eastern Areas)	1:3,000 @ A3
Figure 9:	Magnetic Total Field (Lower Sensor) (Overview) (Central Areas)	1:3,000 @ A3
Figure 10:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Central Areas)	1:3,000 @ A3
Figure 11:	Magnetic Total Field (Lower Sensor) (Overview) (Central Areas)	1:3,000 @ A3
Figure 12:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Central Areas)	1:3,000 @ A3
Figure 13:	Magnetic Total Field (Lower Sensor) (Overview) (Western Areas)	1:3,000 @ A3
Figure 14:	Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Western Areas)	1:3,000 @ A3
Figure 15:	Magnetic Gradient (Areas 16, 17 & 18)	1:1,500 @ A3
Figure 16:	Magnetic Interpretation (Areas 16, 17 & 18)	1:1,500 @ A3
Figure 17:	XY Trace Plot (Areas 16, 17 & 18)	1:1,500 @ A3
Figure 18:	Magnetic Gradient (Areas 9, 16 & 18)	1:1,500 @ A3
Figure 19:	Magnetic Interpretation (Areas 9, 16 & 18)	1:1,500 @ A3

Figure 20:	XY Trace Plot (Areas 9, 16 & 18)	1:1,500 @ A3
Figure 21:	Magnetic Gradient (Areas 5, 6, 7, 8, 9, 11, 12 & 13)	1:1,500 @ A3
Figure 22:	Magnetic Interpretation (Areas 5, 6, 7, 8, 9, 11, 12 & 13)	1:1,500 @ A3
Figure 23:	XY Trace Plot (Areas 5, 6, 7, 8, 9, 11, 12 & 13)	1:1,500 @ A3
Figure 24:	Magnetic Gradient (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)	1:1,500 @ A3
Figure 25:	Magnetic Interpretation (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)	1:1,500 @ A3
Figure 26:	XY Trace Plot (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)	1:1,500 @ A3
Figure 27:	Magnetic Gradient (Areas 28, 29 & 30)	1:1,500 @ A3
Figure 28:	Magnetic Interpretation (Areas 28, 29 & 30)	1:1,500 @ A3
Figure 29:	XY Trace Plot (Areas 28, 29 & 30)	1:1,500 @ A3
Figure 30:	Magnetic Gradient (Areas 22, 23, 24, 27, 28 & 30)	1:1,500 @ A3
Figure 31:	Magnetic Interpretation (Areas 22, 23, 24, 27, 28 & 30)	1:1,500 @ A3
Figure 32:	XY Trace Plot (Areas 22, 23, 24, 27, 28 & 30)	1:1,500 @ A3
Figure 33:	Magnetic Gradient (Areas 15, 16, 19, 22, 23, 24, 27 & 28)	1:1,500 @ A3
Figure 34:	Magnetic Interpretation (Areas 15, 16, 19, 22, 23, 24, 27 & 28)	1:1,500 @ A3
Figure 35:	XY Trace Plot (Areas 15, 16, 19, 22, 23, 24, 27 & 28)	1:1,500 @ A3
Figure 36:	Magnetic Gradient (Areas 12, 13, 14, 15, 19, 20, 21 & 26)	1:1,500 @ A3
Figure 37:	Magnetic Interpretation (Areas 12, 13, 14, 15, 19, 20, 21 & 26)	1:1,500 @ A3
Figure 38:	XY Trace Plot (Areas 12, 13, 14, 15, 19, 20, 21 & 26)	1:1,500 @ A3
Figure 39:	Magnetic Gradient (Areas 5, 14, 20, 21, 25 & 26)	1:1,500 @ A3
Figure 40:	Magnetic Interpretation (Areas 5, 14, 20, 21, 25 & 26)	1:1,500 @ A3
Figure 41:	XY Trace Plot (Areas 5, 14, 20, 21, 25 & 26)	1:1,500 @ A3
Figure 42:	Magnetic Gradient (Areas 31, 35 & 36)	1:1,500 @ A3
Figure 43:	Magnetic Interpretation (Areas 31, 35 & 36)	1:1,500 @ A3
Figure 44:	XY Trace Plot (Areas 31, 35 & 36)	1:1,500 @ A3

Figure 45:	Magnetic Gradient (Areas 32, 33, 34, 35, 36 & 44)	1:1,500 @ A3
Figure 46:	Magnetic Interpretation (Areas 32, 33, 34, 35, 36 & 44)	1:1,500 @ A3
Figure 47:	XY Trace Plot (Areas 32, 33, 34, 35, 36 & 44)	1:1,500 @ A3
Figure 48:	Magnetic Gradient (Areas 33, 34, 37, 43, 47 & 51)	1:1,500 @ A3
Figure 49:	Magnetic Interpretation (Areas 33, 34, 37, 43, 47 & 51)	1:1,500 @ A3
Figure 50:	XY Trace Plot (Areas 33, 34, 37, 43, 47 & 51)	1:1,500 @ A3
Figure 51:	Magnetic Gradient (Areas 38, 39, 40, 41, 43, 46, 47 & 51)	1:1,500 @ A3
Figure 52:	Magnetic Interpretation (Areas 38, 39, 40, 41, 43, 46, 47 & 51)	1:1,500 @ A3
Figure 53:	XY Trace Plot (Areas 38, 39, 40, 41, 43, 46, 47 & 51)	1:1,500 @ A3
Figure 54:	Magnetic Gradient (Areas 42, 50 & 51)	1:1,500 @ A3
Figure 55:	Magnetic Interpretation (Areas 42, 50 & 51)	1:1,500 @ A3
Figure 56:	XY Trace Plot (Areas 42, 50 & 51)	1:1,500 @ A3
Figure 57:	Magnetic Gradient (Areas 42, 46, 49, 50 & 51)	1:1,500 @ A3
Figure 58:	Magnetic Interpretation (Areas 42, 46, 49, 50 & 51)	1:1,500 @ A3
Figure 59:	XY Trace Plot (Areas 42, 46, 49, 50 & 51)	1:1,500 @ A3
Figure 60:	Magnetic Gradient (Areas 55 & 56)	1:1,500 @ A3
Figure 61:	Magnetic Interpretation (Areas 55 & 56)	1:1,500 @ A3
Figure 62:	XY Trace Plot (Areas 55 & 56)	1:1,500 @ A3
Figure 63:	Magnetic Gradient (Areas 53, 54 & 56)	1:1,500 @ A3
Figure 64:	Magnetic Interpretation (Areas 53, 54 & 56)	1:1,500 @ A3
Figure 65:	XY Trace Plot (Areas 53, 54 & 56)	1:1,500 @ A3
Figure 66:	Magnetic Gradient (Area 55)	1:1,500 @ A3
Figure 67:	Magnetic Interpretation (Area 55)	1:1,500 @ A3
Figure 68:	XY Trace Plot (Area 55)	1:1,500 @ A3
Figure 69:	Magnetic Gradient (Area 52)	1:1,500 @ A3

Figure 70:	Magnetic Interpretation (Area 52)	1:1,500 @ A3
Figure 71:	XY Trace Plot (Area 52)	1:1,500 @ A3



1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by JBM Solar to undertake a geophysical survey over a c. 219.9ha area of land east of Casnewydd, Gwent, Wales (ST 39454 87435).
- 1.2. The geophysical survey comprised quad-towed hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David *et al.*, 2008).
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David *et al.*, 2008), the Chartered Institute for Archaeologists (CIfA, 2020) and the European Archaeological Council (Schmidt *et al.*, 2015).
- 1.4. It was conducted in line with a WSI produced by MS (Dyulgerski, 2022).
- 1.5. The survey commenced on 19 April 2022 and took 29 days to complete.

2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CIfA, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

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

4. Geographic Background

4.1. The survey area was located c. 700m to the southeast of Underwood, Newport (Figure 1). Gradiometer survey was undertaken across multiple arable and pasture fields. The survey area's southern boundary includes the South Wales Mainline Railway, and its northern boundaries include Longditch Wood and Poolhead Wood (Figure 2). Approximately 22.9 ha could not be surveyed due to denied access.

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	The pasture field was flat.	The eastern and southern boundaries were treelines. The western boundary was covered in brambles. The northern boundary comprised of a wire fence and brambles. There was a metal pipe along the centre of the northern boundary.
2	The pasture field was flat.	The western, southern and eastern boundaries were bordered by trees. The northern boundary was a wire fence and brambles. There was a metal pipe along the centre of the northern boundary.
3	The pasture field was flat.	The northern and eastern boundaries were brambles. The western and southern boundaries were bordered by trees.
4	The arable field was recently sowed, uneven, dry, and firm.	The western boundary was a treeline. The northern boundary was a treeline and a stream. The eastern and southern boundaries were a hedge. Beyond and adjacent to the southern boundary was the South Wales Mainline Railway with overhead cables.
5	The pasture field was flat and had long grass.	The northern and eastern boundaries were a hedge with wire fencing. Along the western boundary ran a track and a hedge. The southern boundary was bounded by a hedge. There was a metal gate in the south-western corner.
6	The pasture field had raised land along the eastern and south-eastern boundaries.	The eastern and south-eastern boundaries were bordered by a stream. The north-eastern boundary was a wire fence and a hedge. There were two metal gates, one in the north-eastern corner and one in the south-eastern corner. There was a short, isolated hedge in the field towards the north-eastern corner.
7	The pasture field was flat.	The northern boundary consisted of a wire fence. The western and southern boundaries were bordered by streams with wire fencing. The eastern boundary had a stream with a treeline and wire fencing. There was an area unable to be surveyed due to a bramble bush along the western part of the northern boundary. There

		was a metal gate in the centre of the northern boundary.
8	The pasture field was flat.	The northern and eastern boundaries, and the eastern part of the southern boundary, were streams with wire fencing. The western part of the southern boundary was a treeline with wire fencing. The western boundary was a wire fence.
9	The pasture field was flat and had long grass.	The eastern boundary was a treeline. The northern and southern boundaries were wire fences. The western boundary was a hedge with wire fencing. There were two metal gates, one in the north-eastern corner and one in the south-eastern corner. There was a bench along the southern part of the eastern boundary.
10	The pasture field was flat with long grass.	The northern boundary was brambles. The eastern boundary was bramble with an electrical fence and a stream. The southern boundary was bramble with a wire fence. The north-western boundary was bramble and an overgrown area. The western boundary was a stream.
11	The pasture field was flat with long grass.	The northern boundary was a wire fence. The south-eastern boundary was a wire fence and a stream. The western boundary was brambles and a wire fence.
12	The pasture field was flat with long grass.	The northern boundary was a treeline. The eastern boundary was brambles with a wire fence and a metal gate. The southern boundary was brambles and a treeline with a wire fence and a stream. The western boundary was a treeline. There was a utility cover in the northern part of the survey area. Area around the trees growing in the survey site was not surveyed.
13	The arable field was flat and recently sowed.	The northern boundary was a hedge. The eastern boundary was a treeline with a wire fence. The southern boundary was a wire fence and a stream. The western boundary was a wire fence and a stream with a metal gate in the north-western corner.
14	The arable field was flat with knee high crop.	The northern boundary was a hedge and a path. The eastern boundary was brambles with a wire fence and a stream. The south-eastern boundary was a wire fence and a stream. The southern boundary was a stream. The western boundary was a hedge.
15	The arable field was on a south-east dipping slope with knee high crop.	The northern boundary was an edge of the forest. The eastern boundary was a hedge. The southern boundary was hedge with trees. The western boundary was a hedge with a path. The north-western boundary is a hedge. The north-western part of the survey area was not

		surveyed due to the steepness and density of the crop.
16	The arable field was on a south-east slope with high crop.	The northern boundary consisted of a hedge and a treeline. The eastern and south-eastern boundaries were bordered by trees. The southern boundary consisted of a hedge with a wire fence. The north-western boundary bordered the edge of a forest.
17	The arable field on an east dipping slope with knee high crop.	The northern boundary consisted of a treeline. The eastern boundary was bordered by a ditch and brambles. The southern boundary was a hedge. The western boundary was bounded by a forest.
18	The arable field was flat and recently sowed.	The northern boundary was a treeline with a wire fence. The eastern boundary was brambles and a stream. The south-eastern boundary was a wire fence. The southern boundary was a treeline. The western boundary was a hedge with a wire fence. The north-western boundary was a treeline and hedge with a wire fence. There were metal gates in the north-western corner, south-western corner and in the east.
19	The arable field was flat with above knee-high crop.	The area was bordered by a hedge on all sides with a barbed wire on the east side. The headland runs of the survey area were not surveyed due to dense crop.
20	The arable field was on a west dipping slope with knee high crop.	The northern boundary was a hedge with a wire fence. The eastern boundaries were a hedge. The southern boundary was a hedge with a stream. The western boundary was a hedge. The north-western boundary was a wire fence. There was a row of pylons and a concrete slab in the west.
21	The arable field was flat with knee high crop.	The northern and eastern boundaries were a hedge and a stream. The southern boundary was a stream. The western boundary was a hedge with a wire fence.
22	The arable field was on a slope with waist high crop. The north side was dipping towards the south. The west part was dipping towards the west.	The northern boundary was a hedge. The eastern and southeaster boundary was an edge of the forest. The southern boundary was the hedge. The eastern boundary was a hedge with a path.
23	The arable field was on a southwest dipping slope with waist high crop.	The north boundary was a hedge with a wire fence. The north-eastern, eastern and southern boundaries were a hedge. The western boundary was a hedge with a wire fence and the north-western boundary was a treeline.
24	The arable field was flat with waist high crop.	The northern boundary was a treeline. The eastern boundary was an edge of a forest. The southern boundary was a hedge. The western boundary was a hedge with a wire fence. Area

		around the trees in the centre of the survey area was not surveyed. There was a storage shed in the southeast.
25	The arable field was flat and recently sowed.	The northern, eastern, and southern boundary was a stream with some bramble in the north. The eastern boundary was bramble.
26	The arable field was flat and recently sowed.	The northern boundary was a hedge with a stream, the eastern boundary was a treeline with a stream. The southern boundary was a stream and a hedge. The southeaster boundary was a treeline with a stream. The western boundary was a treeline.
27	The pasture field was on a south dipping slope with long grass.	The northern and eastern boundary was a wire fence. the southeaster boundary was a hedge with a wire fence. The southern boundary was a hedge. The western boundary was a treeline.
28	The pasture field was flat.	There was no visible boundary in the north. The eastern boundary was a wire fence. The southern boundary was a hedge with a wire fence. The western boundary was a wire fence. There were metal gates in the northeast corner and on the west side of the survey area.
29	The pasture field was on a southwest dipping slope.	The northern and eastern boundary was a hedge with a wire fence. there was no visible boundary in the south. The south-western boundary was a wire fence and overgrown area. The western boundary was a wire fence. the overgrown area in the southwest was not surveyed.
30	The pasture field was flat.	The northern and eastern boundary was an edge of the forest. The southern boundary was a treeline. The western boundary was a wire fence. the north-western boundary was a treeline.
31	The arable field was on an east dipping slope with knee high crop.	The northern western boundary was a treeline. There was no visible boundary in the northeast. The eastern boundary was a hedge. The southern boundary was a wire fence with a metal gate. The western boundary was a wire fence.
32	The arable field was on a south dipping slope with knee high crop.	The northern boundary was a hedge with a wire fence. the eastern and southern boundaries was a wire fence. The south-western boundary was a treeline with a wire fence. The western boundary was bramble with a wire fence.
33	The pasture field was on a steep east dipping slope.	The northern, southern and eastern boundary was a hedge with a wire fence. The eastern boundary was a path and a treeline.
34	The pasture field was on a slope.	The northern boundary was a wire fence. the eastern boundary was a hedge with a wire fence and a metal gate. The southern boundary was a hedge with a wire fence. The western boundary

		was a treeline with a wire fence. In the western corner area around two fallen trees were not surveyed.
35	The pasture field was flat on a west dipping slope.	The northern, south-eastern and western boundary was a wire fence. the northeaster fence was a treeline with a wire fence. The southern boundary was a hedge with a wire fence and the south-western boundary was a treeline with a wire fence. There were pylons in the northeast corner of the site.
36	The pasture field was on a southeast dipping slope.	The northern boundary was a treeline with a wire fence. The eastern boundary was a wire fence. The south-eastern boundary was a treeline with a wire fence. The southern boundary was a wire fence. The western boundary was a treeline with a wire fence. The southern was not surveyed due to dense trees.
37	The pasture field was on a southeast dipping slope.	The northern boundary was a wire fence, the eastern boundary was a treeline with a wire fence. The southern and the western boundaries were a hedge with a wire fence. In the northeaster corner there was a metal gate.
38	The pasture field was on a shallow southwest dipping slope.	The northern, south-eastern, southern and western boundaries were a hedge with a wire fence. The eastern boundary was a treeline. There was a metal gate on the eastern side.
39	The pasture field was on a shallow southeast dipping slope.	The northern and eastern boundaries were a hedge with a wire fence. There was no visible boundary to the south. The western boundary was a treeline. There was a metal gate in the north.
40	The pasture field was flat.	The filed was surrounded by a hedge with a wire fence on all sides. There were metal gates present on the western and eastern border.
41	The pasture field was flat.	The northern boundary was a hedge with a wire fence. The eastern boundary was a ditch. The south-eastern boundary was a hedge. The southern and western boundary was wire fence. There was a hill with trees on the western side of the field which was not surveyed.
42	The pasture field was on a southwest dipping slope.	The north-eastern boundary was a treeline with a wire fence. The south-eastern boundary was a stream with trees. The south-western boundary was a hedge with a wire fence. The north-western boundary was a treeline with a wire fence. There was a meta gate in the southwest. There were deep tire tracks and a fallen down tree in the southwest which were not surveyed.
43	The pasture field was on a southwest dipping slope.	The north-eastern and eastern boundaries were a hedge with a wire fence. The south-eastern boundary was a ditch with bushes. The

		southwestern boundary was a ditch and the north-western boundary was a hedge with a wire fence. There was a metal gate located in the west.
44	The pasture field was on a steep west dipping slope	The northern and north-eastern boundaries were electrified fence and a deep tire track. There was no visible boundary in the east. The southern and western boundaries were electrified fence.
46	The grassland field was on a slope dipping west.	The survey area was surrounded by a hedge with a metal fence on all sides. There was drainage in the south-eastern corner.
47	The pasture field as flat.	The field was surrounded by a hedge with barbed wire. There was an open field drain in the west. Areas of dense nettles in the south and north were not surveyed.
49	The grassland was flat.	The northern boundary was a hedge and a road. The eastern boundary was a hedge. The southern boundary was a metal fence and a train track. The western boundary was a hedge and a stream. There were telephone poles in the south.
50	The pasture field was on a slope dipping towards the west.	The northern, eastern, and southern boundaries were a hedge. The western boundary was a stream with trees.
51	The pasture field was on an outwards dipping slope.	The survey area was surrounded by a hedge. From the north to the centre there was a strip of forest.
52	The pasture field was flat.	The northern and eastern boundaries were a metal fence. The north-western boundary was a stream. The south-western boundary was a hedge.
53	The pasture field was on a slope dipping towards the north.	The survey area was surrounded by a hedge on all sides. There were metal gates located on the west and east sides. Area of bog in the southwest was not surveyed.
54	The pasture field was on a slope dipping towards the north.	The survey area was surrounded by a hedge on all sides there were metal gates located in the west and east. There was an area of bog in the north which was not surveyed.
55	The pasture field was flat.	The survey area was surrounded by a hedge on all side. The eastern and the southern boundaries also had metal fencing. There was scrap metal in the northeast and northwest.
56	The pasture field was on a slope dipping towards the north.	The northern boundary was a forest. The eastern, southern and western boundaries were hedges.

- 4.3. The underlying geology comprises: Triassic mudstone of the Mercia Mudstone Group across the southeast of the survey area; Hettangian mudstone of the Lavernock Shales Member across the northwest of the survey area, and interbedded limestone and mudstone of the St Mary's Well

Bay Member across the southwest, centre and north of the survey area. Across the northeast of the survey area, there are also small areas of Triassic mudstone of the Blue Anchor Formation and Rhaetian mudstone of the Penarth Group. Superficial deposits include tidal flat deposits of Holocene clay and silt across the southwest and southeast of the survey area, and alluvium of Holocene clay, silt, sand and gravel in a small area of the northeast of the survey area. There are no recorded superficial deposits across the north and centre of the survey area (British Geological Survey, 2022).

- 4.4. The soils consist of: loamy and clayey soils of coastal flats, with naturally high groundwater, across southern parts of the survey area, particularly in the southwest; loamy and clayey floodplain soils, with naturally high groundwater, in the southeast of the survey area; slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils across the centre and north of the survey area; slightly acid loamy and clayey soils with impeded drainage across eastern parts of the survey area, and freely draining slightly acid loamy soils in a small part of the northeast of the survey area (Soilscapes, 2022).

5. Archaeological Background

- 5.1. The following is a summary of a heritage database search produced by Historic Wales (Historic Wales, 2022)
- 5.2. Wilcrick Hill Camp, a Scheduled Ancient Monument and probable Iron Age hillfort, is situated c. 700m east of the easternmost field of the survey area (Area 7) (Cadw, 2022). There are several earthworks, identified in 1999 by aerial photographs, near Waltwood Hill, which are situated in the adjacent field to the northern part of the central survey area (Coflein, 2022).
- 5.3. Within the survey area, there is a small sub rectangular enclosure, c.10m in diameter, that is situated in the adjacent field to the southwest of Ridings Wood, identified by aerial photographs and potentially of Romano-British origin (GGAT, 2022). Within the survey area, there is a metalled surface with limestone blocks, situated c. 150m west of St Cadwaladr's Church, which has complex and extensive associated earthworks suggesting it is not a Roman road but more probably the remains of a Romano-British settlement (GGAT, 2022). Fragments of Roman tile, including roof tile, was found c. 200m northwest of St Mary's Church (Llanwern), outside of the survey area (GGAT, 2022).
- 5.4. Situated at the northern end of Bishton village and generally surrounded by the survey area, Bishton Castle, a Scheduled Ancient Monument, that includes a partial enclosure and traces of two possible rectangular building platforms was recorded (Cadw, 2022). St Cadwaladr's Church, a Grade II Listed Building, is situated adjacent to the southern part of the central survey area and includes exterior and interior features that may be dated between the 14th and 19th centuries (GGAT 2022). Also outside of the survey area, there may have been a planned medieval linear village (now Bishton village) running between Bishton Castle in the north, and St Cadwaladr's Church in the south (Cadw, 2022). There is a Deserted Medieval Village of Wilcrick (appearing in the 12th-century Llandaff Deanery list), a Scheduled Ancient Monument excavated in the 1960s, which includes probable medieval remains of earthworks, platforms and building footings that is situated c. 700m northeast of the easternmost field of the survey area (Cadw, 2022). St Mary's Church (Llanwern), a Grade II* Listed Building, is adjacent to the

north-western corner of the contiguous survey area and is of probable 14th/15th-century date (Cadw, 2022). In a field adjacent to the northwest of the survey area, there are probable medieval earthworks, a defined hollow way and several possible building platforms situated c. 75m northeast of St Mary's Church (Llanwern), which may represent a settlement site deserted in the 18th-century creation of Llanwern Park (GGAT, 2022). Situated within the far-western separated part of the survey area, Llanwern Moat consisted of a garden, high-brick wall and a possible medieval moat, and may have been intact until c. 1950 with the demolition of nearby Llanwern House (GGAT, 2022).

- 5.5. Quarries have been recorded within the survey area, one is situated c. 100m north of St Cadwaladr's Church, and a second is situated in the northernmost field of survey area (OS, 2022).

6. Methodology

6.1. Data Collection

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

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

6.1.3. Table of survey strategies:

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

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

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

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

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

6.2.Data Processing

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

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

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

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

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

6.3.Data Visualisation and Interpretation

- 6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, 47, 50, 53, 56, 59, 62, 65, 68 & 71). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

- 6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2022) was also consulted, to compare the results with recent land use.

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

7. Results

7.1. Qualification

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

7.2. Discussion

7.2.1. The geophysical results are presented in combination with satellite imagery and historical maps (Figures 4, 6, 8, 10, 12 & 14).

7.2.2. A fluxgate gradiometer survey was successfully conducted at Craig Y Perthi Solar Farm which detected anomalies of archaeological, agricultural, natural and modern origins. Modern disturbance is limited to survey boundaries, and surrounding buried services identified in the survey area (Figures 16, 19, 22, 25, 28, 31, 34, 37, 40, 23, 26, 29, 52, 55, 58, 61, 64, 67 and 70). The effect of the disturbance is limited but locally significant.

7.2.3. The survey has identified several foci of archaeological activity, primarily located in the centre, south-west, and northwest parts of the survey area.

7.2.4. Within Areas 46, 49 and 42, a number of linear, curvilinear, sub-rectilinear anomalies forming multiple enclosures with internal divisions and trackways have been identified. Most of these anomalies appear to be positioned upon the higher elevation ground above the Wilrick Moor to the south (Figure 58). The most prominent of the anomalies appear to form a series of rectilinear enclosures aligned in a north/south direction and connected with trackways. A number of weaker curvilinear anomalies in a differing alignment appear to intersect them, which might suggest multi-phase activity. Within the areas of archaeological potential, ridge and furrow regimes appear to crosscut the enclosures, limiting the full potential to classify anomalies.

7.2.5. In Areas 36 and 52, the survey has identified several strong curvilinear anomalies located at the top of the topographical slope that have been interpreted as partial enclosures. The anomaly in Area 32 consists of a large trapezoidal structure with several internal divisions within it. In Area 52 an anomaly interpreted as a probable double-ditched partial enclosure has also been identified (Figure 55). This anomaly appears to extend within the Craig-Y-Perthi Wood which might suggest the possible presence of a hilltop enclosure.

- 7.2.6. In Areas 19 and 23, several rectilinear and curvilinear anomalies have been identified. These anomalies are in close proximity to the medieval village of Bishton and the scheduled site of Bishton Castle. As such they have been interpreted as probable enclosures and field systems of possible medieval origin.
- 7.2.7. Further possible archaeological anomalies have been identified in the east of the survey area, exhibiting weak magnetic signals (Figures 49 and 52). These appear to extend from classified probable archaeological anomalies; however, these do not have a consistent morphological shape that would allow a more confident interpretation. Therefore, these have been designated as possible archaeology.
- 7.2.8. Evidence of agricultural activity has been detected in various forms, primarily as field boundaries running from northwest to southeast in the south-eastern corner of the survey area (Figures 22, 37 and 40). These correspond with field boundaries mapped on historical OS maps of the area, and areas of agricultural spread also appear to align with these. Ridge and furrow cultivation has also been detected in the centre of the survey area, truncating probable archaeology. Agricultural trends have been detected across the survey area, corresponding to modern ploughing regimes running in multiple orientations.
- 7.2.9. Natural variation as a result of superficial deposit changes in the area has been detected in the form of large amorphous anomalies in the south of the survey area (see section 4.3). These anomalies are primarily located on a lower topographical land. Multiple of these anomalies exhibit the morphology of potential paleochannels.
- 7.2.10. Modern features have been detected in the survey area in the form of a vast drainage network running through the survey area in multiple orientations (Figures 16, 19, 22, 25, 28, 37, 40, 58, 61 and 70). Evidence of quarrying can be seen in the north and south of the survey area, corresponding to mapped historical quarrying regions (Figure 37, 42 and 52). Anomalies corresponding to a demolished moated, walled garden have also been identified in the far west of the survey area, along with its associated ferrous debris.
- 7.2.11. Across the survey area, multiple linear and curvilinear anomalies have been detected (Figures 16, 28, 3, 34, 43, 52, 55 and 64). These lack any diagnostic morphology and do not match any features visible on historical OS maps or satellite images of the area. Because of this, these have been classified as undetermined. Whilst these most likely have agricultural, modern or natural origins, it cannot be ruled out that these are archaeological in origin.

7.3. Interpretation

7.3.1. General Statements

- 7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.
- 7.3.1.2. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.3. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.
- 7.3.1.4. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as 'Magnetic Disturbance'. These magnetic 'haloes' will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.
- 7.3.1.5. **Undetermined** – Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally distinct from those caused by ferrous sources.

7.3.2. Magnetic Results – Specific Anomalies

- 7.3.2.1. **Probable Archaeology (Strong & Weak): Settlement Structure** – In the south of the survey area, located in Area 49, a complex of linear and rectilinear anomalies has been detected (Figure 58). Their morphology and strong magnetic signal are characteristic of probable enclosures with internal divisions [49a]. Their rectilinear alignment is also characteristic of a ladder-type enclosure. Curvilinear features extend from these anomalies, most likely representing possible trackways between enclosures detected in Area 49 and 50. Due to the multiple alignments and overlapping strong magnetic signals, it is possible that there are different phases of occupation suggestive of a multiphase landscape.
- 7.3.2.2. **Probable Archaeology (Strong & Weak): Enclosures** – Within the northeast of Area 51 a strong, rectilinear, right angled anomaly measuring c. 120m has been identified [51a] (Figure 55). A weaker linear anomaly has been detected, running parallel to its southern edge. A discrete strongly enhanced anomaly has also been identified within it which may identify a probable pit. Given the clear morphology, its presence on top of the topographical slope and its proximity to scheduled Iron Age hillfort, this anomaly is considered to be of probable archaeological origin (see Sec 5.2). Further on, a possible extension of this anomaly, outside of the survey area, is visible on satellite imagery as a break in the tree cover within the woods to the north (Figure 12). In Area 32, multiple linear and curvilinear anomalies

depict a trapezoidal enclosure that is positioned at the peak of Waltwood Hill (Figure 46). Within this enclosure, several linear anomalies appear to form internal subdivisions. As such these anomalies have also been considered to be of probable archaeological origin.

7.3.2.3. **Probable Archaeology (Weak)** – A series of linear to curvilinear anomalies have been identified in the centre of Area 50 and in the north of Area 46 (Figure 58). They vary in size and morphology and are in close proximity to probable enclosure features that have been identified in Area 49. Because of this they have been classified as probable archaeology.

7.3.2.4. **Probable Archaeology (Weak)** – In Area 19, a series of linear and curvilinear anomalies have been identified (Figure 37). In the western corner of the area, a rectilinear anomaly has been detected, measuring c.20m by c.17m. Surrounding it, several linear anomalies have been identified, running in multiple orientations and of different lengths. Due to the rectangular morphology of the central anomaly, it is possible this is a form of enclosure, with associated linear features such as trackways extending from it. The survey area is located approximately 200m northeast of the medieval village of Bishton, and therefore these anomalies are possibly medieval in origin. In addition, Bishton Castle is located c. 380m northwest of the survey area, further providing evidence that these anomalies are archaeological in origin and of probable medieval date.

7.3.2.5. **Possible Archaeology (Weak)** – In Areas 34 and 51, linear and curvilinear anomalies have been identified (Figure 49). These have weak signals, and are. Due to the rich archaeological surrounding, identified most prominently in Area 50 and 51, these have been classified as possible archaeology, and most likely relate to enclosures or old field systems.

7.3.2.6. **Possible Archaeology (Weak)** – In Areas 20, 23, 39, 46, multiple linear to curvilinear anomalies have been identified (Figures 34, 37, 49, 52 and 55). The anomalies appear to extend from the probable archaeology in Area 19, however the signals they exhibit are not as strong, therefore they have been classified as possible archaeology. These anomalies are linear to curvilinear and vary in length and orientation. Due to their location and relationship to identified probable enclosures in Area 19, the anomalies are most likely related to trackways or field systems.

7.3.2.7. **Agricultural (Strong/Weak/Spread)** – Multiple strong and weak, positively enhanced linear anomalies and spreads of magnetically enhanced material have been identified throughout much of the survey area. Many of these anomalies correspond with former field boundaries and footpaths recorded on historical OS maps (Figures 4, 6, 8, 10, 12, 14).

7.3.2.8. **Ridge and Furrow** – In Area 50, multiple parallel linear anomalies have been identified running northwest to southeast (Figures 55 and 58). These have regular spacing at approximately 5m and correspond with cropmarks seen on previous

satellite images of the area. Due to the morphology and spacing of these features, they have been classified as ridge and furrow cultivation.

- 7.3.2.9. **Agricultural (Trends)** – Numerous parallel, linear anomalies have been identified throughout much of the survey area in multiple differing orientations. The close spacing (c. 3-4m) and regularity of these trends are indicative of modern ploughing regimes.
- 7.3.2.10. **Structural Remnants** – Several strong curvilinear and linear anomalies have been identified within the north of Area 52 surrounded by a spread of ferrous material (Figure 70). These anomalies correspond with the walled garden depicted on historical OS maps (Figure 14) (see section 5.4.). The ferrous spread within the structural remains is most likely related to the demolition of the garden, infilled with construction material and bricks. It should be noted that because of this ferrous spread, more ephemeral anomalies may be obscured in this area.
- 7.3.2.11. **Quarry (Spread)** – Two zones of highly magnetically enhanced signal has been identified within areas 31 and 47 (Figures 43 and 52). These anomalies correlate with quarries recorded on historical OS mapping (Figures 4 and 10) (See Section 5.5). The strong magnetic signal is likely caused by the ferrous nature of the material used to infill the former quarry.
- 7.3.2.12. **Natural (Strong/Weak/Spread)** – Zones of sinuous and amorphous anomalies have been identified throughout much of the southeast of the survey area (Figures 22, 25, 37, and 40). Given their morphology and position within the landscape, they are considered to represent the deposition of alluvial deposits (See Section 4.3) laid down by previous watercourses and flooding events. They exhibit a magnetic signal which is strongly enhanced in the total field data (Figures 5 and 7). Across Areas 1, 2, 3, 4 & 25 in particular, the form and morphology of the natural anomalies are indicative of possible paleochannels.
- 7.3.2.13. **Buried Services** – Multiple strong, dipolar, linear anomalies have been identified across the survey area (Figures 5, 7, 9, 11, 13 & 15). The strength and morphology of these anomalies are indicative of buried services.
- 7.3.2.14. **Drainage Features** – Linear anomalies have been identified across the majority of the survey area exhibiting positive and dipolar magnetic strengths (Figures 4, 6, 8, 10, 12 & 14). The linear morphologies and regular spacing of these anomalies are indicative of drains. These drains are most likely related to the series of canals and water trackways that surround the low-lying areas to the south of the survey area.
- 7.3.2.15. **Undetermined (Weak/Strong)** – Multiple strong and weak linear anomalies have been identified throughout the survey area (Figures 16, 28, 3, 34, 43, 52, 55 and 64). The morphology and strength of these anomalies are indicative of ditches containing magnetically enhanced infill. However, an archaeological or agricultural origin cannot be determined through the geophysical data alone. Two parallel roughly linear anomalies have been identified within the centre of Area 42 [42a].

Although similar in morphology to the former field boundary in Area 46 [46c], the anomaly does not correlate with any former field boundaries and the more sinuous morphology may also indicate a natural origin. Multiple linear and a curvilinear anomaly have been identified within the east of Area 38 [38a]. This may indicate a possible extension to the St. Cadwaladr's Church. However, this extension does not correlate with any features visible on historical mapping and may instead be influenced by the surrounding magnetic disturbance.

8. Conclusions

- 8.1. A fluxgate gradiometer was successfully completed and detected a range of anomalies with archaeological, agricultural, natural and modern origins. Modern disturbance is present and limited to survey boundaries and surrounding buried services, which may obscure weaker anomalies if they are present.
- 8.2. Evidence of archaeological activity is present in the centre, south and north of the survey area. A series of rectilinear and curvilinear enclosures and partial enclosures, which are grouped into possible settlement areas, have been identified across the survey area. Most of these anomalies have been positioned on elevated positions within the landscape. These areas comprise anomalies indicative of probable cut features, containing anthropogenically enhanced fill. The features include ditched enclosures, trackways, former field systems and discrete pits. These have been interpreted as probable multiphase settlement systems of potential prehistoric to medieval date.
- 8.3. Anomalies corresponding to mapped and unmapped field boundaries have also been detected, along with ridge and furrow cultivation and modern ploughing trends.
- 8.4. Variations in the magnetic background across the survey area reflects changes in superficial deposits mapped in the southern part of the survey area, in addition to possible former paleochannels.
- 8.5. Modern activity has been detected in the form of a complex drainage network running through the survey area, close to canals and field boundaries. Evidence of quarrying has also been detected, corresponding to mapped quarries visible on historical maps. Remnants of a walled garden have been detected in the west, however due to ferrous debris it is not possible to map the full extent of the anomalies.
- 8.6. Multiple linear and curvilinear anomalies have been identified that do not correspond to any mapped features visible on historical OS maps or satellite images of the area. Due to a lack of diagnostic morphology and no correlation to features, these anomalies have been classified as undetermined. Whilst they most likely have an agricultural or natural origin, it cannot be ruled out that these are archaeological in origin.

9. Archiving

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

10. Copyright

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

11. References

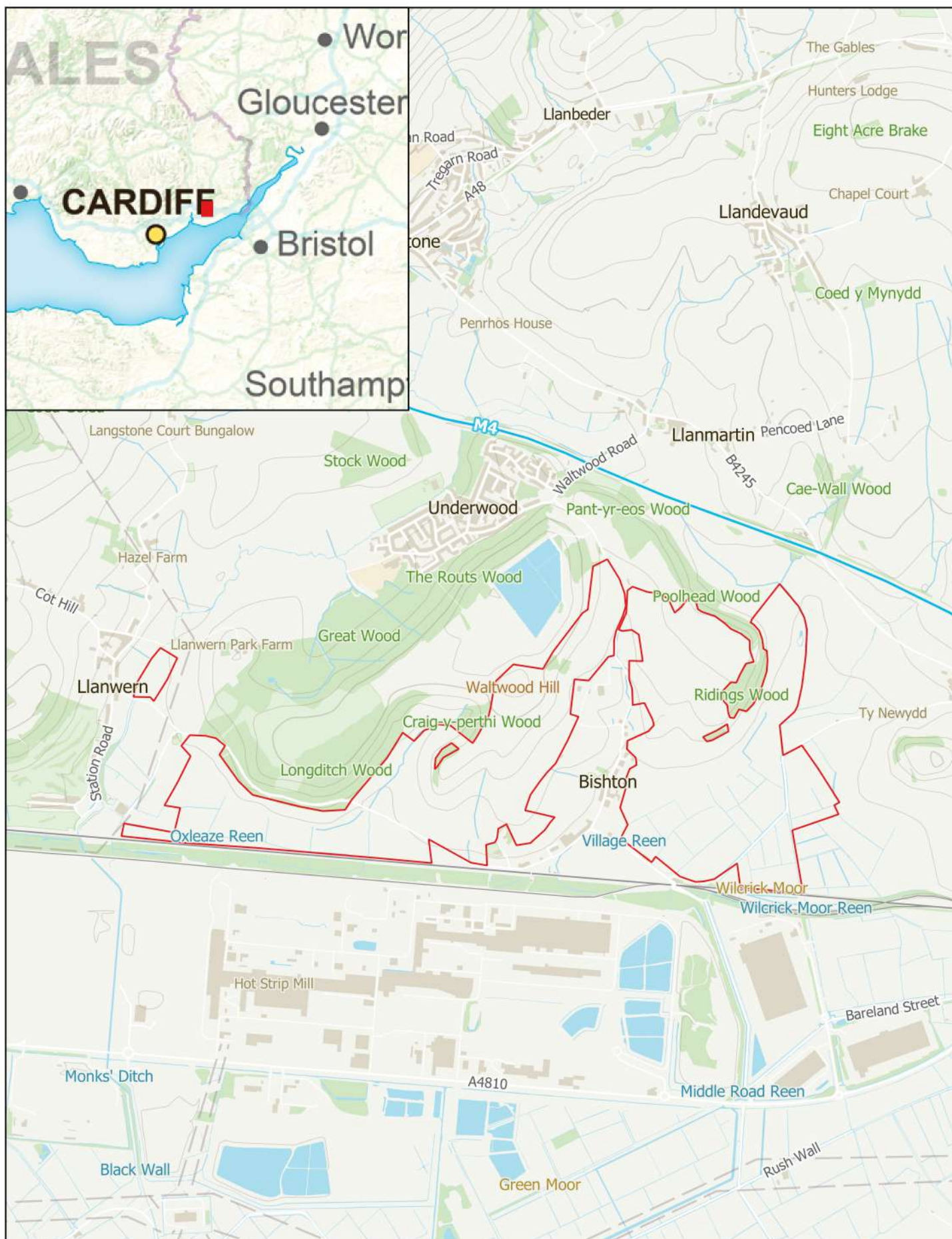
- British Geological Survey, 2022. Geology of Britain. Underwood, Newport.
[<http://mapapps.bgs.ac.uk/geologyofbritain/home.html/>]. Accessed 10/05/2022.
- Chartered Institute for Archaeologists, 2020. Standards and guidance for archaeological geophysical survey. ClfA.
- David, A., Linford, N., Linford, P. and Martin, L., 2008. Geophysical survey in archaeological field evaluation: research and professional services guidelines (2nd edition). Historic England.
- Dyulgerski, K., 2022. Written Scheme of Investigation for a Geophysical Survey of Craig Y Perthi Solar, Wales. MSST1080. Magnitude Surveys Ltd.
- Google Earth, 2022. Google Earth Pro V 7.1.7.2606.
- Historical Wales, 2022. Casnewydd, Gwent, Wales. [<https://historic-wales-rcahmw.hub.arcgis.com/>]. Accessed 01/07/2022.
- Olsen, N., Toffner-Clausen, L., Sabaka, T.J., Brauer, P., Merayo, J.M.G., Jorgensen, J.L., Leger, J.M., Nielsen, O.V., Primdahl, F., and Risbo, T., 2003. Calibration of the Orsted vector magnetometer. Earth Planets Space 55: 11-18.
- Schmidt, A. and Ernenwein, E., 2013. Guide to good practice: geophysical data in archaeology (2nd edition). Oxbow Books: Oxford.
- Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris, A. and Fassbinder, J., 2015. Guidelines for the use of geophysics in archaeology: questions to ask and points to consider. EAC Guidelines 2. European Archaeological Council: Belgium.
- Soilscapes, 2022. Underwood, Newport. Cranfield University, National Soil Resources Institute.
[<http://landis.org.uk>]. Accessed 10/05/2022.

12. Project Metadata

MS Job Code	MSST1080
Project Name	Craig Y Perthi Solar, Wales
Client	JBM Solar
Grid Reference	ST 39454 87435
Survey Techniques	Magnetometry
Survey Size (ha)	219.9ha
Survey Dates	2022-04-19 to 2022-06-26
Project Lead	Krasimir Dyulgerski BA MRes
Project Officer	Krasimir Dyulgerski BA MRes
HER Event No	N/A
OASIS No	N/A
S42 Licence No	N/A
Report Version	0.2

13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	GD DW VK ED	KD	11 August 2022
0.2	Corrections following Project Lead Review	CL	KD	19 August 2022
0.3	Draft report for Director Sign Off	KD	FPC	24 August 2022



MST1080: Craig Y Pethi Solar, Wales

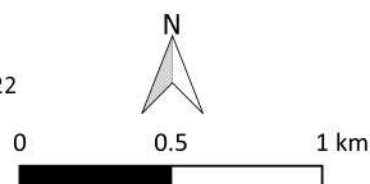
Figure 1 - Site Location

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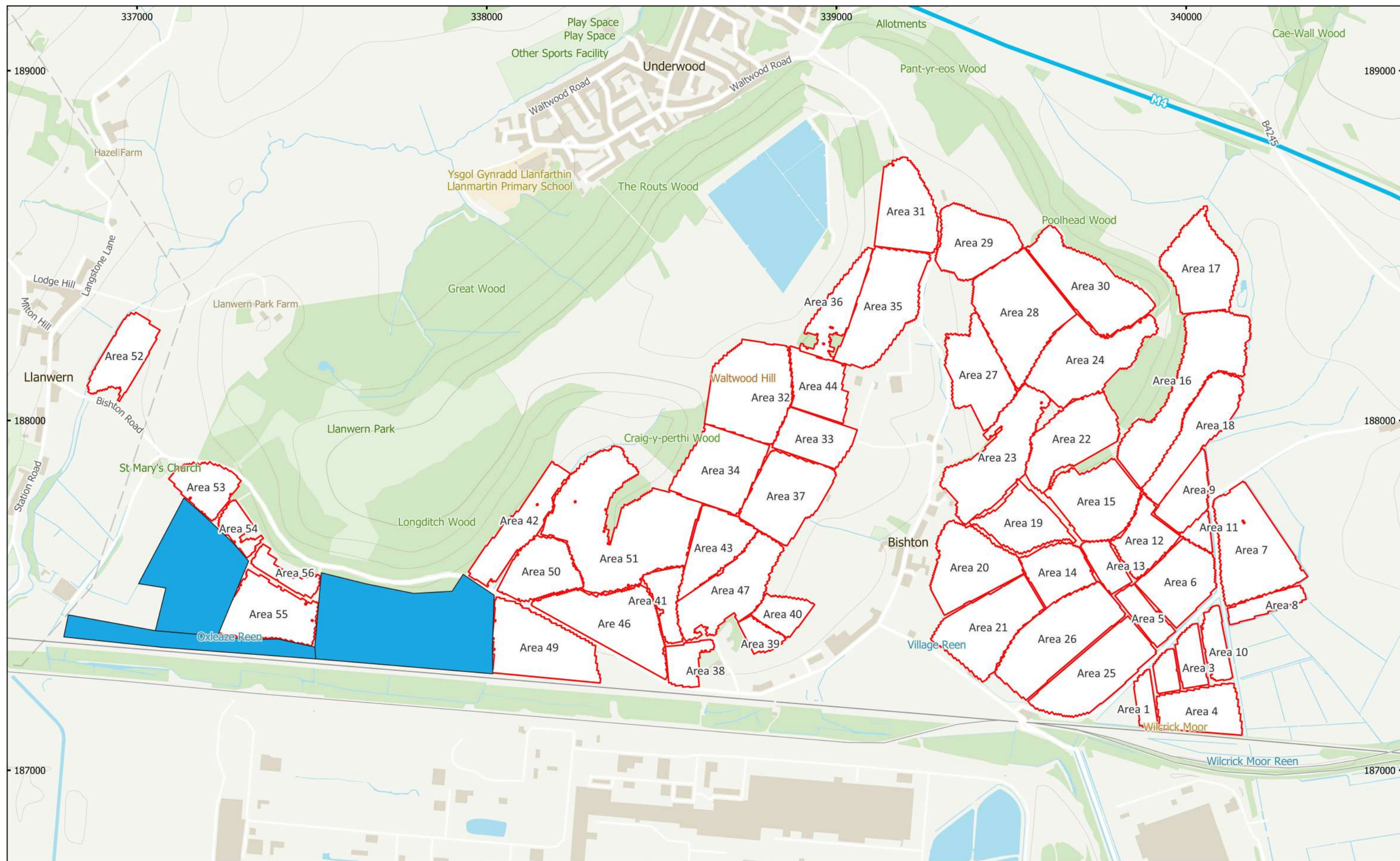
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 Site Boundary

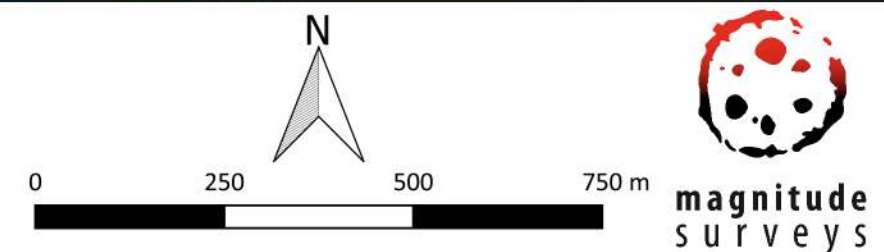


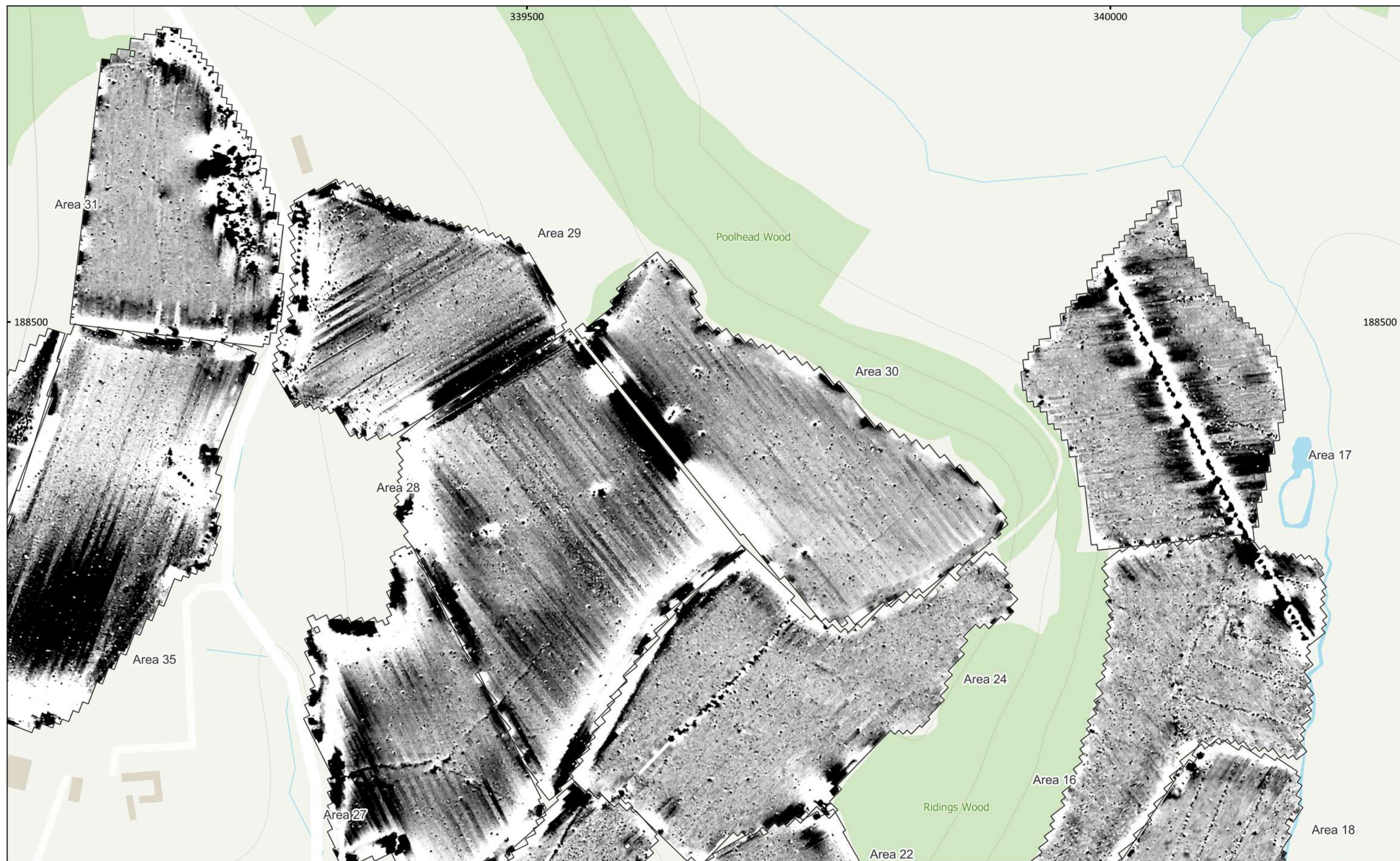
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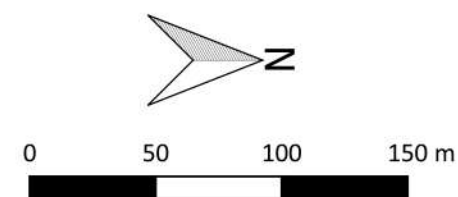
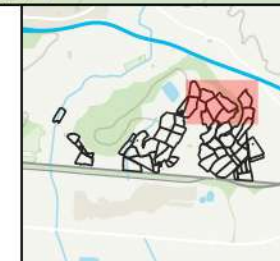
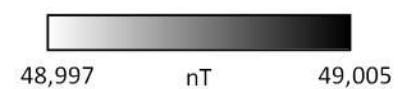
MSST1080: Craig Y Pethi Solar, Wales
 Figure 2 - Location of Survey Areas
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- Survey Extent
- No Access





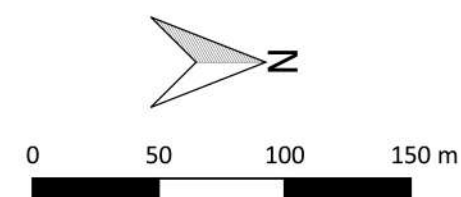
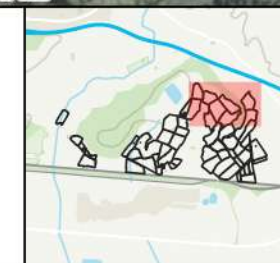
MSST1080: Craig Y Pethi Solar, Wales
 Figure 3 - Magnetic Total Field (Lower Sensor) (Overview) (Northeastern Areas)
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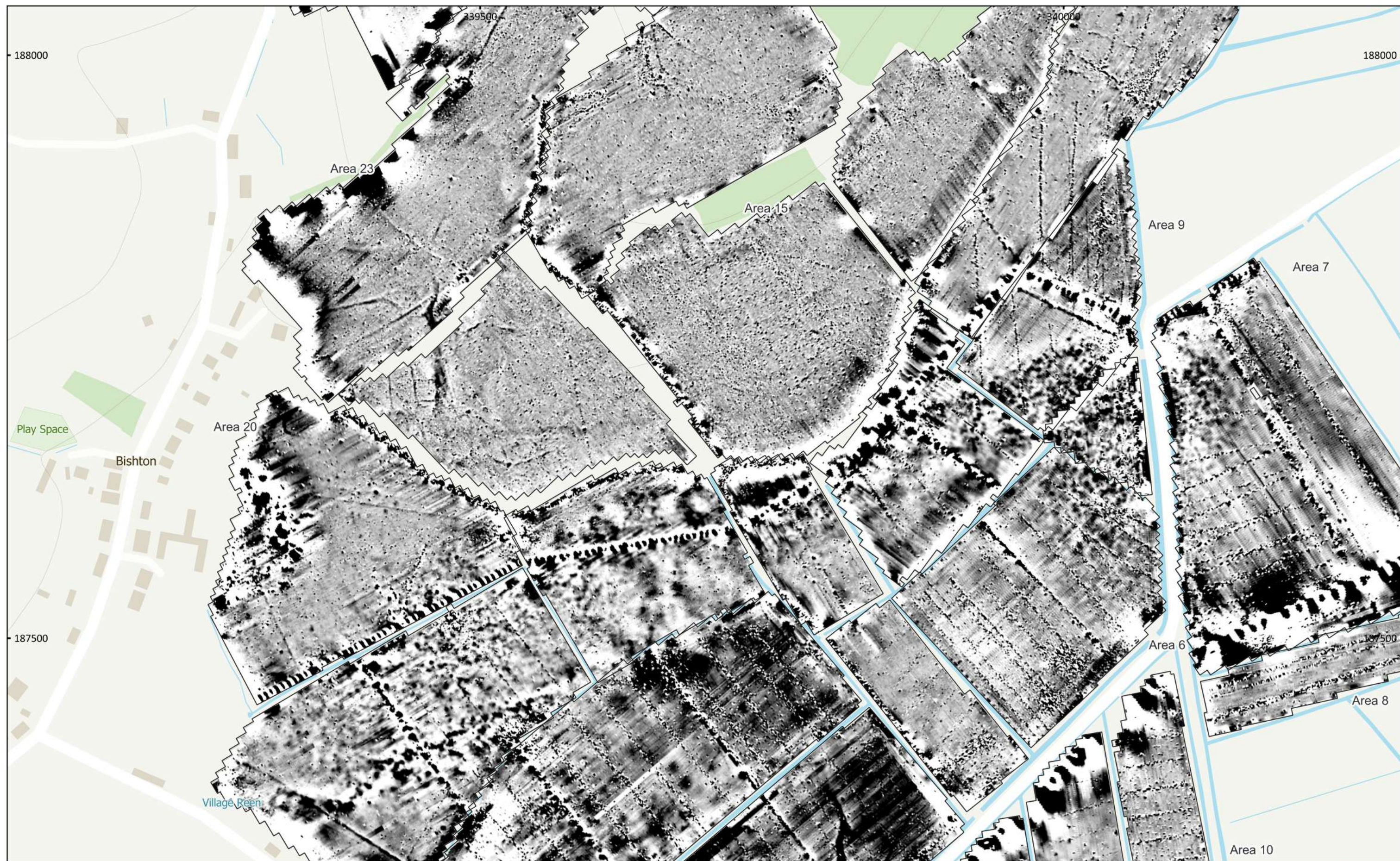




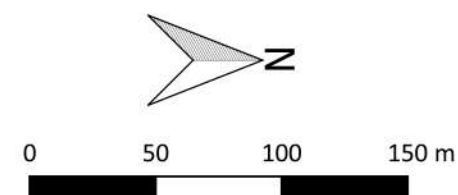
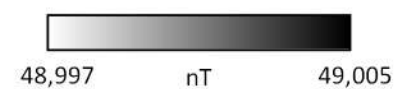
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 Figure 4 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Northeastern Areas)
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 Contains historical mapping © CLS Data 2022: Ordnance Survey, 6" 2nd edition c. 1882-1913
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|-----------------------|-------------------------|--------------------------|
| Agricultural (Strong) | Natural (Spread) | Service |
| Agricultural (Weak) | Magnetic Disturbance | Ridge and Furrow (Trend) |
| Agricultural (Spread) | Ferrous/Debris (Spread) | Drainage Feature |
| Undetermined (Strong) | Quarry | Ferrous (Spike) |
| Undetermined (Weak) | Agricultural (Trend) | |
| Undetermined (Spread) | Data Artefact | |





MSST1080: Craig Y Pethi Solar, Wales
 Figure 5 - Magnetic Total Field (Lower Sensor) (Overview) (Eastern Areas)
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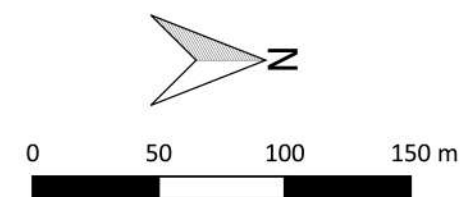
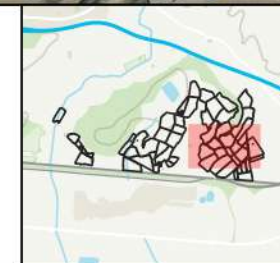


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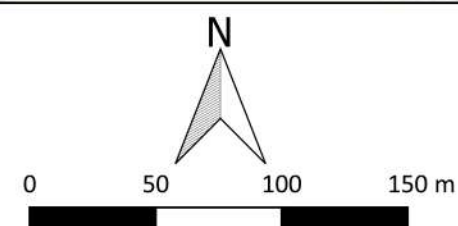
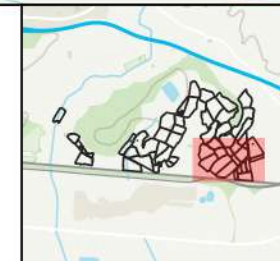
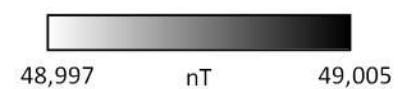
MSST1080: Craig Y Pethi Solar, Wales
 Figure 6 - Magnetic Interpretation Over Combined Historical Maps and
 Satellite Imagery (Overview) (Eastern Areas)
 1:3,000 @ A3
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- | | | |
|---------------------------------|-------------------------|---------------------------|
| ■ Archaeology Probable (Strong) | ■ Undetermined (Strong) | ● Ferrous/Debris (Spread) |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Weak) | ● Quarry |
| ■ Archaeology Possible (Strong) | ■ Undetermined (Spread) | — Agricultural (Trend) |
| ■ Archaeology Possible (Weak) | ■ Natural (Strong) | --- Service |
| ■ Agricultural (Strong) | ■ Natural (Weak) | — Drainage Feature |
| ■ Agricultural (Weak) | ■ Natural (Spread) | ● Ferrous (Spike) |
| ■ Agricultural (Spread) | ■ Magnetic Disturbance | |





MSST1080: Craig Y Pethi Solar, Wales
 Figure 7 - Magnetic Total Field (Lower Sensor) (Overview) (Southeastern Areas)
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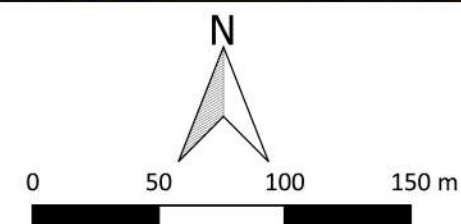
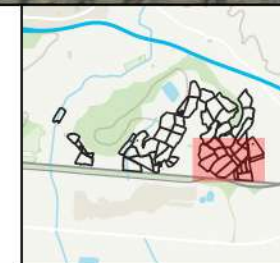


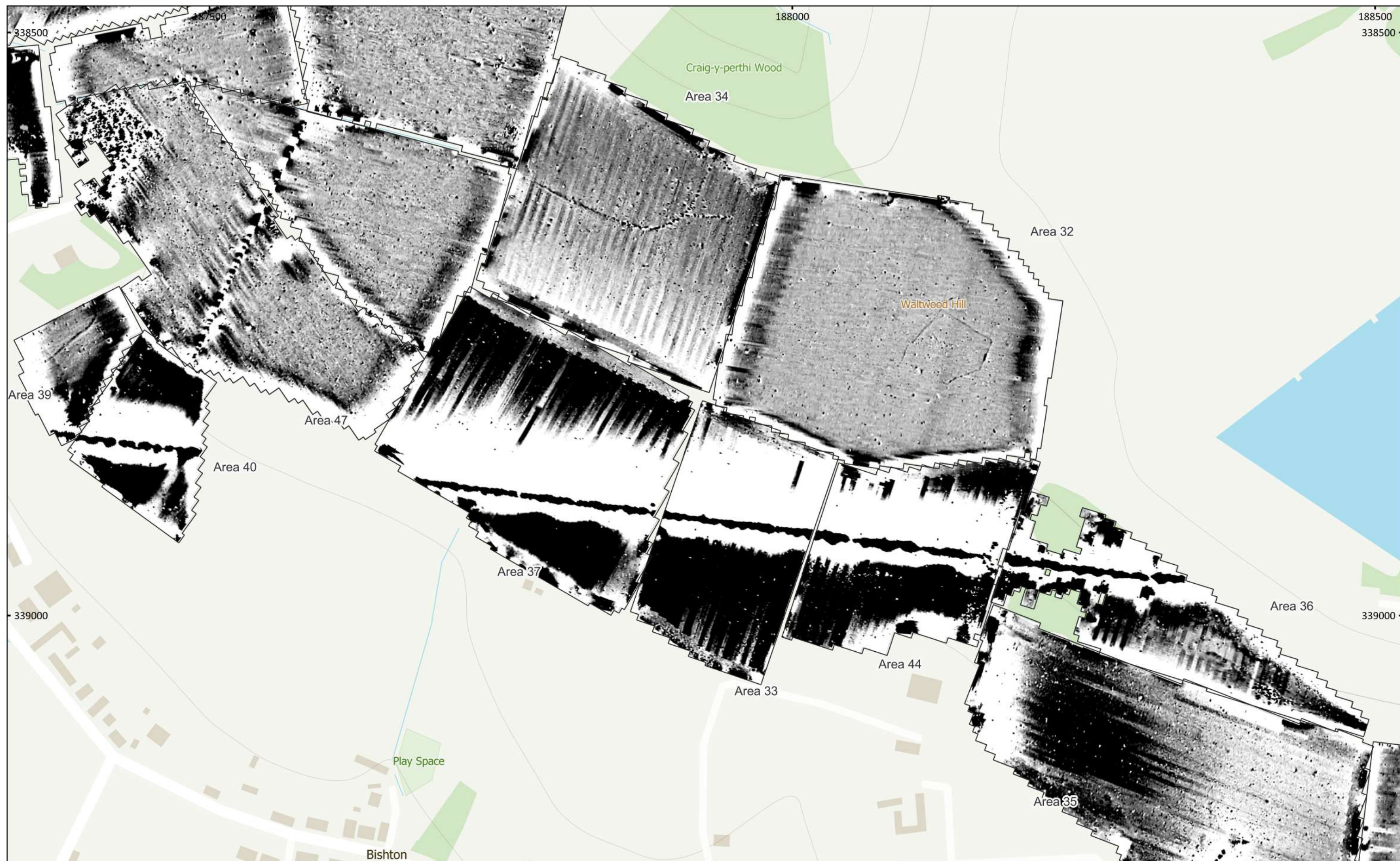
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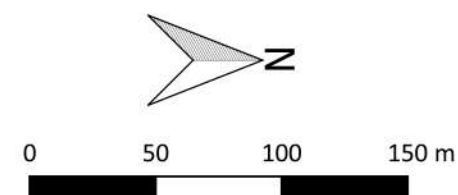
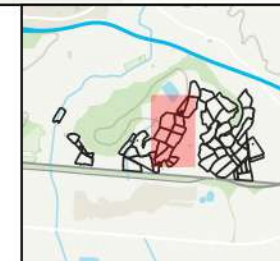
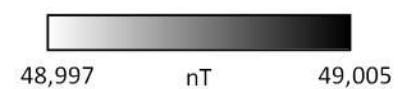
MSST1080: Craig Y Pethi Solar, Wales
 Figure 8 - Magnetic Interpretation Over Combined Historical Maps and Satellite Imagery (Overview) (Southeastern Areas)
 1:3,000 @ A3
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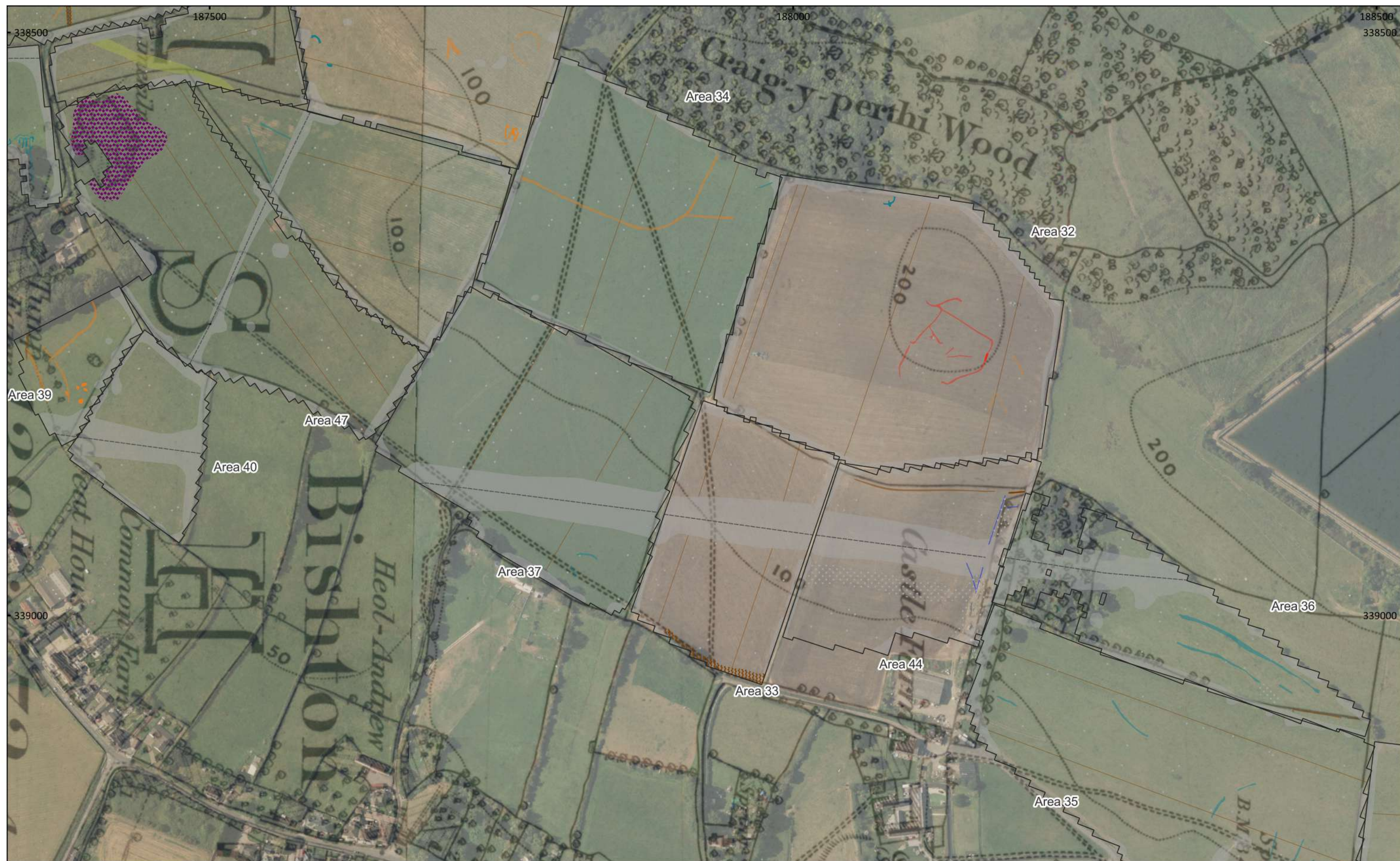
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|-------------------------------|-----------------------|-------------------------|
| Archaeology Probable (Strong) | Agricultural (Spread) | Ferrous/Debris (Spread) |
| Archaeology Probable (Weak) | Undetermined (Weak) | Quarry |
| Archaeology Possible (Strong) | Natural (Strong) | Service |
| Archaeology Possible (Weak) | Natural (Weak) | Drainage Feature |
| Agricultural (Strong) | Natural (Spread) | Ferrous (Spike) |
| Agricultural (Weak) | Magnetic Disturbance | |





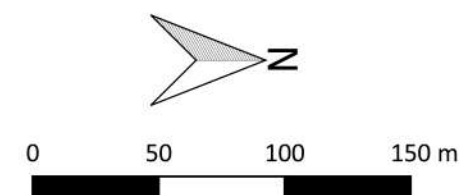
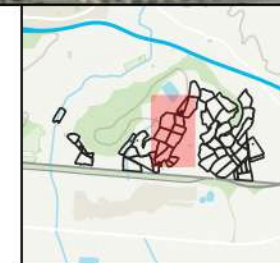
MSST1080: Craig Y Pethi Solar, Wales
 Figure 9 - Magnetic Total Field (Lower Sensor) (Overview) (Central Areas)
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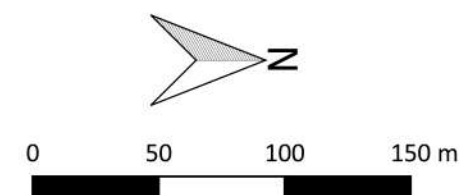
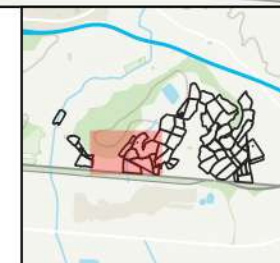
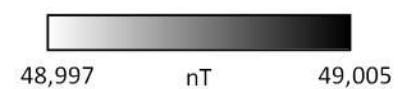
MSST1080: Craig Y Pethi Solar, Wales
 Figure 10 - Magnetic Interpretation Over Combined Historical Maps and
 Satellite Imagery (Overview) (Central Areas)
 1:3,000 @ A3
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- | | | |
|-------------------------------|-------------------------|----------------------|
| Archaeology Probable (Strong) | Agricultural (Spread) | Quarry |
| Archaeology Probable (Weak) | Undetermined (Strong) | Agricultural (Trend) |
| Archaeology Possible (Strong) | Undetermined (Weak) | Service |
| Archaeology Possible (Weak) | Natural (Weak) | Drainage Feature |
| Agricultural (Strong) | Magnetic Disturbance | Ferrous (Spike) |
| Agricultural (Weak) | Ferrous/Debris (Spread) | |





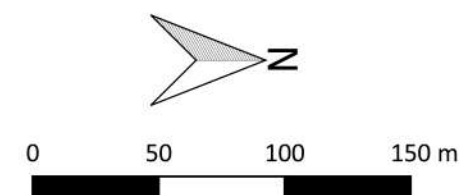
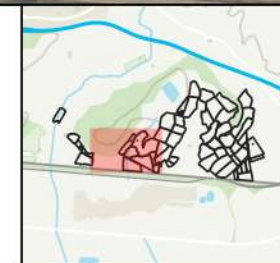
MSST1080: Craig Y Pethi Solar, Wales
Figure 11 - Magnetic Total Field (Lower Sensor) (Overview) (Central Areas)
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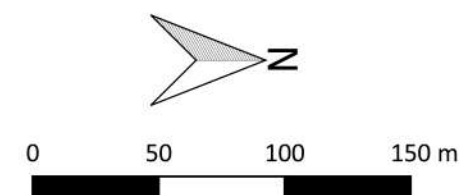
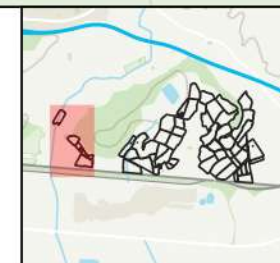
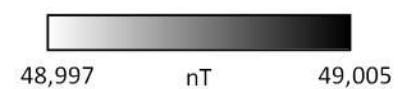
MSST1080: Craig Y Pethi Solar, Wales
 Figure 12 - Magnetic Interpretation Over Combined Historical Maps and
 Satellite Imagery (Overview) (Central Areas)
 1:3,000 @ A3
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- | | | |
|--|---|---|
| ■ Archaeology Probable (Strong) | ■ Agricultural (Spread) | ■ Quarry |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Strong) | — Agricultural (Trend) |
| ■ Archaeology Possible (Strong) | ■ Undetermined (Weak) | --- Service |
| ■ Archaeology Possible (Weak) | ■ Natural (Weak) | --- Ridge and Furrow (Trend) |
| ■ Agricultural (Strong) | ■ Magnetic Disturbance | --- Drainage Feature |
| ■ Agricultural (Weak) | ■ Ferrous/Debris (Spread) | • Ferrous (Spike) |





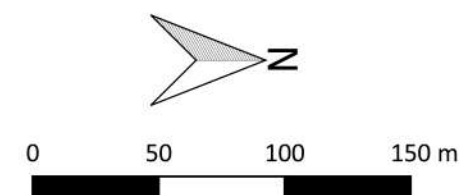
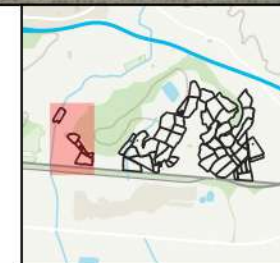
MSST1080: Craig Y Pethi Solar, Wales
 Figure 13 - Magnetic Total Field (Lower Sensor) (Overview) (Western Areas)
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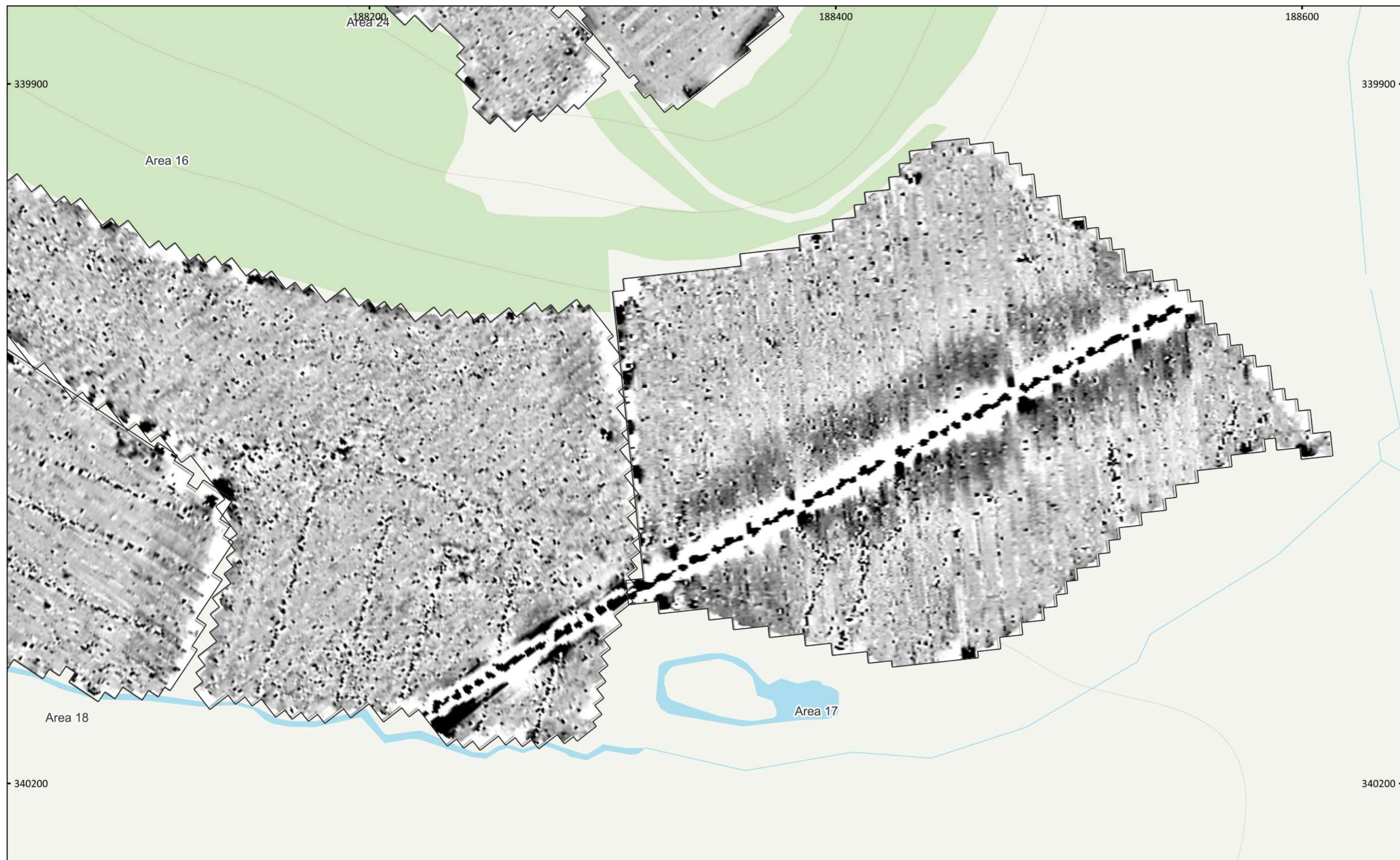




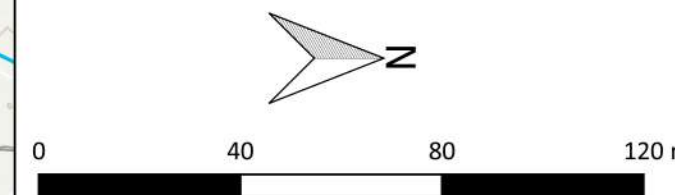
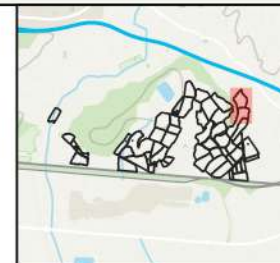
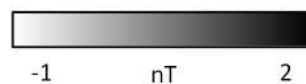
MSST1080: Craig Y Pethi Solar, Wales
 Figure 14 - Magnetic Interpretation Over Combined Historical Maps and
 Satellite Imagery (Overview) (Western Areas)
 1:3,000 @ A3
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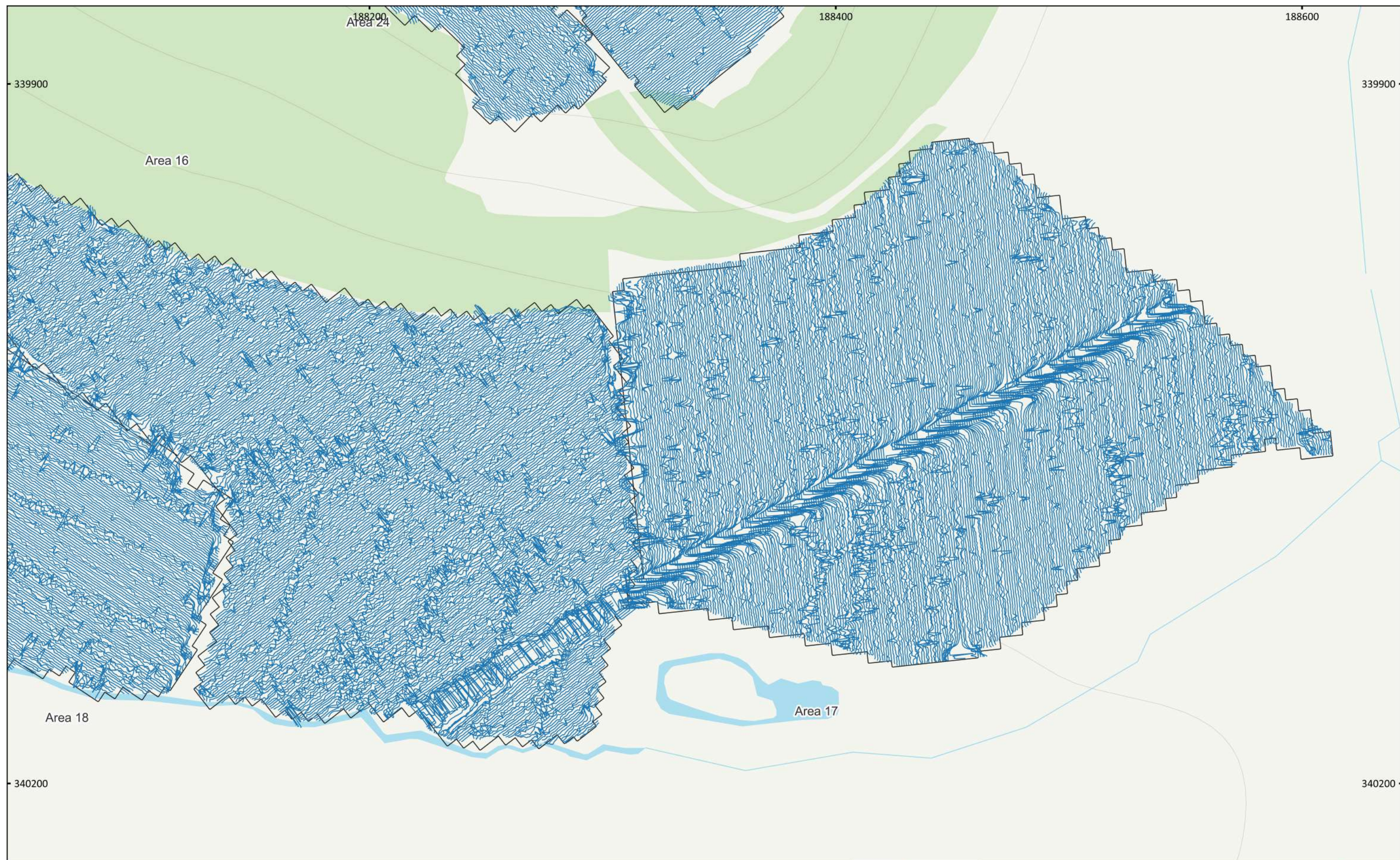
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|-----------------------|-------------------------|------------------|
| Agricultural (Weak) | Magnetic Disturbance | Service |
| Agricultural (Spread) | Ferrous/Debris (Spread) | Drainage Feature |
| Undetermined (Strong) | Structural Remnants | Ferrous (Spike) |
| Undetermined (Weak) | Agricultural (Trend) | |



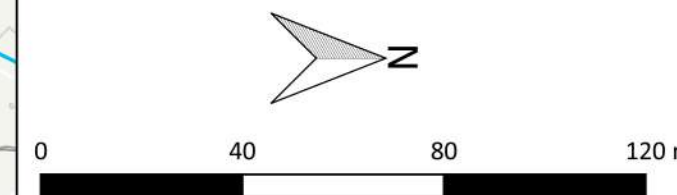
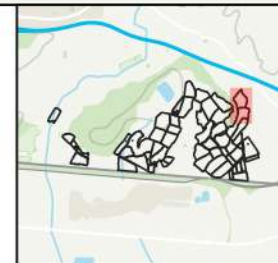


MSST1080: Craig Y Pethi Solar, Wales
 Figure 15 - Magnetic Gradient (Areas 16, 17 & 18)
 1:1,500 @ A3
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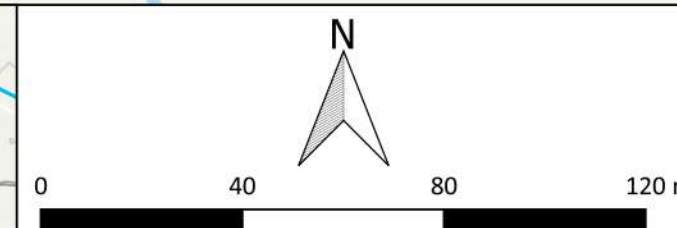
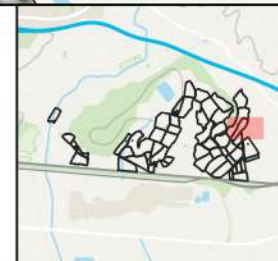
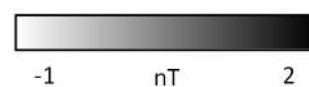


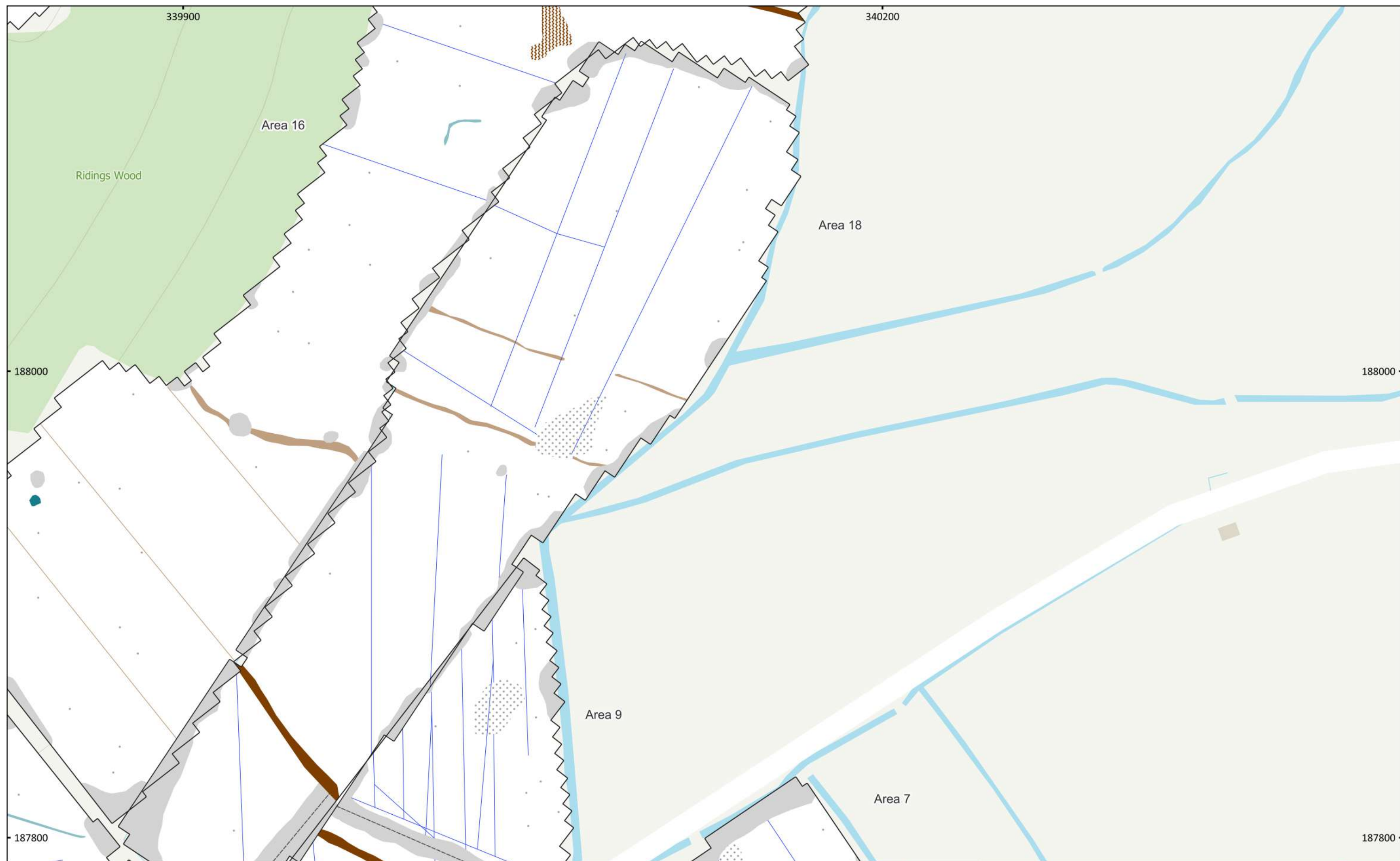
MSST1080: Craig Y Pethi Solar, Wales
Figure 17 - XY Trace Plot (Areas 16, 17 & 18)
30nT/cm at 1:1,500 @ A3
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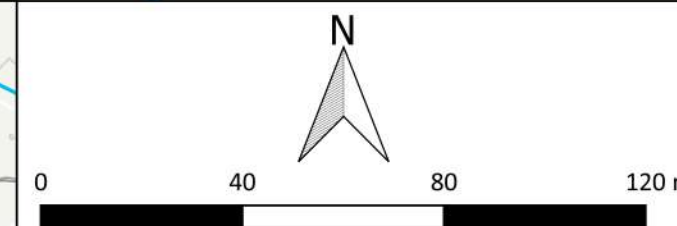
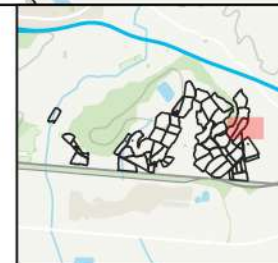
MSST1080: Craig Y Pethi Solar, Wales
Figure 18 - Magnetic Gradient (Areas 9, 16 & 18)
1:1,500 @ A3
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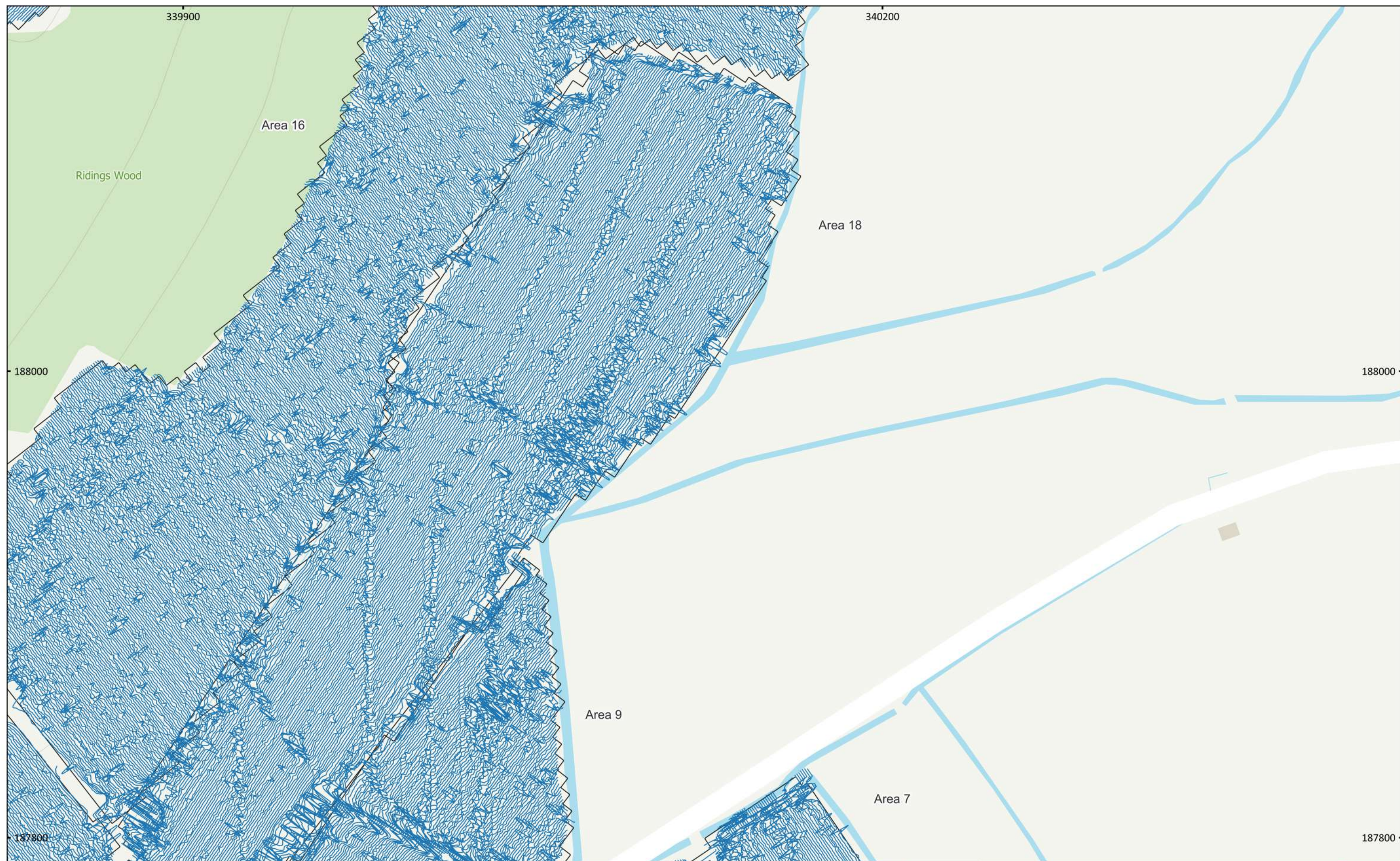




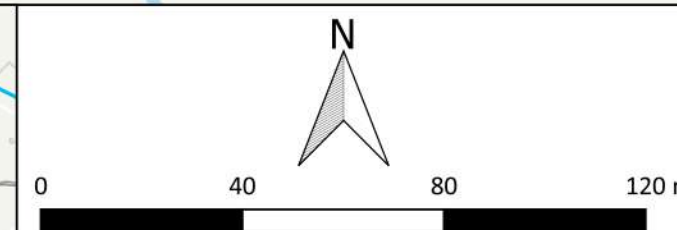
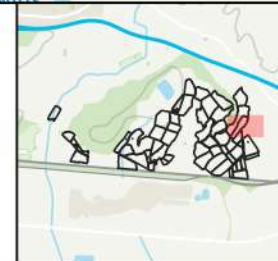
MSST1080: Craig Y Pethi Solar, Wales
 Figure 19 - Magnetic Interpretation (Areas 9, 16 & 18)
 1:1,500 @ A3
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- | | | |
|-----------------------|-------------------------|------------------|
| Agricultural (Strong) | Undetermined (Weak) | Service |
| Agricultural (Weak) | Magnetic Disturbance | Drainage Feature |
| Agricultural (Spread) | Ferrous/Debris (Spread) | Ferrous (Spike) |
| Undetermined (Strong) | Agricultural (Trend) | |

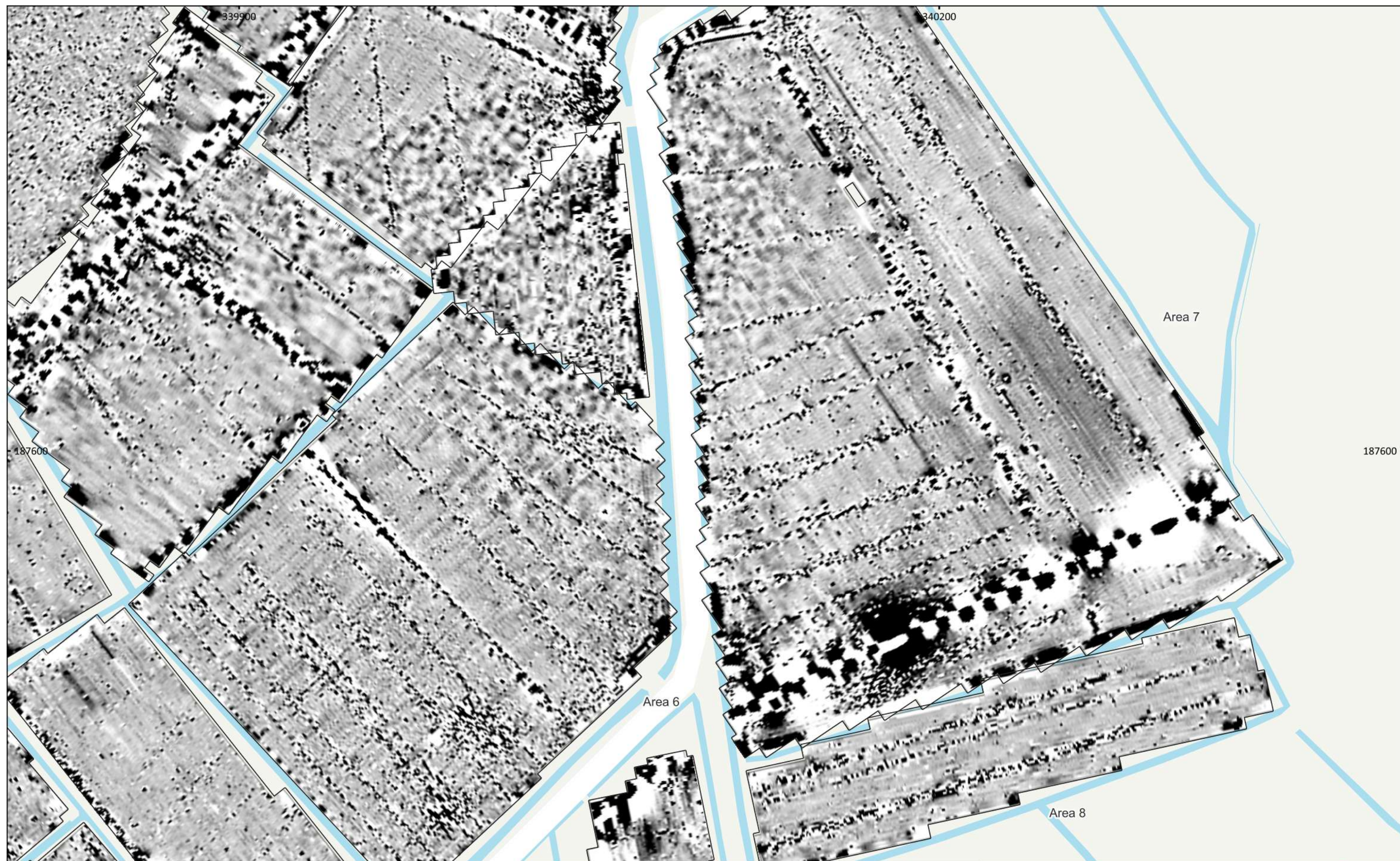




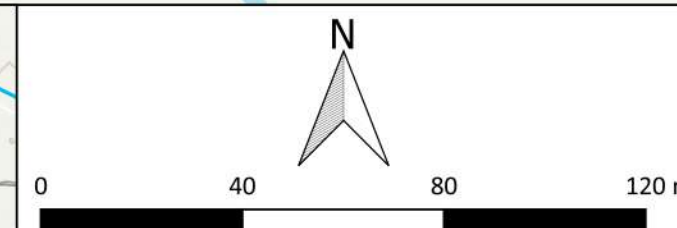
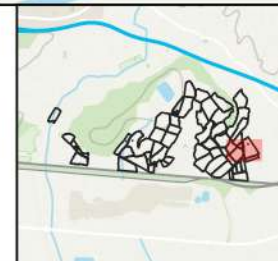
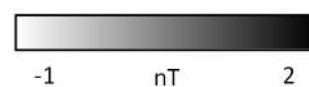
MSST1080: Craig Y Pethi Solar, Wales
Figure 20 - XY Trace Plot (Areas 9, 16 & 18)
30nT/cm at 1:1,500 @ A3
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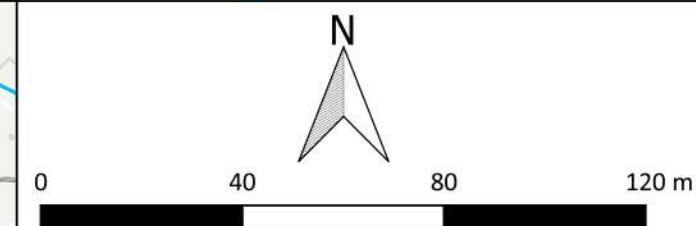
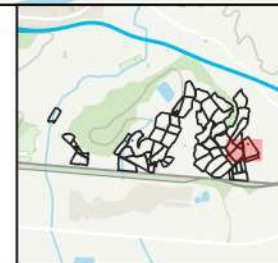
MSST1080: Craig Y Pethi Solar, Wales
 Figure 21 - Magnetic Gradient (Areas 5, 6, 7, 8, 9, 11, 12 & 13)
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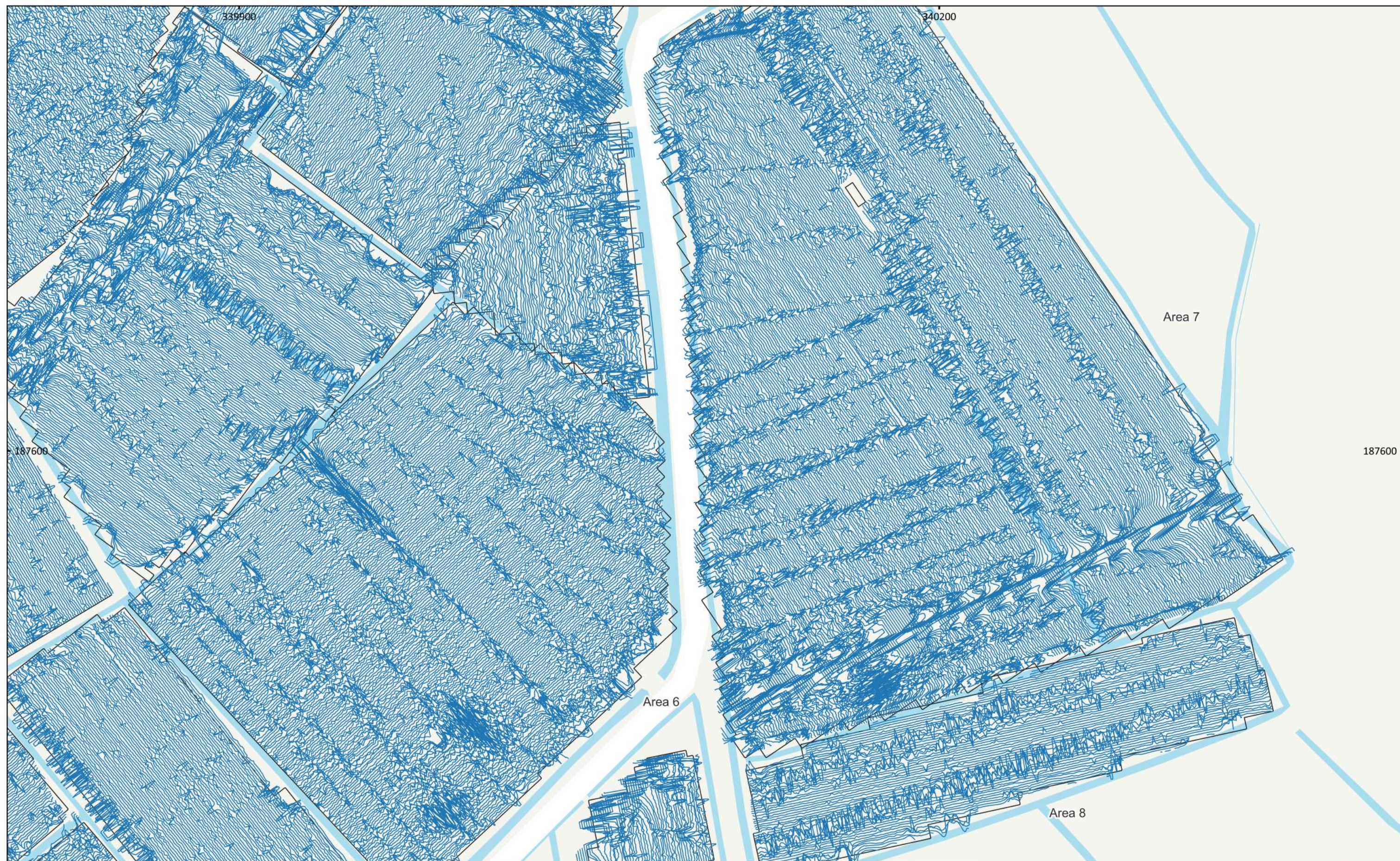




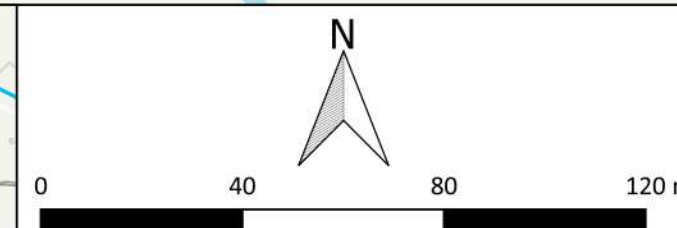
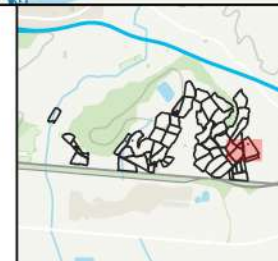
MSST1080: Craig Y Pethi Solar, Wales
 Figure 22 - Magnetic Interpretation (Areas 5, 6, 7, 8, 9, 11, 12 & 13)
 1:1,500 @ A3
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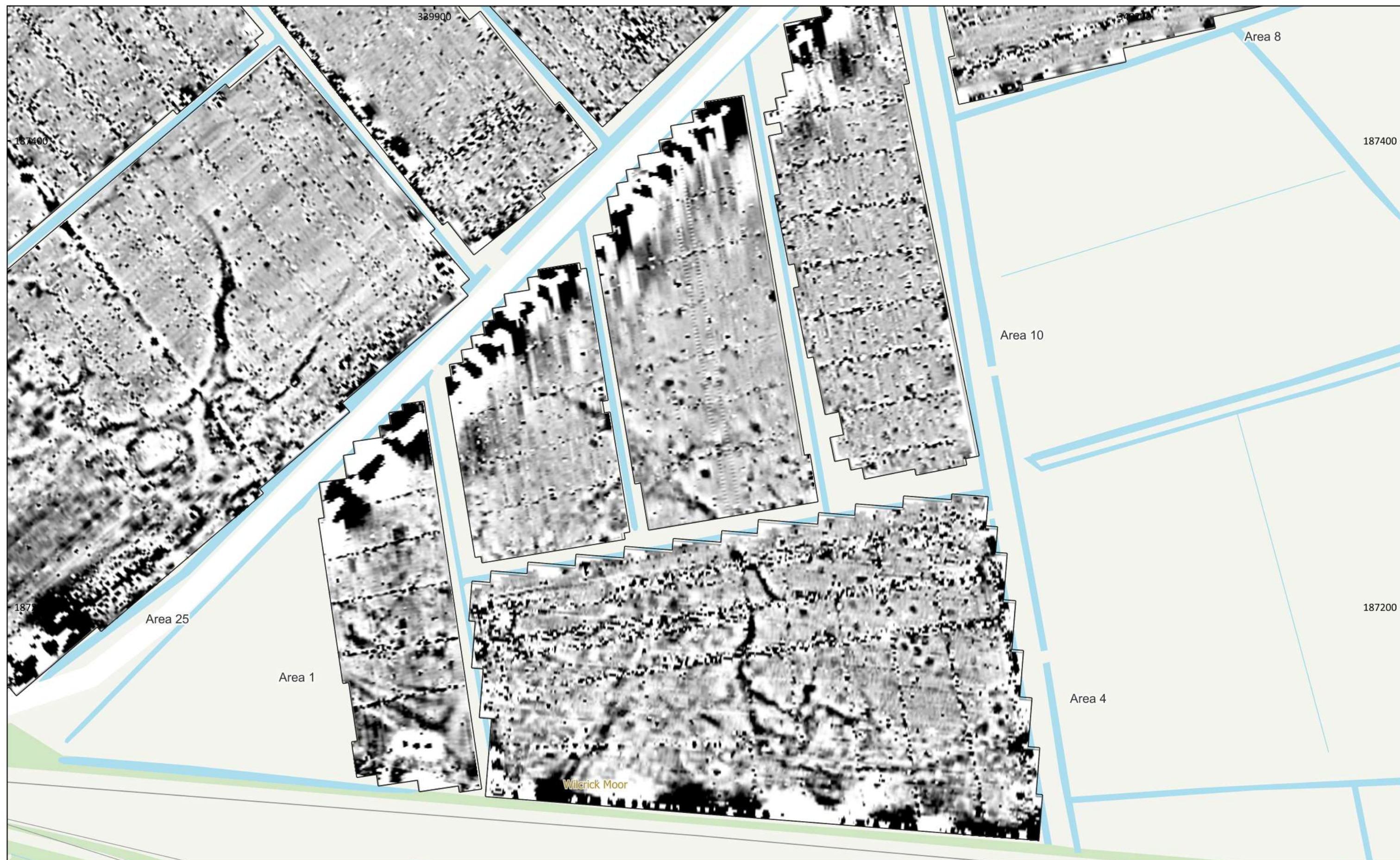
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|-----------------------|-------------------------|------------------|
| Agricultural (Strong) | Natural (Spread) | Service |
| Agricultural (Weak) | Magnetic Disturbance | Drainage Feature |
| Agricultural (Spread) | Ferrous/Debris (Spread) | Ferrous (Spike) |



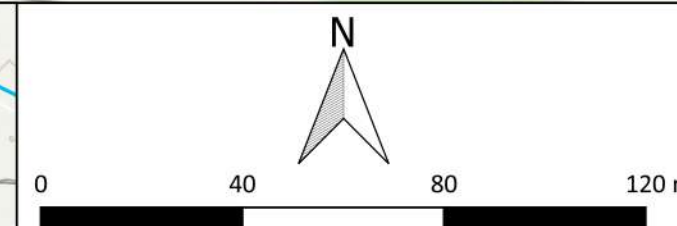
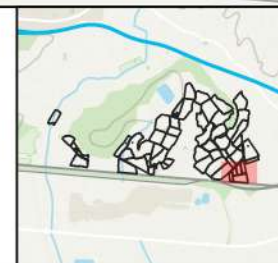
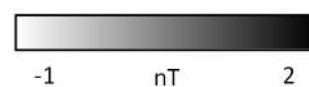


MSST1080: Craig Y Pethi Solar, Wales
 Figure 23 - XY Trace Plot (Areas 5, 6, 7, 8, 9, 11, 12 & 13)
 30nT/cm at 1:1,500 @ A3
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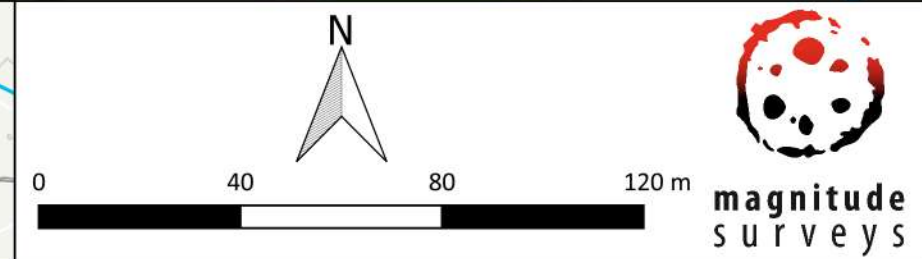
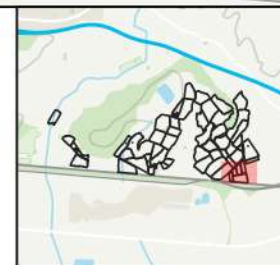
MSST1080: Craig Y Pethi Solar, Wales
 Figure 24 - Magnetic Gradient (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)
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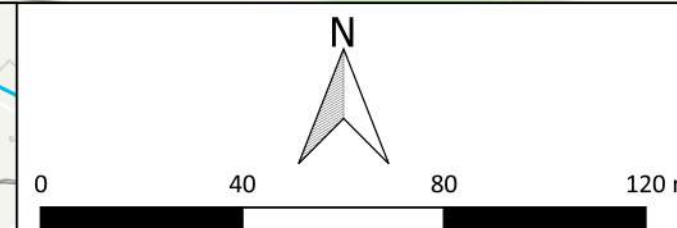
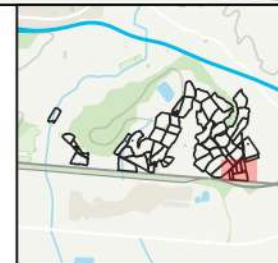
MSST1080: Craig Y Pethi Solar, Wales
 Figure 25 - Magnetic Interpretation (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)
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|-----------------------|-------------------------|------------------|
| Agricultural (Strong) | Natural (Weak) | Service |
| Agricultural (Spread) | Natural (Spread) | Drainage Feature |
| Undetermined (Weak) | Magnetic Disturbance | Ferrous (Spike) |
| Natural (Strong) | Ferrous/Debris (Spread) | |

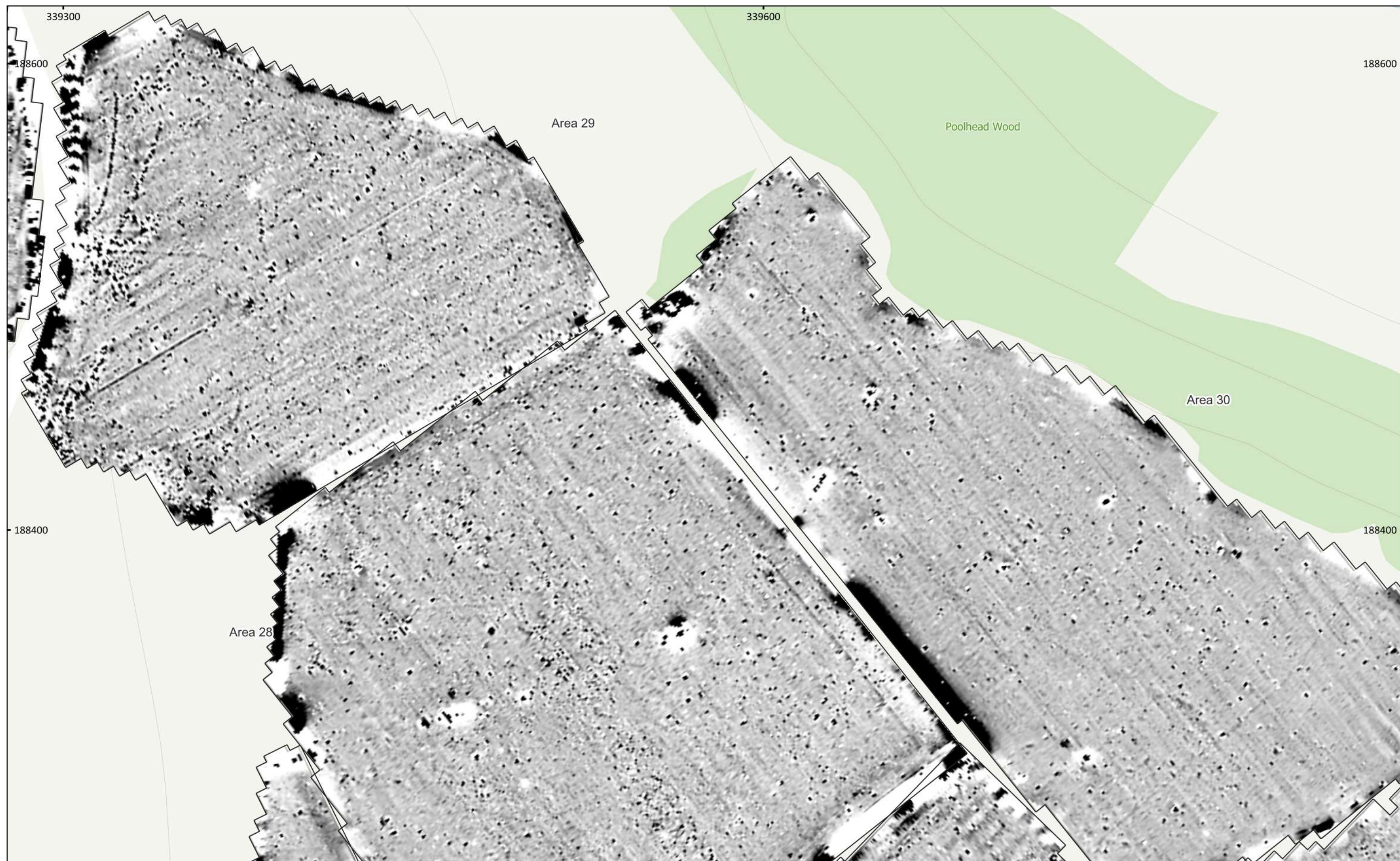




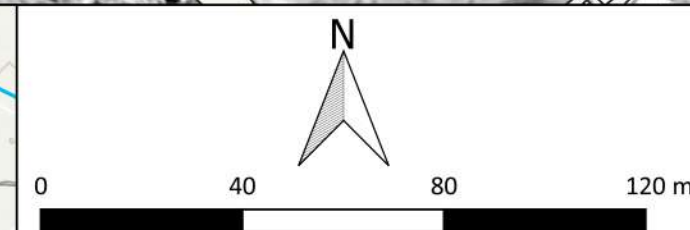
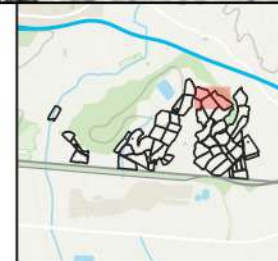
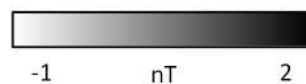
MSST1080: Craig Y Pethi Solar, Wales
Figure 26 - XY Trace Plot (Areas 1, 2, 3, 4, 5, 6, 8, 10 & 25)
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MSST1080: Craig Y Pethi Solar, Wales
 Figure 27 - Magnetic Gradient (Areas 28, 29 & 30)
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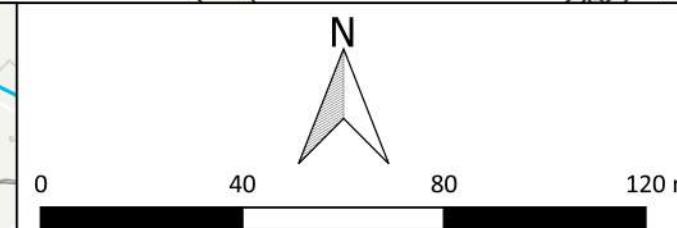
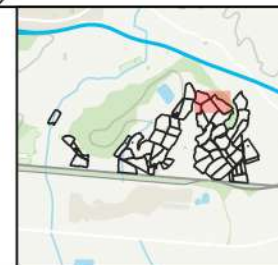


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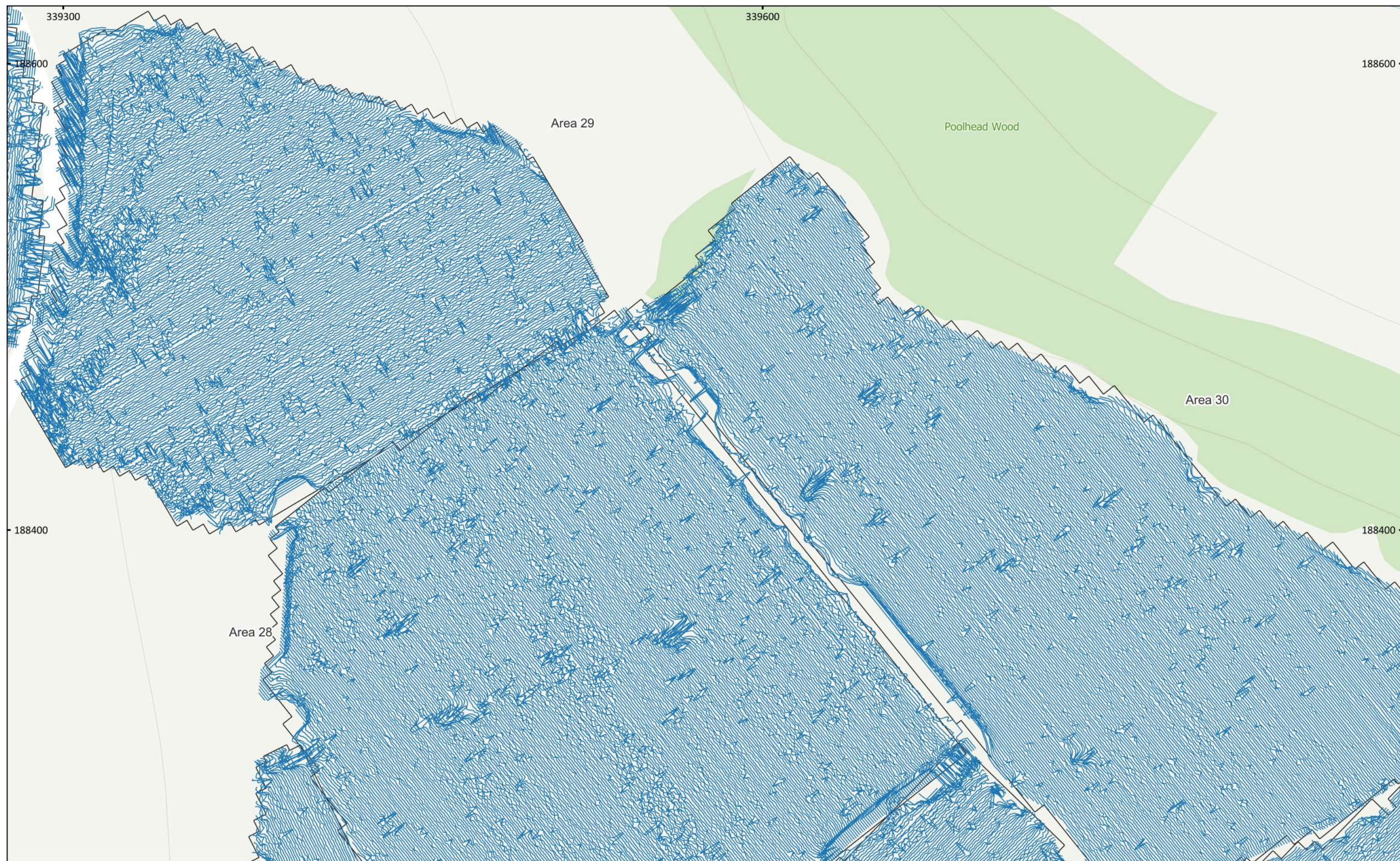


MSST1080: Craig Y Pethi Solar, Wales
 Figure 28 - Magnetic Interpretation (Areas 28, 29 & 30)
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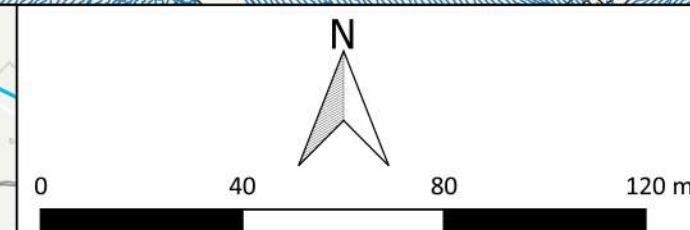
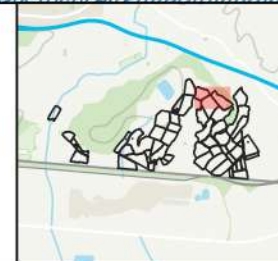
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|-----------------------|----------------------|--------------------------|
| Agricultural (Strong) | Undetermined (Weak) | Data Artefact |
| Agricultural (Weak) | Natural (Spread) | Ridge and Furrow (Trend) |
| Agricultural (Spread) | Magnetic Disturbance | Drainage Feature |
| Undetermined (Strong) | Agricultural (Trend) | Ferrous (Spike) |



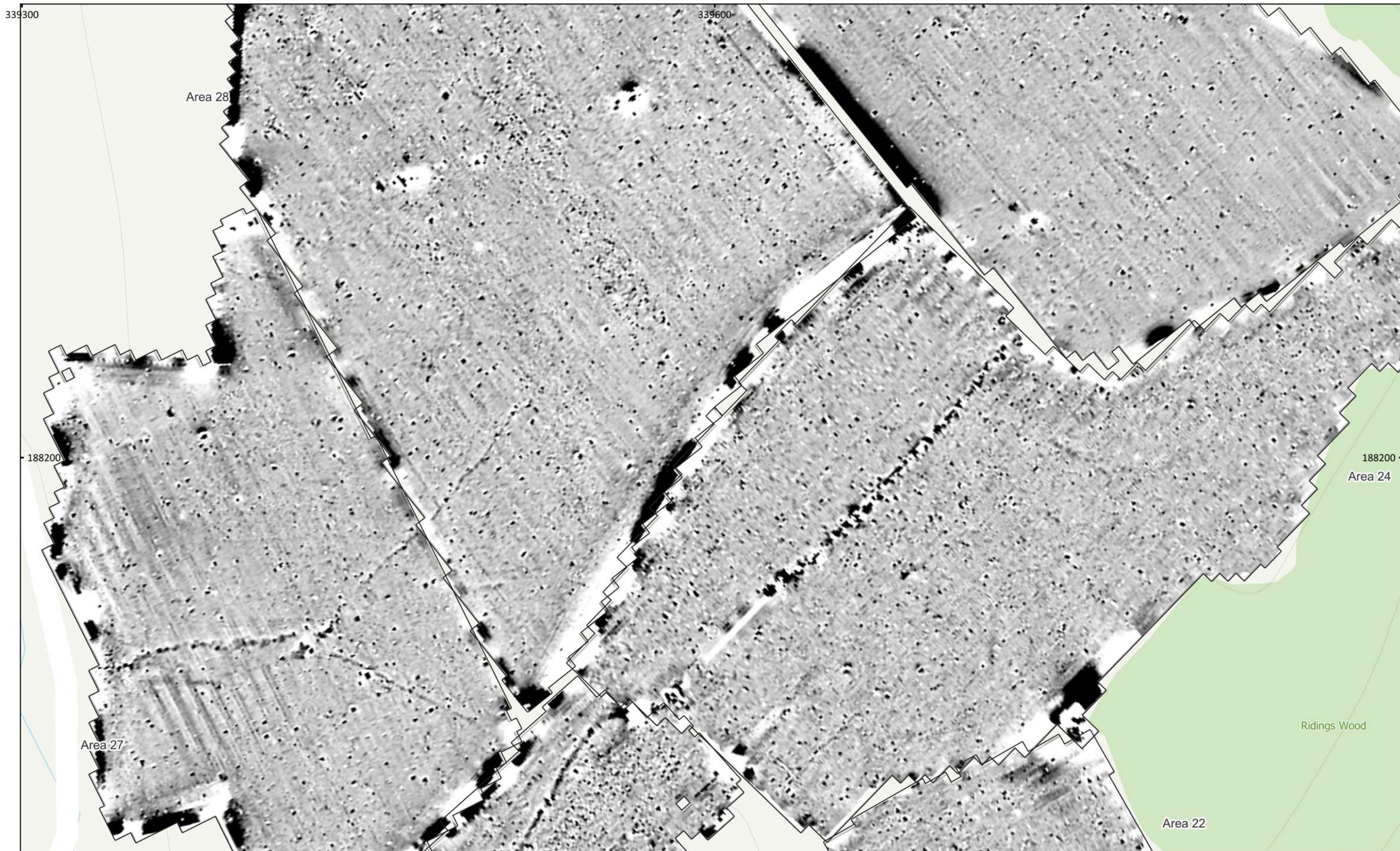
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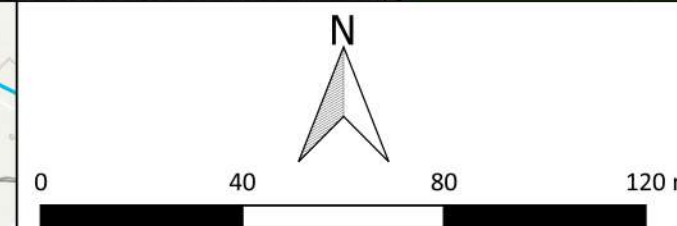
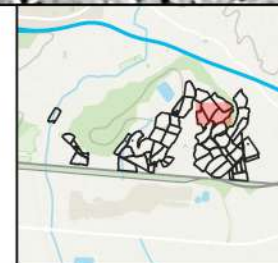
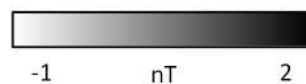
MSST1080: Craig Y Pethi Solar, Wales
Figure 29 - XY Trace Plot (Areas 28, 29 & 30)
30nT/cm at 1:1,500 @ A3
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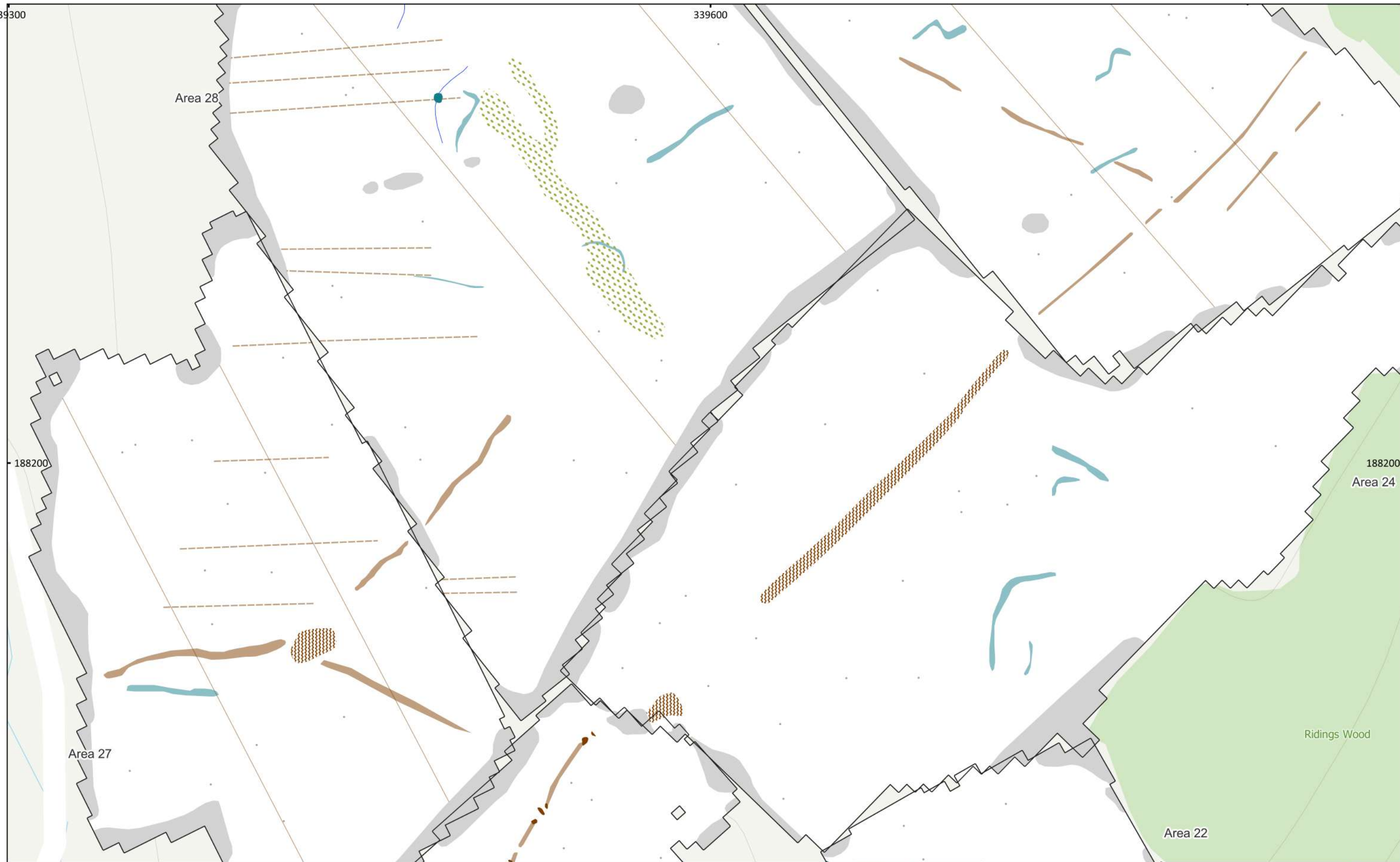
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MSST1080: Craig Y Pethi Solar, Wales
Figure 30 - Magnetic Gradient (Areas 22, 23, 24, 27, 28 & 30)
1:1,500 @ A3
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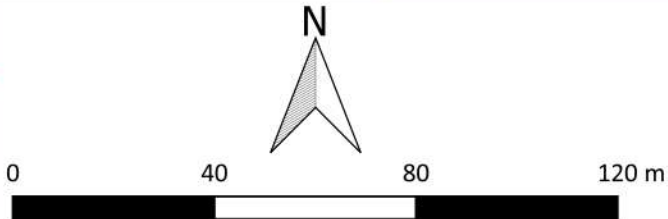
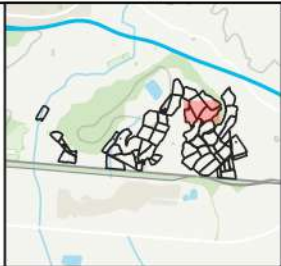


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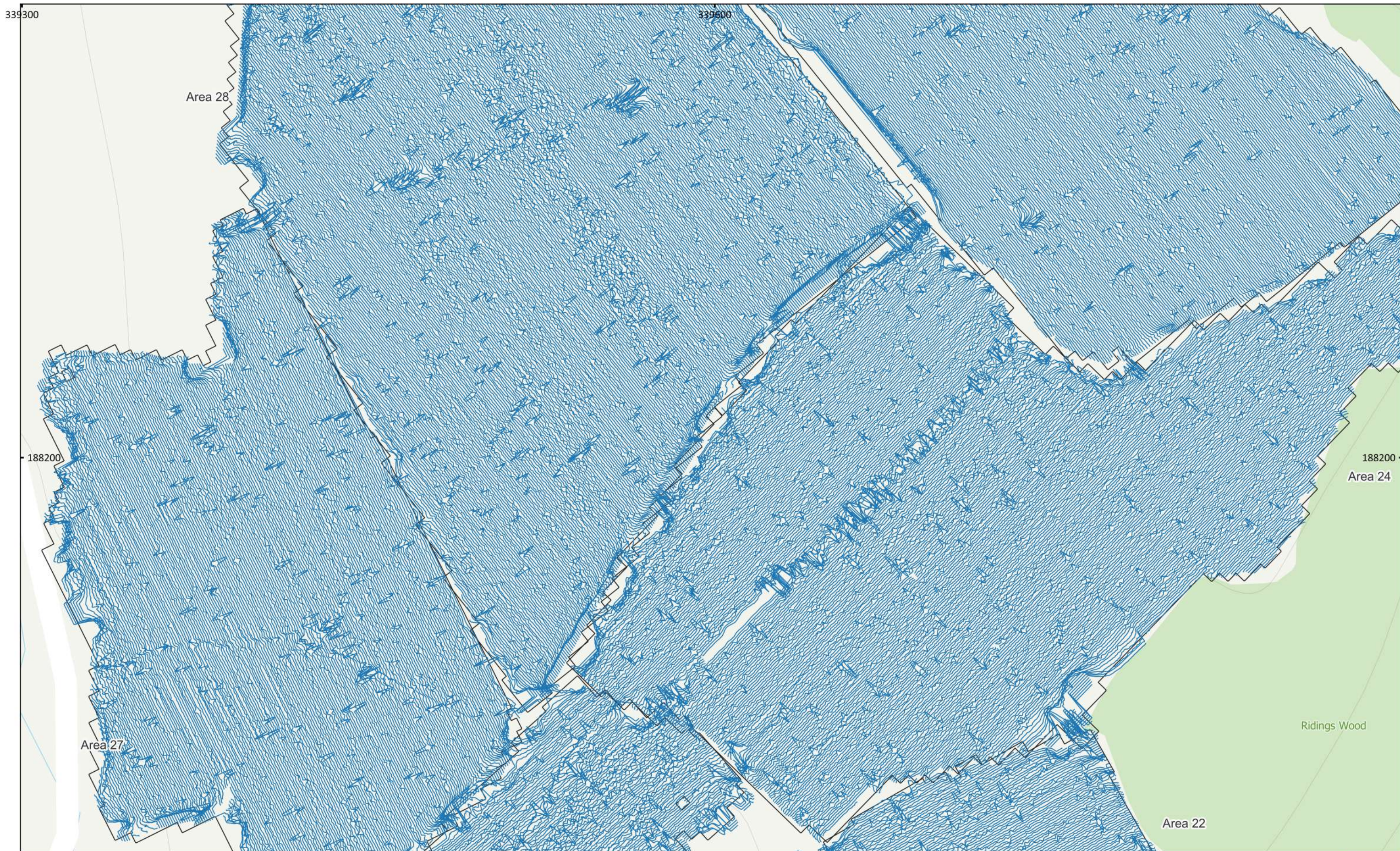


MSST1080: Craig Y Pethi Solar, Wales
Figure 31 - Magnetic Interpretation (Areas 22, 23, 24, 27, 28 & 30)
1:1,500 @ A3
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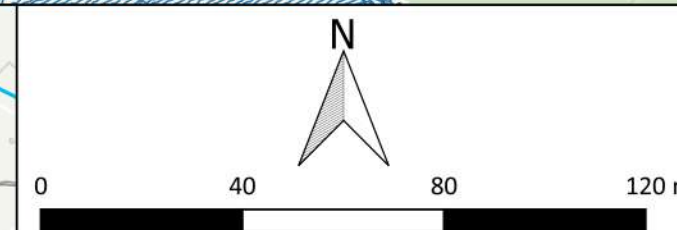
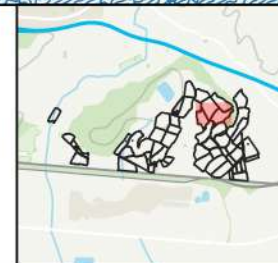
- | | | |
|-----------------------|----------------------|--------------------------|
| Agricultural (Strong) | Undetermined (Weak) | Ridge and Furrow (Trend) |
| Agricultural (Weak) | Natural (Spread) | Drainage Feature |
| Agricultural (Spread) | Magnetic Disturbance | Ferrous (Spike) |
| Undetermined (Strong) | Agricultural (Trend) | |

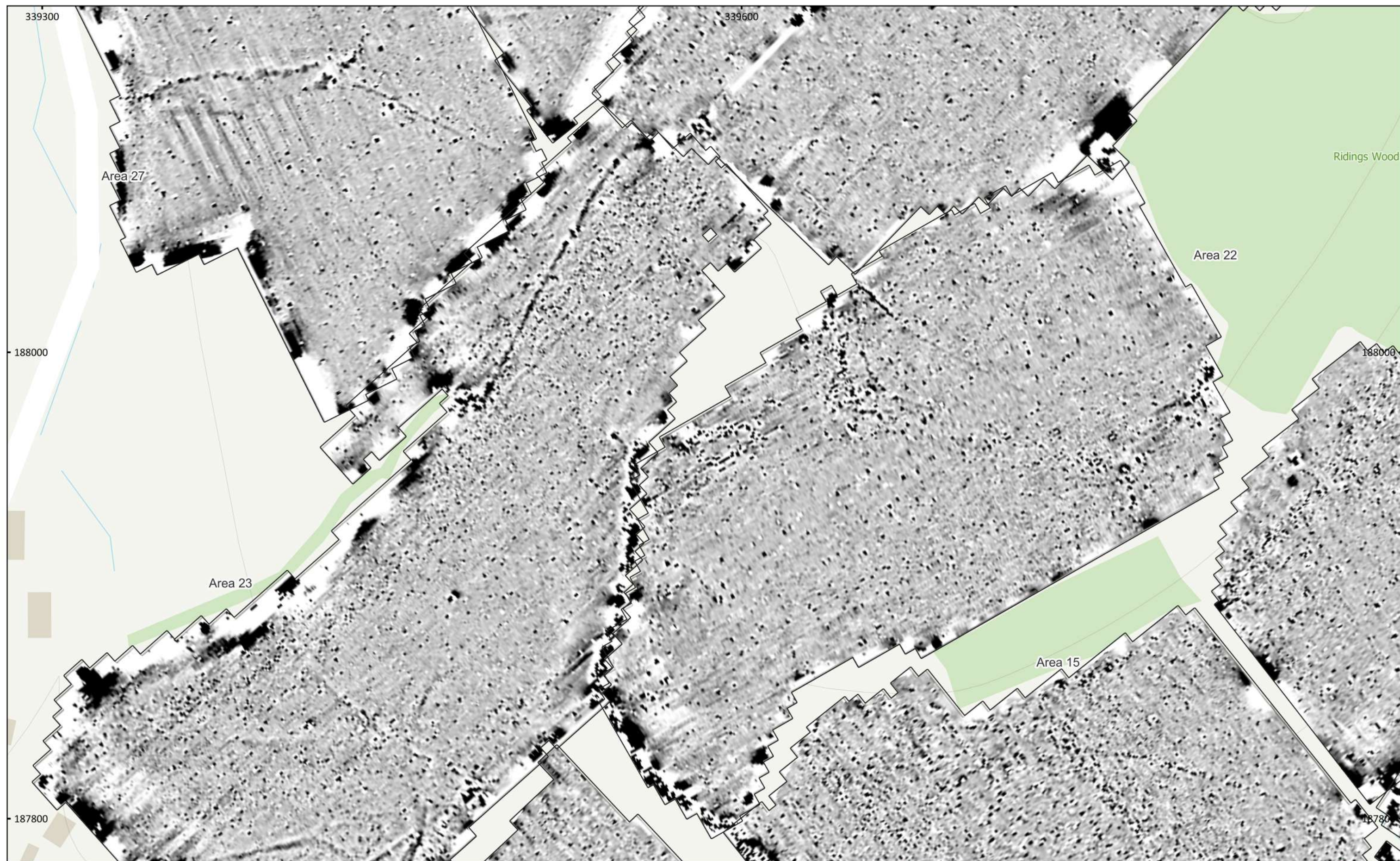


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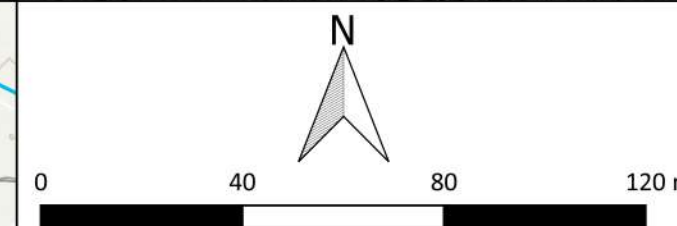
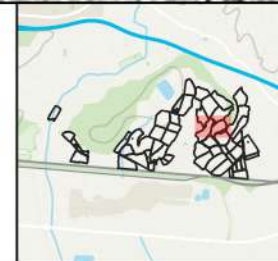
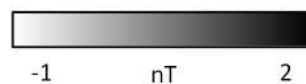


MSST1080: Craig Y Pethi Solar, Wales
Figure 32 - XY Trace Plot (Areas 22, 23, 24, 27, 28 & 30)
30nT/cm at 1:1,500 @ A3
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MSST1080: Craig Y Pethi Solar, Wales
 Figure 33 - Magnetic Gradient (Areas 15, 16, 19, 22, 23, 24, 27 & 28)
 1:1,500 @ A3
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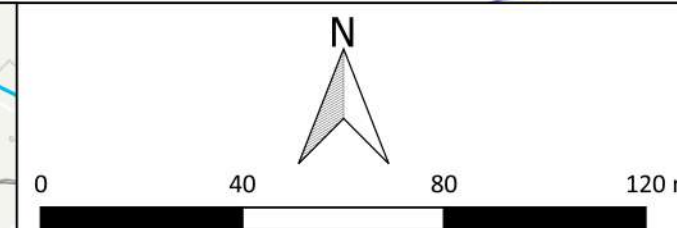
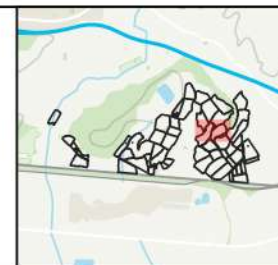


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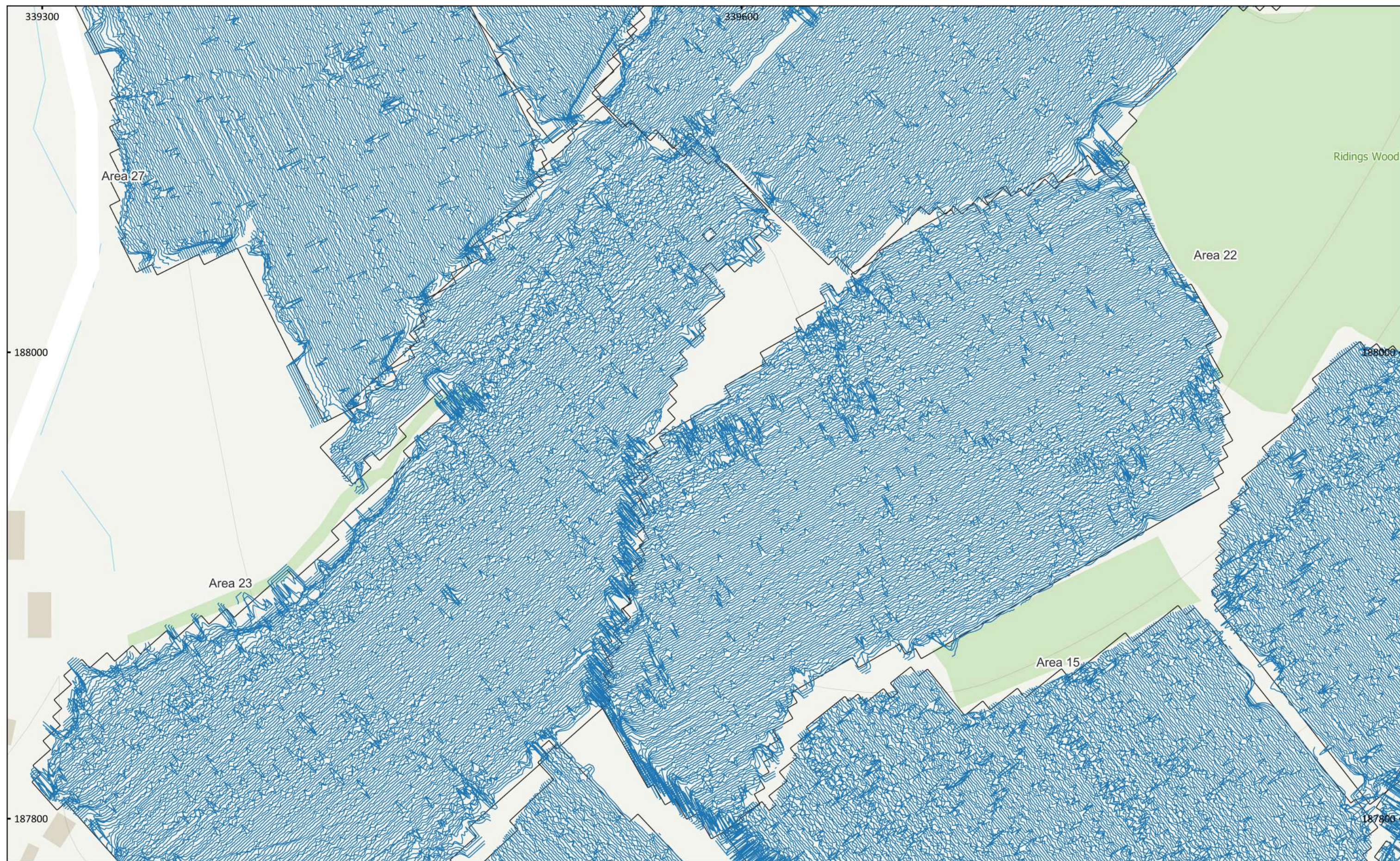


MSST1080: Craig Y Pethi Solar, Wales
 Figure 34 - Magnetic Interpretation (Areas 15, 16, 19, 22, 23, 24, 27 & 28)
 1:1,500 @ A3
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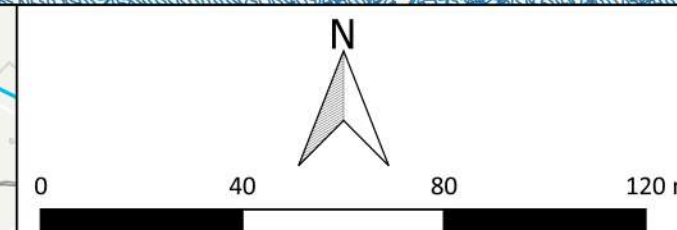
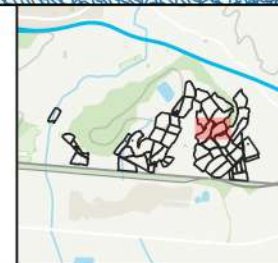
- | | | |
|-----------------------------|-----------------------|--------------------------|
| Archaeology Possible (Weak) | Undetermined (Weak) | Ridge and Furrow (Trend) |
| Agricultural (Strong) | Undetermined (Spread) | Drainage Feature |
| Agricultural (Weak) | Natural (Weak) | Ferrous (Spike) |
| Agricultural (Spread) | Magnetic Disturbance | |
| Undetermined (Strong) | Agricultural (Trend) | |



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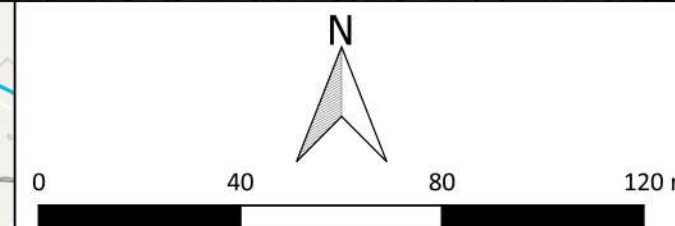
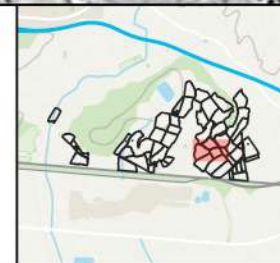
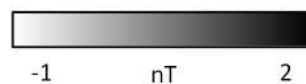


MSST1080: Craig Y Pethi Solar, Wales
 Figure 35 - XY Trace Plot (Areas 15, 16, 19, 22, 23, 24, 27 & 28)
 30nT/cm at 1:1,500 @ A3
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MSST1080: Craig Y Pethi Solar, Wales
Figure 36 - Magnetic Gradient (Areas 12, 13, 14, 15, 19, 20, 21 & 26)
1:1,500 @ A3
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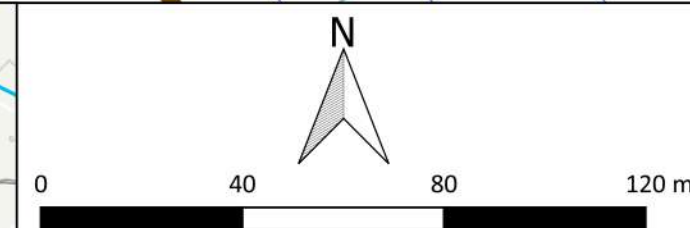
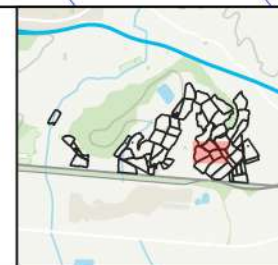


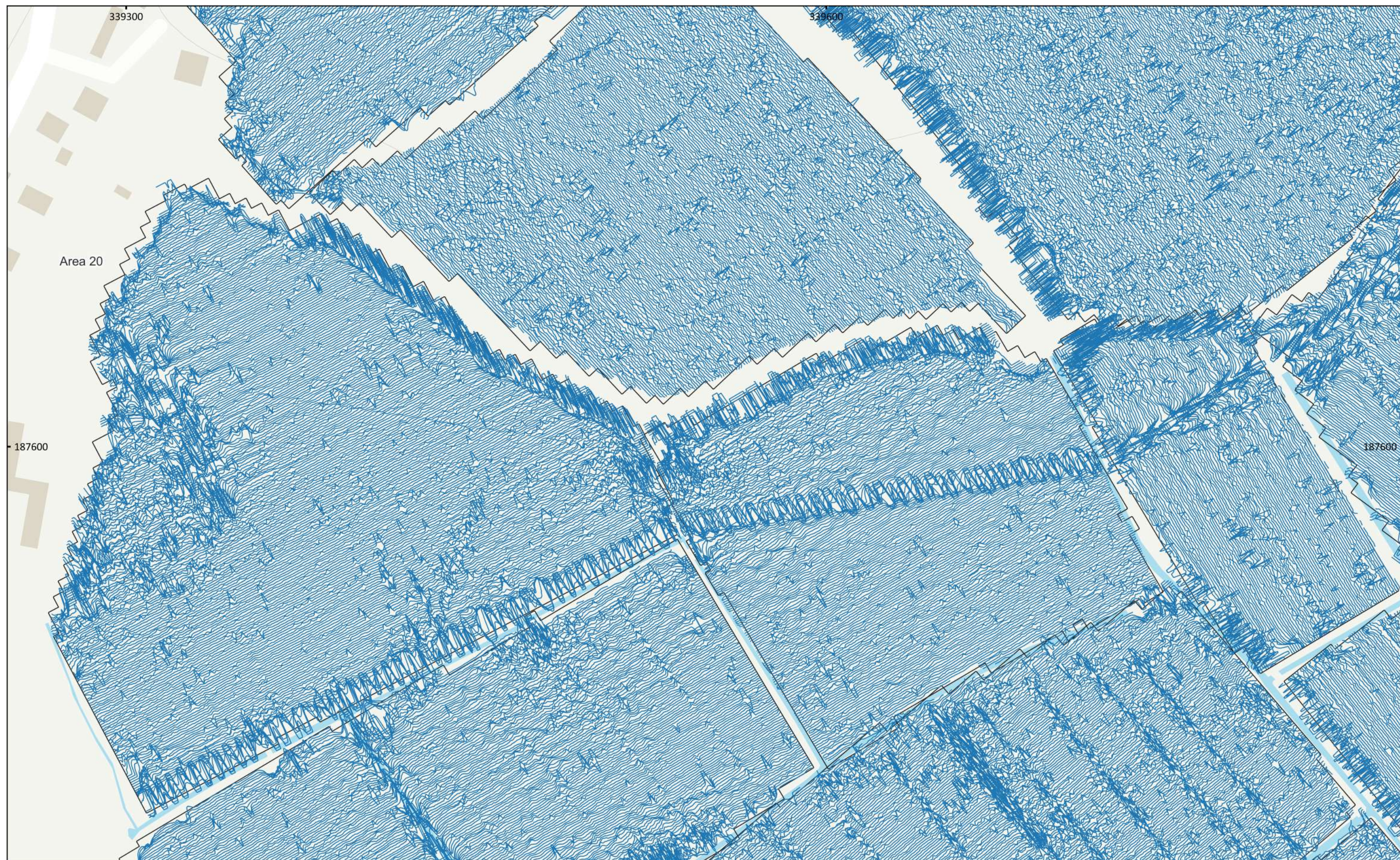
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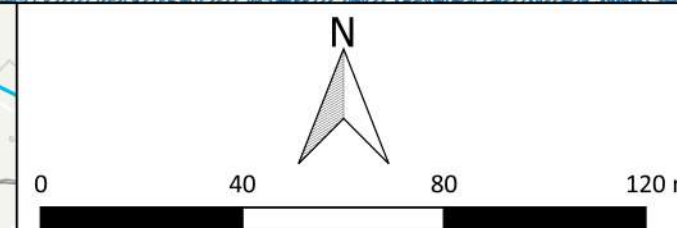
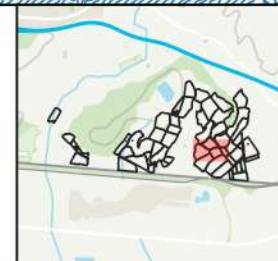
MSST1080: Craig Y Pethi Solar, Wales
 Figure 37 - Magnetic Interpretation (Areas 12, 13, 14, 15, 19, 20, 21 & 26)
 1:1,500 @ A3
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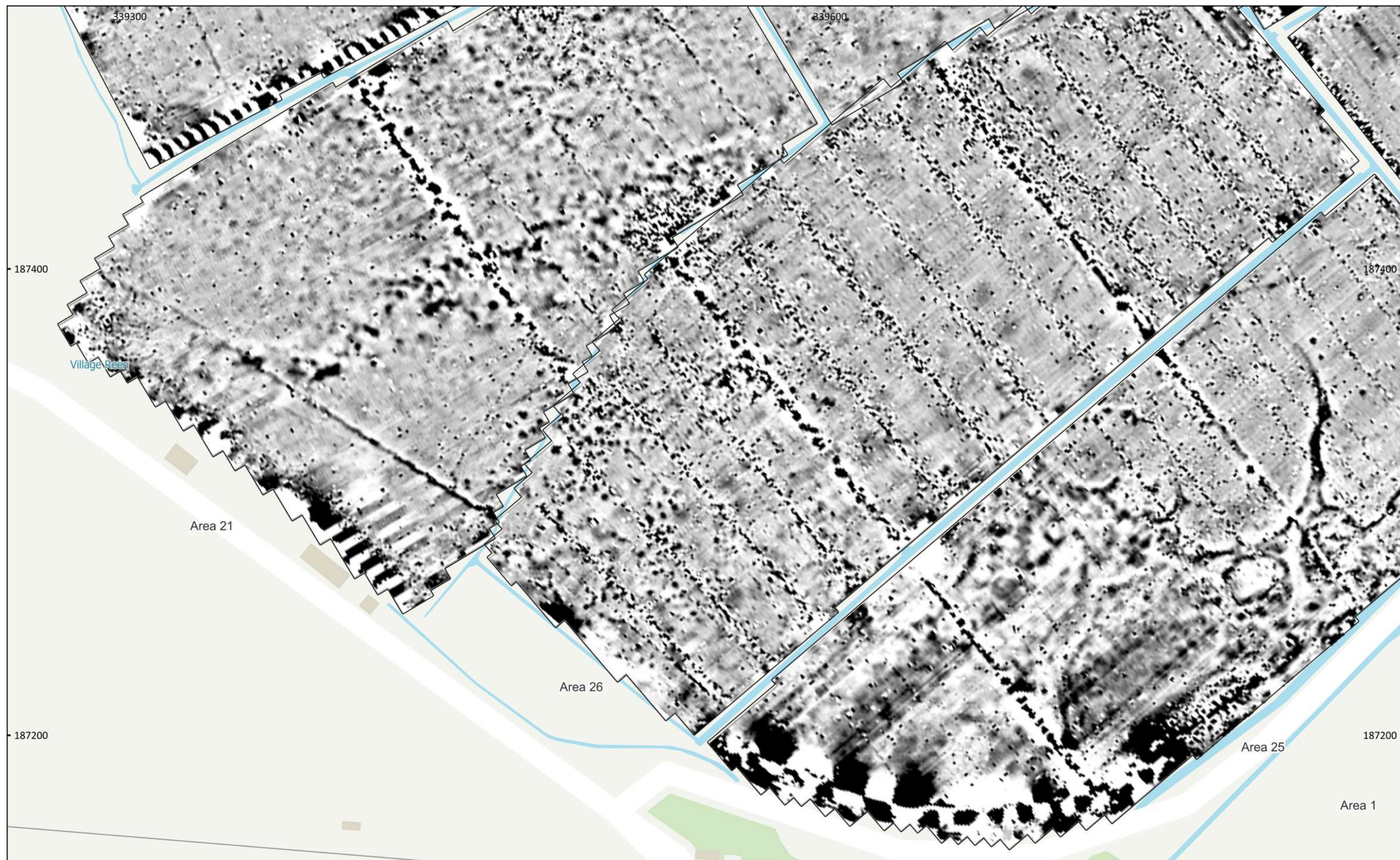
- | | | |
|--|--|--|
| ■ Archaeology Probable (Strong) | ■ Agricultural (Spread) | ■ Ferrous/Debris (Spread) |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Weak) | ■ Quarry |
| ■ Archaeology Possible (Strong) | ■ Natural (Strong) | — Service |
| ■ Archaeology Possible (Weak) | ■ Natural (Weak) | — Drainage Feature |
| ■ Agricultural (Strong) | ■ Natural (Spread) | • Ferrous (Spike) |
| ■ Agricultural (Weak) | ■ Magnetic Disturbance | |



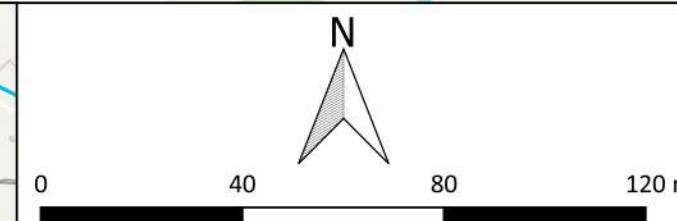
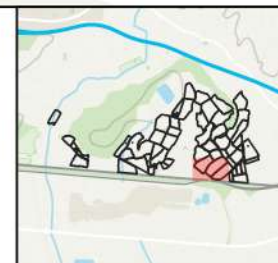
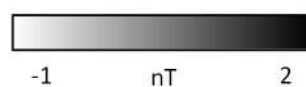


MSST1080: Craig Y Pethi Solar, Wales
Figure 38 - XY Trace Plot (Areas 12, 13, 14, 15, 19, 20, 21 & 26)
30nT/cm at 1:1,500 @ A3
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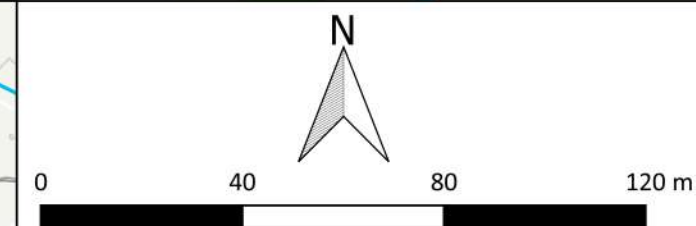
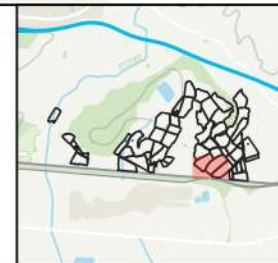
MSST1080: Craig Y Pethi Solar, Wales
 Figure 39 - Magnetic Gradient (Areas 5, 14, 20, 21, 25, & 26)
 1:1,500 @ A3
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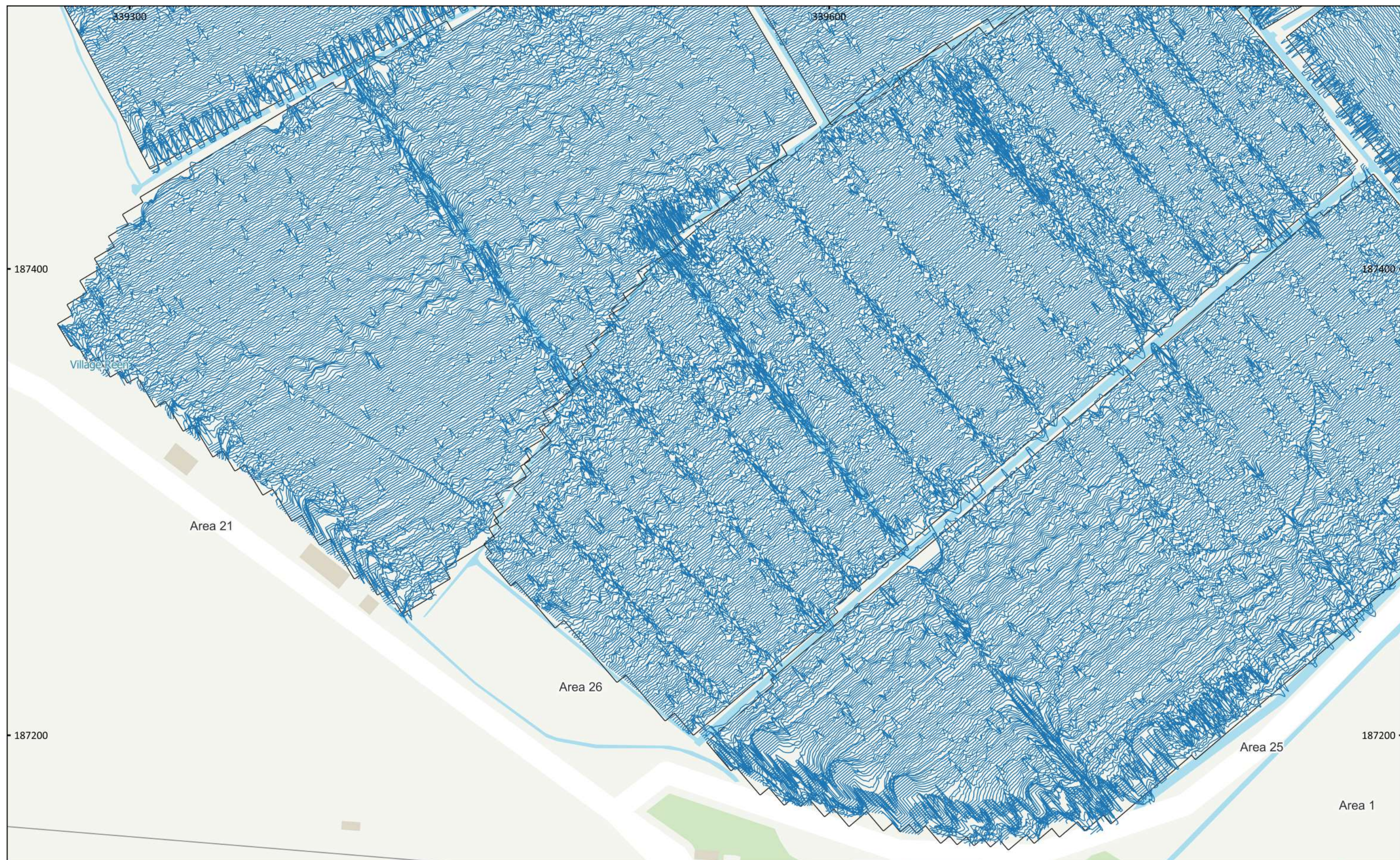




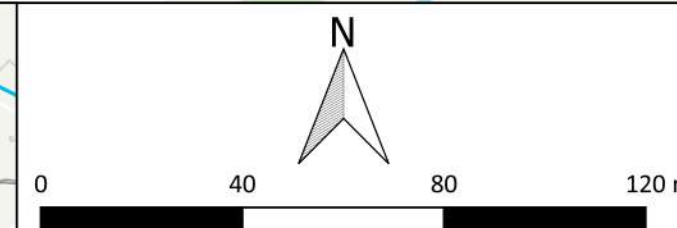
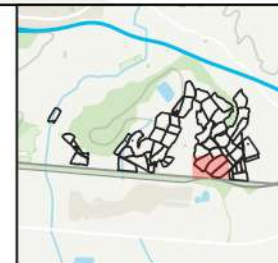
MSST1080: Craig Y Pethi Solar, Wales
 Figure 40 - Magnetic Interpretation (Areas 5, 14, 20, 21, 25, & 26)
 1:1,500 @ A3
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- | | | |
|-----------------------|----------------------|-------------------------|
| Agricultural (Strong) | Natural (Strong) | Ferrous/Debris (Spread) |
| Agricultural (Weak) | Natural (Weak) | Service |
| Agricultural (Spread) | Natural (Spread) | Drainage Feature |
| Undetermined (Weak) | Magnetic Disturbance | Ferrous (Spike) |





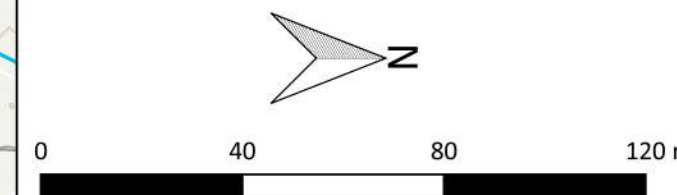
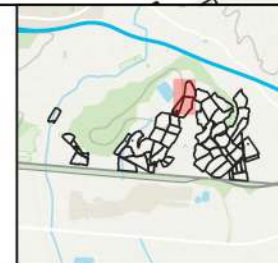
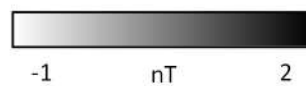
MSST1080: Craig Y Pethi Solar, Wales
Figure 41 - XY Trace Plot (Areas 5, 14, 20, 21, 25, & 26)
30nT/cm at 1:1,500 @ A3
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MSST1080: Craig Y Pethi Solar, Wales
Figure 42 - Magnetic Gradient (Areas 31, 35 & 36)
1:1,500 @ A3

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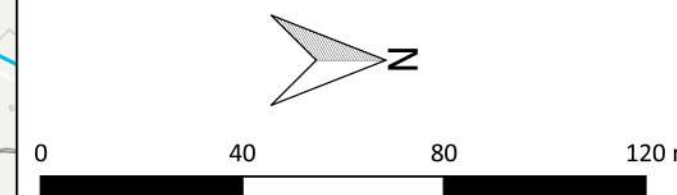
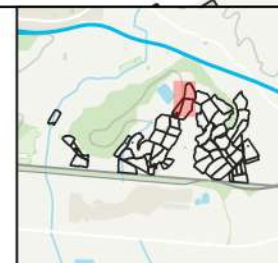


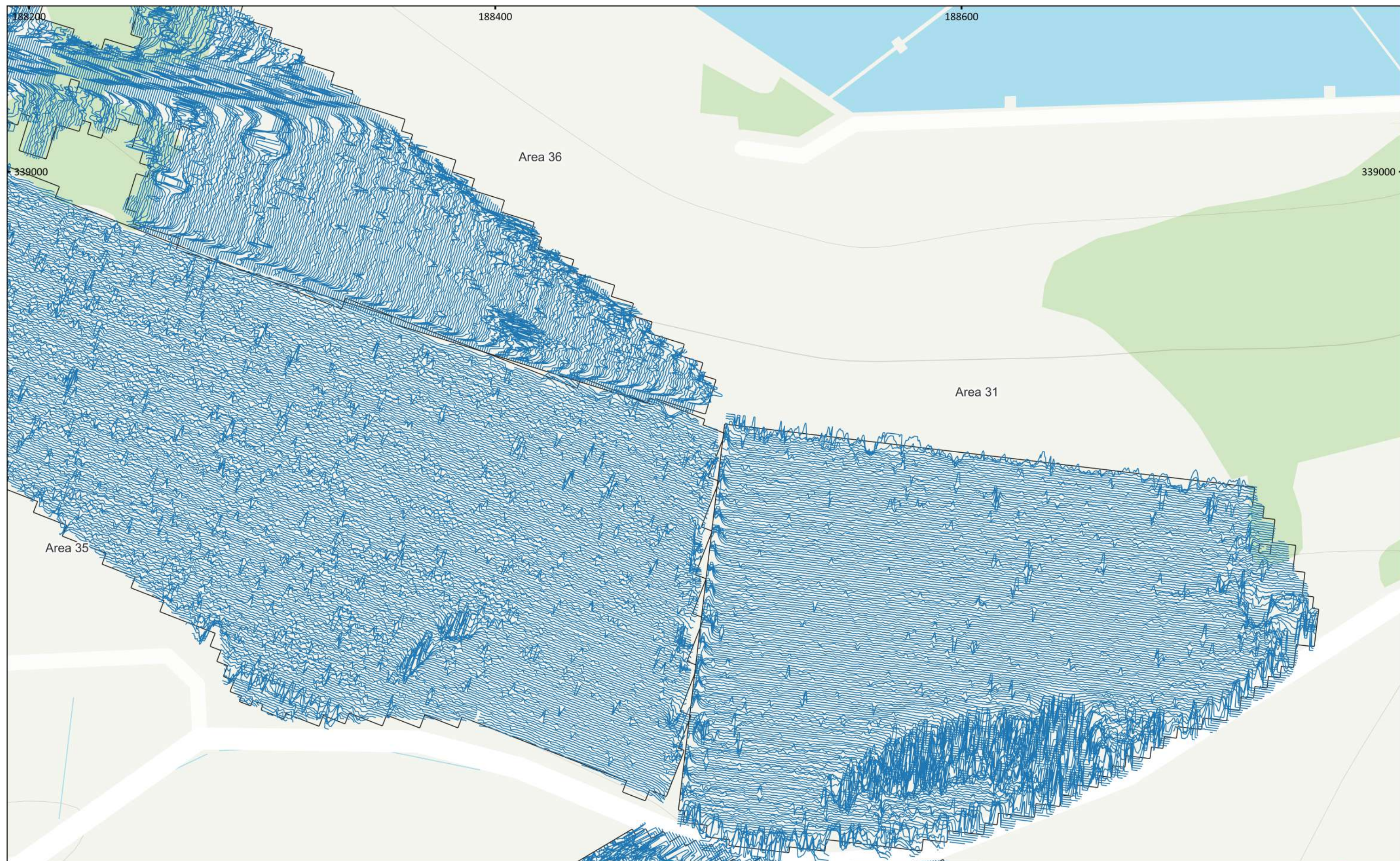
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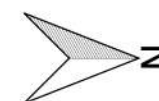
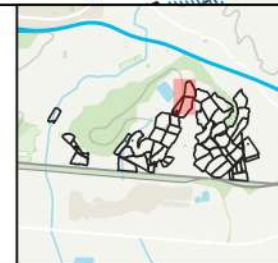
MSST1080: Craig Y Pethi Solar, Wales
 Figure 43 - Magnetic Interpretation (Areas 31, 35 & 36)
 1:1,500 @ A3
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- | | | |
|-----------------------|-------------------------|-----------------|
| Agricultural (Weak) | Magnetic Disturbance | Service |
| Agricultural (Spread) | Ferrous/Debris (Spread) | Ferrous (Spike) |
| Undetermined (Weak) | Quarry | |
| Undetermined (Spread) | Agricultural (Trend) | |





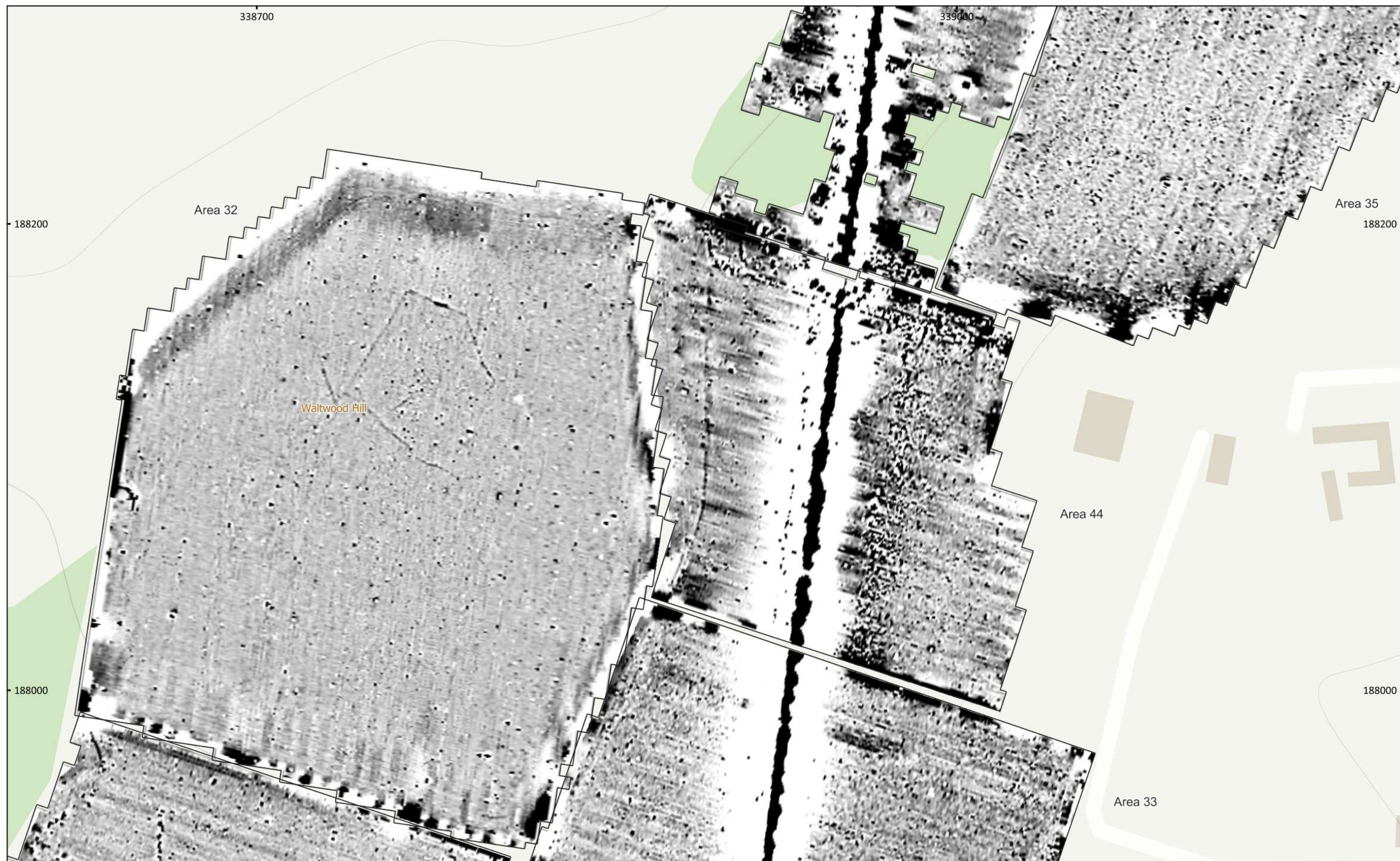
MSST1080: Craig Y Pethi Solar, Wales
Figure 44 - XY Trace Plot (Areas 31, 35 & 36)
30nT/cm at 1:1,500 @ A3
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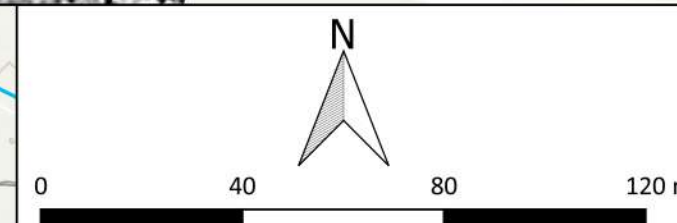
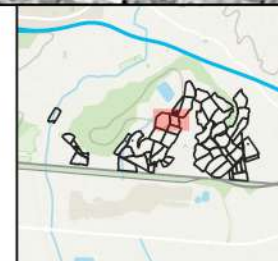
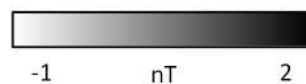
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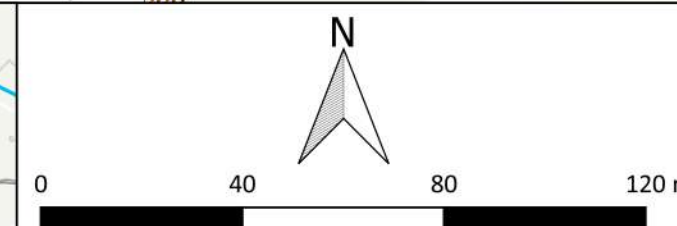
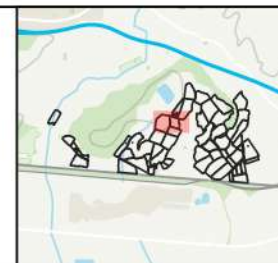
MSST1080: Craig Y Pethi Solar, Wales
 Figure 45 - Magnetic Gradient (Areas 32, 33, 34, 35, 36 & 44)
 1:1,500 @ A3
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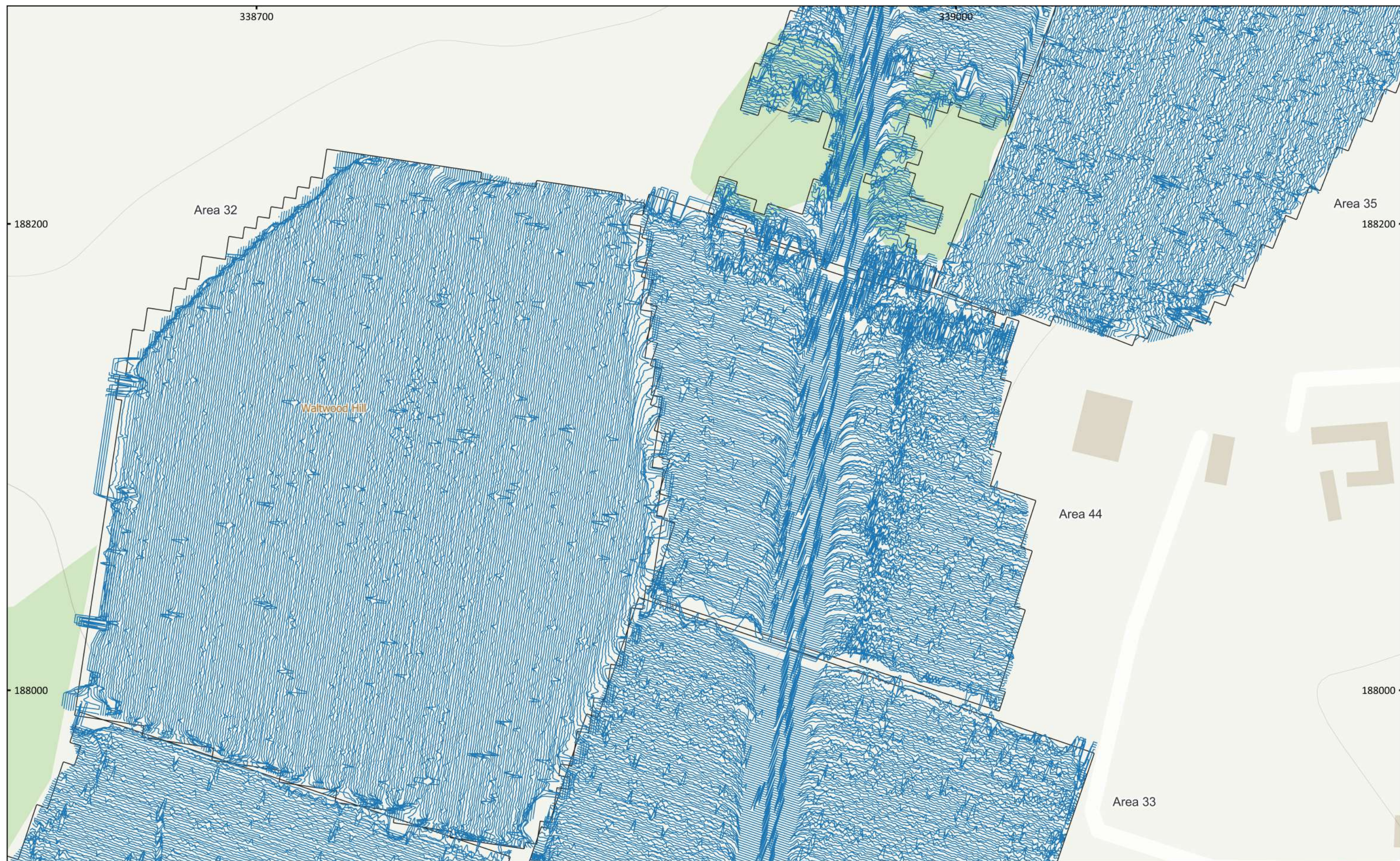




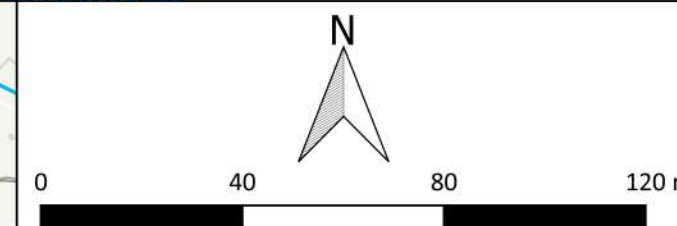
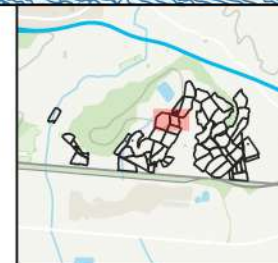
MSST1080: Craig Y Pethi Solar, Wales
 Figure 46 - Magnetic Interpretation (Areas 32, 33, 34, 35, 36 & 44)
 1:1,500 @ A3
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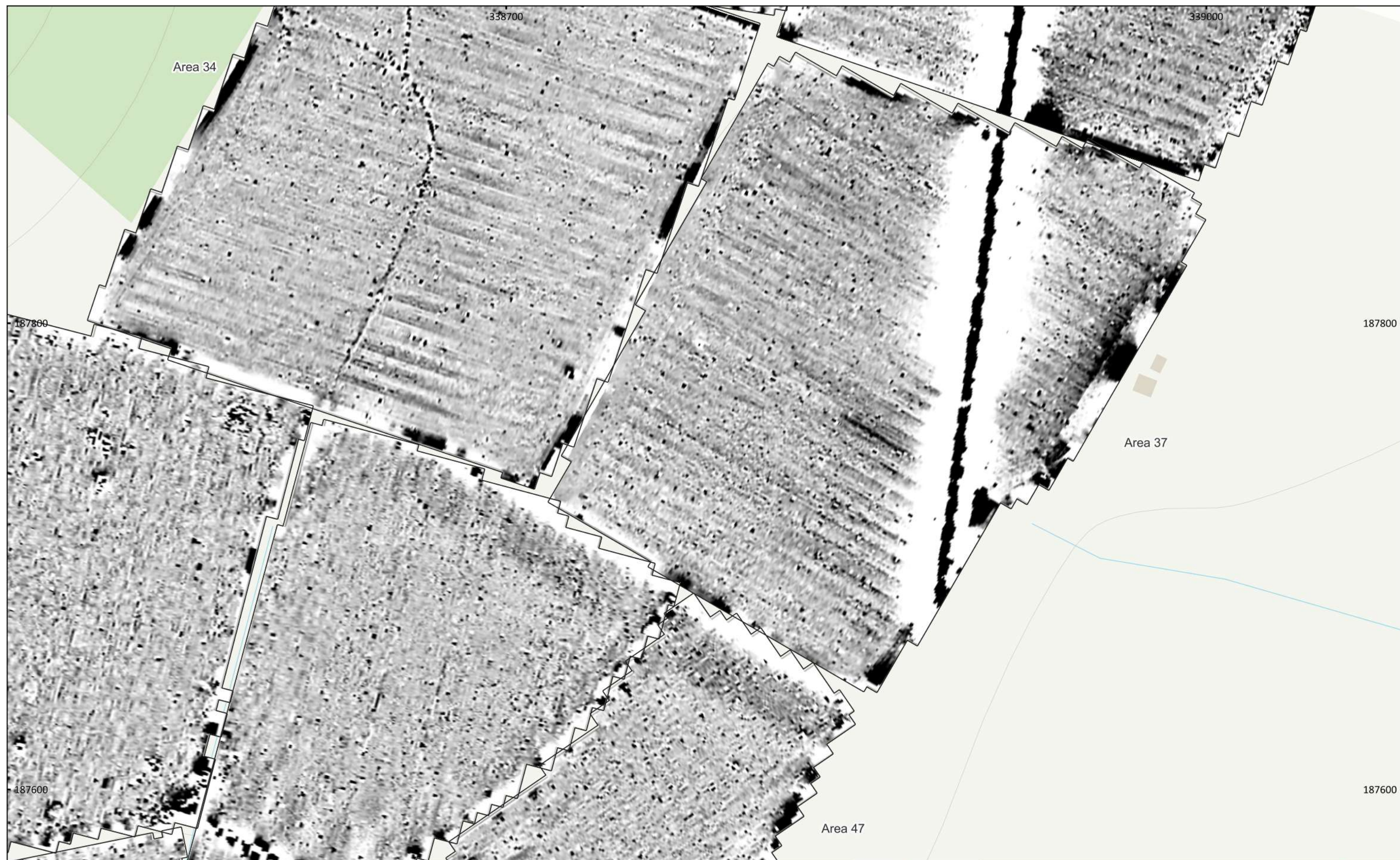
- | | | |
|---|--|---|
| ■ Archaeology Probable (Strong) | ■ Agricultural (Spread) | — Agricultural (Trend) |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Strong) | --- Service |
| ■ Archaeology Possible (Weak) | ■ Undetermined (Weak) | — Drainage Feature |
| ■ Agricultural (Strong) | ■ Magnetic Disturbance | • Ferrous (Spike) |
| ■ Agricultural (Weak) | ■ Ferrous/Debris (Spread) | |



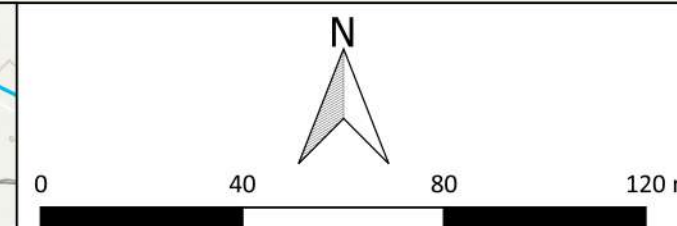
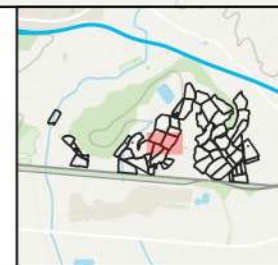
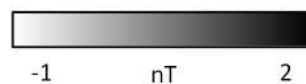


MSST1080: Craig Y Pethi Solar, Wales
Figure 47 - XY Trace Plot (Areas 32, 33, 34, 35, 36 & 44)
30nT/cm at 1:1,500 @ A3
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MSST1080: Craig Y Pethi Solar, Wales
Figure 48 - Magnetic Gradient (Areas 33, 34, 37, 43, 47 & 51)
1:1,500 @ A3
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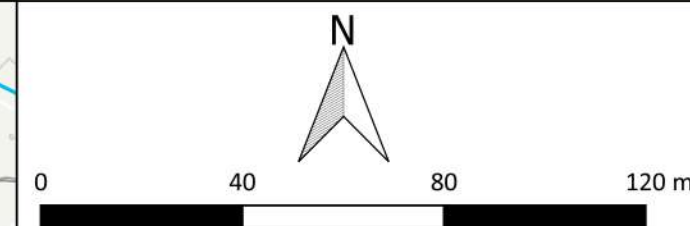
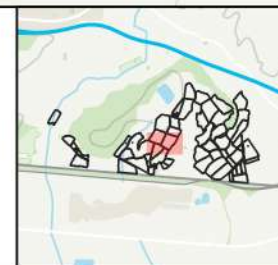


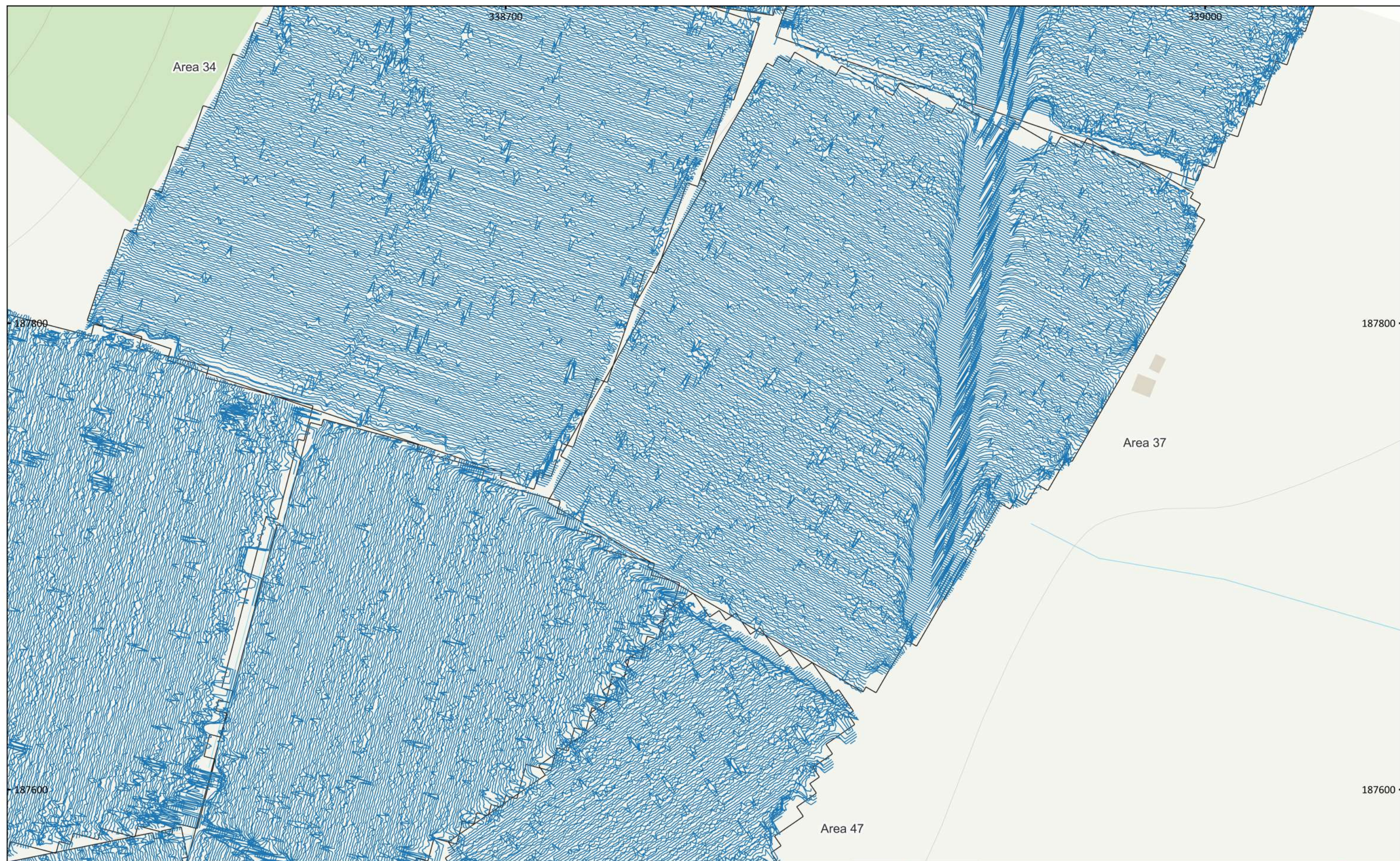
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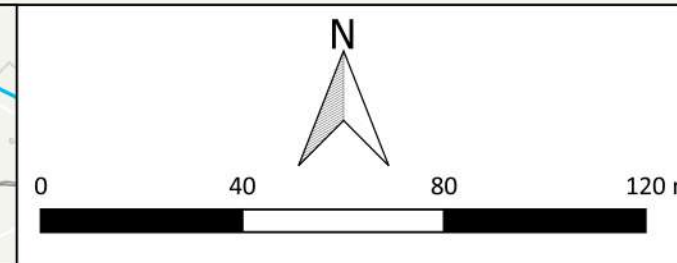
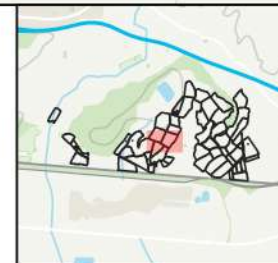
MSST1080: Craig Y Pethi Solar, Wales
 Figure 49 - Magnetic Interpretation (Areas 33, 34, 37, 43, 47 & 51)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|-----------------|
| Archaeology Possible (Strong) | Undetermined (Weak) | Service |
| Archaeology Possible (Weak) | Magnetic Disturbance | Ferrous (Spike) |
| Agricultural (Spread) | Ferrous/Debris (Spread) | |
| Undetermined (Strong) | Agricultural (Trend) | |



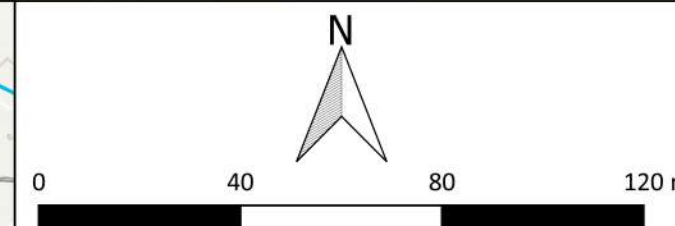
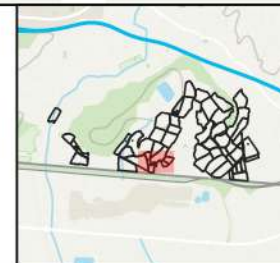
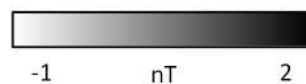


MSST1080: Craig Y Pethi Solar, Wales
Figure 50 - XY Trace Plot (Areas 33, 34, 37, 43, 47 & 51)
30nT/cm at 1:1,500 @ A3
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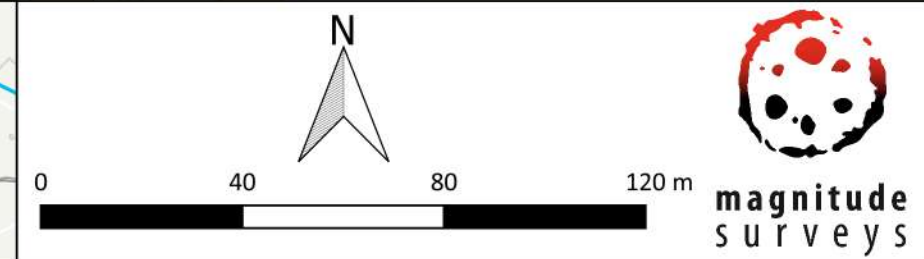
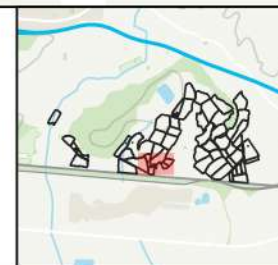
MSST1080: Craig Y Pethi Solar, Wales
Figure 51 - Magnetic Gradient (Areas 38, 39, 40, 41, 43, 46, 47 & 51)
1:1,500 @ A3
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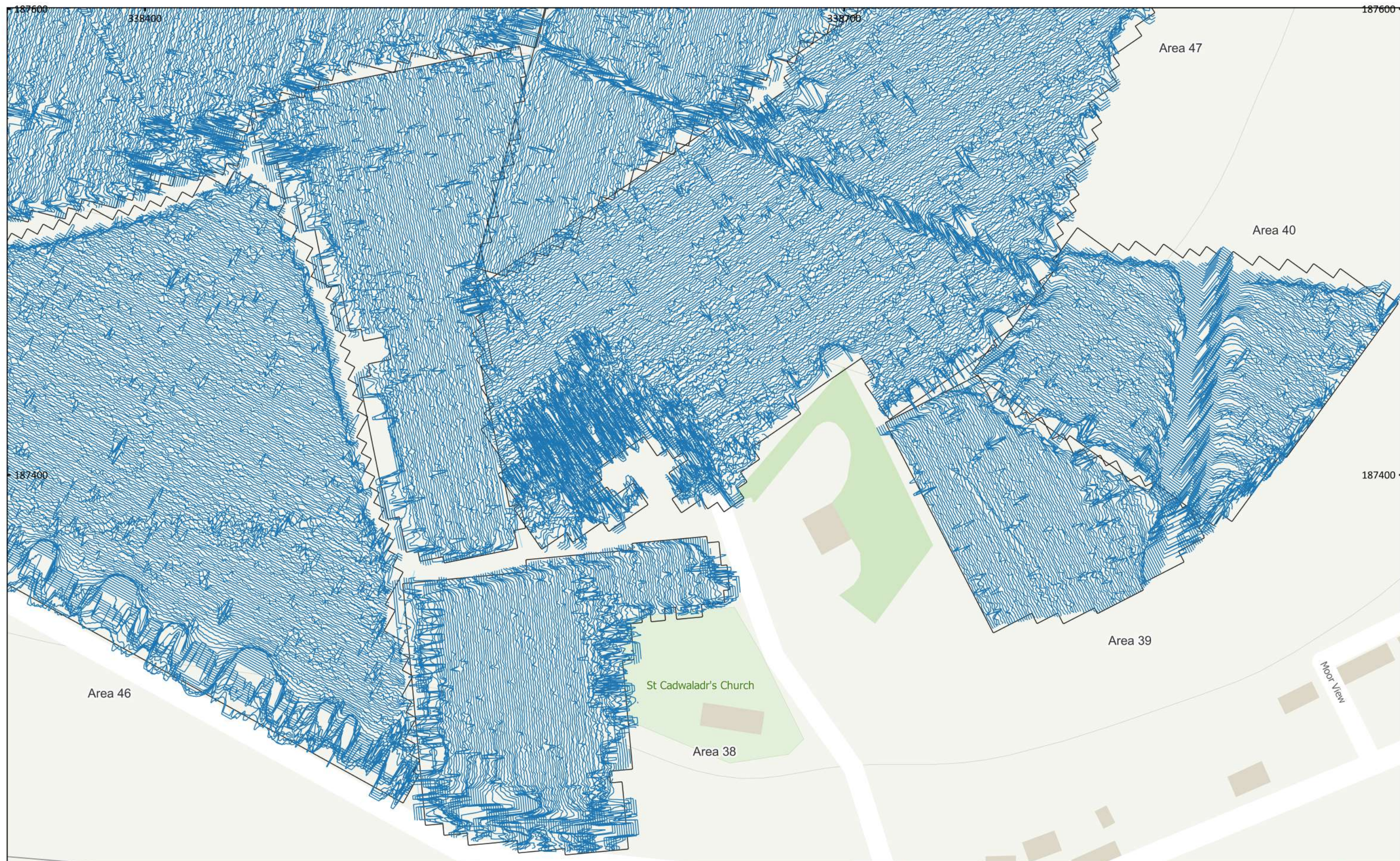




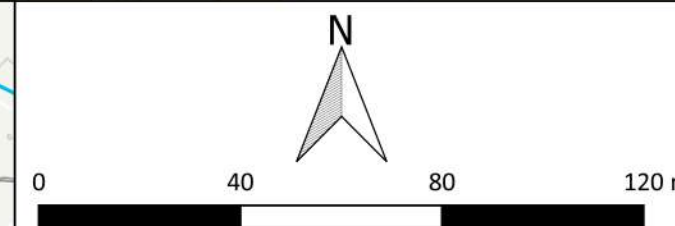
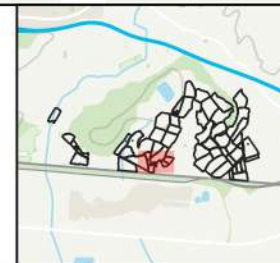
MSST1080: Craig Y Pethi Solar, Wales
 Figure 52 - Magnetic Interpretation (Areas 38, 39, 40, 41, 43, 46, 47 & 51)
 1:1,500 @ A3
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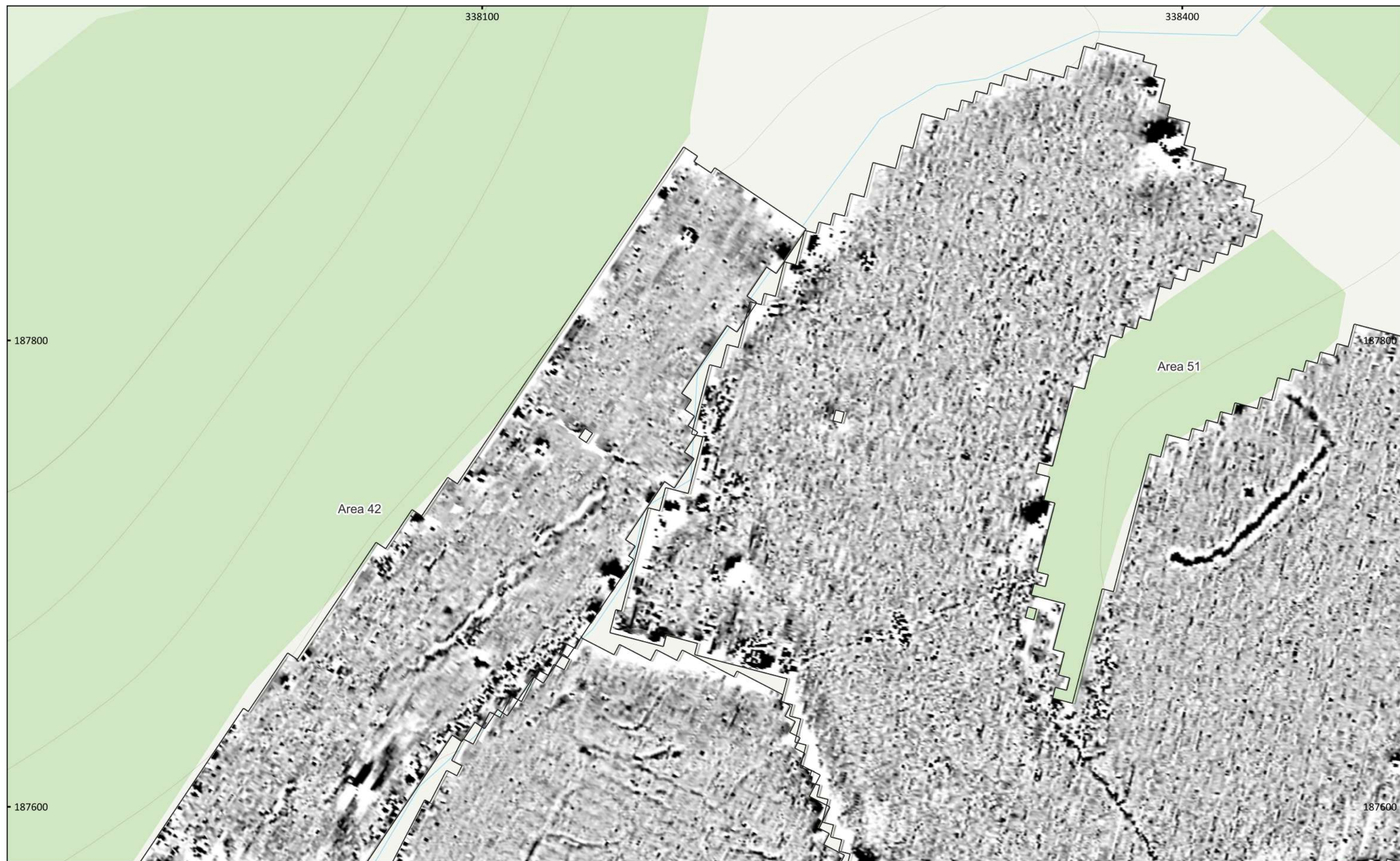
- | | | |
|-------------------------------|-------------------------|----------------------|
| Archaeology Possible (Strong) | Undetermined (Strong) | Quarry |
| Archaeology Possible (Weak) | Undetermined (Weak) | Agricultural (Trend) |
| Agricultural (Strong) | Natural (Weak) | Service |
| Agricultural (Weak) | Magnetic Disturbance | Ferrous (Spike) |
| Agricultural (Spread) | Ferrous/Debris (Spread) | |



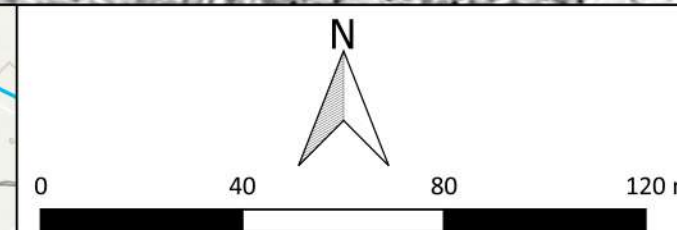
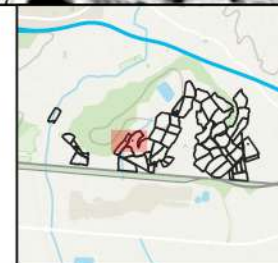
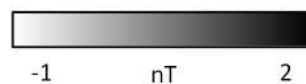


MSST1080: Craig Y Pethi Solar, Wales
Figure 53 - XY Trace Plot (Areas 38, 39, 40, 41, 43, 46, 47 & 51)
30nT/cm at 1:1,500 @ A3
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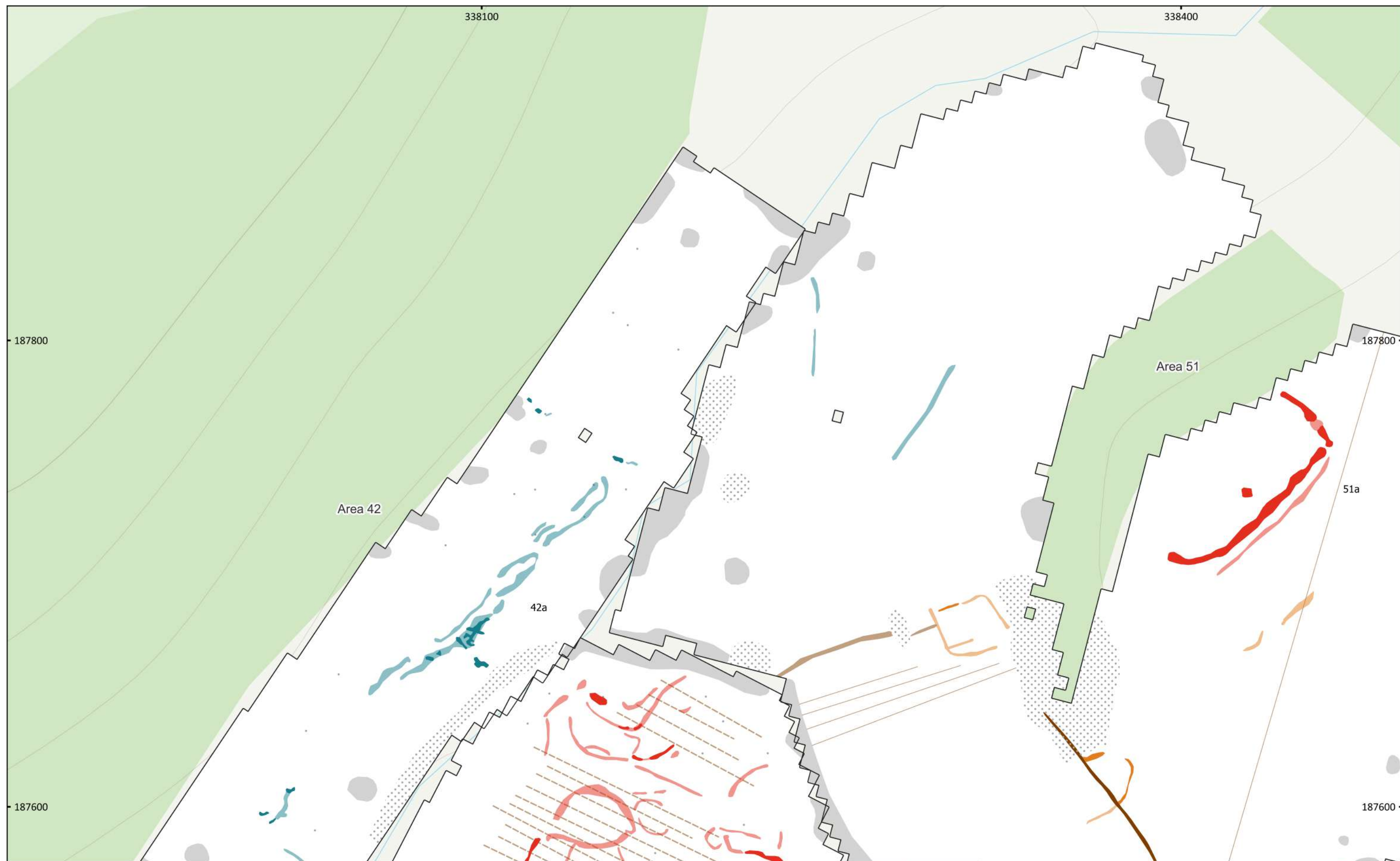




MSST1080: Craig Y Pethi Solar, Wales
Figure 54 - Magnetic Gradient (Areas 42, 50 & 51)
1:1,500 @ A3
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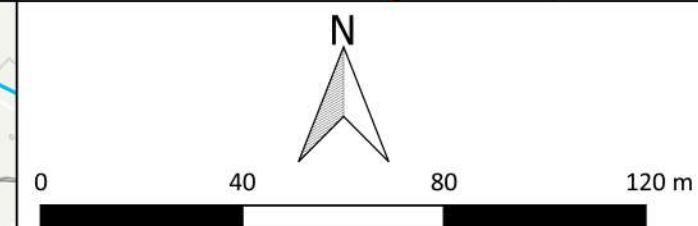
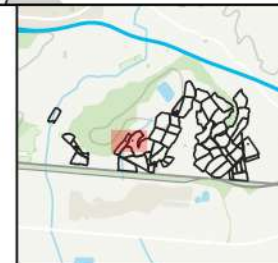


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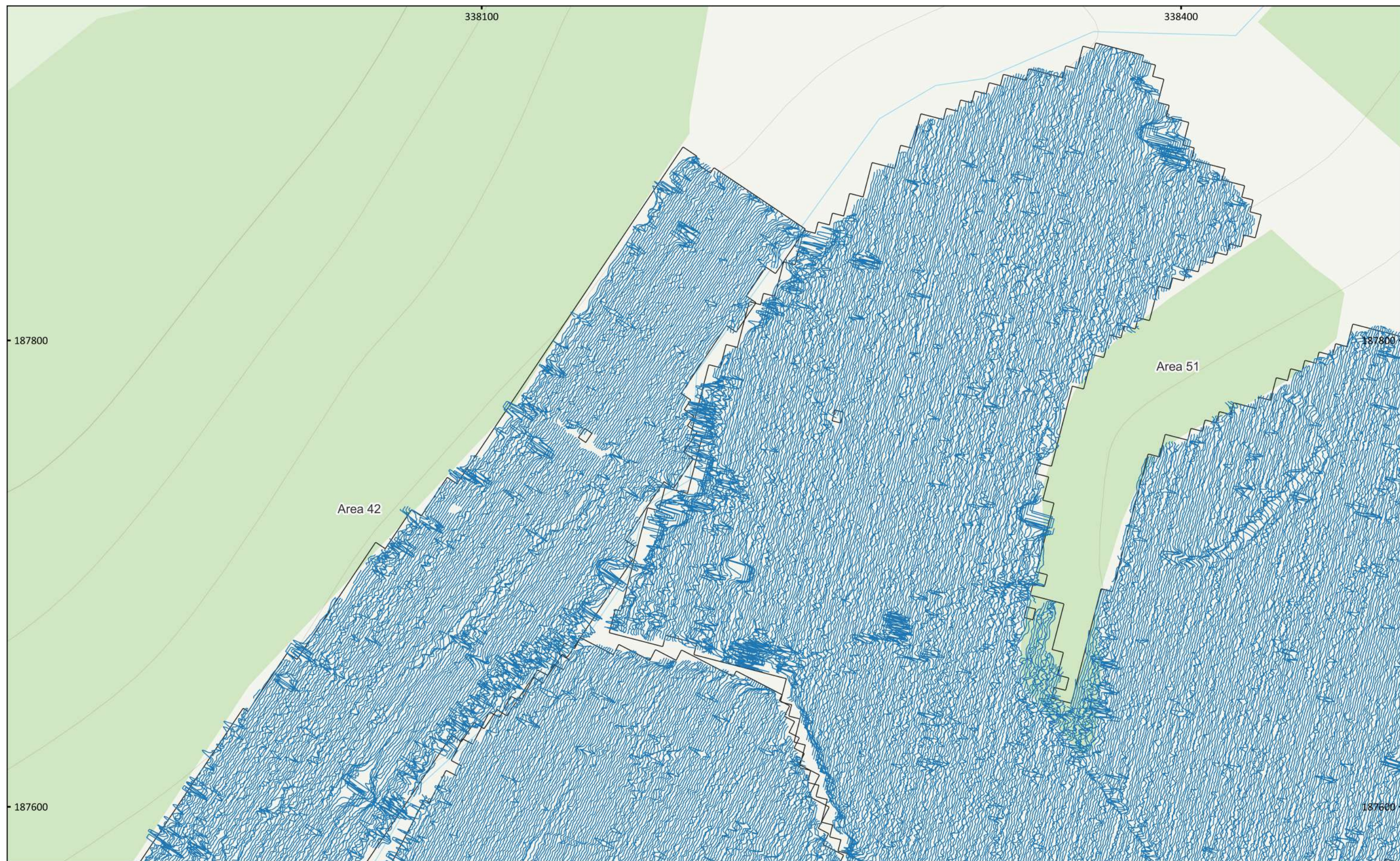


MSST1080: Craig Y Pethi Solar, Wales
 Figure 55 - Magnetic Interpretation (Areas 42, 50 & 51)
 1:1,500 @ A3
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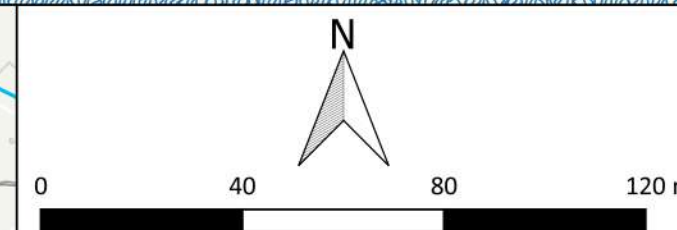
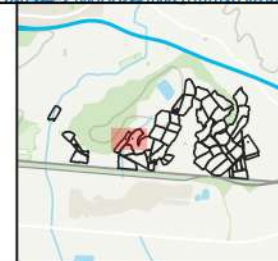
- | | | |
|--|--|---|
| ■ Archaeology Probable (Strong) | ■ Agricultural (Weak) | — Agricultural (Trend) |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Strong) | — Ridge and Furrow (Trend) |
| ■ Archaeology Possible (Strong) | ■ Undetermined (Weak) | ● Ferrous (Spike) |
| ■ Archaeology Possible (Weak) | ■ Magnetic Disturbance | |
| ■ Agricultural (Strong) | ● Ferrous/Debris (Spread) | |



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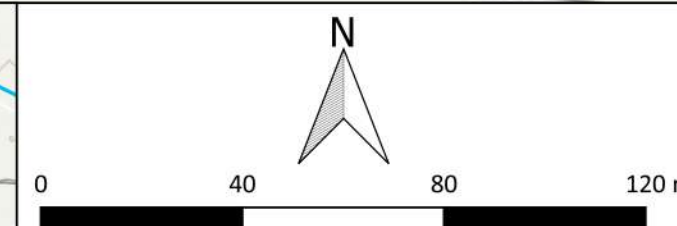
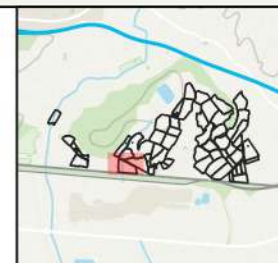
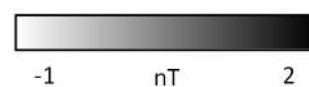
MSST1080: Craig Y Pethi Solar, Wales
Figure 56 - XY Trace Plot (Areas 42, 50 & 51)
30nT/cm at 1:1,500 @ A3
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MSST1080: Craig Y Pethi Solar, Wales
Figure 57 - Magnetic Gradient (Areas 42, 46, 49, 50 & 51)
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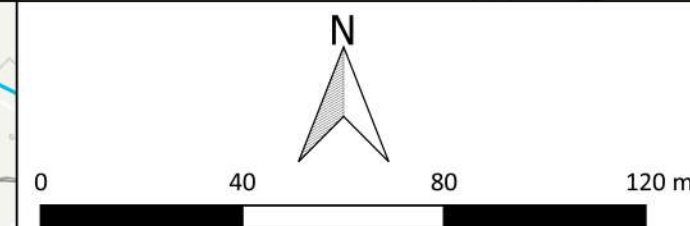
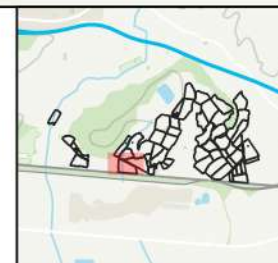


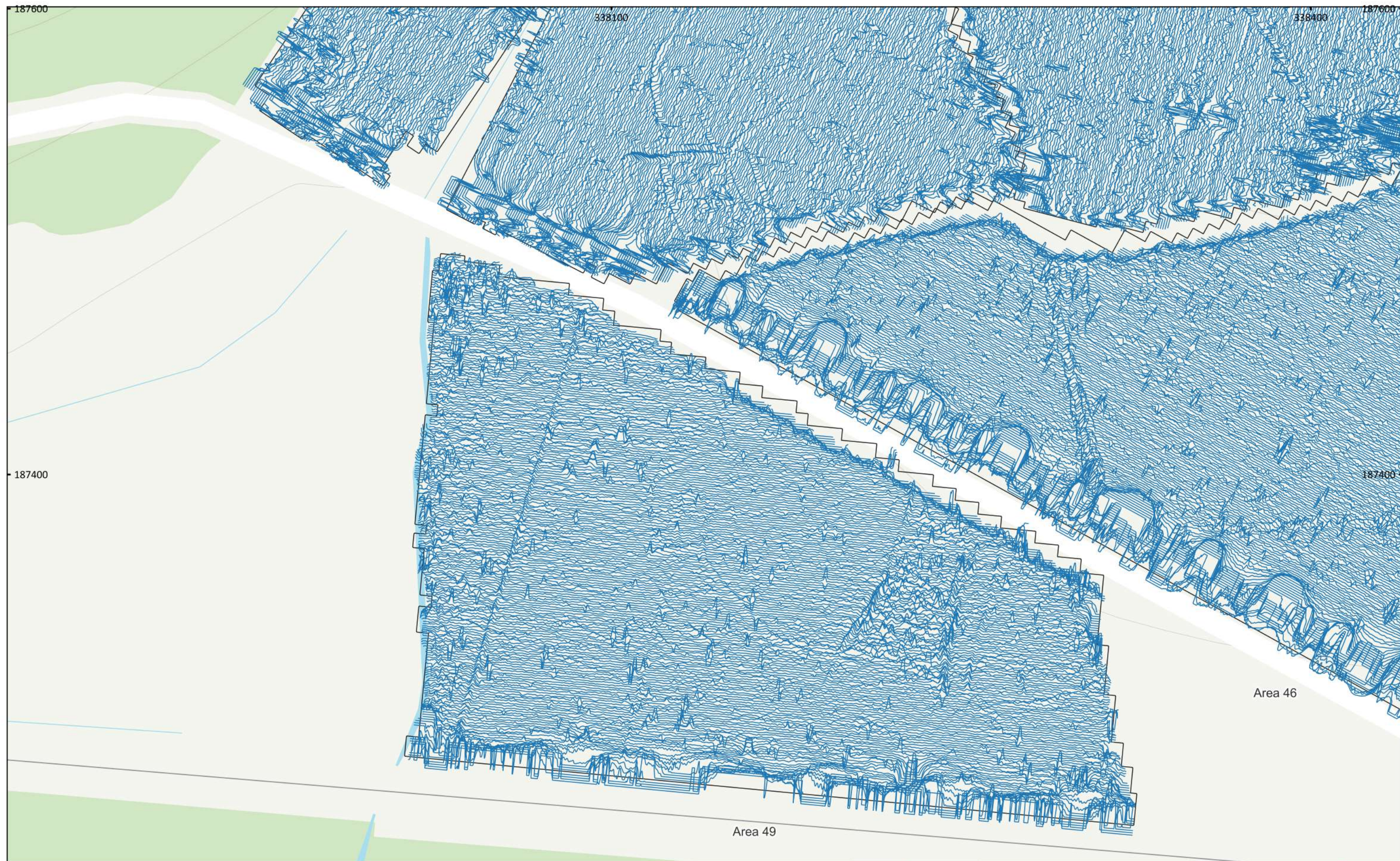
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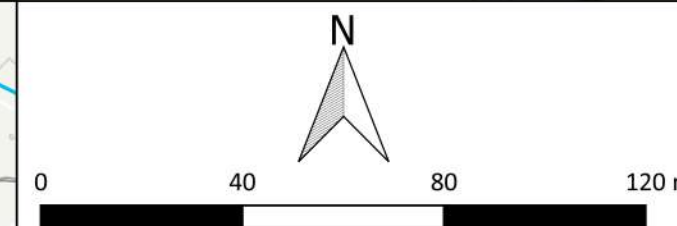
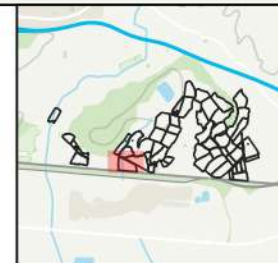
MSST1080: Craig Y Pethi Solar, Wales
 Figure 58 - Magnetic Interpretation (Areas 42, 46, 49, 50 & 51)
 1:1,500 @ A3
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- | | | |
|--|---|---|
| ■ Archaeology Probable (Strong) | ■ Agricultural (Spread) | --- Service |
| ■ Archaeology Probable (Weak) | ■ Undetermined (Strong) | --- Ridge and Furrow (Trend) |
| ■ Archaeology Possible (Strong) | ■ Undetermined (Weak) | --- Drainage Feature |
| ■ Archaeology Possible (Weak) | ■ Magnetic Disturbance | ● Ferrous (Spike) |
| ■ Agricultural (Strong) | ■ Ferrous/Debris (Spread) | |
| ■ Agricultural (Weak) | --- Agricultural (Trend) | |



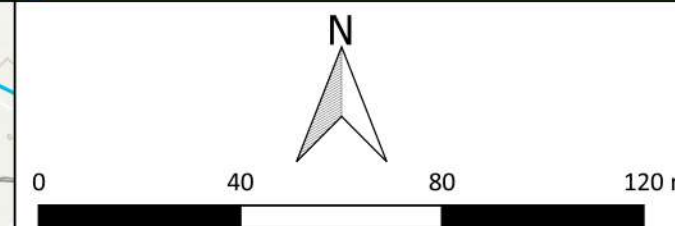
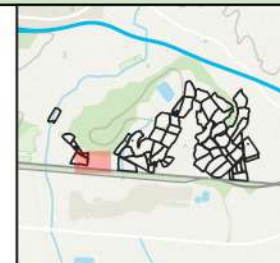
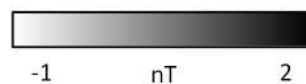


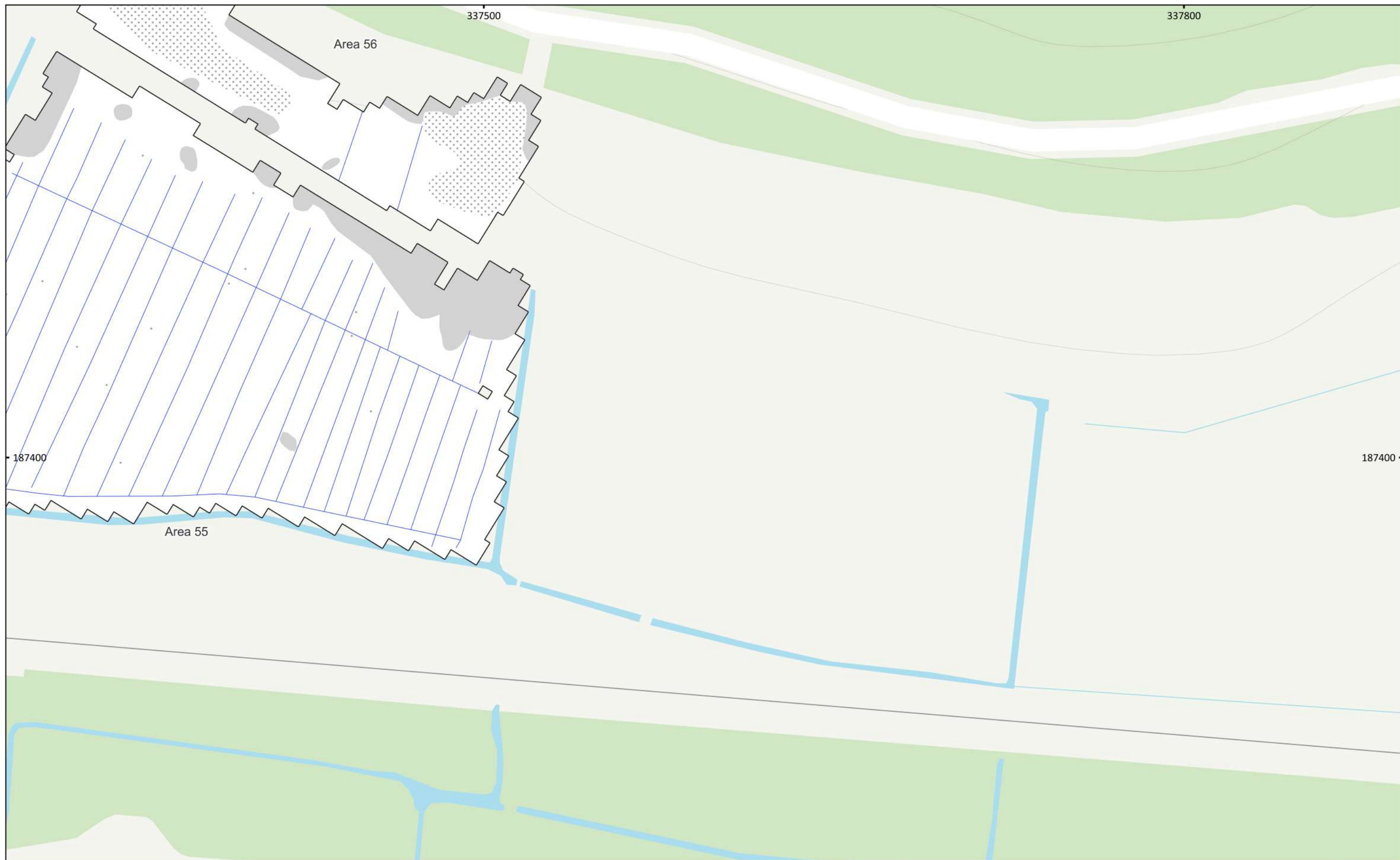
MSST1080: Craig Y Pethi Solar, Wales
Figure 59 - XY Trace Plot (Areas 42, 46, 49, 50 & 51)
30nT/cm at 1:1,500 @ A3
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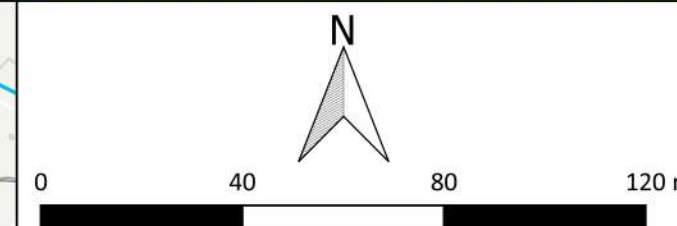
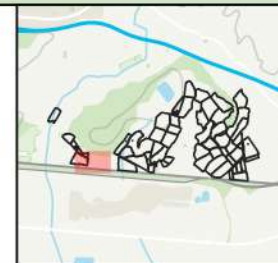
MSST1080: Craig Y Pethi Solar, Wales
Figure 60 - Magnetic Gradient (Areas 55 & 56)
1:1,500 @ A3
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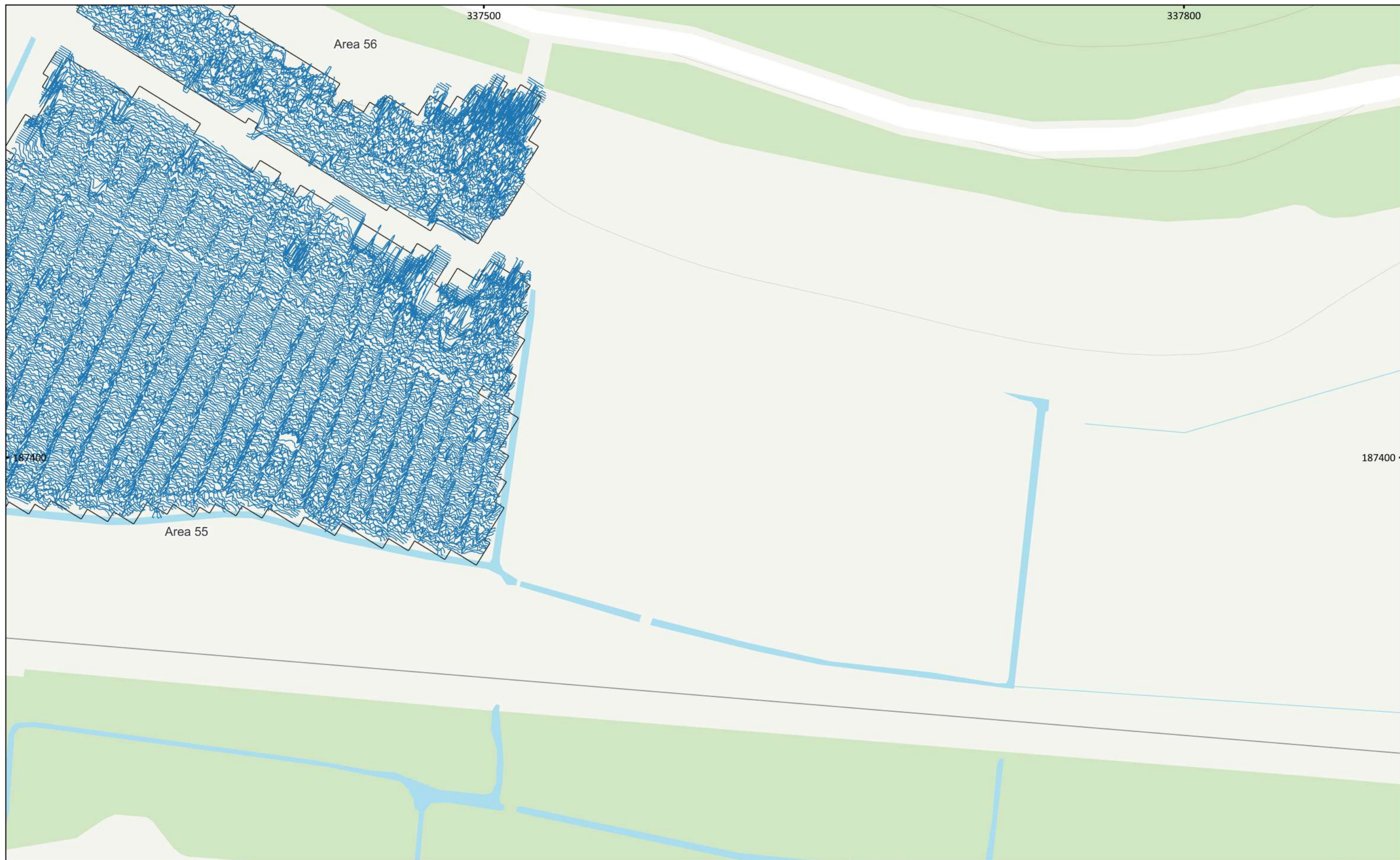




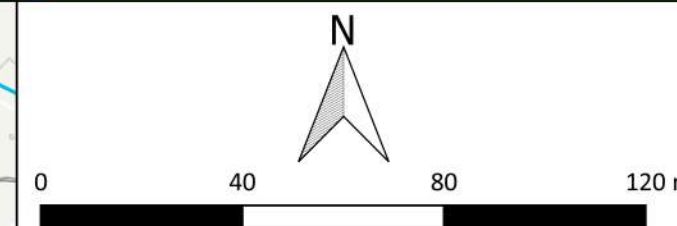
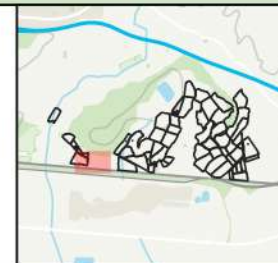
MSST1080: Craig Y Pethi Solar, Wales
 Figure 61 - Magnetic Interpretation (Areas 55 & 56)
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■ Magnetic Disturbance — Drainage Feature • Ferrous (Spike)
 ■ Ferrous/Debris (Spread)



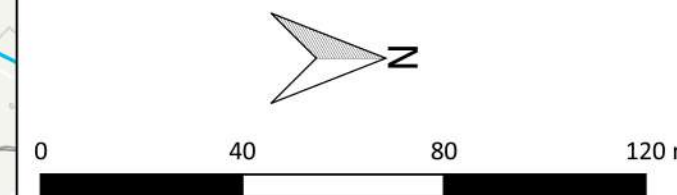
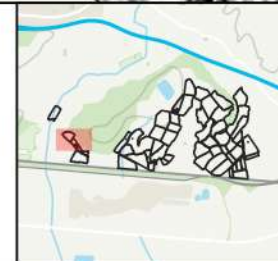
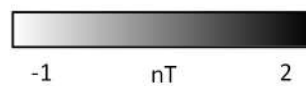


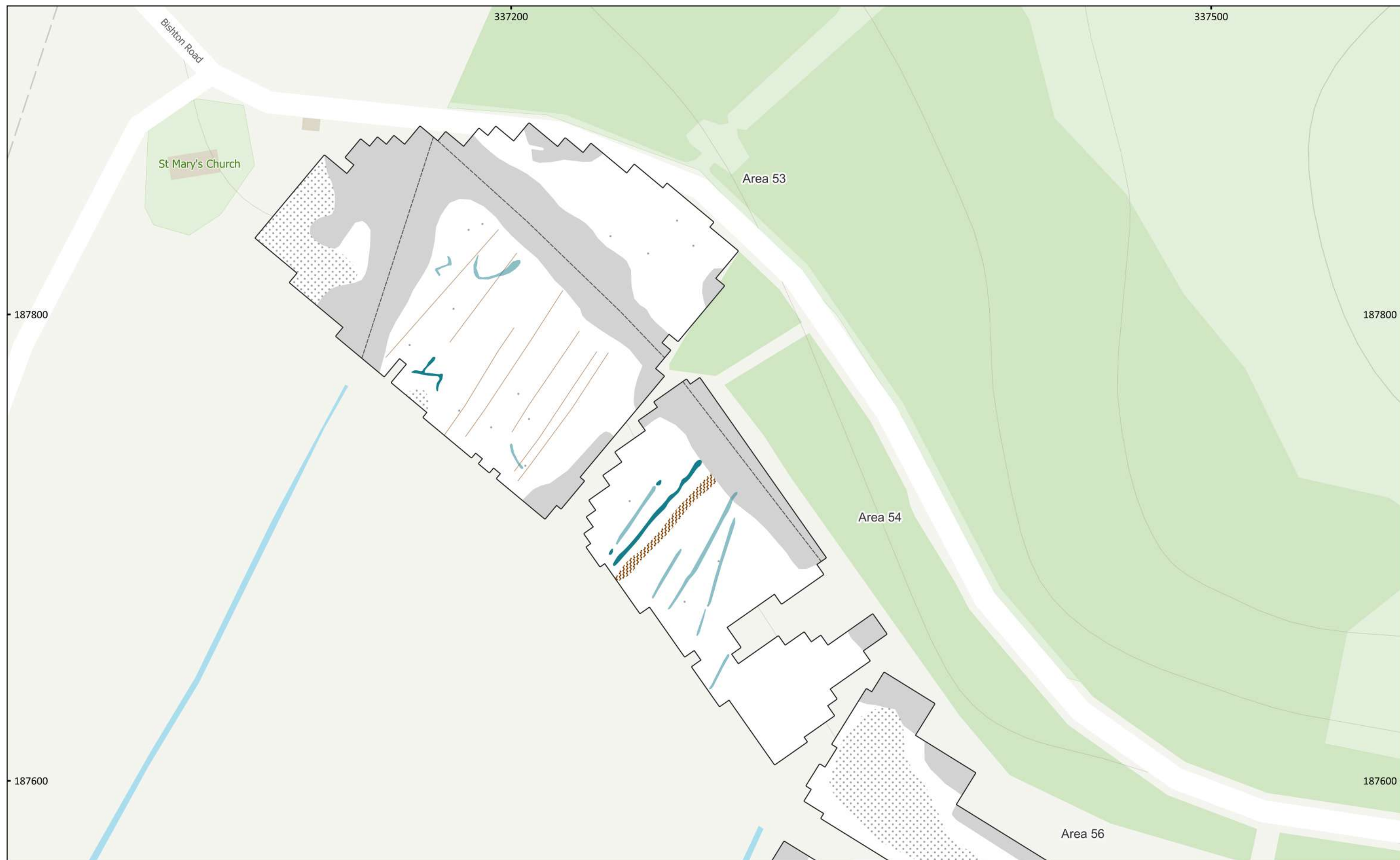
MSST1080: Craig Y Pethi Solar, Wales
Figure 62 - XY Trace Plot (Areas 55 & 56)
30nT/cm at 1:1,500 @ A3
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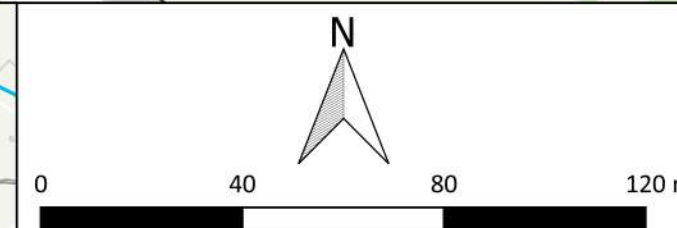
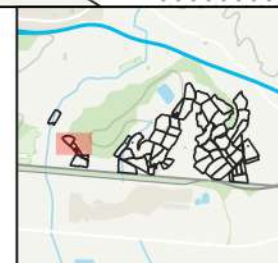
MSST1080: Craig Y Pethi Solar, Wales
 Figure 63 - Magnetic Gradient (Areas 53, 54 & 56)
 1:1,500 @ A3
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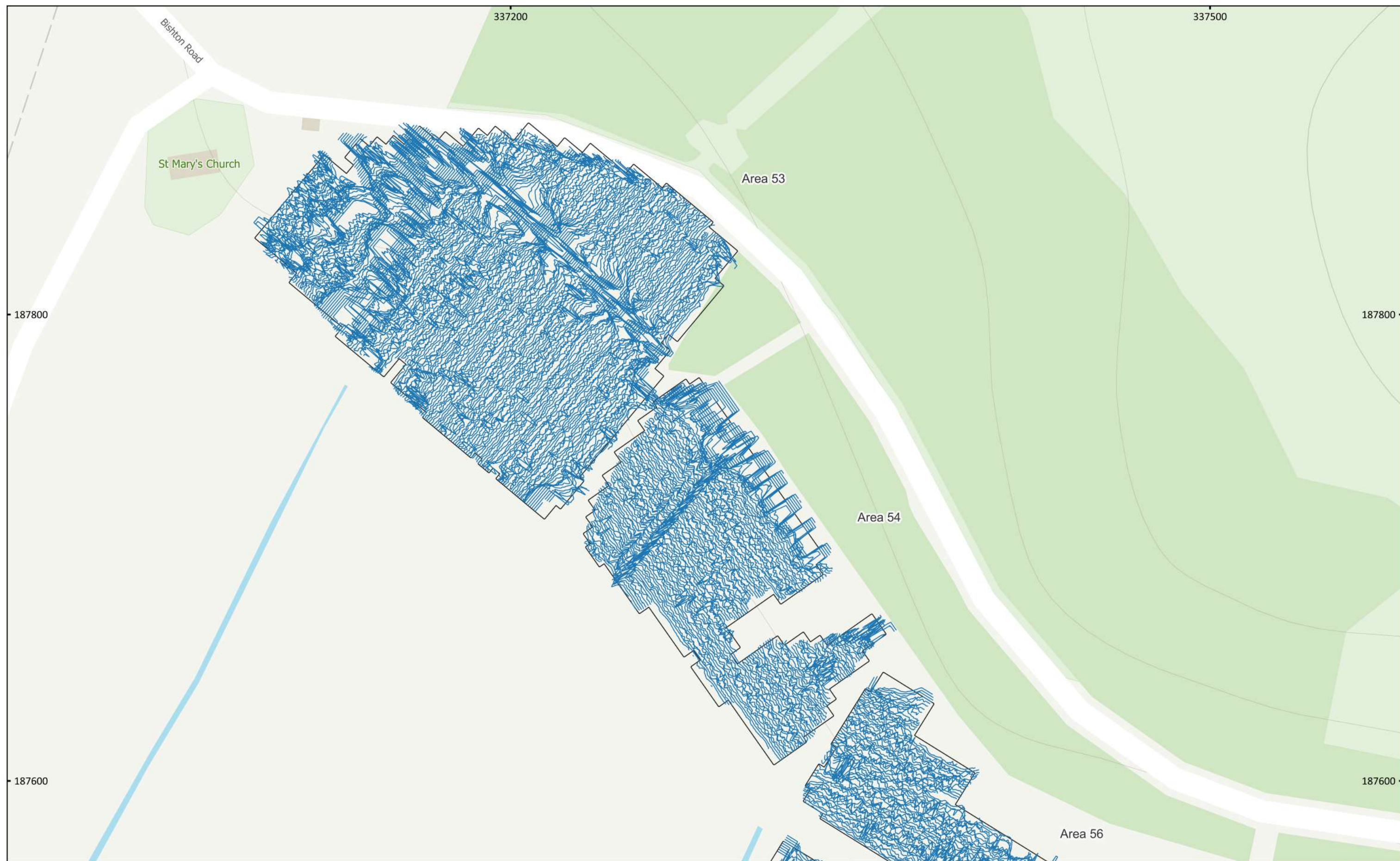




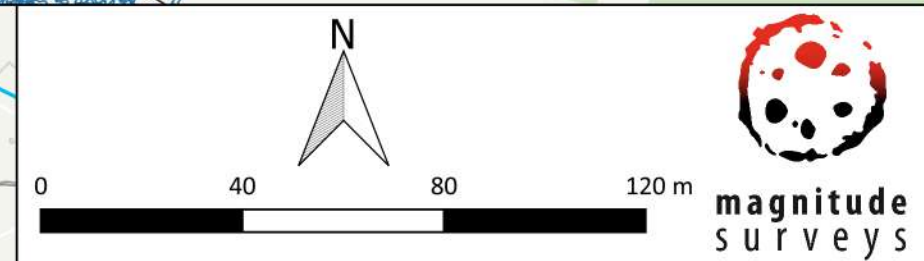
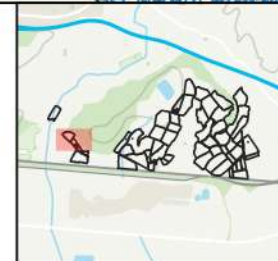
MSST1080: Craig Y Pethi Solar, Wales
 Figure 64 - Magnetic Interpretation (Areas 53, 54 & 56)
 1:1,500 @ A3
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Agricultural (Spread)	Magnetic Disturbance	Service
Undetermined (Strong)	Ferrous/Debris (Spread)	Ferrous (Spike)
Undetermined (Weak)	Agricultural (Trend)	



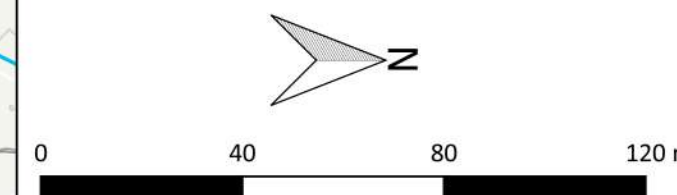
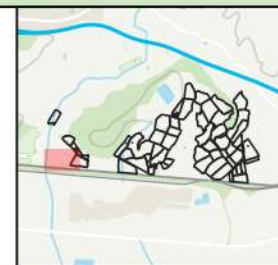
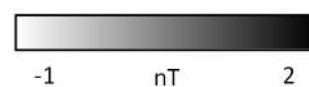


MSST1080: Craig Y Pethi Solar, Wales
Figure 65 - XY Trace Plot (Areas 53, 54 & 56)
30nT/cm at 1:1,500 @ A3
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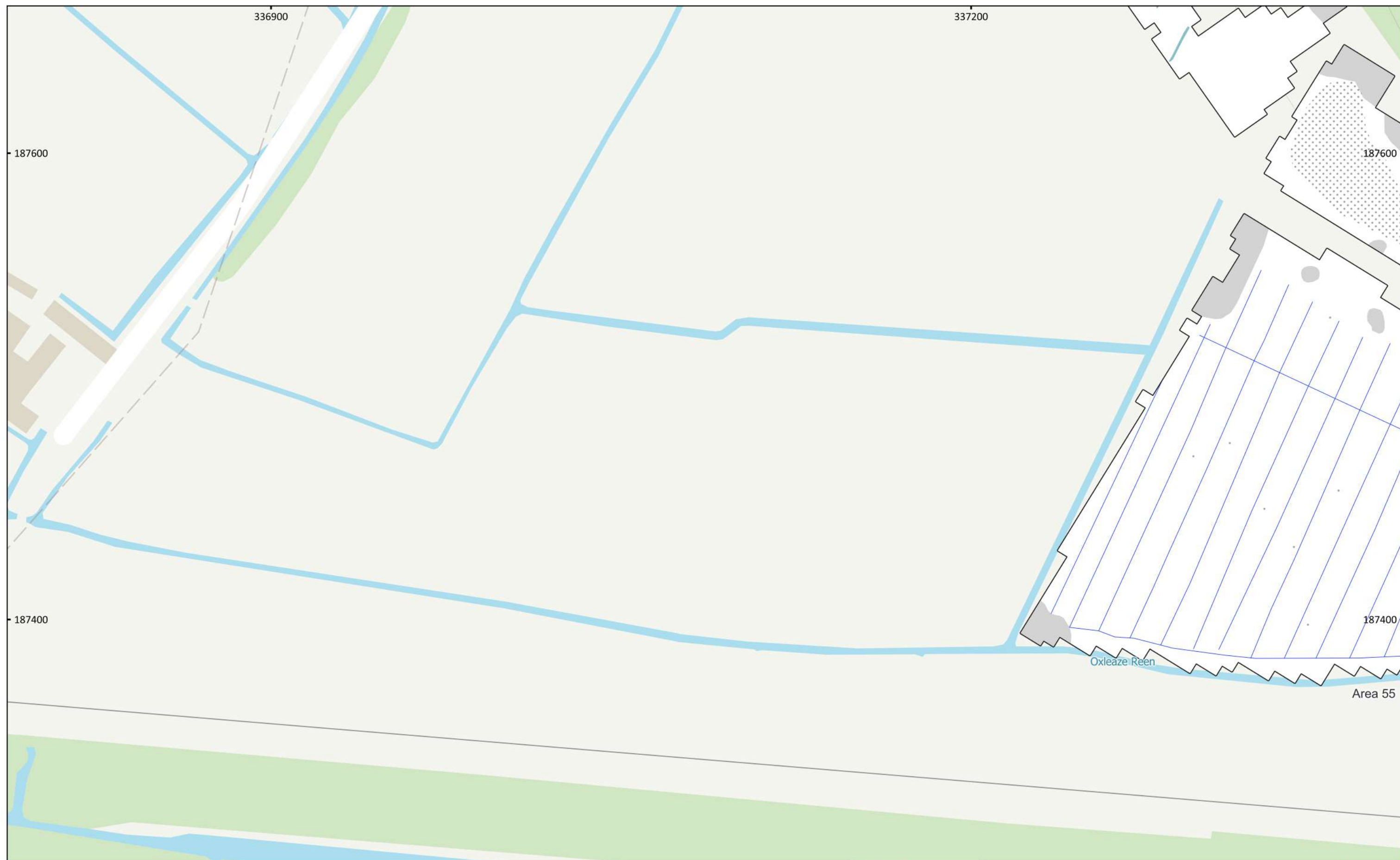




MSST1080: Craig Y Pethi Solar, Wales
Figure 66 - Magnetic Gradient (Area 55)
1:1,500 @ A3
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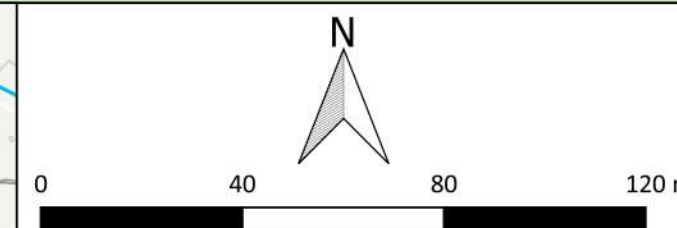
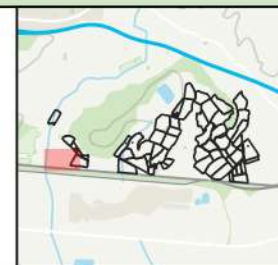


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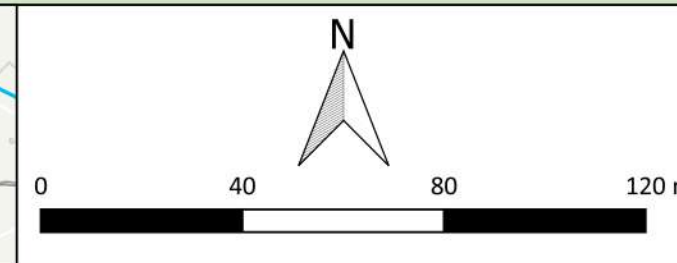
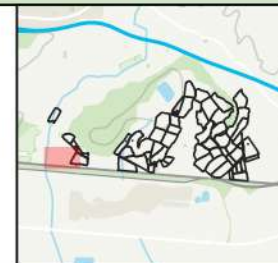
MSST1080: Craig Y Pethi Solar, Wales
Figure 67 - Magnetic Interpretation (Area 55)
1:1,500 @ A3
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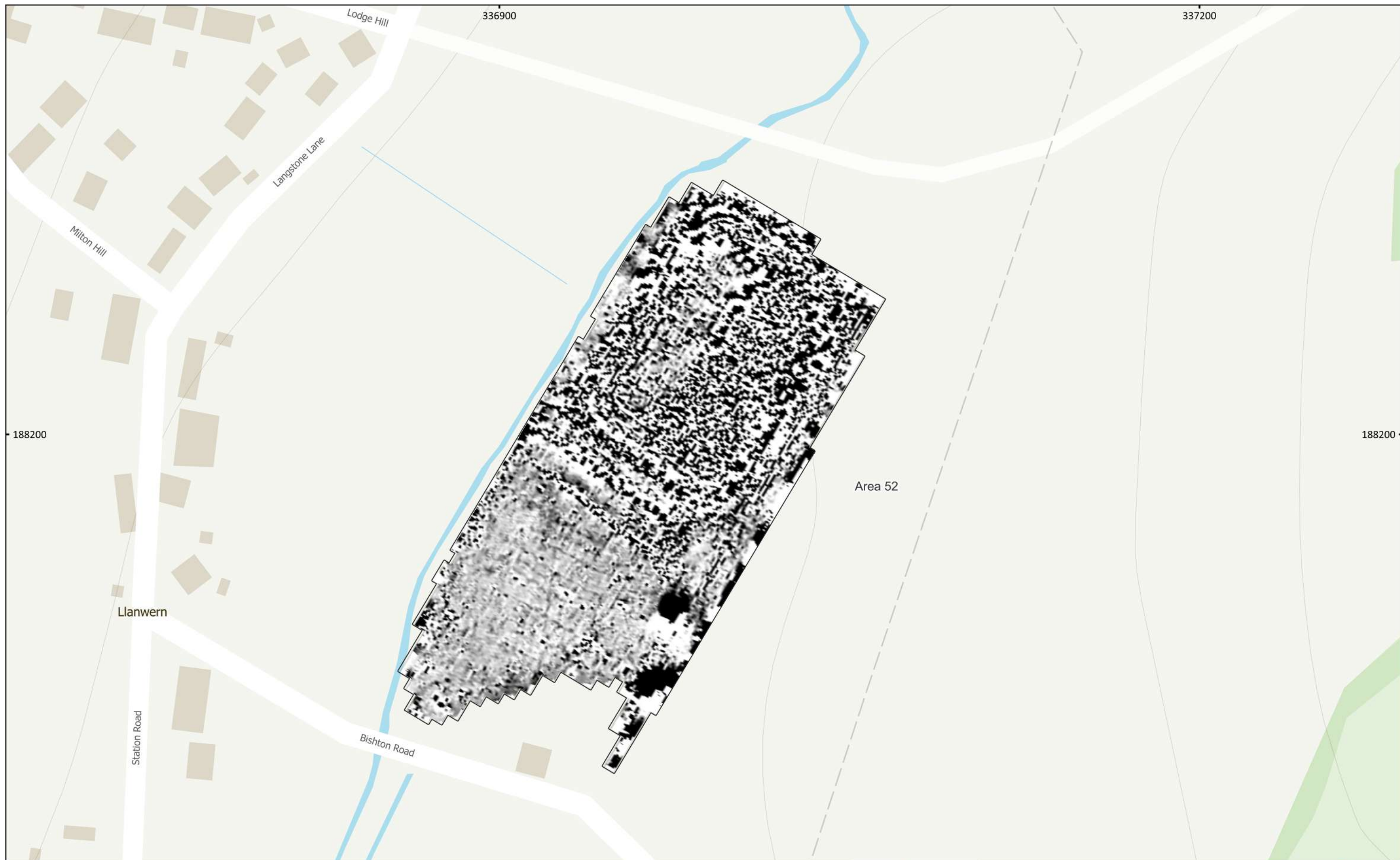
■ Undetermined (Weak)	■ Ferrous/Debris (Spread)	• Ferrous (Spike)
■ Magnetic Disturbance	— Drainage Feature	



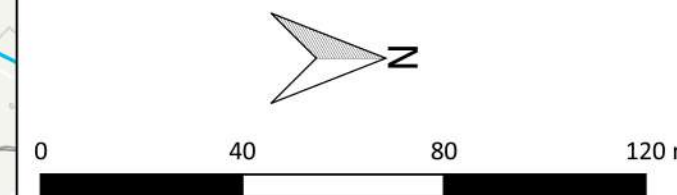
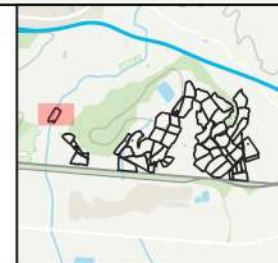
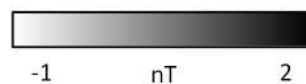


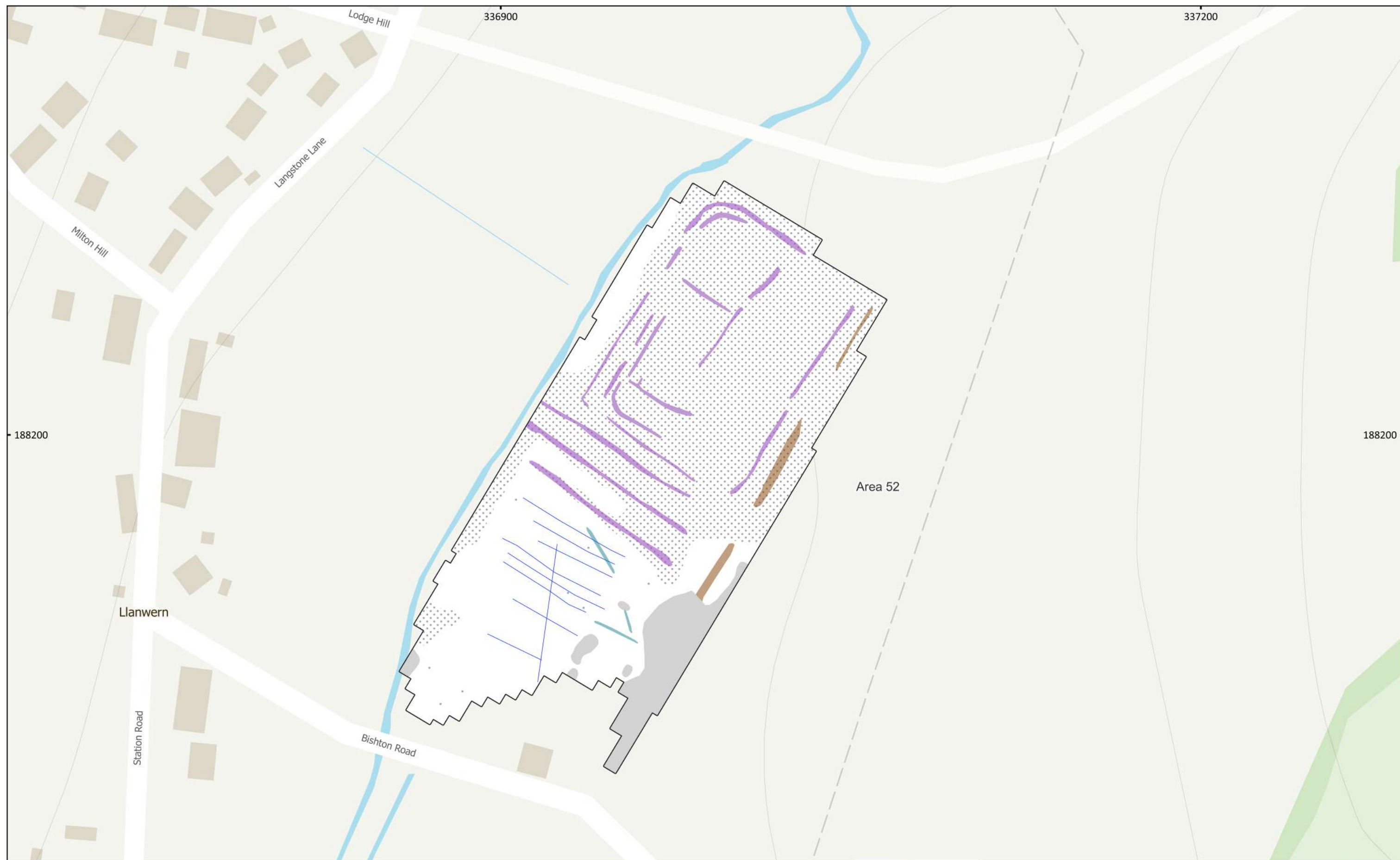
MSST1080: Craig Y Pethi Solar, Wales
Figure 68 - XY Trace Plot (Area 55)
30nT/cm at 1:1,500 @ A3
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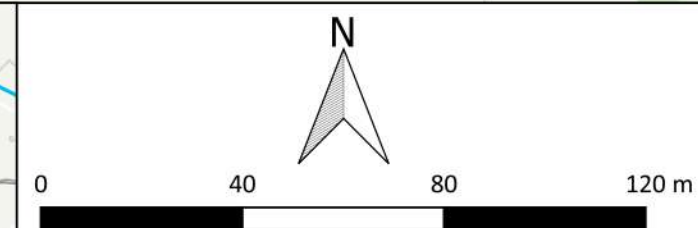
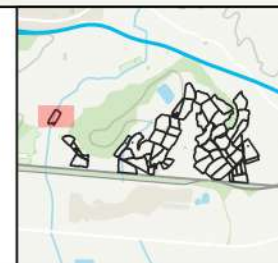
MSST1080: Craig Y Pethi Solar, Wales
Figure 69 - Magnetic Gradient (Area 52)
1:1,500 @ A3
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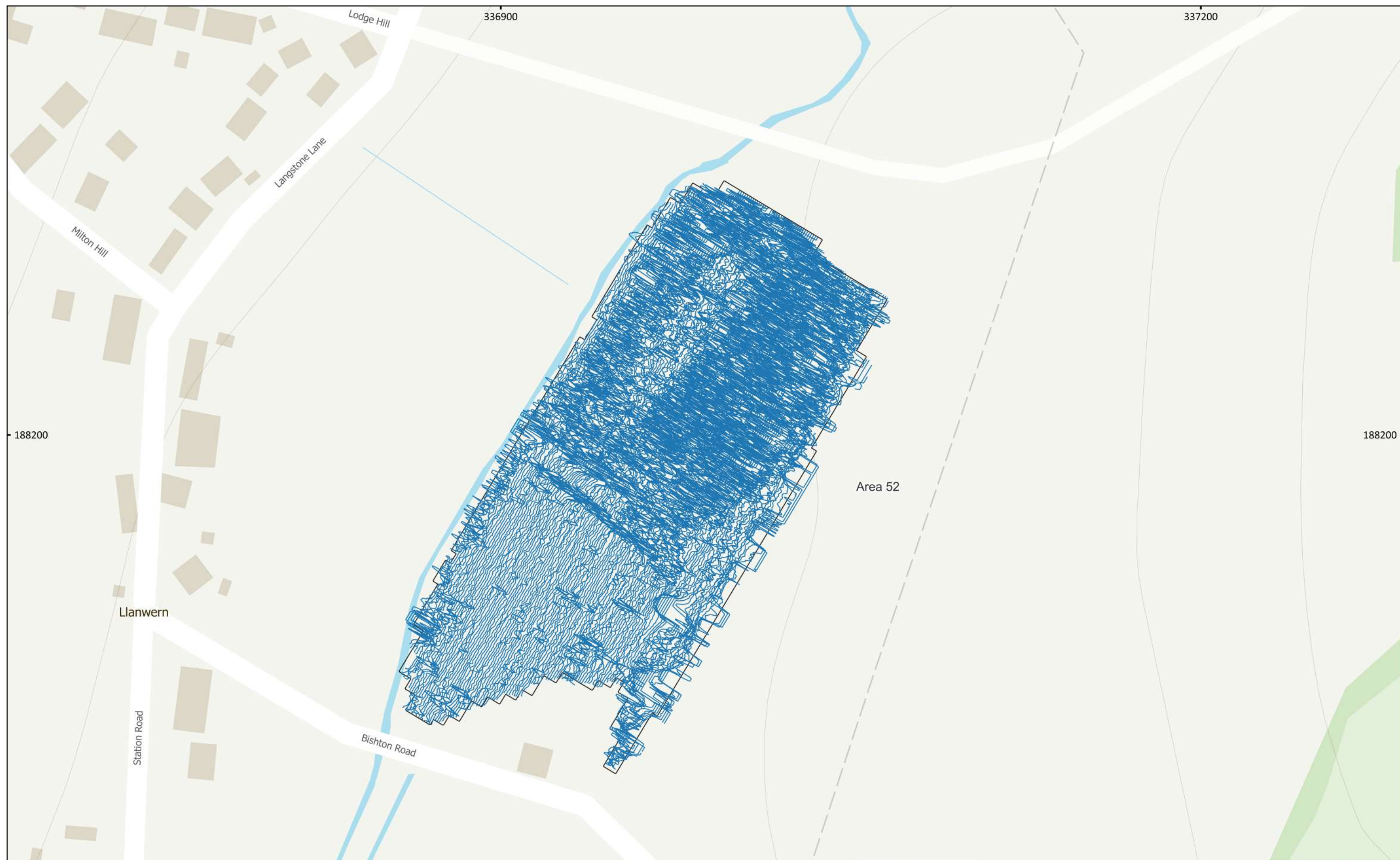




MSST1080: Craig Y Pethi Solar, Wales
 Figure 70 - Magnetic Interpretation (Area 52)
 1:1,500 @ A3
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 Agricultural (Weak)	 Ferrous/Debris (Spread)	 Ferrous (Spike)
 Undetermined (Weak)	 Structural Remnants	
 Magnetic Disturbance	 Drainage Feature	





MSST1080: Craig Y Pethi Solar, Wales
Figure 71 - XY Trace Plot (Area 52)
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