



Geophysical Survey Report of Chippenham Development

**For
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Abstract

Magnitude Ltd was commissioned to locate and assess the potential for sub-surface archaeological remains within a c. 219.7ha area that forms part of the Future Chippenham Road Proposal Phase 2 to the south of Chippenham, Wiltshire. A fluxgate gradiometer survey was successfully completed across the majority of the survey area with the exception of 20ha not being surveyed due to waterlogged ground conditions and a land parcel being excluded. Archaeological activity has been identified across six foci of activity including linear, curvilinear, rectilinear and discrete anomalies, forming probable and possible ditched enclosures, trackways, field systems and pits. Anomalies that align with mapped historical features such as former field boundaries and a former canal have also been detected. Agricultural activity has been identified in the form of ridge and furrow cultivation, modern ploughing trends and field drains. Anomalies relating to modern activity have been interpreted as buried services, electric pylons and overhead cables. There is limited interference from ferrous material such as extant field boundaries and debris spreads around nearby farming infrastructure.

Contents

Abstract.....	2
List of Figures	4
1. Introduction	8
2. Quality Assurance	8
3. Objectives.....	8
4. Geographic Background.....	9
5. Archaeological Background.....	19
6. Methodology.....	20
6.1. Data Collection	20
6.2. Data Processing	20
6.3. Data Visualisation and Interpretation	21
7. Results.....	21
7.1. Qualification	21
7.2. Discussion	22
7.3. Interpretation	23
7.3.1. General Statements	23
7.3.2. Magnetic Results - Specific Anomalies.....	24
8. Conclusions	28
9. Archiving	29
10. Copyright.....	29
11. References	29
12. Project Metadata	30
13. Document History	30

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 (Overview) (Northern Areas)	1:3,500 @ A3
Figure 4:	Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Northern Areas)	1:3,500 @ A3
Figure 5:	Magnetic Total Field (Overview) (Western Areas)	1:3,500 @ A3
Figure 6:	Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Western Areas)	1:3,500 @ A3
Figure 7:	Magnetic Total Field (Overview) (Southern Areas)	1:3,500 @ A3
Figure 8:	Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Southern Areas)	1:3,500 @ A3
Figure 9:	Magnetic Total Field (Overview) (Eastern Areas)	1:3,500 @ A3
Figure 10:	Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Eastern Areas)	1:3,500 @ A3
Figure 11:	Magnetic Total Field (Overview) (Northeastern Areas)	1:3,500 @ A3
Figure 12:	Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Northeastern Areas)	1:3,500 @ A3
Figure 13:	Magnetic Gradient (Areas 20, 21, 7201 and 7302)	1:1,500 @ A3
Figure 14:	Magnetic Interpretation (Areas 20, 21, 7201 and 7302)	1:1,500 @ A3
Figure 15:	XY Trace Plot (Areas 20, 21, 7201 and 7302)	1:1,500 @ A3
Figure 16:	Magnetic Gradient (Areas 17, 19, 21, 66, 67, 68, 70 and 107)	1:1,500 @ A3
Figure 17:	Magnetic Interpretation (Areas 17, 19, 21, 66, 67, 68, 70 and 107)	1:1,500 @ A3
Figure 18:	XY Trace Plot (Areas 17, 19, 21, 66, 67, 68, 70 and 107)	1:1,500 @ A3
Figure 19:	Magnetic Gradient (Areas 71, 72, 73, 7301, 76, 7601 and 106)	1:1,500 @ A3
Figure 20:	Magnetic Interpretation (Areas 71, 72, 73, 7301, 76, 7601 and 106)	1:1,500 @ A3
Figure 21:	XY Trace Plot (Areas 71, 72, 73, 7301, 76, 7601 and 106)	1:1,500 @ A3
Figure 22:	Magnetic Gradient (Areas 76, 78, 79 and 81)	1:1,500 @ A3
Figure 23:	Magnetic Interpretation (Areas 76, 78, 79 and 81)	1:1,500 @ A3

Figure 24:	XY Trace Plot (Areas 76, 78, 79 and 81)	1:1,500 @ A3
Figure 25:	Magnetic Gradient (Areas 79, 81, 82, 8401, 85, 89, and 91)	1:1,500 @ A3
Figure 26:	Magnetic Interpretation (Areas 79, 81, 82, 8401, 85, 89, and 91)	1:1,500 @ A3
Figure 27:	XY Trace Plot (Areas 79, 81, 82, 8401, 85, 89, and 91)	1:1,500 @ A3
Figure 28:	Magnetic Gradient (Areas 8401, 85, 86, 87, 88, 90 and 91)	1:1,500 @ A3
Figure 29:	Magnetic Interpretation (Areas 8401, 85, 86, 87, 88, 90 and 91)	1:1,500 @ A3
Figure 30:	XY Trace Plot (Areas 8401, 85, 86, 87, 88, 90 and 91)	1:1,500 @ A3
Figure 31:	Magnetic Gradient (Areas 1, 2, 3 and 4)	1:1,500 @ A3
Figure 32:	Magnetic Interpretation (Areas 1, 2, 3 and 4)	1:1,500 @ A3
Figure 33:	XY Trace Plot (Areas 1, 2, 3 and 4)	1:1,500 @ A3
Figure 34:	Magnetic Gradient (Areas 4, 6, 7, 8 and 5601)	1:1,500 @ A3
Figure 35:	Magnetic Interpretation (Areas 4, 6, 7, 8 and 5601)	1:1,500 @ A3
Figure 36:	XY Trace Plot (Areas 4, 6, 7, 8 and 5601)	1:1,500 @ A3
Figure 37:	Magnetic Gradient (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)	1:1,500 @ A3
Figure 38:	Magnetic Interpretation (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)	1:1,500 @ A3
Figure 39:	XY Trace Plot (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)	1:1,500 @ A3
Figure 40:	Magnetic Gradient (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)	1:1,500 @ A3
Figure 41:	Magnetic Interpretation (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)	1:1,500 @ A3
Figure 42:	XY Trace Plot (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)	1:1,500 @ A3
Figure 43:	Magnetic Gradient (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50, 112 and 115)	1:1,500 @ A3
Figure 44:	Magnetic Interpretation (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50, 112 and 115)	1:1,500 @ A3

Figure 45:	XY Trace Plot (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50, 112 and 115)	1:1,500 @ A3
Figure 46:	Magnetic Gradient (Areas 79, 80 and 114)	1:1,500 @ A3
Figure 47:	Magnetic Interpretation (Areas 79, 80 and 114)	1:1,500 @ A3
Figure 48:	XY Trace Plot (Areas 79, 80 and 114)	1:1,500 @ A3
Figure 49:	Magnetic Gradient (Areas 82, 85 and 86)	1:1,500 @ A3
Figure 50:	Magnetic Interpretation (Areas 82, 85 and 86)	1:1,500 @ A3
Figure 51:	XY Trace Plot (Areas 82, 85 and 86)	1:1,500 @ A3
Figure 52:	Magnetic Gradient (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)	1:1,500 @ A3
Figure 53:	Magnetic Interpretation (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)	1:1,500 @ A3
Figure 54:	XY Trace Plot (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)	1:1,500 @ A3
Figure 55:	Magnetic Gradient (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)	1:1,500 @ A3
Figure 56:	Magnetic Interpretation (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)	1:1,500 @ A3
Figure 57:	XY Trace Plot (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)	1:1,500 @ A3
Figure 58:	Magnetic Gradient (Areas 22, 28, 35, 36, 37, 3701 and 103)	1:1,500 @ A3
Figure 59:	Magnetic Interpretation (Areas 22, 28, 35, 36, 37, 3701 and 103)	1:1,500 @ A3
Figure 60:	XY Trace Plot (Areas 22, 28, 35, 36, 37, 3701 and 103)	1:1,500 @ A3
Figure 61:	Magnetic Gradient (Areas 23, 24, 26, 27, 28, 33 and 37)	1:1,500 @ A3
Figure 62:	Magnetic Interpretation (Areas 23, 24, 26, 27, 28, 33 and 37)	1:1,500 @ A3
Figure 63:	XY Trace Plot (Areas 23, 24, 26, 27, 28, 33 and 37)	1:1,500 @ A3
Figure 64:	Magnetic Gradient (Area 110, 112, 113, 114 and 115)	1:1,500 @ A3
Figure 65:	Magnetic Interpretation (Area 110, 112, 113, 114 and 115)	1:1,500 @ A3
Figure 66:	XY Trace Plot (Area 110, 112, 113, 114 and 115)	1:1,500 @ A3
Figure 67:	Magnetic Gradient (Area 108)	1:1,500 @ A3

Figure 68:	Magnetic Interpretation (Area 108)	1:1,500 @ A3
Figure 69:	XY Trace Plot (Area 108)	1:1,500 @ A3
Figure 70:	Magnetic Gradient (Areas 5, 14, 5601, 5701, 59, 60 and 61)	1:1,500 @ A3
Figure 71:	Magnetic Interpretation (Areas 5, 14, 5601, 5701, 59, 60 and 61)	1:1,500 @ A3
Figure 72:	XY Trace Plot (Areas 5, 14, 5601, 5701, 59, 60 and 61)	1:1,500 @ A3
Figure 73:	Magnetic Gradient (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)	1:1,500 @ A3
Figure 74:	Magnetic interpretation (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)	1:1,500 @ A3
Figure 75:	XY Trace Plot (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)	1:1,500 @ A3

1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Atkins to undertake a geophysical survey over a c. 219.7ha area of land South of, Chippenham, Wiltshire (centred at ST 92587109). This geophysical survey and report form a part of the Future Chippenham Road Proposal Phase 2 and follows upon previous geophysical survey results from Phase 1 investigations (Dyulgerski, 2021).
- 1.2. The geophysical survey comprised quad-towed, and 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 (Swinbank, 2021).
- 1.5. The survey commenced on 08/10/2021 and was completed on 26/01/2022.

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, 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 primary aim of all archaeological geophysical survey is to identify and record potential archaeological remains through the production and interpretation of geophysical data, to inform the need for, scope and method of subsequent phases of archaeological investigation and mitigation. It should be noted that while geophysical survey can aid in identifying areas of archaeological potential, only intrusive evaluations can provide confirmation of the nature, character, extent and significance of sub-surface archaeological remains.

3.2. The results of all geophysical survey were assessed and interpreted to attempt to understand the potential for buried remains within the targeted areas, in advance of development works.

3.3. The specific aims were to:

- Locate potential sub-surface archaeological remains within the Site and characterise where possible.
- Produce a comprehensive report and archive.
- Inform a programme of potential trial trench evaluation.

4. Geographic Background

4.1. The survey area was located on the south-eastern edge of Chippenham (Figure 1). Gradiometer survey was undertaken across multiple, largely contiguous, agricultural fields. The survey area covered a swathe of land between the A4 to the east and north, and the B4528 to the west. The River Avon ran north-south through the area, before turning east and running along the survey area's southern boundary (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	The survey area consisted of a flat pasture.	The survey area's northern border consisted of a hedgerow, the east and southern borders consisted of tree saplings and wood and metal wire fencing, and the western border consisted of a wooden fence. A farm building and drystone walls were located in the centre of the western border and metal gates were located north and south of it.
2	The survey area consisted of a flat pasture.	The survey area's north, east and southern borders consisted of hedgerows, the western border consisted of a wooden fence and the north-western corner consisted of wood and metal wire fencing and tree saplings. Two isolated trees were located in the survey area, one in the eastern half, and one in the south of the centre of the survey area. Telegraph poles and overhead cables ran northeast to southwest across the eastern half of the survey area.
3	The survey area consisted of a flat arable field.	The survey area's north, east and western borders consisted of hedgerows and the southern border had no physical boundary. A footpath ran northeast – southwest across the centre of the survey area.
4	The survey area consisted of a flat arable field.	The survey area's north, east and western border consisted of hedgerows, the southern border had no physical boundary. A metal trough was located in the centre of the survey area.
5	The survey area consisted of a pasture that sloped gradually to the southeast.	The survey area's northern border had no physical boundary, the east and south-eastern border were bordered by the River Avon, the south and western border consisted of hedgerows. A Pylon was located

		in the southwestern corner of the survey area, with overhead cables running north east – south west.
6	The survey area consisted of a pasture that sloped gradually to the south.	The survey areas northern border had no physical boundary, the east and southern borders consisted of the River Avon.
7	The survey area consisted of a flat pasture.	The survey area's northern border consisted of wood and metal wire fencing, the eastern border consisted of the River Avon, the southern border had no physical boundary and the western border consisted of a hedgerow. A metal gate was located in the eastern half of the northern border.
8	The survey area consisted of a flat pasture.	The survey area's north and southern border consisted of wood and metal wire fencing, the eastern border consisted of the River Avon and the western border consisted of a hedgerow. A metal gate was located in the eastern half of the southern border. Three isolated trees were located in the north-western corner of the survey area. A telegraph pole was also located in the north-western corner of the survey area, with overhead cables running north east to south west.
9	The survey area consisted of pasture that sloped to the south.	The survey area was surrounded on all sides by metal fencing, with hedgerows on the northern and eastern boundary. There was a metal gate in the southwestern corner of the area. A concrete/metal trough was located in the northern end of the survey area.
10	The survey area consisted of a pasture that sloped sharply to the west.	The survey area's northern border had no physical boundary, the east and western borders consisted of wood and metal fencing, and the western border consisted of the River Avon.
11	The survey area consisted of a flat pasture.	The survey area's north, east and western borders consisted of metal wire fencing, the southern border had no physical boundary, and a farm building was located to its south. A telegraph pole was located in the north western corner of the survey area.
12	The survey area consisted of a flat pasture.	The survey area's north, east and western borders consisted of metal wire fencing, the southern border had no physical boundary.
13	The survey area consisted of a flat pasture.	The survey area's southern and eastern border consisted of hedgerow, the western border consisted of a metal fence, and the northern border had no physical boundary. A Pylon was located in the western half of the survey area, with overhead cables running southeast-northwest.
14	The survey area consisted of a flat pasture.	The survey area's south, east and western borders consisted of hedgerows and the northern border consisted of a metal fence. A river ran along the southern border, and a metal trough was located in the centre of the northern boundary.

15	The survey area consisted of a pasture, with a steep slope on the northern border.	The survey area was surrounded on all sides by metal fencing and the north, west and southern boundary consisted of hedgerows and trees. A river ran along the southern border.
16	The survey area consisted of a recently ploughed arable field.	The survey area's east, south and western borders consisted of metal fencing, with the south and western borders also containing hedgerows. The northern border had no physical boundary. Two metal troughs were located in the southern half of the area and two pylons were located in the centre of the field with overhead cables running east west across the survey area.
17	The survey area consisted of a recently ploughed arable field.	The survey area's north and western border consisted of metal fencing and hedgerows and the east and southern borders had no physical boundary.
18	The survey area consisted of an arable field containing crop stubble.	The survey area was surrounded on all sides by hedgerows, with a metal fence on the eastern boundary. A metal trough was located in the centre of the northern end of the survey area. A metal pylon was located in the centre of the northern half of the survey area, with overhead cables running east-west across the survey area. A further pylon was located on the southern end of the eastern border, with overhead cables running southwest to northeast. Farm objects and machinery were located in the centre of the western boundary.
19	The survey area consisted of a recently planted arable field which sloped to the north.	The survey area was surrounded on all sides by hedgerows and trees. Metal troughs were located in the western half of the survey area, on the north and southern ends.
20	The survey area consisted of an undulating, recently planted arable field.	The survey area was surrounded on all sides by hedgerows, with the north, east and southern borders consisted of metal fencing. A brook/ditch ran along the southern border. A metal trough was located on the western half of the southern border. Pylons were located on the centre of the southern border and the southern end of the western border, with overhead cables running east-west across the survey area.
2001	The survey area consisted of a pasture.	The east and western borders consisted of hedgerows, and the north and southern borders had no physical boundary. A pylon was located just south of the survey area.
21	The survey area consisted of a recently planted arable field, which sloped southeast, and west.	The survey area was surrounded on all sides by hedgerows and trees. A line of pylons and overhead cables ran across the southern half of the survey area, running southwest-northeast. Two large trees were located in the southwestern corner of the survey area.
2102	The survey area consisted of a pasture.	The north, east and western borders consisted of hedgerows and the southern border had no physical

		boundary. A metal trough was located in the centre of the northern half of the survey area.
22	The survey area consisted of a pasture.	The survey area's northern boundary consisted of a hedgerow, the eastern and southern boundaries consisted of hedgerow and treeline and the western boundary had no physical border. A gate was located in the north-eastern corner of the field and a stone trough was also located in the northeast corner of the field.
23	The survey area consisted of a pasture.	The survey area's east, south and western borders consisted of fencing, hedgerows and sporadic trees and the northern boundary had no physical border. A trough was located in the north-western corner of the area, and a tree line ran east-west across the centre of the survey area.
24	The survey area consisted of pasture.	The survey area's east, south and western borders consisted of fencing and hedgerows and the northern boundary had no physical border. A trough was located on the eastern half of the northern boundary.
25	The survey area consisted of a flat pasture.	The survey area's north and western border consisted of metal wire fencing, the east and southern borders had no physical boundary. A metal trough was located in the northeastern corner of the survey area.
26	The survey area consisted of an undulating pasture.	The survey area's north and western boundary consisted of hedgerows and trees and the east and southern borders consisted of a brook. Three gates were located along the northern border and a trough was located in the centre of the northern border.
27	The survey area consisted of a pasture which sloped to the south.	The western boundary consisted of a hedgerow, the southern boundary consisted of a treeline, and the east/northern border consisted of a brook. A bridge was located on the eastern border and a gate was located in the centre of the western border.
28	The survey area consisted of a pasture.	The east, west and southern borders consisted of a hedgerow with sporadic trees and the northern border consisted of a ditch and brook. A gate was located in the northern end of the eastern boundary. A trough was located in the centre of the northern end of the survey area.
29	The survey area consisted of a pasture.	The western and eastern borders consisted of a hedgerow, and the north and southern boundary had no physical border. A fence ran northeast-southwest across the southern end of the area. A telegraph pole and overhead pylons ran from the north-eastern corner southwest across the site. A gate was located in the northern end of the eastern boundary. An area of land was unsurveyable in the south-eastern corner of the site.
30	The survey area consisted of a flat livestock pen.	The survey area was surrounded on all sides by wood and metal wire fencing. Hedgerows were located on the north and western borders.

3001	The survey area consisted of a flat pasture.	The survey area's northern border consisted of the River Avon, the remaining borders had no physical boundary.
31	The survey area consisted of a flat pasture.	The survey area was surrounded on all sides by wood and metal wire fencing. Farm objects were located along the northern border of the survey area.
3101	The survey area consisted of pasture sloping from the north to the south.	The survey area was bordered by trees to the north, east and west and trees and a river to the south. A pile of harvested hay was located within the centre and non surveyable areas containing overgrown vegetation was located within the northwest and southeastern edges.
32	The survey area consisted of an arable field.	The survey area was surrounded on all sides by a treeline, and the western boundary consisted of a wood and wire fence. A river ran along the southern boundary. The centre of the survey area contained deep waterlogged puddles.
33	The survey area consisted of a pasture.	The east and southern borders of the survey area consisted of fences, with sporadic hedges on the eastern border. The west and northern border consisted of a brook, with a bridge in the centre of the northern border.
3301	This area consisted of a pasture which sloped to the south.	The east, south and western borders consisted of hedgerows, and the southern border had a metal fence on its eastern half. The northern boundary had no physical border. A metal wire fence ran north-south across the centre of the survey area, and a metal trough was located at the northern end of the western half of the survey area. The north-eastern corner of the survey area was unsurveyable due to waterlogged ground conditions.
34	The survey area consisted of a pasture.	The survey area was surrounded on all sides by fencing, with the east, south and western borders containing hedgerows. A trough was located in the centre of the northern end of the survey area. A brook ran along the northern boundary.
3401	The survey area consisted of a recently slurry spread pasture.	The survey area's east and southern border consisted of hedgerow, and the northern boundary had no physical border.
35	The survey area consisted of a pasture.	The survey area was surrounded on all sides by hedgerows, with a brook running along the northern border. Gates were located in the northern end of the east and western borders.
36	The survey area consisted of a pasture.	The survey area was surrounded on all sides by hedgerows, with a brook running along the northern border. A gate was located in the northern end of the eastern border.
37	The survey area consisted of a recently harvested arable field which sloped to the south.	The survey area was surrounded on all sides by a treeline. The centre of the survey area contained a pile of recently harvested hay. There were three areas of overgrown vegetation which were unsurveyable.

		One in the south-eastern corner, one on the southern boundary and one in the north-eastern corner. A river ran along the southern border.
3701	The survey area consisted of a pasture which sloped to the south.	The north and western boundaries consisted of a treeline, and the east and southern boundaries consisted of unsurveyable overgrown vegetation.
50	The survey area consisted of a flat pasture.	The survey area's north and western borders had no physical boundary, the east and western borders consisted of hedgerows. A small structure was located on the eastern half of the southern boundary.
51	The survey area consisted of a flat pasture.	The survey area's north, south and western borders had no physical boundary, the eastern border consisted of a hedgerow.
52	The survey area consisted of a flat pasture.	The survey area's north and western borders consisted of wood and metal wire fencing, the eastern border consisted of a hedgerow and the southern border had no physical boundary. A metal gate was located in the centre of the northern border, and a trough was located in the northern half of the survey area's centre.
53	The survey area consisted of a flat pasture.	The survey area's north and southern borders had no physical boundary, the east and western borders consisted of hedgerows. A fence/ hedgerow ran partially east-west across the southern end of the survey area.
54	The Survey area consisted of a pasture that sloped to the west.	The survey area's north, south and western borders consisted of wood and metal wire fencing and hedgerows, the northern border consisted of a wood and metal wire fence. The river Avon was located on the western border, a single tree was located in the northern end of the survey area's centre and a farm structure was located in the north eastern corner of the survey area.
55	The survey area consisted of a flat pasture.	The survey area's northern border consisted of the River Avon, the eastern border consisted of a wood and metal wire fence, the southern border had no physical boundary.
5601	The survey area consisted of a flat pasture.	The north and eastern border had no physical boundary. The southern border consisted of a wood and metal wire fence; the western border consisted of the River Avon. A pylon was located in the centre of the survey area, with overhead cables running east- west.
5701	The survey area consisted of a flat pasture.	The survey area's northern border had no physical boundary, the south eastern and south western borders consisted of wood and metal wire fencing.
58	The survey area consisted of a pasture that sloped southwest.	The survey area was surrounded on all sides by wood and metal wire fencing. The north and eastern borders consisted of hedgerows.
59	The survey area sloped to the southwest.	The survey area's northern border consisted of wood and metal wire fencing, the eastern border consisted

		of a hedgerow, the southern border had no physical boundary, the western border consisted of the River Avon. Overhead cables ran east- west across the north eastern corner of the survey area.
60	The survey area consisted of a flat pasture.	The survey area's northern border had no physical boundary, the north eastern border consisted of wood and metal wire fencing, the eastern border consisted of a hedgerow, the western border consisted of the River Avon.
61	The survey area consisted of a flat pasture.	The survey area was surrounded on all sides by wood and metal wire fencing, the north and western border consisted of a hedgerow.
62	The survey area consisted of a flat pasture.	The survey area's north and south border had no physical boundary, the east and western borders consisted of wood and metal wire fencing. Overhead cables ran east – west across the centre of the survey area.
63	The survey area consisted of a flat pasture.	The survey area's north, south and western borders had no physical boundary, the eastern border consisted of wood and metal wire fencing.
64	The survey area consisted of a pasture.	The east and southern borders consisted of hedgerows and metal fencing. The northern boundary had no physical border. Overhead cables ran northeast-southwest across the survey area.
65	The survey area consisted of a pasture.	The north and western borders consisted of hedgerows and metal fencing; the southern boundary had no physical border.
66	The survey area consisted of a pasture which sloped gradually to the north.	The north, east and southern borders consisted of hedgerows and metal fencing, the western border consisted of a metal fence. A dirt path ran southwest-northeast across the survey area.
6601	The survey area consisted of a pasture which slope steeply to west and sloped to the north.	The survey area was surrounded on all sides by metal fencing, and the north and west boundaries consisted of treelines.
67	The survey area consisted of a pasture.	The survey area was surrounded on all sides by metal fencing and treelines.
68	The survey area consisted of a grass pasture.	The survey area was surrounded on all sides by a hedgerow and treeline.
70	The survey area consisted of a grass pasture.	The south and western borders consisted of hedgerows, the northern border consisted of a metal fence, and the eastern border had no physical boundary.
71	The survey area consisted of a grass pasture.	The east and southern borders of the survey area consisted of hedgerows, the northern border consisted of a metal fence and the western border had no physical boundary. Pylons and overhead cables ran northeast to southwest across the survey area.
72	The survey area consisted of a grass pasture.	The north, east and western borders consisted of hedgerows, and the southern border consisted of a

		metal fence. Two lines of pylons and overhead cables ran northeast-southwest across the survey area. A metal trough was located in the eastern half of the survey area.
7201	The survey area consisted of a flat pasture.	The survey area's north and eastern border had no physical boundary, the southern border consisted of a metal wire fence and the eastern border consisted of a hedgerow.
73	The survey area consisted of a flat pasture.	The survey area was surrounded on all sides by hedgerows.
7301	The survey area consisted of a flat pasture.	The survey area's northern border consisted of a wire fence and was bordered by a road, the east and southern borders consisted of hedgerows and the western border had no physical boundary.
7302	The survey area consisted of an undulating pasture.	The survey area's northern border consisted of a partial hedgerow on its western extent, and wooden fencing, the southern border consisted of a wooden fence, the east and western borders consisted of hedgerows. A trough was located in the western extent of the centre of the survey area.
76	The survey area consisted of a pasture that sloped to the north.	The survey area's north, east and southern borders consisted of metal wire fencing, the east and southern borders also consisted of hedgerows. The western border had no physical boundary. A metal gate was located in the centre of the eastern border.
7601	The survey area consisted of a pasture that sloped to the north.	The survey area's northern border consisted of a metal wire fence, the south and western borders had no physical boundary and the eastern border had no physical boundary.
78	The survey area consisted of a pasture that sloped to the north.	The survey area's north, east and western border consisted of hedgerows, the southern boundary consisted of a plant nursery and no physical boundary. Overhead power lines ran northeast-southwest across the survey area.
79	The survey area consisted of a pasture that sloped to the north.	The north and western border consisted of hedgerows and treelines, the south and eastern boundary had no physical border. Multiple metal troughs were located in the north-western corner of the survey area, a further trough was located in the centre of the western border.
80	The survey area consisted of a pasture.	The eastern boundary consisted of a metal fence, the southern boundary consisted of a hedgerow and the north and western boundaries had no physical border.
81	The survey area consisted of a pasture.	The north, east and southern borders consisted of treelines, the south and northern borders consisted of metal wire fencing. A trough was located in the north-western corner of the survey area. A fallen tree and a standing tree were located in the northern half of the survey area. A Pylon was located on the

		southern border and overhead cables ran north-south.
82	The survey area consisted of a flat arable field	The survey area's northern border had no physical boundary, the east and southern borders consisted of a hedgerow and the western border consisted of metal fencing.
8401	The survey area consisted of a pasture.	The survey area was surrounded on all sides by hedgerows. A metal tower was located in the eastern half of the southern border. Farm building were adjacent to the eastern border. One metal gate was located on the southern border, and tow metal gates were located on the western border.
85	The survey area consisted of a flat pasture.	The survey area's northern border consisted of a hedgerow, the east south and western borders had no physical boundary. Farm buildings were located on the eastern border of the survey area, a rubble/waste pile was located in the centre of the survey area. A metal wire fence ran northwest - southeast through the centre of the survey area.
86	The survey area consisted of a flat arable field.	The survey area's northern border consisted of a hedgerow, the southern border has no physical boundary.
87	The survey area consisted of a pasture.	The north and southern border consisted of hedgerows, the western border consisted of an electric fence, and the eastern boundary had no physical border. A farm track ran along the western border. Pylons and overhead cables ran from three directions and converged in the middle of the survey area, running north-south, east-west and southwest-northeast.
88	The survey area consisted of a pasture.	The north and southern borders consisted of hedgerows, the eastern border consisted of an electric fence, and the western boundary had no physical border. A farm track ran along the eastern border. Overhead cables ran northeast-southwest across the south-eastern corner of the survey area. Further overhead cables ran northeast-southwest across the north-western corner of the survey area.
90	The survey area consisted of a flat pasture.	The survey area's northern border consisted of a farm track, the eastern border consisted of a hedgerow, the south and western border had no physical boundary.
91	The survey area consisted of a flat pasture.	The survey area's north, east and western borders consisted of a hedgerow, the southern border had no physical boundary. Metal gates were located on the east and western borders.
100	The survey area consisted of pasture. The centre of the survey area was not surveyed due to unsuitable ground conditions.	The area was bordered to the north by a fence, to the east, south and northwest by hedges and the field continued to the southwest beyond the survey area. A trough was located within the centre of the survey area. Overhead powerline cables were identified

		within the centre of the survey area running northeast to southwest.
101	The survey area consisted of pasture. The centre of the survey area was not surveyed due to unsuitable ground conditions.	The field continued to the north beyond the survey area and was bordered to the east by hedges and to the south and west by a fence and hedges. A telephone line was located within the northwest of the survey area running northeast to southwest.
102	The survey area consisted of pasture.	The area was bordered to the north by barbed wire, to the northeast by a building, to the southeast by fences and the field continued to the south and west beyond the survey area.
103	The survey area consisted of pasture.	The area was bordered to the northeast, east and west by hedges and the field continued to the northwest and south beyond the survey area.
104	The survey area consisted of pasture. The west of the survey area was not surveyed due to overgrown vegetation.	The field continued beyond the survey area to the north east and west and was bordered by hedges to the south.
105	The survey area consisted of pasture.	The area was bordered to the north, south and west by a fence and hedges to the east.
106	The survey area consisted of arable land under harvested crop.	The area was bordered to the north and east by hedges, to the south by barbed wire and the field continued to the west beyond the survey area.
107	The survey area consisted of arable land under harvested crop.	The area was bordered to the north and west, the field continued to the east beyond the survey area and the southeast was bordered by barbed wire.
108	The survey area consisted of pasture.	The field continued to the north beyond the survey area, bordered to the east and south by fences and hedges and a fence to the west. Trees were located within the centre of the survey area.

- 4.3. The underlying geology comprises sandstone, siltstone and mudstone of the Kellaways Formation across the majority of the survey area. The eastern part of the area (Areas 80, 82, 85-91, 8401, 24, 26, 33, 34) extends onto the Oxford Clay Formation, of which an additional branch which stretches west (across parts of Areas 25, 29-31, 51, 16-19, 66, 70-72, 7601, 76, 78 and 79). Cornbrash Formation limestone crops out across the western tip of the survey area (Area 1 and part of Area 2) (British Geological Survey, 2022).
- 4.4. A wide band of alluvium (recorded over Areas 5-10, 54-55, 5601, 58-59, 5701, 60-61, 14-15, 3001, 3101, 32 and 37) is associated with the River Avon; either side of this, River Terrace Deposits of sand and gravel are recorded in Areas 2-5, 7-9, 59, 61, 15, 36, 38, 27 and 34. An additional, narrower band of alluvium occurs along the course of the Cockle Moor Brook (Areas 21, 67-8, 6601, 26-27 and 33-34). Areas 53, 2001, 18, 35, 36, 28, 22-4, 26, 50-51, 29, 33-34 are located on alluvial fan deposits of clay and silt (British Geological Survey, 2022).
- 4.5. The soils consist of slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils across the higher ground to the northeast and west of the River Avon, with a band of loamy

and clayey floodplain soils with naturally high groundwater following the course of the river (Soilscapes, 2022).

5. Archaeological Background

- 5.1. The following is a summary of the Cultural Heritage section of the Preliminary Environmental Assessment of Options Report produced and provided by Atkins (2020).
- 5.2. Prehistoric activity is recorded within Zone 1 in the form of a flint scatter containing a geometric microlith, bladelets, and fragments of flint flakes and scrapers. Two further flint findspots included a Neolithic scraper tool, and a broken polished axe. Similar flint items have been recovered within Zone 2, including Mesolithic tools and waste flakes and an arrowhead. Two Mesolithic sites are recorded within Zone 2 comprising 76 Mesolithic flint tools (MWI3649, MWI3650).
- 5.3. Iron Age activity is limited to within Zone 1, where two sites are recorded. A settlement with associated field system, and a late Iron Age/ early Romano-British crouched burial (MWI15224 and EWI6182).
- 5.4. Romano-British activity is recorded within Zones 1 and 2. Zone 1 contains field-systems, a settlement and associated pottery deposits (MWI5224 and MWI5226). Within this settlement area, located c.300m north of the western end of Zone 1, a trackway, a well, a drying oven, brooches, and a coin of Domitian have been excavated. The type of drying oven is typically associated with a farmstead or villa type structures (EWI618). A second settlement within Zone 1 identified as an area of occupation, and further systems of field boundaries and enclosures is located south of the survey area (EWI6543). Within Zone 2 a Romano-British ladder-enclosure, as well as curvilinear features were identified through geophysical survey. Excavations uncovered a droveway and field systems, and a large sub-circular enclosure (EWI8027 and MWI66322).
- 5.5. No Anglo-Saxon remains are recorded within any of the Zones. However, Chippenham is recorded to have been a Saxon Royal Estate. Though in the 9th century the site formed part of the forest belt known as 'Sealwudu'.
- 5.6. During the medieval period the route options fall largely within the bounds of the Royal Forest of Chippenham which included a mixture of arable, meadow, pasture and woodland. The south of Zone 2 is recorded as being a medieval deer park, a pair of parallel tracks from this deer park extended into the south of Zone 1 (MWI5236). Within Zone 1 there are a number of LiDAR and aerial survey results identifying non-designated earthworks and cropmarks, likely relating to settlements associated with trackways, field systems and enclosures. Geophysical survey and excavation have identified deserted settlements within Zone 1 (MWI74030). At least eight blocks of medieval ridge and furrow earthworks are recorded within Zone 1 often associated with medieval settlement activity, field systems and boundaries.
- 5.7. Post medieval activity largely relates to agricultural activity, including field boundaries in Zone 1 as well as post medieval ridge and furrow cultivation and demolished farms in Zone 2.

5.8. WWII pill boxes are recorded in Zones 1 and 2, a total of 21 fall within the 500m radius of the route options (MWI31747).

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 and hand-carried systems were 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 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72). 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 and 12).
- 7.2.2. The geophysical survey was successfully completed across the majority of the survey area, with 20ha of land not being surveyed due to waterlogged ground conditions and a land parcel being excluded. The magnetometer survey has responded well to the survey area, with limited interference from extant field boundaries, overhead cables and buried services. The survey has identified anomalies of archaeological, agricultural, modern and natural origin across different geological backgrounds, allowing for a fairly confident interpretation of the data.
- 7.2.3. Anomalies indicative of probable archaeological activity are identified in six separate foci of activity, to the west, east, centre, north and northeast of the survey area (Figures 4, 6, 8, 10 & 12). In the west of the survey in Areas 2, 3 and 4 a series of linear, curvilinear and discrete anomalies have been identified. These anomalies are located in close proximity to previously identified field systems, a well, and a drying oven that are typically associated with Romano-British farmsteads or villas (see Sec. 5.4). It is possible that the identified anomalies might be a part of a field system of a similar date and origin (Figure 6). The anomalies in Areas 2, 3 and 4 along with the other five foci of activity expand on anomalies detected in the earlier Phase 1 and 2 of works.
- 7.2.4. The remaining foci of probable and possible archaeological activity consist of anomalies forming probable enclosures, pits and trackways. Within these zones of archaeological activity, some of the anomalies which have differing alignments are overlapping, which could indicate multi-phase activity. The precise date of these anomalies is difficult to ascertain from magnetic results alone, however the presence of Romano-British remains to the surrounding area (see Sec 5.4) might suggest a similar origin.
- 7.2.5. Further anomalies classified as possible archaeology cannot be confidently classed as specific features. Although contextual evidence and magnetic signal consistent with previous phases of geophysical investigation and the above probable and possible archaeological anomalies make the classification of possible archaeological origin more likely.
- 7.2.6. Agricultural activity has been detected across the survey area in the form of linear anomalies that align with mapped historical field boundaries (Figures 4, 6, 8, 10 & 12), as well as medieval ridge and furrow cultivation in the north and west of Zone 3. Field drains and modern ploughing trends have also been identified throughout the survey area. Some of the anomalies detected do not correspond with former field boundaries visible on available mapping and may indicate earlier field divisions.

- 7.2.7. The route of the former Wilts and Berks Canal, visible on 2nd edition OS mapping, has been identified in the magnetic data and is clearly distinguishable from the surround landscape (Figures 49-51).
- 7.2.8. Anomalies have been classified as undetermined when isolated from the probable and possible archaeological activity and lacking any diagnostic archaeological shape or pattern. These anomalies, which do not correspond to any features recorded on historical or satellite imagery have variable magnetic signals and differing alignments. These anomalies are likely the result of natural variations in the geology or agricultural activity, however due to presence of probable archaeological remains in the survey area as a whole, a possible archaeological origin cannot be excluded.
- 7.2.9. Variations in the underlying geology and soils have been identified. This is visible in the data a broad banding and spreads caused by the alluvial terraces deposited along the route of the River Avon to the south and spreads of variable magnetic superficial deposits along the topographic slope to the north.

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. **Data Artefact** – Data artefacts usually occur in conjunction with anomalies with strong magnetic signals due to the way in which the sensors respond to very strong point sources. They are usually visible as minor ‘streaking’ following the line of data collection. While these artefacts can be reduced in post-processing through data filtering, this would risk removing ‘real’ anomalies. These artefacts are therefore indicated as necessary in order to preserve the data as ‘minimally processed’.
- 7.3.1.3. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.4. **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.
- 7.3.1.5. **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.
- 7.3.1.6. **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 and Weak)** – In Area 3, the survey has identified weakly enhanced linear and curvilinear anomalies [3a], [3b] & [3c] as well as discrete anomalies of variable magnetic signal (Figures 31-33). These anomalies have clearly defined edges, suggestive of cut features such as ditches with magnetically enhanced fill. They have been interpreted to be of probable archaeological origin, due to their shape and their proximity to a previously recorded Romano-British corn drying oven and a trackway located c.300m to the north (see Section 5.4). As such there is a possibility that these anomalies might be of similar date and origin to the previously identified Romano-British features.
- 7.3.2.2. **Possible Archaeology (Strong and Weak)** – In Areas 2, 3 and 4 the survey has detected several weak curvilinear anomalies and a strong discrete anomaly [2a], [2b], [4a] & [4b] (Figures 31-33). These anomalies are characteristic of cut features appearing to form partial enclosures. Due to the presence of anomalies of probable archaeological origin in the immediate vicinity [3a], [3b] & [3c], they have been interpreted to be archaeological origin. However, due to their weak magnetic signal, their differing alignment and lack of identifiable morphological shape they have been interpreted to be of possible rather than probable archaeological origin.
- 7.3.2.3. **Probable Archaeology (Strong and Weak)** – In the west of Areas 13 and 62, the survey has identified a cluster of linear and curvilinear anomalies [13a] & [62a] of variable magnetic signal (Figures 52-54). The overlapping linear and rectilinear anomalies appear to form a complex of enclosures with internal subdivisions. It is unclear how far south the complex may continue as it is masked by strong magnetic signal caused by metal pylons and extant fencing. Anomalies of a similar strength and morphology were also detected to the immediate southeast during Phase 1 works suggesting that the complex does continue.
- 7.3.2.4. **Possible Archaeology (Strong)** – A series of strong curvilinear and discrete anomalies have been detected in the southeast of Area 5601 (Figures 52-54). Together these appear to form a penannular enclosure with pit type anomalies [5601a]. The morphology is suggestive of an archaeological origin, however the strong magnetic response might suggest a modern origin. Due to the magnetic signal and the relative isolation a confident classification difficult and has therefore been interpreted as possible archaeology.
- 7.3.2.5. **Probable Archaeology (Strong and Weak)** – In Areas 17 and 107, several, linear and curvilinear anomalies [17a] & [107a] have been identified (Figures 16-18). These anomalies, which are aligned in a north south direction, appear to form

a series of rectilinear ditched enclosures which continue to the west and north from anomalies identified in the Phase 1 works. [17a] & [107a] have the same magnetic signal and shape to the anomalies previously detected and attributed to possible Romano-British Ladder-type enclosure in association with recorded remains c. 1km to the east, which might suggest a similar origin. To the north in Area 107, the survey has identified a number of linear and curvilinear anomalies which appear to further the hypothesis from the previous Phase 1 data that anomalies detected on a differing alignment to [17a] & [107a] may be indicative of a multi-phase activity.

- 7.3.2.6. **Probable Archaeology (Strong and Weak)** – In Areas 21, multiple, linear and curvilinear anomalies [21a] & [21b] with a predominantly strong magnetic signal have been identified (Figures 13-15 & 16-18). These anomalies are suggestive of a ditched enclosure and possible settlement activity with ancillary field systems. The similarity in signal and morphology to anomalies detected nearby in Area 17 and 107 along with evidence from previous phases suggest that these might be of Romano-British origin and have therefore been classified as probable archaeology.
- 7.3.2.7. **Possible Archaeology (Weak/Spread)** – Further weak linear and curvilinear anomalies and an enhanced spread has been detected around [21a] extending northeast into Area 7302 [21c], [21d] & [7302a]. Although weaker in magnetic signal to the above the anomalies are distinctive from the surrounding geology suggesting cut features with anthropogenically enhanced fill. These appear to form a cluster of overlapping partial enclosures as well as possible trackways and have been classified as possible archaeology. A few of the linear anomalies appear to be aligned with the ridge and furrow which may indicate different phases of activity or that these were cut by later ploughing furrows, suggesting the truncation of larger features and some ‘dragging’ of archaeological material. The amorphous spread anomalies to the north may be of natural origin but has a stronger background consistency than other natural zones visible in the surrounding fields and having anomalies with archaeological identifiable throughout the spread suggests a correlation.
- 7.3.2.8. **Possible Archaeology (Strong)** – In the centre of Area 23 extending into Areas 24 & 26, the survey has detected several linear and curvilinear anomalies [23a] [24a] & [26a] of weak magnetic strength as well as a strong discrete anomaly (Figures 43-45). These anomalies exhibit the characteristics of ditches with magnetically enhanced fill which appear to form a double ditched trackway and partial enclosures as well as a pit type feature. [23a] [24a] & [26a] have been identified as possibly having an archaeological origin due to similarities in geophysical form, morphology and strength with surrounding anomalies interpreted as having a Romano-British origin. However, due to limited context in the immediate survey area this interpretation remains tentative.
- 7.3.2.9. **Modern/Industrial (Strong/Spread)** – A spread of dipolar anomalies and strong sinuous anomalies have been identified in Area 82. These anomalies, have a

variable magnetic signal which aligns with a towing path and route of the Wilts Berks Canal, recorded on the second edition historical OS maps (Figures 49-51). The difference in magnetic signal is caused by the material used for the infill of the canal ditch.

- 7.3.2.10. **Possible Archaeology (Strong/Weak)** – In Area 82 the survey has identified a number of linear, curvilinear and discrete anomalies [82a] & [82b] (Figures 49-51). The anomalies have defined edges and are concentrated into a relatively small area of the survey which is suggestive of anthropogenic potential. The location of [82a] & [82b] dispersed around the Wilts Berks Canal may suggest an association with the recorded towing path. This interpretation is supported by the presence of a junction bridge recorded in the west and a draw bridge to the south on the historical OS maps (Figure 12). However, due to the presence of anomalies interpreted as being part of a Roman ladder-type settlement during Phase 2 of works c. 230m to the northwest that shares a similar magnetic signal it is possible that these anomalies represent an earlier feature that was undercut by the towing path. As such [82a] & [82b] has been interpreted to be of possible rather than probable archaeological origin.
- 7.3.2.11. **Possible Archaeology (Strong/Weak)** – Area 87 further linear, curvilinear and discrete anomalies [87a] have been identified (Figures 28-30). Although the strength of the anomalies is variable a strong positive linear anomaly surrounded by a negative halo of weaker strength has been identified which may indicate the location of a trackway. Further weak anomalies suggest the location of partial ditched features and pits. Anomalies with a similar magnetic signal were identified in the previous Phase 2 c.300m to the west and interpreted as relating to the Romano- British ladder-type settlement recorded in the area (See Sec 5.4). A direct correlation cannot be made between the [87a] and the Phase 2 works but an archaeological origin for these anomalies cannot be ruled out, therefore they have been classified as possible archaeology.
- 7.3.2.12. **Possible Archaeology (Weak)** –There are several areas where the magnetometer has detected a series of indistinct anomalies that may have an archaeological origin [28a] & [37a] (Figures 58-50, [71a], [71b] & [72a], [72b] (Figures 19-21). Although they cannot confidently be interpreted as being caused by specific features, the contextual evidence provided by the previous geophysical survey nevertheless raises the possibility of archaeological material here that would be consistent with such anomalies.
- 7.3.2.13. **Agricultural (Strong, Weak and Spread)** – In Areas 1, 2, 7, 8, 21, 23, 24, 26, 31, 68, 86, 87, 88, 115, & 5601 the survey has identified a number of linear and curvilinear anomalies of variable magnetic signal (Figures 4, 6, 8, 10 & 12). These anomalies which exhibit the characteristics of boundary ditches infilled with magnetically enhanced material, sometimes presenting as dipolar responses and spreads of material. These have been interpreted as former field boundaries as the collocate with those recorded on the historical OS maps

(Figures 4, 6, 8, 10 & 12). Some of the anomalies detected do not correspond with former field boundaries visible on historic OS mapping. They do however, have a similar magnetic signature and/or continue from or otherwise align with mapped features suggesting that they are remnants not depicted on available mapping (Figures 3, 5, 7, 9 & 11).

- 7.3.2.14. **Agricultural (Trends) / Ridge and Furrow (Trends)** – Recent ploughing activity has been detected across the majority of the survey area. These are identified as tightly spaced linear anomalies, parallel to each other and following the lines of cultivation as recorded on the satellite mapping (Figures 4, 6, 8, 10 & 12). Only a few indicative linear trends have been picked out to give an idea of direction and presence across the site. In Areas 2, 15, 21, 22, 36, 78, 79, 80, 81, 86, 87 & 7601 weak linear parallel anomalies, which are most visible on the Total Field have been identified (Figures 3, 5, 7, 9 & 11). Due to the relatively wide spacing, c. 5-8m and slight curve these anomalies have been interpreted as historical ridge of furrow cultivation. Weak linear parallel anomalies detected in Area 7601 are visibly straighter than the ridge and furrow examples discussed above as well tighter spacing c.3-5m indicative of steam ploughing popular in the post-medieval period.
- 7.3.2.15. **Natural (Strong, Weak and Spread)** – The survey has identified a number of amorphous strong and weak positive bands aligned in a roughly northwest to southeast direction (Figures 5-10). These anomalies, which follow the topographical slope, are aligned with a band of alluvium recorded on the geological maps (see Sec. 4.3). These bands have been interpreted as alluvial terraces of sands and gravels deposited by the River Avon. Across the north and west of the survey a series of broad curvilinear anomalies and spreads of variable magnetic strength have been detected (Figures 3-4 & 11-12). These anomalies which follow the topographical slopes exhibit the characteristics of anomalies of natural origin likely due to the geological variation between the mudstone bedrock and the alluvial superficial deposits.
- 7.3.2.16. **Undetermined (Strong and Weak)** - A number of isolated linear and discrete anomalies have been identified which are not readily associated with the archaeological activity across the site (Figures 4, 6, 8, 10 & 12). These anomalies have variable magnetic signals, with no clear form or pattern to suggest archaeological activity. These anomalies may also relate to natural, agricultural, or modern activity. Nonetheless, due to the nearby presence of probable and possible archaeological anomalies, an archaeological origin for these undetermined anomalies cannot be dismissed.
- 7.3.2.17. **Drainage Features** – A number of weak linear anomalies have been identified on multiple orientations with Areas 1, 2, 3, 26, 36, 51, 67, 71, 86, 87, 104, 110, & 114 (Figures 4, 6, 8, 10 & 12). These anomalies, which exhibit a weakly dipolar magnetic signal and can be clearly seen in the XY Trace plot (Figures 18, 21, 30, 33, 42, 60, 63, 66), have been interpreted as field drains.

7.3.2.18. **Services** – Multiple linear, dipolar anomalies have been identified, within Areas 1, 2, 4, 16, 17, 18, 20, 21, 22, 23, 26, 29, 30, 34, 50, 52, 53, 71, 72, 102, 110, 87, 88, 89, 90, 3301, 7301, 7302 & 7601. This interpretation is based on the strong dipolar XY signal along the course of this anomaly, indicative of a buried service.

7.3.2.19. **Overhead Cable Effect** – In Areas 78 and 81, the survey has detected a linear band of noisy data running in a southwest to northeast direction. These anomalies, which can be most clearly seen on the Total Field (Figures 22-24), collocate with overhead electrical cables. The mottled effect visible in has been interpreted as magnetic interference caused by these extant features.

8. Conclusions

- 8.1. A fluxgate gradiometer survey was successfully completed across the survey area. The survey has revealed a relatively quiet magnetic background, punctuated by variations in the geology and soils along the route of the River Avon and as spreads of variable magnetic strength along the topographical slope which have not inhibited confident interpretation of the data and the location of several clusters of probable and possible sub-surface archaeological remains. The wider archaeological landscape is known to reflect the occupation of this area through the prehistoric, Romano-British and medieval periods. The survey has expanded upon the extent of previously identified Romano-British activity in the area as well as previously identified anomalies in the Phase 1 and 2 surveys.
- 8.2. The survey has identified six main foci of archaeological activity. These foci comprise of anomalies indicative of cut features, containing anthropogenically enhanced fill, such as ditched enclosures, trackways and discrete pits. It is difficult to date these anomalies using the magnetic data alone although the anomalies in the westernmost focus appear to be in close proximity to previously identified Romano-British field systems and drying kilns as well as archaeological anomalies detected in the Phase 1 works, which might suggest a similar origin. There are no recorded archaeological features near the rest of the foci of archaeological activity, however the anomalies interpreted as archaeological in the Phase 1 and Phase 2 works along with the presence of Late Iron Age/ Romano British settlements to the south and a Roman Ladder-type enclosure to the east might suggest a similar origin. The survey has also identified weak isolated anomalies of possible archaeological origin. Due to their magnetic signal and likely truncation by agricultural processes, a more definitive interpretation is not possible.
- 8.3. The historical agricultural utilisation of the survey area has been identified in the form of ridge and furrow cultivation, former field boundaries recorded on historical second edition OS maps and further unmapped former field boundaries and divisions. More recent agricultural anomalies such as modern ploughing trends and field drains have also been detected.
- 8.4. Anomalies have been classified as undetermined when isolated from the probable and possible archaeological activity and where they are lacking any diagnostic archaeological shape or pattern, however these anomalies may still relate to archaeological activity.
- 8.5. Modern anomalies include magnetic disturbance caused by buried services, electric pylons, overhead cables and the presence of ferrous material along the field edges as well as ferrous debris spread near adjacent farm buildings.

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. Chippenham, Wiltshire.

[<http://mapapps.bgs.ac.uk/geologyofbritain/home.html/>]. Accessed 04/01/2022.

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. 2021. Future Chippenham Proposals Geophysical Reports Zone 1-4. Internal client reference: MSST732.

Google Earth, 2022. Google Earth Pro V 7.1.7.2606.

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. Chippenham, Wiltshire. Cranfield University, National Soil Resources Institute. [<http://landis.org.uk>]. Accessed 04/01/2022.

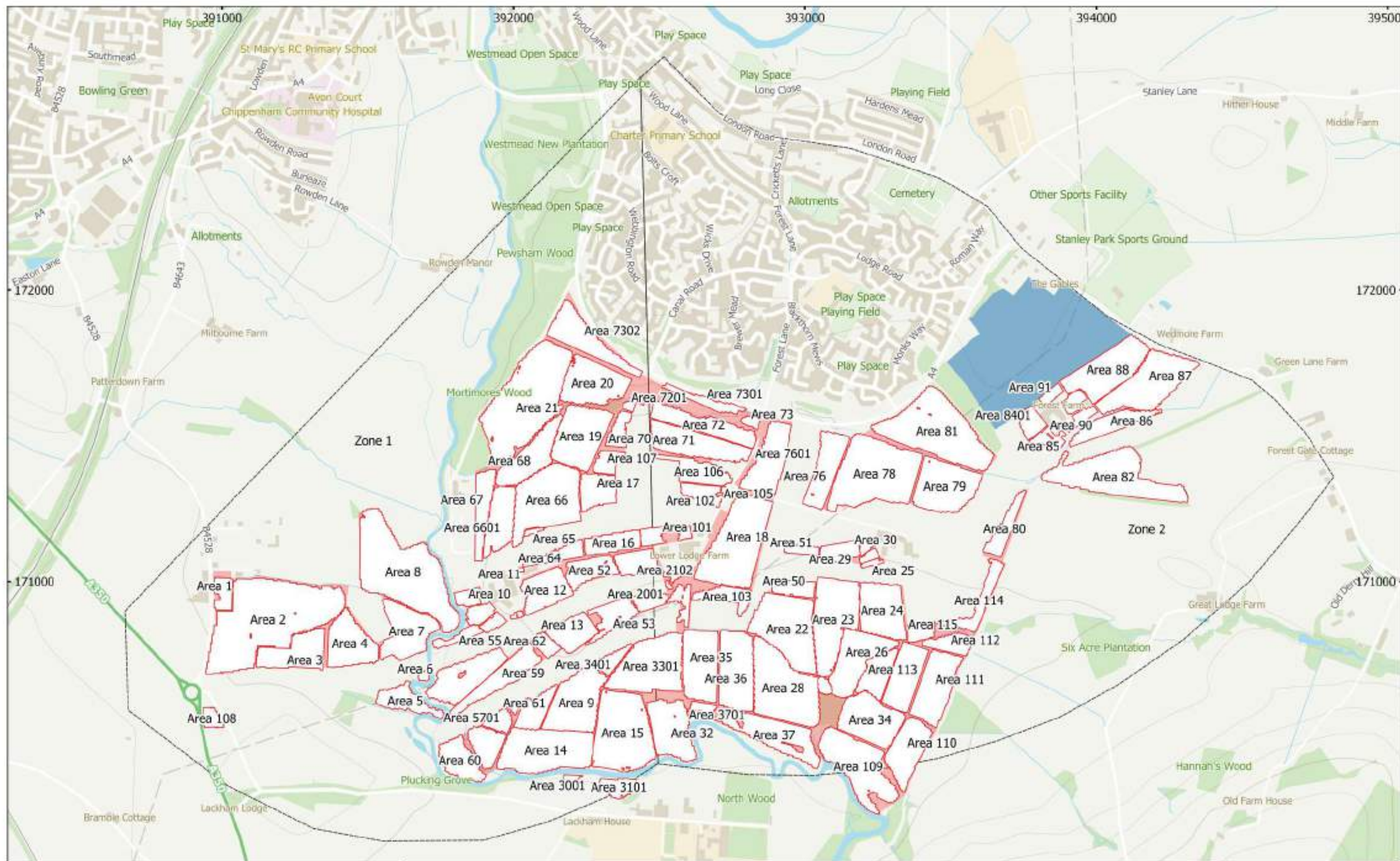
Swinbank, L. 2021. Written Scheme of Investigation for a Geophysical Survey of Future Chippenham Developments, Chippenham, Wiltshire. Magnitude Surveys.

12. Project Metadata

MS Job Code	MSST1037
Project Name	Geophysical Survey Report of Chippenham Development
Client	Atkins
Grid Reference	ST 9258171097
Survey Techniques	Magnetometry
Survey Size (ha)	219.7ha (Magnetometry)
Survey Dates	2021-10-08 to 2022-01-26
Project Lead	Krasimir Dyulgerski BA MRes
Project Officer	Leanne Swinbank, BA ACIfA
HER Event No	TBC
OASIS No	TBC
Report Version	0.4
Atkins Internal Ref:	WC_FCM-ATK-EHR-PL_XX-RP-LH-000008

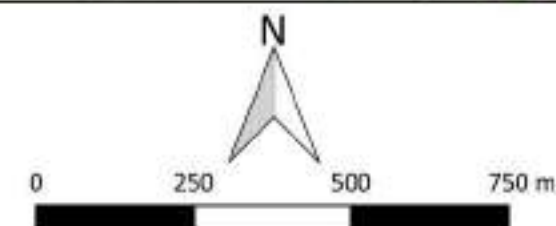
13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	LAG, DW	KD	07 February 2022
0.2	Correction following Project Lead Comments	LAG	KD	11 February 2022
0.3	Corrections following Director Comments	LAG	FPC	14 February 2022
0.4	Client Corrections	KD	FPC	2 March 2022



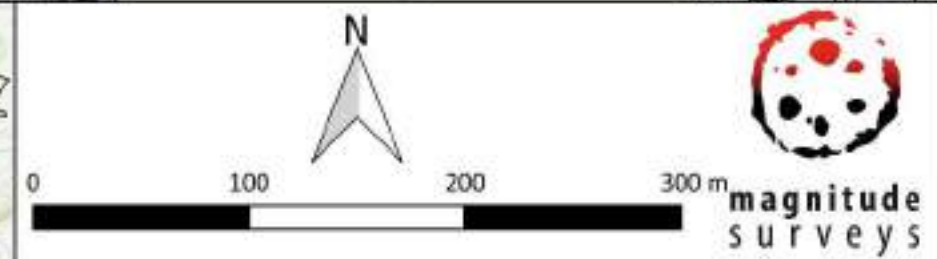
MSST1037 - Chippenham Development
 Figure 2 - Location of Survey Areas
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- Survey Extent
- Land Parcel Excluded
- Unsurveyable





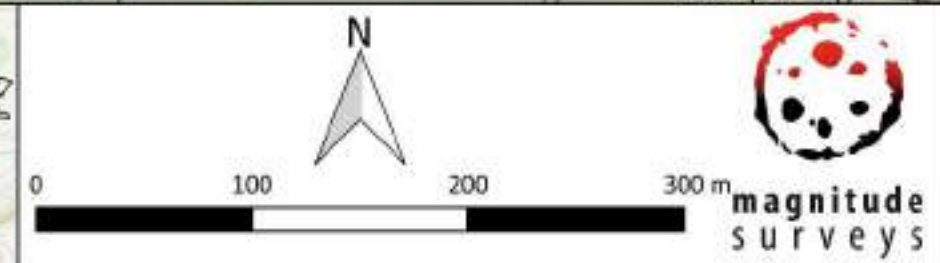
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 Figure 3 - Magnetic Total Field (Overview) (Northern Areas)
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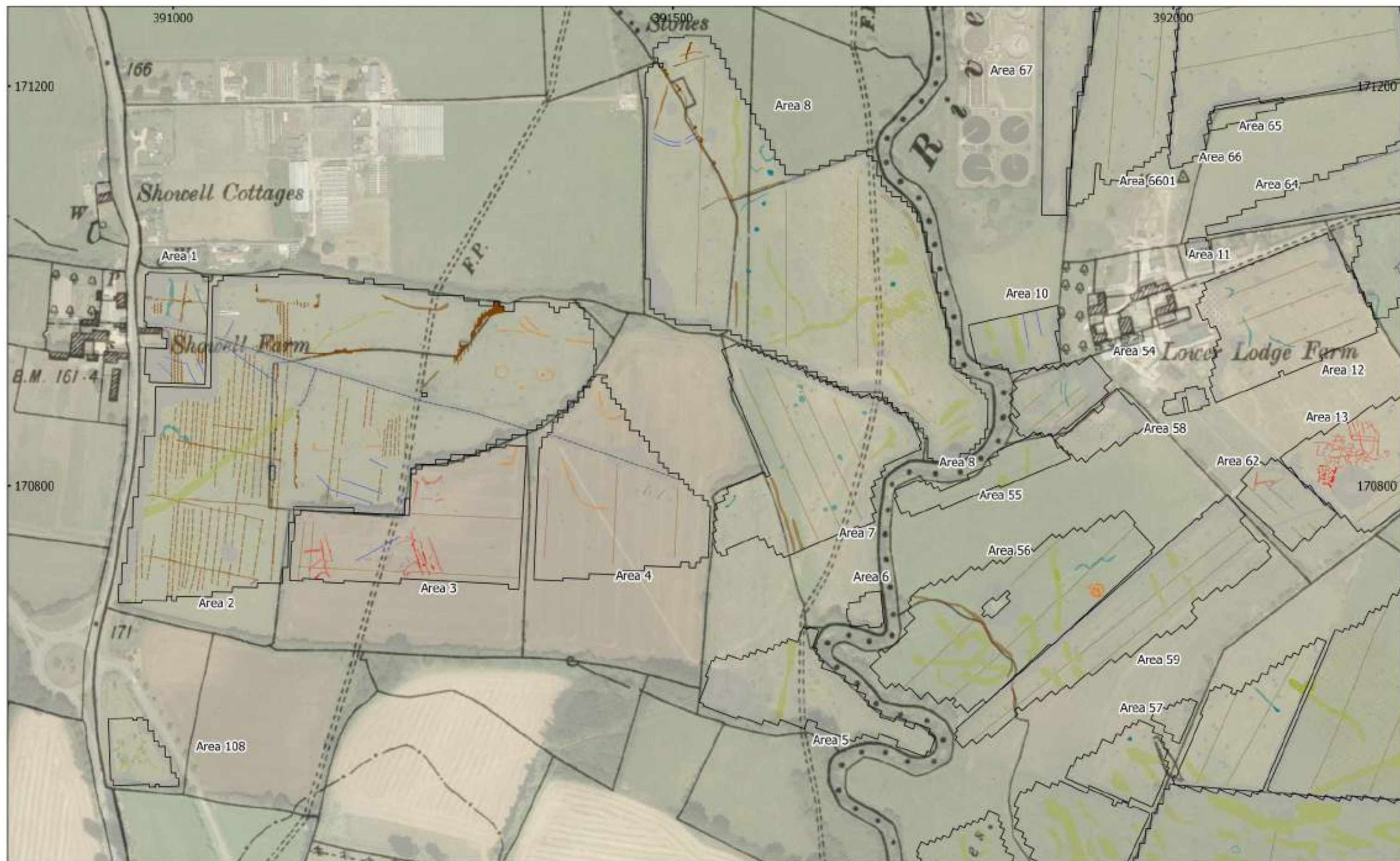


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 Figure 4 - Magnetic Interpretation Over Historical Maps and Satellite Imagery
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| ■ Agricultural (Strong) | ■ Magnetic Disturbance | — Agricultural (Trend) |
| ■ Agricultural (Weak) | ■ Ferrous/Debris (Spread) | — Undetermined (Trend) |
| ■ Archaeology Possible (Spread) | ■ Natural (Spread) | — Ferrous (Trend) |
| ■ Archaeology Possible (Strong) | ■ Natural (Weak) | — Service |
| ■ Archaeology Possible (Weak) | ■ Undetermined (Strong) | — Ridge and Furrow (Trend) |
| ■ Archaeology Probable (Strong) | ■ Undetermined (Weak) | — Drainage Feature |
| ■ Archaeology Probable (Weak) | ■ Overhead Cables | • Ferrous (Spike) |

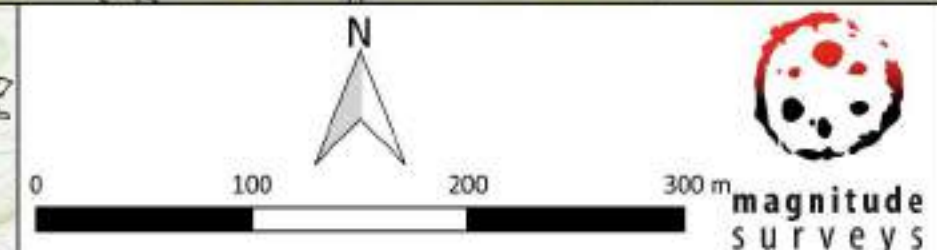
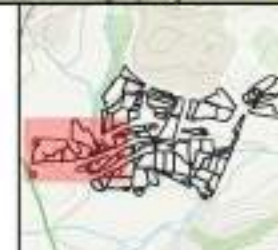






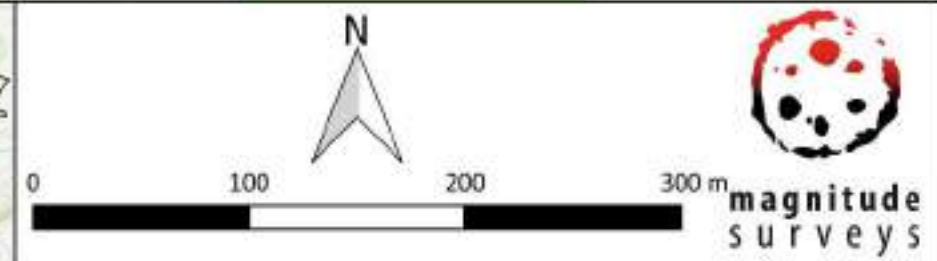
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 Figure 6 - Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Western Areas)
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|-------------------------------|-------------------------|--------------------------|
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| Agricultural (Strong) | Ferrous/Debris (Spread) | Agricultural (Trend) |
| Agricultural (Weak) | Natural (Spread) | Undetermined (Trend) |
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| Archaeology Possible (Weak) | Natural (Weak) | Service |
| Archaeology Probable (Strong) | Data Artefact | Ridge and Furrow (Trend) |
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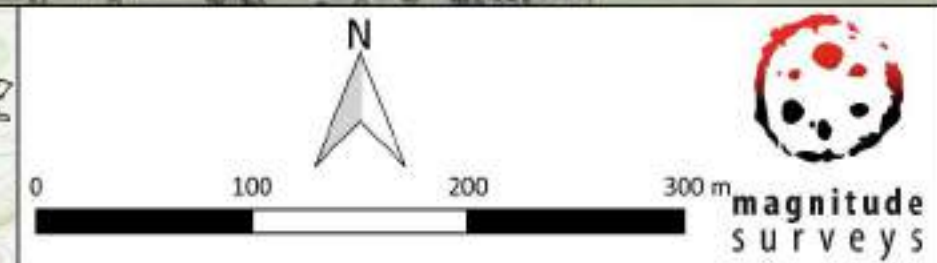
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 Figure 7 - Magnetic Total Field (Overview) (Southern Areas)
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 Figure 8 - Magnetic Interpretation Over Historical Maps and Satellite Imagery
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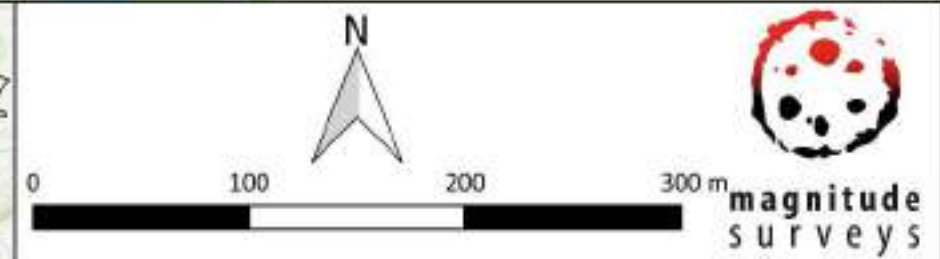
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|--|--|---|





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 Figure 9 - Magnetic Total Field (Overview) (Eastern Areas)
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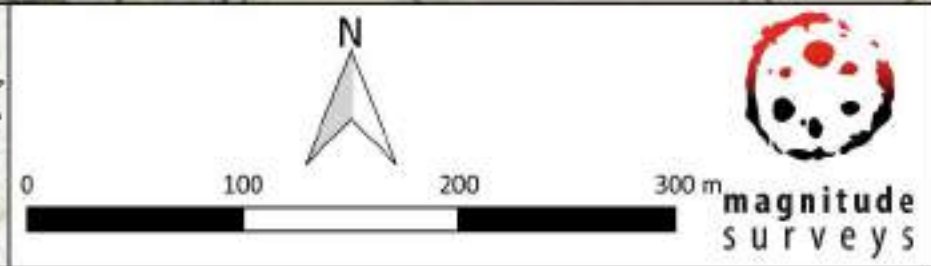
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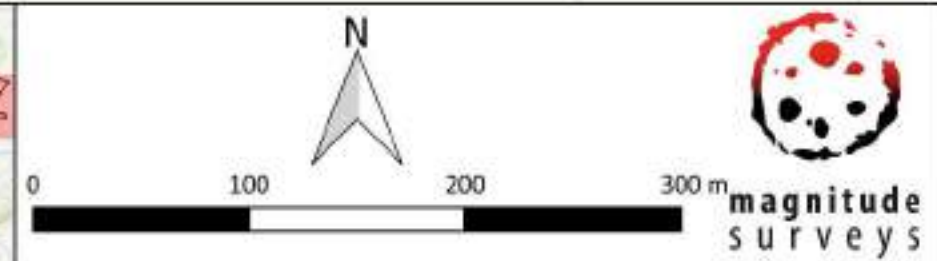
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 Figure 10 - Magnetic Interpretation Over Historical Maps and Satellite
 Imagery (Overview) (Eastern Areas)
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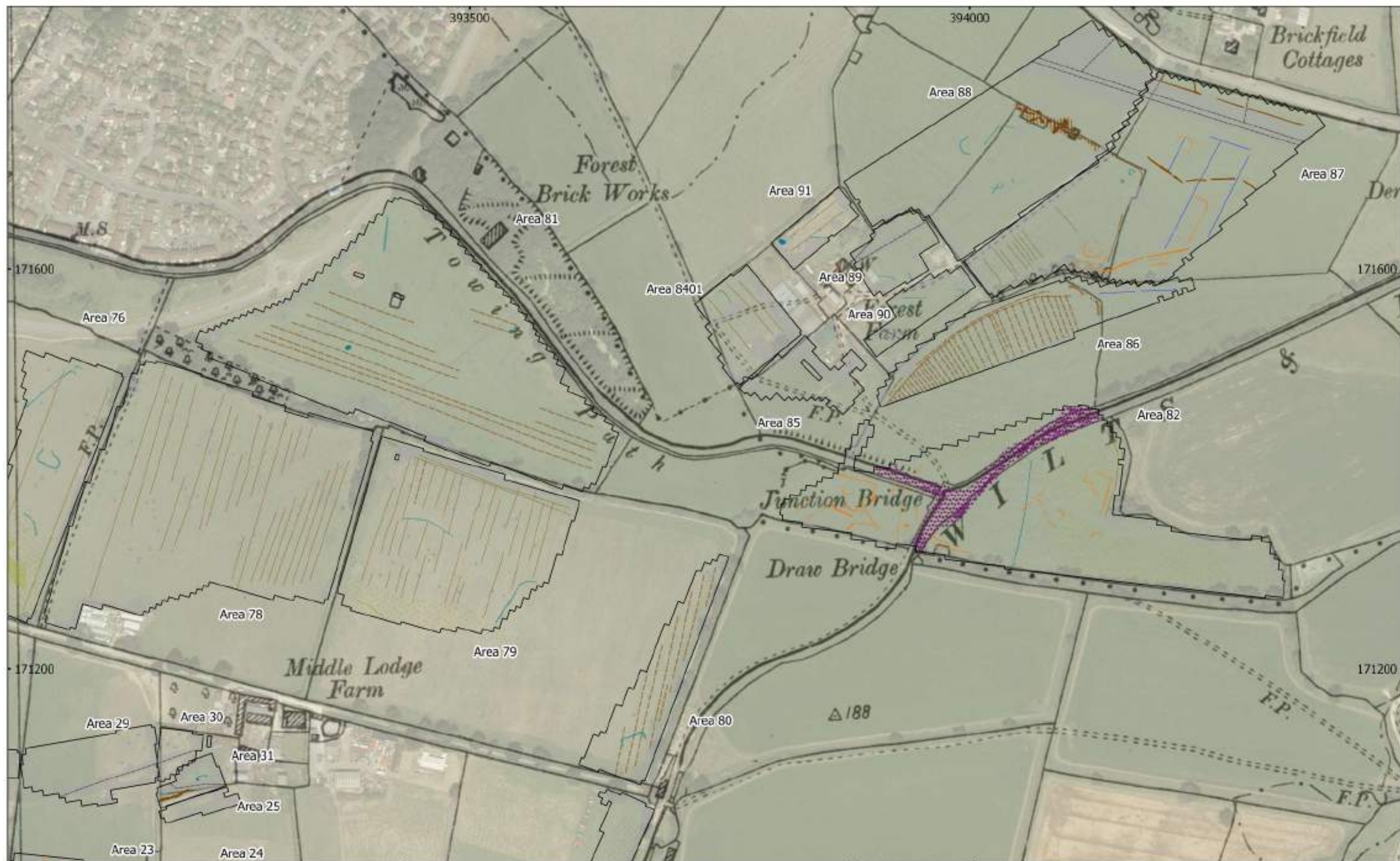
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| Agricultural (Strong) | Natural (Spread) | Agricultural (Trend) |
| Agricultural (Weak) | Natural (Strong) | Ferrous (Trend) |
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| Archaeology Possible (Weak) | Undetermined (Strong) | Ridge and Furrow (Trend) |
| Magnetic Disturbance | Undetermined (Weak) | Drainage Feature |
| Ferrous/Debris (Spread) | Overhead Cables | Ferrous (Spike) |



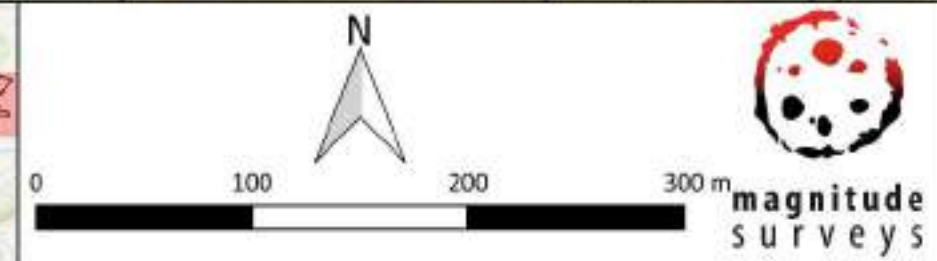
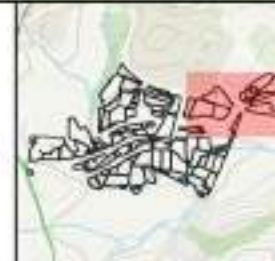
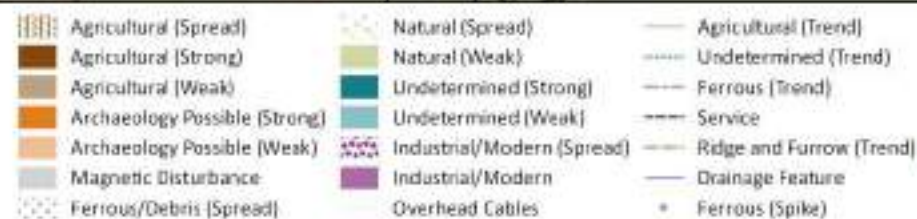


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 Figure 11 - Magnetic Total Field (Overview) (Northeastern Areas)
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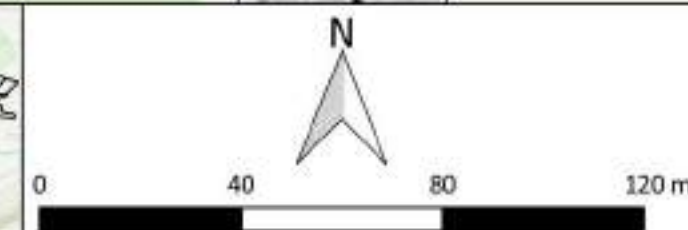


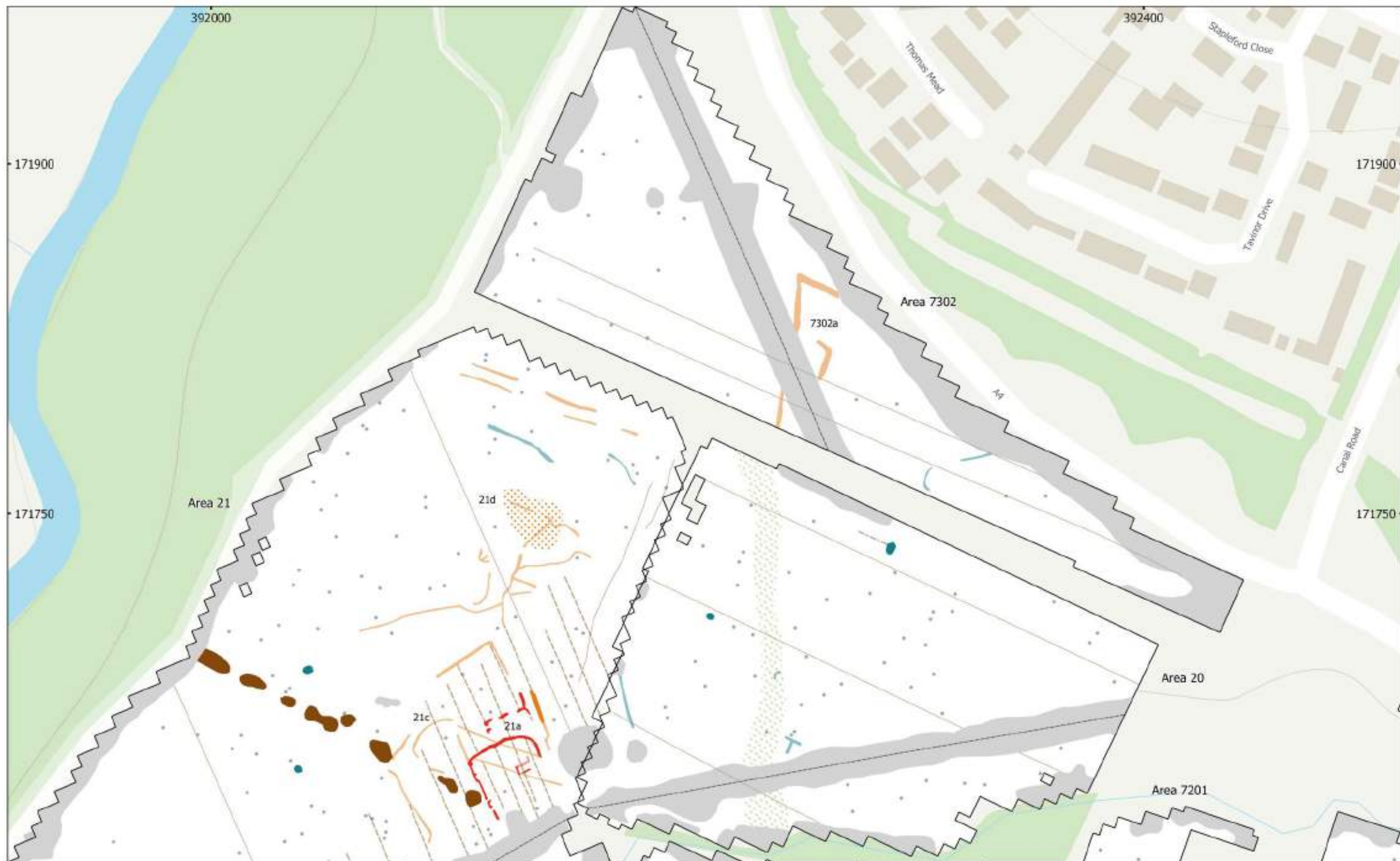
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 Figure 12 - Magnetic Interpretation Over Historical Maps and Satellite Imagery (Overview) (Northeastern Areas)
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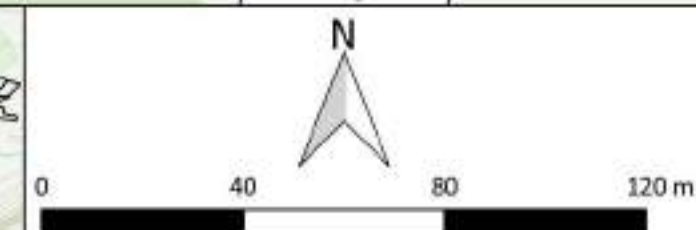
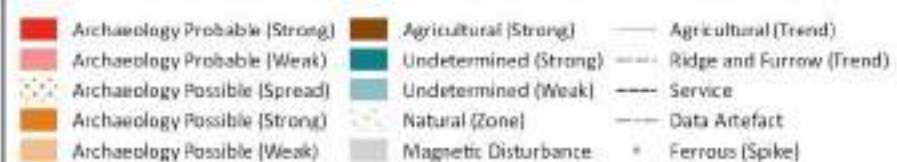


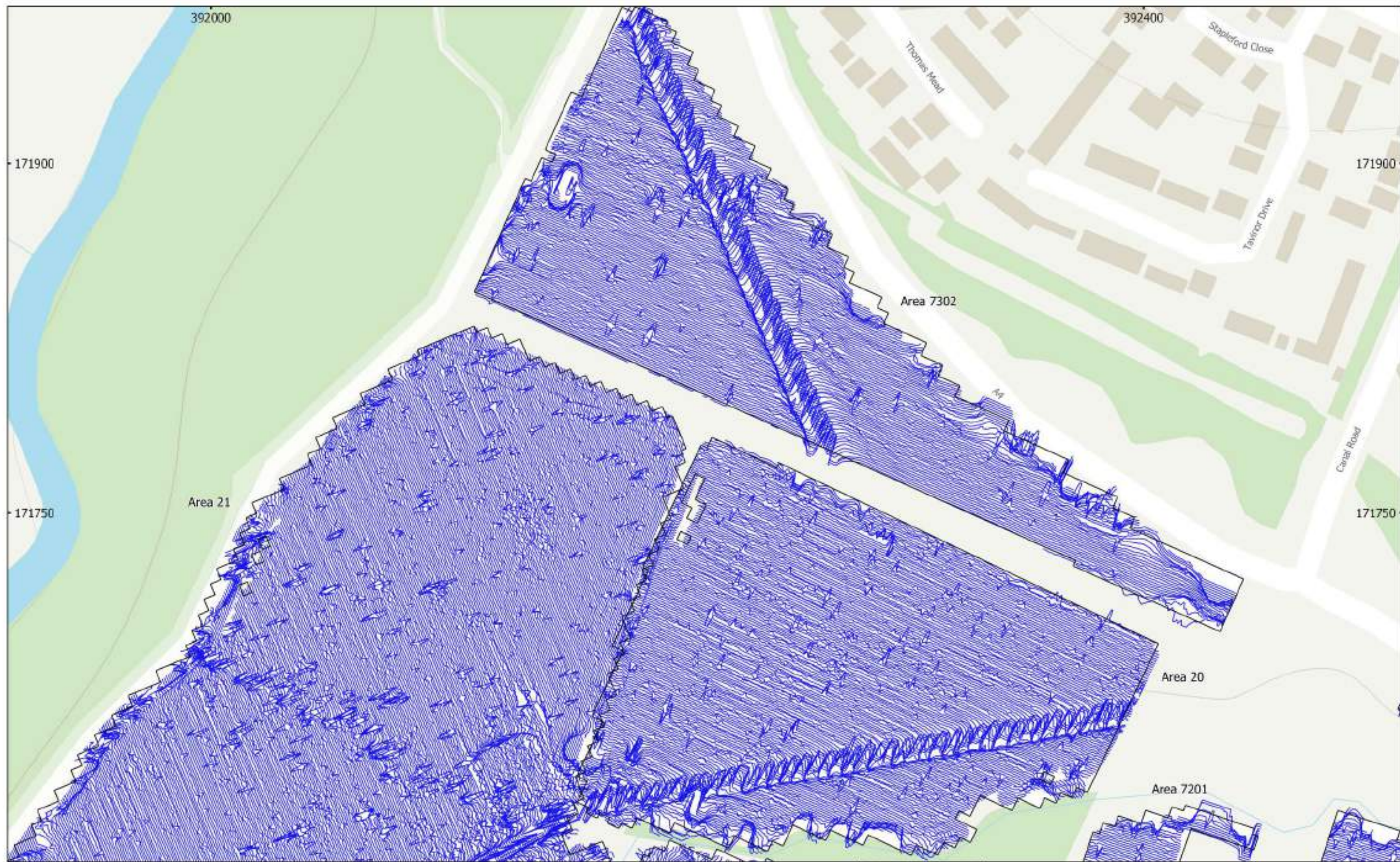
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Figure 14 - Magnetic Interpretation (Areas 20, 21, 7201 and 7302)

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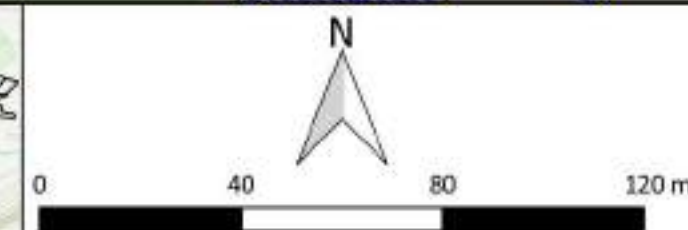
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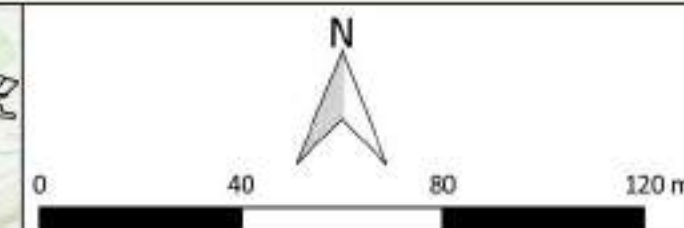


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 Figure 15 - XY Trace Plot (Areas 20, 21, 7201 and 7302)
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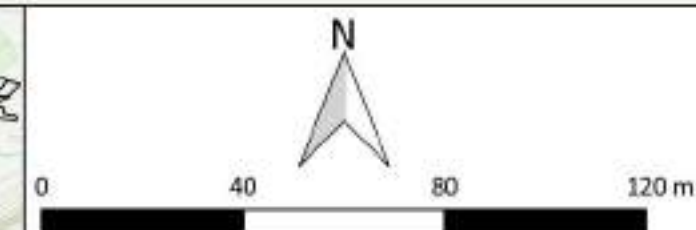
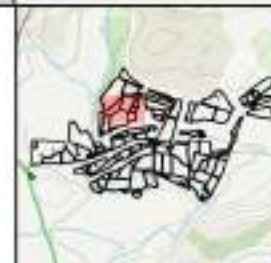
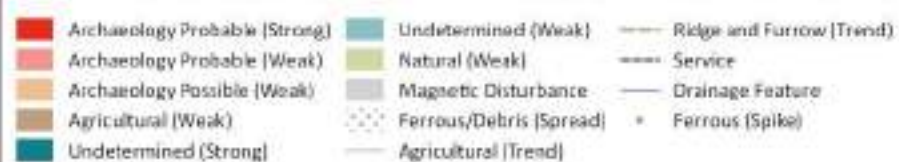


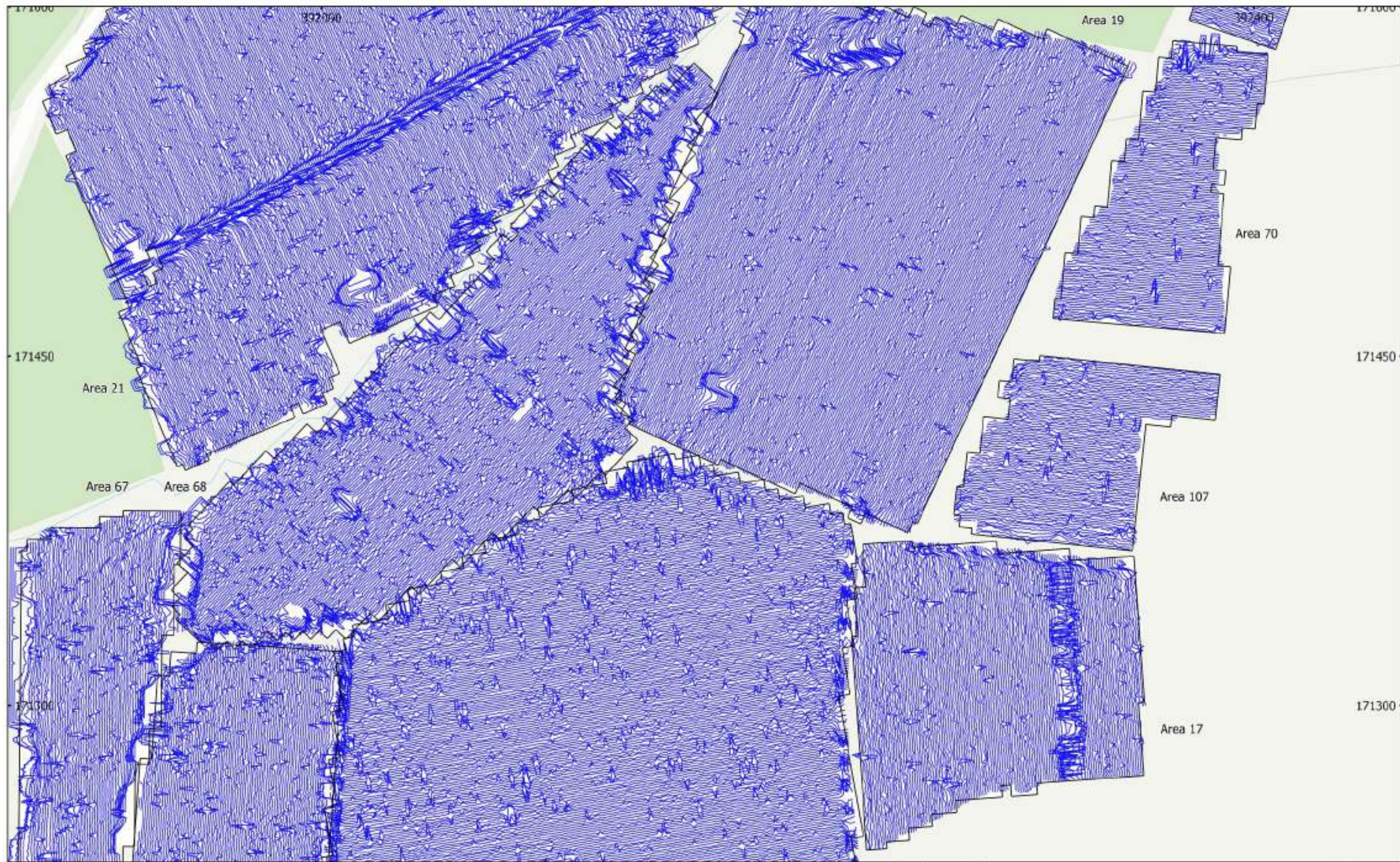
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 Figure 16 - Magnetic Gradient (Areas 17, 19, 21, 66, 67, 68, 70 and 107)
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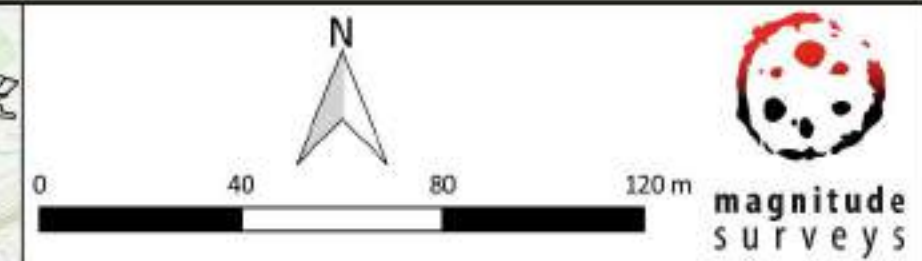


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 Figure 17 - Magnetic Interpretation (Areas 17, 19, 21, 66, 67, 68, 70 and 107)
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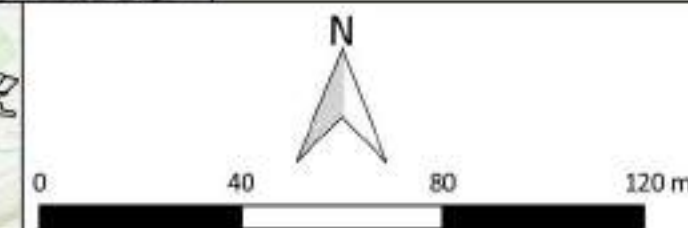


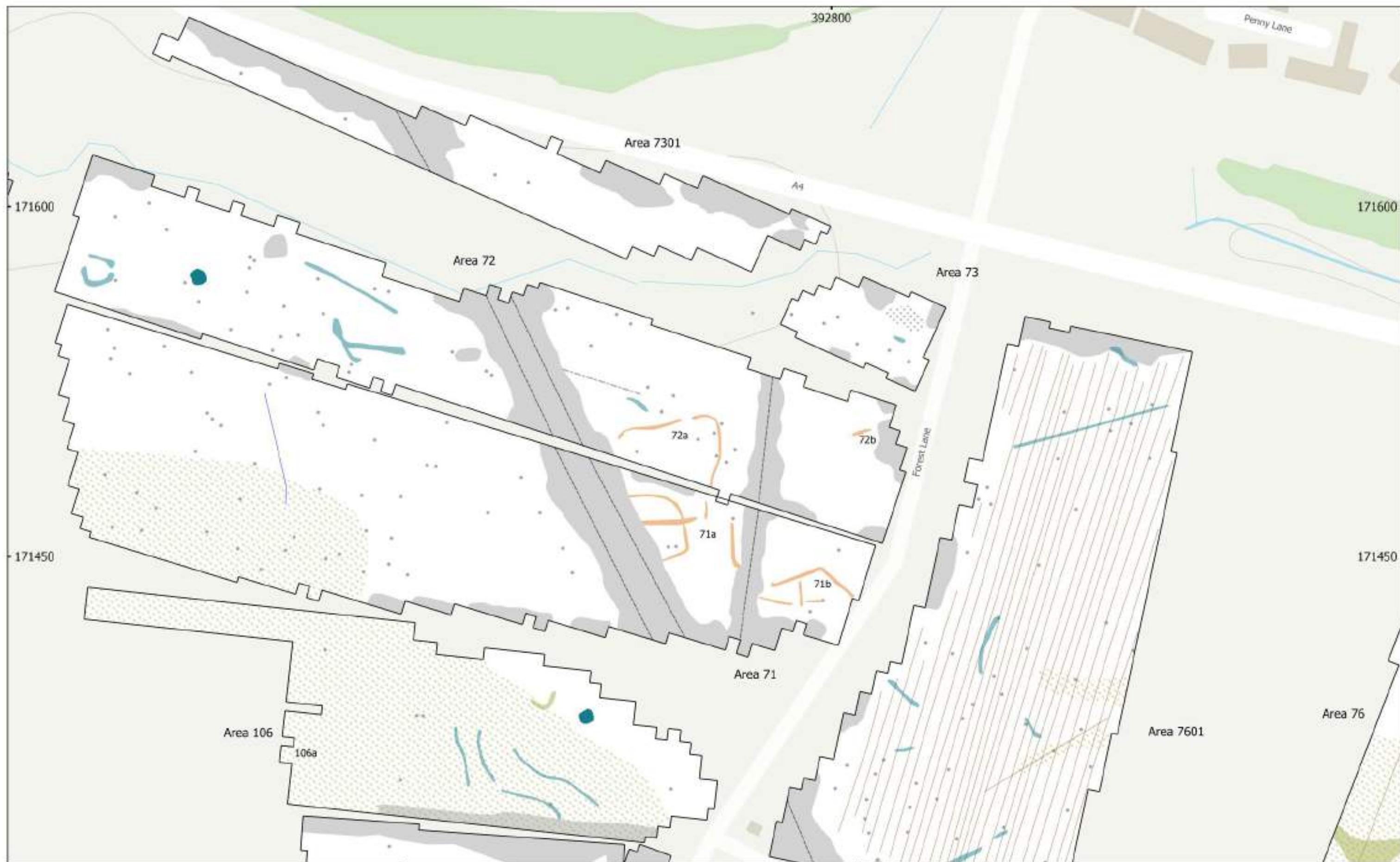
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 Figure 18 - XY Trace Plot (Areas 17, 19, 21, 66, 67, 68, 70 and 107)
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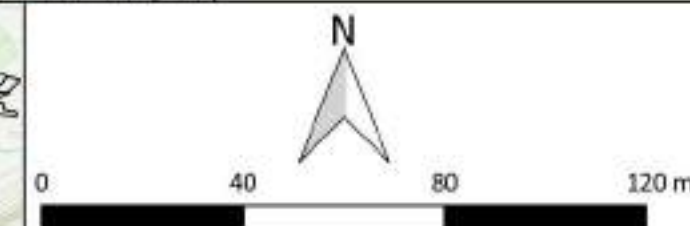
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 Figure 19 - Magnetic Gradient (Areas 71, 72, 73, 7301, 76, 7601 and 106)
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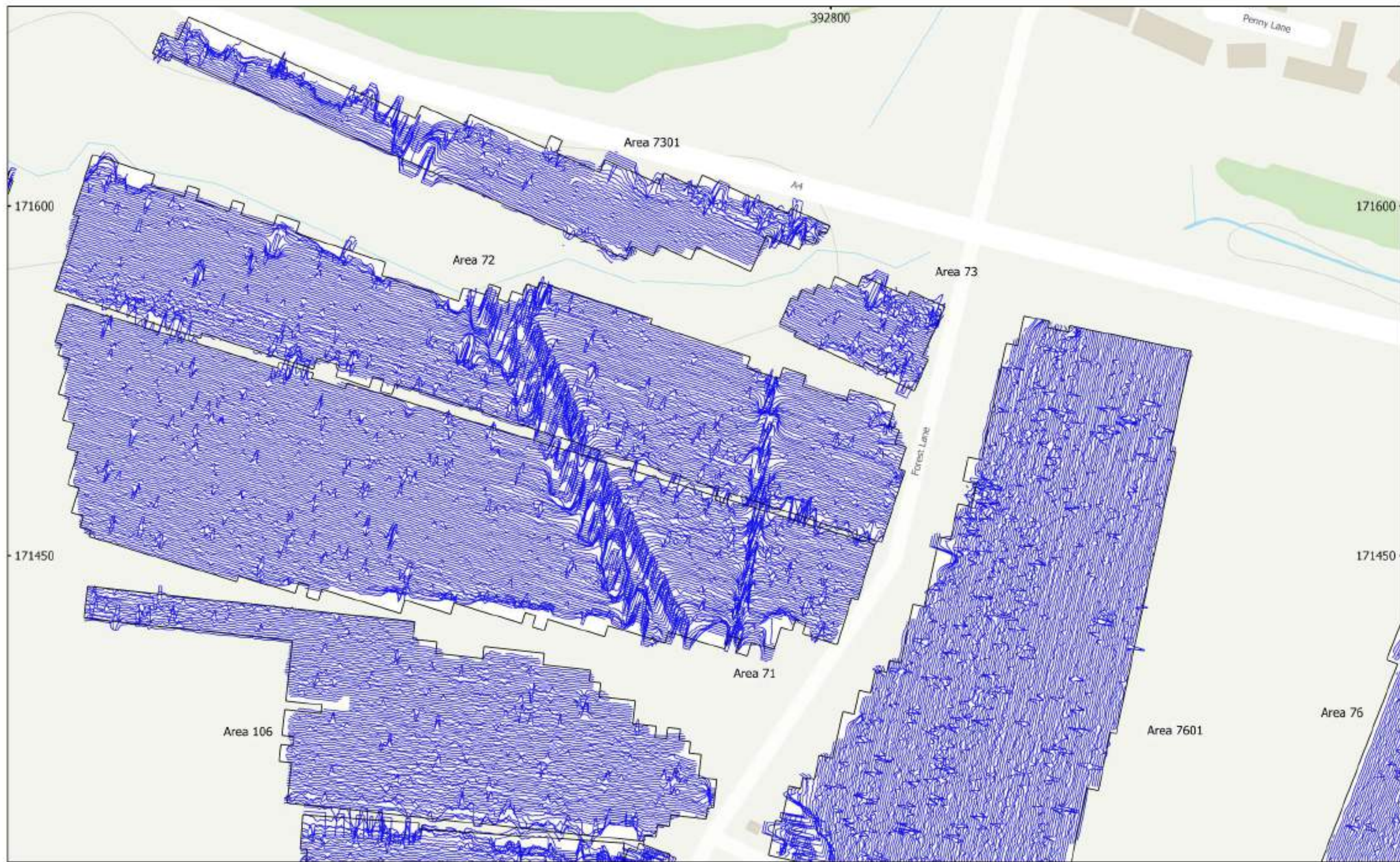




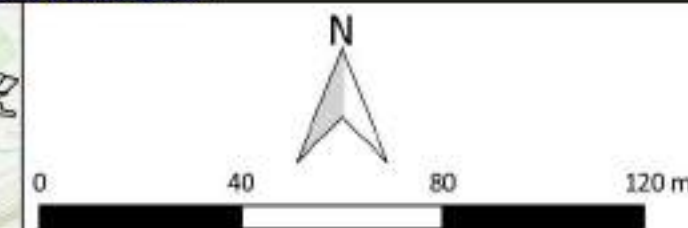
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 Figure 20 - Magnetic Interpretation (Areas 71, 72, 73, 7301, 76, 7601 and 106)
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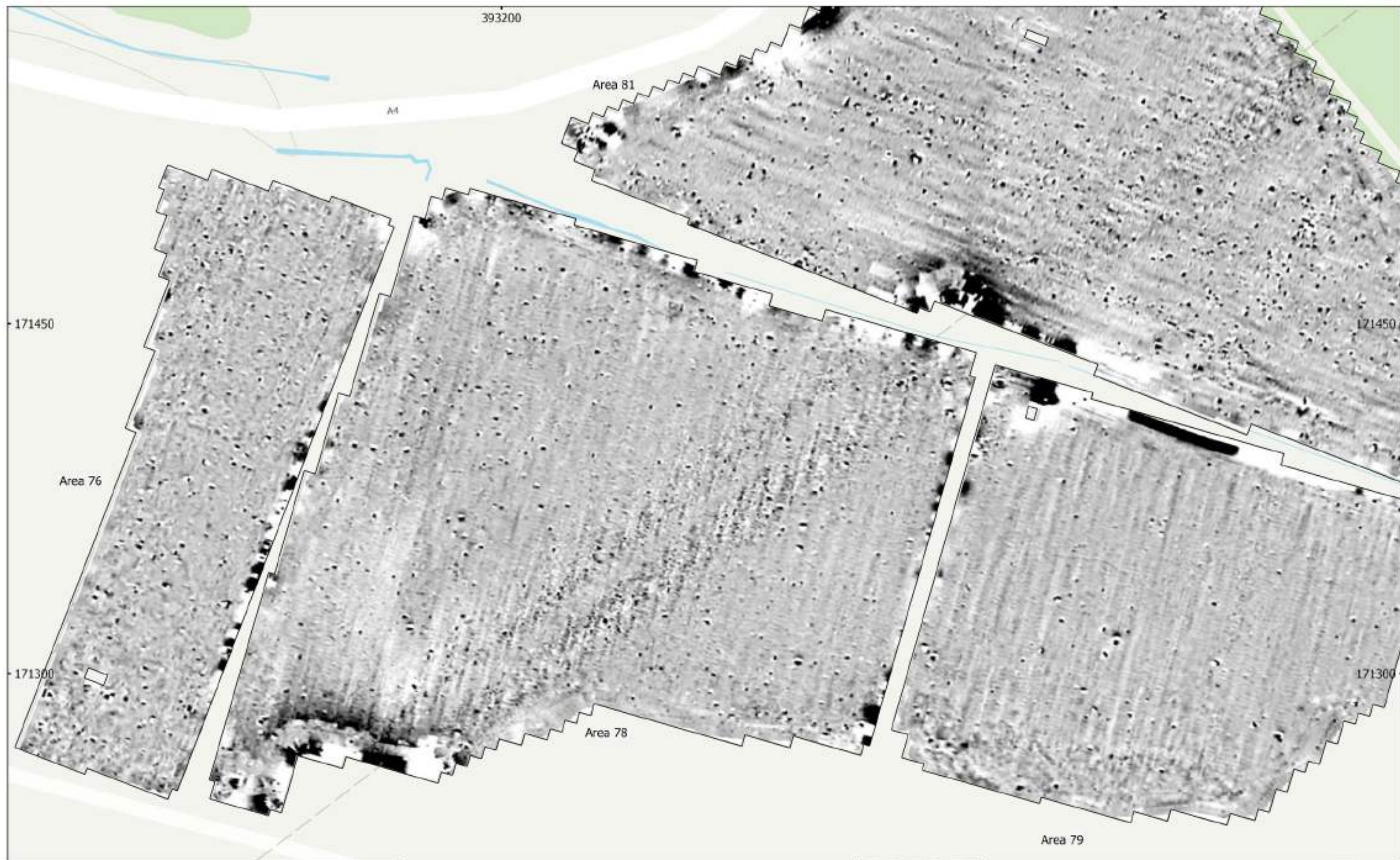
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| Undetermined (Strong) | Magnetic Disturbance | Drainage Feature |
| Undetermined (Weak) | Ferrous/Debris (Spread) | Data Artefact |
| Natural (Weak) | Agricultural (Trend) | Ferrous (Spike) |



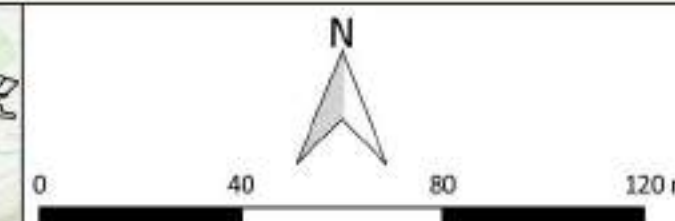
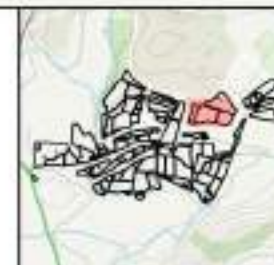


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 Figure 21 - XY Trace Plot (Areas 71, 72, 73, 7301, 76, 7601 and 106)
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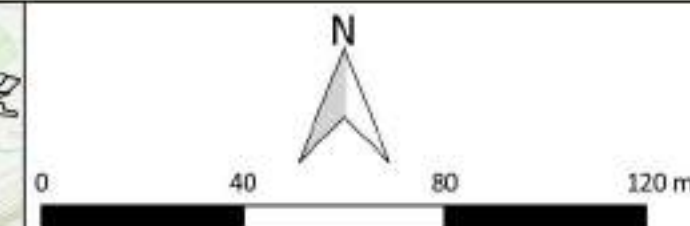
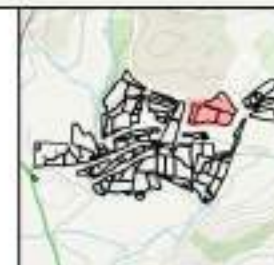
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 Figure 22 - Magnetic Gradient (Areas 76, 78, 79 and 81)
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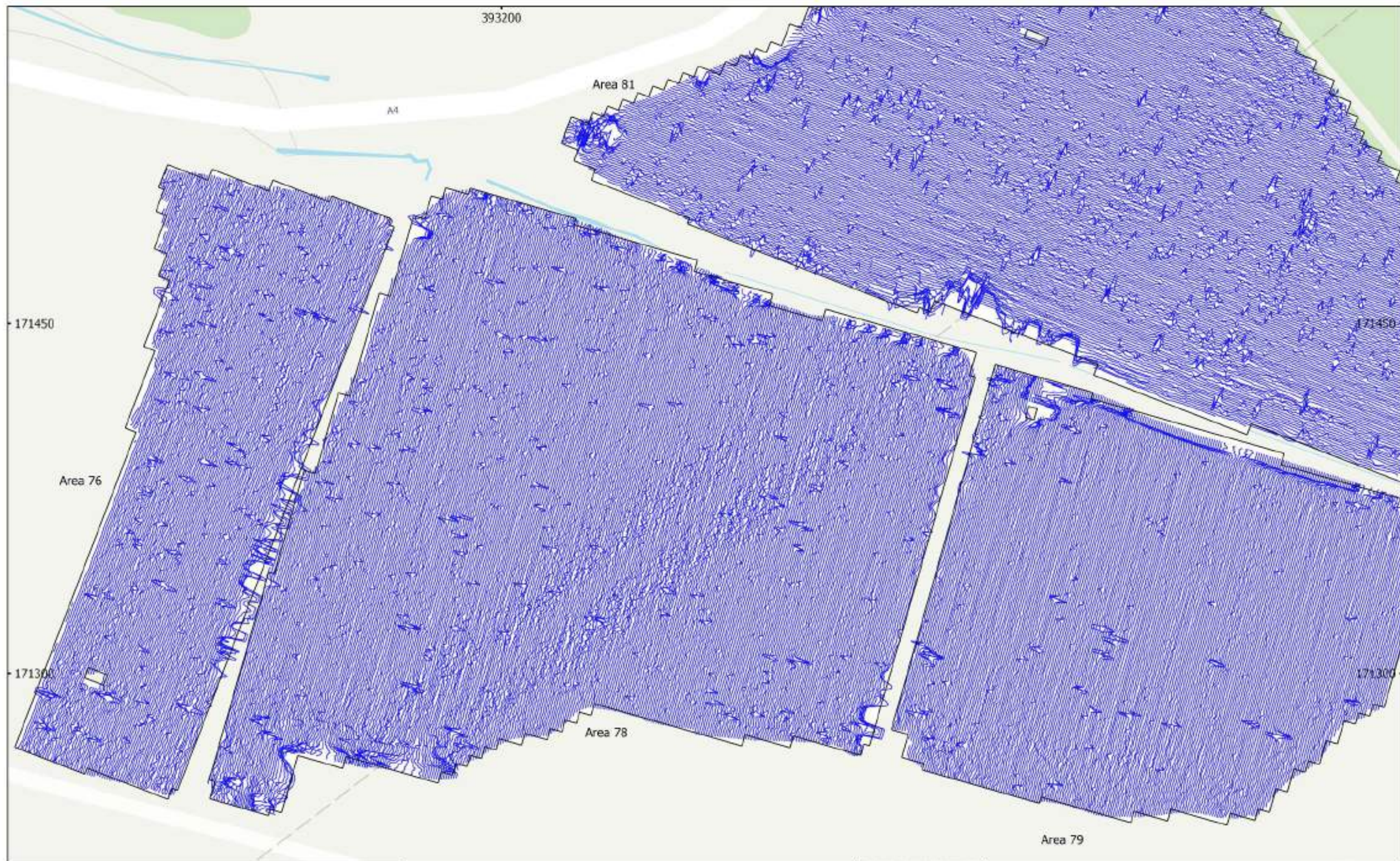




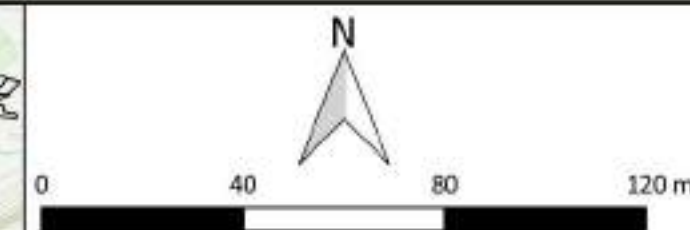
MSST1037 - Chippenham Development
 Figure 23 - Magnetic Interpretation (Areas 76, 78, 79 and 81)
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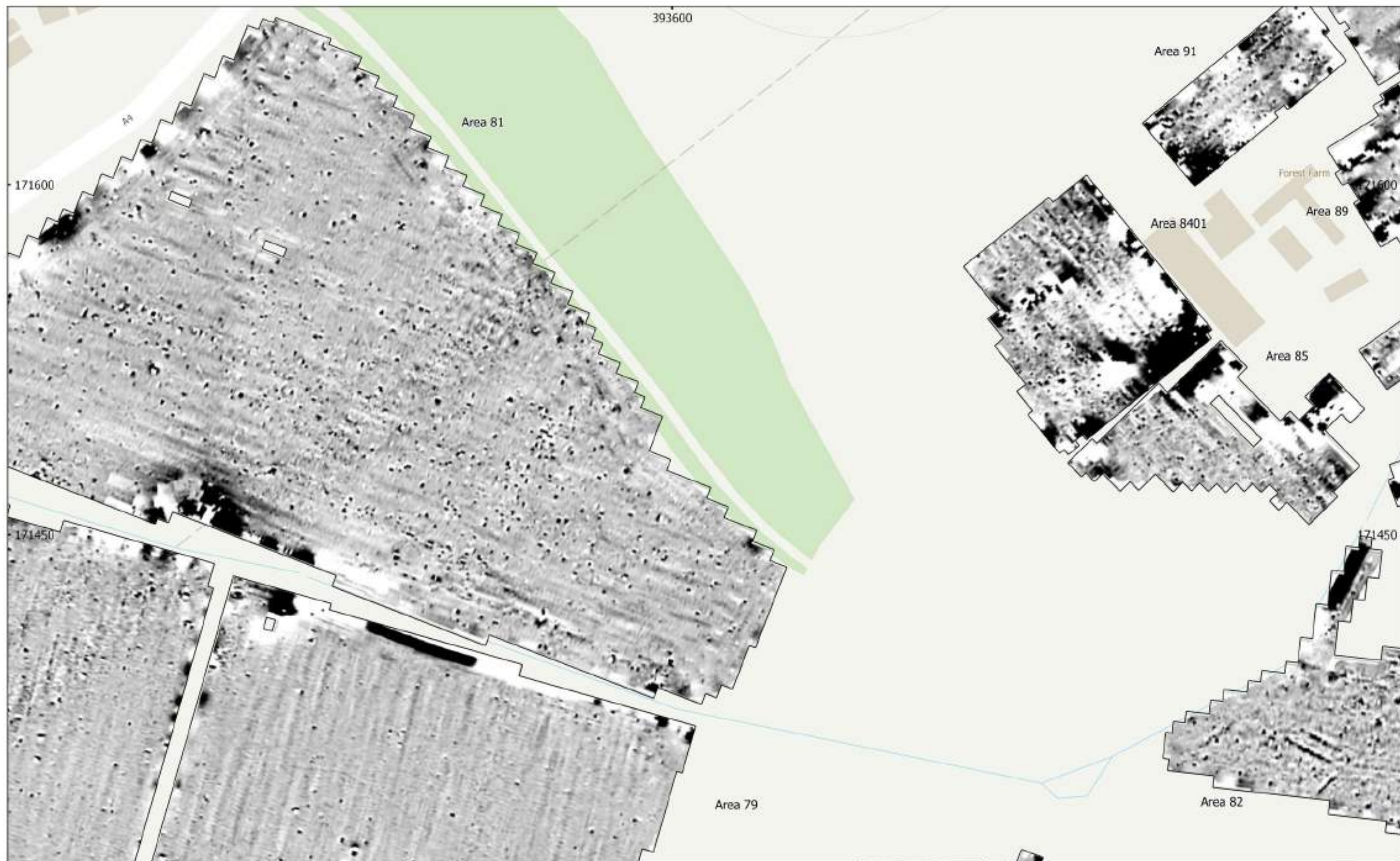
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| Undetermined (Weak) | Magnetic Disturbance | Data Artefact |
| Natural (Weak) | Overhead Cables | Ferrous (Spikes) |
| | Agricultural (Trend) | |



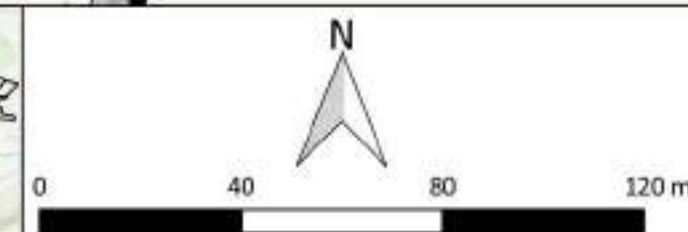


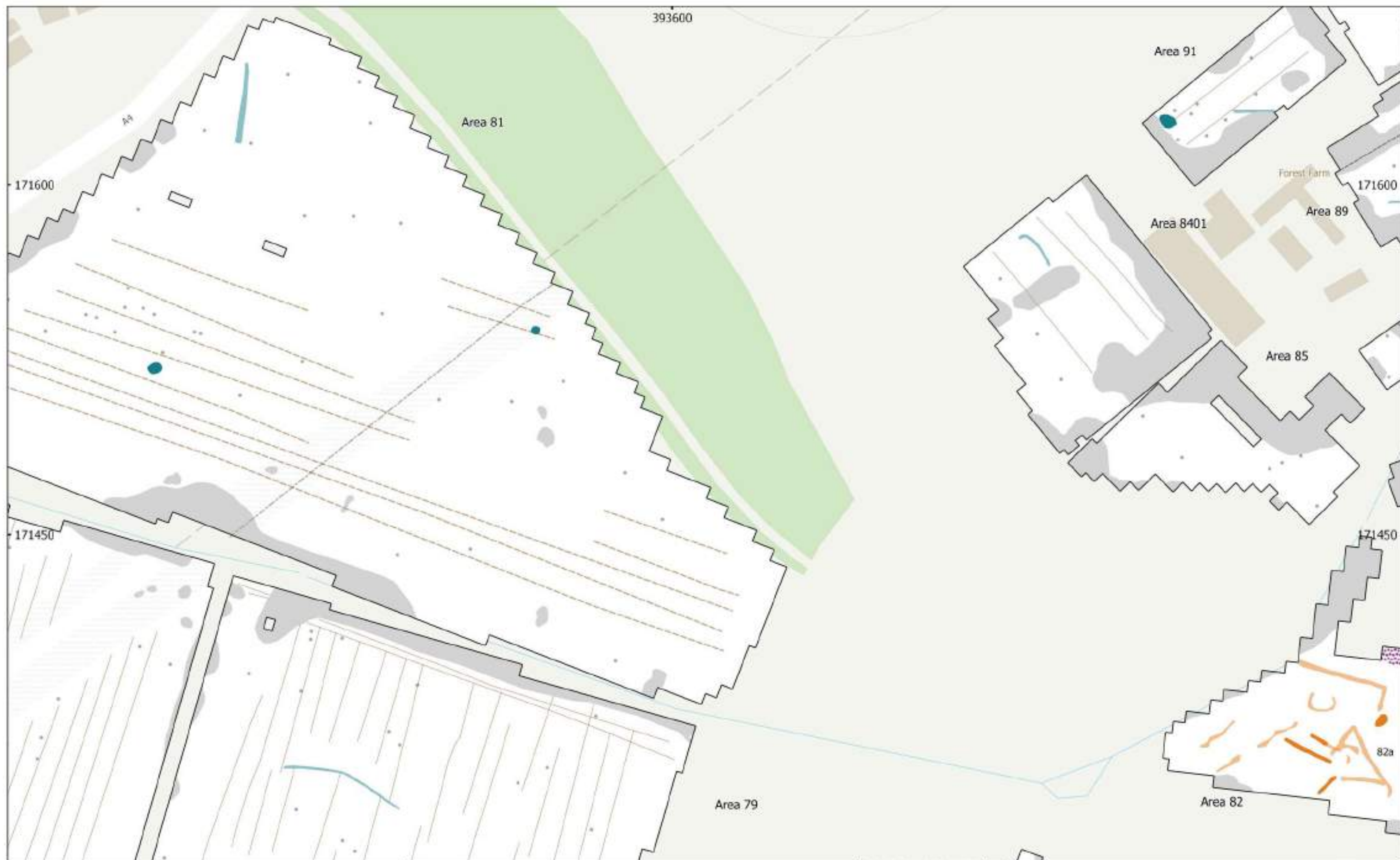
MSST1037 - Chippenham Development
 Figure 24 - XY Trace Plot (Areas 76, 78, 79 and 81)
 30nT/cm at 1:1,500 @ A3
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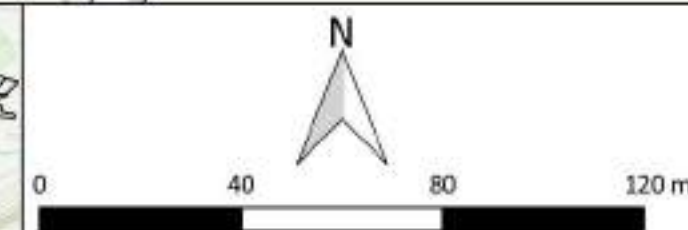
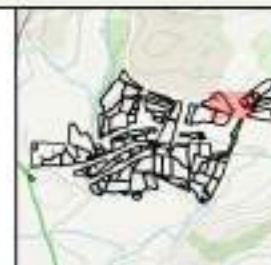
MSST1037 - Chippenham Development
 Figure 25 - Magnetic Gradient (Areas 79, 81, 82, 8401, 85, 89 and 91)
 1:1,500 @ A3
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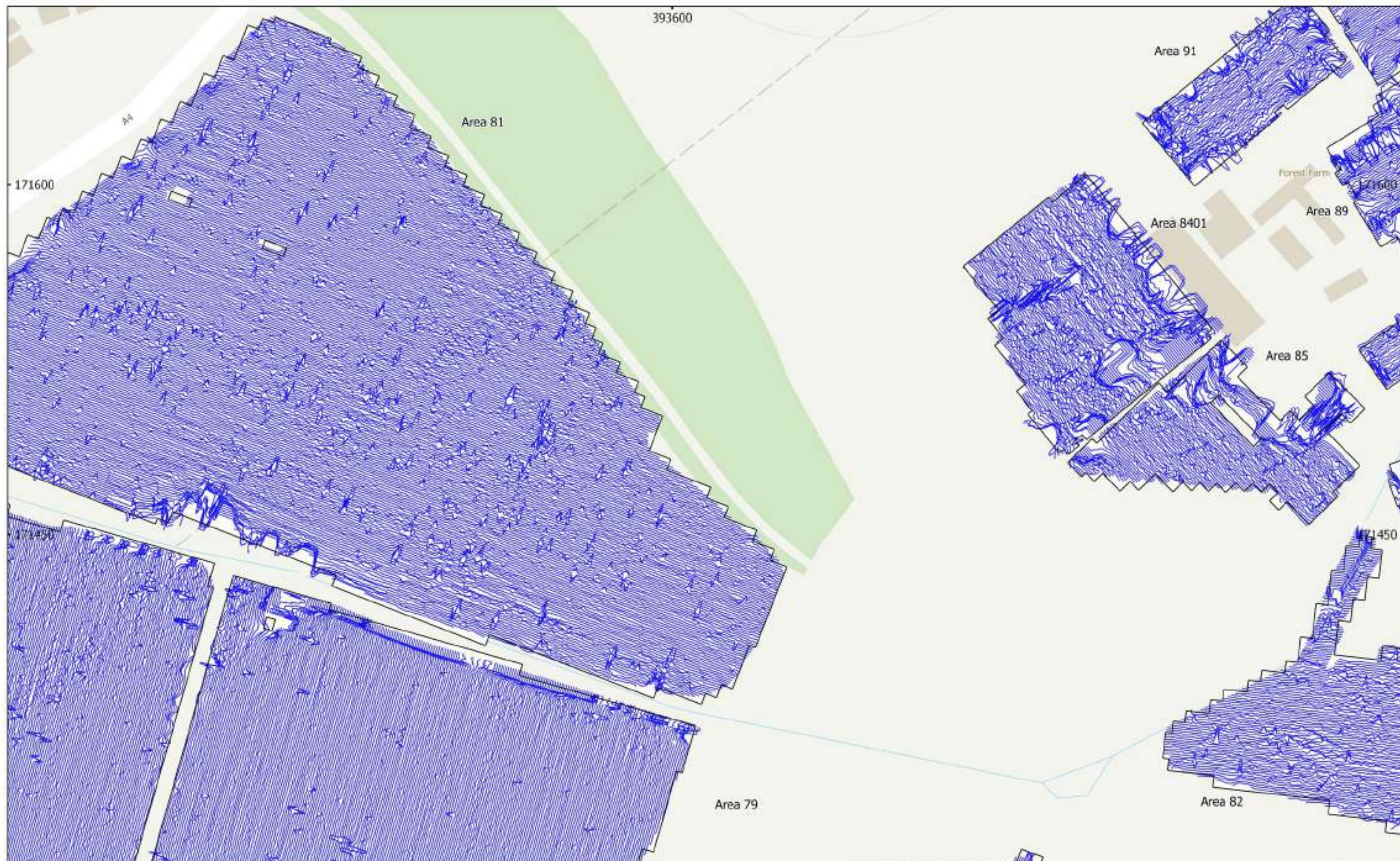




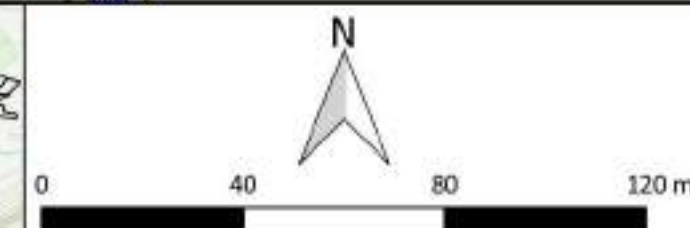
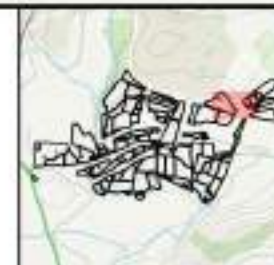
MSST1037 - Chippenham Development
 Figure 26 - Magnetic Interpretation (Areas 79, 81, 82, 8401, 85, 89 and 91)
 1:1,500 @ A3
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- | | | |
|-------------------------------|----------------------------|--------------------------|
| Archaeology Possible (Strong) | Magnetic Disturbance | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Industrial/Modern (Spread) | Service |
| Undetermined (Strong) | Overhead Cables | Data Artefact |
| Undetermined (Weak) | Agricultural (Trend) | Ferrous (Spike) |



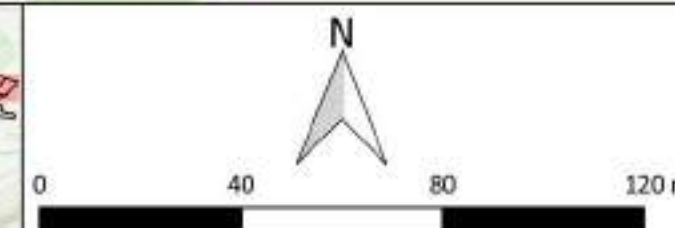


MSST1037 - Chippenham Development
 Figure 27 - XY Trace Plot (Areas 79, 81, 82, 8401, 85, 89 and 91)
 30nT/cm at 1:1,500 @ A3
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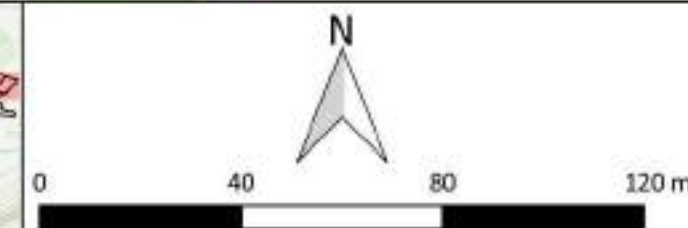
MSST1037 - Chippenham Development
 Figure 28 - Magnetic Gradient (Areas 8401, 85, 86, 87, 88, 89, 90 and 91)
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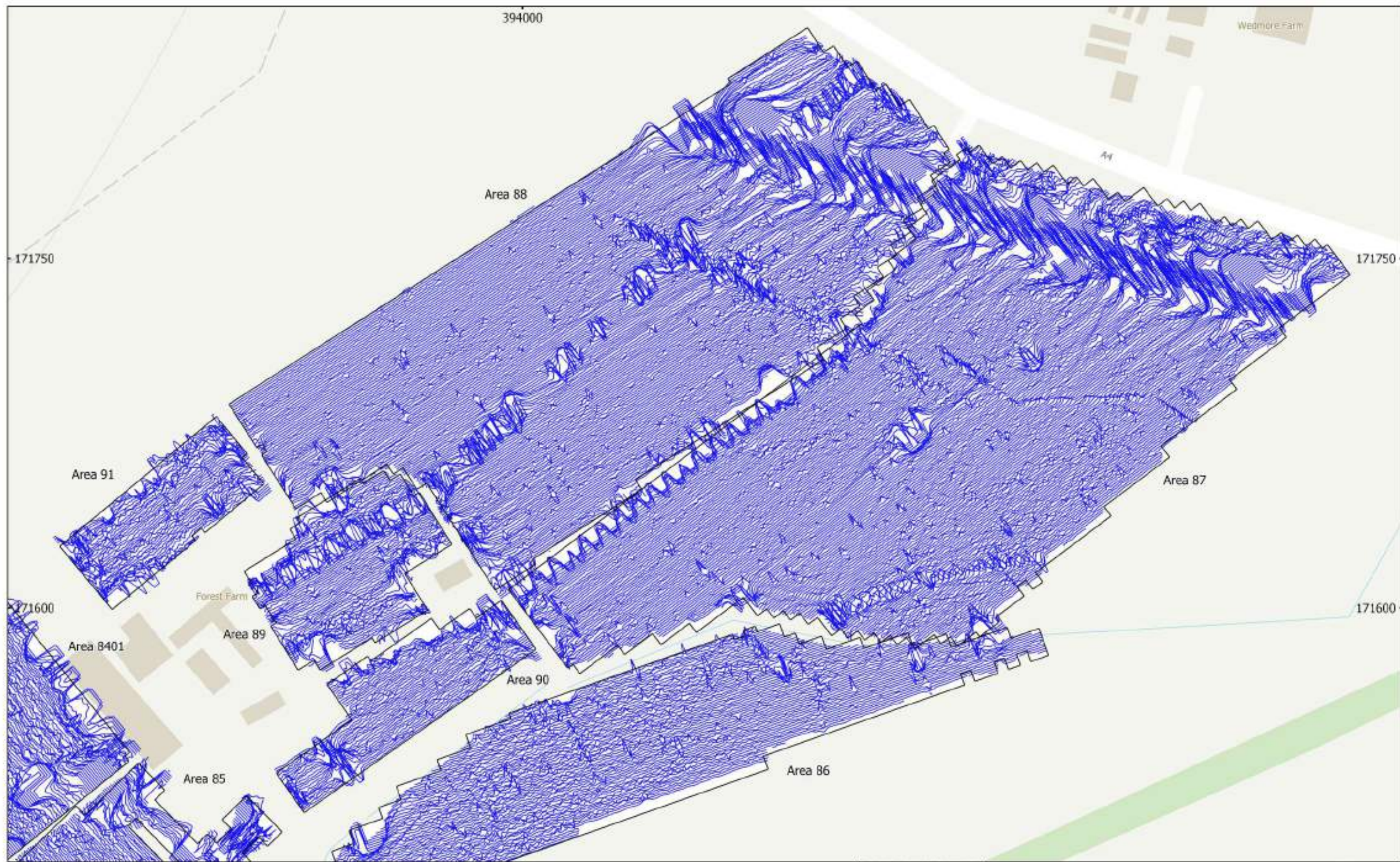




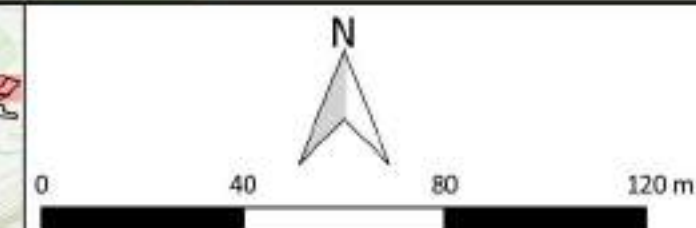
MSST1037 - Chippenham Development
 Figure 29 - Magnetic Interpretation (Areas 8401, 85, 86, 87, 88, 89, 90 and 91)
 1:1,500 @ A3
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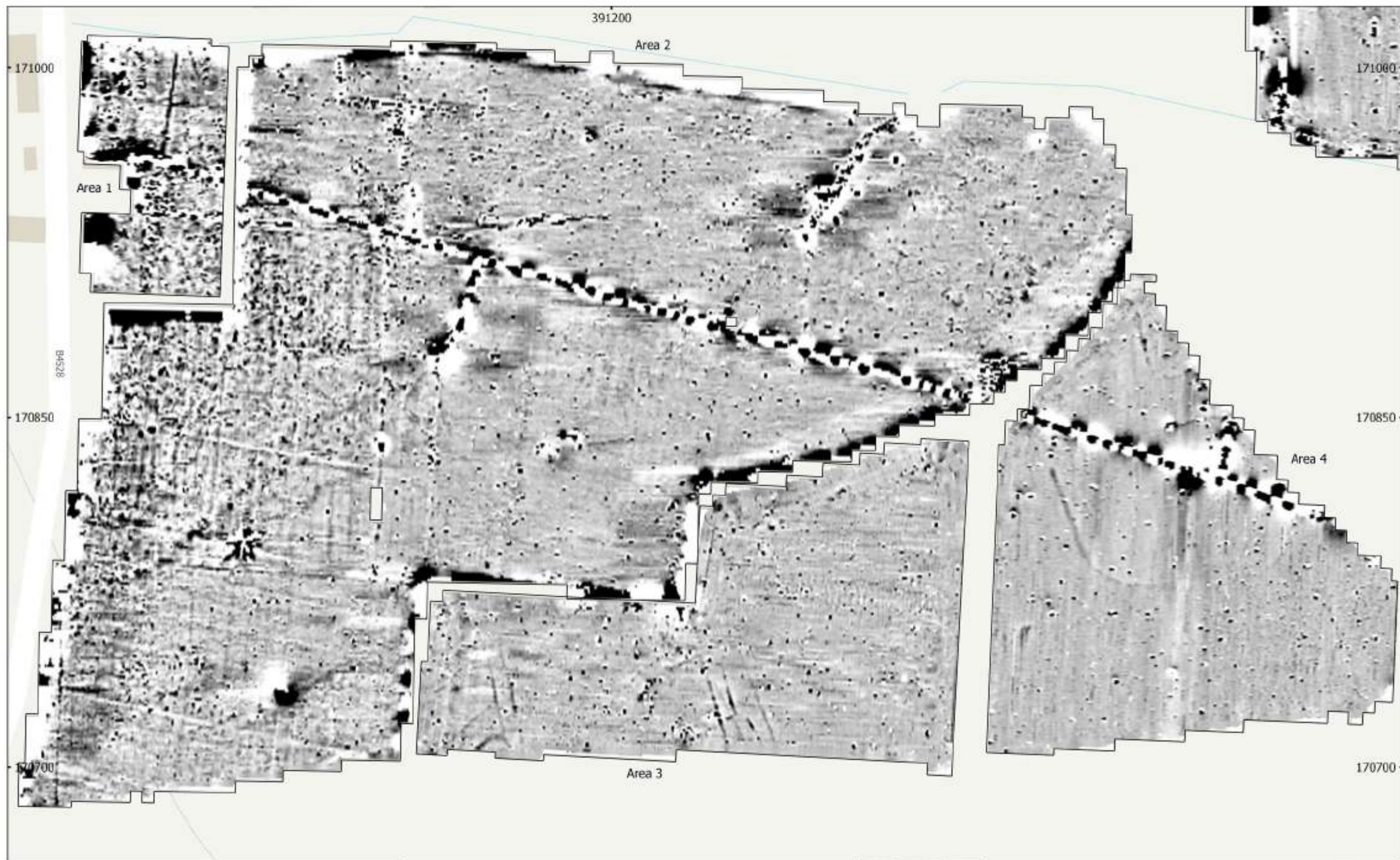
- | | | |
|-------------------------------|--------------------------|------------------|
| Archaeology Possible (Strong) | Undetermined (Weak) | Service |
| Archaeology Possible (Weak) | Magnetic Disturbance | Drainage Feature |
| Agricultural (Strong) | Ferrous/Debris (Spread) | Data Artefact |
| Agricultural (Weak) | Agricultural (Trend) | Ferrous (Spike) |
| Undetermined (Strong) | Ridge and Furrow (Trend) | |



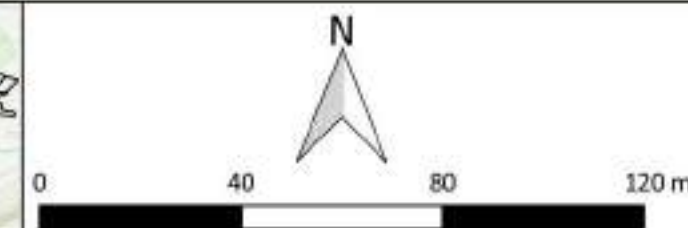


MSST1037 - Chippenham Development
 Figure 30 - XY Trace Plot (Areas 8401, 85, 86, 87, 88, 89, 90 and 91)
 30nT/cm at 1:1,500 @ A3
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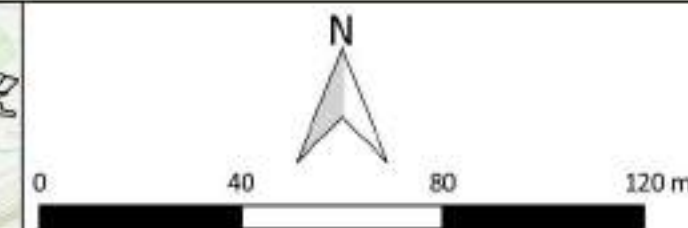
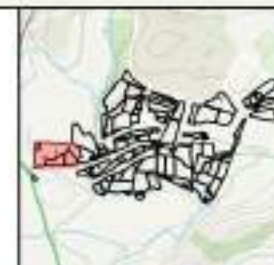
MSST1037 - Chippenham Development
 Figure 31 - Magnetic Gradient (Areas 1, 2, 3 and 4)
 1:1,500 @ A3
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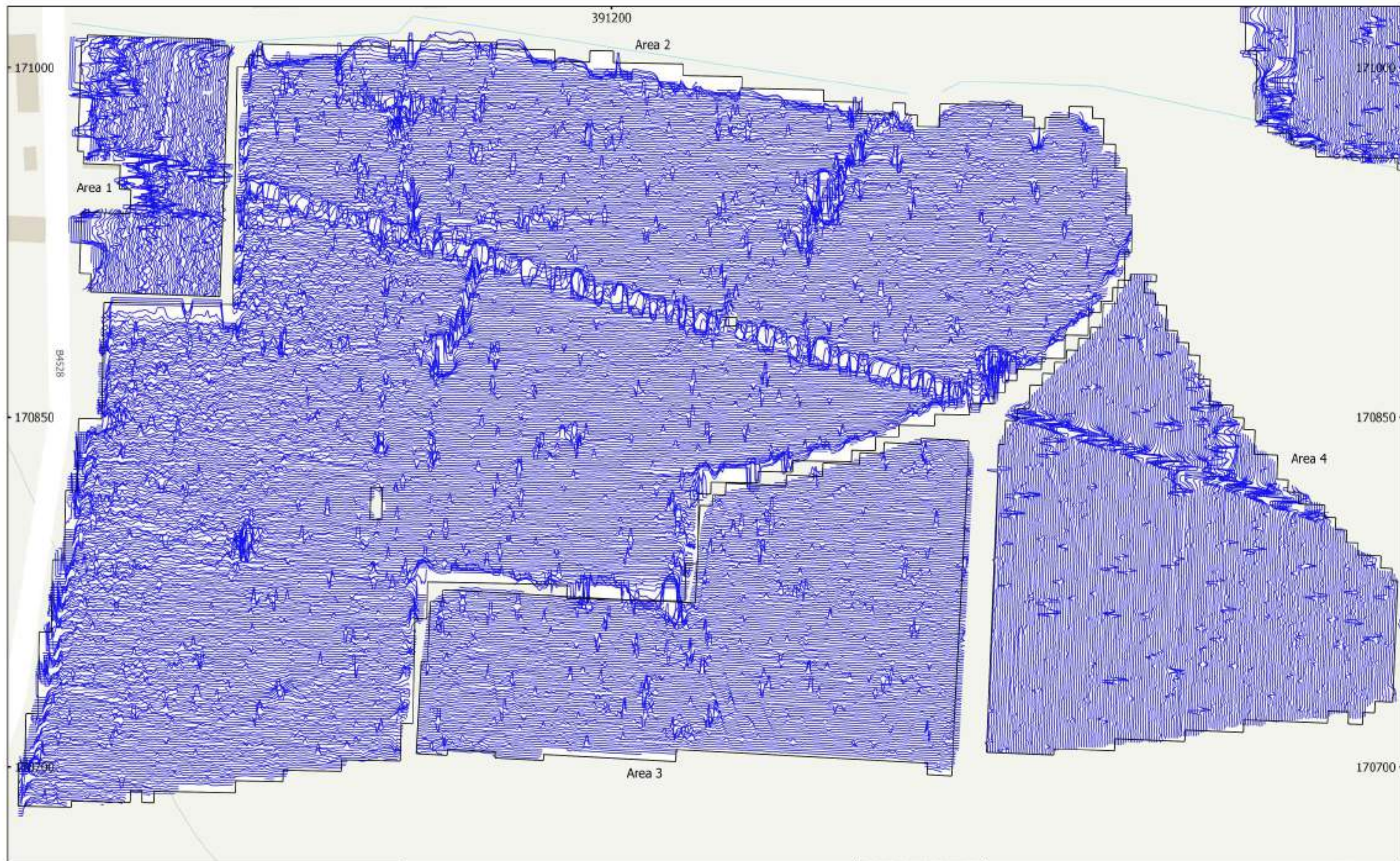




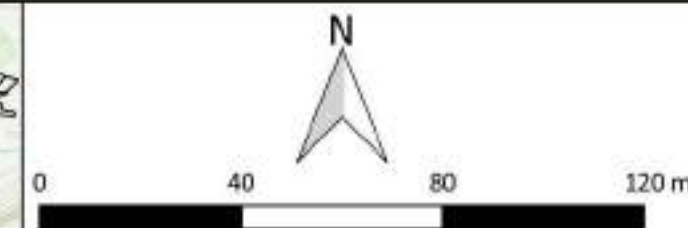
MSST1037 - Chippenham Development
 Figure 32 - Magnetic Interpretation (Areas 1, 2, 3 and 4)
 1:1,500 @ A3
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- | | | |
|-------------------------------|-------------------------|--------------------------|
| Archaeology Probable (Strong) | Undetermined (Weak) | Agricultural (Trend) |
| Archaeology Probable (Weak) | Natural (Weak) | Ridge and Furrow (Trend) |
| Archaeology Possible (Strong) | Natural (Zone) | Service |
| Archaeology Possible (Weak) | Data Artefact | Drainage Feature |
| Agricultural (Strong) | Magnetic Disturbance | Ferrous (Spike) |
| Agricultural (Weak) | Ferrous/Debris (Spread) | |



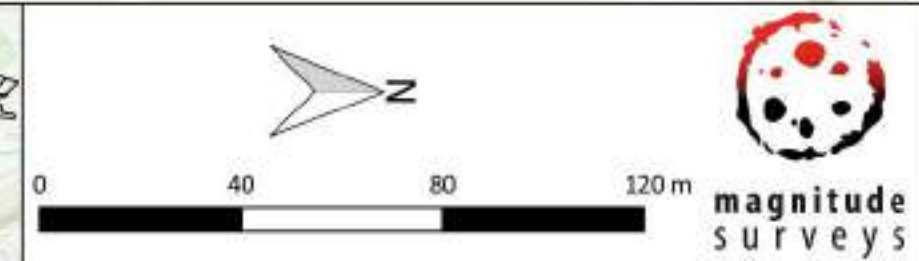


MSST1037 - Chippenham Development
 Figure 33 - XY Trace Plot (Areas 1, 2, 3 and 4)
 30nT/cm at 1:1,500 @ A3
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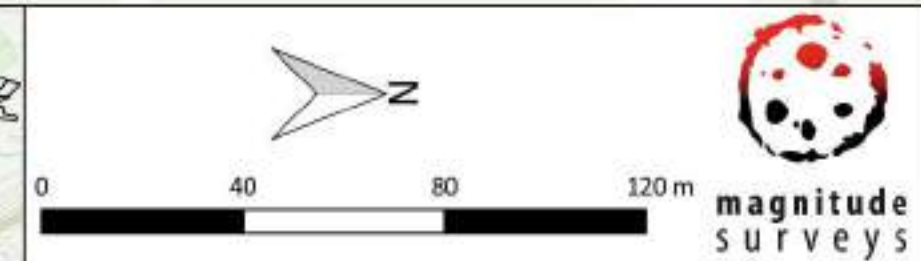


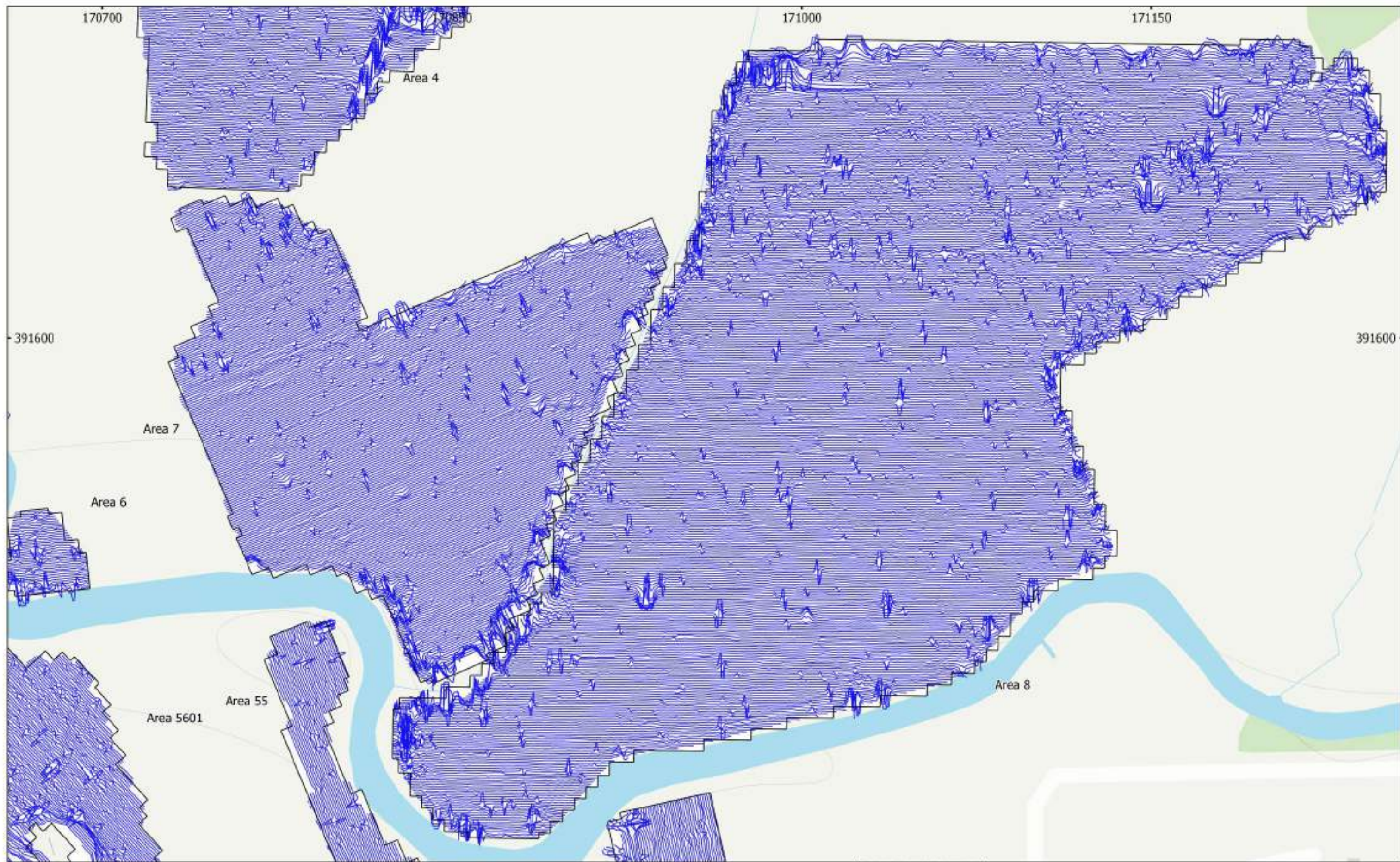
MSST1037 - Chippenham Development
 Figure 34 - Magnetic Gradient (Areas 4, 6, 7, 8 and 5601)
 1:1,500 @ A3
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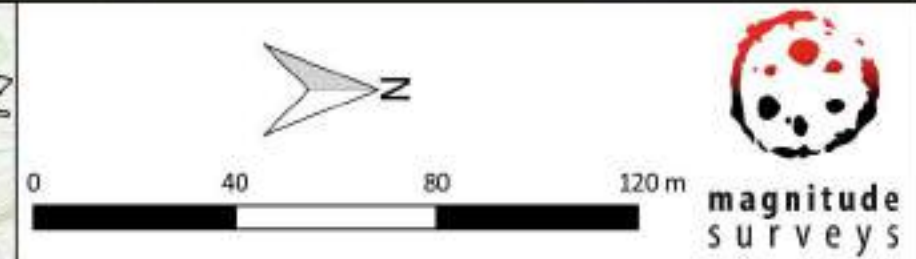


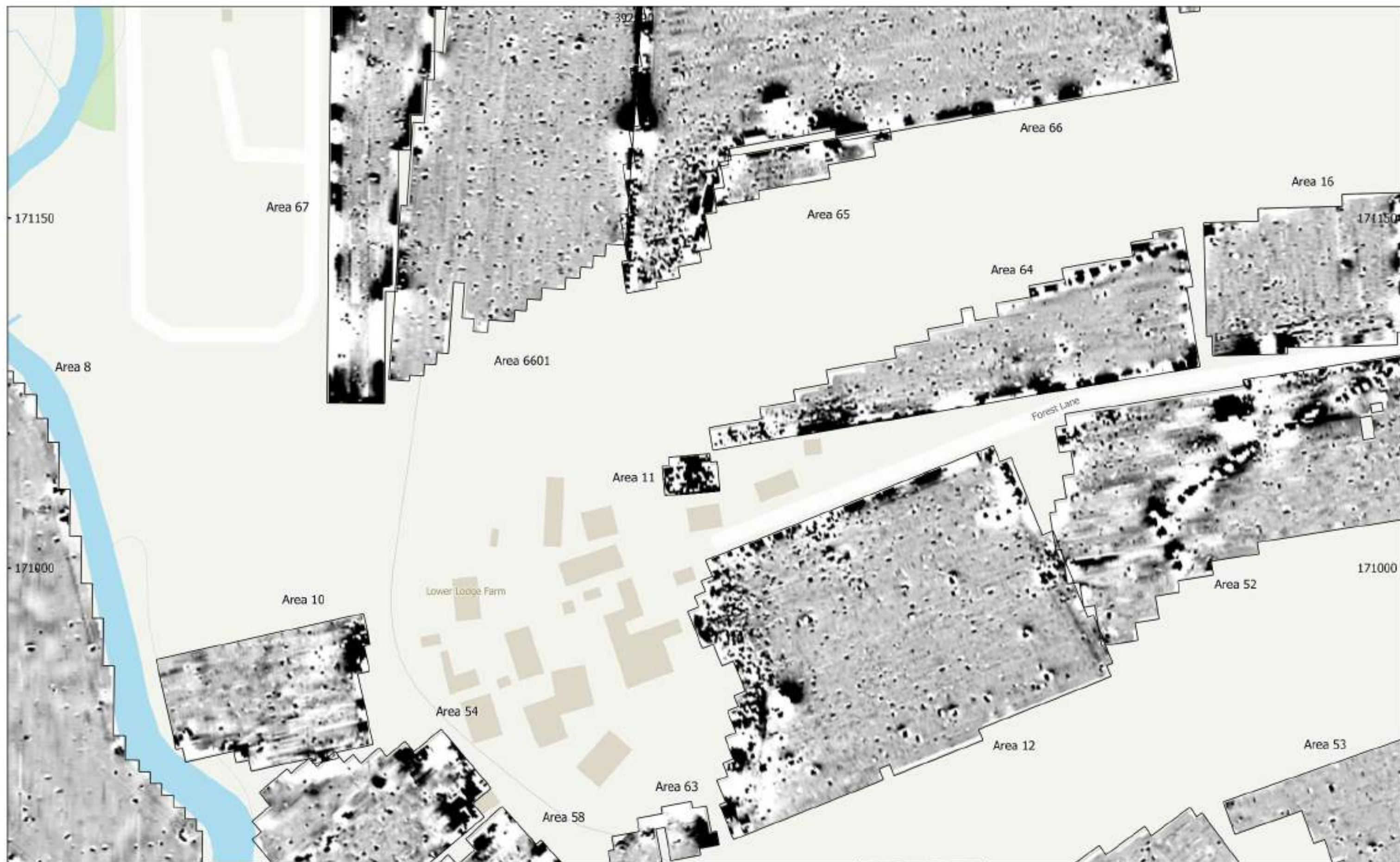
MSST1037 - Chippenham Development
 Figure 35 - Magnetic Interpretation (Areas 4, 6, 7, 8 and 5601)
 1:1,500 @ A3
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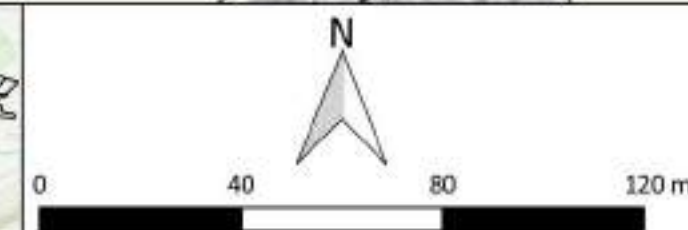


MSST1037 - Chippenham Development
Figure 36 - XY Trace Plot (Areas 4, 6, 7, 8 and 5601)
30nT/cm at 1:1,500 @ A3
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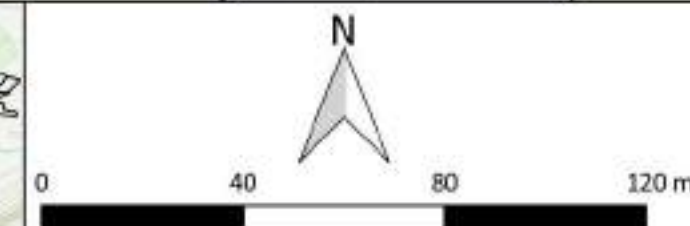


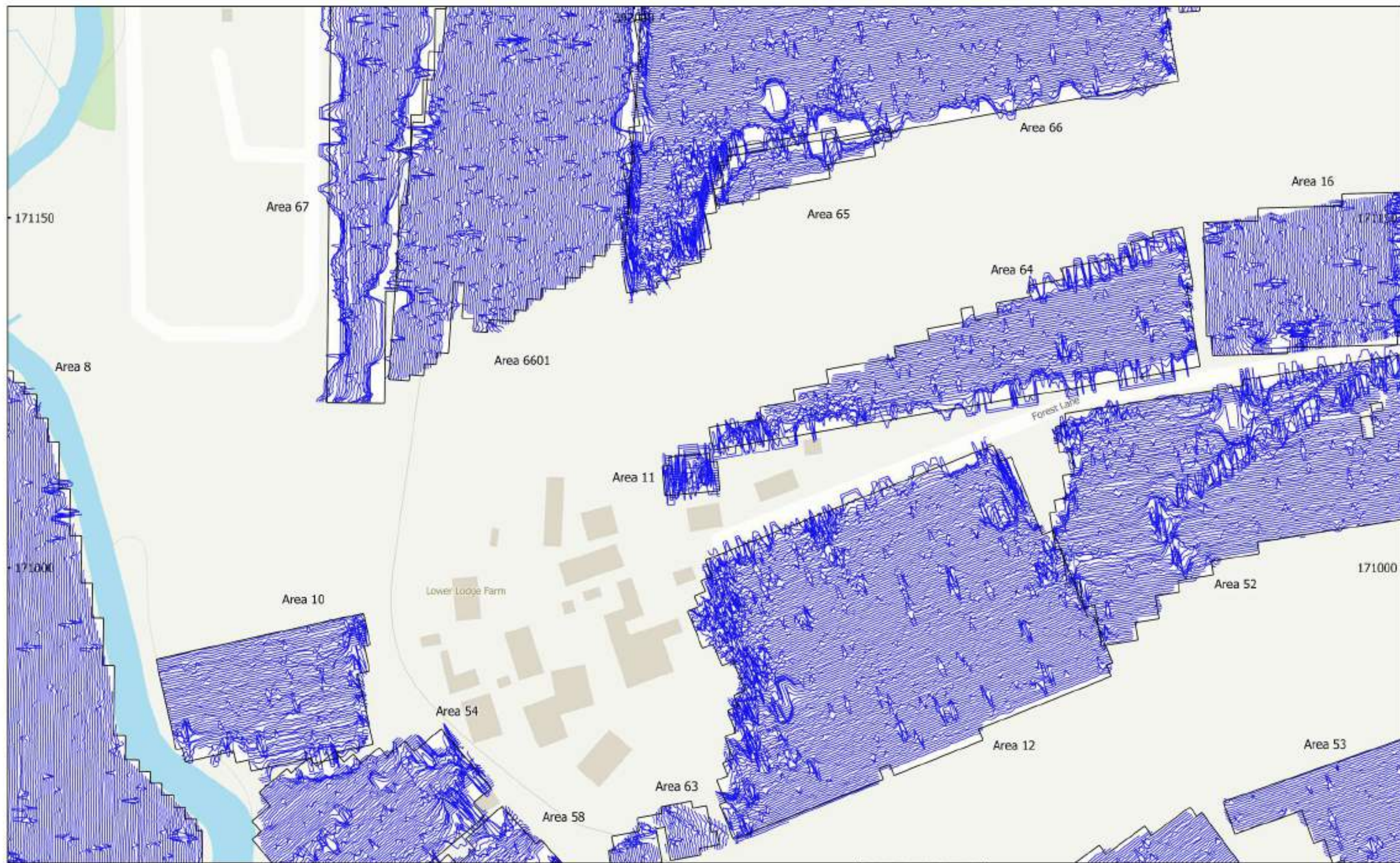
MSST1037 - Chippenham Development
 Figure 37 - Magnetic Gradient (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)
 1:1,500 @ A3
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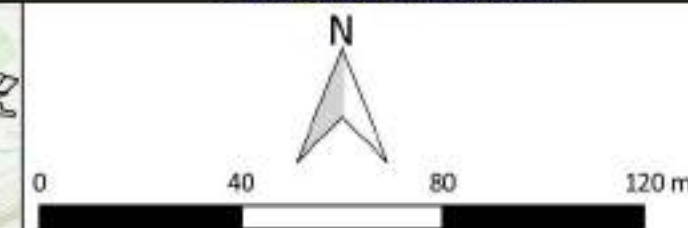


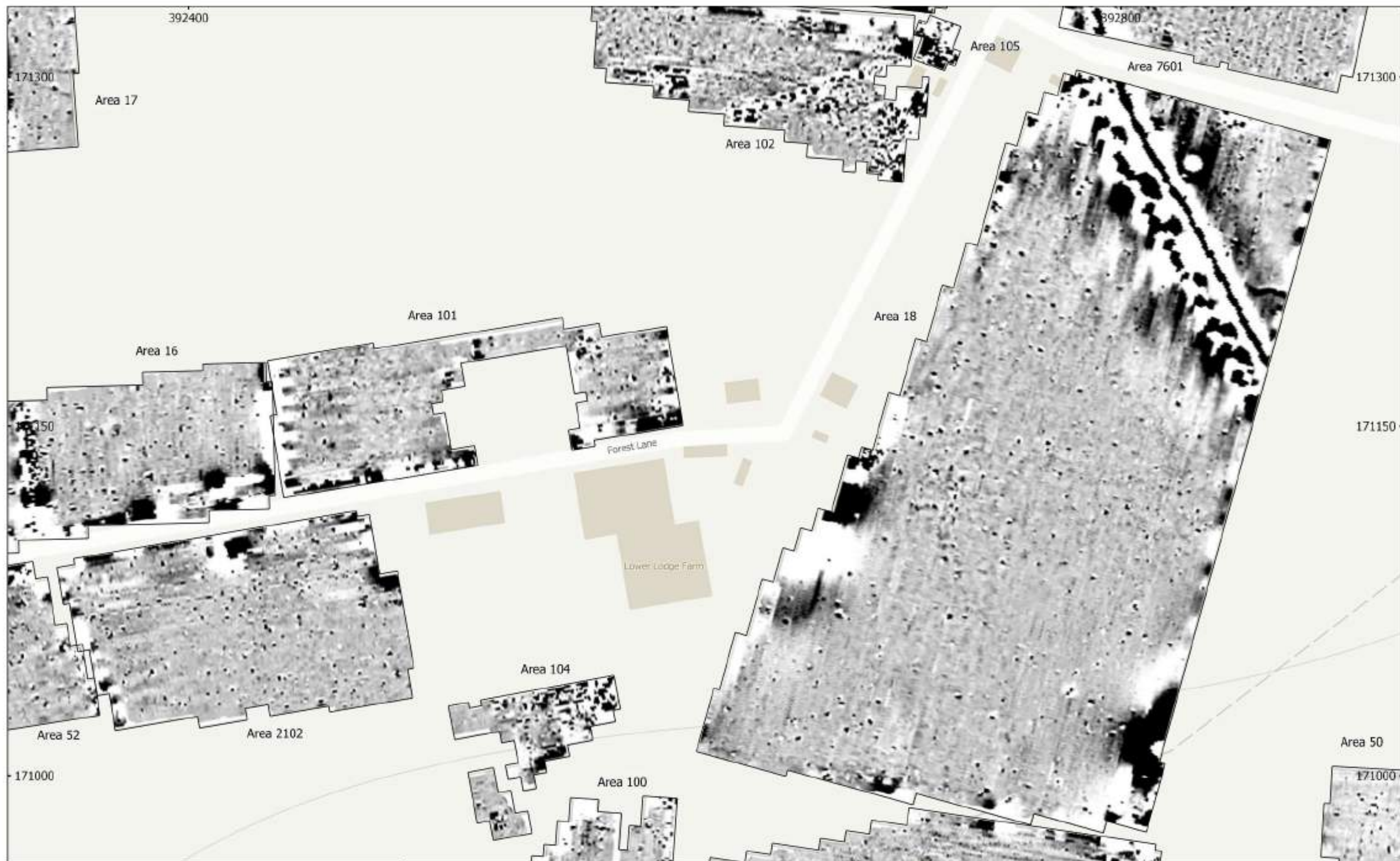
MSST1037 - Chippenham Development
 Figure 38 - Magnetic Interpretation (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)
 1:1,500 @ A3
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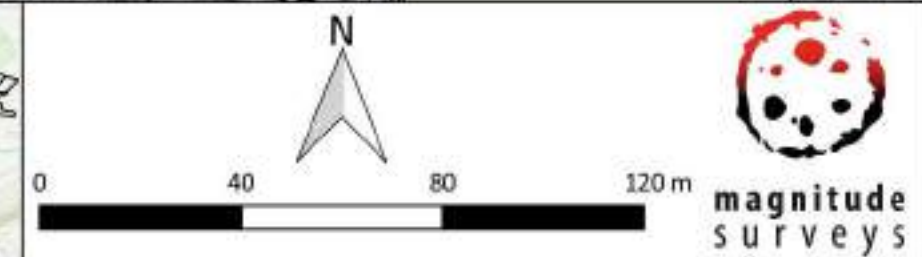
MSST1037 - Chippenham Development
 Figure 39 - XY Trace Plot (Areas 8, 10, 11, 12, 16, 52, 53, 54, 58, 63, 64, 65, 66, 6601 and 67)
 30nT/cm at 1:1,500 @ A3
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MSST1037 - Chippenham Development
 Figure 40 - Magnetic Gradient (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)
 1:1,500 @ A3
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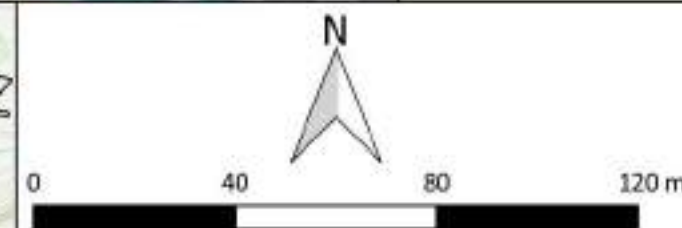
-1 2
 nT

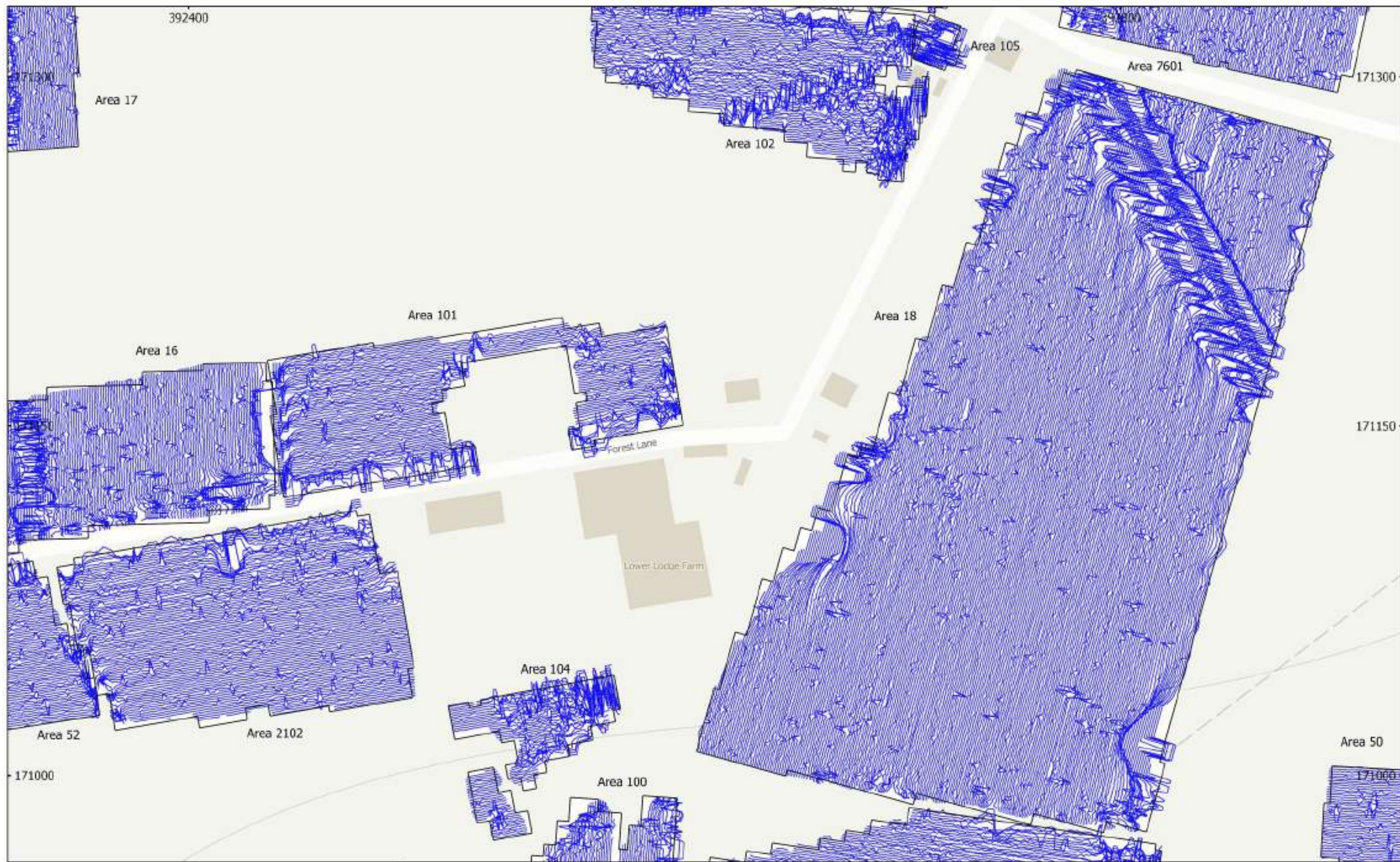




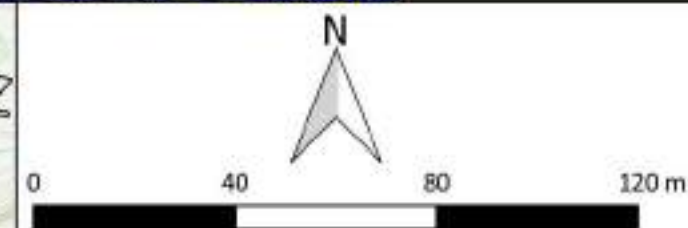
MSST1037 - Chippenham Development
 Figure 41 - Magnetic Interpretation (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)
 1:1,500 @ A3
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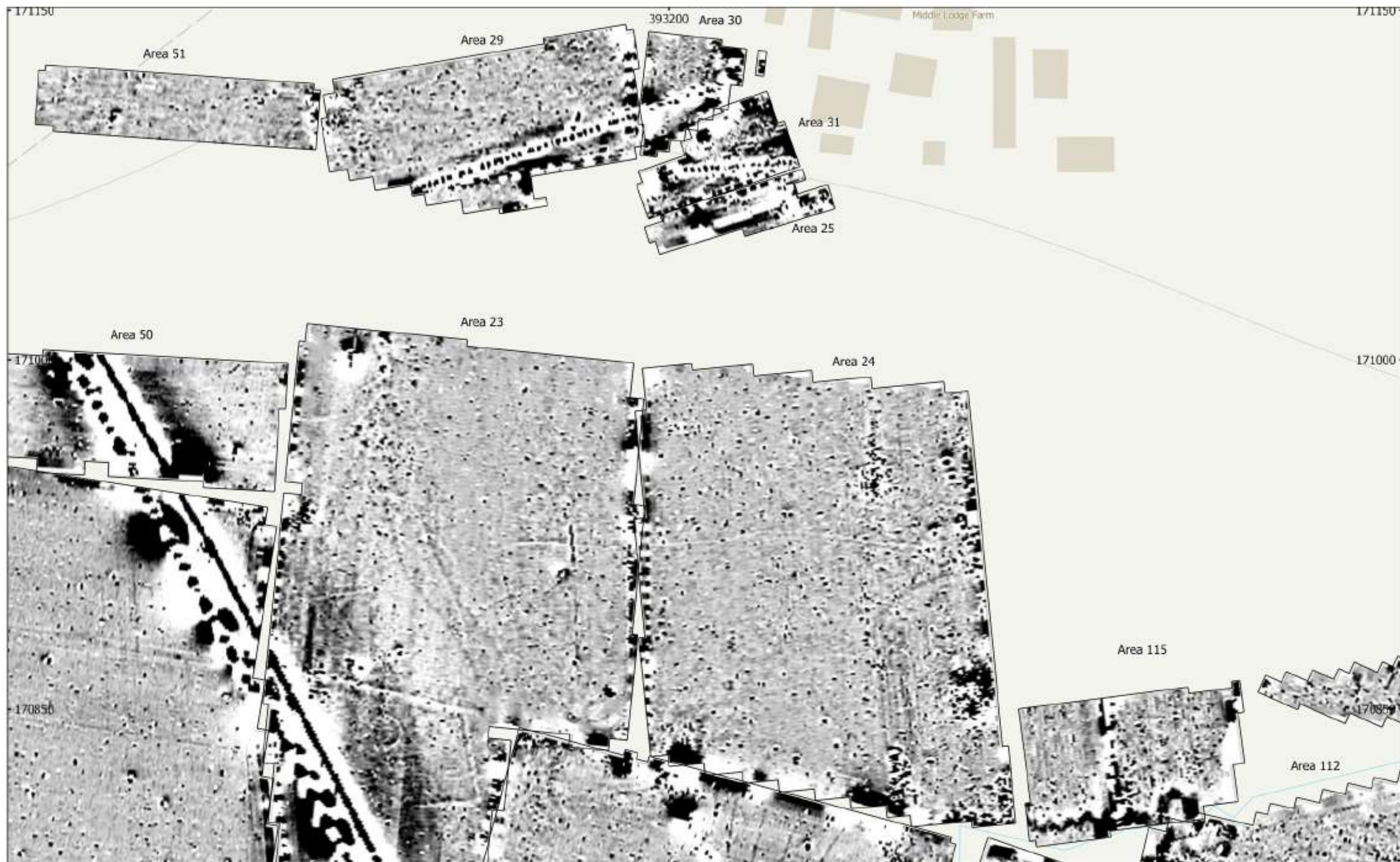
Archaeology Probable (Strong)
 Archaeology Probable (Weak)
 Undetermined (Strong)
 Undetermined (Weak)
 Natural (Weak)
 Natural (Zone)
 Magnetic Disturbance
 Ferrous/Debris (Spread)
 Overhead Cables
 Agricultural (Trend)
 Service
 Drainage Feature
 Data Artefact
 Ferrous (Spike)



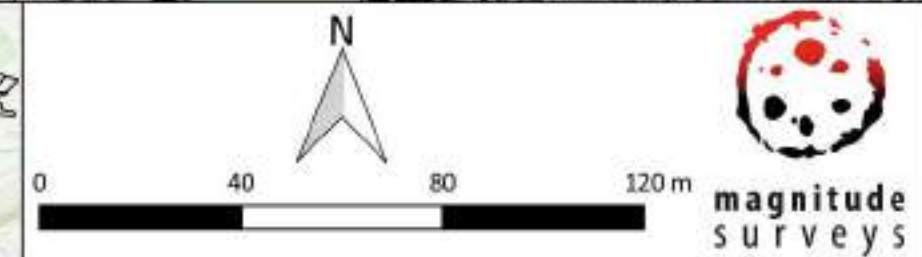


MSST1037 - Chippenham Development
 Figure 42 - XY Trace Plot (Areas 16, 17, 18, 2102, 50, 52, 7601, 100, 101, 102, 104 and 105)
 30nT/cm at 1:1,500 @ A3
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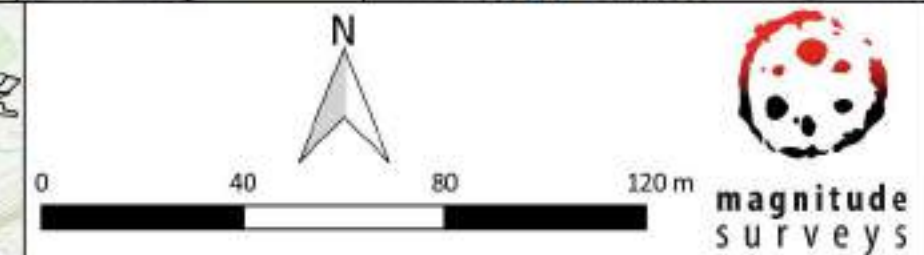
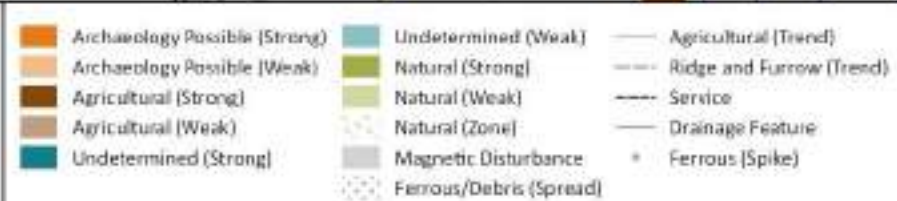


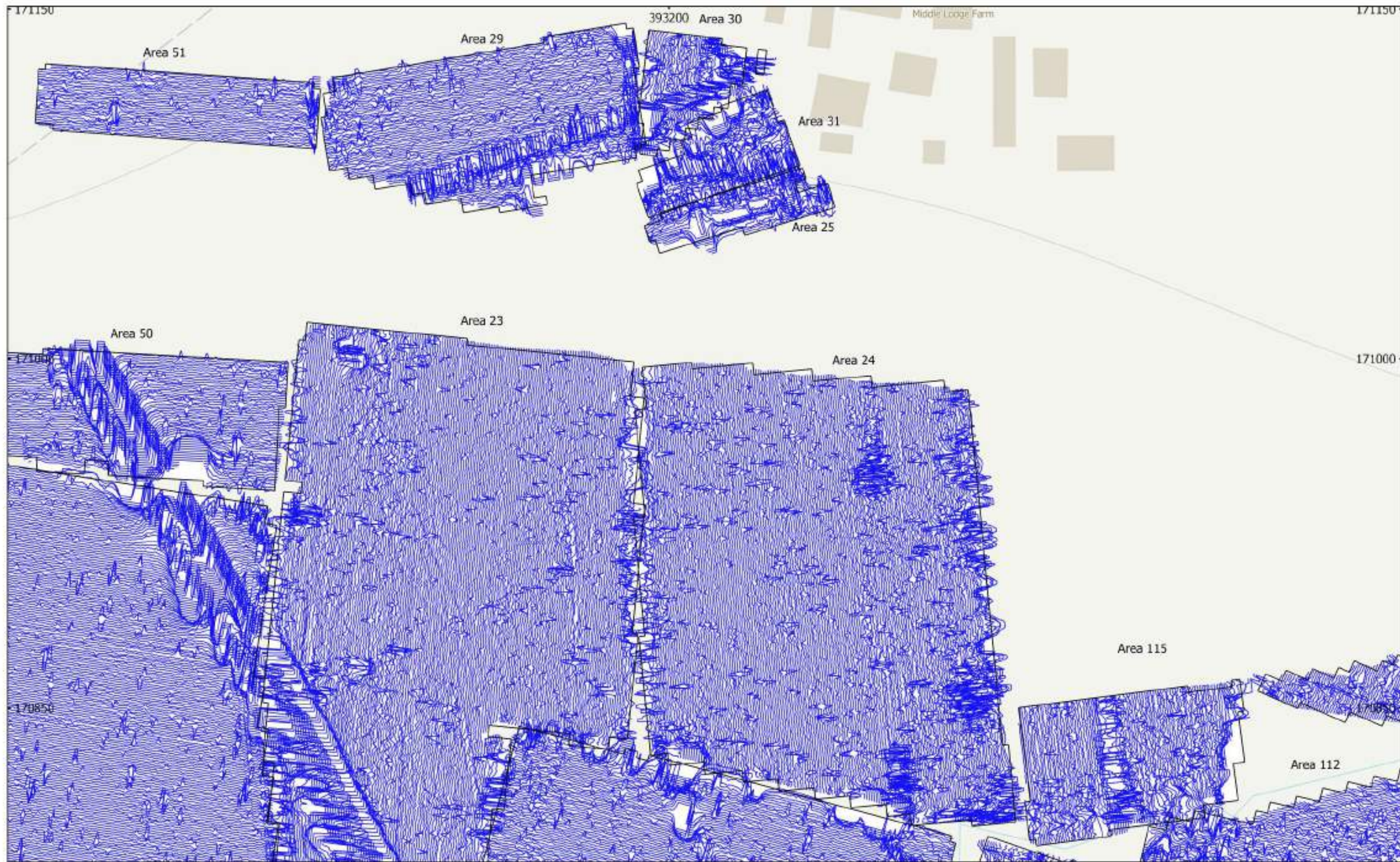
MSST1037 - Chippenham Development
 Figure 43 - Magnetic Gradient (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50, 51, 112 and 115)
 1:1,500 @ A3
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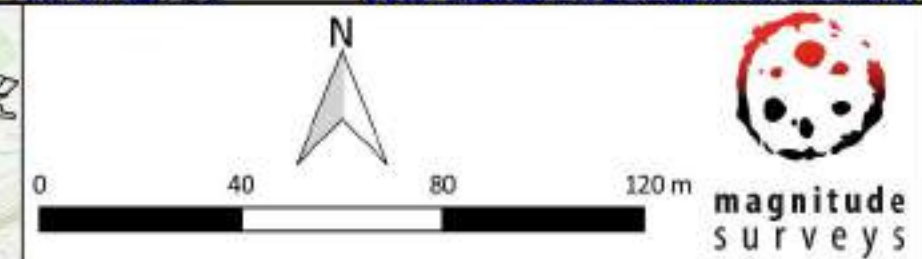


MSST1037 - Chippenham Development
Figure 44 - Magnetic Interpretation (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50,
51, 112 and 115)
1:1,500 @ A3
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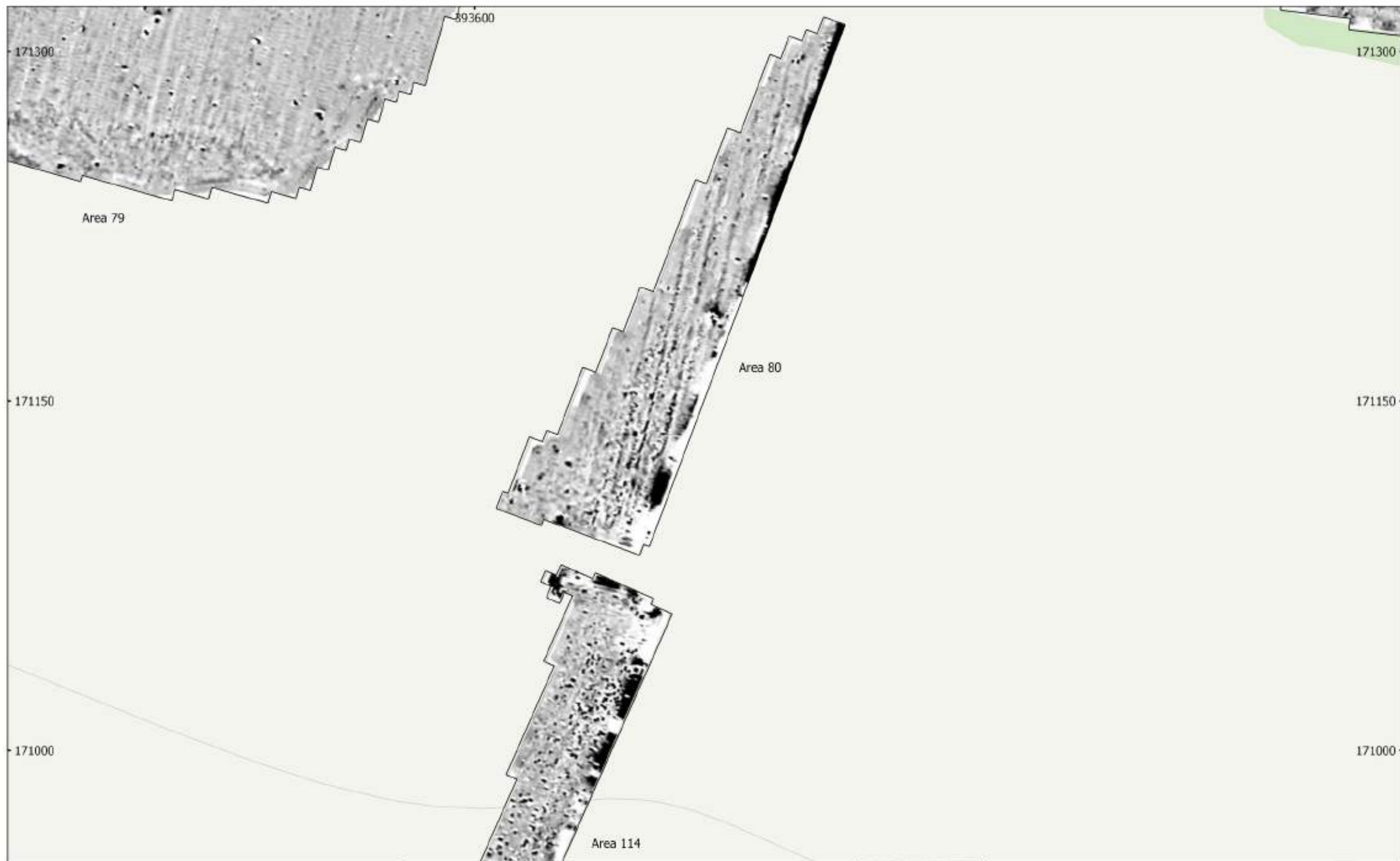




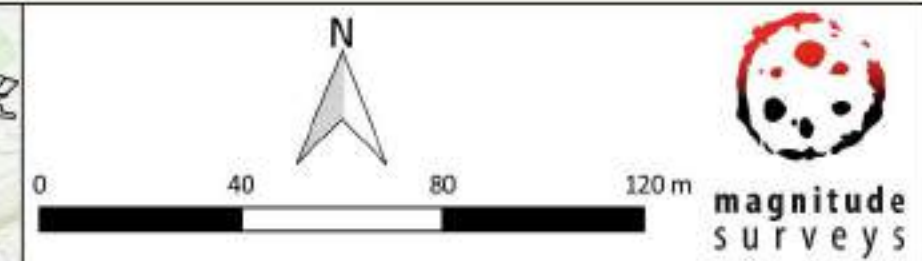
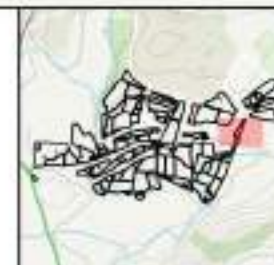
MSST1037 - Chippenham Development
 Figure 45 - XY Trace Plot (Areas 18, 22, 23, 24, 25, 29, 30, 31, 50, 51, 112 and 115)
 30nT/cm at 1:1,500 @ A3
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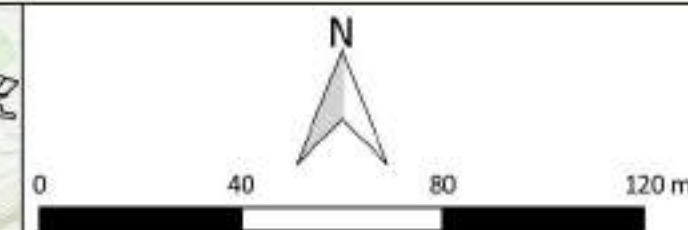
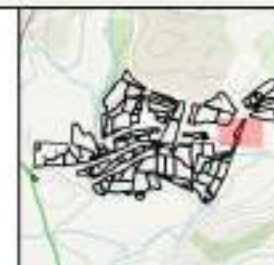
MSST1037 - Chippenham Development
 Figure 46 - Magnetic Gradient (Areas 79, 80 & 114)
 1:1,500 @ A3
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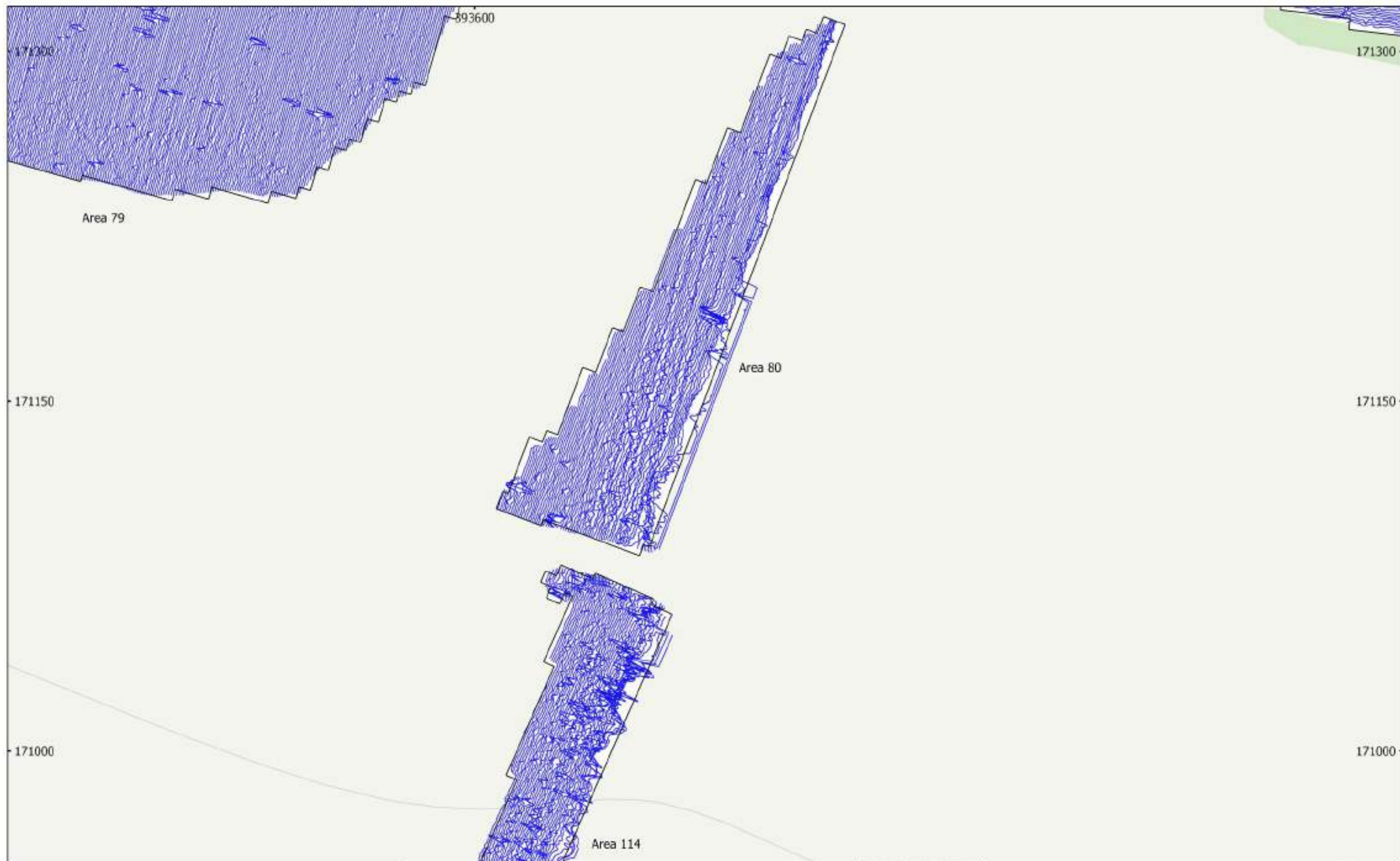




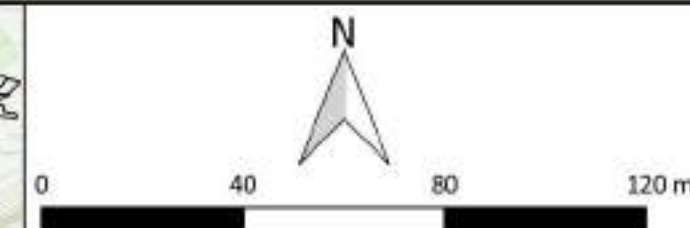
MSST1037 - Chippenham Development
 Figure 47 - Magnetic Interpretation (Areas 79, 80 & 114)
 1:1,500 @ A3
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- | | | |
|-----------------------------|----------------------------|--------------------------|
| Archaeology Possible (Weak) | Magnetic Disturbance | Agricultural (Trend) |
| Undetermined (Weak) | Ferrous/Debris (Spread) | Ridge and Furrow (Trend) |
| Natural (Weak) | Industrial/Modern (Spread) | Ferrous (Spike) |
| Natural (Zone) | Industrial/Modern | |



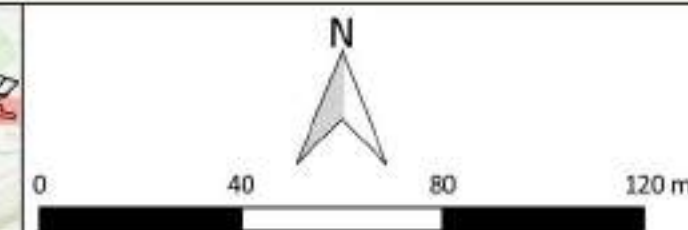


MSST1037 - Chippenham Development
 Figure 48 - XY Trace Plot (Areas 79, 80 & 114)
 30nT/cm at 1:1,500 @ A3
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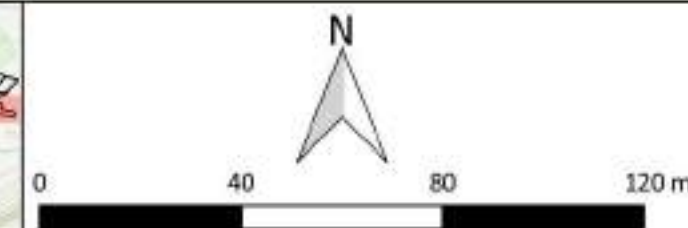
MSST1037 - Chippenham Development
 Figure 49 - Magnetic Gradient (Areas 82, 85 and 86)
 1:1,500 @ A3
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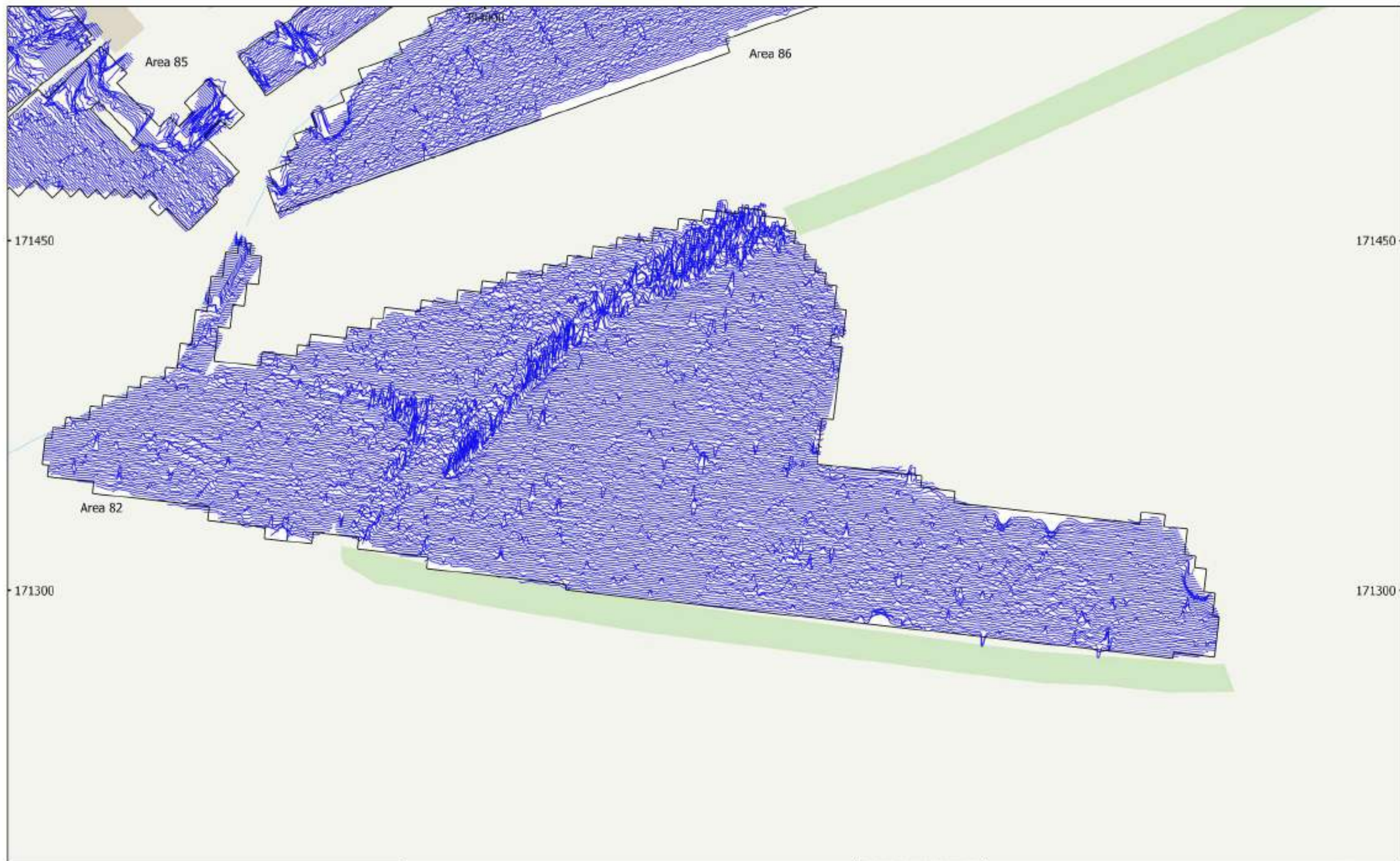




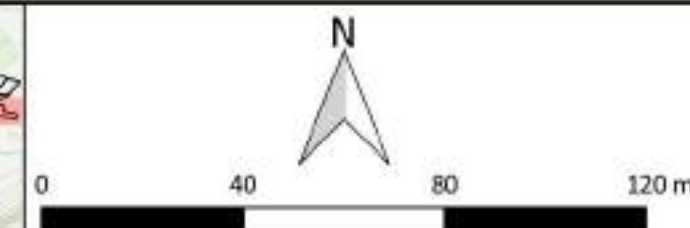
MSST1037 - Chippenham Development
 Figure 50 - Magnetic Interpretation (Areas 82, 85 and 86)
 1:1,500 @ A3
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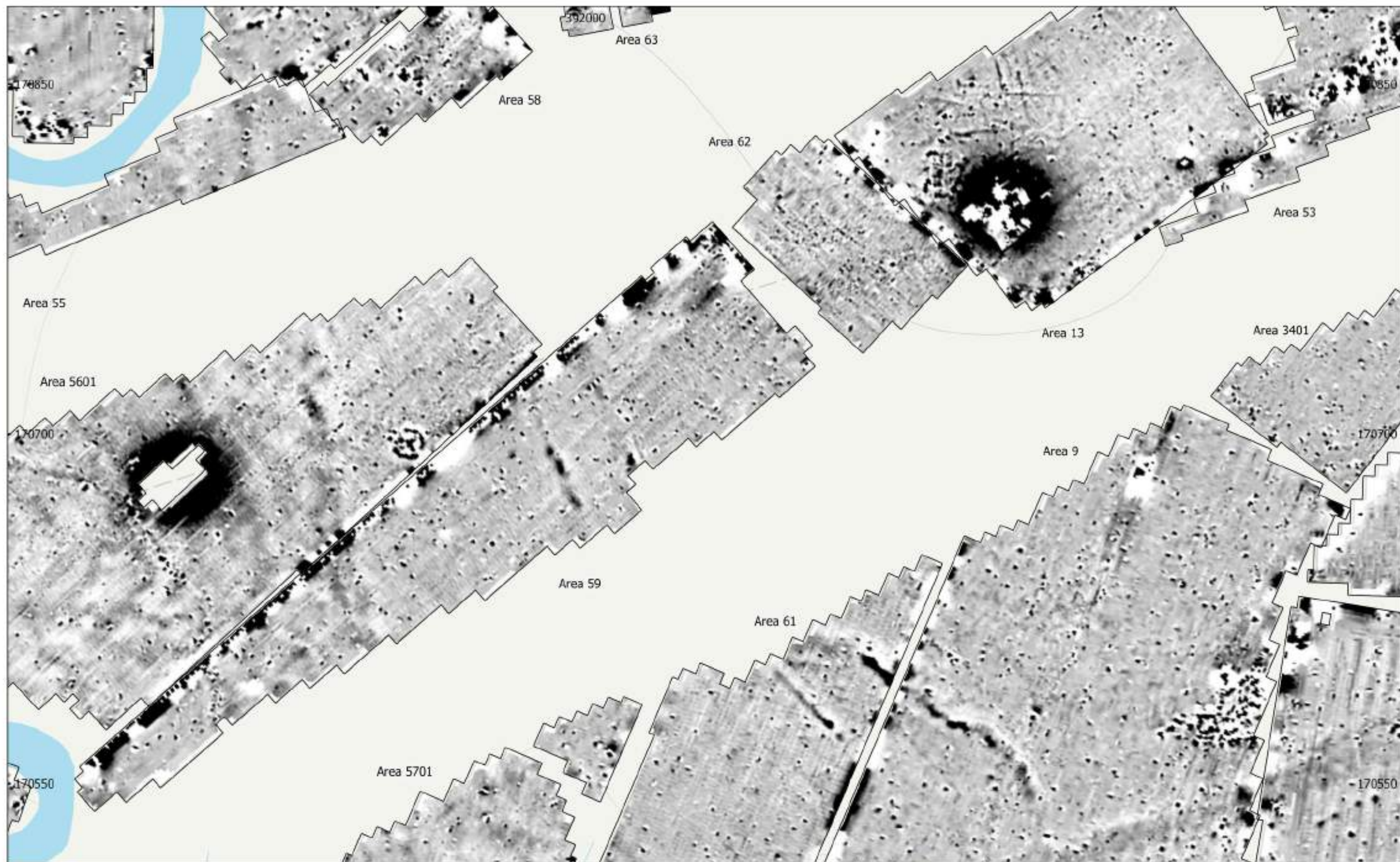
- | | | |
|-------------------------------|----------------------------|--------------------------|
| Archaeology Possible (Strong) | Magnetic Disturbance | Ridge and Furrow (Trend) |
| Archaeology Possible (Weak) | Industrial/Modern (Spread) | Undetermined (Trend) |
| Natural (Weak) | Industrial/Modern | Service |
| Natural (Zone) | Agricultural (Trend) | Ferrous (Spike) |



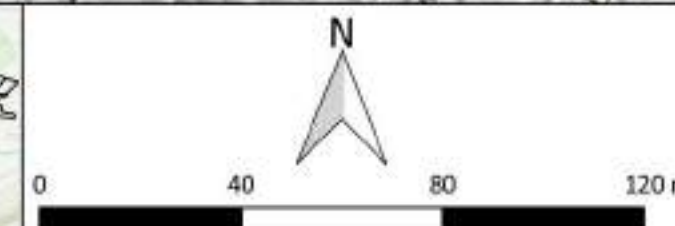


MSST1037 - Chippenham Development
Figure 51 - XY Trace Plot (Areas 82, 85 and 86)
30nT/cm at 1:1,500 @ A3
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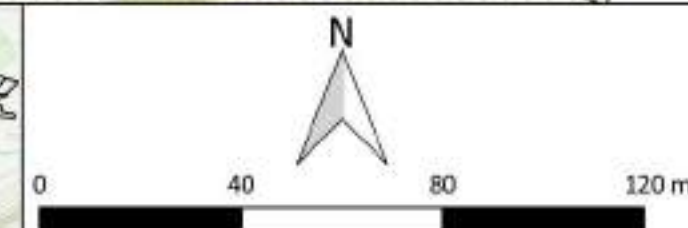
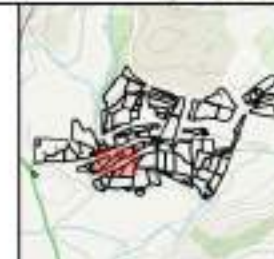


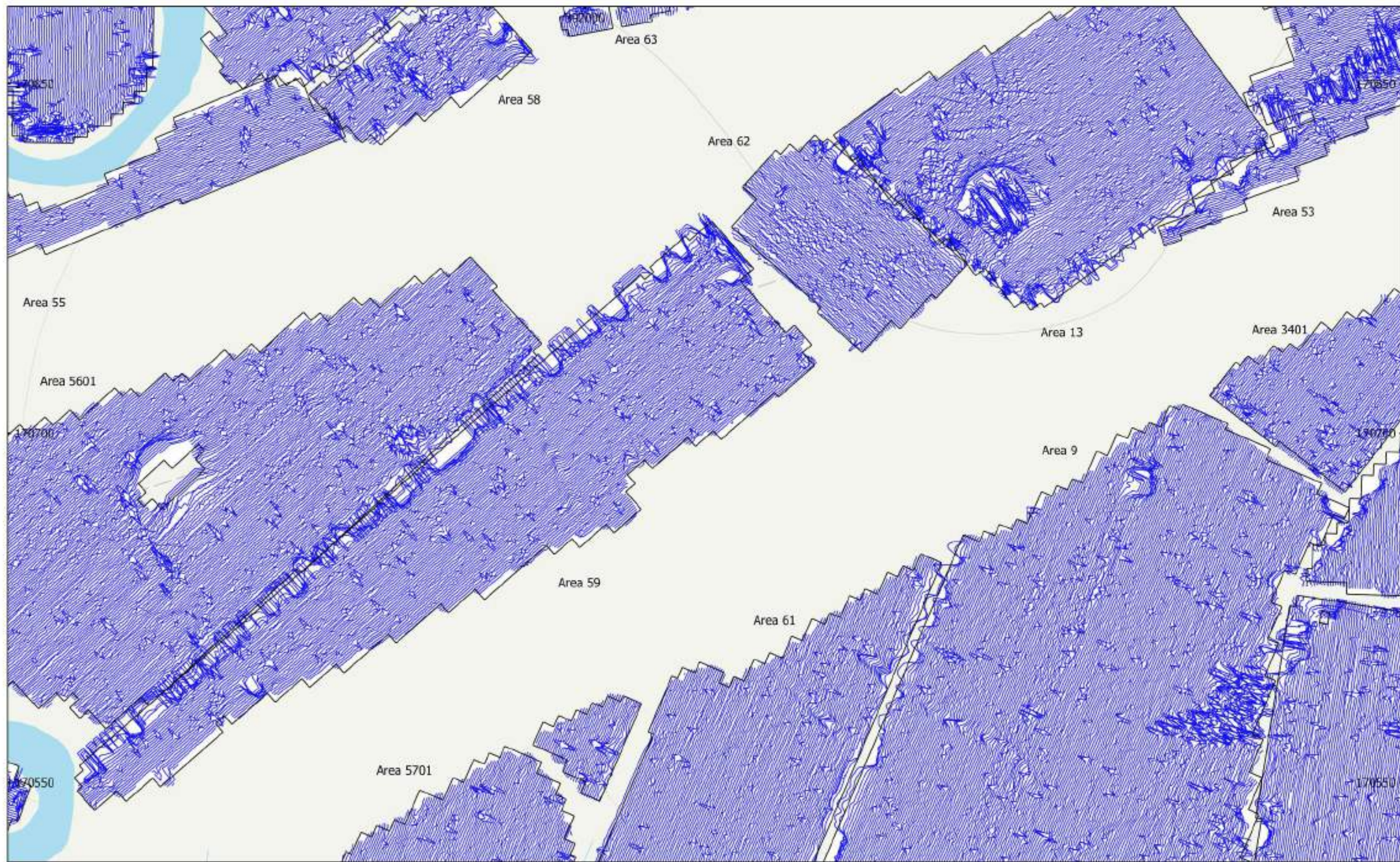
MSST1037 - Chippenham Development
 Figure 52 - Magnetic Gradient (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)
 1:1,500 @ A3
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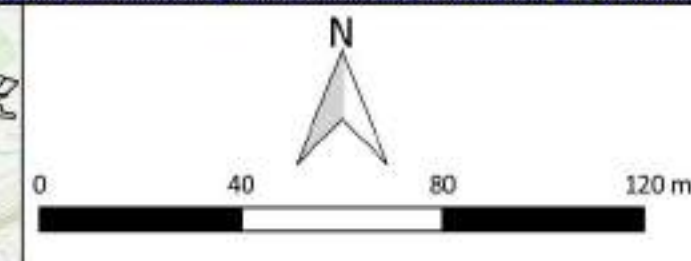


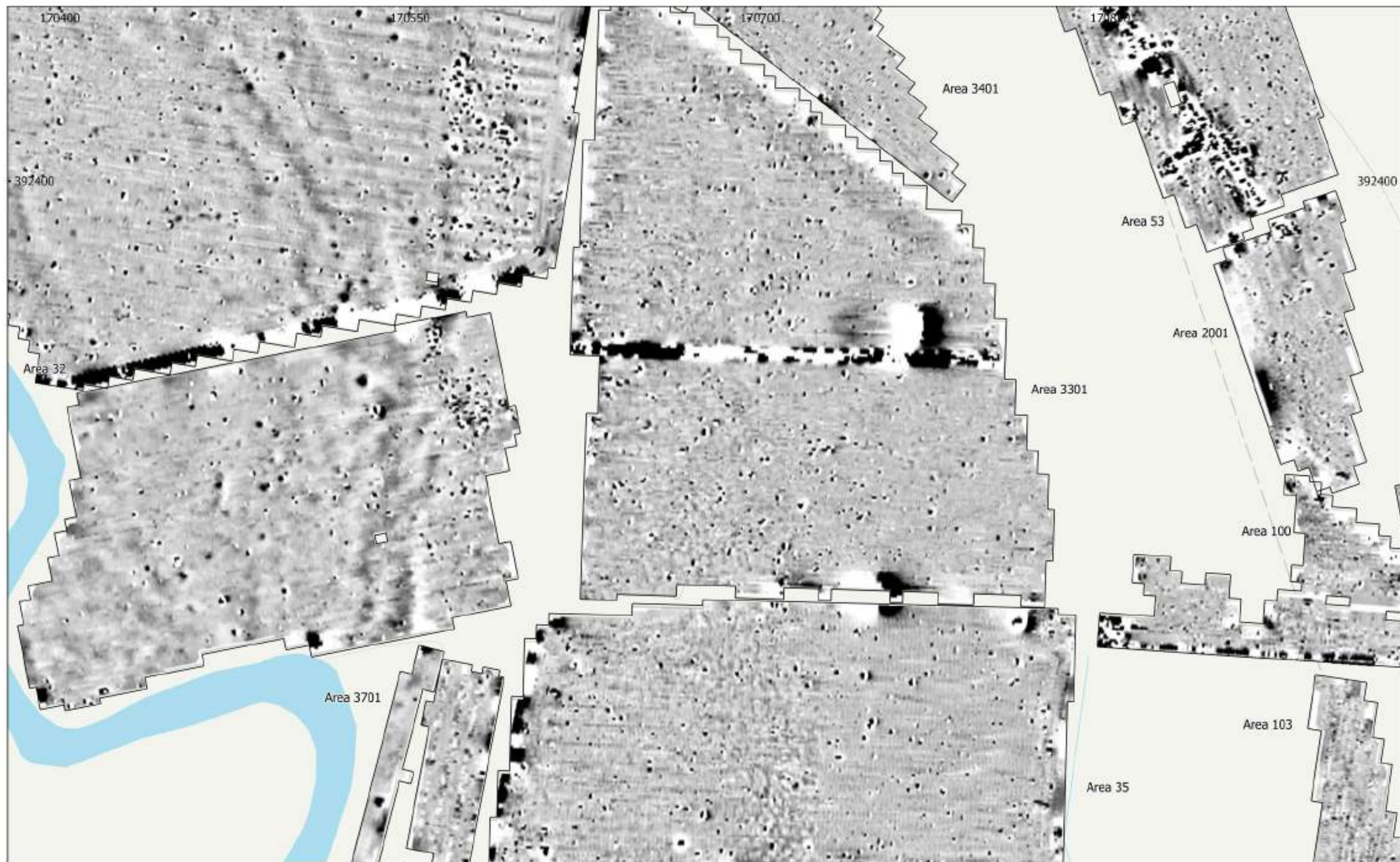
MSST1037 - Chippenham Development
 Figure 53 - Magnetic Interpretation (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)
 1:1,500 @ A3
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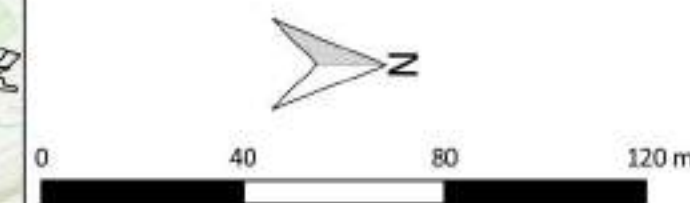


MSST1037 - Chippenham Development
 Figure 54 - XY Trace Plot (Areas 9, 13, 3301, 3401, 53, 54, 55, 5601, 5701, 58, 59, 61, 62 and 63)
 30nT/cm at 1:1,500 @ A3
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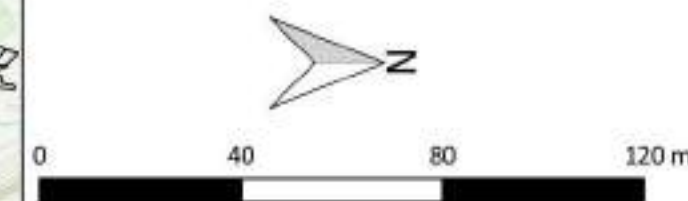
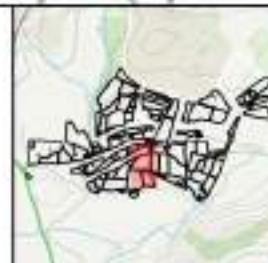
MSST1037 - Chippenham Development
 Figure 55 - Magnetic Gradient (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)
 1:1,500 @ A3
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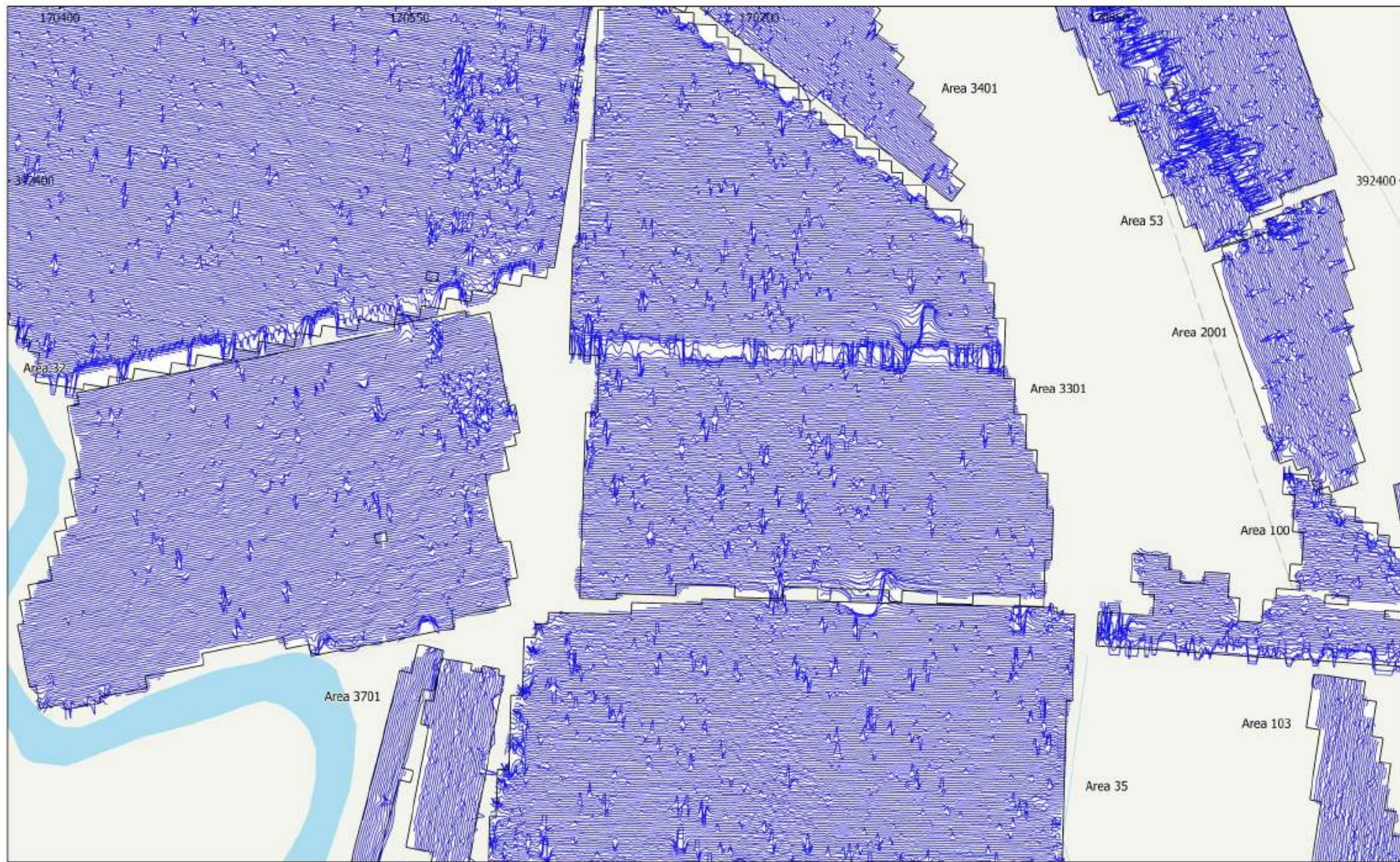




MSST1037 - Chippenham Development
 Figure 56 - Magnetic Interpretation (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)
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- | | | |
|---------------------|-------------------------|--------------------------|
| Undetermined (Weak) | Magnetic Disturbance | Ridge and Furrow (Trend) |
| Natural (Strong) | Ferrous/Debris (Spread) | Service |
| Natural (Weak) | Overhead Cables | Data Artefact |
| Natural (Zone) | Agricultural (Trend) | Ferrous (Spike) |





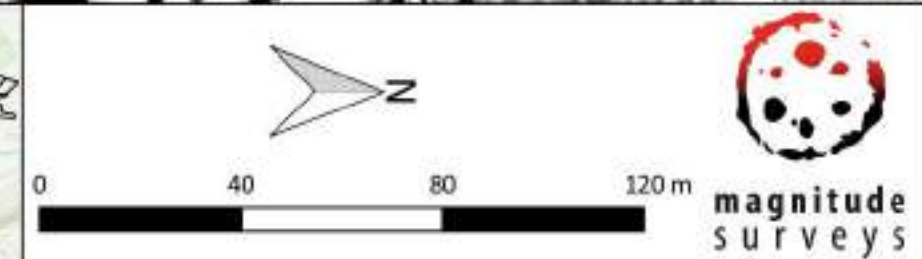
MSST1037 - Chippenham Development
 Figure 57 - XY Trace Plot (Areas 15, 2001, 32, 3301, 3401, 35, 3701, 53, 100 and 103)
 30nT/cm at 1:1,500 @ A3
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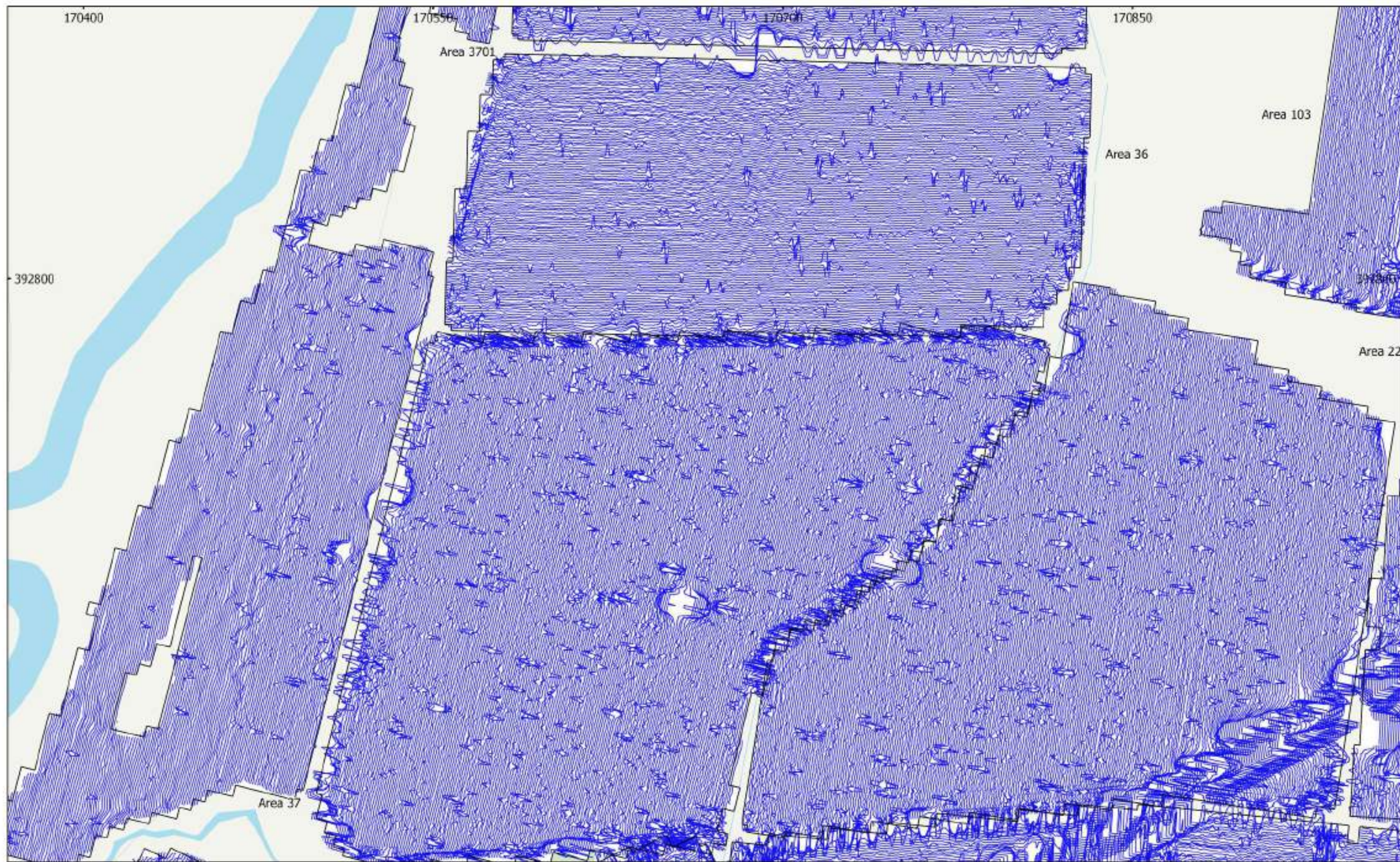


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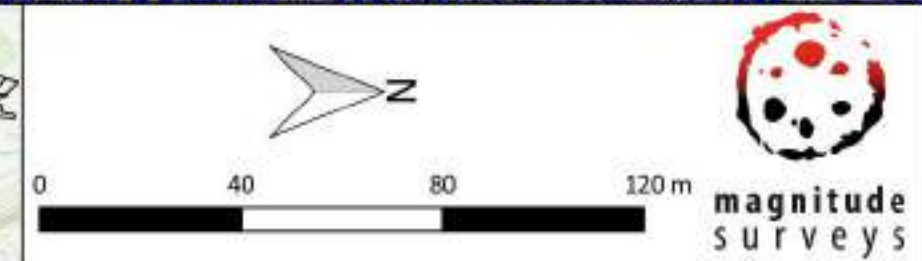


MSST1037 - Chippenham Development
 Figure 58 - Magnetic Gradient (Areas 22, 28, 35, 36, 37, 3701 and 103)
 1:1,500 @ A3
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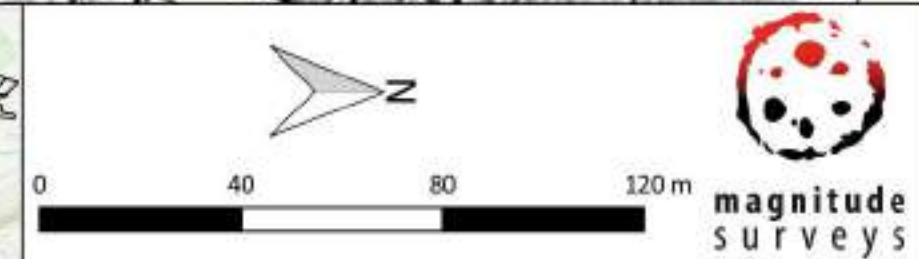


MSST1037 - Chippenham Development
 Figure 60 - XY Trace Plot (Areas 22, 28, 35, 36, 37, 3701 and 103)
 30nT/cm at 1:1,500 @ A3
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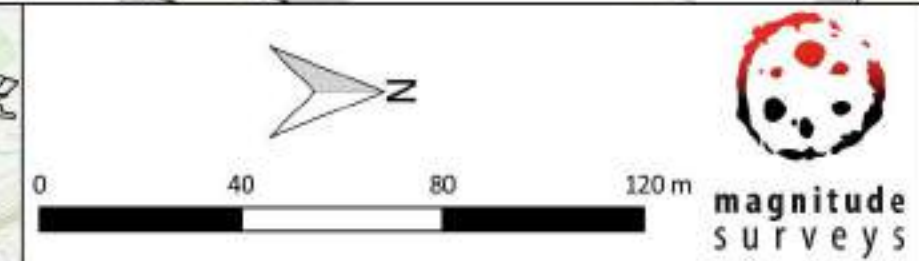
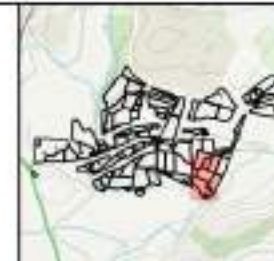
MSST1037 - Chippenham Development
 Figure 61 - Magnetic Gradient (Areas 23, 24, 26, 27, 28, 33, 34 and 37)
 1:1,500 @ A3
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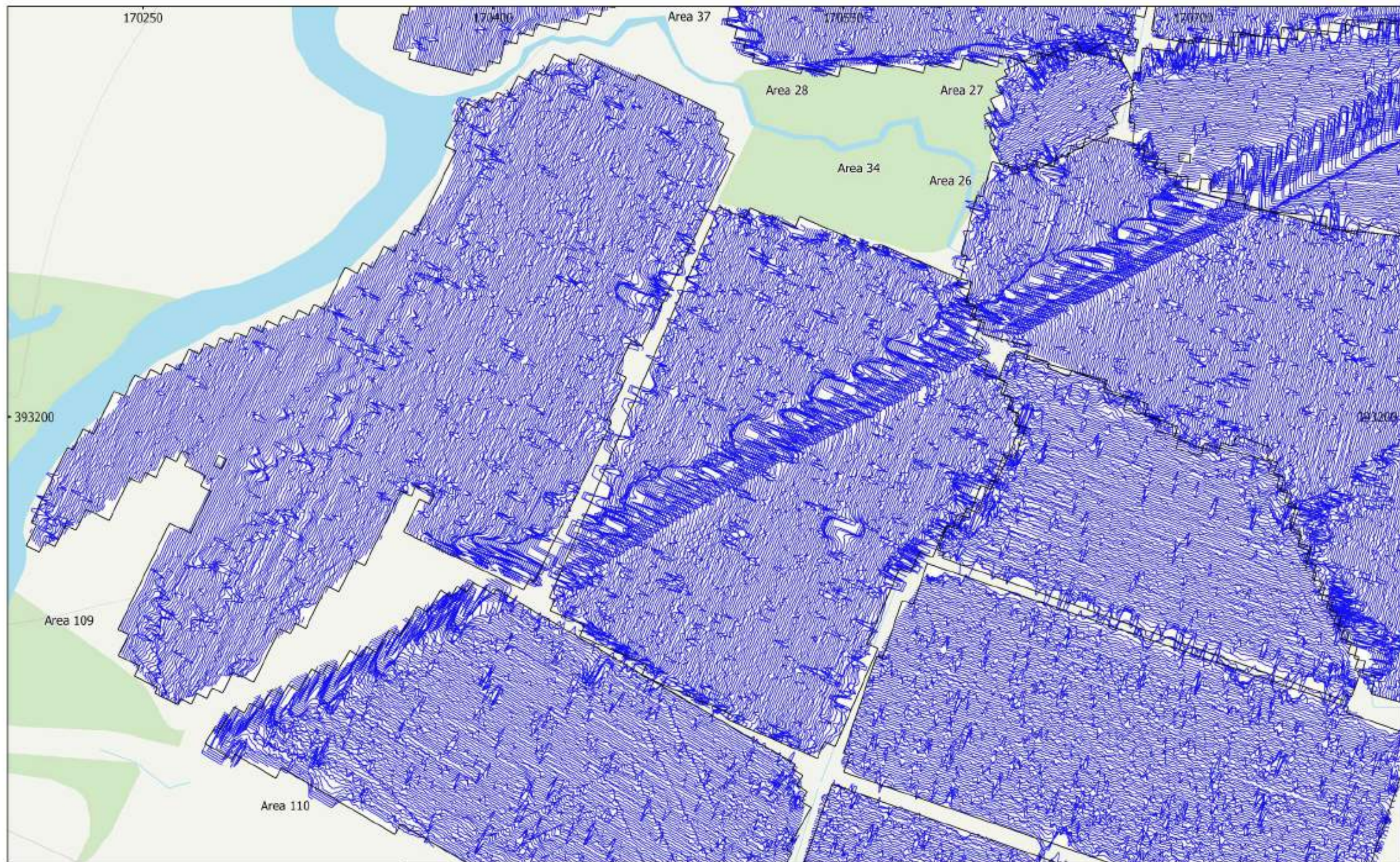




MSST1037 - Chippenham Development
 Figure 62 - Magnetic Interpretation (Areas 23, 24, 26, 27, 28, 33, 34 and 37)
 1:1,500 @ A3
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- | | | |
|--|---|--|
| ■ Agricultural (Strong) | ■ Natural (Weak) | --- Service |
| ■ Undetermined (Weak) | ■ Natural (Zone) | --- Drainage Feature |
| ■ Natural (Strong) | ■ Magnetic Disturbance | • Ferrous (Spike) |
| | --- Agricultural (Trend) | |



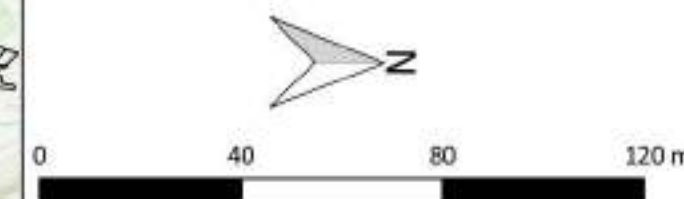
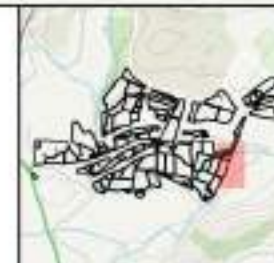


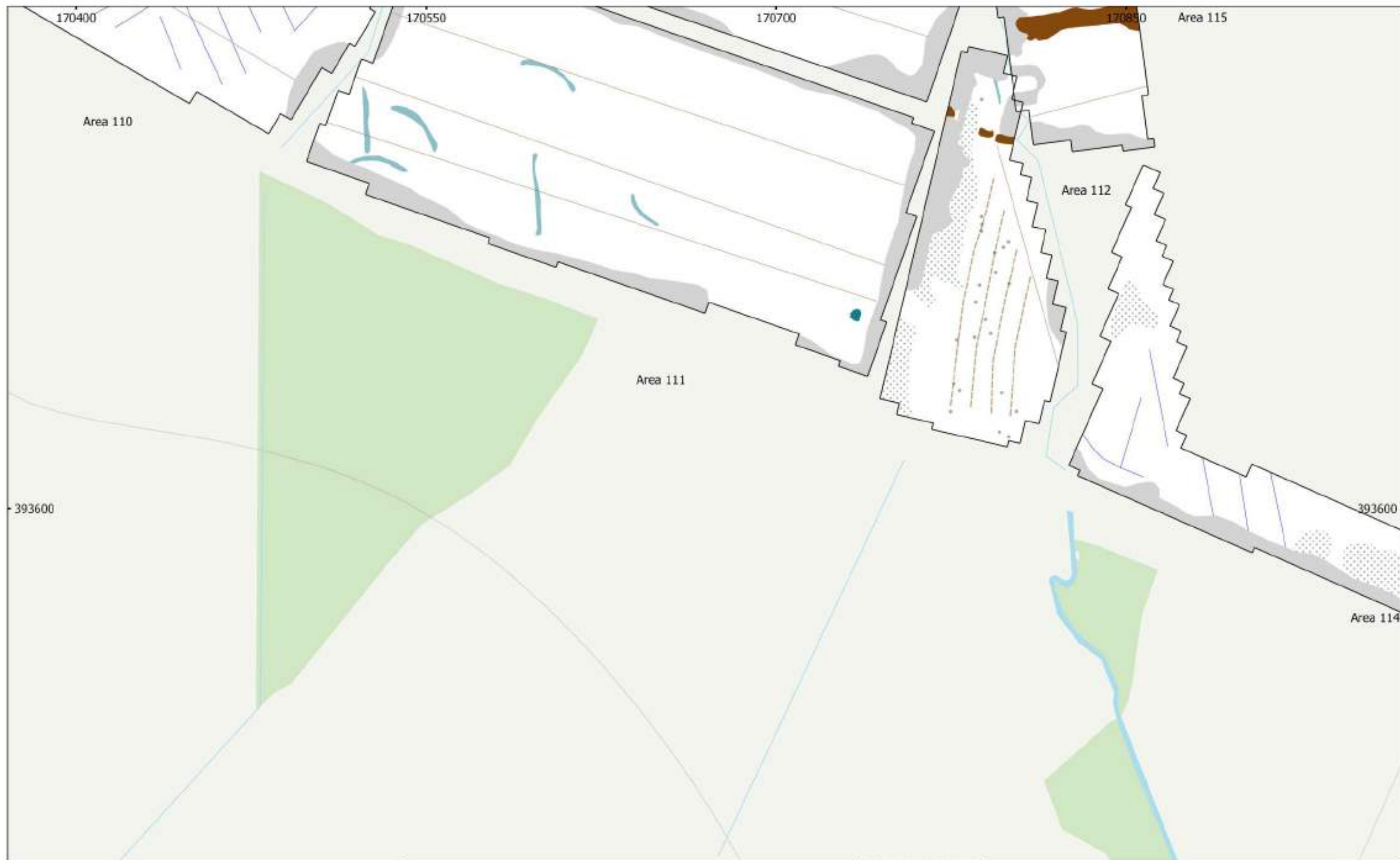
MSST1037 - Chippenham Development
 Figure 63 - XY Trace Plot (Areas 23, 24, 26, 27, 28, 33, 34 and 37)
 30nT/cm at 1:1,500 @ A3
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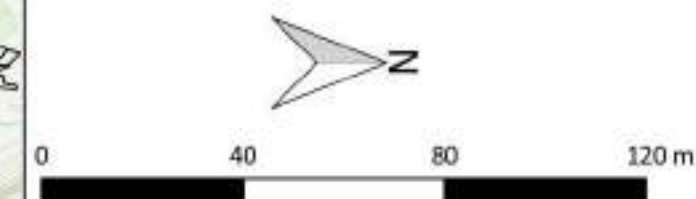
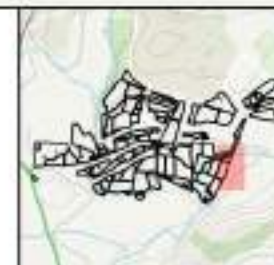
MSST1037 - Chippenham Development
 Figure 64 - Magnetic Gradient (Areas 110, 112, 113, 114 and 115)
 1:1,500 @ A3
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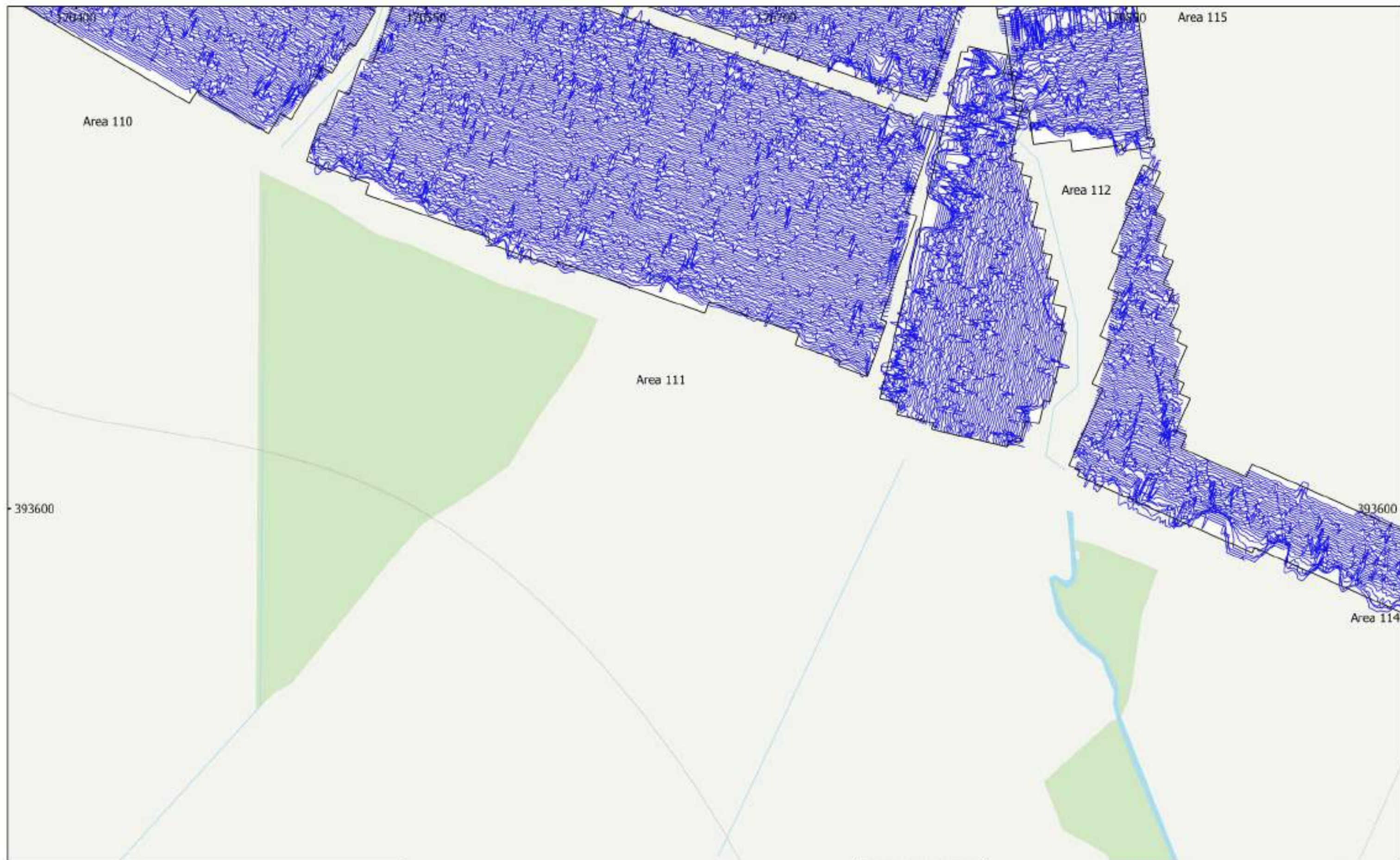




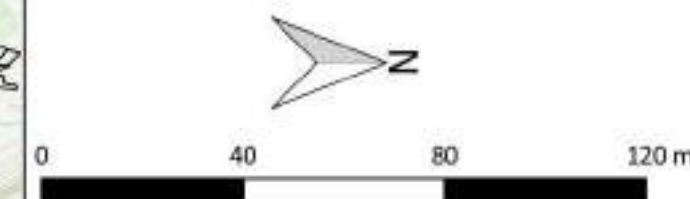
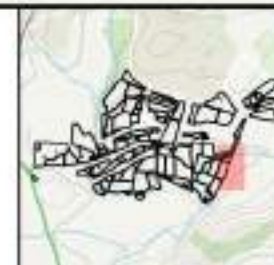
MSST1037 - Chippenham Development
 Figure 65 - Magnetic Interpretation (Areas 110, 112, 113, 114 and 115)
 1:1,500 @ A3
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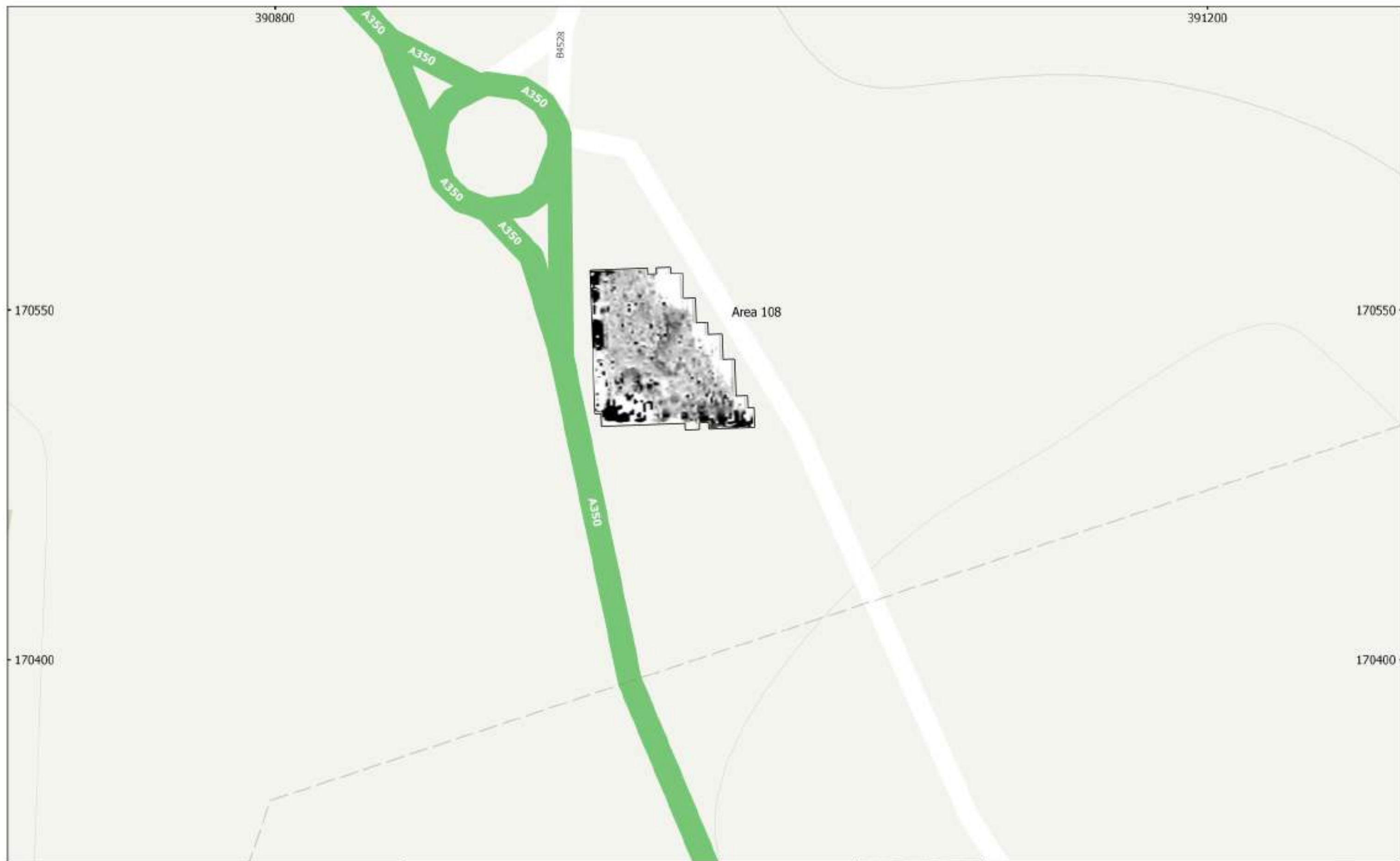
Agricultural (Strong)	Magnetic Disturbance	Ridge and Furrow (Trend)
Undetermined (Strong)	Ferrous/Debris (Spread)	Drainage Feature
Undetermined (Weak)	Agricultural (Trend)	Ferrous (Solix)



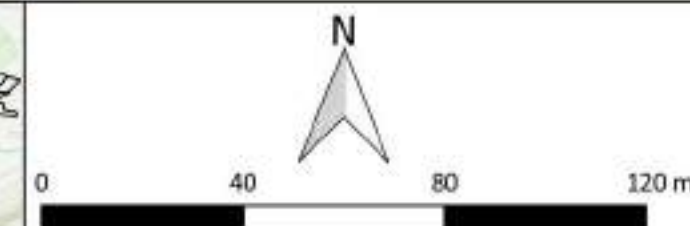


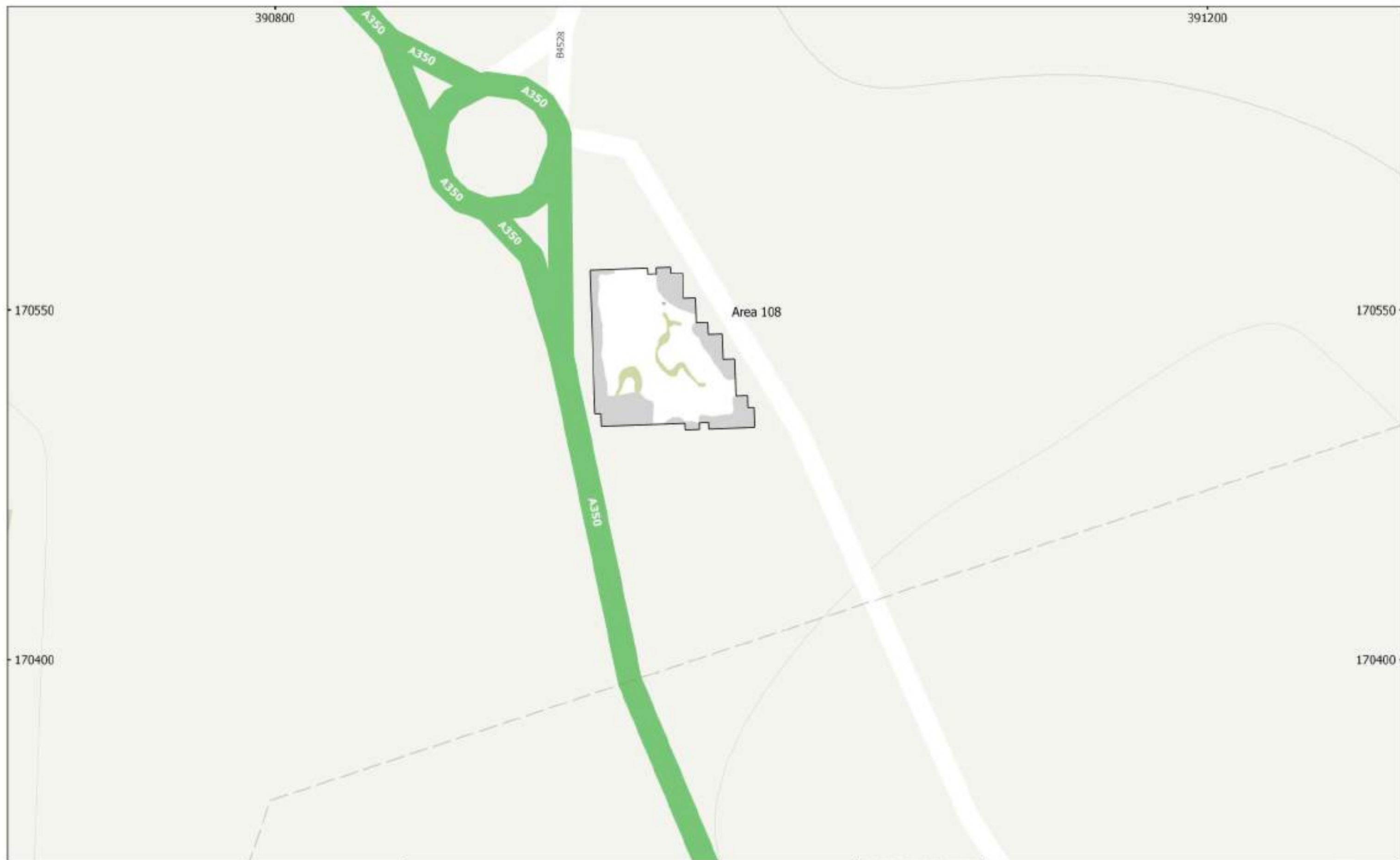
MSST1037 - Chippenham Development
 Figure 66 - XY Trace Plot (Areas 110, 112, 113, 114 and 115)
 30nT/cm at 1:1,500 @ A3
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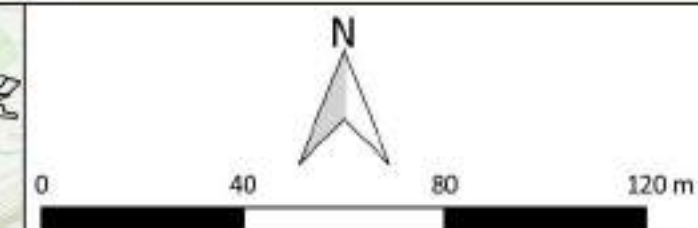
MSST1037 - Chippenham Development
Figure 67 - Magnetic Gradient (Area 108)
1:1,500 @ A3
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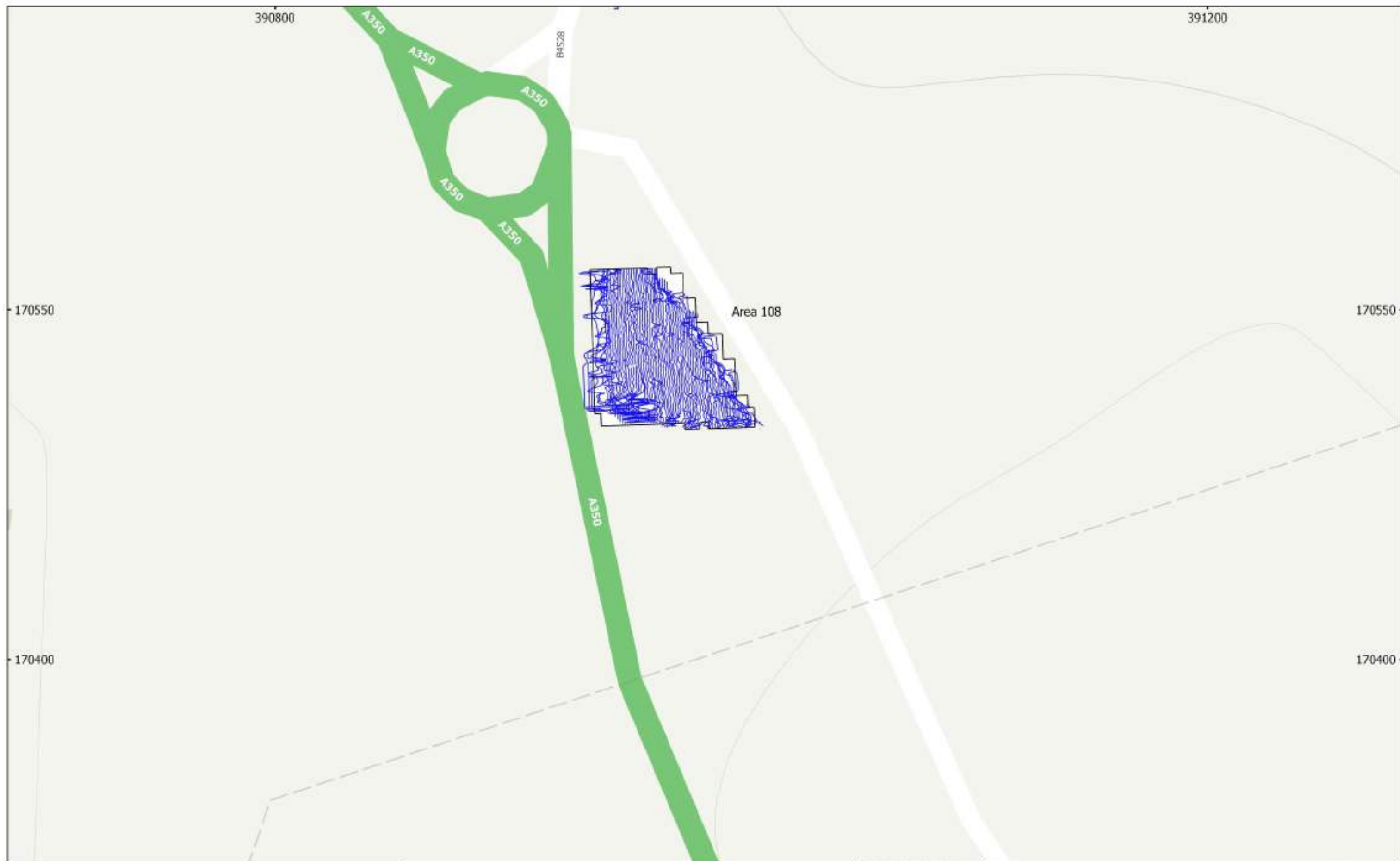




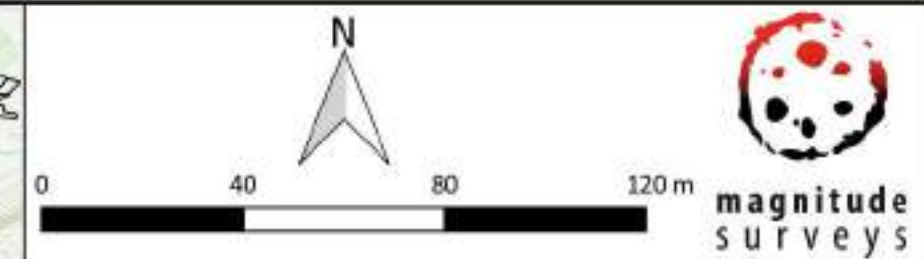
MSST1037 - Chippenham Development
Figure 68 - Magnetic Interpretation (Area 108)
1:1,500 @ A3
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■ Natural (Weak) ■ Magnetic Disturbance * Ferrous (Spike)



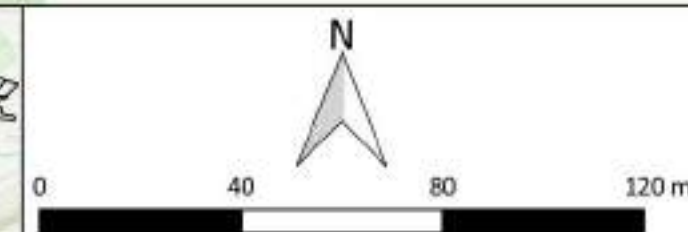


MSST1037 - Chippenham Development
Figure 69 - XY Trace Plot (Area 108)
30nT/cm at 1:1,500 @ A3
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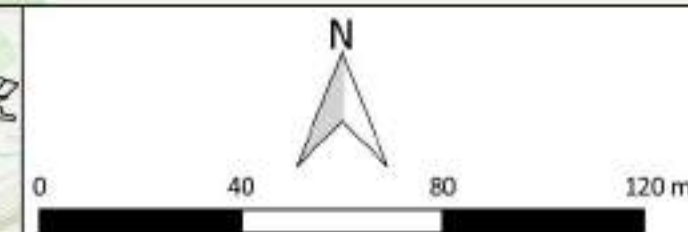
MSST1037 - Chippenham Development
 Figure 70 - Magnetic Gradient (Areas 5, 14, 5601, 5701, 59, 60 and 61)
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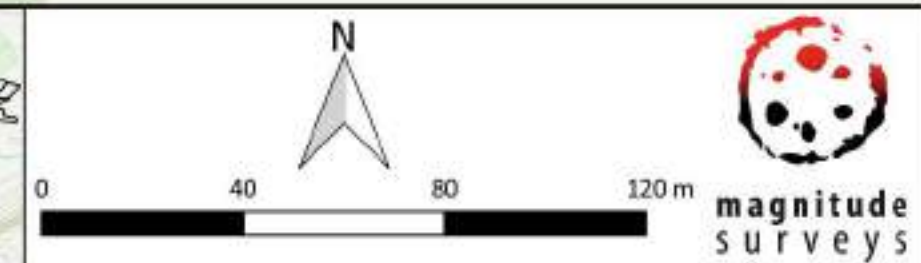
MSST1037 - Chippenham Development
 Figure 71 - Magnetic Interpretation (Areas 5, 14, 5601, 5701, 59, 60 and 61)
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Agricultural (Weak)	Natural (Strong)	Ferrous/Debris (Spread)
Undetermined (Strong)	Natural (Weak)	Agricultural (Trend)
Undetermined (Weak)	Magnetic Disturbance	Ferrous (Spikes)





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Figure 72 - XY Trace Plot (Areas 5, 14, 5601, 5701, 59, 60 and 61)
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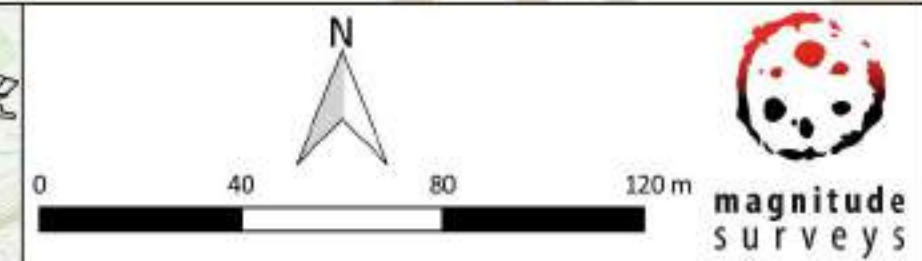
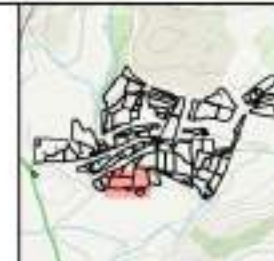


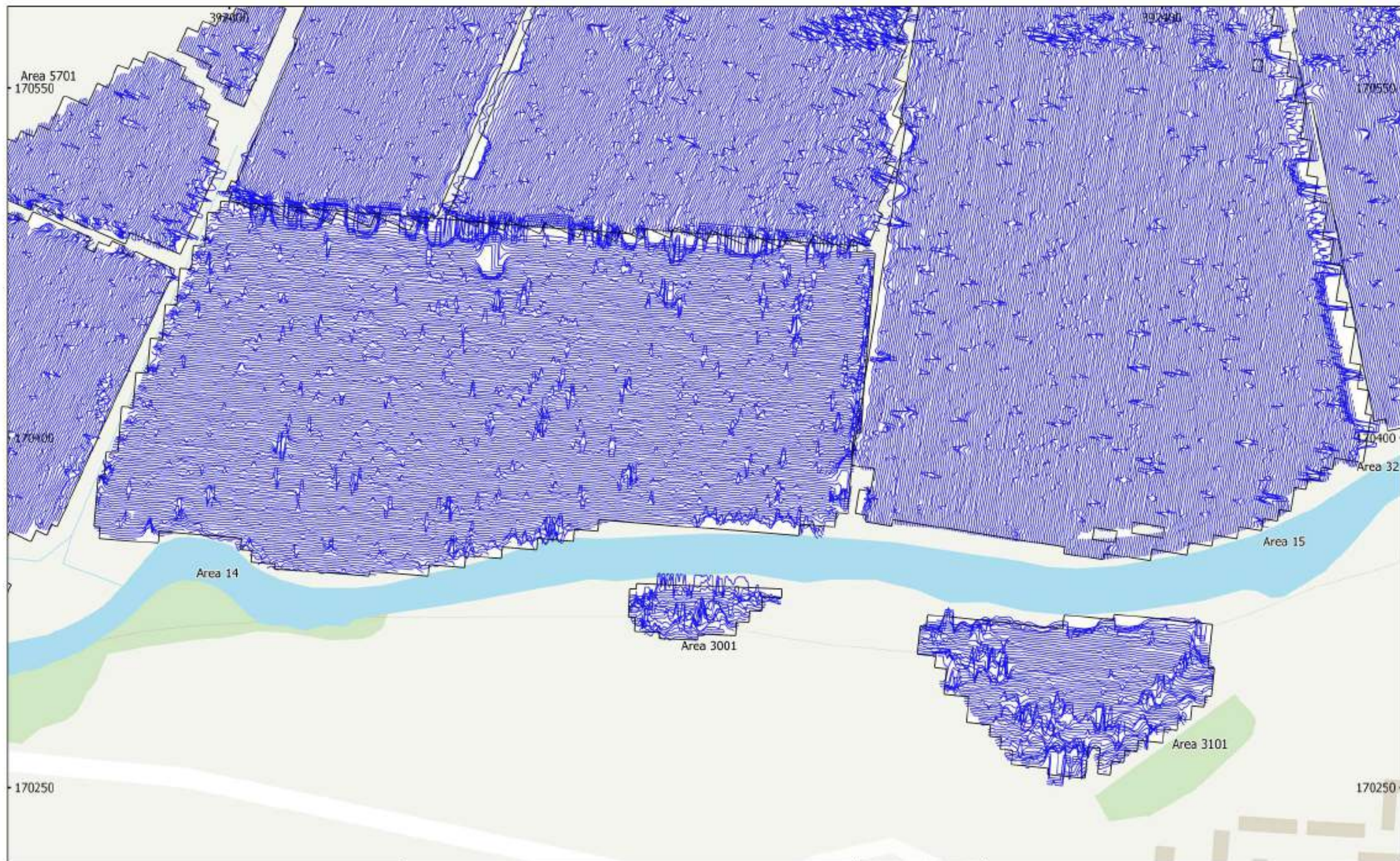
MSST1037 - Chippenham Development
 Figure 73 - Magnetic Gradient (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)
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MSST1037 - Chippenham Development
 Figure 74 - Magnetic Interpretation (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)
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- | | | |
|-----------------------|-------------------------|--------------------------|
| Undetermined (Strong) | Natural (Zone) | Ridge and Furrow (Trend) |
| Undetermined (Weak) | Magnetic Disturbance | Drainage Feature |
| Natural (Strong) | Ferrous/Debris (Spread) | Ferrous (Soil) |
| Natural (Weak) | Agricultural (Trend) | |





MSST1037 - Chippenham Development
 Figure 75 - XY Trace Plot (Areas 9, 14, 15, 3001, 3101, 32, 5701, 60 and 61)
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