



## Appendix 11.2

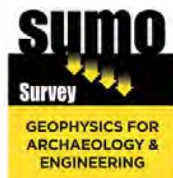
### **GEOPHYSICAL SURVEY WEST**

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# Geophysical Survey Report

Land at J10, M40, Baynards Green (Western Parcel)

Prepared with:



JAC27300  
Land at J10, M40, Baynards  
Green, Oxfordshire  
Version 2  
August 2021

### Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Date
Version 1	For Client Comment	Rebecca Fradgley	John Gater	James Archer	18/06/2021
Version 2	To include additional NW Area	Rebecca Fradgley	John Gater	James Archer	25/08/2021

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**Survey Report 03077: Baynards Green, Oxfordshire**

<b>Survey dates</b>	17 - 21 May 2021 10 - 13 August; 19 August 2021
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<b>Report Date</b>	25 August 2021
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### 2. SURVEY TECHNIQUE

Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site.

Bartington Grad 601-2

Traverse Interval 1.0m

Sample Interval 0.25m

### 3 SUMMARY OF RESULTS

- 3.1 A detailed magnetometer survey has been conducted over approximately 42 hectares at Baynards Green and has not identified any anomalies of definite archaeological interest. Weak linear and curvilinear trends are of uncertain origin, and while an archaeological origin cannot be entirely ruled out, they could equally be natural or agricultural. Ploughing effects are visible in the results, along with possible services and a field drain, plus areas of magnetic disturbance from nearby ferrous objects. Natural responses associated with variations in the underlying limestone geology can also be seen in the data.

### 4 INTRODUCTION

- 4.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for development. This survey forms part of an archaeological investigation being undertaken by **RPS Consulting Services**.

#### 4.2 Site details

NGR / Postcode	SP 55 289 / OX27 7SS
Location	The site is located at Baynards Green, which lies approximately 6km north-west of Bicester, Oxfordshire. The area is bound to the south-west by the M40 motorway and by the A43 to the east.
OASIS Ref.	sumogeop1-421413
District	Cherwell
Parish	Ardley CP
Topography	Mostly level with a slight fall from north to south.
Current Land Use	Arable
Geology (BGS 2021)	Solid: White Limestone Formation - limestone. Superficial: none recorded.
Soils (CU 2021)	Soilscape 5: freely draining lime-rich loamy soils.
Archaeology (OHER 2021)	Oxfordshire Historic Environment Record (HER) does not identify any designated or non-designated heritage assets within the boundary of the site. Approximately 600m to the northeast, a possible banjo enclosure (HER. 17456) is recorded, after being identified as cropmarks in aerial photographs. Further banjo enclosures (HER. 12329; HER. 15964) have been identified roughly 600m west and south of the site. The former comprises 3 paddocks adjacent to the banjo enclosure, as well as an extensive irregular boundary ditch while the latter has been identified as two banjo enclosures connected with a linear boundary. An undated circular enclosure (HER. 11618) visible on aerial photography is recorded roughly 580m to the northwest, and later prehistoric earthworks (HER. 16632) are identified in Stoke Wood to the south of the site.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	c. 42 ha

#### 4.3 **Aims and Objectives**

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



## 5 RESULTS

*The survey has been divided into six survey areas (Areas 1-6). Specific anomalies have been given numerical labels [1] [2] which appear in the text below, as well as on the Interpretation Figure(s).*

### 5.1 **Probable / Possible Archaeology**

5.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

### 5.2 **Uncertain**

5.2.1 A series of weak linear and curvilinear trends [1-4] are mapped in Areas 1, 2, 3, 4 and 6, each of the responses has an uncertain origin. The nearby proximity of numerous banjo enclosures and other later prehistoric features suggests that an archaeological origin cannot be entirely ruled out; however, it is equally feasible that they are a result of natural variations within the underlying limestone geology.

5.2.2 A negative linear anomaly [5] runs between Areas 5 and 6 and also has an uncertain origin. Given that the response is very straight, it is thought to have a modern explanation, i.e. relating to agricultural practices or a possible drain / plastic pipe.

5.2.3 A single discrete positive anomaly [6] is visible in Area 5 and is also of uncertain origin. The feature is indicative of a pit and could have an archaeological explanation, though it could also be natural in origin.

### 5.3 **Former Field Boundary (corroborated)**

5.3.1 A linear anomaly [7] can be seen running east-west across Area 1. The response corresponds with the location of a former field boundary, visible on available historic Ordnance Survey maps (see Fig. 11) dating to 1892.

### 5.4 **Agricultural – Ploughing / Land Drains**

5.4.1 Evidence for modern ploughing activity can be seen in Areas 1, 2 and 6 in the form of closely spaced, magnetically weak, parallel linear anomalies on a north-south alignment.

5.4.2 A single linear anomaly, comprising positive and negative components, can be seen in the east of Area 5; it is indicative of a modern field drain.

### 5.5 **Natural / Geological / Pedological / Topographic**

5.5.1 Large, amorphous areas of enhanced magnetic response and small discrete positive anomalies are visible across the site. These are typical of responses detected over limestone geologies and reflect natural pitting / variations within the bedrock.

### 5.6 **Ferrous / Magnetic Disturbance**

5.6.1 Discrete ferrous anomalies at spacings varying between 25m and 35m are noted, and appear to form linear alignments in Areas 3, 5, and 6. These are likely to have a modern origin and are thought to be related to drains or services.

- 5.6.2 Ferrous responses close to boundaries are due to adjacent fences and gates, while an area of magnetic disturbance at the east of Area 6 is indicative of consolidation at the edge of the field. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

## 6 DATA APPRAISAL & CONFIDENCE ASSESSMENT

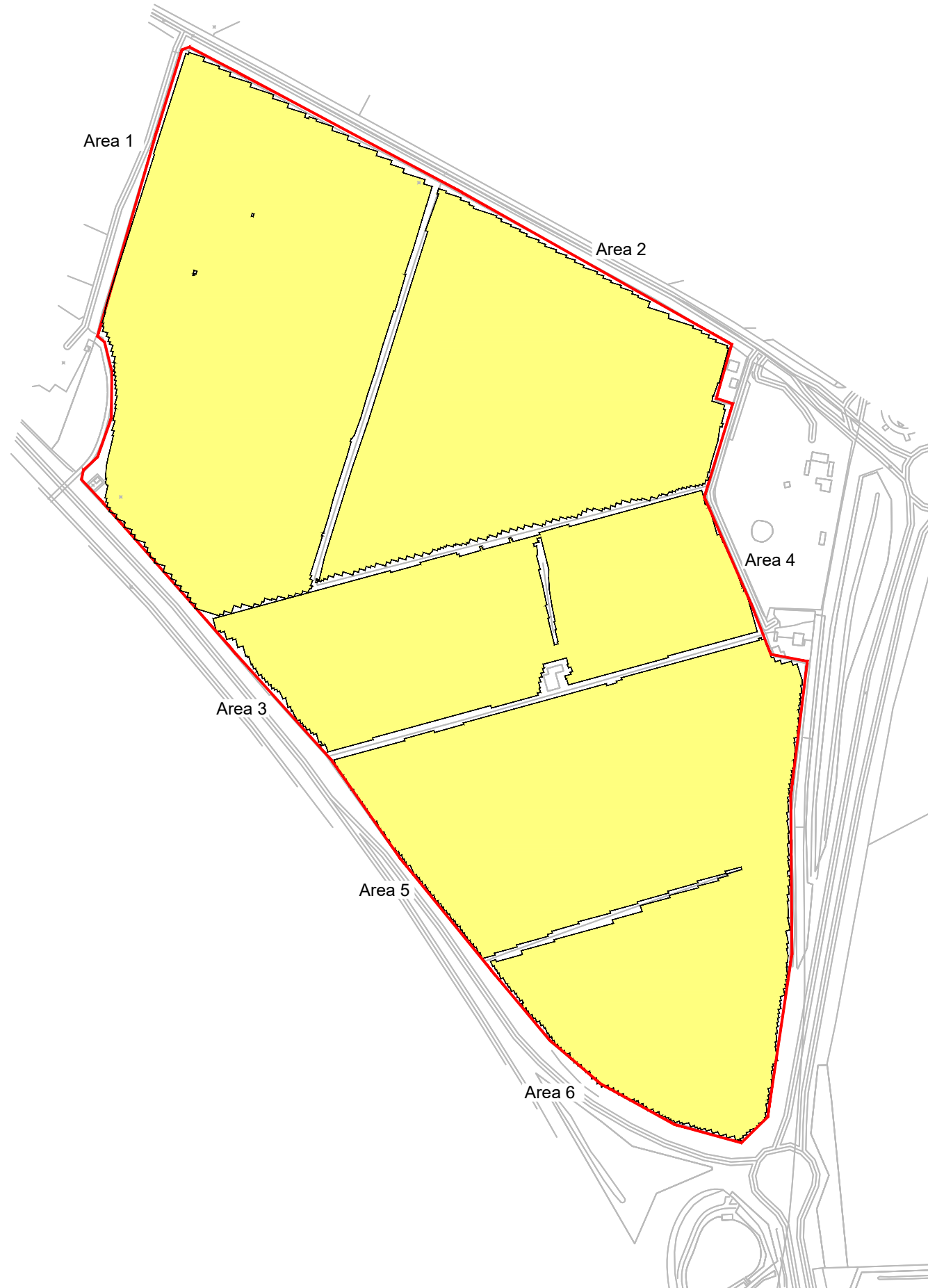
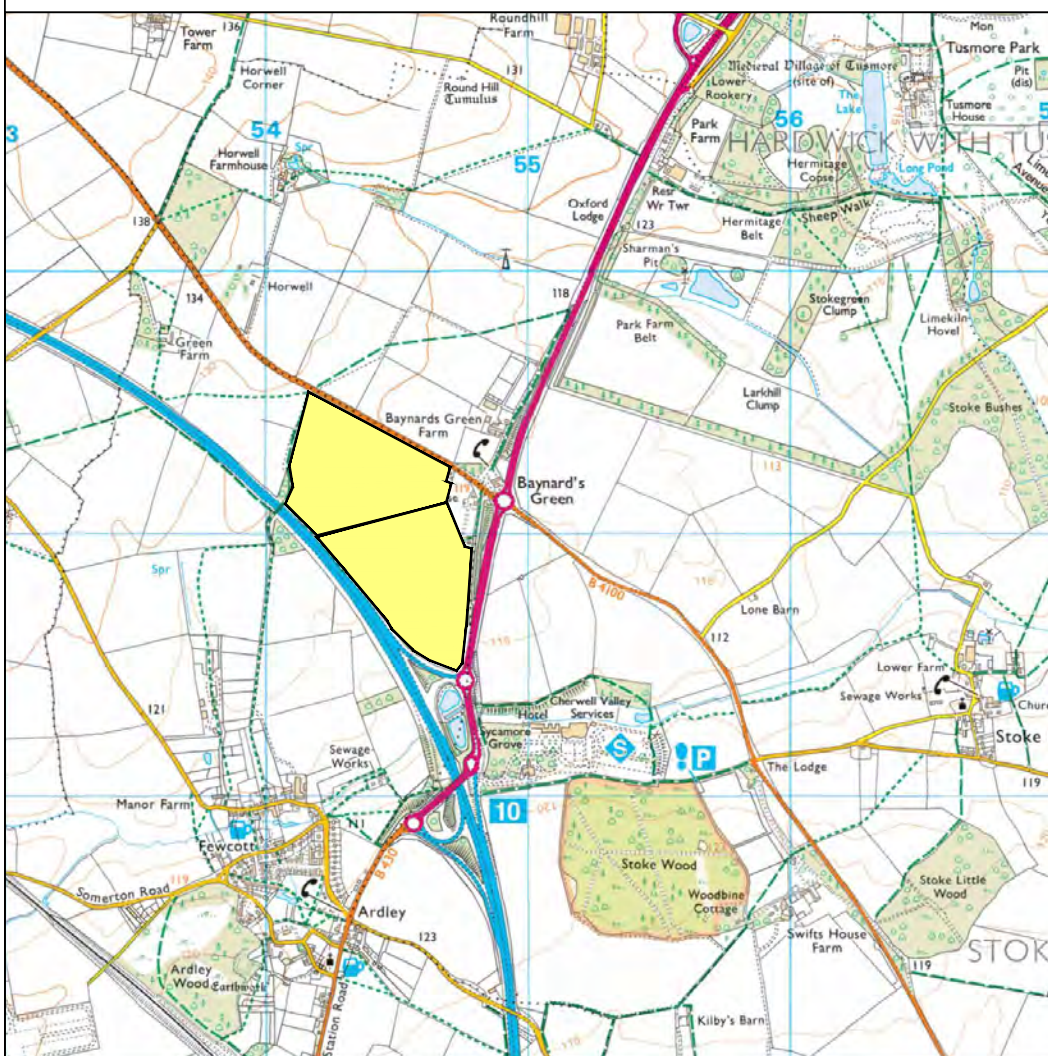
- 6.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is generally good. The results from this survey indicate the presence of anomalies of uncertain origin along with ploughing effects. There is no *a priori* reason to suggest that archaeological anomalies would not have been detected, should they be present.

## 7 CONCLUSION

- 7.1 The survey at Baynards Green has not identified any anomalies of definite archaeological interest. Tentative linear and curvilinear trends have been mapped, though their exact origin remains unclear; they could be archaeological, natural or a result of agricultural practice. Ploughing effects are mapped in the results, along with possible drains / services, areas of natural magnetic variation and ferrous disturbance.

## 8 REFERENCES

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<https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/>
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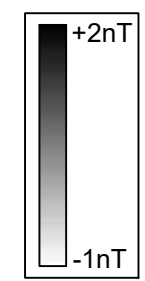
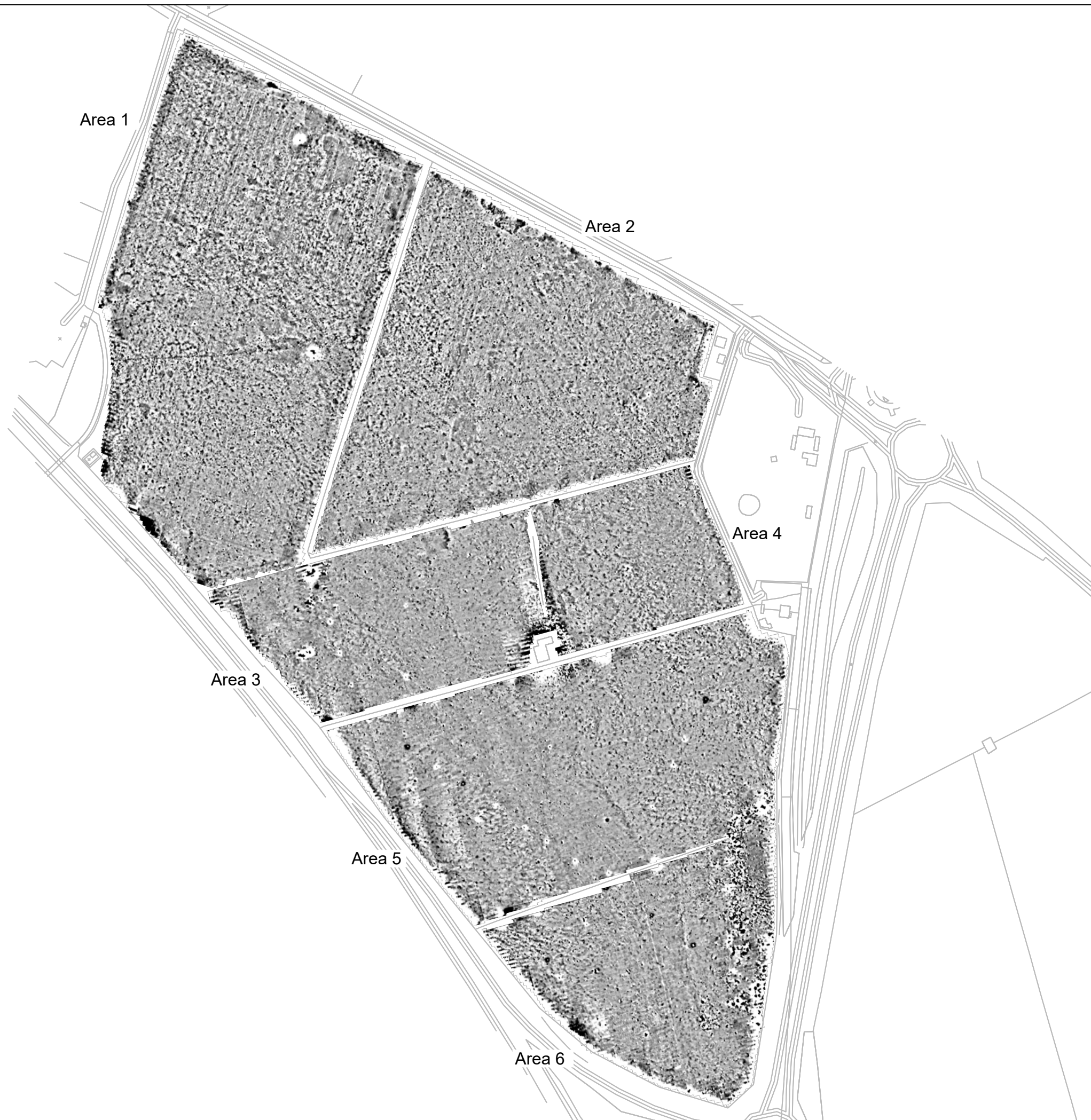


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	Survey Areas	
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Client:	RPS Consulting Services	
Project:	03077 - Baynards Green, Oxfordshire	
Scale:	NOT TO SCALE	Fig No: 01



Title: Magnetometer Survey - Greyscale Plots - Overview

Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

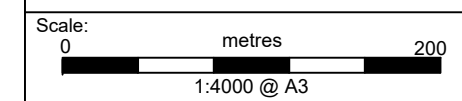
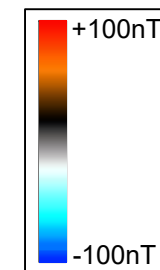
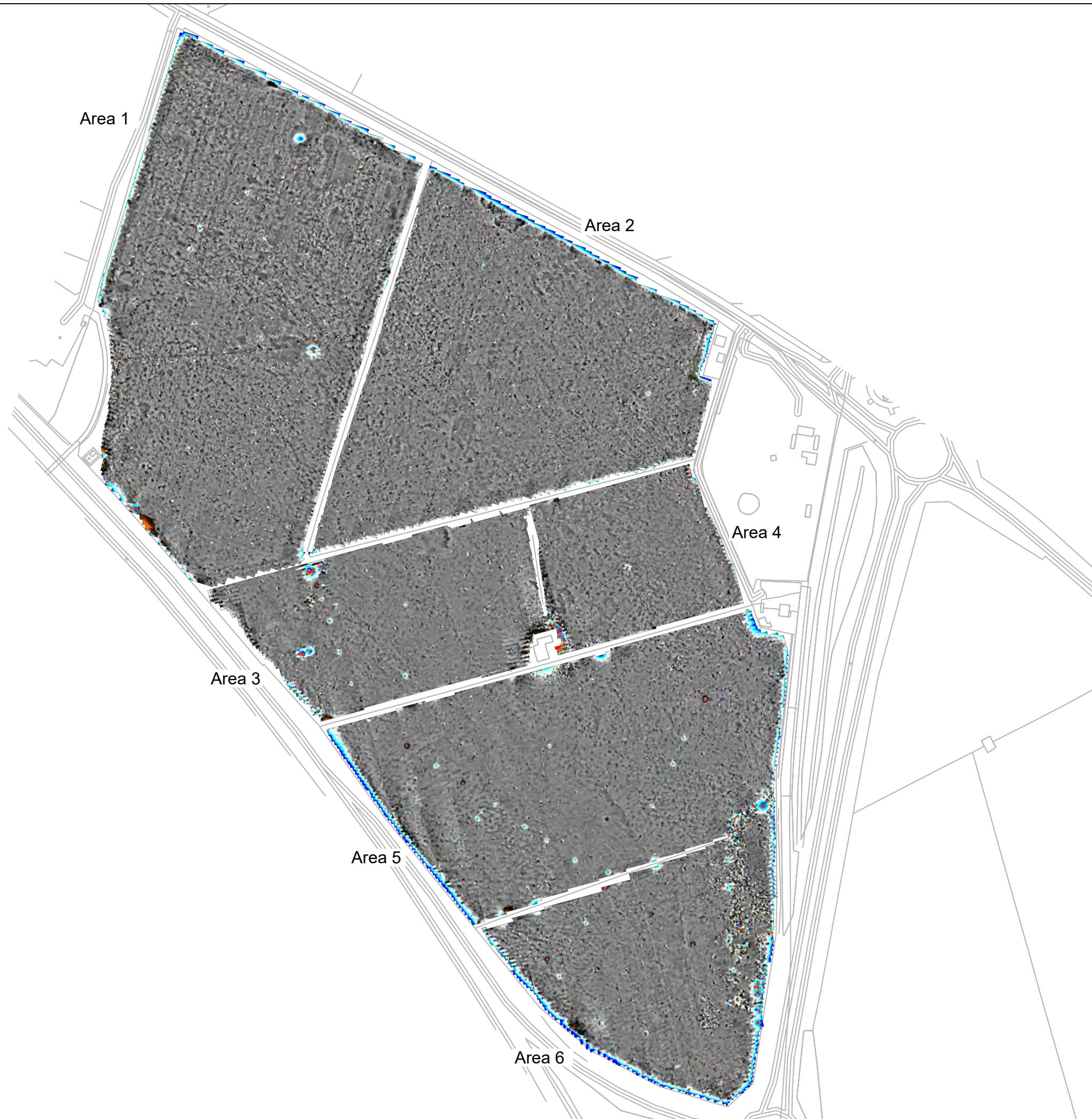


Fig No: 02



Title: Magnetometer Survey - Colour Plots - Overview

Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

Scale: 0 metres 200  
1:4000 @ A3

Fig No: 03



### KEY

	Uncertain Origin (trend)
	Agriculture (plough)
	Possible land drain
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Possible service
	Ferrous



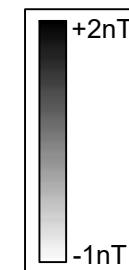
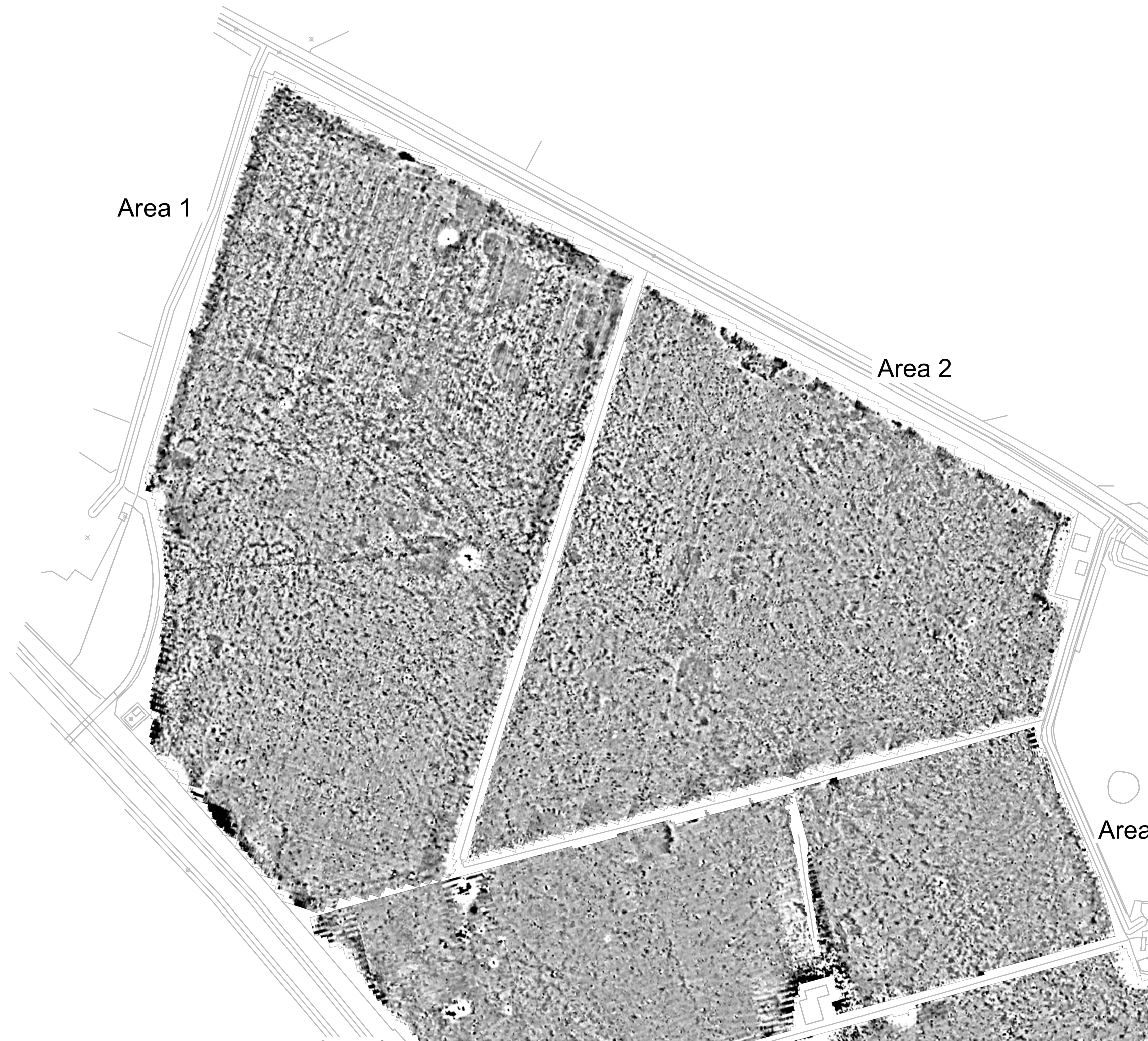
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Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

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Fig No: 04



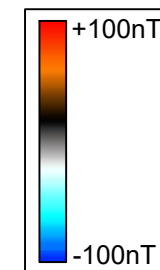
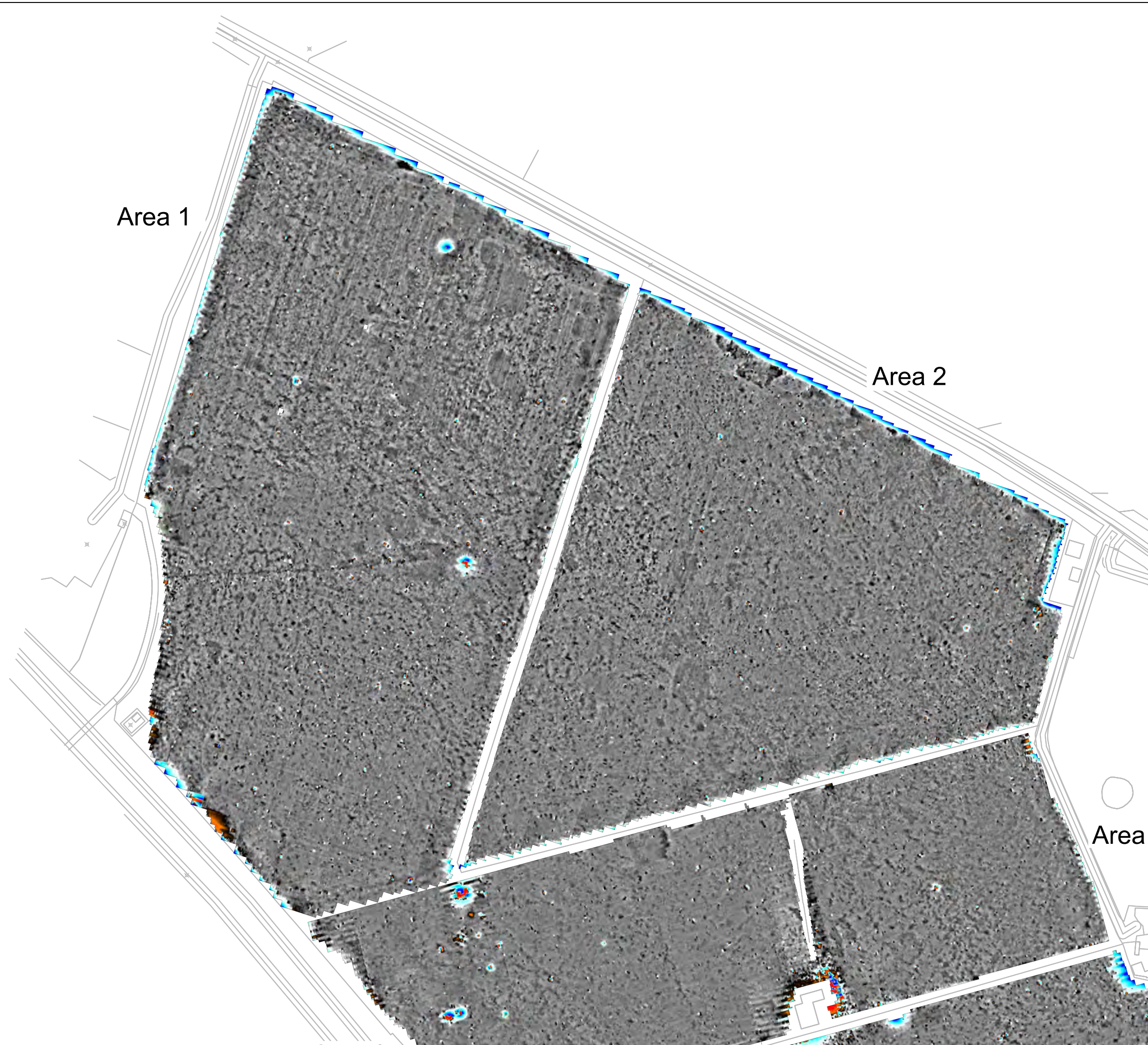
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Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

Scale: 0 metres 125  
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Fig No: 05



Title: Magnetometer Survey - Colour Plots - Areas 1 - 2

Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

Scale: 0 metres 125  
1:2500 @ A3

Fig No: 06





**KEY**

	Uncertain Origin (trend)
	Agriculture (plough)
	Possible land drain
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Possible service
	Ferrous



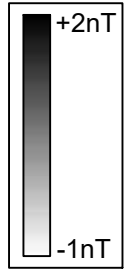
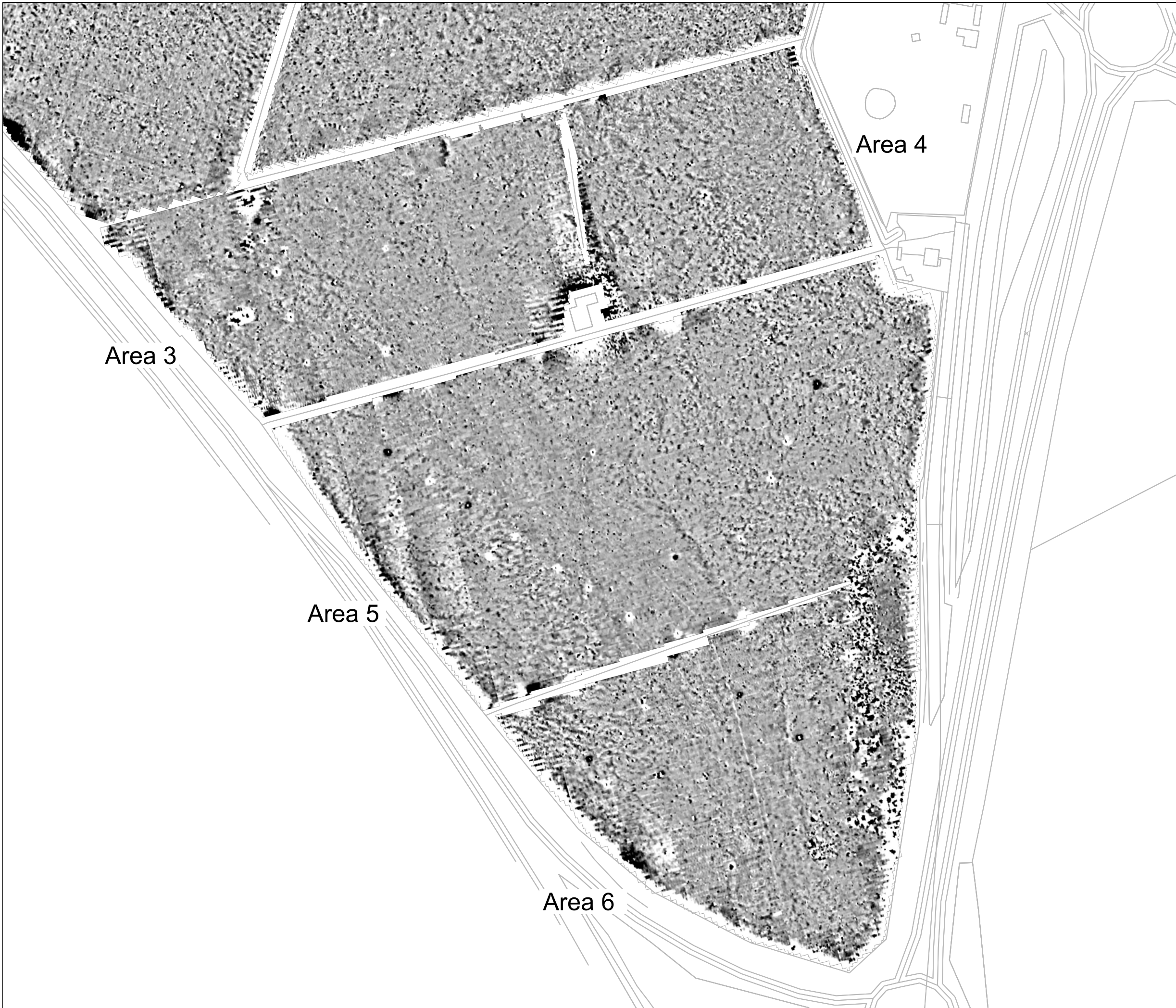
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Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

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Fig No: 07



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Magnetometer Survey - Greyscale Plots -  
Areas 3 - 6

Client:  
RPS Consulting Services

Project:  
03077 - Baynards Green, Oxfordshire

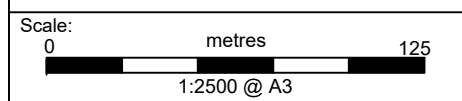
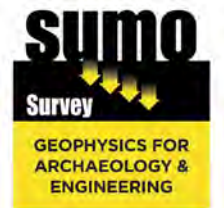
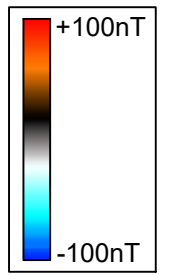
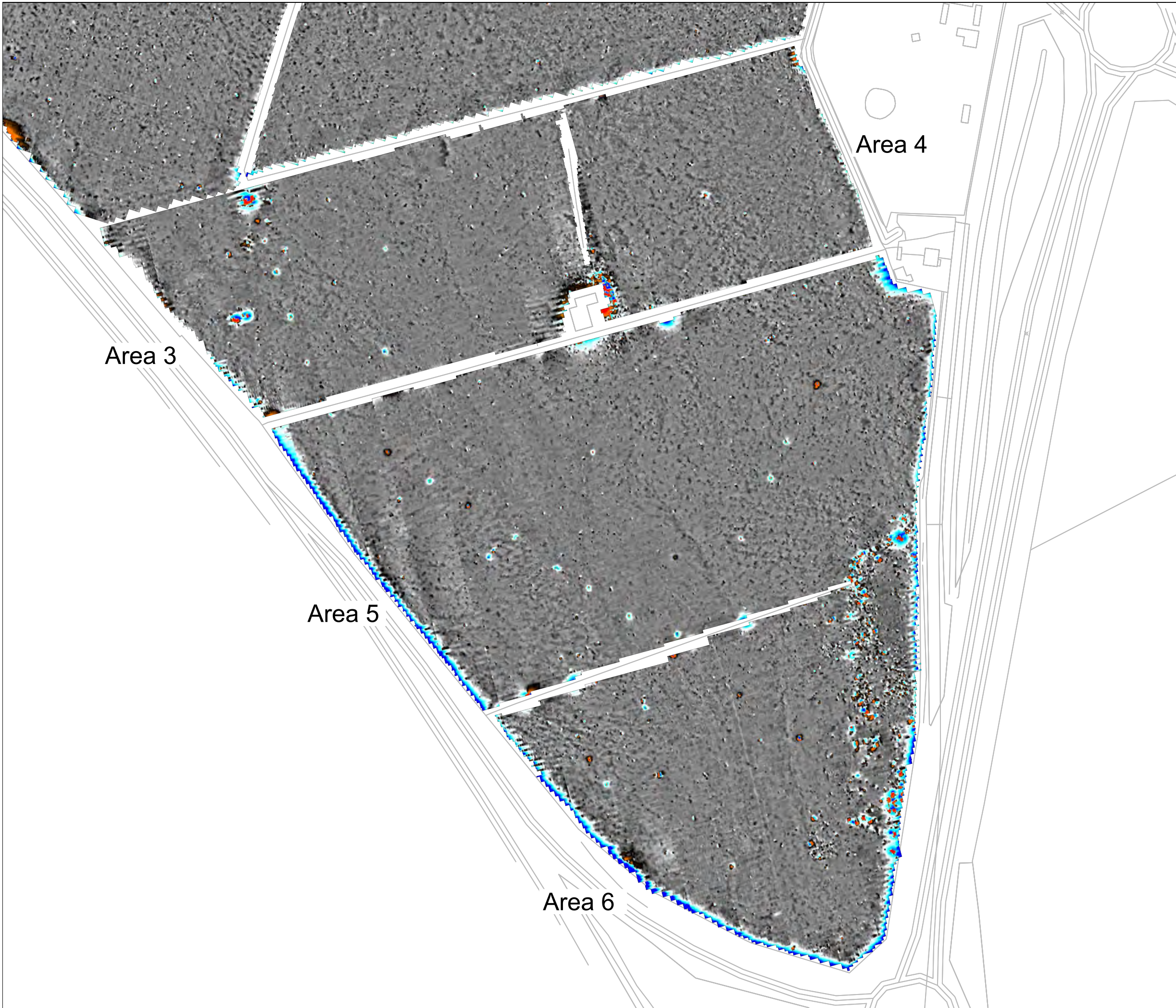


Fig No:  
08



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Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

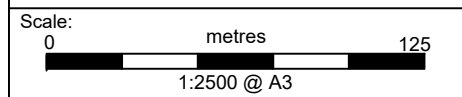
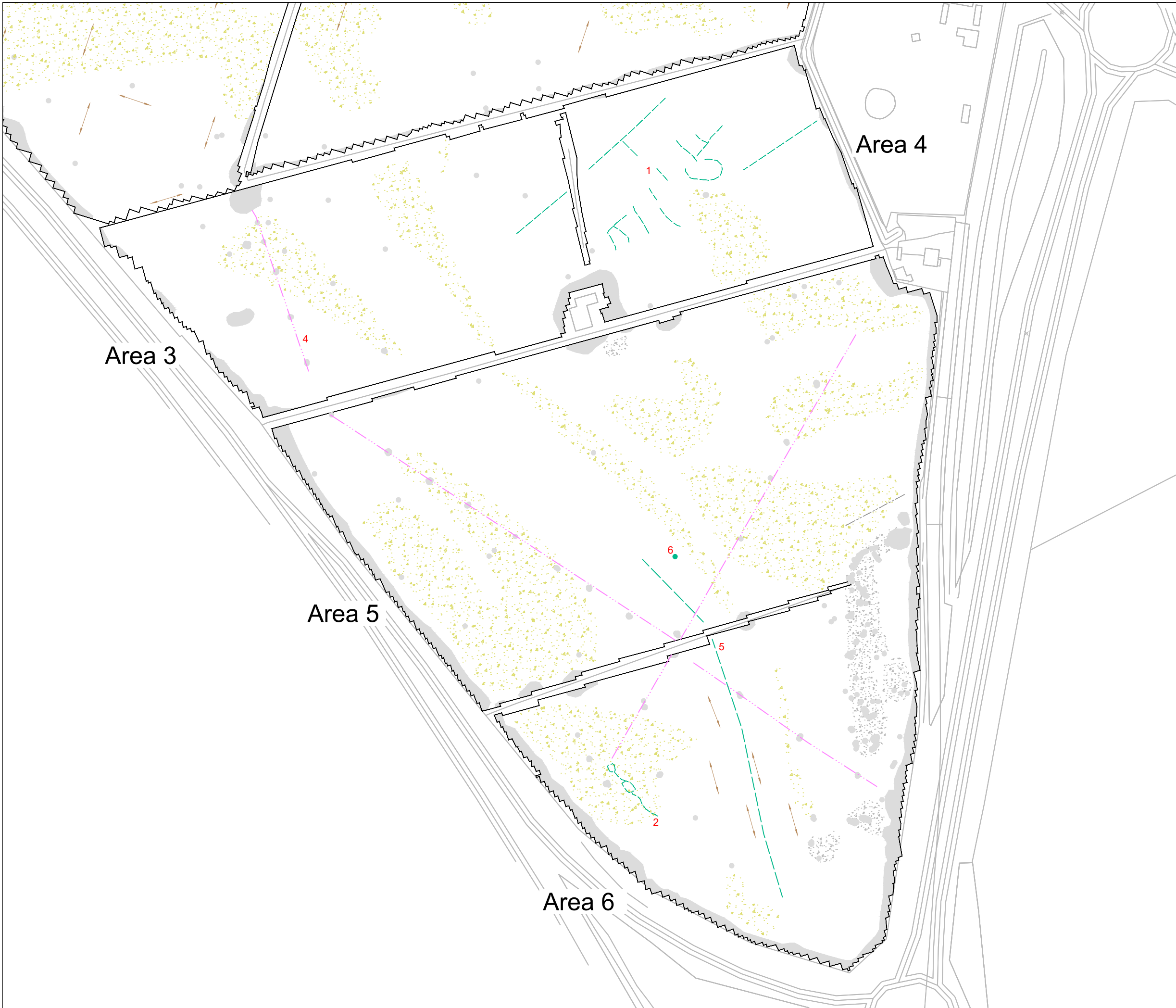
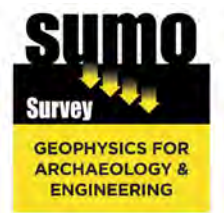


Fig No: 09



**KEY**

	Uncertain Origin (trend)
	Agriculture (plough)
	Possible land drain
	Natural (e.g. geological / pedological)
	Magnetic disturbance
	Possible service
	Ferrous



Title: Magnetometer Survey - Interpretation - Areas 3 - 6

Client: RPS Consulting Services

Project: 03077 - Baynards Green, Oxfordshire

Scale: 0 metres 125  
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Fig No: 10