

GEOPHYSICAL SURVEY REPORT

Loddon Garden Village, Arborfield, Berkshire

Client

RPS

Survey Report

22424

OASIS Ref. No.

Sumogeop1-533757

Date

18 June 2025



Survey Report 22424: Loddon Garden Village, Arborfield, Berkshire

Survey dates	02 - 09 June 2025
Field co-ordinator	Craig Wakefield MSc Liam Brice-Bateman BA
Field Team	Gabriel Mazeski BA Max Moran BA (Hons) Stephen Weston BA
Report Date	18 June 2025
CAD Illustrations	Rebecca Fradgley BSc (Hons) ACIfA
Report Author	Rebecca Fradgley BSc (Hons) ACIfA
Project Manager	Rebecca Fradgley BSc (Hons) ACIfA
Report approved	Dr John Gater BSc DSc(Hon) MCIfA FSA

SUMO GeoSurveys
Suite1
Deer Park Business Centre
Woollas Hill
Eckington
Pershore
Worcestershire
WR10 3DN
T: 01684 592266
www.sumoservices.com
geophysics@sumoservices.com

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3 SURVEY TECHNIQUE

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

All survey techniques followed the guidance set out by ClfA (2020) and the European Archaeology Council (EAC) (2016).

Bartington Grad 601-2	Traverse Interval 1.0m	Sample Interval 0.25m
Bartington Cart System	Traverse Interval 1.0m	Sample Interval 0.125m

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

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

4 EXECUTIVE SUMMARY OF RESULTS

- 4.1 A detailed magnetometer survey was conducted over approximately 14 hectares of land covering a linear road scheme at Arborfield, Berkshire. It has identified one feature of definite archaeological interest; a ring ditch which can be corroborated with a known cropmark feature (MWK1127). Additional ditch-like anomalies, linear trends and discrete anomalies of possible archaeological interest have also been detected. Several other linear, curvilinear and discrete anomalies have an uncertain origin; they could be archaeological, given the proximity of cropmark features recorded in the area or be a result of agricultural and natural processes. Modern ploughing effects, land drains and a former pond have been mapped in the results, along with underground services, areas of natural magnetic variation and modern ferrous disturbance

5 INTRODUCTION

- 5.1 **SUMO GeoSurveys** was commissioned to undertake a geophysical survey of an area outlined for the construction of a spine road associated with a new garden village. This survey forms part of an archaeological investigation being undertaken by **RPS**.

5.2 Site Details

NGR / Postcode	SU 75788 68596 / RG2 9JD
Location	The survey area comprises a linear scheme which is to the south of Reading, and immediately north of Arborfield, Berkshire. It is bounded by the B3270 to the north, Mill Lane to the east, Mole Road to the south-east, the A327 / Arborfield Road to the south-west, and the Eastern Relief Road to the east. The M4 crosses the north of the study site, and the River Loddon crosses the site from south-west to north-east.
HER	Berkshire HER
OASIS Ref. No.	Sumogeop1-533757
District	Wokingham
Parish	Arborfield and Newland
Topography	Undulating
Land Use	Arable / Pasture
Geology (BGS 2025)	Bedrock: London Clay Formation - clay, silt and sand. Superficial: Brickearth - clay, silt and sand; River Terrace Deposits, 2 - sand and gravel; Alluvium - clay, silt, sand and gravel; River Terrace Deposits, 3 - sand and gravel.
Soils (CU 2025)	Soilscape 22: loamy soils with naturally high groundwater; Soilscape 20: loamy and clayey floodplain soils with naturally high groundwater.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	c. 22ha - approximately 14ha was surveyed in total, with several areas being unsuitable for survey due to crop, livestock, vegetation and construction work (detailed below): Areas 2, 3, 6 and 10 - crop; Area 13 - livestock (cattle); Area 15 - copse / wooded; Areas 18 and 19 - heavily overgrown; Areas 22 and 23 - under construction; Areas 24 and 25 - livestock (horses)

5.3 **Archaeological Background** (RPS 2022)

- 5.3.1 An archaeological desk-based assessment for the survey corridor and wider area identifies a number of archaeological finds and features within the survey area and its immediate environs. Within the northeastern part of the survey corridor (Area 16), cropmarks identified as a possible late Neolithic to early Bronze Age ring ditch (MWK1127) are recorded, close to a linear feature of unknown date (MWK1128). A denticulate flint (MWK15141) and flint flake (MWK15142) were also recovered close to the location of the ring ditch. Slightly to the south (within Area 14) two irregular, and dubious, ring ditches are visible as cropmarks (MWK1155), with further flint finds recorded during fieldwalking to the south of Loader Copse (MWK6758, MWK15183 and MWK15144) to the north of Parkcorner Lane. A medieval pottery sherd (MWK1123) was also recovered during the fieldwalking at Parkcorner Lane.
- 5.3.2 A number of cropmarks were identified on historic aerial photographs to the north-east of Cedar Hall Farm (within close proximity of Areas 11 and 12). They include enclosures (MWK1145, MWK1147), a field system (MWK1146), a trackway (MWK1148), and a pit cluster (MWK1149); geological factors make it difficult to ascertain a date for the features.
- 5.3.3 To the south-east of Cedar Hall Farm, between c. 70m and 120m northwest of Area 7, two rectangular enclosures, including one with double ditches, are identified as cropmarks (MWK1134). Other cropmarks in the same field include enclosures (MWK1151, MWK1143, MWK1144) a field system (MWK1142), which along with a number of pits are thought to represent an area of settlement (MWK1141). Cropmarks of a square enclosure and numerous fragmented ditches (MRM18429) and a complex of intersecting ditches (MWK1139) were also identified from aerial photography.
- 5.3.4 Cropmarks of a trackway leading to a rectangular enclosure with internal features (MWK1138), scattered cropmark pits (MWK1140), and a field system (MWK1136), were identified in aerial photography within the survey corridor in Area 4 and immediately to its north. They are considered indicative of another possible area of settlement (MWK1135) to the south-east of Hall Farm, with possible Medieval and post-Medieval phases (1594228).

5.4 **Aims and Objectives**

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

6 **RESULTS**

- 6.1 *The survey has been divided into twenty-five survey areas (Areas 1-25) and specific anomalies have been given numerical labels [1] [2] which appear in the text below, as well as on the Interpretation Figure(s).*

6.2 **Known (corroborated) Archaeology** (Area 16 - Figs. 15-17)

- 6.2.1 A circular anomaly [1], approximately 22m in diameter, has been detected within the survey corridor in Area 16. It corresponds with the recorded location of a cropmark interpreted as being a possible late Neolithic to Early Bronze Age ring ditch (MWK1127) (see Plate 1, below). A couple of linear and discrete responses adjoining the ring ditch could have a possible archaeological origin or could simply be a result of agricultural processes.



Plate 1: Circular cropmark feature (circled) visible on 2018 aerial imagery (©2025 Google Earth)

6.3 **Possible Archaeology**

- 6.3.1 A number of linear, ditch-like responses and trends [2] plus a cluster of discrete anomalies [3] have been detected in Area 4 (Figs. 06-08) which have been assigned to the category of *Possible Archaeology*. The responses lie within immediate proximity of a cropmark field system (MWK1136) which is thought to represent an area of medieval or post-medieval settlement; it is possible that the response are also associated, however the limitations of the narrow survey corridor make further interpretation difficult. The moderate-strength discrete anomalies [3] could be indicative of having a burnt or fired origin, perhaps suggestive of ovens or kilns; however deeply buried iron objects may result in a similar magnetic response.

6.4 **Uncertain**

- 6.4.1 A large number of linear and curvilinear trends have been identified across the survey corridor, with clusters of discrete anomalies and areas of enhancement in Areas 4, 8, 16 and 17. They have all been assigned to the category of *Uncertain* as the responses generally lack the defined morphology of anomalies that would usually be interpreted as being of archaeological interest. Many of the responses lie in close proximity to cropmark features recorded on the HER, suggesting that a possible archaeological explanation cannot be entirely ruled out; however, they could equally be a result of a combination of natural or agricultural processes. It is noted that the responses at [4] in Area 8 (Figs. 09-11) could indicate a series of pits or other features and that they form an apparent sub-circular feature, while a further cluster of discrete anomalies [5] in Area 16 (Figs. 15-17) could also represent pit-like anomalies, although their exact origin remains unclear.

6.5 **Agricultural – Ploughing / Land Drains**

- 6.5.1 Two straight linear anomalies comprising positive and negative components have been detected on an approximate northeast-southwest alignment in Area 4. They are typical of responses associated with modern land drains.
- 6.5.2 Magnetically weak, closely spaced, parallel linear trends have been identified in Areas 5, 7, 14, 16 and 21 and they are a result of modern ploughing effects.

6.6 **Natural / Geological / Pedological**

- 6.6.1 Sinuous bands of slightly enhanced magnetic response can be seen across Areas 1 and 14. They are likely to have a natural explanation and reflect localised variations in the underlying geology or superficial deposits.

6.7 **Service**

- 6.7.1 Strong dipolar linear anomalies have been detected in Areas 5 and 20 which are typical of responses associated with underground services, such as pipes or cables.

6.8 **Ferrous / Magnetic Disturbance / Former Pond**

- 6.8.1 A discrete zone of strong magnetic disturbance [6] is visible at the east of Area 14 (Figs. 15-17). It corresponds with the location of a former pond that can be seen on historic Ordnance Survey mapping (Fig. 21).
- 6.8.2 Ferrous responses close to boundaries are due to adjacent fences and gates, while an area of magnetic disturbance in the east of Area 20 (Figs. 18-20) could reflect an area of consolidation or made ground. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

7 **DATA APPRAISAL & CONFIDENCE ASSESSMENT**

- 7.1 Historic England Table 4 (EH 2008) states that the typical magnetic response on the local soils / geology is generally poor. The results from this survey indicate the presence of a ring ditch, corroborated with a cropmark, along with other ditch-like anomalies of possible archaeological and uncertain origin. Consequently, there is no *a priori* reason why archaeological features would not have been detected, though the narrow survey corridor does hinder interpretation of some responses.

8 **CONCLUSION**

- 8.1 The magnetometer survey at Arborfield has identified a single feature of definite archaeological interest; a ring ditch measuring some 22m in diameter which can be corroborated with a cropmark feature (MWK1127). Additional ditch-like anomalies, linear trends and discrete anomalies of possible archaeological interest have also been detected. These lie in the vicinity of a cropmark field system (MWK1136); however, the limited survey corridor makes further interpretation difficult. A large number of linear, curvilinear and discrete anomalies have an uncertain origin. It is possible that some may have an archaeological explanation, given the proximity of cropmark features including enclosures, ditches and pits, though an agricultural or natural origin is equally feasible. Modern ploughing effects, land drains and a former pond have been mapped in the results, along with underground services, areas of natural magnetic variation and modern ferrous disturbance.

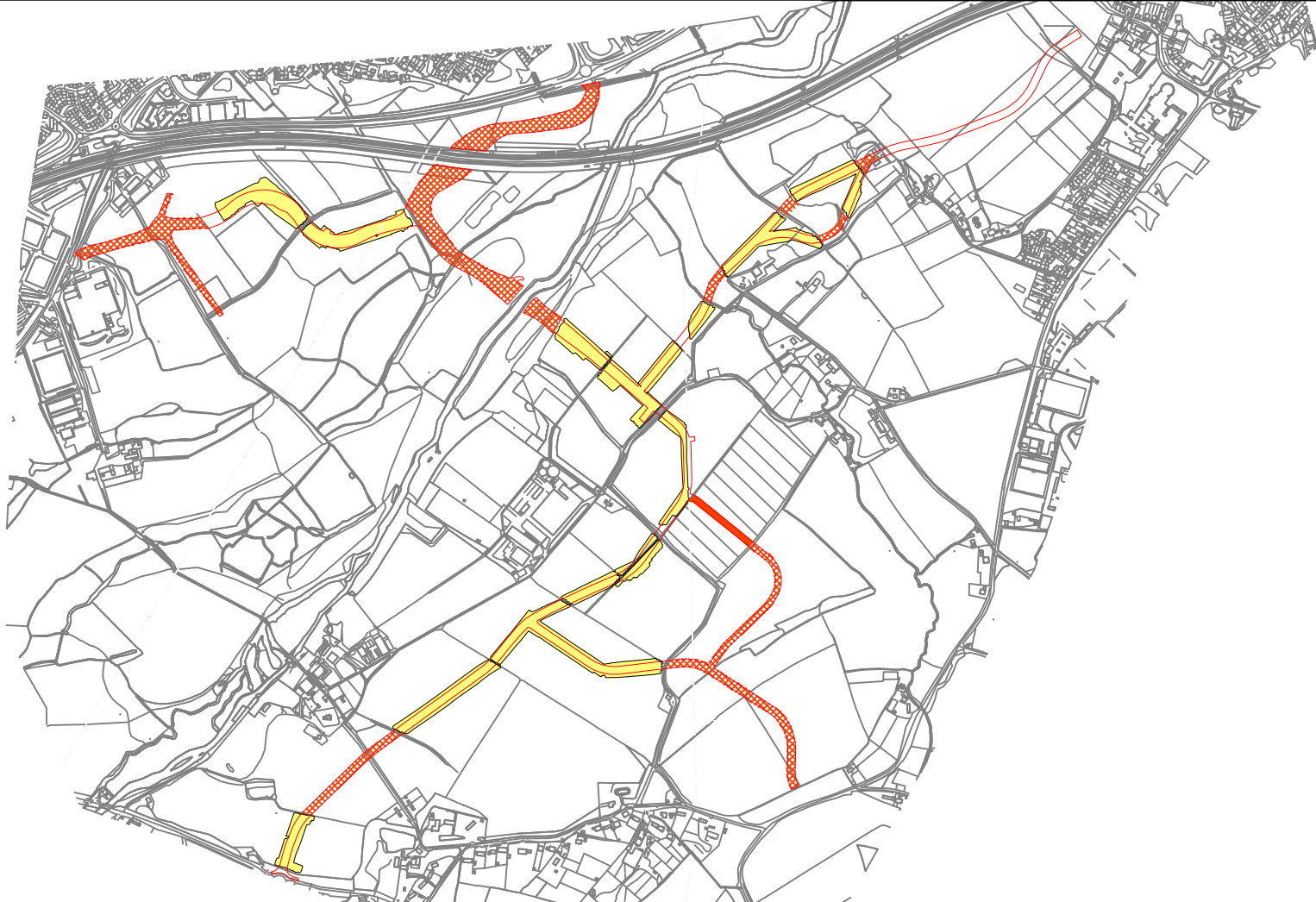
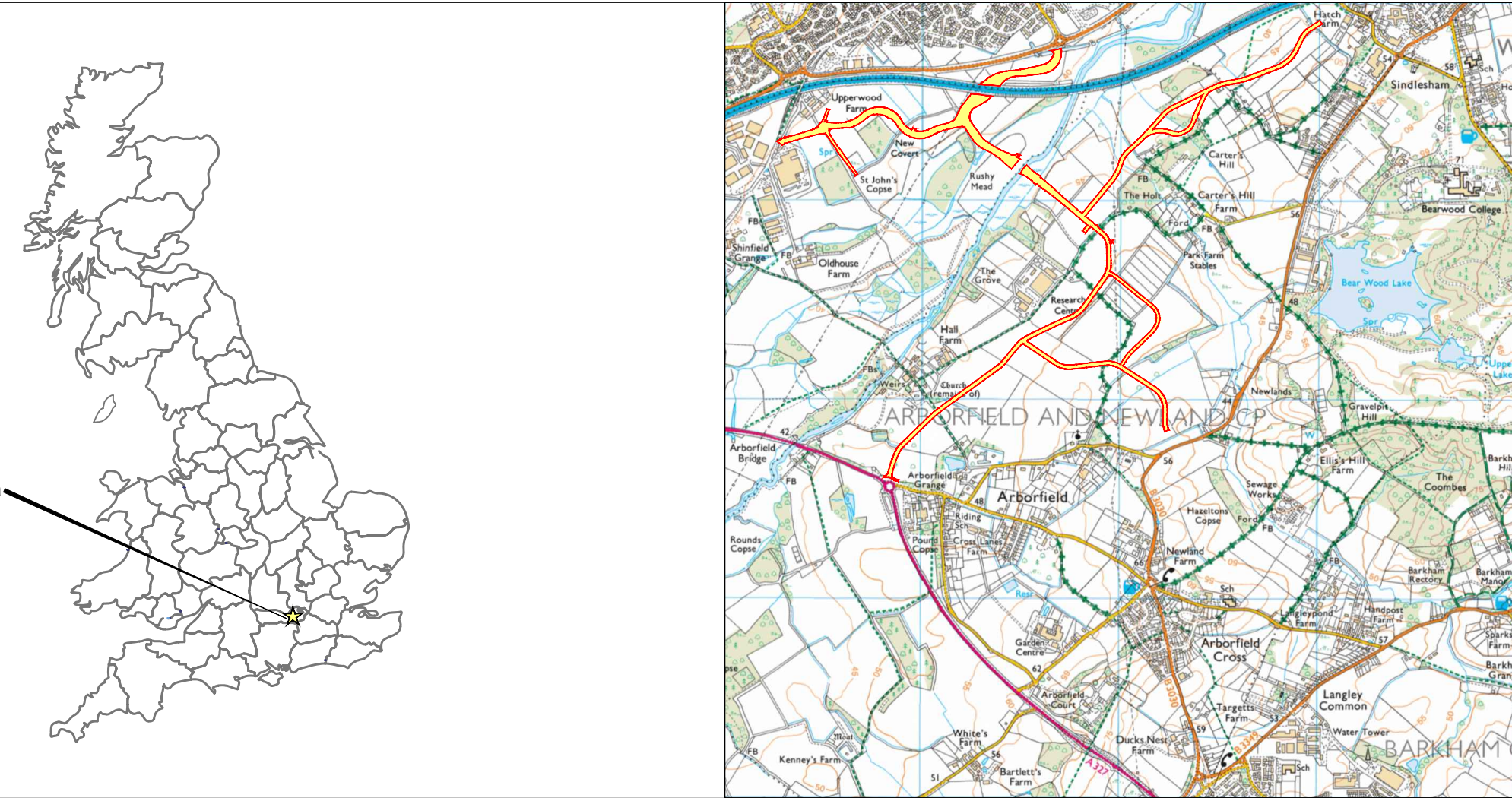
9 REFERENCES

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- ClfA 2020 *Standard and Guidance for Archaeological Geophysical Survey*. 2014 amended 2020. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
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- CU 2025 *The Soils Guide*. www.landis.org.uk. Cranfield University, UK. website:
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- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon
(now withdrawn, but used for evaluating suitability of soil types)
- RPS 2022 *Archaeological Desk-Based Assessment - Land South of Reading*. RPS;
unpublished report. Report No. JAC28072



10 ARCHIVE

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

Survey Area

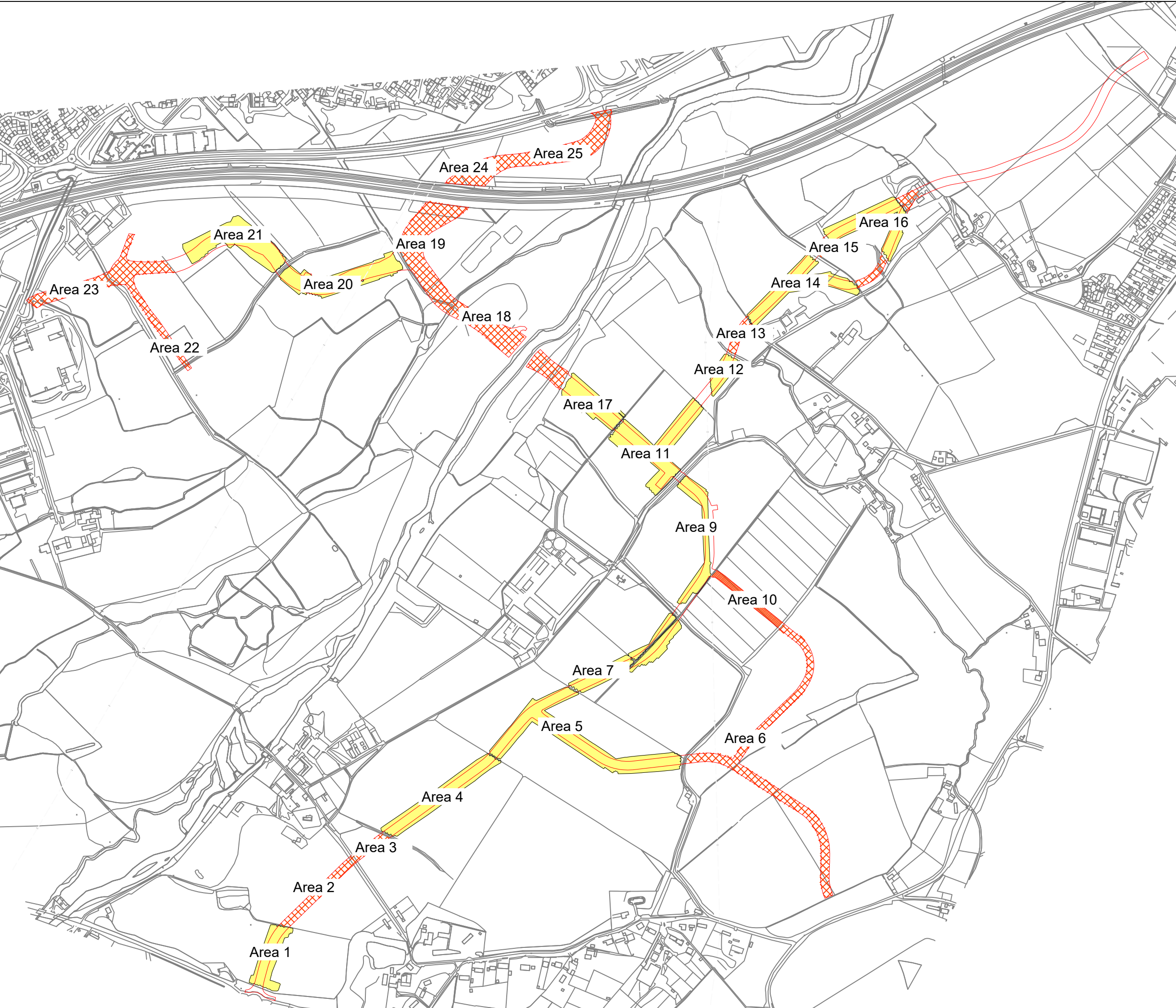


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	Survey Areas
	Unsurveyable



Title: Site Location	
Client: RPS	
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire	
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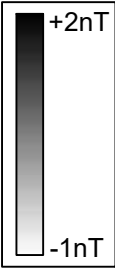


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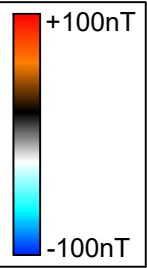
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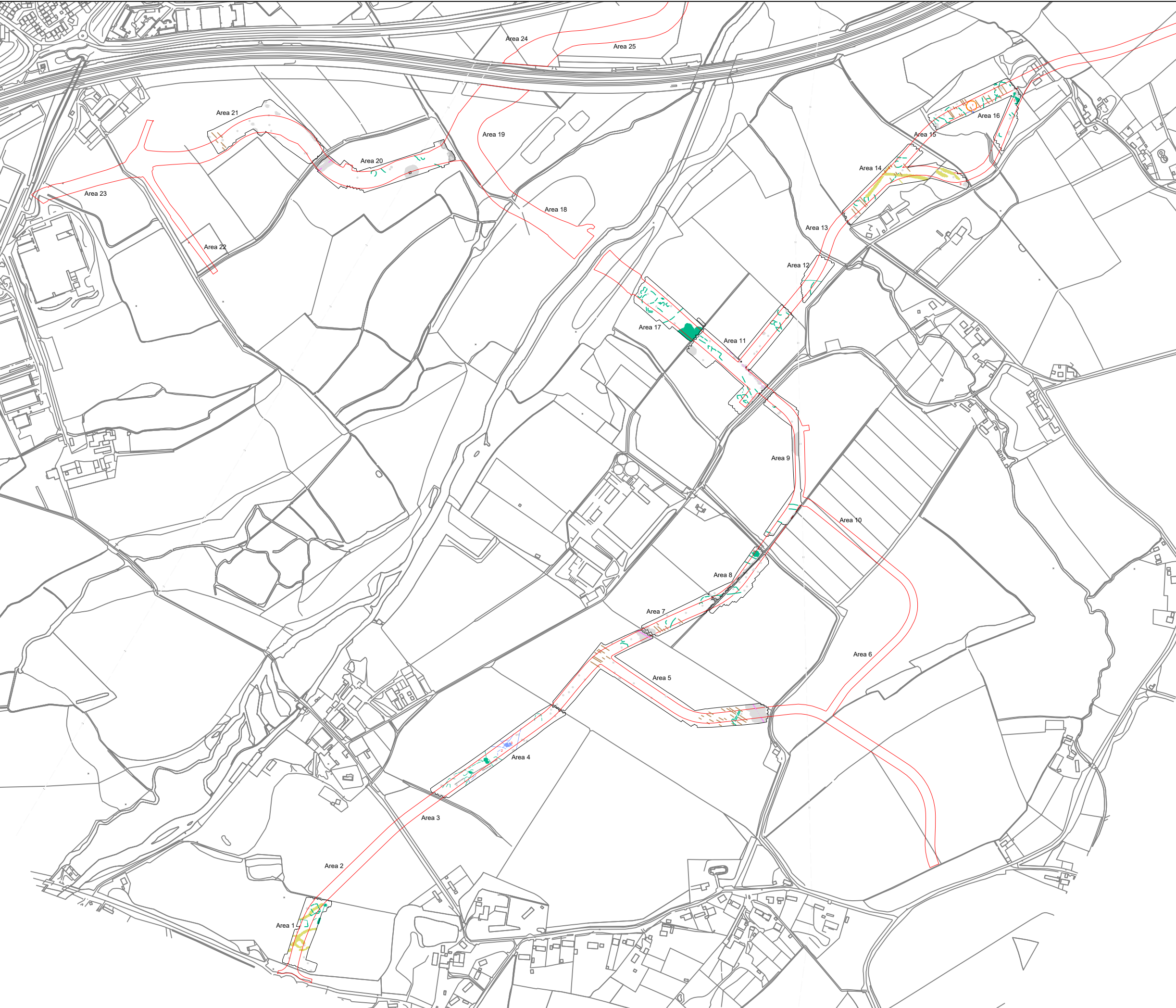
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Client: RPS		
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire		
Scale: 0 metres 400 1:8000 @ A3	Fig No: 03	



Title: Magnetometer Survey - Colour Plots		
Client: RPS		
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire		
Scale: 0 1:8000 @ A3	metres 400	Fig No: 04



KEY

	Known (corroborated) archaeology (discrete anomaly)
	Possible archaeology (discrete anomaly / trend / increased response)
	Uncertain Origin (discrete anomaly / trend / increased response)
	Agriculture (plough)
	Natural (e.g. geological / pedological)
	Former pond (corroborated)
	Magnetic disturbance
	Service
	Ferrous



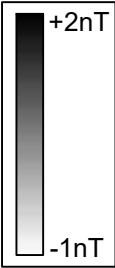
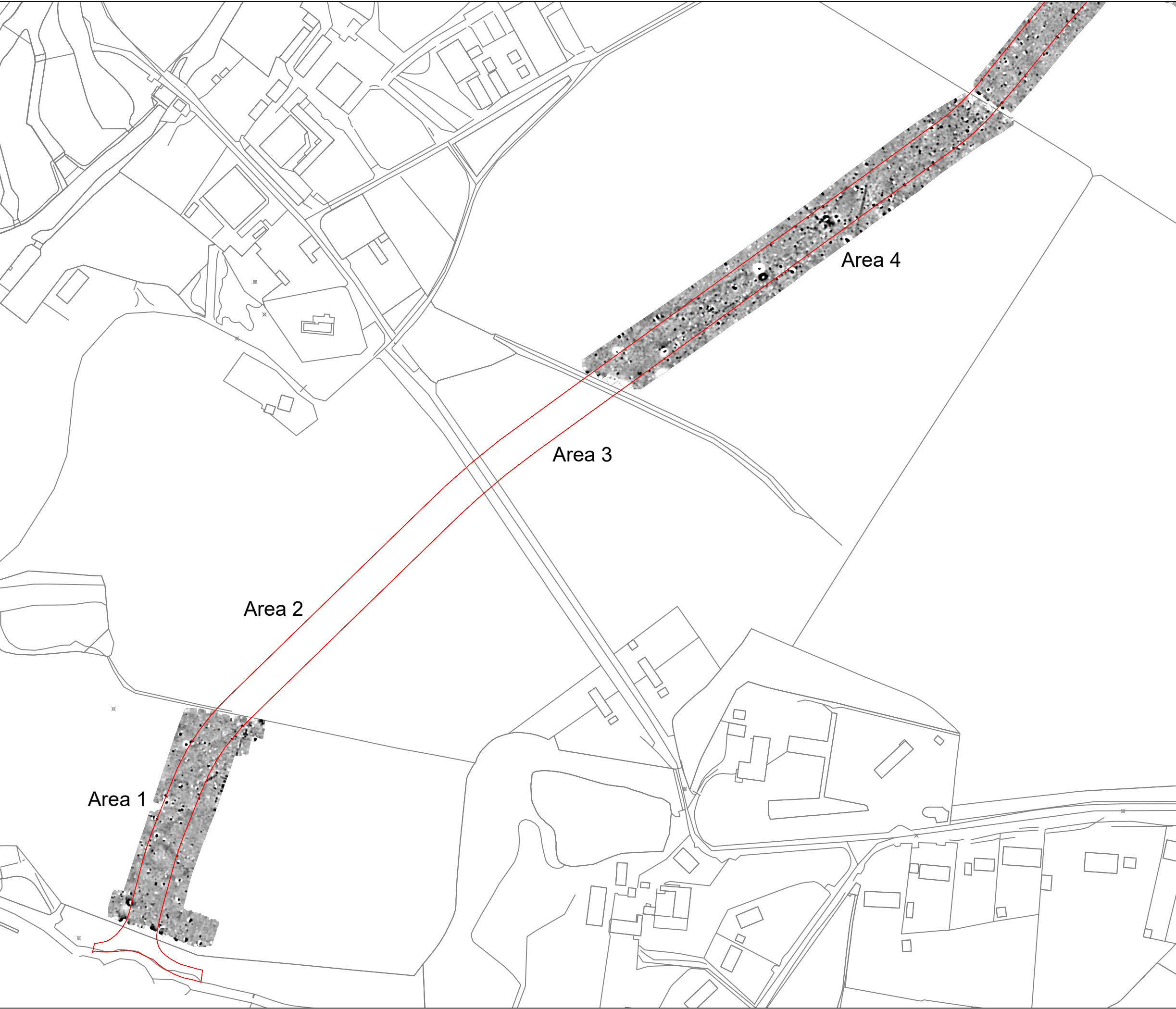
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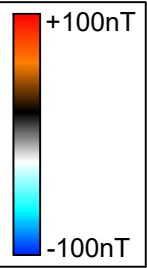
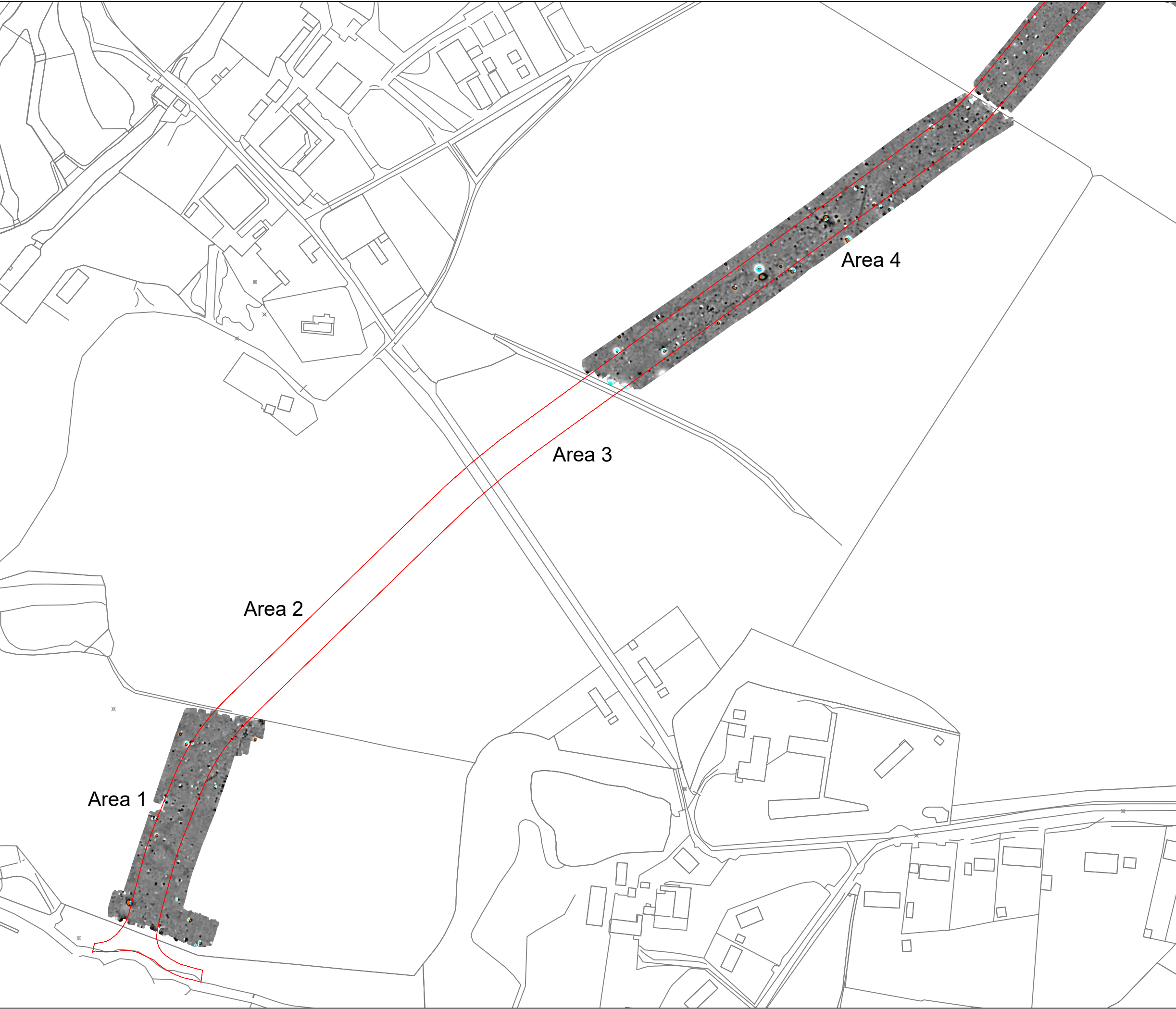
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Fig No: 05



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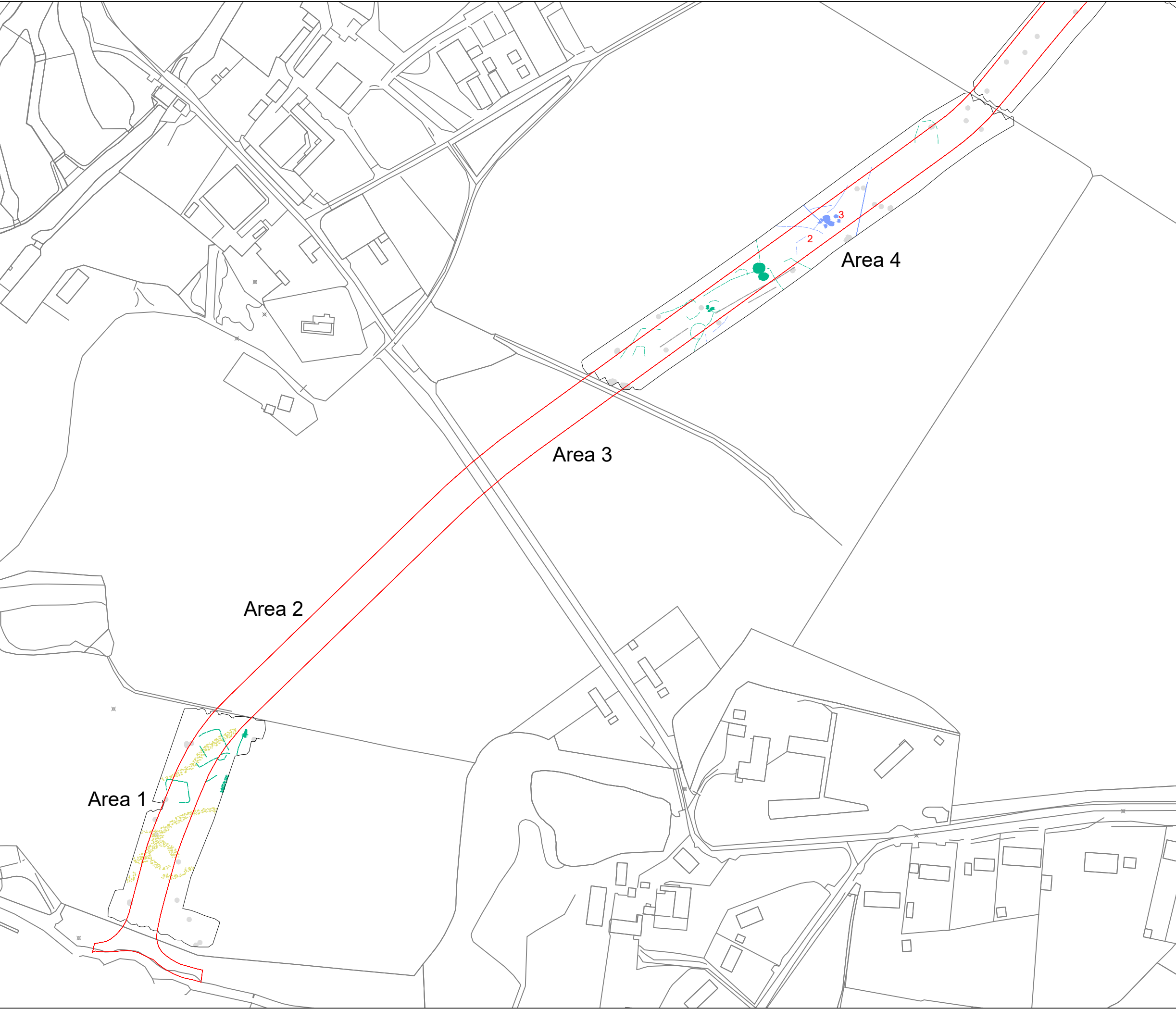
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
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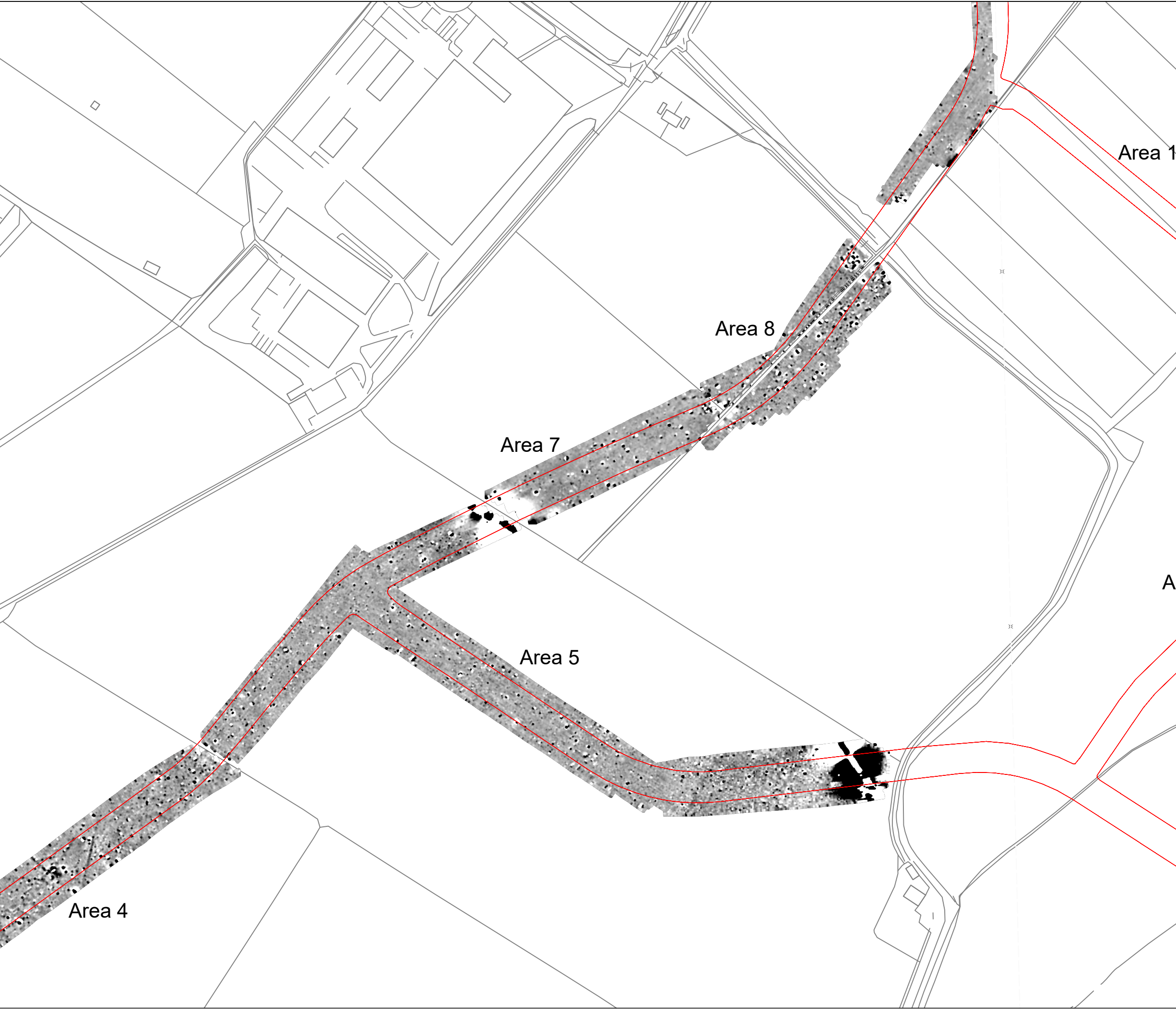


KEY

	Possible archaeology (discrete anomaly / trend)
	Uncertain Origin (discrete anomaly / trend)
	Natural (e.g. geological / pedological)
	Ferrous



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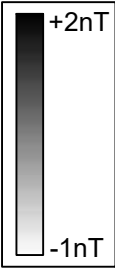
Area 1

Area 8

Area 7

Area 5

Area 4



Title: Magnetometer Survey - Greyscale Plots - Areas 5, 7 and 8

Client: RPS

Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire

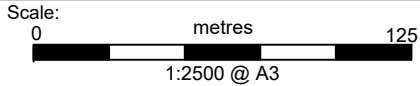
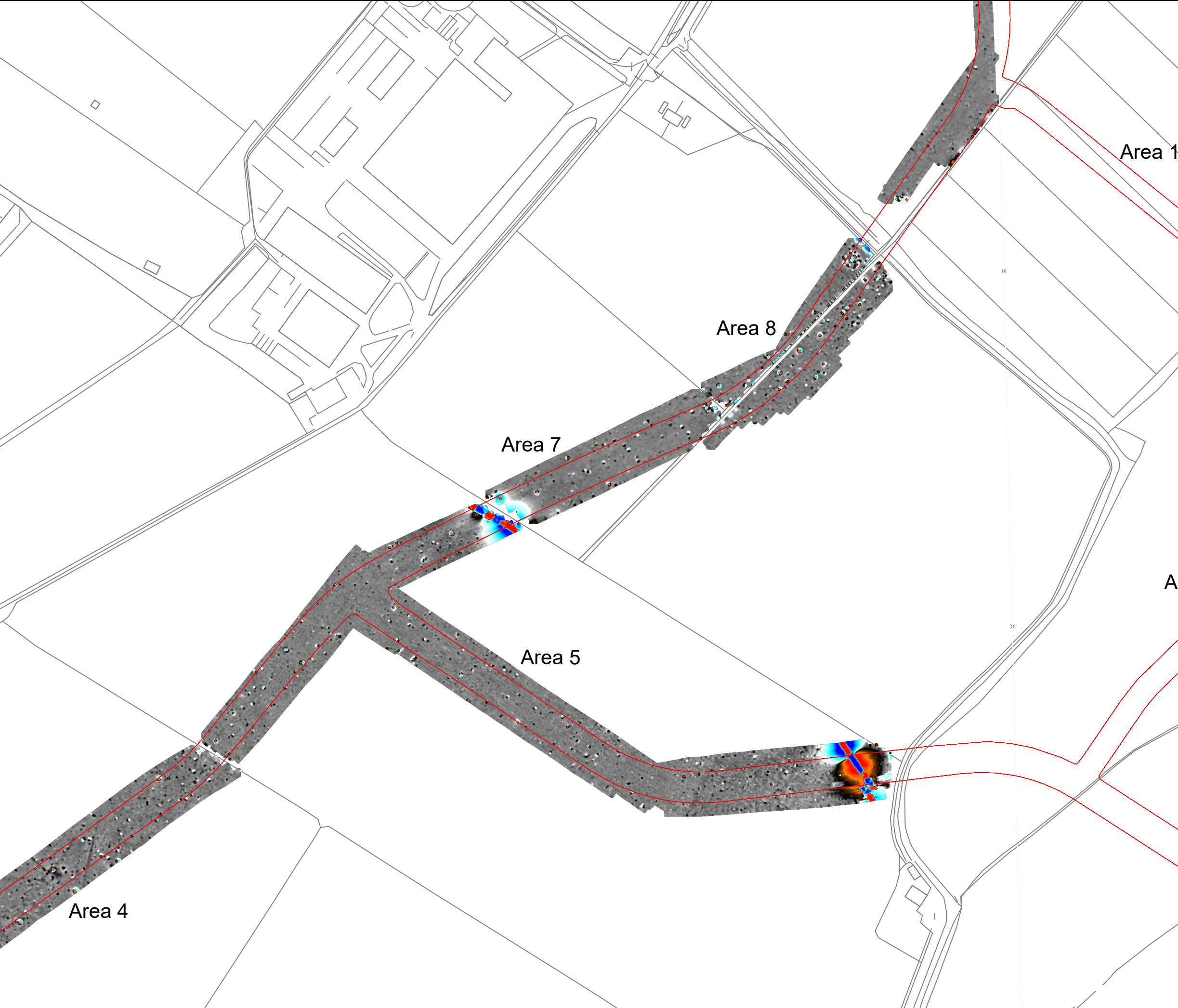


Fig No: 09



Area 1

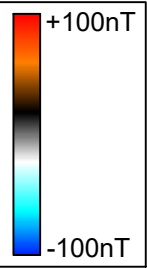
Area 8

Area 7

Area 5

Area 4

A



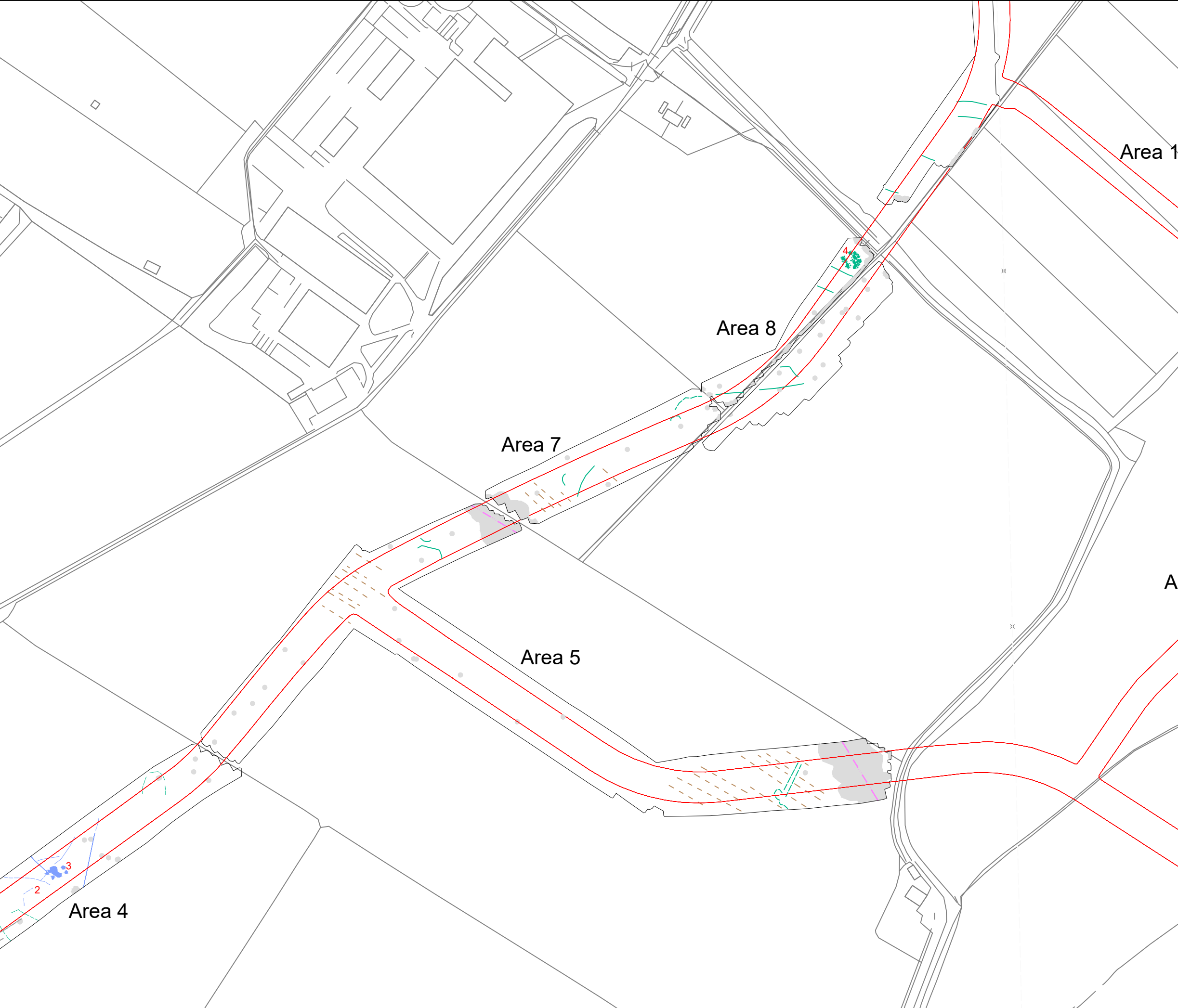
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Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire



Fig No: 10



Area 1

Area 8

Area 7

Area 5

Area 4

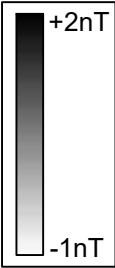
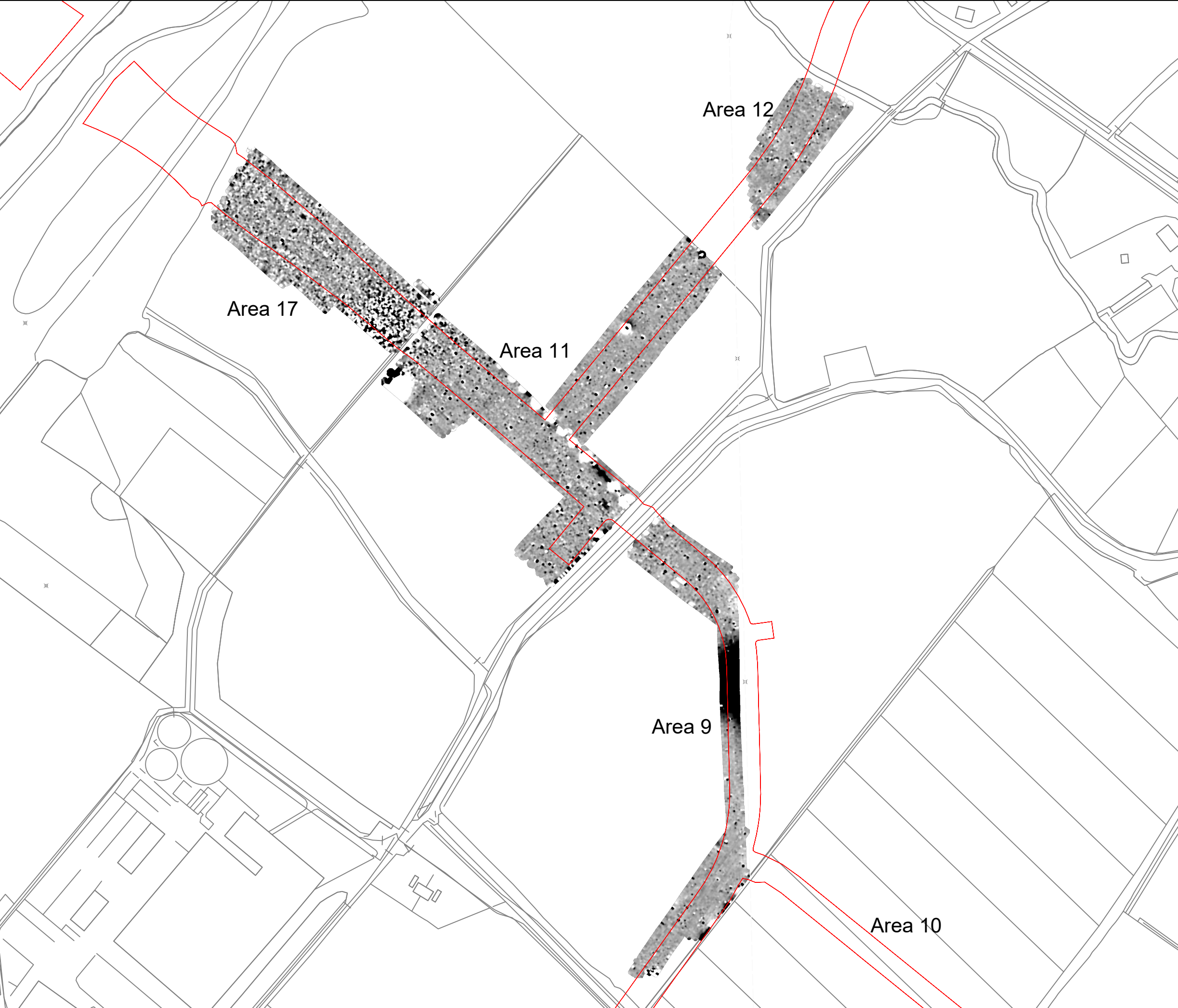
KEY

	Possible archaeology (discrete anomaly / trend)
	Uncertain Origin (discrete anomaly / trend)
	Agriculture (plough)
	Service
	Ferrous

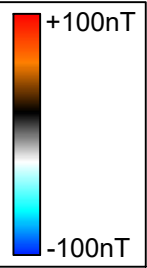
A



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Client: RPS	
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire	
Scale: 0 125 metres 1:2500 @ A3	Fig No: 11



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Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire	
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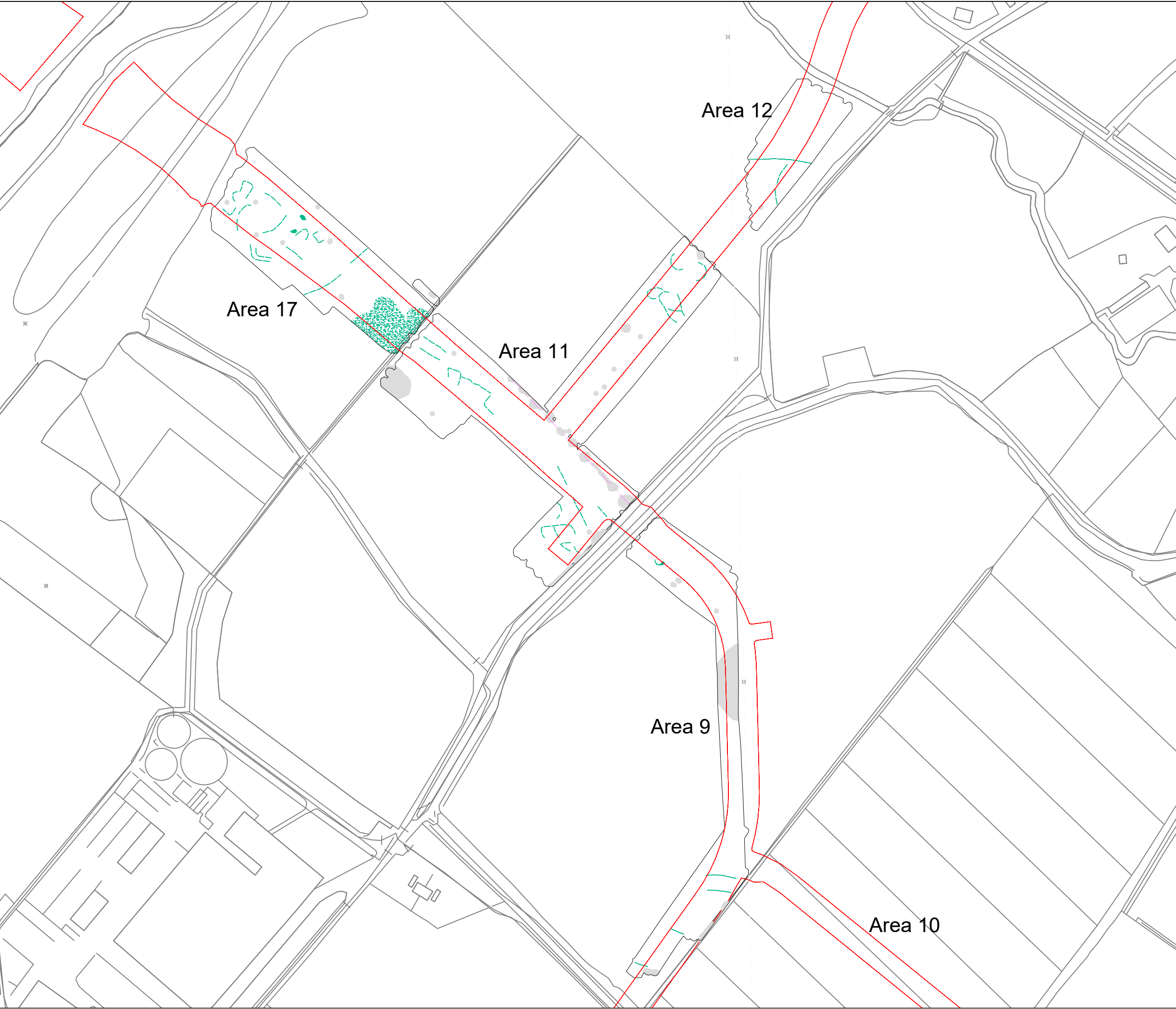
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
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Fig No: 13

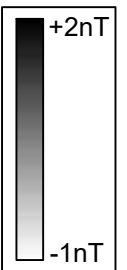
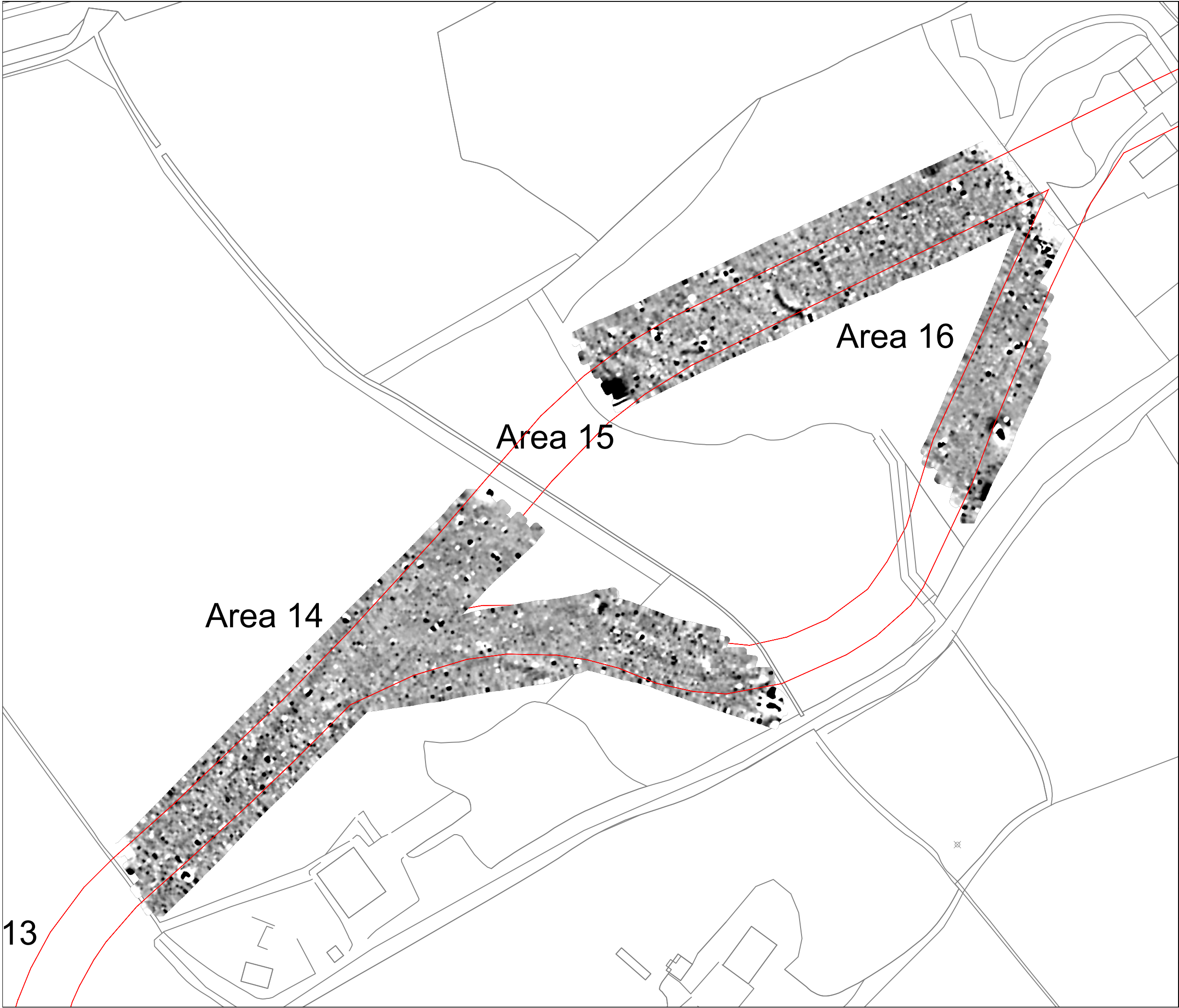


KEY

	Uncertain Origin (discrete anomaly / trend / increased response)
	Service
	Ferrous



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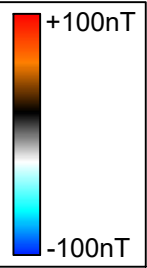
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Client:
RPS

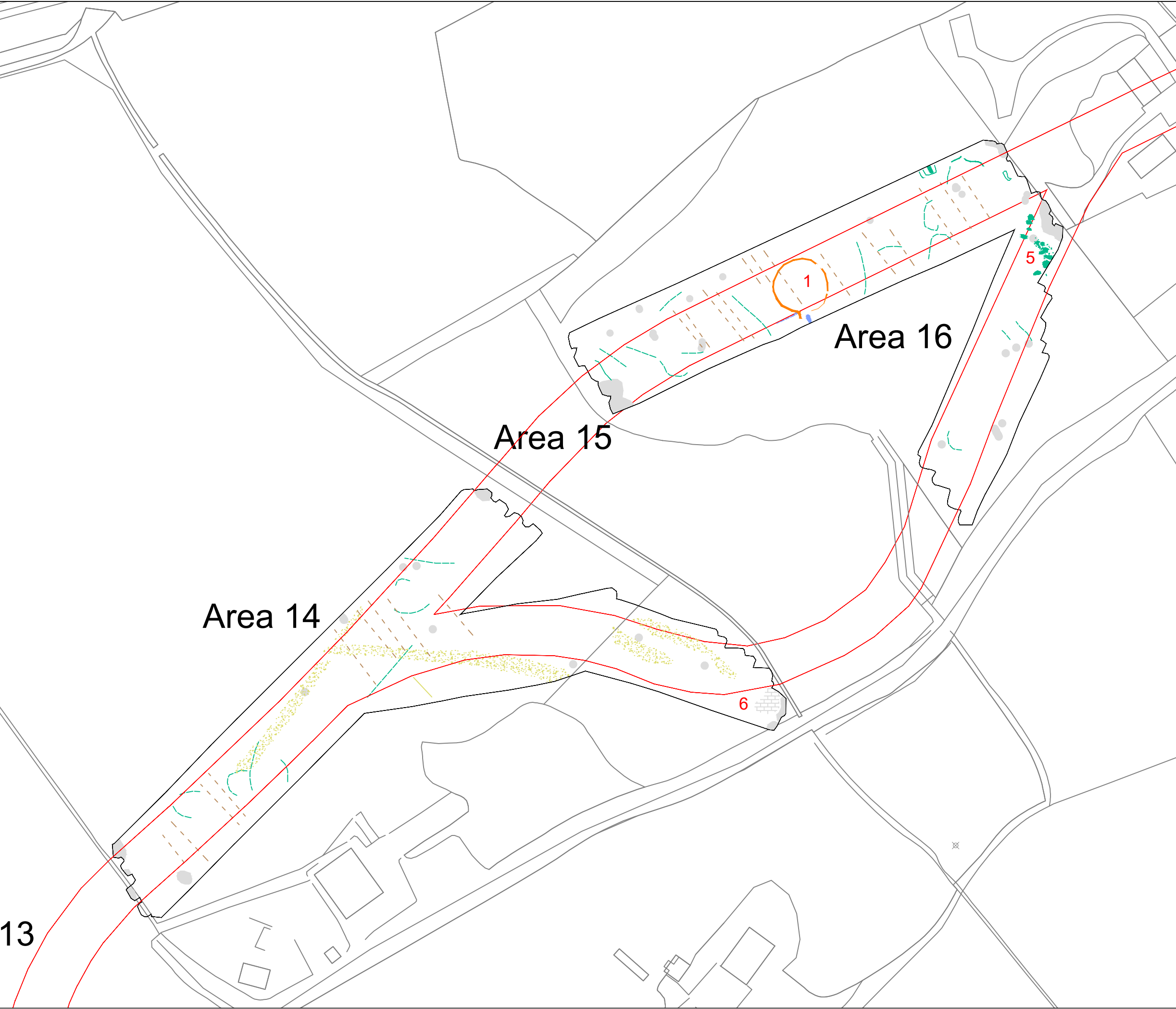
Project:
SUMO-22424: Loddon Garden Village,
Arborfield, Berkshire

Scale:
0 metres 75
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Fig No:
15



Title: Magnetometer Survey - Colour Plots - Areas 14 and 16	
Client: RPS	
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire	
Scale: 0 metres 75 1:1500 @ A3	Fig No: 16



KEY

	Known (corroborated) archaeology (discrete anomaly)
	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend / increased response)
	Agriculture (plough)
	Natural (e.g. geological / pedological)
	Former pond (corroborated)
	Ferrous



Title: Magnetometer Survey - Interpretation - Areas 14 and 16	
Client: RPS	
Project: SUMO-22424: Loddon Garden Village, Arborfield, Berkshire	
Scale: 0 metres 75 1:1500 @ A3	Fig No: 17