

Substrata

Archaeological Geophysical Surveyors

An archaeological magnetometer survey

Land at east of Axminster, Devon

Centred on NGRs: 330920,099580 331120,098990
& 330740,098010

Report: 1806AXM-R-1

Ross Dean BSc MSc MA MCifA
Mark Edwards BA

3 September 2018

Substrata Ltd
Langstrath
Goodleigh
Barnstaple
Devon EX32 7LZ
Tel: 01271 342721
Email: geophysics@substrata.co.uk
Web: substrata.co.uk

Client
AC Archaeology Ltd
4 Halthaies Workshops
Bradninch
Nr Exeter
Devon EX5 4QL
Tel: 01392 882410

Substrata Limited

Company number: 10348811

Registered office: Unit 6 Bude Business Centre, Kings Hill Industrial Estate, Bude, Cornwall, England EX23 8QN

Contents

1. Introduction	1
2. Client details.....	1
3. Copyright.....	1
4. Survey type and location	1
5. Summary	1
6. Aims and objectives	2
7. Standards	2
8. Methodology	2
9. Survey Area.....	2
10. Archaeological background.....	3
11. Results	4
12. Discussion	4
13. Conclusions	6
14. Disclaimer	6
15. Archive.....	6
16. Acknowledgements	6
17. Bibliography.....	7
Appendix 1 Figures	8
Appendix 2 Tables	23
Appendix 3 Project archive contents.....	32

Figures

Figure 1: location map	9
Figure 2: Survey Areas and Plots	10
Figure 3: survey interpretation, Area 1	11
Figure 4: survey interpretation, Area 2	12
Figure 5: survey interpretation, Area 3	13
Figure 6: shade plot of processed data, Area 1	11
Figure 7: shade plot of processed data, Area 2	15
Figure 8: shade plot of processed data, Area 3	16
Figure 9: shade plot of minimally processed data, Area 1	17
Figure 10: shade plot of minimally processed data, Area 2	18
Figure 11: shade plot of minimally processed data, Area 3	19
Figure 12: survey grid plan and location, Area 1	20
Figure 13: survey grid plan and location, Area 2	21
Figure 14: survey grid plan and location, Area 3	22

Tables

Table 1: data analysis	24
Table 2: methodology information	25
Table 3: processed data metadata, Area 1	26
Table 4: minimally processed data metadata, Area 1	27
Table 5: processed data metadata, Area 2	28
Table 6: minimally processed data metadata, Area 2	29
Table 7: processed data metadata, Area 3	30
Table 8: minimally processed data metadata, Area 3	31

1 Introduction

This report presents the results of an archaeological geophysical survey at the site listed in Section 4. The survey was commissioned by AC Archaeology Ltd on behalf of clients in support of a planning application. The commissioning of this report was in keeping with the National Planning Policy Framework, Chapter 16, Paragraph 189 (Ministry of Housing, Communities & Local Government, 2018). The survey and report were completed in compliance with a Survey Method Statement (Substrata Ltd, 2018).

The site, hereafter referred to as the Survey Area, is divided into Areas 1, 2 and 3 which are further divided into Plots 1 to 10 for convenient description as shown in Figures 1 and 2.

2 Client details

AC Archaeology Ltd, 4 Halthaies Workshops, Bradninch Nr Exeter, Devon EX5 4QL

3 Copyright

Substrata Ltd shall retain full copyright as defined in the Copyright, Designs and Patents Act 1988 with all rights reserved, excepting that it hereby provides an exclusive licence to the Client for the use of the report by the Client in all matters directly relating to the project. Any document produced to meet planning requirements may be freely copied for planning, development control, education and research purposes without recourse to the Copyright owner subject to all due and appropriate acknowledgements being provided. This report contains material that is non-Substrata Ltd copyright or the intellectual property of third parties. Such material is labelled with the appropriate copyright and is non-transferrable by Substrata Ltd.

© Substrata Ltd 2018

4 Survey type and location

4.1 Survey

Method:	shallow depth magnetometer survey
Instrument:	twin-sensor fluxgate gradiometer
Date:	between 23 July 2018 and 15 August 2018
Area:	19ha

4.2 Location

Site name:	Land at east of Axminster
Civil Parish:	Axminster
District:	East Devon
County:	Devon
Post code (all areas):	EX13 5PH
Area 1 centre NGR:	SY 30920 99580
Area 1 centre NGR (E/N):	330920,099580
Area 2 centre NGR:	SY 31120 98990
Area 2 centre NGR (E/N):	331120,098990
Area 3 centre NGR:	SY 30740 98010
Area 3 centre NGR (E/N):	330740,098010
Historic environment designation:	None
OASIS ID:	substrat1-327300

5 Summary

A magnetometer survey was selected to provide a relatively fast and cost-effective evaluation of any buried archaeology across the Survey Area (see Section 14). The magnetic anomaly groups pertaining to potential buried archaeology were georeferenced to the Ordnance Survey National Grid, mapped, characterised and assigned with an appropriate degree of certainty in conformance with the survey aims and objectives set out in Section 6.

The differences in magnetic responses across the Survey Area were sufficient to be able to differentiate between anomalies representing possible buried archaeology and background magnetic responses.

Twenty-seven magnetic anomaly groups were characterised as representing potential archaeological deposits and a further five groups as historic cultivation traces. Of these, two groups probably represent disturbed ground and modern fill associated with a former medieval dam and adjacent extraction pit. Five groups represent previously recorded former field boundaries. Nine groups may represent fragments of linear deposits such as ditches. Three anomaly groups represent two previously recorded spoil heaps and an associated track. These groups reflect relatively strongly magnetic deposits which are likely to be composed of highly heated material and/or ferrous material probably derived from industrial activities. A further six groups may represent additional, associated deposits. One group may represent an area of fill, possibly over a former quarry. One, and possibly two, groups represent previously recorded catch-meadow ditches and one group represents a set of previously recorded orchard banks. Two groups may represent historic ploughing.

6 Aims and objectives

6.1 Aims

1. Within the framework set out in Chartered Institute for Archaeologists (2014a), complete an archaeological geophysical survey and report which will, as far as possible, establish the presence or absence, extent and character of any buried archaeology within the Survey Area.
2. Provide sufficient information on the nature of any archaeological remains to facilitate the assessment of their interest prior to the determination of the planning application.

6.2 Objectives

1. Complete a magnetometer survey across the Survey Area.
2. Identify any magnetic anomalies that may be related to buried archaeology.
3. Within the limits of the technique and dataset, archaeologically characterise any such anomalies or patterns of anomalies.
4. Accurately record the location of the identified anomalies.
5. Produce a report based on the survey that informs any subsequent development on the survey area about the location and possible archaeological character of the recorded anomalies.

7 Standards

The standards used to complete this survey are defined by the Chartered Institute for Archaeologists (2014a) and Historic England (2008). The codes of approved practice that were followed are those of the Chartered Institute for Archaeologists (2014b) and Archaeology Data Service (undated).

8 Methodology

The magnetometer survey was undertaken in accordance a Survey Method Statement (Dean, 2018) to achieve the aims and objectives set out in Section 6 using the standards and guidance specified in Section 7. The survey method was selected to provide a relatively fast and cost-effective evaluation of any buried archaeology across the Survey Area (see Section 14).

Data processing was undertaken using appropriate software (Table 2), with all anomalies being digitised and geo-referenced. The final report (this document) includes a graphical and textual account of the techniques undertaken, the data obtained and an archaeological interpretation of that data and conclusions about any likely archaeology. The survey and report conform to the Chartered Institute for Archaeologists standard for geophysical survey (CIfA, 2014a).

9 Survey Area

9.1 Location and description

The Survey Area comprises ten plots of land in three areas to the east of Axminster (Figures 1

and 2).

Area 1 is bound to the north and east by a stream with fields beyond, to the south by a steel fence with Millwey Rise Industrial Estate beyond and to the west by the A358 with fields beyond. Area 2 is bound by Area 1 and the stream with fields beyond to the north, fields to the east, Beavor Lane with fields beyond to the south and a large field with a housing estate beyond to the west. Area 3 is bound by Sector Lane with fields beyond to the north, fields to the east and south, and Lyme Road and housing infrastructure to the west.

The field boundaries are varied, the majority being hedged with wire fencing. The land varies in its topography with some relatively steep slopes in places. All the plots were under pasture at the time of the survey.

9.2 Geology

Area 1

The solid geology is interbedded thinly interbedded limestone and calcareous mudstone or siltstone of Jurassic and Triassic Blue Lias Formation. The western side of the Survey Area has a superficial geology of Quaternary River Terrace Deposits which comprise of undifferentiated sand and gravel, locally with lenses of silt, clay or peat. Along the stream Quaternary Head deposits of sand with clay and gravel of are present (British Geological Survey, undated).

Area 2

The majority of the Survey Area has a solid geology of dark grey laminated shales, and dark, pale and bluish grey mudstones of the Jurassic Charmouth Mudstone Formation. Along the sides of the stream, interbedded limestone and mudstone of Jurassic and Triassic Blue Lias Formation is exposed. Except for the eastern side of Plots 2, 6 and 8 (Figure 2), the superficial geology is Quaternary Head comprising sand with clay and gravel (ibid).

Area 3

Most of the Survey Area has a solid geology of dark grey laminated shales, and dark, pale and bluish grey mudstones of the Jurassic Charmouth Mudstone Formation. Interbedded limestone and mudstone of Jurassic and Triassic Blue Lias Formation lie along the eastern boundary. The superficial geology is Quaternary Head comprising sand with clay and gravel (ibid).

9.3 Soils and near-surface deposits

The topsoil across all three areas is 'slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils' (LandIS, undated).

10 Archaeological background

10.1 Historic landscape characterisation

Area 1

'Modern enclosures' that have been created by adapting earlier fields of post-medieval date which were laid out in the 18th and 19th centuries and commonly have many surveyed dead-straight field boundaries (Devon County Council, undated).

Area 2

The northern side of Plot 2 is designated 'modern enclosures' replacing earlier broad-leaved plantations, re-planted ancient woodland or secondary woodland. The remainder of Plot 2 is designated 'post-medieval enclosures' which defines fields laid out in the 18th and 19th centuries, commonly with surveyed dead-straight field boundaries. Plots 3 to 8 are 'medieval enclosures' that were probably first enclosed with hedge-banks during the middle ages (ibid).

Area 3

Plot 9 and most of Plot 10 are 'medieval enclosures based on strip fields'. This area was probably first enclosed with hedge-banks during the later middle ages. The curving form of the hedge-banks suggests that earlier it may have been farmed as open strip-fields. The eastern end

of plot 10 is designated 'former orchards'. This area was once an orchard planted with fruit trees, but these have been lost in the 20th century.

10.2 Statement of research

The Devon County Council Historic Environment Record (HER) was examined via the Heritage Gateway (Historic England, undated) to gain an appreciation of historic assets pertinent to the geophysical survey data within approximately 500m of the survey area perimeter. Whilst providing a useful context for the data analysis, this source is not necessarily comprehensive and detailed publication of the information in commercial reports is not permitted.

A number of HER entries are relevant to the survey data and their designations are provided in Table 1 and Section 12.

11 Results

11.1 Scope and definitions

This survey was designed to record magnetic anomalies. A magnetic anomaly is a local variation in the Earth's magnetic field. Such variations can result from differences in the magnetic properties of the underlying solid geology, superficial geology and other near-surface deposits including those altered and created by past human activities. Near-surface artefacts can also create magnetic anomalies.

The dimensions of magnetic anomalies mapped as representing potential buried archaeology do not represent the dimensions of any associated archaeology.

The analysis presented below identifies and characterises anomalies and anomaly groups that may relate to buried archaeology.

11.2 Analysis

Figures 3 to 5 show the interpretation of the survey data and include the anomaly groups identified as possibly relating to archaeological deposits along with their identifying numbers. Table 1 is an extract of the detailed analysis of the survey data sourced from the attribute tables of the GIS project provided in the project archive.

Figures 3 to 5 and Table 1 comprise the analysis of the survey data.

Figures 6 to 8 are plots of the processed data as specified in Tables 3, 5 and 7. Figures 9 to 11 are plots of minimally processed data as specified in Tables 4, 6 and 8. Figures 12 to 14 show the locations of the survey grids and grid data files.

12 Discussion

12.1 General points

Scope

Not all anomalies or anomaly groups identified in Table 1 are necessarily discussed below. All identified anomaly groups are recorded in the GIS project held in the survey archive.

Data collection

Data collection along the survey area edges was restricted as shown in the figures due to the presence of dense, rough vegetation and magnetic materials within and adjacent to the plot boundaries. Strong magnetic responses mapped close to the boundaries are likely to relate to the magnetic materials except where otherwise indicated in Figures 3 to 5 and Table 1.

Anomaly characterisation

There are a number of anomaly groups that could be interpreted as relating to large postholes or pits although most will have natural origins. Anomalies of this sort are mapped as potential archaeology when they are well defined in the data, associated with other significant anomaly groups or otherwise formed recognisable patterns as listed in Table 1.

Anomalies thought to relate to natural features and recent man-made objects such as manholes, drains, cables and other services are only mapped where they comprise significant magnetic responses across the dataset that need clarification.

Numerous dipole magnetic anomalies are present within the dataset. These are likely to represent recent ferrous objects. They are only mapped if they could influence the analysis of anomaly groups thought to have an archaeological origin.

12.2 Data relating to historic maps and other records

Area 1

Anomaly group **1** is likely to represent deposits associated with a medieval extraction pit subsequently filled with modern material such as concrete and/or ferrous material (HER entry MDV 119070).

Group **2** represents disturbed deposits and stony material with some ferrous material likely to reflect the removal and subsequent in-filling of a former medieval dam (HER MDV4828).

Groups **3** and **4** are likely to represent disturbed ground and stony deposits associated with former field boundaries recorded on historic maps (Table 1).

Area 2

Group **5** is most likely to magnetic represent materials such as steel and concrete, possibly with highly heated deposits, used to in-fill the sites of a former limekiln and quarry (HER MDV70588 and MDV70589).

Groups **6**, and **21** are likely to represent former field boundaries recorded on historic maps as shown in Table 1. Group **24** represents the remnants of a field boundary recorded on aerial photograph and lidar images (HER119080)

Anomaly groups **12**, **13** and **16** represent a track and two spoil heaps recorded on historic maps, aerial photographs and lidar images (HER MDV119134). These groups represent relatively strongly magnetic deposits which are likely to be composed of highly heated material and/or ferrous material. Usually, such deposits are derived from industrial activities. In this case the source of the materials within the deposits is not recorded.

Group **102** represent ditches from a post-medieval, possibly 19th century, catch-meadow recorded on aerial photograph and lidar images (HER 119107).

Area 3

Anomaly group **104** represents post-medieval orchard banks recorded on aerial photograph and lidar images (HER MDV119086).

12.3 Data with no previous archaeological provenance

Area 1

No magnetic anomaly groups were designated as representing previously un-recorded archaeology.

Area 2

Anomaly groups **10**, **11**, **14**, **15**, **17** and **18** lie close to groups 12, 13 and 16 (discussed in Section 12.2) and may represent deposits of stony material, with some heated and/or ferrous material in the case of groups 17 and 18. These deposits may be associated with the same depositional activities as groups 12, 13 and 16.

Groups **7, 8, 9, 19, 20, 25** and **26** may represent fragments of linear archaeological deposits such as ditches of unknown period or function. Groups **22** and **23** may be extensions of the previously recorded field boundary represented by group 21 and, possibly, group 24 (Section 2.1).

Group **27** may represent an area of fill such material used to cover a former quarry or damp ground.

13 Conclusions

The differences in magnetic responses across the Survey Area were sufficient to be able to differentiate between anomalies representing possible buried archaeology and background magnetic responses.

Twenty-seven magnetic anomaly groups were characterised as representing potential archaeological deposits and a further five groups as historic cultivation traces. Of these, two groups (1 and 2) probably represent disturbed ground and modern fill associated with a former medieval dam and adjacent extraction pit. Five groups represent previously recorded former field boundaries (3, 4, 6, 21 and 24). Nine groups (7, 8, 9, 19, 20, 22, 23, 25 and 26) may represent fragments of linear deposits such as ditches. Three anomaly groups represent two previously recorded spoil heaps (12, 13) and an associated track (16). These groups reflect relatively strongly magnetic deposits which are likely to be composed of highly heated material and/or ferrous material probably derived from industrial activities. A further six groups (10, 11, 14, 15, 17 and 18) may represent additional, associated deposits. One group (27) may represent an area of fill, possibly over a former quarry. One, and possibly two, groups (102 and 103) represent previously recorded catch-meadow ditches and one group (104) represents a set of previously recorded orchard banks. Two groups (101 and 105) may represent historic ploughing.

14 Disclaimer

The description and discussion of the results presented in this report are the authors', based on their interpretation of the survey data. Every effort has been made to provide accurate descriptions and interpretations of the geophysical data set. The nature of archaeological geophysical surveying is such that interpretations based on geophysical data, while informative, can only be provisional. Geophysical surveys are a cost-effective early step in the multi-phase process that is archaeology.

15 Archive

15.1 Online Access to the Index of archaeological investigationS (OASIS)

OASIS ID: substrat1-327300

The OASIS entry has been completed and the boundary file and report uploaded with six months delay in publication.

15.2 Substrata Limited archive

A full archive of this survey will be held by Substrata Limited on cloud and local hard drive storage as specified in Appendix 3.

15.3 Archaeological Data Service (ADS)

Depending on local authority policy, an archive may be deposited with the ADS as specified in Appendix 3.

15.4 Historic Environment Record (HER)

Subject to any contractual requirements on confidentiality, a PDF or printed copy of the report will be submitted to the appropriate HER within six months of completion.

16 Acknowledgements

Substrata would like to thank John Valentin and Fiona Pink of AC Archaeology Ltd for

commissioning us to complete this survey.

17 Bibliography

Archaeology Data Service, (undated). *Archaeology Data Service/Digital Antiquity Guides to Good Practice: Geophysical Data in Archaeology, 2nd Edition*. [online] Available at: http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_Toc [Accessed 13 Jul. 2018]

British Geological Survey, (undated). *Geology of Britain viewer, 1:50000 scale data*. [online] Available at: <http://www.bgs.ac.uk/discovering-Geology/geologyOfBritain/viewer.html> [Accessed 24 Aug. 2018]

Chartered Institute for Archaeologists, (2014a). *Standard and guidance archaeological geophysical survey*. [online] Available at: http://www.archaeologists.net/sites/default/files/CIFAS&GGeophysics_1.pdf [Accessed 13 Jul. 2018]

Chartered Institute for Archaeologists, (2014b). *Code of conduct*. [online] Available at <http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf> [Accessed 13 Jul. 2018]

Clark, A. (2000). *Seeing Beneath the Soil, Prospecting methods in archaeology*. London: Routledge

Devon County Council, (undated). *Historic Environment*. [online] Available at <https://new.devon.gov.uk/historicenvironment/> [Accessed 24 Aug. 2018]

Substrata Ltd, (2018). *Magnetometer survey method statement. Land east of Axminster, Devon*. Unpublished document 1806AXM-M-1

Hydrock Consultants Ltd, (2015). *Outline Utility Assessment, Land East of Axminster*. Unpublished draft report for planning R/C14487/001

Historic England, (undated). *Heritage Gateway*. [online] Available at: <http://www.heritagegateway.org.uk/gateway/> [Accessed 21 Aug. 2018]

Historic England, (2008). *Geophysical Survey in Archaeological Field Evaluation*. [online] Available at: <https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/> [Accessed 13 Jul. 2018]

LandIS, (undated). *Cranfield Soils and Agrifood Institute Soilscales*. [online] Available at: <http://www.landis.org.uk/soilscales/> [Accessed 24 Aug. 2018]

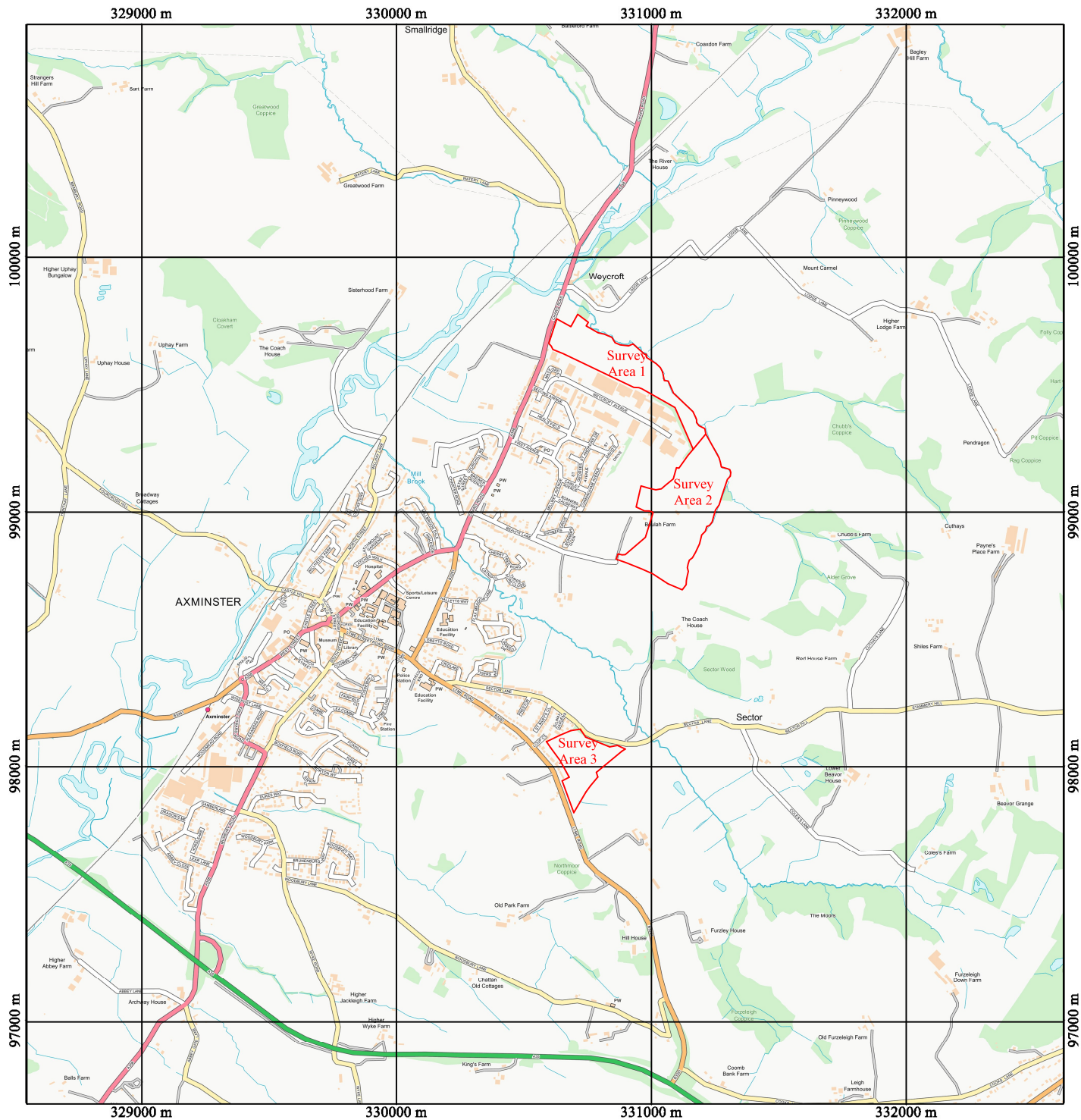
Ministry of Housing, Communities & Local Government, (2018). *National Planning Policy Framework*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf [Accessed 3 Aug. 2018]

Appendix 1 Figures

General Guidance

The anomalies represented in the survey plots provided in this appendix are magnetic anomalies. The apparent size of such anomalies and anomaly patterns are unlikely to correspond exactly with the dimensions of any associated archaeological features .

A rough rule for interpreting magnetic anomalies is that the width of an anomaly at half its maximum reading is equal to the width of the buried feature, or its depth if this is greater (Clark, 2000: 83). Caution must be applied when using this rule as it depends on the anomalies being clearly identifiable and distinct from adjacent anomalies. In northern latitudes the position of the maximum of a magnetic anomaly will be displaced slightly to the south of any associated physical feature.



British Grid
 centre X: 330583.00 m, centre Y: 98794.78 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:15000 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 1: location map



British Grid
 centre X: 330847.13 m, centre Y: 98811.22 m

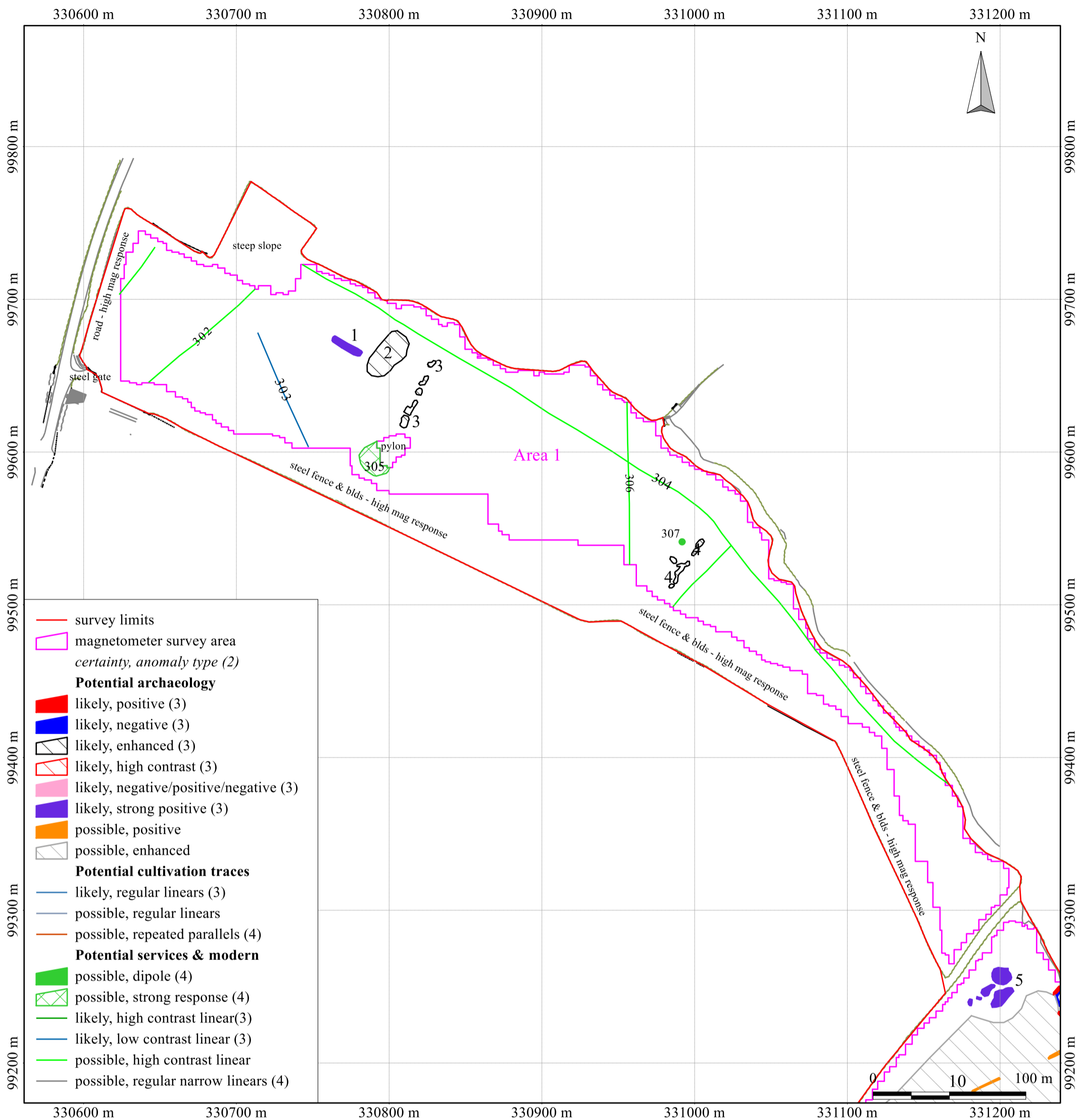
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:7500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

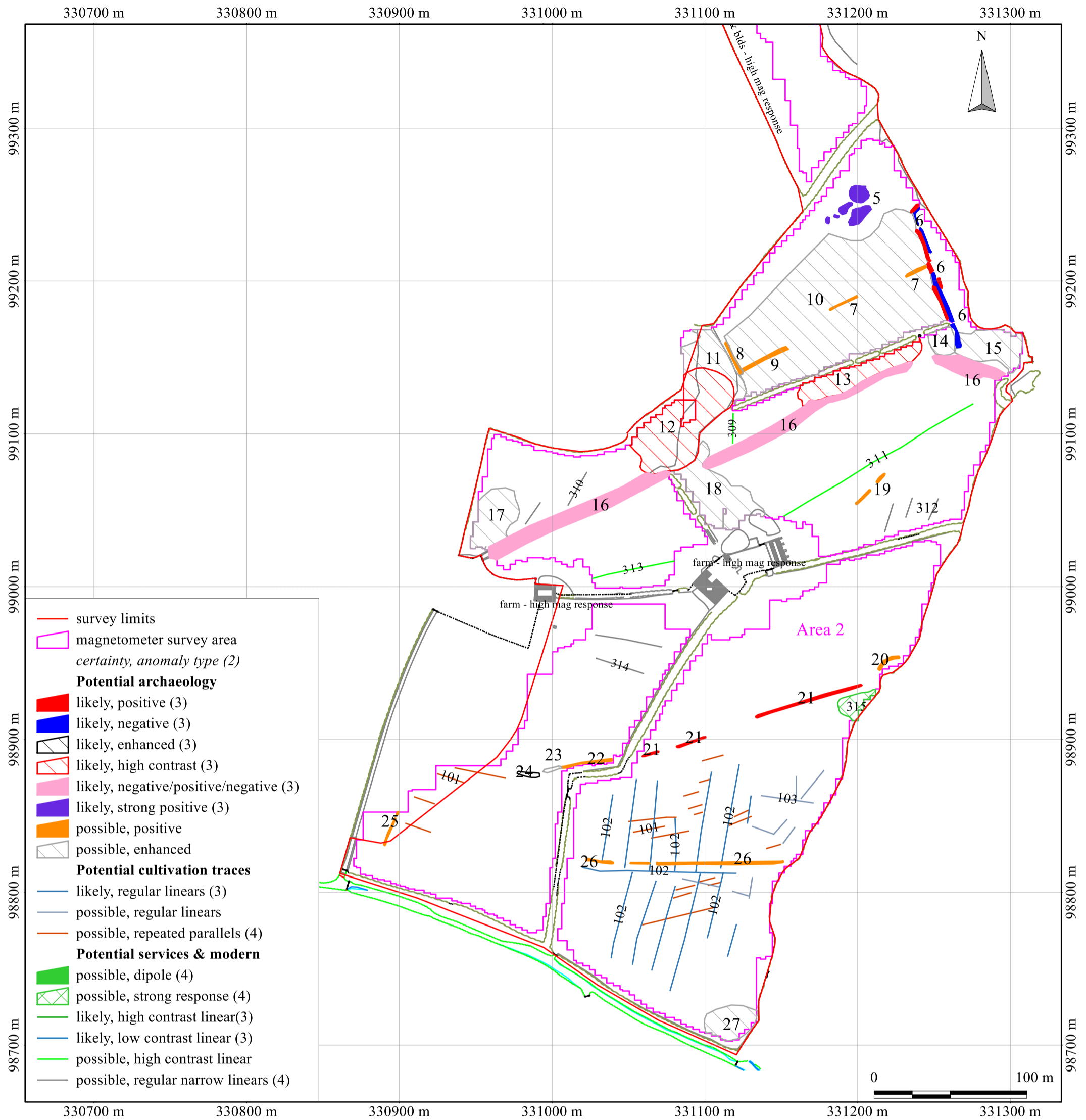
Figure 2: Survey Areas and Plots



An archaeological magnetometer survey
Land at east of Axminster, Devon
Centred on NGRs: 330920,099580
331120,098990 and 330740,098010
Report: 1806AXM-R-1

Substrata Limited
Langstrath, Goodleigh
Barnstaple, Devon EX32 7LZ
Tel: 01271 342721
Email: enquiries@substrata.co.uk
Web: substrata.co.uk

Figure 3: survey interpretation, Area 1



British Grid
centre X: 330994.17 m, centre Y: 99015.47 m

Geophysical survey: Copyright Substrata Limited.
Base map: Ordnance Survey (c) Crown Copyright 2018.
All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

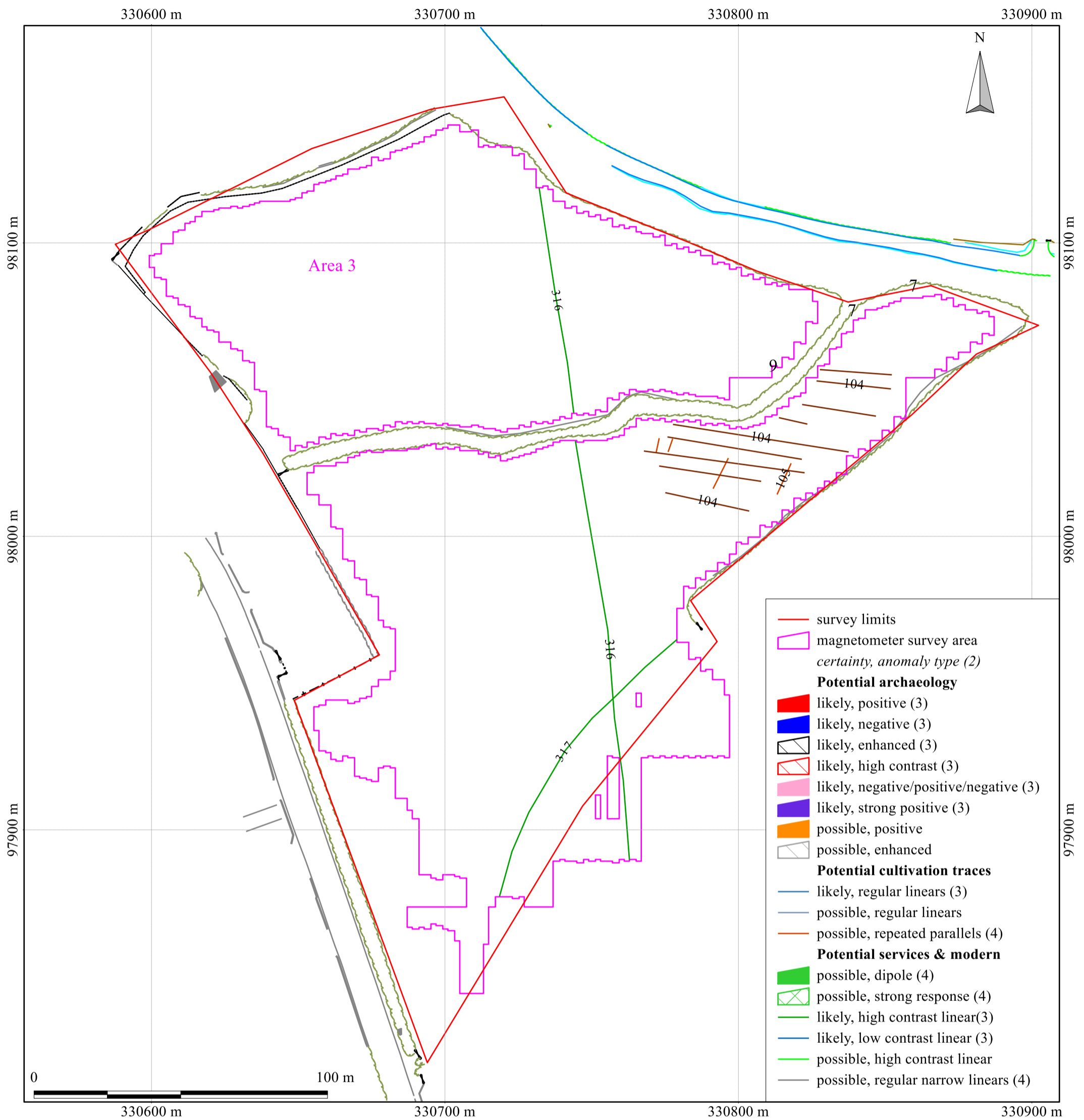
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. 'Anomaly type' is a description of the magnetic anomaly. See the report text or GIS for an archaeological characterisation.
3. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
4. Not all instances are mapped.
5. Anomalies likely to represent recent deposits or ground disturbance, or geological and other natural deposits are not mapped unless relevant to potential buried archaeology.

An archaeological magnetometer survey
Land at east of Axminster, Devon
Centred on NGRs: 330920,099580
331120,098990 and 330740,098010
Report: 1806AXM-R-1

Substrata Limited
Langstrath, Goodleigh
Barnstaple, Devon EX32 7LZ
Tel: 01271 342721
Email: enquiries@substrata.co.uk
Web: substrata.co.uk

Figure 4: survey interpretation, Area 2



British Grid
centre X: 330732.98 m, centre Y: 97990.65 m

Geophysical survey: Copyright Substrata Limited.
Base map: Ordnance Survey (c) Crown Copyright 2018.
All rights reserved. Licence number 100022432

Scale: 1:1300 @ A3. Spatial Units: Meter. Do not scale off this drawing

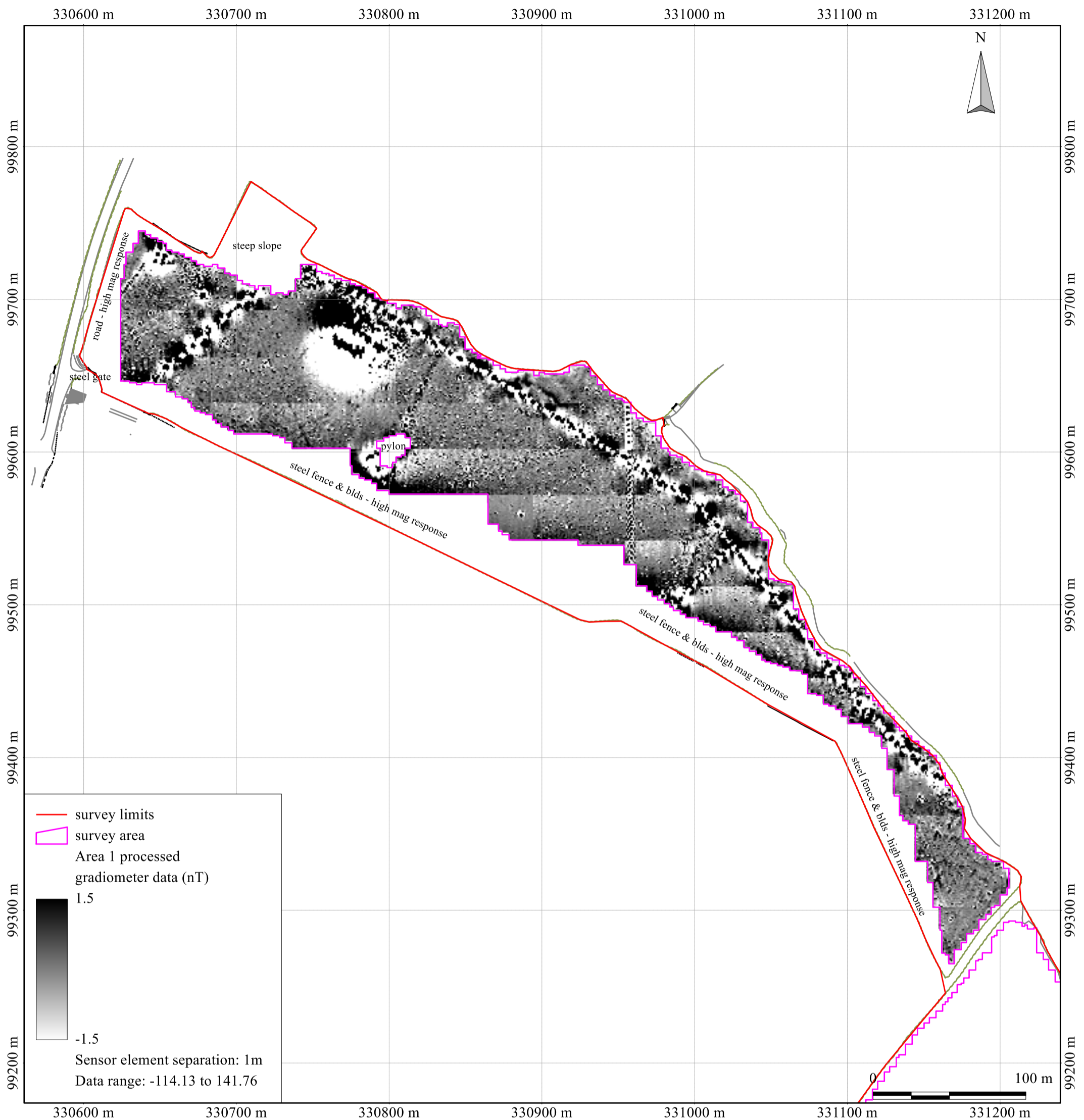
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. 'Anomaly type' is a description of the magnetic anomaly. See the report text or GIS for an archaeological characterisation.
3. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
4. Not all instances are mapped.
5. Anomalies likely to represent recent deposits or ground disturbance, or geological and other natural deposits are not mapped unless relevant to potential buried archaeology.

An archaeological magnetometer survey
Land at east of Axminster, Devon
Centred on NGRs: 330920,099580
331120,098990 and 330740,098010
Report: 1806AXM-R-1

Substrata Limited
Langstrath, Goodleigh
Barnstaple, Devon EX32 7LZ
Tel: 01271 342721
Email: enquiries@substrata.co.uk
Web: substrata.co.uk

Figure 5: survey interpretation, Area 3



British Grid
 centre X: 330900.24 m, centre Y: 99526.51 m

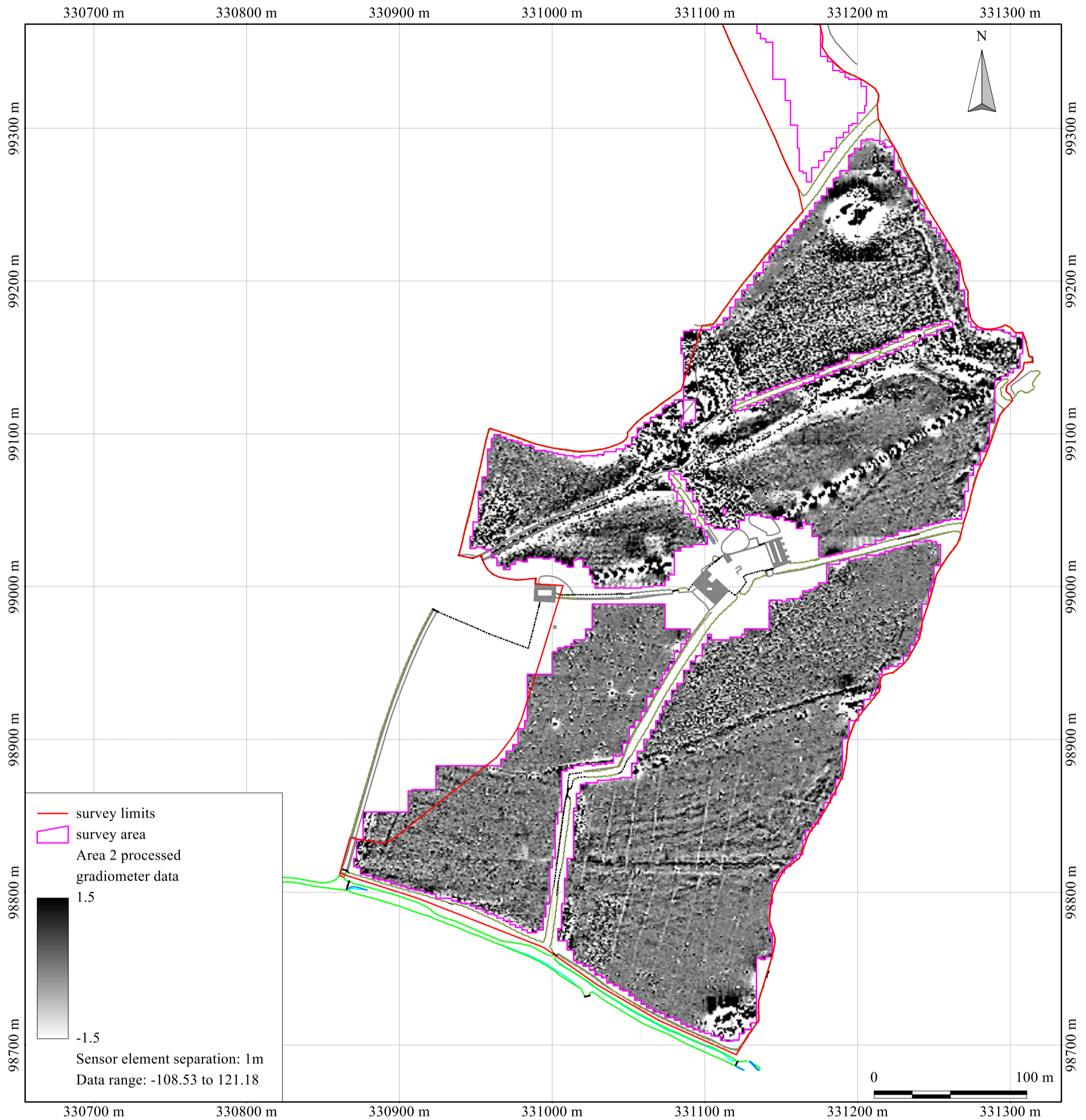
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 6: shade plot of processed data, Area 1



British Grid
 centre X: 330994.17 m, centre Y: 99015.47 m

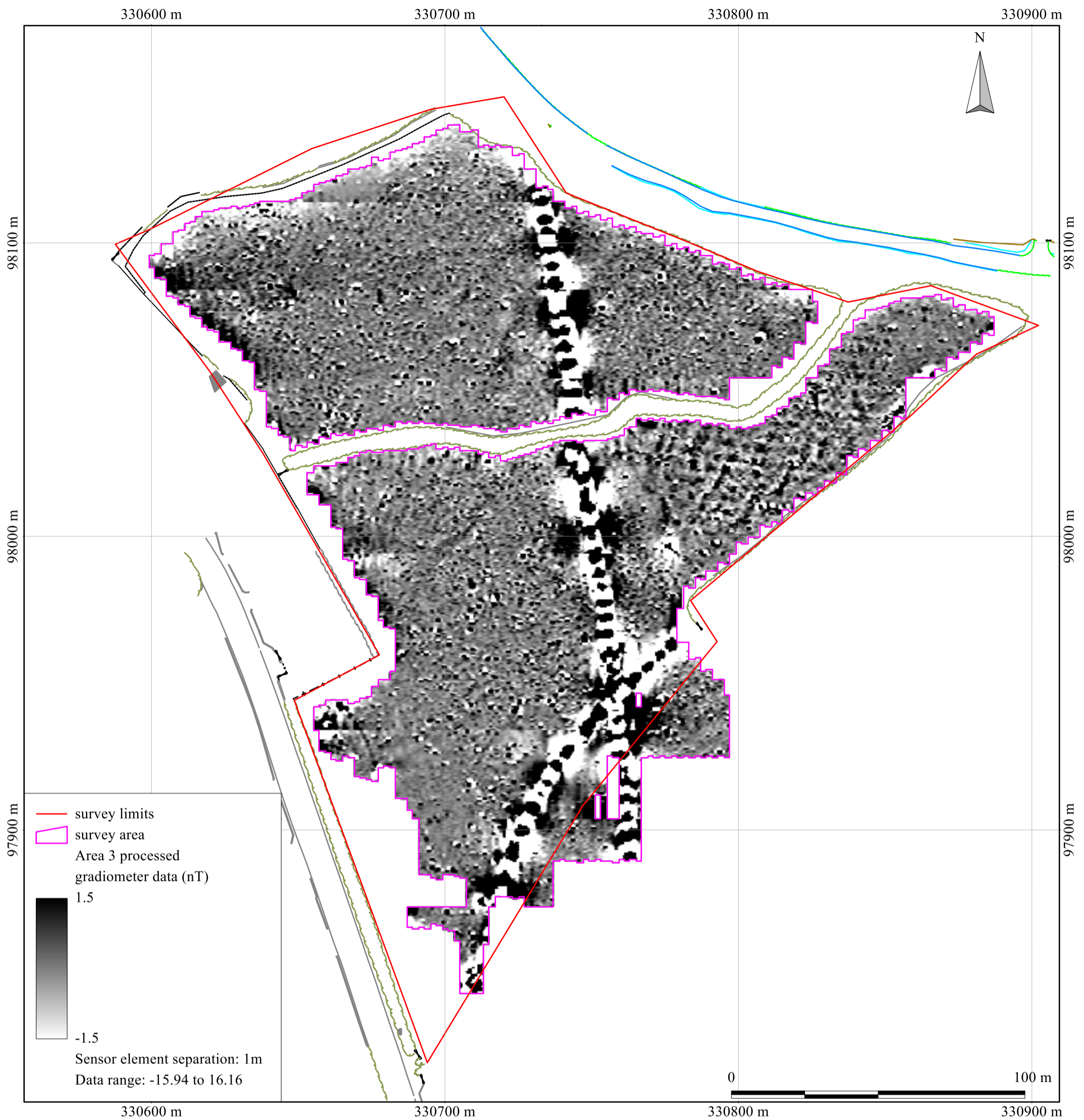
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 7: shade plot of processed data, Area 2



British Grid
 centre X: 330732.98 m, centre Y: 97990.65 m

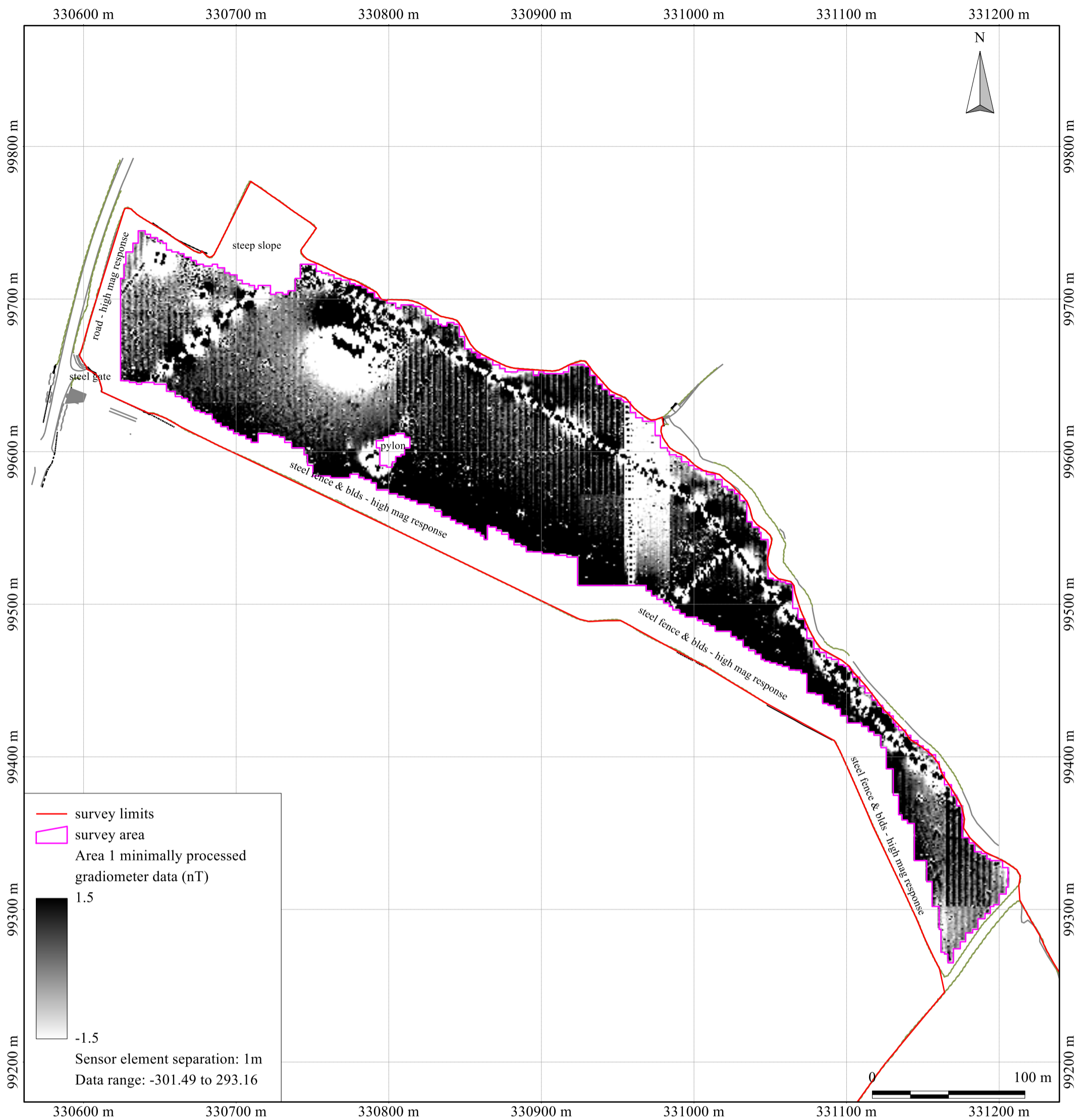
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:1300 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 8: shade plot of processed data, Area 3



British Grid
 centre X: 330900.24 m, centre Y: 99526.51 m

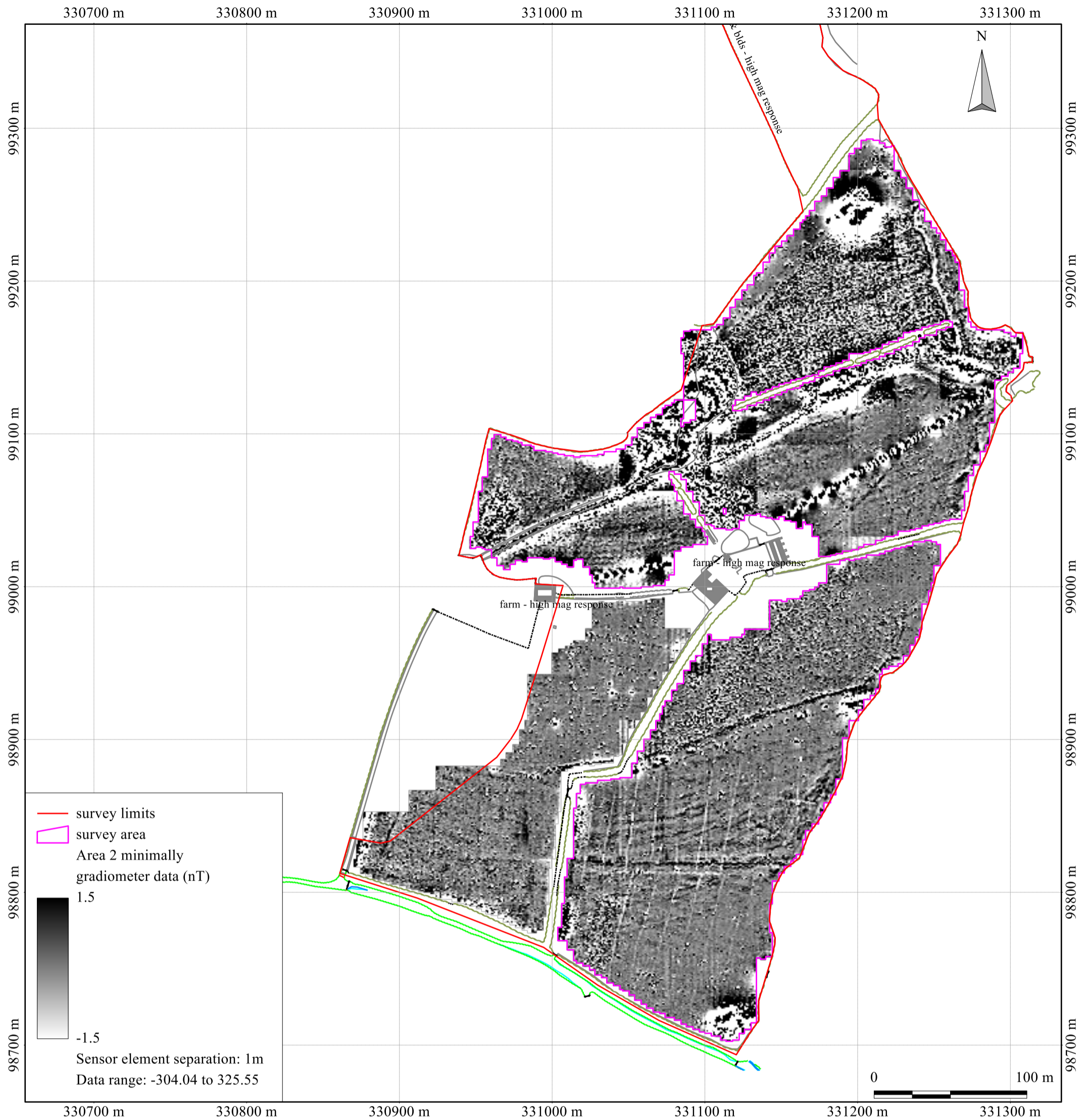
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 9: shade plot of minimally processed data, Area 1



British Grid
 centre X: 330994.17 m, centre Y: 99015.47 m

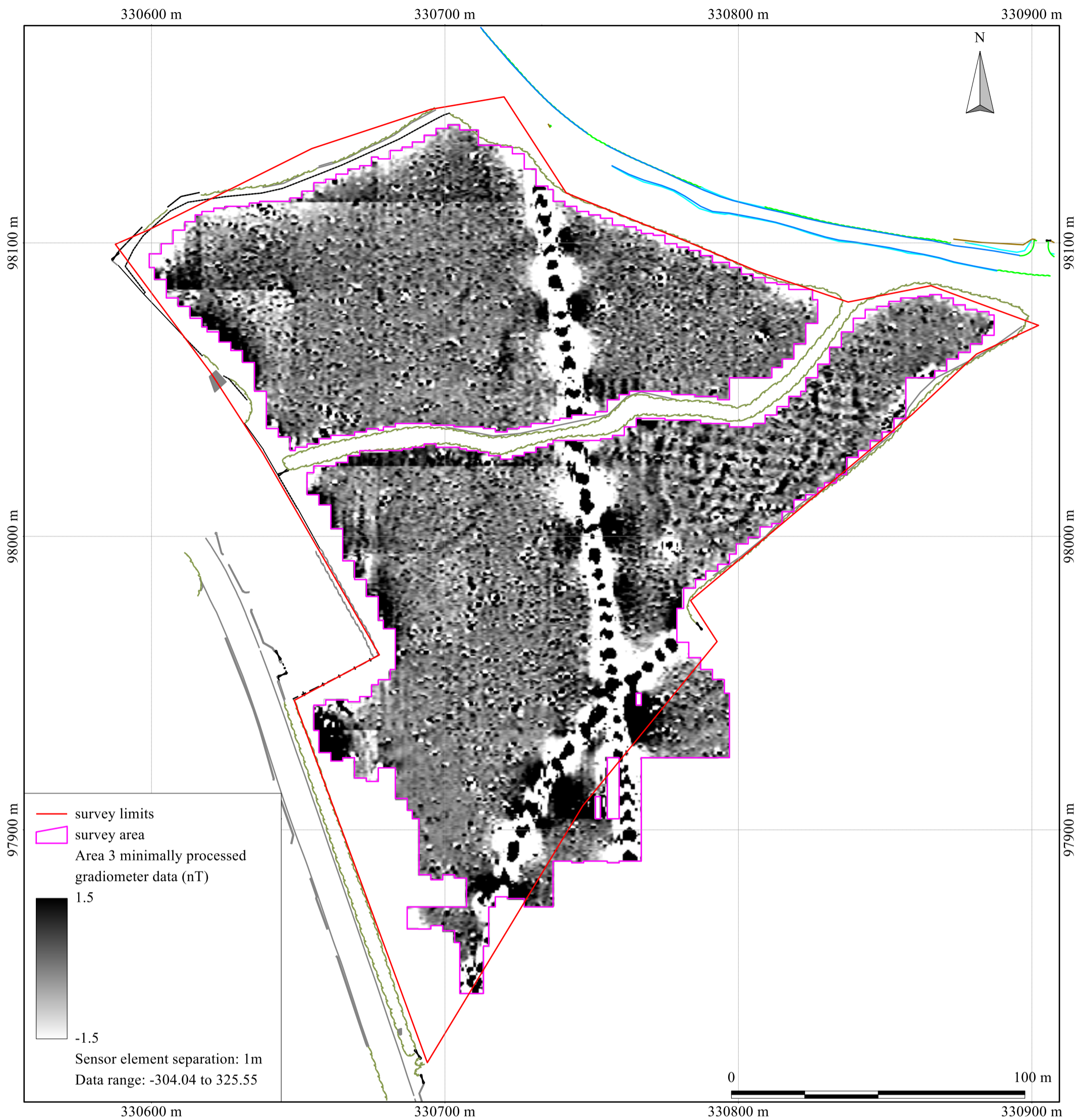
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 10: shade plot of minimally processed data, Area 2



British Grid
 centre X: 330732.98 m, centre Y: 97990.65 m

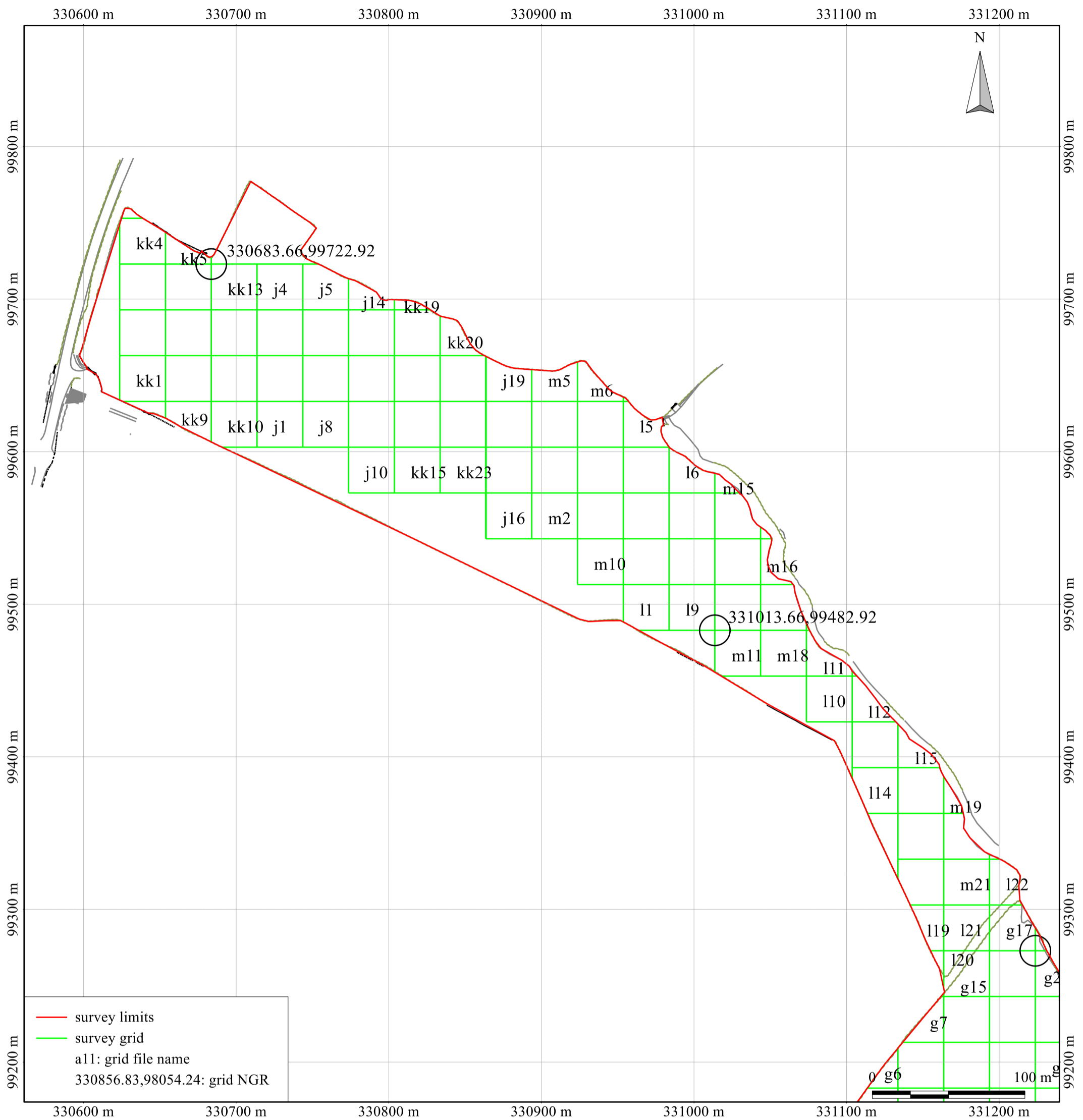
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:1300 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 11: shade plot of minimally processed data, Area 3



British Grid
 centre X: 330900.24 m, centre Y: 99526.51 m

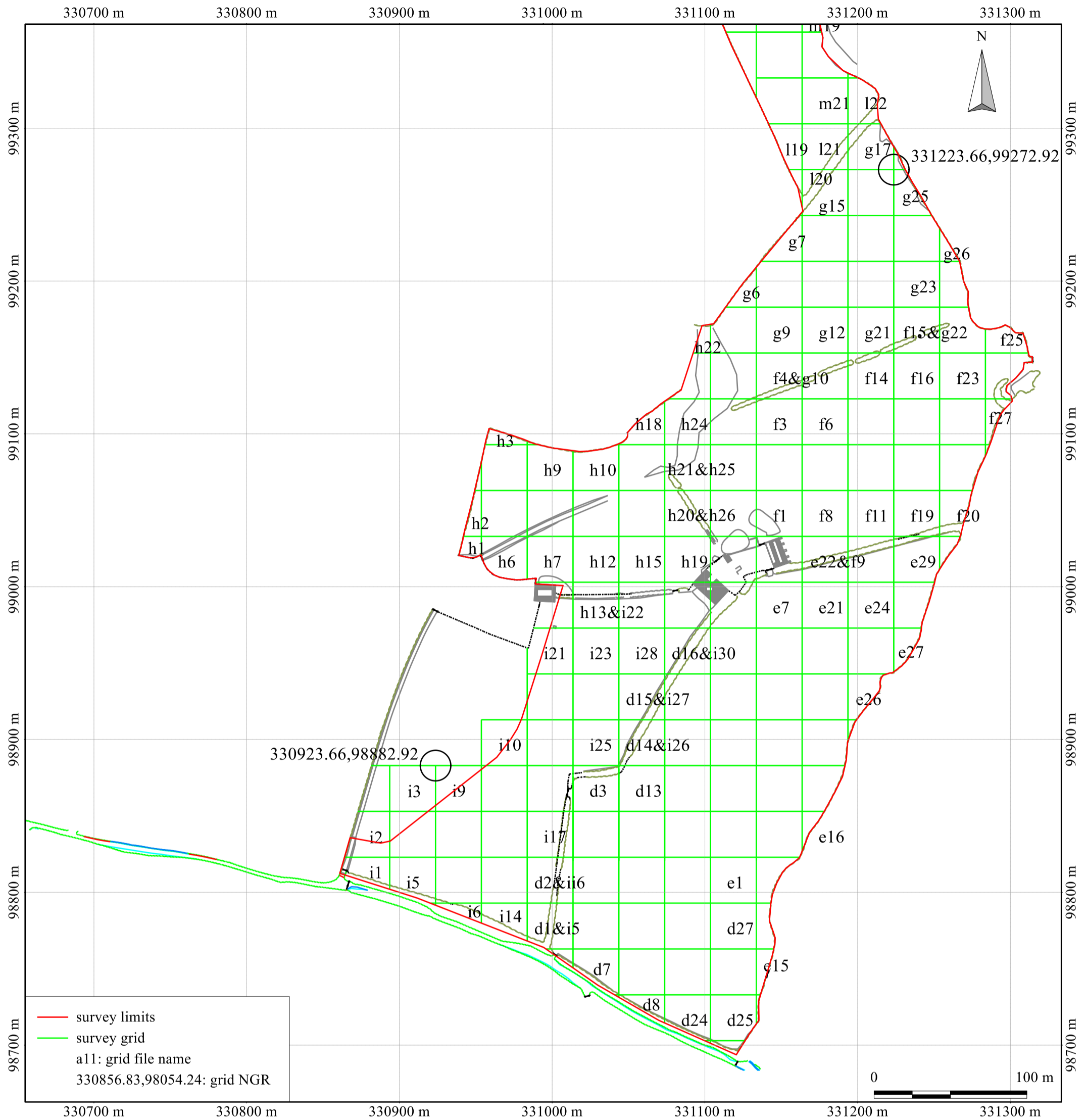
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 12: survey grid plan and location, Area 1



British Grid
 centre X: 330994.17 m, centre Y: 99015.47 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 13: survey grid plan and location, Area 2



British Grid
 centre X: 330732.98 m, centre Y: 97990.65 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
 All rights reserved. Licence number 100022432

Scale: 1:1300 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological magnetometer survey
 Land at east of Axminster, Devon
 Centred on NGRs: 330920,099580
 331120,098990 and 330740,098010
 Report: 1806AXM-R-1

Substrata Limited
 Langstrath, Goodleigh
 Barnstaple, Devon EX32 7LZ
 Tel: 01271 342721
 Email: enquiries@substrata.co.uk
 Web: substrata.co.uk

Figure 14: survey grid plan and location, Area 3

Appendix 2 Tables

Site: Land at east of Axminster, Devon,

Centred on NGRs: 330920,099580 331120,098990 & 330740,098010

area	plot	anomaly group	associated anomalies	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1	1	1		likely, strong positive		iron, steel or concrete	anomaly group is close to the site of an medieval/post-medieval extraction pit or pit associated with adjacent dam	HER MDV119070
	1	2		likely, enhanced		stonny deposits and disturbed ground with ferrous material	anomaly group is close to the location of a possible medieval mill dam shown on historic maps, aerial photographs and lidar data	HER MDV48828; Ordnance Survey maps 1890 1:2500 to 1959 1:2500
	1	3		likely, enhanced	disrupted linear	ground disturbance and stony material associated with a former field boundary	anomaly group coincides with, and likely represents, a field boundary recorded on historic maps up to at least 1972	1842 Axminster Tithe Map, Ordnance Survey maps 1890 1:2500 to 1972 1:10560
	1	4		likely, enhanced	disrupted linear	ground disturbance and stony material associated with a former field boundary	anomaly group may represent ground disturbance and stony deposits associated with a field boundary recorded on historic maps up to at least 1972	1842 Axminster Tithe Map, Ordnance Survey maps 1890 1:2500 to 1972 1:10560
	1	301		possible, high contrast linear		ferrous cable or pipe		
	1	302		possible, high contrast linear		ferrous cable or pipe	anomaly group is near and may represent a watermain, the approximate route of which was recorded in 2015	Source 1
	1	303		likely, low contrast linear		service trench - storm drain	anomaly group coincides with a storm drain recorded in 2015	Source 1
	1	304		possible, high contrast linear		ferrous cable or pipe		
	1	305		possible, strong response		ferrous material		
	1	306		possible, high contrast linear		ferrous cable or pipe		
2	2	5		likely, strong positive		steel and/or concrete and/or heated material	anomaly group coincides with the location of a limekiln and old quarry recorded on historic maps until 1905 and 1938 respectively	HER MDV70589 and MDV70588; Ordnance Survey maps 1890 1:2500 to 1938 1:10560
	2	6		likely, negative	disrupted linear	field boundary	anomaly group coincides with a field boundary recorded on historic maps and removed before 1972	Ordnance Survey maps 1890 1:2500 to 1963 1:10560, 1972 1:2500
	2	7		possible, positive	disrupted linear			
	2	8		possible, positive	linear			
	2	9		possible, positive	linear			
	2	10		possible, enhanced	trapezoid	stonny material	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material	HER MDV119134
	2	11		possible, enhanced	irregular	stonny material	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material	HER MDV119134
	2 3	12		likely, high contrast	elongated oval	industrial deposits with internal (dumping?) structures: stony material with heated material and/or ferrous material	anomaly group coincides with and represents a still partially extant post-medieval spoil heap recorded on historic maps, 1940s aerial photographs and lidar 1998 to 2014; likely to represent heated deposits with internal (dumping?) structures: stony material with heated material and/or ferrous material	HER MDV119134; Ordnance Survey maps 1959 1:2500 and 1972 1:2500
	6	13		likely, high contrast	elongated oval	industrial deposits with internal (dumping?) structures at SW end: stony material with heated material and/or ferrous material	anomaly group coincides with and represents a post-medieval spoil heap recorded on historic maps, 1940s aerial photographs and lidar 1998 to 2014; likely to represent industrial deposits with internal (dumping?) structures: stony material with heated material and/or ferrous material	HER MDV119134; Ordnance Survey maps 1959 1:2500 and 1972 1:2500
	6	14		possible, enhanced	sub-rectangular	stonny deposits	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material	HER MDV119134
	6	15		possible, enhanced	irregular	stonny deposits with some ferrous material	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material with some ferrous material of unknown origin	HER MDV119134
	3 4 6	16		likely, neg/pos/neg	disrupted linear	raised trackway with heated material and/or ferrous material	anomaly group coincides with and likely represents part of a post-medieval hardened raised trackway recorded on historic maps, 1940s aerial photographs and lidar 1998 to 2014; it is possible that the negative components are 'shadow anomalies' of the high positive central element implying that the track is mainly composed of heated and/or ferrous-rich material	HER MDV119134; Ordnance Survey maps 1890 1:2500 to 1972 1:2500
	3	17		possible, enhanced	irregular	stonny deposits with some ferrous material	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material with some ferrous material of unknown origin	HER MDV119134
	6	18		possible, enhanced	irregular	stonny deposits with some heated and or ferrous material	anomaly group is adjacent to anomaly groups representing raised trackways and spoilheaps and may represent dumped stony material with some ferrous material of unknown origin	HER MDV119134
	6	19		possible, positive	disrupted linear	ditch or field drain		
	8	20	21?	possible, positive	curvilinear	field boundary preceding current boundary ?		
	8	21	20? 22? 23? 24?	likely, positive	disrupted linear	field boundary	anomaly group coincides with a field boundary recorded on historic maps and removed before 1972	Ordnance Survey maps 1890 1:2500 to 1963 1:10560, 1972 1:2500
	7	22	21? 23? 24?	possible, positive	linear			
	7	23	21? 22? 24?	possible, enhanced	linear			
	7	24	21?22? 23?	likely, enhanced		field boundary	anomaly group coincides with, and likely represents, a field boundary recorded using aerial photographs and lidar	HER MDV119080
	7	25		possible, positive	disrupted linear			
	8	26		possible, positive	disrupted linear			
	8	27		possible, enhanced	sub-circular	disturbed ground, stony deposits with some ferrous material	anomaly group may represent an area of fill covering a former quarry or damp ground; earthworks and vegetation recorded on an RAF aerial photograph 1946-49	Source 2
	8	101		possible, repeated parallels		cultivation traces	anomaly group may represent traces of ploughing or ridge-and-furrow	
	8	102		likely, regular linears		catchmeadow or drainage ditches	anomaly group coincides with, and likely represents, a series of earthwork ditches recorded using aerial photographs and lidar and thought to represent remains of a post-medieval or 19th century catchmeadow	HER MDV119107
	8	103		possible, regular linears		drainage ditches	anomaly group may represent an extension or different phase of the catchmeadow ditch system recorded at the same location	HER MDV119107
	6	309		possible, high contrast linear		ferrous cable or pipe		
	3	310		possible, regular narrow linears		field drains		
	6	311		possible, high contrast linear		ferrous cable or pipe		
	6	312		possible, regular narrow linears		field drains		
4	313		possible, high contrast linear		ferrous cable or pipe			
7	314		possible, regular narrow linears		field drains	anomaly group does NOT represent elements of a catch meadow recorded in this location using aerial photographs and lidar - no evidence for this in the survey data	HER MDV119129	
8	315		possible, strong response	irregular	ferrous material			
3	10	104		likely, repeated parallels		orchard banks	anomaly group coincides with possible post-medieval orchard banks recorded using aerial photographs and lidar	HER MDV119086
	10	105		possible, repeated parallels		cultivation traces	anomaly group may represent cultivation traces along the contour lines of a slope	
	9 10	316		likely, high contrast linear		water main	anomaly group likely to represent a watermain, the approximate route of which was recorded in 2015	Source 1
	10	317		likely, high contrast linear		water main	anomaly group likely to represent a watermain, the approximate route of which was recorded in 2015	Source 1

Table 1: data analysis

Sources used:

- Hydrock Consultants Ltd, (2015). Outline Utility Assessment, Land East of Axminster. Unpublished draft report for planning R/C14487/001
- Devon County Council, (undated). Historic Environment. [online] Available at <https://new.devon.gov.uk/historicenvironment/>

<p>Grid <i>Method of Fixing:</i> DGPS set-out using pre-planned survey grids and Ordnance Survey coordinates. <i>Composition:</i> 30m by 30m grids <i>Recording:</i> Geo-referenced and recorded using digital map tiles. <i>DGPS used:</i> Spectra Precision PM5V2 GPS with external antenna and survey pole and DigiTerra Explorer 7 as the survey control program.</p>	
<p>Equipment <i>Instrument:</i> Bartington Instruments grad601-2 <i>Firmware:</i> version 6.1</p>	<p>Data Capture <i>Sample Interval:</i> 0.25m <i>Traverse Interval:</i> 1 metre <i>Traverse Method:</i> zigzag <i>Traverse Orientation:</i> GN</p>
<p>Data Processing, Analysis and Presentation Software IntelliCAD 8.4 DW Consulting TerraSurveyor3 Manifold System 8 GIS Microsoft Corp. Office 365: Excel, Publisher, Word Adobe Systems Inc Adobe Acrobat 9 Pro Extended</p>	

Table 2: methodology information

<p>Instrument Type: Bartington Grad-601 gradiometer Units: nT Direction of 1st Traverse: see below Collection Method: ZigZag Sensors: 2 @ 1.00 m spacing, each with 1m separation Dummy Value: 32702</p>	
<p>Program Name: TerraSurveyor Version: 3.0.33.6</p>	
<p><u>Statistics</u> Max: 141.76 Min: -114.13 Std Dev: 18.70 Mean: -0.53 Median: 0.00 Surveyed Area: 5.15ha</p>	<p><u>Processing</u> 1 Base Layer 2 Clip at 1.00 SD 3 Clip at 3.00 SD 4 DeStripe Median Traverse: Grids: l20.xgd l19.xgd l21.xgd l18.xgd m21.xgd l22.xgd l17.xgd m20.xgd l14.xgd l16.xgd m19.xgd l13.xgd l15.xgd l12.xgd 5 DeStripe Median Traverse: Grids: l13.xgd l10.xgd l12.xgd m11.xgd m18.xgd l11.xgd m12.xgd m17.xgd m13.xgd m16.xgd m14.xgd 6 DeStripe Median Traverse: Grids: l9.xgd l8.xgd l7.xgd l6.xgd 7 DeStripe Median Traverse: Grids: m2.xgd m9.xgd m3.xgd m8.xgd m4.xgd m7.xgd m5.xgd m6.xgd 8 DeStripe Median Traverse: Grids: kk15.xgd kk23.xgd j17.xgd kk16.xgd kk22.xgd j18.xgd kk17.xgd kk21.xgd j19.xgd kk18.xgd kk20.xgd 9 DeStripe Median Traverse: Grids: kk11.xgd j2.xgd kk12.xgd j3.xgd kk13.xgd j4.xgd 10 DeStripe Median Traverse: Grids: kk2.xgd kk7.xgd kk3.xgd kk6.xgd kk4.xgd kk5.xgd 11 DeStripe Median Traverse: Grids: kk24.xgd 12 DeStripe Median Traverse: Grids: j16.xgd 13 Edge Match (Area: Top 210, Left 1200, Bottom 239, Right 1319) to Right edge 14 Edge Match (Area: Top 240, Left 1200, Bottom 269, Right 1319) to Right edge 15 Edge Match (Area: Top 300, Left 1080, Bottom 329, Right 1199) to Right edge 16 DeStripe Median Traverse: Grids: m10.xgd 17 Edge Match (Area: Top 300, Left 1080, Bottom 329, Right 1199) to Right edge 18 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 291, Left 1036, Bottom 336, Right 1136) 19 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 207, Left 1200, Bottom 246, Right 1240) 20 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 203, Left 1216, Bottom 224, Right 1264) 21 DeStripe Median Traverse: Grids: j8.xgd j11.xgd 22 Edge Match (Area: Top 90, Left 1440, Bottom 119, Right 1559) to Bottom edge 23 Edge Match (Area: Top 60, Left 1440, Bottom 89, Right 1559) to Bottom edge 24 DeStripe Median Traverse: Grids: kk10.xgd 25 DeStripe Median Traverse: Grids: kk8.xgd 26 Edge Match (Area: Top 120, Left 1320, Bottom 149, Right 1439) to Right edge 27 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 117, Left 1340, Bottom 150, Right 1396) 28 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 72, Left 1436, Bottom 93, Right 1480) 29 Range Match (Area: Top 240, Left 1200, Bottom 269, Right 1319) to Right edge 30 Range Match (Area: Top 210, Left 1200, Bottom 239, Right 1319) to Right edge 31 Edge Match (Area: Top 210, Left 1200, Bottom 239, Right 1319) to Right edge 32 Edge Match (Area: Top 240, Left 1200, Bottom 269, Right 1319) to Right edge 33 Edge Match (Area: Top 240, Left 1200, Bottom 269, Right 1319) to Bottom edge 34 Edge Match (Area: Top 330, Left 1440, Bottom 359, Right 1559) to Top edge 35 Edge Match (Area: Top 330, Left 1320, Bottom 359, Right 1439) to Top edge 36 Edge Match (Area: Top 330, Left 1200, Bottom 359, Right 1319) to Top edge 37 DeStripe Median Traverse: Grids: l2.xgd l3.xgd l4.xgd 38 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 257, Left 1104, Bottom 328, Right 1188) 39 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 201, Left 1220, Bottom 240, Right 1296) 40 Edge Match (Area: Top 210, Left 1200, Bottom 239, Right 1319) to Right edge 41 Edge Match (Area: Top 210, Left 1200, Bottom 239, Right 1319) to Bottom edge 42 Edge Match (Area: Top 180, Left 1200, Bottom 209, Right 1319) to Bottom edge 43 Edge Match (Area: Top 30, Left 1440, Bottom 59, Right 1559) to Bottom edge</p> <p>Interpolate match x & y double is imposed on export to the GIS</p>

Table 3: processed data metadata, Area 1

Instrument	
Type:	Bartington Grad-601 gradiometer
Units:	nT
Direction of 1st Traverse:	see below
Collection Method:	ZigZag
Sensors:	2 @ 1.00 m spacing, each with 1m separation
Dummy Value:	32702
Program	
Name:	TerraSurveyor
Version:	3.0.33.6
<u>Statistics</u>	<u>Processing</u>
Max:	293.16
Min:	-301.49
Std Dev:	34.47
Mean:	0.02
Median:	0.90
Surveyed Area:	5.41ha
	1 Base Layer
	2 Clip at 1.00 SD
	Interpolate match x & y double is imposed on export to the GIS

Table 4: minimally processed data metadata, Area 1

<p>Instrument Type: Bartington Grad-601 gradiometer Units: nT Direction of 1st Traverse: see below Collection Method: ZigZag Sensors: 2 @ 1.00 m spacing, each with 1m separation Dummy Value: 32702</p>	
<p>Program Name: TerraSurveyor Version: 3.0.33.6</p>	
<p><u>Statistics</u> Max: 121.18 Min: -108.53 Std Dev: 16.20 Mean: -0.24 Median: 0.00 Surveyed Area: 10.41ha</p>	<p><u>Processing</u> 1 Base Layer 2 Clip at 1.00 SD 3 Clip at 1.00 SD 4 DeStripe Median Traverse: Grids: All 5 Search & Replace From: -3000 To: 3000 With: Dummy (Area: Top 157, Left 1144, Bottom 212, Right 1168) 6 Range Match (Area: Top 330, Left 1200, Bottom 359, Right 1319) to Left edge 7 De Stagger: Grids: i6.xgd i14.xgd d1+i15.xgd i1.xgd i5.xgd i7.xgd i13.xgd i16+d2.xgd i2.xgd i4.xgd i8.xgd i12.xgd i17.xgd i3.xgd i9.xgd i11.xgd i18.xgd By: 0 intervals, 25.00cm 8 De Stagger: Grids: i25.xgd By: 0 intervals, 25.00cm 9 De Stagger: Grids: g14.xgd g19.xgd g15.xgd g18.xgd g17.xgd By: 0 intervals, 25.00cm</p> <p>Interpolate match x & y double is imposed on export to the GIS</p>

Table 5: processed data metadata, Area 2

Instrument	
Type:	Bartington Grad-601 gradiometer
Units:	nT
Direction of 1st Traverse:	see below
Collection Method:	ZigZag
Sensors:	2 @ 1.00 m spacing, each with 1m separation
Dummy Value:	32702
Program	
Name:	TerraSurveyor
Version:	3.0.33.6
<u>Statistics</u>	<u>Processing</u>
Max:	325.55
Min:	-304.04
Std Dev:	47.83
Mean:	-0.82
Median:	0.00
Surveyed Area:	10.43ha
	1 Base Layer
	2 Clip at 1.00 SD
	3 Clip at 4.00 SD
	4 DeStripe Median Sensors: Grids: All
	Interpolate match x & y double is imposed on export to the GIS

Table 6: minimally processed data metadata, Area 2

Instrument	
Type:	Bartington Grad-601 gradiometer
Units:	nT
Direction of 1st Traverse:	see below
Collection Method:	ZigZag
Sensors:	2 @ 1.00 m spacing, each with 1m separation
Dummy Value:	32702
Program	
Name:	TerraSurveyor
Version:	3.0.33.6
<u>Statistics</u>	<u>Processing</u>
Max:	16.16
Min:	-15.94
Std Dev:	4.01
Mean:	-0.04
Median:	0.00
Surveyed Area:	3.47ha
	1 Base Layer
	2 Clip at 1.00 SD
	3 Clip at 3.00 SD
	4 DeStripe Median Traverse: Grids: All
	5 De Stagger: Grids: All By: 0 intervals, 50.00cm
	6 Range Match (Area: Top 60, Left 1080, Bottom 89, Right 1199) to Left edge
	7 Edge Match (Area: Top 74, Left 720, Bottom 149, Right 756) to Left edge
	8 Edge Match (Area: Top 90, Left 1080, Bottom 119, Right 1199) to Left edge
	9 Edge Match (Area: Top 120, Left 1080, Bottom 149, Right 1199) to Top edge
	10 Edge Match (Area: Top 60, Left 1080, Bottom 89, Right 1199) to Bottom edge
	11 Add/Subtract 1 (Area: Top 30, Left 931, Bottom 59, Right 959)
	12 Clip at 1.00 SD
	Interpolate match x & y double is imposed on export to the GIS

Table 7: processed data metadata, Area 3

Instrument	
Type:	Bartington Grad-601 gradiometer
Units:	nT
Direction of 1st Traverse:	see below
Collection Method:	ZigZag
Sensors:	2 @ 1.00 m spacing, each with 1m separation
Dummy Value:	32702
Program	
Name:	TerraSurveyor
Version:	3.0.33.6
<u>Statistics</u>	<u>Processing</u>
Max:	325.55
Min:	-304.04
Std Dev:	47.83
Mean:	-0.82
Median:	0.00
Surveyed Area:	10.43ha
	1 Base Layer
	2 Clip at 1.00 SD
	3 Clip at 4.00 SD
	4 DeStripe Median Sensors: Grids: All
	Interpolate match x & y double is imposed on export to the GIS

Table 8: minimally processed data metadata, Area 3

Appendix 3 Project archive contents

A3.1 Substrata Limited archive

A full archive of this survey will be held by Substrata Limited on cloud and local hard drive storage as follows:

Report:	Adobe PDF (.pdf), Microsoft Publisher (.pub)
Raw grid data files:	DW Consulting TerraSurveyor 3 (.xgd) and XYZ (.dat)
Minimally processed data composite files:	DW Consulting TerraSurveyor 3 (.xgd) and ESRI ASCII (.asc)
Final data processing composite files:	DW Consulting TerraSurveyor 3 (.xgd) and ESRI ASCII (.asc)
GIS project:	GIS project Manifold 8 (.map)
Survey interpretation:	ESRI shape files
AutoCAD version of the survey interpretation: (if generated)	AutoCAD (.dwg)
All project working files:	IntelliCAD 8.4 Microsoft Corp. Office 365: Excel, Publisher, Word Adobe Systems Inc Adobe Acrobat 9 Pro Extended

A3.2 Online Access to the Index of archaeological investigationS (OASIS)

Metadata:	online form
Georeferenced survey boundary file:	ESRI shape file
Report:	Adobe PDF (.pdf)

A3.3 Archaeological Data Service

Depending on local authority policy, an archive may be deposited with the ADS as follows:

Raw data composite file:	XYZ file
Processed data plot:	rendered images in TIFF format
Survey grid plot:	image in TIFF format
Details of data processing:	image in TIFF format
Interpretation plot:	rendered images in TIFF format
Metadata:	Microsoft Excel format

A3.4 Historic Environment Record (HER)

Subject to any contractual requirements on confidentiality, a PDF copy of the report will be submitted to the appropriate HER within 6 months of the completion of this report via the OASIS process or by other means, depending on the relevant HER process.