



An archaeological magnetometer survey

**Land off Parsonage Street
Bradninch, Devon**

Centred on NGR (E/N): 300560,104000

Report: 1707BRA-R-1

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17 December 2017

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Project archive

Report	Adobe PDF format
Raw and processed grid & composite files	DW Consulting TerraSurveyor 3 formats
Minimal processing data plots and metadata.....	DW Consulting TerraSurveyor 3 formats
Final data processing data plots and metadata	DW Consulting TerraSurveyor 3 formats
GIS project, shape files and classification schema	
GIS project	Manifold 8 '.map' file
GIS shape files.....	ESRI standard
GIS classification schema.....	Adobe PDF format
AutoCAD version of the survey interpretation	AutoCAD DXF

Website: substrata.co.uk

For an overview of Substrata, our archaeological geophysical surveying techniques and the results we obtain.

1 Survey description and summary

1.1 Survey

Type: twin-sensor fluxgate gradiometer
Date: 25 July 2017
Area: 1.4ha
Lead surveyor: Mark Edwards BA
Author: Ross Dean BSc MSc MA MifA
with John Valentin, AC Archaeology (Section 6)

1.2 Clients

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

1.3 Location

Site: Land off Parsonage Street
Town: Bradninch
District: Mid Devon
County: Devon
Nearest Postcode: EX5 4NW
NGR: ST 00560 04000 (point)
NGR (E/N): 300560,104000 (point)

1.4 Archive

OASIS number: substrat1-304217
Archive: At the time of writing, the archive of this survey will be held by Substrata. Depending on local authority policy, an archive of the unprocessed data may be deposited with the Archaeological Data Service

1.5 Introduction

This report presents the results of an archaeological magnetometer survey at the above site. It has been prepared for AC Archaeology Ltd as part of a Bradninch community research project. The survey area location is shown in Figure 1.

There is aerial photographic evidence for an potentially pre-historic or Romano-British enclosure within the survey area. This survey was designed to test for the presence and nature of any such enclosure.

1.6 Summary

The magnetic responses across the survey area were sufficient to be able to differentiate between anomalies representing possible archaeological features and background magnetic responses.

Fifty-eight magnetic anomaly groups were mapped as representing potential archaeological deposits or features. An enclosure originally mapped using aerial photographic evidence was clear in the dataset. Five groups external to the enclosure have characteristics typical of anomalies representing fragments of former field or enclosure boundaries of unknown date. Two similar groups were recorded within the enclosure and may represent similar deposits or features related to the enclosure. An area of enhanced magnetic response may represent disrupted archaeological deposits within the enclosure. The remaining anomaly groups mapped as representing potential archaeological deposits have characteristics typical of filled hollows or pits. Many will represent natural deposits but they are recorded as potential archaeological deposits given their proximity to the enclosure.

2 Survey aims and objectives

2.1 Aims

To establish the presence or absence, extent and character of any archaeological features and deposits within the survey area.

2.2 Survey objectives

1. Complete a magnetometer survey across agreed parts of the survey area.
2. Identify any magnetic anomalies that may be related to archaeological deposits, structures or artefacts.
3. Within the limits of the techniques 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 is sufficiently detailed to inform any subsequent development on the survey area about the location and possible archaeological character of the recorded anomalies.

3 Methodology

The work was undertaken in accordance with the survey methodology statement (Dean, 2017).

The survey grid location information and grid plan were recorded as part of the project in a suitable GIS system (Table 3).

Data processing was undertaken using appropriate software (Table 3), 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.

4 Standards

The standards used to complete this survey are defined by the Chartered Institute for Archaeologists (2014a) and Historic England (2010). The codes of approved practice that were followed are those of the Chartered Institute for Archaeologists (2014b) and Archaeology Data Service (undated).

5 Site description

5.1 Landscape and land use

The survey area comprised part of an agricultural field on the eastern side of the town of Bradninch, Devon (Figure 1). The land slopes north to south from approximately 97m to 90m AOD.

5.2 Geology

The bedrock across the site comprises breccia of the Permian Cadbury Breccia Formation. Generically these rocks are brown to reddish-brown unbedded to very roughly bedded breccia, consisting of angular to subrounded pebbles and cobbles of Culm Sandstone in a very poorly sorted gritty, clayey, sandy, silt. The clasts are mainly locally derived Culm Sandstone generally not exceeding 0.3m diameter; other clasts include vein quartz, chert and fossiliferous sandstone of Pilton Beds type (British Geological Survey, undated).

The superficial deposits for the site are not recorded in the source used (ibid).

6 Archaeological background

6.1 Historic landscape characterisation

‘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 (Devon County Council, undated).

6.2 Summary of archaeological background

The main archaeological interest in the site is that a double-ditched enclosure with rounded corners is visible as a cropmark on aerial photographs and is represented by an outer ditch 85m across and inner ditch (almost square) 55m across (Devon Historic Environment Record MDV 1433). The enclosure is likely to be of late prehistoric or Romano-British date. Fieldwalking on and adjacent to the enclosure produced a small quantity of prehistoric worked flint and chert (MDV 44081).

7 Results, discussion and conclusions

7.1 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 changes in the magnetism 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 terms 'archaeological deposit', 'structure' and 'feature' refer to any artefacts, material deposits or disturbance of natural deposits thought to be the result of human activity, excluding recent land maintenance and farming.

Magnetic anomalies cannot be regarded as physical archaeological deposits, structures or features and the dimensions of the anomalies shown do not represent the dimensions of any associated archaeology.

The analysis presented below identifies and characterises anomalies and anomaly groups that may relate to archaeological deposits, structures and features.

The reader is referred to section 8.

7.2 Results

Figure 2 shows the interpretation of the survey data across the whole site. Figures 3 and 4 are larger scale maps showing the interpretation with numbered 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 and 4 along with Table 1 comprise the analysis of the survey data.

Figures 5 and 6 are plots of processed data as specified in Table 3. Figure 7 is a plot of the unprocessed data with its metadata.

7.3 Discussion

7.3.1 General points

Discussion 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 the survey archive.

Data collection

Data collection along the survey area edges was restricted as shown in the figures due to the presence of magnetic materials within and adjacent to boundaries. Strong magnetic responses mapped close to the boundaries are likely to relate to these materials except where otherwise indicated in Figures 2 to 4 and Table 1.

Anomaly characterisation and mapping

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 were mapped as potential archaeology when they were 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, water management equipment, drains, cables and other services were only mapped where they comprised significant magnetic responses across the dataset that needed clarification.

Numerous dipole magnetic anomalies are scattered across the data set. 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.

Trends

The parallel, curvilinear, northeast to southwest trending pattern visible in the data (Figure 5) is likely to represent modern ploughing disturbance.

7.3.2 Data relating to historic maps and other records

Magnetic anomaly groups **1** and **2** coincide with and likely represent cropmarks recorded on aerial photographs. As summarised in Section 6 above, the cropmark relates to a double-ditched enclosure with rounded corners and looks to have an outer ditch 85m across and an almost inner ditch 55m across (Devon Historic Environment Record MDV 1433).

7.3.3 Data with no previous archaeological provenance

Most of the other anomaly groups mapped as representing potential archaeological deposits have characteristics typical of filled hollows or pits. Many of these anomalies will represent natural deposits but their position relative to the enclosure discussed above means that they should be included in the analysis as potential archaeological deposits.

Groups **48**, **53**, **55**, **56** and **57** have characteristics typical of anomalies representing fragments of former field or enclosure boundaries of unknown date. Groups **15** and **28** have similar characteristics but lie within the enclosure opening up the possibility that they represent contemporary internal archaeological structures or deposits. Group **22**, an area of enhanced magnetic response, gives weight to the possibility of internal archaeological deposits associated with the enclosure.

7.4 Conclusions

The magnetic responses across the survey area were sufficient to be able to differentiate between anomalies representing possible archaeological features and background magnetic responses.

Fifty-eight magnetic anomaly groups were mapped as representing potential archaeological deposits or features. An enclosure originally mapped using aerial photographic evidence was clear in the dataset (groups 1 and 2). Five groups external to the enclosure (48, 53, 55, 56 and 57) have characteristics typical of anomalies representing fragments of former field or enclosure boundaries of unknown date. Two similar groups (15 and 28) were recorded within the enclosure and may represent similar deposits or features related to the enclosure. An area of enhanced magnetic response (22) may represent disrupted archaeological deposits within the enclosure. The remaining anomaly groups mapped as representing potential archaeological deposits have characteristics typical of filled hollows or pits. Many will represent natural deposits but they are recorded as potential archaeological deposits given their proximity to the enclosure.

8 Disclaimer and copyright

The description and discussion of the results presented in this report are the authors, based on his 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. The evaluation programme of which this survey is part may also be informed by other archaeological assessment work and analysis. It must be presumed that more archaeological features will be evaluated than those specified in this report.

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9 Acknowledgements

Substrata would like to thank John Valentin of AC Archaeology Ltd for commissioning us to complete this survey.

10 Bibliography

Archaeology Data Service (undated) *Archaeology Data Service/Digital Antiquity Guides to Good Practice: Geophysical Data in Archaeology* [Online], Available: http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_Toc [December 2017]

British Geological Survey (undated) *Geology of Britain viewer, 1:50000 scale data*, [Online], Available: http://www.bgs.ac.uk/discovering_Geology/geologyOfBritain/viewer.html [December 2017]

Chartered Institute for Archaeologists (2014a) *Standard and guidance archaeological geophysical survey*. Reading: Author [Online], Available: http://www.archaeologists.net/sites/default/files/CifAS&GGeophysics_1.pdf [December 2017]

Chartered Institute for Archaeologists (2014b) *Code of conduct*. Reading: Author [Online], <http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf> [December 2017]

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

Dean, R. (2017) *A survey method statement for a detailed magnetometer survey across land off Parsonage Street, Bradninch, Devon*. Substrata Ltd unpublished document 1707BRA-M-1

Devon County Council (undated) *Devon & Dartmoor Historic Environment Record* [Online], Available: <https://new.devon.gov.uk/historicenvironment/> [December 2017]

Historic England (2010) *Geophysical Survey in Archaeological Field Evaluation* [Online], Available: <https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/> [December 2017]

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: 300558.46 m, centre Y: 104032.01 m

Scale: 1:5000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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 Base map: Ordnance Survey (c) Crown Copyright 2017.
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An archaeological magnetometer survey
 Land off Parsonage Street, Bradninch, Devon
 Centred on NGR (E/N): 300560,104000 (point)
 Report: 1707BRA-R-1

Figure 1: location map

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British Grid
centre X: 300576.07 m, centre Y: 104010.16 m

Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

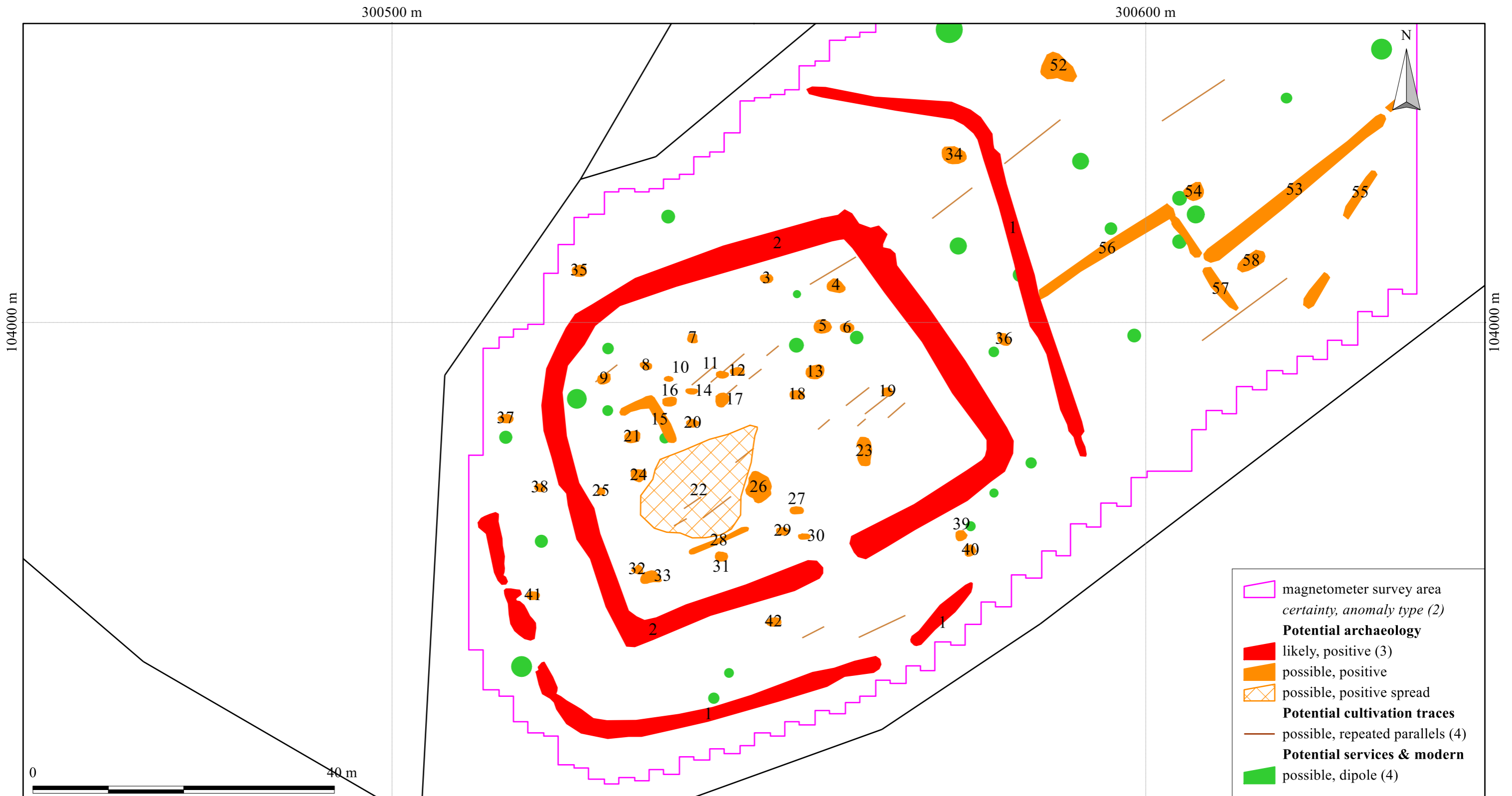
Geophysical survey: Copyright Substrata Limited.
Base map: Ordnance Survey (c) Crown Copyright 2017.
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- Notes:
1. All interpretations are provisional and represent potential archaeological deposits.
 2. 'Anomaly type' is a description of the magnetic 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 geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposits.

An archaeological magnetometer survey
Land off Parsonage Street, Bradninch, Devon
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Figure 2: survey interpretation

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British Grid
centre X: 300548.03 m, centre Y: 103988.36 m

Scale: 1:500 @ A3. Spatial Units: Meter. Do not scale off this drawing

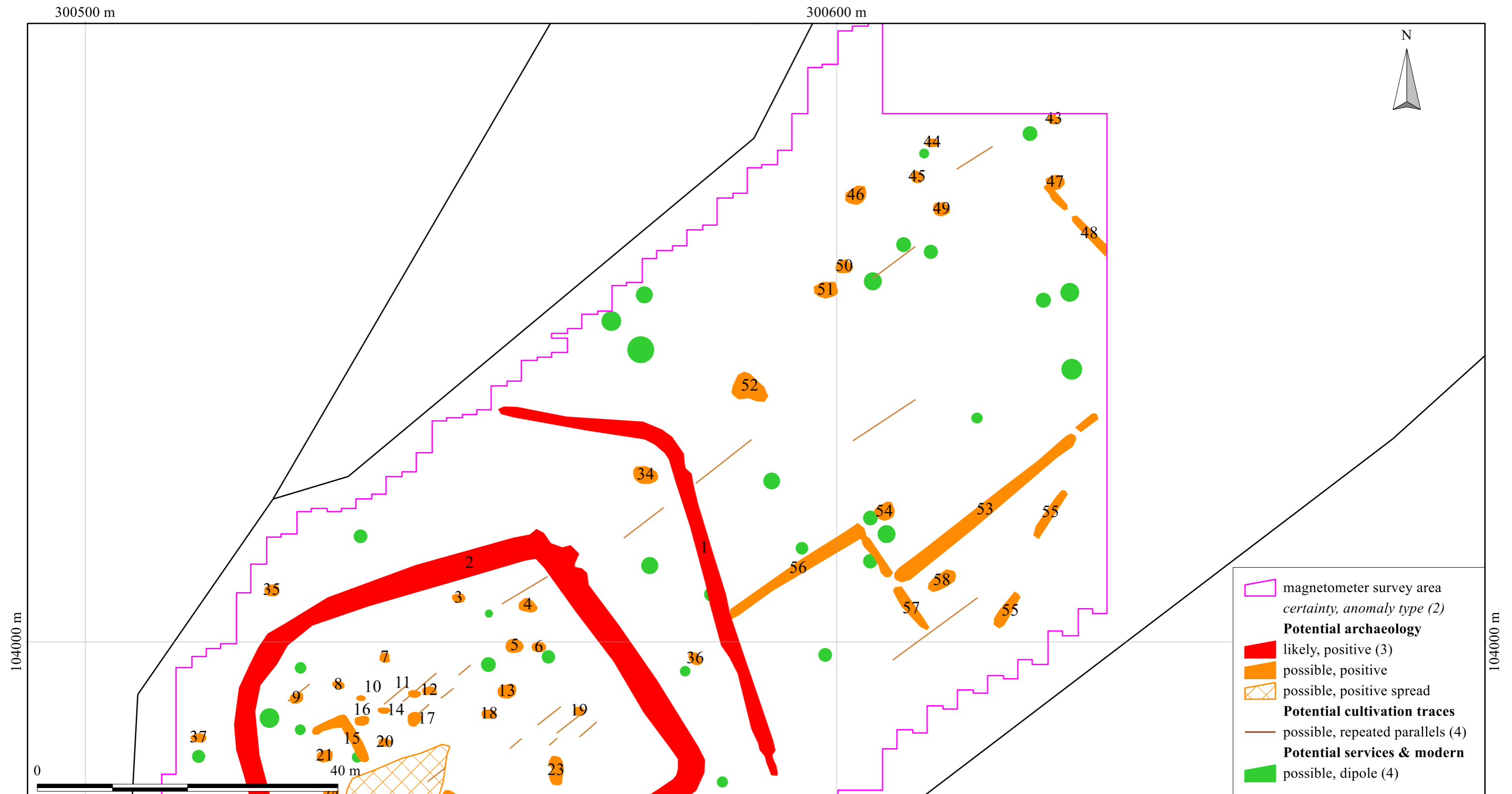
Geophysical survey: Copyright Substrata Limited.
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- Notes:
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An archaeological magnetometer survey
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Figure 3: survey interpretation, west

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Tel: 01271 342721
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Web: substrata.co.uk



British Grid
 centre X: 300589.30 m, centre Y: 104030.96 m

Scale: 1:500 @ A3. Spatial Units: Meter. Do not scale off this drawing

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- 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.
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An archaeological magnetometer survey
 Land off Parsonage Street, Bradninch, Devon
 Centred on NGR (E/N): 300560,104000 (point)
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Figure 4: survey interpretation, east

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British Grid
 centre X: 300576.07 m, centre Y: 104010.16 m

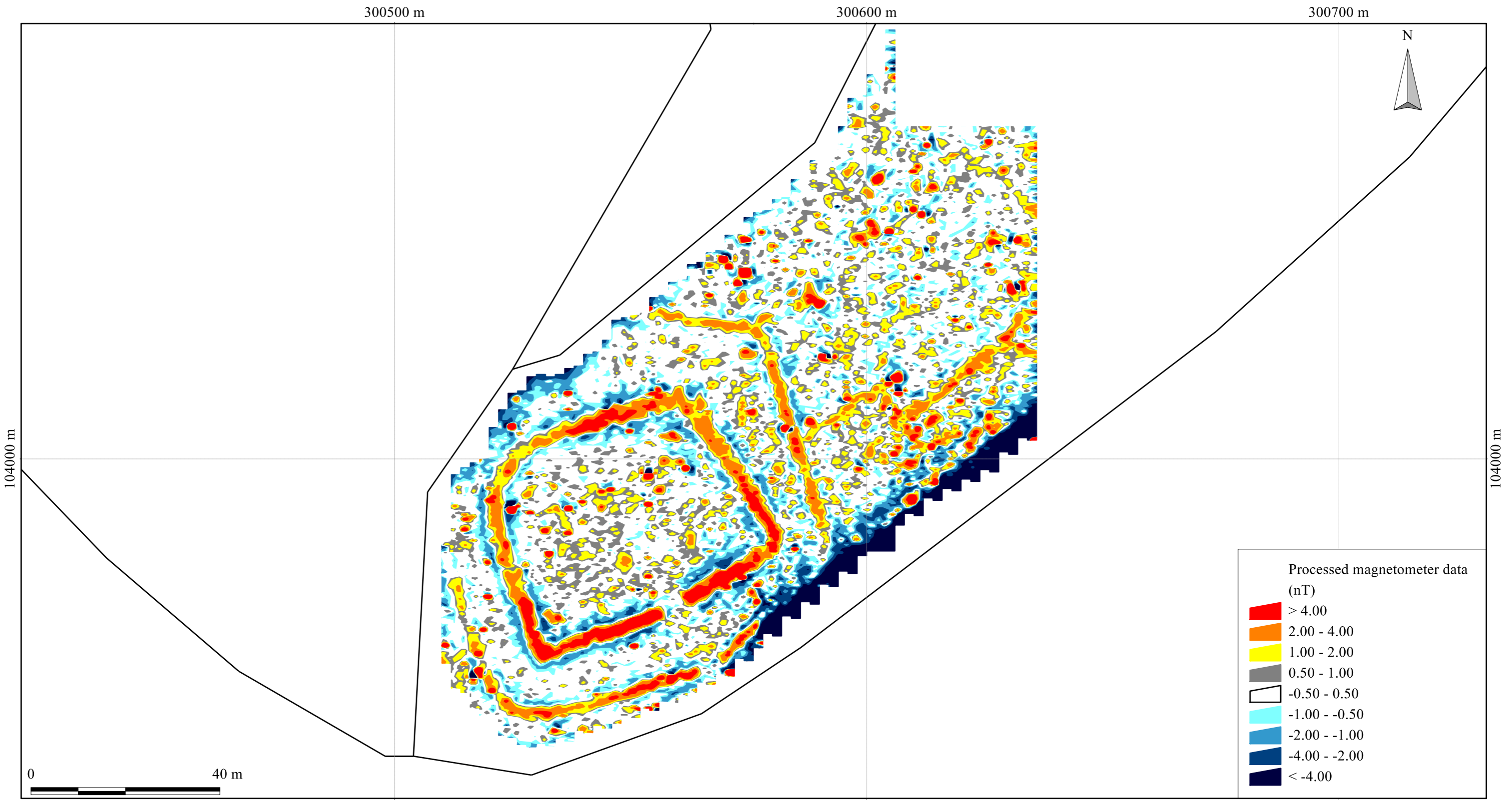
Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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An archaeological magnetometer survey
 Land off Parsonage Street, Bradninch, Devon
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Figure 5: shade plot of processed data

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 Web: substrata.co.uk



British Grid
 centre X: 300576.07 m, centre Y: 104010.16 m

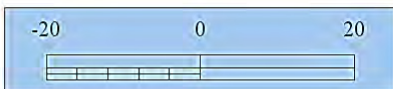
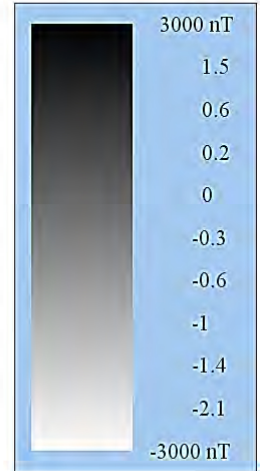
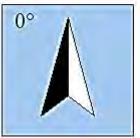
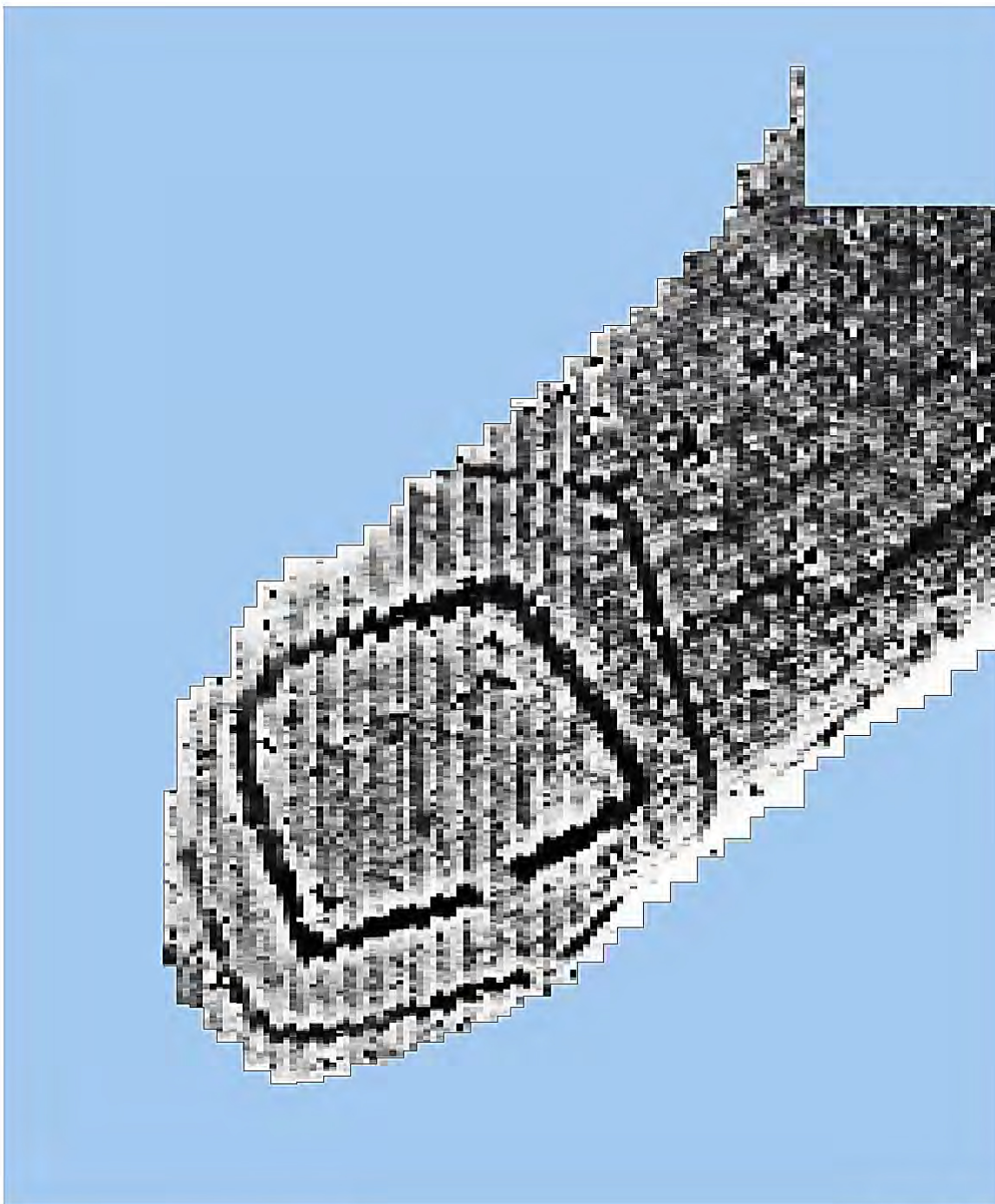
Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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An archaeological magnetometer survey
 Land off Parsonage Street, Bradninch, Devon
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Figure 6: contour plot of processed data

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Instrument Type: Bartington Grad 601
 Units: nT
 Direction of 1st Traverse: 0 deg
 Collection Method: ZigZag
 Sensors: 2 @ 0.00 m spacing.
 Dummy Value: 32702
 Dimensions
 Grid Size: 30 m x 30 m
 X Interval: 0.25 m
 Y Interval: 1 m
 Stats
 Max: 3000.00
 Min: -3000.00
 Std Dev: 29.18
 Mean: -0.55
 Median: -0.30
 Surveyed Area: 1.0252 ha
 PROGRAM
 Name: TerraSurveyor
 Version: 3.0.31.0

Processes: 1
 1 Base Layer

Figure 7: shade plot of unprocessed data

Appendix 2 Tables

Site: An archaeological magnetometer survey
Land off Parsonage Street, Bradninch, Devon
Centred on NGR (E/N): 300560,104000 (point)
Report: 1707BRA-R-1

anomaly group	associated anomalies	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1		likely, positive	disrupted multiple sided	outer enclosure ditch	anomaly group coincides with a cropmark recorded on aerial photographs and thought to be a double ditched enclosure of later prehistoric date	DHER MDV1433
2		likely, positive	sub-rectangular	inner enclosure ditch	anomaly group coincides with a cropmark recorded on aerial photographs and thought to be a double ditched enclosure of later prehistoric date	DHER MDV1433
3		possible, positive	oval	large posthole, pit or natural deposit		
4		possible, positive	oval	large posthole, pit or natural deposit		
5		possible, positive	oval	large posthole, pit or natural deposit		
6		possible, positive	oval	large posthole, pit or natural deposit		
7		possible, positive	oval	large posthole, pit or natural deposit		
8		possible, positive	oval	large posthole, pit or natural deposit		
9		possible, positive	oval	large posthole, pit or natural deposit		
10		possible, positive	oval	large posthole, pit or natural deposit		
11		possible, positive	oval	large posthole, pit or natural deposit		
12		possible, positive	oval	large posthole, pit or natural deposit		
13		possible, positive	oval	large posthole, pit or natural deposit		
14		possible, positive	oval	large posthole, pit or natural deposit		
15		possible, positive	return?			
16		possible, positive	oval	large posthole, pit or natural deposit		
17		possible, positive	oval	large posthole, pit or natural deposit		
18		possible, positive	oval	large posthole, pit or natural deposit		
19		possible, positive	oval	large posthole, pit or natural deposit		
20		possible, positive	oval	large posthole, pit or natural deposit		
21		possible, positive	oval	large posthole, pit or natural deposit		
22		possible, positive spread	irregular		area of magnetic enhancement - may represent disrupted archaeological deposits	
23		possible, positive	linear			
24		possible, positive	oval	large posthole, pit or natural deposit		
25		possible, positive	oval	large posthole, pit or natural deposit		
26		possible, positive	oval	large posthole, pit or natural deposit		
27		possible, positive	oval	large posthole, pit or natural deposit		
28		possible, positive	linear			
29		possible, positive	oval	large posthole, pit or natural deposit		
30		possible, positive	oval	large posthole, pit or natural deposit		
31		possible, positive	oval	large posthole, pit or natural deposit		
32		possible, positive	oval	large posthole, pit or natural deposit		
33		possible, positive	oval	large posthole, pit or natural deposit		
34		possible, positive	oval	large posthole, pit or natural deposit		
35		possible, positive	oval	large posthole, pit or natural deposit		
36		possible, positive	oval	large posthole, pit or natural deposit		
37		possible, positive	oval	large posthole, pit or natural deposit		
38		possible, positive	oval	large posthole, pit or natural deposit		
39		possible, positive	oval	large posthole, pit or natural deposit		
40		possible, positive	oval	large posthole, pit or natural deposit		
41		possible, positive	oval	large posthole, pit or natural deposit		
42		possible, positive	oval	large posthole, pit or natural deposit		
43		possible, positive	oval	large posthole, pit or natural deposit		
44		possible, positive	oval	large posthole, pit or natural deposit		
45		possible, positive	oval	large posthole, pit or natural deposit		
46		possible, positive	oval	large posthole, pit or natural deposit		
47		possible, positive	oval	large posthole, pit or natural deposit		
48		possible, positive	disrupted linear			
49		possible, positive	oval	large posthole, pit or natural deposit		
50		possible, positive	oval	large posthole, pit or natural deposit		
51		possible, positive	oval	large posthole, pit or natural deposit		
52		possible, positive	irregular			
53		possible, positive	disrupted linear			
54		possible, positive	oval	large posthole, pit or natural deposit		
55		possible, positive	disrupted linear			
56	57	possible, positive	linear or return			
57	56	possible, positive	linear or return			
58		possible, positive	oval	large posthole, pit or natural deposit		

Table 1: data analysis

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.	
Equipment <i>Instrument:</i> Bartington Instruments grad601-2 <i>Firmware:</i> version 6.1	Data Capture <i>Sample Interval:</i> 0.125m <i>Traverse Interval:</i> 1 metre <i>Traverse Method:</i> zigzag <i>Traverse Orientation:</i> GN
Data Processing, Analysis and Presentation Software QCAD Professional 3 DW Consulting TerraSurveyor3 Manifold System 8 GIS Microsoft Corp. Office Excel 2013 Microsoft Corp. Office Publisher 2013 Adobe Systems Inc Adobe Acrobat 9 Pro Extended	

Table 2: methodology information

Instrument Type: Bartington Grad-601 gradiometer Units: nT Direction of 1st Traverse: see below Collection Method: ZigZag Sensors: 2 @ 1.00 m spacing. Dummy Value: 32702	
Program Name: TerraSurveyor Version: 3.0.33.6	
Statistics Max: 45.71 Min: -59.30 Std Dev: 3.35 Mean: -0.17 Median: -0.03 Surveyed Area: 1.0ha	Processing Processes: 10 1 Base Layer 2 Clip at 1.00 SD 3 DeStripe Median Sensors: Grids: All 4 De Stagger: Grids: All By: 0 intervals, 50.00cm 5 De Stagger: Grids: a4.xgd By: 0 intervals, 25.00cm 6 Edge Match (Area: Top 90, Left 120, Bottom 119, Right 239) to Top edge 7 De Stagger: Grids: SubGrid (Area: Top 76, Left 360, Bottom 85, Right 479) By: 0 intervals, 75.00cm 8 Range Match (Area: Top 120, Left 240, Bottom 149, Right 359) to Top edge 9 Edge Match (Area: Top 30, Left 360, Bottom 59, Right 479) to Left edge 10 Interpolate: Match X & Y Doubled.

Table 3: processed data metadata