

Substrata

Archaeological Geophysical Surveyors

An archaeological magnetometer survey

Land west of Exminster, Devon

Centred on NGR (E/N): 292288,87696 (point)

Report: 1702EXM-R-1

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28 February 2017

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Project archive

Report	Adobe PDF format
Copies of report figures	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: 21 to 24 February 2017
Area: 12.7ha
Lead surveyor: Mark Edwards BA
Author: Ross Dean BSc MSc MA MifA

1.2 Clients

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

1.3 Location

Site: Land west of Exminster
Civil Parish: Exminster
District: Teignbridge
County: Devon
Nearest Postcode: EX2 9SL
NGR: SX 923 877 (point)
NGR (E/N): 292288,87696 (point)

1.4 Archive

OASIS number: substrat1-277737
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, hereafter referred to as the survey area. It has been prepared for AC Archaeology Ltd on behalf of clients. The survey area location is shown in Figure 1.

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.

Twenty-one magnetic anomaly groups were mapped as representing potential archaeological deposits or features. One of these groups may represent the remains of a World War 2 anti-aircraft battery emplacement recorded in the Devon County Council Historic Environment Record (HER) entry MDV58401. Another group coincides with a crop mark recorded in the HER as a potential Bronze Age ring ditch (HER MDV37366). Two groups represent former field boundaries recorded on historic maps between 1840 and at least 1982. One anomaly group may represent part of a former rectangular enclosure and another group almost certainly represents a rectangular enclosure spatially close to the potential ring ditch. Five groups are mapped as possible large pits, four of these being associated with the latter potential enclosure and one with the ring ditch.

The other anomaly groups mapped as representing potential archaeological deposits and features have patterns that typically represent former field and enclosure boundaries of unknown date and possibly of more than one phase of past land management.

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 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).

4 Site description

4.1 Landscape and land use

The survey area comprises a single field to the west of Exminster (Figure 1). It is bounded to the north by Days Pottles Lane, to the west by a trading estate and an agricultural field, to the south by the A38 Devon Expressway and to the east by an arable field.

The survey area lies on the south-facing slope of a valley that slopes north-to-south from approximately 60m to 40m AOD within the survey area.

The field was under grass during the survey.

4.2 Geology

The bedrock across the site is of the Permian Heavitree Breccia Formation which generically comprises reddish brown, mainly fine-grained, breccia; clasts (mainly less than 8cm, some over 30cm) of Culm sandstone, vein quartz, hornfels lava, granite, and potassium feldspar (Murchisonite). The rock can be well cemented locally. The superficial deposits for the site are unknown (British Geological Survey, undated).

5 Archaeological background

5.1 Historic landscape characterisation

‘Post-medieval enclosures’

Enclosures of post-medieval date. Fields laid out in the eighteenth and nineteenth centuries. Commonly they have many surveyed dead-straight field boundaries (Devon County Council, undated)

5.2 Summary of archaeological background

The following is taken from an Archaeological Assessment produced by Archaeology & Planning Solutions (2012) which examined a larger area of land which included the field subject to this report. Given the date of the report, the Historic Environment Record (HER) entries were checked for updates (Devon Country Council, undated) .

Several enclosures and ring ditches are recorded within close proximity to the survey area and this strongly suggests that the general area has a high potential for containing buried archaeological remains. A potential ring ditch has been identified within the survey area which coincides with an anomaly group discussed in Section 6; HER MDV37366, SX 921 875, a dark curvilinear cropmark, visible on aerial photographs taken in the summer of 1984. It is

tentatively interpreted as having formed over the buried ring ditch of a Bronze Age barrow. No earthwork remains were visible during a site visit in 1989.

Although the HER entry is unverified and so may be subject to revision, a mobile World War II anti-aircraft battery is thought to have been located within the survey area; HER entry MDV58401, SX 921 876, documented in June 1942. The battery was manned by 421 Battery of 108 Regiment Royal Artillery. It comprised of four 3.7" guns and was a mobile gun battery without fixed positions. An anomaly group discussed in Section 6 may relate to this entry. If it does then a fixed element to this battery is implied.

6 Results, discussion and conclusions

6.1 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 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 7.

6.2 Results

Figure 2 shows the interpretation of the survey data which includes 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. Figure 3 provides a more detailed view of potential archaeological deposits mapped in the south western corner of the survey area.

Figures 2 and 3 along Table 1 comprise the analysis of the survey data.

Figures 4 and 5 are plots of processed data as specified in Table 3. Figure 6 is a plot of unprocessed data with its metadata.

6.3 Discussion

6.3.1 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 Figure 2 and Table 1.

In particular, data collected in the south eastern corner of the survey area was masked by a strong magnetic response, possibly from a gas main which is known to run through this area. The affected data had to be removed from the data set to allow processing to be undertaken (compare Figure 4 with Figure 6).

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.

Data trends

There are a number of broad, curvilinear anomaly groups across the data set trending north-north-west to south-south-east, northwest to southeast and north-north-east to south-west-south (Figure 4). These represent palaeochannels. Only one section of these features is mapped in Figures 2 and 3 where the natural deposit lies alongside a likely ring ditch discussed below.

6.3.2 Data relating to historic maps and other records

Magnetic anomaly group **3** may represent the location of a World War 2 anti aircraft battery though to have been stationed within the survey area as discussed in Section 5 (HER MDV58401). The battery is thought to have been mobile but anomaly group 3 appears to have a definite shape and may represent a steel or re-enforced concrete structure which suggests a static element to the battery position.

Group **11** coincides with a cropmark recorded from aerial photographs and thought to represent a Bronze Age ring ditch as discussed in Section 5 (HER MDV37366). Group **12** is recorded as representing a possible pit because of its association with group 11 and its distinctiveness in the data set.

Anomaly groups **16** and **21** coincide with former field boundaries recorded on historic maps between 1840 and at least 1982 as listed in Table 1.

6.3.3 Data with no previous archaeological provenance

Group **1** may represent three sides of a former rectangular enclosure although the two approximately north-south trending sides coincide with the direction of survey traverse lines and so could reflect survey error. On balance, however, the anomaly group is characterised as a potential enclosure.

Group **5** has a distinctive pattern and is likely to represent an enclosure. Groups **6 to 9** are distinct within the data set and are within the potential enclosure represented by group 5. For these reasons they are mapped as potential archaeological pits.

The remaining magnetic anomaly groups characterised as representing potential archaeological deposits have characteristics typical of those reflecting former field or enclosure boundaries of unknown date and possibly of more than one phase of land management.

6.4 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.

Twenty-one magnetic anomaly groups were mapped as representing potential archaeological deposits or features. One of these groups (3) may represent the remains of a World War 2 anti-aircraft battery emplacement recorded in the Devon County Council Historic Environment Record (HER) entry MDV58401. Another group (11) coincides with a crop mark recorded in the HER as a potential Bronze Age ring ditch (HER MDV37366). Two groups (16 and 21) represent former field boundaries recorded on historic maps between

1840 and at least 1982. One anomaly group (1) may represent part of a former rectangular enclosure and another group (5) almost certainly represents a rectangular enclosure spatially close to the potential ring ditch. Five groups are mapped as possible large pits, four of these (6 to 9) being associated with the latter potential enclosure and one (12) with the ring ditch.

The other anomaly groups mapped as representing potential archaeological deposits and features (groups 2, 4, 10, 13, 14, 15, 17, 18, 19 and 20) have patterns that typically represent former field and enclosure boundaries of unknown date and possibly of more than one phase of past land management.

7 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.

Substrata Ltd will assign copyright to the client upon written request but retains the right to be identified as the author of all project documentation and reports as defined in the Copyright, Designs and Patents Act 1988 (Chapter IV, s.79). This report contains material that is non-Substrata Limited copyright or the intellectual property of third parties. Such material is labelled with the appropriate copyright and is non-transferrable by Substrata Ltd.

8 Acknowledgements

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

9 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 [February 2017]

Archaeology & Planning Solutions (2012) *Land west of Exminster, Devon, Archaeological Assessment*, Unpublished report APS 12/322

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

Chartered Institute for Archaeologists (2014b) *Code of conduct*. Reading: Author [Online], <http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf> [February 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 near Exminster, Devon*. Substrata Ltd unpublished document 1702EXM-M-1

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

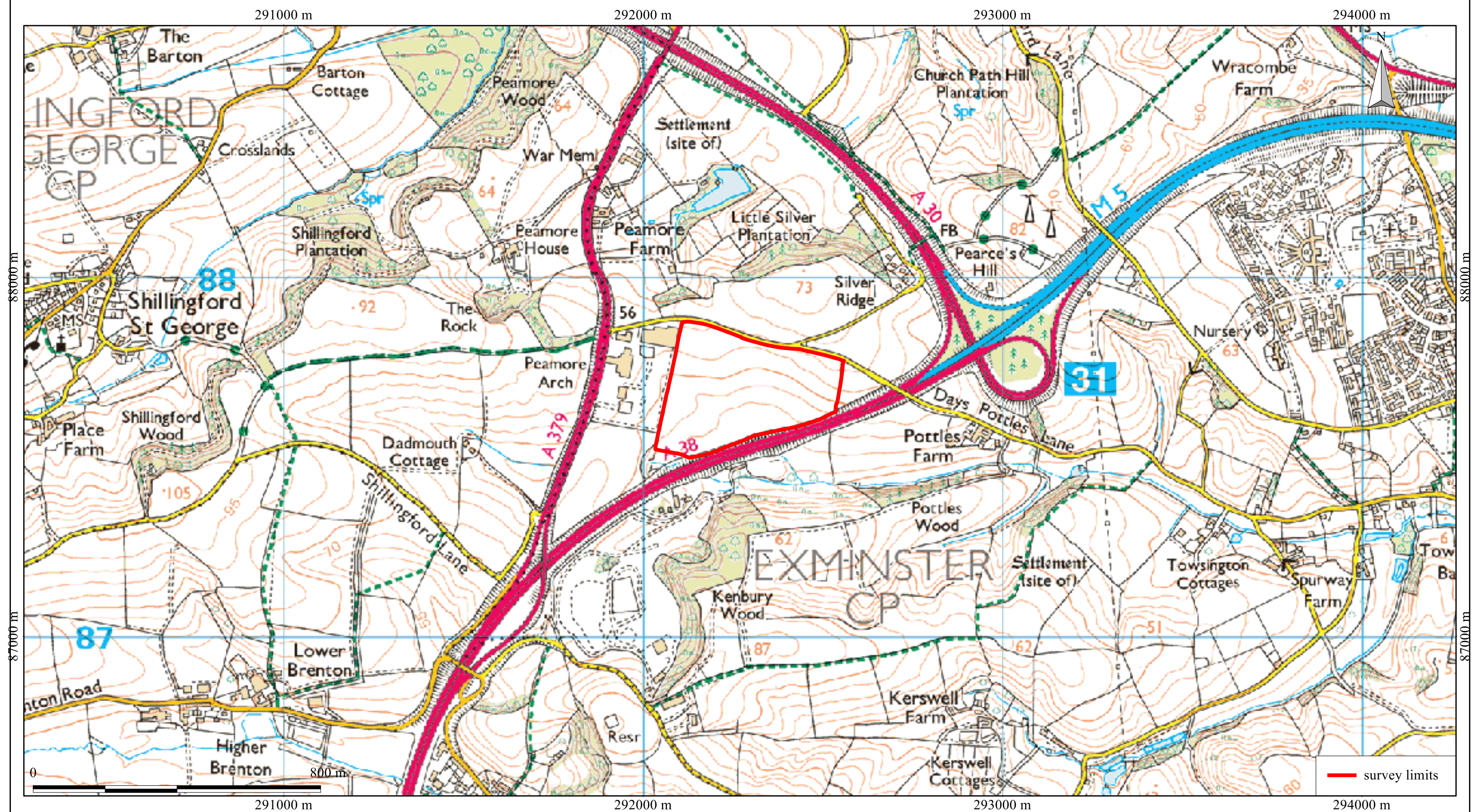
Historic England (2010) *Geophysical Survey in Archaeological Field Evaluation*. [Online], Available: <https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/> [February 2017]

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 (see Section 6.1).

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.



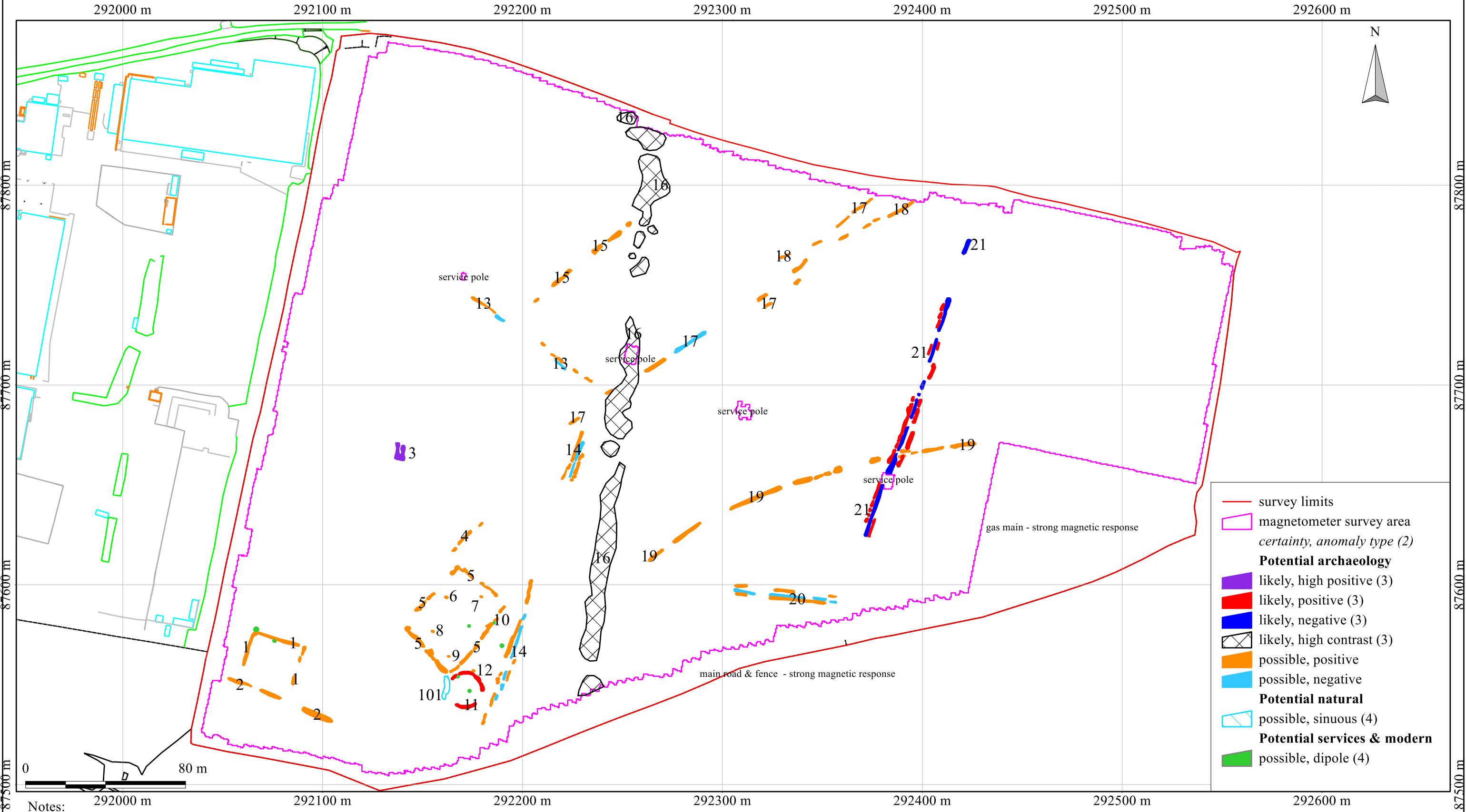
Scale: 1:10000 @ A3. Spatial Units: Meter. Do not scale off this drawing

Geophysical survey: Copyright Substrata Limited.
Base map: Ordnance Survey (c) Crown Copyright 2017.
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An archaeological magnetometer survey
Land west of Exminster, Devon
Centred on NGR (E/N): 292288,87696 (point)
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Figure 1: location map

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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.

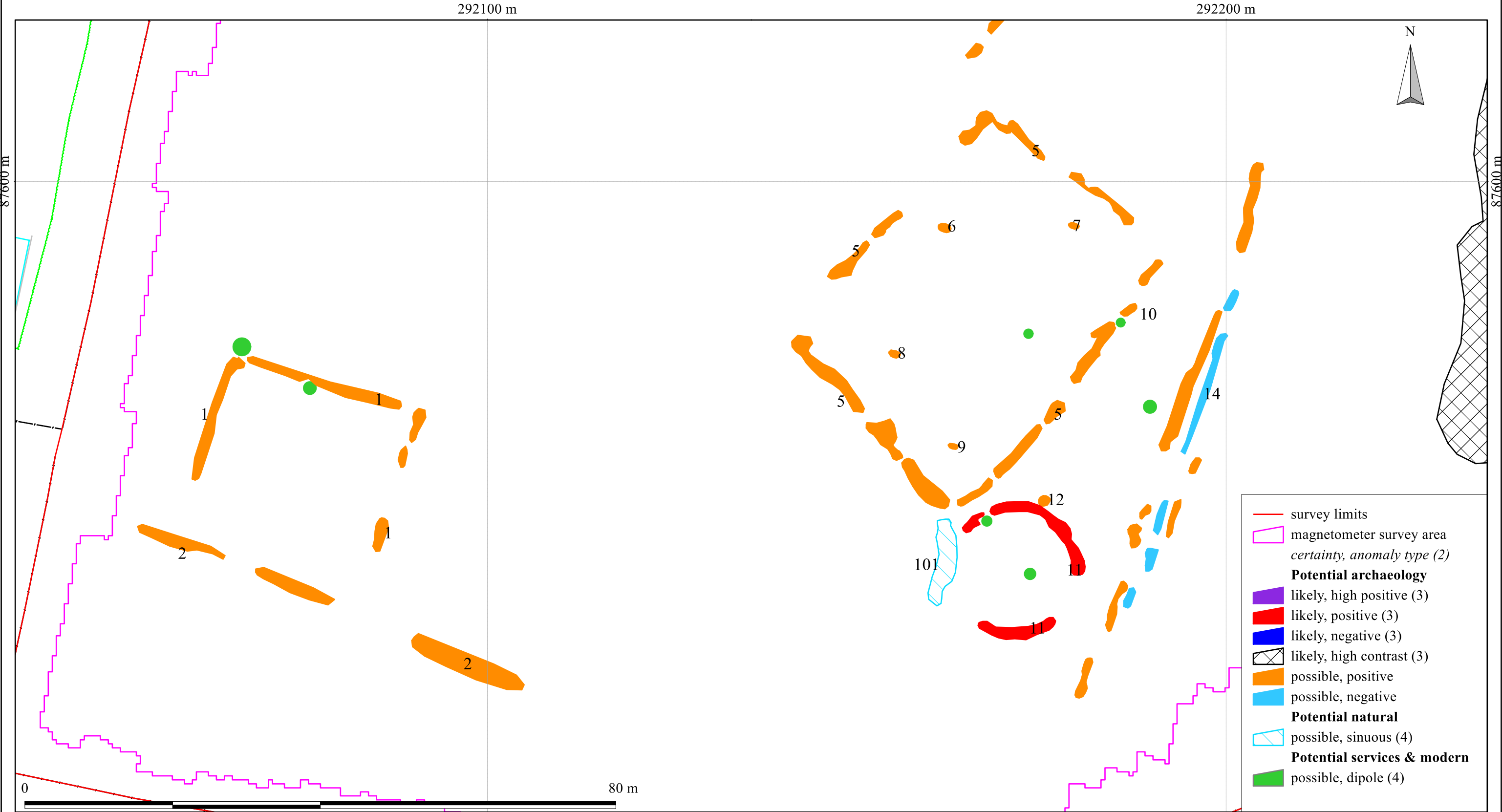
Geophysical survey: Copyright Substrata Limited.
Base map: Copyright West Country Land Surveyors Ltd

Scale: 1:1800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Figure 2: survey interpretation, entire area

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Notes:

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4. Not all instances are mapped.
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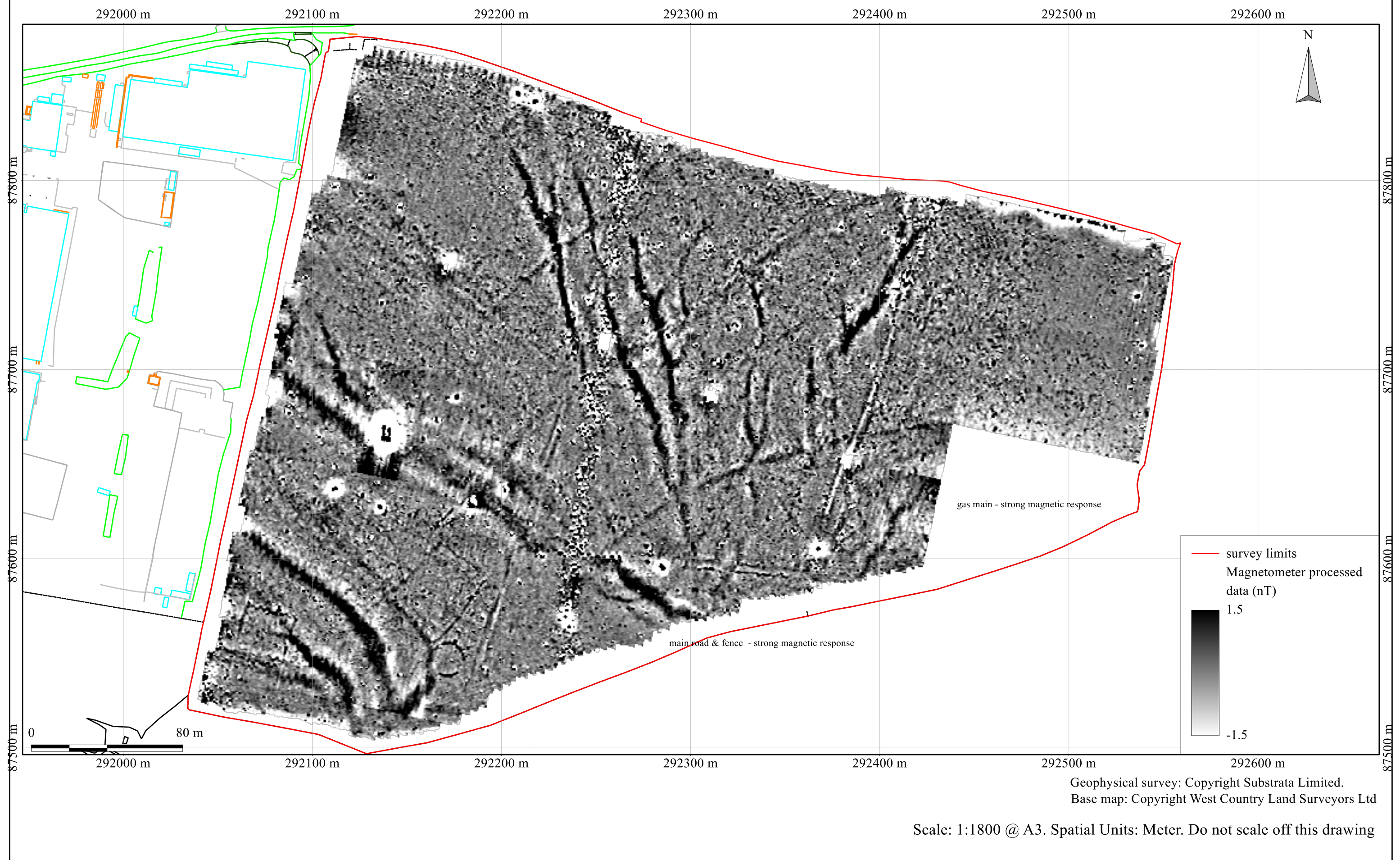
Geophysical survey: Copyright Substrata Limited.
Base map: Copyright West Country Land Surveyors Ltd

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

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Figure 3: survey interpretation, south western corner

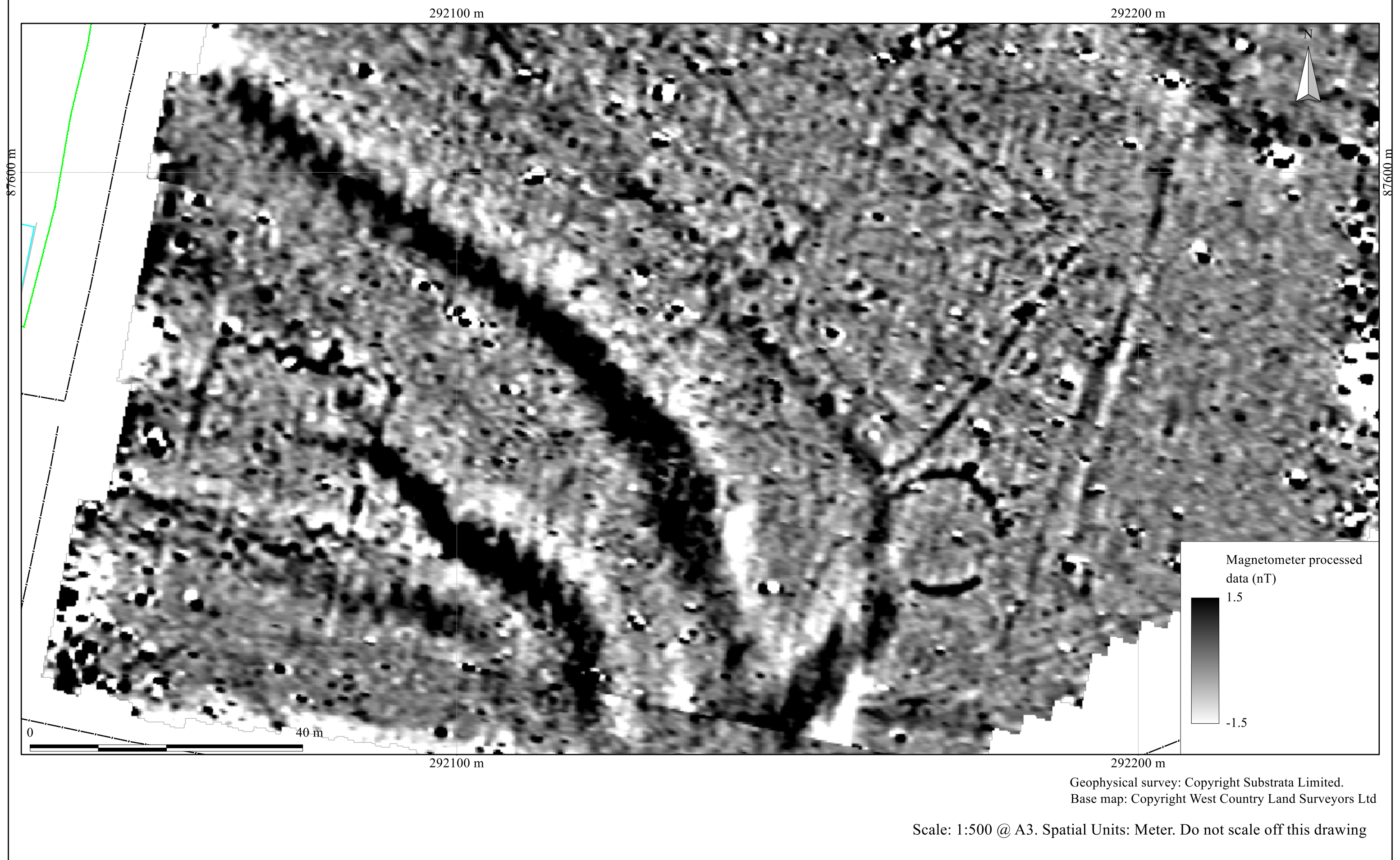
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Figure 4: shade plot of processed data, entire area

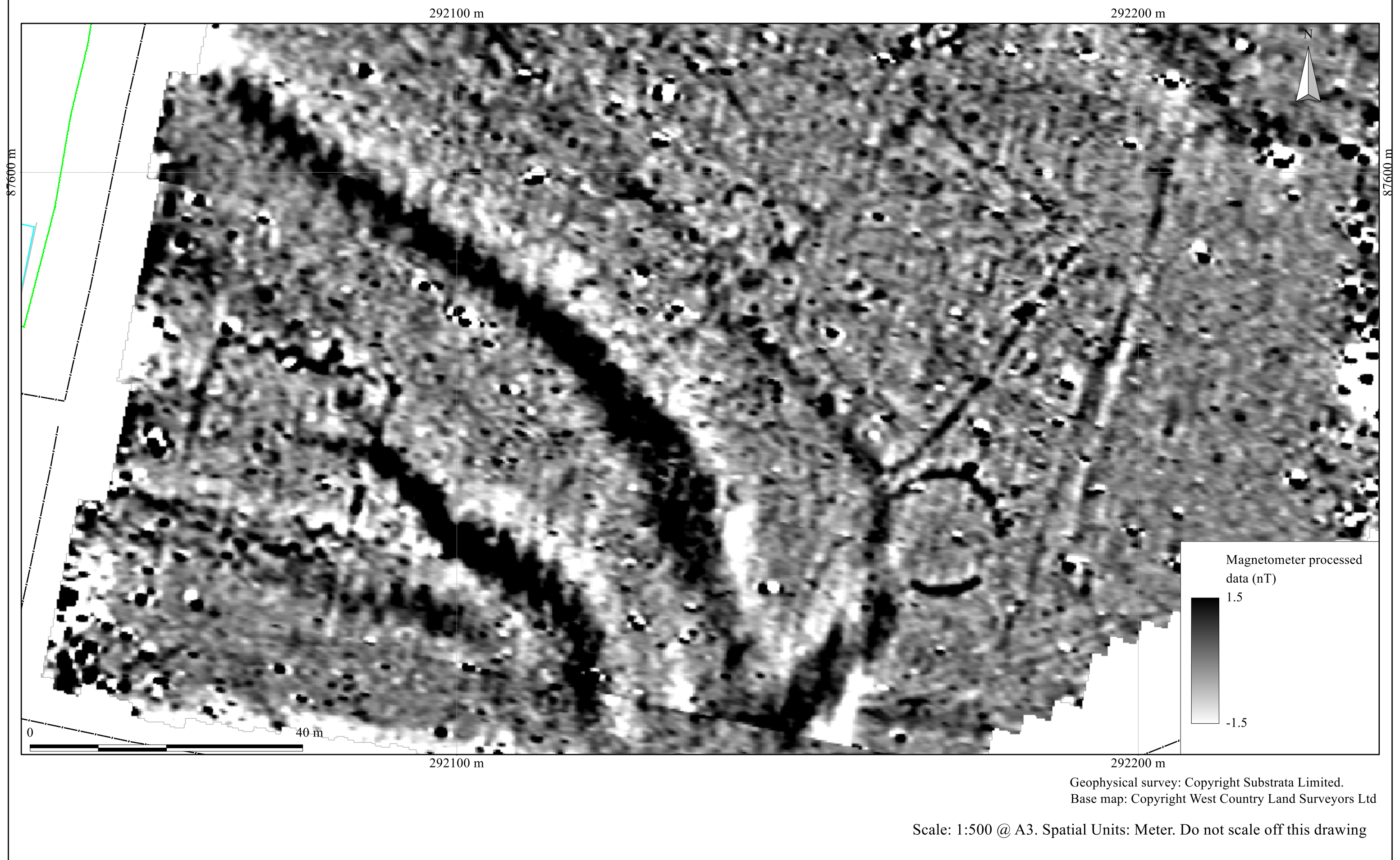
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Figure 5: shade pot of processed data, south western corner

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Figure 5: shade pot of processed data, south western corner

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Appendix 2 Tables

Site: An archaeological magnetometer survey
Land west of Exminster, Devon
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anomaly group	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1	possible, positive	partial sub-rectangular	enclosure	the western and eastern linear anomalies are characterised as representing potential archaeology but could be depicting survey traverses rather than archaeological deposits	
2	possible, positive	disrupted linear			
3	likely, high positive	sub-rectangular	WW2 AA battery remnant	anomaly group is within the bounds of the HER grid reference for the site of a mobile World War II anti-aircraft battery although the anomaly implies a static element	HER entry MDV58401
4	possible, positive	disrupted linear			
5	possible, positive	disrupted sub-rectangular	enclosure		
6	possible, positive	oval	pit	anomaly group is recorded because of it clarity within the dataset and its proximity to an anomaly group that may represent a sub-rectangular enclosure	
7	possible, positive	oval	pit	anomaly group is recorded because of it clarity within the dataset and its proximity to an anomaly group that may represent a sub-rectangular enclosure	
8	possible, positive	oval	pit	anomaly group is recorded because of it clarity within the dataset and its proximity to an anomaly group that may represent a sub-rectangular enclosure	
9	possible, positive	oval	pit	anomaly group is recorded because of it clarity within the dataset and its proximity to an anomaly group that may represent a sub-rectangular enclosure	
10	possible, positive	disrupted linear			
11	possible, positive	disrupted sub-circular	ring ditch	anomaly group coincides with a crop mark recorded as a potential ring ditch	HER MDV37366
12	possible, positive	oval	pit	anomaly group is recorded because of it clarity within the dataset and its proximity to an anomaly group which is likely to represent a potential ring ditch	
13	possible, positive & negative	disrupted linear			
14	possible, positive/negative/positive	disrupted linear	field boundary - possible Devon bank		
15	possible, positive	disrupted linear			
16	likely, high contrast	disrupted linear spread	field boundary	anomaly group coincides with a former field boundary recorded on historic maps	1840 Exminster tithe map, Ordnance Survey maps between 1896 and at least 1982
17	possible, positive & negative	disrupted linear		anomaly group is part of a parallel set of similar anomalies possibly representing a single archaeological feature such as a field boundary, enclosure boundary or track	
18	possible, positive	disrupted linear			
19	possible, positive	disrupted curvilinear			
20	possible, positive/negative/positive	disrupted linear	field boundary - possible Devon bank		
21	likely, positive/negative/positive	disrupted linear	field boundary - Devon bank	anomaly group coincides with a former field boundary recorded on historic maps	1840 Exminster tithe map, Ordnance Survey maps between 1896 and at least 1982
101	possible, sinuous		palaeochannel		

Table 1: data analysis

Documents Survey methodology statement: Dean (2017)	
Methodology 1. The work was undertaken in accordance with the survey methodology statement. The geophysical (magnetometer) survey was undertaken with reference to standard guidance provided by the Chartered Institute for Archaeologists (2014) and Archaeology Data Service (undated). 2. The survey grid location information and grid plan was recorded as part of the project in a suitable GIS system. 3. Data processing was undertaken using appropriate software, with all anomalies being digitised and geo-referenced. The final report included 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.	
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> 0.25m <i>Traverse Interval:</i> 1 metre <i>Traverse Method:</i> zigzag <i>Traverse Orientation:</i> GN
Data Processing, Analysis and Presentation Software IntelliCAD Technology Consortium IntelliCAD 8.0 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 summary

SITE 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: 3.0.31.0	
Stats Max: 104.95 Min: -97.74 Std Dev: 4.90 Mean: -0.03 Median: 0.00	Processes: 9 1 Base Layer 2 Clip at 1.00 SD 3 De Stagger: Grids: All Mode: Both By: -1 intervals 4 De Stagger: Grids: c4.xgd c3.xgd c5.xgd c2.xgd c6.xgd d14.xgd d15.xgd c1.xgd c7.xgd d13.xgd d16.xgd d31.xgd d32.xgd b36.xgd c8.xgd d12.xgd d17.xgd d30.xgd d33.xgd e10.xgd e11.xgd b35.xgd c9.xgd d11.xgd d18.xgd d29.xgd d34.xgd e9.xgd e12.xgd e23.xgd b34.xgd d1.xgd d10.xgd d19.xgd d28.xgd d35.xgd e8.xgd e13.xgd e22.xgd e24.xgd e33.xgd b33.xgd d2.xgd d9.xgd d20.xgd d27.xgd d36.xgd e7.xgd e14.xgd e21.xgd e25.xgd e32.xgd b32.xgd d3.xgd d8.xgd d21.xgd d26.xgd e1.xgd e6.xgd e15.xgd e20.xgd e26.xgd e31.xgd b31.xgd d4.xgd d7.xgd d22.xgd d25.xgd e2.xgd e5.xgd e16.xgd e19.xgd e27.xgd e30.xgd b30.xgd d5.xgd d6.xgd d23.xgd d24.xgd e3.xgd e4.xgd e17.xgd e18.xgd e28.xgd e29.xgd Mode: Both By: -1 intervals 5 DeStripe Median Traverse: Grids: e10.xgd e9.xgd e8.xgd e7.xgd 6 DeStripe Median Traverse: Grids: a1.xgd a26.xgd a27.xgd b16.xgd b17.xgd a2.xgd a25.xgd a28.xgd b15.xgd b18.xgd c4.xgd a3.xgd a24.xgd a29.xgd b14.xgd b19.xgd c3.xgd c5.xgd a4.xgd a23.xgd a30.xgd b13.xgd b20.xgd c2.xgd c6.xgd d14.xgd d15.xgd a5.xgd a22.xgd a31.xgd b12.xgd b21.xgd c1.xgd c7.xgd d13.xgd d16.xgd d31.xgd d32.xgd a6.xgd a21.xgd a32.xgd b11.xgd b22.xgd b36.xgd c8.xgd d12.xgd d17.xgd d30.xgd d33.xgd e10.xgd a7.xgd a20.xgd a33.xgd b10.xgd b23.xgd b35.xgd c9.xgd d11.xgd d18.xgd d29.xgd d34.xgd e9.xgd a8.xgd a19.xgd a34.xgd b9.xgd b24.xgd b34.xgd d1.xgd d10.xgd d19.xgd d28.xgd d35.xgd e8.xgd a9.xgd a18.xgd a35.xgd b8.xgd b25.xgd b33.xgd d2.xgd d9.xgd d20.xgd d27.xgd d36.xgd e7.xgd a10.xgd a17.xgd a36.xgd b7.xgd b26.xgd b32.xgd d3.xgd d8.xgd d21.xgd d26.xgd e1.xgd e6.xgd a11.xgd a16.xgd b1.xgd b6.xgd b27.xgd b31.xgd d4.xgd d7.xgd d22.xgd d25.xgd e2.xgd e5.xgd a12.xgd a15.xgd b2.xgd b5.xgd b28.xgd b30.xgd d5.xgd d6.xgd d23.xgd d24.xgd e3.xgd e4.xgd 7 DeStripe Median Traverse: Grids: e14.xgd e21.xgd e25.xgd e32.xgd e15.xgd e20.xgd e26.xgd e31.xgd e16.xgd e19.xgd e27.xgd e30.xgd e17.xgd e18.xgd e28.xgd e29.xgd 8 Edge Match (Area: Top 60, Left 600, Bottom 89, Right 719) to Bottom edge 9 Edge Match (Area: Top 360, Left 960, Bottom 479, Right 1079) to Right edge

Table 3: processed data metadata