

Substrata

Archaeological Geophysical Surveyors

An archaeological magnetometer survey

**Land at Creacombe Cross
Yealmpton, Devon**

Ordnance Survey NGR (E/N): 259458,49983 (point)

Report: 1611CRE-R-1

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Renewable Developers Ltd

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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: Phase 1: 20 to 27 April 2015
Phase 2: 10 to 11 August 2015
Phase 3: 8 December 2016
Area: Surveyed area: 12.4ha
Lead surveyor: Mark Edwards BA
Author: Ross Dean BSc MSc MA MIfA

1.2 Clients

Renewable Developers Ltd

1.3 Location

Site: Land at Creacombe Cross
Village & Civil Parish: Yealmpton
District: South Hams
County: Devon
Nearest Postcode: PL8 2ER
NGR: SX 594 499
Ordnance Survey E/N: 259458,49983 (point)

1.4 Archive

OASIS number: substrat1-221007
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 was commissioned by Renewable Developers Ltd to help establish the cultural heritage and archaeological implications of a proposal for a solar array at the above site. The proposed development lies within three fields as shown in Figure 1.

The survey took place in three discrete phases as listed above. The first and second phase were the subject of an earlier report (Dean, 2015b). This report is an update of the earlier report to incorporate the data and survey interpretation from phase 3

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.

Thirty-five magnetic anomaly groups were mapped as representing possible archaeological deposits or features. Seven of these anomaly groups represent former field boundaries recorded on historic maps. Three groups may represent archaeological deposits but this is by no means certain. A further three groups may represent either filled pits or natural hollows. The remaining groups are most likely to represent linear and disrupted linear deposits, such as former ditches or banks, of unknown period and from one or more phases of past land management.

The strong multilinear linear patterns across the eastern and southern fields data reflect relatively deep ploughing across the site, the latest phase of which was present as deep furrows during the survey. Such disturbance to the soil and subsoil is bound to reduce the preservation of archaeological deposits and this is reflected in the concentration of mapped potential archaeological deposits in the north-western corner of the survey area.

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 proposed development area is located at approximately 105m AOD within four agricultural fields to the north of Creacombe Cross (Figure 1). At the time of the initial survey in April 2015, the southern two fields had been ploughed with deep furrows. The northern field was under crop and was surveyed in August 2015 following the crop harvest. The survey of the western field was commissioned in late November 2016.

4.2 Geology

The proposed development area is located on sandstone, siltstone and mudstone of the Devonian Staddon Formation comprising medium to thick beds (1-4m) of fine- to medium-grained sandstone, thickening and coarsening upwards with thin interbedded grey mudstone and siltstone. The superficial geology is not recorded in the source used (British Geological Survey, undated).

5 Archaeological background

5.1 Sources

The following is a short summary of information obtained from the Devon Historic Environment Record within approximately 500m of the survey area and relevant to the understanding of the geophysical survey. Except where specifically cited, this information was obtained using the Heritage Gateway (Historic England, undated).

5.1 Historic landscape characterisation

All four fields are designated as Modern enclosures adapting Medieval fields. These modern fields have been created out of probable Medieval enclosures. The sinuous medieval boundaries survive in places. The Medieval enclosures were themselves based on strip fields probably first enclosed during the later Medieval period (Devon County Council, undated).

5.2 Heritage Assets within the proposed development area

There are no recorded heritage assets within the proposed development area.

5.3 Heritage Assets within 500m of the Proposed development area

A Mesolithic microlithic blade core and two retouched flakes, all of grey mottled flint, found in 1971 near Creacombe Cross. The actual location is unclear in the HER with two areas recorded, one to the south of the proposed development area and one to the northeast (MDV14544, MDV14545, MDV2285 and MDV2286).

A Prehistoric or Roman round barrow was provisionally identified as a possible ring ditch cropmark about 150m north of Creacombe and west of the proposed development site (MDV62536).

Three Late Neolithic to Bronze Age bowl barrows, in a broadly southwest to northeast alignment, are sited on gently sloping ground to the northwest of a small combe at Creacombe Farm (MDV1748). The eastern mound is 52 metres in diameter by up to 1 metre high and is composed of orange stony soil. Many pieces of worked flint of Neolithic or Early Bronze Age date were picked up on the mound. The quarry ditch survives as a buried feature four metres wide. Despite their reduction by ploughing, the three barrows at Creacombe Farm still appear as visible earthworks which will retain information about their construction and use. Their surrounding ditches will contain stratified material and it is likely that their primary burials are undisturbed. Barrows the size of the eastern example are uncommon in Devon. The northern most barrow lies to the west of the proposed development area.

Creacombe is at least an 11th century to Late Medieval settlement recorded as Crawecome in the Domesday Book in 1086 AD (MDV19392).

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 variations 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

Figures 2 and 3 show the interpretation of the survey data. They 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 2 and 3 along with 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 the unprocessed data.

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.

Magnetic anomalies recorded in the survey data but outside the designated proposed development area are not included in this analysis.

Data collection

Data collection along the survey area edges and internal field boundaries 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 and 3 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 are only mapped as potential archaeology if they are clustered in groups or otherwise form recognisable patterns.

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

The strong multilinear linear patterns across the eastern and southern fields (Figure 4) reflect relatively deep ploughing across the site, the latest phase of which was present as deep furrows during the survey. Such disturbance to the soil and subsoil is bound to reduce the preservation of archaeological deposits and this is reflected in the concentration of mapped potential archaeological deposits in the north-western corner of the survey area.

6.3.2 Data relating to historic maps and other records

Magnetic anomaly groups **1, 3, 6, 8, 9, 28** and **35** coincide with and represent former field boundaries mapped by the Ordnance Survey as specified in Table 1.

6.3.3 Data with no previous archaeological provenance

Anomaly groups **2** and **16** are returns probably representing with the corner of an enclosure or former field boundary of unknown date and archaeological provenance.

Group **5** is an area of enhanced magnetic responses. These can be indicative of areas of archaeological activity in the form of heated deposits. Given the barrow recorded in the same field (MDV1748 in Section 5.3), the anomaly was characterised as of potential archaeological interest. In this case, however, the response is not dissimilar to the general background responses to the north (Figure 3) with a slight additional enhancement resulting from magnetic materials in the adjacent field boundary.

Groups **19** and **20** have a distinct shape in the data set and may represent archaeological deposits.

Groups **21, 22** and **27** are distinct in the data set and are relatively close to groups 19 and 20 discussed above. Because of these reasons, they have been mapped as possibly representing archaeological deposits such as filled pits but they could represent natural deposits.

The remaining groups have characteristics typical of anomalies represents disrupted linear and curvilinear deposits, such as former ditches and banks, of unknown period and more than one phase of past land management.

6.4 Conclusions

Thirty-five magnetic anomaly groups were mapped as representing possible archaeological deposits or features. Seven of these anomaly groups (1, 3, 6, 8, 9, 28 and 35) represent former field boundaries recorded on historic maps. Three groups (5, 19 and 20) may represent archaeological deposits but this is by no means certain. A further three groups (21, 22 and 27) may represent either filled pits or natural hollows. The remaining groups are most likely to represent linear and disrupted linear deposits, such as former ditches or banks, of unknown period and from one or more phases of past land management.

The strong multilinear linear patterns across the eastern and southern fields data (Figure 4) reflect relatively deep ploughing across the site, the latest phase of which was present as deep furrows during the survey. Such disturbance to the soil and subsoil is bound to reduce the preservation of archaeological deposits and this is reflected in the concentration of mapped potential archaeological deposits in the north-western corner of the survey area.

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 Renewable Developments Ltd for commissioning us to complete this survey.

9 Bibliography

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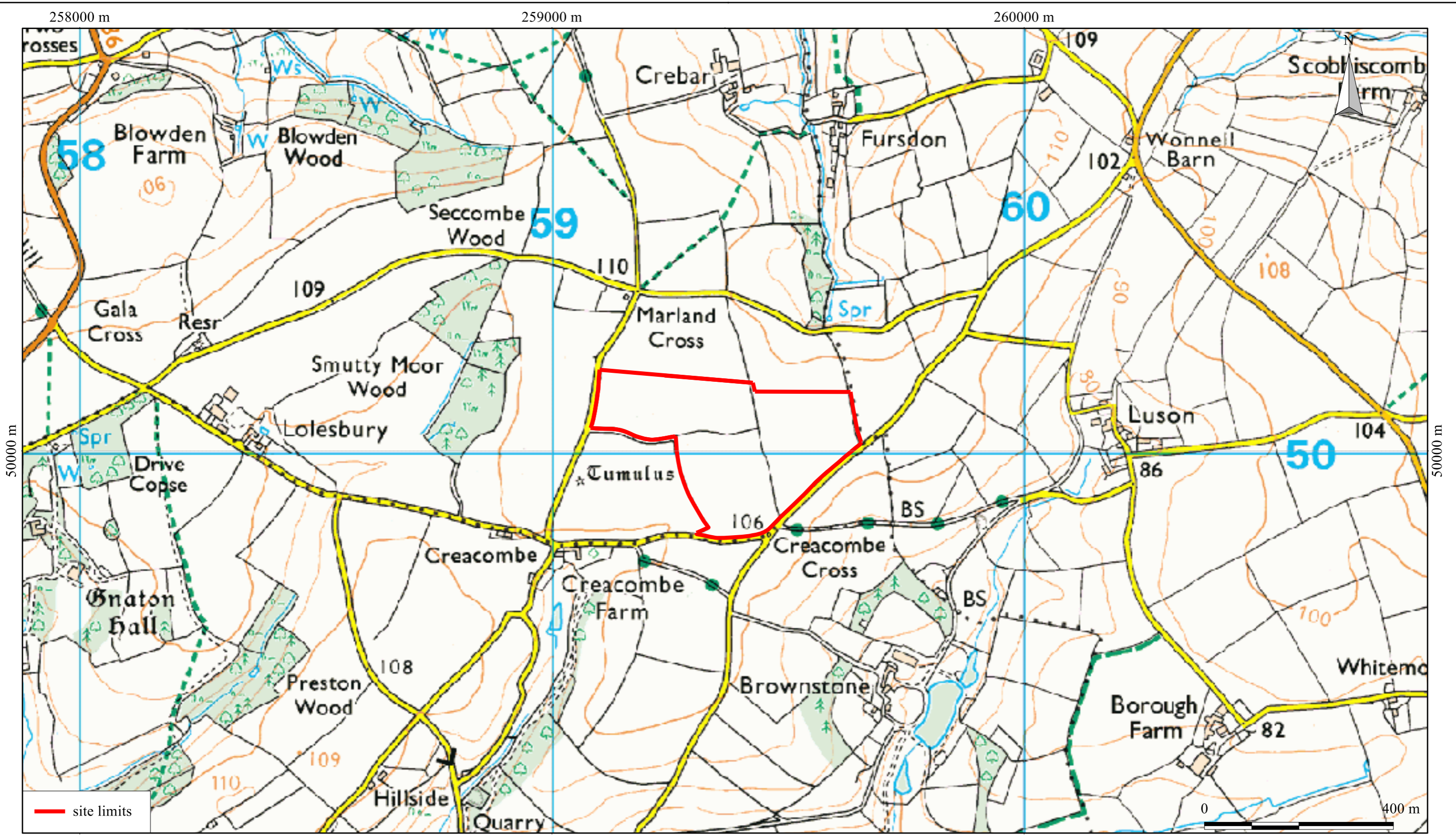
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Appendix 1 Figures

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.



258000 m
 British Grid
 centre X: 259366.46 m, centre Y: 50042.73 m

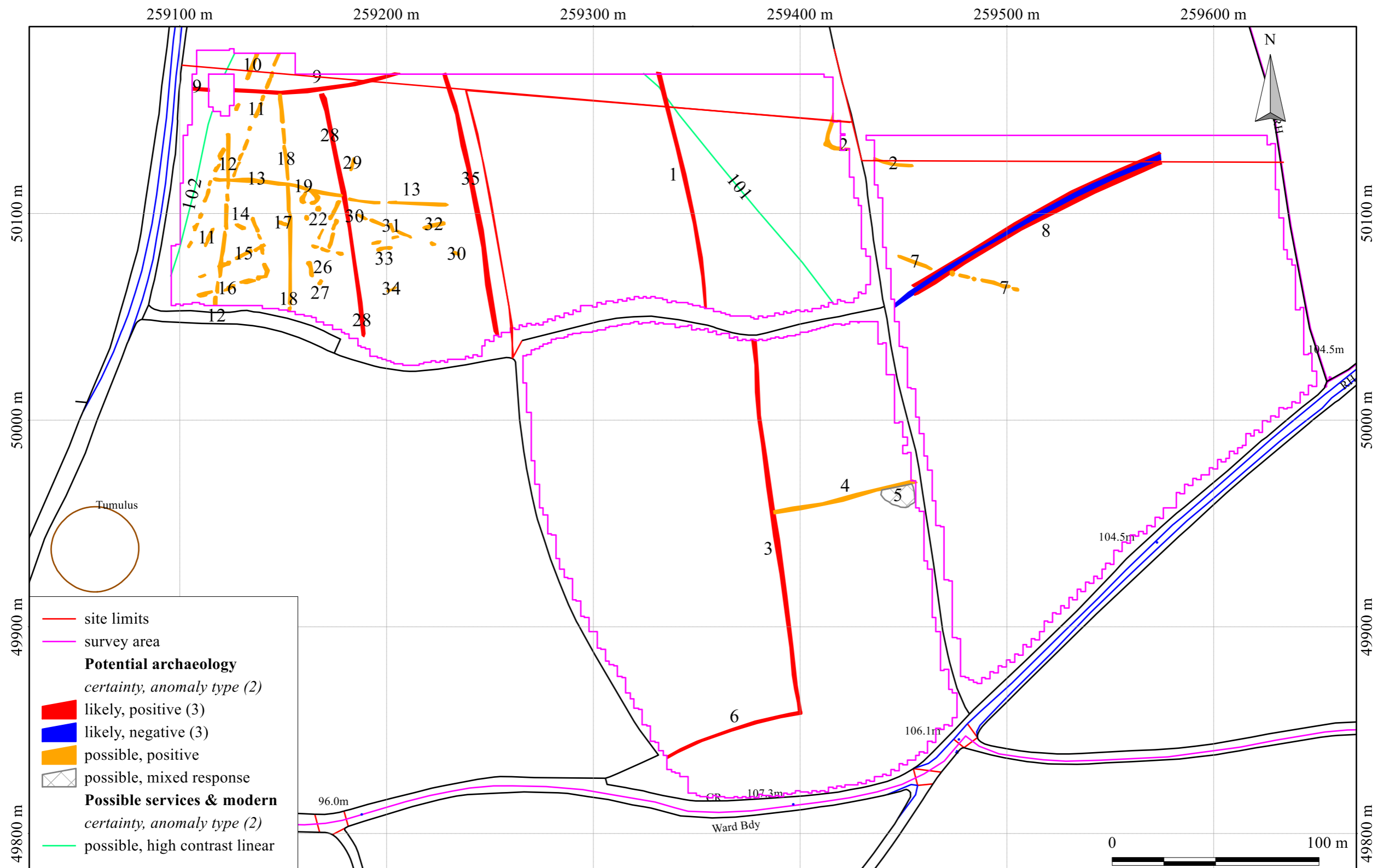
259000 m
 260000 m
 Scale: 1:8000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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 Base map: Ordnance Survey (c) Crown Copyright 2016.
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An archaeological gradiometer survey
 Land at Creacombe Cross, Yealmpton, Devon
 Ordnance Survey (E/N): 259458,49983 (point)
 Report: 1611CRE-R-1

Figure 1: location map

Substrata Limited
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 Tel: 01273 273599
 Email: geophysics@substrata.co.uk
 Web: substrata.co.uk



British Grid
centre X: 259348.10 m, centre Y: 49986.52 m

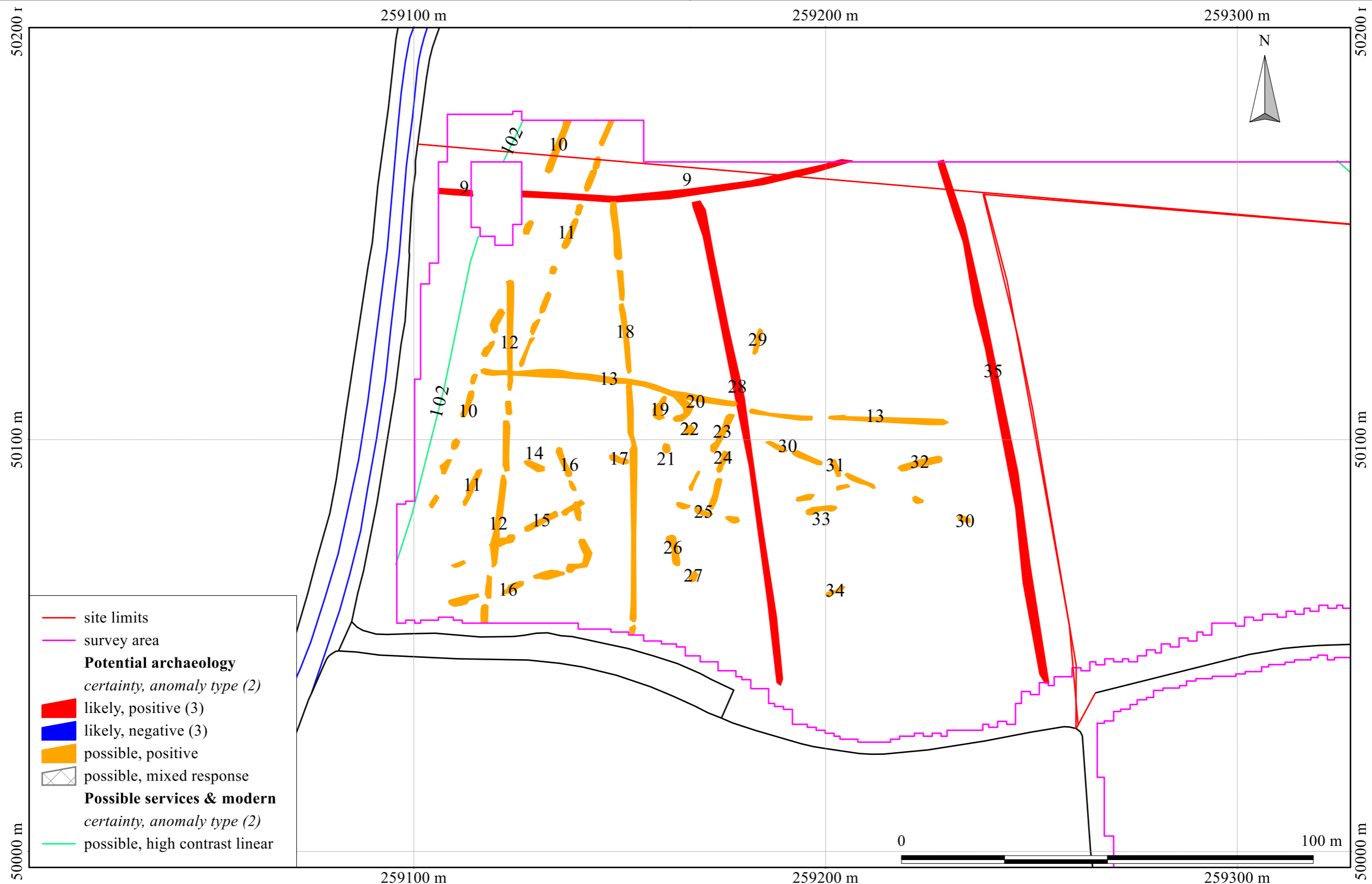
Scale: 1:2000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Base map: Ordnance Survey (c) Crown Copyright 2016.
All rights reserved. Licence number 100022432

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. Representative; 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.

Figure 2: survey interpretation



British Grid
centre X: 259167.02 m, centre Y: 50098.09 m

Scale: 1:1000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Base map: Ordnance Survey (c) Crown Copyright 2016.
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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. Representative; 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.

Figure 3: survey interpretation, north-western corner



British Grid
centre X: 259348.10 m, centre Y: 49986.52 m

Scale: 1:2000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Base map: Ordnance Survey (c) Crown Copyright 2016.
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Figure 4: shade plot of processed data

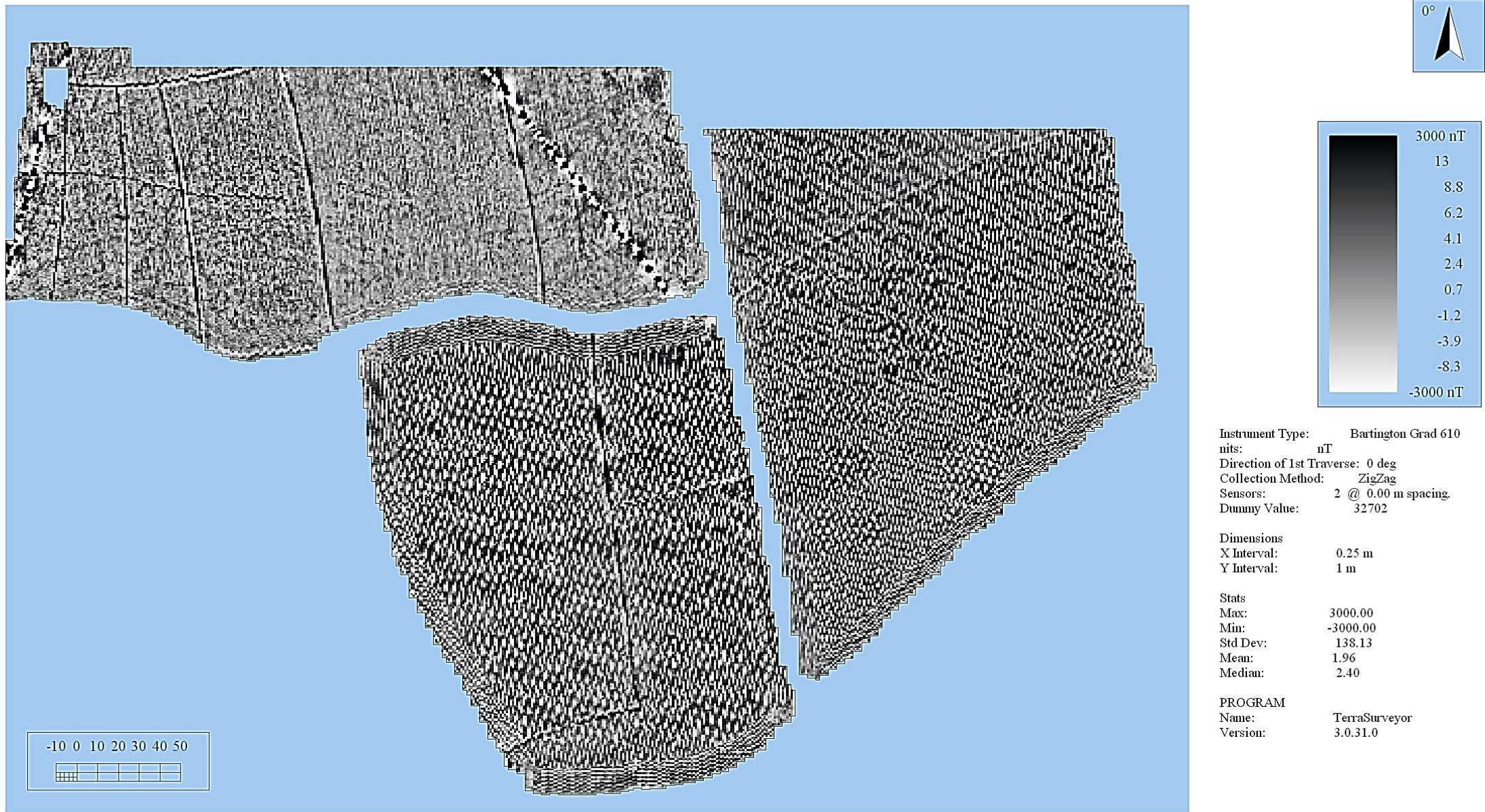


British Grid
centre X: 259167.02 m, centre Y: 50098.09 m

Scale: 1:1000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Base map: Ordnance Survey (c) Crown Copyright 2016.
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Figure 5: shade plot of processed data, north-western corner



Instrument Type: Bartington Grad 610
 nits: nT
 Direction of 1st Traverse: 0 deg
 Collection Method: ZigZag
 Sensors: 2 @ 0.00 m spacing.
 Dummy Value: 32702

Dimensions
 X Interval: 0.25 m
 Y Interval: 1 m

Stats
 Max: 3000.00
 Min: -3000.00
 Std Dev: 138.13
 Mean: 1.96
 Median: 2.40

PROGRAM
 Name: TerraSurveyor
 Version: 3.0.31.0

Processes: 1
 1 Base Layer

Figure 6: shade plot of unprocessed data

Appendix 2 Tables

Site: An archaeological gradiometer survey
Land at Creacombe Cross, Yealmpton, Devon
Ordnance Survey (E/N): 259458,49983 (point)
Report: 1611CRE-R-1

anomaly group	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1	likely, positive	linear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1953-54, removed before 1967-70	Ordnance Survey maps 1869-96 1:10560 to 1967-70 1:10560
2	possible, positive	disrupted linear & return			
3	likely, positive	linear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1953-54; removed before 1982-87 apart from the northern end which was mapped in 1982-87 but not in 1991-92	Ordnance Survey maps 1869-96 1:10560 to 1991-92 1:10000
4	possible, positive	linear	field boundary		
5	possible, mixed response	irregular	area of possible archaeological activity	anomaly group shows an apparent area of enhanced magnetic response but this is, in part at least, due to the presence of magnetic materials in the adjacent field boundary	
6	likely, positive	linear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1953-54; removed before 1982-87	Ordnance Survey maps 1869-96 1:10560 to 1991-92 1:10000
7	possible, positive	disrupted linear			
8	likely, positive/negative/positive	curvilinear	field boundary - Devon bank	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1991-92	Ordnance Survey maps 1869-96 1:10560 to 1991-92 1:10000
9	likely, positive	curvilinear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1991-92	Ordnance Survey maps 1869-96 1:10560 to 1991-92 1:10000
10	possible, positive	disrupted linear			
11	possible, positive	disrupted linear			
12	possible, positive	disrupted linear			
13	possible, positive	disrupted linear			
14	possible, positive				
15	possible, positive	disrupted linear			
16	possible, positive	disrupted rectilinear			
17	possible, positive	linear			
18	possible, positive	disrupted linear			
19	possible, positive	curvilinear			
20	possible, positive	curve			
21	possible, positive	oval	filled pit or hollow		
22	possible, positive	oval	filled pit or hollow		
23	possible, positive	disrupted linear			
24	possible, positive	disrupted linear			
25	possible, positive	disrupted linear			
26	possible, positive	linear			
27	possible, positive	oval	filled pit or hollow		
28	likely, positive	linear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and 1906	Ordnance Survey maps 1869-96 1:10560 to 1906 1:2500
29	possible, positive	linear			
30	possible, positive	disrupted linear			
31	possible, positive	linear			
32	possible, positive	disrupted linear			
33	possible, positive	linear			
34	possible, positive	linear			
35	likely, positive	curvilinear	field boundary	anomaly group coincides with and represents a field boundary mapped by the Ordnance Survey between 1869-96 and at least 1991-92	Ordnance Survey maps 1869-96 1:10560 to 1991-92 1:10000
101	possible, high contrast linear		ferrous service cable, pipe or drain		
102	possible, high contrast linear		ferrous service cable, pipe or drain		

Table 1: data analysis

<p>Documents Survey methodology statement: Dean (2015a)</p>	
<p>Methodology</p> <ol style="list-style-type: none"> 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. 	
<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 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</p>	

Table 2: methodology summary

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: 52.90 Min: -54.14 Std Dev: 8.66 Mean: -0.62	Processes: 20 1 Base Layer 2 Clip at 1.00 SD 3 De Stagger: Grids: cb10.xgd cb11.xgd cb26.xgd cc1.xgd ca10.xgd cb9.xgd cb12.xgd cb25.xgd cc2.xgd ca9.xgd ca11.xgd cb8.xgd cb13.xgd cb24.xgd cc3.xgd ca8.xgd ca12.xgd cb7.xgd cb14.xgd cb23.xgd cc4.xgd ca7.xgd ca13.xgd cb6.xgd cb15.xgd cb22.xgd cc5.xgd ca1.xgd ca6.xgd ca14.xgd cb5.xgd cb16.xgd cb21.xgd cc6.xgd ca2.xgd ca5.xgd cb1.xgd cb4.xgd cb17.xgd cb20.xgd cc7+cc17.xgd ca3+a1.xgd ca4.xgd cb2.xgd cb3.xgd cb18.xgd cb19.xgd cc8+cc16.xgd a2.xgd a10.xgd a11.xgd b5.xgd b6.xgd b13.xgd b14+cc15.xgd a3.xgd a9.xgd a12.xgd b4.xgd b7.xgd b12.xgd b15+cc14.xgd a4.xgd a8.xgd a13.xgd b3.xgd b8.xgd b11.xgd cc13.xgd a5.xgd a7.xgd b1.xgd b2.xgd b9.xgd b10.xgd Mode: Both By: -2 intervals 4 De Stagger: Grids: cc12.xgd Mode: Both By: -2 intervals 5 De Stagger: Grids: cc11+cc18.xgd cc10+cc19.xgd cc9+cc20.xgd cd1.xgd Mode: Both By: -3 intervals 6 De Stagger: Grids: cd1.xgd cd2.xgd cd3.xgd cd4.xgd cd5.xgd cd6.xgd Mode: Both By: -3 intervals 7 De Stagger: Grids: cd7.xgd Mode: Both By: -1 intervals 8 De Stagger: Grids: cd15.xgd cd14.xgd cd13.xgd cd12.xgd cd11.xgd cd10.xgd cd9.xgd cd8.xgd Mode: Both By: -3 intervals 9 De Stagger: Grids: cd16.xgd ce1.xgd ce2.xgd ce3.xgd ce4.xgd ce5.xgd Mode: Both By: -3 intervals 10 De Stagger: Grids: ce6.xgd ce9.xgd ce7.xgd ce8.xgd Mode: Both By: -2 intervals 11 De Stagger: Grids: ce14.xgd ce13.xgd ce15.xgd ce12.xgd ce16.xgd ce11.xgd ce17.xgd ce10.xgd ce18.xgd Mode: Both By: -3 intervals 12 De Stagger: Grids: ce19.xgd ce22.xgd ce20.xgd ce21.xgd Mode: Both By: -2 intervals 13 De Stagger: Grids: ce26.xgd ce25.xgd ce27.xgd ce24.xgd ce28.xgd ce23.xgd ce29.xgd Mode: Both By: -3 intervals 14 De Stagger: Grids: d11.xgd d20.xgd d21.xgd d1.xgd d10.xgd d12.xgd d19.xgd d22.xgd d2.xgd d9.xgd d13.xgd d18.xgd d23.xgd d3.xgd d8.xgd d14.xgd d17.xgd d24.xgd d4.xgd d7.xgd d15.xgd d16.xgd d25.xgd Mode: Both By: -1 intervals 15 De Stagger: Grids: d2.xgd Mode: Both By: -1 intervals 16 De Stagger: Grids: d15.xgd Mode: Both By: -1 intervals 17 De Stagger: Grids: d21.xgd Mode: Both By: -1 intervals 18 DeStripe Median Sensors: Grids: All 19 Interpolate: Match X & Y Doubled. 20 Clip at 5.00 SD

Table 3: processed data metadata