Substrata
Archaeological Geophysical Surveyors

An archaeological magnetometer survey

Land at Lynchmead Farm, Wick St Lawrence, Weston Super Mare

Centred on NGR: 335834, 164320

Report: 1901LYN-R-1

Mark Edwards BA

02 April 2019

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: Units 20 21, Bude Business Centre, Kings Hill Industrial Estate, Bude, Cornwall, England EX23 8QN

Contents

Figures

Tables

1 Introduction

This report presents the results of an archaeological magnetometer survey at the proposed development site listed in Section 4.

The survey was commissioned by AC Archaeology Ltd on behalf of clients in advance 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, 2019 .

2 Client

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

3 Copyright

4 Survey type and location

4.1 Survey

Method:	shallow depth magnetometer survey
Instrument:	twin-sensor fluxgate gradiometer
Date:	12th, 13th, 14th, 15th March 2019
Area:	5ha
Investigation level:	Level 2 prospection and delineation
Survey resolution:	1m by 0.25m

4.2 Location

Name:	Lynchmead Farm, Weston Super Mare
Town:	Wick St Lawrence
Civil Parish:	Wick St Lawrence
District:	North Somerset
County:	Somerset
Nearest Postcode:	BS22 9NY
Survey centre NGR:	ST 35834 64320 point
Survey centre NGR E/N :	335834, 164320 point
Historic environment designation:	None
OASIS ID:	substrat1-347819

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 7.

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.

Fourteen magnetic anomaly groups were characterised as reflecting potential buried archaeology. Five groups may represent former field drains with the same trends as the current field Drains. One of these groups has, however, been recorded on OS maps so is much more likely to represent an infilled drain. One group may represent a stony bank with flanking ditches, although the signature is very weak, probably because the area is very wet and liable to flooding. One group may represent either land drains or ridge and furrow cultivation. The remaining anomaly groups may represent former boundaries and ditches, due to the limestone geology in the area these may represent natural deposits.

6 Standards

The standards that were used to complete this survey are defined by the Chartered Institute for Archaeologists 2014b and the Europae Archaeologiae Consilium undated . The codes of approved practice to be followed are those of the Chartered Institute for Archaeologists 2014 and Archaeology Data Service undated .

7 Survey aims and objectives

7.1 Aims

1. Within the framework set out in Chartered Institute for Archaeologists 2014b and Europae Archaeologiae Consilium undated , 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.

7.2 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 is sufficiently detailed to inform any subsequent development on the survey area about the location and possible archaeological character of the recorded anomalies.

8 Methodology

The magnetometer survey was undertaken in accordance a Survey Method Statement Substrata Ltd, 2019 using the standards specified in Section 6 to achieve the aims and objectives set out 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 Chartered Institute for Archaeologists, 2014b and Europae Archaeologiae Consilium undated .

9 Survey Area

9.1 Location and description

The Survey Area comprises parts of Four fields to the south west of the village of Ebdon Figure 1 . The survey area is bound to the South by Ebdon road and an industrial estate in the south eastern corner. A group of houses and farm buildings lie centrally, the survey area encompassing them. The fields are divided by a mixture of drains, fencing and hedging. The survey area is mainly level with little or no slopes to note. The fields were under grass with some crop remnants at the time of the survey.

9.2 Geology and sub-surface deposits

The solid geology across the site is Blue Lias Formation - Mudstone And Limestone, Interbedded. Sedimentary Bedrock formed approximately 191 to 210 million years ago in the Jurassic and Triassic Periods. Local environment previously dominated by shallow lime-mud seas. The superficial geology is not recorded in the source used British Geological Survey, undated .

9.3 Soils

The topsoils in the vicinity are Loamy and clayey soils of coastal flats with naturally high groundwater. LandIS, undated .

10 Archaeological background

10.1 Historic landscape characterisation

'Late medieval enclosed open fields created by local arrangement and exchange'
'Post medieval 15th - 17th C irregular field enclosed from anciently reclaimed inland moors'
North Somerset Council

10.2 Summary of the archaeological background

This section summarises heritage assets that are thought relevant to the survey data analysis and is not designed to be a comprehensive description of the archaeological background.

A Heritage Desk-based Assessment for a site including the current Survey Area is currently being completed by AC Archaeology 2019 . The Assessment will included an analysis of the recorded heritage assets, cartographic evidence, other documentary evidence and field name evidence within the site and an study area around the site.

The area is former marsh and moorland which has been historically reclaimed, land drains dominate the landscape.

Whilst providing a useful context for the data analysis, the on-line HER information is not necessarily complete or up-to-date. Publication in commercial reports of both the HER information and the on-line historic maps is not permitted without a licence.

There are no designated or undesignated heritage assets within the Survey Area.

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

Figure 2 shows the interpretation of the survey data and includes the anomaly groups identified as possibly relating to buried archaeology 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 2, 3, 4 and Table 1 comprise the analysis of the survey data.

Figures 5, 6 and 7 are plots of the processed data as specified in Table 3. Figure 8 is a plot of

minimally processed data as specified in Table 4. Figure 9 shows the location of the survey grid 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 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 Figure 2 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, water management equipment, 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.

Data trends

Group **5,** a series of roughly N-S parallel linear anomalies likely represent either cultivation or land drainage.

12.2 Data relating to historic maps and other records

Magnetic anomaly group **1** relates to a former land drain which was in-filled sometime after 1991.

12.3 Data with no previous archaeological provenance

Anomaly group **3** may represent a stony bank with flanking ditches, although the signature is very weak, probably because the area is very wet and liable to flooding.

Anomaly groups **4** and **9** may represent linear/ curvilinear ditches, although natural origins cannot be ruled out. Group **5** may relate to groups **4** and **9** although its signature is indicative of a small pit, however natural origins are more likely.

Anomaly groups **2, 7, 8** and **10** may represent former field drains which have been infilled with stoney materials. They share the same trends as the current field Drains and all have a similar signature to anomaly **1.** The area has a very high natural water table so land drains are the most likely conclusion. Anomaly group **13** likely represents modern rubble dumping.

Anomaly groups **11, 12** and **14** are of possible natural origins caused by water run off, however due to there curvilinear appearance and their ditch like qualities an archaeological deposition cannot be ruled out.

Anomaly group **6** may represent former ridge and furrow cultivation or former land drains.

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.

Fourteen magnetic anomaly groups were characterised as reflecting potential buried archaeology. Five groups **1, 2, 7, 8,** and **10** may represent former field drains which have been in filled. Group **1** is shown as a drain on OS maps and was removed sometime after 1991. One group **3** may represent a stony bank with flanking ditches, however the signature is very weak, the area has a very high water table and liable to flooding so a weak response isn't unusual. One group **6** may represent either land drains or ridge and furrow style cultivation. Anomaly groups **4** and **9** may represent linear/ curvilinear ditches, although natural origins cannot be ruled out. Group **5** may relate to groups **4** and **9** although its signature is indicative of a small pit, however natural origins are more likely.

The remaining anomalies groups **11, 12** and **14** are of possible natural origins caused by water run off, however due to there curvilinear appearance and their ditch like qualities an archaeological deposition cannot be ruled out. Anomaly group **13** likely represents modern ground strengthening or dumping of rubble and ferrous materials.

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 substrat1-347819

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 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. Available at: http:// guides.archaeologydataservice.ac.uk/g2gp/Geophysics_Toc Accessed 5 Oct. 2018 .

British Geological Survey undated *Geology of Britain viewer, 1:50000 scale data.* Available at: http://www.bgs.ac.uk/discovering Geology/geologyOfBritain/viewer.html Accessed 19 Oct. 2018 .

Chartered Institute for Archaeologists 2014 *Code of conduct.* Available at: https://www.archaeologists.net/sites/default/files/CodesofConduct.pdf Accessed 5 Oct. 2018 .

Chartered Institute for Archaeologists 2014b *Standard and guidance archaeological geophysical survey.* Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_2.pdf Accessed 5 Oct. 2018 .

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

Devon County Council undated *Historic environment*. Available at: https://new.devon.gov.uk/historicenvironment/ Accessed 22 Oct. 2018 .

Europae Archaeologiae Consilium undated *EAC Guidelines for the Use of Geophysics in Archaeology, Questions to Ask and Points to Consider.* EAC Guidelines 2. Available at: http://old.european-archaeological-council.org/files/eac_guidelines_2_final.pdf Accessed 5 Oct. 2018 .

Historic England undated *Heritage Gateway*. Available at: http://www.heritagegateway.org.uk/Gateway/ Accessed 19 Oct. 2018 .

LandIS undated *Cranfield Soils and Agrifood Institute Soilscapes.* Available at: http://www.landis.org.uk/soilscapes/ Accessed 19 Oct. 2018 .

Ministry of Housing, Communities Local Government 2018 *National Planning Policy Framework*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf Accessed 5 Oct. 2018 .

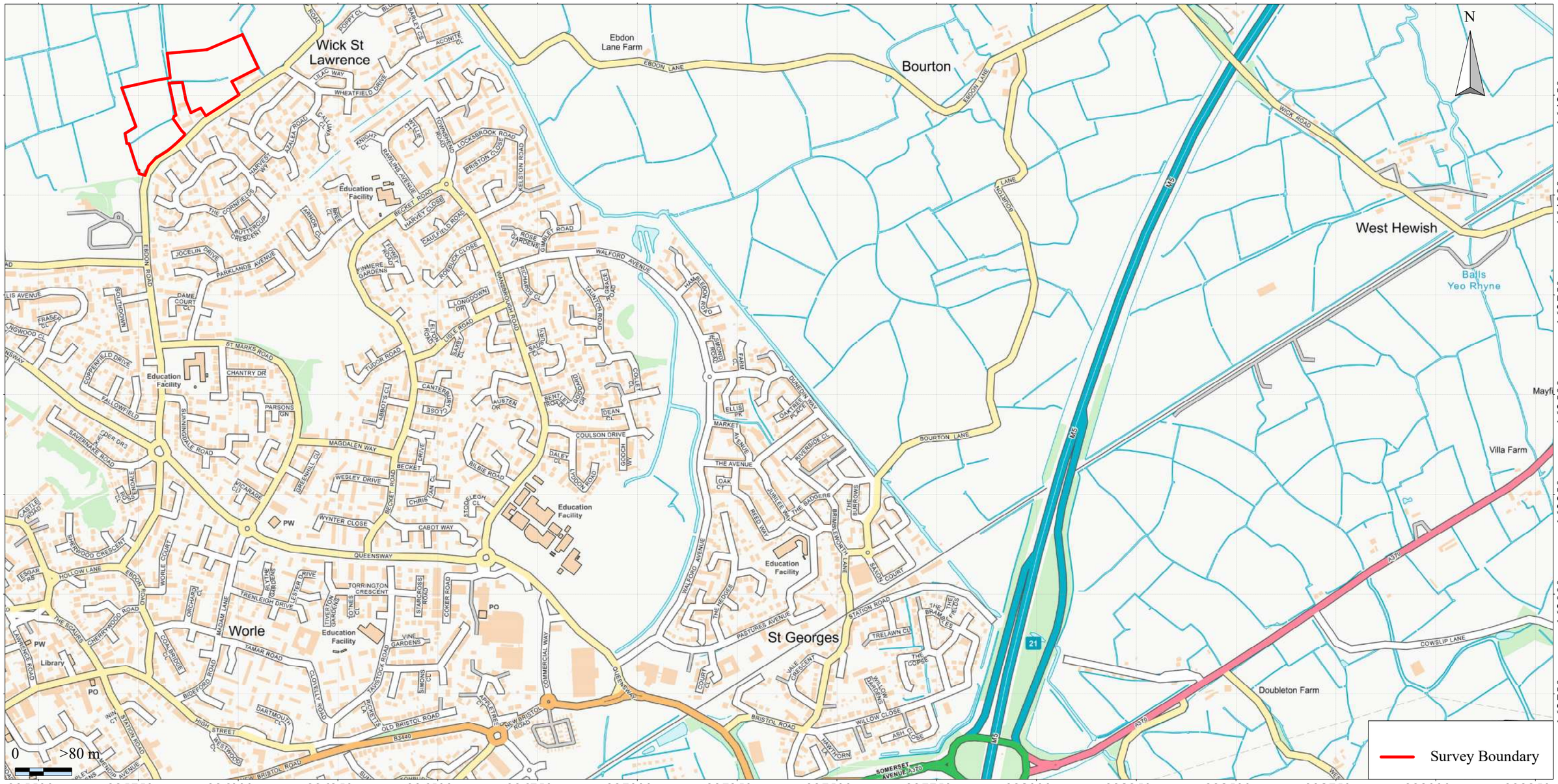
Old-Maps undated *old-maps.co.uk*. Available at: https://www.old-maps.co.uk/#/ Accessed 19 Oct. 2018 .

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: 337355.12 m, centre Y: 163507.17 m

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

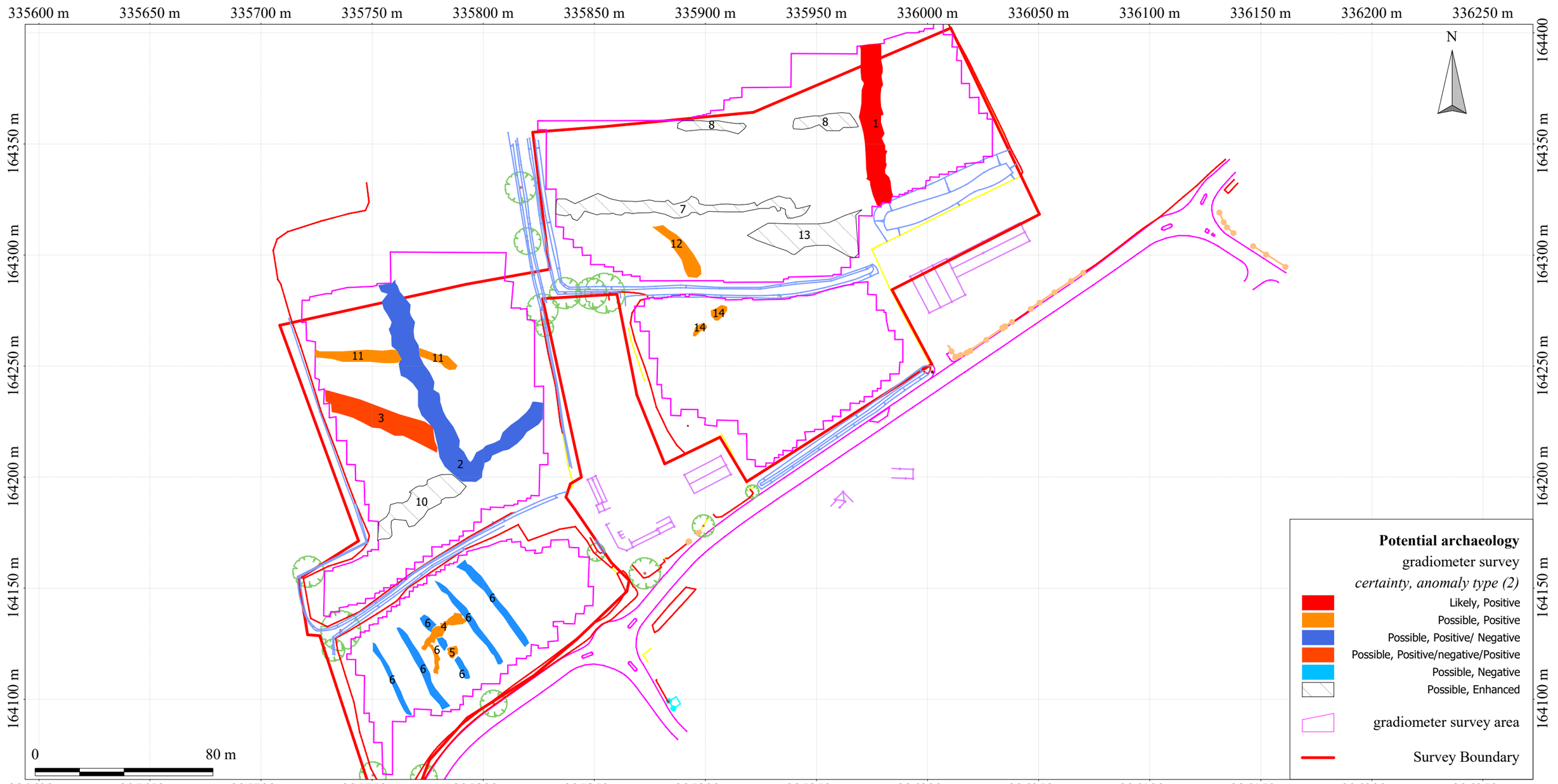
Notes:

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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 1: location plan

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



British Grid
centre X: 335933.18 m, centre Y: 164233.88 m

Scale: [1:1750] @ A3. Spatial Units: Meter. Do not scale off this drawing

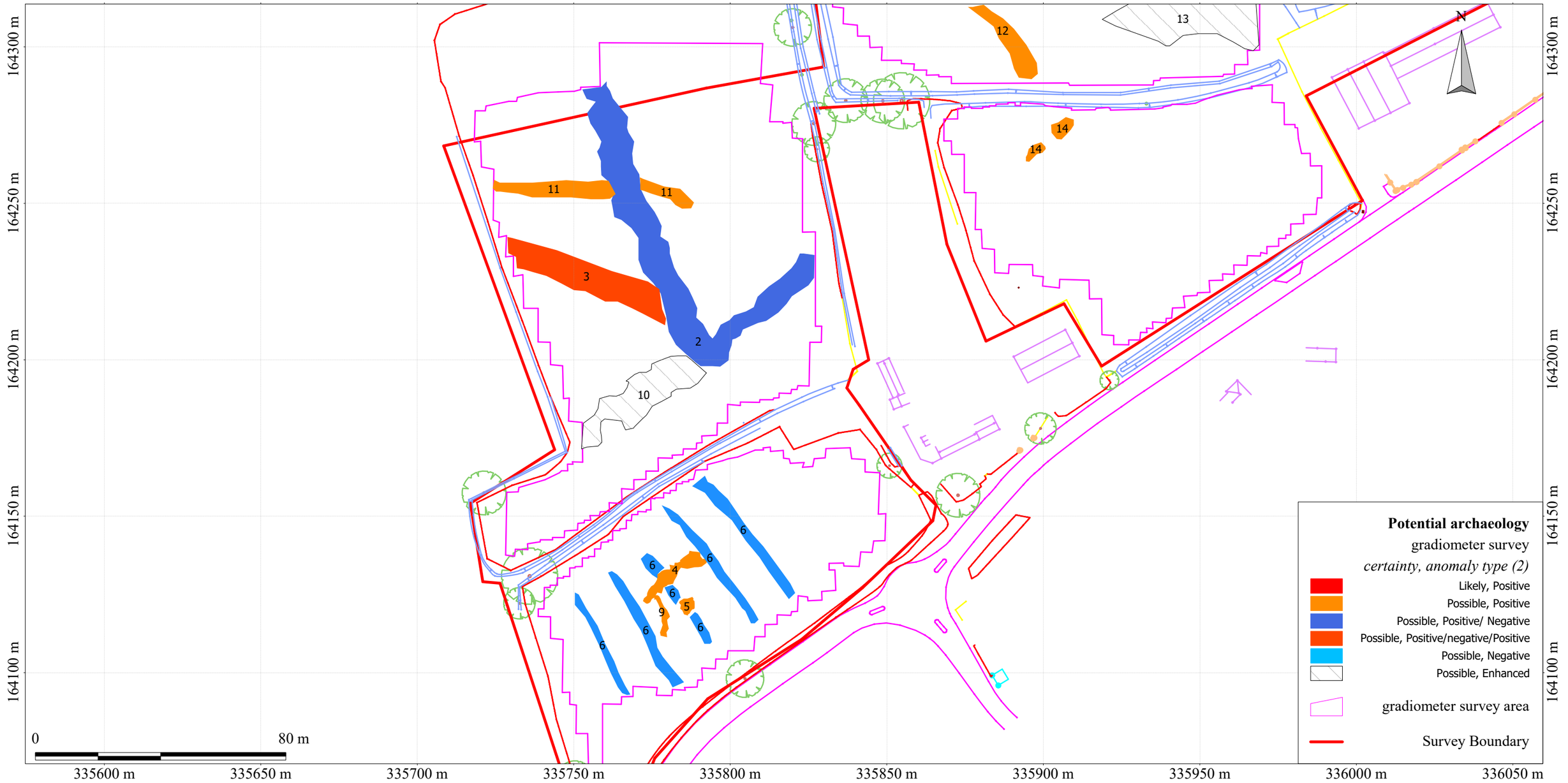
Notes:

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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 2: survey interpretation,

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



British Grid
centre X: 335817.18 m, centre Y: 164192.30 m

Scale: [1:1250] @ A3. Spatial Units: Meter. Do not scale off this drawing

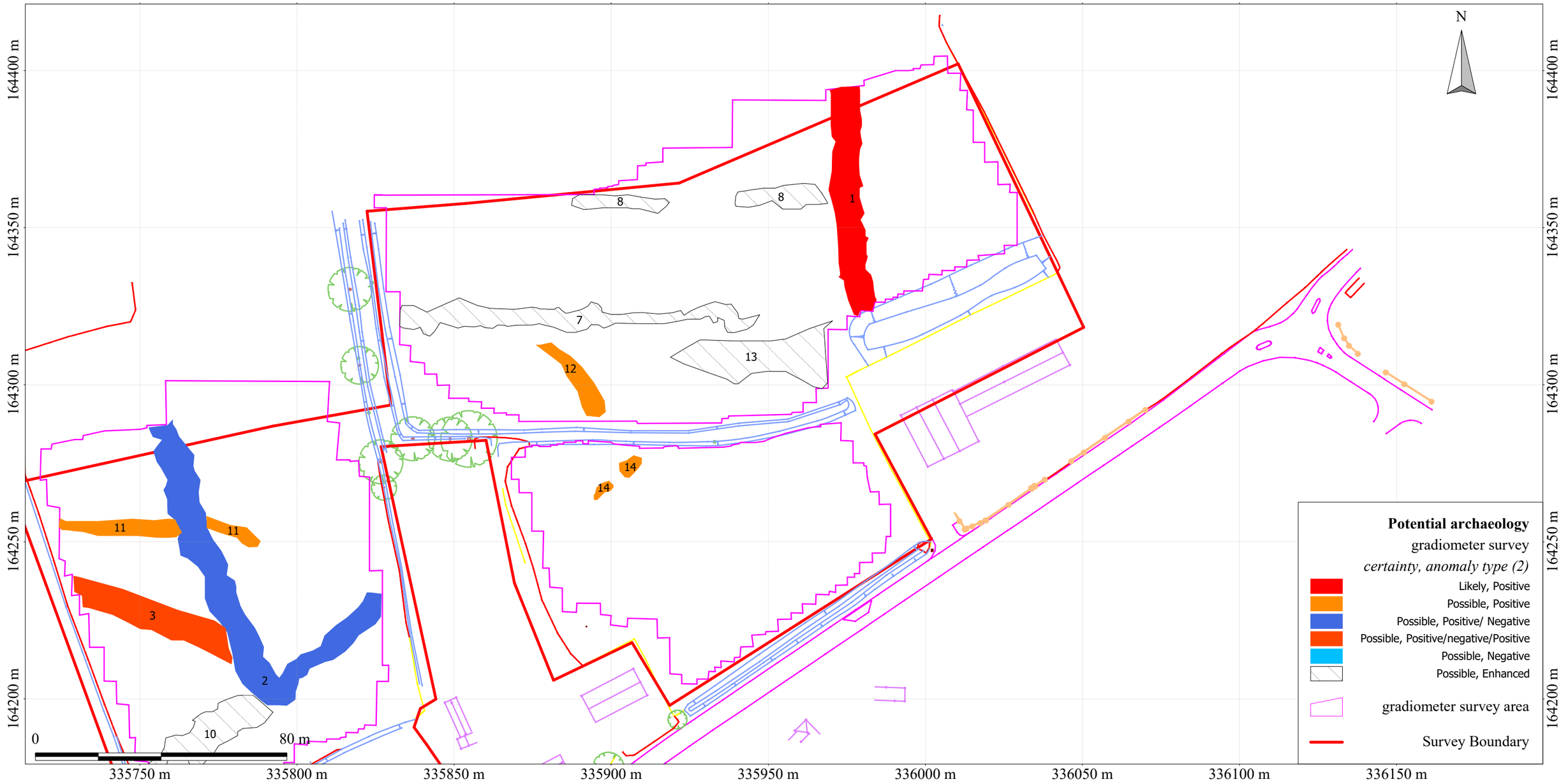
Notes:

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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 3: survey interpretation, west

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



British Grid
centre X: 335955.03 m, centre Y: 164300.23 m

Scale: [1:1250] @ 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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 4: survey interpretation, east

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

British Grid
centre X: 335933.18 m, centre Y: 164233.88 m

Scale: [1:1750] @ A3. Spatial Units: Meter. Do not scale off this drawing

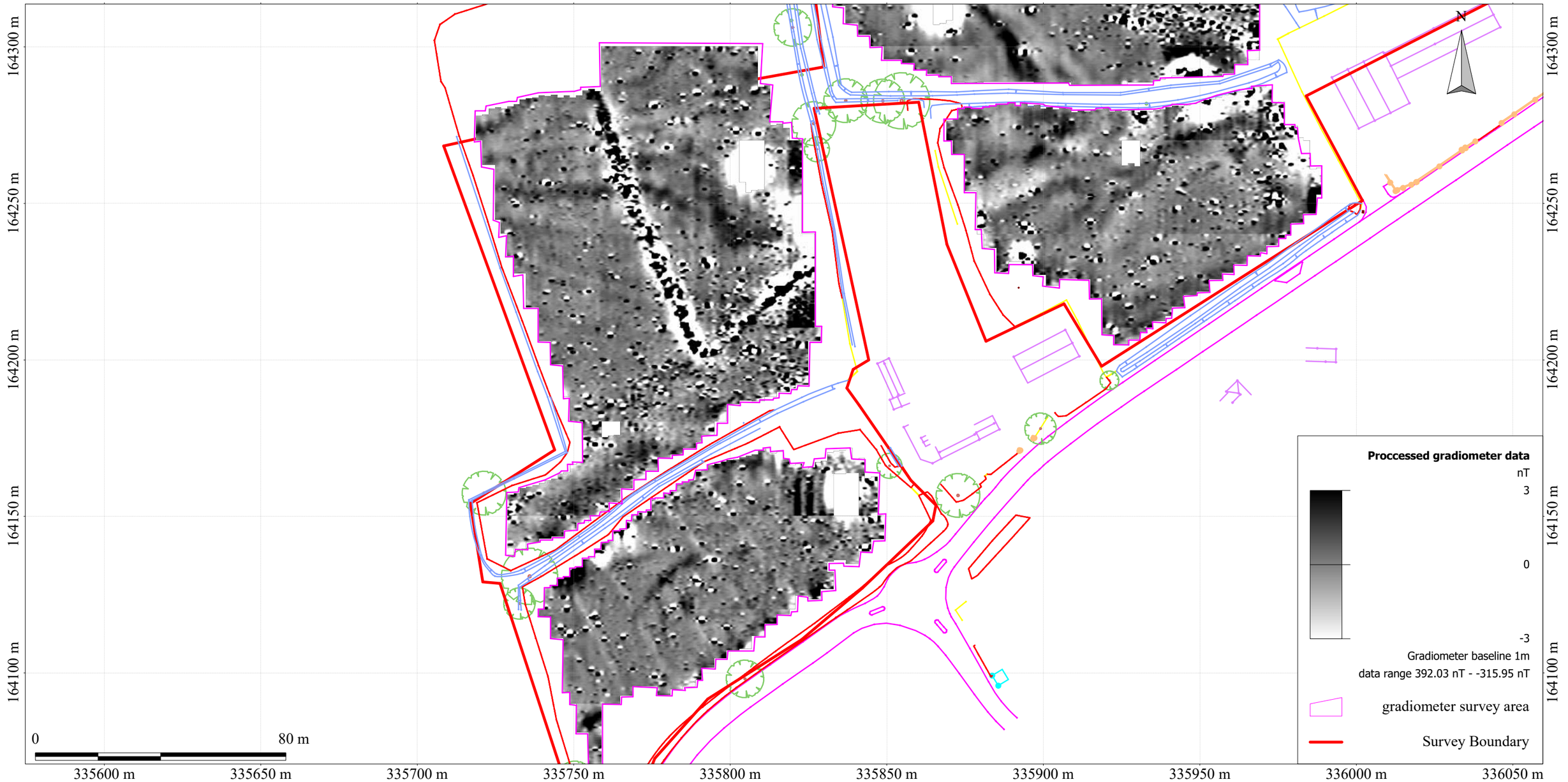
Notes:

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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 5: processed gradiometer data

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



British Grid
centre X: 335817.18 m, centre Y: 164192.30 m

Scale: [1:1250] @ 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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 6: processed gradiometer data, west

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

335750 m 335800 m 335850 m 335900 m 335950 m 336000 m 336050 m 336100 m 336150 m

164400 m
164350 m
164300 m
164250 m
164200 m

N

Proccessed gradiometer data
nT
3
0
-3
Gradiometer baseline 1m
data range 392.03 nT - -315.95 nT
gradiometer survey area
Survey Boundary

0 80 m

British Grid
centre X: 335955.03 m, centre Y: 164300.23 m

Scale: [1:1250] @ 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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 7: processed gradiometer data, east

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

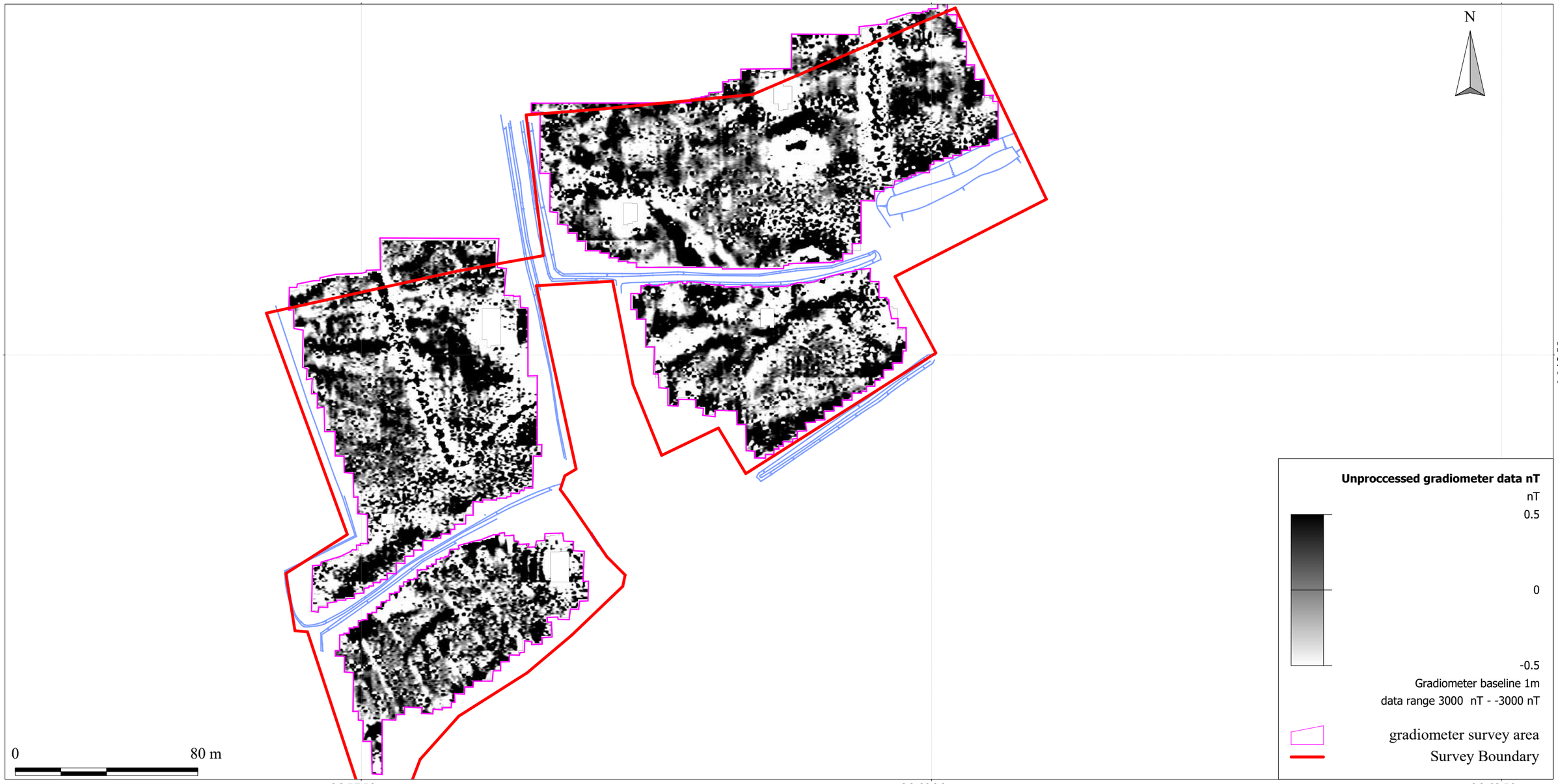
335750 m

336000 m

336250 m

164250 m

N



Unproccessed gradiometer data nT

nT

0.5

0

-0.5

Gradiometer baseline 1m

data range 3000 nT - -3000 nT

gradiometer survey area

Survey Boundary

0

80 m

335750 m

336000 m

336250 m

164250 m

British Grid

centre X: 335933.18 m, centre Y: 164233.88 m

Scale: [1:10000] @ 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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 8: unprocessed gradiometer data

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

335650 m
335900 m
336150 m
164250 m
N
335968.954, 164390.262
335758.927, 164300.325
335998.927, 164330.325
Industrial units
High magnetic response
High magnetic response
farm buildings
335758.927, 164180.325
High magnetic
response
335848.927, 164150.3250
Wood pile
(trees)
0
80 m
335650 m
335900 m
336150 m
164250 m
British Grid
centre X: 335896.94 m, centre Y: 164265.74 m

Scale: 1:2200 @ 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 Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320
Report: 1901LYN-R-1

Figure 9: map and control points

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

Appendix 2 Tables

Land at Lynchmead Farm, Weston Super Mare
Centred on NGR: 335834, 164320

anomaly group	associated anomaly groups	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1		Likely Positive/Negative	Linear	Infilled former drain	Filled with stoney and ferrous materials	OS Map, Removed sometime after 1991
2		Possible Positive/Negative	Linear	Possible infilled drain or service	Filled with stoney and ferrous materials	
3		Possible Positive/Negative/Positive	Curvilinear	Possible bank with flanking ditches	Very low response	
4		Possible Positive	Curvilinear			
5		Possible Positive	Ovoid	Possible pit	possible natural deposit	
6		Possible Negative	Linear	Possible cultivation or land drains		
7		Possible Enhanced	Linear	Possible former drains or boundaries		
8		Possible Enhanced	Linear	Possible former drains or boundaries		
9		Possible Positive	Linear			
10	2	Possible Enhanced	Linear	Possible former drain, backfilled	Possibly connected to 2	
11		Possible Positive	Curvilinear	Possible natural		
12		Possible Positive	Curvilinear	Possible natural		
13		Possible Enhanced	Random	Possible modern, rubble, ground strengthening or dumping		
14		Possible Positive	Curvilinear	Possible natural		

Table 1: Data analysis

<table>
<tr><td colspan="2">Grid
Method of Fixing: DGPS set-out using pre-planned survey grids and Ordnance Survey coordinates.
Composition: 30m by 30m grids
Recording: Geo-referenced and recorded using digital map tiles.
DGPS used: Spectra Precision PM5V2 GPS with external antenna and survey pole and DigiTerra Explorer 7 as the survey control program.</td></tr>
<tr><td>Equipment
Instrument: Bartington Instruments grad601-2
Firmware: version 6.1</td><td>Data Capture
Sample Interval: 0.25m
Traverse Interval: 1 metre
Traverse Method: zigzag
Traverse Orientation: GN</td></tr>
<tr><td colspan="2">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</td></tr>
</table>

Table 2: methodology information

Instrument Type: Bartington Grad 601
Units: nT
Direction of 1st Traverse: 0 deg
Collection Method: ZigZag
Sensors: 2 @ 1.00 m spacing.
Dummy Value: 32702

Dimensions
Composite Size (readings): 1440 x 1320
Survey Size (meters): 360 m x 330 m
Grid Size: 30 m x 30 m
X Interval: 0.25 m
Y Interval: 0.25 m (surveyed @ 1 m)

Stats
Max: 392.03
Min: -315.95
Std Dev: 11.50
Mean: -0.20
Median: 0.01

PROGRAM
Name: TerraSurveyor
Version: 3.0.34.10
Processes: 5
1 Base Layer
2 Clip at 1.00 SD
3 DeStripe Median Sensors: All
4 De Stagger: Grids: All Mode: Outbound By: -2 intervals
5 Interpolate: Match X & Y Doubled.

Note: Input to the GIS results in slight changes to the stats shown above. The data stored in the archives (Appendix 3) will have the above metadata and the values quoted in the report figures will be those quoted in this metadata table.

Table 3: processed data metadata

Instrument Type:	Bartington Grad 601
Units:	nT
Direction of 1st Traverse:	0 deg
Collection Method:	ZigZag
Sensors:	2 @ 1.00 m spacing.
Dummy Value:	32702
Dimensions	
Composite Size (readings):	1440 x 330
Survey Size (meters):	360 m x 330 m
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:	161.91
Mean:	-0.71
Median:	0.00
PROGRAM	
Name:	TerraSurveyor
Version:	3.0.34.10
Processes:	1
1	Base Layer
Note:	Input to the GIS results in slight changes to the stats shown above. The data stored in the archives (Appendix 3) will have the above metadata and the values quoted in the report figures will be those quoted in this metadata table.

Table 4: minimally processed data metadata

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
Raw data composite files:	CSV (.xyz)
Minimally processed data composite files:	DW Consulting TerraSurveyor 3 (.xgd) and CSV (.xyz)
Final data processing composite files:	DW Consulting TerraSurveyor 3 (.xgd) and CSV (.xyz)
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:	CSV (xyz)
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.