



An archaeological gradiometer survey

Westwood, land adjoining junction 27,
M5, Devon

Centred on NGR 304960,113560

Report: 150623

15 July 2015

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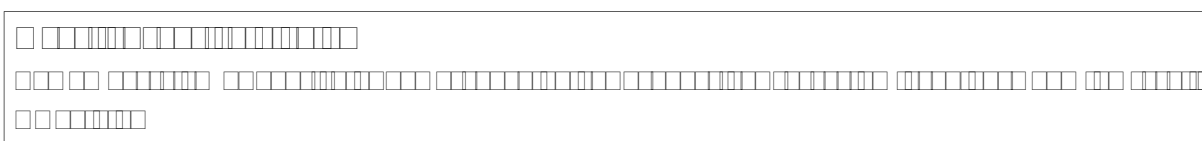
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Accompanying CD-ROM

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



1 Survey description and summary

1.1 Survey

Type: twin-sensor fluxgate gradiometer
Date: between 1 December 2014 and 1 April 2015
Area: 79 ha
Project Manager: Ross Dean BSc MSc MA MCifA, Partner, Substrata
Lead surveyor: Mark Edwards BA, Partner, Substrata

1.2 Client

Friends Life Ltd, c/o AXA Real Estate Investment Managers UK Ltd, 155 Bishopsgate, London EC2M 3XJ

1.3 Commissioning agent

Mills Whipp Projects Ltd, 40 Bowling Green Lane, London EC1R 0NE on behalf of Friends Life Ltd. c/o AXA Real Estate Investment Managers UK Ltd.

1.4 Location

Site: Westwood, land adjoining junction 27, M5
Civil Parish: Burlescombe, Halburton (survey areas 9D and 9E)
District: Mid Devon
County: Devon
Nearest Postcode: EX16 7EL
NGR: ST 049 135
Ordnance Survey E/N: 304960,113560 (point)

1.5 Archive

OASIS number: substrat1-215993
Archive: At the time of writing, the archive of this survey will be held by Substrata and will be deposited with the ADS in due course.

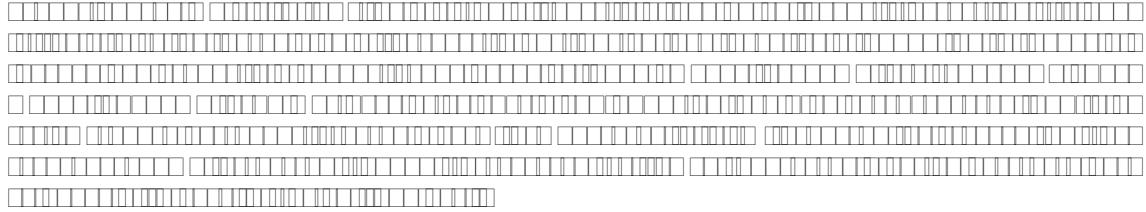
1.6 Introduction

This report was commissioned by Mills Whipp Projects Ltd on behalf of Friends Life Ltd in order to help establish the cultural heritage and archaeological implications of a proposal for a construction project at the above site. The location of the proposed application area is shown in Figure 1.

The application site comprises 90ha of mixed farmland of which 79ha was available for survey. The survey land was subdivided into twenty-six fields. For the purposes of data analysis, these fields were split into nine separate land parcels based on land ownership at the time of the survey (Figure 2).

1.7 Summary

[Placeholder for summary content]



2 Survey aims and objectives

2.1 Overview

The magnetometer survey will seek to record the presence or absence of potential archaeological remains at the site so as to allow an appropriate mitigation strategy to be employed. A confidence rating for the survey results will be an integral part of the report.

2.2 Objectives

The magnetometer survey is intended to indicate the potential presence of archaeological remains. In particular it will assess the nature, distribution, degree of survival and, if possible, the potential of sub-surface features and deposits. It should recover as much information as possible on the extent, date, phasing, character, function, status and significance of the site.

3 Standards

The standards used to complete this survey are defined by the Chartered Institute for Archaeologists (2014a) and English Heritage (2010). The codes of approved practice that were followed are those of the Chartered Institute for Archaeologists (2014b) and Archaeology Data Service/Digital Antiquity Guides (undated). The document text was written using the house style of the Chartered Institute for Archaeologists (Chartered Institute for Archaeologists, undated).

4 Site description

The solid geology across the site is rock of the Triassic Aylesbeare Mudstone Group. Generically, this group comprises reddish-brown silty mudstone and clayey siltstone. Clayey fine-grained sandstone occurs locally and, less commonly, local deposits of clean, fine- to medium-grained sandstone are found (British Geological Survey, undated).

The superficial geology on the western side of the application area is not recorded in the source used. On the eastern side of the area the solid geology is overlain by Quaternary River Terrace Deposits. Typically these comprise sand and gravel, locally with lenses of silt, clay or peat (ibid).

The soils on the western side of the application area are lightly acid loamy and clayey soils with impeded drainage. Those on the eastern side are loamy soils. Both soil types have naturally high groundwater.

The application area lies comprises 90ha of mixed farmland situated between 80 and 90m above Mean Ordnance Datum. The land was subdivided into twenty-six fields. For the purposes of data analysis, these fields were split into nine separate land parcels based on land ownership at the time of the survey (Figure 2).

5 Archaeological background

The following is a short summary of information obtained from the Devon Historical Environment Record (DHER) as presented in the Historical England on-line resource Heritage Gateway (Historic England, undated). Designated and non-designated heritage assets within 1000m of the designated centre of the application area were assessed. Those relevant to the analysis of the survey data are briefly discussed below.

5.1 General observations

There are a number of HER entries concerned with Post-medieval and Modern buildings of historic interest and features associated with the railway to the west of the site. The remaining entries not discussed below record Medieval (1066 AD to 1539 AD) and Post Medieval to Modern (1540 AD to 2013 AD) structures or features associated with agricultural and small-scale industrial activities such as quarry pits, a dew pond, field boundaries, drainage ditches and other earthworks, sluices, a possible water meadow and former orchards. An estate boundary possibly dating to the 10th century AD (DHER entry MDV15694) and parish boundaries are also recorded.

Entries concerning evidence of Prehistoric activities are absent within the search area apart from the finding of a Prehistoric flint axe, thought to be Neolithic (between 4000 BC and 2201 BC), found to the west of the application area during construction of the North Devon Link Road in 1984 (MDV22736).

5.2 Relevant DHER entries within the application area

Although not recorded in the survey dataset, some sub-circular crop marks were recorded in the north-eastern half of area 2 from aerial photographs taken between 2006-7 and 2010. These cropmarks were assessed as typical of those that form over geological features (MDV103554).

The site of Medieval strip fields is shown on 19th century maps south of Tiverton Parkway Station (MDV73524) covering parts of survey areas 7A, 7B and 9A (MDV73524). Magnetic anomaly groups 33, 52 and 53 may relate to these relatively early field patterns. The Enclosure Award for Leonard Moor was issued in 1864 (MDV21048).

Pieces of iron tap slag were incorporated into the porch and external rendering of the 19th century Leonard Moor Cottages later known as Turnpike Cottages, to the east and adjacent to area 9E (MDV58407). No evidence of iron production or working was recorded in the survey dataset.

(continued)

5.3 Historic landscape characterisation

Area	Sub-area	HLC – Modern A characterisation of the landscape of Devon based on what we see today	HLC – Post-medieval A characterisation of the landscape of Devon as it was in the late 19th Century
1		Modern enclosures adapting post-medieval fields	Post-medieval enclosures
2		Modern enclosures adapting post-medieval fields	Post-medieval enclosures
3		Modern enclosures adapting post-medieval fields	Medieval enclosures based on strip fields
4		Post-medieval enclosures	Post-medieval enclosures
5	All areas	Post-medieval enclosures	Post-medieval enclosures
6	All areas	Post-medieval enclosures	Post-medieval enclosures
7	All areas	Modern enclosures adapting medieval fields	Medieval strip-enclosures
8	All areas	Post-medieval enclosures	Post-medieval enclosures
9	A	Modern enclosures adapting medieval fields & Post-medieval enclosures	Post-medieval enclosures & Medieval strip-enclosures
	B	Post-medieval enclosures	Post-medieval enclosures
	C	Modern enclosures adapting post-medieval fields	Post-medieval enclosures
	D	Post-medieval enclosures	Post-medieval enclosures
	E	Post-medieval enclosures	Post-medieval enclosures

Table 1: Historical Landscape Characterisation (HLC) (Devon County Council, undated)

Notes:

Modern enclosures adapting post-medieval fields: Modern enclosures that have been created by adapting earlier fields of probable post-medieval date.

Modern enclosures adapting medieval fields: These modern fields have been created out of probable medieval enclosures. The sinuous medieval boundaries survive in places.

Post-medieval enclosures: Enclosures of post-medieval date. Fields laid out in the C18th and C19th commonly have many surveyed dead-straight field boundaries

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

Medieval strip-enclosures: These narrow, curving strip-enclosures derive from the enclosure of open-field strips with hedge-banks during the later middle ages

6 Results, discussion and conclusions

This survey was designed to record magnetic anomalies. The anomalies themselves cannot be regarded as actual archaeological features and the dimensions of the anomalies shown do not represent the dimensions of any associated archaeological features. The analysis presented below identifies and characterises anomalies and anomaly groups that may relate to archaeological deposits and structures.

The terms ‘archaeological features’ and ‘archaeological deposits’ refer to any artefacts, material deposits or disturbance of natural deposits thought to be the result of human activity and not undertaken as recent land maintenance or farming.

The reader is referred to section 7.

6.1 Results

Figure 2 in Appendix 1 shows the sub-division of the survey area into fields grouped in land parcels based on land ownership at the time of the survey. Figure 3 shows the interpretation of the survey data for the entire application area. Figures 4 to 9 show the survey interpretation at larger scales. They include the anomaly groups identified as relating to archaeological deposits along with their numbers. Tables 1 and 2 in Appendix 2 are extracts of the detailed analysis of the survey data which is provided in the attribute tables of the GIS project on the accompanying CD-ROM and in the project archive.

Figures 3 to 9 and Tables 1 and 2 comprise the analysis of the survey data. Plots of the processed data are provided in Figures 10 to 16.

6.1.1 General points (Figures 3 and 10)

6.1.1.1 Magnetic anomaly groups

The mapped magnetic anomalies are presented as anomaly groups with a degree of certainty as to their archaeological, modern or natural characterisation provided in Figures 3 to 9 and Tables 1 and 2.

Not all anomalies or anomaly groups identified in Tables 1 and 2 are necessarily discussed below. All identified anomaly groups are recorded in the GIS project on the accompanying CD-ROM.

6.1.1.2 Survey limitations

The western edges of survey areas 1 and 2 were in use as vehicle parks and soil dumps for work being undertaken on the M5 slip road adjacent to the survey area and so could not be surveyed.

Data collection along the survey area edges was restricted as shown in the figures due to the presence of magnetic materials in and adjacent to field and roadside boundaries. Strong magnetic responses mapped close to the field and roadside boundaries are likely to relate to these materials except where otherwise indicated in the analysis.

6.1.1.3 Survey exclusions

Anomalies thought to relate to natural features were not mapped except in the case of springs which can be a focus for archaeological activities. A former palaeochannel or water-course was also recorded as it may have been used as a channel for a service pipe resulting in some clear and unusual anomaly patterns in survey area 8A.

Recent man-made objects such as manholes, water management equipment, drains, cables and other services were mapped where they comprised significant magnetic responses across the dataset that needed clarification. If mapped, they are listed in

Table 1 but are not discussed below unless they are associated with archaeological features or deposits.

6.1.1.4 General interpretation notes

The anomalies of area 1A imply that this field contains deposits of rubble and other material, probably associated with the construction of the adjacent M5 motorway. This is also probably true of anomaly group **54** in area 9A but in this case the deposit has further archaeological significance and so is discussed below.

A number of the survey areas have datasets exhibiting regular, parallel trends. These are likely to be the result of relatively recent ploughing. Anomalies indicating disturbance resulting from historical ploughing activities were mapped and are listed in Tables 1 and 2.

There are numerous 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.

6.1.2 Areas 1, 2 and 3 (Figures 4 and 11, Table 1)

Anomaly group **2** represent a Devon Bank field boundary (comprising a stone-revetted earthen bank and flanking ditches) mapped by the Ordnance Survey between 1889 and 1962.

Group **4** represents a former field boundary mapped between 1889 and 1993. It is likely that groups **6** and **8** are also associated with this boundary. Groups **5**, **7** and **8** probably represent deposits of rubble. These may be infill and, speculatively, the deposits may contain stone and other materials from the former mapped field boundary.

The relatively recent high-contrast linear group **1002** is most likely to reflect either a service pipe or cable or possibly wire fence material following the line of a former field boundary mapped between 1889 and 1993.

Group **11** is a strong dipole ferrous response indicating iron or steel beneath the surface. It is spatially associated with a spring or wet area (group **2001**) but the archaeological significance of the relationship cannot be established and such a strong ferrous response is likely to reflect relatively recent iron-rich material.

Group **3** is on the same orientation as group **2** and extant field boundaries. It is most likely to reflect a field boundary removed before the publication of the Ordnance Survey First Edition map in 1889.

Groups **1** and **10** represent linear deposits that are usually associated with field and enclosure boundaries of unknown archaeological provenance.

6.1.3 Areas 4 and 5 (Figures 5 and 12, Table 1)

Most of the magnetic anomaly groups mapped as archaeological in areas 4 and 5 represent linear deposits that are usually associated with field and enclosure boundaries of unknown archaeological provenance. Given their various orientations, it is possible that more than one phase of past enclosures are represented by these anomaly groups.

Group **17** (area 4) probably to relate to former ridge-and-furrow ploughing. Given the anomaly groups' relatively straight trends, it is possible that a later phase of ridge-and-furrow cultivation is represented using smaller teams of oxen or horses and more efficient plough technology compared to earlier Medieval ploughing practice. Group

16 (area 4) may represent a former plough headland perhaps later used as a field boundary as it seems to act as a terminus to the traces of ridge-and-furrow.

Group **22** (area 5B) may represent an archaeological deposit such as a filled ditch or a relatively recent ploughed out service trench.

6.1.4 Area 6 (Figures 6 and 13, Table 1)

Most of the magnetic anomaly groups mapped as archaeological in area 6 represent linear deposits that are usually associated with field and enclosure boundaries of unknown archaeological provenance. Area 6A contains a greater concentration of potential archaeological deposits than the other fields. Given their various orientations, it is possible that more than one phase of past enclosures are represented by these anomaly groups.

Group **27** (area 6A) may represent a sub-circular deposit which can be associated with archaeological features such as ring-ditches and round-houses. In this case, the anomaly groups are not clearly defining a sub-circular pattern and it may be that the disturbance of the sub-soils is of recent origin. Only further archaeological investigations can qualify these anomalies further.

Group **31** (area 6F) may represent either a linear deposit disturbed by later ploughing or a linear series of pits of archaeological significance. The shape and distribution of the anomalies makes a disrupted linear deposit more likely. This group has an orientation apparently at odds with the trends of the extant and recorded Post-medieval fields. As such it may represent an older phase of land use.

6.1.5 Area 7, area 8 A to C, area 9 A and B (Figures 7 and 14, Table 2)

Magnetic anomaly groups **33** (area 7A), **34** and **35** (area 7B) coincide with and are likely to represent former field boundaries mapped by the Ordnance Survey between 1889 and 1962. They lie within a Medieval strip field system recorded in the Devon County Council Historic Environment Record (DCC HER) MDV73524.

Group **54** is an area of relatively large magnitude mixed anomalies that represent rubble and other debris which are most likely to be related to the construction of the adjacent M5 motorway. The north-western edge of this large anomaly group retains the shape of a former field boundary mapped by the Ordnance Survey between 1889 and 1993.

The remaining anomalies mapped as archaeological represent linear deposits that are usually associated with ridge-and-furrow ploughing and field and enclosure boundaries. These groups lie east of and adjacent to a Medieval strip field system discussed above (MDV73524) and may well represent deposits and features associated with that system. Groups **36**, **42**, **45**, **52** and **53** lie on a different orientation to the majority of these groups and, even though 52 and 53 lie within the area of Medieval strip field system, these anomalies may represent one or more earlier agrarian phases.

6.1.6 Area 8 D to F, area 9C (Figures 8 and 15, Table 2)

Anomaly group **47** represents a former field boundary mapped by the Ordnance Survey between 1889 and 1962 and group **60** represents a field boundary mapped between 1889 and 1993.

Groups **48** and **58** relate to anomaly group represent deposits of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground.

6.1.7 Area 9 D and E (Figures 9 and 16, Table 2)

Group **61** represents a former Devon Bank field boundary mapped between 1889 and 1980.

Group **62** represents a disrupted linear deposit of unknown archaeological provenance. This group has an orientation apparently at odds with the trends of the extant and recorded Post-medieval fields. As such it may represent an older phase of land use.

6.2 Discussion

There is a distinct concentration of the anomaly groups assessed as representing potential archaeological features or deposits in the northwest and west of the application area. The contrast with the eastern and southern parts is marked (Figures 3 and 10). It is most likely that the majority of these anomalies represent Medieval strip fields and associated cultivation practices along with Post-Medieval former field boundaries. Eight of the anomaly groups (31 in area 6F, 36 in 7B, 42 in 8B, 52 and 53 in 9A, 59 in 9C and 62 in 9D) have orientations at odds with the extant fields and may represent odd remnants of older phases of land enclosure.

This distribution approximately corresponds to a change in the superficial geology discussed in section 4 with the solid geology of the Triassic Aylesbeare Mudstone Group which underlie the entire site being overlain by deposits of Quaternary River Terrace Deposits on the eastern half of the application area. The superficial geology on the western side is not mapped in the sources consulted. The superficial geology pattern is reflected in the distribution of the two soil types found across the site (Section 4).

The distribution in archaeologically relevant magnetic anomalies could be explained as a result of agrarian practice and/or magnetic response differences between subsoils resulting from the geological environment although this cannot be concluded with certainty without a better understanding of the nature of the superficial deposits on the western side of the survey area. Given that the effective depth of recording of the magnetic survey technique employed here and in most archaeological surveys in the UK is 1 to 1.5m below ground level, an appreciation of the depth of the superficial deposits across the application area would also be required to understand the influence of the geological environment on the clear distribution of the mapped magnetic anomalies.

Given the survey anomaly group distributions and that the historic landscape analysis for the eastern fields concludes that they are most likely to be Post-medieval in origin (Section 5, Table 1), it is possible, bearing in mind the caveats discussed above, that the eastern side of the application area was not subject to the same level of Medieval agriculture as the western side. Alternatively or in addition, the eastern fields may have been subject to deeper disturbance during relatively recent ploughing.

6.3 Conclusions

The magnetic contrast was sufficient to differentiate sixty-one anomaly groups representing potential archaeological deposits or features. Of these, one group may represent a partial sub-circular archaeological feature such as a round-house or ring-ditch but the group is not clearly defined and may equally relate to ground disturbance around an animal feeder or other recent agricultural activities. One group is most likely to represent a linear deposit such as a ditch disrupted by later ploughing but could represent a series of linear pits. Six areas of disturbed ground and/or rubble were mapped across the site and these are most likely to represent relatively recent ground-infill and demolished former field boundaries. Ten anomaly groups represent former field boundaries recorded on historical Ordnance Survey maps. The remaining anomaly groups have linear and occasional curvilinear patterns that typically represent former land division and agricultural practices. There is a clear concentration of such anomalies on the western side of the application area adjacent to an area of Medieval

strip fields recorded in the Devon County Council Historical Environment Record (MDV73524). The majority of these anomalies are assessed as being of likely Medieval and Post-Medieval origin although there is a fragmented scattering of anomaly groups that may belong to earlier phases of land management.

The distribution of archaeological anomaly groups approximately follows the division of superficial geological deposits across the site and is likely to reflect associated differences in past agricultural practice although the influence of the depth of superficial deposits on the detection of magnetic anomalies is unknown. The magnetic anomalies almost exclusively related to agricultural features representing field systems and other deposits associated with modern activity. With one unlikely exception, the recorded anomalies are not thought to represent settlement and associated features or other evidence of intense, historical land use.

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.

Ross Dean, trading as Substrata, 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).

8 Acknowledgements

Substrata would like to thank Mike Hutchinson of Mills Whipp Projects Ltd for managing the commissioning of this survey and for his subsequent project management.

9 Bibliography

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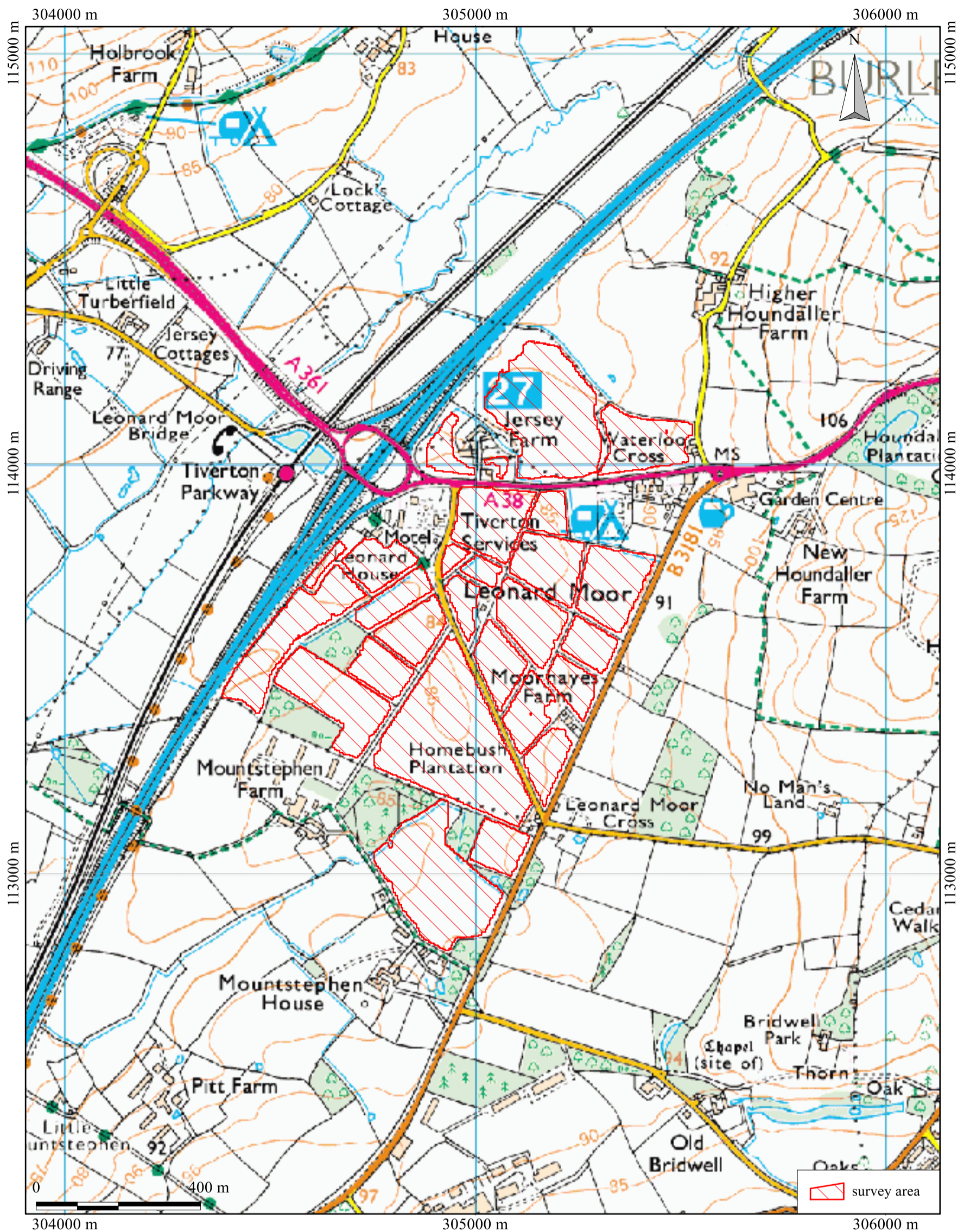
Historic England (undated) [Online], Available: <http://www.heritagegateway.org.uk/gateway/> [June 2015]

Appendix 2 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
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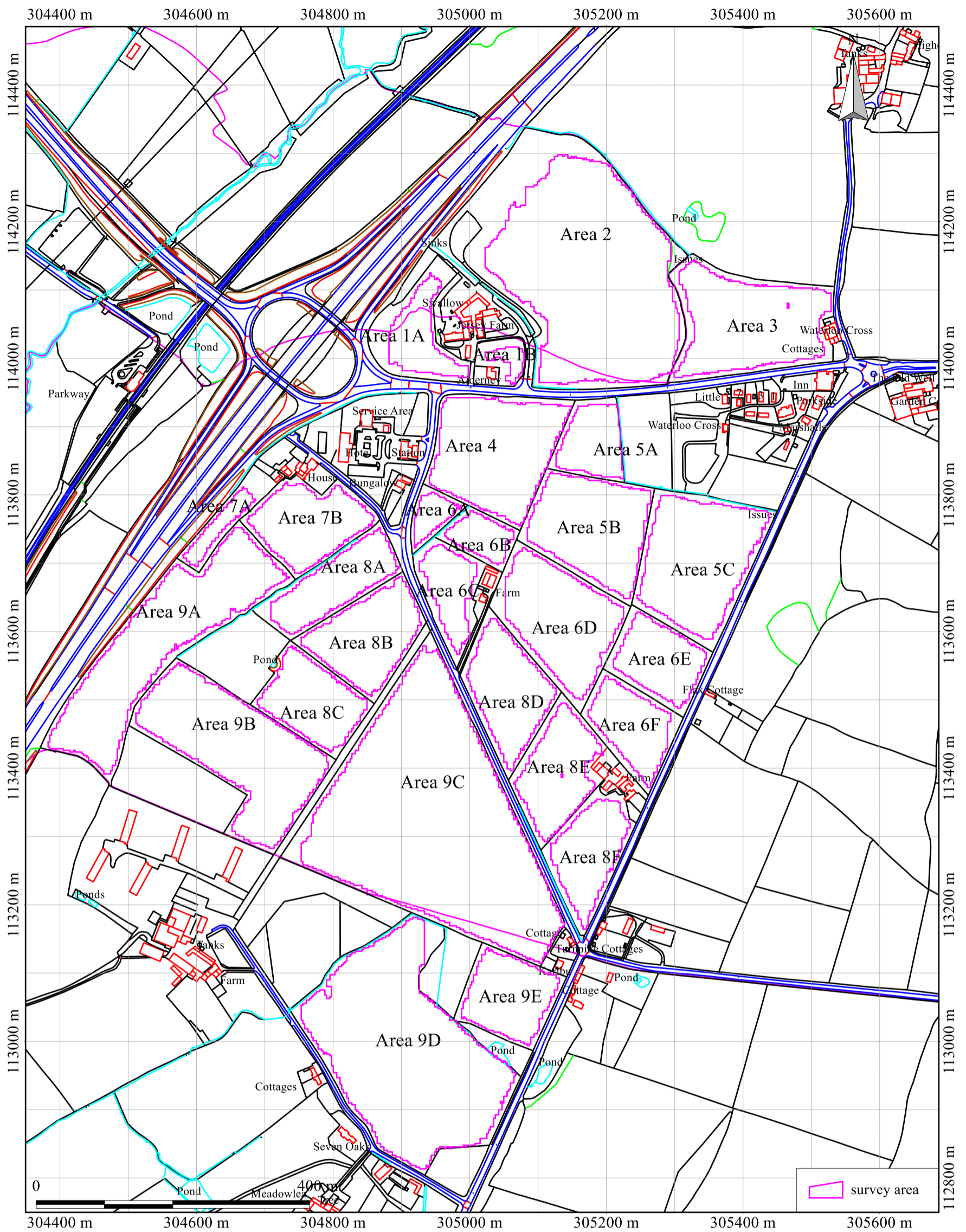
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Scale: 1:10000 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological gradiometer survey
 Westwood, land adjoining junction 27, M5, Devon
 Ordnance Survey E/N: 304960,113560 (point)
 Report: 150623

Figure 1: location map

Substrata
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British Grid
centre X: 305018.15 m, centre Y: 113617.70 m

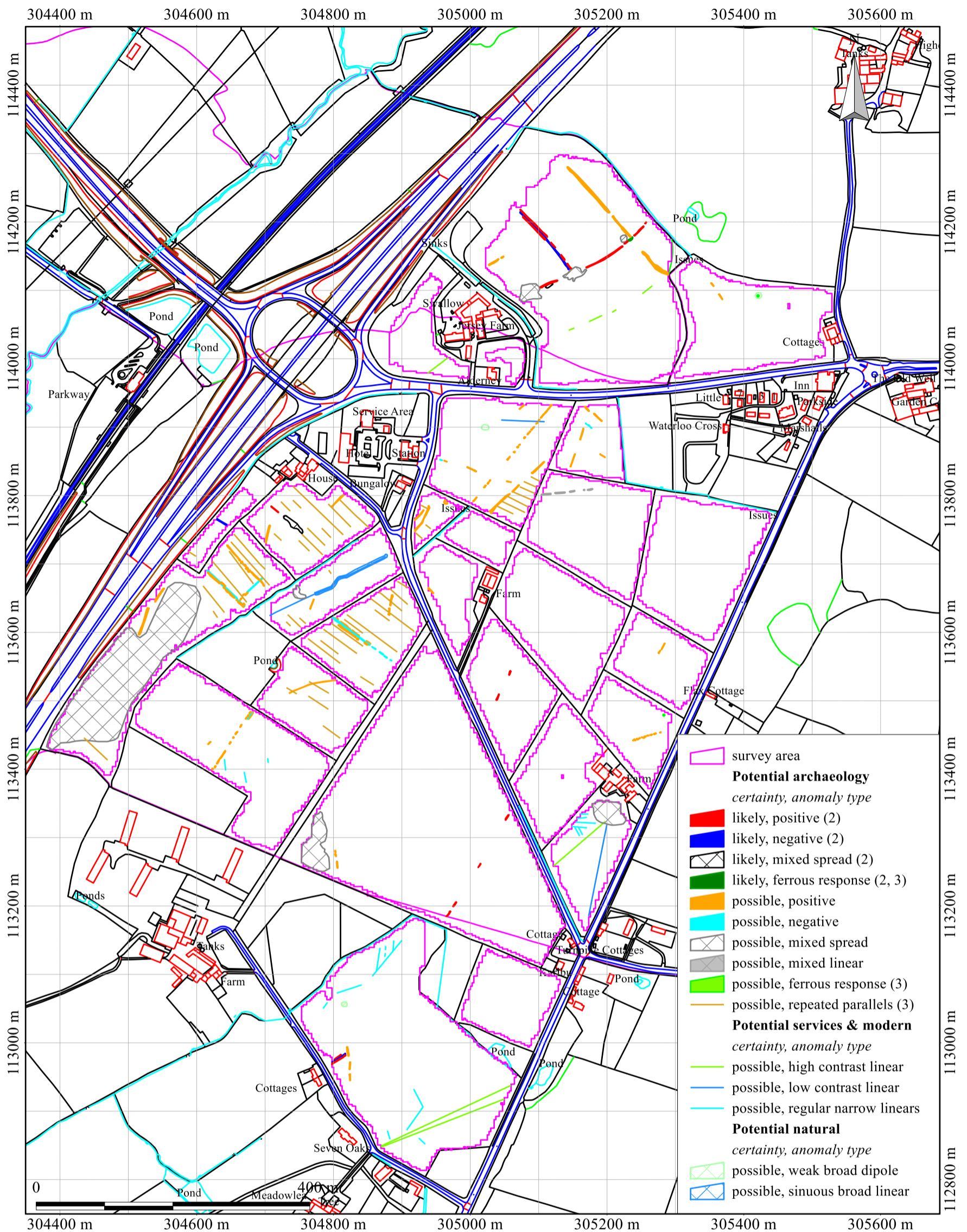
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Scale: 1:6000 @ A3. Spatial Units: Meter. Do not scale off this drawing

An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
Ordnance Survey E/N: 304960,113560 (point)
Report: 150623

Figure 2: survey areas

Substrata
Orchaed Lodge, Conrborough Road
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British Grid
centre X: 305018.15 m, centre Y: 113617.70 m

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Scale: 1:6000 @ A3. Spatial Units: Meter. Do not scale off this drawing

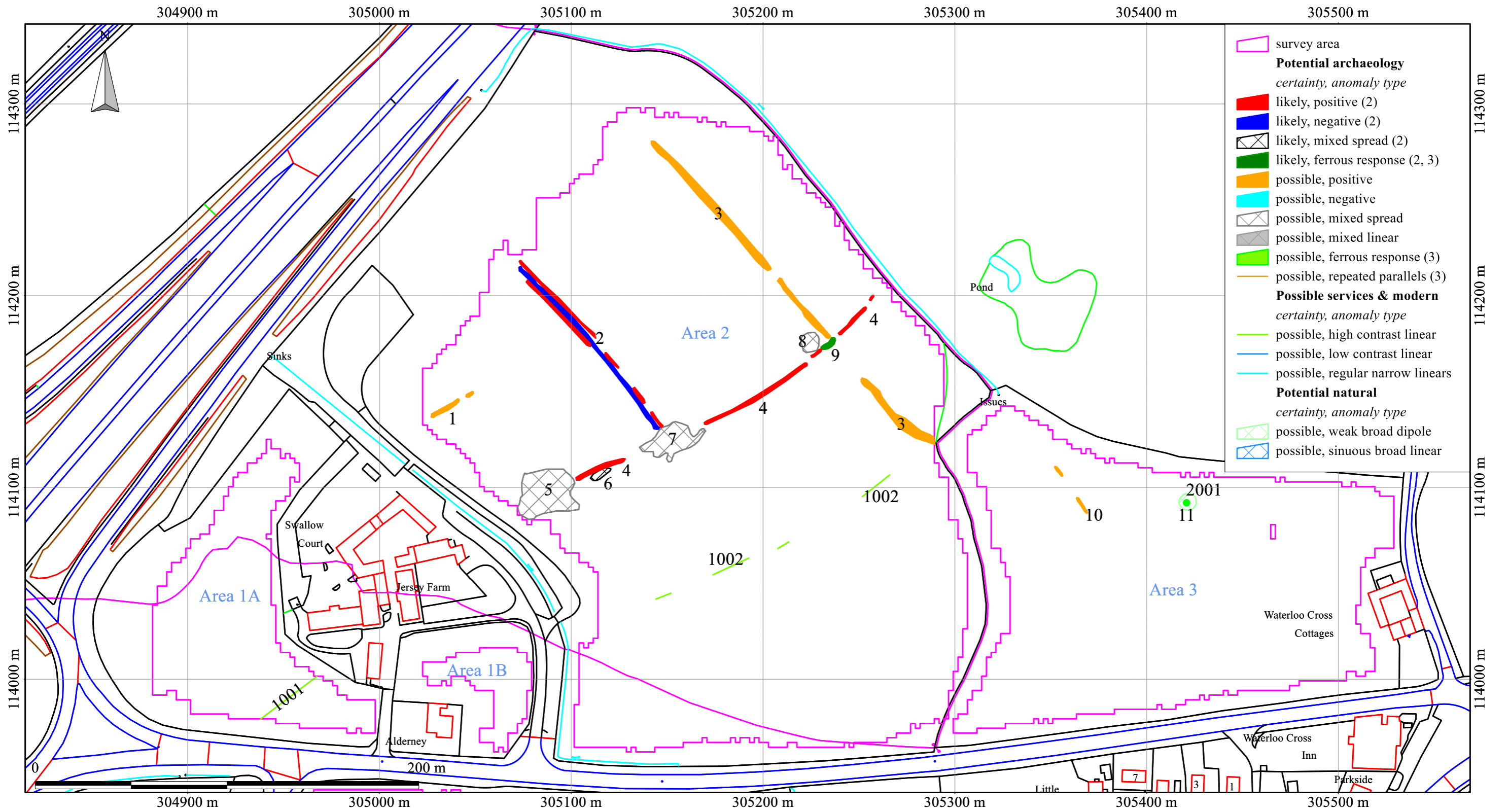
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit

An archaeological gradiometer survey
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Figure 3: survey interpretation, all areas

Substrata
Orchaed Lodge, Conrborough Road
Westward Ho!, Bideford, Devon EX39 1AA
Tel: 07788627822
Email: geophysics@substrata.co.uk
Web: substrata.co.uk



British Grid
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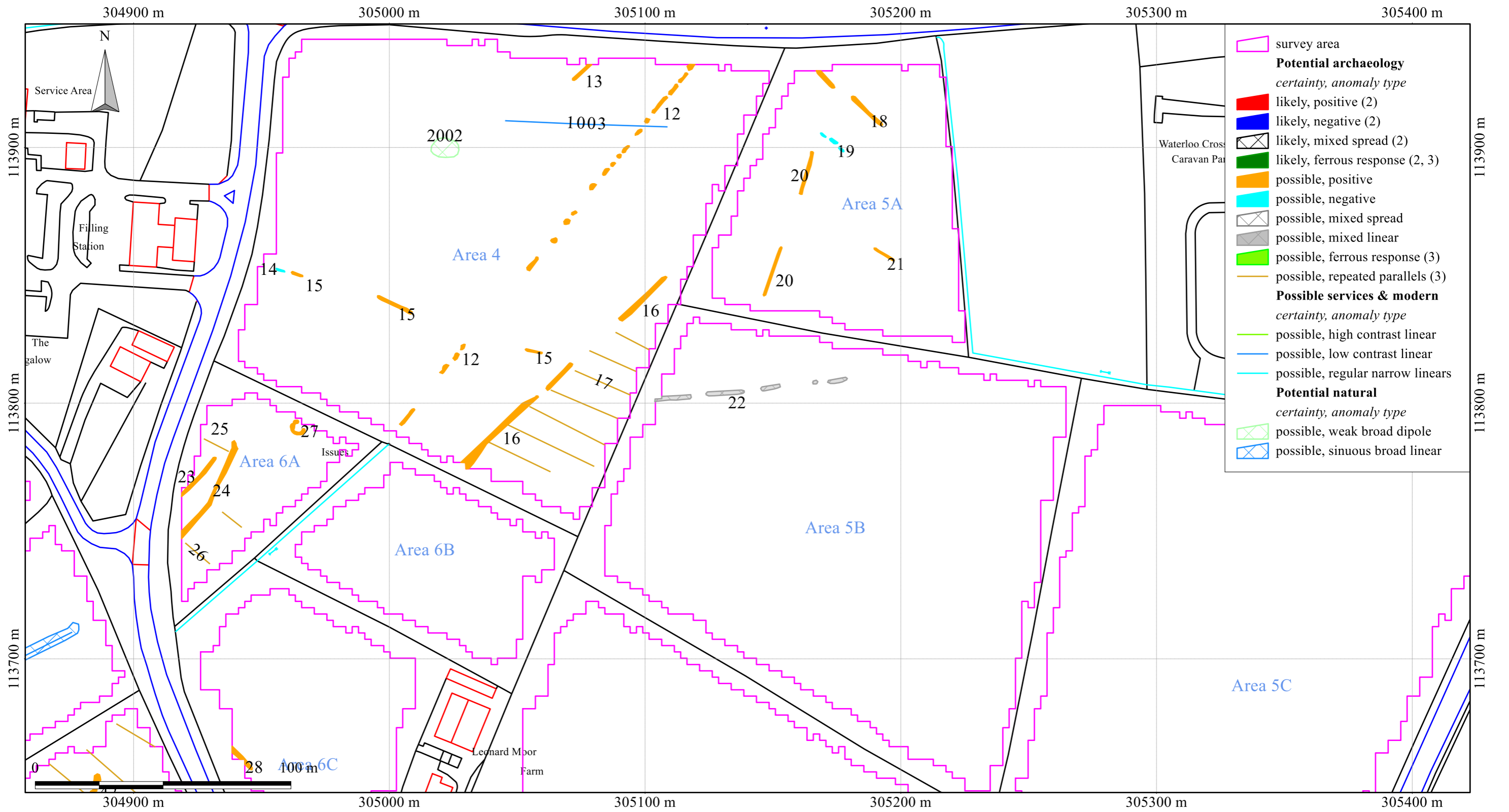
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An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
Ordnance Survey E/N: 304960,113560 (point)
Report: 150623

Figure 4: survey interpretation, areas 1 to 3

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British Grid
centre X: 305140.12 m, centre Y: 113798.01 m

Scale: 1:1500 @ A3. Spatial Units: Meter. Do not scale off this drawing

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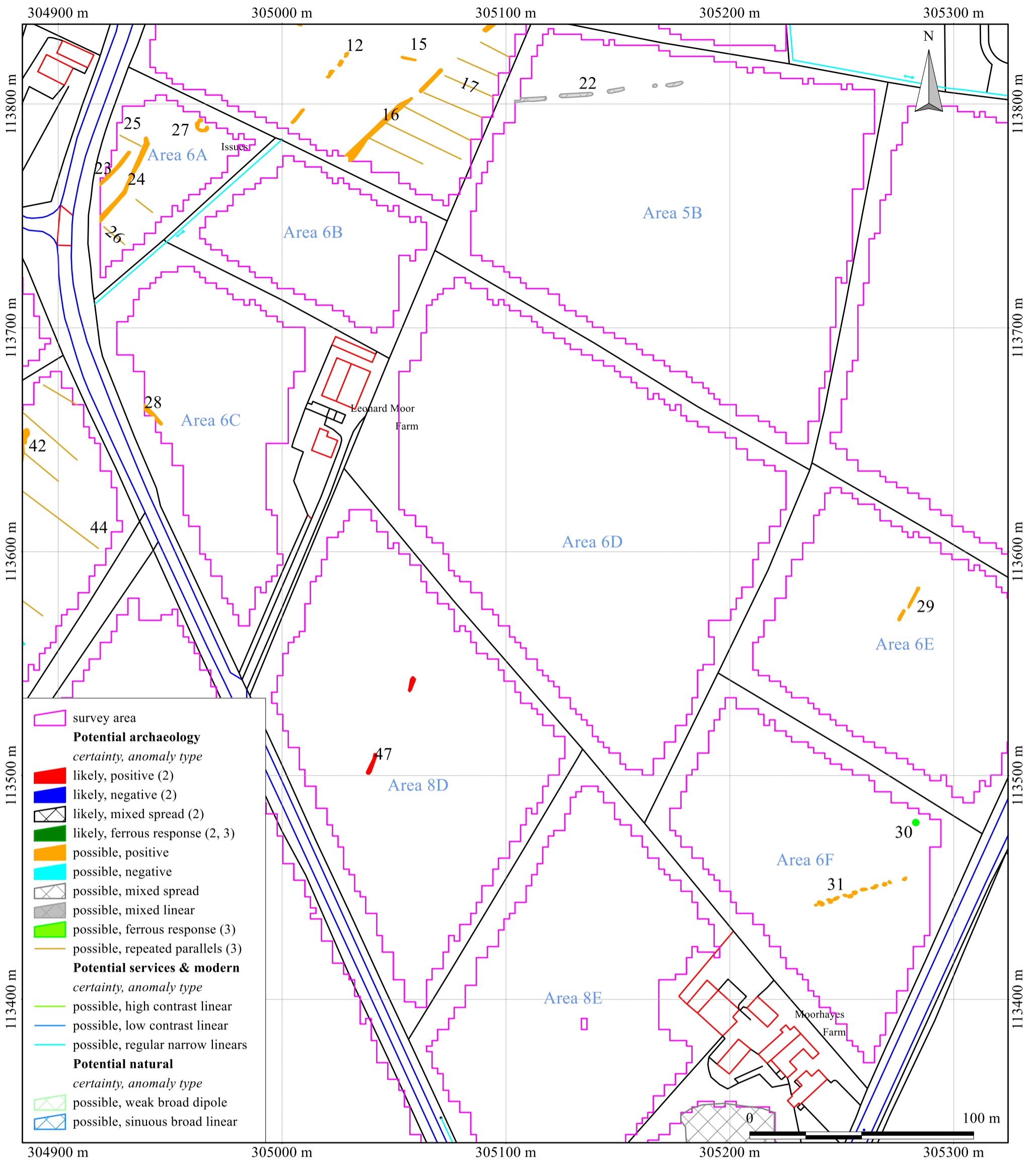
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposits.

An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
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Figure 5: survey areas 4 and 5
(area 5C has no significant anomalies)

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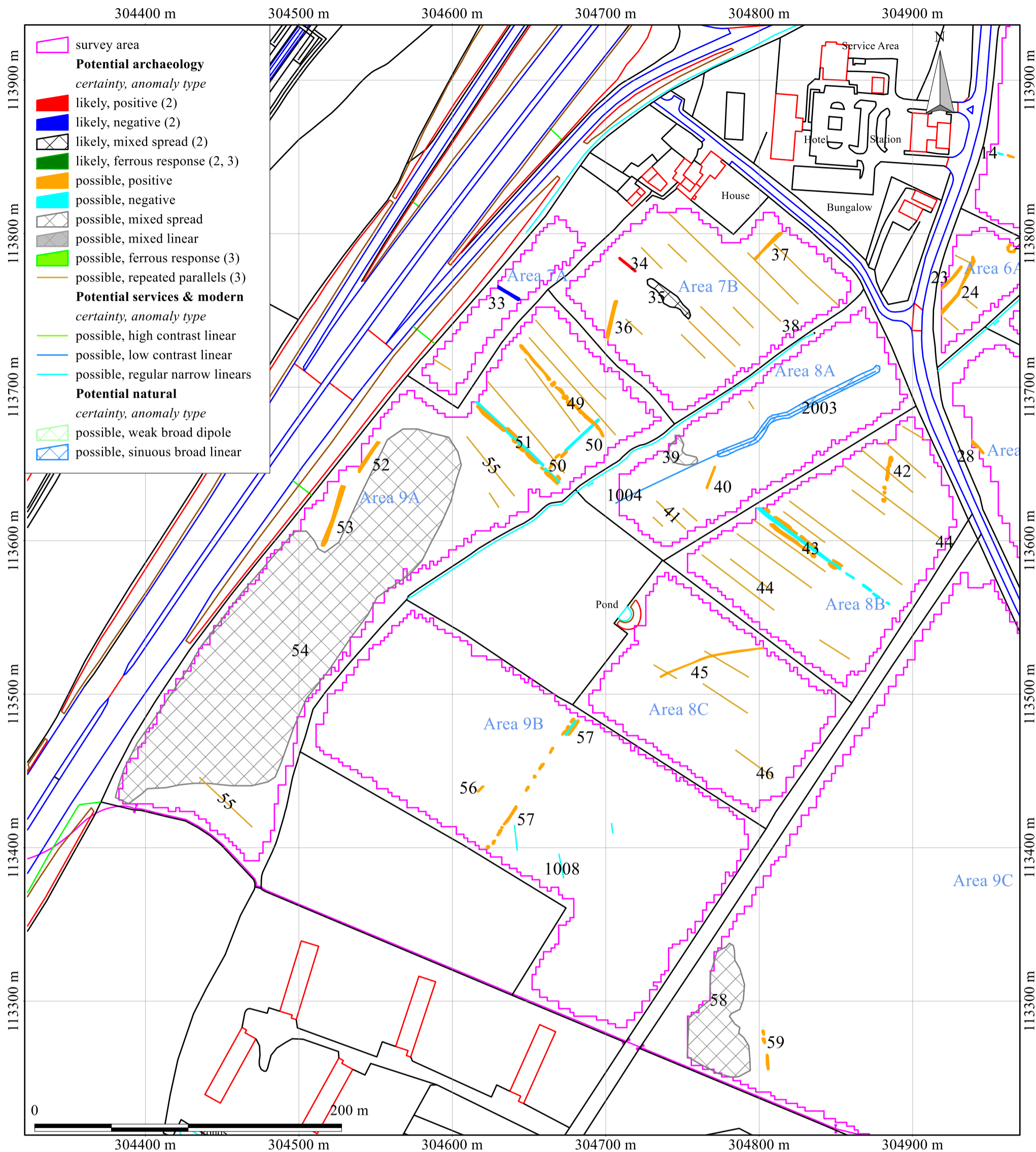
British Grid
centre X: 305104.14 m, centre Y: 113585.81 m

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Scale: 1:1700 @ A3. Spatial Units: Meter. Do not scale off this drawing

Notes:

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2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit



British Grid
centre X: 304645.61 m, centre Y: 113574.38 m

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

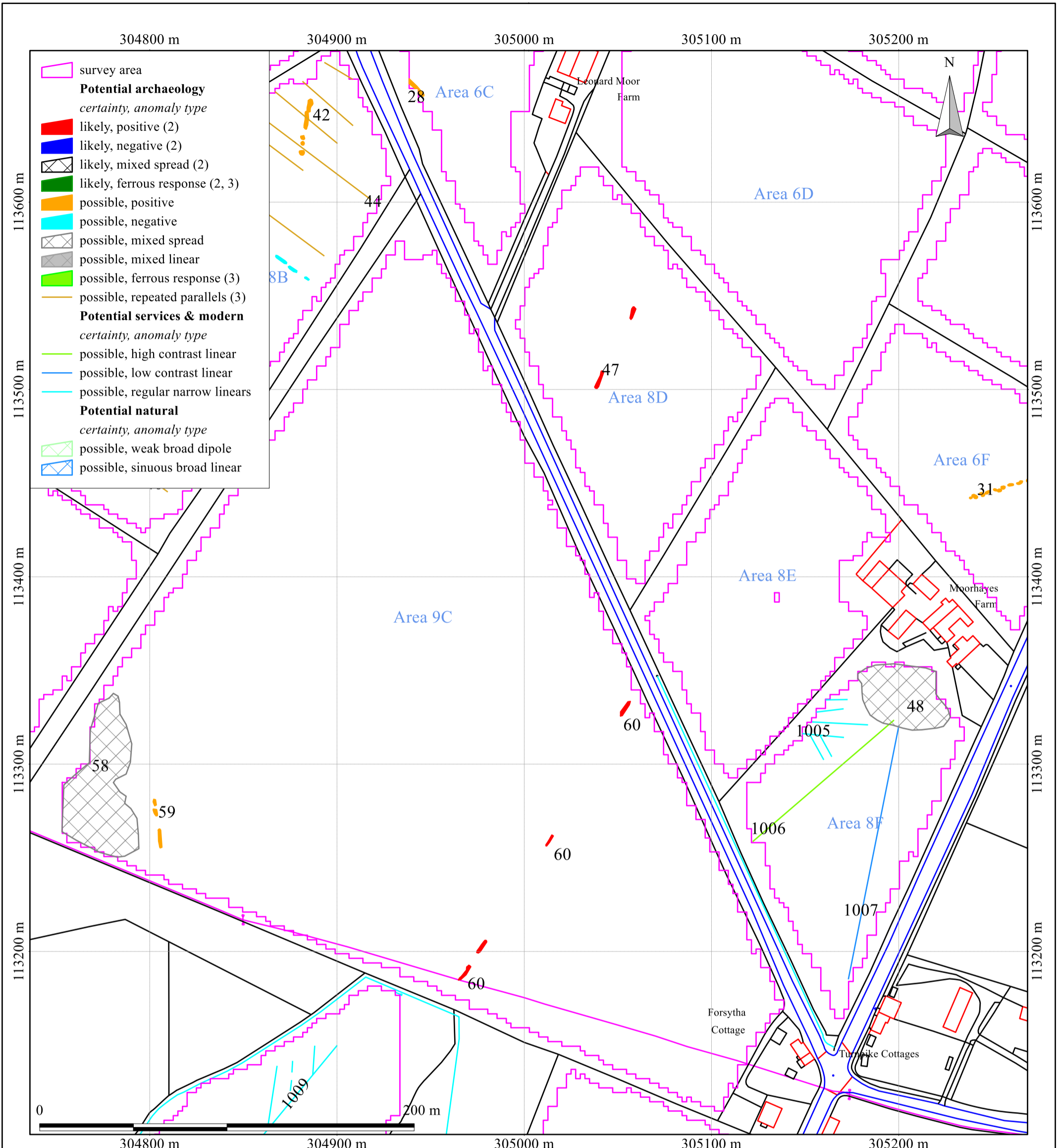
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit

An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
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Figure 7: survey interpretation, area 7,
area 8 A to C, area 9 A and B

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British Grid
centre X: 305002.41 m, centre Y: 113391.61 m

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

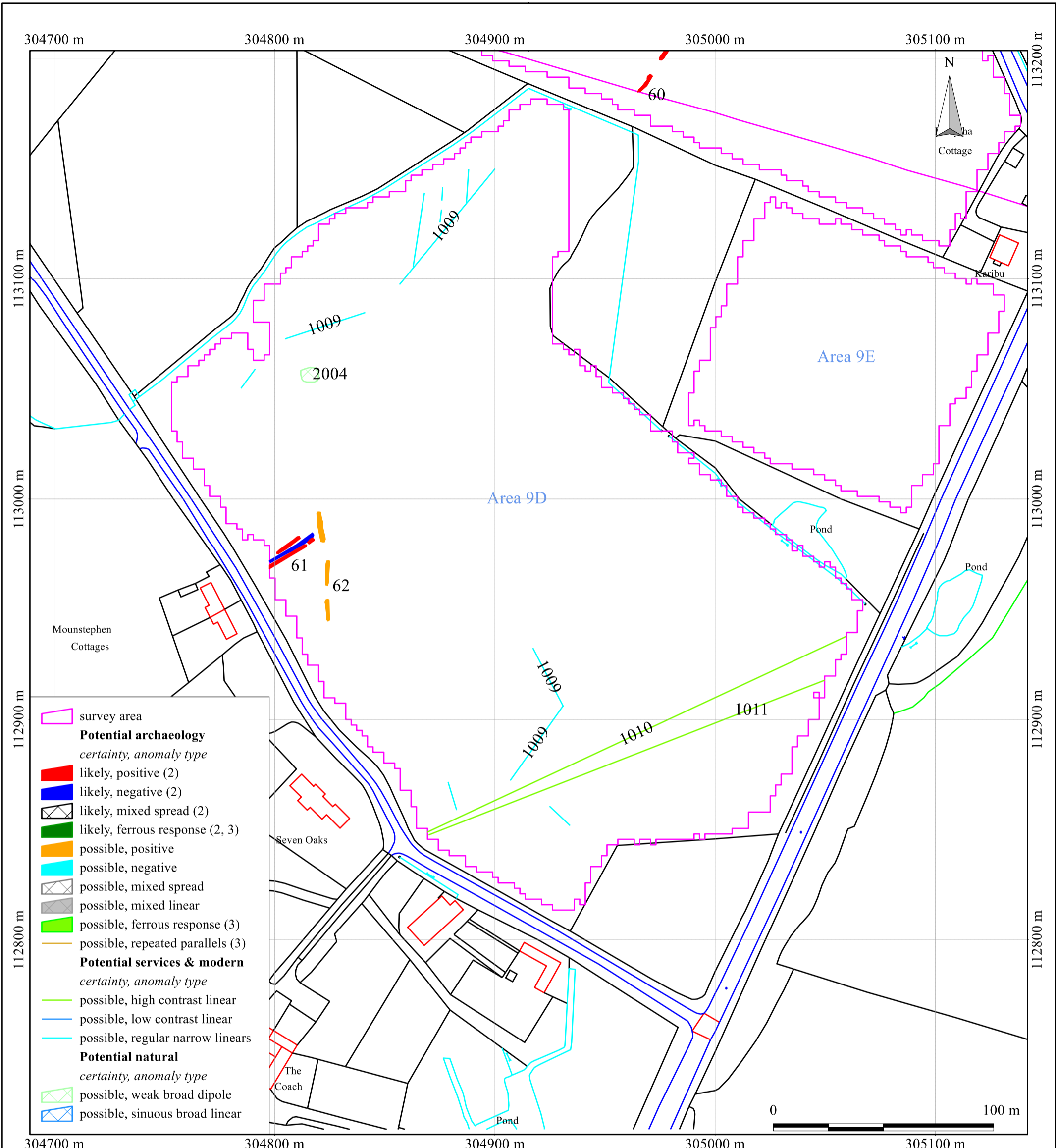
Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit

An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
Ordnance Survey E/N: 304960,113560 (point)
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Figure 8: survey interpretation, area 8 D to F, area 9C

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British Grid
 centre X: 304915.38 m, centre Y: 112957.58 m

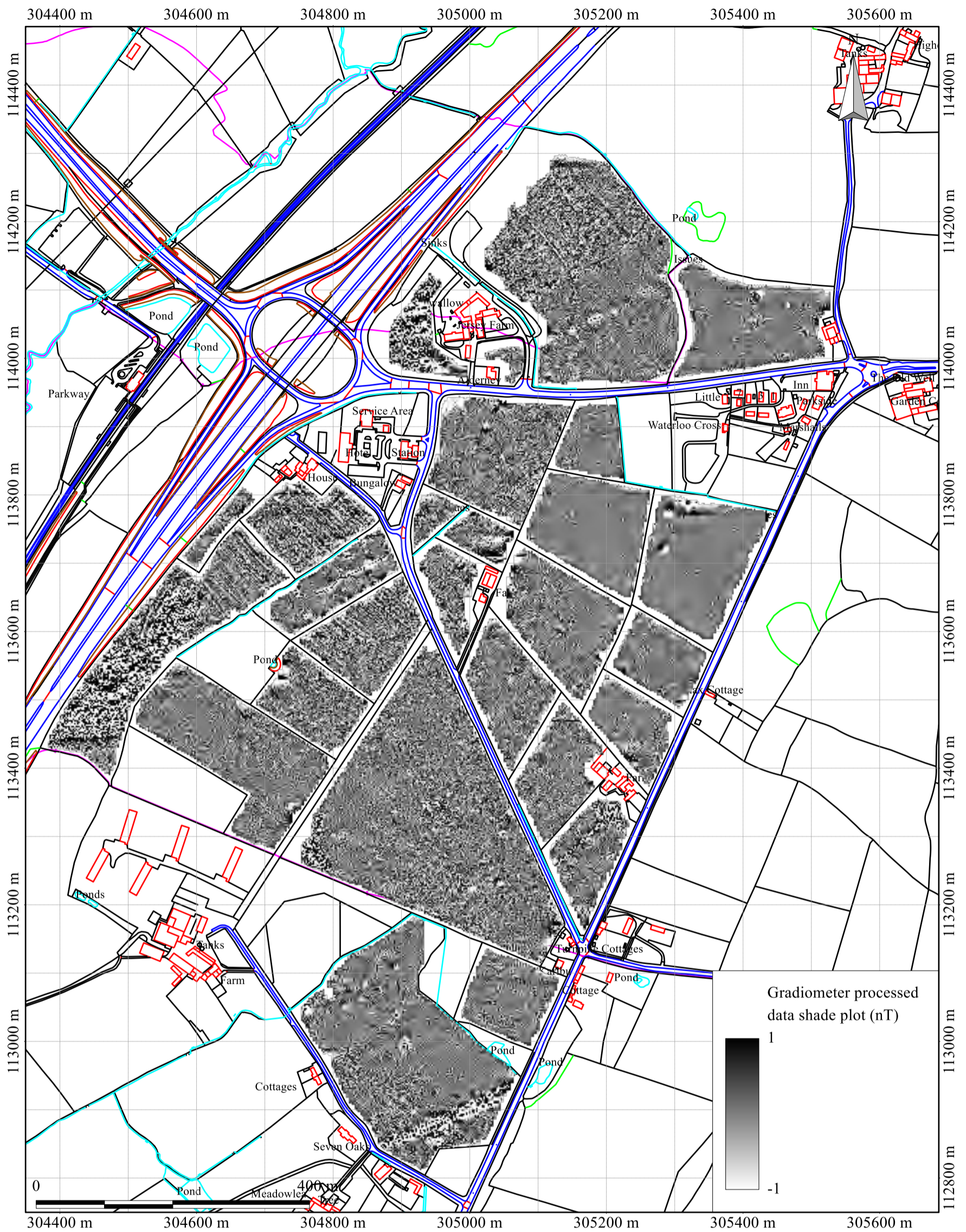
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Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
3. Representative; not all instances are mapped.
4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit

Figure 9: survey interpretation, area 9 D and E



British Grid
 centre X: 305018.15 m, centre Y: 113617.70 m

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Scale: 1:6000 @ A3. Spatial Units: Meter. Do not scale off this drawing

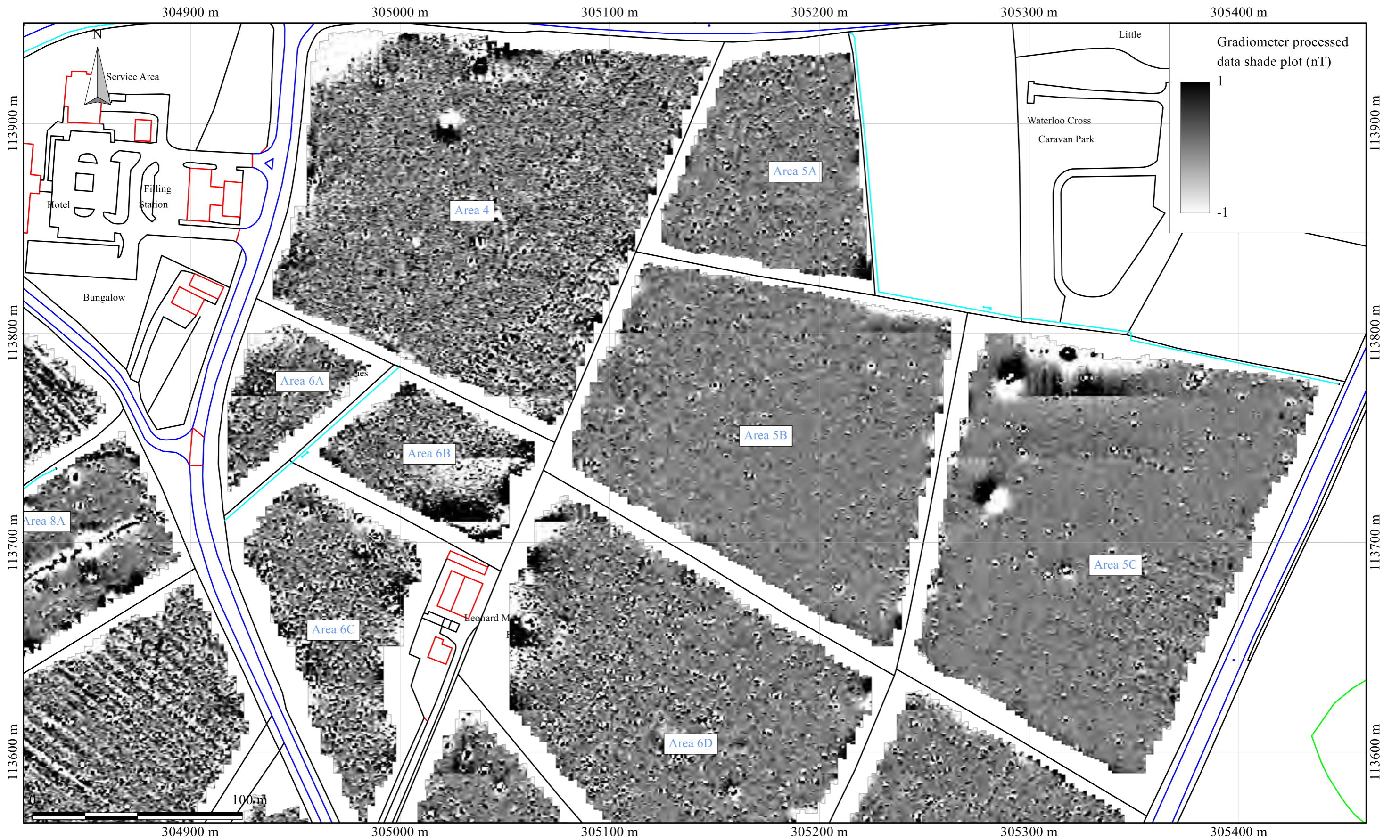
Figure 10: shade plot of processed data, all areas



British Grid
centre X: 305191.98 m, centre Y: 114141.31 m

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

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British Grid
 centre X: 305140.52 m, centre Y: 113757.13 m

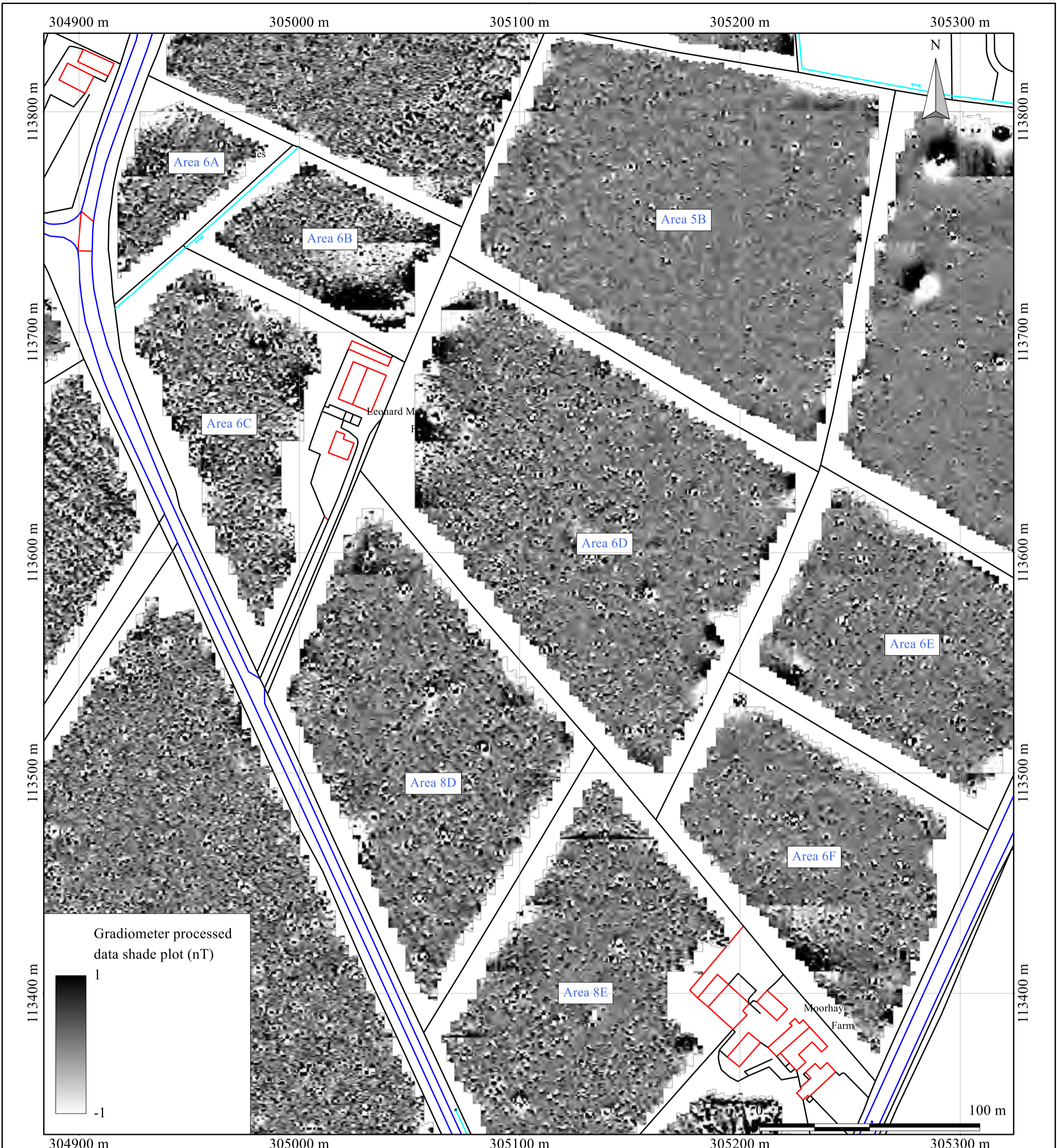
Scale: 1:1700 @ A3. Spatial Units: Meter. Do not scale off this drawing

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An archaeological gradiometer survey
 Westwood, land adjoining junction 27, M5, Devon
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Figure 12: shade plot of processed data, areas 4 and 5

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British Grid
 centre X: 305104.14 m, centre Y: 113585.81 m

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An archaeological gradiometer survey
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Figure 13: shade plot of processed data, area 6

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British Grid
 centre X: 304645.61 m, centre Y: 113574.38 m

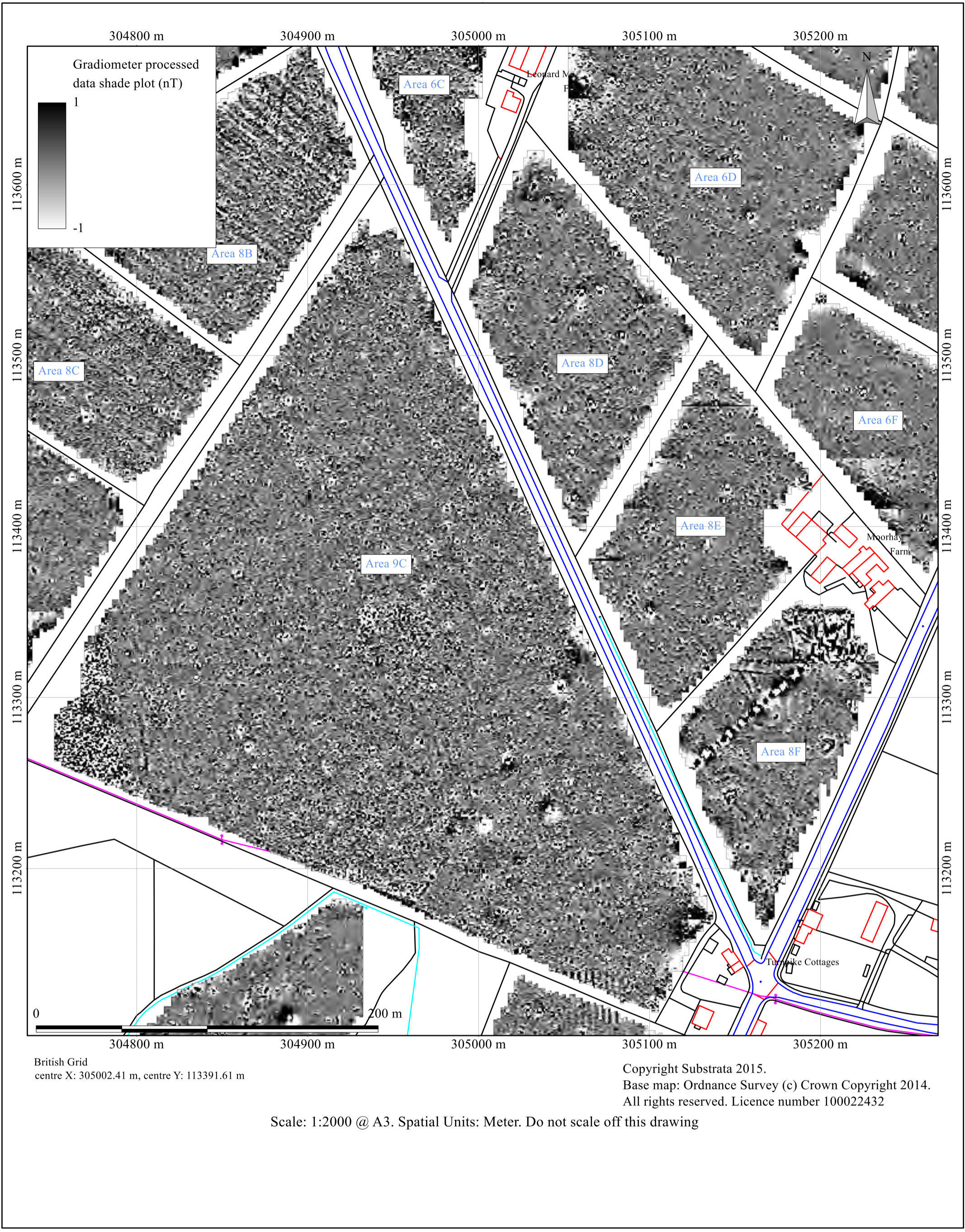
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Scale: 1:2500 @ A3. Spatial Units: Meter. Do not scale off this drawing

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 Westwood, land adjoining junction 27, M5, Devon
 Ordnance Survey E/N: 304960,113560 (point)
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Figure 7: shade plot of processed data
 area 7, area 8 A to C, area 9 A and B

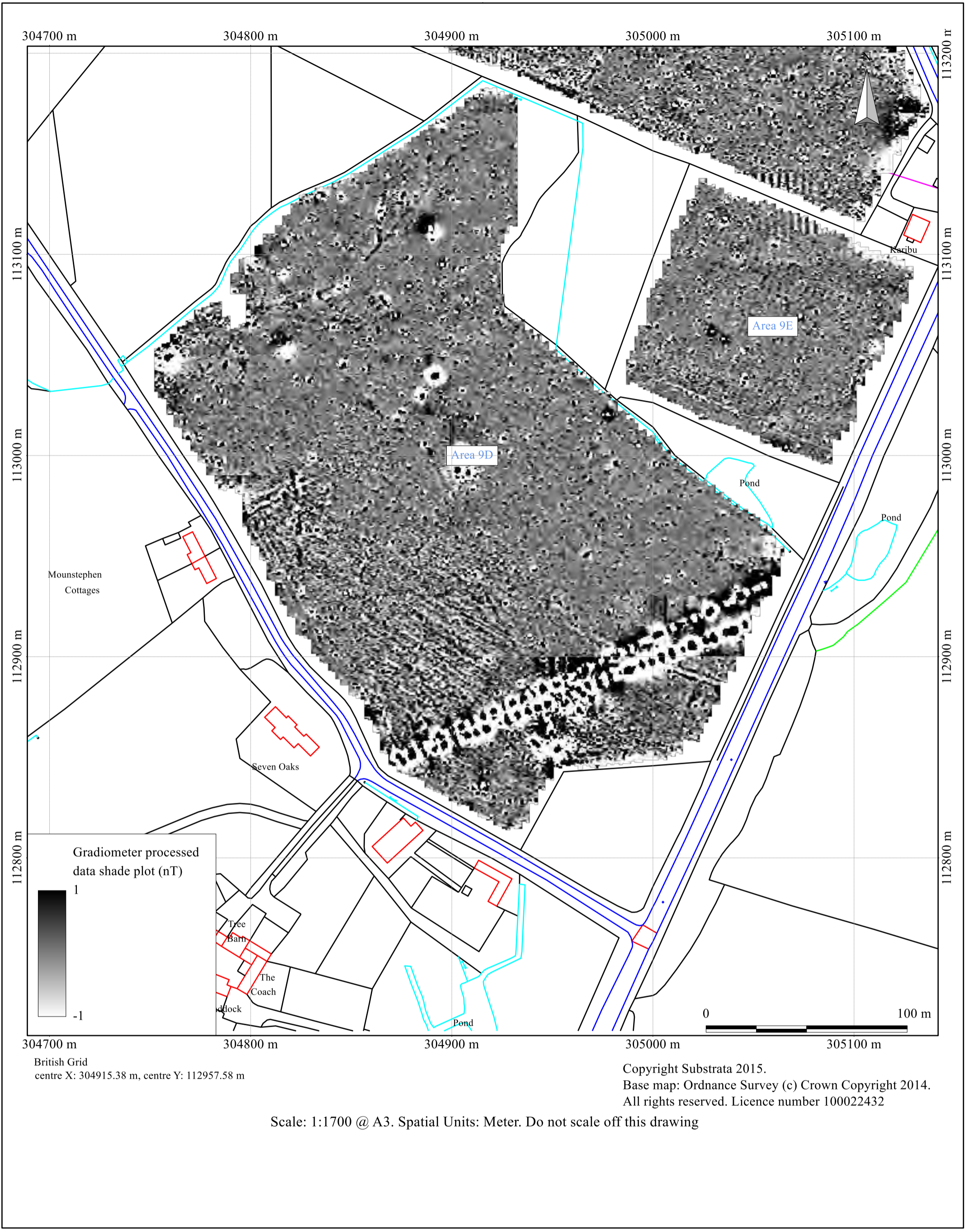
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An archaeological gradiometer survey
Westwood, land adjoining junction 27, M5, Devon
Ordnance Survey E/N: 304960,113560 (point)
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Figure 15: shade plot of processed data, area 8 D to F, area 9 C

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Appendix 2 Analysis tables

Site: An archaeological gradiometer survey
 Westwood, land adjoining junction 27, M5, Devon
 Ordnance Survey E/N: 304960,113560 (point)
 Report: 150623

survey area	sub-area	anomaly group	associated anomalies	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1	A	1001		possible, high contrast linear		ferrous-rich cable, pipe or drain	anomaly groups likely represent a former fence or service such as an iron pipe along the line of a field boundary mapped between 1889 and at least 1993	Ordnance Survey 1889 1:2500 to 1993 1:10000
2			1	possible, positive	disrupted linear			
			2	likely, pos/neg/pos	linear	former field boundary	anomaly group coincides with a former Devon Bank field boundary mapped by the Ordnance Survey between 1889 and 1962	OS maps 1889 1:2500 to 1962 1:10560
			3	possible, positive	disrupted linear			
			4	likely, positive	disrupted linear	former field boundary	anomaly group coincides with a former field boundary mapped by the Ordnance Survey between 1889 and at least 1993	OS maps 1889 1:2500 to 1993 1:10000
			5	possible, mixed spread	irregular	stony deposit or rubble	anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
			6	likely, mixed spread	linear	stony deposit or rubble	anomaly group coincides with a former field boundary mapped by the Ordnance Survey between 1889 and at least 1993	OS maps 1889 1:2500 to 1993 1:10000
			7	possible, mixed spread	irregular	stony deposit or rubble	anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
			8	possible, mixed spread	irregular	stony deposit or rubble	anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
			9	likely, ferrous response	linear	ferrous material associated with a former field boundary		
		1002		possible, high contrast linear	disrupted linear	ferrous-rich cable, pipe or drain	anomaly groups likely represent a former fence or service such as an iron pipe along the line of a field boundary mapped between 1889 and at least 1993	Ordnance Survey 1889 1:2500 to 1993 1:10000
3		10		possible, positive	disrupted linear			
		11		possible, ferrous response		ferrous material		
		2001		possible, weak broad dipole		spring		
4		12		possible, positive	disrupted linear		anomaly group appears to be a north-eastern extension of an extant field boundary is most likely to represent a former field boundary of unknown date and removed before the Ordnance Survey First Edition map of 1889	OS maps 1889 1:2500
		13		possible, positive	linear			
		14	15	possible, negative	linear			
		15	14	possible, positive	linear			
		16		possible, positive	disrupted linear	ploughing headland		
		17		possible, repeated parallels		ridge-and-furrow traces		
		1003		possible, low contrast linear		service trench		
		2002		possible, weak broad dipole		spring		
5	A	18		possible, positive	disrupted linear		anomaly group may represent archaeological deposits, field drains or traces of ridge-and-furrow ploughing	
		19		possible, negative	disrupted linear		anomaly group may represent archaeological deposits, field drains or traces of ridge-and-furrow ploughing	
		20		possible, positive	disrupted linear			
		21		possible, positive	linear		anomaly group may represent archaeological deposits, field drains or traces of ridge-and-furrow ploughing	
5	B	22		possible, mixed linear				
6	A	23		possible, positive	linear			
		24		possible, positive	curvilinear	ploughing headland		
		25		possible, repeated parallels		ridge-and-furrow traces		
		26		possible, repeated parallels		ridge-and-furrow traces		
		27		possible, positive	partial sub-circular		anomaly group is not clear cut and may represent a sub-circular archaeological deposit or very recent magnetic response from an animal feeder or a coincidental arrangement of otherwise non-related anomalies	
6	C	28		possible, positive	linear			
6	E	29		possible, positive	disrupted linear			
6	F	30		possible, ferrous response		ferrous material		
		31		possible, positive	disrupted linear	linear deposit or linear pit sequence	anomaly group is most likely to represent a linear deposit of unknown provenance but may represent a sequence of pits	

Table 2: data analysis areas 1 to 6

Site: An archaeological gradiometer survey
 Westwood, land adjoining junction 27, M5, Devon
 Ordnance Survey E/N: 304960,113560 (point)
 Report: 150623

survey area	sub-area	anomaly group	associated anomalies	anomaly characterisation certainty & class	anomaly form	additional archaeological characterisation	comments	supporting evidence
7	A	32		possible, repeated parallels		ridge-and-furrow traces		
		33		likely, negative	linear	former field boundary	anomaly group within a Medieval strip field system recorded in the HER and coincides with a field boundary mapped between 1889 and 1962	DCC HER entry MDV73524, OS maps 1889 1:2500 to 1962 1:10560
7	B	34	35	likely, positive	linear	former field boundary	anomaly group is likely to represent linear deposit associated with a former field boundary mapped between 1889 and 1962	OS maps 1889 1:2500 to 1962 1:10560
		35	34	likely, mixed spread	broad linear	former field boundary	anomaly group is likely to represent rubble and ground disturbance associated with the clearing of a former field boundary mapped between 1889 and 1962	OS maps 1889 1:2500 to 1962 1:10560
		36		possible, positive	linear			
		37		possible, positive	linear	linear deposit, possible ploughing headland		
		38		possible, repeated parallels		ridge-and-furrow traces		
8	A	39		possible, mixed spread	irregular	stony deposit or rubble	anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
		40		possible, positive	linear			
		41		possible, repeated parallels		ridge-and-furrow traces		
		1004	2003	possible, low contrast linear		service	service such as a water pipe laid along a former stream bed	
		2003	1004	possible, sinuous broad linear		filled palaeochannel	anomaly groups are indicative of a length of former stream bed with a relatively modern fill of material such as brick and stone and possibly a service pipe	
8	B	42		possible, positive	disrupted linear			
		43		possible, pos/neg/pos	disrupted linear	former field boundary	anomaly group typical of a Devon Bank field boundary comprising a stone revetted earthen bank with flanking ditches	
		44		possible, repeated parallels		ridge-and-furrow traces		
8	C	45		possible, positive	curvilinear		it is unclear whether this group represents an archaeological deposit or recent ground disturbance but a curvilinear cropmark thought to represent a Medieval field boundary was recorded to the northeast of area 5C west of New Houndaller Farm	DCC HER entry MDV107691
		46		possible, repeated parallels		ploughing traces	anomaly groups may represent ridge-and-furrow or later ploughing	
8	D	47		likely, positive	disrupted linear	former field boundary	these faint anomaly groups coincide with a former field boundary mapped by the Ordnance Survey between 1889 and 1962	OS maps 1889 1:2500 to 1962 1:10560
8	F	48		possible, mixed spread	stony deposit or rubble		anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
		1005		possible, regular narrow linears		field drains		
		1006		possible, high contrast linear		ferrous-rich cable, pipe or drain		
		1007		possible, low contrast linear		service trench		
9	A	49		possible, positive	disrupted linear		anomaly group represents either ridge-and-furrow or a former field boundary	
		50		possible, pos/neg/pos	disrupted linear	former field boundary	anomaly group may represent a Devon Bank field boundary comprising a stone revetted earthen bank with flanking ditches	
		51		possible, pos/neg/pos	disrupted linear	former field boundary	anomaly groups are typical of those representing a former Devon Bank field boundary comprising a stone revetted earthen bank with flanking ditches	
		52		possible, positive	linear		anomaly group within a Medieval strip field system recorded in the HER	DCC HER entry MDV73524
		53		possible, positive	linear		anomaly group within a Medieval strip field system recorded in the HER	DCC HER entry MDV73524
		54		possible, mixed spread	irregular	area of disturbed ground and rubble	anomaly groups indicate disturbed ground and rubble landfill; the north-western edge of the anomaly group corresponds with a former field boundary mapped between 1889 and 1980 but removed before 1993	OS maps 1889 1:2500 to 1993 1:10000
		55		possible, repeated parallels		ridge-and-furrow traces		
9	B	56		possible, positive	linear			
		57		possible, pos/neg/pos	disrupted linear	former field boundary	anomaly groups are most likely to represent a former field boundary, possibly a Devon Bank, removed before 1889	
		1008		possible, regular narrow linears		field drains or ploughing disturbance		
9	C	58		possible, mixed spread	irregular	area of disturbed ground and rubble	anomaly group represents a deposit of rubble or stony material of unknown provenance; such groups often represent demolition deposits or recently made-up ground	
		59		possible, positive	disrupted linear			
		60		likely, positive	disrupted linear	former field boundary	anomaly group coincides with a former field boundary mapped by the Ordnance Survey between 1889 and 1969 and as part of a field lane between 1971 to at least 1993	OS maps 1889 1:2500 to 1993 1:10000
9	D	61		likely, pos/neg/pos	linear	former field boundary	anomaly group coincides with a former Devon Bank field boundary mapped by the Ordnance Survey between 1889 and 1980	OS maps 1889 1:2500 to 1980 1:10000
		62		possible, positive	disrupted linear			
		1009		possible, regular narrow linears		field drains		
		1010		possible, high contrast linear		ferrous-rich cable, pipe or drain		
		1011		possible, high contrast linear		ferrous-rich cable, pipe or drain		
		2004		possible, weak broad dipole		spring		

Table 3: data analysis areas 7 to 9

Appendix 3 Methodology Summary

Table 4: methodology summary	
<p>Documents Survey methodology statement: Dean (2014)</p>	
<p>Methodology</p> <ol style="list-style-type: none"> The work was undertaken in accordance with the survey methodology statement. The geophysical (gradiometer) survey was undertaken with reference to standard guidance provided by the Chartered Institute for Archaeologists (2014) and Archaeology Data Service/Digital Antiquity Guides (undated). The survey grid location information and grid plan was recorded as part of the project in a suitable GIS system. 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</p> <ul style="list-style-type: none"> □ □ □ □ □ □ □ □ □ □ □ □ □ □ DGPS set-out using pre-planned survey grids and Ordnance Survey coordinates. □ □ □ □ □ □ □ □ □ □ □ □ □ □ 30m by 30m grids □ □ □ □ □ □ □ □ □ □ □ □ □ □ Geo-referenced and recorded using digital map tiles. □ □ □ □ □ □ □ □ □ □ □ □ □ □ Spectra Precision PM5V2 GPS with external antenna and survey pole and DigiTerra Explorer 7 as the survey control program. 	
<p>Equipment</p> <ul style="list-style-type: none"> □ □ □ □ □ □ □ □ □ □ Bartington Instruments grad601-2 □ □ □ □ □ □ □ □ □ □ version 6.1 	<p>Data Capture</p> <ul style="list-style-type: none"> □ □ □ □ □ □ □ □ □ □ □ □ □ □ 0.25-metres □ □ □ □ □ □ □ □ □ □ □ □ □ □ 1 metre □ □ □ □ □ □ □ □ □ □ □ □ □ □ zigzag □ □ □ □ □ □ □ □ □ □ □ □ □ □ GN
<p>Data Processing, Analysis and Presentation Software IntelliCAD Technology Consortium IntelliCAD 7.2 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 5: gradiometer survey - processed data metadata	
SITE	
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
PROGRAM	
Name:	TerraSurveyor
Version:	3.0.25.0
Stats	
Max:	171.36
Min:	-175.57
Std Dev:	8.22
Mean:	0.07
Median:	0.00
Processes: 18	
1 Base Layer 2 Clip at 1.00 SD 3 De Stagger: Grids: All Mode: Both By: -2 intervals 4 De Stagger: Grids: ea20.xgd ea22.xgd fb3.xgd fb7.xgd fb10.xgd ea21.xgd fb4.xgd fb6.xgd fb11.xgd fb5.xgd fb12.xgd Mode: Both By: 1 intervals 5 De Stagger: Grids: ea23.xgd fb2.xgd da12+fb8.xgd Mode: Both By: 1 intervals 6 De Stagger: Grids: zd12.xgd Mode: Both By: 1 intervals 7 Edge Match (Area: Top 360, Left 2040, Bottom 389, Right 2159) to Top edge 8 DeSlope (Area: Top 690, Left 2280, Bottom 719, Right 2399) using Horz Polynomial 9 DeSlope (Area: Top 750, Left 2640, Bottom 809, Right 2759) using Horz Polynomial 10 DeSlope (Area: Top 810, Left 2040, Bottom 869, Right 2159) using Horz Polynomial 11 Edge Match (Area: Top 840, Left 2400, Bottom 869, Right 2519) to Right edge 12 DeStripe Median Traverse: Grids: zb21.xgd zc20.xgd zc21.xgd zb20.xgd zb22.xgd zc19.xgd zc22.xgd zd10.xgd zd11.xgd zd21.xgd zb1.xgd zb19.xgd zb23.xgd zc18.xgd zc23.xgd zd9.xgd zd12.xgd zd20.xgd zb2.xgd zb18.xgd zb24.xgd zc17.xgd zc24.xgd zd8.xgd zd13.xgd zd19.xgd zd22.xgd za9.xgd zb3.xgd zb17.xgd zb25.xgd zc16.xgd zc25.xgd zd7.xgd zd14.xgd zd18.xgd zd23.xgd za8.xgd zb4.xgd zb16.xgd zc1.xgd zc15.xgd zc26.xgd zd6.xgd zd15.xgd zd17.xgd zd24.xgd za1.xgd za7.xgd zb5.xgd zb15.xgd zc2.xgd zc14.xgd zc27.xgd za5.xgd zd16.xgd ze7.xgd ze16.xgd ze17.xgd za2.xgd za6.xgd zb6.xgd zb14.xgd zc3.xgd zc13.xgd zc28.xgd zd4+ze1.xgd ze6.xgd ze8.xgd ze15.xgd ze18.xgd za3.xgd za5.xgd zb7.xgd zb13.xgd zc4.xgd zc12.xgd zc29.xgd ze2.xgd ze5.xgd ze9.xgd ze14.xgd ze19.xgd ze23.xgd za4.xgd zb8.xgd zb12.xgd zc5.xgd zc11.xgd ze4.xgd ze10.xgd ze13.xgd ze20.xgd ze22.xgd zb9.xgd zb11.xgd zc6.xgd zc10.xgd ze3.xgd zf11+ze11.xgd ze11.xgd ze12.xgd zf12+ze21.xgd zb10.xgd zc7.xgd zc9.xgd zd8.xgd te10.xgd tf10.xgd te12.xgd tf13.xgd tf20.xgd ma21.xgd td7+zc8.xgd tc5.xgd td9.xgd te9.xgd td9.xgd te13.xgd tf14.xgd tf19.xgd ma20.xgd mb1.xgd tb1.xgd te4.xgd td6.xgd tc6.xgd td10.xgd te8.xgd tf8.xgd te14.xgd tf15.xgd tf18+ma11.xgd ma19.xgd mb2.xgd ta1.xgd ta10.xgd ta11.xgd tb2.xgd tc3.xgd td5.xgd tc7.xgd td11.xgd te7.xgd tf7.xgd te15.xgd tf16.xgd ma12.xgd ma18.xgd mb3.xgd mb12.xgd ah22.xgd ta2.xgd ta9.xgd ta12.xgd tb3.xgd tc2.xgd td4.xgd tc8.xgd td12.xgd te6.xgd tf6.xgd te16.xgd tf17.xgd ma13.xgd ma17.xgd mb4.xgd mb11.xgd ag14.xgd ah21.xgd ah23.xgd ag15.xgd ta3.xgd ta8.xgd ta13.xgd tb4.xgd tc1.xgd td3.xgd tc9.xgd td13.xgd te5.xgd tf5.xgd te17.xgd la8.xgd la9+ma14.xgd ma16.xgd mb5.xgd mb10.xgd ag13.xgd ah20.xgd aj1.xgd ag16.xgd ai7+ta4.xgd ta7.xgd ta14.xgd tb5.xgd ta24.xgd td2.xgd tc10.xgd td14.xgd te4.xgd td4.xgd te18.xgd la7.xgd la10.xgd ma6+ma15.xgd mb6.xgd mb9.xgd ag12.xgd ah19+ah18.xgd aj2.xgd ag17.xgd ai6.xgd ta6.xgd ta15.xgd tb6.xgd ta23.xgd td1.xgd tc11.xgd td15.xgd te3.xgd tf3.xgd la1+te19.xgd la6.xgd la11.xgd ma5.xgd mb7+ma7.xgd mb8.xgd ja26.xgd fb13.xgd ag1.xgd ag11.xgd ah17.xgd aj3.xgd ag18.xgd ai5.xgd ai8+ta5.xgd ta16.xgd tb7.xgd ta22.xgd tb17.xgd te12.xgd td16.xgd te2.xgd tf2.xgd k14+la2.xgd la5.xgd la12.xgd ma4.xgd ma8.xgd ja27.xgd ja35.xgd fa1.xgd fa6.xgd fa7.xgd fb14.xgd fd8.xgd ah8.xgd ah9.xgd ag2.xgd ag10.xgd ah16.xgd aj4.xgd ai1.xgd ai4+aj8.xgd ai9+aj17.xgd ta17+ai9.xgd tb8.xgd ta21.xgd tb16.xgd tc13.xgd td17.xgd te11.xgd tf1+k13.xgd k15.xgd la4.xgd la13.xgd ma3.xgd ma9.xgd ja25.xgd ja28.xgd ja34.xgd fa2.xgd fa5.xgd fa8.xgd fb15.xgd fd7.xgd ah1.xgd ah7.xgd ah10.xgd ag3.xgd ag9.xgd ah15.xgd aj5.xgd ai2+ai18.xgd ai3+aj7.xgd aj16.xgd ai20.xgd tb9.xgd ta20.xgd tb15.xgd te14.xgd td18.xgd tc20.xgd k12.xgd k16.xgd k25+la3.xgd la14.xgd ma2.xgd ma10+ja18.xgd ja24.xgd ja29.xgd ja33.xgd fa4.xgd fa9.xgd fb6.xgd fd6.xgd ah2.xgd ah6.xgd ah11.xgd ag4.xgd ag8.xgd ah14+ai10.xgd ai11+aj6.xgd ai17.xgd aj9.xgd aj15.xgd ai21.xgd tb10+ai24.xgd ta19.xgd tb14.xgd te15.xgd td19.xgd k1+tc19.xgd k11.xgd k17.xgd k24.xgd k26+la15.xgd ma1.xgd ja19.xgd ja23.xgd ja30.xgd ja32+o9.xgd o18.xgd fa3.xgd fa10.xgd fb17.xgd fd5.xgd ah3+fa17.xgd ah5.xgd ah12.xgd ag5.xgd ag7.xgd ai2.xgd ai6.xgd aj10.xgd aj14.xgd ai22+da7.xgd ai23+da17.xgd ta18+da18.xgd tb13.xgd tc16.xgd td20.xgd k2.xgd k10.xgd k18.xgd k23.xgd k27+ja3.xgd ga18.xgd ja20+jal4.xgd ja22.xgd ja31+o8.xgd o19.xgd o17.xgd o17.xgd fa11.xgd fb18.xgd fd4.xgd fa16.xgd ah4+fc1.xgd ah13.xgd ag6.xgd ai3.xgd ai5.xgd aj11.xgd aj13+da6.xgd da8.xgd da16.xgd da19.xgd tb12.xgd tc17.xgd td21.xgd k3.xgd k9.xgd k19.xgd k22+ga17.xgd ja2.xgd ga19.xgd ja13+ja21.xgd o1.xgd o7.xgd o11.xgd o16.xgd o20.xgd fb19.xgd fd3.xgd fa15.xgd fc2.xgd fd9.xgd ai4.xgd aj12+da1.xgd da5.xgd da9.xgd da15.xgd da20.xgd tb11+da27.xgd te18.xgd n7.xgd n17+k4.xgd k8.xgd k20+ha10.xgd ga16.xgd ja1.xgd ja4.xgd ja12.xgd ja15+o2.xgd o6.xgd o12.xgd o15.xgd o21.xgd fd2.xgd fa14.xgd fc3.xgd fd10.xgd fd18.xgd fc12.xgd ea16.xgd da2+ea17.xgd da4.xgd da10.xgd da14.xgd da21.xgd da26.xgd n6.xgd n8.xgd n16+k5.xgd k7.xgd k21+ha11.xgd ga15.xgd ha19.xgd ja5.xgd ja11.xgd jal6+o3.xgd o5.xgd o13.xgd o14+sc1.xgd scl4.xgd scl5.xgd fd1.xgd fa13.xgd fc4.xgd fd11.xgd fd17.xgd fc11.xgd fc13.xgd ea13.xgd ea15.xgd ha19.xgd da3+ea24.xgd da11+fb1.xgd da13.xgd da22.xgd da25.xgd n5.xgd n9.xgd ha12.xgd ga14.xgd ha18.xgd ja6.xgd ja10.xgd ja17.xgd o4+sb19.xgd sb28.xgd sc2.xgd scl3.xgd scl6.xgd fc5.xgd fd2.xgd fd16.xgd fc10.xgd fc14.xgd fd19.xgd ea14+fd23.xgd ea19.xgd ea23.xgd fb2.xgd da12+fb8.xgd da23+fb9.xgd da24.xgd n4.xgd n10.xgd n14.xgd ha13.xgd ga13.xgd ha17.xgd ja7.xgd ja9+sb6.xgd sb7.xgd sb18+sb20.xgd sb27.xgd sc3.xgd scl2.xgd scl7.xgd sc26.xgd fc6.xgd qv10+fd13.xgd fd15+qv15.xgd fc9.xgd fc15.xgd fd20.xgd qv7+fd22.xgd ea20+qu16.xgd ea22+qu17.xgd fb3.xgd fb7.xgd fb10.xgd n1.xgd n3.xgd n11.xgd n13.xgd ga6.xgd ha14.xgd ga12.xgd ha16+sa17.xgd ja8+sa18.xgd sb5.xgd sb8.xgd sb17+sb21.xgd sb26.xgd sc4.xgd scl1.xgd scl8.xgd sc25.xgd qv11.xgd fd14+qv14.xgd fc8.xgd fc16.xgd fd21+qu6.xgd qu8.xgd qu15.xgd ea21+qu18.xgd fb4+qv7.xgd fb6.xgd fb11.xgd ha1.xgd ha7+n2.xgd ga1+n12.xgd ga5.xgd ga7.xgd ha15+ga10.xgd sa8+ga11.xgd sa16.xgd sa19.xgd sb4.xgd sb9.xgd sb16+sb22.xgd sb25.xgd sc5.xgd sc10.xgd sc19.xgd sc24.xgd sc27.xgd qv13.xgd fc7+qv16.xgd fc17+qu1.xgd qu5.xgd qu9.xgd qu14.xgd qv1.xgd qv6.xgd fb5+qv8.xgd fb12.xgd ha2.xgd ha6.xgd ha8+ga2.xgd ga4.xgd ga8.xgd a12+ga9.xgd sa9.xgd sa15.xgd sa20.xgd sb3.xgd sb10.xgd sb15.xgd sb24.xgd sc6.xgd sc9.xgd sc20.xgd sc23.xgd sc28.xgd	
13 DeStripe Median Traverse: Grids: qv12.xgd qv17.xgd qu2+qv20.xgd qu4.xgd qu10.xgd qu13.xgd qv2.xgd qv5.xgd qv9.xgd ha3.xgd ha5.xgd a11+ha9.xgd b1+ga3.xgd b12.xgd a13.xgd ea6+sa10.xgd sa14.xgd sa21.xgd sb2.xgd sb11.xgd sb14.xgd qv18.xgd qv19.xgd qu3.xgd qu11.xgd qu12.xgd qv3.xgd qv4.xgd ha4+al.xgd a10.xgd b2.xgd b11.xgd a14.xgd ea5+sa11.xgd sa13.xgd sa22.xgd pf11+sb1.xgd pe21+sb12.xgd sb13.xgd a2.xgd a9.xgd b3.xgd b10.xgd a15.xgd ea4.xgd sa12+ea7+pe14.xgd pe20.xgd pf12.xgd pe22.xgd a3.xgd a8.xgd b4.xgd b9.xgd a16.xgd ea3.xgd ea8+pe15.xgd pe19.xgd pf13.xgd pe23.xgd a4.xgd a7.xgd b5.xgd b8.xgd a17.xgd ea2.xgd ea9+pe16.xgd pe18.xgd pf14.xgd pf17.xgd	
14 DeStripe Median Traverse: Grids: b6.xgd b7.xgd a18.xgd ea1.xgd ea10.xgd ea11+pe17.xgd pf15.xgd pf16.xgd u17.xgd u23.xgd pb1.xgd pe9.xgd pa10.xgd pd16.xgd pc10.xgd pf10.xgd pd17.xgd ra1.xgd u18.xgd u19.xgd u22.xgd pb2.xgd pe8.xgd pa11.xgd pd15.xgd pc11.xgd pf9.xgd pe1.xgd ra2+pe13.xgd ra12.xgd ra14.xgd ra25.xgd ra24.xgd ra33.xgd ra34.xgd sa7.xgd u20.xgd u21.xgd pb3.xgd pc7.xgd pa2.xgd pd14.xgd pc12.xgd pf8.xgd pe2.xgd ra3+pe12.xgd ra11.xgd ra15.xgd ra22.xgd ra23.xgd ra32.xgd ra35.xgd sa6.xgd pb4.xgd pc6.xgd pa13.xgd pd13.xgd pc13.xgd pf7.xgd pc3.xgd pe11.xgd ra10.xgd ra16.xgd ra21.xgd ra26.xgd ra31.xgd ra36.xgd sa5.xgd pa9.xgd pb5.xgd pc5.xgd pa14.xgd pd12.xgd pc14.xgd pf6.xgd pe4.xgd pe10+ra4.xgd ra9.xgd ra17.xgd ra20.xgd ra27.xgd ra30.xgd sa1.xgd sa4.xgd pa1.xgd pa8.xgd pb6.xgd pc4.xgd pa15.xgd pd11.xgd pc15.xgd pf5.xgd pe5.xgd pe9+ra5.xgd ra8.xgd ra18.xgd ra19.xgd ra28.xgd ra29.xgd sa2.xgd sa3.xgd pa2.xgd pa7.xgd pb7.xgd pc3.xgd pa16.xgd pd10.xgd pc16.xgd pf4.xgd pe6.xgd ra6.xgd ra1.xgd pa3.xgd pa6.xgd pb8.xgd pc2.xgd pa17.xgd pd9.xgd pe17.xgd pf3.xgd pe7.xgd pa5.xgd pb9.xgd pc1.xgd pd1.xgd pd8.xgd pc18.xgd pf2.xgd pe8.xgd pa4.xgd pb10.xgd pd2.xgd pd7.xgd pc19.xgd pf1.xgd pb11.xgd pb13.xgd pd3.xgd pd6.xgd pc20.xgd pb12.xgd pd4.xgd pd5.xgd pc21.xgd	
15 DeStripe Median Traverse: Grids: ur9.xgd u16.xgd u17.xgd u18.xgd u19.xgd u20.xgd u21.xgd u22.xgd u23.xgd u24.xgd u25.xgd u26.xgd u27.xgd u28.xgd u29.xgd u30.xgd u31.xgd u32.xgd u33.xgd u34.xgd u35.xgd u36.xgd u37.xgd u38.xgd u39.xgd u40.xgd u41.xgd u42.xgd u43.xgd u44.xgd u45.xgd u46.xgd u47.xgd u48.xgd u49.xgd u50.xgd	
16 DeStripe Median Traverse: Grids: b6.xgd b7.xgd u17.xgd u18.xgd u19.xgd u20.xgd	
17 DeStripe Median Traverse: Grids: sb23.xgd sc7.xgd sc8.xgd sc21.xgd sc22.xgd sc29.xgd	
18 De Stagger: Grids: pa9.xgd pb5.xgd pc5.xgd pa14.xgd pd12.xgd pc14.xgd pf6.xgd ea4.xgd pa1.xgd pa8.xgd pb6.xgd pc4.xgd pa15.xgd pd11.xgd pc15.xgd pf5.xgd pe5.xgd pa2.xgd pa7.xgd pb7.xgd pc3.xgd pa16.xgd pd10.xgd pc16.xgd pf4.xgd pe6.xgd ra7.xgd pa3.xgd pa6.xgd pb8.xgd pc2.xgd pa17.xgd pd9.xgd pe17.xgd pf3.xgd pe7.xgd pa5.xgd pb9.xgd pc1.xgd pd1.xgd pd8.xgd pc18.xgd pb12.xgd pd4.xgd pd5.xgd pc21.xgd Mode: Both By: -1 intervals	
Note: converting the gradiometer data into ESRI GIS files imposed an x=y interpolation on the entire dataset	