

GEOPHYSICAL SURVEY REPORT

STRATASCAN™



Project name:
Land off Ilmington Road, Blackwell, Warwickshire

Client:
Cotswold Archaeology

Job ref:
J9892

June 2016

GEOPHYSICAL SURVEY REPORT

Project name: Land off Ilmington Road, Blackwell, Warwickshire Client: Cotswold Archaeology	Job ref: J9892
Survey date: 9th- 13th May	Report date: June 2016
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TABLE OF CONTENTS

1	SUMMARY OF RESULTS.....	1
2	INTRODUCTION	1
3	METHODS, PROCESSING & PRESENTATION.....	2
4	RESULTS	3
5	DATA APPRAISAL & CONFIDENCE ASSESSMENT	4
6	CONCLUSION	5
7	REFERENCES	6
	Appendix A - Technical Information: Magnetometer Survey Method.....	7
	Appendix B - Technical Information: Magnetic Theory	9

LIST OF FIGURES

Figure 01	1:25 000	Location plan of survey area
Figure 02	1:4000	Location of survey grids and referencing
Figure 03	1:4000	Colour plot of gradiometer data showing extreme values - overview
Figure 04	1:1250	Colour plot of gradiometer data showing extreme values - viewport 1
Figure 05	1:1250	Colour plot of gradiometer data showing extreme values - viewport 2
Figure 06	1:1250	Colour plot of gradiometer data showing extreme values - viewport 3
Figure 07	1:4000	Plot of minimally processed gradiometer data - overview
Figure 08	1:1250	Plot of minimally processed gradiometer data - viewport 1
Figure 09	1:1250	Plot of minimally processed gradiometer data - viewport 2
Figure 10	1:1250	Plot of minimally processed gradiometer data - viewport 3
Figure 11	1:4000	Abstraction and interpretation of gradiometer anomalies - overview
Figure 12	1:1250	Abstraction and interpretation of gradiometer anomalies - viewport 1
Figure 13	1:1250	Abstraction and interpretation of gradiometer anomalies - viewport 2
Figure 14	1:1250	Abstraction and interpretation of gradiometer anomalies - viewport 3

1 SUMMARY OF RESULTS

A detailed gradiometry survey was carried out over approximately 16.5 hectares of arable farmland and grassland. A substantial area of late prehistoric settlement activity has been identified, comprising roundhouses, rectilinear enclosures, a possible field system and backfilled pits. The features identified provide evidence of multi-phase prehistoric, Iron Age and possible Roman settlement. Evidence of ridge and furrow cultivation, a trackway and former building indicate that the site has been used for agricultural purposes since the medieval period. The other features detected are natural or modern and include areas of natural magnetic variation, magnetic disturbance from nearby ferrous objects, a non-ferrous underground service, and magnetic spikes.

2 INTRODUCTION

2.1 Background synopsis

Stratascan were commissioned to undertake a geophysical survey of an area outlined for solar farm development. This survey forms part of an archaeological investigation being undertaken by Cotswold Archaeology.

2.2 Site Details

NGR / Postcode	SP 234 433 / CV36 4JX
Location	The site lies to the west of the village of Blackwell, Warwickshire and to the north of Ilmington Road. The Fosse Way lies approximately 2km to the east.
HER/SMR	Warwickshire
District	Stratford-on-Avon
Parish	Tredington Civil Parish
Topography	Mostly flat
Current Land Use	Arable and pasture
Weather Conditions	Dry, clear
Soils	The overlying soil is Evesham 2, which are typical calcareous pelosols. These consist of slowly permeable, calcareous clayey soils (Soils of England and Wales, Sheet 3 Midland and Western England).
Geology	The solid geology across the majority of the site comprises Rugby Limestone Member - mudstone and limestone. Across the west of the site the underlying geology comprises mudstone of Charmouth

	Mudstone Formation. There are no recorded superficial deposits (British Geological Society, 2016).
Archaeology	<p>Extract from “Blackwell Grange Solar, Blackwell, Warwickshire - Heritage Desk-Based Assessment” (Cotswold Archaeology, 2016):</p> <p><i>There are no previously recorded heritage assets located within the proposed development site. Aerial photographs have recorded ridge and furrow earthworks within the site up until 1993. No ridge and furrow earthworks have been discovered within the site during the site visit, and it is probable that these have been destroyed by modern ploughing. If any subsurface remains of ridge and furrow cultivation survive within the development site, these will be of limited heritage significance.</i></p> <p><i>Evidence for a number of possible late Iron Age/Roman settlement sites within close proximity to the development site suggests some potential for the presence of previously unrecorded buried archaeology of this date. However, as the entire site is likely to have been subject to ploughing since the medieval period, any surviving archaeological features are likely to have been substantially impacted or truncated. As no features indicating settlement remains have been identified on aerial photographs, such potential is considered to be limited.</i></p>
Survey Methods	Detailed magnetic survey (gradiometry)
Study Area	c. 16.5ha

2.3 Aims and objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

3 METHODS, PROCESSING & PRESENTATION

3.1 Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (2008) and the Chartered Institute for Archaeologists (2002 & 2014).

Stratascan Ltd are a Registered Organisation with the CifA and are committed to upholding its policies and standards.

3.2 Survey methods

Due to the potential for prehistoric and Roman activity detailed magnetic survey was used as an efficient and effective method of locating archaeological anomalies. The limestone and mudstone geology also provides good conditions for magnetic survey.

More information regarding this technique is included in Appendix A.

3.3 Processing

The following schedule shows the basic processing carried out on the data used in this report:

1. *Destripe*
2. *Destagger*

3.4 Presentation of results and interpretation

The presentation of the data for each site involves a plot of the minimally processed data as a greyscale plot and a colour plot showing extreme magnetic values. Magnetic anomalies have been identified and plotted onto the 'Interpretation of Anomalies' drawing.

When interpreting the results several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to very specific known features documented in other sources, this is done (for example: Abbey Wall, Roman Road). For the generic categories levels of confidence are indicated, for example: probable, or possible archaeology. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification "possible".

4 RESULTS

The detailed magnetic gradiometer survey conducted at Land off Ilmington Road, Blackwell, Warwickshire has identified a number of anomalies that have been characterised as being either of a *probable* or *possible* archaeological origin. The following numbered anomalies refers to numerical labels on the interpretation plots.

4.1 Probable Archaeology

A large number of circular and sub-circular anomalies [1] in the centre of the site are indicative of former cut features, such as ditches. These anomalies are likely representative of former roundhouses or small enclosures. Concentric, sub-circular anomalies [1a] are indicative of a double ditched enclosure. Positive rectilinear anomalies [2] in the west of the site also represent small former enclosures and, combined with the large number of sub-circular enclosures, provide evidence of substantial settlement activity. Further rectilinear enclosures [3] in the east, along with an extremely high concentration of positive linear and curvilinear anomalies [4] provide further evidence of extensive, multi-phase settlement activity, with the eastern rectilinear anomalies possibly indicative of later Roman occupation. A large trapezoidal feature [4a] and further linear anomalies in the east [4b] are related to larger enclosures, and may be representative of a field system surrounding the main concentration of occupation. A number of areas of enhanced magnetic response [5], and a number of small discrete positive anomalies [6], provide further evidence of settlement activity. The small discrete anomalies are indicative of former backfilled pits. All of the features are consistent with later prehistoric or Iron Age occupational sites, while the complexity of anomalies indicates that the site underwent several phases of activity.

4.2 **Possible Archaeology**

A small number of positive linear anomalies [7] in the east and south-west of the site are indicative of former cut features, such as ditches. It is possible that these are of archaeological origin, relating to the settlement activity on the site, however they may equally be related to agricultural activity. A number of small discrete positive anomalies [8] across the west of the site are indicative of former backfilled pits, however may also be of natural origin. An area of enhanced magnetic response [8a] in the south-west may be of archaeological origin, though may relate to agricultural activity on the site.

4.3 **Medieval/Post-Medieval Agriculture**

Evidence of medieval ridge and furrow cultivation [9] is visible across the site in the form of slightly curved, parallel linear anomalies and is also visible on the 1843 tithe map. An area of strong magnetic debris in the south-west [10] is related to a former building visible on available OS mapping from 1885 to 1969. Two parallel linear anomalies [11] running the length of the western field are likely to be related to a former trackway, though is not visible on available mapping.

4.4 **Other Anomalies**

An area of strong magnetic debris [12] in the south-west of the site. This is of uncertain origin and may related to the settlement activity on the site, though it may equally be modern in origin. Areas of amorphous magnetic variation [13] in the east of the site are likely to be of natural origin, while the remaining features are modern. A negative linear anomaly [14] in the east of the site is related to a non-ferrous underground service, while areas of magnetic disturbance [15] are the result of nearby, substantial ferrous objects. Smaller ferrous anomalies, or 'magnetic spikes' [16] indicate ferrous metal objects and are likely to be modern rubbish.

5 **DATA APPRAISAL & CONFIDENCE ASSESSMENT**

Underlying geologies of Rugby Limestone Member - mudstone and limestone, and Charmouth Mudstone Formation generally provide good results for gradiometer survey. The data across the site shows a high contrast between archaeological and agricultural anomalies in comparison to the background magnetic response. A small number of archaeological features appear to have been truncated by later medieval ridge and furrow, though the ploughing does not seem to have significantly affected the majority of the below ground archaeology. Given the high contrast between responses, and the quantity of features detected, it can be determined that the survey has been effective.

6 CONCLUSION

The survey at Ilmington Road, Blackwell, has identified a large number of anomalies related to late prehistoric or Iron Age settlement. A significant number of former roundhouses, rectilinear enclosures, backfilled pits, and additional linear anomalies combine to provide evidence of substantial multi-phase occupational activity. The form of the anomalies indicates a late prehistoric origin, likely Iron Age, with rectilinear enclosures in the east possibly indicative of later Roman activity. The close proximity of other Iron Age and Roman activity within the surrounding area, outlined in the desk-based assessment, also suggests a late prehistoric or Roman date is likely. Further linear anomalies and small discrete anomalies may be archaeological in origin, though may also be agricultural or natural. Evidence of medieval ridge and furrow across the site suggests that the site formed part of the agricultural hinterland of Blackwell. A former building and possible former trackway provide evidence that the site has had continued agricultural use. The remaining features are natural or modern and include areas of natural magnetic variation, a non-ferrous underground service, disturbance from nearby ferrous objects, and magnetic spikes.

7 REFERENCES

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Appendix A - Technical Information: Magnetometer Survey Method

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

Instrumentation: Bartington *Grad601-2*

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m.

The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

Data Processing

Zero Mean Traverse This process sets the background mean of each traverse within each grid to zero. The operation removes striping effects and edge discontinuities over the whole of the data set.

Step Correction (Destagger) When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/ Colourscale Plot This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall*, etc.) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology/Probable Archaeology</i>	This term is used when the form, nature and pattern of the response are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal- working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable & possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge & Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains will often lead and empty into larger diameter pipes and which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present. They are presumed to be modern.
<i>Service</i>	Magnetically strong anomalies usually forming linear features indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) cause weaker magnetic responses and can be identified from their uniform linearity crossing large expanses.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
<i>Uncertain Origin</i>	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of <i>Possible Archaeology</i> and <i>Possible Natural</i> or (in the case of linear responses) <i>Possible Archaeology</i> and <i>Possible Agriculture</i> ; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTeslas (nT) in an overall field strength of 48,000nT, can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns and material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

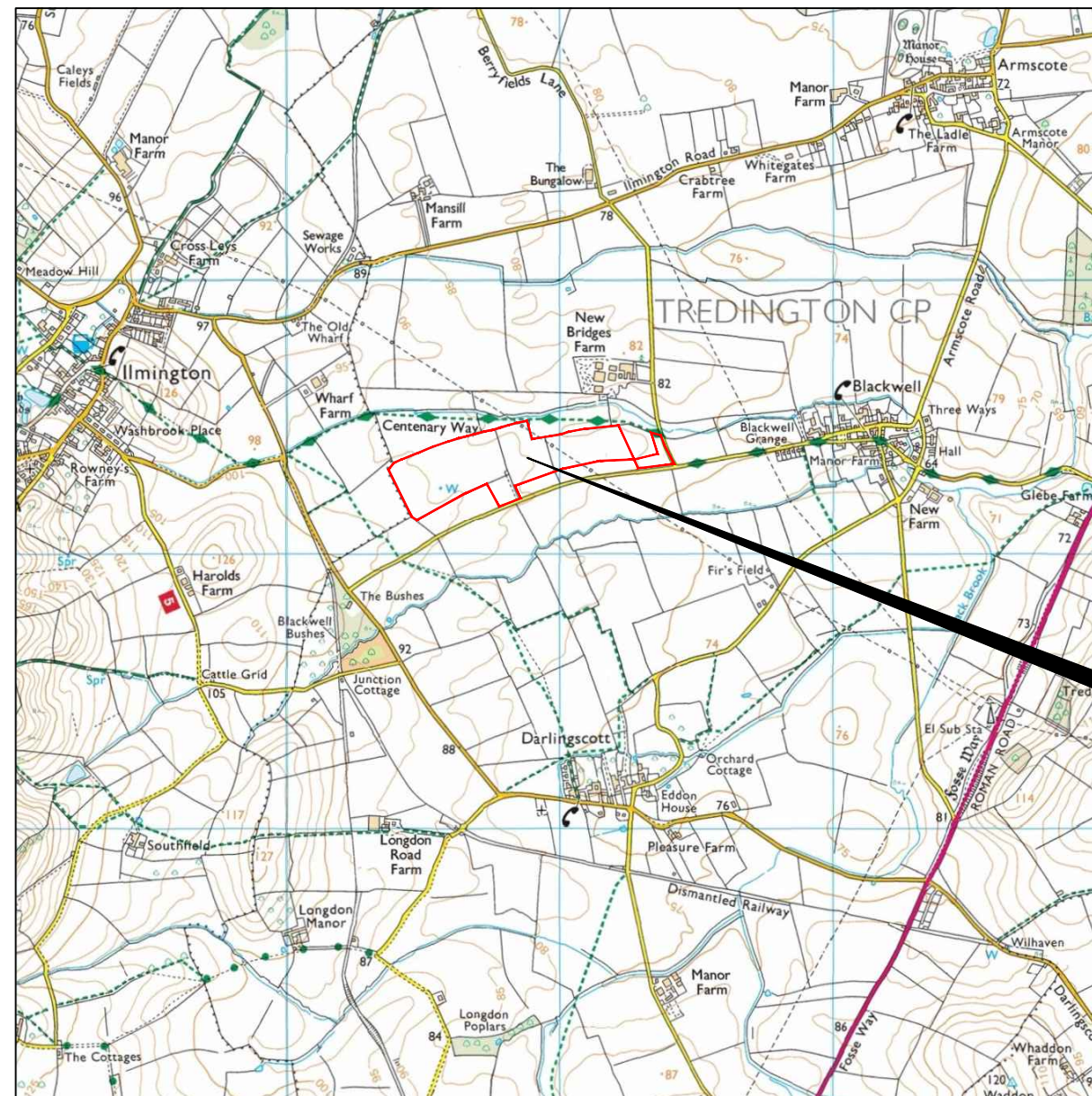
Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried field. The difference between the two sensors will relate to the strength of a magnetic field created by a buried feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity, disturbance from modern services etc.

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45
 44
 43
 42
 41



Survey Area

21 22 23 24 25

Amendments

Issue No.	Date	Description
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Site centred on NGR **SP 234 433**

Client
COTSWOLD ARCHAEOLOGY

Project Title Job No. 9892
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Subject
LOCATION PLAN OF SURVEY AREA

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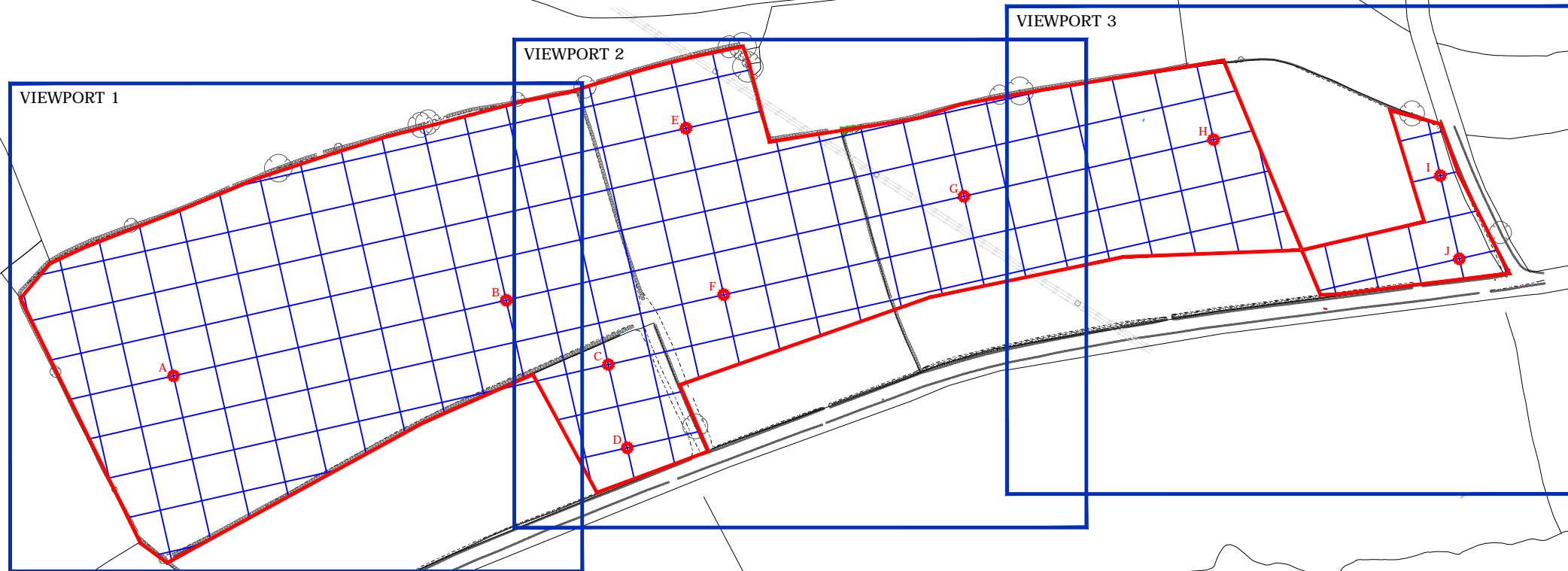


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Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 01



Amendments

Issue No.	Date	Description
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OS GRID REFERENCES

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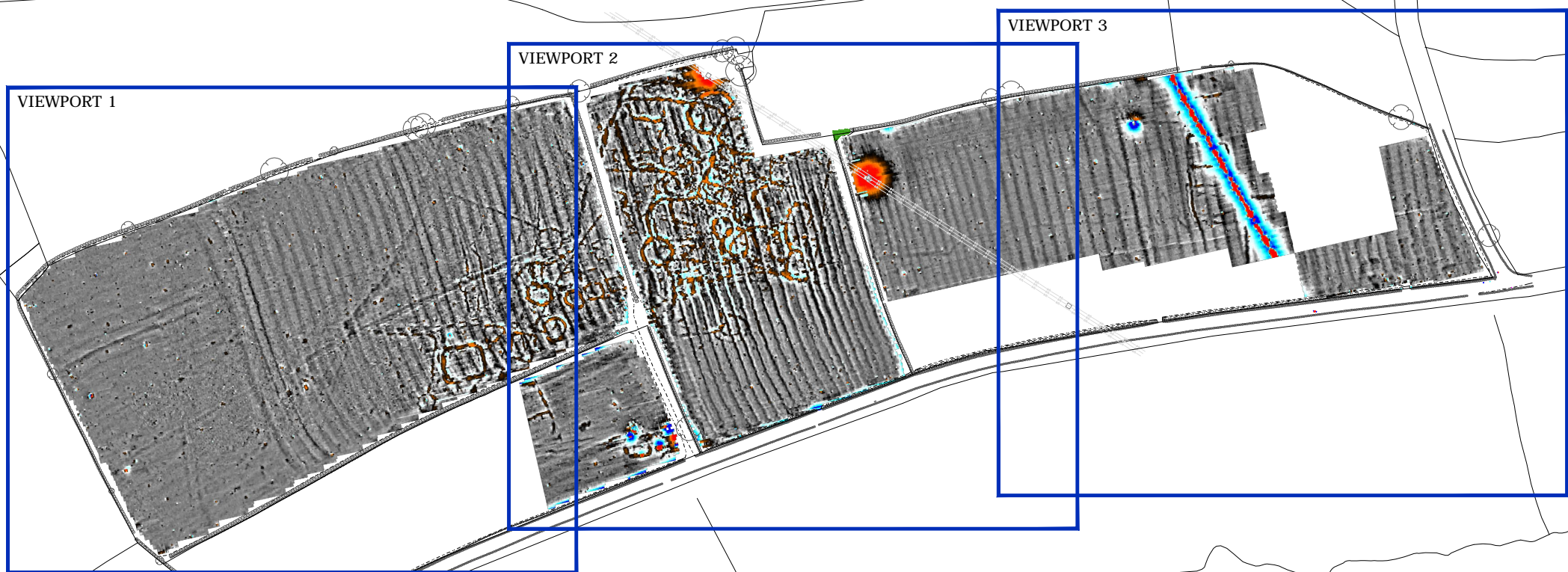
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Plotting parameters

Maximum + 100nT (red)
Minimum -100nT (blue)

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Subject
**COLOUR PLOT OF GRADIOMETER DATA
SHOWING EXTREME VALUES - OVERVIEW**

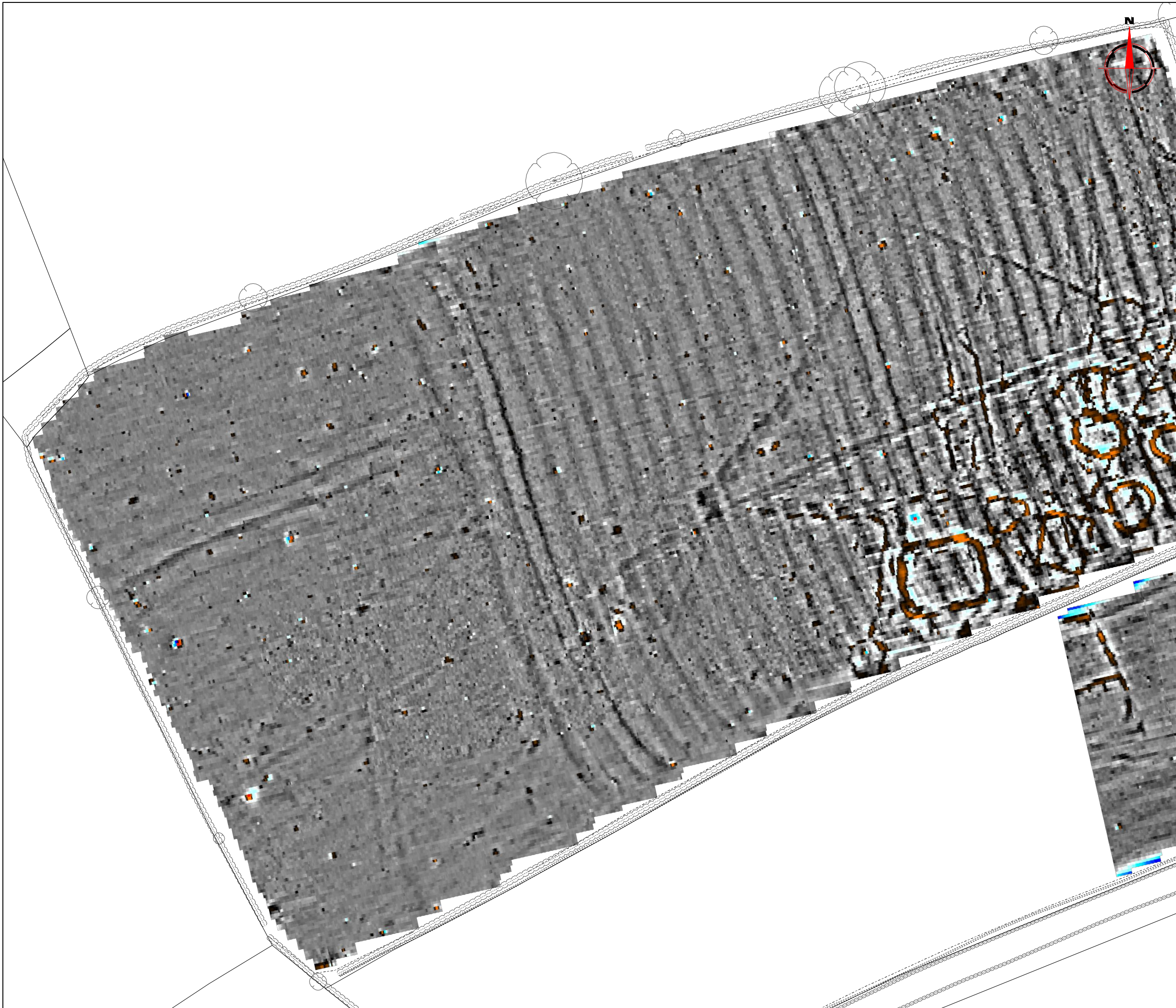
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Scale 1:4000

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 Minimum -100nT (blue)

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Subject
**COLOUR PLOT OF GRADIOMETER DATA
 SHOWING EXTREME VALUES - VIEWPORT 1**

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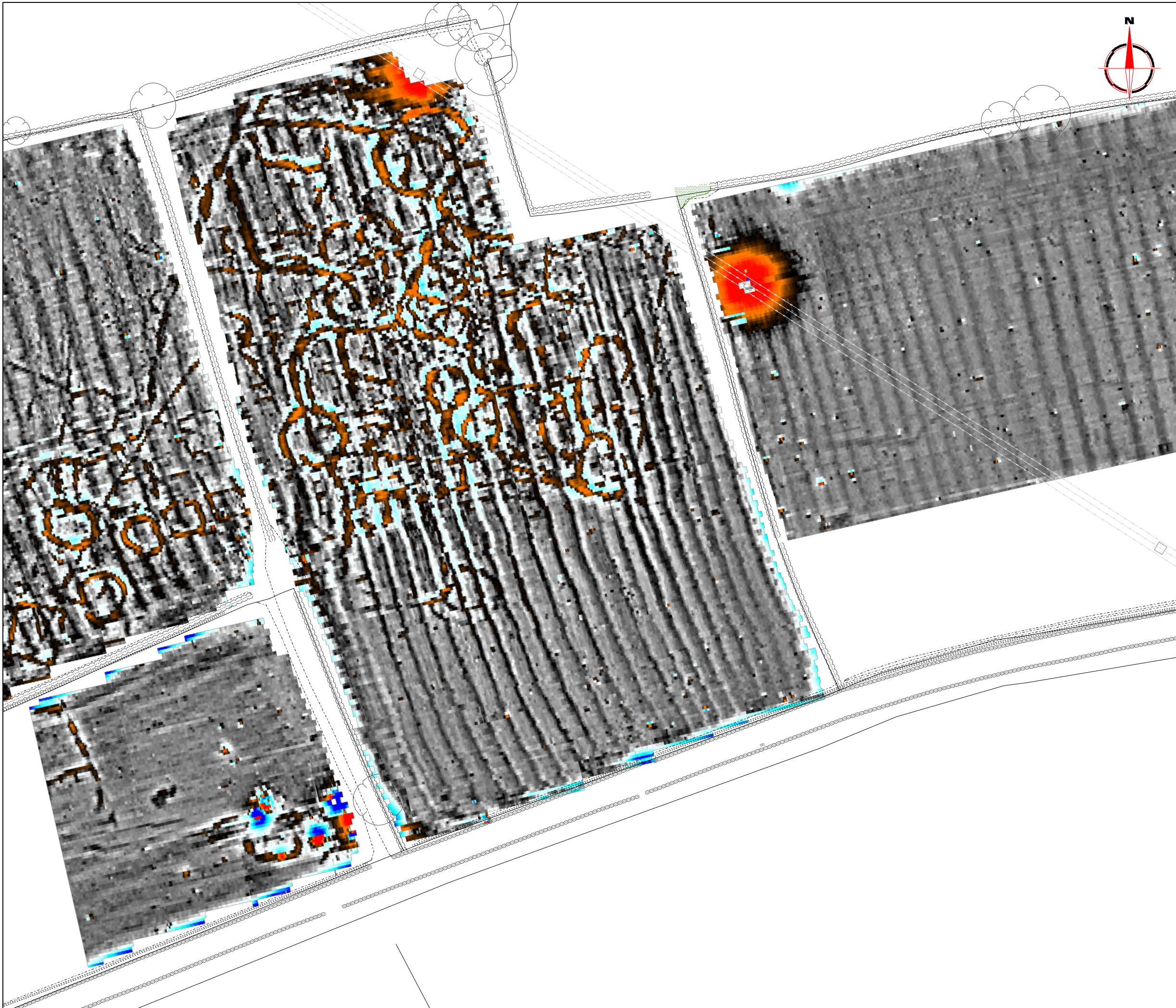
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Maximum + 100nT (red)
Minimum -100nT (blue)

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Subject
**COLOUR PLOT OF GRADIOMETER DATA
SHOWING EXTREME VALUES - VIEWPORT 2**

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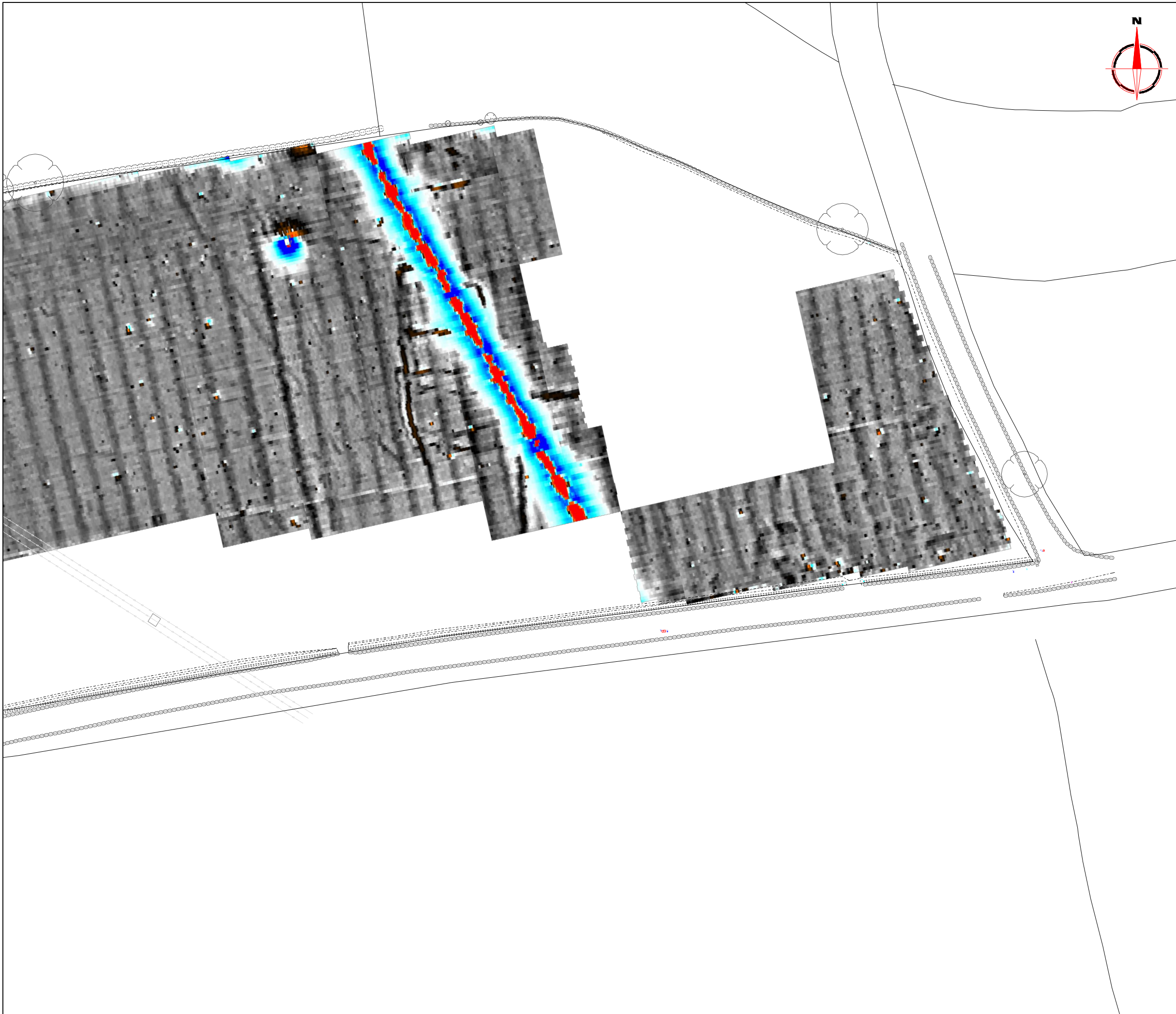
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Plotting parameters

Maximum + 100nT (red)
Minimum - 100nT (blue)

+ 100nT
+ 25nT
+ 3nT
- 3nT
- 25nT
- 100nT

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Subject
**COLOUR PLOT OF GRADIOMETER DATA
SHOWING EXTREME VALUES - VIEWPORT 3**

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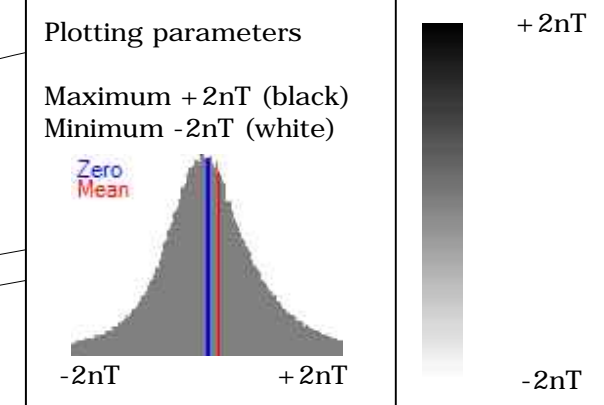
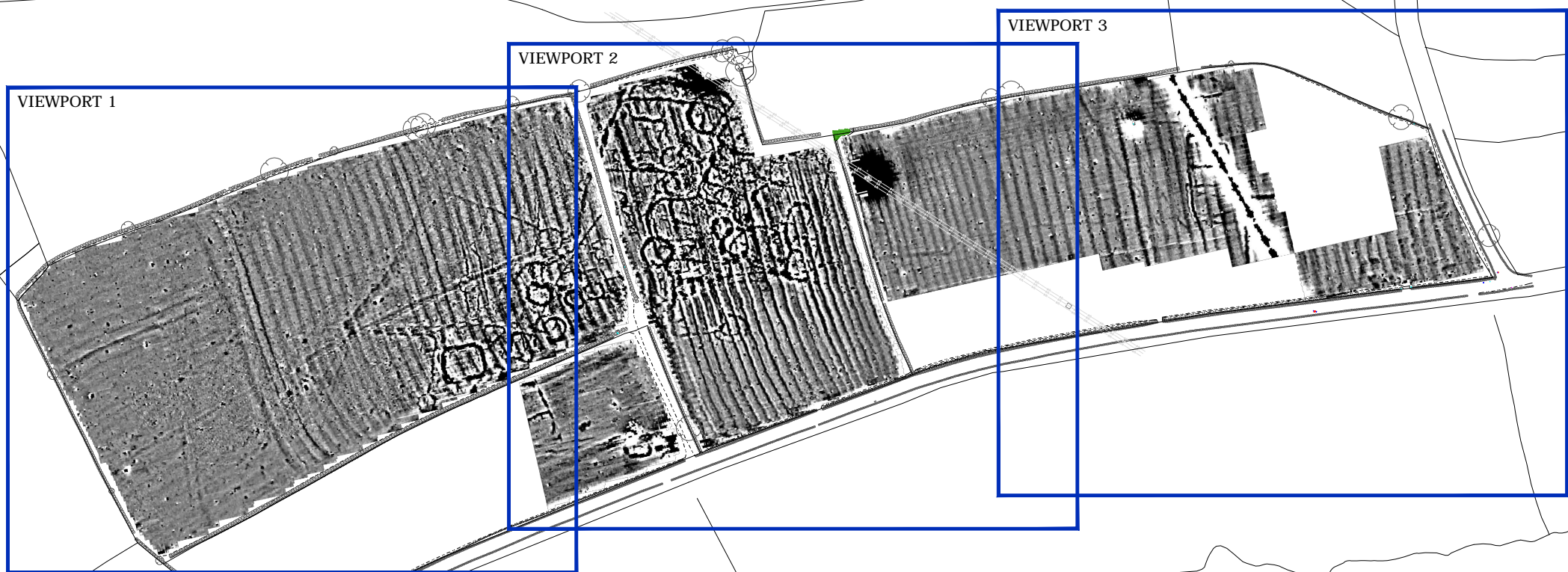
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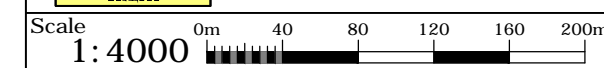
Client
COTSWOLD ARCHAEOLOGY

Project Title Job No. 9892
**LAND OFF ILMINGTON ROAD,
BLACKWELL, WARWICKSHIRE**

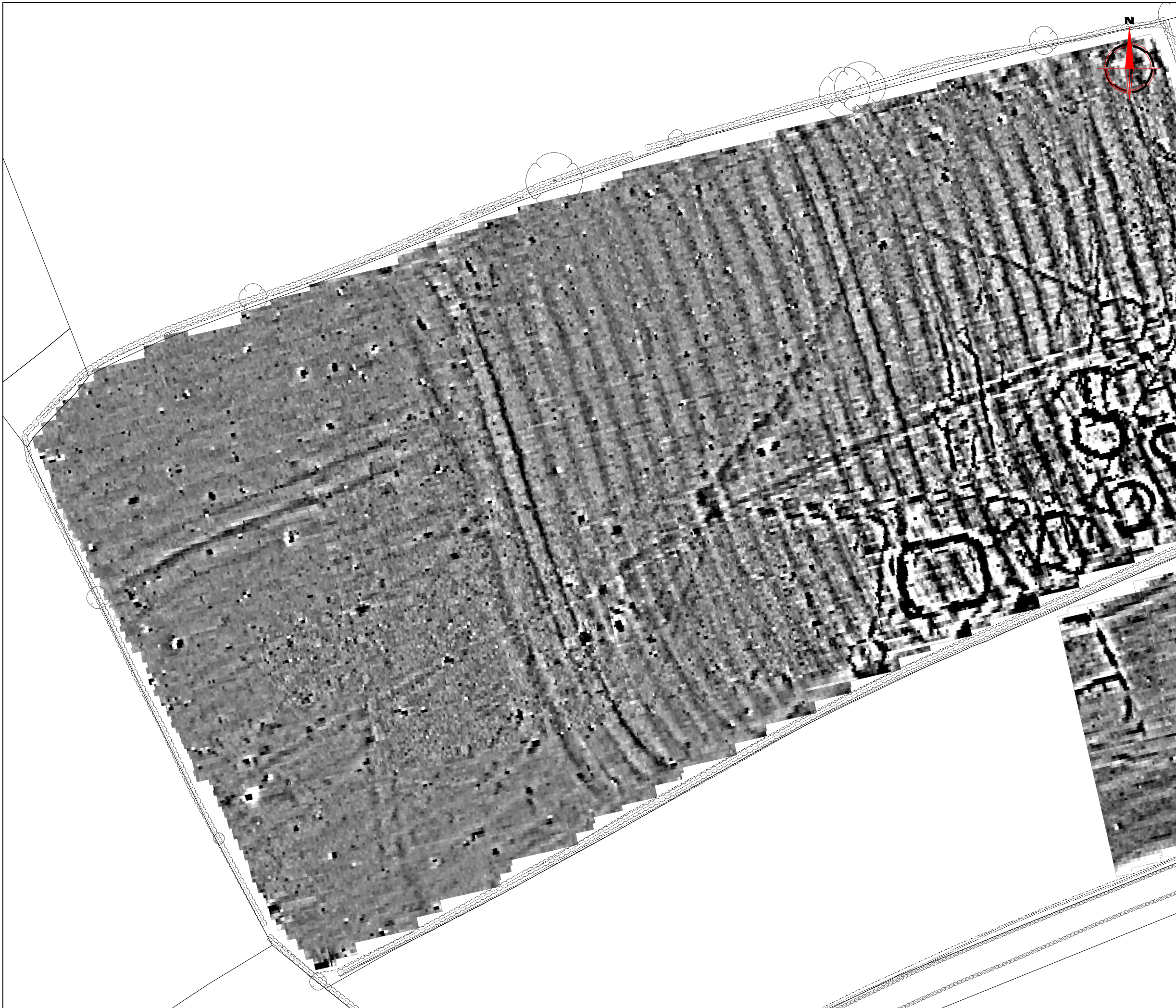
Subject
**PLOT OF MINIMALLY PROCESSED
GRADIOMETER DATA - OVERVIEW**

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GEOPHYSICS FOR ARCHAEOLOGY
AND ENGINEERING

VINEYARD HOUSE T: 01684 592266
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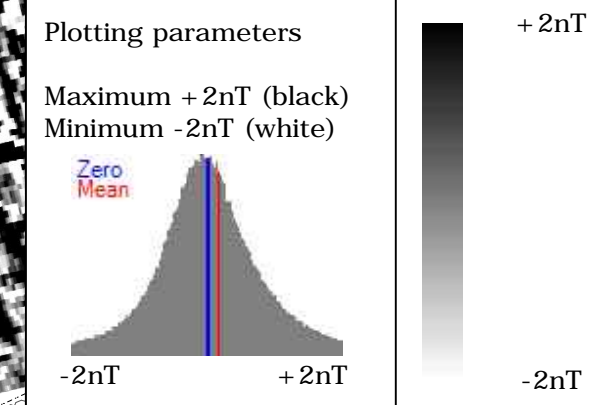
Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 07



Amendments

Issue No.	Date	Description
-	-	-

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Project Title Job No. 9892
**LAND OFF ILMINGTON ROAD,
BLACKWELL, WARWICKSHIRE**

Subject
**PLOT OF MINIMALLY PROCESSED
GRADIOMETER DATA - VIEWPORT 1**

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Scale **1:1250**
0m 10 20 30 40 50m

Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 08



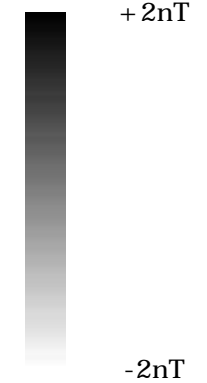
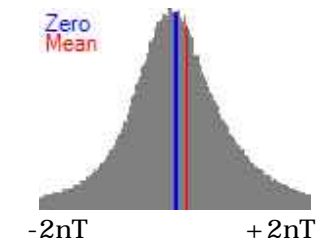
Amendments

Issue No.	Date	Description
-	-	-
-	-	-

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Plotting parameters

Maximum +2nT (black)
Minimum -2nT (white)



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Project Title Job No. 9892
**LAND OFF ILMINGTON ROAD,
BLACKWELL, WARWICKSHIRE**

Subject
**PLOT OF MINIMALLY PROCESSED
GRADIOMETER DATA - VIEWPORT 2**

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SUMO
GROUP
MEMBER



Scale
1:1250

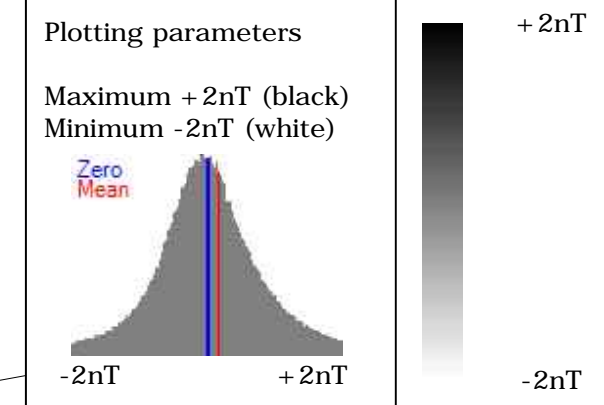
Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 09



Amendments

Issue No.	Date	Description
-	-	-
-	-	-

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Project Title Job No. 9892
**LAND OFF ILMINGTON ROAD,
BLACKWELL, WARWICKSHIRE**

Subject
**PLOT OF MINIMALLY PROCESSED
GRADIOMETER DATA - VIEWPORT 3**

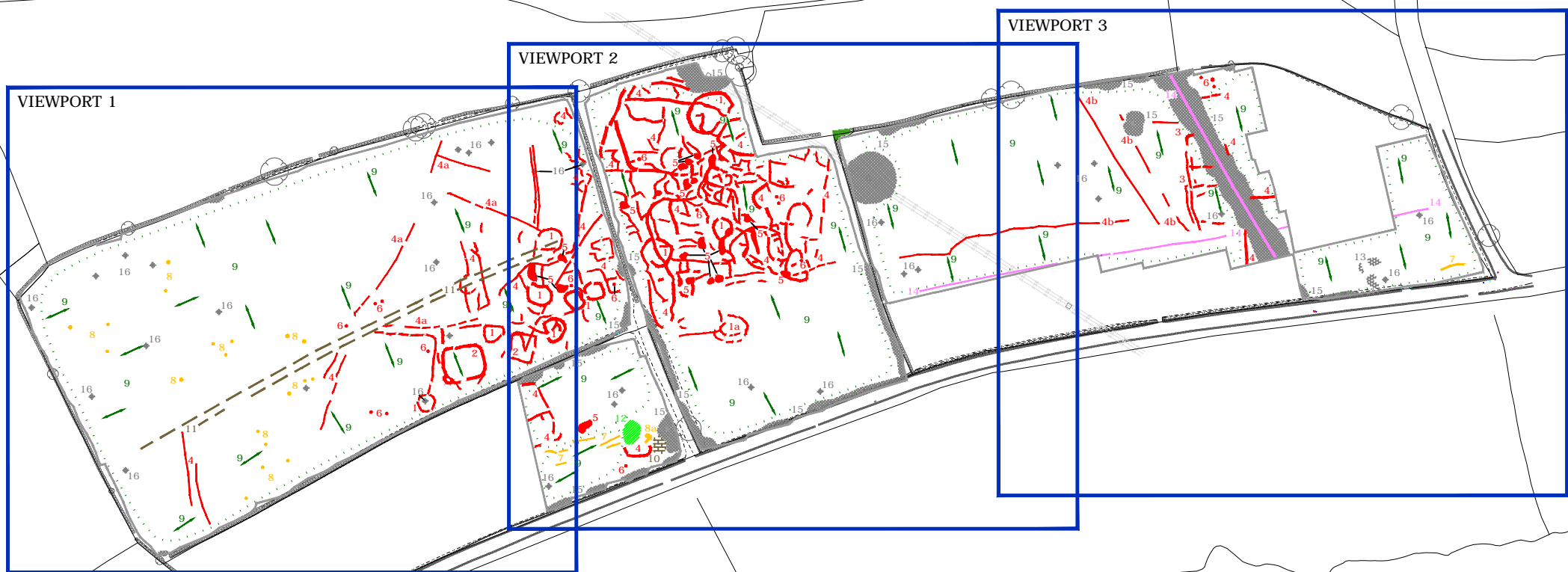
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Scale
1:1250



Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 10





Amendments		
Issue No.	Date	Description
-	-	-
-	-	-

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PROBABLE ARCHAEOLOGY

-  Positive anomaly / weak positive anomaly - probable cut feature of archaeological origin
-  Negative anomaly / weak negative anomaly - probable bank or earthwork of archaeological origin







POSSIBLE ARCHAEOLOGY

-  Positive anomaly / weak positive anomaly - possible cut feature of archaeological origin
-  Negative anomaly / weak negative anomaly - possible bank or earthwork of archaeological origin

MEDIEVAL/POST-MEDIEVAL AGRICULTURE

-  Widely spaced curving parallel linear anomalies - probably related to ridge-and-furrow
-  Closely spaced parallel linear anomalies - probably related to agricultural activity such as ploughing
-  Linear anomaly - probably related to a former field boundary not present on available mapping
-  Linear anomaly - related to a former field boundary present on available mapping
-  Linear anomaly - likely related to former track not present on available mapping
-  Strong magnetic debris - related to former pond present on available mapping

OTHER ANOMALIES

-  Linear anomaly - probably related to pipe, cable or other modern service
-  Strong magnetic debris - uncertain origin
-  Magnetic disturbance associated with nearby metal object such as service or field boundary
-  Strong magnetic debris - possible disturbed or made ground
-  Area of amorphous magnetic variation - probable natural (e.g. geological or pedological) origin
-  Magnetic spike - probable ferrous object


Client
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Project Title Job No. 9892
**LAND OFF ILMINGTON ROAD,
BLACKWELL, WARWICKSHIRE**

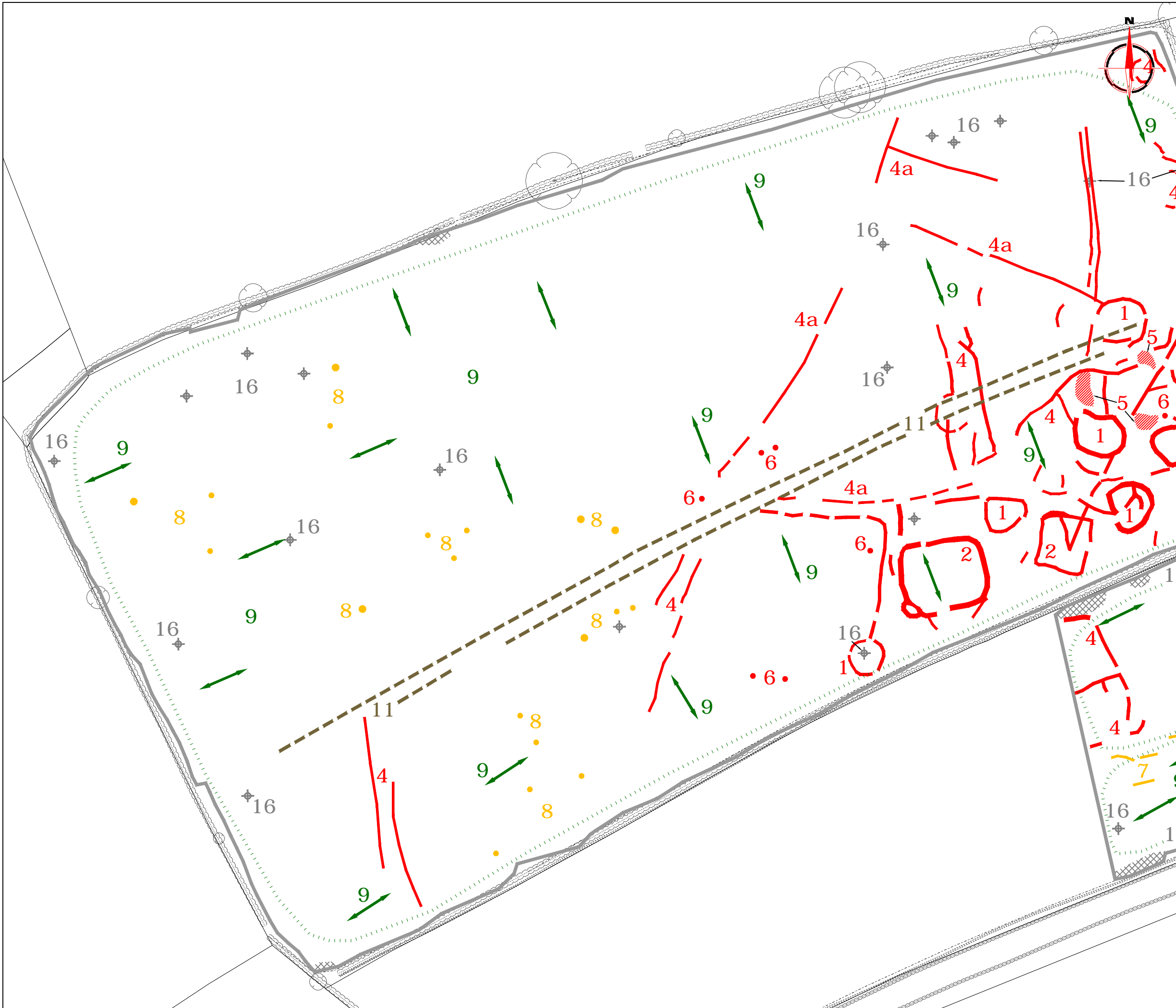
Subject
**ABSTRACTION AND INTERPRETATION OF
GRADIOMETER ANOMALIES - OVERVIEW**

STRATASCAN™
GEOPHYSICS FOR ARCHAEOLOGY
AND ENGINEERING
VINEYARD HOUSE T: 01684 592266
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Scale 1:4000 

Plot A3	Checked by DGE	Issue No. 01
Survey date MAY 16	Drawn by RD	Figure No. 11



Amendments		
Issue No.	Date	Description
-	-	-
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PROBABLE ARCHAEOLOGY		
	Positive anomaly / weak positive anomaly - probable cut feature of archaeological origin	
	Negative anomaly / weak negative anomaly - probable bank or earthwork of archaeological origin	
POSSIBLE ARCHAEOLOGY		
	Positive anomaly / weak positive anomaly - possible cut feature of archaeological origin	
	Negative anomaly / weak negative anomaly - possible bank or earthwork of archaeological origin	
MEDIEVAL/POST-MEDIEVAL AGRICULTURE		
	Widely spaced curving parallel linear anomalies - probably related to ridge-and-furrow	
	Closely spaced parallel linear anomalies - probably related to agricultural activity such as ploughing	
	Linear anomaly - probably related to a former field boundary not present on available mapping	
	Linear anomaly - related to a former field boundary present on available mapping	
	Linear anomaly - likely related to former track not present on available mapping	
	Strong magnetic debris - related to former pond present on available mapping	
OTHER ANOMALIES		
	Linear anomaly - probably related to pipe, cable or other modern service	
	Strong magnetic debris - uncertain origin	
	Magnetic disturbance associated with nearby metal object such as service or field boundary	
	Strong magnetic debris - possible disturbed or made ground	
	Area of amorphous magnetic variation - probable natural (e.g. geological or pedological) origin	
	Magnetic spike - probable ferrous object	
Client		
COTSWOLD ARCHAEOLOGY		
Project Title		Job No. 9892
LAND OFF ILMINGTON ROAD, BLACKWELL, WARWICKSHIRE		
Subject		
ABSTRACTION AND INTERPRETATION OF GRADIOMETER ANOMALIES - VIEWPORT 1		
STRATASCAN™		
GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING		
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SUMO GROUP MEMBER		
Scale		
1: 1250		
Plot	Checked by	Issue No.
A3	DGE	01
Survey date	Drawn by	Figure No.
MAY 16	RD	12



Amendments		
Issue No.	Date	Description
-	-	-
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PROBABLE ARCHAEOLOGY		
		Positive anomaly / weak positive anomaly - probable cut feature of archaeological origin
		Negative anomaly / weak negative anomaly - probable bank or earthwork of archaeological origin
POSSIBLE ARCHAEOLOGY		
		Positive anomaly / weak positive anomaly - possible cut feature of archaeological origin
		Negative anomaly / weak negative anomaly - possible bank or earthwork of archaeological origin
MEDIEVAL/POST-MEDIEVAL AGRICULTURE		
		Widely spaced curving parallel linear anomalies - probably related to ridge-and-furrow
		Closely spaced parallel linear anomalies - probably related to agricultural activity such as ploughing
		Linear anomaly - probably related to a former field boundary not present on available mapping
		Linear anomaly - related to a former field boundary present on available mapping
		Linear anomaly - likely related to former track not present on available mapping
		Strong magnetic debris - related to former pond present on available mapping
OTHER ANOMALIES		
		Linear anomaly - probably related to pipe, cable or other modern service
		Strong magnetic debris - uncertain origin
		Magnetic disturbance associated with nearby metal object such as service or field boundary
		Strong magnetic debris - possible disturbed or made ground
		Area of amorphous magnetic variation - probable natural (e.g. geological or pedological) origin
		Magnetic spike - probable ferrous object
Client		
COTSWOLD ARCHAEOLOGY		
Project Title		Job No. 9892
LAND OFF ILMINGTON ROAD, BLACKWELL, WARWICKSHIRE		
Subject		
ABSTRACTION AND INTERPRETATION OF GRADIOMETER ANOMALIES - VIEWPORT 2		
STRATASCAN™ GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING		
VINEYARD HOUSE		T: 01684 592266
UPTON UPON SEVERN	E: info@stratascan.co.uk	
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Scale		
1: 1250		
Plot	Checked by	Issue No.
A3	DGE	01
Survey date	Drawn by	Figure No.
MAY 16	RD	13



Amendments		
Issue No.	Date	Description
-	-	-
-	-	-
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PROBABLE ARCHAEOLOGY		
		Positive anomaly / weak positive anomaly - probable cut feature of archaeological origin
		Negative anomaly / weak negative anomaly - probable bank or earthwork of archaeological origin
POSSIBLE ARCHAEOLOGY		
		Positive anomaly / weak positive anomaly - possible cut feature of archaeological origin
		Negative anomaly / weak negative anomaly - possible bank or earthwork of archaeological origin
MEDIÆVAL/POST-MEDIÆVAL AGRICULTURE		
		Widely spaced curving parallel linear anomalies - probably related to ridge-and-furrow
		Closely spaced parallel linear anomalies - probably related to agricultural activity such as ploughing
		Linear anomaly - probably related to a former field boundary not present on available mapping
		Linear anomaly - related to a former field boundary present on available mapping
		Linear anomaly - likely related to former track not present on available mapping
		Strong magnetic debris - related to former pond present on available mapping
OTHER ANOMALIES		
		Linear anomaly - probably related to pipe, cable or other modern service
		Strong magnetic debris - uncertain origin
		Magnetic disturbance associated with nearby metal object such as service or field boundary
		Strong magnetic debris - possible disturbed or made ground
		Area of amorphous magnetic variation - probable natural (e.g. geological or pedological) origin
		Magnetic spike - probable ferrous object
Client		
COTSWOLD ARCHAEOLOGY		
Project Title		Job No. 9892
LAND OFF ILMINGTON ROAD, BLACKWELL, WARWICKSHIRE		
Subject		
ABSTRACTION AND INTERPRETATION OF GRADIOMETER ANOMALIES - VIEWPORT 3		
STRATASCAN™ GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING		
VINEYARD HOUSE		T: 01684 592266
UPTON UPON SEVERN	WR8 0SA	E: info@stratascan.co.uk www.stratascan.co.uk
Scale		0m 10 20 30 40 50m
1: 1250		
Plot	Checked by	Issue No.
A3	DGE	01
Survey date	Drawn by	Figure No.
MAY 16	RD	14

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- Void Detection

