



Geophysical Survey Report

Fin Cop Hill Fort

for

Archaeological Research Services

May 2009

Job No. J2591

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Document Title: **Geophysical Survey Report
Fin Cop Hill Fort**

Client: **Archaeological Research Services**

Stratascan Job No: **J2591**

Techniques: **Detailed Gradiometry and Resistance**

National Grid Ref: **SK 174 710**



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1 SUMMARY OF RESULTS

The geophysical survey undertaken over four hectares of agricultural land at Fin Cop hillfort, Derbyshire has identified a number of anomalies of a possible archaeological origin. Cut features such as pits and ditches have been identified in both the resistance and gradiometer data. Areas of possible structural debris and compacted earth are evident in the resistance data.

2 INTRODUCTION

2.1 Background synopsis

Stratascan were commissioned to undertake a geophysical survey of an area of archaeological interest. This survey forms part of an archaeological investigation being undertaken by Archaeological Research Services on behalf of a local history society. An element of outreach was undertaken by Stratascan for the society which involved a presentation on the basic techniques used in archaeological geophysics.

2.2 Site location

The site is located on Fin Cop hill fort, Monsall Head, Derbyshire at OS NGR ref. SK 174 710.

2.3 Description of site

The site consists of approximately 4 hectares of relatively flat pasture. Standing earthworks run through part of the survey area.

The underlying geology is Tournaisian and Visean Limestone (British Geological Survey South Sheet, Fourth Edition Solid, 2001). The drift geology is recorded as Peat (British Geological Survey South Sheet, First Edition Quaternary 1977).

The overlying soils are known as Wetton 1 which are typical humic rankers. These consist of very shallow loamy upland soils over limestone which are mostly humose and sometimes calcareous (Soil Survey of England and Wales, Sheet 3 Midland and Western England).

2.4 Site history and archaeological potential

No specific details were available to Stratascan. However, the fact that the site lies within Fin Cop hill fort would suggest that there is a high potential for the location of anomalies of a possible archaeological origin within the survey area.

2.5 Survey objectives

The objective of the survey was to locate any anomalies that may be of archaeological significance prior to trenching.

2.6 Survey methods

Detailed gradiometry and earth resistance were employed on this site as a quick and efficient method of collecting comparative data sets. More information regarding these techniques is included in the Methodology section below.

3 **METHODOLOGY**

3.1 Date of fieldwork

The fieldwork was carried out over four days from 5th to 8th May 2009. Weather conditions during the survey were wet and windy.

3.2 Grid locations

The location of the survey grids has been plotted in Figure 2 together with the referencing information. Grids were set out using a Leica 705auto Total Station and referenced to suitable topographic features around the perimeter of the site and grid points positioned by ARS.

3.3 Description of techniques and equipment configurations

Gradiometer

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using a dual sensor Grad601-2 Magnetic Gradiometer manufactured by Bartington Instruments Ltd. The instrument consists of two fluxgates very accurately aligned to nullify the effects of the Earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. The Grad601-2 consists of two high stability fluxgate gradiometers suspended on a single frame. Each gradiometer has a 1m separation between the sensing elements so enhancing the response to weak anomalies.

Earth Resistance

This method relies on the relative inability of soils (and objects within the soil) to conduct an electrical current which is passed through them. As resistivity is linked to moisture content, and therefore porosity, hard dense features such as rock will give a relatively high resistivity response, while features such as a ditch which retains moisture give a relatively low response

The resistance meter used was an RM15 manufactured by Geoscan Research incorporating a mobile Twin Probe Array. The Twin Probes are separated by 0.5m and the associated remote probes were positioned approximately 15m outside the grid. The instrument uses an automatic data logger which permits the data to be recorded as the survey progresses for later downloading to a computer for processing and presentation.

The resistance meter was used in conjunction with an MPX15 multiplexer to allow two adjacent readings to be taken at each instrument position.

Though the values being logged are actually resistances in ohms they are directly proportional to resistivity (ohm-metres) as the same probe configuration was used through-out.

3.4 Sampling interval, depth of scan, resolution and data capture

3.4.1 Sampling interval

Gradiometer

Readings were taken at 0.25m centres along traverses 1m apart. This equates to 3600 sampling points in a full 30m x 30m grid. All traverses were surveyed in a “zigzag” mode.

Earth Resistance

Readings were taken at 1.0m centres along traverses 1.0m apart. This equates to 900 sampling points in a full 30m x 30 grid. All traverses were surveyed in a “zigzag” mode.

3.4.2 Depth of scan and resolution

Gradiometer

The Grad 601 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. The collection of data at 1m centres provides an optimum methodology for the task balancing cost and time with resolution.

Earth Resistance

The 0.5m probe spacing of a twin probe array has a typical depth of penetration of 0.5m to 1.0m. The collection of data at 1m centres with a 0.5m probe spacing provides an optimum resolution for the task.

3.4.3 Data capture

Gradiometer

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

Earth Resistance

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

3.5 Processing, presentation of results and interpretation

3.5.1 Processing

Gradiometer

Processing is performed using specialist software known as *Geoplot 3*. This can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids.

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

1. *Despike* (useful for display and allows further processing functions to be carried out more effectively by removing extreme data values)

Geoplot parameters:

X radius = 1, y radius = 1, threshold = 3 std. dev.
Spike replacement = mean

2. *Zero mean traverse* (sets the background mean of each traverse within a grid to zero and is useful for removing striping effects)

Geoplot parameters:

Least mean square fit = off

Earth Resistance

The processing was carried out using specialist software known as *Geoplot 3* and involved the 'despiking' of high contact resistance readings and the passing of the data through a high pass filter. This has the effect of removing the larger variations in the data often associated with geological features. The net effect is aimed at enhancing the archaeological or man-made anomalies contained in the data.

The following schedule shows the processing carried out on the processed resistance plots.

<i>Despike</i>	<i>X radius = 1</i> <i>Y radius = 1</i> <i>Spike replacement</i>
<i>High pass filter</i>	<i>X radius = 10</i> <i>Y radius = 10</i> <i>Weighting = Gaussian</i>

3.5.2 Presentation of results and interpretation

Gradiometer

The presentation of the data for the survey involves a print-out of the raw data both as grey scale (Figure 3) and trace plots (Figures 4 and 5), together with a grey scale plot of the processed data and the abstraction and interpretation of magnetic anomalies (Figure 6).

Earth Resistance

The presentation of the data for the site involves a print-out of the raw data as a grey scale plot (Figure 7), together with a grey scale plot of the processed data (Figure 8). Anomalies have been identified and plotted onto the 'Abstraction and Interpretation of Anomalies' drawing (Figure 9).

4 RESULTS

4.1 Gradiometry

The gradiometer survey undertaken over four hectares of land at Fin Cop hillfort has identified a number of anomalies of a possible archaeological origin. Positive linear and area anomalies (1) have been identified throughout the survey area. These anomalies have been interpreted as cut features such as ditches. Similar anomalies (2) can be identified which correlate with the existing earthworks within the survey area. Positive linear anomalies of an agricultural origin (3) are also evident within the survey area; particularly in the southern region.

Discrete positive anomalies (4) can be noted throughout the survey area. These anomalies have been interpreted as pits of a possible archaeological origin.

Negative anomalies, representing former banks or earthworks, are evident within the survey data. These anomalies are particularly noticeable over the earthworks which run through the survey area (5). Two negative linear anomalies (6) are present in the eastern and western limits of the site. These anomalies may relate to the drains located in this area.

Areas of magnetic debris are evident within the survey area. It is interesting to note that these features often occur in areas that have been subject to a level of quarrying.

An area of possible thermoremnant response (7) can be noted within an area of quarrying in the south western region of the site. This response may be related to the site of a former lime kiln.

4.2 Earth Resistance

The resistance survey was positioned in the north of the survey area based on the anomalies identified in the gradiometer data.

High resistance linear and area anomalies can be noted throughout the survey area. These anomalies may indicate the presence of buried structural debris. Areas of weaker high resistance as identified in the north eastern part of the survey area may relate to areas of compacted earth. A linear arrangement of high resistance seems to correlate well with the position of a drain in the western limits of the survey area.

Low resistance anomalies represent cut features of a possible archaeological origin such as pits or ditches.

5 **CONCLUSION**

The geophysical survey undertaken at Fin Cop hillfort has identified a number of anomalies of a possible archaeological origin. There is a good correlation between the two data sets employed on site with areas of low resistance being identified in the same location as positive anomalies in the gradiometer data.

The southern half of the survey area has not yielded as many features of a possible archaeological origin; this may be as a result of the heavy agricultural activity that has taken place in this area.

6 REFERENCES

British Geological Survey, 2001. *Geological Survey Ten Mile Map, South Sheet, Fourth Edition (Solid)*. British Geological Society.

Soil Survey of England and Wales, 1983. *Soils of England and Wales, Sheet 3 Midland and Western England*.

APPENDIX A – Basic principles of magnetic survey

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.

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

Thermoremnance 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. Thermoremnant archaeological features can include hearths and kilns and material such as brick and tile may be magnetised through the same process.

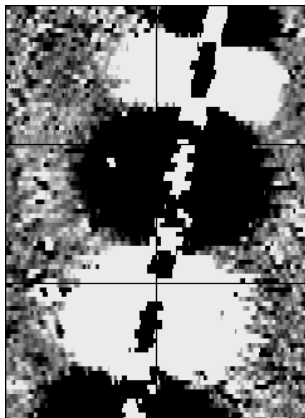
Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement 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 either 0.5 or 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.

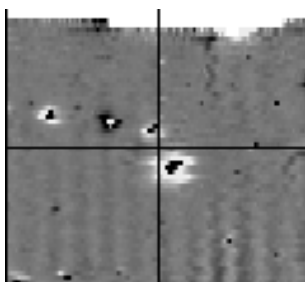
APPENDIX B – Glossary of magnetic anomalies

Bipolar



A bipolar anomaly is one that is composed of both a positive response and a negative response. It can be made up of any number of positive responses and negative responses. For example a pipeline consisting of alternating positive and negative anomalies is said to be bipolar. See also dipolar which has only one area of each polarity. The interpretation of the anomaly will depend on the magnitude of the magnetic field strength. A weak response may be caused by a clay field drain while a strong response will probably be caused by a metallic service.

Dipolar

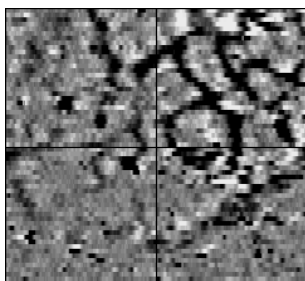


This consists of a single positive anomaly with an associated negative response. There should be no separation between the two polarities of response. These responses will be created by a single feature. The interpretation of the anomaly will depend on the magnitude of the magnetic measurements. A very strong anomaly is likely to be caused by a ferrous object.

Positive anomaly with associated negative response

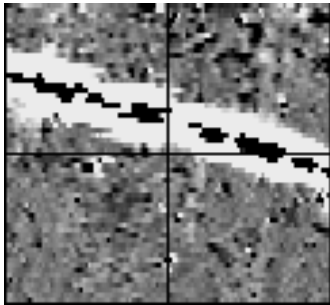
See bipolar and dipolar.

Positive linear



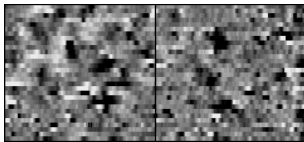
A linear response which is entirely positive in polarity. These are usually related to infilled cut features where the fill material is magnetically enhanced compared to the surrounding matrix. They can be caused by ditches of an archaeological origin, but also former field boundaries, ploughing activity and some may even have a natural origin.

Positive linear anomaly with associated negative response



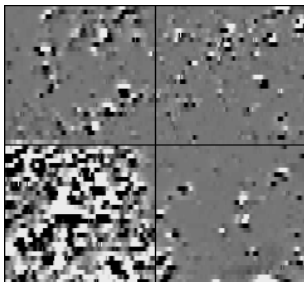
A positive linear anomaly which has a negative anomaly located adjacently. This will be caused by a single feature. In the example shown this is likely to be a single length of wire/cable probably relating to a modern service. Magnetically weaker responses may relate to earthwork style features and field boundaries.

Positive point/area



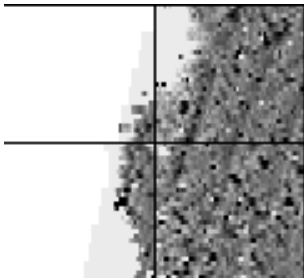
These are generally spatially small responses, perhaps covering just 3 or 4 reading nodes. They are entirely positive in polarity. Similar to positive linear anomalies they are generally caused by infilled cut features. These include pits of an archaeological origin, possible tree bowls or other naturally occurring depressions in the ground.

Magnetic debris



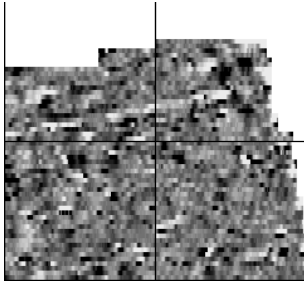
Magnetic debris consists of numerous dipolar responses spread over an area. If the amplitude of response is low ($\pm 3\text{nT}$) then the origin is likely to represent general ground disturbance with no clear cause, it may be related to something as simple as an area of dug or mixed earth. A stronger anomaly ($\pm 250\text{nT}$) is more indicative of a spread of ferrous debris. Moderately strong anomalies may be the result of a spread of thermoremanent material such as bricks or ash.

Magnetic disturbance



Magnetic disturbance is high amplitude and can be composed of either a bipolar anomaly, or a single polarity response. It is essentially associated with magnetic interference from modern ferrous structures such as fencing, vehicles or buildings, and as a result is commonly found around the perimeter of a site near to boundary fences.

Negative linear

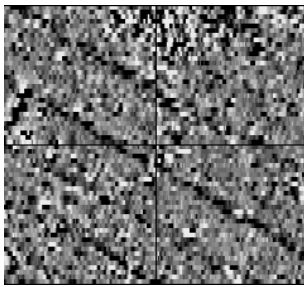


A linear response which is entirely negative in polarity. These are generally caused by earthen banks where material with a lower magnetic magnitude relative the background top soil is built up. See also ploughing activity.

Negative point/area

Opposite to positive point anomalies these responses may be caused by raised areas or earthen banks. These could be of an archaeological origin or may have a natural origin.

Ploughing activity



Ploughing activity can often be visualised by a series of parallel linear anomalies. These can be of either positive polarity or negative polarity depending on site specifics. It can be difficult to distinguish between ancient ploughing and more modern ploughing, clues such as the separation of each linear, straightness, strength of response and cross cutting relationships can be used to aid this, although none of these can be guaranteed to differentiate between different phases of activity.

Polarity

Term used to describe the measurement of the magnetic response. An anomaly can have a positive polarity (values above 0nT) and/or a negative polarity (values below 0nT).

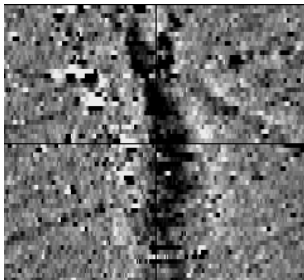
Strength of response

The amplitude of a magnetic response is an important factor in assigning an interpretation to a particular anomaly. For example a positive anomaly covering a 10m² area may have values up to around 3000nT, in which case it is likely to be caused by modern magnetic interference. However, the same size and shaped anomaly but with values up to only 4nT may have a natural origin. Trace plots are used to show the amplitude of response.

Thermoremnant response

A feature which has been subject to heat may result in it acquiring a magnetic field. This can be anything up to approximately +/-100 nT in value. These features include clay fired drains, brick, bonfires, kilns, hearths and even pottery. If the heat application has occurred insitu (e.g. a kiln) then the response is likely to be bipolar compared to if the heated objects have been disturbed and moved relative to each other, in which case they are more likely to take an irregular form and may display a debris style response (e.g. ash).

Weak background variations



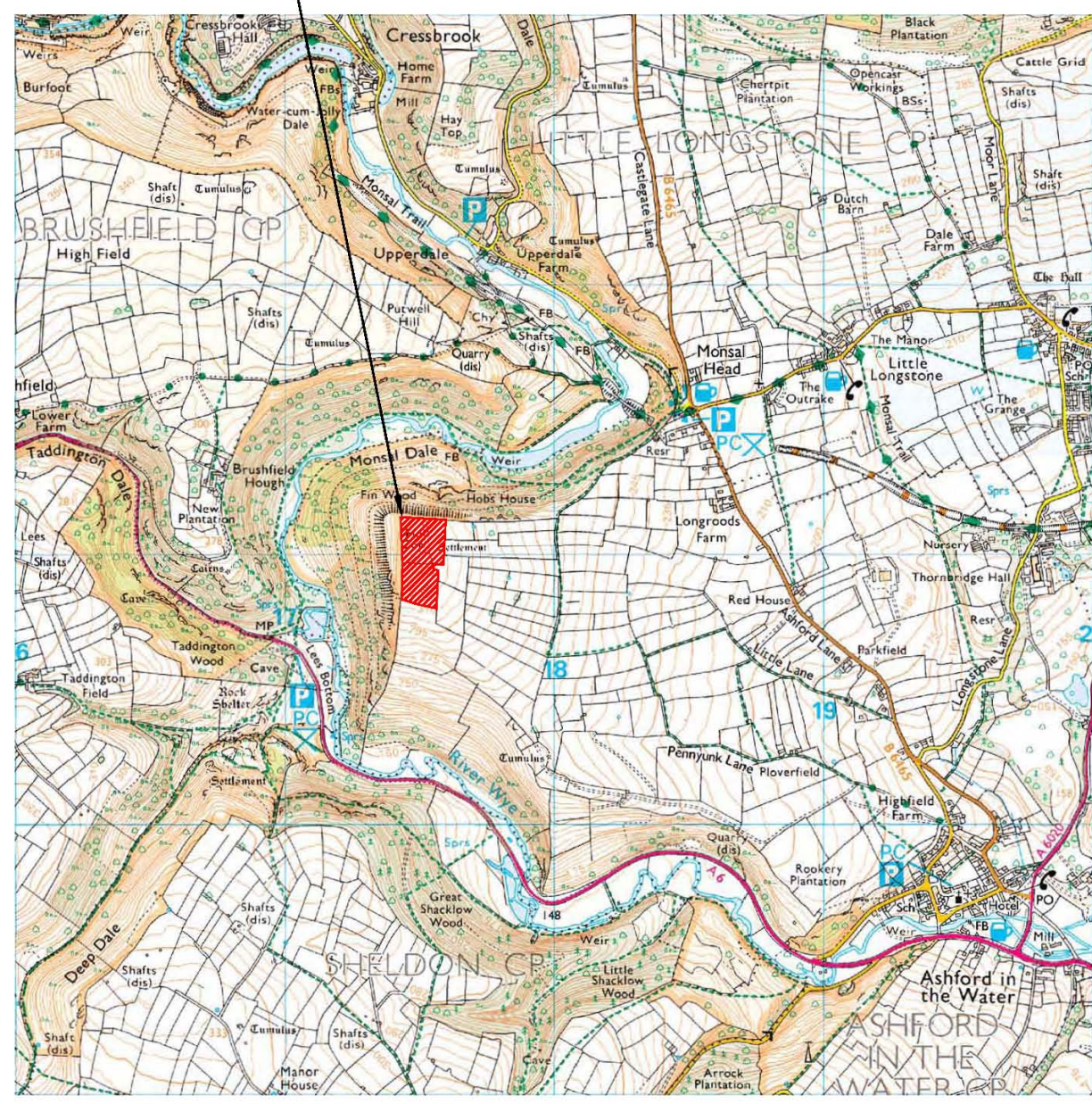
Weakly magnetic wide scale variations within the data can sometimes be seen within sites. These usually have no specific structure but can often appear curvy and sinuous in form. They are likely to be the result of natural features, such as soil creep, dried up (or seasonal) streams. They can also be caused by changes in the underlying geology or soil type which may contain unpredictable distributions of magnetic minerals, and are usually apparent in several locations across a site.

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 OS 100km square = SK



73
72
71
70
69

Survey area



16 17 18 19 20

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

Site centred on NGR **SK 174 710**

Client **ARCHAEOLOGICAL RESEARCH SERVICES**

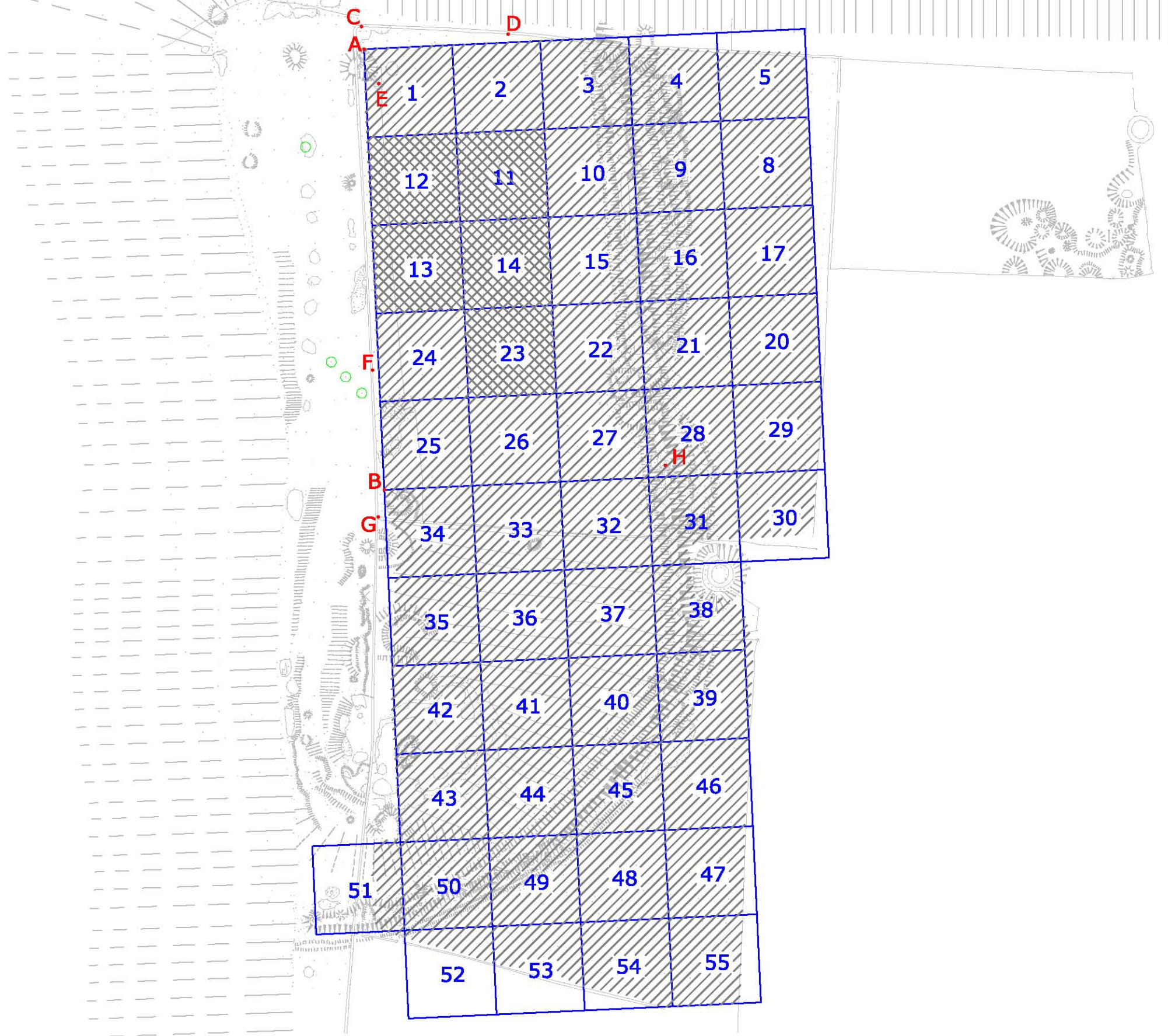
Project Title **GEOPHYSICAL SURVEY - FIN COP HILL FORT** Job No. 2591

Subject **LOCATION PLAN OF SURVEY AREA**



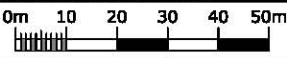
GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING
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 F: +44 (0)1684 594142
 E: info@stratascan.co.uk
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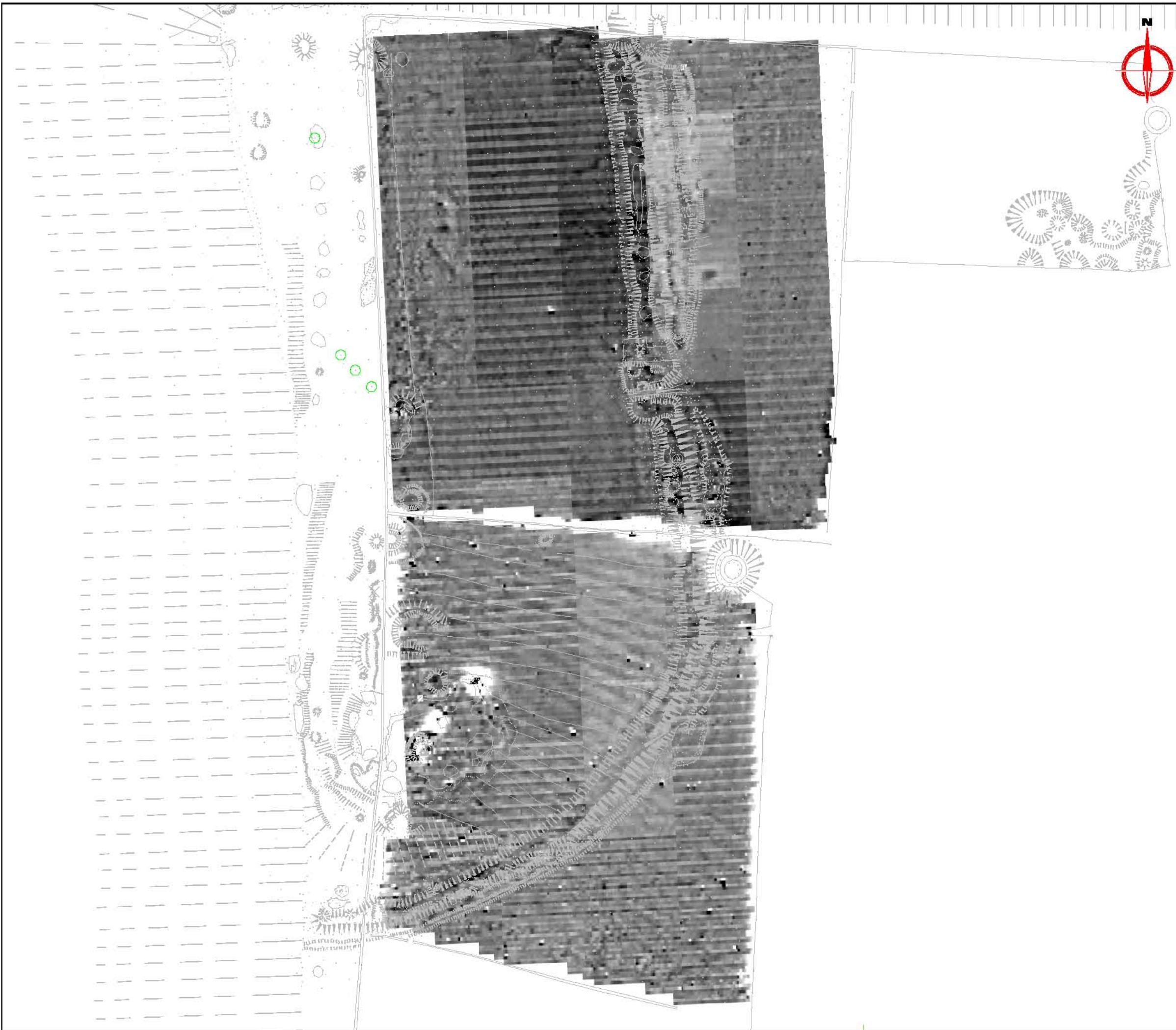
Scale **1:25 000** 0m 500m 1000m

Plot A3	Checked by PPB	Issue No. 01
Survey date MAY 09	Drawn by RAJS	Figure No. 01



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

REFERENCING INFORMATION					
A-B	150m	A-C	7.77m	A-D	49.31m
A-E	12.77m	B-F	40.93m	B-G	9.45m
B-H	95.94m	C-D	50m	G-F	50m
A-B	Base line				
C-H	Referencing points				
2	Grid number				
	Area surveyed with gradiometry				
	Area surveyed with resistance				
Client					
ARCHAEOLOGICAL RESEARCH SERVICES					
Project Title					
GEOPHYSICAL SURVEY - FIN COP HILL FORT				Job No. 2591	
Subject					
SITE PLAN SHOWING LOCATION OF SURVEY GRIDS AND REFERENCING					
STRATASCAN™					
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E: info@stratascan.co.uk					
www.stratascan.co.uk					
Scale					
1:1500					
Plot	Checked by		Issue No.		
A3	PPB		01		
Survey date	Drawn by		Figure No.		
MAY 09	RAJS		02		



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

<p>Plotting parameters</p> <p>Maximum +5nT (black) Minimum -5nT (white)</p> <p>-3SD +3SD</p>	<p>+5nT</p> <p>-5nT</p>
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Client	ARCHAEOLOGICAL RESEARCH SERVICES	
Project Title	GEOPHYSICAL SURVEY -FIN COP HILL FORT	
Job No.	2591	
Subject	PLOT OF RAW GRADIOMETER DATA	

<p>GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK</p>	
<p>WR8 0SA T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk</p>	
Scale	
1:1250	

Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
MAY 09	RAJS	03



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

Plotting parameters +40nT <i>(Positive values displace above the trace line. Hidden values have not been plotted)</i>	
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Client
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Project Title Job No. 2591
GEOPHYSICAL SURVEY - FIN COP HILL FORT

Subject
TRACE PLOT OF GRADIOMETER DATA SHOWING POSITIVE VALUES

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Scale
1:1250

Plot A3	Checked by PPB	Issue No. 01
Survey date MAY 09	Drawn by RAJS	Figure No. 04



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

Plotting parameters

-40nT

(Negative values displace above the trace line. Hidden values have not been plotted)

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ARCHAEOLOGICAL RESEARCH SERVICES

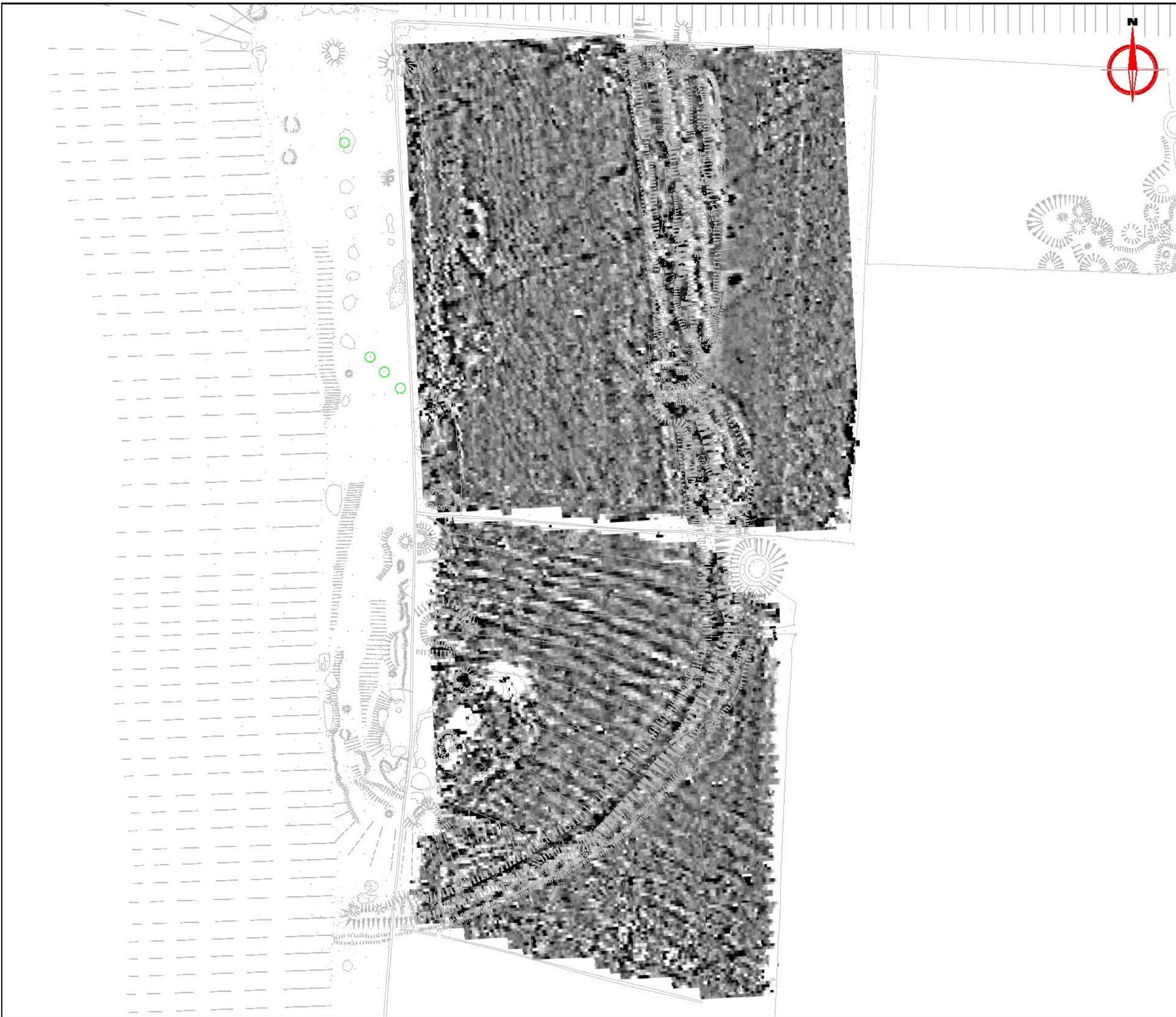
Project Title Job No. 2591
GEOPHYSICAL SURVEY - FIN COP HILL FORT

Subject
TRACE PLOT OF GRADIOMETER DATA SHOWING NEGATIVE VALUES

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 F: +44 (0)1684 594142
 E: info@stratascan.co.uk
 www.stratascan.co.uk

Scale **1:1250**

Plot A3	Checked by PPB	Issue No. 01
Survey date MAY 09	Drawn by RAJS	Figure No. 05



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

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

Client	ARCHAEOLOGICAL RESEARCH SERVICES
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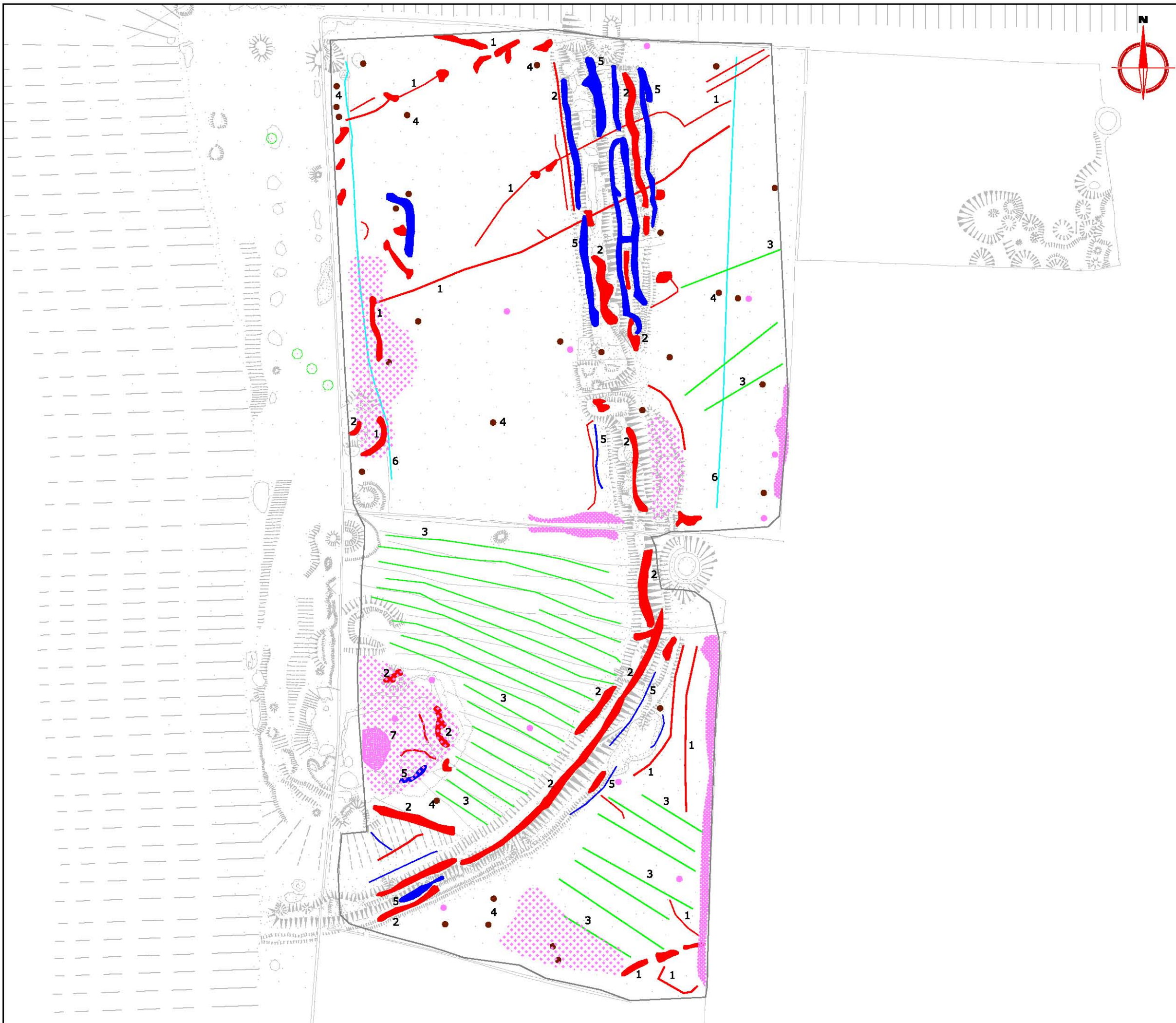
Project Title	Job No. 2591
GEOPHYSICAL SURVEY - FIN COP HILL FORT	

Subject	PLOT OF PROCESSED GRADIOMETER DATA
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GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK WR8 0SA T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk	

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

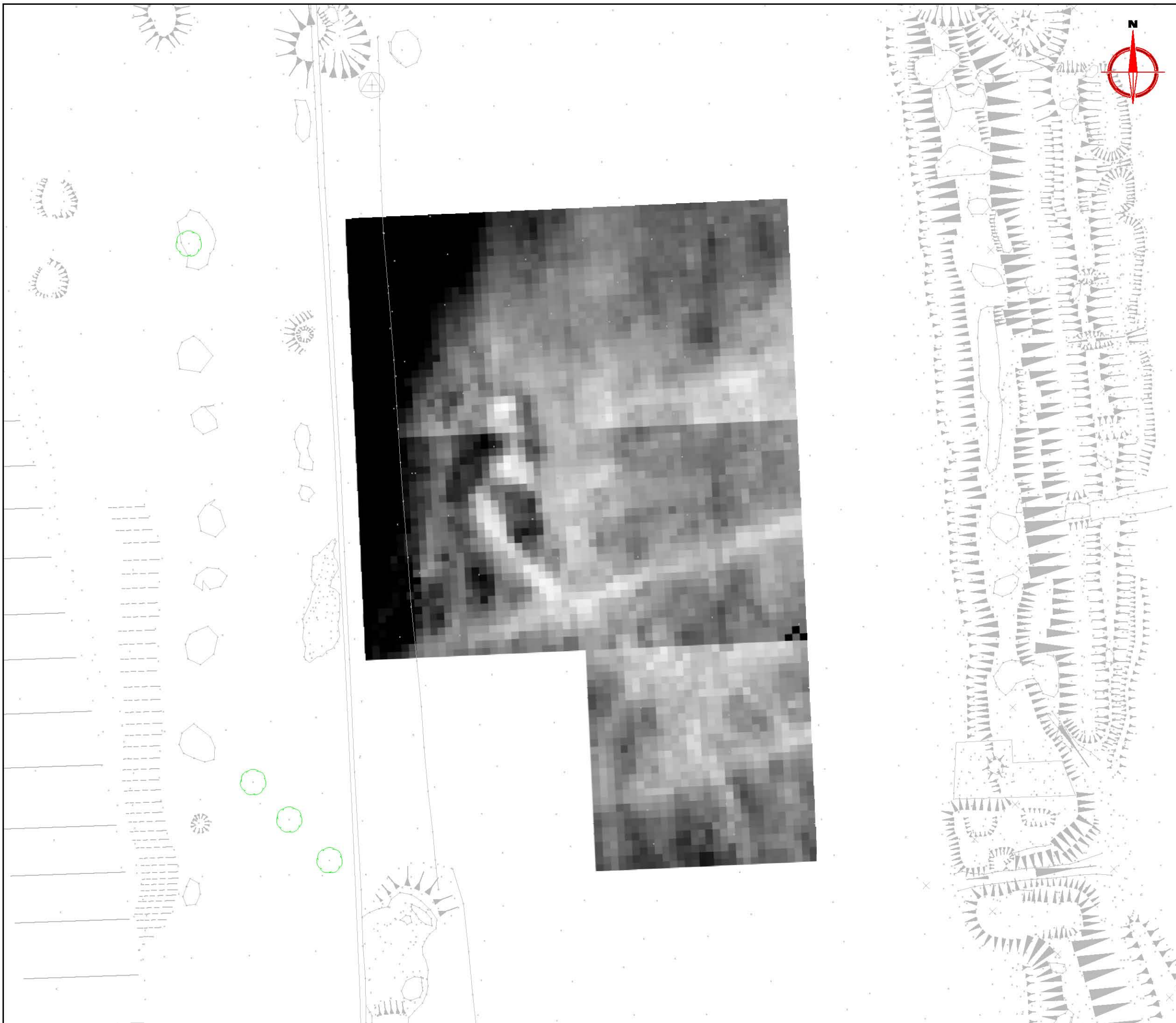
Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
MAY 09	RAJS	06



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

KEY	
	Discrete positive anomaly - possible pit
	Positive anomaly with associated negative response - ferrous object
	Positive linear anomaly - agricultural mark
	Positive linear anomaly - cut feature of possible archaeological origin
	Negative linear anomaly - bank or earthwork of possible archaeological origin
	Linear anomaly - possibly related to drains
	Positive area anomaly - cut feature of possible archaeological origin
	Negative area anomaly - bank or earthwork of possible archaeological origin
	Magnetic disturbance associated with nearby service or field boundary
	Possible thermoremanent feature
	Magnetic debris
1	Anomaly ID number

Client	ARCHAEOLOGICAL RESEARCH SERVICES	
Project Title	Job No.	2591
GEOPHYSICAL SURVEY -FIN COP HILL FORT		
Subject	ABSTRACTION AND INTERPRETATION OF GRADIOMETER ANOMALIES	
 STRATASCAN™ GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK WR8 0SA T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk		
Scale	1:1250	
Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
MAY 09	RAJS	07



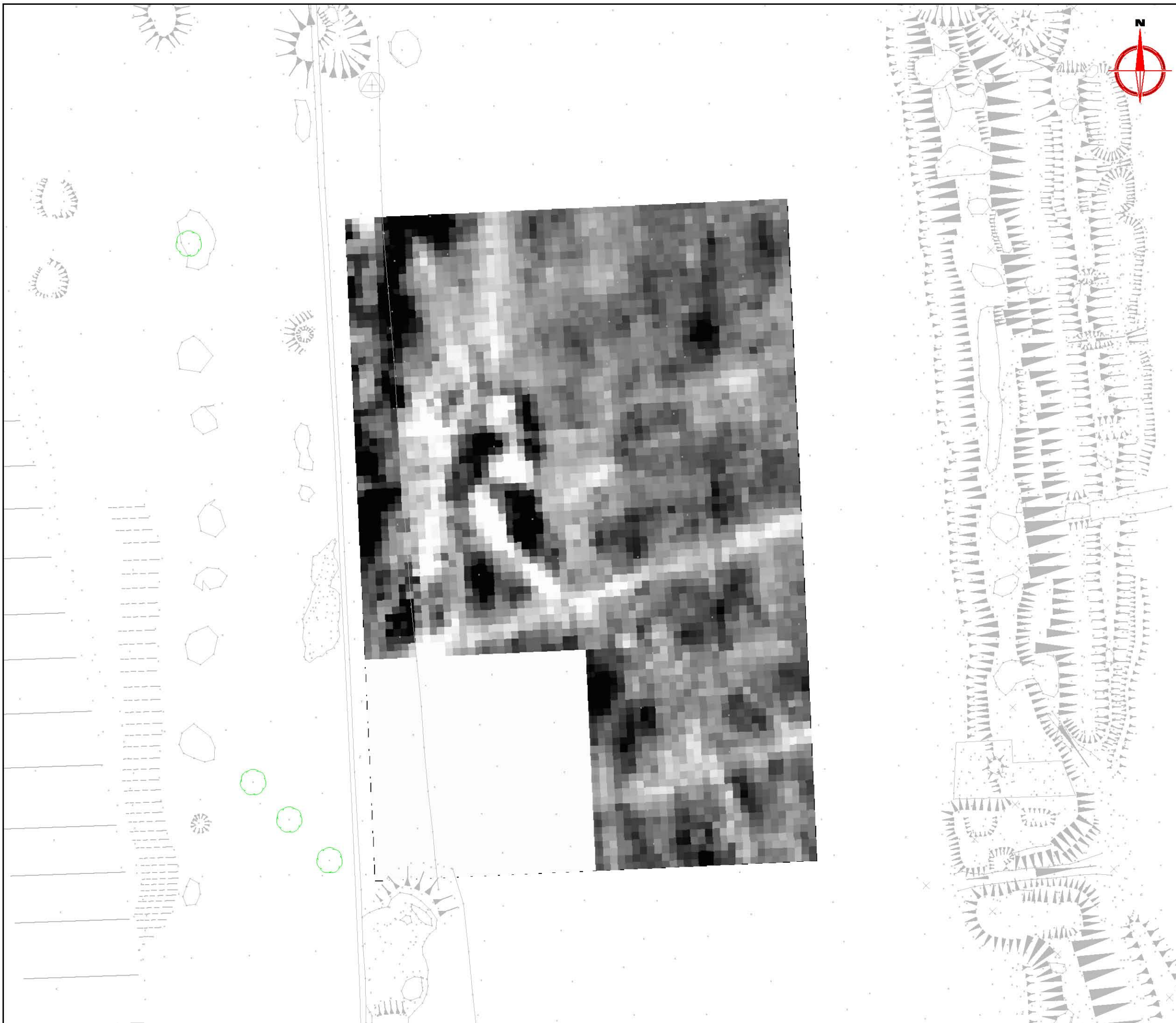
Amendments		
Issue No.	Date	Description
-	-	-
-	-	-

<p>Plotting parameters</p> <p>Maximum +131Ω (black) Minimum +17Ω (white)</p>	
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Client	ARCHAEOLOGICAL RESEARCH SERVICES	
Project Title	GEOPHYSICAL SURVEY - FIN COP HILL FORT	
Job No.	2591	
Subject	PLOT OF RAW RESISTANCE DATA	

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Scale	1:500	
Plot	A3	Issue No. 01
Checked by	PPB	Figure No. 08
Survey date	MAY 09	
Drawn by	RAJS	

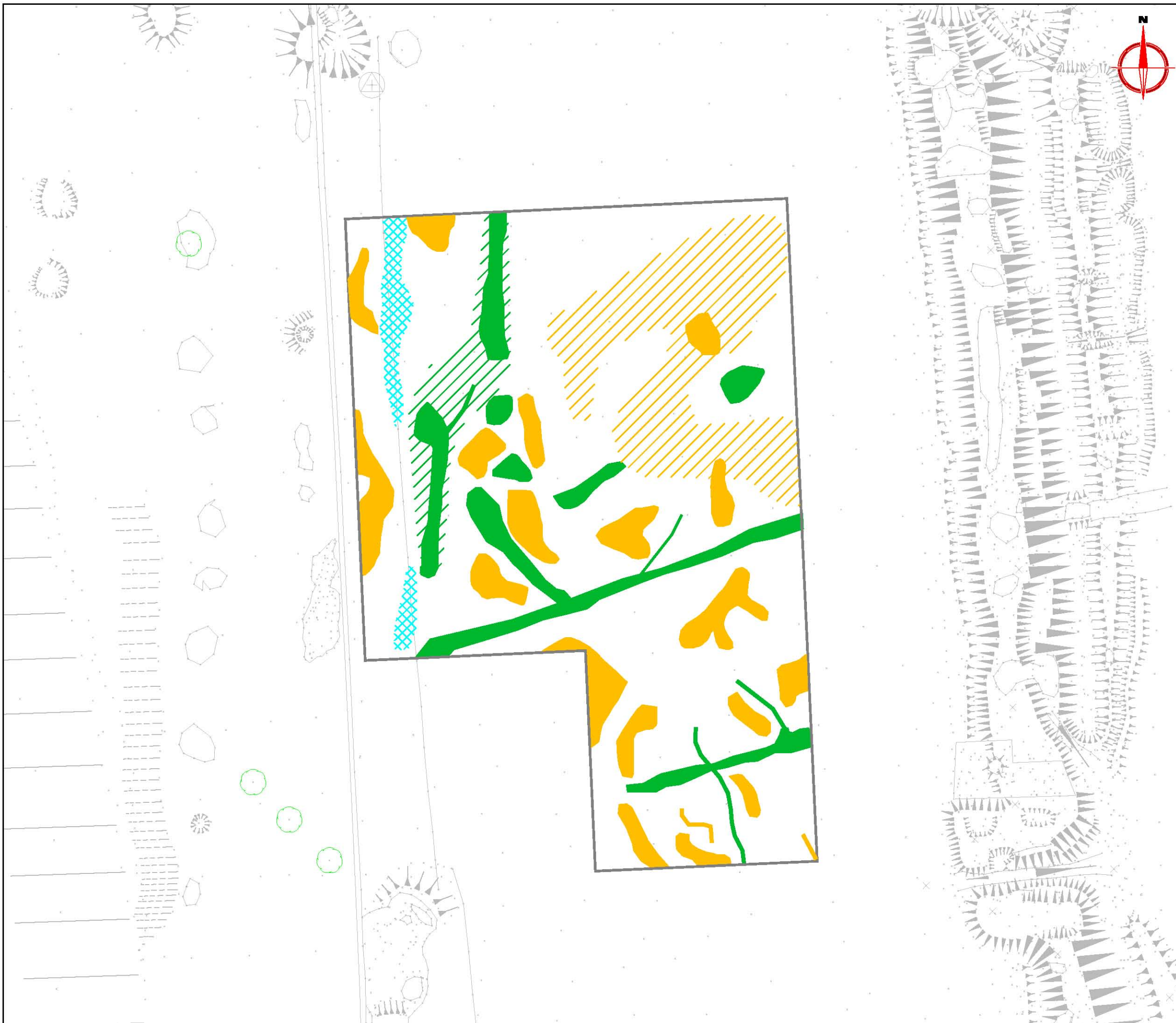


Amendments		
Issue No.	Date	Description
-	-	-
-	-	-

<p>Plotting parameters</p> <p>Maximum +155Ω (black) Minimum +117Ω (white)</p> <p>-3SD +3SD</p>	<p>+155Ω</p> <p>+117Ω</p>
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Client	ARCHAEOLOGICAL RESEARCH SERVICES	
Project Title	GEOPHYSICAL SURVEY -FIN COP HILL FORT	
Job No.	2591	
Subject	PLOT OF PROCESSED RESISTANCE DATA	

<p>GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING VINEYARD HOUSE UPPER HOOK ROAD UPTON UPON SEVERN UK WR8 0SA T: +44 (0)1684 592266 F: +44 (0)1684 594142 E: info@stratascan.co.uk www.stratascan.co.uk</p>	
Scale	
Scale	1:500
Plot	A3
Checked by	PPB
Issue No.	01
Survey date	MAY 09
Drawn by	RAJS
Figure No.	09



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

KEY	
	High resistance linear anomaly- possible structural remains
	Low resistance linear anomaly- cut feature of possible archaeological origin
	High resistance area anomaly- possible structural remains
	Low resistance area anomaly- cut feature of possible archaeological origin
	Weaker high resistance area anomaly- possible structural remains or compacted earth
	Weaker low resistance area anomaly- possible cut feature or area of moisture retention
	High resistance area anomaly related to drain

Client	ARCHAEOLOGICAL RESEARCH SERVICES	
Project Title	Job No.	2591
GEOPHYSICAL SURVEY -FIN COP HILL FORT		
Subject	ABSTRACTION AND INTERPRETATION OF RESISTANCE ANOMALIES	

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Scale	0m 5 10 15 20 25m	
1:500		
Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
MAY 09	RAJS	10