STRATASCAN

Geophysical Survey Report

Ford Farm, St Ive, Cornwall

For

Archaeological Consultancy Ltd.

Goodagrane, Halvasso, Penryn, Cornwall, TR10 9BX

Tel +44 (0)1326 341 061

June 2009

J2595

Simon Haddrell BEng(Hons) AMBCS PIFA and
Matt Mossop MA MGSDip MIAI

REGISTERED ORGANISATION IfA

Document Title:	**Geophysical Survey Report Ford Farm, St Ive, Cornwall**
Client:	**Sarsen Housing Association**
Stratascan Job No:	**J2595**
Techniques:	**Detailed magnetic survey (gradiometry)**
National Grid Ref:	**SX 315 671**

Field Team:	**John Cook BSc(Hons) AIFA, Matt Gillott**
Stratascan Project Manager:	**Simon Stowe BSc. (Hons)**
AC Project Manager:	**Matt Mossop MA MGSDip MIAI**
Report written by:	**Simon Haddrell BEng(Hons) AMBCS PIFA and Matt Mossop MA MGSDip MIAI**
CAD illustration by:	**Simon Haddrell BEng(Hons) AMBCS PIFA**
Checked by:	**Simon Stowe BSc. (Hons)**

Stratascan Ltd.
Vineyard House
Upper Hook Road
Upton upon Severn
WR8 0SA

Tel: 01684 592266
Fax: 01684 594142
Email: ppb@stratascan.co.uk
www.stratascan.co.uk

LIST OF FIGURES

ABBREVIATIONS

AEL Anciently Enclosed Land
CRO Cornwall Record Office
LBS Listed Building Schedule Number
OS Ordnance Survey
PRN Cornwall Council Historic Environment Record Primary Record Number

1 SUMMARY OF RESULTS

The geophysical survey carried out over 1ha of land at Ford Farm, St Ive, Cornwall has identified several possible former field boundaries. Areas of weak positive and negative area anomalies can be seen in the north, of either archaeological or geological origin. The survey has identified an area of magnetic debris, an area of geological response and agricultural mark. Caution should be taken during any intrusive work as the background noise of the site has made it difficult to identify weak features within the survey area.

2 INTRODUCTION

2.1 Background synopsis

Archaeological Consultancy Ltd were commissioned by Sarsen Housing Association to undertake the first phase of archaeological work to fulfil associated planning requirements in advance of development work. Following a walk-over survey and desk-based assessment Stratascan were commissioned by Archaeological Consultancy Ltd to undertake a geophysical survey of an area outlined for development. This report combines the results to provide recommendations for further archaeological work in advance of development.

2.2 Site location

The site is located near St Ive, with the A390 to the north, St Ive Cross to the south and Parkfield to the north East. at OS ref. SX 315 671

2.3 Description of site

The survey area is 2 ha of pasture with a slight southerly slope.
A site visit on 6/1/09 found the area to be overgrown pasture with tussocks of grass and cut wheat straw generally reaching 0.2-0.3m in height. The stone-faced earth bank which surrounded the field utilised slate which was probably locally derived. Vegetation on the bank included bramble, bracken and grass with occasional young sycamore, oak and very occasional elder all of which are likely to have self-seeded. At the northeast edge of the site, the bank had been largely removed and replaced with an iron railing and privet hedge. This seems to define the northeast part of a 20th century subdivision within the field for a building or garden related to Myrtle House or the smithy immediately to the east. Myrtle House and the former smithy are similarly enclosed, but no other evidence is upstanding and the subdivision is not shown on any of the maps consulted as part of this study.

2.4 Geology and soils

The underlying geology is Upper Devonian Rocks (www.bgs.ac.uk/GeoIndex/index.htm, May 2009).

The overlying soils are known as Denbigh 1 which are typical brown earths. These consist of well drained fine loamy and fine silty soils over rock. Some similar soils with slowly permeable sub soils and slight seasonal waterlogging. Shallow soils and some bare rock locally (Soil Survey of England and Wales, Sheet 5 South West England).

2.5 Site history and archaeological potential (Figure 02)

Prehistoric activity is well testified within the parish of St Ive and a number of possible enclosures or rounds suggest a substantial population by the later prehistoric period. Gate Farm, Trebeigh, Great Ley and Hammett rounds all lie within a mile of the site, whilst an additional site lies just 400m to the southwest (PRN 109047) within a field called Gold Bury (Tithe map 1840). The Old English 'Bury' meaning 'fort or stronghold' (Mills, 1996, p61) may suggest a former round.

The site itself lies on land recorded by the Cornwall and Scilly Historic Environment Record as being 'Anciently Enclosed Land' (AEL). Typically, AEL may be expected to include important subsurface archaeological material, including Bronze Age, Iron Age and Romano-British settlements and fields of the farmers who originally cleared this zone. Each farming settlement is likely to contain a wealth of historical, architectural and archaeological information and surveys of field systems can record considerable agricultural, social, and tenurial information. Buried archaeological features can be expected virtually anywhere in this zone (Markham 2008).

The site probably formed part of the Manor of Trebeigh held by Oswulf before 1066 and at the time of the Domesday survey (1086AD), held wrongfully from Tavistock Church by the Count of Mortain. Trebeigh manor included land for two ploughs, three smallholders and 200 acres of pasture (Morris, 1979).

In 1150 Trebeigh manor was given to the Knights Templar and it is likely that the village of St Ive developed alongside the manor at this stage. 'Sanctus Yvo' is recorded in 1201, St Ive is believed to have been a Dark Age Persian bishop who came to convert the pagan English (Padel 1988, p100). The church of St Ivo (LBS 61362) was consecrated in 1338 (Pevsner, 1970, p179) and it includes a memorial to the Wrey family dated 1597. John Norden's map of the Easte Hundred of Cornwall published in 1728 includes details from his late 16th century survey. This map shows both St Ive and Trebeigh, with 'Trebigh' entitled 'Wm Wraye', who was presumably lord of the manor at this stage. The first Baronet Sir William Wray was born c.1555 and died in 1617 (The Peerage website).

The site was previously part of Ford Farm. Ford Farmhouse (LBS 61378) was built in the 17th century, with an 18th century barn surviving to the west (LBS 61379) and late 18th or early 19th century extensions (Listed Buildings on-line website).

By 1699 Gascoyne's map of Cornwall depicts the cross-roads entitled 'Crofs', immediately to the northeast of the site, suggesting that some sort of a settlement had been established at St Ive Cross by this point.

The Cock family farmed Ford throughout the early 19th century and by 1840 the Tithe map shows the site as arable land divided into Little Cross Park (to the east) and Great Cross Park (to the west), both part of Ford, owned by Edward Collins (Esq) and occupied by John Cock. The homestead, gardens, ponds, orchard and meadow of Ford Farm are well detailed immediately to the west. At least seven buildings are depicted at St Ive Cross immediately to the east of the site by this date.

St Ive Cross grew rapidly in the late 19th century and by 1878 William Scurry is described as a blacksmith at Cross (Harrods Directory). By 1882 (OS map) the field boundary which previously divided Cross Park had been removed and the Methodist Chapel and smithy are shown. The smithy, immediately to the east of the site, was occupied until at least 1910 by William Scourey (Kelly Directory) and it maybe that he was responsible for the iron railing enclosing the northeast corner of the site, though nothing is shown in this location in 1907 (OS map) and no blacksmith is recorded at Cross by 1930 (Kelly's Directory).

Aerial photos (Google Earth) appear to show evidence for parts of the removed boundary, with a number of less certain anomalies parallel to this, to the west of the site within Great Cross Park. These may be evidence for a strip-field system typical of the medieval period.

2.6 Survey objectives

The objective of the survey was to locate any features of possible archaeological significance in order that they may be assessed prior to development.

2.7 Survey methods

Detailed magnetic survey (gradiometry) was used as an efficient and effective method of locating archaeological anomalies. More information regarding this technique is included in the Methodology section below.

3 METHODOLOGY

3.1 Date of fieldwork

The walk-over survey was carried out on the 6th January 2009 by Archaeological Consultancy Ltd staff whilst the geophysical fieldwork was carried out over 2 days from 11th May 2009 – 12th May 2009. Weather conditions during the survey were dry and sunny.

3.2 Grid locations

The location of the survey grids has been plotted in Figure 1 together with the referencing information. Grids were set out using a Leica Smart Rover RTK GPS.

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. A SmartNet RTK GPS uses Ordnance Survey's network of over 100 fixed base stations to give an accuracy of around 0.01m.

3.3 Survey equipment

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.

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

3.4.1 Sampling interval

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

3.4.2 Depth of scan and resolution

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 0.25m centres provides an optimum methodology for the task balancing cost and time with resolution.

3.4.3 Data capture

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 job, data is transferred to the office for processing and presentation.

3.5 Processing, presentation of results and interpretation

3.5.1 Processing

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. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out further processing which may include low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies.

The following schedule shows the basic processing carried out on all processed gradiometer 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

3.5.2 Presentation of results and interpretation

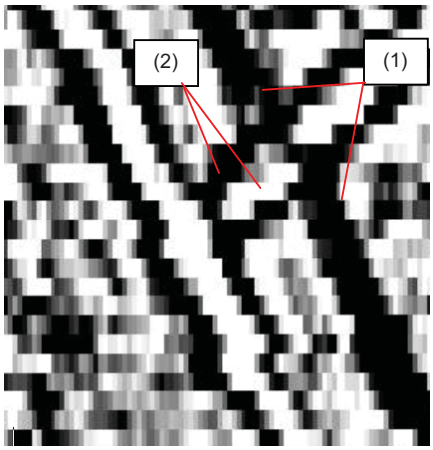
The presentation of the data for each site involves a print-out of the raw data both as greyscale (Figure 04) and trace plots (Figure 05), together with a greyscale plot of the processed data (Figure 06). Magnetic anomalies have been identified and plotted onto the 'Abstraction and Interpretation of Anomalies' drawing for the site (Figure 07).

4 RESULTS

The survey has identified at least two phases of field boundaries within the field with differing construction types. The first phase is a single ditch (1) with the second, later phase (2), consisting of a double ditch and bank formation. An area anomaly in the north (3) can be seen at approximately the same orientation as the agricultural marks, however, due to the strength of the anomaly it is likely this may represent a cut feature of possible archaeological origin or former field boundary. The north of the field contains weak positive (5) and negative (6) anomalies, possibly either archaeological or geological in origin. A linear anomaly (7), of possible archaeological origin, is apparent in the south of the area. A weak positive area anomaly (4), of a probable geological origin, is evident in an approximate east to west direction. An area of magnetic debris in the northeastern part of the site may be related with the late 19th century smithy immediately to the east (Figure 02 and 07).

5 CONCLUSION

The geophysical survey at Ford Farm, St Ive, Cornwall has found considerable evidence for at least two separate phases of field boundaries within the site. The first phase, consists of a ditch with possible banks or earthworks either side and with the second phase being made up a double ditch and single bank formation. A further possible field boundary can be seen in the north of the field. Some weaker positive and negative anomalies, possibly representing archaeology in the north east may also be of a geological origin whilst the magnetic debris may be associated with the late 19th century smithy. The site exhibited a large amount of background noise which may be masking subtle archaeological features.



Area of geophysics showing the interaction of two possible field boundaries. Feature (2) has removed part of feature (1) where they intersect

6 RECOMMENDATIONS

Further investigation of the area is recommended in advance of development to test, record and interpret anomalies identified in the assessment and check for more subtle features which may be associated. This should ideally consist of testing and recording of negative anomalies as well as controlled topsoil stripping and appropriate mitigation of any exposed archaeological features.

The northern part of the site is due to be developed first and a single WSI and report should ideally cover the recording of negative anomalies, topsoil stripping and mitigation to prevent the fragmentation of the results.

7 REFERENCES

Harrod's Directory 1878

Kelly's Directory 1910

Kelly's Directory 1930

Gascoyne, J. 1991. A Map of the County of Cornwall 1699. Devon and Cornwall Record Society. Vol 34.

Tithe map 1840 Map of the Parish of Saint Ive in the County of Cornwall and Apportionment Microfiche CRO/FTM/90

Markham, P. 2008. Brief for Archaeological Geophysical Survey Unpublished report for Cornwall County Council Historic Environment Service

Mills, A. D. 1996. The Popular Dictionary of English Place-names. Oxford: Parragon Book Service Ltd and Magpie Books Morris, 1979

Morris, J. ed. 1979. Domesday Book: A Survey of the Counties of England: Cornwall. Chichester: Phillimore.

Norden, J. 1728 A Topographical and Historical Survey of Cornwall: Map of the Easte Hundred of Cornwall. London

Ordnance Survey 1882 Ordnance Survey 6 inch map. 1st edition

Ordnance Survey 1907 Ordnance Survey 25 inch map 2nd edition

Padel, O. J. 1988. A Popular Dictionary of Cornish Place-Names Newmill, Penzance: Alison Hodge

Pevsner, N. 1970. The Buildings of England: Cornwall. 2nd ed. Harmondsworth: Penguin Books Ltd

Soil Survey of England and Wales, 1983. *Soils of England and Wales, Sheet 5 Southwest England.*

7.1 Website references

British Geological Society.	www.bgs.ac.uk/GeoIndex/index.htm, May 2009.
Google Earth	http://earth.google.com
Listed Buildings on-line website	www.english-heritage.org.uk/lbonline
The Peerage website	http://www.thepeerage.com/p2616.htm#i26156

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.

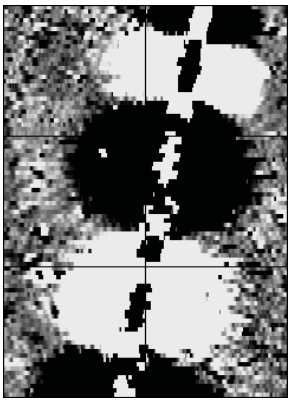
Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement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

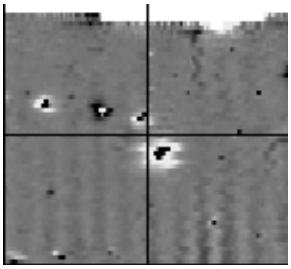
APPENDIX B – Glossary of magnetic anomalies

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

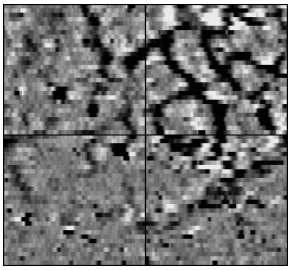


This consists of a single positive anomaly with an associated negative response. There should be no separation between the two polarities of response. These responses will be created by a single feature. The interpretation of the anomaly will depend on the magnitude of the magnetic measurements. A very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

Positive anomaly with associated negative response

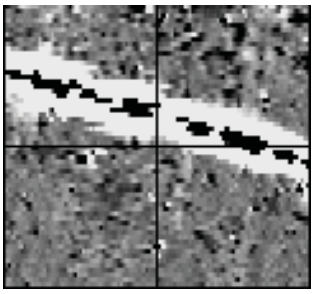
See bipolar and dipolar.

Positive linear



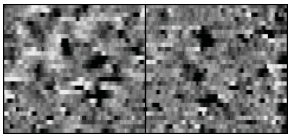
A linear response which is entirely positive in polarity. These are usually related to infilled cut features where the fill material is magnetically enhanced compared to the surrounding matrix. They can be caused by ditches of an archaeological origin, but also former field boundaries, ploughing activity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

Positive linear anomaly with associated negative response



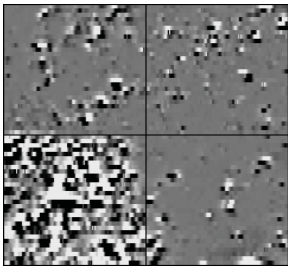
A positive linear anomaly which has a negative anomaly located adjacently. This will be caused by a single feature. In the example shown this is likely to be a single length of wire/cable probably relating to a modern service. Magnetically weaker responses may relate to earthwork style features and field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

Positive point/area



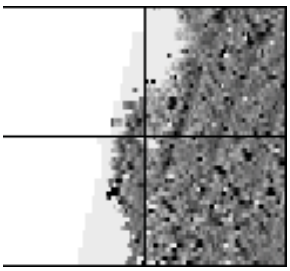
These are generally spatially small responses, perhaps covering just 3 or 4 reading nodes. They are entirely positive in polarity. Similar to positive linear anomalies they are generally caused by infilled cut features. These include pits of an archaeological origin, possible tree bowls or other naturally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

Magnetic debris



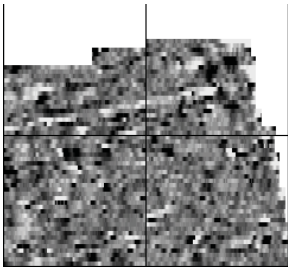
Magnetic debris consists of numerous dipolar responses spread over an area. If the amplitude of response is low (+/-3nT) then the origin is likely to represent general ground disturbance with no clear cause, it may be related to something as simple as an area of dug or mixed earth. A stronger anomaly (+/-250nT) is more indicative of a spread of ferrous debris. Moderately strong anomalies may be the result of a spread of thermoremnant 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

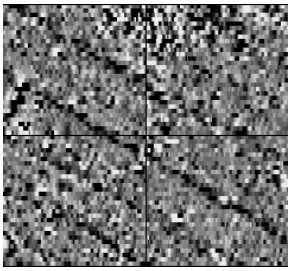


A linear response which is entirely negative in polarity. These are generally caused by earthen banks where material with a lower magnetic magnitude relative the background top soil is built up. See also ploughing activity.

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).

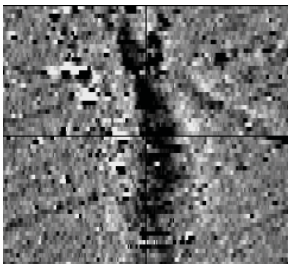
Strength of response

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 $10m^2$ 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

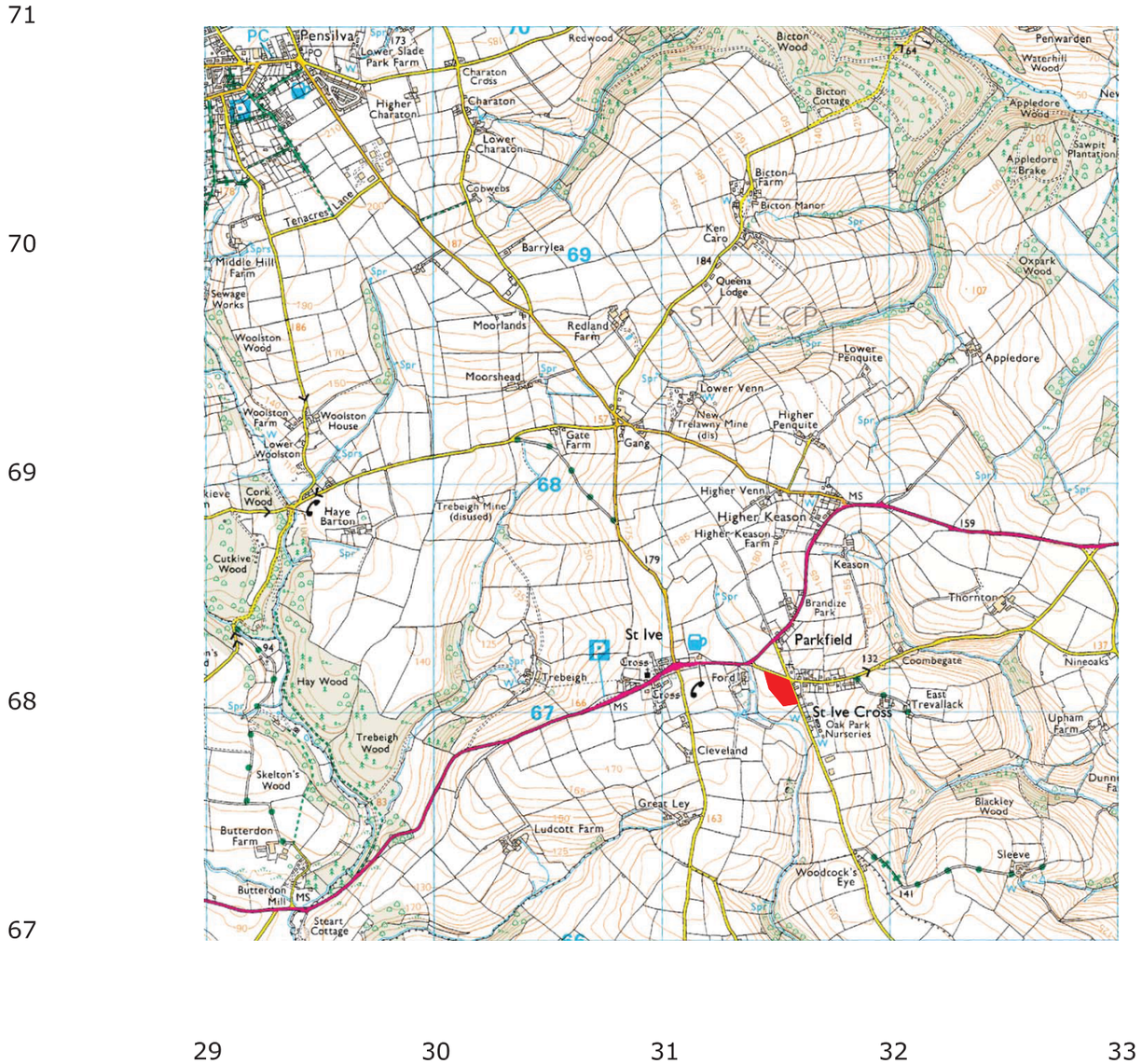
A feature which has been subject to heat may result in it acquiring a magnetic field. This can be anything up to approximately +/-100 nT in value. These features include clay fired drains, brick, bonfires, kilns, hearths and even pottery. If the heat application has occurred insitu (e.g. a kiln) then 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.

OS 100km square = SX



Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

Site centred on NGR SX 315 671

Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Job No. 2595

Subject
LOCATION PLAN OF SURVEY AREA

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
REGISTERED ORGANISATION IFA

Scale 1:25000 (0m, 500, 1000m)

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	01

Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

Client
ARCHAEOLOGICAL CONSULTANCY LTD

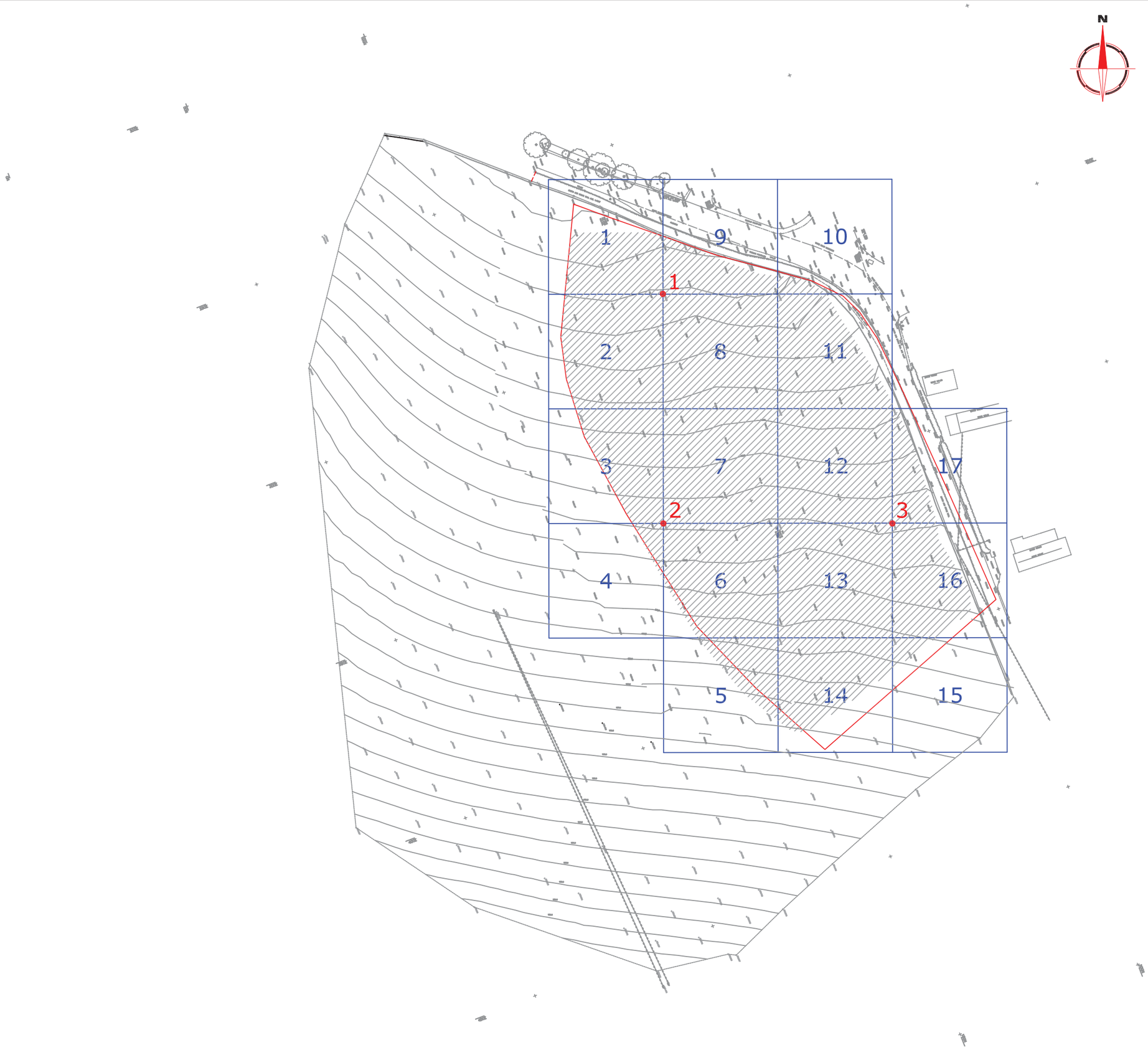
Project Title — Job No. 2595
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Subject
LOCATION OF SITE, SHOWN ON 1840 TITHE MAPPING

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
REGISTERED ORGANISATION IFA

Scale 1:2000 — 0m 20 40 60 80 100m

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	02



Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

OS REFERENCING

1	231503.38,067140.39
2	231503.47,067080.32
3	231563.49,067080.31

KEY

	Survey Area
1	Grid Number
	Area surveyed within grid
•	Reference point

Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

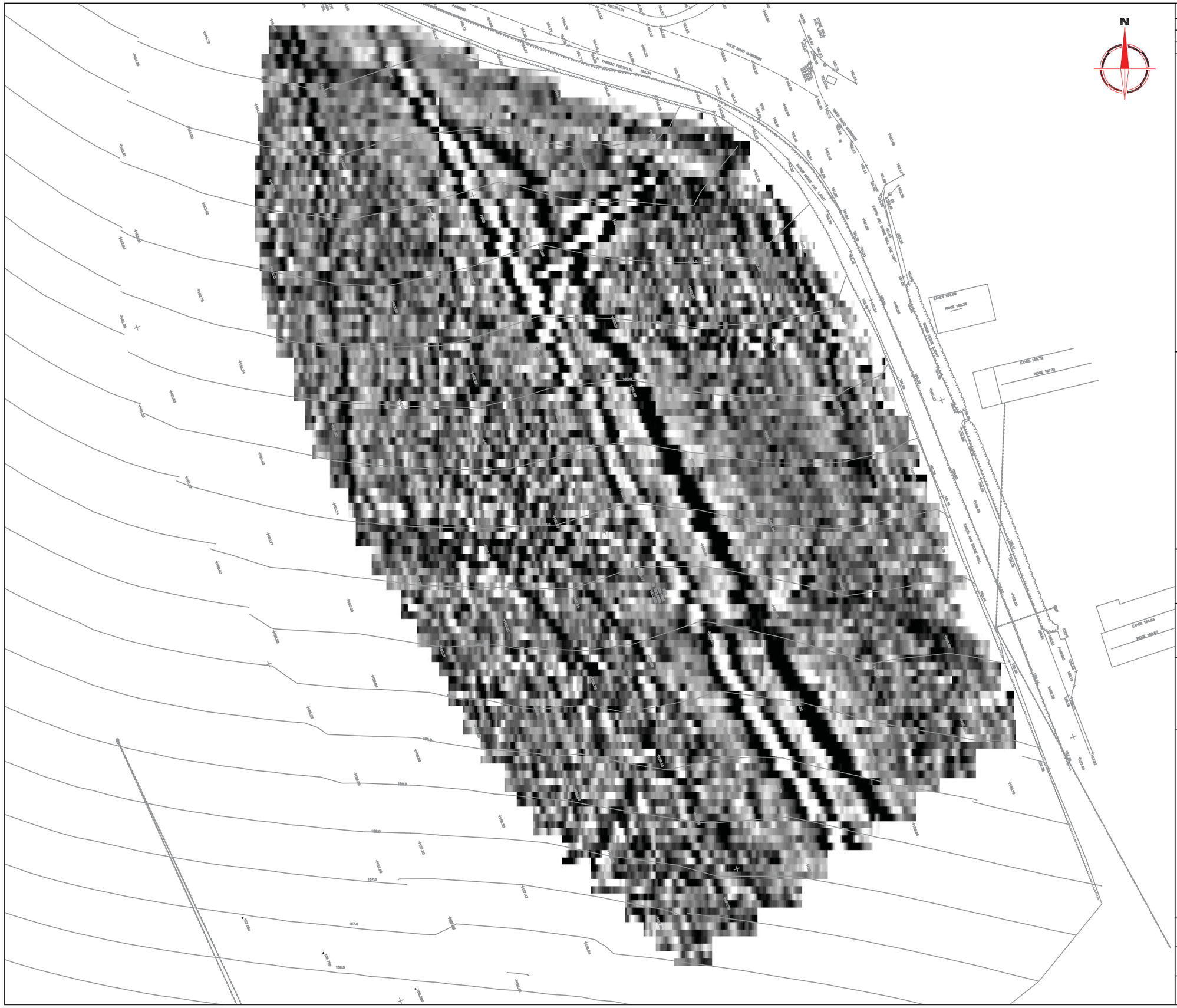
Job No. 2595

Subject
LOCATION AND REFERENCING OF SURVEY GRIDS

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
REGISTERED ORGANISATION IFA

Scale 1:1000 (0m 10 20 30 40 50)

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	03

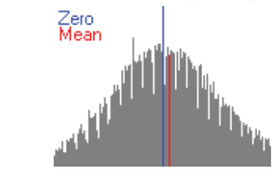


Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

Plotting parameters

Maximum +20nT (black)
Minimum -20nT (white)



Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Job No. 2595

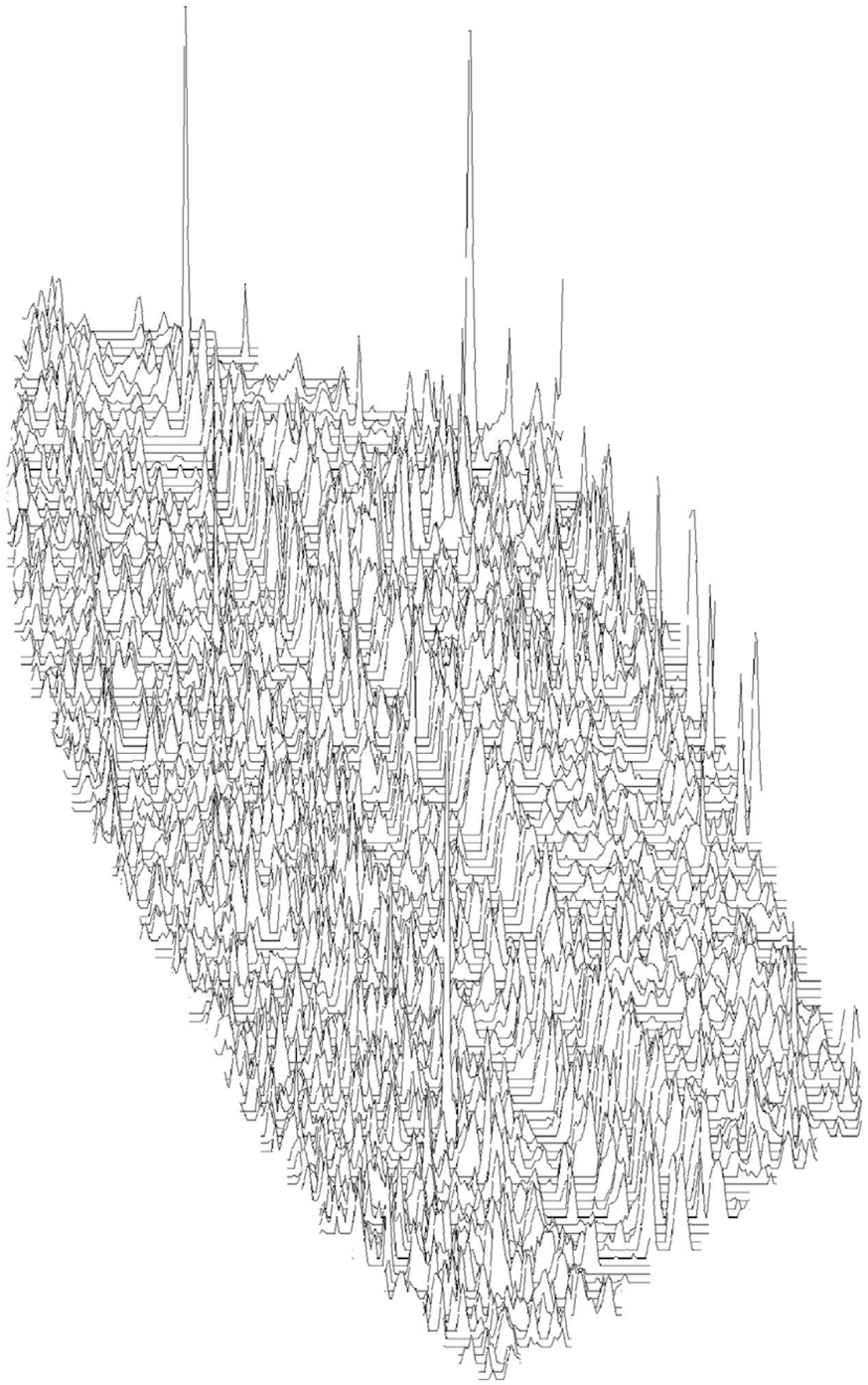
Subject
PLOT OF RAW GRADIOMETER DATA

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
REGISTERED ORGANISATION IFA

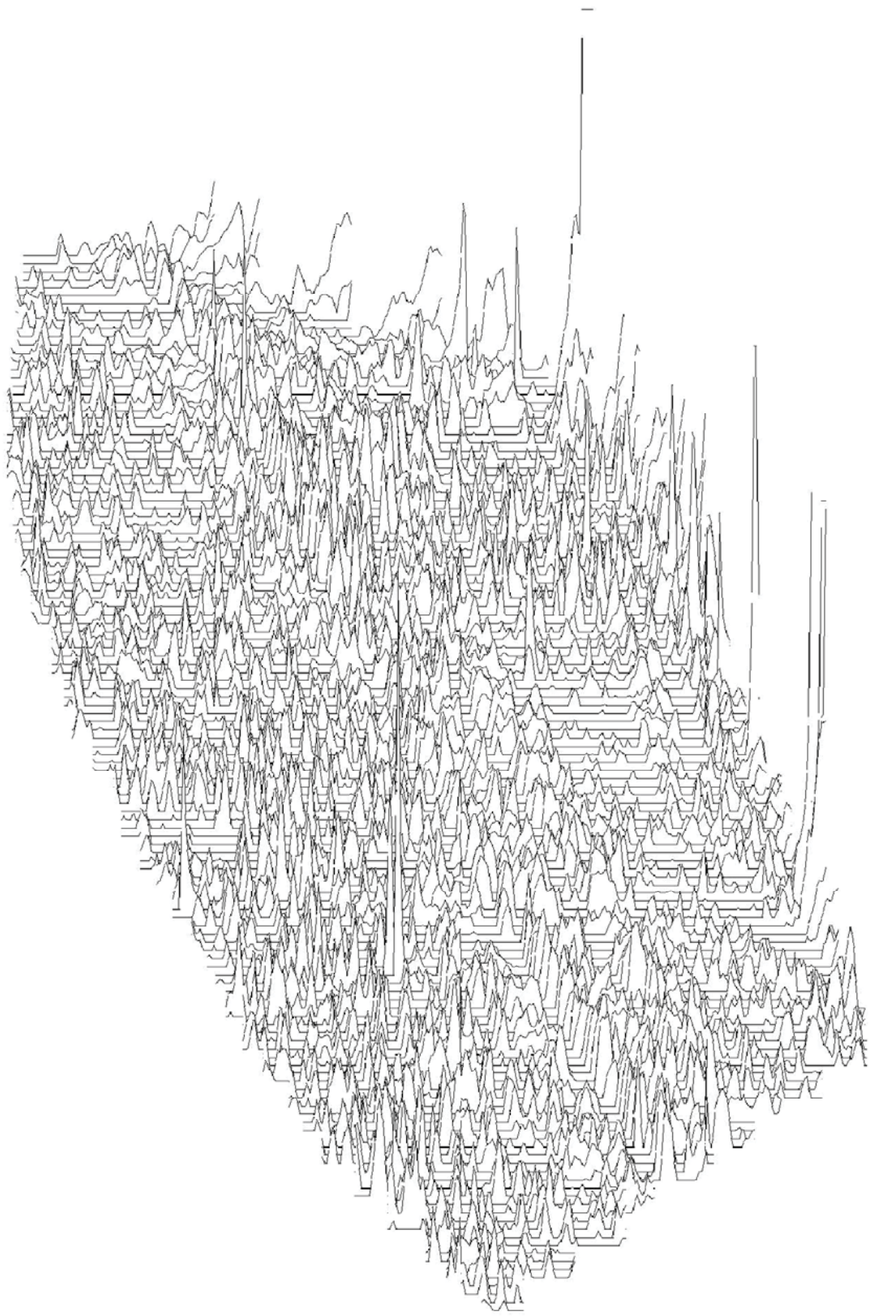
Scale 1:500 — 0m 5 10 15 20 25m

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	04

POSITIVE TRACE PLOT



NEGATIVE TRACE PLOT



Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

Plotting parameters

+/-40nT

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

200nT
160nT
120nT
80nT
40nT
0nT

Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

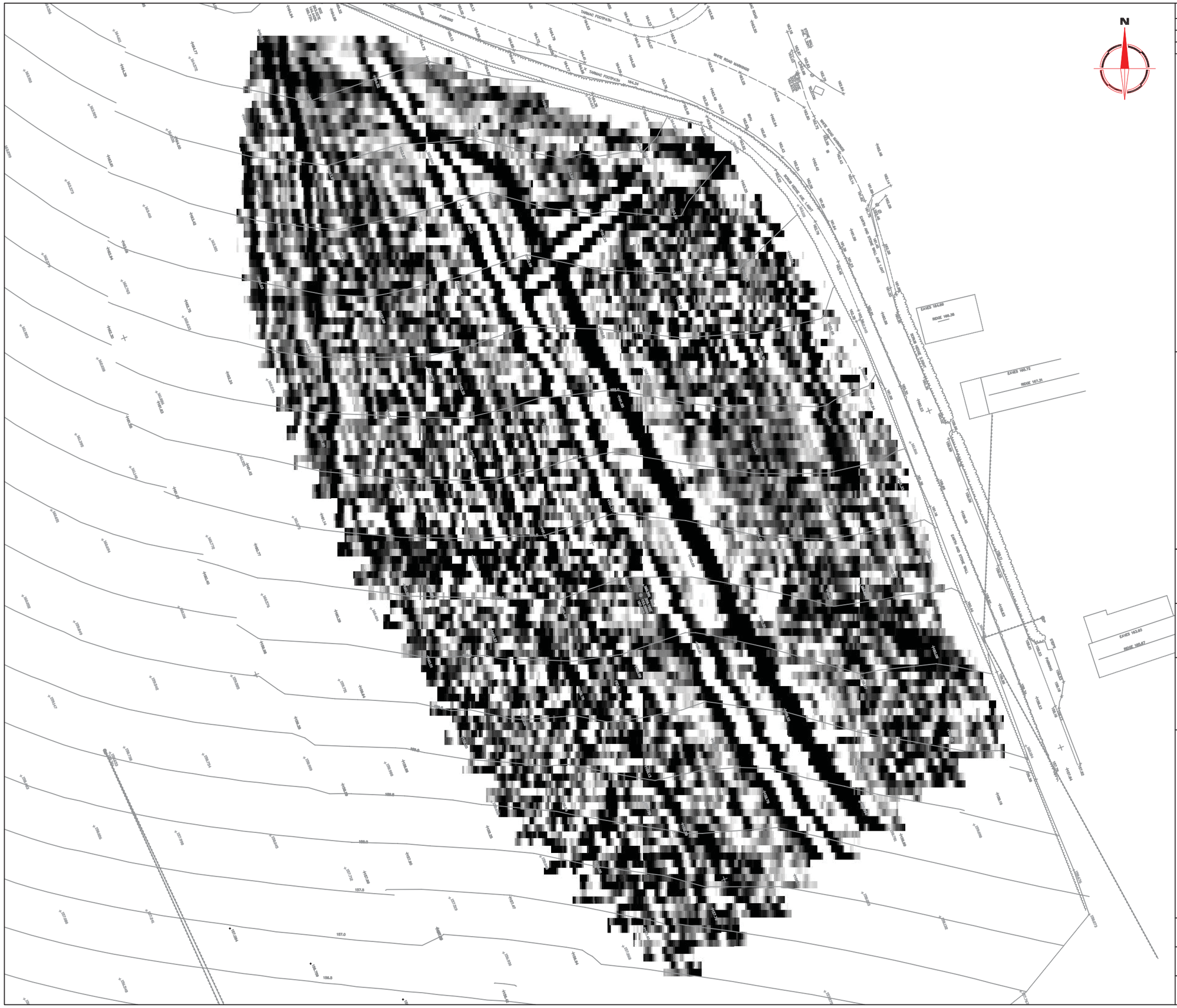
Job No. 2595

Subject
TRACE PLOTS OF GRADIOMETER DATA

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
REGISTERED ORGANISATION IFA

Scale 1:1000 (0m 10 20 30 40 50)

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	05

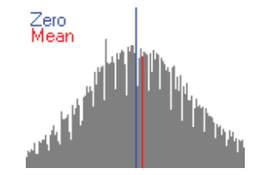


Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

Plotting parameters

Maximum +10nT (black)
Minimum -10nT (white)



Client
ARCHAEOLOGICAL CONSULTANCY LTD

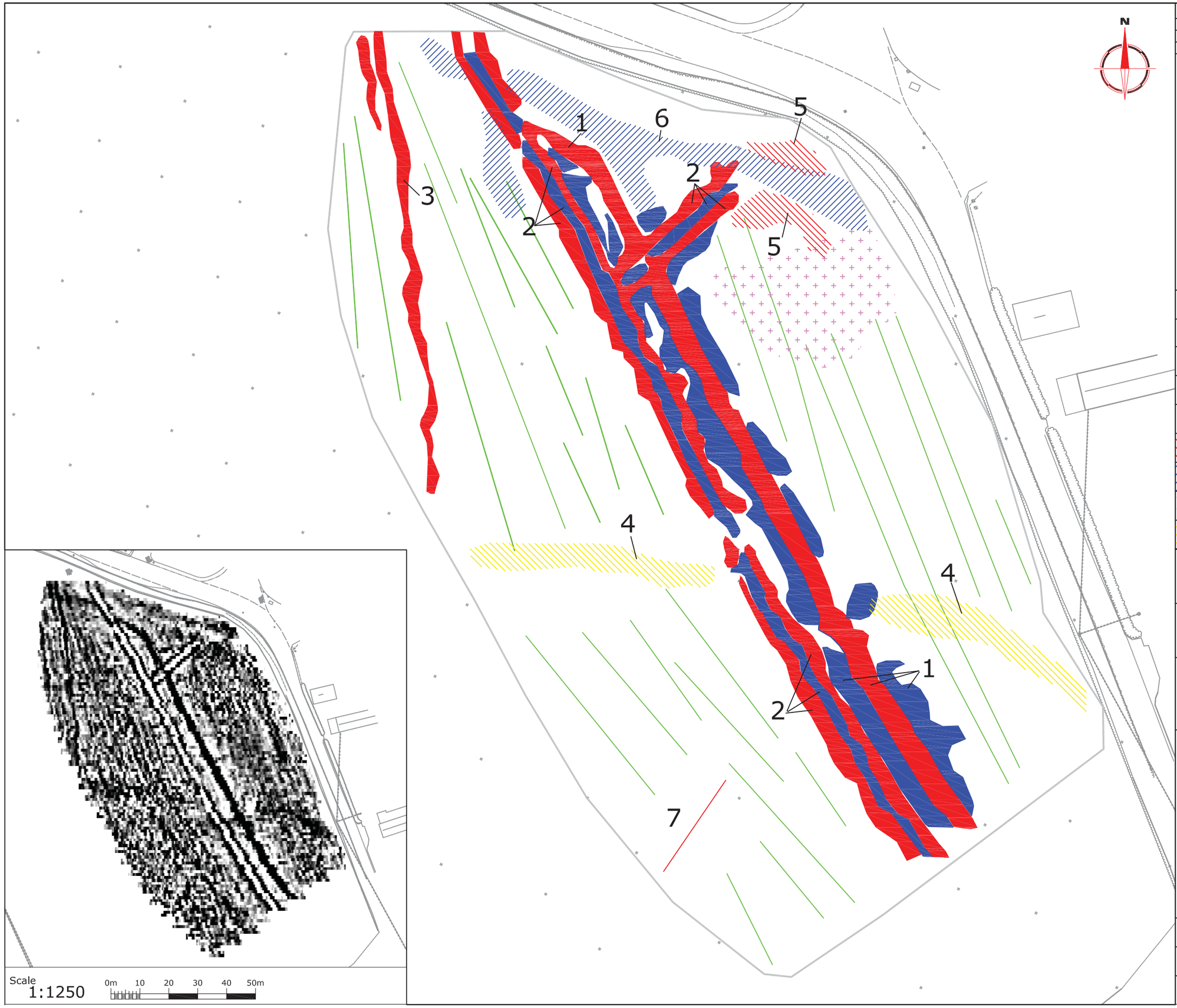
Project Title — Job No. 2595
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Subject
PLOT OF PROCESSED GRADIOMETER DATA

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
REGISTERED ORGANISATION IFA

Scale 1:500 — 0m 5 10 15 20 25m

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	06



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

Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

KEY

- Positive linear anomaly - agricultural mark
- Positive linear anomaly - cut feature of possible archaeological origin
- Positive area anomaly - cut feature of possible archaeological origin
- Negative area anomaly - bank or earthwork of possible archaeological origin
- Weak positive area anomaly
- Weak negative area anomaly
- Magnetic debris
- Area of geological / pedological variation

Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Job No. 2595

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
REGISTERED ORGANISATION IFA

Scale 1:500 0m 5 10 15 20 25m

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	07

Amendments

Issue No.	Date	Description
02	JUN 09	INCLUDE TITHE MAPPING
-	-	-

KEY

- Positive linear anomaly - agricultural mark
- Positive linear anomaly - cut feature of possible archaeological origin
- Positive area anomaly - cut feature of possible archaeological origin
- Negative area anomaly - bank or earthwork of possible archaeological origin
- Weak positive area anomaly
- Weak negative area anomaly
- Magnetic debris
- Area of geological / pedological variation

Client
ARCHAEOLOGICAL CONSULTANCY LTD

Project Title — Job No. 2595
GEOPHYSICAL SURVEY - FORD FARM, ST IVE

Subject
INTERPRETATION OF GRADIOMETER ANOMALIES OVERLAIN ONTO TITHE MAPPING

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
REGISTERED ORGANISATION IFA

Scale 1:1000 — 0m 10 20 30 40 50

Plot	Checked by	Issue No.
A3	SAS	02
Survey date	**Drawn by**	**Figure No.**
MAY 09	SDH	08