LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD, NACTON, SUFFOLK

DETAILED MAGNETOMETER SURVEY

Report Number: 1068 October 2014

LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD, NACTON, SUFFOLK

Detailed Magnetometer Survey

Prepared for:
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October 2014

Site Code	NAC 112	**NGR**	TM 2120 4070
Planning Ref.	DC/14/0332/AGO	**OASIS**	britanni1-189070
Approved By	Matthew Adams	**DATE**	October 2014

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CONTENTS

ABSTRACT

Isolated dipolar responses were particularly numerous throughout the dataset and record the presence of modern ferrous cultural debris introduced into the topsoil, rather than resulting from the presence of buried archaeological artefacts.

Three weak positive linear trends were recorded in the north-eastern quadrant of the dataset that may prove to be part of a single ditch type anomaly, however a geological origin cannot be ruled out.

Two positive discrete anomalies were further recorded, both of which have been interpreted as being archaeological rubbish pits, however they may also be of a geological derivation.

Four thermo-remnant responses were also recorded in the eastern half of the survey area. They are indicative of areas of burning that may have an archaeological derivation; however they could be related to fires lit by the current landowners. Further targeted archaeological investigations will be undertaken to ground-test the hypotheses given within this report.

1.0 INTRODUCTION

On Monday 15th September 2014 Britannia Archaeology Ltd (BA) undertook detailed fluxgate gradiometer survey over *c.*2.10ha of land to the north-west of Ladywood House, Ipswich Road, Nacton, Suffolk (NGR TM 2120 4070) in one agricultural field over the footprint of a proposed agricultural reservoir (Figure 1).

This survey was commissioned by Rhodri Gardener of Suffolk County Council Archaeological Service/Field Team in response to a design brief issued by Suffolk County Council Archaeology Service/Conservation Team (SCCAS/CT), (Brudenell. M, dated 26th March 2014). The weather was sunny all day.

2.0 SITE DESCRIPTION

2.1 Site Visit 8th September 2014

A site visit was undertaken on the 8th September 2014, the conditions were found to be favourable for geophysical survey. The footprint is located in the corner of one field that is covered in light foliage. Access was gained along a dirt track on the fields southern border.

DP1

Site Shot, Looking North from South-East Corner.

DP2

Site Shot, Looking North-West from South-East Corner.

The bedrock comprises Red Crag Formation sand, formed approximately 2 to 4 million years ago in the Quaternary and Neogene Periods when the local environment was dominated by shallow seas depositing mainly siliciclastic sediments as mud, silt, sand and gravel (BGS, 2014).

Superficial deposits are described as Lowestoft Formation sand and gravel, formed up to 2 million years ago in the Quaternary Period when the local environment was dominated by ice age conditions with glaciers scouring the landscape depositing moraines of till with outwash sand and gravel deposits from seasonal and post glacial meltwaters (BGS, 2014).

3.0 PLANNING POLICIES

The archaeological investigation was carried out on the recommendation of the local planning authority, following guidance laid down by the National Planning and Policy Framework (NPPF, DCLD 2012) which replaces Planning Policy Statement 5: Planning for the Historic Environment (PPS5, DCLG 2010). The relevant local planning policy is the *Suffolk Coastal Local Plan; incorporating First and Second Amendments* (March 2006) which is due to be replaced with the *Suffolk Coastal Local Development Framework* in the near future.

3.1 National Planning Policy Framework (NPPF, DCLG March 2012)

The NPPF recognises that 'heritage assets' are an irreplaceable resource and planning authorities should conserve them in a manner appropriate to their significance when considering development. It requires developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. The key areas for consideration are:

- The significance of the heritage asset and its setting in relation to the proposed development;

- The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance;

- Significance (of the heritage asset) can be harmed or lost through alteration or destruction, or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification;

- Local planning authorities should not permit loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred;

- Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

3.2 Suffolk Coastal District Council (Policy AP7. 31st March 2006)

The local plan for the Suffolk Coastal District deals with development on archaeological sites in section AP7, this states the following:

In considering planning applications, outline or detailed, for development that might affect sites that are known or are likely to contain archaeological remains, the Council will require the following. Where necessary, these should be preceded by a professional archaeological assessment as to the likelihood that remains might be encountered and their importance.

- a field evaluation in those cases where the assessment suggests that important archaeological remains may exist but it is unable to be precise about their nature or extent. The field evaluation shall be carried out by an approved archaeological contractor in accordance with a specification agreed with the Council;

- the preservation of archaeological remains in situ where the assessment and/or field evaluation indicate that the remains are important. Even where lesser remains exist, consideration must be given to the desirability of preserving them in situ;

- adequate arrangements for "preservation by record" - a recording of the archaeological remains that would be lost in the course of works for which permission is being sought - in those cases where arguments in favour of the development outweigh the significance of the remains;

- Development that would adversely affect a Scheduled Ancient Monument, its setting or remains will not be permitted.

4.0 ARCHAEOLOGICAL BACKGROUND

The site of the proposed agricultural reservoir is located in an area of archaeological interest as defined by information held in the County Historic Environment Record (HER). One undated linear cropmark is recorded (HER no. NAC 084), which is likely to relate to a more extensive series of cropmarks that form an early boundary system identified in

the surrounding fields (NAC 014, 045-046). A Bronze Age ring-ditch is further recorded *c.*60m west of the site (NAC036). The large scale of the development means that there is a high potential for the discovery of unknown important features and deposits, in particular those of Prehistoric origin.

5.0 PROJECT AIMS

A geophysical survey was required to inform the location of the subsequent trial trench evaluation which will ground-truth the results recorded by the fluxgate gradiometer. Suffolk County Council Archaeological Service will be undertaking the trial trench evaluation and will prepare a separate written scheme of investigation.

6.0 METHODOLOGY

6.1 Instrument Type Justification

Britannia Archaeology Ltd employed a Bartington Dual Grad 601-2 fluxgate gradiometer to undertake the survey, because of its high sensitivity and rapid ground coverage. The surveyors noted that that the background magnetic susceptibility signature was relatively low and consequently it was straightforward to locate a suitable zero station.

6.2 Instrument Calibration

One hour was allowed in the morning for the magnetometers sensors to settle before the start of the first grid. The instrument was zeroed after every three to five grids to minimise the effect of sensor drift. An area with a relatively low magnetic reading was chosen to calibrate the instrument; this same point was used to zero the sensors throughout the survey providing a common zero point. The survey was undertaken during a prolonged sunny period which caused a degree of sensor drift and the characteristic parallel traverse 'striping' that is prevalent throughout the raw dataset (Figure 2).

6.3 Sampling Interval and Grid Size

The sampling interval was set at 0.25m along 1m traverse intervals, providing 4 readings a metre, the magnetometer survey was undertaken within 20 x 20m grids.

6.4 Survey Grid Location

The survey grid was set out to the Ordnance Survey OSGB36 datum to an accuracy of ±0.1m employing a Leica Viva Glonnass Smart Rover GS08 real time kinetic (RTK) survey system. Data were converted to the National Grid Transformation OSTN02 and the instrument was regularly tested using stations with known ETRS89 coordinates. The grids were positioned on a north-west to south-east alignment (Figure 1).

6.5 Data Capture

Instrument readings were recorded on an internal data logger that were downloaded to a laptop at lunchtime and then also at the end of the day. The grid order was recorded on a BA pro-forma to aid in the creation of the data composites. Data were filed in job specific folders. These data composites were checked for quality on site by BA, allowing grids to be re-surveyed if necessary. The data were backed up onto an external storage device in the office and finally a remote server at the end of the day. A five metre exclusion zone was left between the boundaries and the survey area to reduce the amount of field boundary magnetic disturbance, which slightly reduced the area available.

6.6 Data Presentation and Processing

Data are presented in both raw and processed data plots in greyscale format (Figures 2 and 3). An XY trace plot of the processed data has also been included (Figure 4).

The raw data is presented with no processing, and was clipped to produce a uniform greyscale plot, processed data schedules are also displayed below.

Raw Data:
Data Clipping: 1.00 standard deviation.
Display Clipping: +/- 3 standard deviations.

Processed Data:
De-stripe: Median Sensors: All;
Data Clipping: 1.00 standard deviation;
Display Clipping: +/- 3 standard deviations.

An interpretation plan characterising the anomalies recorded can be found at Figure 5, drawing together the evidence collated from both greyscale and XY trace plots (Figures 2, 3 and 4). All figures are tied into the National Grid and printed at an appropriate scale.

6.7 Software

Raw data were downloaded using DW Consulting's Archeosurveyor v2.0 and will be stored in this format as raw data. The software used to process the data and produce the composites was also DW Consulting's Archeosurveyor v2.0. Datasets were exported into AutoCAD and placed onto the local survey grid. Interpretation plots were then produced using AutoCAD.

6.8 Grid Restoration

Britannia Archaeology Ltd positioned three reference stations within the field, these geo-referenced stakes are presented in Figure 1.

7.0 RESULTS & DISCUSSION

Isolated dipolar ('iron spike') responses were particularly numerous throughout the dataset and record the presence of a high degree of modern ferrous cultural debris introduced into the topsoil, rather than resulting from the presence of buried archaeological artefacts. These responses (yellow hatched circles) are evenly spaced throughout the field with no apparent concentration.

Three weak positive linear trends (linear orange hatching) were recorded in the north-eastern quadrant of the dataset, predominantly on a north to south alignment that may prove to be part of a single anomaly. These are indicative of ditches that could prove to have an archaeological derivation, although a geological origin cannot be ruled out.

Two positive discrete anomalies (orange hatching) were further recorded; the first is located to the west and within close proximity to the three positive linear responses. The second is recorded in the north-western corner of the plot. Both have been interpreted as being of archaeological origin; however the readings could be caused by natural geological variations.

Four thermo-remnant responses (magenta hatching) were also recorded by the fluxgate gradiometer. These large responses are located in the eastern half of the survey area. They are indicative of areas of burning that may have an archaeological derivation; equally they could also be related to fires lit by the current landowners.

8.0 CONCLUSION

The underlying superficial geology had a relatively low background magnetic susceptibility, recording the anomalies with good clarity. Three weak positive linears, two positive discretes, and four thermo-remnant responses are all worthy of further archaeological investigation. They are all of potential archaeological origin and should be ground-tested to prove their derivation. Areas devoid of anomalies should also be targeted to investigate whether features have not been recorded by the fluxgate gradiometer.

9.0 PROJECT ARCHIVE AND DEPOSITION

A full archive will be prepared for all work undertaken in accordance with guidance from the *Selection, Retention and Dispersion of Archaeological Collections,* Archaeological Society for Museum Archaeologists, 1993. Arrangements will be made for the archive to be deposited with the relevant museum/HER Office.

10.0 ACKNOWLEDGEMENTS

Britannia Archaeology Ltd would like to thank Dr Rhodri Gardener of SCCAS for commissioning the project, and to Dr Matthew Brudenell of Suffolk County Council Archaeological Service/Conservation Team for his advice throughout.

Bibliography

Ayala. G. *et al*. 2004. *Geoarchaeology; Using Earth Sciences to Understand the Archaeological Record*. English Heritage.

Clark. A. J. 1996. *Seeing Beneath the Soil, Prospecting Methods in Archaeology*. BT Batsford Ltd, London.

David. A. 1995. *Geophysical Survey in Archaeological Field Evaluation: Research and Professional Services Guidelines*. No.1. English Heritage.

David. A. *et al*. 2008. *Geophysical Survey In Archaeological Field Evaluation,* Second Edition. English Heritage.

Department for Communities and Local Government, 2012. *National Planning Policy Framework (NPPF)*

Gaffney. C, Gater. J. and Ovenden. S. 2002. *The Use of Geophysical Techniques in Archaeological Evaluations*. IFA Technical Paper No. 6.

Gaffney. C. and Gater. J. 2003. *Revealing the Buried Past, Geophysics for Archaeologists*. Tempus Publishing Ltd.

Gurney, D. 2003. *Standards for Archaeology in the East of England*, East Anglian Archaeology Occasional Paper 14.

Institute for Archaeologists. 2011. *Standard and Guidance for Archaeological Geophysical Survey*.

Linford. N. 2006. Notes from an English Heritage Seminar.

Schmidt. A. 2001. *Geophysical Data in Archaeology: A Guide to Good Practice*. Archaeology Data Service. Oxbow Books.

Whitten. D.G.A. 1978. *The Penguin Dictionary of Geology*. Penguin Books Ltd. London.

Witten. A.J. 2006. *Handbook of Geophysics and Archaeology*. Equinox Publishing Ltd. London.

Websites

The British Geological Survey, 2013, (Natural Environment Research Council) – Geology of Britain Viewer - www.bgs.ac.uk/opengeoscience/home.html?Accordion2=1#maps

APPENDIX 1 METADATA SHEETS

Raw Data

Filename	Nac1R.xcp
Description	
Instrument Type	Grad 601-2 (Gradiometer)
Units	nT
Surveyed by	TPS/MB on 9/15/2014
Assembled by	TPS on 9/16/2014
Direction of 1st Traverse	135 deg
Collection Method	ZigZag
Sensors	2 @ 1.00 m spacing.
Dummy Value	32702.00
Dimensions	
Composite Size (readings)	720 x 140
Survey Size (meters)	180.00m x 140.00 m
Grid Size	20.00 m x 20.00 m
X Interval	0.25 m
Y Interval	1.00 m
Stats	
Max	8.22
Min	-7.45
Std Dev	3.30
Mean	0.36
Median	0.30
Composite Area	2.52 ha
Surveyed Area	1.98 ha
Program	
Name	ArcheoSurveyor
Version	2.5.16.0

Processed Data

Filename	Nac1P.xcp
Description	
Instrument Type	Grad 601-2 (Gradiometer)
Units	nT
Surveyed by	TPS/MB on 9/15/2014
Assembled by	TPS on 9/16/2014
Direction of 1st Traverse	135 deg
Collection Method	ZigZag
Sensors	2 @ 1.00 m spacing.
Dummy Value	32702.00
Dimensions	
Composite Size (readings)	720 x 140
Survey Size (meters)	180.00m x 140.00 m
Grid Size	20.00 m x 20.00 m
X Interval	0.25 m
Y Interval	1.00 m
Stats	
Max	7.76
Min	-7.66
Std Dev	3.03
Mean	0.03
Median	0.00
Composite Area	2.52 ha
Surveyed Area	1.98 ha
Program	
Name	ArcheoSurveyor
Version	2.5.16.0

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APPENDIX 2 – TECHNICAL DETAILS

Magnetometer Survey

The magnetometer differs from the 'active' magnetic susceptibility meter by being a 'passive' instrument. Rather than injecting a signal into the ground it detects slight variations in the Earth's magnetic field caused by cultural and natural disturbance (Clark).

Thermoremanent magnetism is produced when a material containing iron oxides is strongly heated. Clay for example has a high iron oxide content that in a natural state is weakly magnetic, when heated these weakly magnetic compounds become highly magnetic oxides that a magnetometer can detect.

The demagnetisation of iron oxides occurs above a temperature known as the Curie point; for example haematite has a Curie point of 675 Celsius and magnetite 565C. At the time of cooling the iron oxides become permanently re-magnetised with their magnetic properties re-aligned in the direction of the Earth's magnetic field (Gaffney and Gater). The direction of the Earth's magnetic field shifts over time and these subtle alignment differences can be recorded. Kilns, hearths, baked clay and ovens can reach Curie point temperatures, and are the strongest responses apart from large iron objects that can be detected. Other cultural anomalies that can be prospected include occupation areas, pits, ditches, furnaces, sunken feature buildings, ridge and furrow field systems and ritual activity (David, 2011). Commonly recorded anomalies include modern ferrous service pipes, field drainage pipes, removed field boundaries, perimeter fences and field boundaries.

Fluxgate Gradiometers

Fluxgate gradiometers are sensitive instruments that utilise two sensors placed in a vertical plane, spaced 1 metre apart. The sensor above reads the Earth's magnetic (background) response while the sensor below records the local magnetic field. Both sensors are carefully adjusted to read zero before survey commences at a 'zeroing' point, selected for its relatively 'quiet' magnetic background reading. When differences in the magnetic field strength occur between the two sensors a positive or negative reading is logged. Positive anomalies have a positive magnetic value and conversely negative anomalies have a negative magnetic value relative to the site's magnetic background. Examples of positive magnetic anomalies include hearths, kilns, baked clay, areas of burning, ferrous material, ditches, sunken feature buildings, furrows, ferrous service pipes, perimeter fences and field boundaries. Negative magnetic anomalies include earthwork embankments, plastic water pipes and geological features.

The instruments are usually held approximately 0.30m to 0.50m above the ground surface and can detect to a depth of between 1-2metres. Best practice dictates that the optimal direction of traverse in Britain is east to west.

Magnetic Anomalies

Linear trends
Linear trends can be both positive and negative magnetic responses. If they are broad, relatively weak or negative in nature they may be of agricultural or geological origin, for example periglacial channels, land drains or ploughing furrows. If the responses are strong positive trends they are more likely to be of archaeological origin. Archaeological settlement ditches tend to be rich in highly magnetic iron oxides that accumulate in them via anthropogenic activity and humic backfills. Conversely surviving banks will be negative in nature, the material is derived from subsoil deposits that is less likely to be positively magnetic. Curvilinear trends can also be recorded and are indicative of archaeological structures such as drip-gullies.

Discrete anomalies
Discrete anomalies appear as increased positive responses present within a localised area. They are caused by a general increase in the amount of magnetic iron oxides present within the humic back-fill of for example a rubbish pit.

'Iron spike' anomalies
These strong isolated dipolar responses are usually caused by ferrous material present in the topsoil horizon. They can have an archaeological origin but are usually introduced into the topsoil during manuring.

Areas of magnetic disturbance
An area of magnetic disturbance is usually associated with material that has been fired. For example areas of burning, demolition (brick) rubble or slag waste spreads. They can also be caused by ferrous material, e.g. close proximity to barbwire or metal fences and field boundaries, buried services, pylons and modern rubbish deposits.

APPENDIX 3 OASIS FORM

OASIS ID: britanni1-189070

Project details

Project name	Land to the North of Ipswich Road, Nacton, Suffolk
Short description of the project	Isolated dipolar responses were particularly numerous throughout the dataset and record the presence of modern ferrous cultural debris introduced into the topsoil, rather than resulting from the presence of buried archaeological artefacts. Three weak positive linear trends were recorded in the north-eastern quadrant of the dataset that may prove to be part of a single ditch type anomaly, however a geological origin cannot be ruled out. Two positive discrete anomalies were further recorded, both of which have been interpreted as being archaeological rubbish pits, however they may also be of a geological derivation. Four thermo-remnant responses were also recorded in the eastern half of the survey area. They are indicative of areas of burning that may have an archaeological derivation; however they could be related to fires lit by the current landowners. Further targeted archaeological investigations will be undertaken to ground-test the hypotheses given within this report.
Project dates	Start: 15-09-2014 End: 15-09-2014
Previous/future work	No / Yes
Any associated project reference codes	P1073 - Contracting Unit No.
Any associated project reference codes	R1068 - Contracting Unit No.
Any associated project reference codes	NAC 112 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	NONE None
Significant Finds	NONE None
Methods & techniques	"Geophysical Survey"
Development type	Agricultural Reservoir
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)

Solid geology (other)	Red Crag Formation Sand
Drift geology (other)	Lowestoft Formation Sand and Gravel
Techniques	Magnetometry

Project location

Country	England
Site location	SUFFOLK SUFFOLK COASTAL NACTON Land to the North of Ipswich Road, Nacton, Suffolk
Study area	2.10 Hectares
Site coordinates	TM 2120 4070 52.0199939028 1.22428598 52 01 11 N 001 13 27 E Point
Height OD / Depth	Min: 30.00m Max: 30.00m

Project creators

Name of Organisation	Britannia Archaeology Ltd
Project brief originator	Local Planning Authority (with/without advice from County/District Archaeologist)
Project design originator	Timothy Schofield
Project director/manager	Timothy Schofield
Project supervisor	Timothy Schofield
Type of sponsor/funding body	Archaeological Contractor
Name of sponsor/funding body	Suffolk County Council Archaeological Service

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Suffolk HER
Digital Contents	"Survey"
Digital Media available	"Geophysics","Survey","Text"
Paper Archive recipient	Suffolk HER
Paper Contents	"Survey"
Paper Media available	"Report","Survey ","Unpublished Text"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)

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URL	www.britannia-archaeology.com
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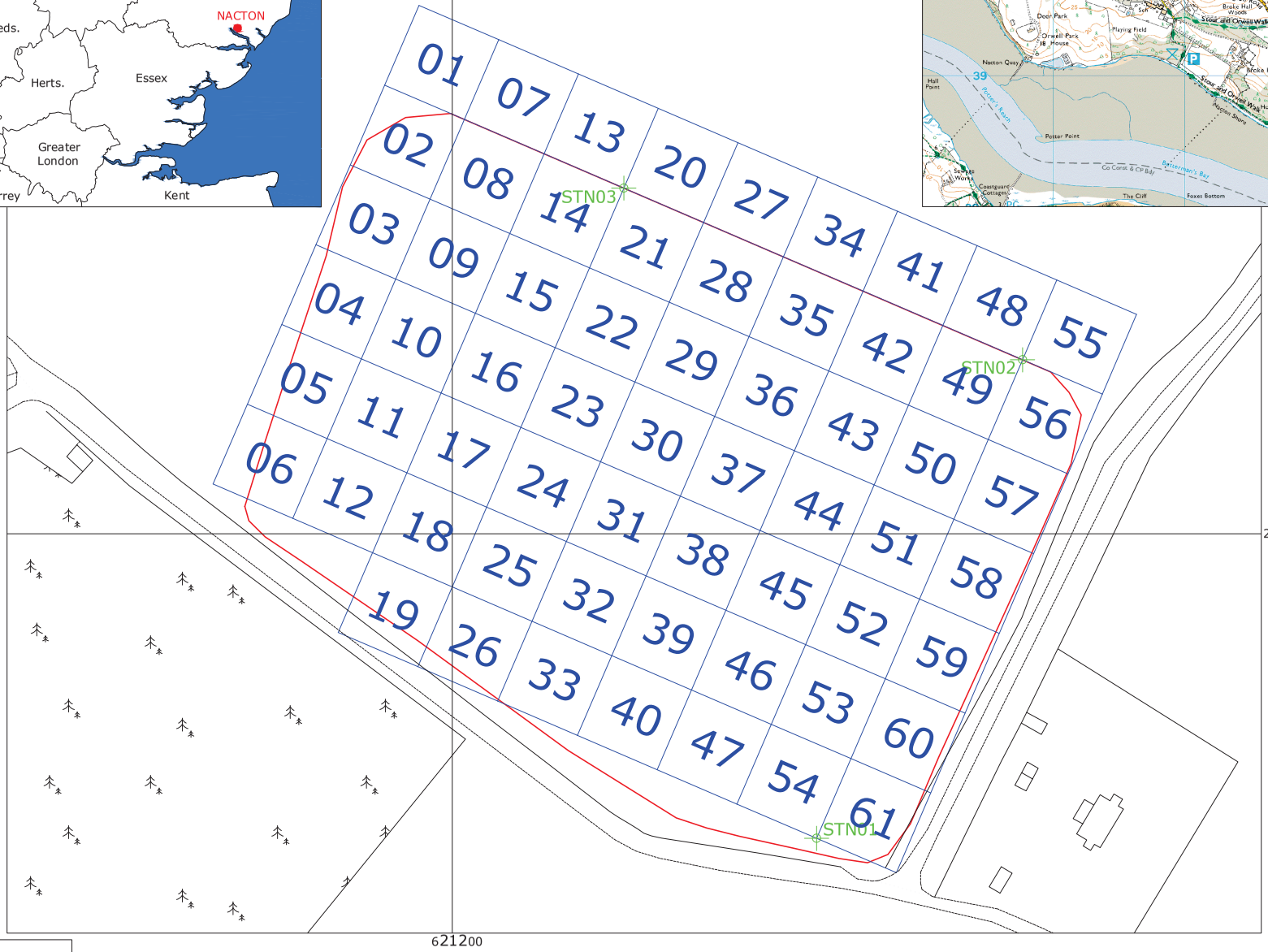
Entered on	8 April 2015



N

STATION	EASTING	NORTHING
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02	621331.378	240740.064
03	621239.523	240779.596

Survey Grid Location

Site Boundary

NGR: TM 2120 4070

REPORT NUMBER: 1068

PROJECT: LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD,NACTON, SUFFOLK

CLIENT: Suffolk County Council

DESCRIPTION: SITE, SURVEY GRID & GEOREFERENCING INFORMATION PLAN

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W: www.britannia-archaeology.com

SCALE: 1:1000 (0 – 50m)

PLOT:	APPROVED:	VERSION:
A3	MCA	01
DATE:	AUTHOR:	FIGURE:
SEP 2014	TPS	01

Site Boundary

NGR:	REPORT NUMBER:
TM 2120 4070	1068

PROJECT:
LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD,NACTON, SUFFOLK

CLIENT:
Suffolk County Council

DESCRIPTION:
RAW MAGNETOMETER GREYSCALE PLOT

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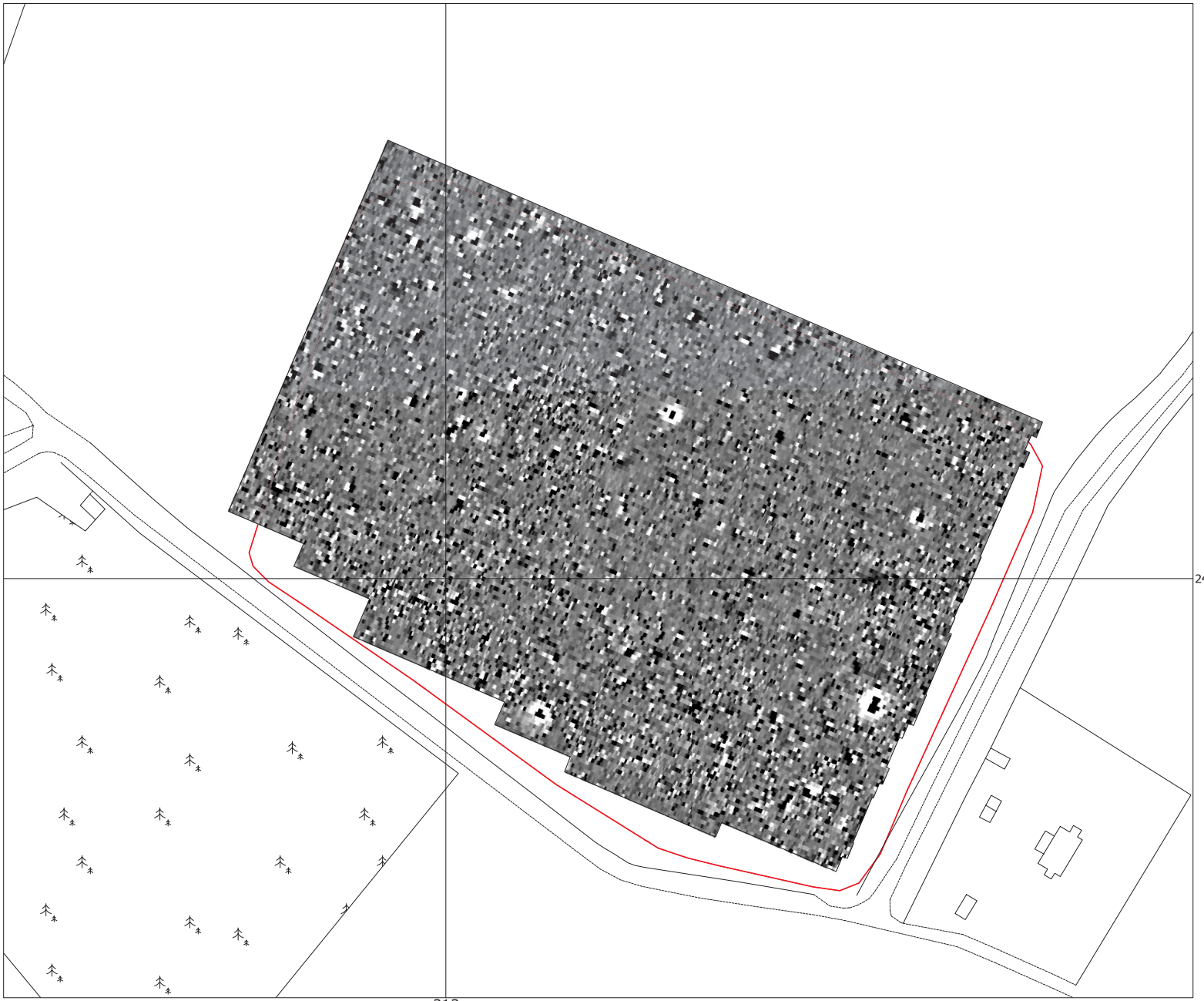
SCALE: 1:1000 (0 – 50m)

PLOT:	APPROVED:	VERSION:
A3	MCA	01

DATE:	AUTHOR:	FIGURE:
SEP 2014	TPS	02



Site Boundary

NGR:	REPORT NUMBER:
TM 2120 4070	1068

PROJECT:
LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD,NACTON, SUFFOLK

CLIENT:
Suffolk County Council

DESCRIPTION:
PROCESSED MAGNETOMETER GREYSCALE PLOT

BRITANNIA ARCHAEOLOGY LTD

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SCALE: 1:1000 (0 – 50m)

PLOT:	APPROVED:	VERSION:
A3	MCA	01

DATE:	AUTHOR:	FIGURE:
SEP 2014	TPS	03

50nT/cm	Scale Interval
	Site Boundary

NGR:	REPORT NUMBER:
TM 2120 4070	1068

PROJECT:
LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD,NACTON, SUFFOLK

CLIENT:
Suffolk County Council

DESCRIPTION:
PROCESSED MAGNETOMETER XY TRACE PLOT

BRITANNIA ARCHAEOLOGY LTD

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SCALE: 1:1000 (0 – 50m)

PLOT:	APPROVED:	VERSION:
A3	MCA	01
DATE:	AUTHOR:	FIGURE:
SEP 2014	TPS	04

	Thermo-Remnant Response, Archaeology?
	Positive Discrete Anomaly, Archaeology?
	Weak Positive Linear Trend, Archaeology?
	Isolated Dipolar Responses
	Site Boundary

NGR:	REPORT NUMBER:
TM 2120 4070	1068

PROJECT:
LAND NORTH-WEST OF LADYWOOD HOUSE, IPSWICH ROAD,NACTON, SUFFOLK

CLIENT:
Suffolk County Council

DESCRIPTION:
INTERPRETATION PLOT OF MAGNETOMETER ANOMALIES

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SCALE: 1:1000 (0 – 50m)

PLOT:	APPROVED:	VERSION:
A3	MCA	01
DATE:	AUTHOR:	FIGURE:
SEP 2014	TPS	05