# PROPOSED CAMP SITE, ALTON WATER, SUFFOLK

DETAILED MAGNETOMETER SURVEY

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# PROPOSED CAMP SITE, ALTON WATER, SUFFOLK

## DETAILED MAGNETOMETER SURVEY

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| | | | |
|---|---|---|---|
| **Site Code** | STU 084 | **NGR** | TM 154 353 |
| **Planning Ref.** | - | **OASIS** | britanni1-175541 |
| **Approved By** | Matthew Adams | **DATE** | April 2014 |

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***ABSTRACT***

*Detailed fluxgate gradiometer survey was undertaken by Britannia Archaeology Ltd over one field (c.3Ha) on the 31st March and 1st April 2014. A fairly narrow range of anomalies were recorded within the dataset, some of which have an archaeological potential.*

*Isolated dipolar ('iron spike') responses were most numerous within the dataset and were probably caused by the introduction of modern ferrous cultural debris into the topsoil during manuring and through loss, rather than resulting from the presence of buried archaeological artefacts. Six areas of magnetic disturbance were recorded, those on the boundary are likely to have been caused by the metal fence that encloses the field, while those to the east record the presence of electricity poles that bisect the field on a north-west to south-east alignment.*

*Seventeen weak positive discrete and linear anomalies were recorded that are perhaps indicative of natural changes within the superficial geology, however an archaeological origin cannot be dismissed.*

*Six broad weak dipolar anomalies, at least three of which are of a linear nature, were also recorded in the dataset. These anomalies have been interpreted as remnant riverine deposits (palaeo-channels) that have gradually been backfilled by plough-action or have silted up over time. These readings may also indicate the presence of deposits with a humic (potentially peat) content.*

*Seven positive discrete anomalies indicative of archaeological rubbish pits were also recorded, however a geological origin cannot be ruled out.*


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## 1.0 INTRODUCTION

On Monday 31st March and Tuesday 1st April 2014 Britannia Archaeology Ltd (BA) undertook detailed fluxgate gradiometer survey over *c.*3 hectares in one field given over to pasture, in advance of a proposed new camp site at Alton Water, Suffolk (Figure 1), (NGR TM 154 353).

This survey was commissioned by Alison Dickens of Cambridge Archaeological Unit in response to a request by Dr Jess Tipper of Suffolk County Council Archaeological Service/Conservation Team (SCCAS/CT).

## 2.0 SITE DESCRIPTION

The site is located to the south of the current *c.*149 hectare reservoir, construction of which was completed in 1987. Present within one field currently given over to pasture that slopes from *c.*29 to *c.*28m AOD from south to north. The immediate landscape was previously characterised by sub-divided fields of mixed pasture and arable farmland interspersed with pockets of woodland. This field has been recently used as a picnic area.

Bedrock geology is described as Red Crag Formation Sand, a sedimentary rock formed approximately 2 to 4 million years ago in the Quaternary and Neogene Periods when the local environment was dominated by shallow seas forming siliciclastic sediments deposited as mud, silt, sand and gravel (BGS, 2014).

Superficial geology is described as Kesgrave Catchment Subgroup Sand and Gravel, formed up to 3 million years ago in the Quaternary Period when the local environment was dominated by rivers depositing sand and gravel detrital material in channels forming river terraces, with fine silt and clay from overbank floods forming floodplain alluvium and some bogs depositing peat (BGS 2014).

### *2.1 Site visit*

A site visit was undertaken by Martin Brook on the 14th March to assess the ground conditions and to undertake a risk assessment. It was found to be suitable for survey with only one overhead power cable (DP1, Figure 6), that traverses the eastern half of the site on an approximate north-south orientation, worthy of note.


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DP1

Taken from South-eastern corner, looking west.

## 3.0 PLANNING POLICIES

The geophysical survey was carried out on the recommendation of the county council (SCCAS/CT), following guidance laid down by the *National Planning and Policy Framework* (NPPF, DCLD 2012) which replaced *Planning Policy Statement 5: Planning for the Historic Environment* (PPS5, DCLG 2010) in March 2012. The relevant local development framework is *The Babergh Development Framework Core Strategy (2011-2031)*.

### *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; and


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- 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 Babergh Development Framework Core Strategy (2011-2031) Submission Draft*

The local development framework for Babergh states the following:

- Provide support and guidance to ensure that development which may affect historic assets and ensure new development makes a positive contribution to local character and distinctiveness (section 3.3.6).

## 4.0 ARCHAEOLOGICAL BACKGROUND

An assessment of archaeological potential was undertaken by Cambridge Archaeological Unit in March 2014 (Dickens, A.); the findings are summarised below.

There are no Scheduled Ancient Monuments, Designated Heritage Assets, Non-Designated Heritage Assets or Conservation Areas within the development area. However unknown Non-Designated Heritage Assets may exist on site.

No known archaeological work has been undertaken within the area, however a number of sites have been recorded on air photographs and isolated findspots are present within a 1km search radius centred on the proposed development.

Prehistoric evidence starts in the Neolithic period with stray finds including a leaf shaped arrow head (MSF9773), a broken polished flint axe (MSF8230), a stone axe (MSF8239) and two end scrapers and flakes (MSF9774). Bronze Age remains are more prevalent within the 1km search radius, three ring ditches (MSF8240, MSF8241 and MSF8242) ranging from 20 to 30m in diameter have been recorded on air photographs 1km to the north. A possible barrow (MSF8238) and ring ditch (MXS20425) are located 1km to the north-east and a potential ring ditch (MXS20435) recorded as a cropmark lies 960m to the south-east.

Later prehistoric and/or Roman activity has been recorded 890m to the north-east where an enclosure is visible as a cropmark (MSF10762). Evidence of Roman metalworking (MSF19562) has been recorded during fieldwalking 685m to the north-east. Roman pottery (MSF8149) was recovered at the Royal Hospital School 1km to the south-east.

Saxon activity is recorded in two locations, the first is 1km to the west at Roundwood Farm where a fragment of a 9$^{th}$-10$^{th}$ century strap end (MSF11221) was recovered. The second lies 1.2km to the south-east at St Peters Church where two Ipswich Ware pots (MSF8233) were found.

The remains of ancient woodland (MSF19385) dating from the medieval period has been recorded at Argents Manor Wood, 900m to the west.


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The location of the dismantled post-medieval Alton watermill (MSF12240) is recorded 585m to the north, this structure was later re-assembled at the Museum of East Anglian Life in Stowmarket. Second World War air raid shelters and trenches are present on air photographs located around the Royal Hospital 1.1km to the east (MXS20408), a pillbox and potential earthworks (MXS20413) were also recorded 450m to the south.

Undated remains include various linear field boundaries and trackways (MSF8229) located 1km to the north that transect the three Bronze Age ring ditches (MSF8240, MSF8241 and MSF8242). Undated linear ditches, trackways and enclosures (MSF8231) have also been recorded at Alton Farm 875m to the north-west. A possible small enclosure to the north of a curving trackway and field boundaries (MSF8236) have been recorded 350-450m to the west. A rectilinear field system (MSF8150) is located to the west of the Royal hospital School 350m to the east. Located 510m to the south-east is a possible ring ditch (MSX20448). Undated cropmarks have also been recorded around Church Field Road in Stutton from 580m - 1.2km south-east of the area, they include a large oval enclosure (MSF24062), possible field boundaries and trackways (MXS20437), A large circular enclosure (MSF24061) and part of a ring ditch (MSF23955).

The cartographic evidence reveals little has changed in the area, field boundaries to the north have slightly altered and the survey area was part of a larger field and formerly bounded by Millfield Covert.

There is no recorded archaeology within 300m of the survey area. It is possible that cropmarks (MSF8236, MSF8150) may extend from the east and west into the site, which is one of the aims of the geophysical survey. Most of the development is unlikely to impact on below ground remains, however the perimeter track, shower block and service runs will have some slight impact on any archaeology present.

## 5.0 PROJECT AIMS

A non-intrusive field survey by geophysical prospection was required of the development to determine the extent and significance of subsurface anomalies.

## 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 superficial geology carried a relatively low magnetically susceptible background signature, a typical characteristic of soils of an alluvial nature.


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### 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 grids to minimise the effect of sensor drift. An area with a relatively low magnetic reading was chosen to calibrate the instrument in each field; this same point was used to zero the sensors throughout the surveys providing a common zero point. The overhead conditions were predominantly overcast on day one with outbreaks of sunshine. Day two was consistently sunny, a degree of sensor drift was noted by the surveyors which caused the characteristic parallel traverse 'striping' in the raw dataset (Figure 3).

### 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 on 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) system. Data were then converted to the National Grid Transformation OSTN02 and the instrument was regularly tested using stations with known ETRS89 coordinates. The grids were positioned on an almost north-south alignment (Figure 2).

### 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 3 and 4). An XY trace plot of the processed data has also been included (Figure 5).

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

*Raw Data:*

**Data Clipping**: 1 standard deviation.
**Display Clipping**: +/- 3 standard deviations.


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*Processed Data:*

**De-spike**: X diameter = 3, Y diameter = 3, Threshold = 1, centre value=mean, replace with = mean;
**De-stripe**: Median Sensors: All but 65, 67, 73;
**Data Clipping**: 1 standard deviation;
**Display Clipping**: +/- 3 standard deviations.

An interpretation plan characterising the anomalies recorded can be found at Figure 6, drawing together the evidence collated from both greyscale and XY trace plots (Figures 3, 4 and 5). 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 no reference stations within the field however the grids can be relocated using the geo-referenced stations printed in Figure 2; these can also enable the accurate targeting of geophysical anomalies.

## 7.0 RESULTS & DISCUSSION

Isolated dipolar ('iron spike') responses were most numerous within the dataset and were probably caused by the introduction of modern ferrous cultural debris into the topsoil during manuring and through loss, rather than resulting from the presence of buried archaeological artefacts. These responses (yellow hatched circles) seem to be fairly evenly spaced throughout the field with no apparent concentration. This field has been used as a scout camp site, it is therefore likely that a degree of these responses are caused by tent pegs and lost ferrous material.

Three areas of magnetic disturbance (yellow hatching) were recorded in the north-western corner of the field, a metal fence that encloses the field is a likely source for these readings. A further three areas of magnetic disturbance in the eastern half of the survey area record the presence of electricity poles together with overhead cables (magenta line) that bisect the field on a north-west to south-east alignment.

Fourteen weak positive discrete and linear anomalies have been recorded across the dataset that are perhaps more indicative of natural changes within the superficial geology, however an archaeological origin cannot be ruled out.


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Six broad weak dipolar anomalies (cyan hatching) were recorded in the dataset. They are particularly broad (*c.*10m in width) at least three of which are linear in nature. These anomalies have been interpreted as remnant riverine deposits (palaeo-channels) that have been gradually backfilled by plough action, or have silted up over time, only one slight depression was topographically recorded (black line and hachures) to the west of the survey area which does not correlate with any of the anomalies. These readings are fairly strong and may indicate the presence of surviving humic material, potentially peat, a deposit known to be present within the immediate area.

Seven positive discrete anomalies have been recorded across the site that are indicative of archaeological rubbish pits. They are slightly stronger in character than the weak positive anomalies (blue hatching) ascribed a geological origin, and potentially contain a more humic deposit or material of a thermoremnant nature, however a geological origin cannot be dismissed.

## 8.0 CONCLUSION

A fairly narrow range of anomalies have been recorded within the dataset, the majority of which relate to ferrous debris and areas of magnetic disturbance of probable modern origin. The very weak positive anomalies are more likely to be of a geological derivation however it may be prudent to ground-test this hypothesis as an archaeological origin cannot be ruled out. Stronger discrete anomalies are also worthy of further targeted investigations because they are more likely to contain material derived from an archaeological source. Perhaps the most interesting of all the anomalies recorded are the broad dipolar riverine deposits present across the dataset. These anomalies are amongst the strongest recorded and may indicate the survival of intact organic material within the superficial geology and are therefore worthy of further archaeological investigations.

## 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 Alison Dickens of Cambridge Archaeological Unit for commissioning the project and for her input in arranging site access, and to Dr Jess Tipper of Suffolk County Council Archaeological Service/Conservation Team for his advice throughout.


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## APPENDIX 1 METADATA SHEETS

### Raw Data

| | |
|---|---|
| Filename | Alton Raw.xcp |
| **Description** | |
| Instrument Type | Grad 601-2 (Gradiometer) |
| Units | nT |
| Surveyed by | TPS/MCA on 4/1/2014 |
| Assembled by | TPS on 4/1/2014 |
| Direction of 1st Traverse | 90 deg |
| Collection Method | ZigZag |
| Sensors | 2 @ 1.00 m spacing. |
| Dummy Value | 32702.00 |
| **Dimensions** | |
| Composite Size (readings) | 1200 x 100 |
| Survey Size (meters) | 300.00m x 100.00 m |
| Grid Size | 20.00 m x 20.00 m |
| X Interval | 0.25 m |
| Y Interval | 1.00 m |
| **Stats** | |
| Max | 4.92 |
| Min | -4.88 |
| Std Dev | 1.42 |
| Mean | -0.02 |
| Median | 0.10 |
| Composite Area | 3.00 ha |
| Surveyed Area | 2.49 ha |
| **Program** | |
| Name | ArcheoSurveyor |
| Version | 2.5.16.0 |

### Processed Data

| | |
|---|---|
| Filename | Alton Pro.xcp |
| **Description** | |
| Instrument Type | Grad 601-2 (Gradiometer) |
| Units | nT |
| Surveyed by | TPS/MCA on 4/1/2014 |
| Assembled by | TPS on 4/1/2014 |
| Direction of 1st Traverse | 90 deg |
| Collection Method | ZigZag |
| Sensors | 2 @ 1.00 m spacing. |
| Dummy Value | 32702.00 |
| **Dimensions** | |
| Composite Size (readings) | 1200 x 100 |
| Survey Size (meters) | 300.00m x 100.00 m |
| Grid Size | 20.00 m x 20.00 m |
| X Interval | 0.25 m |
| Y Interval | 1.00 m |
| **Stats** | |
| Max | 3.13 |
| Min | -3.51 |
| Std Dev | 0.97 |
| Mean | -0.15 |
| Median | -0.01 |
| Composite Area | 3.00 ha |
| Surveyed Area | 2.49 ha |
| **Program** | |
| Name | ArcheoSurveyor |
| Version | 2.5.16.0 |


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| 72 | Col:14 | Row:3 | grids\72.xgd |
| 73 | Col:14 | Row:4 | grids\73.xgd |


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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.


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## 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.


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## APPENDIX 3 – OASIS FORM

## OASIS ID: britanni1-175541

### Project details

| | |
|---|---|
| **Project name** | New Camp Site, Alton Water, Suffolk |
| **Short description of the project** | Detailed fluxgate gradiometer survey was undertaken by Britannia Archaeology Ltd over one field (c.3Ha) in March and April 2014. A fairly narrow range of anomalies were recorded within the dataset, some of which have an archaeological potential. Isolated dipolar ('iron spike') responses were most numerous were probably caused by the introduction of modern ferrous cultural debris into the topsoil during manuring and through loss, rather than resulting from the presence of buried archaeological artefacts. Six areas of magnetic disturbance were recorded, those on the boundary are likely to have been caused by the metal fence that encloses the field, while those to the east record the presence of electricity poles that bisect the field on a north-west to southeast alignment. Seventeen weak positive discrete and linear anomalies were recorded that are perhaps indicative of natural changes within the superficial geology, however an archaeological origin cannot be dismissed. Six broad weak dipolar anomalies, at least three of which are of a linear nature, were also recorded . These anomalies have been interpreted as remnant riverine deposits (palaeo-channels) that have gradually been backfilled by plough-action or silted up over time. These readings may also indicate the presence of deposits with a humic (potentially peat) content. Seven positive discrete anomalies indicative of archaeological rubbish pits were also recorded, however a geological origin cannot be ruled out. |
| **Project dates** | **Start:** 31-03-2014 **End:** 01-04-2014 |
| **Previous/future work** | Yes / Yes |
| **Any associated project reference codes** | P1055 - Contracting Unit No<br>STU 084 - Sitecode |
| **Type of project** | Field evaluation |
| **Site status** | None |
| **Current Land use** | Grassland Heathland 4 - Regularly improved |
| **Monument type** | NONE None |
| **Significant Finds** | NONE None |
| **Methods & techniques** | "Geophysical Survey" |
| **Development type** | Camp Site |
| **Prompt** | Direction from Local Planning Authority - PPS |
| **Position in the planning process** | Pre-application |
| **Solid geology (other)** | Red Crag Formation Sand |
| **Drift geology (other)** | Kesgrave Catchment Sand and Gravel |
| **Techniques** | Magnetometry |

### Project location

| | |
|---|---|
| **Country** | England |
| **Site location** | SUFFOLK BABERGH STUTTON New Camp Site, Alton Water, Stutton |
| **Study area** | 3.00 Hectares |
| **Site coordinates** | TM 154 353 51.9738070306 1.13648879981 51 58 25 N 001 08 11 E Point |
| **Height OD /Depth** | **Min:** 28.00m **Max:** 29.00m |

### 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** | Cambridge Archaeological Unit |

### Project archives

| | |
|---|---|
| **Physical Archive Exists?** | No |
| **Digital Archive recipient** | Suffolk HER |
| **Digital Contents** | "Survey" |


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| | |
|---|---|
| **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) |
| **Title** | Proposed Camp Site, Alton Water, Suffolk; Detailed Magnetometer Survey |
| **Author(s)/Editor(s)** | Schofield, T. P. |
| **Other bibliographic details** | R1052 |
| **Date** | 2014 |
| **Issuer or publisher** | Britannia Archaeology Ltd |
| **Place of issue or publication** | Stowmarket |
| **Description** | A4 Bound Report with A3 Fold-out Figures. |
| **URL** | www.britannia-archaeology.com |
| **Entered by** | Tim Schofield (tim@britannia-archaeology.com) |
| **Entered on** | 22 January 2015 |


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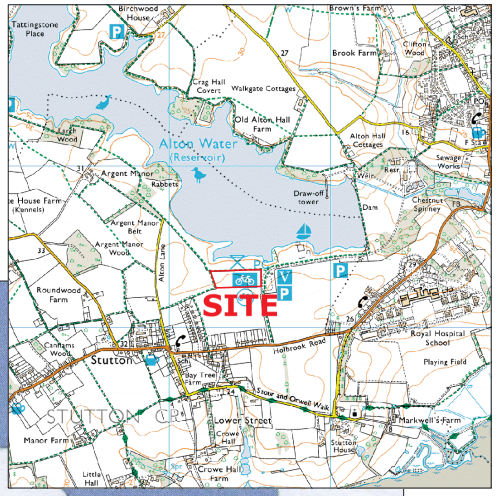



N

Site Boundary

| NGR: | REPORT NUMBER: |
|---|---|
| TM 1540 3530 | 1052 |

PROJECT:
PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:
CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

DESCRIPTION:
PROPOSED CAMP SITE
LOCATION PLAN


BRITANNIA ARCHAEOLOGY LTD

115 OSPREY DRIVE, STOWMARKET, SUFFOLK
IP14 5UX

T: 01449 763034
E: info@britannia-archaeology.com
W: www.britannia-archaeology.com


SCALE: 1:1500 (0 – 50m)

| PLOT: | APPROVED: | VERSION: |
|---|---|---|
| A3 | MCA | 01 |
| DATE: | AUTHOR: | FIGURE: |
| APR 2014 | TPS | 01 |


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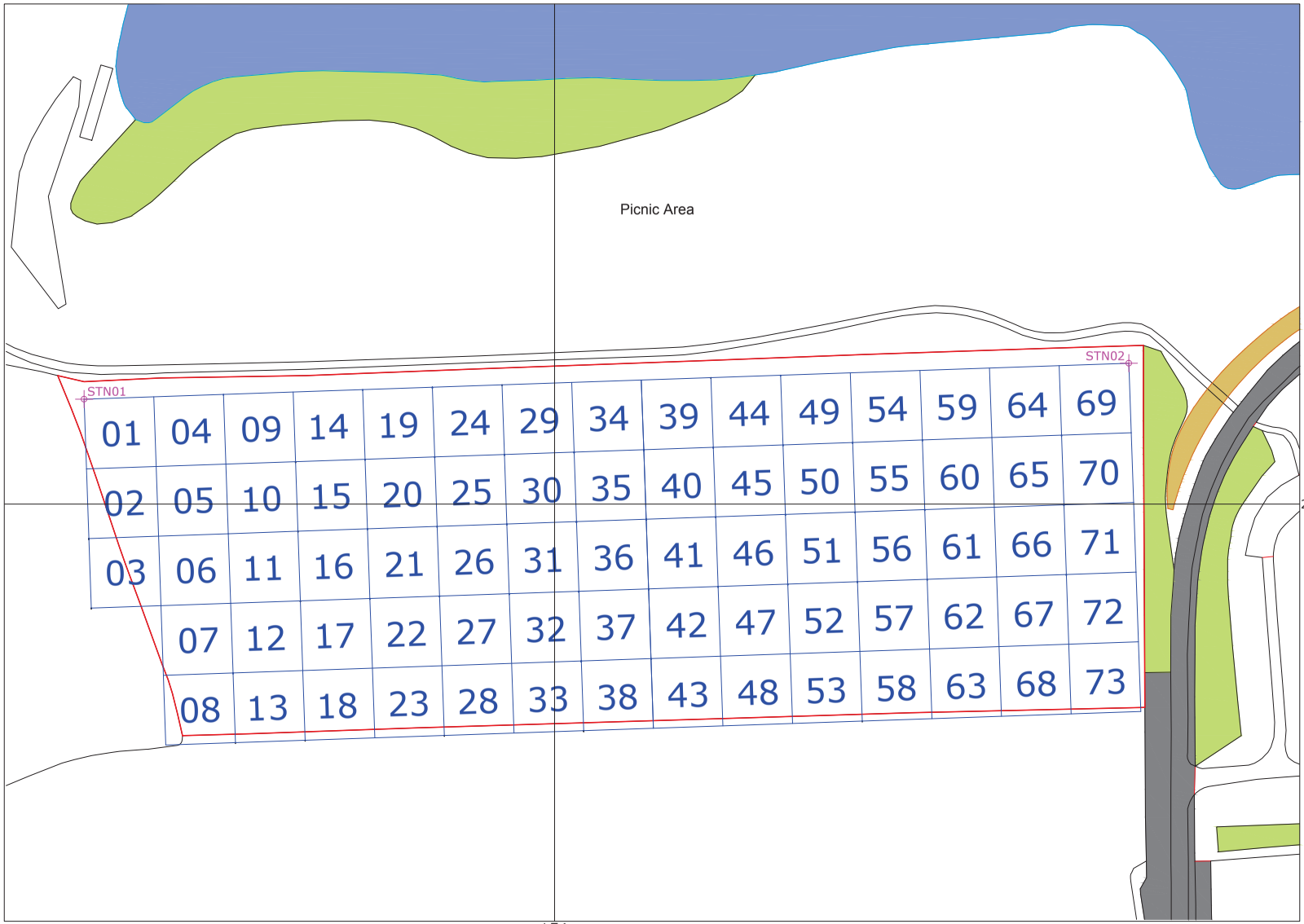


N

| STATION | EASTING | NORTHING |
|---|---|---|
| 01 | 615264.976 | 235330.090 |
| 02 | 615564.799 | 235340.402 |

Survey Grid Location

Site Boundary

NGR: TM 1540 3530

REPORT NUMBER: 1052

PROJECT:
PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:
CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

DESCRIPTION:
SURVEY GRID & REFERENCING
INFORMATION PLAN


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PLOT: A3

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VERSION: 01

DATE: APR 2014

AUTHOR: TPS

FIGURE: 02


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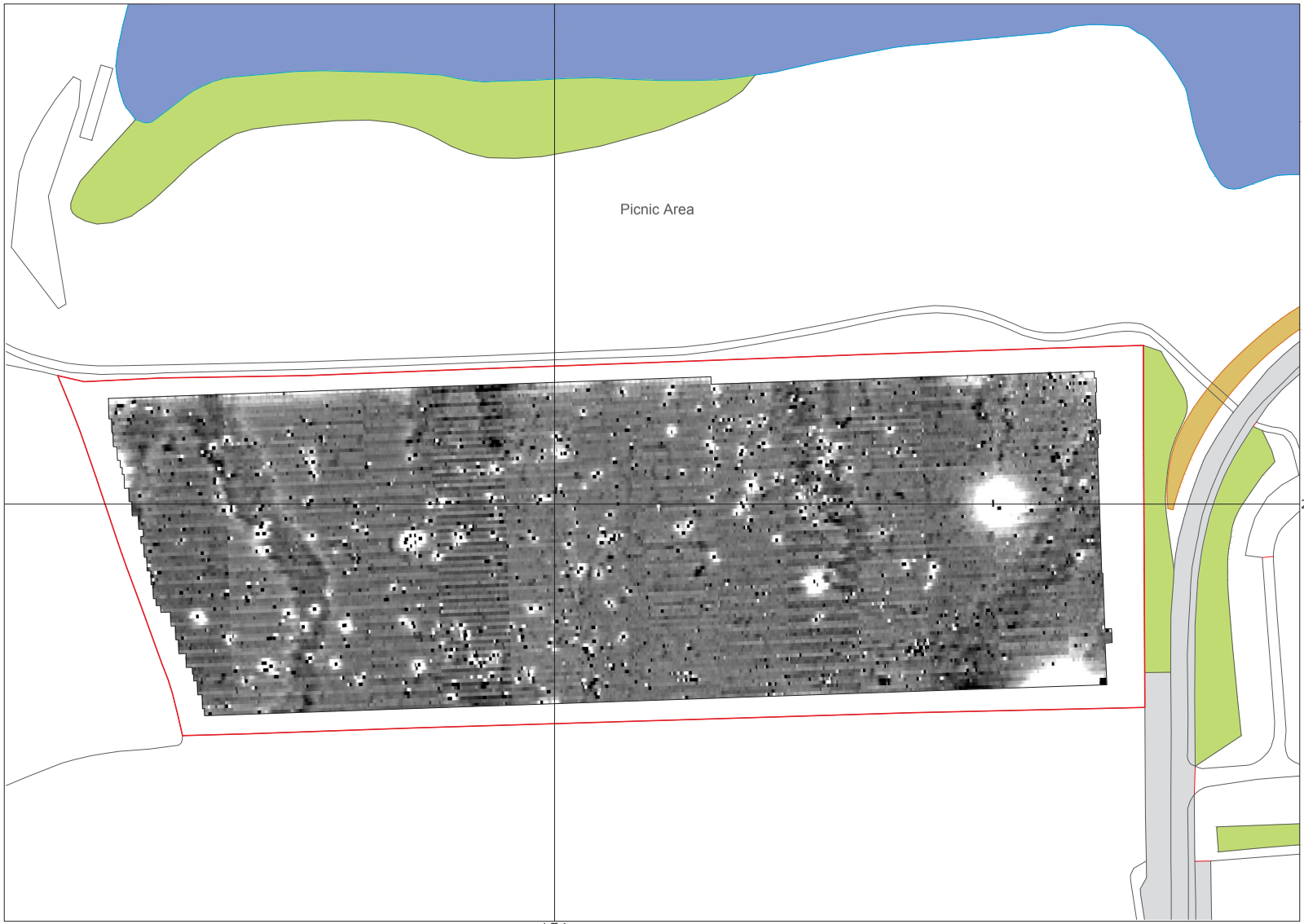


N

+4.23nT

-4.27nT

Site Boundary

| NGR: | REPORT NUMBER: |
|---|---|
| TM 1540 3530 | 1052 |

PROJECT:

PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:

CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

DESCRIPTION:

RAW MAGNETOMETER
GREYSCALE PLOT

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SCALE: 1:1000 0 50m

| PLOT: | APPROVED: | VERSION: |
|---|---|---|
| A3 | MCA | 01 |

| DATE: | AUTHOR: | FIGURE: |
|---|---|---|
| APR 2014 | TPS | 03 |

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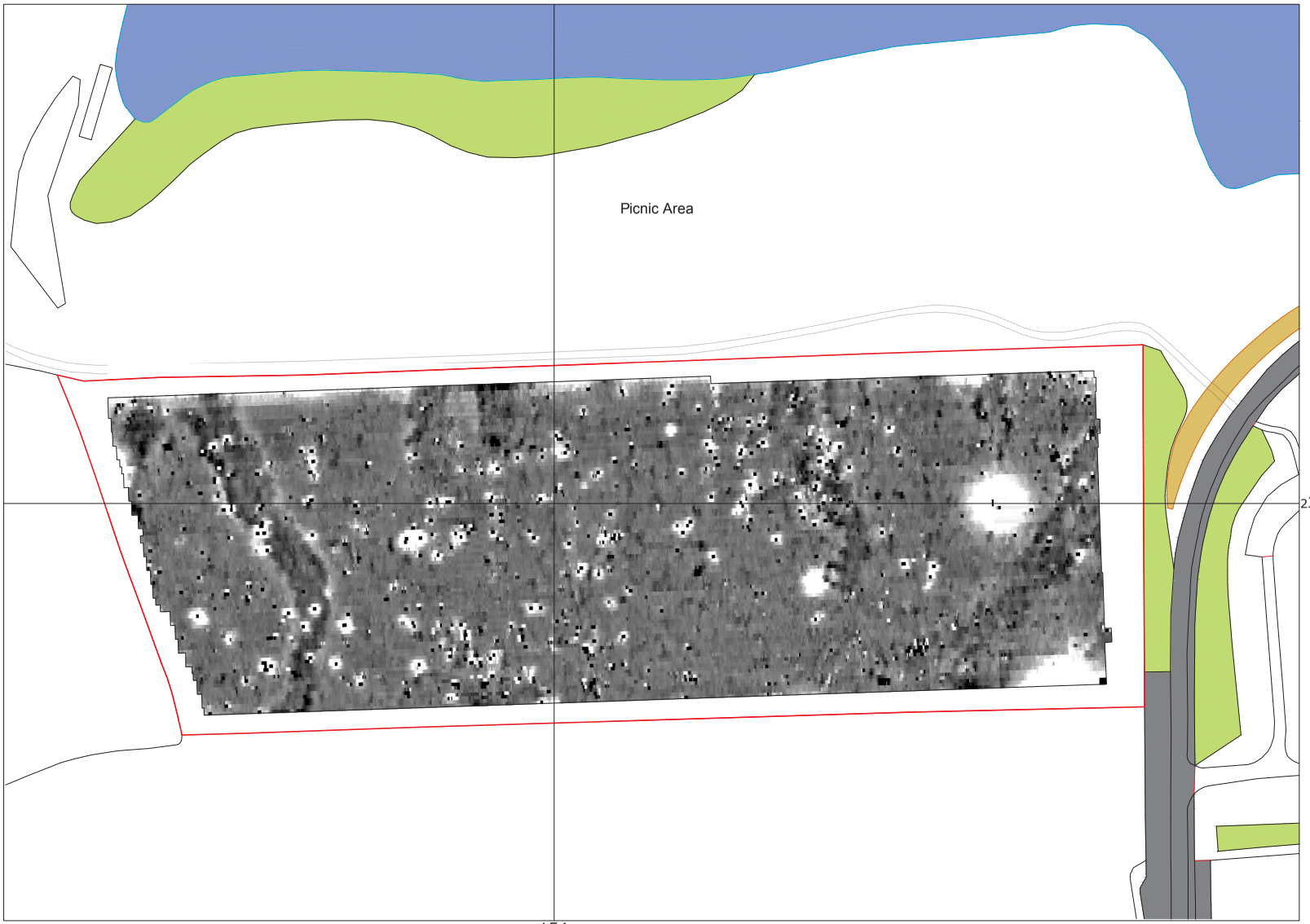


N

+2.75nT

-3.06nT

Site Boundary

NGR: TM 1540 3530

REPORT NUMBER: 1052

PROJECT:
PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:
CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

DESCRIPTION:
PROCESSED MAGNETOMETER
GREYSCALE PLOT

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| PLOT: | APPROVED: | VERSION: |
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| A3 | MCA | 01 |
| DATE: | AUTHOR: | FIGURE: |
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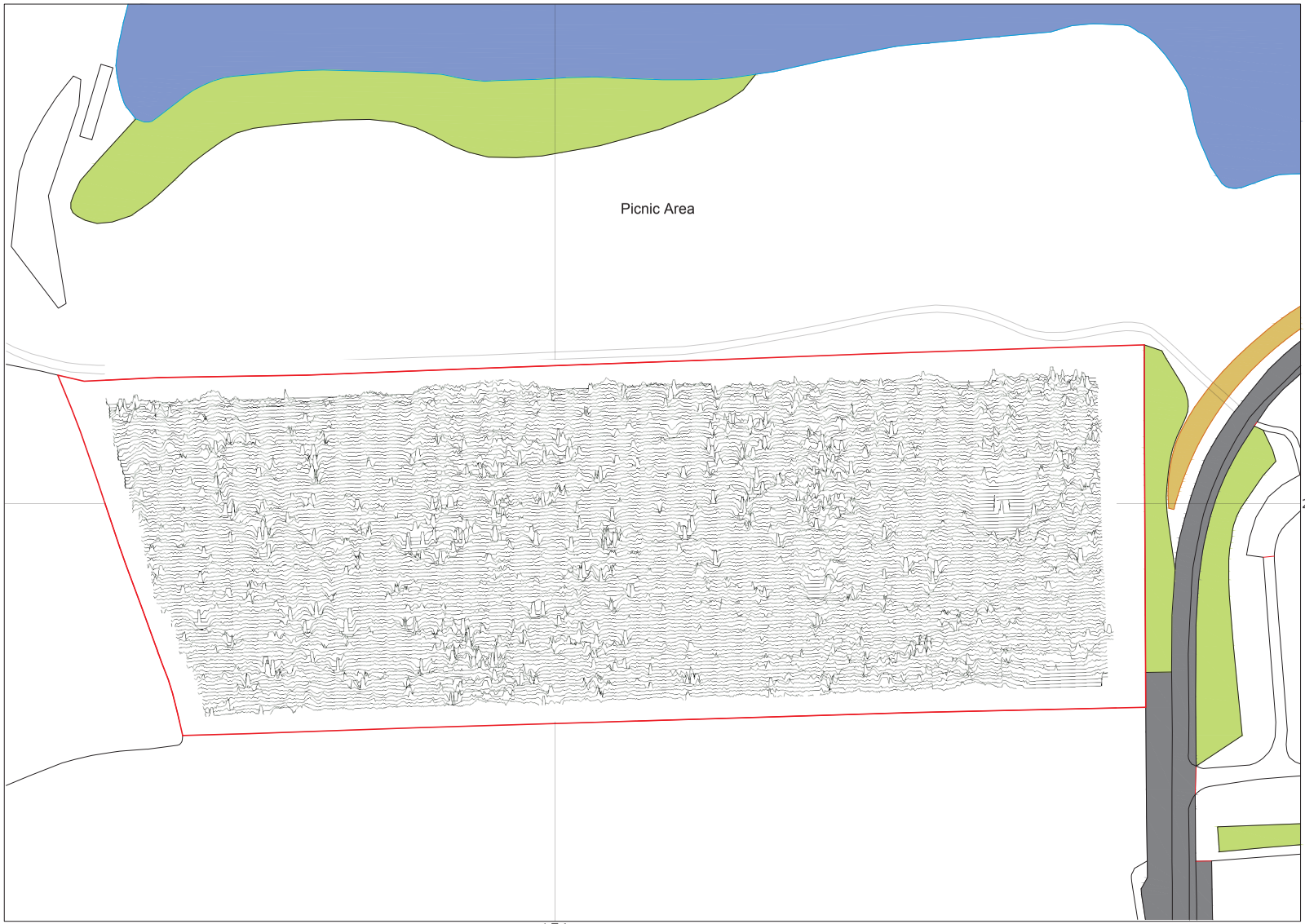


N

| | |
|---|---|
| 20nT/cm | Scale Interval |
| | Site Boundary |

| NGR: | REPORT NUMBER: |
|---|---|
| TM 1540 3530 | 1052 |

PROJECT:
PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:
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UNIVERSITY OF CAMBRIDGE

DESCRIPTION:
PROCESSED MAGNETOMETER
XY TRACE PLOT

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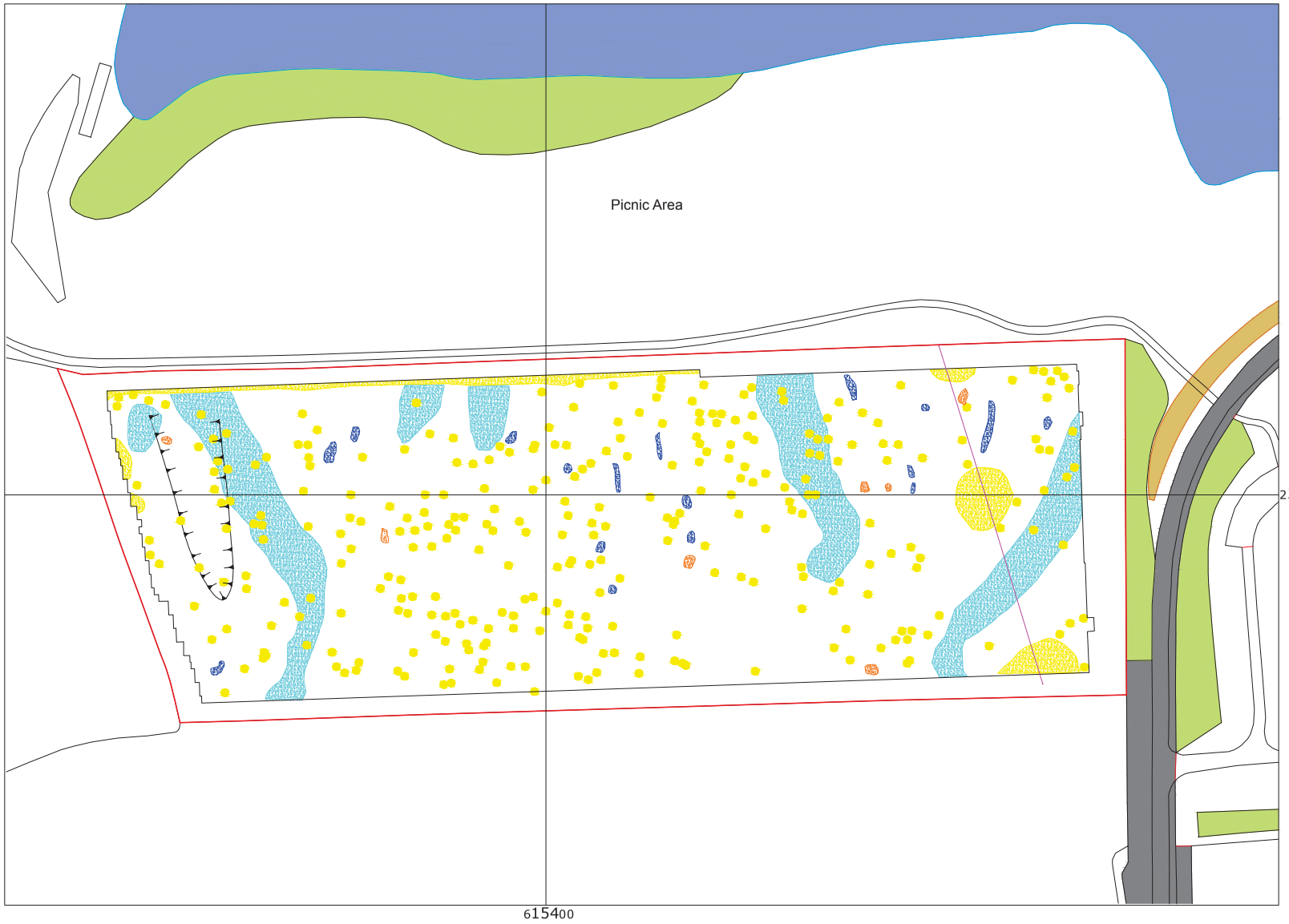


N

| | |
|---|---|
| | Positive Discrete Anomaly, Archaeology? |
| | Broad Weak Dipolar Anomaly, Geology. |
| | Weak Positive Anomaly, Geology? |
| | Area of Magnetic Disturbance |
| | Isolated Dipolar Response |
| | Depression |
| | Overhead Electric Pole and Cable |
| | Site Boundary |

| NGR: | REPORT NUMBER: |
|---|---|
| TM 1540 3530 | 1052 |

PROJECT:

PROPOSED CAMP SITE,
ALTON WATER, SUFFOLK

CLIENT:

CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

DESCRIPTION:

INTERPRETATION PLOT OF
MAGNETOMETER ANOMALIES

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SCALE: 1:1000 (0 – 50m)

| PLOT: | APPROVED: | VERSION: |
|---|---|---|
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| DATE: | AUTHOR: | FIGURE: |
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