Land South of Bristol Road, Stonehouse, Gloucestershire

Report on Archaeological Geophysical Survey 2013

Report by:

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on behalf of:

Robert Hitchins Ltd

8 June 2013

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Introduction

The geophysical survey described in this report is to form part of an archaeological field evaluation of a proposed development site at Stonehouse near Stroud, Gloucestershire. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, on behalf CgMs Consulting Ltd of Cheltenham, who are to undertake and co-ordinate the evaluation on behalf of Robert Hitchins Ltd and their successors in title to the land.

Fieldwork for the survey was done on 12 April 2013. Data plots showing the survey findings were subsequently supplied to CgMs, and are now included in this report.

The Site

The site is described in an Archaeological Desk Based Assessment (DBA), which was prepared and supplied to us by CgMs [1]. This documents lists and describes previously recorded archaeological sites and findings from the evaluation site, and from the surrounding area. We previously included a summary of the more relevant archaeological findings as noted in the DBA in the Method Statement (prepared by BCC and submitted to CgMs) at the start of this project [2]. The following notes are reproduced in part from this earlier summary.

Topography and geology

The proposed development site is described in the DBA as a single cultivated field bounded by the Bristol Road (A419) to the north, the Stroudwater canal to the south, the railway line to the east and car parking and commercial units to the west. The study site has a broadly level topography lying at c.28m Above Ordnance Datum (AOD), although ground level does fall very gently towards the canal situated along its southern extent. The site is centred at NGR 379550, 205217.

The solid geology of the study site is identified as mudstone of the Blue Lias Formation and Charmouth Mudstone Formation (undifferentiated), overlying which are third terrace Frome River deposits (sand and gravel) (British Geological Survey 1975, Sheet 234).

Sites both on Jurassic bedrock (as here) and on river terrace gravels usually provide favourable conditions for magnetometer surveying, and positive archaeological findings have previously been obtained in surveys at sites with similar ground conditions. Nearby previous investigations include a survey done in late 2012 (by Bartlett Clark Consultancy for CgMs) near Nastend Green Farm [3]. This survey recorded potential archaeological anomalies indicative of former Medieval ridge and furrow cultivation and possible pits, ditches and enclosure features of uncertain date.

Archaeological background

No previous archaeological fieldwork has been carried within the study site itself, although the Stroudwater Canal Corridor has been the subject of previous assessment (HER 41390). A number of field investigations, comprising geophysical survey, trenched evaluation and watching briefs have been undertaken on land within the immediate proximity.

Aerial photographs for the study site held by the NMR were examined by CgMs, as described in the DBA. No discernible cropmark or earthwork sites were recorded, although areas of former cultivation were noted within the study site. An area of rectilinear and amorphous parch marks towards the east of the study site was noted on a single aerial photograph (Ref: US/7PH/GP/LOC234 – Frame 5030 – March 1944). These in part have been removed by the later construction of the A419, although the south eastern extent of these would appear to correspond with a series of undulations noted across the eastern area of the study site. These features could perhaps relate to some previous extraction works, or activity possibly related to the establishment of the GHQ defensive line.

The topography of the study site and its close association with the course of the River Frome would suggest that it occupies a landscape favourable for occupation and settlement in prehistoric periods, and the underlying river terrace gravel geology of the study site could also have made it more favourable for early cultivation and occupation.

There are no recorded findings or features from the Roman period recorded on the NMR or HER for the study site itself, but activity from this period is noted in the wider study area (as indicated by the recovery of finds including pottery, tile and coins).

Beyond the study area, evidence of Roman occupation activity and settlement has been recorded near Stonehouse. Findings include a Roman iron furnace and more recently a settlement comprising pits, postholes, ditches, gullies, burials, a trackway and corn-drying oven to the north of Ebley Road (Cotswold Archaeology 2012), situated c.2.2km to the east of the study site. The line of a Roman road running approximately from Frocester to Alkerton and on to the Severn Crossing at Arlingham is also recorded c.1.7km to the south-west of the study site (Victoria County History (VCH) 1972). As in the proceeding period, the topography of the study site and its association with the River Frome may again suggest that it occupied a favourable location for settlement in this period.

The site is likely to have remained in agricultural use during Saxon and Medieval periods, with a correspondingly low potential for archaeological findings of those dates. Historic map evidence illustrates that the study site has remained predominantly in agricultural use, either as cultivated or pasture land, throughout the Post-Medieval and Modern period, although there has perhaps been some gravel extraction, as indicated by aerial photographs.

Survey Procedure

The site was investigated by means of a recorded magnetometer survey. Readings were collected along transects 1m apart using Bartington 1m fluxgate gradiometers, and are plotted

at 25cm intervals along each transect. The results of the survey are presented at 1:1250 scale as a grey scale plot (figure 1), and as a graphical (x-y trace) plot (figure 2). Comparison of these alternative presentations allows the detected magnetic anomalies to be examined in plan and profile respectively. An interpretation of the findings is shown superimposed on figure 2 (which permits the interpreted outlines to be compared with the underlying data), and is reproduced separately to provide a summary of the findings (figure 3).

The graphical plots show the magnetometer readings after minimal pre-processing which includes adjustment for irregularities in line spacing caused by variations in the instrument zero setting, and slight linear smoothing. Additional 2D low pass filtering has been applied to the grey scale plots to reduce background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. The interpretation is intended to be schematic and illustrative, and not to reproduce the detail of the grey scale plots.

Features as marked include magnetic anomalies which show characteristics to be expected from features of potential archaeological significance (in red). A group of disturbances which could be of either recent or archaeological origin is indicated in brown. Stronger (perhaps recent) disturbances are in a blue/purple, and cultivation markings in green. A pipe is shown in blue, and some of the more conspicuous ferrous objects (identifiable as narrow spikes in the graphical plots) are outlined in light blue.

Survey location

The survey grid was set out and tied to the OS grid using a differential GPS system (with Omnistar satellite correction to give accuracy to c. 10cm). The plans are therefore geo-referenced, and OS co-ordinates of map locations can be read from the AutoCAD version of the plans, which can be supplied with this report.

Results

The survey has produced a variety of findings, including some of clear archaeological relevance. These are consistent, in terms of their characteristics and location, with the possibility that parch marks and surface features (as indicated on the DBA plan inset in figure 3) in the eastern half of the site could be of archaeological significance.

Conditions at the site should be favourable (as expected) for the magnetic detection of archaeological features, as was confirmed by magnetic susceptibility readings taken during the survey. The readings (in a range 40 – 80 x 10^{-5} SI) were sufficiently high to indicate that the soil should be highly responsive to a survey of this kind.

The main finding is a group of rectilinear ditched enclosures and other features located to the east of a clearly defined north-south ditch (labelled A on figure 3). Findings within this group include a ditched trackway entering from the south (B), and clusters of pit-like features suggesting the presence of settlement remains (as at C, D). There are groups of particularly

strong disturbances (which could indicate industrial remains, or settlement features including hearths or pits containing burnt debris in their fill) within a smaller enclosure at E.

The interpretation of an even stronger group of disturbances (indicated in brown around F) is more problematic. A former gravel extraction pit (as mentioned in the DBA) could give rise to disturbances of this kind if it contains relatively modern debris (brick rubble, etc) in the fill, although it is also possible that a late prehistoric or Roman pottery or iron working site could produce equally strong magnetic activity. The location of the disturbances at F within a clearly defined archaeological site leaves this possibility open.

There is less uncertainty in the interpretation of another group of strong disturbances in the south west corner of the site at G. These are located within a former fenced enclosure (as shown on the plan inset in figure 3), but the fence is no longer extant. Rubble and slag or clinker is visible here on the ground surface, indicating that magnetic disturbances are caused by a spread of recent debris.

Other findings include weak traces of a north-south cultivation pattern, visible particularly in the western half of the field (as indicated by broken green lines). A similar pattern is shown in figure 8 from the DBA (inset in figure 3). Two slightly stronger linear features (H, J) do not align exactly with the cultivation pattern, and so could perhaps indicate other ditches or drains. There is a further area of east-west aligned cultivation markings at the western end of the field. These perhaps terminate at a north-south linear feature (K). This possible earthwork or headland is broader and weaker than the archaeological features to its west.

A large iron pipe (blue broken line) was detected at the western end of the field. Several strong ferrous magnetic anomalies (L, M and others) represent steel-lined boreholes visible in the field.

Conclusions

The survey has detected a clearly defined system of ditched enclosures and other features in the eastern half of the field. Findings include a trackway (B), and groups of occupation or industrial features (C, D, E). The very strong magnetic disturbances around F could also be of archaeological origin (particularly if this was a pottery making or metal working site), but the possibility that they are recent cannot be excluded. There are faint traces of ridge and furrow in the western half of the field (and perhaps also at the eastern end), but few other findings.

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The fieldwork for the survey was done by C. Oatley and P. Cottrell.

References

[1] Archaeological Desk Based Assessment; Land South of Bristol Road, Stonehouse, Gloucestershire. S. Weaver, CgMs. February 2013 (CgMs ref: SW/14947).

[2] Land South of Bristol Road, Stonehouse, Gloucestershire: Method Statement for Archaeological Geophysical Survey. Document submitted by Bartlett Clark Consultancy to CgMs; 9 April 2013.

[3] Land North of Stroudwater, Stonehouse, Gloucestershire. Report on Archaeological Geophysical Survey 2012. Report submitted by Bartlett Clark Consultancy to CgMs; 30 January 2013.

Background mapping based on site plan supplied by Robert Hitchins Ltd.
Map contains Ordnance Survey digital data. Crown Copyright reserved.

379600E

BRISTOL ROAD

Commercial Centre

N

2.4nT

-2.2

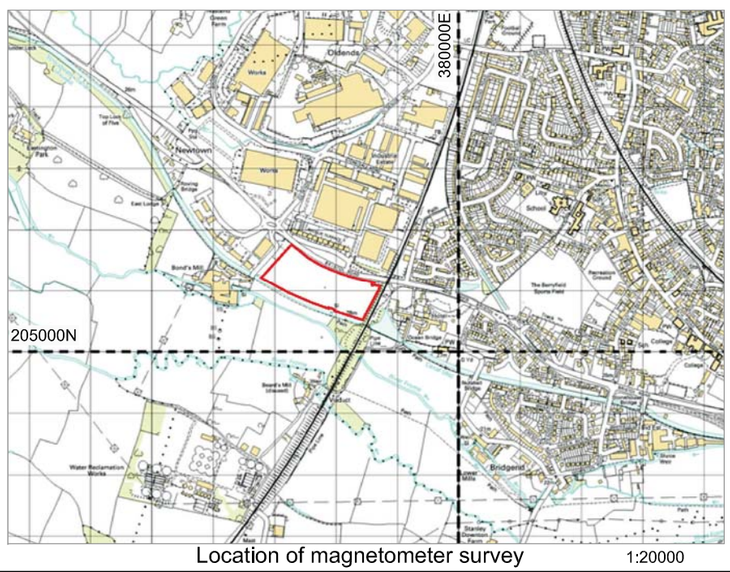
The Moorings

The Gatehouse

205200N

Court Farm Mews

River Frome



Location of magnetometer survey 1:20000

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for CgMs Consulting (Cheltenham)

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Figure 1: Magnetometer survey
(grey scale plot)

0 1:1250 50m

Background mapping based on site plan supplied by Robert Hitchins Ltd.
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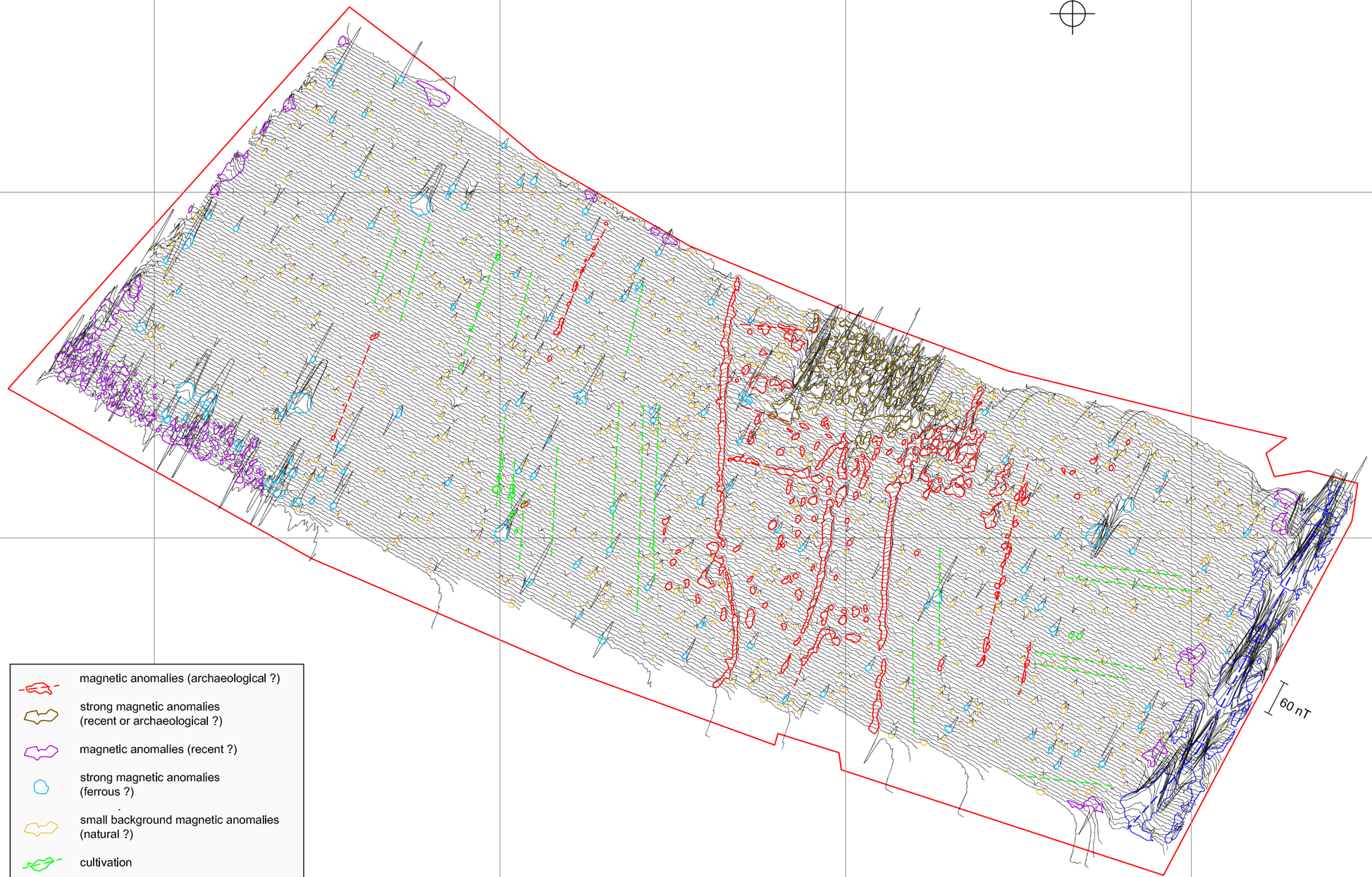
379600E

N

205200N



- magnetic anomalies (archaeological ?)
- strong magnetic anomalies (recent or archaeological ?)
- magnetic anomalies (recent ?)
- strong magnetic anomalies (ferrous ?)
- small background magnetic anomalies (natural ?)
- cultivation
- pipe (and associated magnetic disturbance)

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Figure 2: Magnetometer survey (with interpretation)

0 1:1000 50m

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379600E

205200N

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- cultivation
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A B C D E F G H J K L M

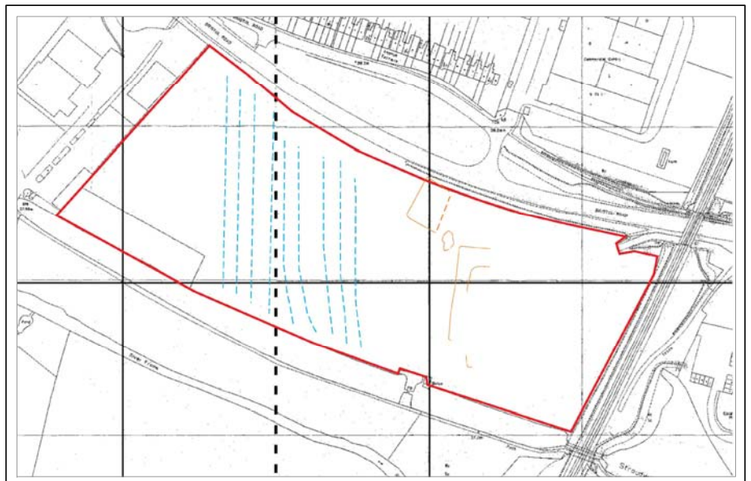

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Figure 3: Summary of findings

0 1:1250 50m