

**LAND OFF HOLYWELL ROAD,
SOUTHAM, WARWICKSHIRE**

Report on Archaeological Geophysical Survey 2013

A.D.H. Bartlett

Surveyed by:

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Introduction

This geophysical survey is to form part of an archaeological field evaluation of a proposed development site at Southam in Warwickshire. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Phoenix Consulting Archaeology Ltd on behalf of Barton Willmore Planning and Design Consultancy. Fieldwork for the survey was done on 20-22 September 2013. A data plot showing the survey findings has been supplied to Phoenix Consulting, and is now included in this report.

The Site

The site is an arable field to the west of Holywell Road on the western edge of Southam (centred approximately at NGR 441100, 261900). The complete field was surveyed, giving coverage (as hatched on the location plan inset in figure 1) of 4.01ha. The field was newly ploughed at the time of the survey, and so required additional time for the fieldwork.

The ground slopes down from the north of the field towards the River Stowe to the south. The site is on a bedrock of early Jurassic Lias, and appears to be free of drift deposits. Sites on comparable bedrock are usually highly responsive to magnetometer surveying, as appears to be the case here. Magnetic susceptibility readings which were measured from soil samples taken at the site gave a (high) mean value of 74×10^{-8} SI/kg). This confirms that subsurface features containing a silted earth fill should be readily detectable in the survey.

We have not been told that any previously identified archaeological sites or findings have been recorded within the site itself, although the mediaeval Holy Well (which is a Scheduled Ancient Monument) is located outside the field at its SW corner.

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 at 1:1000 (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 plot shows 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 plot to reduce background noise levels.

The magnetometer responds to cut features such as ditches and pits when they are silted with topsoil, which usually has a higher magnetic susceptibility than the underlying natural subsoil. It also detects the thermoremanent magnetism of fired materials, notably baked clay structures such as kilns or hearths, and so responds preferentially to the presence of ancient settlement or industrial remains. It is also strongly affected by ferrous and other debris of recent origin.

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. Any magnetic anomalies which show characteristics to be expected from features of potential archaeological interest are usually outlined in red (although none were identified in this survey).

Background magnetic anomalies which may be of natural or non-archaeological origin are lightly outlined in brown, and stronger (perhaps recent) disturbances in a darker brown. Ferrous objects (identifiable as narrow spikes in the graphical plots) are marked in light blue. Pipes (and associated magnetic disturbances) are indicated in blue, and cultivation effects in green.

Survey location

The survey grid was set out and tied to the OS grid using a Trimble differential GPS system. 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 main finding from the survey is a strongly defined parallel pattern of N-S linear markings, as indicated by broken green lines in figure 3. Linear markings of this kind are usually caused by remains of former ridge and furrow cultivation. No earthworks are visible in the field, but cultivation effects often respond more strongly when the ridges are levelled (which increases the depth of fill in the furrows) than when they are intact.

Other disturbances visible in the survey plots include a SW-NE pipe (indicated in blue), and strong magnetic anomalies which could indicate another pipe along the southern boundary. A strip of particularly dense disturbances (outlined in brown) could indicate a

former track along the western field boundary (or perhaps a ditch filled with imported rubble or debris).

Strong isolated magnetic anomalies indicating near-surface pieces of iron are scattered across the site with no particular concentrations to suggest recent activities or disturbances. Smaller background magnetic anomalies (light brown) are likely to be natural, and are also evenly distributed across the site.

We usually indicate features which show archaeological characteristics by red outlines in the interpretation. In most surveys these will include individual magnetic anomalies with rounded profiles (as seen in the graphical plot), which may indicate silted pits or hollows of either archaeological or natural origin. At this site (even though conditions are clearly responsive to magnetic investigation) there is an unusual lack of such features, and we have not therefore placed any findings in this category of the interpretation.

One distinct linear feature (labelled A in figure 3) could in isolation be interpreted as a silted ditch, but it clearly forms part of the overall cultivation pattern, and so must be an unusually well-defined silted furrow. (It has therefore been outlined in green in figure 3.)

Conclusions

Soil conditions at the site appear to be entirely favourable for magnetic investigation, and the survey has detected a clearly defined cultivation pattern. This probably indicates that subsurface remains of ridge and furrow cultivation survive across the field. The survey has otherwise detected pipes and recent disturbances, but there are no other identifiable findings which can be interpreted as representing archaeological features.

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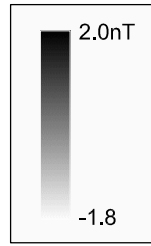
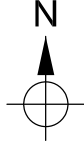
9 October 2013

The fieldwork for this project was done by R. and S. Ainslie.

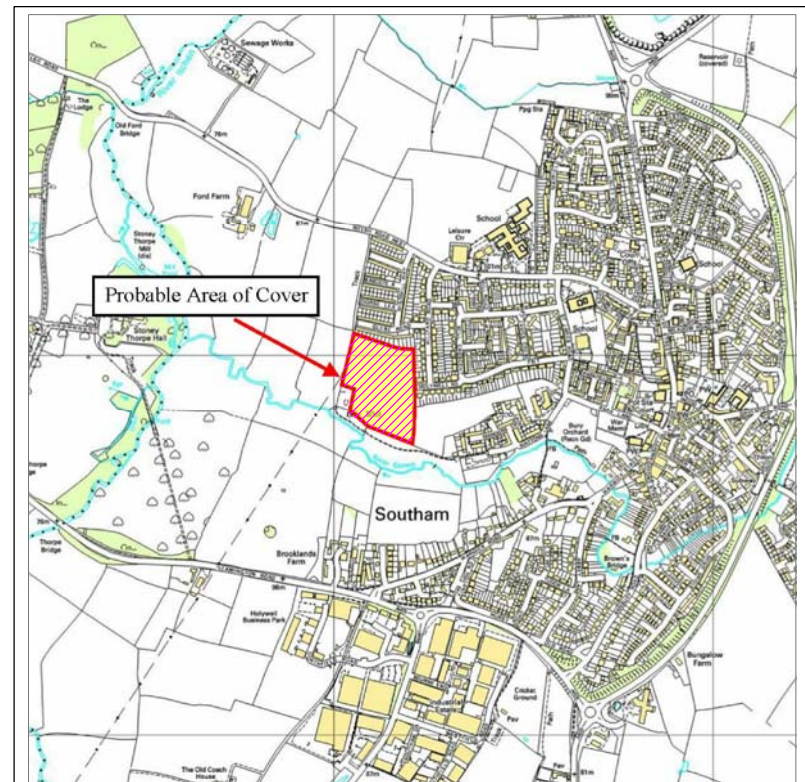
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262000N

441000E



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Survey location

1:20000

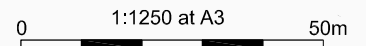
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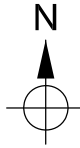
Holy Well







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LAND OFF HOLYWELL ROAD,
SOUTHAM
Geophysical Survey 2013
Figure 1: Magnetometer survey
(grey scale plot)





-  magnetic anomalies (archaeological ?)
-  magnetic disturbances (recent ?)
-  strong individual magnetic anomalies (ferrous ?)
-  small background magnetic anomalies (natural ?)
-  cultivation
-  pipe

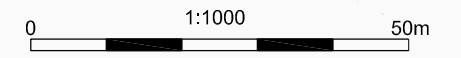
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Issues

Holy Well

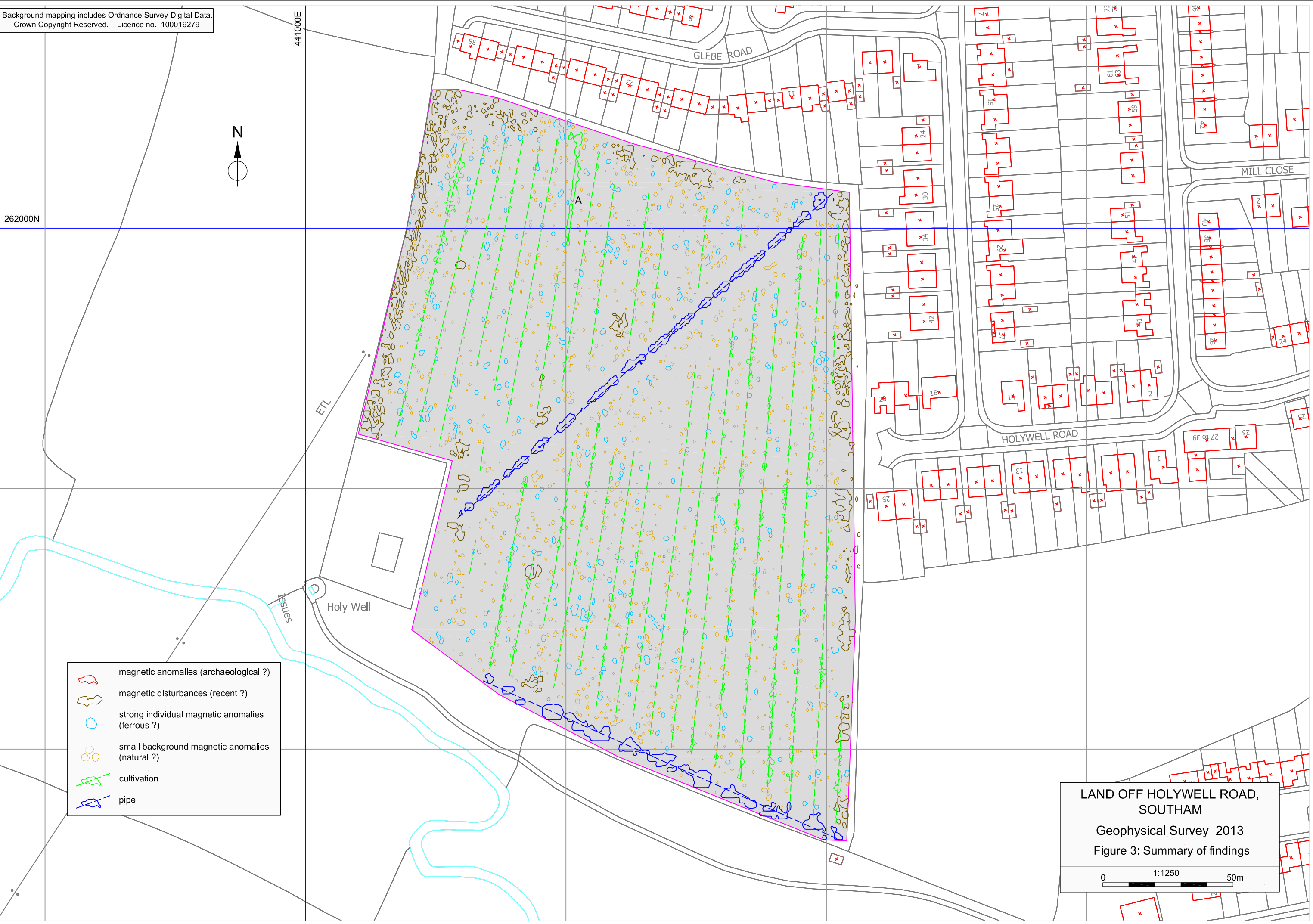
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LAND OFF HOLYWELL ROAD,
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Figure 2: Magnetometer survey
(with interpretation)



441000E

262000N



-  magnetic anomalies (archaeological ?)
-  magnetic disturbances (recent ?)
-  strong individual magnetic anomalies (ferrous ?)
-  small background magnetic anomalies (natural ?)
-  cultivation
-  pipe

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Figure 3: Summary of findings

