

**LAND EAST OF GREET ROAD, WINCHCOMBE,
GLOUCESTERSHIRE**

Report on Archaeological Geophysical Survey 2011

A. Bartlett

Surveyed by:

Bartlett-Clark Consultancy

**25 Estate Yard, Cuckoo Lane,
North Leigh,
Oxfordshire OX29 6PW
01865 200864**

for:

**CgMs Consulting
Burlington House, Lypiatt Road,
Cheltenham GL50 2SY**

Land East of Greet Road, Winchcombe

Report on Archaeological Geophysical Survey, 2011

Summary

This geophysical survey forms part of an archaeological evaluation of a field adjacent to Greet Road, to the north of Winchcombe, Gloucestershire. The survey was undertaken in connection with a proposal to construct a rugby pitch and tennis courts at the site, which is adjacent to the existing school playing field.

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by CgMs Consulting of Cheltenham. Fieldwork for the survey was done on 19 August 2011.

The Site

Some of the following comments are reproduced from the Written Scheme of Investigation for the project, as submitted to Gloucestershire County Council in advance of the survey [1].

The site is approximately 2.8ha in extent. It is located at NGR SP 025296 on the east side of Greet Road, and immediately to the north of the school (as indicated on the location plan inset in figure 1). It was surveyed in full except for an overgrown area at the east of the field (as noted on figure 1).

The site is on a bedrock of Jurassic Lias, and is free of drift deposits. Ground conditions should therefore be favourable for the detection of archaeological features by means of a magnetometer survey, as has been seen in previous surveys in comparable locations.

An earlier magnetometer survey of the field opposite the school on the west side of Greet Road was done in 2009 by Bartlett Clark Consultancy for CgMs [2]. This survey produced a clear plan of a Roman settlement site, which has since been scheduled. The 2009 report mentions a number of previous archaeological findings, mainly of Iron Age and Roman date, in the vicinity of the survey. These relate mainly to excavations in 2007-8 in advance of development to the south of the 2009 site, and to the west of Greet Road. There do not appear to be any previously recorded archaeological findings from the east of Greet Road, or in the immediate vicinity of the present site, other than those seen in the 2009 survey.

The positive findings from the 2009 survey suggest that any comparable features within the present survey area should also be detectable.

Survey procedure

The method used for the geophysical survey was a full recorded magnetometer survey supplemented by background magnetic susceptibility testing.

Magnetometer survey

Readings for the magnetometer survey were collected using Bartington 1m fluxgate magnetometers, and are plotted at 25cm intervals along transects 1m apart. The results of the survey are shown as a grey scale plot at 1:1250 scale in figure 1, and as a graphical (x-y trace) plot in figure 3. [Figure 2 shows the 2009 and 2011 surveys together for comparison.] Figures 1 and 3 display the detected magnetic anomalies in plan and profile respectively. The x-y plots represent the readings after minimal pre-processing operations. These include adjustment for irregularities in line spacing caused by heading errors (direction sensitivity in the instrument zero setting), and truncation of extreme values. The grey scale plots show a processed version after additional low pass filtering to control 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. The readings are also strongly affected by ferrous and other debris of recent origin.

Magnetic susceptibility survey

We usually supplement a magnetometer survey with background magnetic susceptibility readings, which in this case were taken at 30m intervals, using a Bartington MS2 meter with a field detector loop. Susceptibility measurements can provide a broad indication of areas in which archaeological debris, and particularly burnt material associated with past human activity, has become dispersed in the soil. They are also affected by non-archaeological factors, including geology, past and present land use, and modern disturbances, and so provide evidence relating to soil and site conditions which can be of help in interpreting the magnetometer survey. The results are presented as a shaded plot inset in figure 4.

Presentation

An interpretation of the findings is shown superimposed on the graphical plot (figure 3), and is reproduced separately to provide a summary of the findings in figure 4. Features as marked include a small number findings of potential archaeological significance (in red). Broken lines are used to indicate features which may be visible in the grey scale plot, which are too weak or discontinuous to be outlined in detail. Weak magnetic anomalies of probably natural or non-archaeological origin are outlined in light brown.

Probable recent or non-archaeological disturbances are indicated in a darker brown and ferrous debris in blue. Apparent cultivation effects are indicated in green.

Survey location

The survey was located by reference to a temporary site grid which was set out and tied to national grid co-ordinates by means of a differential GPS system. OS co-ordinates of map locations can be read from the AutoCAD 2007 version of the plans which can be supplied with this report. The site plan used as a background to the survey plans is taken from a site survey supplied to us by the client.

Results

The most conspicuous survey finding is a sequence of parallel linear E-W markings, as seen on the grey scale plot (figure 1). The positive (dark) anomalies probably represent the silted fill of furrows resulting from former ridge and furrow cultivation. The clear response to these cultivation effects confirms that the site, as expected, is magnetically responsive and should provide favourable conditions for the selection of archaeological features. This is confirmed also by the relatively high magnetic susceptibility values (which are mainly in a range 20-40 SI). The cultivation effects fade on lower ground at the east of the field (which slopes down gently by some 10m from west to east), where susceptibility values are lower than elsewhere. The linear markings (as shown in green in figure 4) are otherwise more clearly defined than was seen in much of the 2009 survey.

Findings other than the ridge and furrow are difficult to identify with confidence. Clearly defined ditched enclosures extend to the NE corner of the 2009 survey (figure 2), but there is no evidence for comparable features in the adjacent SW corner of the 2011 survey. Features identifiable in the survey plot include a few individual magnetic anomalies which could represent silted pits (as outlined in red). The most distinct of these are perhaps those labelled A and B in figure 4, but they are isolated and do not form groups or clusters which would suggest the presence of a concentration of archaeological features.

A weak linear feature visible in the grey scale plot is marked by a broken red line at C. This could be a small silted ditch intersected by the ridge and furrow, but it is much weaker than ditches seen in 2009. Other findings are limited to weak and ill-defined magnetic anomalies perhaps representing minor (natural ?) variations in topsoil depth (as outlined in light brown), and strong recent disturbances near boundaries (dark brown). Ferrous anomalies (blue) are dispersed across the site, with no concentrations to suggest the site has been subject to any substantial recent disturbance.

Conclusions

Conditions at the site appear to be favourable for a magnetometer survey, but there are few distinct findings other than clearly defined traces of ridge and furrow. This extends across much of the site, but other findings are limited to a few small linear or pit-like magnetic anomalies. These are weak or isolated, and not necessarily of archaeological significance.

Report by:

A. Bartlett BSc MPhil

Bartlett-Clark Consultancy
Specialists in Archaeogeophysics
25 Estate Yard
Cuckoo Lane
North Leigh
Oxfordshire OX29 6PW

01865 200864

email: bcc123@ntlworld.com

13 September 2011

The fieldwork and data processing for this project were done by P. Cottrell and F. Prince.

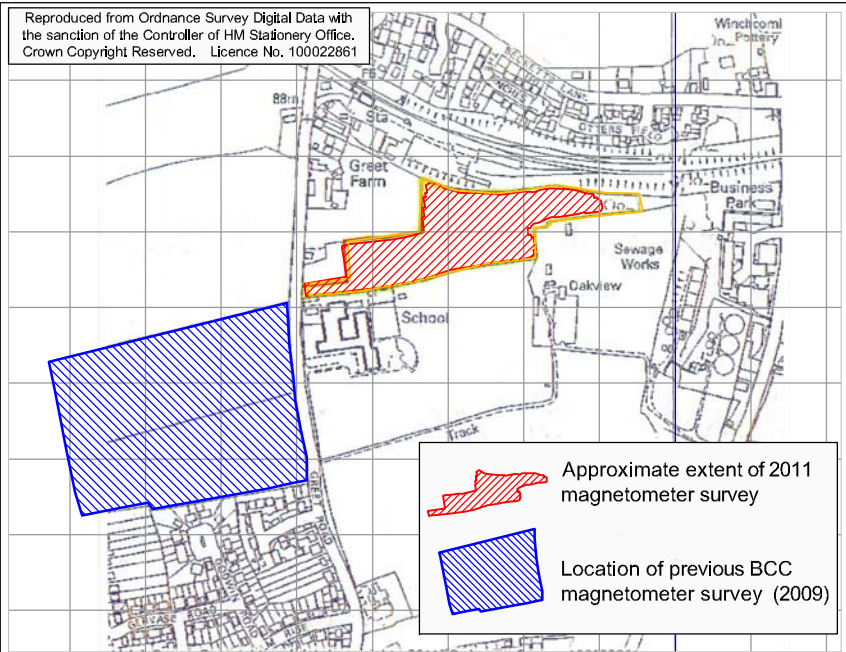
References

[1] Land at Greet Road, Winchcombe, Gloucestershire. Written Scheme of Investigation for Archaeological Geophysical Survey. Specification prepared by A. Bartlett, Bartlett Clark Consultancy, for CgMs Consulting; 18 August 2011.

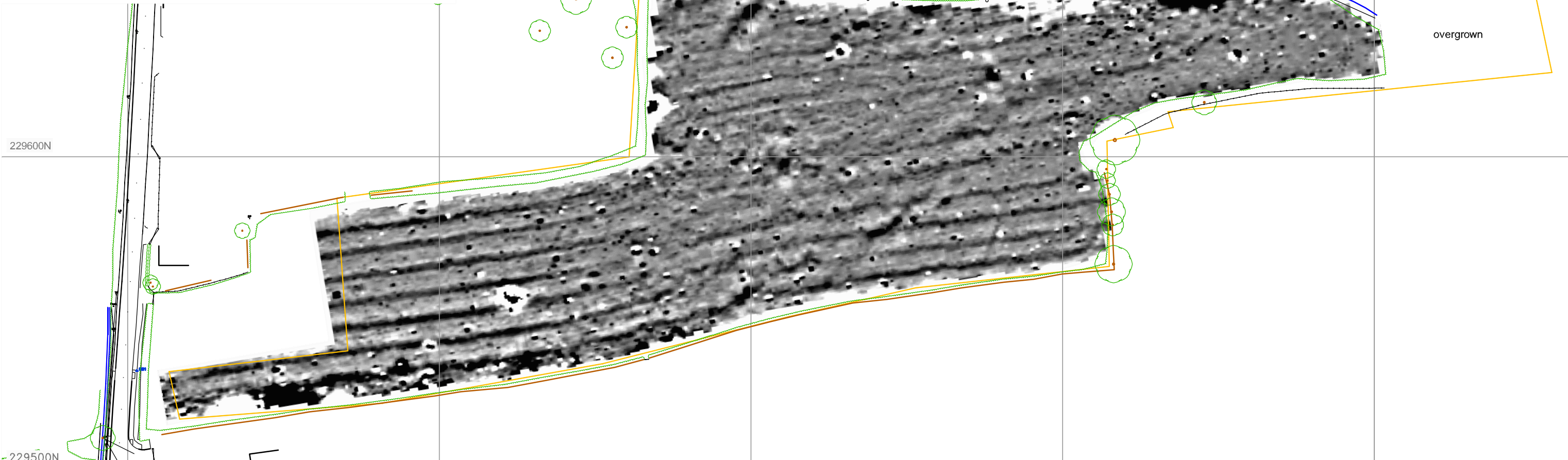
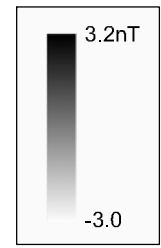
[2] Land at Greet Road, Winchcombe, Gloucestershire. Report on Archaeogeophysical Survey 2009. A. Bartlett, Bartlett Clark Consultancy, for CgMs Consulting; 4 April 2009.

Reproduced from Ordnance Survey Digital Data with the sanction of the Controller of HM Stationery Office. Crown Copyright Reserved. Licence No. 100022861

Background mapping based on digital site plan supplied by client.



Location of magnetometer surveys 1:10000



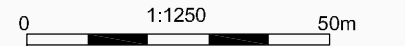
229600N

229500N

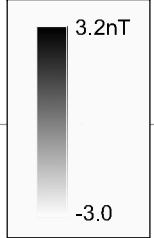
Surveyed by Bartlett - Clark Consultancy (01865 200864) for CgMs Consulting (Cheltenham)

Area proposed for magnetometer survey (2011)

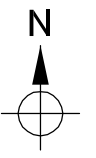
Land off Greet Road, Winchcombe, Gloucestershire
Geophysical Survey 2011
Figure 1: Magnetometer survey (grey scale plot)



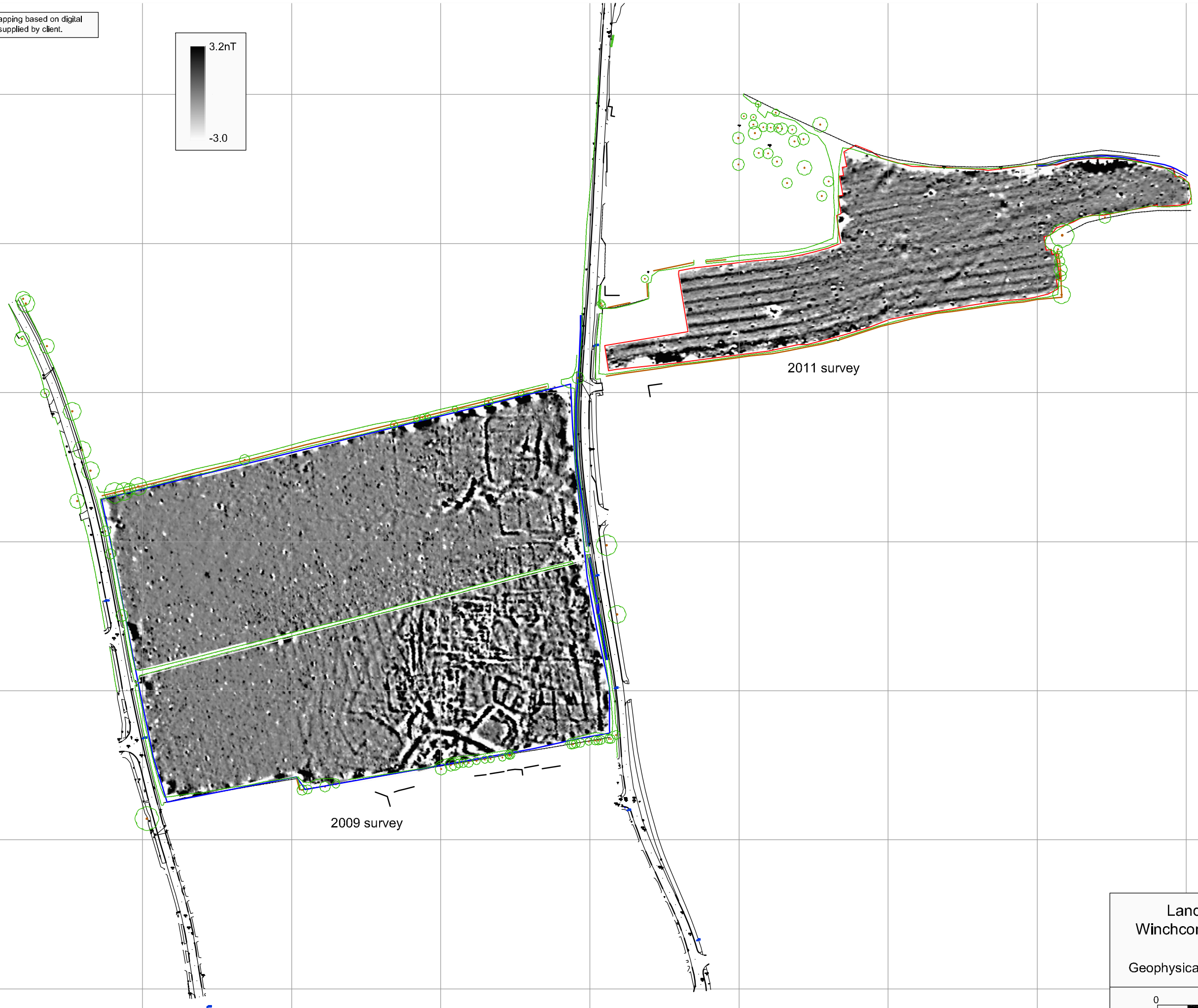
Background mapping based on digital site plan supplied by client.



403000E



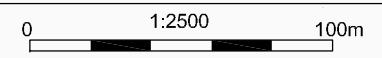
229500N



2011 survey

2009 survey

Land off Greet Road,
Winchcombe, Gloucestershire
Figure 2
Geophysical Surveys 2009 and 2011

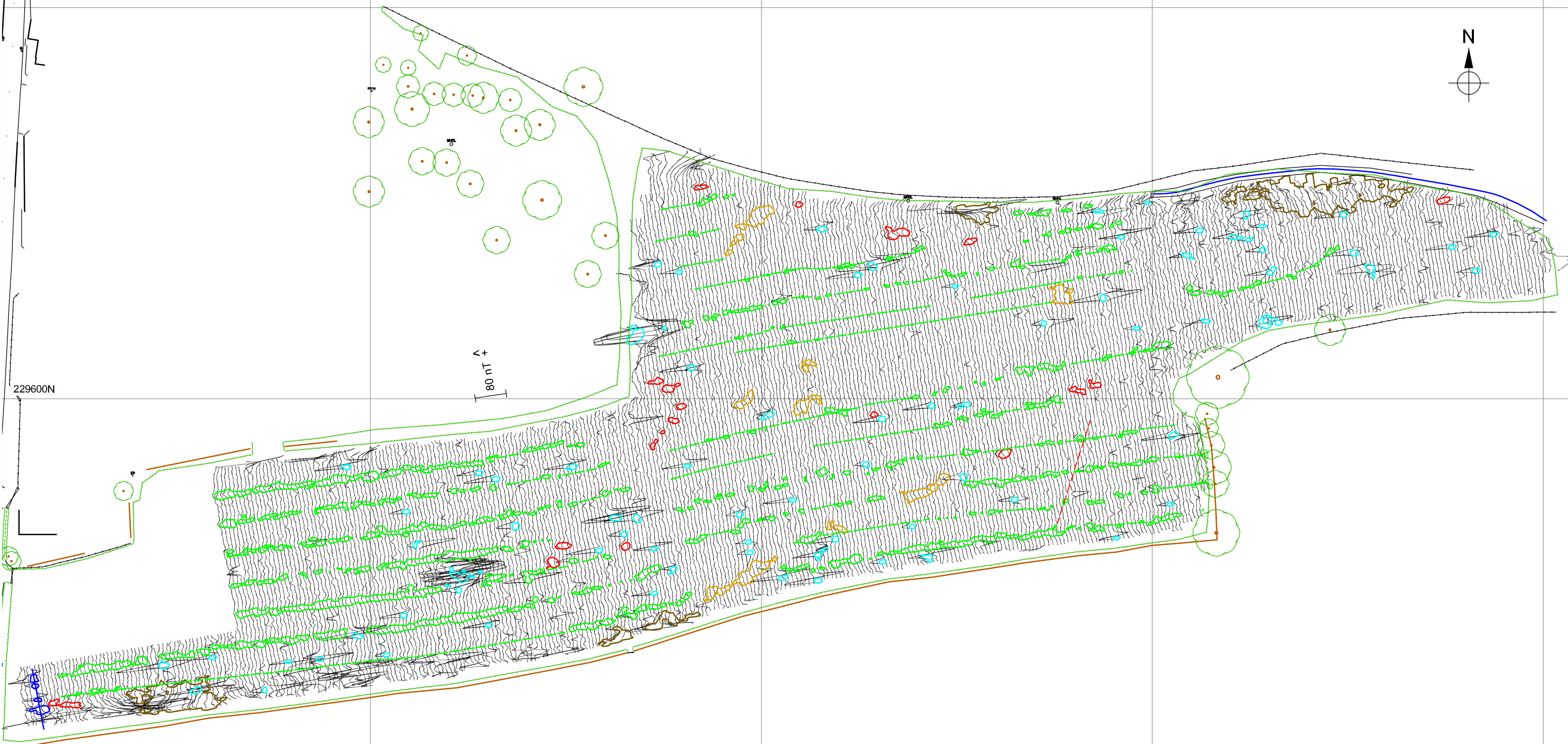
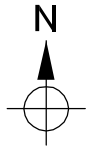








Background mapping based on digital site plan supplied by client.

402700E

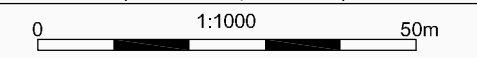
229600N

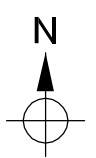
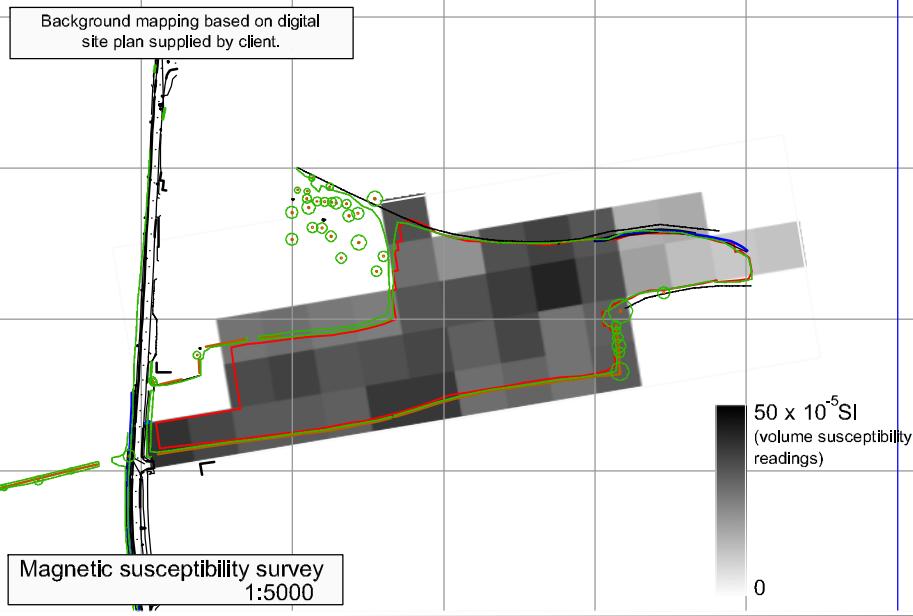
80 nT









-  magnetic anomalies (archaeological ?)
-  magnetic anomalies (non-archaeological / natural?)
-  magnetic anomalies (recent ?)
-  linear magnetic anomalies (cultivation ?)
-  strong magnetic anomalies (ferrous ?)
-  pipe (and associated magnetic disturbance)

Land off Greet Road,
Winchcombe, Gloucestershire
Geophysical Survey 2011
Figure 3: Magnetometer survey
(with interpretation)





-  magnetic anomalies (archaeological ?)
-  magnetic anomalies (non-archaeological / natural?)
-  magnetic anomalies (recent ?)
-  linear magnetic anomalies (cultivation ?)
-  strong magnetic anomalies (ferrous ?)
-  pipe (and associated magnetic disturbance)

Land off Greet Road,
Winchcombe, Gloucestershire
Geophysical Survey 2011
Figure 4: Summary of findings