

**LAND OFF BATH ROAD,
CHURCH STREET, WARMINSTER**

Report on Archaeological Geophysical Survey 2013

Survey commissioned by:

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

Report by:

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2 August 2013

Land off Bath Road, Church Street, Warminster Report on Archaeological Geophysical Survey, 2013

Introduction

This geophysical survey has been undertaken as part of an archaeological field evaluation of a proposed development site at Warminster, Wiltshire. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, on behalf CgMs Consulting Ltd of Cheltenham.

Fieldwork for the survey was completed on 18-19 May 2013. Plans showing the survey data have previously been submitted to CgMs, and are now included for the record 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 4.2ha in area and is centred at National Grid Reference 386900, 145650 (as outlined in red on the enclosed plans). The site lies immediately to the north west of Warminster and comprises three pasture fields bounded by playing fields and The Were to the north, Bath Road, the church of St Denys and its associated graveyard and car park and housing to the south. There is residential housing situated off Rectory Close to the east and housing to the west. Ground level within the study site is c. 115m AOD at the Bath Road, and falls gently northwards from the Bath Road/Church Street to The Were.

The site is on Cretaceous bedrock near to the boundary of the Grey Chalk and Upper Greensand formations (or more specifically comprising sandstone of the Melbury Sandstone Member, as noted in the DBA). There may also be alluvial deposits close to The Were.

These conditions should not present any unusual difficulties for a geophysical survey. Conditions on chalk are usually favourable for magnetic investigation, but soils may be rather less responsive on Greensand.

Archaeological background

No previous archaeological fieldwork has been carried within the study site itself, although numerous field investigations have been undertaken within Warminster and the wider study area.

The DBA notes the presence of undated cropmarks and earthwork features within the study site and the wider study area. Features identified from aerial photographs and site inspections include settlement type earthworks situated to either side of St Denys church comprising a substantial bank and ditch and building platform with banks and ditches adjoining (HER MWI976), lying within the study site.

Other archaeological sites and findings recorded in the vicinity include ridge and furrow cultivation remains (HER MWI1006) south of Arn Hill Down golf course, c.480m to the north-east of the study site; cropmark features probably relating to former ridge and furrow cultivation (HER MWI1016), c.280 m to the north of the study site; a rectangular cropmark enclosure (HER MWI1004) of uncertain but possible Prehistoric date, c. 390m to the north-west of the study site. There are also other more doubtful cropmark features (perhaps relating to former sports pitches and allotments) within 2-300m of the site.

Earthwork features identified within the study site are discernible (on both vertical and oblique aerial photographs), and have been plotted (as shown on figure 9 in DBA). Subsequent site inspection has confirmed the presence of upstanding earthwork remains, these being observed as a low platform to the east of St Denys church, a pronounced bank running north from the extended church graveyard, and a further low platform adjacent to the north-western corner of the church graveyard.

Comparison of aerial photographs from the 1970s and 1990s indicates that some partial removal of former earthwork remains present to the north of the study site appears to have occurred in conjunction with works undertaken on The Were.

Site inspection confirmed the presence of a number of earthwork features as identified from cropmarks. Of these, a low raised platform area was noted at the south-west corner of the easternmost field and a pronounced bank running approximately north-south and a further possible partial raised platform area in the central field. Other banks and ditches noted on the HER within the easternmost field of the study site were not readily visible.

Individual earthwork banks or platforms will not necessarily respond well to a magnetometer survey (although ridge and furrow is often detected), but disturbances associated with occupation activity at the site will often be detectable.

Survey Procedure

The method used for the geophysical survey was a recorded magnetometer survey using Bartington 1m fluxgate magnetometers. Readings are plotted at 25cm intervals along transects 1m apart. The results of the survey are shown as a grey scale plot at 1:2000 scale in

figure 1, and as a graphical (x-y trace) plot at 1:1250 scale in figures 2-3. Comparison of these alternative presentations allows the detected magnetic anomalies to be examined 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.

Presentation

An interpretation of the findings is shown superimposed (for comparison) on the graphical plot (figures 2-3), and is reproduced separately to provide a summary of the findings in figure 4. Magnetic anomalies which perhaps show some of the characteristics to be expected from potential archaeological features are outlined in red. A number of strong ditch-like features (which in this case appear unlikely to be of archaeological origin) are shown in orange. 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 individual items of ferrous debris in blue.

Survey location

The survey grid was set out and tied to the OS grid using a 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 fields within the survey area are numbered (1-3) from west to east for reference in this report.

The survey has detected a considerable amount of magnetic activity, but it is probable that much of it relates to recent disturbances rather than archaeological findings.

Magnetic susceptibility readings taken at the site suggest the soil should be sufficiently, but not strongly, responsive to magnetic investigation. Relatively low readings from fields 2 and

3 (10.6 and 16.5×10^{-5} SI/kg) could indicate a site where settlement or industrial remains should respond, but silted ditches or earthwork features not directly associated with such features may not be reliably detectable. The unusual strength of many of the magnetic anomalies identified by the survey therefore suggests they are not necessarily of archaeological origin.

Findings visible in the survey consist mainly of strong linear disturbances (indicated in orange in figure 4), and groups of strong magnetic anomalies (brown). These are seen against a less disturbed background containing small (and perhaps partly natural) magnetic anomalies, as outlined in light brown. The location and plan of some of the stronger disturbances appears to relate in part to the earthwork features visible in aerial photographs and on the ground. (Earthworks reproduced from figure 9 in the DBA are indicated by blue lines in figure 4.)

It is probable that the linear magnetic anomalies represent land drains of varying types, rather than uniformly silted ditches of archaeological origin. Some of them (A, B, C as labelled on figure 4) are of an intermittent or fragmented appearance, which is a characteristic of clay land drains. Others (e.g. D in field 1 and E in field 2) are much stronger, and could represent drains set in ditches which are additionally backfilled with rubble. These features are most numerous in field 1, which is partly waterlogged and overgrown with dense bog grass. A band of highly disturbed readings (around F) in field 1 is contained approximately by two of the earthwork features (blue). This suggests the earthwork is perhaps an area of infilled land where imported rubble or other debris has been spread to improve the drainage.

The same could apply in field 2 where the disturbances at G are located adjacent to an earthwork platform. The disturbed area at H is in the lower northern part of field 2, and so could be an infilled pit or pond fed by the drain or former ditch at E.

Magnetic disturbances in field 3 are less concentrated than in fields 1 and 2, but it is again probable that the stronger magnetic anomalies are of recent origin. There remains a slight possibility that some of the less pronounced magnetic anomalies (as at J in field 3 and, less probably, K in field 2) could indicate minor disturbances of the kind which might indicate occupation debris within a medieval house platform, but there is no evidence from the survey for associated features, enclosures or structures which would support such an interpretation.

Conclusions

The magnetic disturbances detected by the survey appear to relate mainly to (probably modern) reclamation and drainage works, rather than to archaeological findings, but the possibility that archaeological features could also be present cannot be entirely excluded on the survey evidence alone. Magnetic debris at an ancient industrial site (pottery or metal working) could give rise to magnetic disturbances of the strength seen in fields 1 and 2, but it is unlikely there would be no reports of surface finds of pottery or slag if such a site were present. A faint possibility remains that some of the weaker magnetic anomalies could indicate occupation debris, but it remains likely (given the proximity of other disturbances) that the magnetic anomalies noted in fields 2 and 3 are of non-archaeological origin.

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2 August 2013

The fieldwork for the survey was done by R. and S. Ainslie.

References

- [1] Archaeological Desk Based Assessment; Land off Bath Road, Church Street, Warminster. S. Weaver, CgMs. April 2013 (CgMs ref: SW/15294).
- [2] Land off Bath Road, Church Street, Warminster: Method Statement for Archaeological Geophysical Survey. Document submitted by Bartlett Clark Consultancy to CgMs; 15 May 2013.

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H2

H1


Field 1

Field 2

Field 3

Figure 2

Figure 3

 Area proposed for magnetometer survey






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Geophysical Survey 2013
Figure 1: Magnetometer survey
(grey scale plot)

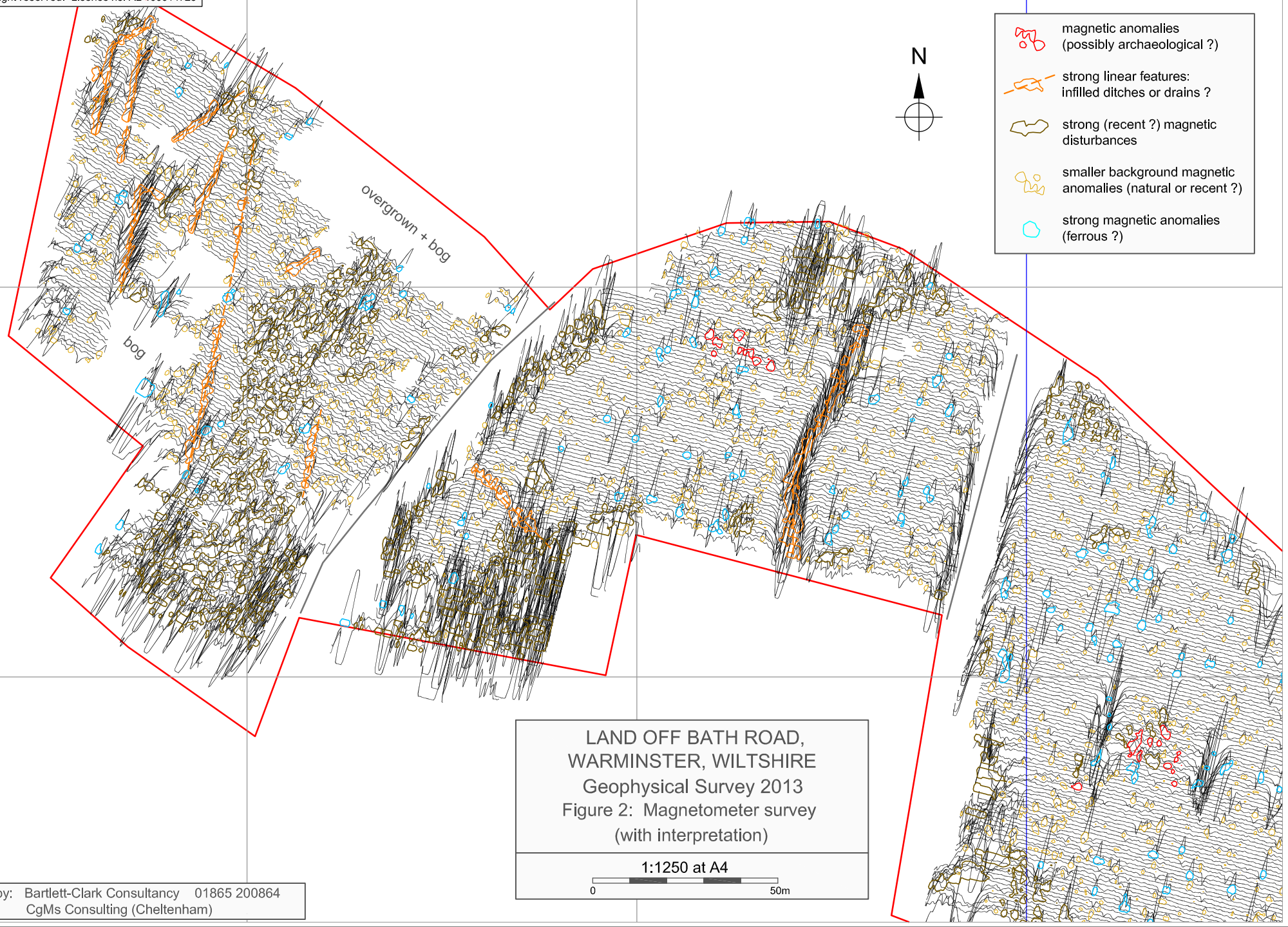
1:2000 at A4
0 100m

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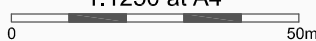


-  magnetic anomalies (possibly archaeological ?)
-  strong linear features: infilled ditches or drains ?
-  strong (recent ?) magnetic disturbances
-  smaller background magnetic anomalies (natural or recent ?)
-  strong magnetic anomalies (ferrous ?)



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Figure 2: Magnetometer survey
(with interpretation)

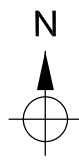
1:1250 at A4



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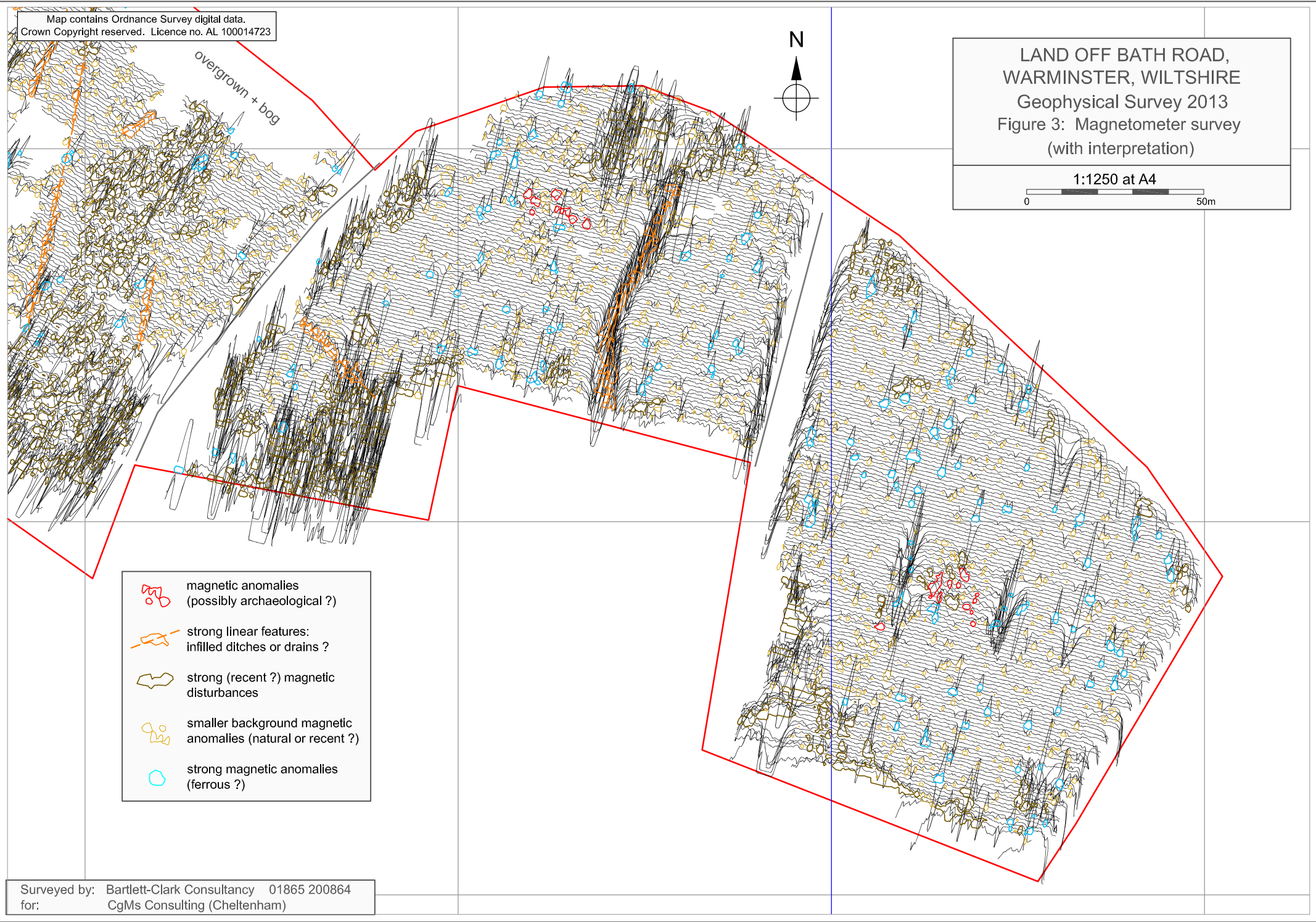
overgrown + bog








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Figure 3: Magnetometer survey
(with interpretation)

1:1250 at A4

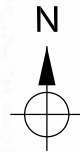
0 50m









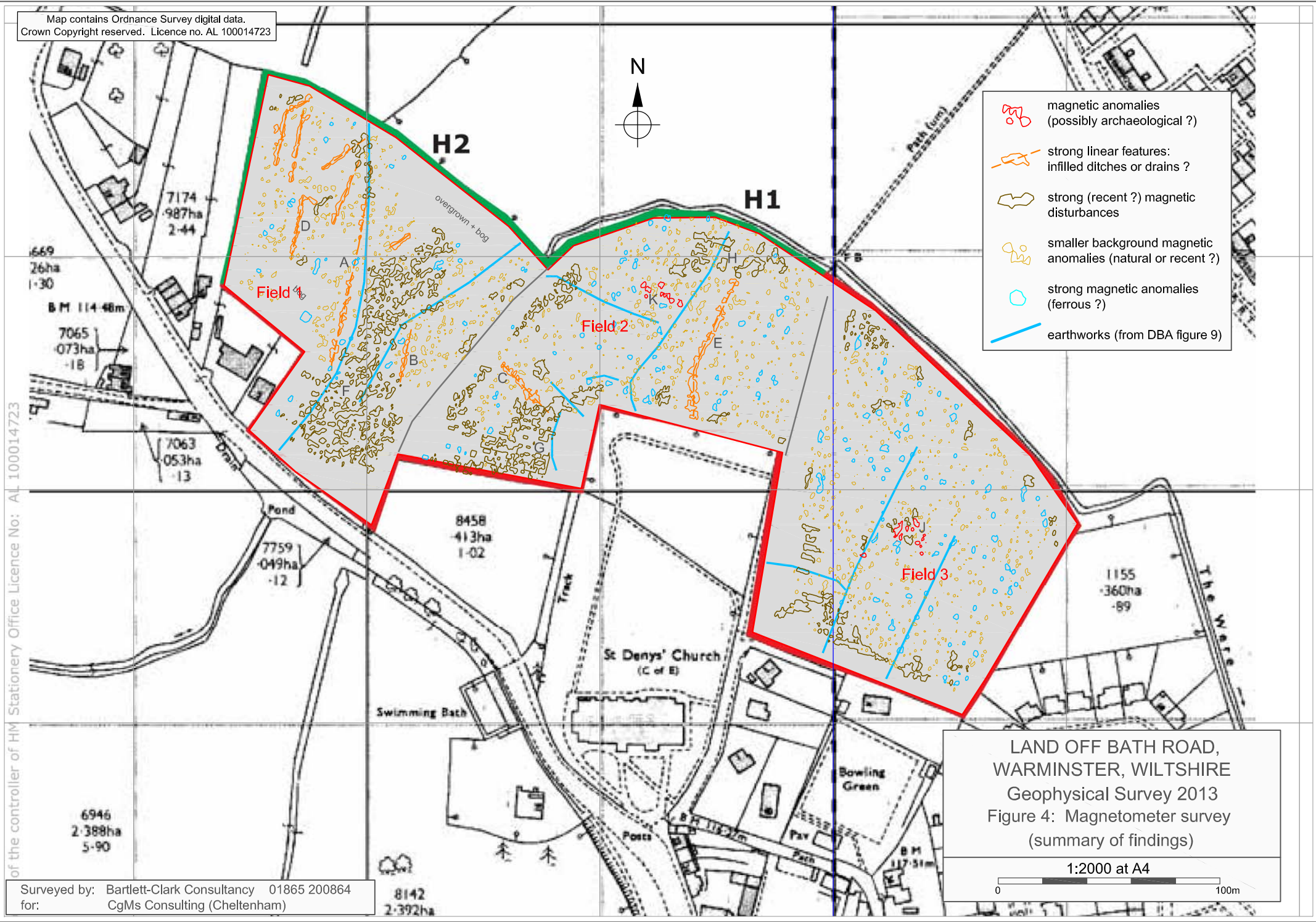
-  magnetic anomalies (possibly archaeological ?)
-  strong linear features: infilled ditches or drains ?
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-  magnetic anomalies (possibly archaeological ?)
-  strong linear features: infilled ditches or drains ?
-  strong (recent ?) magnetic disturbances
-  smaller background magnetic anomalies (natural or recent ?)
-  strong magnetic anomalies (ferrous ?)
-  earthworks (from DBA figure 9)



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Figure 4: Magnetometer survey
(summary of findings)

1:2000 at A4

