

**LAND NEAR HONEY HALL, CARDITCH DROVE
CONGRESBURY, NORTH SOMERSET**

Report on Archaeological Geophysical Survey 2014

Survey commissioned by:

**Avon Archaeology Limited
Avondale Business Centre
Woodland Way
Kingswood
Bristol BS15 1AW**

on behalf of:

TGC Renewables

Report by:

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3 June 2014

Land near Honey Hall, Carditch Drove, Congresbury, Somerset Report on Archaeological Geophysical Survey, 2014

Introduction

This geophysical survey has been undertaken as part of an archaeological field evaluation of a proposed solar power site in Somerset. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Avon Archaeology Limited on behalf of TGC Renewables.

Fieldwork for the survey was completed on 12-15 May 2014. The survey has detected various magnetic disturbances, a number of which clearly relate to former field boundaries and drains. There are also strong disturbances on the line of a former ditch or palaeochannel. A few irregular linear markings could perhaps be of archaeological relevance, but the evidence is uncertain. There is also a scatter of small magnetic anomalies, one possible explanation for which could be a spread of industrial debris in one of the fields.

The Site

The site is described in an Archaeological Desk Based Assessment (DBA) which has been prepared by Avon Archaeology Limited [1]. This report includes a detailed review of archaeological findings and previous investigations in the vicinity of the evaluation site. The following brief notes are based in part on information from the DBA.

Topography and geology

The site is an area of farmland extending across six fields as indicated by coloured shading on the location plan inset in figure 1. It is centred approximately at NGR ST 426615, and is described as located immediately to the west of the small hamlet of Honey Hall at the southern edge of Congresbury parish, and 2.3km SW of Congresbury. The total extent of the evaluation area (as indicated by a red outline in figures 1-2) is c. 17.5ha.

The site is bounded on the south by the Churchill Rhyne, which forms the Churchill – Congresbury parish boundary, and on the west by the former Cheddar Valley Railway. A public footpath which crosses the site from SW to NE is described as the successor to a more substantial trackway indicated on historic maps.

The site is located in the North Somerset Levels at an elevation not exceeding 4m AOD, although with higher ground nearby to the south and east. The underlying solid geology is Triassic Mercia Mudstone, but this is masked by a considerable depth of estuarine alluvium.

It is mentioned in the DBA that studies elsewhere in the Somerset Levels have shown that an upper alluvial formation of 4-5m depth may seal archaeological sites and landscapes, and also overlies a band of peat, and a lower alluvial formation of up to 17m in depth. A magnetometer survey in these conditions will test only for archaeological findings or deposits

within the upper part of the alluvial formation (perhaps to a depth of c. 1m). Archaeological features at greater depth are likely to be masked by the alluvium.

Magnetic susceptibility samples taken in each of the fields at the time of the survey gave relatively low readings ($8-10 \times 10^{-8}$ SI/kg), as is typically the case on clay or alluvial soils. These readings do not preclude the magnetic detection of archaeological features, but it may be the case that earthwork features containing a clean silted fill will not respond reliably to the survey. An anomalous susceptibility reading (43 SI) was obtained from one of the fields, as noted below.

Archaeological background

It is mentioned in the DBA that settlement sites are likely to be found on slightly higher ground where solid bedrock outcrops at the edge of the fen (as is the case at Honey Hall, which is near to but outside the present site). Much of the upper alluvial formation is thought to represent a post-Roman marine incursion, and archaeological sites of earlier date might therefore be buried at a depth inaccessible to magnetometer surveying.

Potentially detectable features could include kiln sites of Romano-British date, which have been found in Congresbury. Extensive geophysical surveys (by the community archaeology group YCCART) have identified additional potential kiln sites in the vicinity of Congresbury, and also around Iwood to the SE of Congresbury.

A sequence of historic maps from the 18th to 20th C is reproduced in the DBA. These include the 1902 OS map inset in figure 6 of this report. The maps show a number of former field boundaries removed since the 1980s, but which remain identifiable as disturbances in the survey plots. The maps also suggest the modern footpath across the site follows the line of a palaeochannel silted or backfilled by the early 18th C, and defined by boundaries visible in successive maps.

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 figures 1-2, and as a graphical (x-y trace) plot at 1:1250 scale in figures 3-5. 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 weak low pass filtering to adjust 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 plots (figures 3-5), and is reproduced separately to provide a summary of the findings in figure 6. Magnetic anomalies which perhaps show some of the characteristics to be expected from potential archaeological features are outlined in red. Weak magnetic anomalies of probably natural or non-archaeological origin are outlined in a light green. Probable recent or non-archaeological disturbances are indicated in grey, and individual items of ferrous debris in blue. Pipes and probable land drains are also indicated.

Survey location

The survey grid was set out and tied to the OS grid using a differential GPS system (with VRS correction). 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

Fields within the evaluation area have been numbered arbitrarily (1-6) for reference on the summary plan (figure 6). We comment on various categories of findings in turn.

Former field boundaries

The survey has detected strong linear disturbances which clearly correspond to field boundaries visible on the 1902 and other maps. These include features detected at A (as labelled on figure 6) in field 1; B and C in field 3; D - E in fields 2 and 4, and F in field 5. G and H in field 2 do not appear on the maps, but are visible in a 1946 aerial photograph.

These features are marked in blue in the interpretation, and are labelled as possible pipes because they contain sequences of strong magnetic anomalies typically caused by sections of iron pipe. It is possible the ditches also contain rubble or similar material, but the regularity in most cases of the magnetic response (as seen in the grey scale plot) suggests that pipes are present within the fill.

Land drains

The response from the linear feature H in field 2 is weaker and less regular than for A-G (as noted above). It is likely that H represents a ditch or trench containing a clay land drain, perhaps also with other fill. Similar intermittent linear responses (indicating magnetic anomalies representing sections of clay drain pipe) are indicated by broken (blue/purple) lines at various locations across the survey. These sometimes form characteristic linked or branching patterns, as in fields 2 and 5.

Palaeochannel

The pipe-like linear disturbance D-E lies within a strip of strong magnetic activity extending across fields 2 and 4 (as seen particularly in the xy plot: figure 4). These disturbances lie within former boundaries as indicated on the 1902 (and other) maps, and correspond to the possible palaeochannel described in the DBA. It is notable that there is such a strong magnetic response from a channel thought to have been infilled before the 18th C, given that the strength of magnetic activity is similar to a modern landfill site, or could indicate a spread of brick rubble or similar debris across the site. This perhaps suggests there has been further infilling along the track, perhaps as a consequence of subsidence or settlement along the former channel.

Possible linear features

There are linear features which could perhaps indicate ditches or enclosures at J in field 4, and K, L in field 6. They are, however, broad and irregular in plan, and not very clearly distinguishable from the rather more irregular disturbances (marked in light green) which are seen to the west of the site at M in field 3 (and elsewhere). Linear and other magnetic anomalies similar to those around M are often seen in surveys of wetland or alluvial sites in the Somerset levels and elsewhere, and they are much too widespread to be archaeological features. They are a characteristic of wetland soils, and so must represent natural variations in the depth or composition of silt deposits. It remains slightly uncertain, therefore, whether the narrower and less irregular features at J, K, L are also natural, or whether they could represent archaeological features, perhaps covered by a layer of alluvium.

Other linear markings in field 5 could be cultivation effects (as marked in green). These are weaker and more continuous than the probable land drains marked elsewhere in the survey.

Possible industrial (?) debris

Numerous small magnetic anomalies (as outlined in light brown) were detected in a band across field 5, but not in other fields within the survey area. Disturbances of this kind often represent an outcrop of gravel soil (containing naturally magnetic stones), but that might not be the case on the alluvial soils present here. The disturbances could alternatively represent a scatter of modern rubble or debris, but the responses are weaker than from the various infilled ditches seen elsewhere in the survey. One relevant factor could be that the soil sample collected here for susceptibility testing was very blackened, and gave an anomalously high reading in relation to the other fields. This could indicate the presence in field 5 of burnt material or debris of a kind which might be expected near a kiln, and so could suggest industrial activity as has been identified previously around Congresbury.

The evidence here is not entirely conclusive. Pottery (or salt making) sites may contain strong magnetic disturbances representing waster heaps (or briquetage), but the magnetic activity seen here remains relatively sparse. There are also no strong single magnetic anomalies of a kind which could represent intact kiln bases. The strongest candidates are perhaps the magnetic anomalies outlined (in brown) and labelled N and O.

Conclusions

The survey has detected strong magnetic disturbances corresponding to former field boundaries. These appear in several cases to be marked by infilled ditches containing iron pipes with other debris. There also appears to have been relatively modern infilling on the line of the possible palaeochannel which corresponds to the line of the footpath across the centre of the site.

Other findings (in addition to land drains) include possible ill-defined and curving linear features (J, K, L). These are not conclusively distinguishable from other irregular linear features (as at M) which appear to be natural.

A spread of small magnetic anomalies in field 5 could indicate a scatter of industrial debris in the vicinity of a kiln or hearth, but the evidence for this is less than fully conclusive.

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3 June 2014

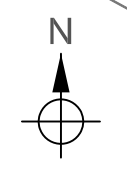
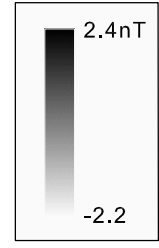
The fieldwork for the survey was done by C. Oatley and P. Heykoop.

Reference

- [1] *Land near Honey Hall, Carditch Drove, Congresbury, North Somerset: Archaeological Desk-Based Assessment*. N. Corcos. Avon Archaeology Ltd, Bristol: March 2014

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3



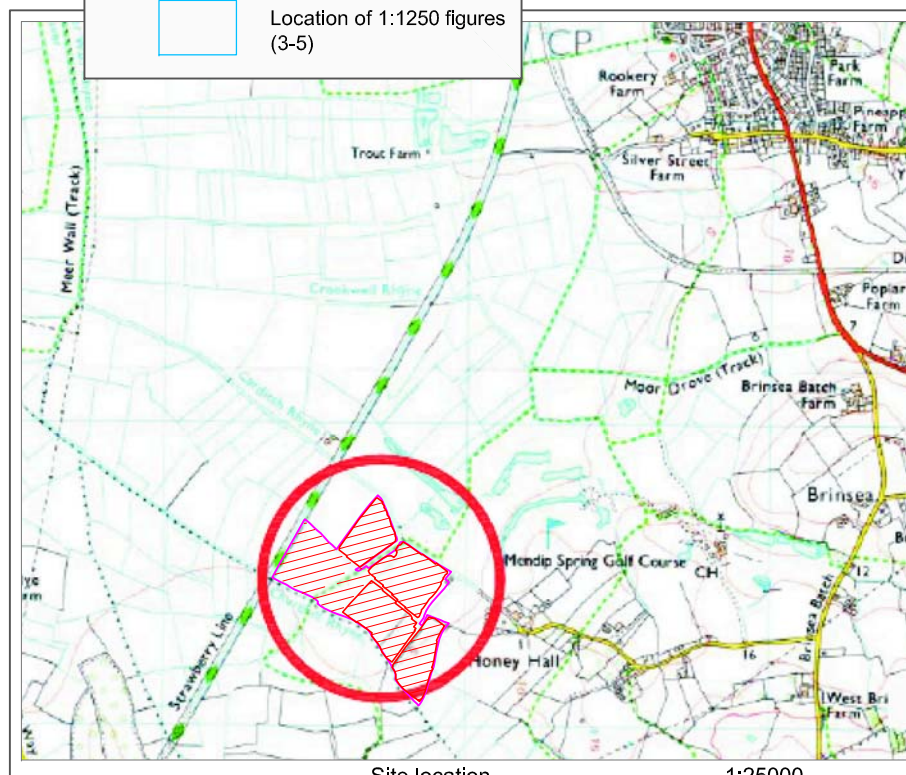
4

5

Evaluation area

Survey coverage

Location of 1:1250 figures (3-5)

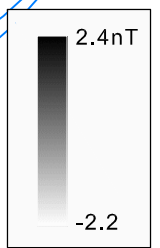
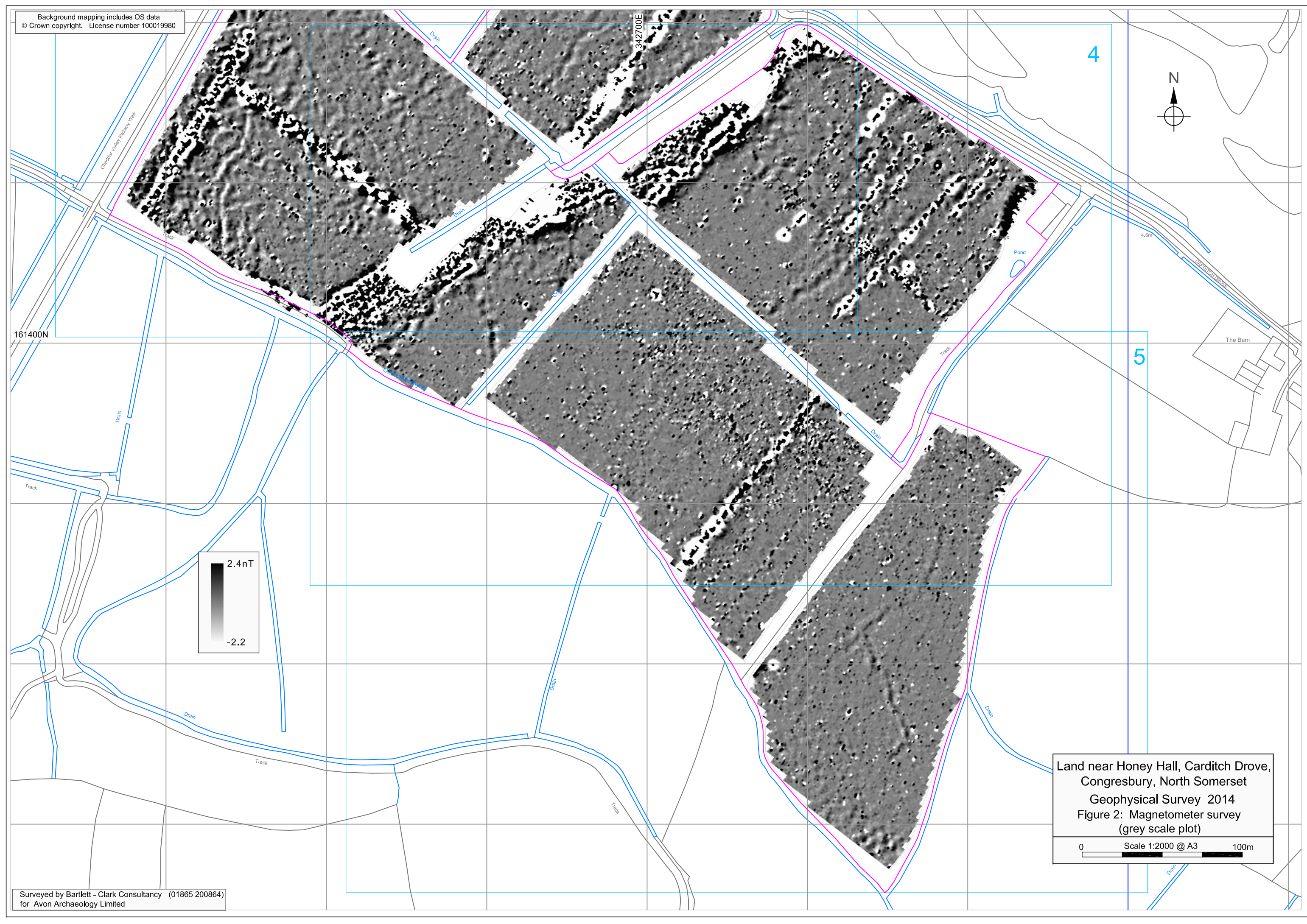


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Figure 1: Magnetometer survey
(grey scale plot)

0 Scale 1:2000 @ A3 100m










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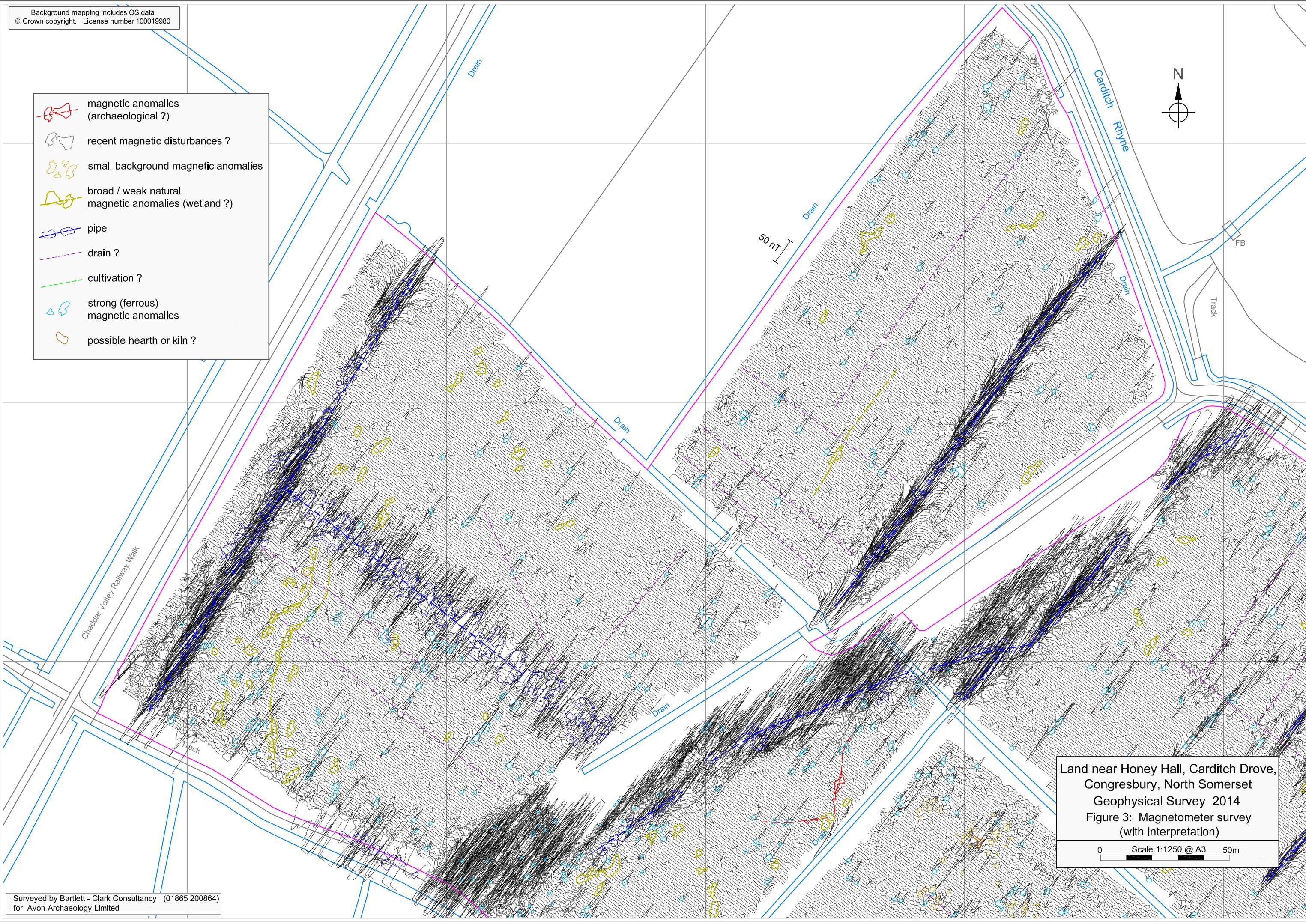


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Figure 2: Magnetometer survey
(grey scale plot)

0 Scale 1:2000 @ A3 100m

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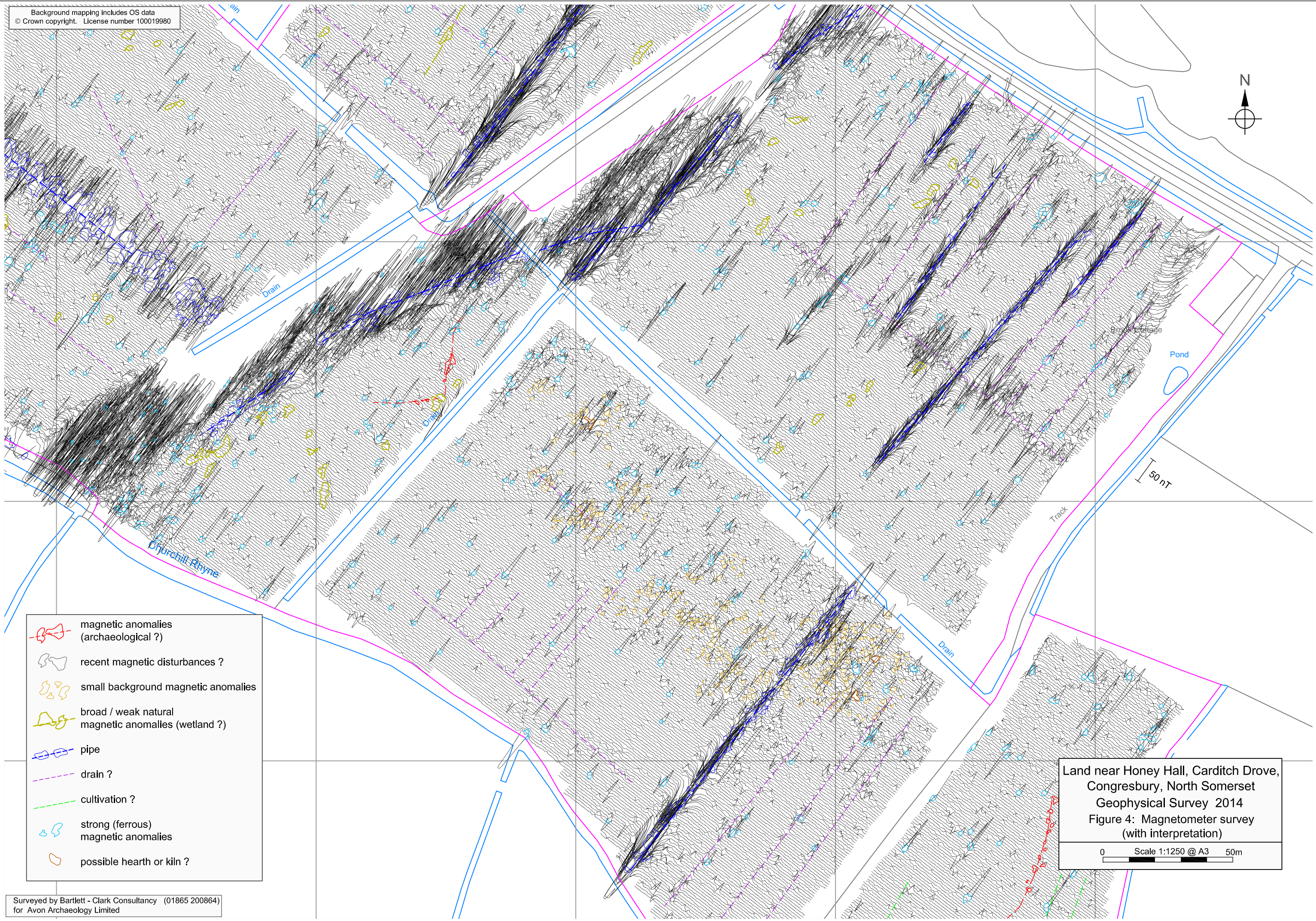
-  magnetic anomalies (archaeological ?)
-  recent magnetic disturbances ?
-  small background magnetic anomalies
-  broad / weak natural magnetic anomalies (wetland ?)
-  pipe
-  drain ?
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  possible hearth or kiln ?







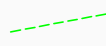




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Figure 3: Magnetometer survey
(with interpretation)

0 Scale 1:1250 @ A3 50m

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-  magnetic anomalies (archaeological ?)
-  recent magnetic disturbances ?
-  small background magnetic anomalies
-  broad / weak natural magnetic anomalies (wetland ?)
-  pipe
-  drain ?
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  possible hearth or kiln ?

Land near Honey Hall, Carditch Drove,
Congresbury, North Somerset
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Figure 4: Magnetometer survey
(with interpretation)

0 Scale 1:1250 @ A3 50m

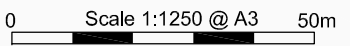
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-  magnetic anomalies (archaeological ?)
-  recent magnetic disturbances ?
-  small background magnetic anomalies
-  broad / weak natural magnetic anomalies (wetland ?)
-  pipe
-  drain ?
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  possible hearth or kiln ?

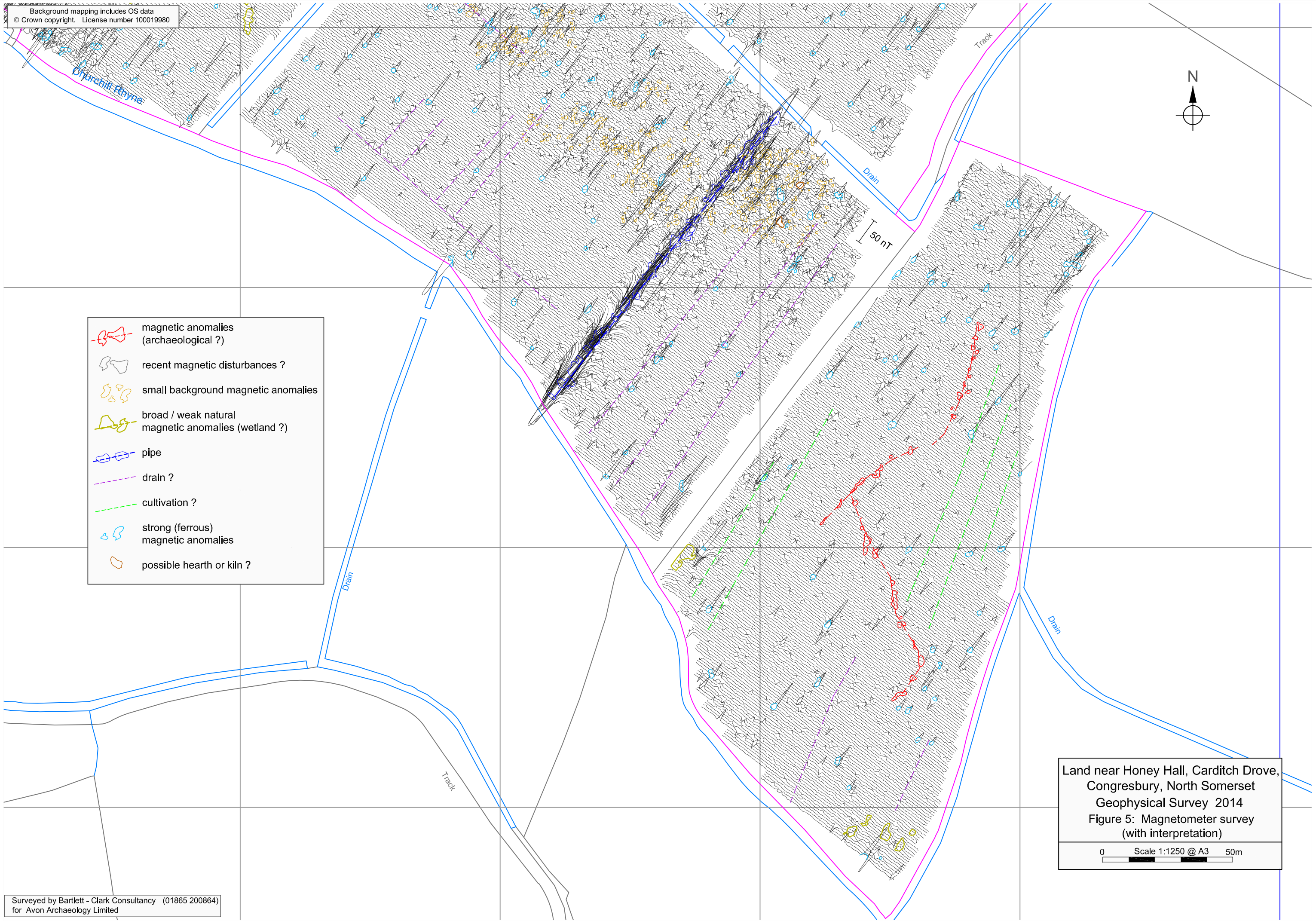
50 nT

Land near Honey Hall, Carditch Drove,
Congresbury, North Somerset
Geophysical Survey 2014
Figure 5: Magnetometer survey
(with interpretation)

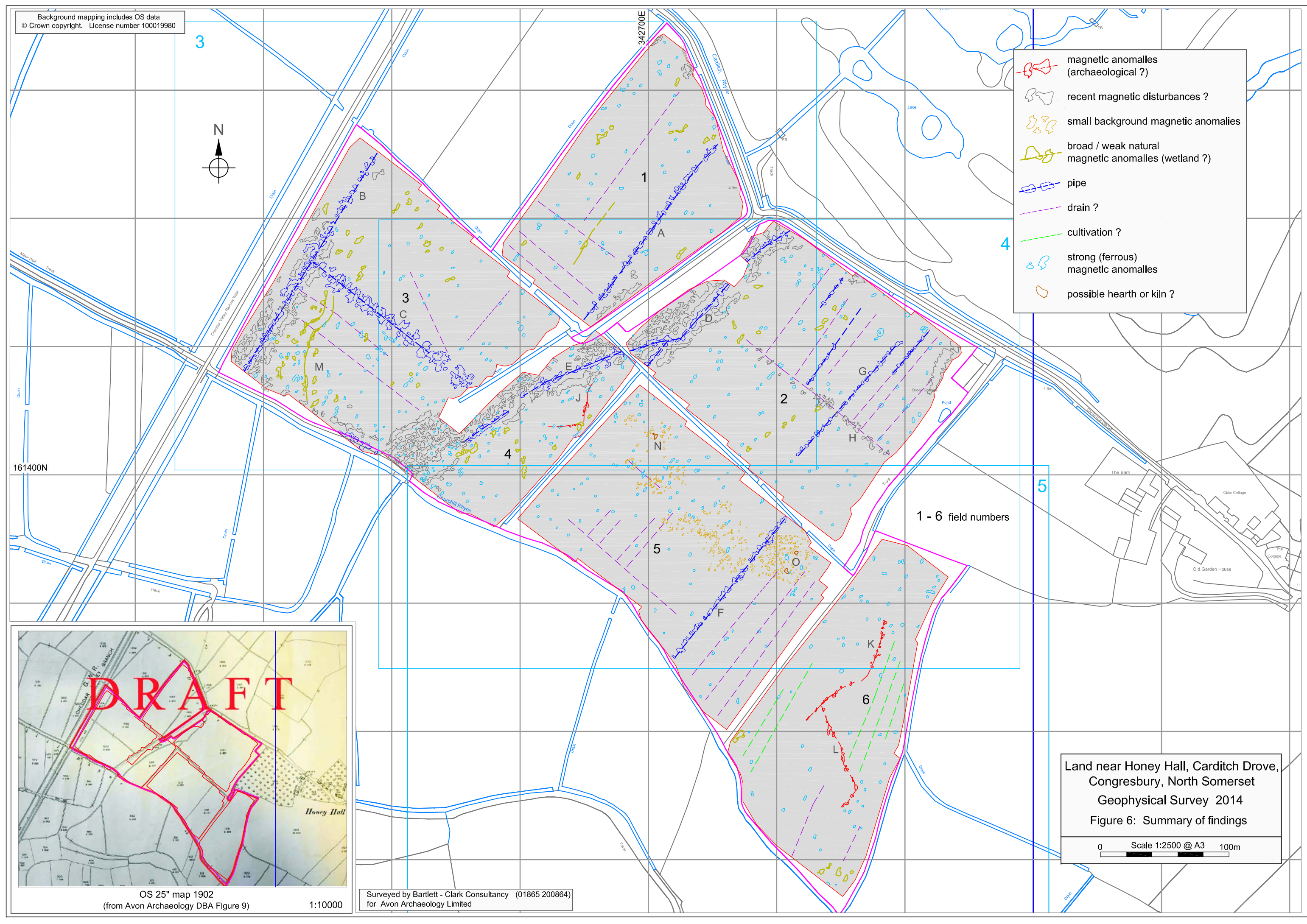


0 Scale 1:1250 @ A3 50m

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- magnetic anomalies (archaeological ?)
- recent magnetic disturbances ?
- small background magnetic anomalies
- broad / weak natural magnetic anomalies (wetland ?)
- pipe
- drain ?
- cultivation ?
- strong (ferrous) magnetic anomalies
- possible hearth or kiln ?



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 Figure 6: Summary of findings

0 Scale 1:2500 @ A3 100m

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OS 25" map 1902
 (from Avon Archaeology DBA Figure 9)
 1:10000