

CRWW/01



LAND EAST OF TROWBRIDGE ROAD, WESTBURY, WILTSHIRE

Geophysical Survey

Commissioned by Amec Environment & Infrastructure UK Ltd

& Robert Hitchins Ltd

May 2014

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HAS no.: 1042
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Parish: Westbury
Council: Wiltshire Council
OASIS ref.: Headland3-179660

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Graphics: Bartlett - Clark Consultancy
Approved by: Andy Boucher – Project Manager

Land East of Trowbridge Road, Westbury, Wiltshire

Geophysical Survey 2014

Prepared by A. Boucher

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Abstract

This geophysical survey was undertaken as the initial stage of an archaeological field evaluation of a proposed development site at Westbury, Wiltshire.

The survey has detected possible traces of former open field cultivation, together with other cultivation effects and ditch-like linear markings of uncertain significance. There do not appear to be any concentrations of archaeological features which would suggest the presence of settlement remains, or other such focus of archaeological activity.

1. Introduction

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Headland Archaeology (UK) Ltd on behalf of Amec Environment & Infrastructure UK Ltd, and Robert Hitchins Ltd. Fieldwork for the survey was done on 17-19 April 2014. Plots showing the survey data have previously been supplied to Headland Archaeology, and are now included in this report.

The proposed development extends across six pasture fields amounting to 13.4ha, and is centred at NGR 387700, 152100. The fields are numbered arbitrarily for reference on illustrations 1 and 4. The site is located to the east of Trowbridge Road, and immediately

north-east of Westbury.

The fields within the evaluation area were surveyed as completely as the presence of hedges and boundaries permitted, although a small area of rutted and disturbed ground in field 5 could not be surveyed.

2. Objectives of the Survey

The general aim of the geophysical survey was to identify the extent and character of any archaeological remains capable of producing a magnetic response; these can include ditches, large pits, kilns, ovens etc.

3. Geological Background

The site (according to the BGS website) is at the boundary between Cretaceous Greensand to the south, and Jurassic Clay, Mudstone and Sandstone to the north. These conditions should not present any particular difficulties for a geophysical survey, and soils on similar bedrock usually respond well to magnetic investigation.

4. Archaeological Background

We have not been told of any specific known archaeological findings within the evaluation area. The survey will therefore serve as a prospecting exercise to test for the presence of previously unrecorded archaeological features at the site.

5. Survey Procedure

The procedures used for the investigation were as specified in the Sub-Consultancy Agreement between Amec E & I and Headland Archaeology. This requires a fluxgate gradiometer survey to be carried out across the evaluation area, and the results to be presented in appropriate graphical formats.

A survey grid was set out at the required locations, and tied to the OS grid using a GPS system with VRS correction to provide 0.1m or greater accuracy. The plans are therefore geo-referenced, and OS co-ordinates of map locations can be read from the AutoCAD version of the plans.

The magnetometer 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 as grey a scale plot in Illustration 1 (1:2000 scale @ A3), and as graphical (x-y trace) plots in Illustrations 2-3. Inclusion of both types of presentation allows the detected magnetic anomalies to be examined in plan and profile respectively.

The graphical (x-y) plots represent minimally pre-processed magnetometer readings, as recommended for initial presentation of survey data in the 2008 English Heritage geophysical guidelines document (English Heritage 2008). Adjustments are made for irregularities in line spacing caused by variations in the instrument zero setting (as is required for legibility in gradiometer data), but no further filtering or other process which could affect the anomaly profiles or influence the interpretation of the data has been applied. A weak additional 2D low pass filter has been applied to the grey scale plot to reduce background noise levels.

An interpretation of the findings is shown in illustrations 2-3, and is reproduced separately to provide a summary of the findings in Illustration 4. Colour coding has been used in the interpretation to distinguish different interpretations and anomaly types.

6. Results

One of the main findings visible in the grey scale plot is a parallel pattern of linear cultivation markings (as marked in the interpretation in green). Their appearance and dimensions could be consistent with the presence of silted furrows from former ridge and furrow. They are most clearly visible in the southern part of the site in fields 3 and 6. They fade to the north, but may be faintly visible in field 2. Linear markings in fields 4 and 5 in the south west of the site (as indicated in light green) are narrower than in field 3, and so could perhaps relate to more recent cultivation, although the distinction is not conclusive.

Other findings include possible ditch-like linear features outlined in red, and labelled A, B, C in Illustration 4. Features A and B together could perhaps be interpreted as two sides of an enclosure which cuts across (and so perhaps predates) the present field boundary, but the enclosure is incomplete and ill-defined if so. The strength of some of the magnetic disturbances (as outlined in grey) between features A and B suggests they could represent items or deposits of recent (ferrous or other) debris, rather than archaeological features. The strength of magnetic response from the linear feature at B (as seen in the graphical plot; Illustration 3) suggest this could be a ditch or trench also containing strongly magnetic debris, which could be of recent origin.

A further broad curving linear response (C) extends from field 2 into field 3. This could perhaps be a remnant of an earlier enclosure, but it is too eroded and indistinct to be interpreted with any confidence.

Other findings include other strong and probably recent disturbances near field boundaries at various locations. The level of background magnetic activity (as indicated by small magnetic anomalies outlined in light brown) varies across the site, and is unusually high in field 2. This effect is probably mainly natural (although small ferrous objects are also present), and may relate to the change to Jurassic geology in the northern part of the site. It could also indicate the presence of a gravel component in the topsoil.

It is difficult within the background magnetic activity to identify any individual magnetic anomalies (of suitable size, and with rounded profiles as seen in the graphical plot) which could be interpreted as silted pits of the kind which could indicate an ancient occupation site.

7. Conclusions

Conditions at the site appear to be favourable for the magnetic detection of archaeological features, as is indicated by the cultivation effects which are clearly visible in the survey plots, but there are few other findings.

The survey has detected linear markings which are probably associated with former open field cultivation within the survey area, together with other linear features. Some of these (A, B, C) do not align with the cultivation pattern, and could indicate traces of enclosures. A and B could suggest remains of an early farmstead, and a further broad linear feature could perhaps indicate part of an enclosure at C. The plan of the features is rather too incomplete for these interpretations to be proposed with any great confidence.

The absence of interpretable pit-like features in the survey data suggests there are unlikely to be any dense concentrations of ancient settlement or industrial remains within the area investigated.

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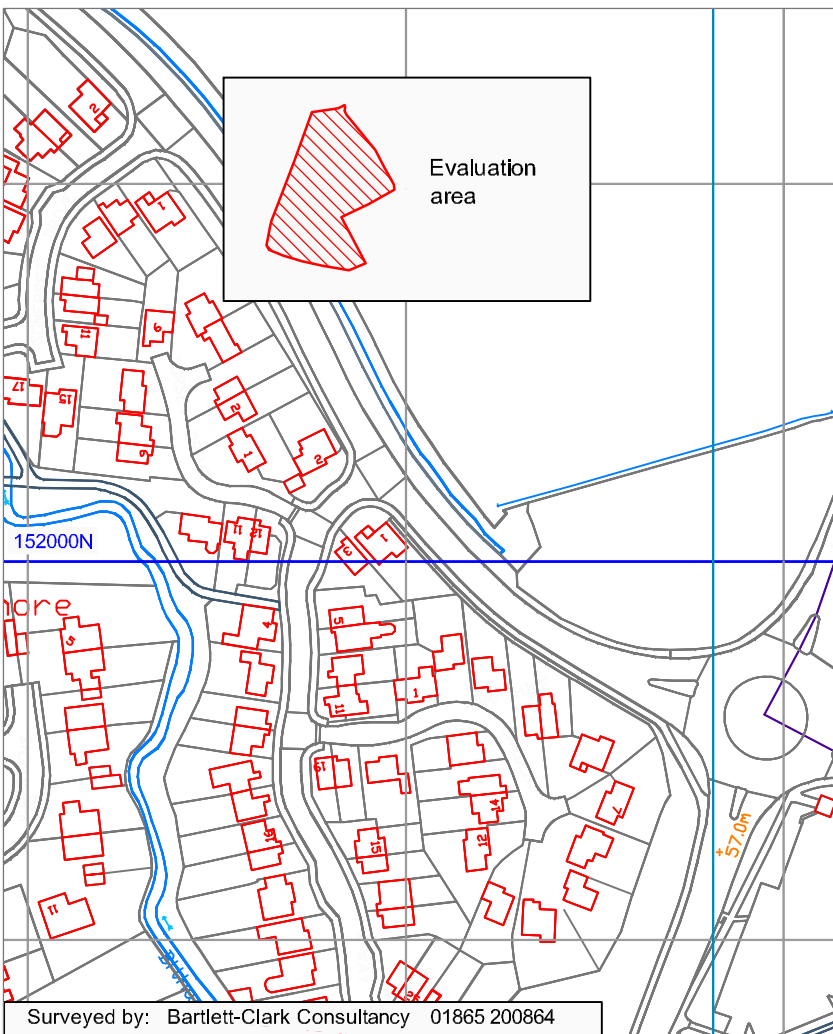
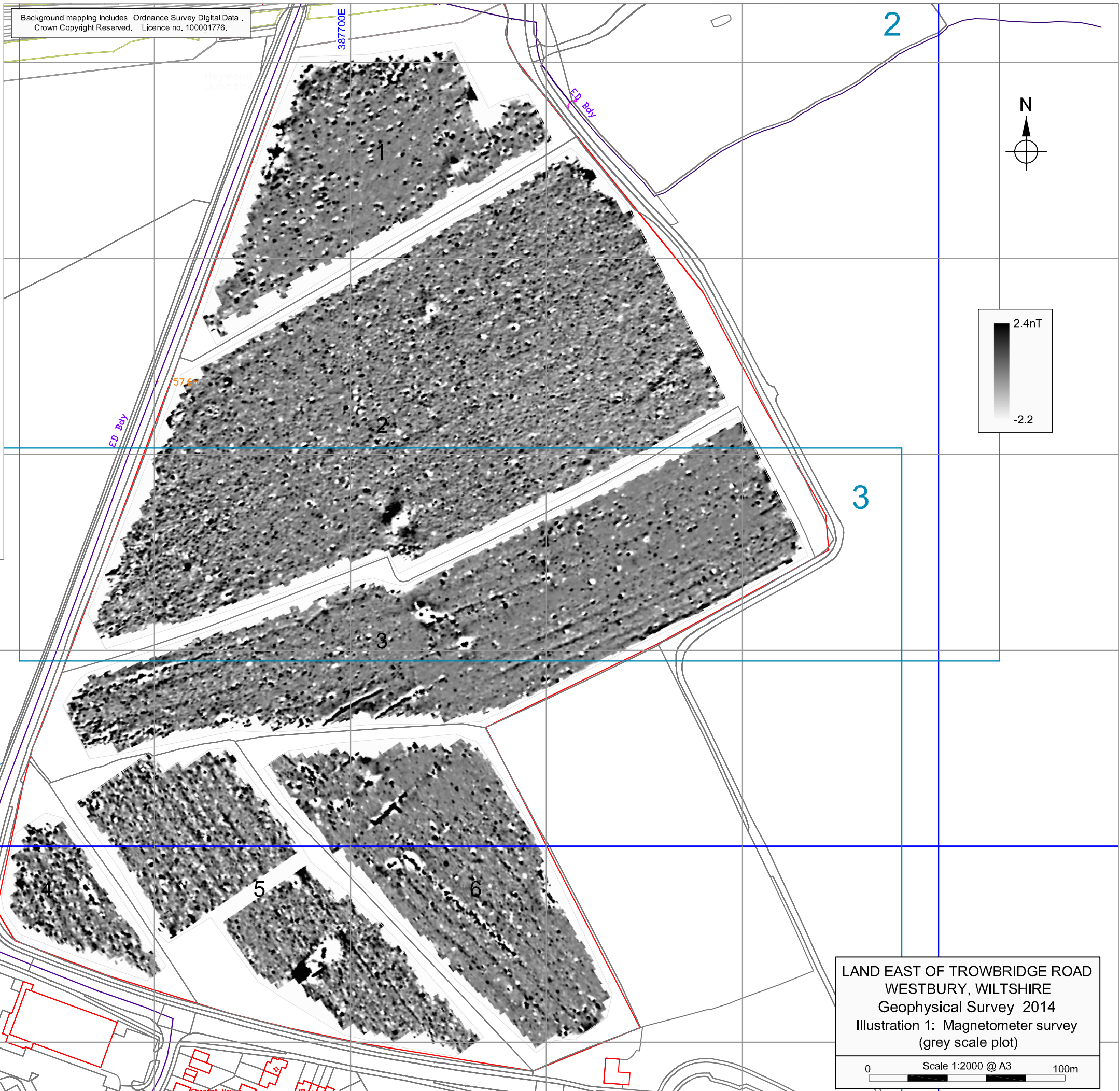
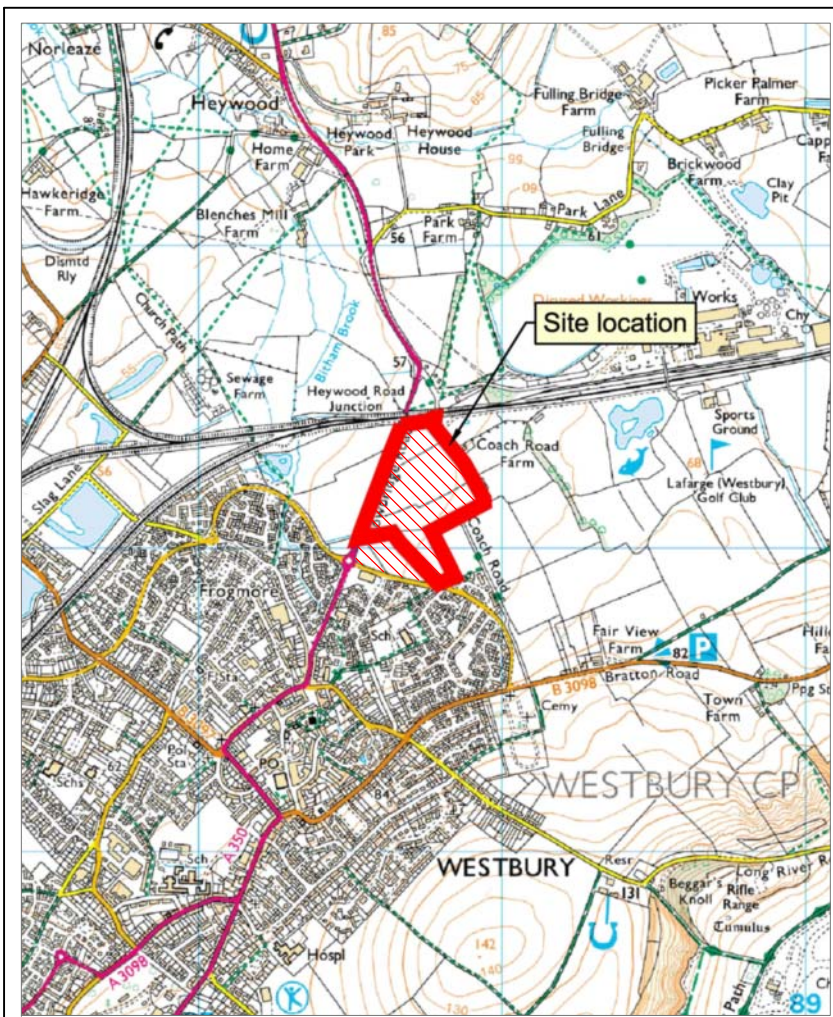
23 May 2014

The fieldwork for this project was done by P. Cottrell, C. Oatley, R. Organ and A. Bartlett.

References

English Heritage 2008a *Geophysical Survey in Archaeological Field Evaluation* [online facsimile] (English Heritage: Swindon, 2008), English Heritage Research

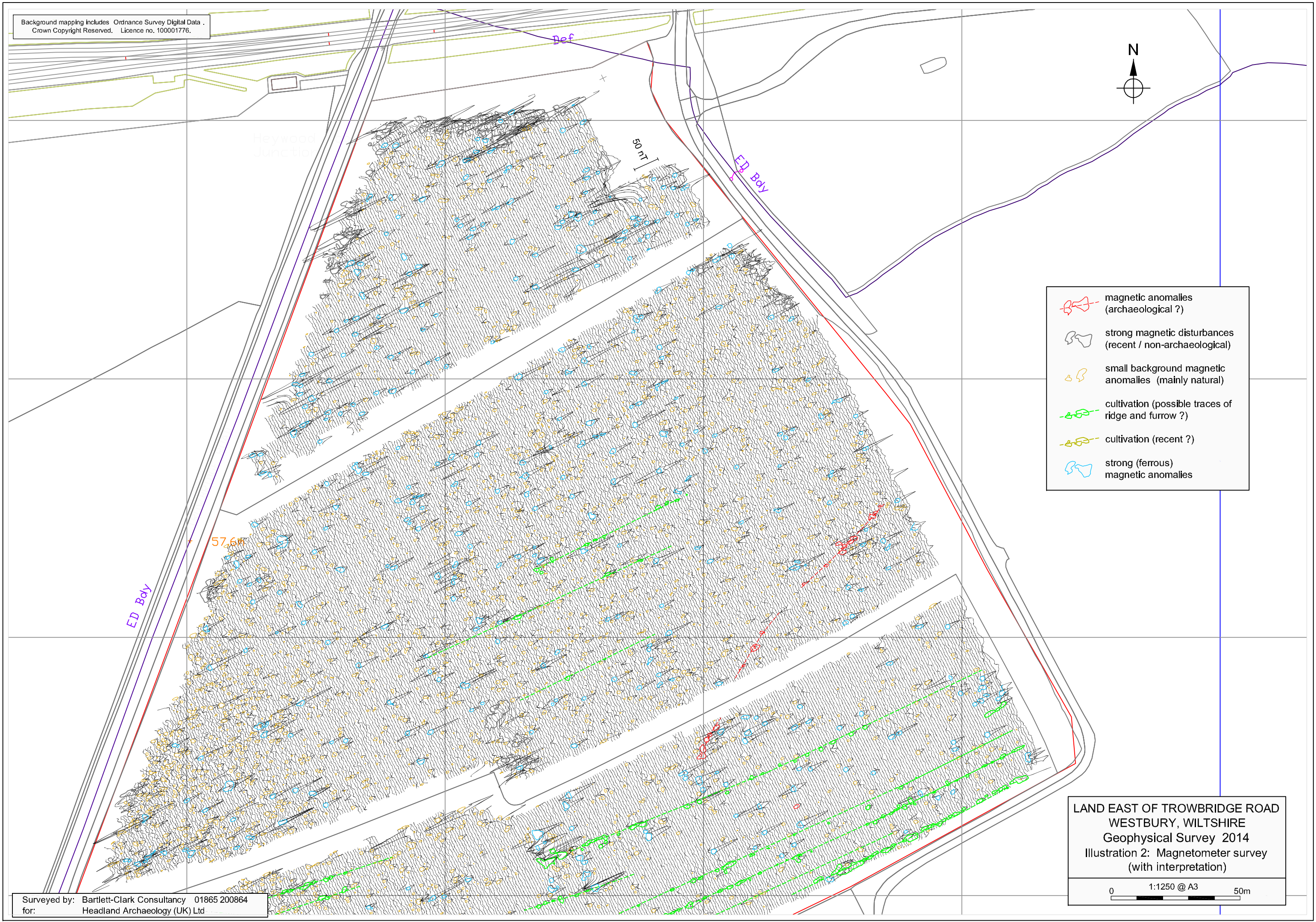
English Heritage 2008b *Professional Services Guideline no. 1, 2nd edn* English Heritage Research.



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for: Headland Archaeology (UK) Ltd

LAND EAST OF TROWBRIDGE ROAD
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Geophysical Survey 2014
Illustration 1: Magnetometer survey
(grey scale plot)

Background mapping includes Ordnance Survey Digital Data .
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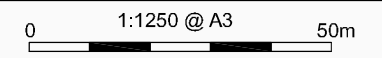


- magnetic anomalies (archaeological ?)
- strong magnetic disturbances (recent / non-archaeological)
- small background magnetic anomalies (mainly natural)
- cultivation (possible traces of ridge and furrow ?)
- cultivation (recent ?)
- strong (ferrous) magnetic anomalies

57.6m
ED Bdy

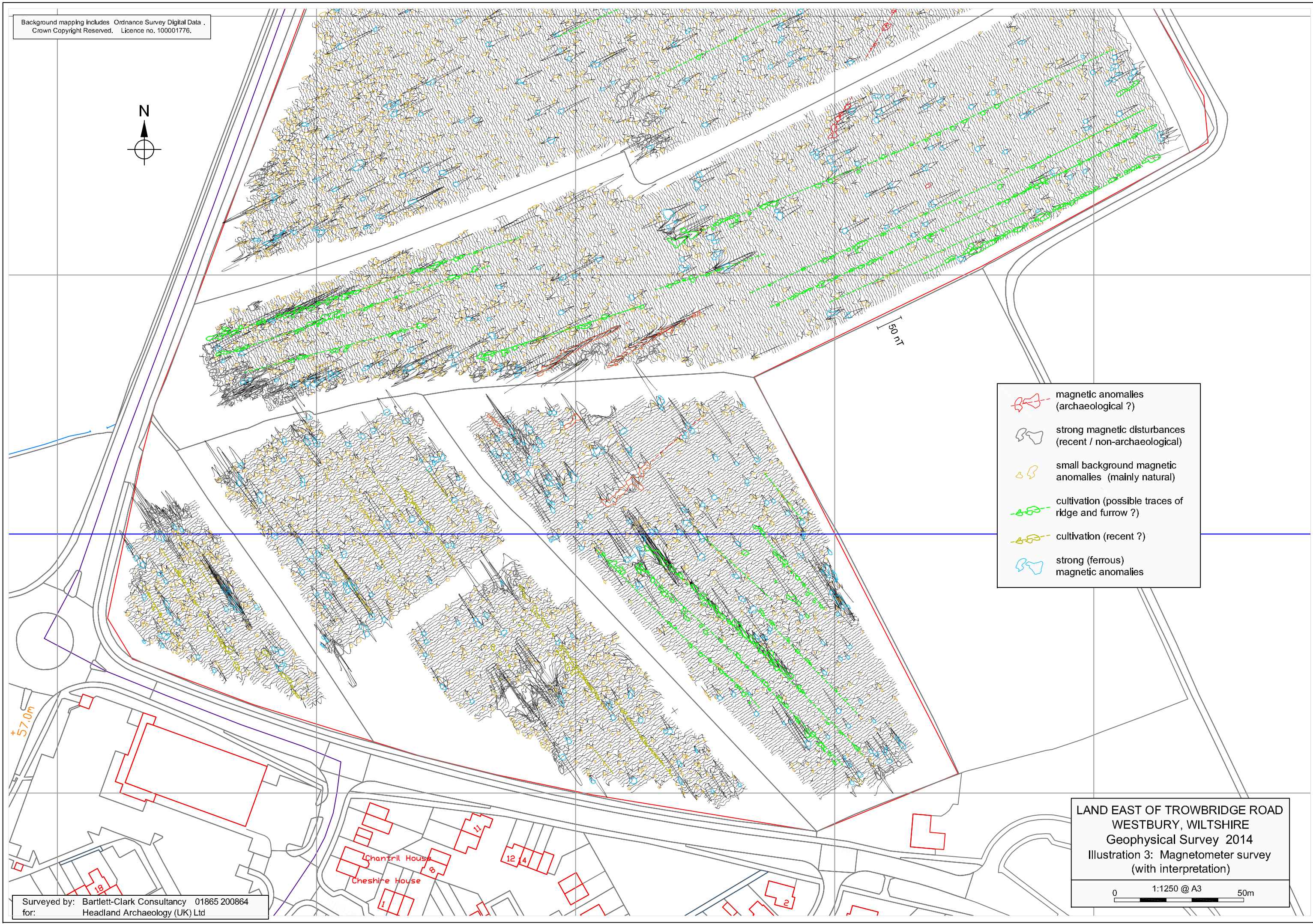
50m







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Illustration 2: Magnetometer survey
(with interpretation)



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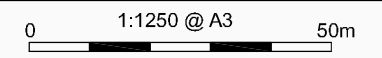
-  magnetic anomalies (archaeological ?)
-  strong magnetic disturbances (recent / non-archaeological)
-  small background magnetic anomalies (mainly natural)
-  cultivation (possible traces of ridge and furrow ?)
-  cultivation (recent ?)
-  strong (ferrous) magnetic anomalies

+ 57.0m

50 NT







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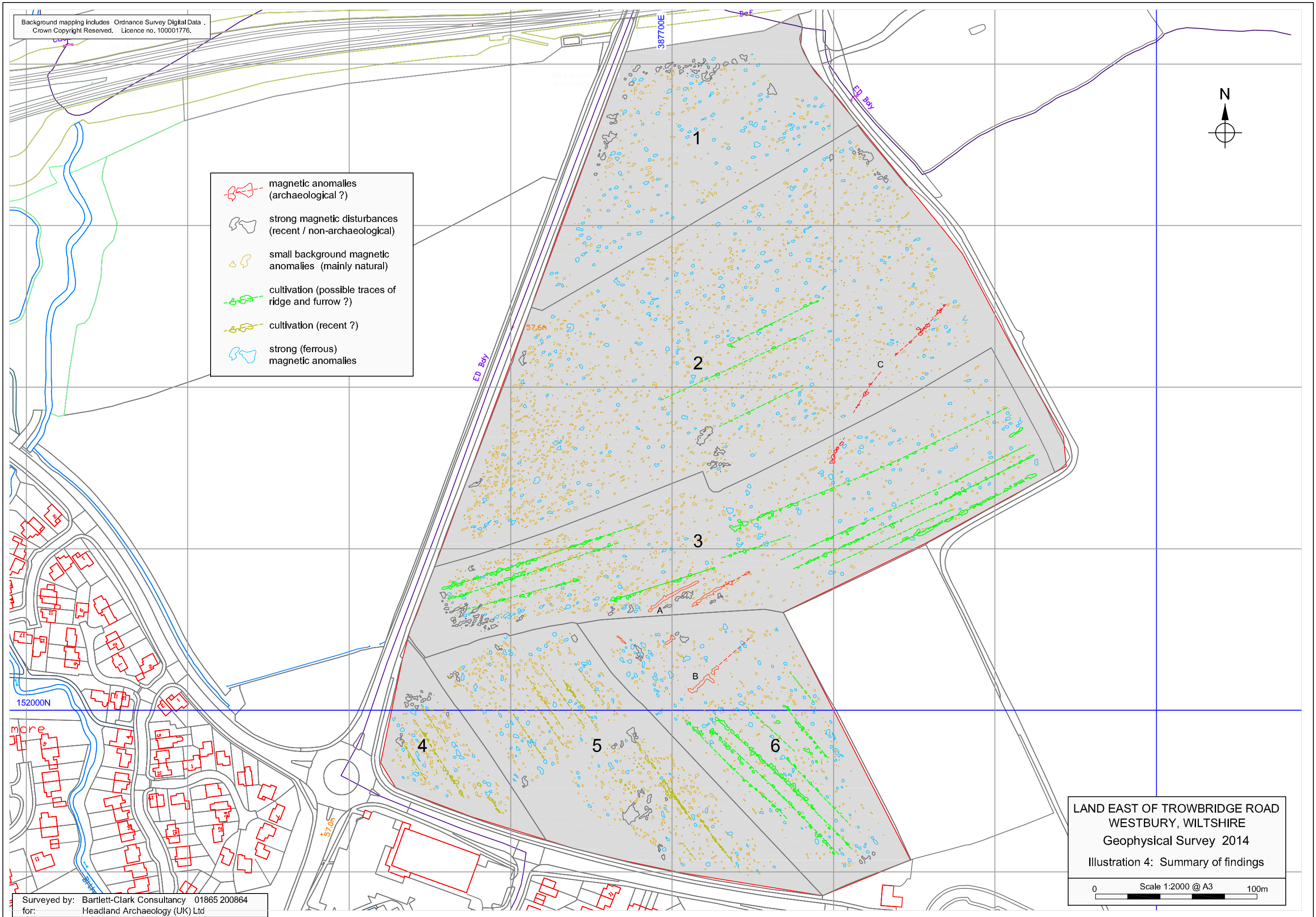
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Illustration 3: Magnetometer survey
(with interpretation)



Background mapping includes Ordnance Survey Digital Data .
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-  magnetic anomalies (archaeological ?)
-  strong magnetic disturbances (recent / non-archaeological)
-  small background magnetic anomalies (mainly natural)
-  cultivation (possible traces of ridge and furrow ?)
-  cultivation (recent ?)
-  strong (ferrous) magnetic anomalies



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Illustration 4: Summary of findings

0 Scale 1:2000 @ A3 100m

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