

**Land off Thaxted Road
Saffron Walden, Essex**

Report on Archaeological Geophysical Survey 2013

Survey commissioned by:

**Oxford Archaeology East
15 Trafalgar Way
Bar Hill
Cambridge
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Report by:

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18 March 2013

Land off Thaxted Road, Saffron Walden, Essex

Report on Archaeological Geophysical Survey 2013

Introduction

The geophysical survey described in this report was carried out as part of an archaeological field evaluation of a proposed development site to the east of Saffron Walden, Essex. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Oxford Archaeology East on behalf of Saffron Walden East Landowners. Fieldwork for the survey was done between 4-6 March 2013.

The Site

Background information on the location and condition of the site is included in the Archaeological Desk Based Assessment (DBA) which has been prepared as part of this evaluation by Oxford Archaeology East (Report No. 1361, July 2012). This document describes an extended evaluation area covering 81ha to the south and east of Saffron Walden (as indicated by the red outline on the plan inset in figure 4 of this report). The present survey covers three areas (identified as fields 1-3 on figures 1-5 in this report) within the larger evaluation area. The total survey coverage amounts to 12.77ha. The following notes are based in part on the DBA.

Location and topography

The survey covers areas of arable farmland to each side of Thaxted Road immediately to the south east of Saffron Walden, and is centred approximately at NGR TL 549375. The land slopes down from the north east corner of field 1 towards Thaxted Road, and to the south, and rises again in field 2. The site is bounded by recent housing and a leisure centre to the north and west, and farmland to the south and east. There are modern buildings on the site of an infilled chalk pit between fields 1 and 2 and Thaxted Road.

The geology of the site is described in the DBA as chalk with some overlying Boulder Clay and Head deposits. The Head deposits (clay, silt, sand and gravel) are mainly on the south west side of Thaxted Road.

Soils on chalk bedrock usually provide favourable conditions for a magnetometer survey, as was confirmed here by magnetic susceptibility readings taken at the site during the survey. The readings (as shown on the plot inset in figure 5) have a relatively high mean value of 43 ($\times 10^{-5}$ SI), indicating that archaeological features containing a silted earth fill should be responsive to magnetic detection. [The higher susceptibility readings are found in lower lying parts of the site, which suggest that the observed variations are likely to be of topographical rather than archaeological origin.]

Archaeological background

Nearby archaeological sites and findings as listed in the Essex County Historic Environment Record are indicated on the plan inset in figure 4 of this report (reproduced from DBA figure 2). There are none within the actual survey area, but excavations in 1993-4 found Late Bronze Age and Early Iron Age occupation evidence about 500m to the west of field 3 (HER 14594). There are cropmarks of field boundaries (of possible Bronze Age or Iron Age date) to the south west of the survey (HER 19840). Pottery and other findings suggest there was Iron Age to Roman settlement activity close to the eastern edge of the (81ha) evaluation area.

The survey area is about 1km east of the medieval town, and was probably in agricultural use at that time. It is suggested in the DBA that former fields within field 1 of the survey area (as seen on a tithe map of 1843 and later OS maps) could be Romano-British in date, and so remained unchanged at enclosure in 1823.

Later activities within the (full) evaluation area include Bell's Brickworks (HER 15724), dating from 1865, and limekilns near to Thaxted Road (HER 15007). Former chalk pits near to Thaxted Road are shown on maps of 1877-1921, but none are recorded within the survey area.

Survey Procedure

The methods used for the survey were recorded magnetometer surveying, supplemented by background magnetic susceptibility testing.

Magnetometer survey

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 a grey scale plot at 1:2000 scale (figure 1), and as a graphical (x-y trace) plot in three sections at 1:1250 scale in figures 2-4. These alternative presentations allow the detected magnetic anomalies to be examined in plan and profile respectively.

The graphical survey plot shows the magnetometer readings after minimal pre-processing based on adjustment for irregularities in line spacing caused by variations in the instrument zero setting. Additional 2D low pass filtering has been applied to the grey scale plot to reduce background noise levels.

An interpretation of the findings is shown superimposed on figures 2-4 (which permits the interpreted outlines to be compared with the underlying data), and is reproduced separately to provide a summary of the findings (figure 5). Colour coding has been used in the interpretation to distinguish different effects. Features are indicated by coloured outlines or broken lines.

Features of potential archaeological origin are outlined in red, and strong recent

disturbances in brown. Minor background anomalies are in light brown, and possible cultivation effects in green. Ferrous anomalies and some possible land drains are in shades of blue.

Magnetic susceptibility tests

Magnetic susceptibility readings were taken (using a Bartington instrument) across the survey area. This information provides an indication of the strength of magnetic response to be expected from the site, and can be of help when interpreting the magnetometer survey. Susceptibility readings are shown on a plot inset in figure 5.

Survey location

The survey grid was set out and tied (to c. 10cm accuracy) 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 survey has detected some clearly identifiable archaeological findings, together with other magnetic activity which is likely to be of mainly natural or recent origin.

Two findings of particular archaeological interest are a ring ditch 20m in diameter towards the north of field 1 (at A as labelled on figure 5), and a nearby similar but slightly elliptical feature (c. 22 x 24m) at B. These features are not recorded as cropmarks or visible earthworks, but it is mentioned in the DBA that earthworks are likely to have been eroded by long-term ploughing. A is more strongly defined, but B remains visible in the grey scale plot (figure 1). They are rather too large to be hut circles, and so could be barrow ditches.

There may be a few individual pit-like magnetic anomalies (outlined in red) near to A, but they are too few and small to suggest any dense concentrations of archaeological features.

Other findings include a ditch-like north-south linear feature at C, and an east-west alignment of weaker disturbances at D. These correspond to boundaries shown on the tithe map of 1843 (figure 5 in DBA), and also marked (in part) on OS maps of 1877 and 1897 (figures 6-7 in DBA). Additional east-west boundaries shown to the east of C in maps of 1881, 1897 and 1921 are not clearly identifiable in the survey. One possible (but more doubtful) linear feature which may be visible in the grey scale plot is marked in red at E, but does not correspond to a recorded field boundary.

Findings elsewhere in the survey are minimal. The orientations of various cultivation markings are indicated in green. Most of them probably relate to recent ploughing, but the broader linear features at F in field 3 could perhaps indicate traces of ridge and furrow. There are various recent disturbances near boundaries (outlined in brown). These include magnetic interference from the adjacent electricity substation at G in field 2.

There is an increased concentration of background magnetic activity around H in the north

east of field 1. Similar small background magnetic anomalies are visible throughout the survey (as outlined in light brown), and are commonly caused by individual magnetic stones in glacial gravels. It is probable therefore that the topsoil across the site is composed in part of glacial drift material, and this contains an increased proportion of gravel in the vicinity of H.

There are no strong magnetic disturbances which would suggest the presence of infilled clay or chalk pits (or debris associated with brick or cement making) within the survey area.

Conclusions

The survey has detected two well-defined and previously unrecorded ring ditches (A and B) in field 1, as well as former field boundaries (C and D), but there is no clear evidence for the presence of archaeological features elsewhere in the survey. Soil conditions at the site should be favourable for the magnetic detection of archaeological features, but there are no groups or clusters of magnetic anomalies of a kind which would suggest the presence of ancient settlement or industrial remains within the survey area.

There are faint linear cultivation markings across much of the survey. These may include possible traces of ridge and furrow in field 3. A possible linear feature (which does not appear to represent cultivation or a former boundary) is indicated at E in field 1, but nearby magnetic anomalies (G) appear to be natural.

Report by:

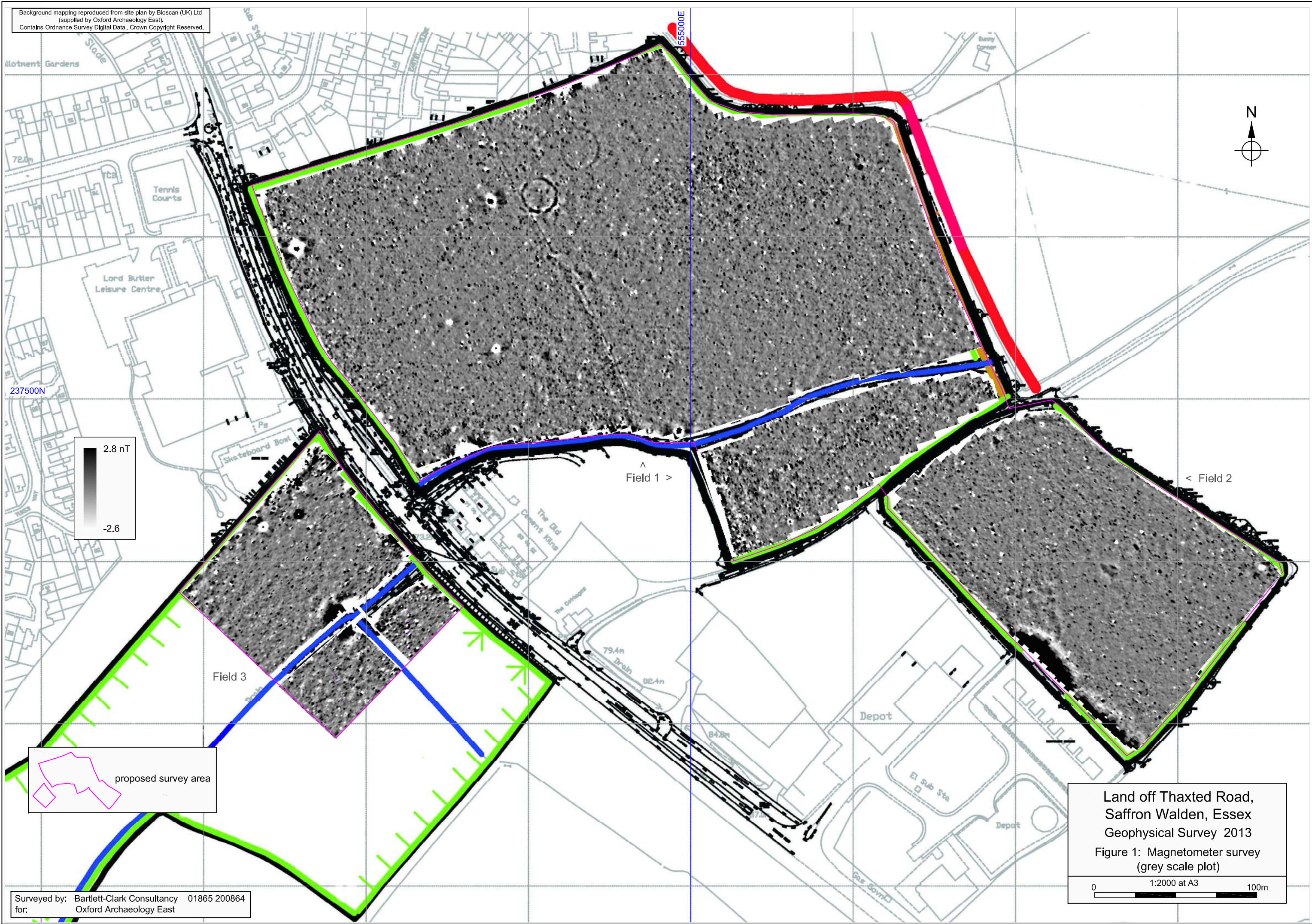
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18 March 2013

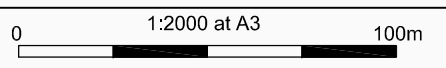
The fieldwork for this survey was done by C. Oatley and N. Paveley. Data processing was by P. Cottrell.

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proposed survey area







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Figure 1: Magnetometer survey
(grey scale plot)



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60 nT

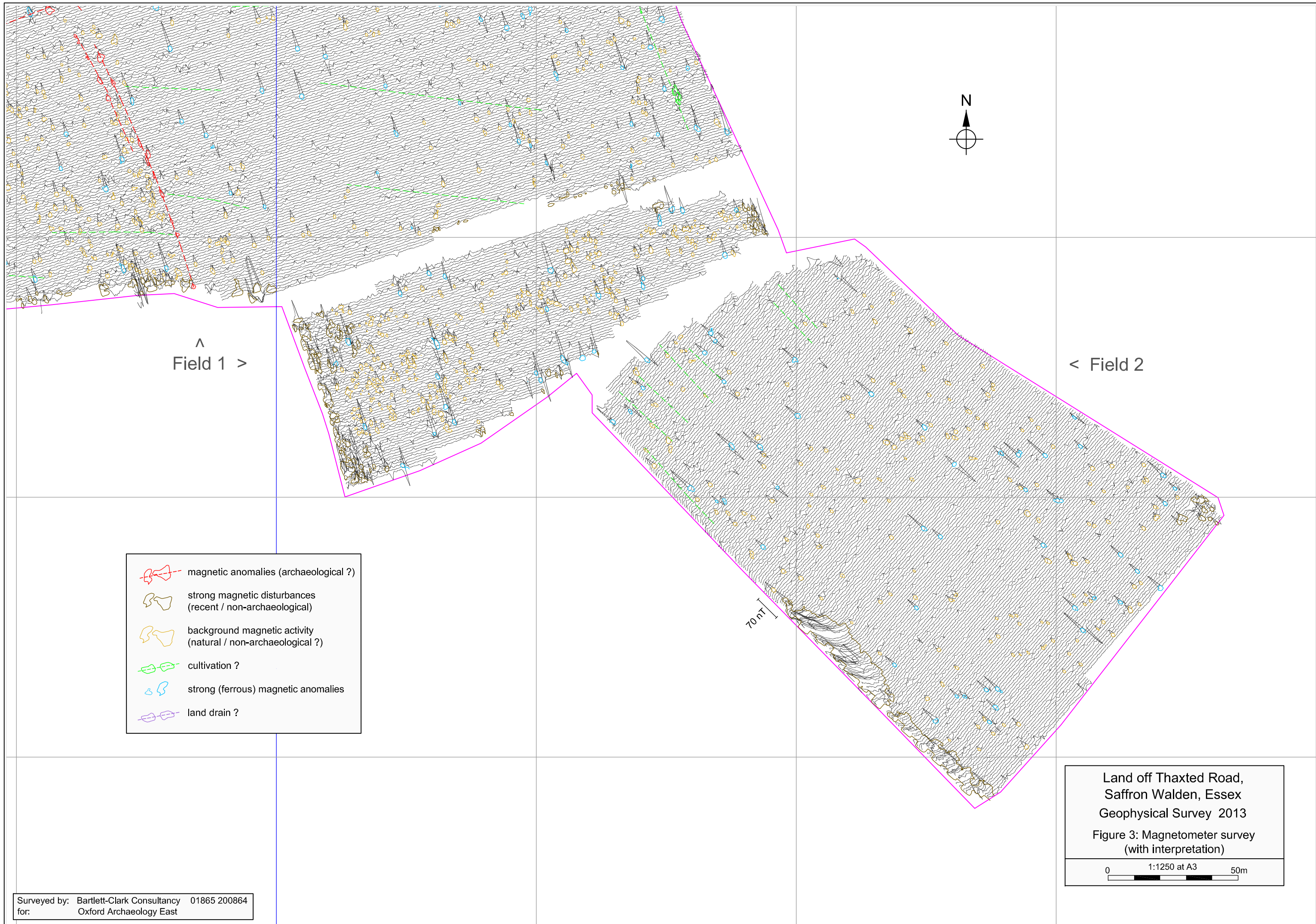
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-  strong magnetic disturbances (recent / non-archaeological)
-  background magnetic activity (natural / non-archaeological ?)
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  land drain ?

^
Field 1 >

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Figure 2: Magnetometer survey
(with interpretation)







0 1:1250 at A3 50m

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Field 1 >

< Field 2

-  magnetic anomalies (archaeological ?)
-  strong magnetic disturbances (recent / non-archaeological)
-  background magnetic activity (natural / non-archaeological ?)
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  land drain ?







70 nT

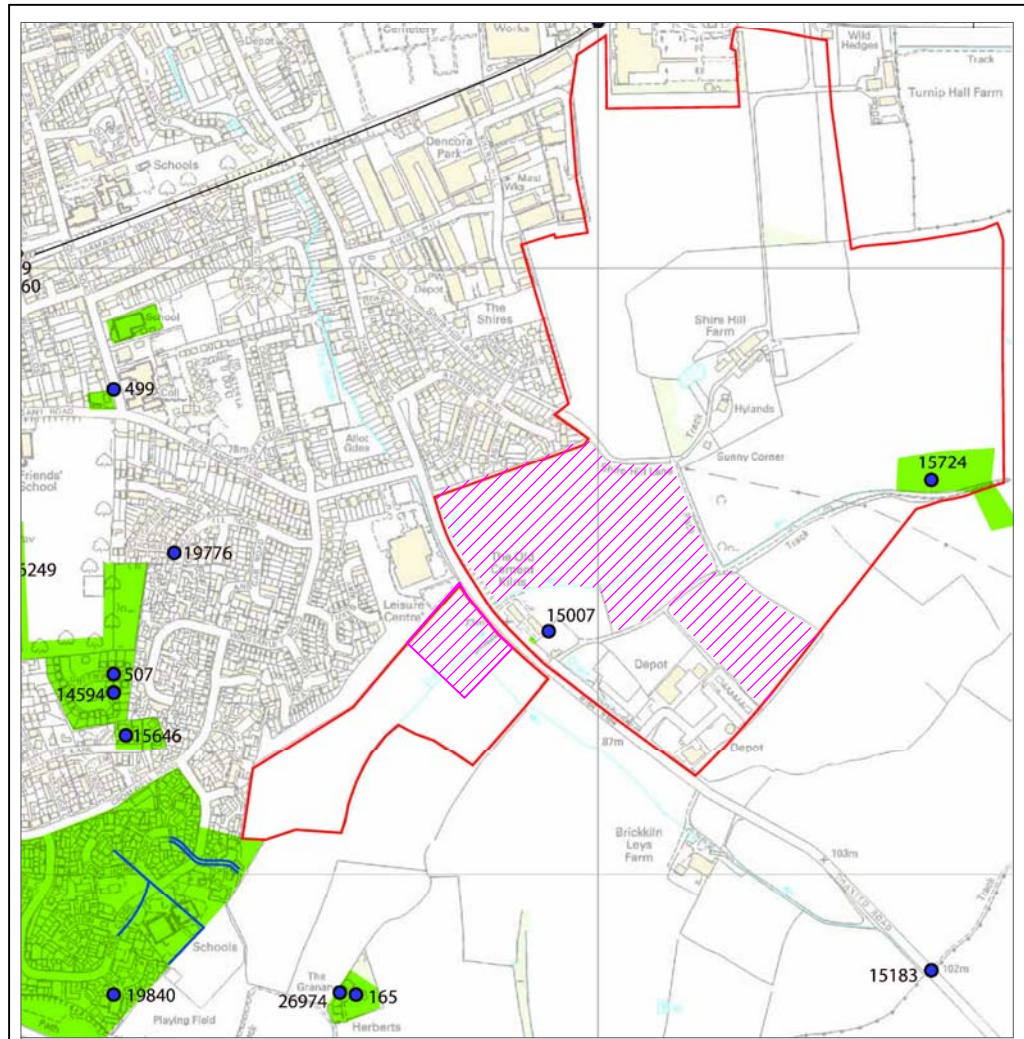
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Figure 3: Magnetometer survey
(with interpretation)

0 1:1250 at A3 50m

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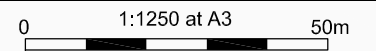
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-  strong magnetic disturbances (recent / non-archaeological)
-  background magnetic activity (natural / non-archaeological ?)
-  cultivation ?
-  strong (ferrous) magnetic anomalies
-  land drain ?



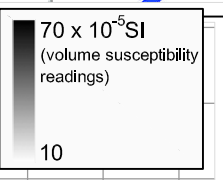
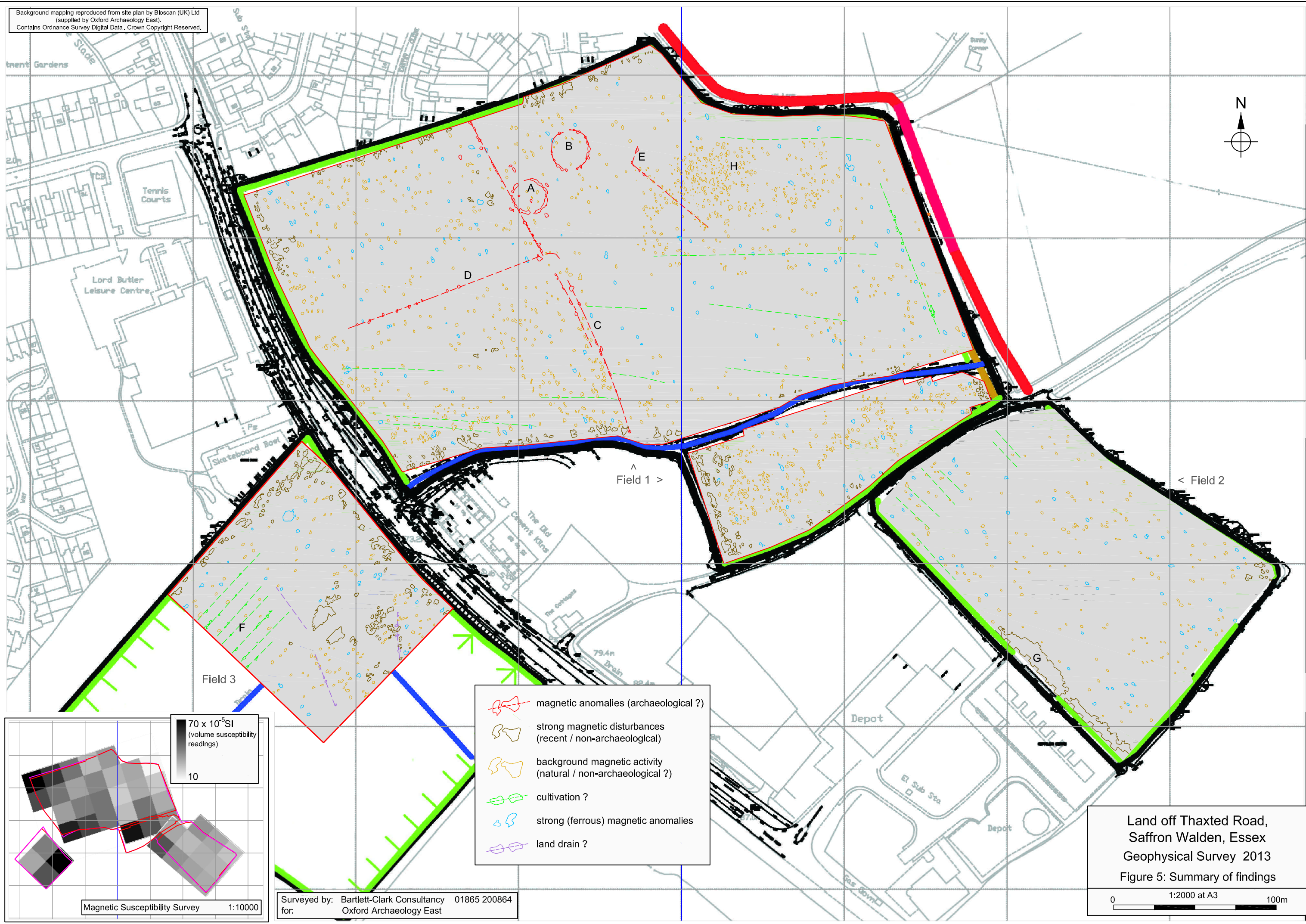
HER entries (from DBA, figure 2) 1:12500







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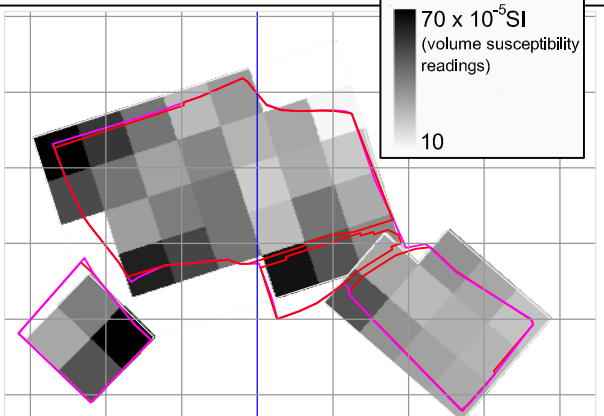
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Figure 4: Magnetometer survey
(with interpretation)



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-  magnetic anomalies (archaeological ?)
-  strong magnetic disturbances (recent / non-archaeological)
-  background magnetic activity (natural / non-archaeological ?)
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Figure 5: Summary of findings
0 1:2000 at A3 100m