

Land at Fordham Road, Newmarket
Report on Archaeological Geophysical Survey
2012

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Land at Fordham Road, Newmarket

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Introduction

This report describes the findings from a geophysical survey which was carried out as part of an archaeological field assessment of the site of a proposed solar farm development to the west of Fordham Road, Newmarket. The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Oxford Archaeology East. Fieldwork for the survey was done on 28-30 November 2012.

The Site

A description of the topography of the site is included in the Desk Based Assessment [DBA] for the project, which has been supplied to us by Oxford Archaeology East [1]. The assessment report also reviews the archaeological potential of the site and its surroundings.

Topography and geology

The site is located at TL 632672 directly to the west of the county boundary between Suffolk and Cambridgeshire, and 3km to the north of Newmarket, and is 10ha in size. We have been notified since completing the survey that the land ownership boundary does not extend to the edge of the field in the south eastern corner of the site adjacent to the sewage works. We have therefore marked the ownership boundary (as a red outline) on the survey plans. This line represent the limit of the proposed development, and part of the survey therefore lies outside the development area.

The site is on a bedrock of Lower Chalk with a capping of river terrace gravels towards the west and south. The south western part of the site is located on a raised promontory rising to c. 25m OD. The land slopes down gradually to the north and west, and also towards the River Snail 2-300m to the east. Soils both on chalk and gravel usually provide favourable conditions for the magnetic detection of archaeological features, as is confirmed by the clarity of response from some of the findings detected by the present survey.

Archaeological background

Nearby archaeological findings, as noted in the DBA, include various cropmark ring-ditches, some of which may indicate Bronze Age barrows. One of these (EXG044) lies within the map extract inset in figure 4, and there are others nearby. An excavation 1km to the north (MCB16109 on map) has found Bronze Age enclosures, structures, burials and ditches.

Various Iron Age sites and settlements have also been identified or excavated within 1-2km of the site. The nearest findings are silver Iron Age artefacts located by metal detector 0.5km to the south

(EXG033). A Roman settlement has also been excavated at the same location, and there are other sites and findings nearby. It is concluded in the DBA on the basis of these findings that there is a strong possibility that archaeological remains of prehistoric or Roman date could be present within the proposed development area.

Historic maps confirm the site has been open agricultural land since at least the 18thC, and conditions should therefore be favourable for the preservation of archaeological features, although they could be eroded in part by modern ploughing.

Survey Procedure

The method used for this geophysical investigation was magnetometer surveying. 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 1:2000 grey scale plot (figure 1), and as a graphical (x-y trace) plot in two sections at 1:1250 scale in figures 2-3. Inclusion of these alternative presentations allows the detected magnetic anomalies to be examined in plan and profile respectively. An interpretation of the findings is shown superimposed on figures 2-3 (which permits the interpreted outlines to be compared with the underlying data), and is reproduced separately to provide a summary of the findings (figure 4).

The survey plots show the magnetometer readings after standard treatments which include adjustment for irregularities in line spacing caused by variations in the instrument zero setting, and slight linear smoothing. Additional 2D low pass filtering has been applied to the grey scale plot to reduce background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. Features are indicated by coloured outlines, or broken lines. Magnetic anomalies of possibly archaeological origin are outlined in red. Features of probably natural origin are shown in a light brown. Strong magnetic anomalies which are likely to be of recent origin are shown in dark blue. Strong magnetic anomalies which appear to represent iron objects are in blue, and apparent cultivation effects in green.

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 grey scale plot (figure 1) shows a varied magnetic response, including features which are likely to be archaeologically significant. The most conspicuous findings are linear markings in the south east of the survey. These are likely to represent ditched enclosures of probably late prehistoric date. The most clearly defined enclosure (as outlined in red in figure 4) appears to be in

two sections (labelled A, B) separated by a track or entrance at C. There are other linear features which could indicate other incomplete enclosures to the north at D and to the south at E, F. These could perhaps be surviving deeper sections of ditches which have otherwise been damaged or eroded.

There does not appear to be clear evidence for the presence of settlement remains within the enclosures, although their presence cannot be wholly excluded. A group of strong magnetic anomalies at B could indicate recent debris, but its location near the enclosure ditch could be significant, and indicate a small deposit of metal working or other ancient industrial debris.

Other possible pit-like features which could indicate activity within the enclosure A were detected around G. These features are not very clearly defined, and are near to the site boundary where there are other (probably recent) disturbances. They also lie partly outside the development area as represented by the land ownership boundary. There is a slightly increased noise level in the magnetometer readings beneath a power line which intersects this corner of the site.

A few other possible pit-like features are outlined in red elsewhere in the survey, of which the clearest examples are to the south west of the site at H and J. Such features are sparsely distributed, and do not suggest the presence of further concentrations of archaeological findings.

One other category of feature which is clearly visible in the survey plots is a series of irregular linear markings which radiate to the north and east from the higher ground in the SW. These are indicated (partially and schematically) by broken brown lines in figure 4. The distribution of these markings in relation to the topography suggests they are natural effects, and perhaps represent erosion channels on the sloping ground. Various curving or polygonal patterns are also visible, but none are of a size of clarity which would suggest archaeological findings. Curving shapes as seen to the east of the site around K probably reflect areas of more uniform colluvial deposition on lower ground, and shapes such as L (to the south west) could be periglacial effects on the gravel. The possibility cannot be fully excluded that archaeological features could be buried at depth beneath colluvial deposits on lower ground, as mentioned in the DBA, but the survey provides no evidence for their presence. One possible isolated linear feature (M) intersects other (natural) magnetic anomalies towards the north of the site, and could be a former ditch or boundary of uncertain origin.

Linear markings shown in green at the field edges are probably recent cultivation headlands.

Conclusions

The survey has produced clear evidence for the presence of ditched enclosures in the south eastern corner of the site. The survey here extends beyond the land ownership boundary (as indicated by a red outline on the plans), and so the area within the enclosures lies in part outside the proposed development area.

The ditches are likely to represent field systems or settlement enclosures of late prehistoric date,

although there does not appear to be conspicuous evidence for the presence of settlement remains within the surveyed areas of the enclosures.

Various magnetic anomalies which may reflect erosion patterns as determined by the topography of the site have also been detected, but there is no clear evidence for the presence of any concentrations of archaeological features in the remainder of the site.

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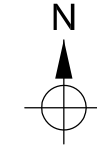
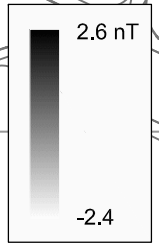
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7 December 2012
(revised 11 December 2012 and 12 December 2012)

The fieldwork for this project was done by C. Oatley, M. Berry and P. Heykoop.

Reference

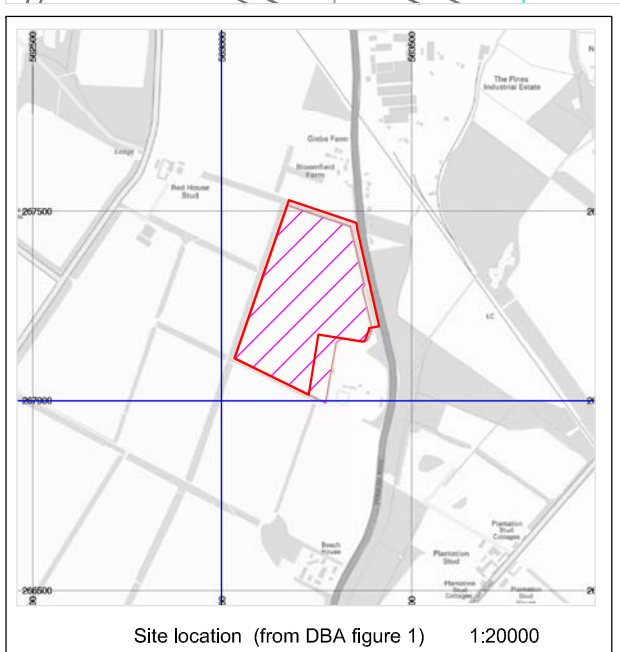
- [1] Fordham Road, Newmarket. Desk Based Assessment (draft). OA East report no. 1421; Oxford Archaeology East, November 2012.



Land ownership boundary
(traced from Land Registry
Title Plan)

Figure 2






Figure 3




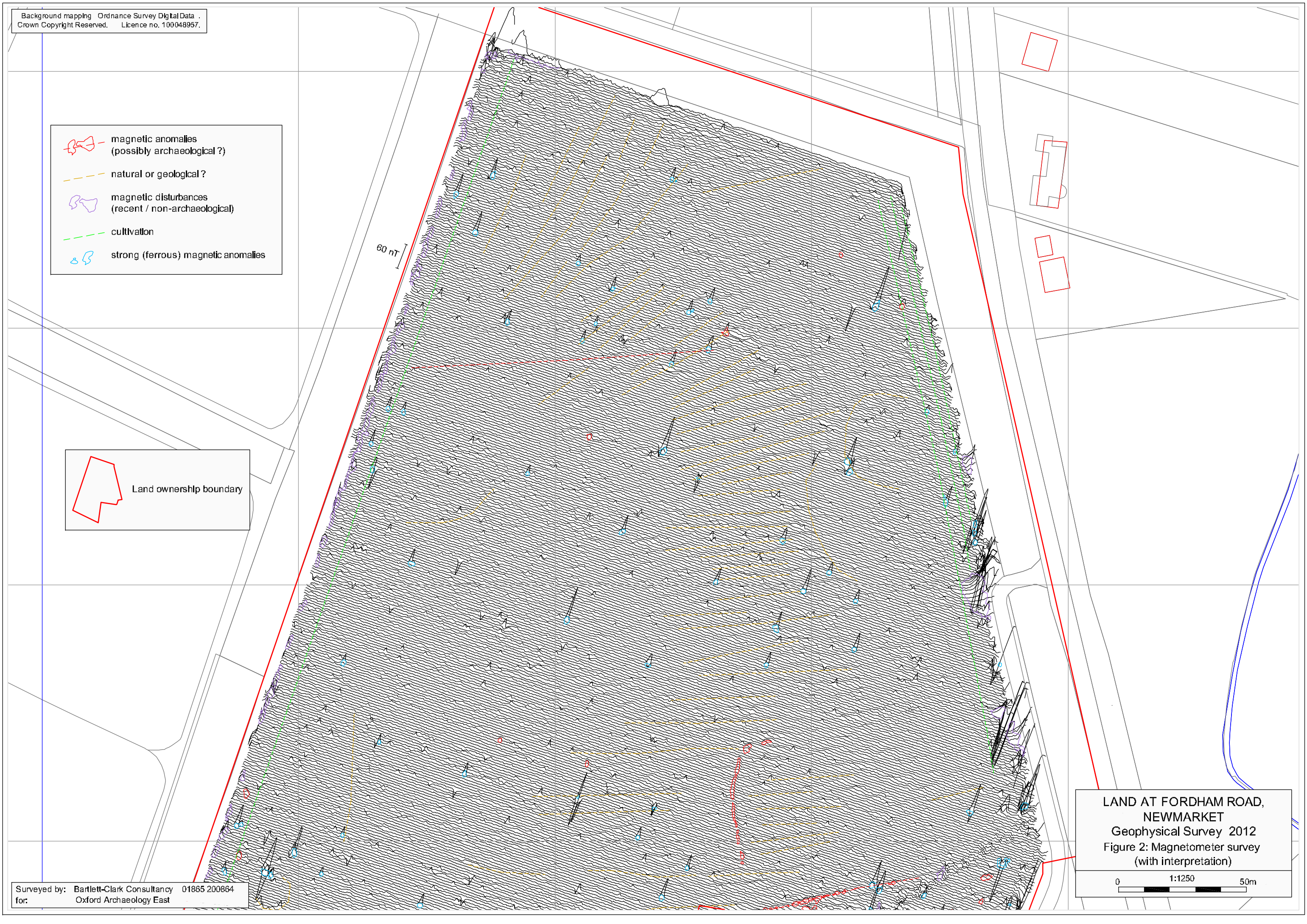
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NEWMARKET
Geophysical Survey 2012
Figure 1: Magnetometer survey
(grey scale plot)

0 1:2000 100m






-  magnetic anomalies (possibly archaeological?)
-  natural or geological?
-  magnetic disturbances (recent / non-archaeological)
-  cultivation
-  strong (ferrous) magnetic anomalies

 Land ownership boundary

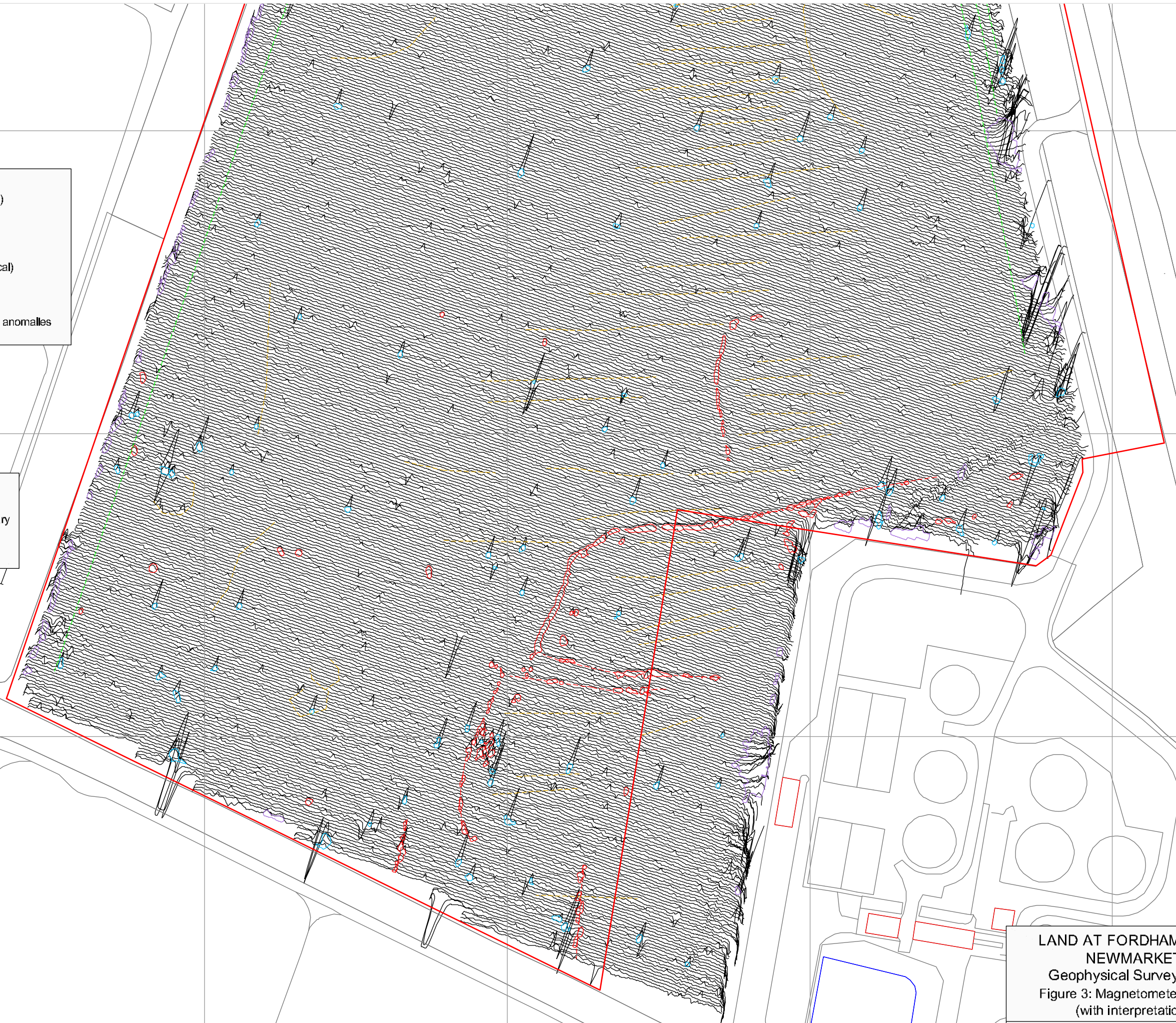
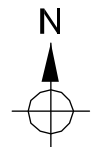


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Figure 2: Magnetometer survey
(with interpretation)

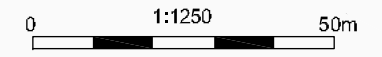
0 1:1250 50m






-  magnetic anomalies (possibly archaeological?)
-  natural or geological?
-  magnetic disturbances (recent / non-archaeological)
-  cultivation
-  strong (ferrous) magnetic anomalies

 Land ownership boundary

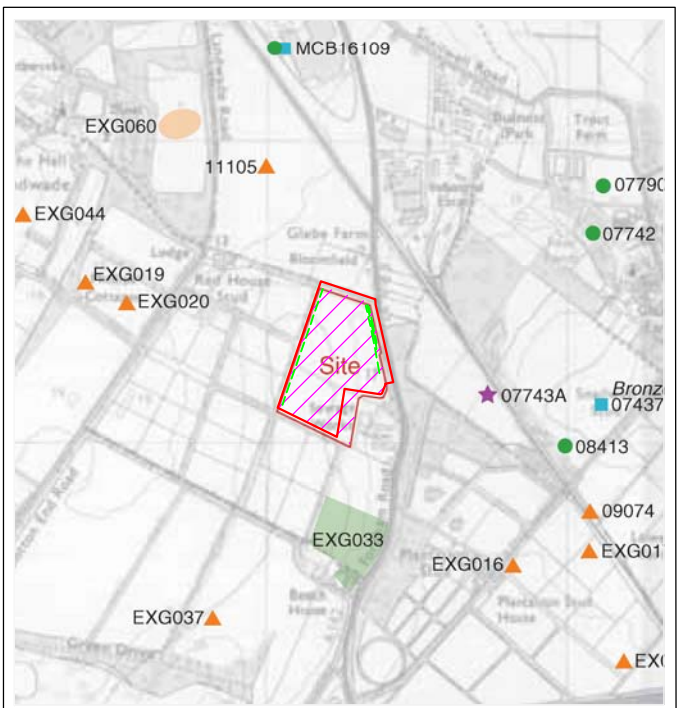
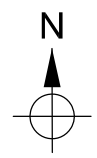


LAND AT FORDHAM ROAD,
NEWMARKET
Geophysical Survey 2012
Figure 3: Magnetometer survey
(with interpretation)



-  magnetic anomalies (possibly archaeological ?)
-  natural or geological ?
-  magnetic disturbances (recent / non-archaeological)
-  cultivation
-  strong (ferrous) magnetic anomalies

 Land ownership boundary



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Figure 4: Summary of findings

