

ARCHAEOLOGICAL GEOPHYSICAL SURVEY

LAND TO THE WEST OF STOWMARKET ROAD
GREAT BLAKENHAM, SUFFOLK

SITE CENTRED AT NGR TM 11548 51038

SUFFOLK CC SITE CODE: BLG 037

OASIS ID: preconst2-355694

REPORT PREPARED FOR
ARCHAEOLOGY COLLECTIVE
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Contents

Non technical summary	1
1.0 Introduction	2
2.0 Location and description	2
3.0 Geology and topography	2
4.0 Archaeological context	2
5.0 Methodology	3
6.0 Results and discussion	3
7.0 Conclusions	4
8.0 Acknowledgements	4
9.0 References	4

Illustrations

Fig. 1: Location of site	1:20000
Fig. 2: Location of site and survey (greyscale images of processed data)	1:1250
Fig. 3: Interpretation	1:1250
Fig. 4: Greyscale images of unprocessed data	1:1250
Fig. 5: Trace plot images	1:1250

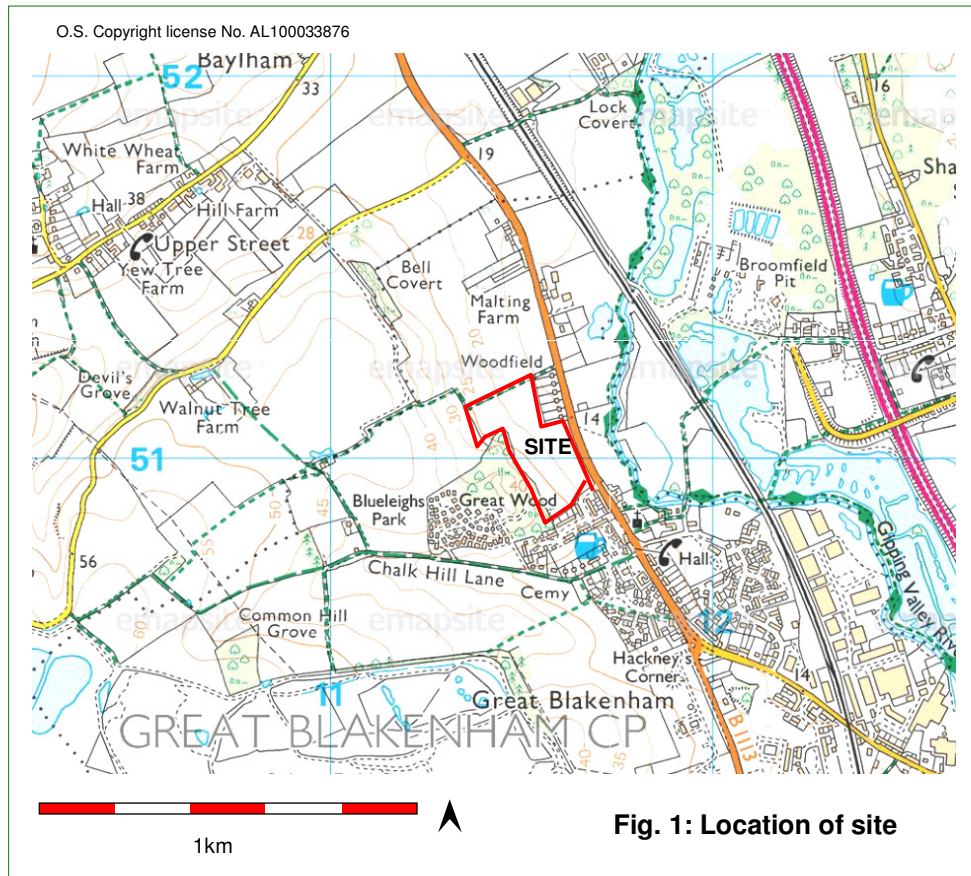
Appendix

OASIS summary

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Non-technical summary

- A fluxgate gradiometer survey of land to the west of Stowmarket Road, Great Blakenham, Suffolk has recorded only limited geophysical evidence of potential archaeological remains - in the form of a small number of discrete and linear anomalies that might, conceivably signify pits and ditches.
- Modern and recent responses include those induced by a buried service, boundary features and potential ridge and furrow cultivation.



1.0 Introduction

Acting for Christchurch Land and Estates Limited (via Heritage Collective), Archaeology Collective commissioned a fluxgate gradiometer survey of land to the west of Stowmarket Road, Great Blakenham in Suffolk. This was to establish the presence/absence of magnetically anomalous archaeological features and, if recorded, define their extent and, where possible, the nature of such anomalies in order to inform the planning and development process.

This report incorporates information that has been selectively extracted from a Desk-Based Assessment (DBA) prepared by Archaeology Collective (Feldkamp, 2015).

2.0 Location and description (Figs. 1 – 2)

The proposed development site lies just to the north of the village of Great Blakenham. It largely occupies two pasture fields (F1 & F2), with boundaries consisting mostly of hedgerows. The western boundary is largely defined by Great Blakenham Wood and the eastern edge by Stowmarket Road. Two areas of housing border the site, a row of 20th century cottages to the northeast and a modern housing development adjoining Chequers Rise to the south. Allotment gardens are present at the northern edge of the site. These were considered unsuitable for effective survey.

CNGR TM 11548 51038.

3.0 Geology and topography

The solid geology of the area comprises Newhaven Chalk Formation - sedimentary bedrock formed approximately 71 to 86 million years ago in the Cretaceous period, in a local environment previously dominated by warm seas.

Superficial deposits are not recorded.

The magnetic response of archaeological features within chalk is generally good (English Heritage, 2008).

The site occupies a pronounced west to east slope, also falling from south to north, from its boundary with Chequers Rise to the allotment gardens at the north. A mean spot height of 21m AOD is recorded in the central region.

4.0 Archaeological context (extract from summary of DBA (Feldkamp, 2015))

Existing impacts on any surviving archaeological deposits and features will derive from the agricultural use of the land in the 19th century which is likely to have horizontally truncated below ground strata. The removal of field boundaries, extraction of chalk and the cultivation of the allotments currently present within the application site are also likely to have caused disturbance to below ground deposits.

The application site has been shown to have a moderate potential for early prehistoric unstratified artefactual material and a low potential for early prehistoric occupation. There is a low to moderate potential for Bronze Age and Iron Age occupation based on cropmark evidence. Based on the presence of settlement and a Roman road within the study area, along a large number of Roman findspots, there is high potential for evidence of Roman activity within the application site.

Archaeological remains could be present as sub-surface deposits and/or unstratified artefactual material. There is a low to moderate potential for Saxon/early medieval, medieval and post medieval archaeology based on the recovery of unstratified artefactual material from within the study area.

5.0 Methodology

The survey methodology was based upon English Heritage guidelines: '*Geophysical Survey in Archaeological Field Evaluation*' (English Heritage, 2008). A WSI for the project was submitted for approval by Suffolk County Council Planning Archaeologist prior to commencement of the fieldwork (Bunn, 2016).

5.1 Fluxgate Gradiometry is a non-intrusive scientific prospecting tool that is used to determine the presence/absence of some classes of sub-surface archaeological features (e.g. pits, ditches, kilns, and occasionally stone walls).

Gradiometry should help to establish the presence/absence of buried magnetic anomalies, which may indicate sub-surface archaeological features, and may therefore form a basis for subsequent archaeological trenching, where required.

The use of magnetic surveys to locate sub-surface ceramic materials and areas of burning, as well as magnetically weaker features is well established, particularly on large greenfield sites. The detection of anomalies requires the use of highly sensitive instruments; in this instance the Bartington 601 Dual Fluxgate Gradiometer, calibrated to the mean magnetic value of the survey area. Two sensors mounted vertically and separated by 1m, measure slight, localised distortions of the earth's magnetic field, which are recorded by a data logger.

5.2 The survey took place on 22nd February 2016. The zigzag traverse method was used, with readings being taken at 0.25m intervals along 1.0m wide traverses.

The survey grid was established by Global Positioning Satellite using a Leica GS08 RTK, with an accuracy of +/- 0.1m.

The data were processed using *Terrasurveyor V3*; the raw data are presented on Fig. 4 (clipped to +/-10nT to enhance resolution).

A 'Despike' function was applied to reduce the effect of extreme readings induced by metal objects, and 'Destripe' to eliminate striping introduced by zigzag traversing. The data were clipped to +/- 20nT on the trace plots (Fig. 5) and +/-2nT on the greyscale images of the processed data (Fig. 2).

Anomalies in excess of +/-10nT are highlighted pink and blue on the interpretive image (Fig. 3). These are characterised magnetically as dipolar 'iron spikes', often displaying strong positive and/or negative responses, which reflect ferrous-rich objects (particularly apparent on stacked trace plots). Examples include those deposited along current or former boundaries (e.g. wire fencing), services and random horseshoes, ploughshares etc across open areas. Ferro-enhanced (fired) materials such as brick/tile (sometimes where the latter are introduced during manuring or land drain construction) usually induce a similar though predominately weaker response, closer to c+/-5nT (highlighted in pink/blue on interpretive images). Collectively, concentrations of such anomalies indicate probable rubble spreads, such as backfilled ponds/ditches and demolished buildings. (Fired clay associated with early activity has the same magnetic characteristics as modern brick/tile rubble, therefore the interpretation of such variation must consider the context in which it occurs.)

6.0 Results and discussion (Figs. 2 - 5)

The survey recorded:

- a) A group of discrete and linear anomalies in the south-western part of F1 that exhibit some potential as indicative of buried pits and ditches (Fig. 3: highlighted red). These interpretations are somewhat tentative, given poor resolution of the responses, although this part of the site lies to the immediate east of an area where a substantial number of Roman coins and brooches have been discovered by metal detectorists (HER Ref: MSF 4469 - Feldkamp, 2015);

- b) Slight indications of a recently removed boundary in F1 (yellow line), as depicted on historic maps (*ibid*);
- c) C.NE – SW aligned magnetically weak linear anomalies in both fields that probably signify cultivation, potentially ridge and furrow (dotted orange lines);
- d) Strong responses indicative of ferrous-rich materials and features (pink and blue), including those recorded across and in proximity to a buried service (blue line), in close proximity to sections current boundaries (including that along the southern edge of the allotment gardens) and as isolated/grouped examples across the site. The latter (typically) reflect miscellaneous objects contained within the plough soil, such as fragments of ceramic rubble, ploughshares, horseshoes, etc.

The discussed anomalies were recorded against a relatively muted backdrop of likely natural variation (greenscale).

7.0 Conclusions

The survey has recorded only limited geophysical evidence of potential archaeological remains, in the form of a small number of discrete and linear anomalies that might, conceivably signify pits and ditches.

Modern and recent responses include those induced by a buried service, boundary features and potential ridge and furrow cultivation.

8.0 Acknowledgements

Pre-Construct Geophysics Ltd would like to thank Archaeology Collective for this commission.

9.0 References

Bunn, D. 2016 *Method Statement for Geophysical Survey: Land West of Stowmarket Road, At Great Blakenham, Suffolk*. Pre-Construct Geophysics, unpublished.

English Heritage. 2008 *Geophysical Survey in Archaeological Field Evaluation*. London, English Heritage.

Feldkamp, C. 2015 *Land to the west of Stowmarket Road, Great Blakenham, Suffolk*. Archaeological Desk-Based Assessment, Archaeology Collective. Project Ref: AC00115A

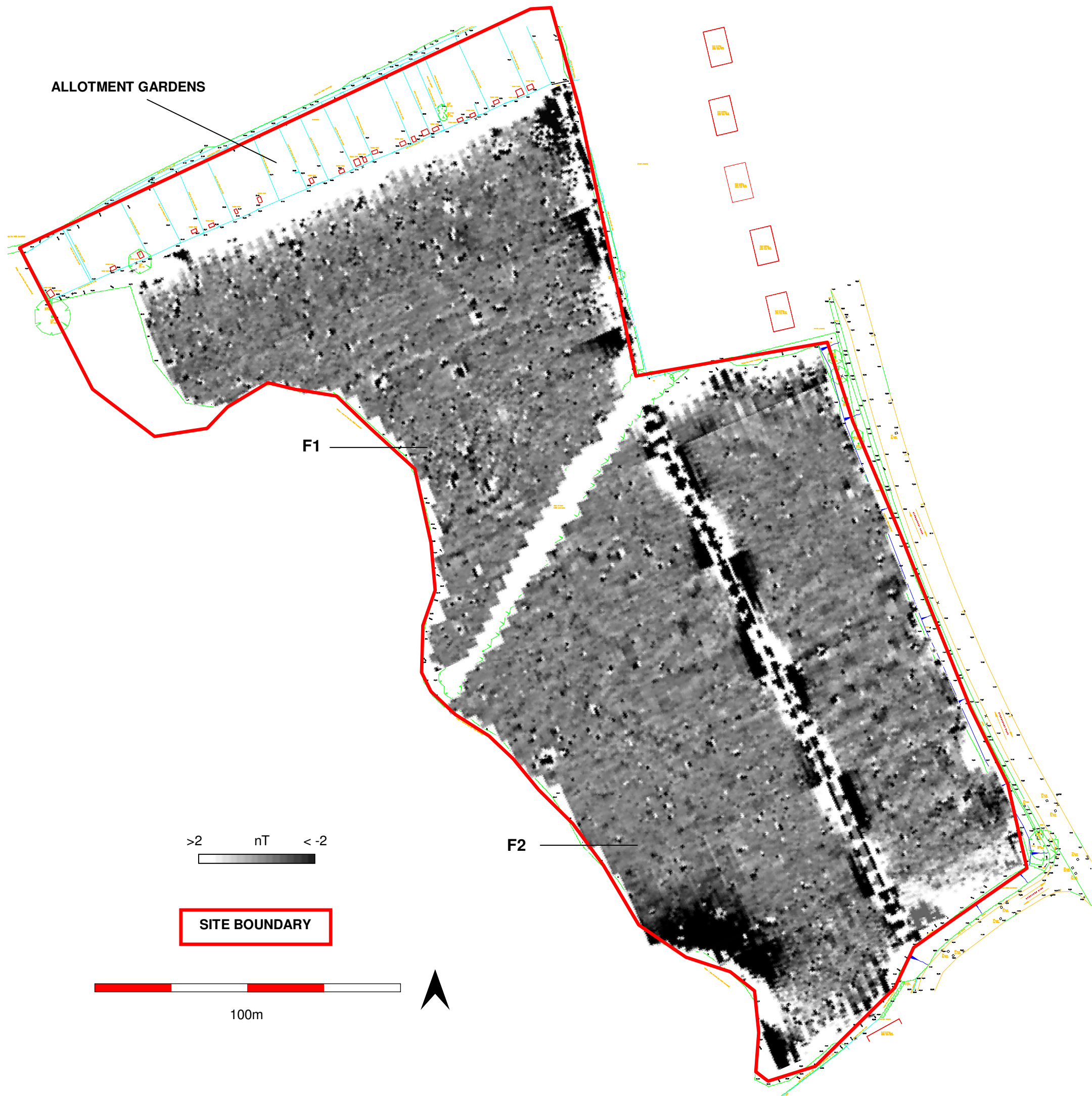


Fig. 2: Greyscale images of processed data

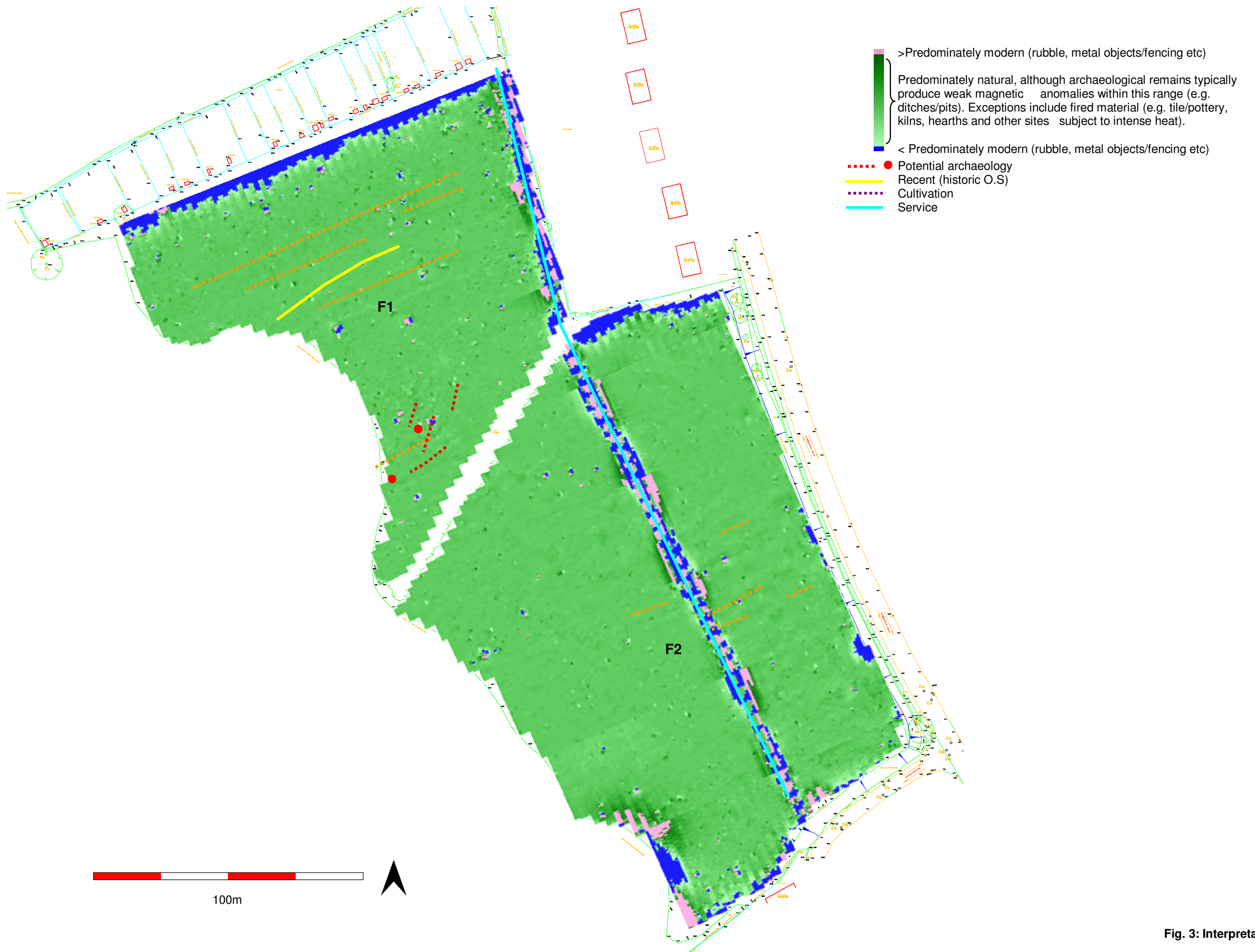


Fig. 3: Interpretation

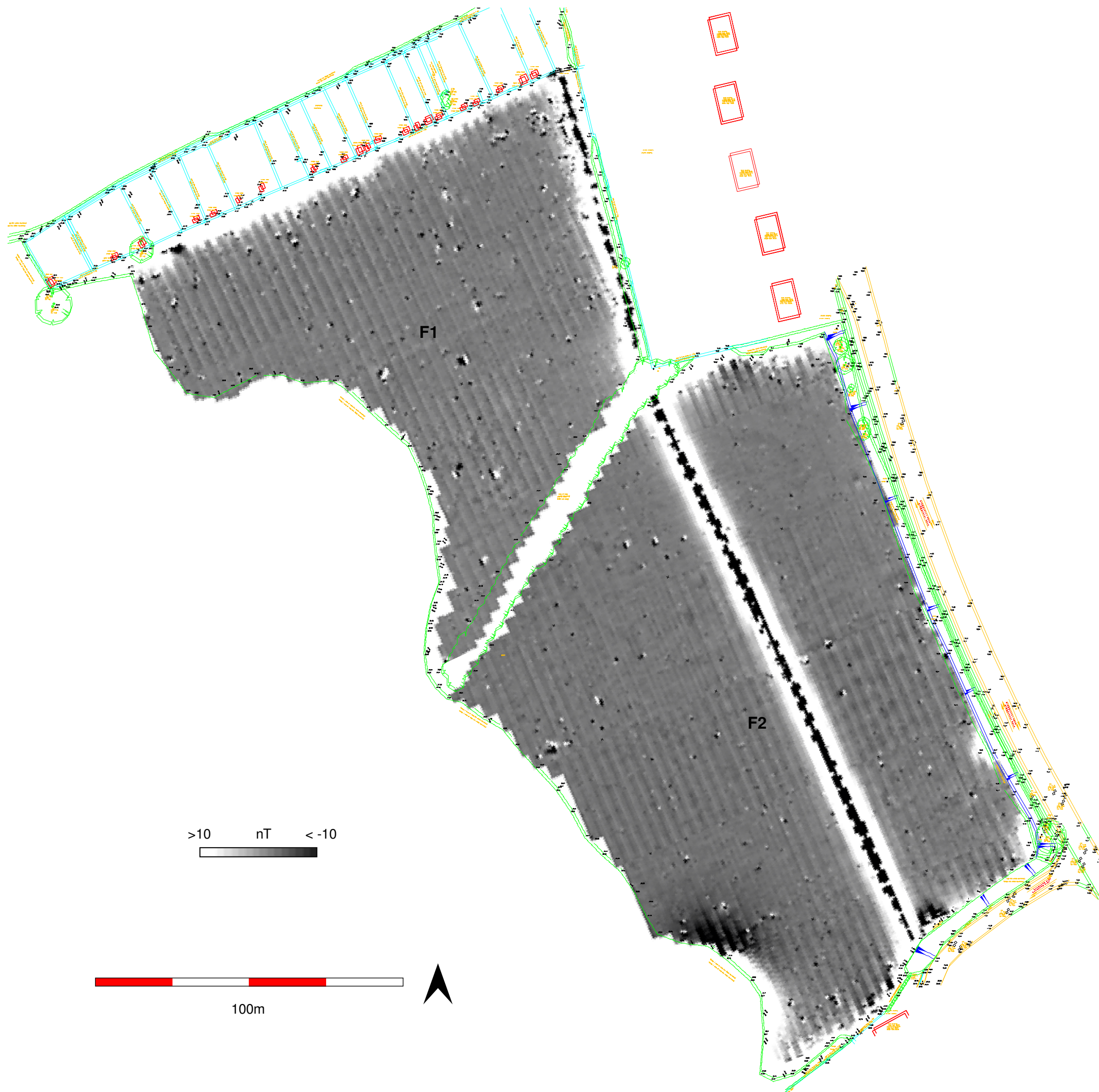


Fig. 4: Greyscale images of unprocessed data



Fig. 5: Trace plot images

APPENDIX : OASIS SUMMARY

OASIS ID: precon2-355694

Project details

Project name	land to the west of Stowmarket Road, Great Blakenham
Short description of the project	Fluxgate gradiometer survey
Project dates	Start: 22-02-2016 End: 22-02-2016
Previous/future work	Not known / Not known
Type of project	Field evaluation
Current Land use	Cultivated Land 4 - Character Undetermined
Monument type	POTENTIAL PITS AND DITCHES Uncertain
Significant Finds	NONE None
Significant Finds	NONE None
Methods & techniques	""Geophysical Survey""
Development type	Housing estate
Prompt	Direction from Local Planning Authority - PPG15
Position in the planning process	Not known / Not recorded
Solid geology	CHALK (INCLUDING RED CHALK)
Drift geology	Unknown
Techniques	Magnetometry

Project location

Country	England
Site location	SUFFOLK MID SUFFOLK GREAT BLAKENHAM land to the west of Stowmarket Road, Great Blakenham, Suffolk
Study area	4.5 Hectares
Site coordinates	TM 11548 51038 52.116598617573 1.090227568503 52 06 59 N 001 05 24 E Point