

SPSS12/001



PROPOSED NEW PRIMARY SCHOOL SITE, SILVERSTONE

Fluxgate Gradiometer Survey

for Lend Lease Consulting (EMEA) Ltd

October 2012

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NGR: SP 66587 44399

Parish: Silverstone

Local authority: Northamptonshire Council

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PROPOSED NEW PRIMARY SCHOOL SITE, SILVERSTONE

Fluxgate Gradiometer Survey

Abstract

Headland Archaeology were commissioned by Lend Lease Consulting (EMEA) Limited to undertake a fluxgate gradiometer survey over two proposed sites for a new primary school in Silverstone. The survey was undertaken to assist in the site selection process and establish whether there are likely to be any issues regarding heritage assets which might have to be dealt with during the planning process.

Site 1 on Church Road produced responses related to a scatter of iron objects. The density of these suggests that rubbish has been spread across the site at some point in the past as it is at a higher level than would usually be expected. There is also a concentration of debris on the line of a trackway that leads into the field.

Site 2 located an iron pipe running across its south-west corner and a background scatter of iron objects.

No features of archaeological significance are apparent in either of the plots.

Introduction

This report describes a geophysical survey undertaken on two sites selected for a proposed new primary school at Silverstone.

The survey was carried out by Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford in conjunction with Headland Archaeology (UK) Ltd in October 2012.

Site 1 was located at Rookery Farm (NGR 466540, 244390) which is bounded to the west by a water course, to the south by the Abthorpe Road and to the east by a field boundary. To the east of the site are a number of features labelled as fishponds on the OS mapping.

Site 2 lies to the north of the village (NGR 467162, 244682) with a track to its south, the main road through the village to its east and a field with disused quarry pits in to its north.

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...

Two sites were surveyed as part of a site selection process with the aim of the results informing this process.

Archaeological Background

Silverstone is a historic village that is known to predate the Domesday survey (and most probably the conquest) as in one entry part of it was held by Siward and worth 2s prior to the survey (Williams and Martin 1992). To the east of Site 1 and south of site 2, by c. 100m in each case there are fish ponds parked on the modern OS map. The first edition Ordnance Survey map of 1884 shows features at this location although these could equally be remnants of some form of moated enclosure by their appearance on this map.

Geology and Topography

No drift geology is recorded for either site, although the west boundary of Site 1 might contain some alluvium due to a stream that runs along that side. The geology beneath this site is Wellingborough Limestone. Site 2 also appears to be underlain by limestone, in this case Bisworth Limestone formation. Both sites are relatively level and low lying.

Survey Procedure

The procedure used for the investigation was a recorded magnetometer survey carried out across the shaded areas indicated on Illustration 1.

Magnetometer survey

A survey grid was set out and tied to the OS grid using a GPS system with Omnistar 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 scale plots (Illustrations 2-3), and as graphical (x-y trace) plots in Illustrations 4-5 (all at 1:1250 scale). 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 illustration 6. Colour coding has been used in the interpretation to distinguish different interpretations and anomaly types.

Only two features have been identified on the plots.

Results

Site 1

The results within this site can be defined by two manifestations of the same types of response. The first a dense scatter of ferrous material across the whole site. The second (shown on Illus 6) an area where these appear to band together. This coincides with the area of a track shown on air photos of the site.

Site 2

The only response of note within this field is the line of a pipe shown on Illus 6 and the plots of the site.

References

English Heritage, 2008, *Geophysical Survey in Archaeological Field Evaluation (Section 4.8)*
p10

Williams A, and Martin G H, 1992, *A complete translation: Domesday Book* Penguin

Illustrations

Illus 1 - Site Location

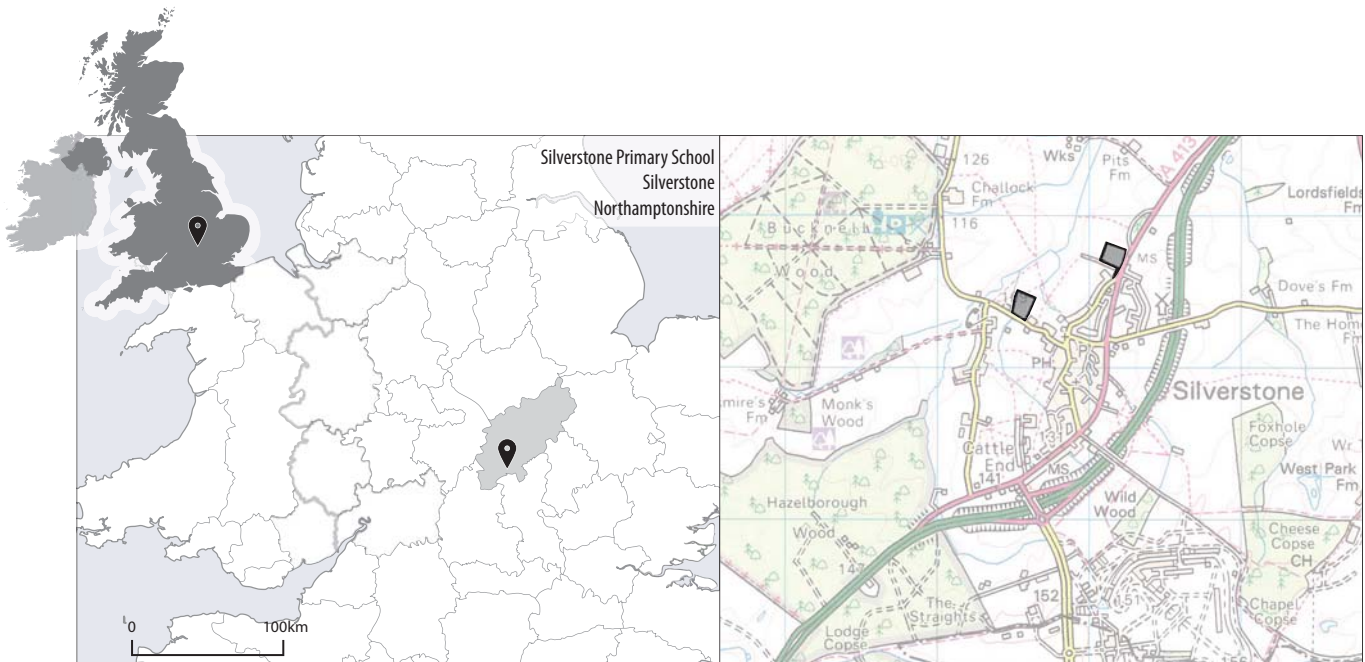
Illus 2 - Site 1 greyscale plot

Illus 3 - Site 2 greyscale plot

Illus 4 - Site 1 trace plot

Illus 5 - Site 2 trace plot

Illus 6 - Interpretation of results

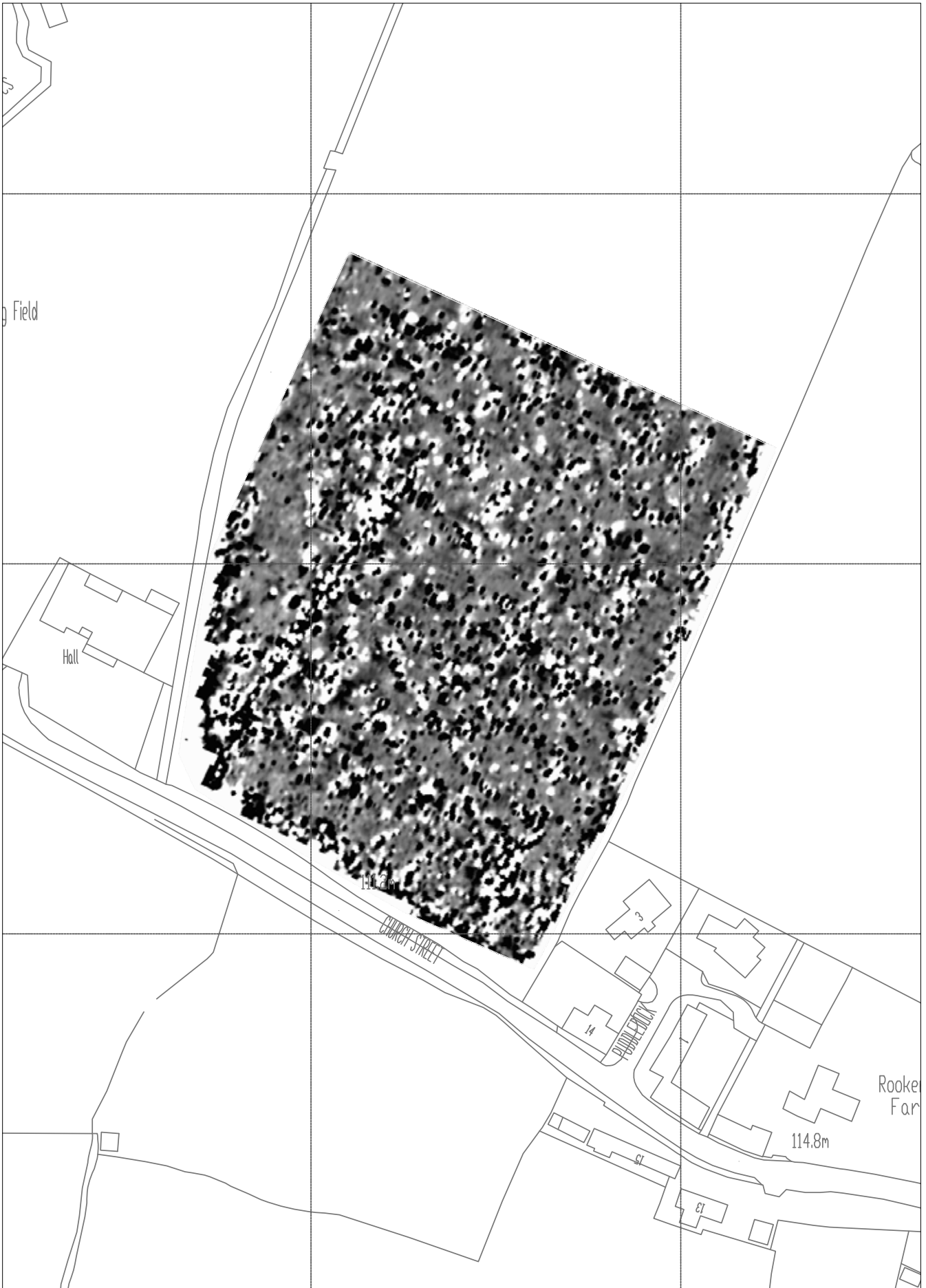


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Scale 1:5,000 @ A4

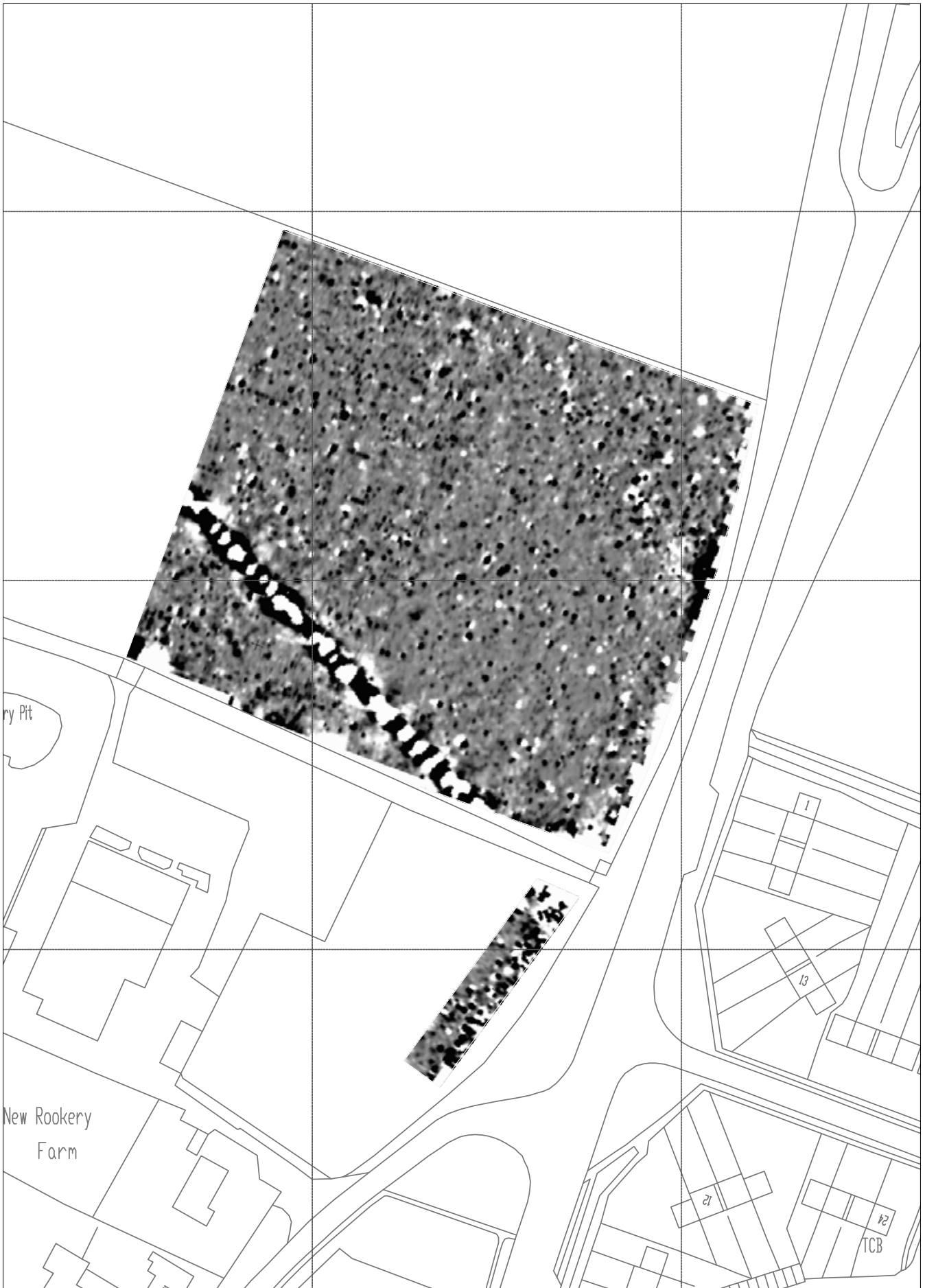


Illus 1
Site location



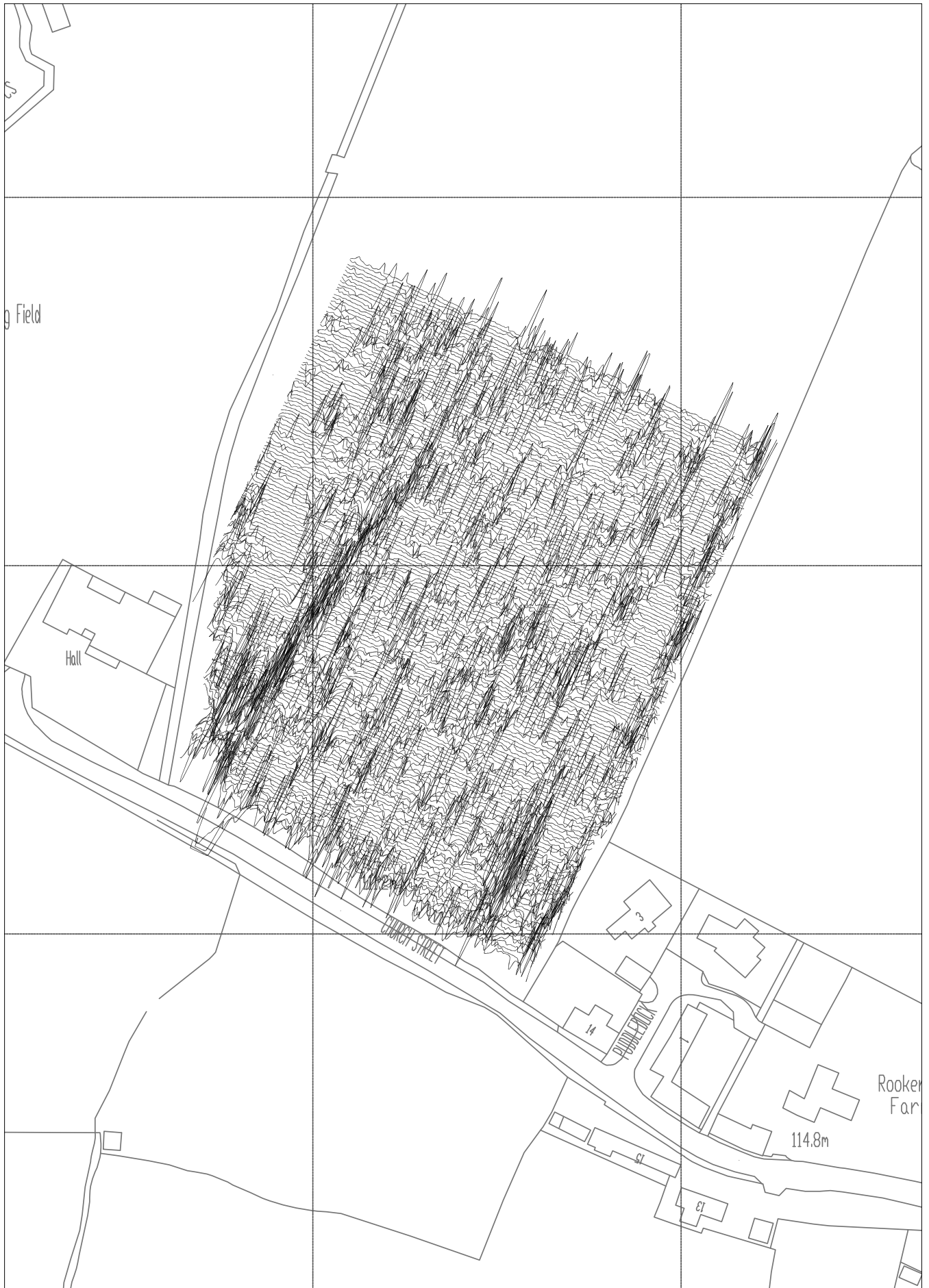
Illus 2

Site 1 – Grey scale plot

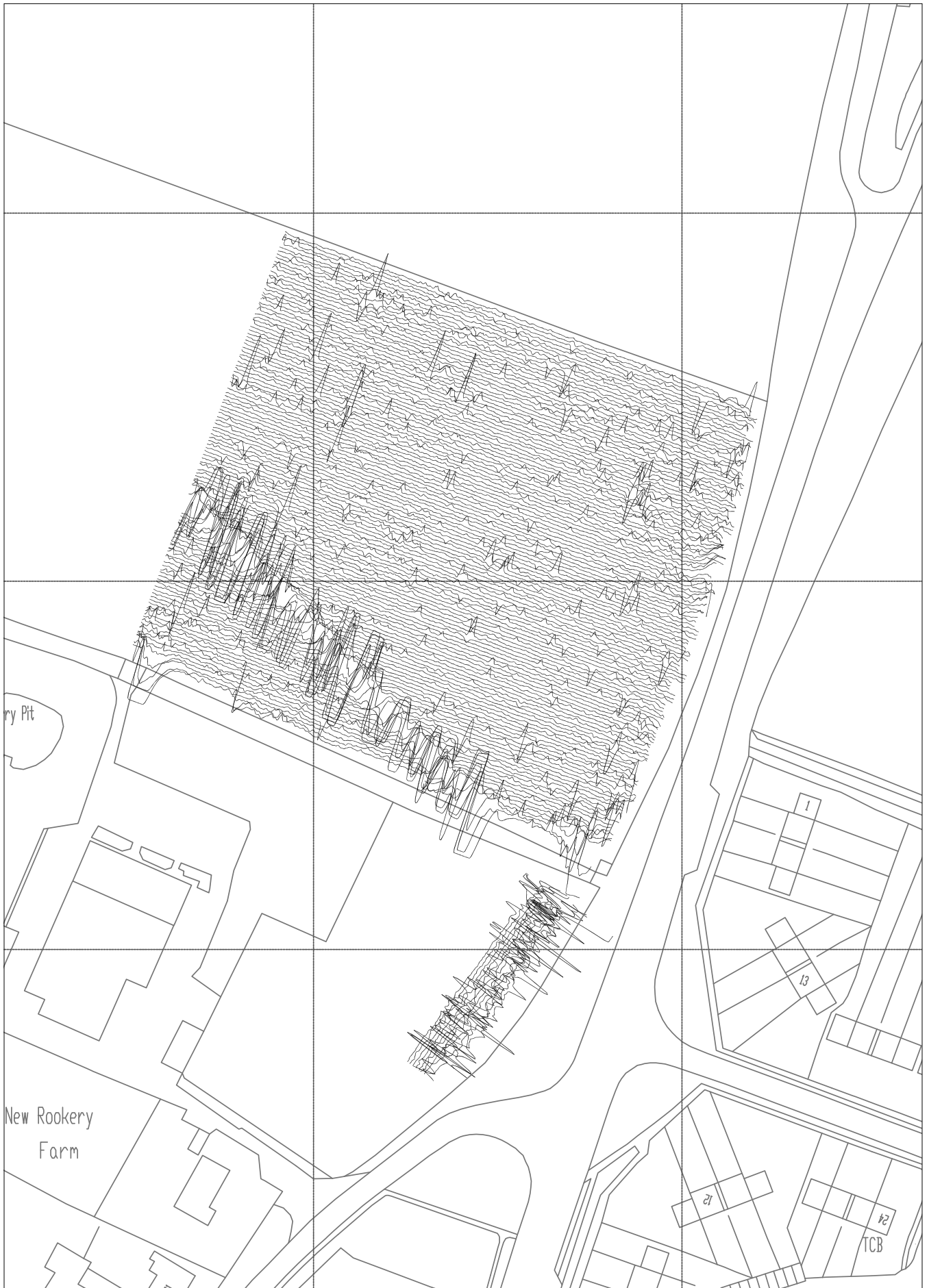


Illus 3

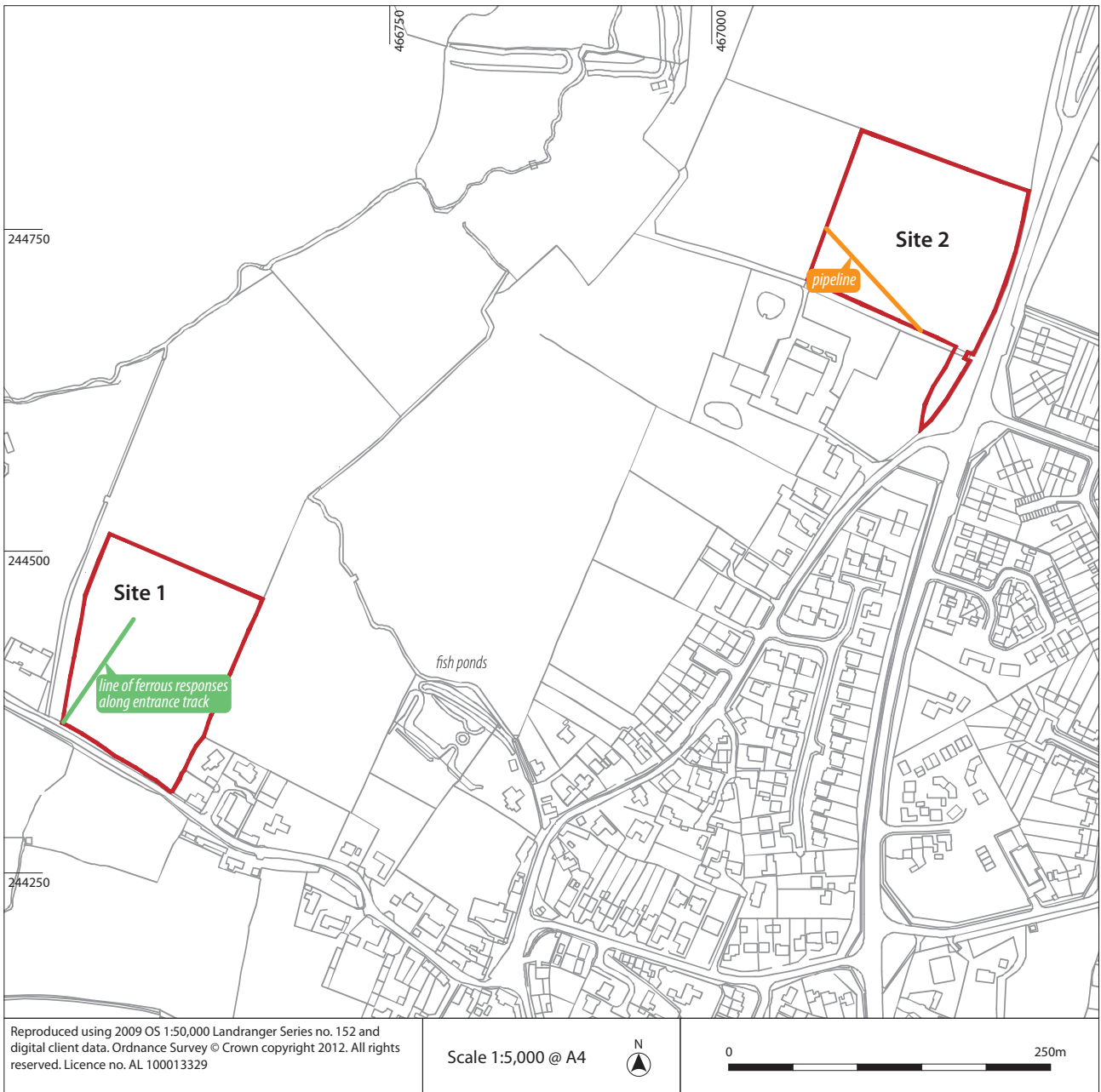
Site 2 – Grey scale plot



Illus 4
Site 1 – Trace plot



Illus 5
Site 2 – Trace plot



Illus 6
Interpretation of results

Access from the North Proposal (The Third Don Crossing)

Appendix : Inventory of Selected Findings

This list notes the more significant findings from the magnetometer survey of the proposed access route. The grading (1-4) given alongside each entry refers primarily to the reliability of the geophysical evidence, but the potential archaeological relevance of detected features is also taken into account in the definitions of grades 3 and 4.

- Grade 1: Distinct magnetic anomalies of probable archaeological origin.
- Grade 2: Weaker or more isolated magnetic anomalies which could in part be archaeologically significant.
- Grade 3: Distinct magnetic anomalies, but probably recent or natural, or of other non-archaeological origin.
- Grade 4: Weaker or more isolated magnetic anomalies of probably non-archaeological origin.

This summary list includes only selected magnetic findings, particularly those which may be of potential archaeological interest. Magnetic disturbances which may be mentioned in the text or indicated on plans are not necessarily included if they appear to be of natural or non-archaeological origin.

Feature		Grade
A	Fragmentary ditch-like feature near to ferrous and other disturbances.	2
B	Trench or hollow possibly filled with recent debris.	3
C, D	Negative linear features: perhaps a partially extant ditch or hollow, but possibly wall footings or pipes.	1 or 3 ?
E, F	Linear features similar to C, D, but aligned with boundaries of walled garden.	1 or 3 ?
G	Negative linear feature and other disturbances near site of building A23.	2
H	Strong isolated magnetic anomaly: pit or hollow perhaps containing recent debris.	3
J	Strong magnetic disturbances near structures A8 and A30; may relate to structural debris or recent landscaping.	3



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