Archaeology South-East

ASE

Detailed Magnetometer Survey
Land at White House Farm, Sprowston, Norfolk

NGR: 626583 311990
(TG 26583 11990)

Site Code: WFP18
OASIS ID: archaeol6-
ASE Project No: 171101
ASE Report No: 2018113

By John Cook

Detailed Magnetometer Survey
Land at White House Farm, Sprowston, Norfolk

NGR: 626583 311990
(TG 26583 11990)

Site Code: WFP18
OASIS ID: archaeol6-
ASE Project No: 171101
ASE Report No: 2018113

Prepared by:	**John Cook**	**Senior Geophysicist**	J. Cook
Reviewed and approved by:	**Vasilis Tsamis**	**Project Manager**	
Date of Issue:	**March 2018**		
Version:	**1**		

Archaeology South-East
Units 1 & 2
2 Chapel Place
Portslade
East Sussex
BN41 1DR

Tel: 01273 426830
Fax: 01273 420866
Email: fau@ucl.ac.uk
www.archaeologyse.co.uk

Abstract

Archaeology South-East (ASE), the contracting division of The Centre for Applied Archaeology at the Institute of Archaeology, University College London (UCL), was commissioned by CgMs Consulting Ltd to undertake a geophysical survey on Land at White House Farm, Sprowston, Norfolk, NGR 626583 311990. The work was undertaken between Wednesday 14th and Thursday 22nd March 2018.

Evidence for possible archaeological features was represented by moderate positive anomalies. Though they could have an archaeological origin, such as pits or ditches, they may equally be the result of the natural geology. Areas of magnetic debris are likely to be caused by ground disturbance or demolished buildings. Some of which may be relatively recent due to previous construction work compounds. Ploughing is indicated by parallel anomalies observed across the site. The anomalies show a pattern of ploughing that cross each other showing different phases of ploughing have taken place. A number of services and possible services are noted across the site. Including a large anomaly running along the eastern edge of the site that corresponds to a known gas pipe. Evidence for archaeology was generally sparse. This may be due to the thickness of the overburden with the topsoil being noted, in open trenches running along the western edges of the site, as being up to 400mm in depth.

Statement of Indemnity

Geophysical survey is the collection of data that relate to subtle variations in the form and nature of soil and which relies on there being a measurable difference between buried archaeological features and the natural geology. Geophysical techniques do not specifically target archaeological features and anomalies noted in the interpretation do not necessarily relate to buried archaeological features. As a result, magnetic and earth resistance detail survey may not always detect sub-surface archaeological features. This is particularly true when considering earlier periods of human activity, for example those periods that are not characterised by sedentary social activity.

CONTENTS

1.0 INTRODUCTION

1.1 Site background

1.1.1 Archaeology South-East (ASE) have been commissioned by CgMs Consulting Ltd (hereafter 'the client') to undertake a magnetometry survey on Land at White House Farm, Sprowston, Norfolk, (hereafter 'the site') centred on NGR 626583 311990; Figure 1.

1.1.2 CgMs produced a Desk-Based Assessment (2017) commissioned by Taylor Wimpey, Persimmon Homes and Hopkins Homes to establish the nature of any archaeological assets at the site and to provide guidance on ways to accommodate any archaeological constraints identified.

1.1.3 A planning application has not been submitted yet and construction proposals are not currently available. However, they are likely to comprise residential housing which could have a destructive impact on any underlying archaeological remains, should they exist.

1.1.4 A Written Scheme of Investigation (WSI) for a geophysical survey (ASE 2018) was prepared accordingly.

1.2 Geology and topography

1.2.1 According to the online British Geological Survey 1:50,000 mapping, the bedrock geology of the site consists of Crag Group - Sand and Gravel, and superficial deposits as Sheringham Cliffs Formation – Sand and Gravel, as well as Happisburgh Glacigenic Formation - Diamicton (BGS 2018).

1.2.2 The survey area consisted of approximately 16 hectares of arable land located to the East of Norwich on a gentle south facing slope (Figure 2).

1.3 Aims of geophysical investigation

1.3.1 The geophysical survey comprised a detailed magnetometer survey within all accessible areas (as shown on Figure 2). The survey aimed to detect anomalies of possible archaeological origin within the boundaries of the survey area. The features detected were naturally limited to those features that produce a measurable response to the instrumentation used.

1.3.2 The general aim of this programme of geophysical survey is to obtain a better understanding of the archaeological potential of the site. The results of this fieldwork will allow informed decisions to be made as to the need, nature and scope of any further mitigation measures that may be required.

1.4 Scope of report

1.4.1 The scope of this report is to detail the findings of the survey. The project was conducted by John Cook with the assistance of Chris Russel. The project was managed by Vasilis Tsamis (fieldwork and post fieldwork).

2.0 ARCHAEOLOGICAL BACKGROUND

2.1. Introduction

2.1.1 The results of the CgMs Archaeological Desk-Based Assessment (DBA; CgMs 2017) are summarised below.

2.2 Prehistoric

2.2.1 No Palaeolithic finds are recorded on the HER for the study site itself and the wider study area.

2.2.2 Prehistoric (more precise date not given) pits, ditches and post holes are recorded at Sprowston Manor Golf Course, immediately north of the study site. A Mesolithic flint tranchet axehead is recorded on the HER at a findspot c.200m north of the study site. Prehistoric and Mesolithic worked and burnt flints were recovered during fieldwalking in 2002 at a findspot located c.300m north of the study site.

2.2.3 A number of Neolithic and Bronze Age finds are recorded within 1 1km radius of the site. Probable enclosure ditches of uncertain, but possibly late Prehistoric date, are visible as cropmarks on aerial photographs in a number of locations within the vicinity of the study site. Based on the available evidence, it is apparent that the site lay in a landscape that was clearly being occupied and exploited. The archaeological potential of the study site is therefore considered to be moderate for artefactual evidence within the plough soil but low/moderate for evidence of in-situ settlement or funerary activity. Evidence for land division and agricultural activity could potentially be represented.

2.3 Iron Age and Roman

2.3.1 Based on the available evidence, there is little to suggest any significant Iron Age or Roman settlement remains on the study site. However, stray finds could conceivably be present. Overall, a low/moderate potential is identified for these periods within the study site.

2.4 Medieval

2.4.1 In view of the available evidence, there is a findspot-rich HER record for this period due to extensive metal detecting in the area, consequentially finds cannot be precluded. The potential for Saxon and Medieval settlement remains within the study site is low/moderate with the site seemingly located in agricultural land associated with possible roads.

2.5 Post-medieval and modern

2.5.1 The map regression exercise demonstrates that the study site lay within agricultural, pasture and woodland throughout the Post-Medieval period. As a result, the study site is considered to have a low/moderate potential for Post-Medieval or Modern remains

2.6 The Archive

2.6.1 The digital and paper archive derived from this project will be housed at

Archaeology South-East's Sussex offices and will be combined with any further archive generated in the event of further fieldwork being required.

3.0 SURVEY METHODOLOGY

3.1 Geophysical survey

3.1.1 A fluxgate gradiometer (magnetometry) survey was undertaken across five parcels of land as depicted on Figure 2 (Denoted as Fields 1-5). The work was undertaken between Wednesday 14th and Thursday 22nd March during cold and breezy weather with the occasional shower and one day of rain.

3.2 Applied geophysical instrumentation

3.2.1 The Fluxgate Gradiometer employed was the Bartington Instrumentation Grad 601-2. The Grad 601-2 has an internal memory and a data logger that store the survey data. This data is downloaded into a PC and is then processed in a suitable software package.

3.2.2 30m x 30m grids were set out using a GNSS instrument (see below). Each grid was surveyed with 1m traverses and samples were taken every 0.25m.

3.2.3 Data was collected along north-south traverses in a zigzag pattern beginning in the south west corner of each grid, following the contours of the site.

3.3 Instrumentation used for setting out the survey grid

3.3.1 The survey grid for the site was geo-referenced using a Leica Viva SmartRover. The GNSS receiver collects satellite data to determine its position and uses the mobile phone networks to receive corrections, transmitting them to the RTK Rover via Bluetooth to provide a sub centimetre Ordnance Survey position and height. Each surveyed grid point has an Ordnance Survey position; therefore the geophysical survey can be directly referenced to the Ordnance Survey National Grid.

3.4 Data processing

3.4.1 All of the geophysical data processing was carried out using TerraSurveyor published by DW Consulting. Minimally processed data was produced using the following schedule of processing. Due to the very high positive readings of some of the magnetic disturbance, the values were replaced with a dummy value so as to avoid detrimentally affecting the dataset when further processed. The first process carried out upon the data was to apply a DESPIKE to the data set which removes the random ‘iron spikes’ that occur within fluxgate gradiometer survey data. A ZERO MEDIAN TRAVERSE was then applied to survey data. This removes stripe effects within grids and ensures that the survey grid edges match.

3.5 Data presentation

3.5.1 Data is presented using images exported from TerraSurveyor into AutoCAD software and inserted into the geo-referenced site grid. Data is presented as raw and processed data greyscale plots.

4.0 GEOPHYSICAL SURVEY RESULTS

4.1 Description of site

4.1.1 The survey area consisted of approximately 16 hectares of arable land located to the East of Norwich on a gentle south facing slope (Figure 2).

4.2 Survey limitations

4.2.1 Physical obstructions encountered on site included areas of overgrown vegetation with hidden dips, deeply rutted ground and metal fences (Figure 2). In addition, the effectiveness of magnetometer surveys depends on a contrast between the absolute magnetic susceptibility of the topsoil to the underlying subsoil (Clark 1996). Features may also be difficult to detect where there has been significant primary silting and development of significant overburden. Areas where physical obstructions form a barrier to survey, or a health and safety issue, have been omitted. The site lies over sand and gravel geologies with superficial deposits consisting of glacial till. The response to magnetometer survey is very variable (English Heritage 2008).

4.3 Introduction to results

4.3.1 The results should be read in conjunction with the figures at the end of this report. The types of features likely to be identified are discussed below.

Positive Magnetic Anomalies

4.3.2 Positive anomalies generally represent cut features that have been in-filled with magnetically enhanced material.

Negative Magnetic anomalies

4.3.3 Negative anomalies generally represent buried features such as banks or compacted ground that have a lower magnetic signature in comparison to the background geology.

Magnetic Disturbance

4.3.4 Magnetic disturbance is generally associated with interference caused by modern ferrous features such as fences and service pipes or cables.

Magnetic Debris

4.3.5 Low amplitude magnetic debris consists of a number of dipolar responses spread over an area and is indicative of ground disturbance.

Dipolar Anomalies

4.3.6 Dipolar anomalies are positive anomalies with an associated negative response. These anomalies are usually associated with discreet ferrous objects or may represent buried kilns or ovens.

Bipolar Anomalies

4.3.7 Bipolar anomalies consist of alternating responses of positive and negative magnetic signatures. Interpretation will depend on the strength of these responses; modern pipelines and cables typically produce strong bipolar responses.

Thermoremanence

4.3.8 Thermoremanence is most commonly encountered through the magnetizing of clay through the firing process although stones and soils can also acquire thermoremanence.

4.3.9 Magnetism from ferromagnetic materials (iron) and from thermoremanence are forms of permanent magnetism and in most cases a magnetometer will not enable the separation of anomalies into the two categories. The interpretation of these anomalies into either category relies on field strength within an area. Magnetic anomalies due to iron normally rise and fall rapidly, forming a 'spike' in the data.

4.4 Interpretation of fluxgate gradiometer results (Figures 3-22)

4.4.1 The interpretation of fluxgate gradiometer results should be read in conjunction with the figures at the end of the report. Specific examples of anomaly types may be numbered in the figures and text but not all anomalies are numbered.

Field 1

4.4.2 Field 1 consisted of a narrow strip of land at the north-eastern end of the site measuring approximately 1.7ha. The field is bounded by a golf course to the north and east and a road to the south and west.

4.4.3 Evidence of possible archaeological activity included the following described anomalies (Figure 13). The most obvious possible archaeological anomalies are the linear and discrete moderate positive anomalies and likely to be due to cut features such as pits and ditches (coloured light green, A1).

4.4.4 Dipolar anomalies (Pink dots, A2) may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects.

4.4.5 Plough marks create linear anomalies that may be mistaken for ditches but are noted when more obvious (dark green dashed lines, A3).

Field 2

4.4.6 Field 2 consisted of a diamond shaped enclosure in the northern half of the site and measuring approximately 3.9ha.

4.4.7 Evidence of possible archaeological activity included the following described anomalies (Figure 14). The most obvious possible archaeological anomalies are the linear and discrete moderate positive anomalies and likely to be due to cut features such as pits and ditches (coloured light green, A4).

4.4.8 Areas of magnetic debris may relate to a scattering of near surface ferrous material, demolished buildings, former field boundaries, ground disturbance or made ground (dotted brown, A5).

4.4.8 Dipolar anomalies (Pink dots, A6) may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects.

4.4.9 Plough marks create linear anomalies that may be mistaken for ditches but are noted when more obvious (dark green dashed lines, A7).

4.4.10 Magnetic disturbance due to nearby magnetic objects such as fences is observed in the south of Field 2 (light brown, A8)

Field 3

4.4.11 Field 3 is the largest of the fields on the site measuring approximately 7.3ha bounded by wooded hedgerows to the east and new construction to the west.

4.4.12 Evidence of possible archaeological activity included the following described anomalies (Figure 15 and 16). The most obvious possible archaeological anomalies are the linear and discrete moderate positive anomalies and likely to be due to cut features such as pits and ditches (coloured light green, A9 and A14).

4.4.13 Areas of magnetic debris may relate to a scattering of near surface ferrous material, demolished buildings, former field boundaries, ground disturbance or made ground (dotted brown, A10).

4.4.14 Dipolar anomalies (Pink dots, A11 and A15) may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects.

4.4.15 Plough marks create linear anomalies that may be mistaken for ditches but are noted when more obvious (dark green dashed lines, A12).

4.4.16 A strong alternating dipolar anomaly with associated magnetic disturbance (Pink line, A13) runs along the eastern side of Field 3 indicating a service.

4.4.17 A further linear anomaly in the west of Field 3 may indicate a service but with no magnetic disturbance (pink line, A17)

Field 4

4.4.18 Field 4 is the smallest of the fields on the site measuring approximately 0.8ha and currently under rough grass bounded by woodland and construction.

4.4.19 Evidence of possible archaeological activity included the following described anomalies (Figure 16). The most obvious possible archaeological anomalies are the linear and discrete moderate positive anomalies and likely to be due to cut features such as pits and ditches (coloured light green).

4.4.20 Dipolar anomalies (Pink dots) may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects.

4.4.21 Areas of magnetic debris may relate to a scattering of near surface ferrous material, demolished buildings, former field boundaries, ground disturbance or made ground (dotted brown, A16).

Field 5

4.4.22 Field 5 is the most southerly of the fields on the site measuring approximately 3.5ha and bounded by woodland, construction and Salhouse Road to the south.

4.4.23 Evidence of possible archaeological activity included the following described anomalies (Figure 17). The most obvious possible archaeological anomalies are the linear and discrete moderate positive anomalies and likely to be due to cut features such as pits and ditches (coloured light green, A18).

4.4.24 Dipolar anomalies (Pink dots, A19) may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects.

4.4.25 Areas of magnetic debris may relate to a scattering of near surface ferrous material, demolished buildings, former field boundaries, ground disturbance or made ground (dotted brown, A20).

4.4.26 Plough marks create linear anomalies that may be mistaken for ditches but are noted when more obvious (dark green dashed lines, A21).

4.4.26 A strong, alternating, dipolar anomaly with associated magnetic disturbance (Pink line, A22) runs along the eastern side of Field 3 indicating a service.

5.0 CONCLUSIONS

5.1 Discussion

5.1.1 Evidence for possible archaeological features was represented by moderate positive anomalies (coloured light green on interpretation figures). Though they could have an archaeological origin, such as pits or ditches, they may equally be the result of the natural geology. The strongest evidence for possible cut features is noted in the south of Field 3 (Figure 16, A14).

5.1.2 Areas of magnetic debris (dotted brown) are likely to be caused by ground disturbance or demolished buildings. Some of which may be relatively recent due to previous construction work compounds.

5.1.3 Dipolar anomalies may indicate thermoremanent features such as kilns or furnaces. However, these anomalies are more likely to represent near surface ferrous (iron) objects within this survey.

5.1.4 Ploughing is indicated by parallel anomalies observed across the site. The anomalies show a pattern of ploughing that cross each other showing different phases of ploughing have taken place.

5.1.5 A number of services and possible services are noted across the site. Including a large anomaly running along the eastern edge of the site that corresponds to a known gas pipe.

5.1.6 As regards the site specific research aims, a number of possible archaeological features were encountered across the site but the technique does not allow for specific dating of features. Evidence for archaeology was generally sparse. This may be due to the thickness of the overburden with the topsoil being noted, in open trenches running along the western edges of the site (Figure 23h), as being up to 400mm in depth.

Bibliography

ASE, 2018 *Land at White House Farm, Sprowston, Norfolk: Written Scheme of Investigation for Geophysical Survey.*

BGS, 2018 *Geology of Britain Viewer*
http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html?src=topNav
Accessed 26th March 2018

CgMs, 2017 *Land at White House Farm, Sprowston, Norfolk Archaeological Desk Based Assessment*

Clark, A. 1996 *Seeing Beneath the Soil.* (2nd edition). London: Routledge.

English Heritage, 2008 *Geophysical Survey in Archaeological Field Evaluation 2nd Edition* Swindon: English Heritage

Acknowledgements

Archaeology South-East would like to thank CgMs Consulting Ltd for commissioning the survey.

HER Summary

HER enquiry number	N/A					
Site code	WFP18					
Project code	171101					
Planning reference						
Site address	Land at White House Farm, Sprowston, Norfolk, West Sussex					
District/Borough	Norfolk					
NGR (12 figures)	626583 311990					
Geology	Crag Group - Sand and Gravel, and superficial deposits as Sheringham Cliffs Formation – Sand and Gravel, as well as Happisburgh Glacigenic Formation - Diamicton					
Fieldwork type					**Survey**	
Date of fieldwork	14rd to 22nd March 2018					
Sponsor/client	CgMs Consulting Ltd					
Project manager	Vasilis Tsamis					
Project supervisor	John Cook					
Period summary						
Project summary	*Archaeology South-East (ASE), the contracting division of The Centre for Applied Archaeology at the Institute of Archaeology, University College London (UCL), was commissioned by CgMs Consulting Ltd to undertake a geophysical survey on Land at White House Farm, Sprowston, Norfolk, NGR 626583 311990. The work was undertaken between Wednesday 14th and Thursday 22nd March 2018. Evidence for possible archaeological features was represented by moderate positive anomalies. Though they could have an archaeological origin, such as pits or ditches, they may equally be the result of the natural geology. Areas of magnetic debris are likely to be caused by ground disturbance or demolished buildings. Some of which may be relatively recent due to previous construction work compounds. Ploughing is indicated by parallel anomalies observed across the site. The anomalies show a pattern of ploughing that cross each other showing different phases of ploughing have taken place. A number of services and possible services are noted across the site. Including a large anomaly running along the eastern edge of the site that corresponds to a known gas pipe. Evidence for archaeology was generally sparse. This may be due to the thickness of the overburden with the topsoil being noted, in open trenches running along the western edges of the site, as being up to 400mm in depth*					
Museum/Accession	N/A					

OASIS FORM

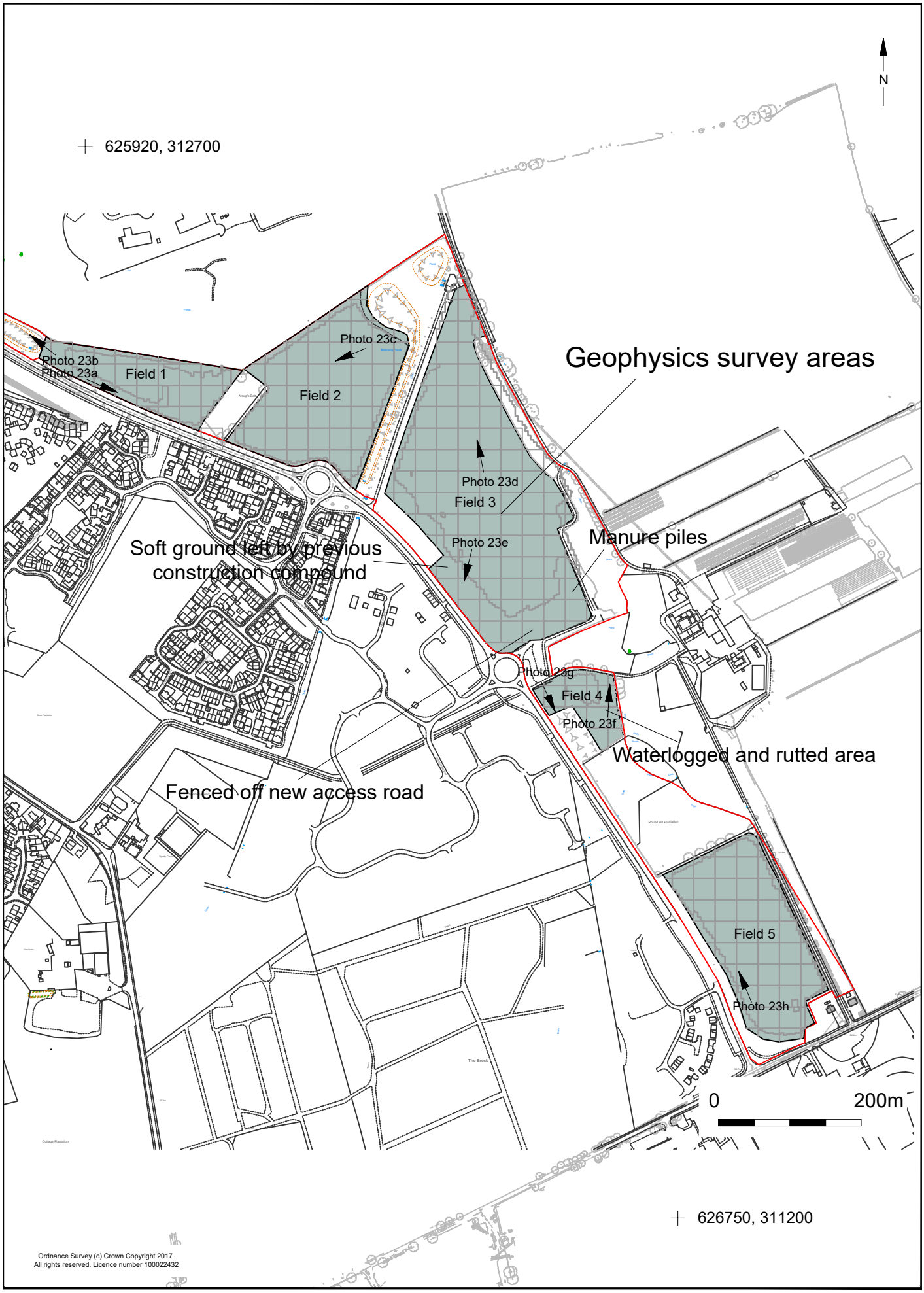
OASIS ID: archaeol6-312976

Project details	
Project name	Detailed Magnetometer Survey Land at White House Farm, Sprowston, Norfolk
Short description of the project	Archaeology South-East (ASE), the contracting division of The Centre for Applied Archaeology at the Institute of Archaeology, University College London (UCL), was commissioned by CgMs Consulting Ltd to undertake a geophysical survey on Land at White House Farm, Sprowston, Norfolk, NGR 626583 311990. The work was undertaken between Wednesday 14th and Thursday 22nd March 2018. Evidence for possible archaeological features was represented by moderate positive anomalies. Though they could have an archaeological origin, such as pits or ditches, they may equally be the result of the natural geology. Areas of magnetic debris are likely to be caused by ground disturbance or demolished buildings. Some of which may be relatively recent due to previous construction work compounds. Ploughing is indicated by parallel anomalies observed across the site. The anomalies show a pattern of ploughing that cross each other showing different phases of ploughing have taken place. A number of services and possible services are noted across the site. Including a large anomaly running along the eastern edge of the site that corresponds to a known gas pipe. Evidence for archaeology was generally sparse. This may be due to the thickness of the overburden with the topsoil being noted, in open trenches running along the western edges of the site, as being up to 400mm in depth
Project dates	Start: 14-03-2018 End: 22-03-2018
Previous/future work	Yes / Not known
Any associated project reference codes	171101 - Contracting Unit No.
Any associated project reference codes	WFP18 - Sitecode
Type of project	Field evaluation

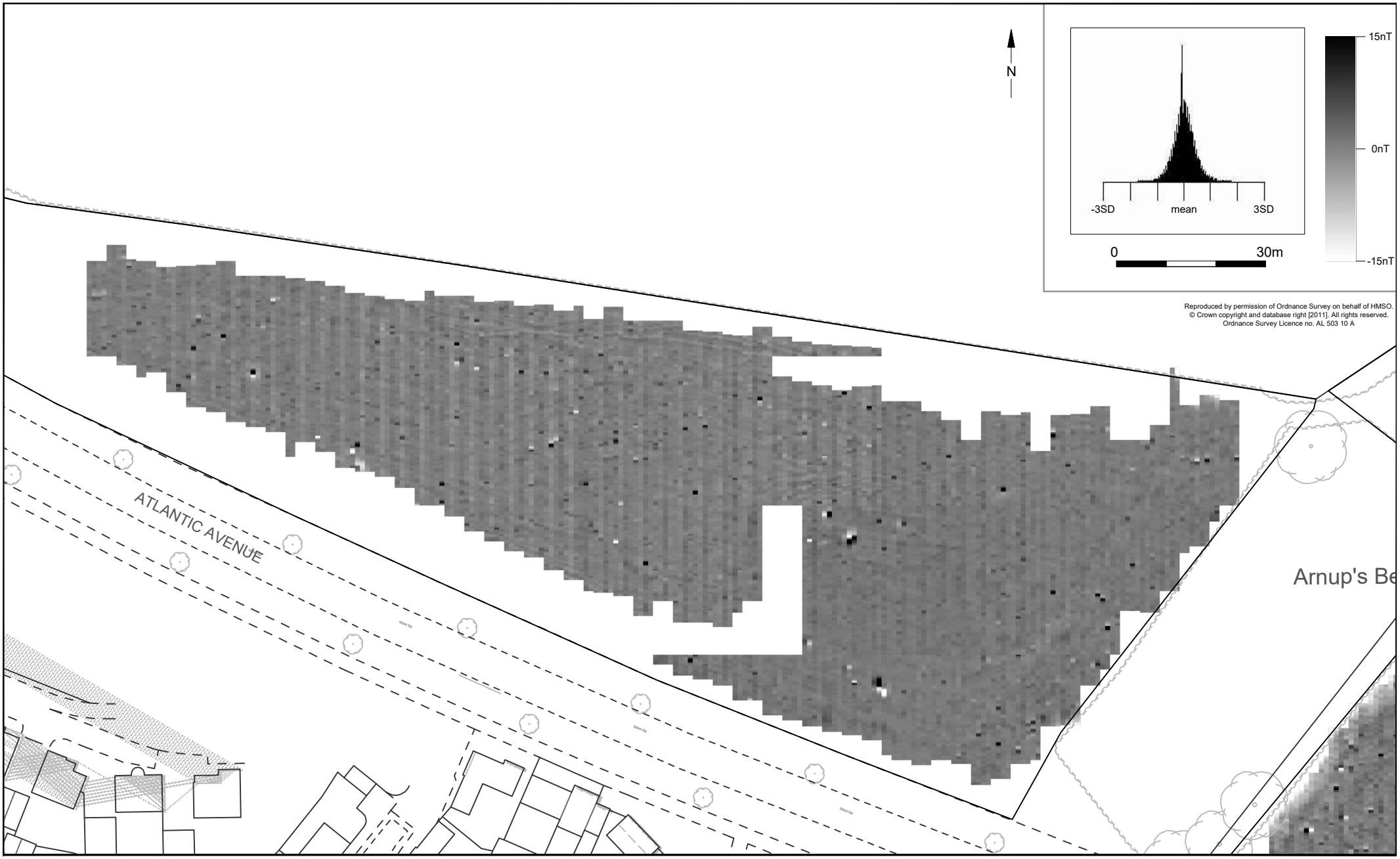
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	NONE None
Significant Finds	NONE None
Methods & techniques	"Geophysical Survey"
Development type	Housing estate
Prompt	Pre-application
Position in the planning process	Pre-application
Solid geology (other)	Crag Group - Sand and Gravel
Drift geology (other)	Sheringham Cliffs Formation – Sand and Gravel and Happisburgh Glacigenic Formation - Diamicton
Techniques	Magnetometry
Project location	
Country	England
Site location	NORFOLK BROADLAND SPROWSTON Land at White House Farm
Postcode	NR7 8DD
Study area	16 Hectares
Site coordinates	TG 26583 11990 52.657701946893 1.350682282887 52 39 27 N 001 21 02 E Point
Project creators	
Name of Organisation	Archaeology South-East
Project brief originator	CgMs Consulting
Project design originator	ASE/CgMs
Project director/manager	Vasilis Tsamis
Project supervisor	John Cook
Type of sponsor/funding body	Consultant

Name of sponsor/funding body	CgMs Consulting Ltd
Project archives	
Physical Archive Exists?	No
Digital Archive recipient	ASE
Digital Media available	"Geophysics","Images raster / digital photography"
Paper Archive recipient	ASE
Paper Media available	"Report","Unpublished Text"
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Detailed Magnetometer Survey Land at White House Farm, Sprowston, Norfolk
Author(s)/Editor(s)	Cook, J.
Other bibliographic details	Repert number: 2018113
Date	2018
Issuer or publisher	ASE
Place of issue or publication	Portslade
Entered by	John Cook (john.cook@ucl.ac.uk)
Entered on	28 March 2018

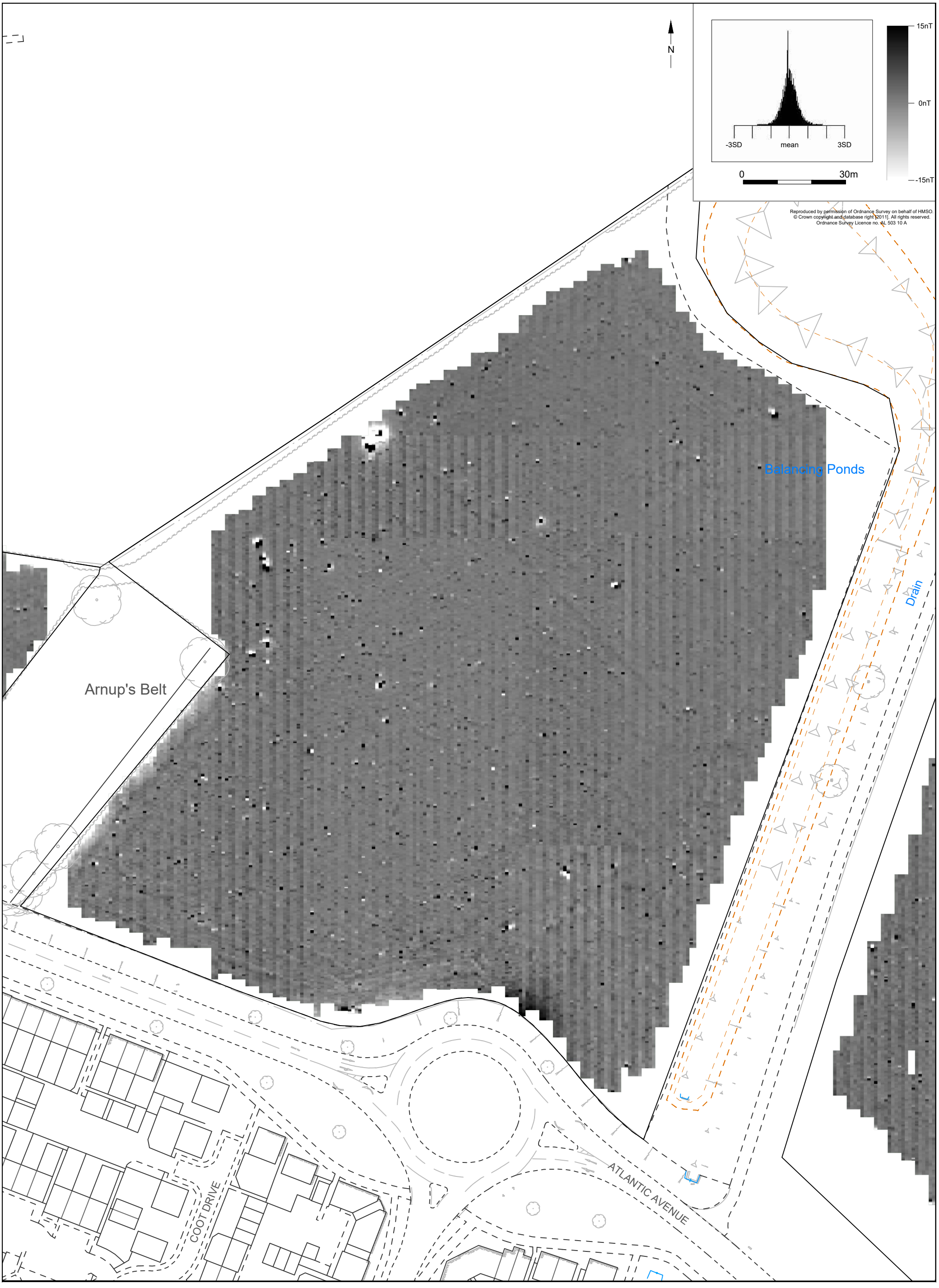
© Archaeology South-East		Land at White House Farm, Sprowston	Fig. 1
Project Ref: 171101	March 2018	Site location	
Report Ref: 2018113	Drawn by: JLR/JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 2
Project Ref: 171101	March 2018	Location of geophysics survey area	
Report Ref: 2018113	Drawn by: JC		

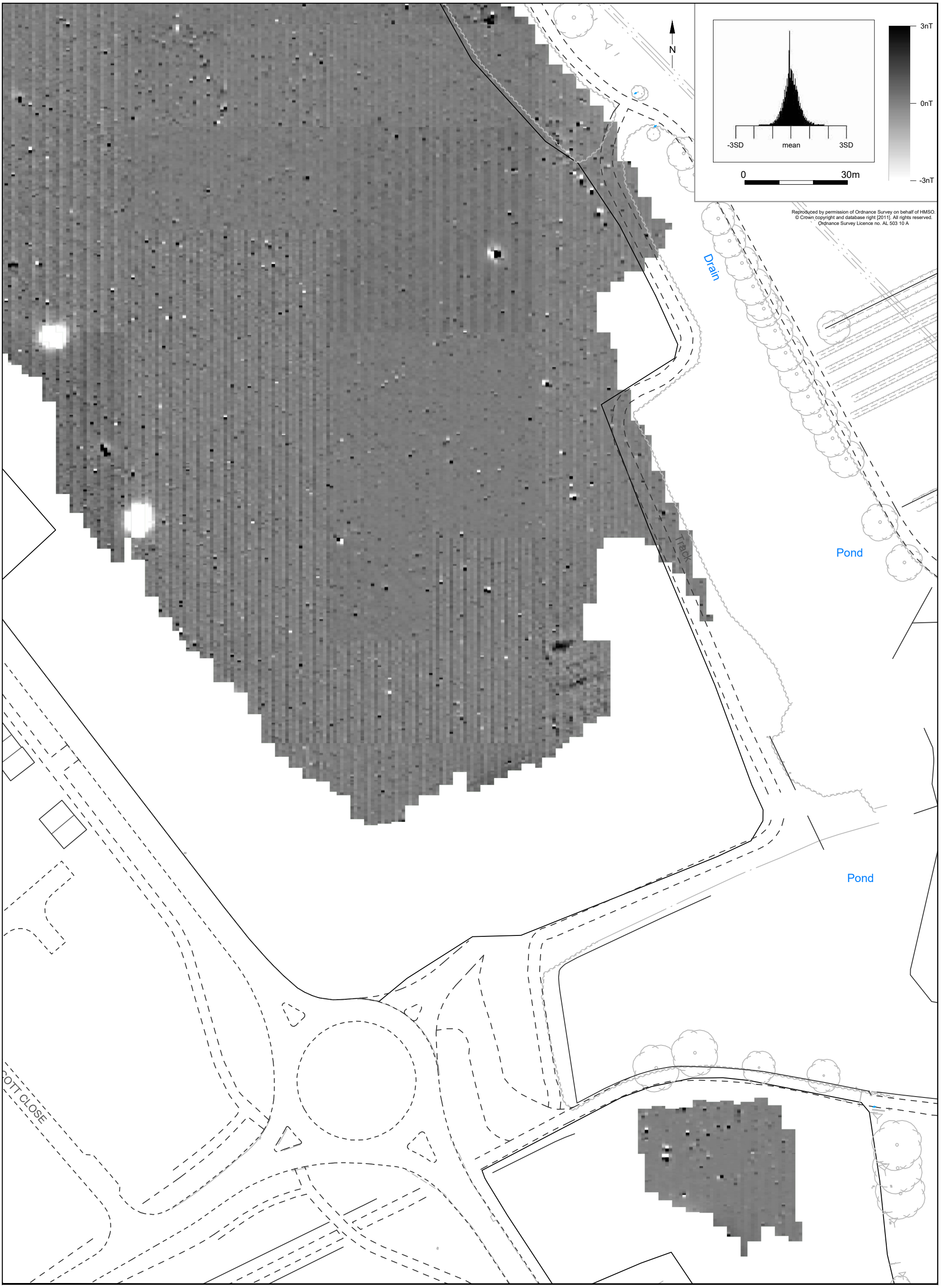


© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 3
Project Ref: 171101	March 2018	Raw data - Field 1	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 4
Project Ref: 171101	March 2018	Raw data - Field 2	
Report Ref: 2018113	Drawn by: JC		

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 5
Project Ref: 171101	March 2018	Raw data - Field 3 (North)	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 6
Project Ref: 171101	March 2018	Raw data - Field 3 (South) and Field 4	
Report Ref: 2018113	Drawn by: JC		

und Hill Plantation

N

-3SD mean 3SD

15nT 0nT -15nT

0 30m

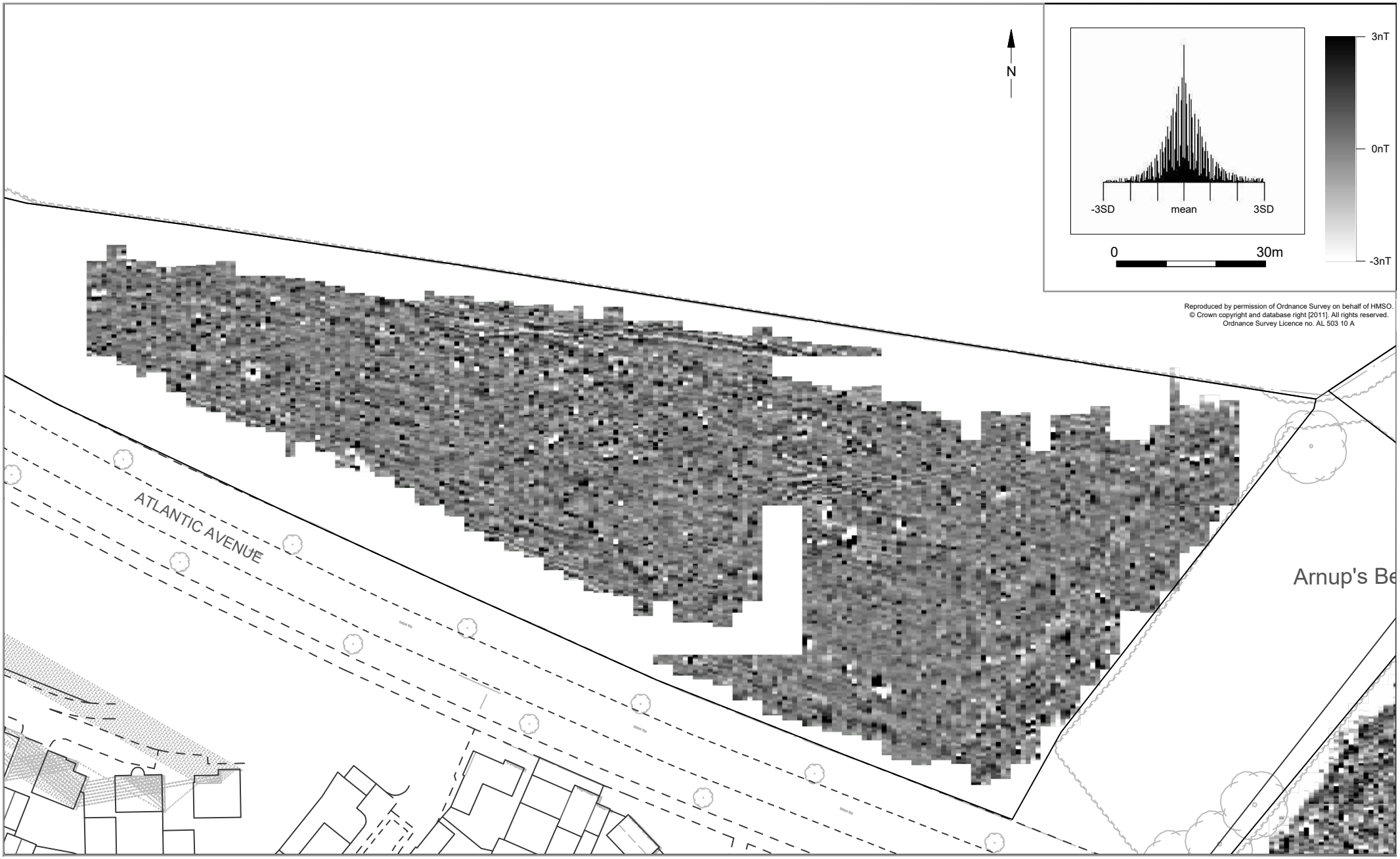
30.5m

BOLTON ROAD

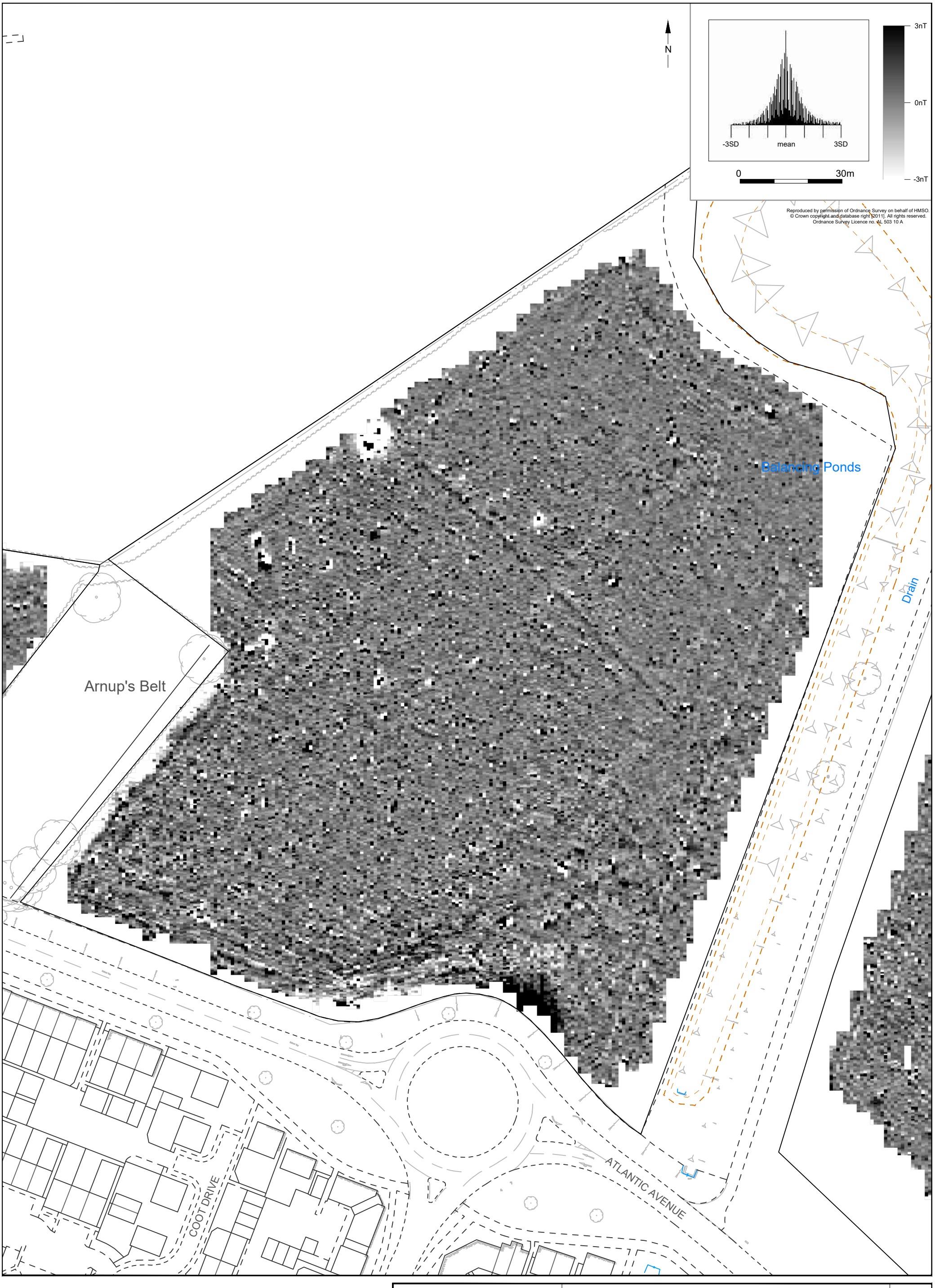
ATLANTIC AVENUE

34.7m

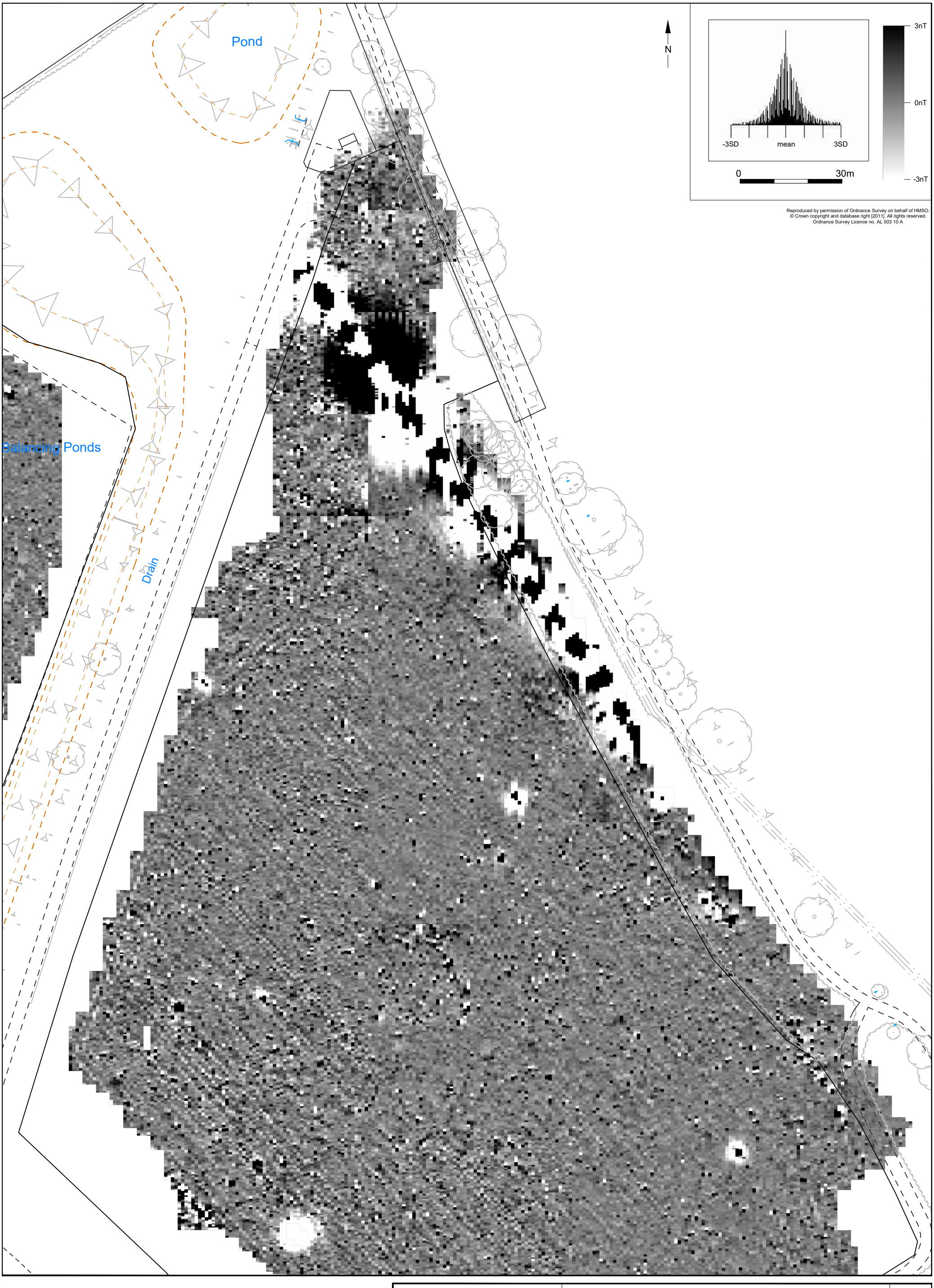
© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 7
Project Ref: 171101	March 2018	Raw data - Field 5	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 8
Project Ref: 171101	March 2018	Processed data - Field 1	
Report Ref: 2018113	Drawn by: JC		

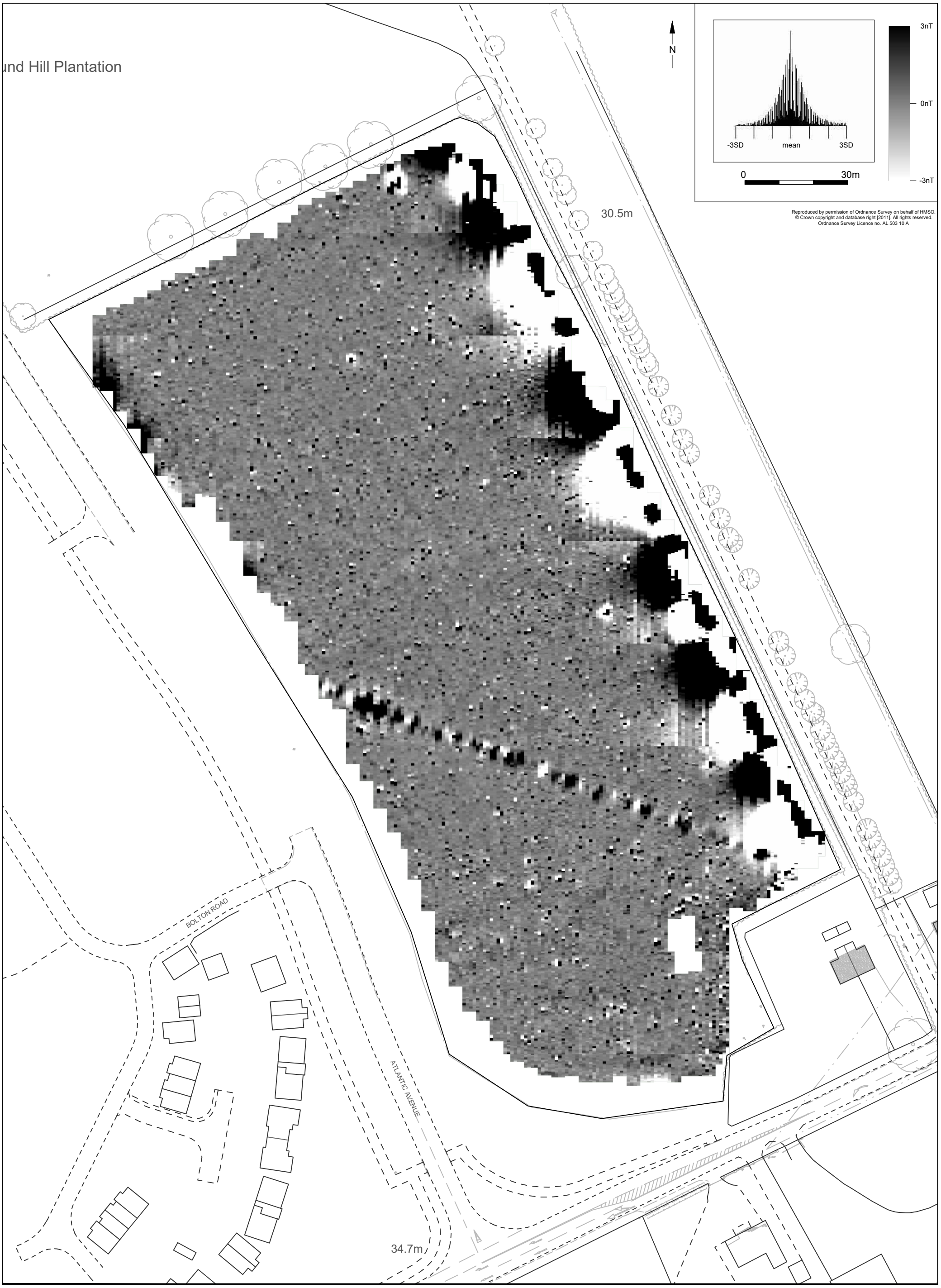


© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 9
Project Ref: 171101	March 2018	Processed data - Field 2	
Report Ref: 2018113	Drawn by: JC		

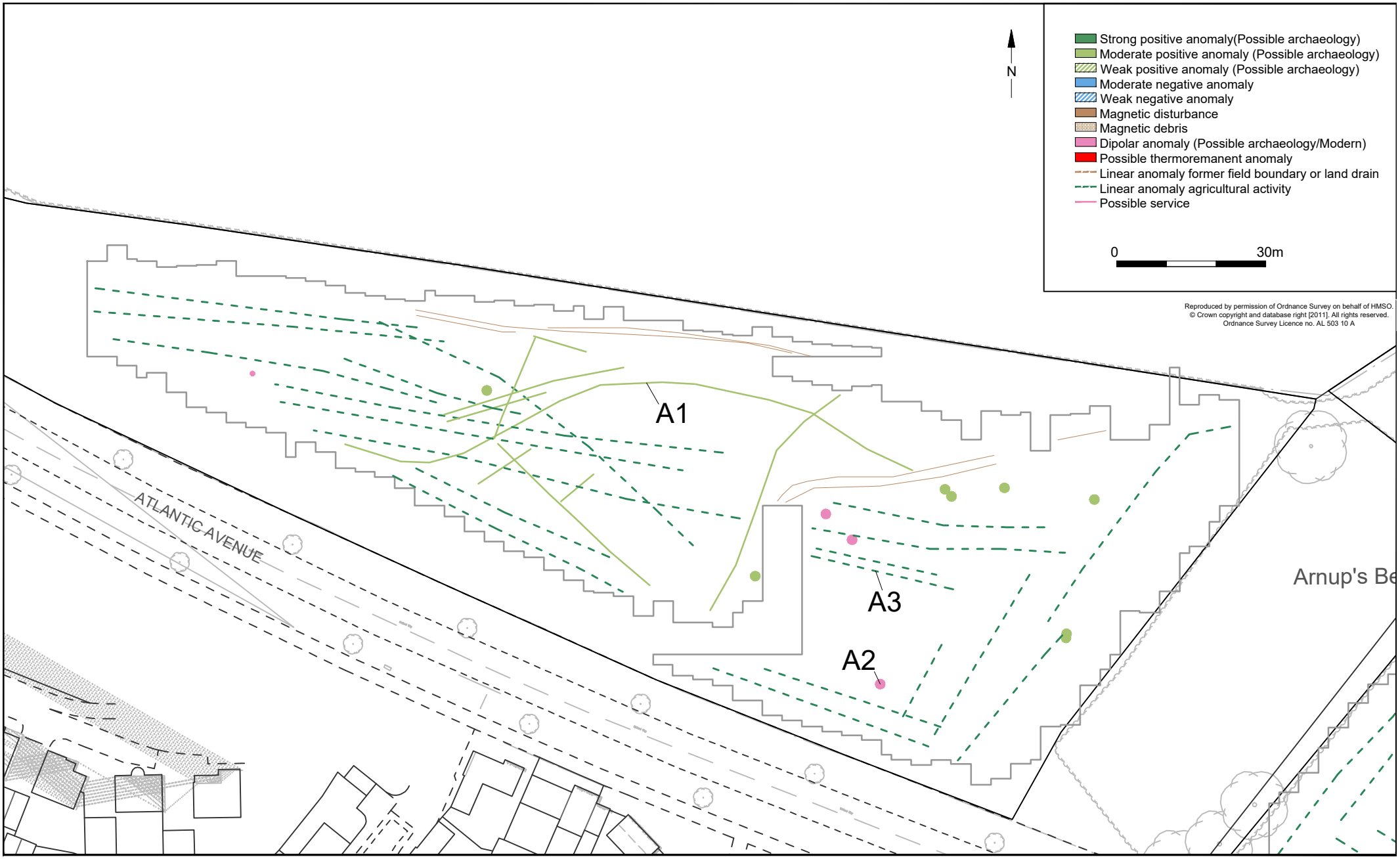


© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 10
Project Ref: 171101	March 2018	Processed data - Field 3 (North)	
Report Ref: 2018113	Drawn by: JC		

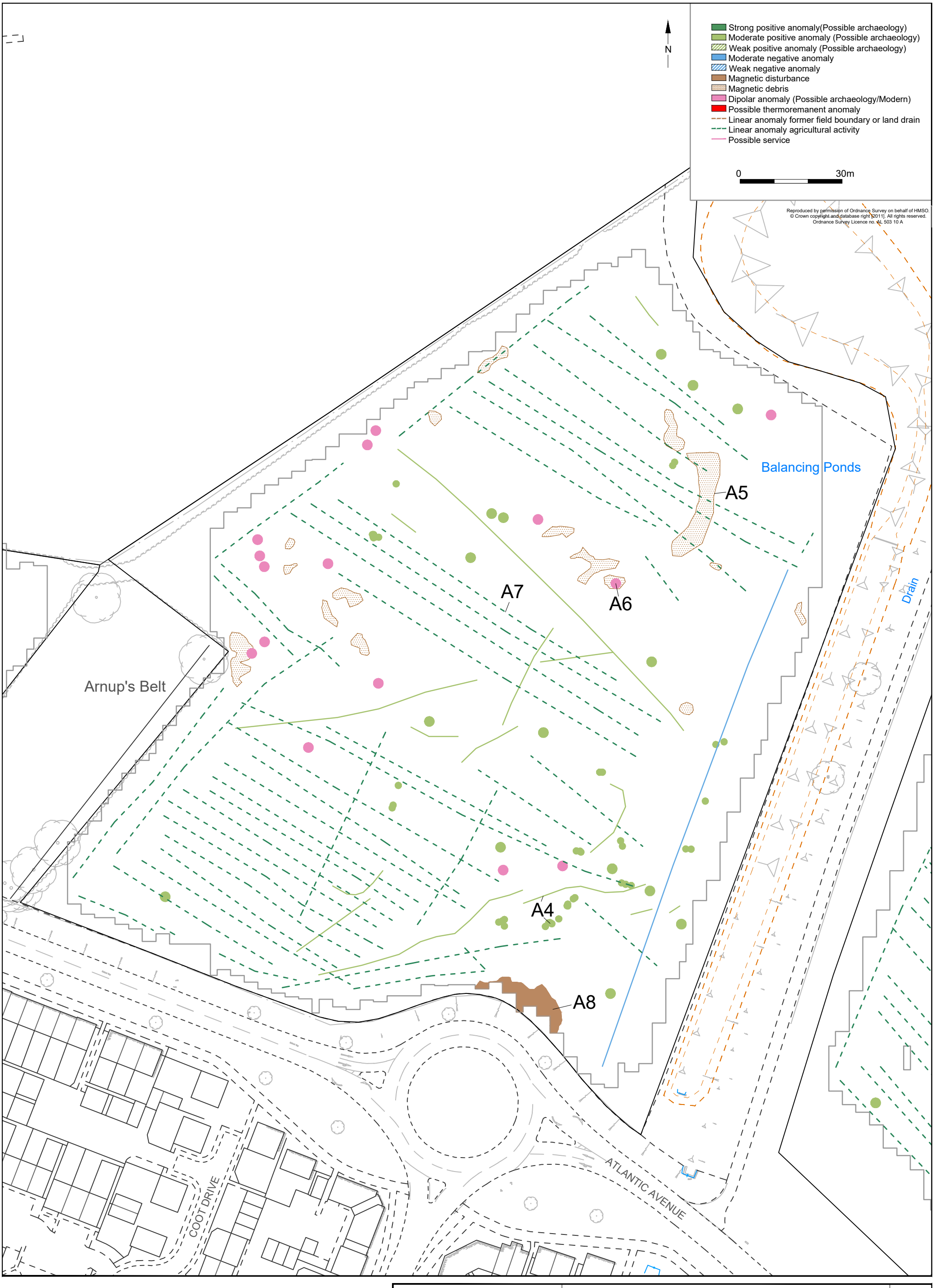
© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 11
Project Ref: 171101	March 2018	Processed data - Field 3 (South) and Field 4	
Report Ref: 2018113	Drawn by: JC		



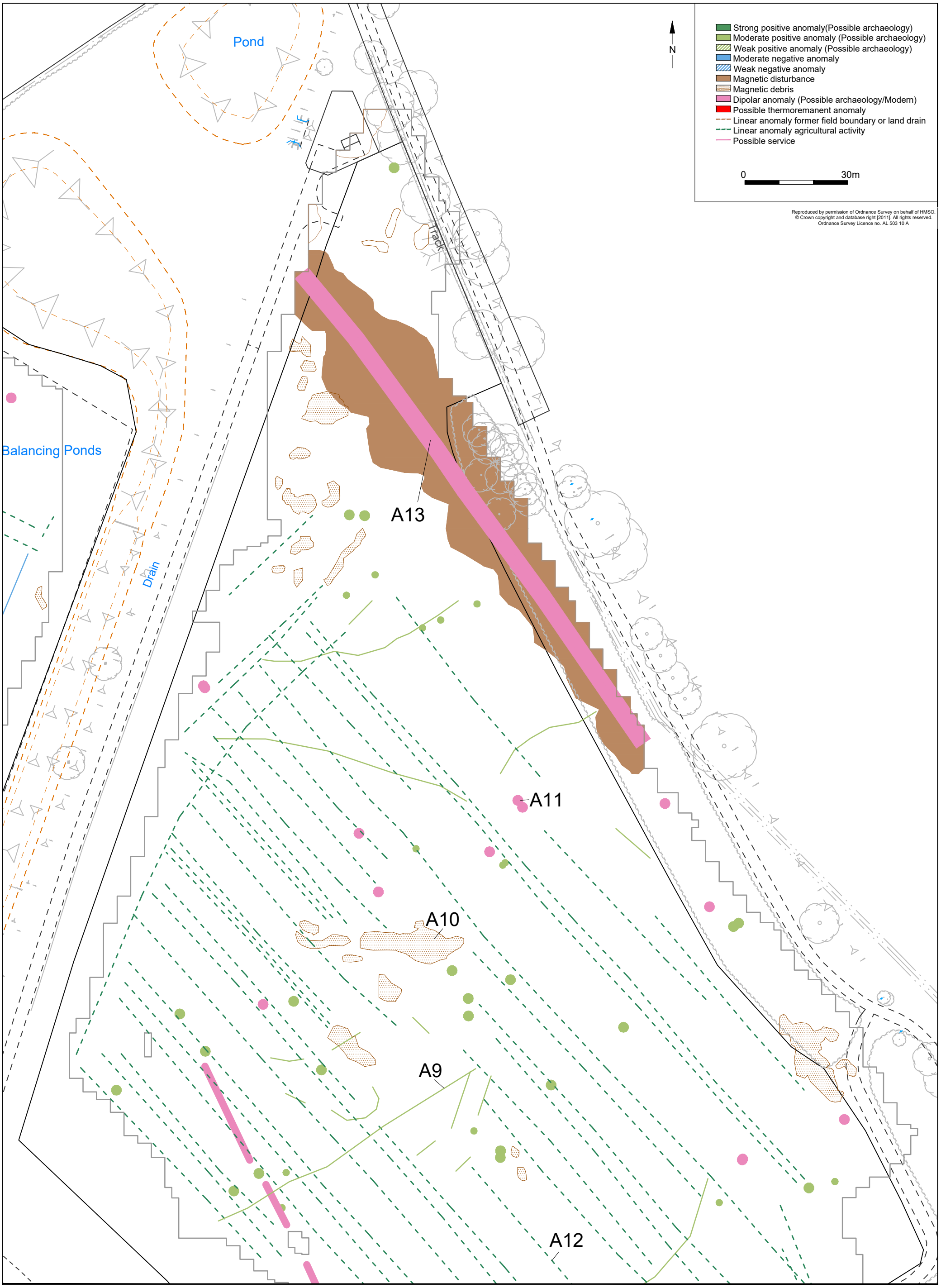
© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 12
Project Ref: 171101	March 2018	Processed data - Field 5	
Report Ref: 2018113	Drawn by: JC		



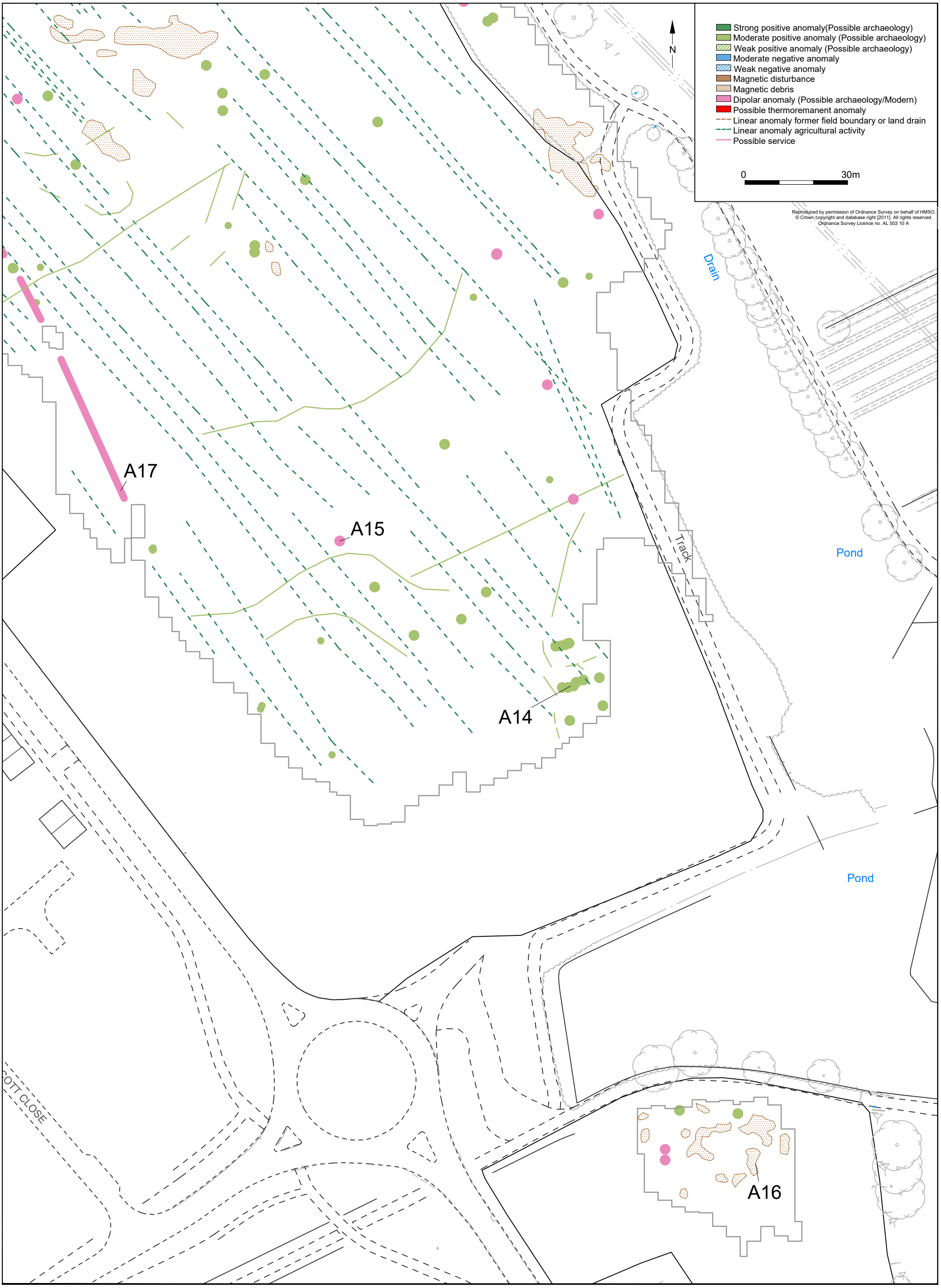
© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 13
Project Ref: 171101	March 2018	Interpretation - Field 1	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 14
Project Ref: 171101	March 2018	Interpretation - Field 2	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 15
Project Ref: 171101	March 2018	Interpretation - Field 3 (North)	
Report Ref: 2018113	Drawn by: JC		



© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 16
Project Ref: 171101	March 2018	Interpretation - Field 3 (South) and Field 4	
Report Ref: 2018113	Drawn by: JC		

und Hill Plantation

N

Strong positive anomaly(Possible archaeology)
Moderate positive anomaly (Possible archaeology)
Weak positive anomaly (Possible archaeology)
Moderate negative anomaly
Weak negative anomaly
Magnetic disturbance
Magnetic debris
Dipolar anomaly (Possible archaeology/Modern)
Possible thermoremanent anomaly
Linear anomaly former field boundary or land drain
Linear anomaly agricultural activity
Possible service

0 30m

30.5m

A21

A22

A19

A20

A18

BOLTON ROAD

ATLANTIC AVENUE

34.7m

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 17
Project Ref: 171101	March 2018	Interpretation - Field 5	
Report Ref: 2018113	Drawn by: JC		

625920, 312700

N

-3SD mean 3SD

3nT 0nT -3nT

Sports Ground

Round Hill Plantation

The Breck

Cottage Plantation

0 200m

626750, 311200

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 18
Project Ref: 171101	March 2018	Processed data - Overview	
Report Ref: 2018113	Drawn by: JC		

Strong positive anomaly(Possible archaeology)
Moderate positive anomaly (Possible archaeology)
Weak positive anomaly (Possible archaeology)
Moderate negative anomaly
Weak negative anomaly
Magnetic disturbance
Magnetic debris
Dipolar anomaly (Possible archaeology/Modern)
Possible thermoremanent anomaly
Linear anomaly former field boundary or land drain
Linear anomaly agricultural activity
Possible service

N

625920, 312700

626750, 311200

0 200m

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 19
Project Ref: 171101	March 2018	Interpretation - Overview	
Report Ref: 2018113	Drawn by: JC		

Fig. 20a Oblique Google Earth imagery

Fig. 20b Oblique Google Earth 3D imagery with geophysical survey data overlain

© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 20
Project Ref: 171101	March 2018	Google Earth images - Fields 1 and 2	
Report Ref: 2018113	Drawn by: JC		

Fig. 21a Oblique Google Earth imagery

Fig. 21b Oblique Google Earth 3D imagery with geophysical survey data overlain

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 21
Project Ref: 171101	March 2018	Google Earth images - Fields 3 and 4	
Report Ref: 2018113	Drawn by: JC		

Fig. 22a Oblique Google Earth imagery

Fig. 22b Oblique Google Earth 3D imagery with geophysical survey data overlain

© Archaeology South-East		Land at White House Farm, Sprowston, Norfolk	Fig. 22
Project Ref: 171101	March 2018	Google Earth images - Field 5	
Report Ref: 2018113	Drawn by: JC		

Photo 23a Field 1 looking east

Photo 23b Western end Field 1

Photo 23c Field 2 looking west

Photo 23d Field 3 looking north

Photo 23e Field 3 looking south-east boggy areas

Photo 23f Field 4 rutted and waterlogged area

Photo 23g Field 4 fenced off pond

Photo 23h Field 5 looking north trench excavated along western boundary

© **Archaeology South-East**		Land at White House Farm, Sprowston, Norfolk	Fig. 23
Project Ref: 171101	March 2018	Site photographs	
Report Ref: 2018113	Drawn by: JC		

Sussex Office
Units 1 & 2
2 Chapel Place
Portslade
East Sussex BN41 1DR
tel: +44(0)1273 426830
email: fau@ucl.ac.uk
web: www.archaeologyse.co.uk

Essex Office
27 Eastways
Witham
Essex
CM8 3YQ
tel: +44(0)1376 331470
email: fau@ucl.ac.uk
web: www.archaeologyse.co.uk

London Office
Centre for Applied Archaeology
UCL Institute of Archaeology
31-34 Gordon Square
London WC1H 0PY
tel: +44(0)20 7679 4778
email: fau@ucl.ac.uk
web: www.ucl.ac.uk/caa