Northamptonshire Archaeology

Archaeological evaluation on land at White Barn Farm, Station Road Long Buckby, Northamptonshire July 2011

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July 2011

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OASIS REPORT FORM

PROJECT DETAILS		
Project title	Archaeological evaluation on land at White Barn Farm, Station Road, Long Buckby, Northamptonshire July 2011	
Short description	An archaeological investigation was carried out to inform a planning application for the construction of two wind turbine bases at White Barn Farm, Station Road, Long Buckby, Northamptonshire. Geophysical survey identified a possible pit group and medieval ridge and furrow. Subsequent archaeological evaluation did not identify any significant archaeological remains.	
Project type	Geophysical survey & Trial trench evaluation	
Previous work	None	
Current land use	Arable	
Future work	Unknown	
Monument type and period	None	
Significant finds	None	
PROJECT LOCATION		
County	Northamptonshire	
Site address	White Barn Farm, Station Road, Long Buckby, Northamptonshire	
Easting Northing	461550 266600	
Area (sq m/ha)	2ha	
Height aOD	110m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	Northamptonshire County Council Assistant Archaeological Advisor (NCCAA) Liz Mordue	
Project Design originator	NA	
Director/Supervisor	Edmund Taylor, Ian Fisher & Adrian Butler	
Project Manager	Tony Walsh (NA)	
Sponsor or funding body	ICE Renewables, on behalf of Mr Josh Adams	
PROJECT DATE		
Start date	July 11th 2011	
End date	July 12th 2011	
ARCHIVES	**Location (Accession no.)**	**Contents**
Physical	NA store	
Paper		Site records (1 small archive box)
Digital		Client report PDF
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Archaeological evaluation on land at White Barn Farm, Station Road, Long Buckby, Northamptonshire July 2011	
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Date	19th July 2011	

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ARCHAEOLOGICAL INVESTIGATION OF LAND AT WHITE BARN FARM, STATION ROAD, LONG BUCKBY NORTHAMPTONSHIRE JULY 2011

Abstract

An archaeological investigation was carried out to inform a planning application for the construction of two wind turbine bases at White Barn Farm, Station Road, Long Buckby, Northamptonshire. Geophysical survey identified archaeological pitting and medieval ridge and furrow. Subsequent archaeological evaluation did not identify any significant archaeological remains.

1 INTRODUCTION

In July 2011, archaeological geophysical survey and trial trench evaluation was carried out by Northamptonshire Archaeology (NA) on land at White Barn Farm, Station Road, Long Buckby, Northamptonshire (NGR: SP 61550 66600; Fig 1). The work was commissioned by ICE Renewables on behalf of JO Adams and Sons Ltd and was undertaken to inform a planning application (DA/2011/0399) for two proposed wind turbine bases.

Following a brief issued by Northamptonshire County Council's Assistant Archaeological Advisor (NCCAAA), a programme of archaeological evaluation was agreed (Mordue 2011 a & b). The objectives of the evaluation were to determine the presence of any archaeological features or deposits within the application area and to date and characterise their extent, depth of burial and state of preservation.

2 BACKGROUND

2.1 Topography and geology

The geophysical survey covered an area of approximately 2ha. The bases of the proposed wind turbines each cover an area of 9m^2, and are located approximately 1.4km southwest of Long Buckby (Fig 1).

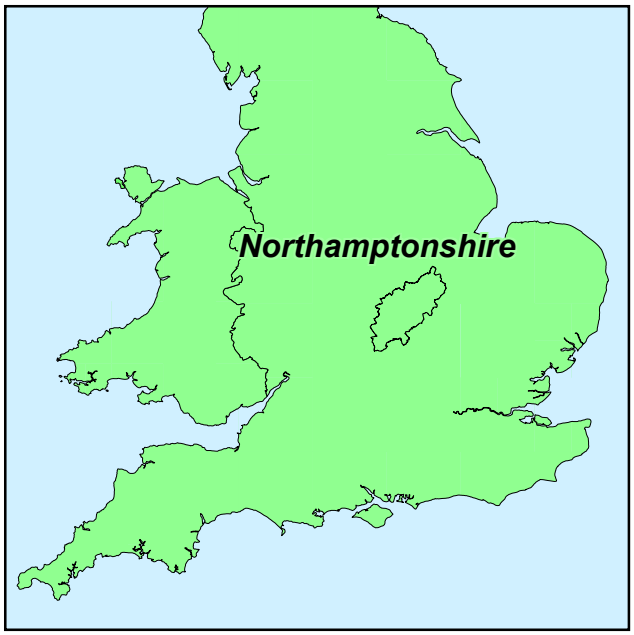
The proposed wind turbines are located in an open field to the west of White Farm barn. The site slopes to the south-west, and the proposed turbine locations are at a height of 110m aOD. The land had been harvested prior to the evaluation.

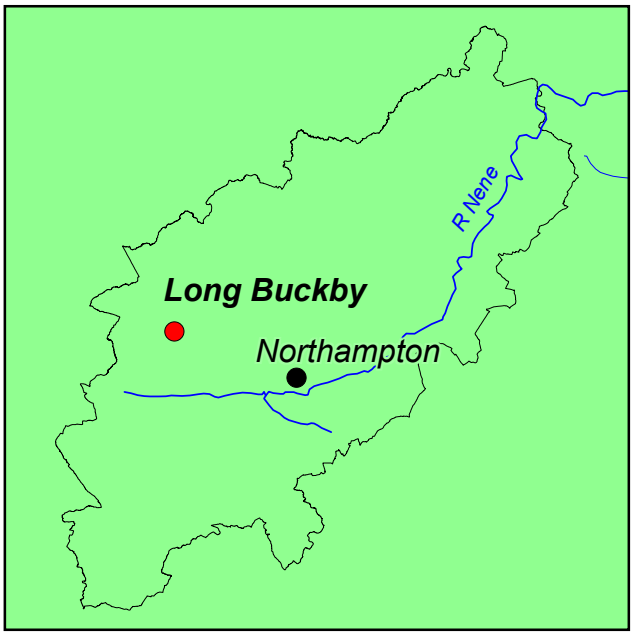
The underlying geology of the north turbine is Upper Lias clay above Marlestone Rock Beds; the southern turbine is located on Mid Lias Silts and Clays (www.bgs.ac.uk/geologyviewer).

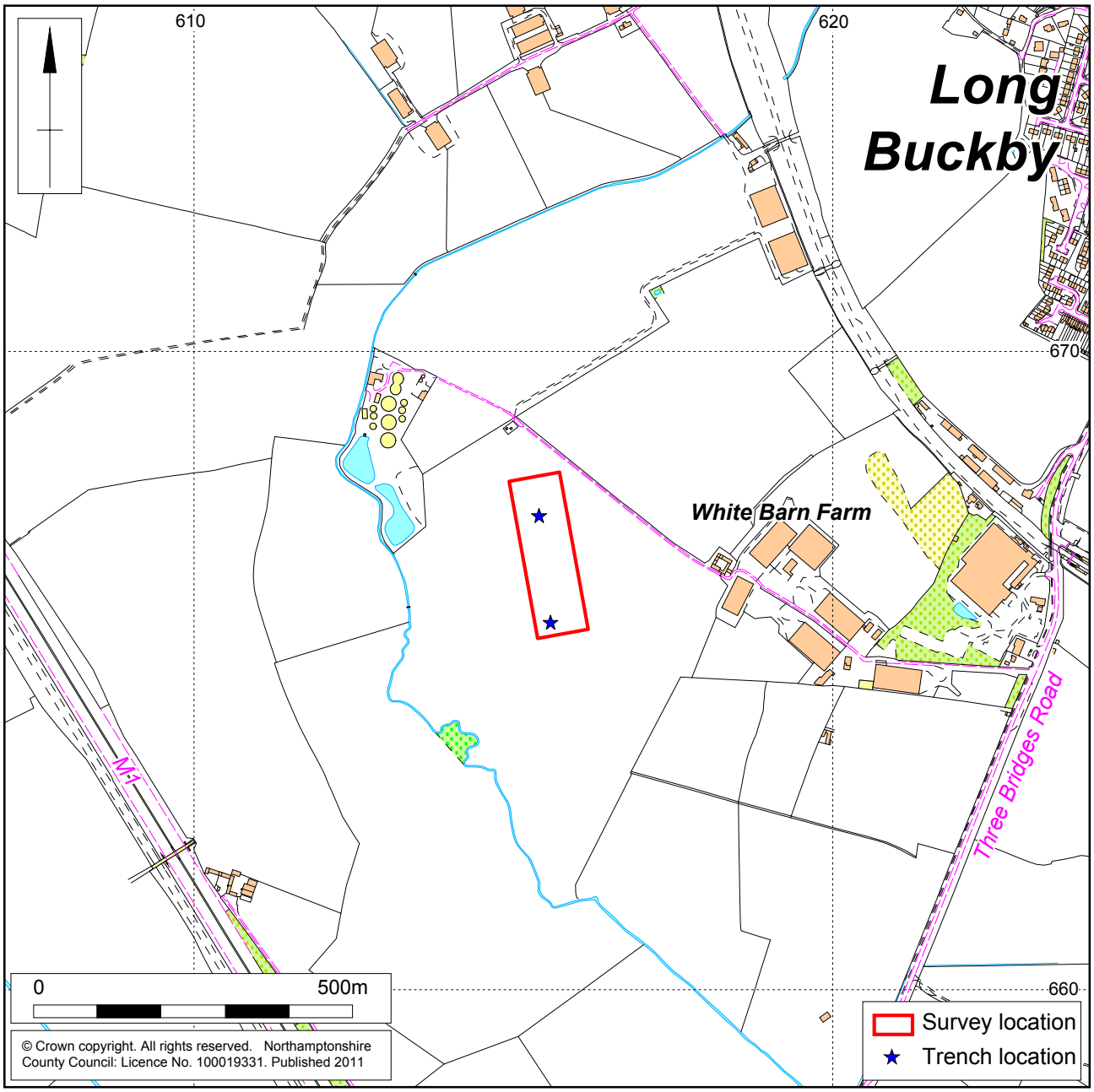
2.2 Historical and archaeological background

A *c*1km radius search of Northamptonshire's Historic Environment Record (HER) has been undertaken. The following presents a brief summary of the notable entries:

To the west of the watercourse is a group of possible prehistoric enclosures recorded by aerial photography (MNN130884), (MNN130888), (MNN130885).







Scale 1:10,000

Site location Fig 1

Approximately 0.4km to the north-west is a possible Bronze Age funerary site (MNN6521).

Areas of surviving medieval ridge and furrow lie to the south and east of White Barn Farm (MNN133241), (MNN133240); elsewhere ridge and furrow are visible as cropmarks.

3 AIMS AND OBJECTIVES

The purpose of the work is to determine and understand the nature, function and character of the archaeological site in its cultural and environmental setting.

The aims of the investigation were to:

- Establish the location, extent, nature and date of any archaeological features or deposits that may be present on the development site
- Establish the integrity and state of preservation of any archaeological features or deposits that maybe present
- Recover artefacts to assist in the development of type series within the region
- Recover palaeo-environmental remains to determine local environmental conditions.

4 METHODOLOGY

4.1 Geophysical survey methodology

Geophysical prospection was carried out by magnetometer survey (11 July 2011), utilising *Bartington Grad601-2*, twin sensor array, vertical component fluxgate gradiometers. These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanotesla (nT).

The area of survey was rectangular, measuring 250m x 50m (2ha), set out manually by tape measure and optical square. The geophysical survey fieldwork and reporting conformed to established English Heritage and Institute for Archaeologists guidelines (EH 2008 and IfA forthcoming), and the Brief (Mordue 2011) and WSI (NA 2011). The gradiometer coverage comprised a total of 27 30m x 30m grid-squares. Each grid square was traversed at rapid walking pace in zigzag mode and magnetic data was recorded every 0.25m along traverses spaced at 1m intervals. The survey grids were measured in to permanent, re-locatable landmarks and also to the Ordnance Survey using Leica System 1200 dGPS (see EH 2008, 19). The survey slightly overlaps the required area due to the use of 30m grids.

The data was analysed using Geoplot 3.00v software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greytone plots. Minimal manipulation was carried out on the data as the raw data is generally of high quality, ensuring that the data-set is uniform (EH 2008, 41-44). Thermal drift in the four fluxgate sensors may slightly alter the balanced level of the gradiometer over a survey, causing 'heading' errors visible as striping along traverses in the data. The 'Zero Mean Traverse' function was applied in order to bring the average level of each data line into a balanced mean of zero. This function retains the gradient of the magnetic field whilst reducing the mean so that each traverse is directly comparable.

The processed data was examined for weak magnetic anomalies under a variety of viewing regimes. The data is presented here in the form of a grey tone image highlighting a broad magnetic anomaly scale (-4.0nT / +4.0nT) which in turn was rectified to the Ordnance Survey base (Fig 2). Interpretative plots have been generated from the results (Fig 3). A plot of the unprocessed data (-4.0nT / +4.0nT) is included for reference (Fig 4).

4.2 Evaluation methodology

Two trial trenches (Trench 1 and Trench 2), each measuring 3m long by 3m wide, were excavated on the site of the turbine bases in accordance with the trench plan approved by NCCAAA (Figs 1 and 3). The trenches were positioned using the Leica 1200 GPS surveying system.

A JCB mechanical excavator fitted with a 1.8m wide toothless ditching bucket was used to remove overburden to the natural substrate. Deposits were examined by hand excavation to determine their nature.

Recording followed standard NA procedures as described in the *Fieldwork Manual* (NA 2006). Deposits were described on *pro-forma* sheets to include measured and descriptive details of the context, its relationships and interpretation. A photographic record was made using 35mm black and white negative film and 35mm colour slide and digital images. Spoil heaps were scanned by eye and using a metal detector to maximise the recovery of any artefacts.

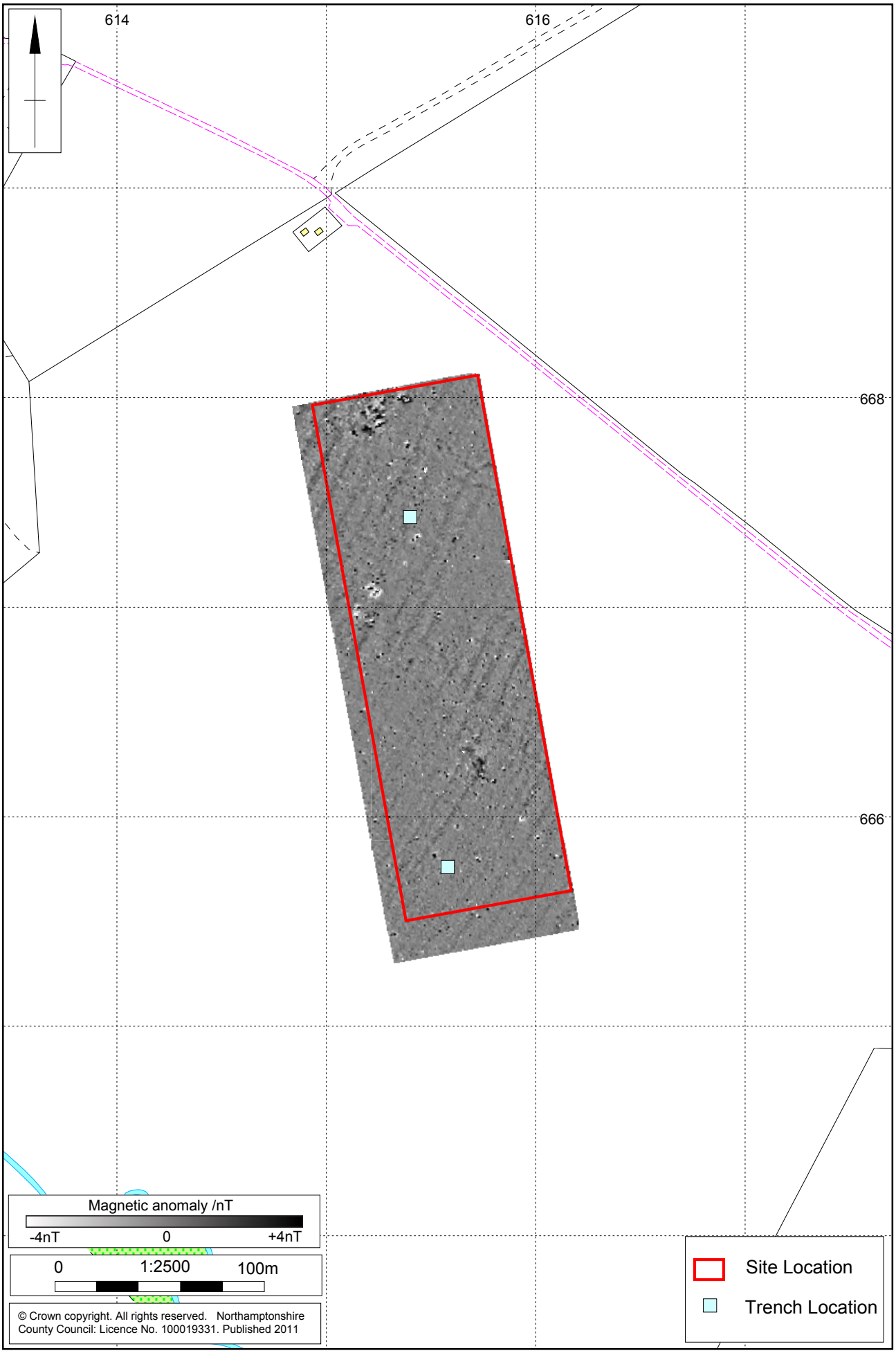
All works were conducted in accordance with the Institute for Archaeologists' *Code of Conduct* (IfA 2010) and *Standard and Guidance for Archaeological Field Evaluation* (IfA 1994, revised 2008).

5 RESULTS

5.1 Geophysical survey results

In the northern part of the field, analysis of the survey results has revealed a cluster of discrete positive magnetic anomalies that may represent a group of archaeological features such as pits.

Parallel positive linear magnetic anomalies orientated north-east to south-west across the area indicates the remains of medieval ridge and furrow cultivation. Numerous small dipolar (paired positive/negative) magnetic anomalies, likely to reflect pieces of ferrous debris in the topsoil, were detected across the survey area. No anomalies suggestive of buried archaeological features were located other than in the north of the survey area.



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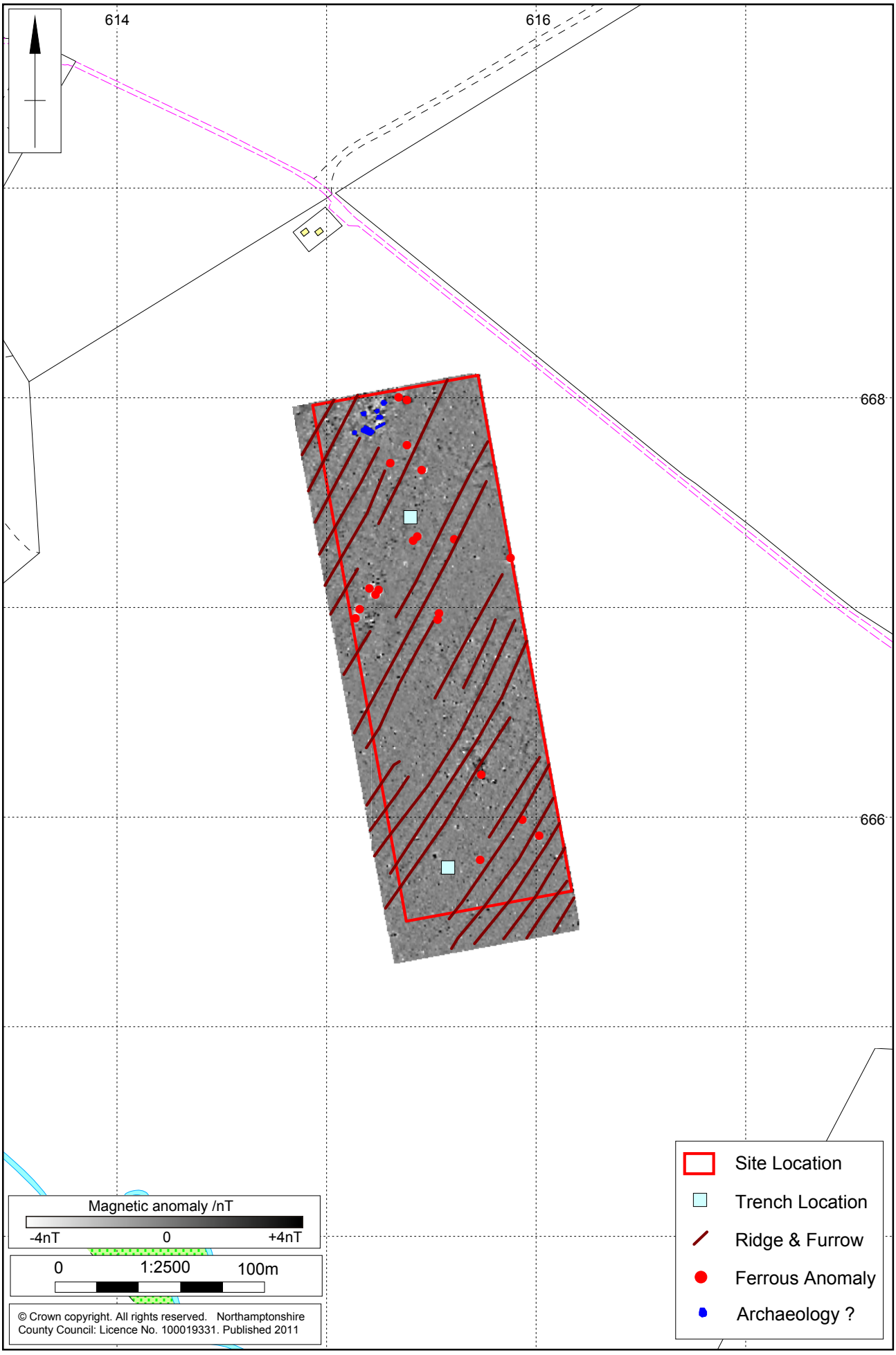
Magnetometer Survey Results Fig 2



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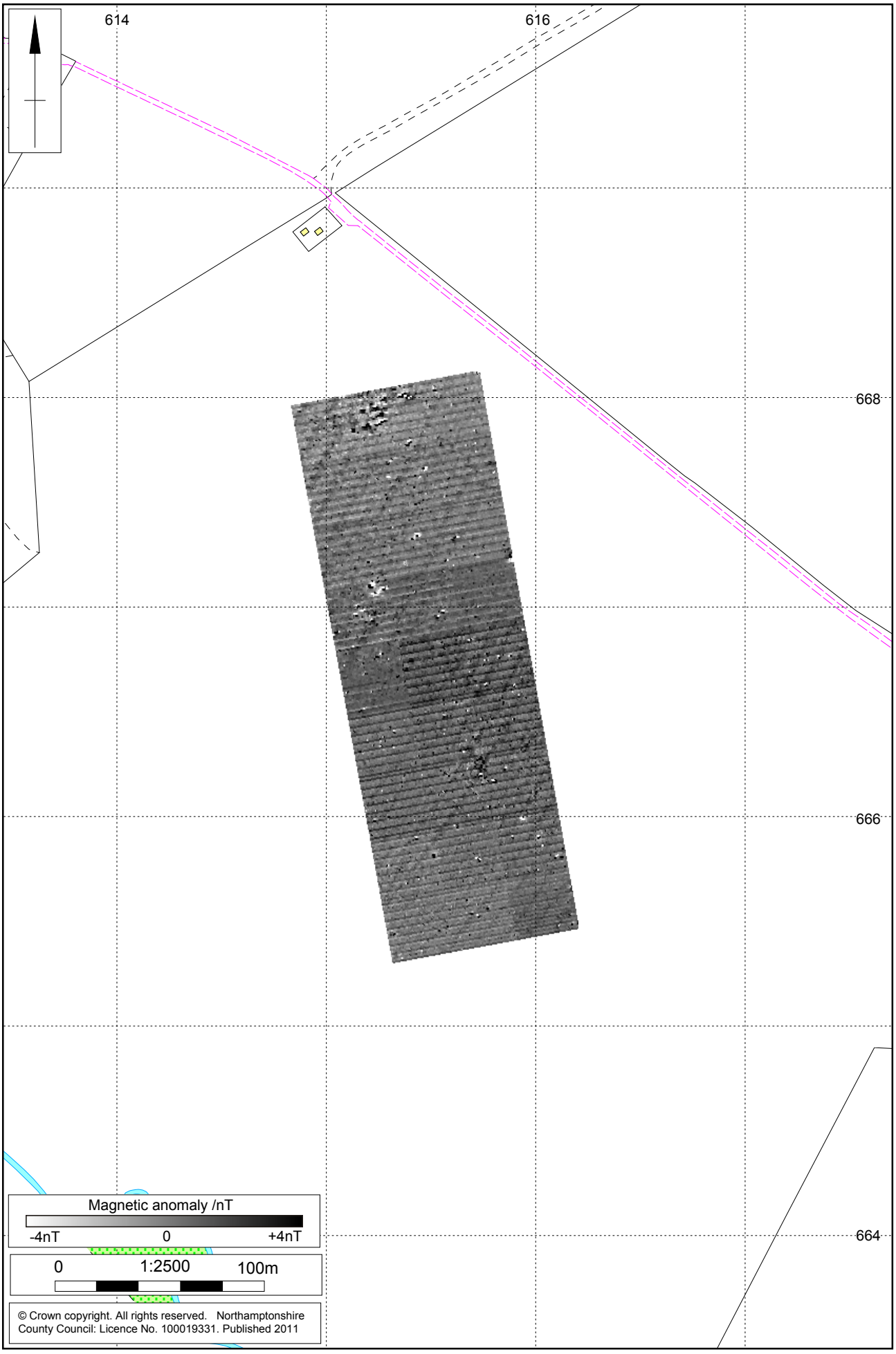
Magnetometer Survey Interpretation Fig 3



Scale 1:2,500 Magnetometer Survey Unprocessed Data Fig 4

5.2 Evaluation results

In both trenches, which were each 3m square, the natural substrate, which comprised a mid to light orange-yellow sandy clay, was overlain by a dark brown sandy subsoil, 0.12m-1.17m thick. This in turn was overlain by a mid grey-brown silty clay loam topsoil soil, 0.11m-0.18m thick.

No archaeological remains were encountered in either of the trenches.

Trench 1

Trench 1 (Figs 5 and 6), was located over the position of the proposed northern turbine base. There were no archaeological features or artefacts present.

Trench 1, looking north Fig 5

Trench 1, section looking south Fig 6

Trench 2

Trench 2 (Figs 7 and 8), was located over the position of the proposed southern turbine base. There were no archaeological features or artefacts present.

Trench 2, looking north Fig 7

Trench 2, section, looking south Fig 8

6 DISCUSSION

The site of the proposed wind turbine lies in an area of prehistoric and Roman activity. The magnetometer survey did identify a possible group of pits and medieval ridge and furrow. However, the archaeological evaluation established that there were no archaeological features or deposits, and no finds recovered from the topsoil or subsoil, within the exact footprint of the proposed turbines,

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APPENDIX 1: CONTEXT DATA

Trench no	Context	Type	Description	Thickness (m)
1	101	Layer	Topsoil. Dark grey-brown silty clay loam	0.16m-0.18m
	102	Layer	Subsoil. Dark brown sandy clay. Occasional charcoal flecks	0.15m-0.17m
	103	Layer	Natural. Mid yellow-orange sandy clay	

Trench no	Context	Type	Description	Thickness (m)
2	201	Layer	Topsoil. Dark grey-brown silty clay loam	0.11m-0.14m
	202	Layer	Subsoil. Dark brown sandy clay. Occasional charcoal flecks	0.12m-0.13m
	203	Layer	Natural. Mid yellow-orange sandy clay	

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