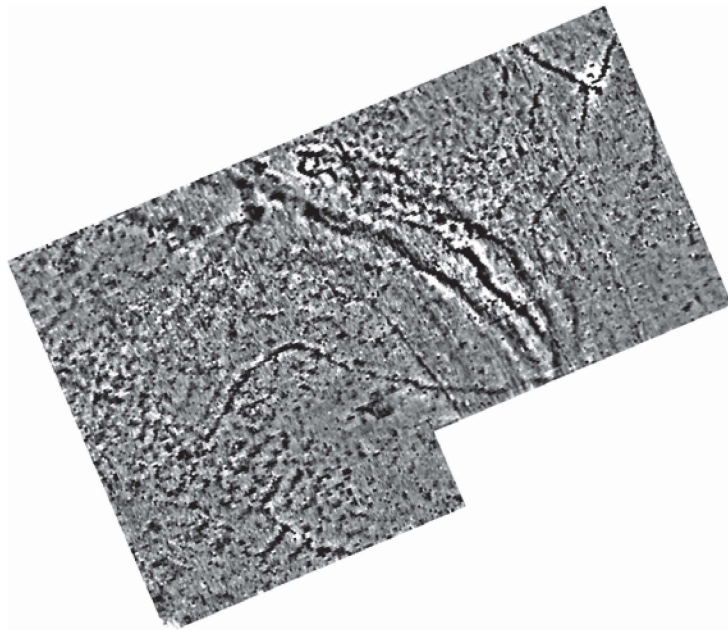




Northamptonshire
County Council

Northamptonshire Archaeology

An archaeological geophysical survey
on land at Tollemache Road, Grantham
Lincolnshire
June 2008



Paul Clements & Ian Fisher

June 2008

Report 08/114

Accession Number: LCNCC : 2008.84

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NORTHAMPTONSHIRE COUNTY COUNCIL

NORTHAMPTONSHIRE ARCHAEOLOGY

JUNE 2008

AN ARCHAEOLOGICAL GEOPHYSICAL SURVEY

ON LAND AT TOLLEMACHE ROAD, GRANTHAM

LINCOLNSHIRE

JUNE 2008

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QUALITY CONTROL

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	An Archaeological Geophysical Survey on land at Tollemache Road, Grantham, Lincolnshire	
Short description (250 words maximum)	Northamptonshire Archaeology was commissioned by CgMs Consulting to undertake a gradiometer survey across land between Tollemache Road and Gorse Lane, Grantham, Lincolnshire. Reconnaissance survey covered 16ha of the available field identifying potential archaeological anomalies in the north and east. Sample detailed magnetometer survey mapped possible archaeological remains and geological features.	
Project type	Geophysical Survey	
Site status	Arable Land	
Previous work	HER 36405; 33848	
Current Land use	Arable farmland	
Future work	Unknown	
Monument type/ period	Unknown	
Significant finds		
PROJECT LOCATION		
County	Lincolnshire	
Site address	Land adjacent to Tollemache Road, Grantham, Lincolnshire	
Study area (sq.m or ha)	Approx 16ha	
OS Easting & Northing	SK 91450 33250	
Height OD	120m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator		
Project Design originator	Northamptonshire Archaeology	
Director/Supervisor	Ian Fisher (NA)	
Project Manager	Adrian Butler (NA)	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	May 2008	
End date	June 2008	
ARCHIVES	Location	Content (eg pottery, animal bone etc)
	LCNCC : 2008.84	
Paper	Northamptonshire Archaeology	Survey notes
Digital	Northamptonshire Archaeology	Geophysical data, GIS data & text Report
BIBLIOGRAPHY		
	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	An Archaeological Geophysical Survey on Land at Tollemache Road, Grantham, Lincolnshire	
Serial title & volume	Northamptonshire Archaeology report 08/114	
Author(s)	Paul Clements & Ian Fisher	
Page numbers	15	
Date	10/06/08	

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**AN ARCHAEOLOGICAL GEOPHYSICAL SURVEY
ON LAND AT TOLLEMACHE ROAD, GRANTHAM**

LINCOLNSHIRE

JUNE 2008

ABSTRACT

Northamptonshire Archaeology was commissioned by CgMs Consulting to undertake a gradiometer survey across land between Tollemache Road and Gorse Lane, Grantham, Lincolnshire. Reconnaissance survey covered 16ha of the available field identifying potential archaeological anomalies in the north and east. Sample detailed magnetometer survey mapped possible archaeological remains and geological features.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by CgMs Consulting to undertake a gradiometer survey across land between Tollemache Road and Gorse Lane, Grantham, Lincolnshire (NGR SK 91450 33250, Fig 1). The survey was required to inform a planning proposal for the development of the site.

The objectives of the geophysical survey were to identify the presence or absence of buried archaeological remains within the proposed development area. The magnetometer survey of the 16ha area of land was undertaken in May and June 2008.

2 TOPOGRAPHY AND GEOLOGY

The proposed development site lies on the southern edge of Grantham between Tollemache Road in the east and Gorse Lane to the north. The field is surrounded by fields to the north and south, a quarry to the east and the A1 road to the west (Fig 1).

The underlying geology and soil associations of the proposed development site are noted as glaciofluvial drift (Escrick 2) across the centre of the field and Jurassic limestone (Marcham) north and south (Soil Survey of England and Wales Sheet 2). The site lies at approximately 120m AOD.

3 ARCHAEOLOGICAL BACKGROUND

The archaeological background of the site is described in full in the desk-based-assessment (CgMs 2008). Neolithic and Bronze Age flint scatters have been discovered 200m to the east of the survey area. These are the earliest indication of archaeological remains in the area. Bronze Age barrows have been identified 700m north-west of the site (HER 36407), 300m north-east of the site (HER 33895) and 50m and 400m south of the site (HER 36290; 33819). Within the survey area itself faint cropmarks indicate another Bronze Age barrow, and a double-ditched enclosure (HER 36405; 33848). Late Iron Age settlement remains have been identified from geophysical survey and excavation north of the site (HER35362).

Remains of Roman activity is mainly concentrated to the 800m east of the survey area at Saltersford, known to be an area of Roman occupation. No Roman occupation is recorded within the survey area, however, a Roman farmstead or villa lies 500m to the south (HER 33973).

Saxon remains indicating settlement and/or industrial activity have been identified 500m to the east of the site (HER 30509, 33970).

To the west of the survey area (125m) is thought to be the deserted medieval village of Walton, later the site of Walton Farm (HER 30507) (CgMs 2008).

4 METHODOLOGY

Geophysical survey was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

The field work was divided into two phases, an initial reconnaissance survey by gradiometer scanning followed by 4ha of detailed gradiometer survey.

Reconnaissance survey

The reconnaissance survey was carried out using Geoscan FM-series fluxgate gradiometers. The development area was surveyed north-west to south-east in parallel transects at 20m intervals. The gradiometers were carried along the transects and monitored for fluctuations in the local magnetic field (scanning). Where an anomaly exceeding +/-3.0nT (nanoTesla) was encountered it was examined for magnetic characteristics, likely surface ferrous or ceramic anomalies were discounted, and flagged for possible further investigation. Such anomalies were then plotted on

scale maps (Fig 2).

Detailed magnetometer survey

All detailed magnetometer survey was undertaken using Bartington Grad601-2 fluxgate gradiometers. The Grad601-2 is constructed as a dual-sensor instrument with two vertical gradiometers separated on a yoke to enable two lines of survey to be recorded in tandem.

The areas were sub-divided into 30m x 30m grid-squares. These were laid out manually, using tapes and an optical square. The survey consisted of forty-five whole 30m x 30m grid-squares. Each grid square was traversed at rapid walking pace in zigzag traverses spaced at 1m intervals and data recorded every 0.25m along these.

The data was analysed using Geoplot 3.00u software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. To avoid the introduction of processing errors, minimal manipulation was carried out on the data. The 'Zero Mean Traverse' function was applied in order to bring the average level of each data line into a balanced zero.

The processed data is presented here in the form of a greyscale georectified to the Ordnance Survey base (-2nT / +2nT scale; Figs 3 and 4). An interpretative plot has been generated from the results (Fig 4). These figures are referred to directly in the following section.

5 SURVEY RESULTS

Reconnaissance survey

Twenty-two significant anomalies were detected in the field. A group of 13 anomalies towards the north of the field and a cluster of four anomalies to the south were then investigated by detailed magnetometer survey.

Detailed survey

The detailed survey recorded magnetic anomalies which correlate with those detected in the reconnaissance survey and expand greatly upon them. The anomalies relate to both archaeological and geological features (Fig 5).

Area 1

A 3.1ha area located in the northern half of the field was selected for detailed survey. Possible crop mark features appear in this area on aerial photography and can be linked with a group of 13

anomalies. Putative archaeological features were detected in the northern corner the survey area. Two lengths of linear ditch forming a right angle, may represent the corner of an enclosure. A pair of possible burnt features were located between the ditches. Extending south from the possible corner there is a sinuous feature, aligned north to south. The potential ditch is on a different alignment to any of the modern field boundaries.

A positive magnetic anomaly, a possible ditch, was detected orientated east to west, then curving toward south-west, in the south of the survey area. That feature was intersected on a north-western alignment by an 'L-shaped' magnetic anomaly, again feasibly a ditch.

Irregular but gently curving positive and negative magnetic anomalies indicating a geological feature, orientated north-west to south-east corresponds to a shallow valley visible in the field. A deposit of glaciofluvial sands and gravels may have been detected in the south-west of the survey area, represented by an area of confused positive and negative magnetic responses.

Area 2

An area of 0.9ha was surveyed to the east of the field. The survey identified two linear ditches aligned north to south in the south-east of the area.

6 CONCLUSION

The reconnaissance was in successful in identifying significant anomalies which were confirmed by the detailed gradiometer survey. However, not all features were identified by the reconnaissance survey. This can be attributed to the spacing of the traverses and relatively weak enhancement of magnetic anomalies. The detailed gradiometer survey identified possible archaeological remains in the form of an enclosure and segments of former ditches. The Bronze Age barrow and double-ditched enclosure indicated by crop marks was not identified.

BIBLIOGRAPHY

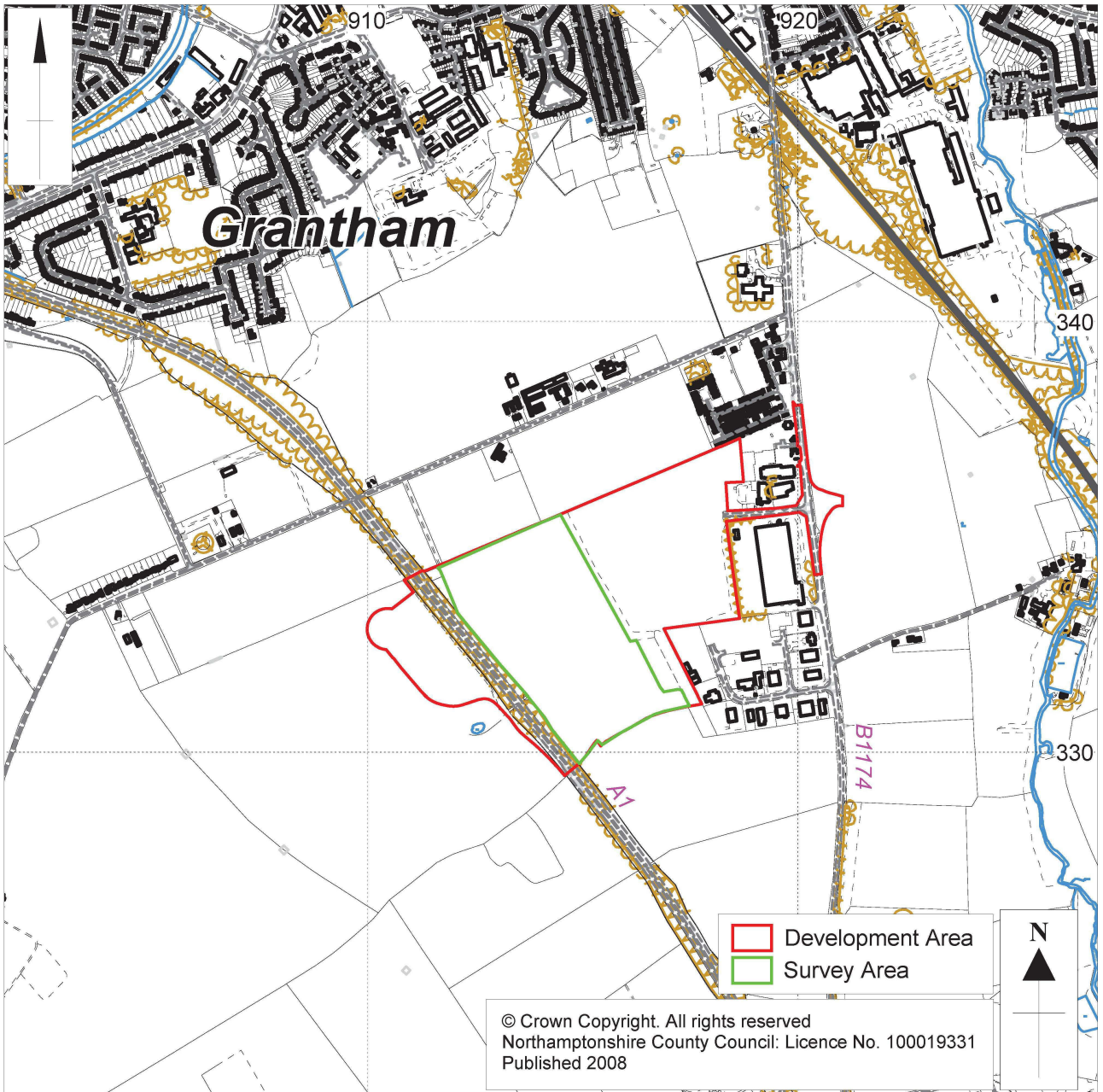
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Soil Survey of England and Wales Sheet 2



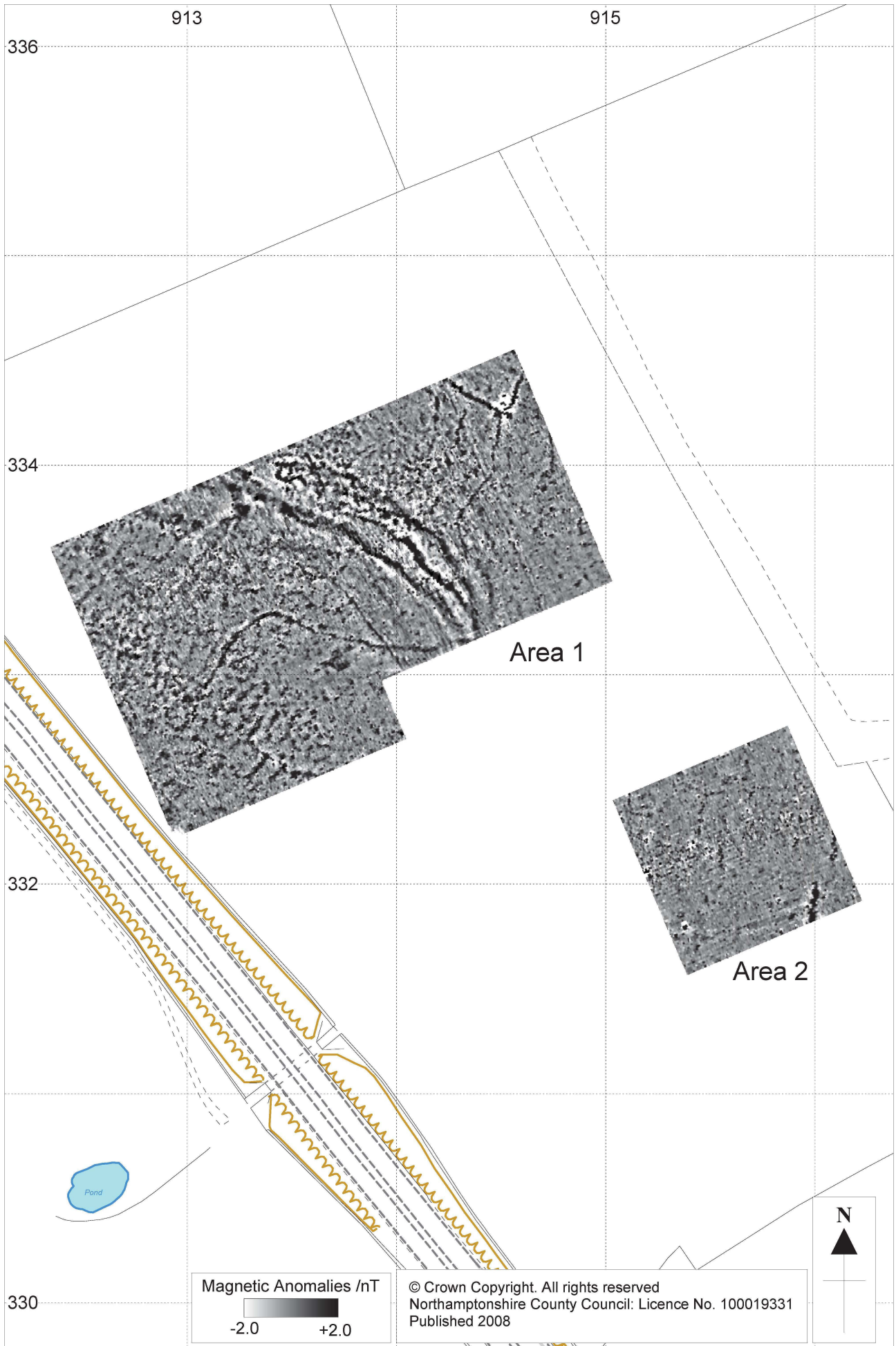
Scale 1:15,000

Site Location Fig 1



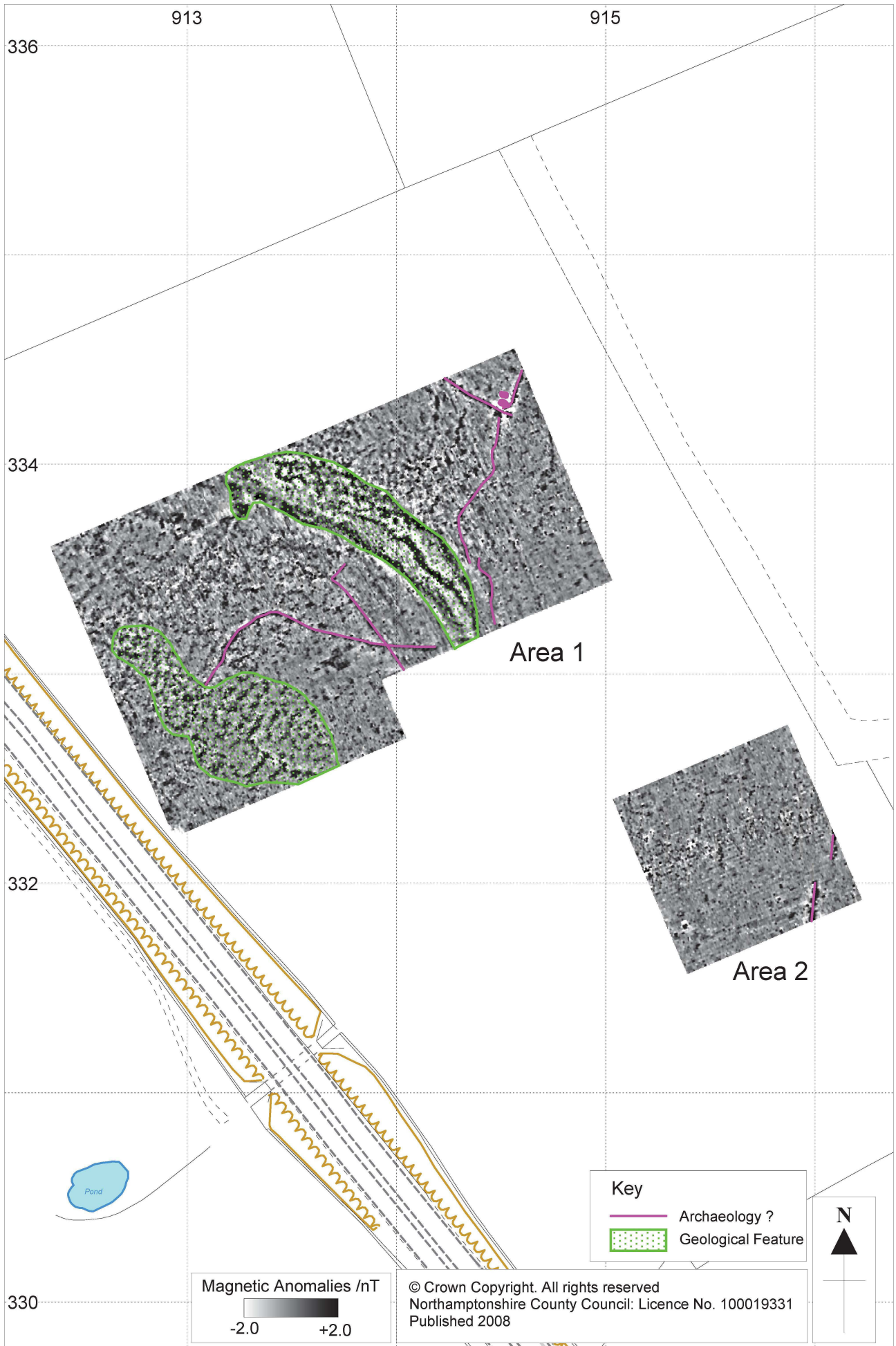
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Reconnaissance Survey Results Fig 2



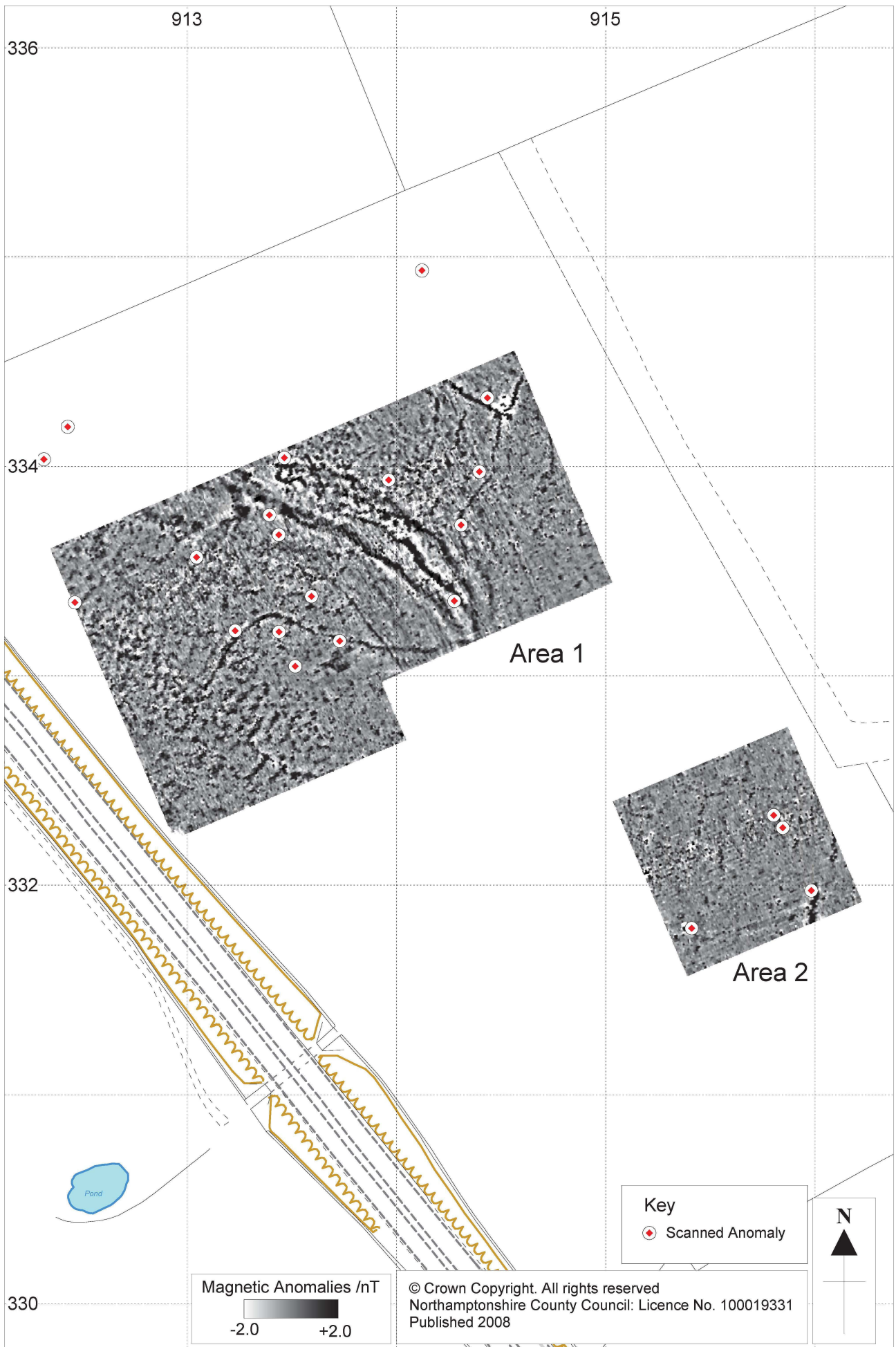
Scale 1:2500 @ A4

Detailed Gradiometer Survey Results Fig 3



Scale 1:2500 @ A4

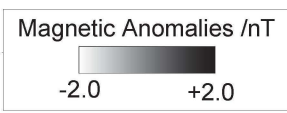
Detailed Gradiometer Survey Interpretation Fig 4



Scale 1:2500 @ A4

Reconnaissance & Detailed Gradiometer Survey Results

Fig 5



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Key
◊ Scanned Anomaly

