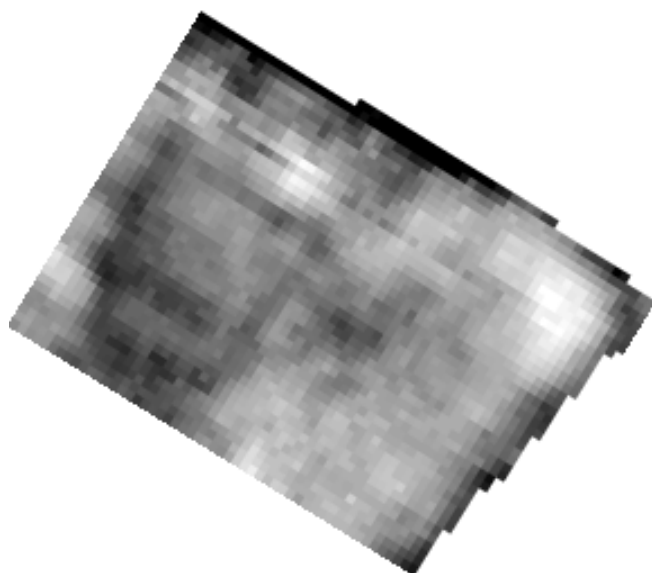




Northamptonshire Archaeology

Archaeological geophysical survey at
Crew Lane, Kenilworth, Warwickshire
December 2013



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Report 13/259

December 2013



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QUALITY CONTROL

	Print name	Signed	Date
Checked by	Pat Chapman	<i>PC</i>	17/12/2013
Verified by	Mark Holmes	<i>MH</i>	17/12/2013
Approved by	Andy Chapman	<i>AC</i>	17/12/2013

OASIS REPORT FORM

PROJECT DETAILS		Oasis No. 166933	
Project title	Archaeological geophysical survey at Crew Lane, Kenilworth, Warwickshire, December 2013		
Short description	Northamptonshire Archaeology was commissioned by AMEC Environment and Infrastructure UK to conduct magnetometer and earth resistance surveys on the proposed site of an electricity sub-station at Crew Lane, to the east of Kenilworth. The magnetometer survey results were uninformative, but the earth resistance survey detected a large trapezoidal anomaly of apparent archaeological significance. The correct interpretation of this anomaly is debatable, but two plausible interpretations may be suggested. One is that it represents a set of building footings, perhaps of Roman or medieval date. The other is that it represents a small ditched enclosure dating from either the Iron Age or Roman periods.		
Project type	Geophysical survey		
Previous work	None known		
Current land use	Pasture		
Future work	Unknown		
Monument type and period	Unidentified feature (possibly a Roman or medieval building, or an Iron Age or Roman enclosure)		
Significant finds			
PROJECT LOCATION			
County	Warwickshire		
Site address	Crewe Gardens Farm, Crew Lane, Kenilworth		
Easting Northing	SP 3133 7234		
Area (sq m/ha)	0.5ha		
Height aOD	c 75m – 80m AOD		
PROJECT CREATORS			
Organisation	Northamptonshire Archaeology (NA)		
Project brief originator	Simon Atkinson, AMEC Environment and Infrastructure UK		
Project Design originator	Northamptonshire Archaeology		
Director/Supervisor	John Walford (NA)		
Project Managers	Adam Yates (NA)		
Sponsor or funding body	AMEC Environment and Infrastructure UK		
PROJECT DATE			
Start date	4/11/2013		
End date	17/12/2013		
ARCHIVES	Location (Accession no.)	Contents	
Physical	N/A		
Paper	NA	Site records (1 archive box)	
Digital	NA	Client report PDF. Survey data	
BIBLIOGRAPHY			
Title	Archaeological geophysical survey at Crew Lane, Kenilworth, Warwickshire, December 2013		
Serial title & volume	Northamptonshire Archaeology Report 13/259		
Author(s)	John Walford		
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**ARCHAEOLOGICAL GEOPHYSICAL SURVEY AT
CREW LANE, KENILWORTH, WARWICKSHIRE
DECEMBER 2013**

Abstract

Northamptonshire Archaeology was commissioned by AMEC Environment and Infrastructure UK to conduct magnetometer and earth resistance surveys on the proposed site of an electricity sub-station at Crew Lane, to the east of Kenilworth. The magnetometer survey results were uninformative, but the earth resistance survey detected a large trapezoidal anomaly of apparent archaeological significance. The correct interpretation of this anomaly is debatable, but two plausible interpretations may be suggested. One is that it represents a set of building footings, perhaps of Roman or medieval date. The other is that it represents a small ditched enclosure dating from either the Iron Age or Roman periods.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by AMEC Environment and Infrastructure UK to conduct magnetometer and earth resistance surveys on the proposed site of an electricity sub-station at Crew Lane, to the east of Kenilworth (NGR SP 3133 7234; Fig 1). The fieldwork was undertaken on 4 November 2013.

2 BACKGROUND

2.1 Location and geology

The proposed sub-station development site occupies approximately 0.2ha of land at Crewe Gardens Farm, to the east of Kenilworth. It lies in the corner of a pasture field, bounded to the north by Crew Lane and to the east by the A46 dual carriageway.

The site stands at an elevation of 75m – 80m aOD, on the south-east facing side of the Avon Valley. It is underlain by Permian sandstones and mudstones of the Ashow Formation, which are disrupted by a north-east to south-west trending fault (BGS 2013).

2.2 Historical and archaeological background

The proposed survey area lies close to a known Roman site, which was partially excavated prior to the construction of the A46 dual carriageway (Warwickshire HER 1887). This site has never been properly published, but information held at the HER indicates that it was a rectilinear enclosure containing at least one timber structure. Most of the excavations took place to the north of Crew Lane, but two trial trenches showed that the site extended across the lane to the south (information via Simon Atkinson).

The origins of the present Crewe Gardens Farm are unknown, but it must date to at least the 18th century, as it appears on an estate map of 1780, entitled 'A Survey of an Estate Situated in the Parish of Kenilworth' (information via Simon Atkinson). There is no evidence for medieval settlement directly on the site, although there are documentary records which suggest the former site of a castle lies to the east of the A46, in the woods by the River Avon (HER 4817).

3 METHODOLOGY

Two complementary geophysical techniques, earth resistance survey and magnetometer survey, were deployed on this site. Although both surveys were carried out on a common site grid, using a shared baseline and origin, different grid unit sizes were used for each, as detailed below. The resistance survey was confined fairly closely to the footprint of the proposed development, but the magnetometer survey area was expanded, at the request of the client, to cover an area of c 0.5ha. The fieldwork methods for each survey complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011).

3.1 Earth resistance survey

This survey was conducted with a Geoscan Instruments RM15 resistance meter connected to a 0.5m 'twin-probe' electrode array. Such an instrument and probe configuration are standard for archaeological earth resistance survey (EH 2008, 25). The data was collected in 20m grid squares, at a resolution of 1m x 1m.

At the time of the survey the weather was overcast and damp. The ground was in a favourable condition for earth resistance survey, being moist but not sodden.

Following completion of the survey, the data was processed using Geoplot 3.00v software. The 'edge match' function was applied to level out imbalances between grids caused by the re-location of the remote probes, but no other processing was necessary. As the data had a reasonably uniform background, high-pass filtering was not thought to be worthwhile.

3.2 Magnetometer survey

The magnetometer survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

The survey data was collected in 30m grid squares. The gradiometers were carried at a brisk but steady pace through each grid, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square.

The survey data was processed using Geoplot 3.00v software. Striping was removed using the 'zero mean traverse' function, and destaggering of the data was performed as necessary.

3.3 Data presentation

The processed magnetometer and earth resistance data are presented in this report as grey-tone plots, at scales of +4nT to -4nT (black to white) and 160Ω to 100Ω (black to white) respectively. These plots have been scaled, rotated and re-sampled (georectified) for display against the Ordnance Survey base mapping (Figs 2 & 3), and are shown with interpretative overlays in Figures 4 and 5. Grey-tone plots of the unprocessed survey data are presented in Figures 6 and 7. No X-Y trace plots of the data have been produced, as it was considered that they would not significantly aid the data interpretation.

4 SURVEY RESULTS

4.1 Earth resistance survey

The survey has detected a trapezoidal high resistance anomaly, approximately 20m wide by 25m long, which is split into two unequal halves by an internal partition. Its significance is not entirely clear, but two possible archaeological interpretations may be offered.

One interpretation would be that the anomaly represents a set of stone building footings; perhaps a large sub-rectangular room with a smaller annex on its southern side. The other would be that it represents a small ditched enclosure with an internal division. The former is perhaps more plausible, as it is normal for stone walls to show as high resistance anomalies and for ditches to show as low resistance ones. However, there are circumstances where ditch anomalies can 'reverse', due to differential rates of drying and wetting between the ditch fill and the surrounding substrate (Clark 1996, 48-54)), so the latter interpretation cannot be ruled out. Indeed, it might be argued that the slightly irregular shape of the feature, and the width of the lines that define it (c 2m) would be more consistent with an enclosure than a building.

To the east of the trapezoidal feature there are some poorly-defined high-resistance anomalies. These are too incoherent to interpret with confidence, and may represent either archaeological features or natural variations in the underlying geology.

A narrow, high resistance linear anomaly passes through the northern part of the survey area, parallel with Crew Lane. It coincides with a modern wheel rut or plough furrow which was evident on the surface of the field. At its eastern end, in the corner of the field, there is a small area of low resistance which probably represents a damp and poorly-drained spot where the natural slope is interrupted by the embankment of the A46. The high resistance readings along the northern and eastern edges of the survey area probably indicate areas of soil dried by the roots of the adjacent hedgerows.

4.2 Magnetometer survey

The magnetometer data is largely bland and uninformative. There are two very slight positive linear anomalies which could conceivably represent ditches, but neither is particularly convincing. Apart from these, there is one thin negative linear anomaly, representing the same rut detected by the resistance survey, and a few small magnetic dipoles which represent insignificant pieces of scrap iron scattered within the topsoil.

5 CONCLUSION

The earth resistance survey has detected a trapezoidal anomaly, approximately 20m wide by 25m long, which is probably of archaeological significance. There is, however, some uncertainty as to whether it represents the remains of a building or of an enclosure ditch. The evidence is inconclusive, and plausible arguments could be made to support either interpretation.

If the anomaly does represent a building, then it is likely to be a fairly substantial stone-built one, perhaps dating from the Roman or the medieval period. A post-medieval date is less likely, as no structures are shown on any of the available historic maps. If, on the other hand, the anomaly represents an enclosure, then its morphology would fit best with an Iron Age or Roman date.

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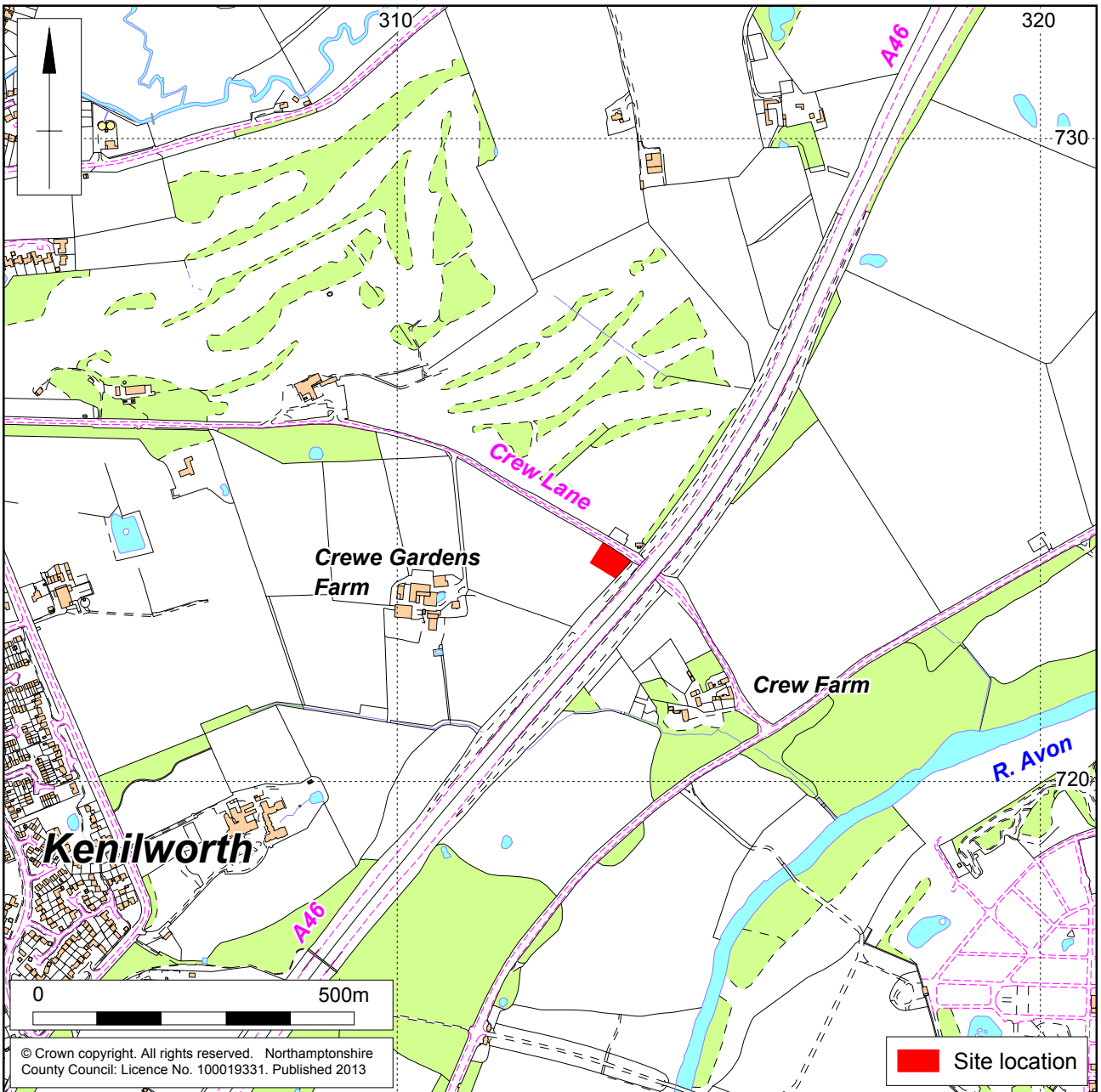
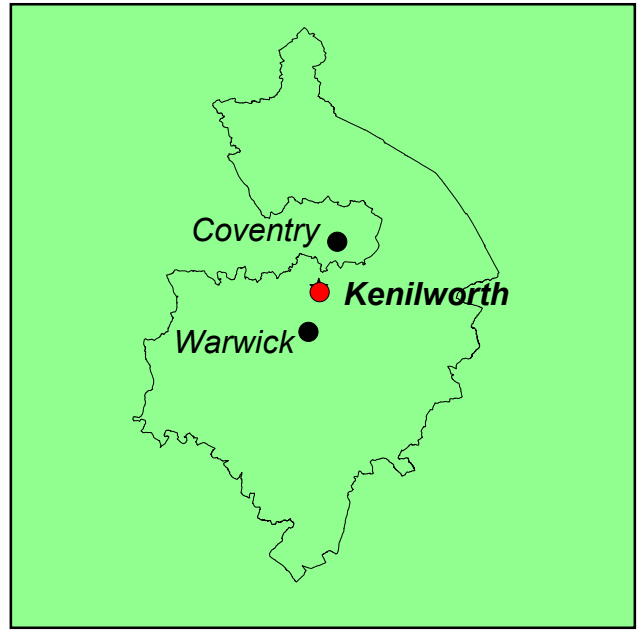
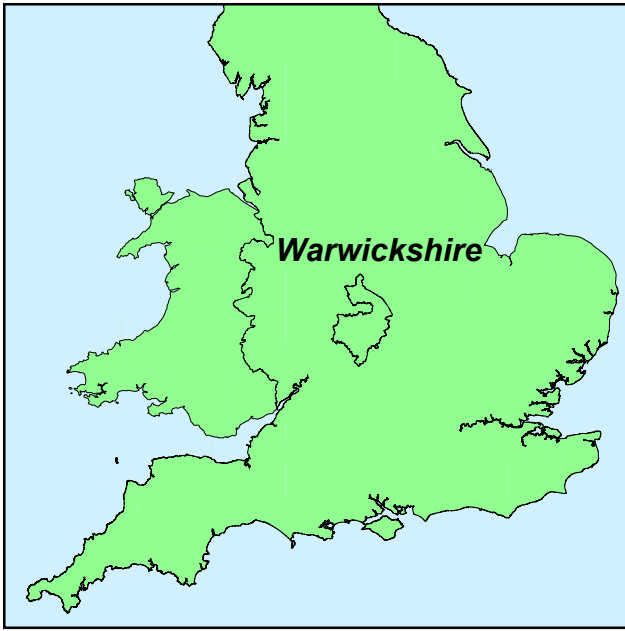
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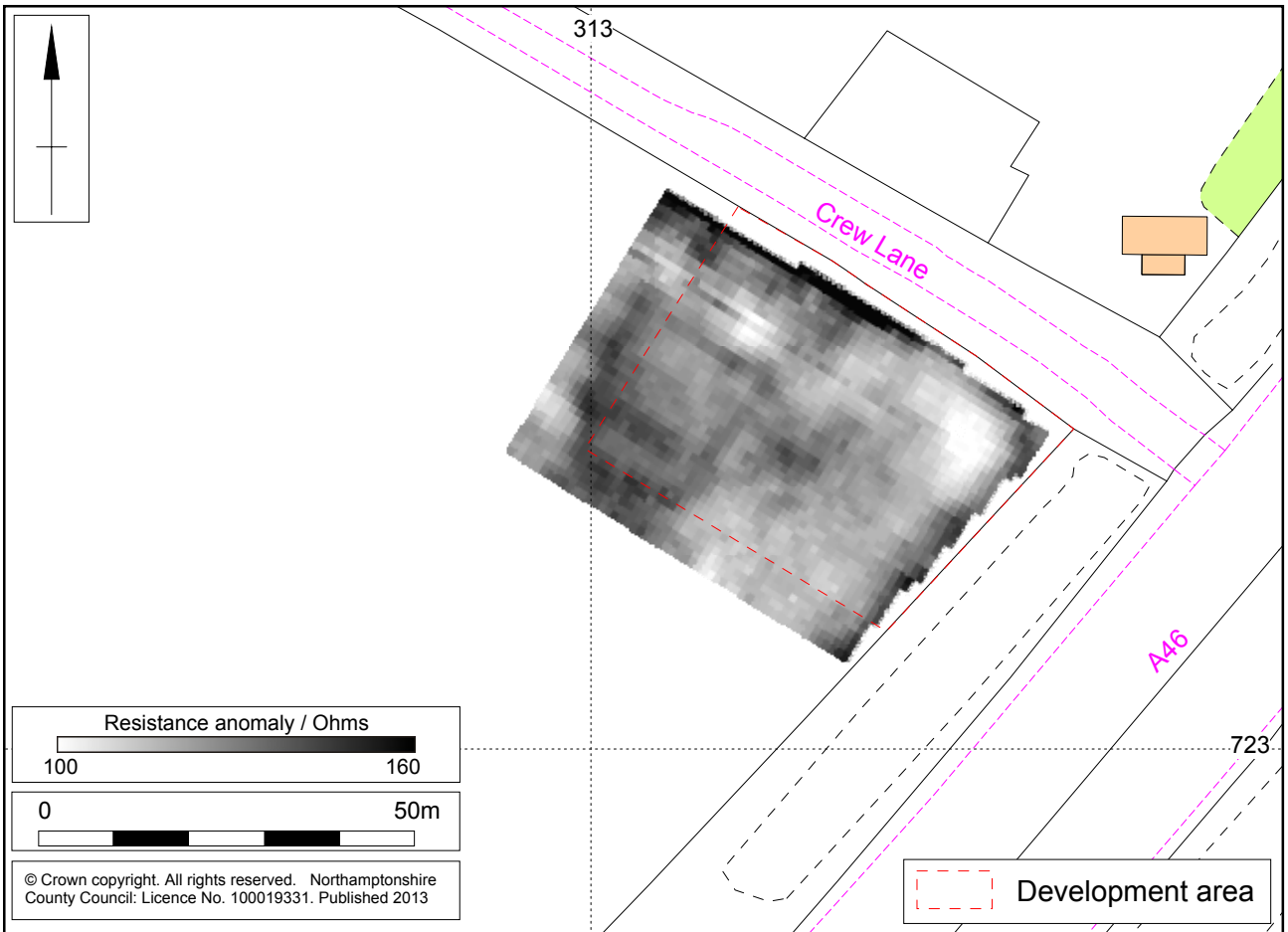
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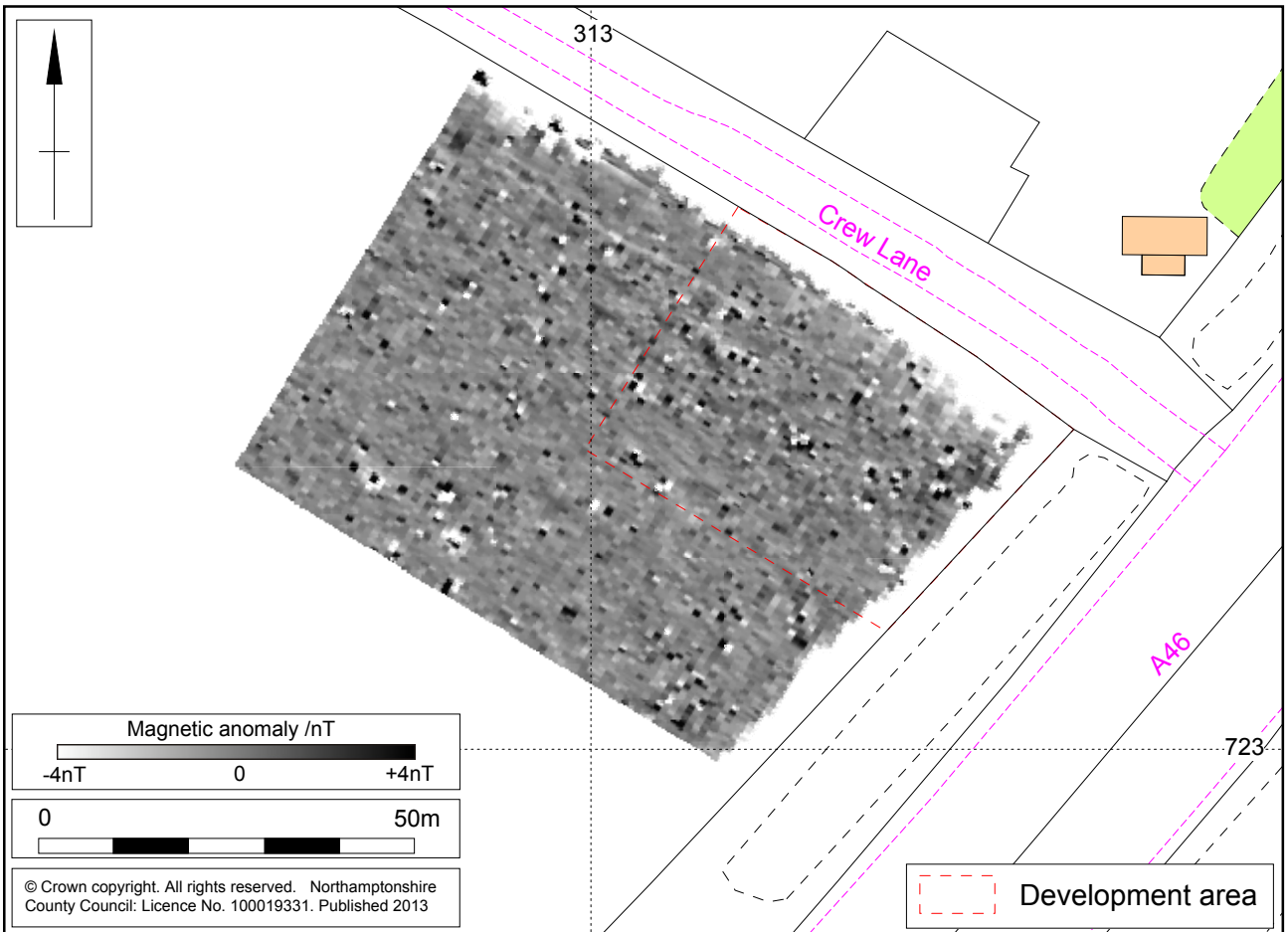
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Site location Fig 1



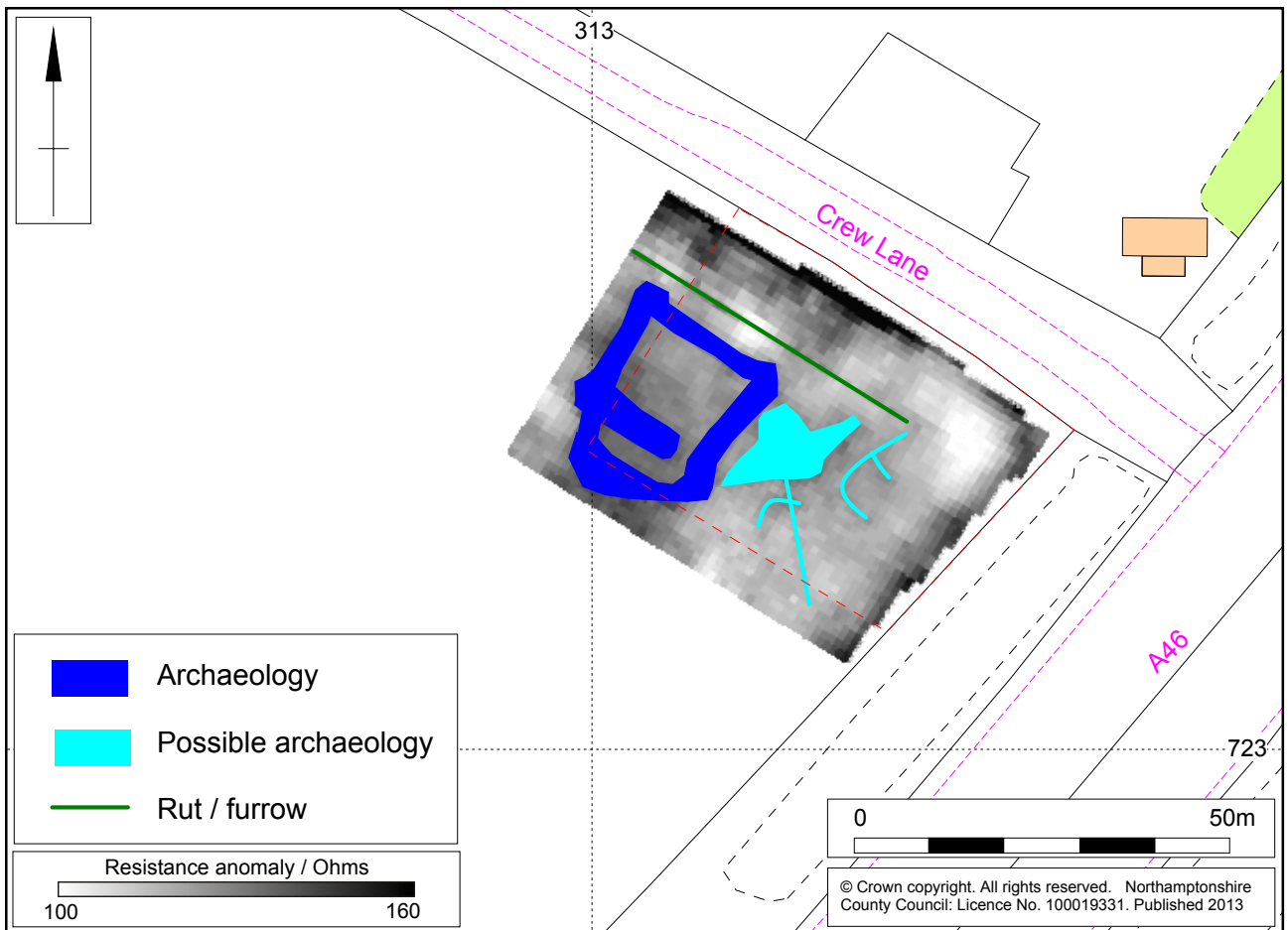
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Earth resistance survey results Fig 2



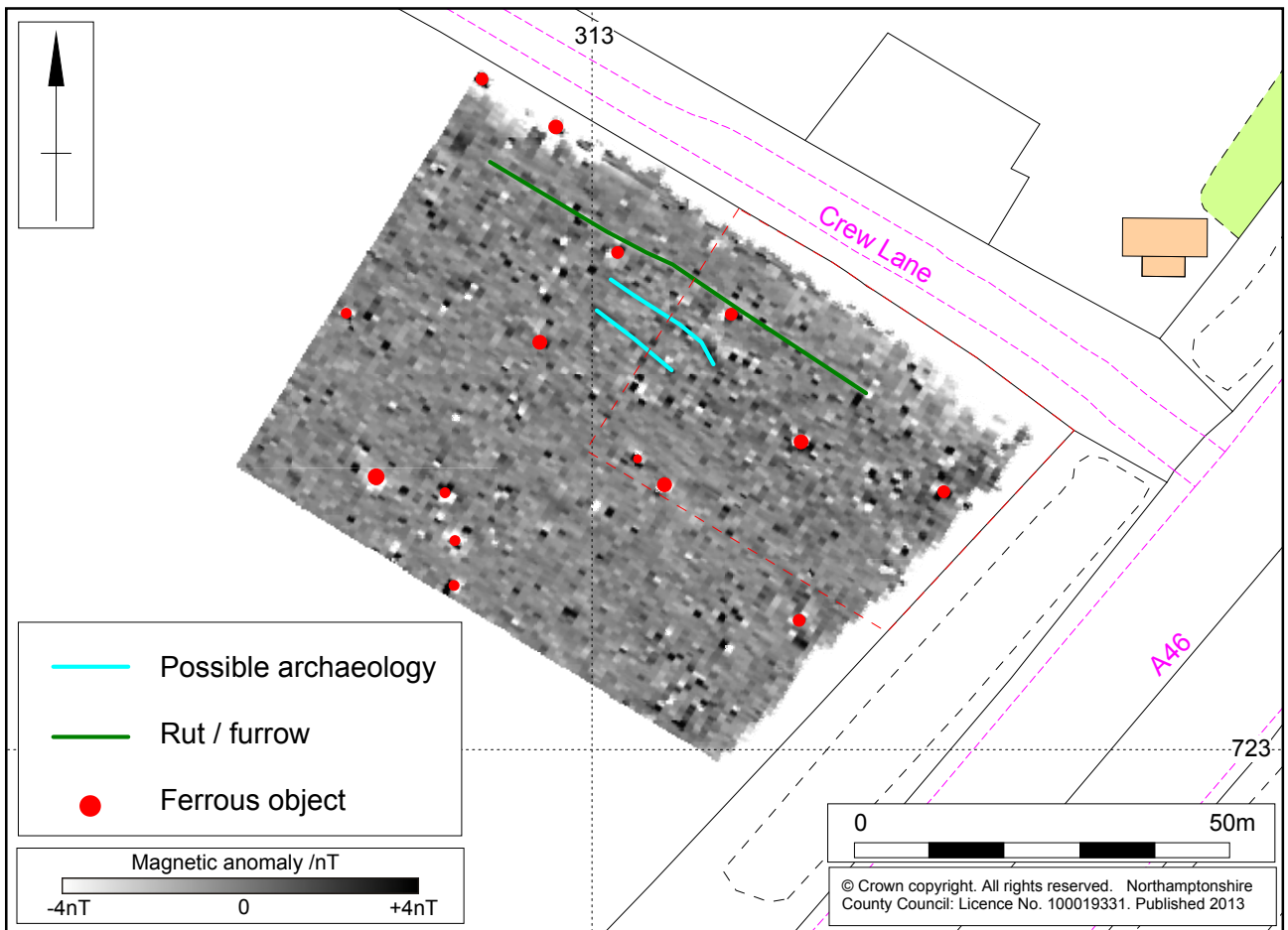
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Magnetometer survey results Fig 3



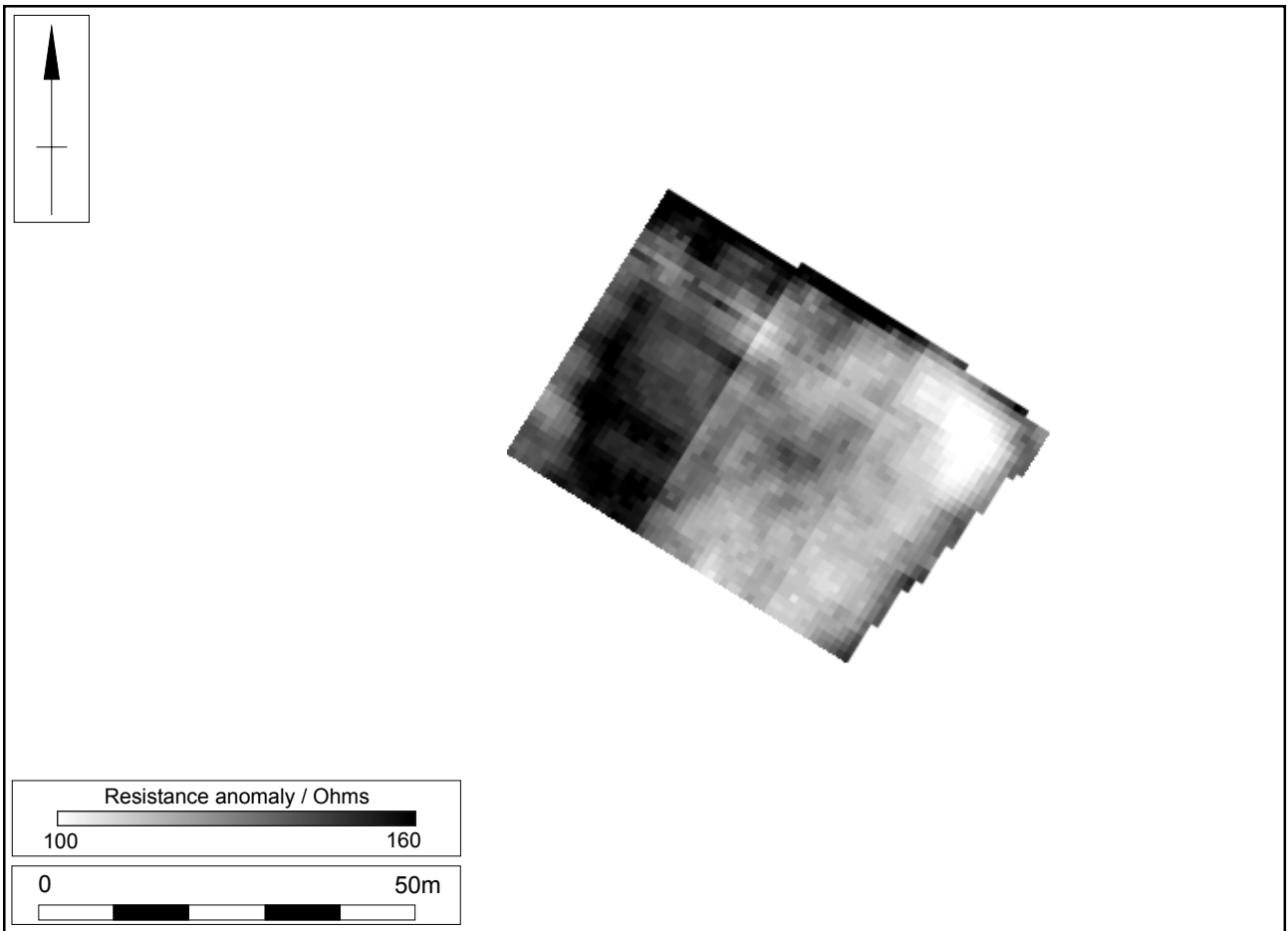
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Earth resistance survey interpretation Fig 4



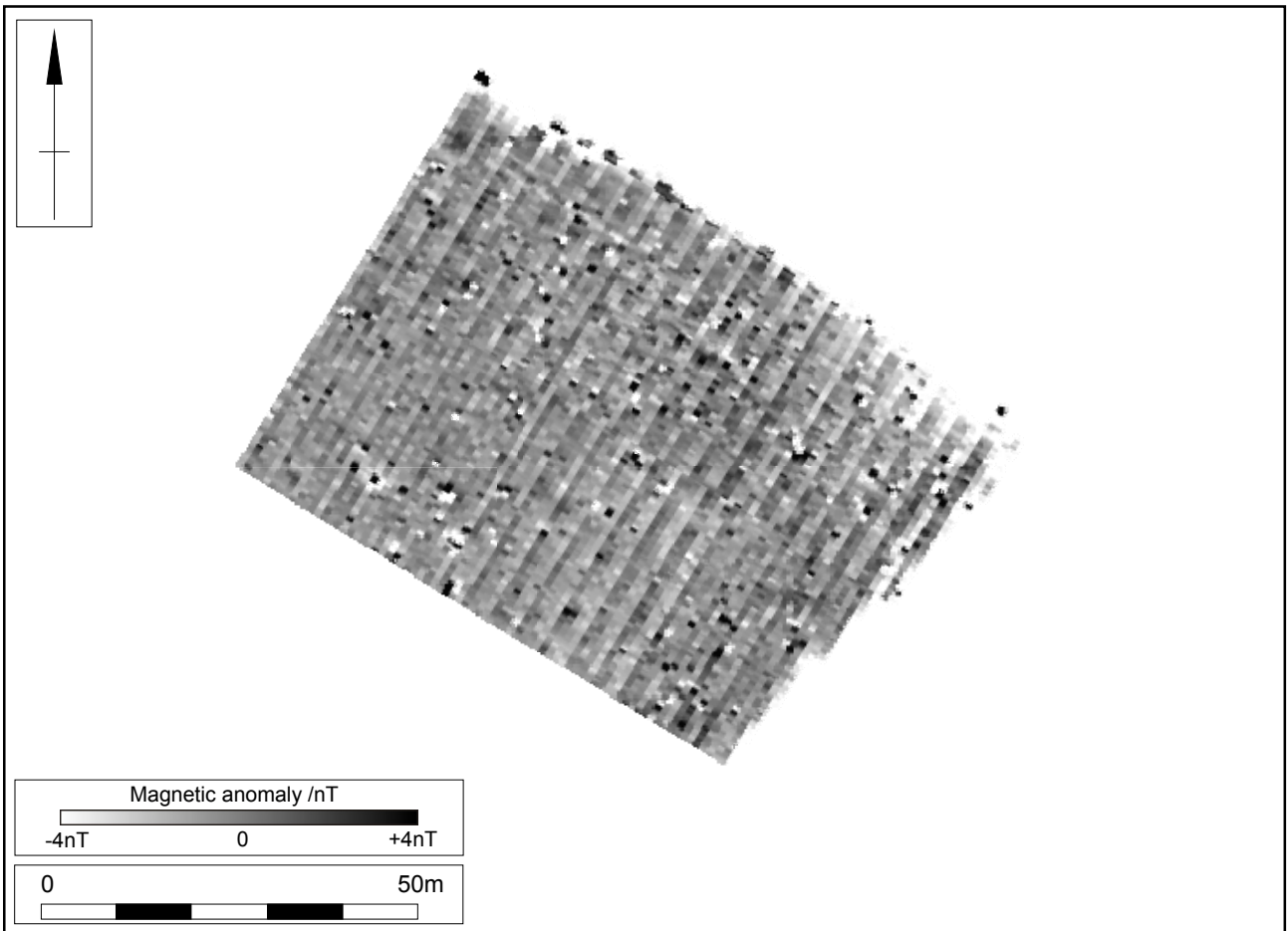
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Magnetometer survey interpretation Fig 5



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Unprocessed earth resistance data Fig 6



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Unprocessed magnetometer data Fig 7



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