



Northamptonshire County Council

Northamptonshire Archaeology

Archaeological Geophysical Survey

on land at Clack Hill,

Market Harborough, Leicestershire

October 2009



Adrian Butler
October 2009

Report 09/147

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey on land at Clack Hill, Market Harborough, Leicestershire	
Short description	CgMs Consulting Ltd commissioned Northamptonshire Archaeology to conduct archaeological geophysical survey at Clack Hill, Market Harborough. Magnetometry of a 3.1ha area reflected the pronounced existing ridge-and-furrow earthworks revealing five separate furlongs with dividing headlands. A possible driveway and an anomaly indicating a possible ditch were also detected.	
Project type	Geophysical survey	
Site status	None	
Previous work	Unknown	
Current Land use	Pasture	
Future work	Unknown	
Monument type/ period	Medieval Ridge-and-Furrow	
Significant finds	None	
PROJECT LOCATION		
County	Leicestershire	
Site address	Kettering Road, Market Harborough	
Study area	3.1ha	
OS Easting & Northing	475100 286900	
Height OD	125m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting Ltd	
Project Design originator	Michael Dawson, CgMs Consulting	
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler	
Sponsor or funding body	CgMs Consulting Ltd	
PROJECT DATE		
Start date	12 October 2009	
End date	22 October 2009	
ARCHIVES	Location	Content
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey on land at Clack Hill, Market Harborough, Leicestershire	
Serial title & volume	Northamptonshire Archaeology Reports 09/147	
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Cover Clack Hill Gradiometer Survey in Monochrome

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Fig 2 Survey Results, 1:2000

Fig 3 Survey Interpretation, 1:2000

**ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND AT CLACK HILL,
MARKET HARBOROUGH, LEICESTERSHIRE**

OCTOBER 2009

ABSTRACT

CgMs Consulting Ltd commissioned Northamptonshire Archaeology to conduct archaeological geophysical survey at Clack Hill, Market Harborough. Magnetometry of a 3.1ha area reflected the pronounced existing ridge-and-furrow earthworks revealing five separate furlongs with dividing headlands. A possible driveway and an anomaly indicating a possible ditch were also detected.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by CgMs Consulting Ltd, to conduct an archaeological geophysical survey on land at Clack Hill, Market Harborough, Leicestershire (NGR 475100 286900; Fig 1).

The objectives of the geophysical survey were to identify the presence or absence of archaeological remains within the proposed 3.1 hectare housing development area. The fieldwork consisted of an area magnetic gradiometer survey.

2 TOPOGRAPHY AND GEOLOGY

Clack Hill is situated on the eastern edge of Little Bowden village, Market Harborough in South Leicestershire. The investigation site covers a triangular-shaped area of land between Kettering Road in the south and the A6 road in the north-east (Fig 1). To the west, the site is bounded by a sharp drop overlooking modern housing.

At the time of the fieldwork the area was pasture occupied by a herd of grazing cattle. The field was covered by pronounced ridge and furrow on a steep slope, of up to 40 degree gradient running down to the north. Immediately south of the survey area, adjacent to Kettering Road, was a former clay pit.

The maximum elevation of the site is approximately 125m AOD and the geology of the area is believed to be Upper Lias clays (BGS Sheet 170 Market Harborough).

3 ARCHAEOLOGICAL BACKGROUND

There is no indication of any previous archaeological work having been carried out on the site. Geophysical survey was carried out by NA at nearby Windy Ridge, Little Bowden in 2009, with little of archaeological merit detected other than traces of ridge and furrow (SP744 867; Soden & Butler 2009). Clack Hill would appear to have been within the open fields of Little Bowden during the medieval and post-medieval periods (Soden & Butler 2009). The sole intervention on the hill may have been the excavation of clay for the brickworks at the foot of the Kettering Road.

4 METHODOLOGY

The 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 area was divided into a single network of 44 contiguous, whole and partial, 30m x 30m grid squares. These were set out manually by tape measure and optical square, and were tied to the Ordnance Survey grid by Leica System 1200 differential GPS. The instruments 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 grid.

All fieldwork was carried out in accordance with the guidelines issued by English Heritage and by the Institute for Archaeology (EH 2008; Gaffney, Gater and Ovendon 2002).

The data was processed using Geoplot 3.00u software. Striping, occasionally caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function (ZMT) and destaggering of the data was performed as necessary.

The processed data is presented in this report in the form of a greyscale plot (scale +4nT to -4nT black ~ white). This has been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative plot has been produced and is shown overlain onto the data in Figure 3.

5 SURVEY RESULTS

The results of the survey are relatively straightforward to interpret (Figs 2 & 3). Data from the southern extent of the survey was pushed to the extreme limits of the detection range by sets of iron gates and heavy inclusion of brick rubble in the ground to the north. The northern tip of the survey area was also subject to ferrous disturbance.

The major detected magnetic anomalies at Clack Hill were sinuous linear bands of alternate positive and negative signal. These anomalies directly reflected the surviving ridge-and-furrow earthworks on the site. In the south of the area they were orientated east to west in an 80m block, possibly changing to north-south alignment in the very south-eastern limit of the survey. At the northern end of the block a scarp with up to a metre drop, curved from the west to north-east across the area. Visual inspection and the survey data indicate that this topographic feature has been utilised as a headland.

North of the scarp ridge-and-furrow described a shallow 'reverse-S' shape to the north for approximately 120m. The central pair of ridges within this area of ploughing appears as more pronounced negative anomalies, the space between more positive. The feature may indicate a headland dividing two furlongs and it is possible that this feature may also represent a droveway, perhaps developed since the land became cattle pasture. Two highly magnetic anomalies detected at the southern end of the droveway were likely to be ferrous in origin. A linear positive anomaly was detected orientated south-east to north-west in the western furlong. This anomaly may indicate a buried ditch with no other associated features. A group of dipolar - ferrous - anomalies were identified in the north-east of the eastern furlong, probably reflecting discarded pieces of iron.

The central pair of furlongs was identified as terminating to the north before an east-west headland. A gap on the headland between furlongs could have continued the droveway to the west. Beyond this, ridge-and-furrow resumed an east-west orientation. A line of seven ferrous dipolar anomalies was detected shadowing the headland to the north, probably the remains of a former fence line.

6 CONCLUSION

Magnetometer survey of land on Clack Hill produced an accurate reproduction of the ridge-and-furrow earthworks that currently exist in the field. The results have defined five different furlongs of probable medieval cultivation separated by headlands. A possible droveway was identified between the east and west furlongs. The only other anomaly was a possible length of linear ditch aligned north-west to south-east.

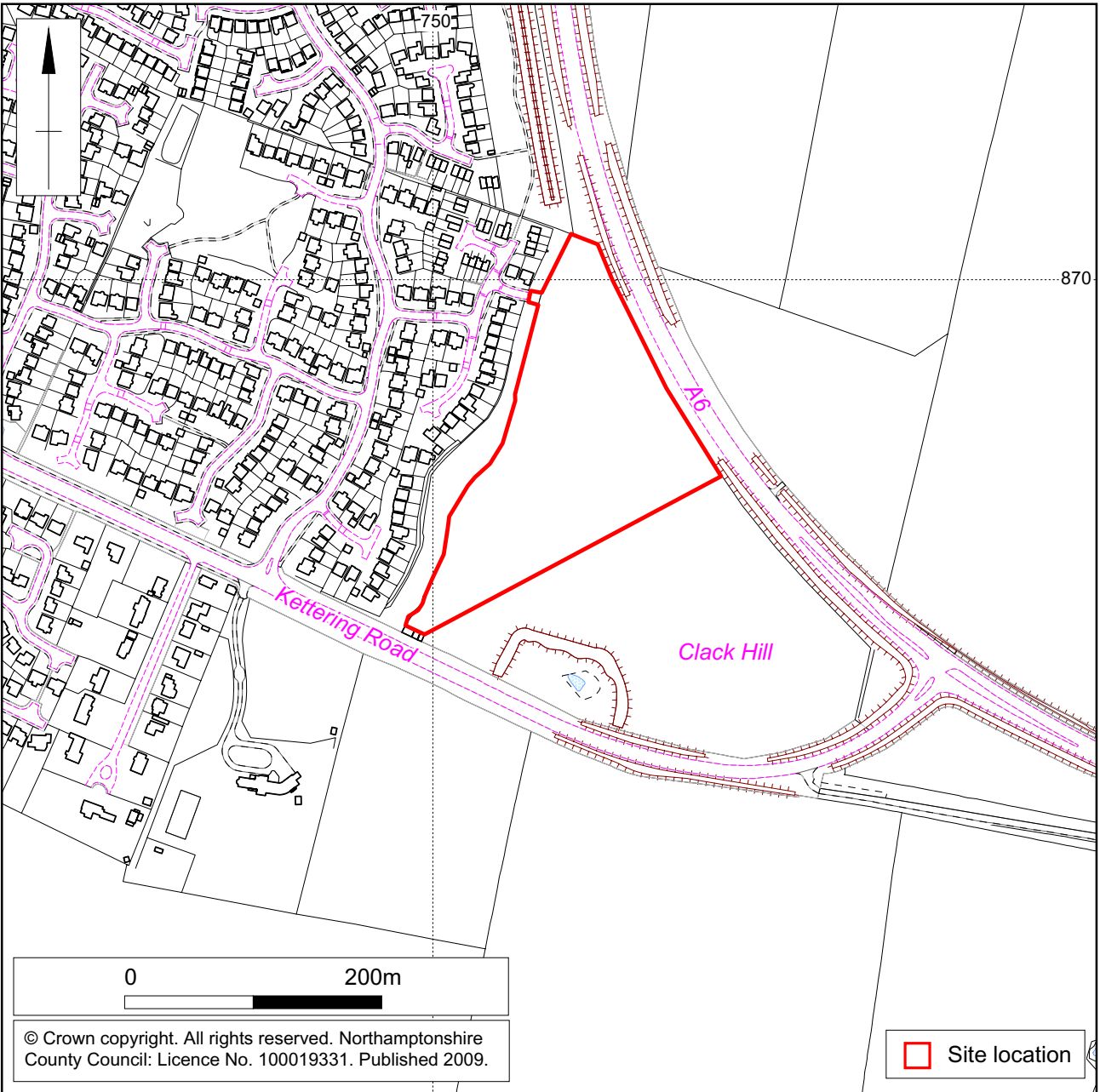
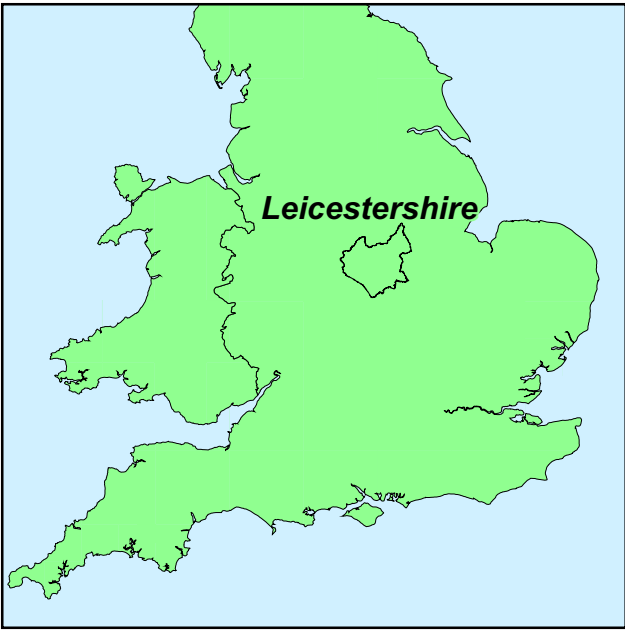
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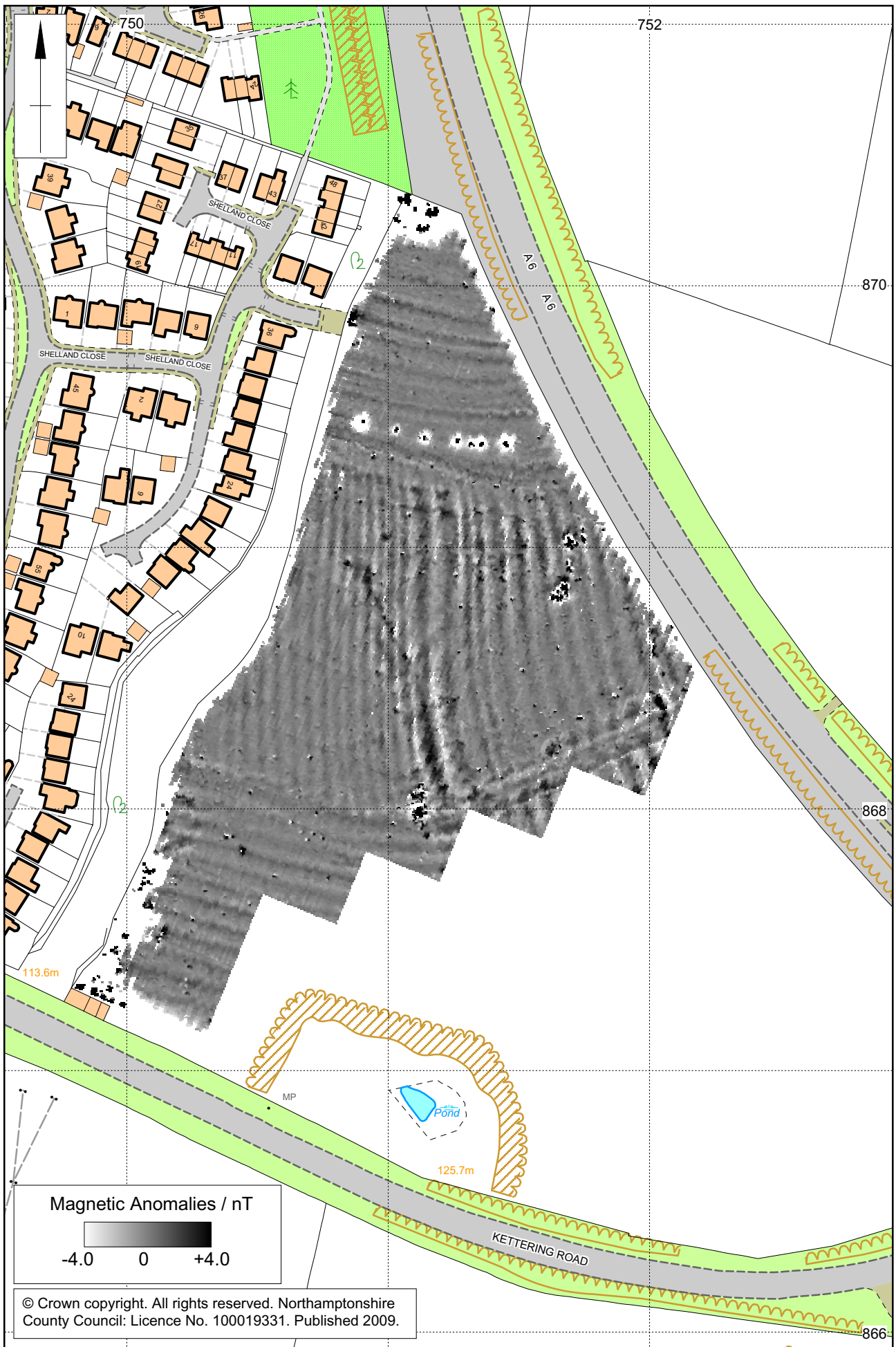
Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

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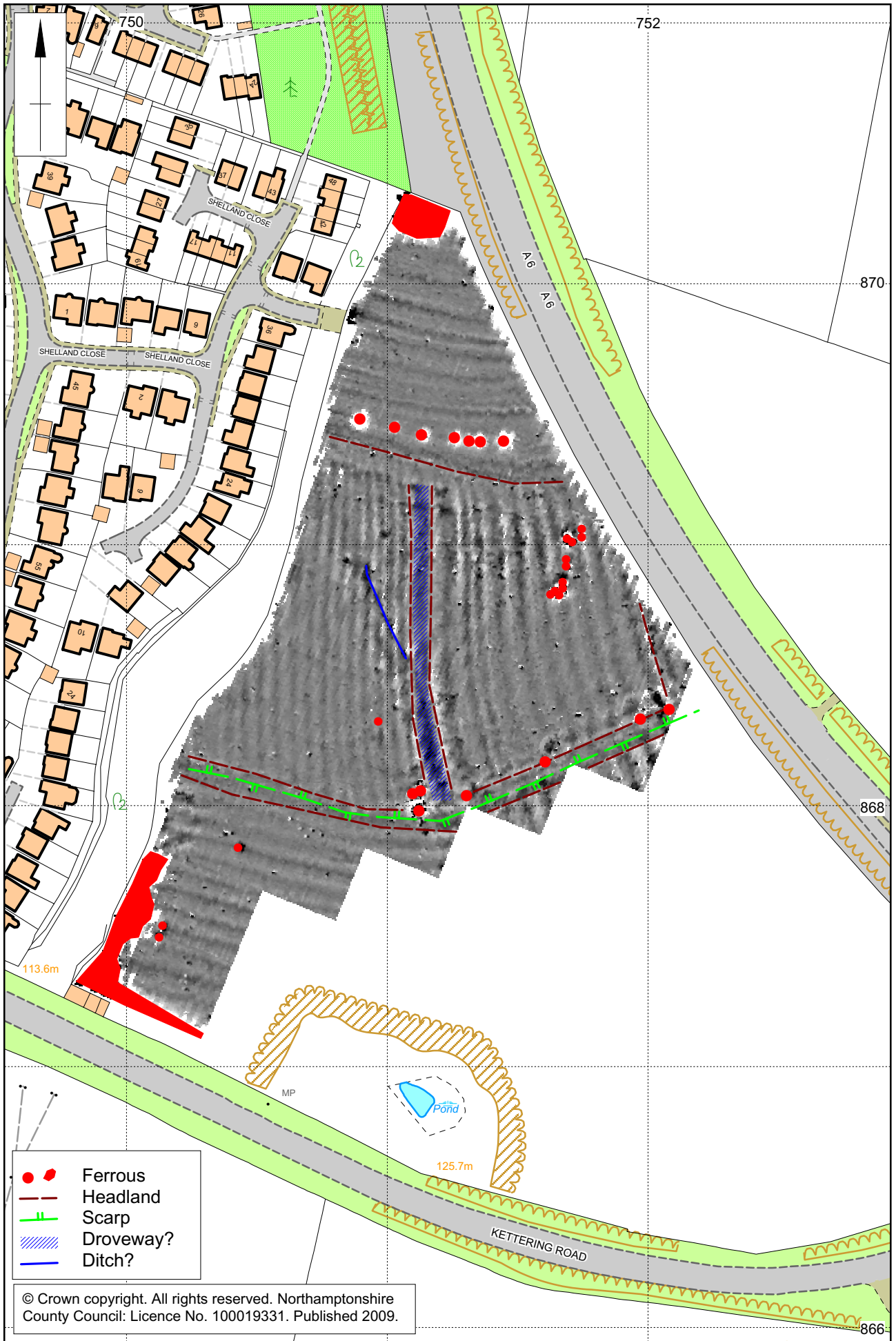
Scale 1:5000

Site location Fig 1



Scale 1:2000

Survey Results Fig 2



Scale 1:2000

Survey Interpretation Fig 3



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