

Ancient Monuments Laboratory  
Report 18/95

RAUNDS AREA PROJECT, MARCH 1995:  
REPORT ON GEOPHYSICAL SURVEYS AT  
THREE BARROW SITES NEAR HIGHAM  
FERRERS, NORTHANTS

M Cole

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Summary

Geophysical surveys were undertaken over three suspected barrow sites near Higham Ferrers, Northants in response to a request from the Raunds Area Project (RAP). The aim of the surveys was to confirm their presence, size and number of associated quarry ditches. It was also hoped that any related features, both internal and external, would be mapped. Magnetometer surveys were carried out in each case and a resistance survey was also conducted at one of the sites. The results of the magnetometer surveys successfully confirmed the presence of single ditched barrows at two of the sites with some evidence of internal features also being detected within one of these barrows. The resistance survey carried out at this latter site proved particularly informative and increased detail of internal structure was recorded. The results of the magnetometer survey from the third site were more enigmatic and an additional resistance survey here is recommended to clarify its interpretation.

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**RAUNDS AREA PROJECT: "BARROW 2", IRTHLINGBOROUGH ISLAND, "FLAT-TOP BARROW" 1766/1/1 AND CROP MARK 1344/1/4 ALL NEAR HIGHAM FERRERS, NORTHANTS.**

**Report on Geophysical Surveys, March 1995.**

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## **INTRODUCTION**

Geophysical surveys were undertaken at three locations near Higham Ferrers, Northants in response to a request from the Raunds Area Project (RAP). The overall aim of the surveys was to confirm the presence, size and number of quarry ditches associated with three suspected barrows. Furthermore it was hoped that any related features, both internal and external, would be located to allow as full an investigation as possible short of open excavation. The aims of the individual surveys were to:

- Site 1** Investigate the size and character of a suspected barrow (SMR no. 1344/1/4, NGR SP 9618 7036) identified as a crop mark on aerial photographs (AP's) and located on the first river gravel terrace.
- Site 2** Investigate the character of an upstanding earthwork (SAM 13676, SMR no. 1766/1/1, NGR SP 9727 7024) known locally as 'flat-top barrow' and located over alluvium.
- Site 3** Investigate the last remaining barrow of the Irthlingborough Island group (Barrow 2, SAM 13667, NGR SP 9659 7139) also located over alluvium. This extant barrow is situated within what is now the centre of the ARC gravel sorting site and is sandwiched between a protective culvert and a disused railway line now used by quarry vehicles.

## **METHOD**

Separate grids of 30m squares were laid out at all three sites by CAS surveyors. At sites 1 and 2 the grids were aligned precisely to the National Grid (see Figs 1 & 4) and were located by reference to the relevant rectified AP's. Due to the restricted area accessible at site 3 the grid here was laid out to best fit the available space (see Fig 7).

### Magnetometer Survey

The magnetometer surveys were carried out using Geoscan FM36 fluxgate gradiometers. Readings were recorded at 0.25m intervals along traverses 1.0m apart and the data was periodically down-loaded to a microcomputer in the field. The resulting data is presented in this report using both greyscale and graphical trace plots (see Figs 2, 3, 5, 6, 8 & 9).

## Resistivity Survey

The resistance survey was carried out using a Geoscan RM15 resistance meter operated in the twin electrode configuration with a mobile probe spacing of 0.5m. Readings were collected at 1.0m intervals along traverses 1.0m apart. The resulting data is presented in the form of greyscale plots (see Figs 8 & 9). In order to clarify visual recognition of significant anomalies the data has been statistically treated using a high-pass gaussian filter (see plot 1b on Fig 9) and also a Wallis contrast enhancing filter (see plot 1c on Fig 9)<sup>1</sup>.

## RESULTS

### Site 1 (see Figs 1-3)

The magnetometer survey of crop mark 1344/1/4 has clearly located a circular ring ditch approximately 20m in diameter. This ditch has not, however, been detected in its entirety and the anomaly is abruptly curtailed to the north. The northern third of the survey data is generally disturbed and this disturbance may be responsible for the curtailment of the ring ditch anomaly, assuming that the ditch is in fact complete (barrow 4 of the nearby Irthlingborough Island group was found to have a causewayed ditch on excavation, CEU 1989). During the course of gravel extraction ARC have reportedly dumped topsoil in this field, which was subsequently levelled. As a result the northern circuit of the ring ditch may perhaps be more deeply buried and is, therefore, not detectable. Alternatively the ditch may have been accidentally bulldozed during the levelling process. The latter would certainly help explain the east-west parallelism evident in the data to the north and, additionally, the linear negative anomaly running northwest-southeast which clips the ring ditch to the southwest.

It is worth noting that the magnetometer has responded most strongly to the ring ditch in its southwestern arc. This is suggestive of the use of fire in this area - perhaps associated with some funerary activity. Once again, however, the variation in magnetic response may be due to a differing depth of burial. No obvious internal features appear to have been detected, the strong dipole response to the south most probably being due to modern, extraneous iron.

### Site 2 (see Figs 4-6)

The magnetometer survey of crop mark 1766/1/1 has also responded to a circular feature this time slightly greater than 20m in diameter. On this occasion, however, the feature has been detected as a negative anomaly and as such represents an unusual response suggestive of a ditch containing a fill with a significantly lower magnetic susceptibility (MS) than the surrounding soil. This may in turn be due to the ditch being filled with stone (perhaps with local limestone) or it having been excavated at some stage and subsequently in-filled with a low susceptibility fill (perhaps a more recent deposit of river alluvium).

The activity detected within the ring is fairly intense and is certainly not a typical response to the interior of a burial mound. The latter does suggest that if this was originally a barrow it has been re-used or interfered with at some stage. Indeed, this type of disturbed response is more usually associated with buried masonry structures. Within this area an L-shaped negative anomaly can be discerned which may represent an in-filled excavation trench.

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<sup>1</sup>For a detailed description of these image enhancing filters see Scollar et al (1990).

Other potentially significant anomalies have been detected, for instance an alignment in the southeastern corner of the survey area.

### **Site 3 (see Figs 7-9)**

#### Magnetometer Survey

Despite being located within the heart of the gravel quarry, this site has responded surprisingly well to magnetometer survey. An outer ring ditch, approximately 25m in diameter, has been detected almost in its entirety. Once again, however, the magnetic response to the ditch is not uniform around its circuit and is at its strongest to the west. The magnetic response is rather confused although there is the suggestion of a second, internal ring. Two discrete anomalies have been detected near the centre of the barrow, one of which correlates well with a low resistance anomaly detected by the resistivity survey (see below).

#### Resistivity Survey

This site has also responded well to resistivity survey with the outer ring ditch being detected clearly as a low resistance anomaly with an associated high resistance anomaly, possibly an outer bank, to the north and northeast. Within the ring ditch is a broad circular band of high resistance, approximately 8m wide, which surrounds a central area of generally lower resistance. This could be interpreted as a compacted bank surrounding an inner hollow, although this does not conform to any recognised barrow morphology (Grinsell, 1953). At the very centre of the barrow there is an irregularly shaped low resistance anomaly, also detected by the magnetometer survey, which may be a response to an original pit or, alternatively, the remains of a robber trench. Overall it does seem likely that some excavation over the centre of this barrow has taken place.

### **CONCLUSION**

The geophysical surveys have succeeded in locating buried remains at all three sites. The magnetometer survey at site 1 has confirmed the presence of a single ditched barrow which may have been damaged by the activities of the gravel extractors. The magnetometer survey at site 3 was similarly successful but a response of greater clarity was achieved by the resistivity survey which confirmed the presence of an outer ditch and clearly indicates an area of disturbance (and some possible structural detail) at the centre of the mound. The results of the magnetometer survey at site 2 are rather enigmatic and as such are difficult to interpret with any confidence. Resistance survey, given its effectiveness at site 3, perhaps allied to coring or limited trial trenching would help to resolve the uncertainty of interpretation, particularly at site 2.

Surveyed by: P Cottrell  
A Payne  
M Cole

Dates: 13-17 March 1995

Reported by: M Cole

23 May 1995

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## References

CEU, 1989 The Work of the Central Excavation Unit 1987-8, English Heritage.

Grinsell, L V 1953 *The Ancient Burial Mounds of England*, London.

Institute of Geological Sciences, 1972 1" map *Geological Survey of Great Britain, Sheet 186, Wellingborough - Solid and Drift*.

Scollar, I et al 1990 *Topics in Remote Sensing 2: Archaeological Prospecting and Remote Sensing*, Cambridge.

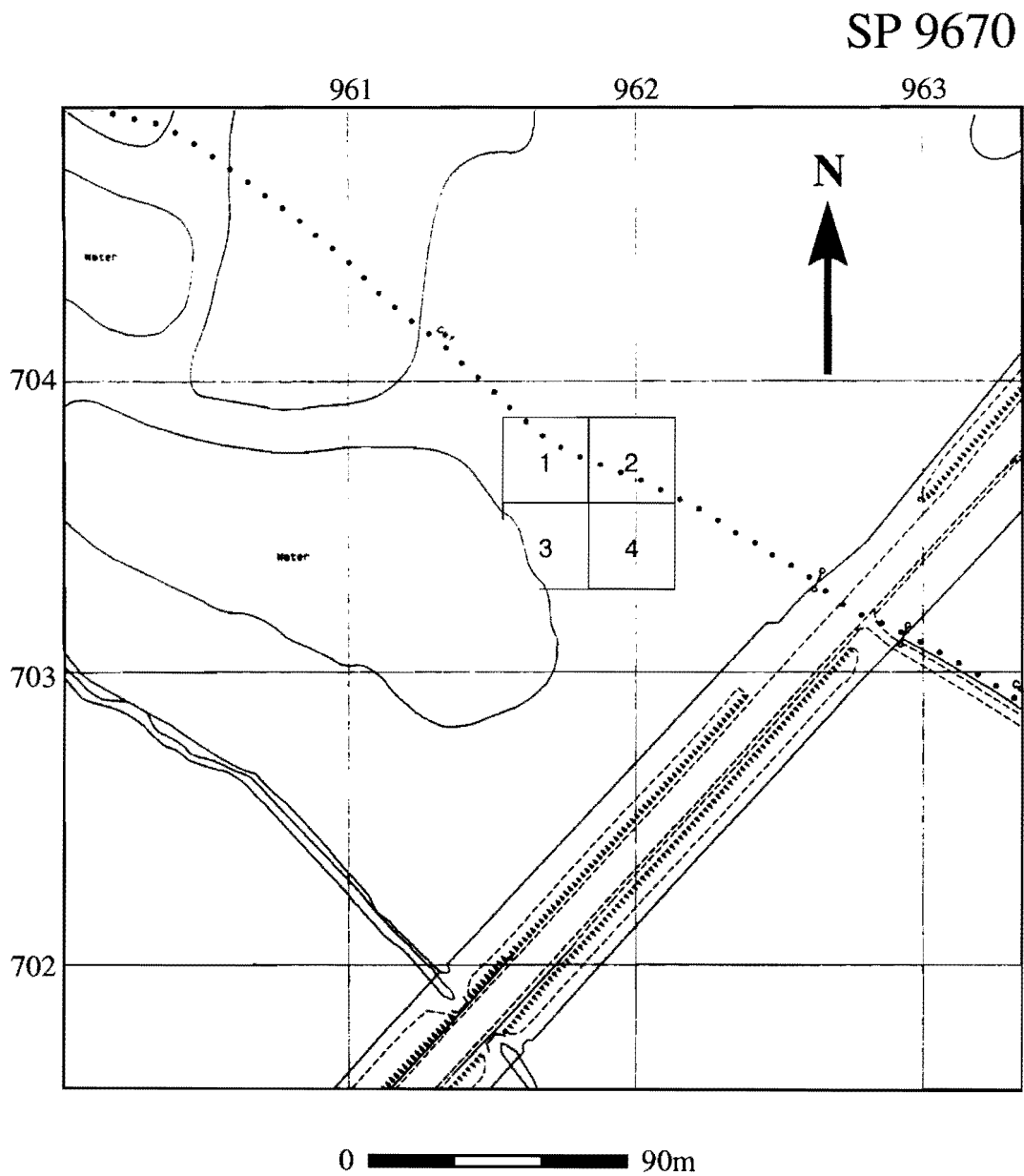
## Plans Enclosed

- Figure 1 Location plan of survey at site 1 (1:2500)
- Figure 2 Greyscale of magnetometer data from site 1 overlain on location plan (1:2500)
- Figure 3 Plots of magnetometer data from site 1 (1:750)
- Figure 4 Location plan of survey at site 2 (1:2500)
- Figure 5 Greyscale of magnetometer data from site 2 overlain on location plan (1:2500)
- Figure 6 Plots of magnetometer data from site 2 (1:750)
- Figure 7 Location plan of survey at site 3 (1:2500)
- Figure 8 Greyscale of resistivity data from site 3 overlain on contour survey
- Figure 9 Plots of resistivity and magnetometer data from site 3 (1:250)

FIGURE 1.

Raunds Area Project, N'hants.

Location of survey over cropmark 1344/1/4.

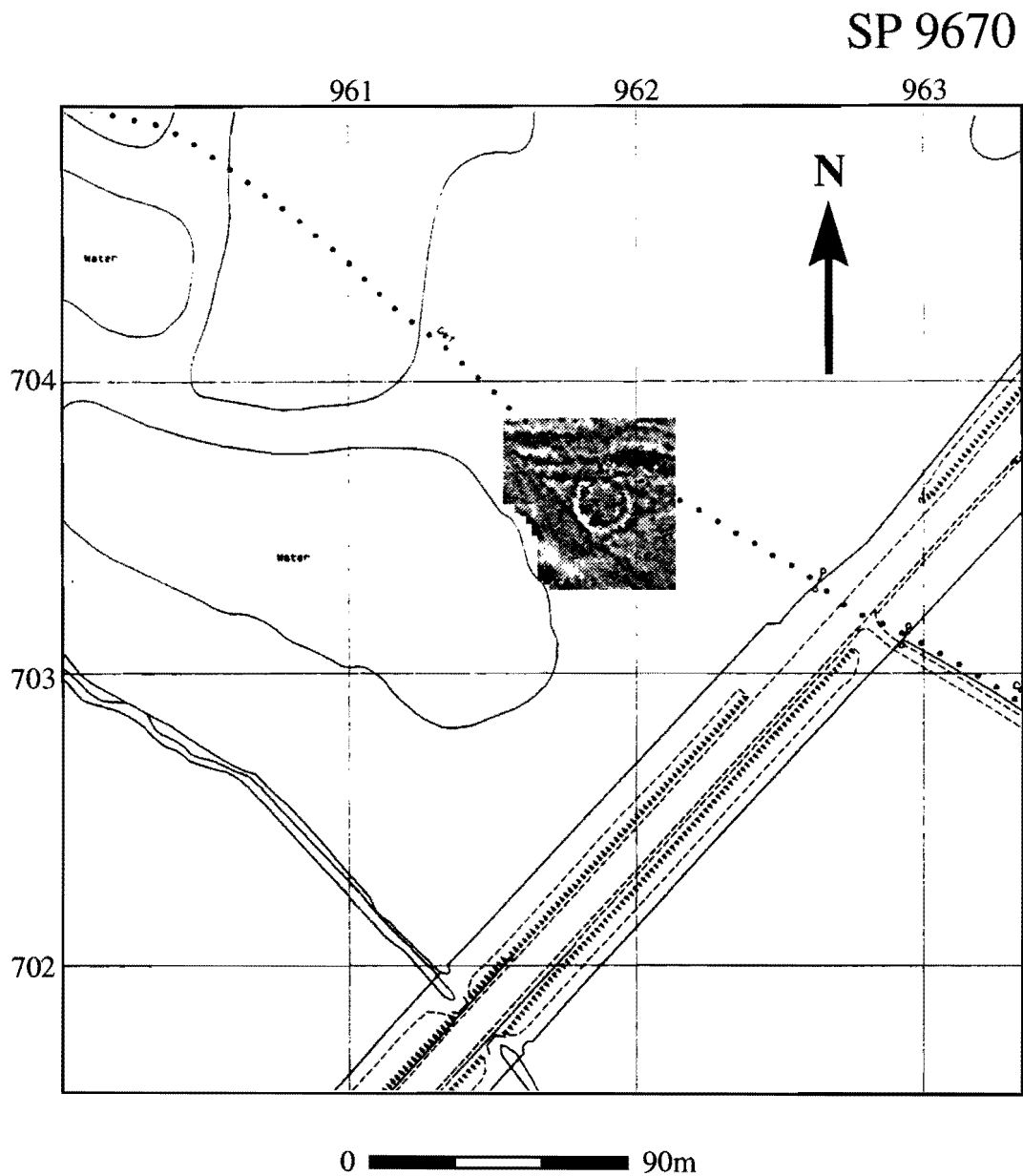


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FIGURE 2.

Raunds Area Project, N'hants.

Magnetometer survey over cropmark 1344/1/4.



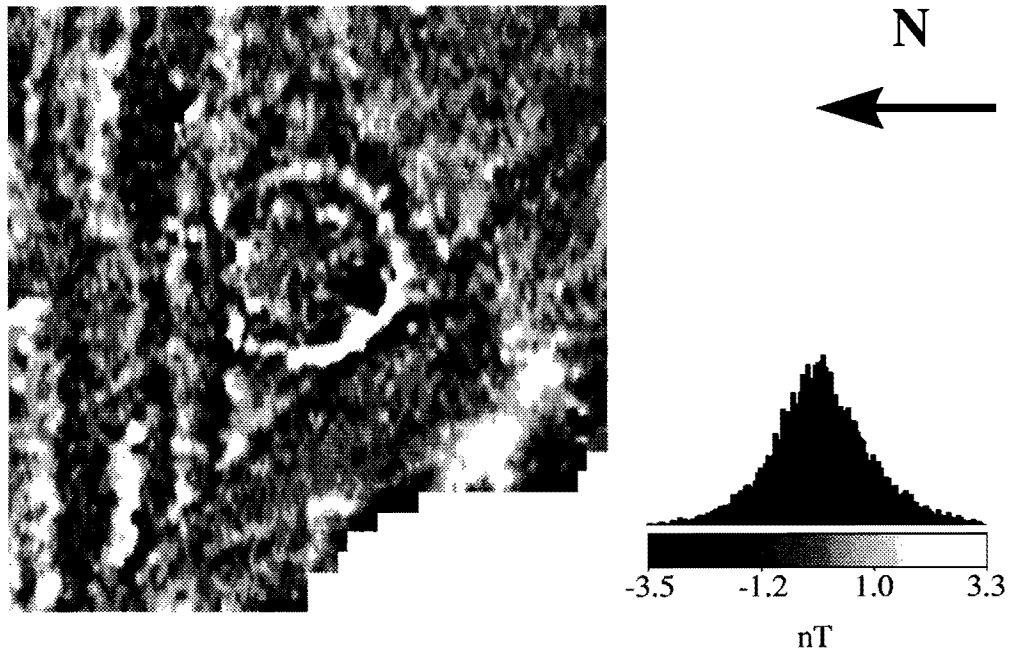
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FIGURE 3.

Raunds Area Project, N'hants.  
Magnetometer survey over cropmark 1344/1/4.

1. Greyscale of magnetometer data.



2. Traceplot of raw magnetometer data.

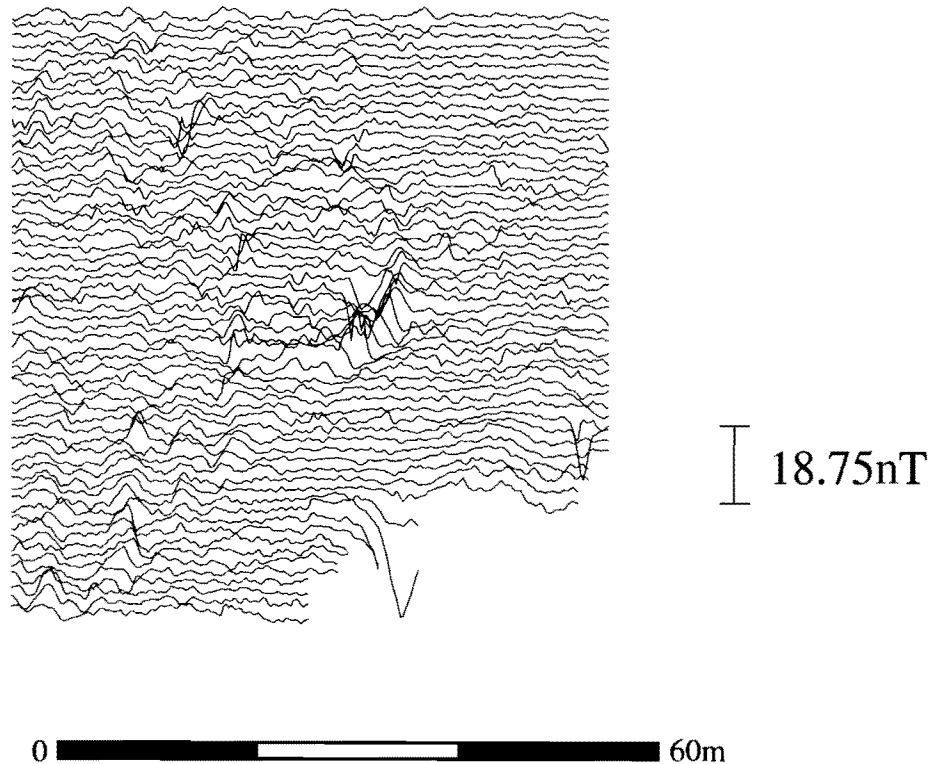
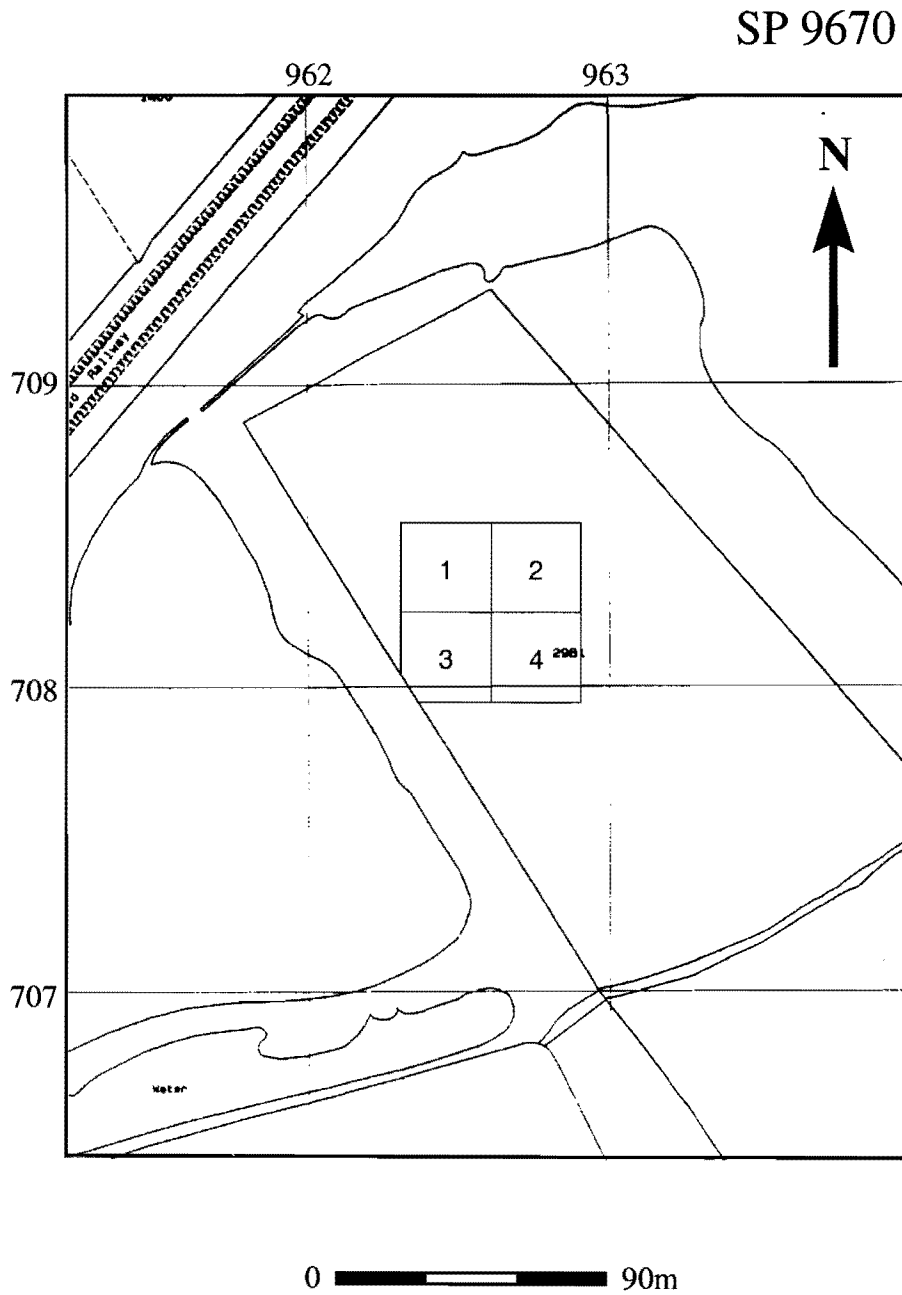


FIGURE 4.

Raunds Area Project, N'hants.

Location of survey over cropmark 1766/1/1.

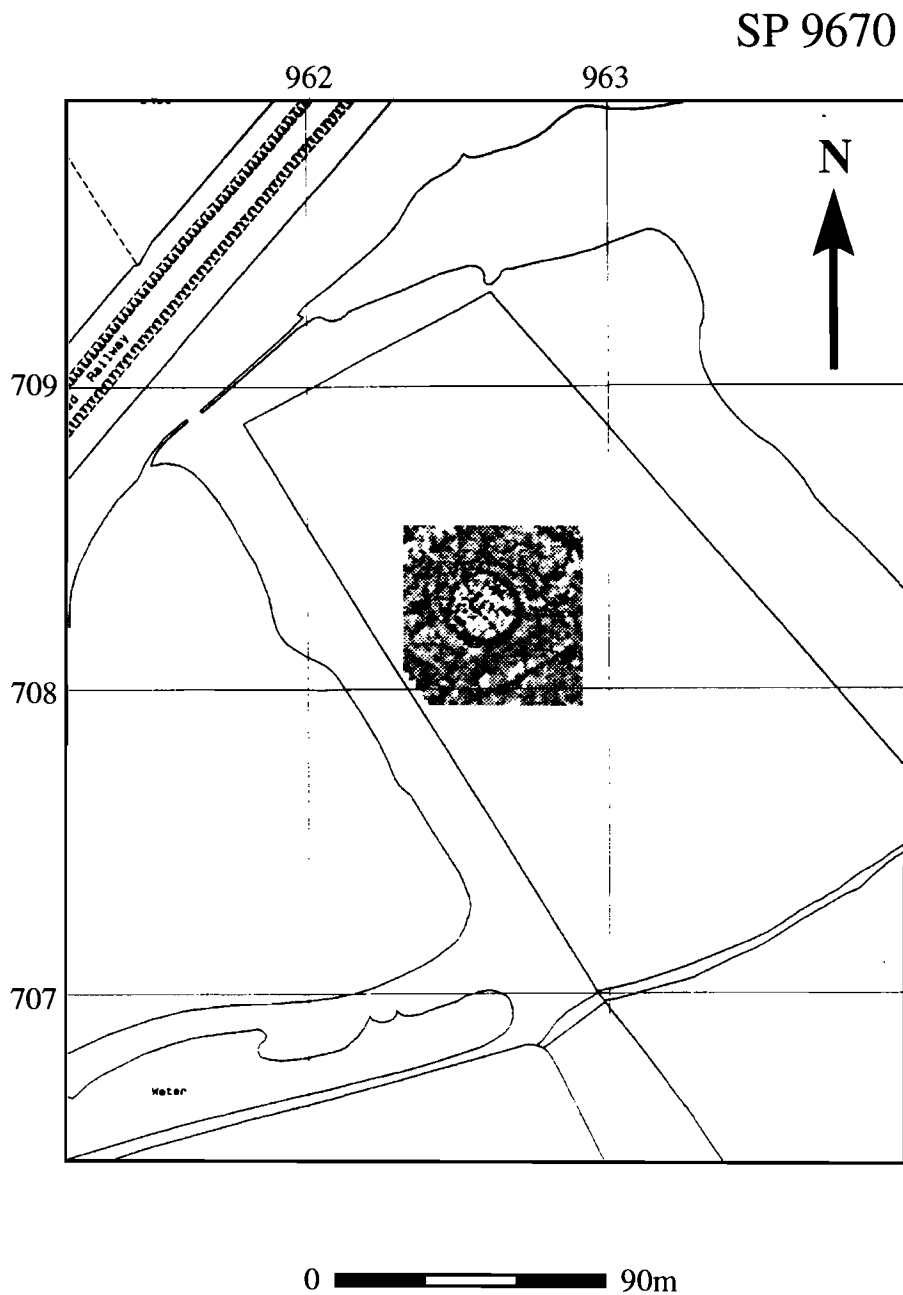


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FIGURE 5.

Raunds Area Project, N'hants.

Location of survey over cropmark 1766/1/1.

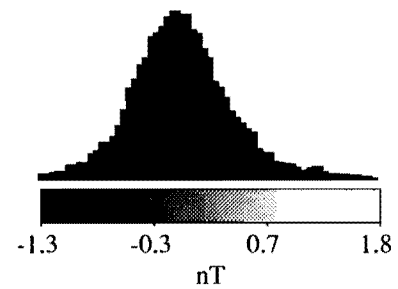
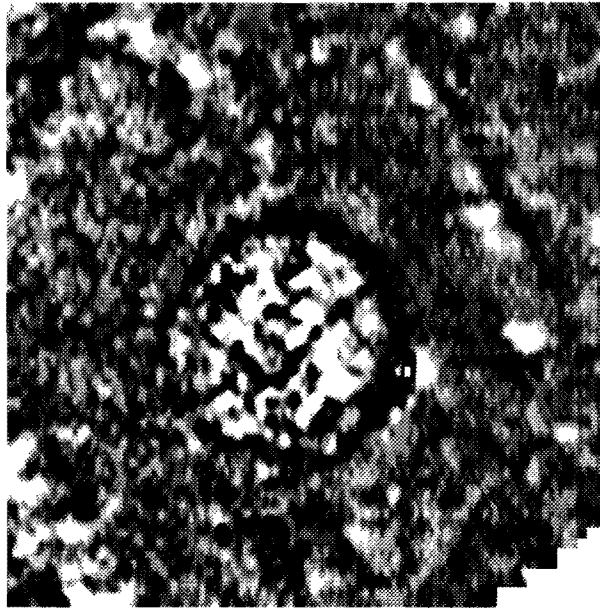


Ancient Monuments Laboratory 1995.

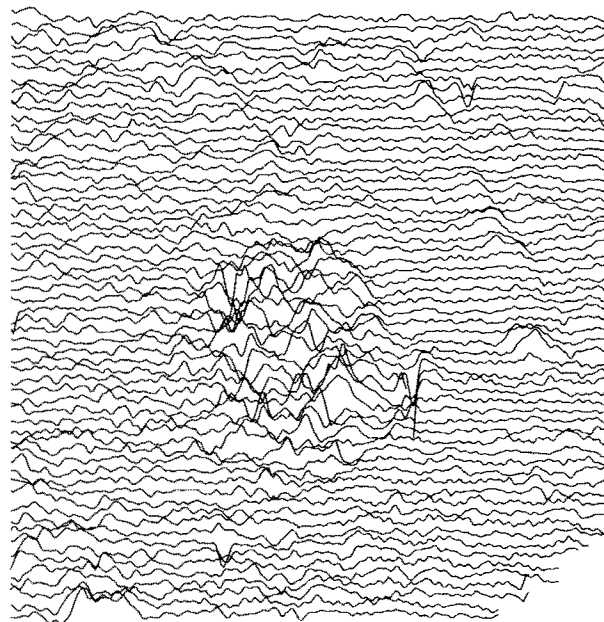
FIGURE 6.

Raunds Area Project, N'hants.  
Magnetometer Survey of Cropmark 1766/1/1.

1. Greyscale of raw magnetometer data.



2. Traceplot of magnetometer data.



10nT

Scale

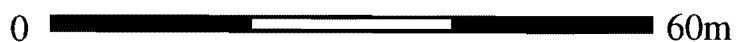
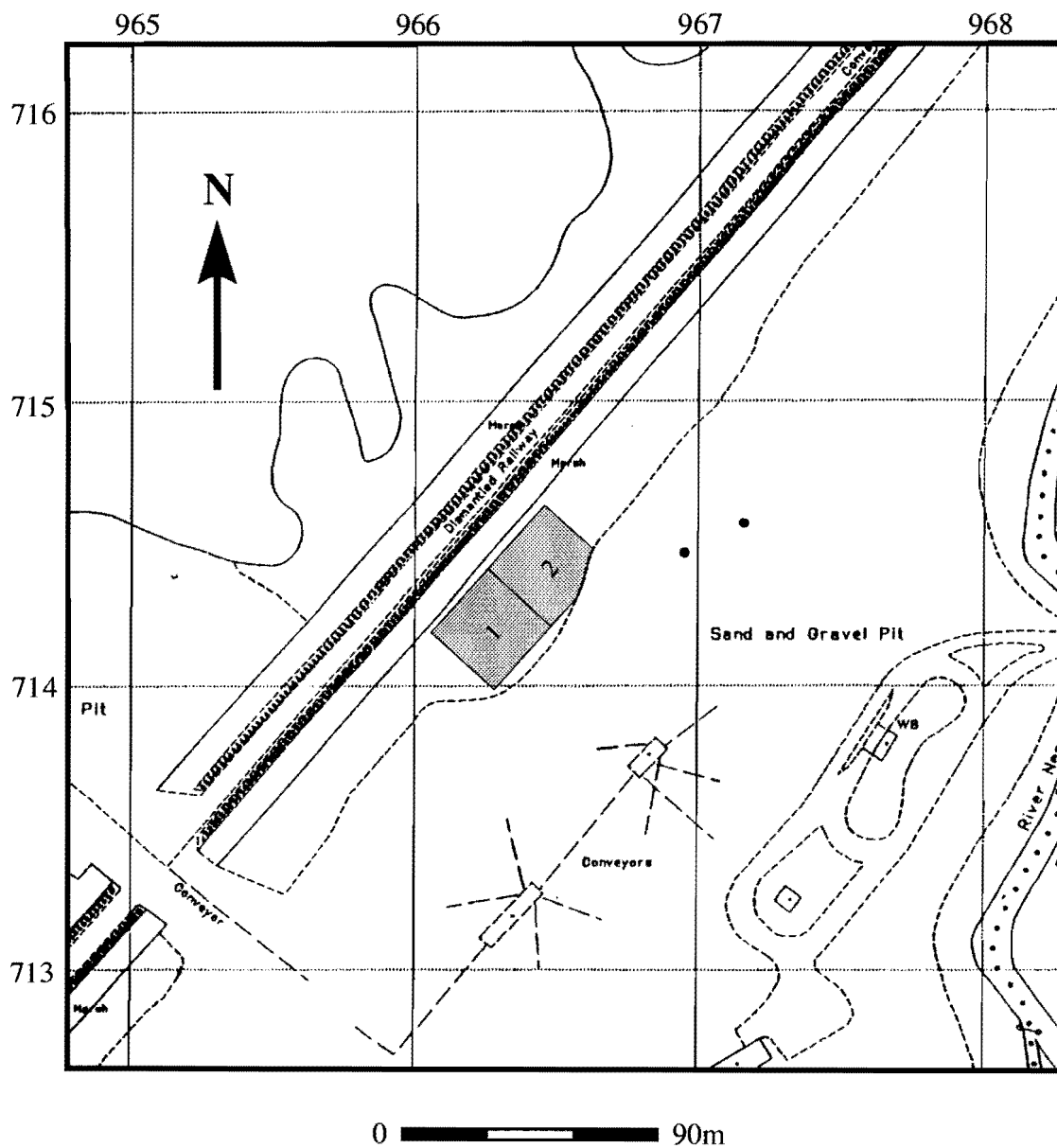


FIGURE 7.

Raunds Area Project, N'hants.

Location of survey over Barrow 2, Irthlingborough Island.

SP 9671



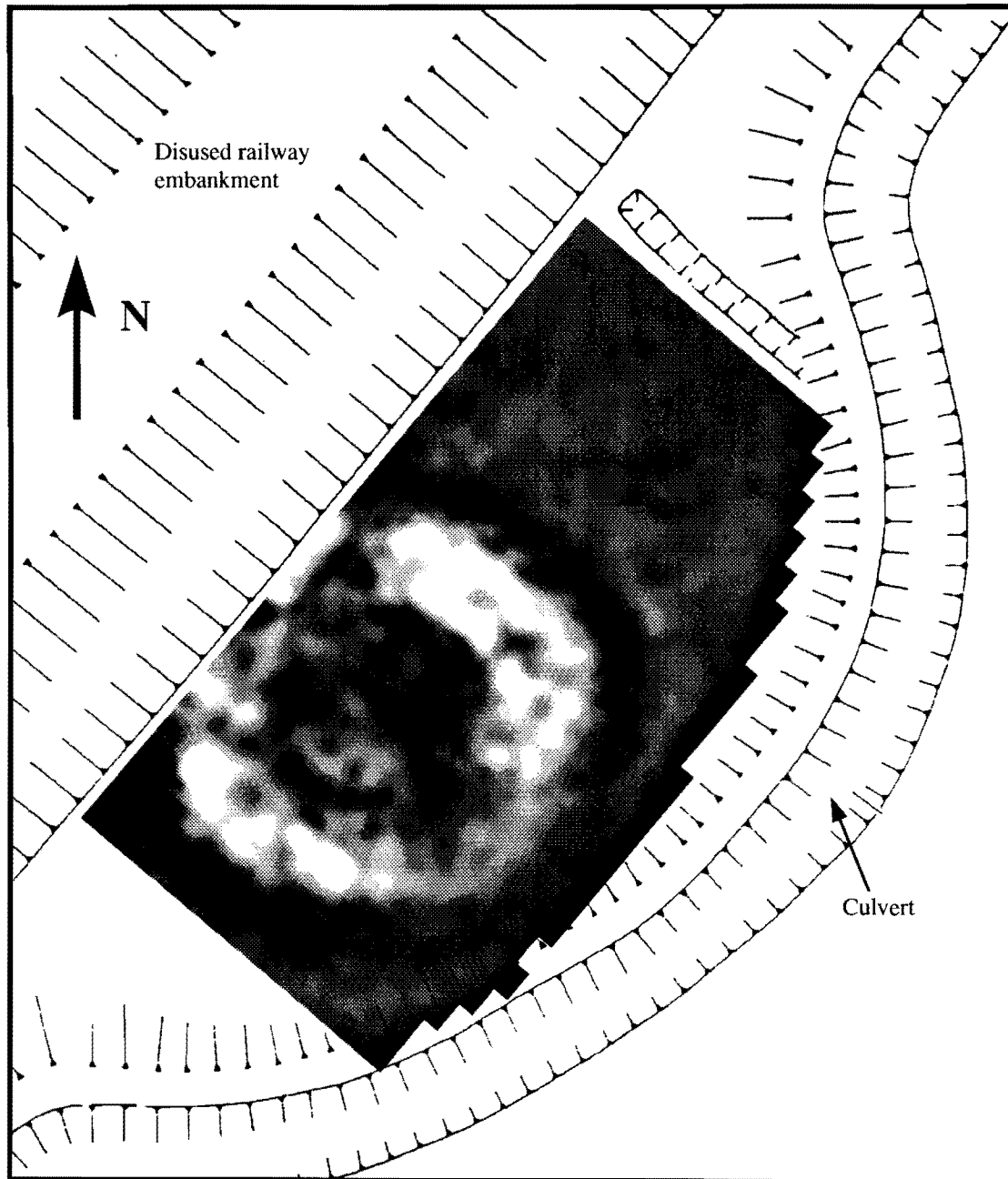
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FIGURE 8.

Raunds Area Project, N'hants.

Geophysical survey of Barrow 2, Irthlingborough Island.

Greyscale of enhanced resistivity data  
overlain on contour survey.



0 30m

Ancient Monuments Laboratory 1995.

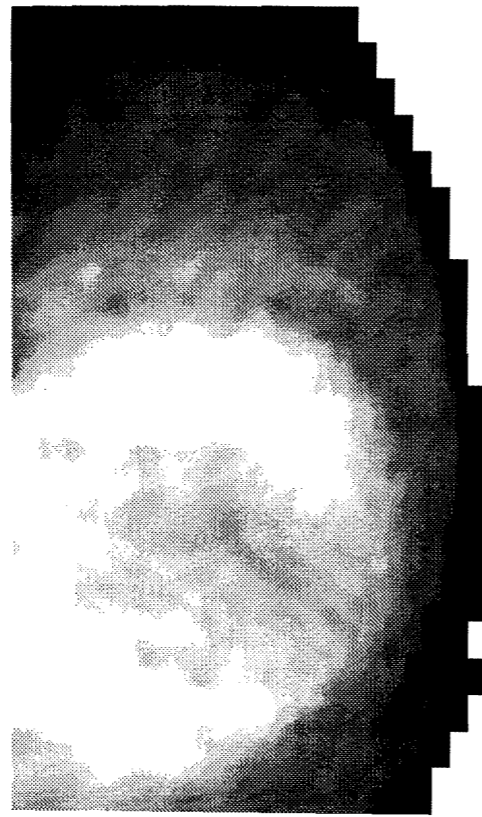
FIGURE 9.

Raunds Area Project, N'hants.  
Geophysical survey of Barrow 2, Irthlingborough Island.



1. Greyscales of resistivity data:

a) raw data.

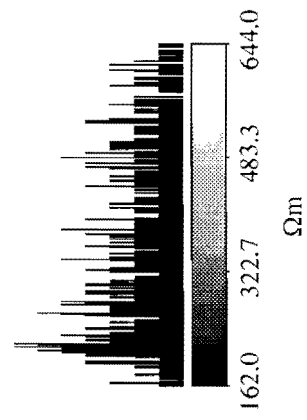


b) contrast enhanced data.



c) high-pass filtered data.

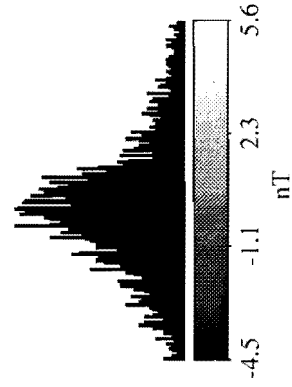
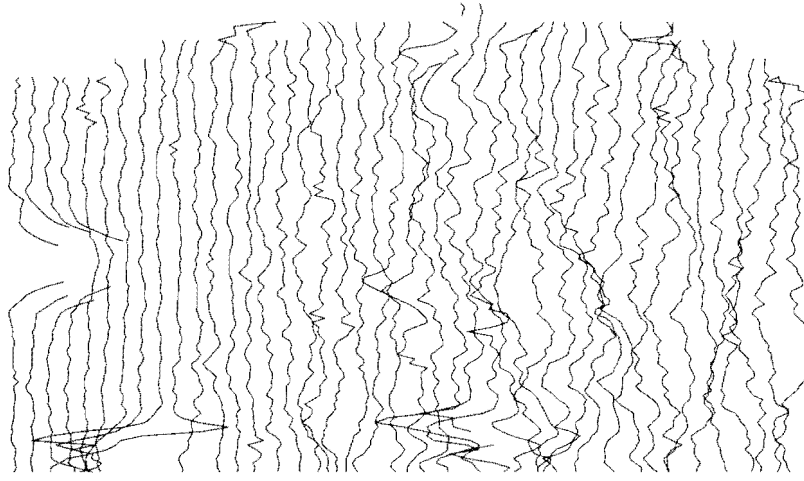




2. Greyscale of raw magnetometer data.



3. Traceplot of magnetometer data.



0 30m