

NYCC HER	
SNY	8725
ENY	2324
CNY	
Parish	6064
Rec'd	03-02-04



ARCHAEOLOGICAL
SERVICES
WYAS

**Land at Aldboroughgate
Boroughbridge
North Yorkshire**

Geophysical Survey

January 2004

Report No. 1207

CLIENT
Boroughbridge Community Association

**Land at Aldboroughgate,
Boroughbridge,
North Yorkshire.**

Geophysical Survey

Contents

1. Introduction and Archaeological Background
2. Methodology and Presentation
3. Results and Discussion
4. Conclusions

Bibliography

Acknowledgements

Figures

Appendices

Summary

A geophysical evaluation comprising magnetic scanning, covering approximately 6 hectares, followed by targeted detailed magnetometer survey covering 3 hectares, was carried out on the southern outskirts of Boroughbridge. Areas of archaeological potential were identified in the northern part of the site during scanning and these were resolved through the detailed survey. Conjoining linear anomalies indicative of a rectilinear enclosure have been identified. Discrete anomalies inside the enclosure could be associated with occupational activity.

Authorised for distribution by:



© WYAS 2004

Archaeological Services WYAS

PO Box 30, Nephshaw Lane South, Morley, Leeds LS27 0UG

1. Introduction and Archaeological Background

- 1.1 Archaeological Services WYAS was commissioned by Mr Nick Cooke, on behalf of Boroughbridge Community Association, to carry out a geophysical (fluxgate gradiometer) evaluation of an area of land south of Boroughbridge (see Fig. 1), where a planning application (No. 6.64.574.RG4) has been received proposing to create new community playing fields on land currently under cultivation.
- 1.2 The site, centred at NGR SE 4000 6580, comprised two irregularly shaped fields covering an area of approximately 6.5 hectares that at the time of survey contained a young cereal crop. The proposal area is defined by field boundaries to the north and west and by Chapel Hill Lane to the south-east (see Fig. 2). The survey was carried out between January 9th and January 15th 2004. No problems were encountered during the survey.
- 1.3 Topographically the site is undulating at about 40m Above Ordnance Datum with both fields sloping gradually down towards the drain that divides the two fields. The solid geology comprises Permian and Triassic sandstones overlain by till and glaciofluvial drift deposits. The soils derived from this material are classified in the Bishampton 1 Soil Association and are described as deep, fine loamy soils with slowly permeable sub-soils.
- 1.4 There are no known archaeological sites within the proposed development area. Nevertheless it is located within a landscape rich in sites of historical and archaeological importance. Perhaps among the most important, and the nearest, are the Roman town of *Isurium* located less than 1 kilometre to the north-east and Studworth Hill, a similar distance east of the site. Consequently outline planning permission was granted subject to the applicant implementing a programme of archaeological works approved by the Local Planning Authority.

2. Methodology and Presentation

- 2.1 Following consultation Mr Neil Campling, of the North Yorkshire County Council Heritage Unit, advised that a geophysical evaluation of the site should be undertaken. It was recommended that the whole of the site be rapidly scanned in the first instance as a means of identifying potential areas of archaeological interest for further investigation by detailed magnetic survey covering 3 hectares.
- 2.2 The objectives of the geophysical evaluation were:-
 - to establish the presence or absence of any archaeological anomalies within the proposed development area
 - to define the extent of any such anomalies
 - to characterise, if possible, any such anomalies.
- 2.3 The survey methodology and report comply with the recommendations outlined in the English Heritage Guidelines (David 1995) as a minimum standard. All figures reproduced from Ordnance Survey mapping are done so

with the permission of the controller of Her Majesty's Stationery Office. © Crown copyright.

- 2.4 A general site location plan, incorporating the 1:50000 Ordnance Survey mapping, is shown in Figure 1. Figure 2 is a site location plan, showing the processed greyscale gradiometer data, superimposed onto an Ordnance Survey digital base map, at a scale of 1:5000. The processed data are displayed in greyscale format, at a scale of 1:1000 in Figure 3 with the accompanying interpretation shown at the same scale in Figure 4. The unprocessed ('raw') data is presented in XY trace plot format in Appendix 4.

N.b – all the figures with the exception of Figure 1 display the data on a local grid that is aligned with that of the Ordnance Survey.

- 2.5 Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the archive.

The interpretations of the observed anomalies are based on information contained in all parts of the report including the appendices.

3. Results and Discussion

3.1 Magnetic Scanning

- 3.1.1 Scanning was undertaken on a field-by-field basis with traverses aligned parallel with the longest boundary in each field and approximately 10m apart. Comprehensive notes were made on large-scale (1:1250) maps of any areas of potential interest and bamboo canes also left in place to aid the accurate placement of the detailed survey blocks.
- 3.1.2 The magnetic background (soil) noise varied greatly between with the two fields. In the southerly field there was very little variation but in the northern field distinct areas of magnetic enhancement were identified, particularly in the middle of the field. During the scanning this variation was thought to be a consequence of recent tipping which was evidenced by the frequent appearance of coal chippings and 19th and 20th century pottery fragments on the surface of the field. A possible linear anomaly was also identified aligned approximately parallel with Chapel Hill Lane. A modern service pipe aligned from north-west to south-east was located crossing the north-eastern corner of the northern field.

3.2 Detailed Survey

Rationale

- 3.2.1 Following the completion of the magnetic scanning the archaeological potential of the site was not considered high. Nevertheless it was deemed that the potential of the northern field was considerably higher than that of the southern field where no discrete magnetic anomalies or areas of magnetic enhancement were identified. Therefore it was determined that initially only a transect 60m wide and 120m long (20% of the area for detailed survey) would be surveyed in the southern field. This transect would sample both the higher

ground adjacent to the road and Aldborough Forge and the lower lying ground nearer the drain.

3.2.2 Two other blocks, each of approximately 0.5 hectares (80m by 60m), were set out in the northern field. The first was located to sample across the linear anomaly and the second centred on the areas of magnetic enhancement. Following analysis of the results from this initial survey all the remaining blocks were utilised in the northern field.

3.2.3 Numerous isolated dipolar anomalies ('iron spikes' - see Appendix 1) have been identified across all parts of the survey area. These 'iron spike' anomalies are indicative of ferrous objects or other magnetic material in the topsoil/subsoil and, although archaeological artefacts may cause them, they are more often caused by modern cultural debris that has been introduced into the topsoil. There is no apparent clustering to these anomalies and consequently they are not considered to be archaeologically significant. Only the strongest of these responses have been shown on the interpretation figure.

3.3 Northern Field

3.3.1 Conjoined linear anomalies, indicative of infilled ditches, have been identified in the centre of the field. Together these anomalies describe three sides of a probable enclosure. To the eastern side two parallel ditches can be seen aligned from south-west to north-east approximately parallel with Chapel Hill Lane; one of these ditches (probably the westernmost) was the anomaly identified during the scanning. Ditches defining the northern and southern sides of the enclosure are also present although a ditch defining the western side of the putative enclosure cannot be seen. At the western end of the southern enclosure ditch a weak linear anomaly, perpendicular to the southern edge of the enclosure, can also be seen extending about 20-30m south of the enclosure. This anomaly is also interpreted as a probable archaeological ditch. Beyond this, adjacent to the drain, the magnetic background becomes extremely uniform, probably as a result of the deposition of silty alluvial deposits during flooding. These deposits may be masking the continuation of any archaeological features across this lowest lying part of the site.

3.3.2 Within the enclosure the area of enhanced magnetic response identified during the scanning has been confirmed and resolved by the detailed survey. Identifying and interpreting these vague anomalies individually is difficult hence only the extent of this area has been shown on the interpretation figure. However, the fact that these anomalies are in a cluster and are located within the possible enclosure suggests they may have an archaeological origin and may indeed be indicative of occupational activity. Nevertheless a non-archaeological origin, either natural or modern, cannot be discounted.

3.3.3 Several other discrete areas of magnetic enhancement have been identified across this field. However, it is not clear whether these anomalies have an archaeological origin; a modern or natural cause is considered equally likely.

3.4 Southern Field

3.4.1 Other than ferrous responses only a single linear anomaly interpreted as being caused by a field drain has been identified in the southern field. No anomalies indicative of archaeological activity have been identified.

4. Conclusions

- 4.1 The detailed magnetic survey has confirmed that the linear anomaly identified during the scanning in the northern field is probably archaeological in origin being caused by an infilled ditch forming the eastern side of an enclosure. Areas of magnetic enhancement within the enclosure could be indicative of human occupation although modern activity or natural variations in the magnetic properties of the topsoil could also explain the observed anomalies.
- 4.2 Modern agricultural practice may have severely truncated any surviving archaeological features as evidenced by the discontinuous nature and weak response from some of the anomalies. A thick deposit of alluvium adjacent to the drain may also be masking the magnetic response from other archaeological features.

The results and subsequent interpretation of data from geophysical surveys should not be treated as an absolute representation of the underlying archaeological and non-archaeological remains.

Bibliography

David, A., 1995. *Geophysical Survey in Archaeological Field Evaluation: Research and Professional Services Guidelines* No. 1. English Heritage

Acknowledgements

Project Management

A. Webb BA

Fieldwork

A. Hancock BSc PgDip

T. Schofield HND BSc PIFA

A. Webb

Report

A. Webb

Graphics

A. Hancock

Figures

Figure 1 Site location (1:50000)

Figure 2 Site location showing greyscale gradiometer data (1:5000)

Figure 3 Greyscale plot of gradiometer data (1:1000)

Figure 4 Interpretation of gradiometer data (1:1000)

Appendices

Appendix 1 Magnetic Survey: Technical Information

Appendix 2 Survey Location Information

Appendix 3 Geophysical Archive

Appendix 4 Gradiometer Data Plots (1:500)