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WYAS

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**Land off Gatherley Road  
Brompton on Swale  
North Yorkshire**

*Geophysical Survey*

*July 2002*

*Report No. 1025*

CLIENT  
MAP Archaeological Consultancy Ltd

**Land off Gatherley Road,  
Brompton on Swale,  
North Yorkshire.**

**Geophysical Survey**

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***Summary***

*Sample detailed gradiometer survey, covering approximately 5.8 hectares, was carried out at the site of a proposed housing development north of Brompton. Apart from anomalies caused by ridge and furrow ploughing and more recent agricultural activity no anomalies of probable archaeological origin have been identified. Anomalies with a possible archaeological origin have been noted but it is thought that in all cases a non-archaeological is more likely. Two cropmarks identified within the site have not been located as magnetic anomalies.*

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## **1. Introduction and Archaeological Background**

- 1.1 Archaeological Services WYAS was commissioned by Ms Anne Finney of MAP Archaeological Consultancy Ltd to carry out a geophysical (fluxgate gradiometer) survey at the site of a proposed housing development north of Brompton on Swale, near Catterick (see Fig. 1), centred at NZ 228 004.
- 1.2 The five fields comprising the application area border a new housing development to the east of Gatherley Road. The southern boundary is a track (formerly a railway line) that now serves as access to a landfill and recycling site. In total the site covers an area of approximately 14.4 hectares.
- 1.3 At the time of survey (between May 7<sup>th</sup> and May 14<sup>th</sup> 2002) the ground cover was mostly closely cropped pasture although one field contained a maturing grass crop. At the request of the landowner this field was not surveyed until June 26<sup>th</sup> after the grass had been harvested for silage. No problems were encountered during the survey.
- 1.4 Two small sub-rectangular cropmarks were identified on the eastern and northern edges of the application area during a desk-top assessment of the site and the surrounding area. An extensive complex of cropmarks was also identified approximately 1km to the north-east.
- 1.5 The local drift geology is of gravel with occasional pockets of alluvial silt overlying the limestone bedrock.

## **2. Methodology and Presentation**

- 2.1 The objectives of the survey were to establish the presence, extent and character of any archaeological magnetic anomalies within the application area. To achieve this aim detailed survey covering 40% of each of the individual fields comprising the site was undertaken. The exception to this was the long linear field at the western edge of the site where the majority of the field had been top-soiled and drains installed prior to the commencement of the geophysical survey. No blocks smaller than 60m by 40m were surveyed and the location of the sub-rectangular cropmarks was covered.
- 2.2 The survey and report use 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.
- 2.3 A general site location incorporating the 1:50000 Ordnance Survey mapping is shown in Figure 1 with a more detailed location plot, illustrating the relative position of each survey block, presented as Figure 2 at a scale of 1:2000. The map base used for this, and the other larger scale figures, was provided by the client, and although it is on a local grid it is thought to be aligned on the National Grid. Greyscale plots and accompanying interpretations are shown in Figures 3 to 8 inclusive at a scale of 1:1250. Large scale, 1:500, greyscale and X-Y trace plots of the data are shown in Appendix 4.
- 2.4 Technical information on the equipment used, data processing and magnetic survey methodology are given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the archive.



*The interpretative figures should not be looked at in isolation but in conjunction with the relevant discussion section and with the information contained in the Appendices.*

### **3. Results and Discussion**

3.1 Common across all the survey blocks are 'iron spike' responses (see Appendix 1) that are indicative of ferrous material in the topsoil or subsoil. These responses can be caused by archaeological artefacts but are more often caused by modern material. Unless there is strong supporting evidence to the contrary they are assumed not to be of archaeological significance. Only the larger responses have been indicated on the interpretation figures.

3.2 Also apparent along the western and eastern edges of Block E and along the western edge of Block F are areas of magnetic disturbance manifest by negative readings. These anomalous responses have not been shown on the interpretation figures as they are caused by the proximity of the survey areas to a field boundary partially maintained by wire strand fencing.

#### **3.3 Block A and Block B (Figs 3, 4, 5 and 6)**

3.3.1 A strong, dipolar linear anomaly is apparent running from east to west across these blocks and a series of similarly aligned weak linear trends can also be discerned.

3.3.2 The character of the strong linear anomaly indicates the presence of a linear ferrous object, probably a relatively modern small pipe or drain, which may have been laid when this field was used as a nursery. This former land use probably also explains the concentration of ferrous 'iron spike' responses which are particularly prevalent in Block A.

3.3.3 The ephemeral nature of the weaker linear trends and their common orientation suggest that they probably have an agricultural origin.

#### **3.4 Block C (Figs 5 and 6)**

3.4.1 The two sub-rectangular cropmarks identified during the desk-based assessment close to the northern and eastern boundaries in this field have not been identified as magnetic anomalies.

3.4.2 A series of very weak, linear anomalies have been identified aligned broadly from east to west along the long axis of the field. Two short, parallel, weak linear anomalies aligned broadly north to south are also noted.

3.4.3 The similar orientation and distance between the east-west aligned linear anomalies suggests that these anomalies are probably agricultural in origin. It is possible that the two north-south linear trends are also agricultural in origin although the alignment of the westernmost of the two anomalies mirrors that of the field boundary slightly to the north. It is therefore likely that this anomaly is caused by a recently infilled field boundary.

3.4.4 A single, spatially discrete, area of magnetic enhancement is visible in the north-western part of the survey block. Without other supporting evidence it is impossible to offer a definitive interpretation of this anomaly. Although the anomaly does exhibit an archaeological profile a modern or geological origin is thought likely.



### **3.5 Block D (Figs 7 and 8)**

- 3.5.1 A series of linear magnetic anomalies and some areas of magnetic enhancement are identified in this block.
- 3.5.2 The anomalies running north-south are parallel, equidistant and alter markedly in strength becoming little more than linear trends in the south-western half of the survey block. The regularity of orientation and separation would appear to indicate that these anomalies are indicative of past agricultural activity, probably ridge and furrow ploughing.
- 3.5.3 A single linear anomaly orientated north-west to south-east exhibits a form which may indicate the presence of an infilled archaeological ditch. However, a definitive interpretation cannot be given from the geophysical results.
- 3.5.4 The areas of magnetic enhancement identified in the south-western corner of this block could indicate the presence of discrete archaeological features. However, given the ground disturbance associated with the new house building nearby it is thought that modern intrusive activity or unknown geological factors are more likely causes of the observed responses.

### **3.5.5 Block E (Figs 7 and 8)**

- 3.5.6 Strong, broadly parallel and equidistant north-south aligned linear, magnetic anomalies are evident in the southern half of the survey block. In the northern half of the survey block these linear anomalies appear to decrease in strength becoming little more than weak linear trends. These anomalies are caused by ridge and furrow ploughing.

### **3.6 Blocks F, G and H (Figs 7 and 8)**

- 3.6.1 Weak linear anomalies aligned broadly north-south are visible in all these blocks. Ridge and furrow ploughing or more recent agricultural regimes are interpreted as the causes of these anomalies.

## **4. Conclusions**

- 4.1 There is a marked contrast between the strength of the anomalies caused by ridge and furrow ploughing in Block D and in the southern half of Block E compared to the rest of the site. Localised variations in the composition of the topsoil/subsoil may account for this trend which might also explain why no anomalies have been identified that correlate with the position of the two observed cropmarks.
- 4.2 The linear anomaly, linear trend and areas of magnetic enhancement evident in Block C could have an archaeological origin however their proximity to an area where construction of homes is already underway suggests that a modern origin is more likely. It is impossible to offer a definitive interpretation of these anomalies as they are undiagnostic in spatial form or pattern.

*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**

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### **Graphics**

M. Whittingham

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## **Appendices**

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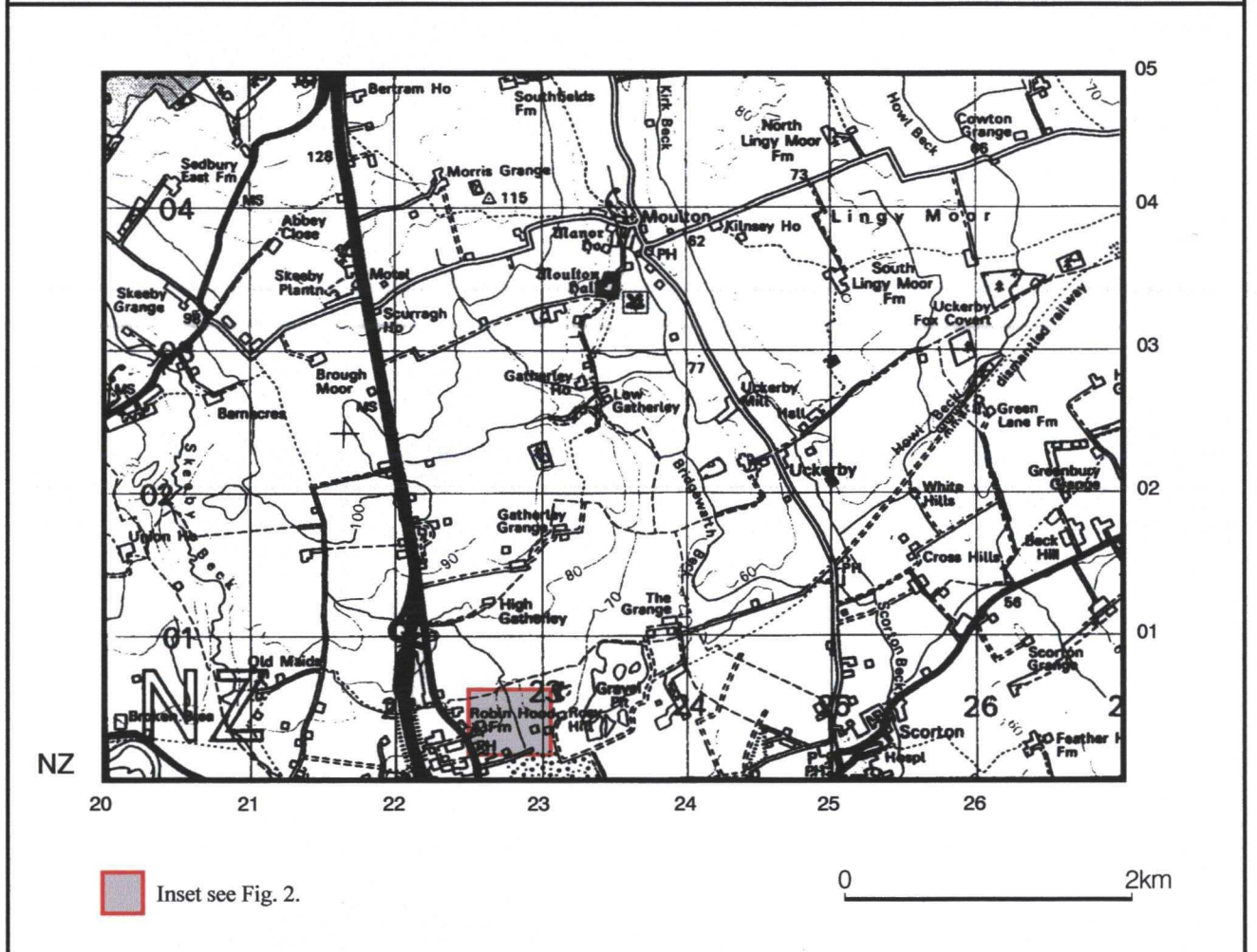
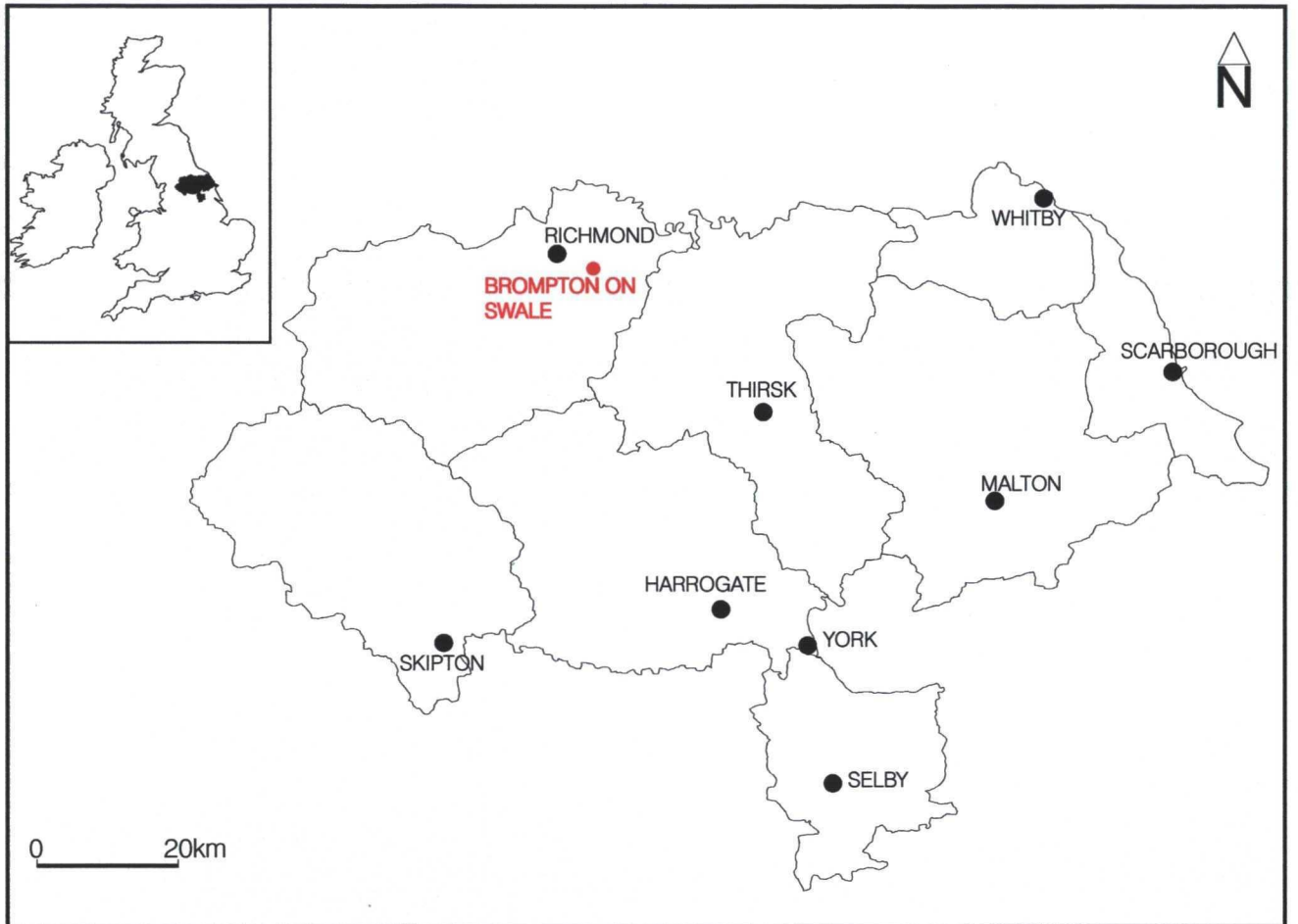


Fig. 1. Site location





Fig. 2. Site location (local grid) showing greyscale gradiometer data



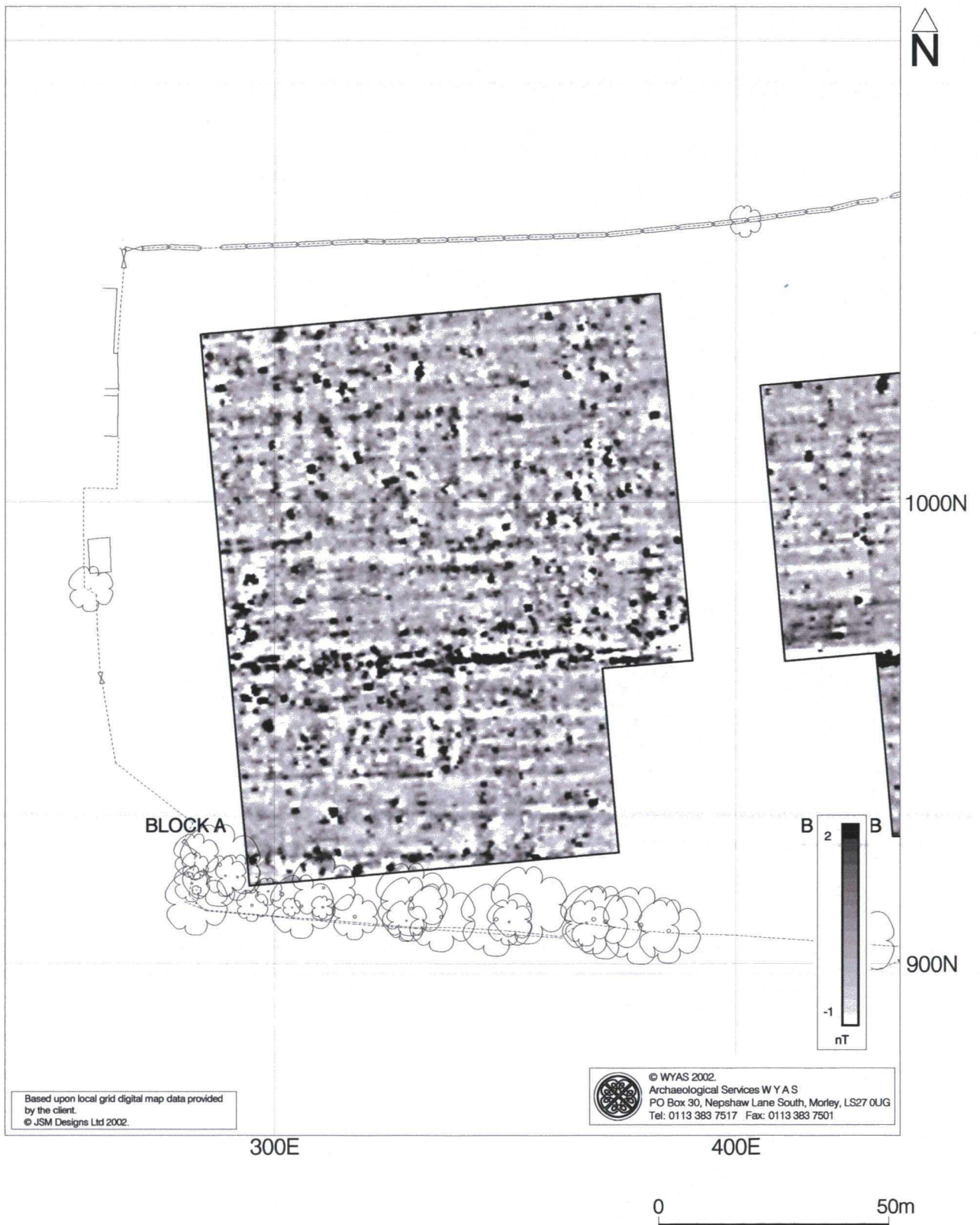


Fig. 3. Greyscale gradiometer data; Block A



Fig. 4. Interpretation of gradiometer data; Block A





Fig. 5. Greyscale gradiometer data; Blocks B and C



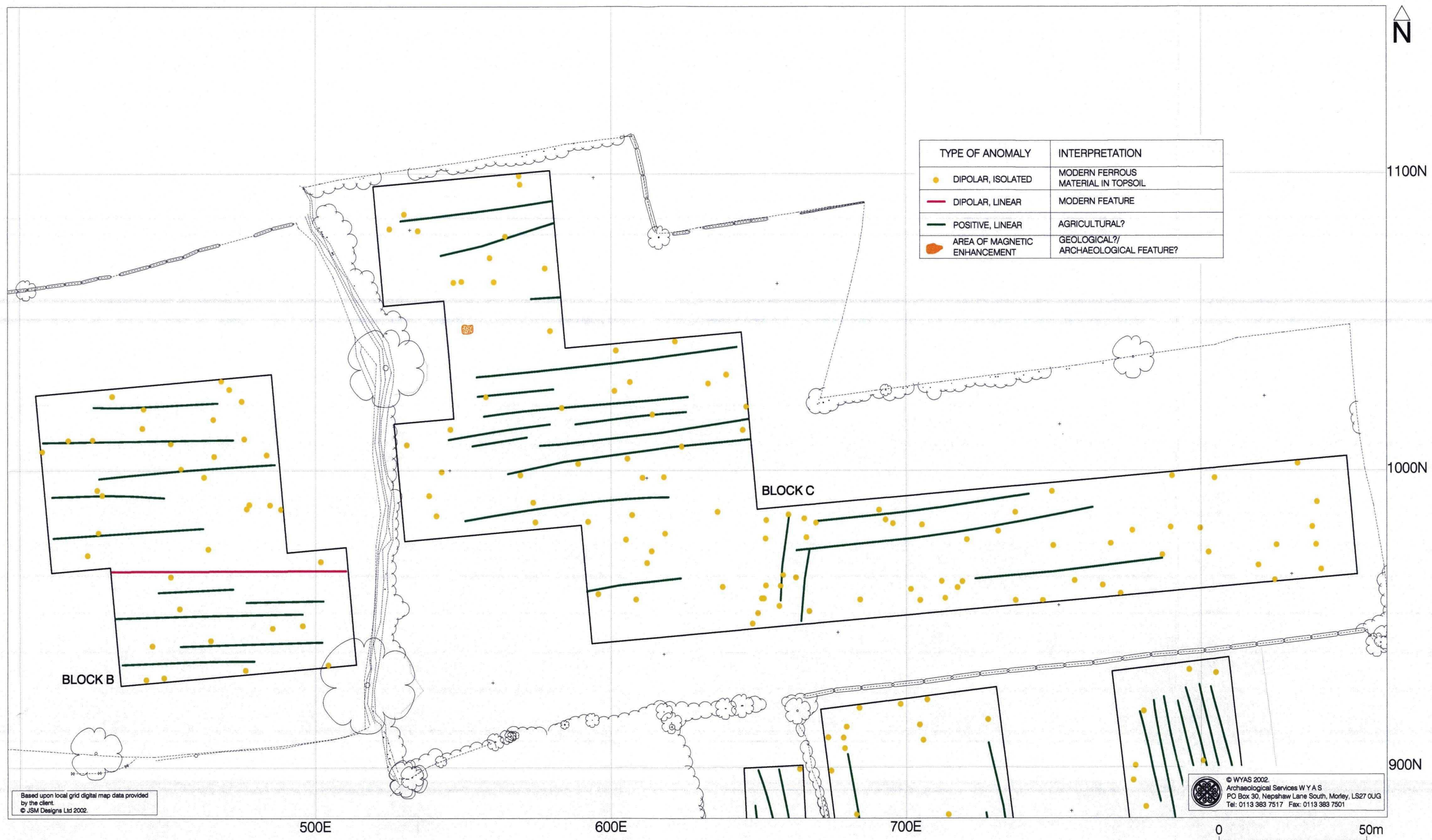


Fig. 6. Interpretation of gradiometer data; Blocks B and C

Based upon local grid digital map data provided by the client.  
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Fig. 7. Greyscale gradiometer data; Blocks D, E, F, G and H





Fig. 8. Interpretation of gradiometer data; Blocks D, E, F, G and H