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WEST LODGE 2, MALTON.  
PROGRAMME FOR INVESTIGATION OF  
GEOPHYSICAL ANOMALIES.

M R Stephens  
MAP Ltd Malton

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**Introduction**

The site is situated south of Castle Howard Road, Malton, SE 779 714. Following the Desktop Evaluation which assessed the extent of the known and potential archaeology in the area, a Geophysical Survey was carried out by the Landscape Research Trust in the northern part of the site in order to elucidate suspected archaeological features. The Geophysical Survey revealed the presence of a number of anomalies (Appendix 1).

**Appendix 1 – Geophysical Survey at West Lodge 2, Malton, North Yorkshire, August 1991,**  
by M Griffiths in association with the Landscape Research Centre Ltd.

**Introduction**

This report covers the results obtained from a Geophysical Survey conducted from the 14th to the 16th of August 1991, as part of an archaeological evaluation in advance of residential development on land to the west of the former West Lodge, Castle Howard Road, Malton. Air photographs in the North Yorkshire Sites and Monuments Record show that the site possibly contains archaeological remains, and that there are more certain remains nearby. In addition, a beaker in the British Museum is attributed to West Lodge, nearby.

**Summary**

The survey produced reasonable quality data, and several anomalies potentially of archaeological interest, can be seen in the results. However, a cast iron pipe crosses the site in an 'L' shape towards the eastern and southern edges, and impairs the result for several metres on either side of it, which affects grids 17, 18, 19, 20, 21, 26, 22, 25, 23, 24, 9 and 8. There is also a physical obstruction, which could not be surveyed, containing magnetic material towards the south of the area, affecting grid 22.

**Background**

The site lies in the western outskirts of Malton, on the south side of Castle Howard Road and opposite Castle Howard Drive.

The area surveyed was approximately 2.5 Hectares, and covered that part of the field between Castle Howard Road and the brick structure towards its centre (Fig 1).

The area encompassed by the survey slopes down to the south, and the slope increases towards the south.

A reasonably thin layer of topsoil covers Jurassic limestone.

**Method**

The survey was carried out using a Geoscan FM18 fluxgate magnetometer covering the area in 30m square blocks with a sample interval of 25cm x 1m, giving 3600 points for each square.

Approximately 90,000 data points were gathered and processed using Geoimage software on a Mesh 486B microcomputer.

**Results**

The results are presented in Figures 1 to 7. Figure 2 is plotted using a bandwidth of 35nT, in other words the greys relate to readings up to 17.5nT either side of the median, readings that are outside of this range are shown as the lightest or darkest shade. Figure 3 uses a narrower range of the data, a bandwidth of 15nT, which focuses in on the spread of the readings observed. Figure 4 shows the distribution of readings obtained, and the bandwidths used, excluding the very high and very low

### **Work Programme for the Investigation of Geophysical Anomalies**

It is recommended that the next stage of archaeological work should involve the sampling of the Geophysical Anomalies. This process will verify the presence of the anomalies, and illustrate their form and date, along with the quality and degree of preservation. It should then be possible to produce a Research Design for the full excavation, including environmental sampling, of the archaeological features, as well as make suggestions for the preservation of the features, where appropriate.

It is therefore proposed that those areas of the site where Geophysical Anomalies occur should be investigated. The sampling of these areas will involve stripping by machine with untoothed ditching bucket, followed by the hand cleaning and archaeological excavation of segments of the archaeological features. Full records will be made, and a report produced and archive prepared to Level III standard.

#### **Anomaly D (Fig 2)**

This feature would appear to represent a double-ditched trackway, noted as AP(i) in the Desktop Evaluation. A trench c 2m wide should be excavated at 90 degrees to the axis of the anomaly and segments archaeologically excavated to show the depth and form of the suspected ditches. In addition the interior of the 'trackway' should be examined and the possible presence of associated banks considered. This last factor is important in relation to environmental sampling as buried soils might exist below bank material.

#### **Anomaly F (Fig 2)**

Anomaly F apparently represents a sub-rectangular enclosure c 13m in width, perhaps representing an Iron Age square-ditched barrow. An area of the anomaly should be revealed, and segments of the ditches archaeologically excavated and the possible presence of a grave considered.

#### **Anomalies G, H and I (Fig 2)**

The Geophysical Survey does not appear to present these anomalies as ditched enclosures in the manner of F; their form is rather amorphous, and they do not seem to be demarcated by ditches. It is possible that G, H and I represent natural features created by solution of the bedrock, and it is noteworthy in this respect that the Geophysical Survey did not show anomaly D, the 'trackway', in this area.

An area of anomalies G and H should be examined to determine their status as either natural or archaeological features.

#### **Anomaly J (Fig 2)**

This anomaly represents the eastward continuation of a west-east linear feature present on an aerial photograph, and noted as part of AP(ii) in the Desktop Evaluation.

A segment of this feature should be excavated to show the depth and form, and also examine the hypothesis of a possible associated bank.

**Anomaly K (Fig 2)**

Anomaly K is the only anomaly which extends into the southern area of the site ('Area B'). It is suggested that this anomaly be examined at the (assumed) junction with anomaly J (an area not covered by the Geophysical Survey). The archaeological quality and date of this feature should determine the desirability of a Geophysical sampling of the southern area of the development site, as mentioned in the Desktop Evaluation.

readings that are principally caused by metal in the topsoil. Figure 5 is a detail of four grids. Figures 6 and 7 are the same as Figures 2 and 3 but at a larger scale.

The range of the measured signal at Malton was not high enough to render the signal "noise" insignificant, and the affect of unavoidable extraneous factors can still be seen despite computer enhancement and filtration. In this instance these included some wind buffeting of the instrument, temperature variation, and striping due to bidirectional surveying, and probably a certain level of modern metal on the topsoil.

Greyscale plots have been principally used in this report as they provide the clearest form of presentation, although a dot density plot is also provided.

### **Interpretation**

There are 11 anomalies that are apparent in the result (see the interpretive overlay for Figure 2).

'A' is a cast iron water main.

'B' would appear to be a water pipe connected to 'A'.

'C' surrounds and is caused by the physical obstruction which contains barbed wire.

'D' is a pair of linear features running east-west for about 90 metres, which are 11 metres apart at the west end, and 7.5 metres apart at the east end, where they are obscured by the very much stronger magnetic field of the cast iron pipe along the edge of the field. These are possibly ditches bordering a trackway.

'E' is a series of parallel linear anomalies running north-south, which are up to 100m long. They cross feature 'D', and might be caused by rig and furrow.

'F' is a sub-rectangular anomaly, approximately 13 metres across.

'G', 'H' and 'I' are circular anomalies, between about 8.5 metres to 10 metres across. It is possible that 'I' is part of anomaly 'H', which would make 'H' rectangular.

'J' is a linear anomaly running east-west for 125 metres right across the area surveyed.

'K' is a strong linear anomaly running north-south for 18 metres right across the eastern corner of the area.

### **Conclusion**

Magnetic prospecting at the Malton site produced data of a reasonable quality, and the results show several anomalies that can be readily identified.

The data will be retained at the Landscape Research Centre for a period of of one year and will be available for inspection by prior appointment.