



**GEOPHYSICAL SURVEY REPORT
2010/71**

**Cloughton Village, Scarborough
North Yorkshire**



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Specialising in Shallow and Archaeological Geophysics

GSB Survey No. 2010/71

**Cloughton Village, Scarborough
North Yorkshire**

NGR	TA 009 945 (approximate centre)
Location	Five areas within the village of Cloughton, North Yorkshire, lying either side of the A171 some 7km north-northeast of Scarborough town centre
County	North Yorkshire
District	Scarborough (B)
Parish	Cloughton
Topography	Undulating / sloping / flat
Current land-use	Pasture
Soils	Fine clayey, loamy and silty soils of the Dale association (712a) and the Salop association (711m) to the west and east of the A171, respectively (<i>Soils of England and Wales. Sheet 1, Northern England. Soil Survey of England and Wales. 1983</i>)
Geology	Carboniferous and Jurassic Clay and Shale as well as reddish till
Archaeology	Suspected old field boundaries and the potential for ridge and furrow
Study Area	2.5ha
Survey Methods	Magnetic (fluxgate gradiometer)

Aims

To locate and characterise any anomalies of possible archaeological interest within the application area. The work forms part of a wider archaeological assessment being carried out by the **York Archaeological Trust**.

Summary of Results*

The datasets have all been badly affected by magnetic disturbance and ferrous anomalies presumed to be of relatively modern origins. That said, evidence of former cultivation, including ridge and furrow practices, has been recorded along with former field boundaries. Two areas of increased response have been highlighted as having archaeological potential, one in Area 4A and the other in Area 5; the latter perhaps carries more weight than the other, owing to its association with distinctive localised earthworks. Having said that, the location – between a pond and a disused railway – adds significant caveats to any archaeological interpretation as a relatively modern origin cannot be entirely ruled out.

Project Information

Project Co-ordinator: Jimmy Adcock BSc. MSc.
Project Assistants: C Stephens, J Tanner & E Wood
Date of Fieldwork: 20th October 2010
Date of Report: 26th October 2010

*It is essential that this summary is read in conjunction with the detailed results of the survey.

Survey Specifications

Method

All survey grid positioning was carried out using Trimble R8 Real Time Kinematic (RTK) differential GPS equipment. The geophysical survey areas are georeferenced relative to the Ordnance Survey (OS) National Grid by tying in to local detail. The supplied mapping has been corrected to the OS using a local benchmark. These tie-ins are presented in Figure T1; please refer to this diagram when re-establishing the grid or positioning trenches.

Technique	Traverse Separation	Reading Interval	Instrument	Survey Size
Magnetometer - Scanning (Appendix 1)	-	-	-	-
Magnetometer - Detailed (Appendix 1)	1m	0.25	Bartington Grad 601-2	2.5ha
Resistance - Twin Probe (Appendix 1)	-	-	-	-
Ground Penetrating Radar (GPR) (Appendix 1)	-	-	-	-

Data Processing

	Magnetic	Resistance	GPR
Zero Mean Traverse	Y	-	-
Step Correction	Y	-	-
Interpolate	Y	-	-
Filter	N	-	-

Presentation of Results

Report Figures (Printed & Archive CD): Location, data plots and interpretation diagram on base map (Figures 1-3).
 Reference Figures (Archive CD): Data plots at 1:500 for reference and analysis. (See List of Figures). Tie-in information (Figure T1).
 Plot Formats: See Appendix 1: Technical Information, at end of report.

General Considerations

Conditions for survey were good in Areas 1 – 3 with all three under short pasture and being flat or gently sloping down to the west. Area 4 was also under pasture but had a somewhat steeper slope down to the east, whilst Area 5 was quite undulating and had a large amount of standing water immediately north of the pond, which lies at the centre of the survey area.

Smaller scale ferrous anomalies ("iron spikes") are present throughout, their form best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris in the topsoil and are commonly assigned a modern origin. While the most prominent of these are highlighted on the interpretation diagram, they are not discussed in the text below unless considered relevant.

Results of Survey

1. Magnetic Survey

Area 1

- 1.1 A sporadic line of vegetation through the centre of the survey area appeared to delineate a former boundary and an associated linear band of magnetic response can be seen in the data between the trees and bushes. The data also highlight a second former field division running off this at right angles to the north and this response is coincident with a shallow lynchet in the field. Some weak linear trends are evident but they do not form any clear pattern and it seems likely that they have an agricultural origin of unknown antiquity. The boundary fences have produced ferrous anomalies at the limits of the data.

Area 2

- 1.2 Much of this area has been affected by ferrous responses from the perimeter fence line and presumed modern material within the field. Parallel trends may indicate former ridge and furrow cultivation and it seems likely that the few stronger anomalies recorded across the field are pockets of enhanced topsoil, associated with this agricultural phase of activity.

Area 3

- 1.3 This area is a small public garden and the results are dominated by modern ferrous responses. A single linear anomaly seems to cross the area but, with no associated features or wider context it is impossible to say whether this is likely to be archaeological or not. It could simply be a small drain or similar.

Area 4A

- 1.4 Area 4 is split between two interconnected fields with the northern one being the largest and also the most disturbed. A metal pipe (A) crosses the field and very little can be discerned from the data to the north of this, especially on the eastern side of the grid where the level of magnetic disturbance is extremely high. The pipe seems to run to another service running south along the eastern fence line.

- 1.5 The field slopes down, quite steeply in places, from west to east. When compared with the south-east quadrant of the field, the western half of the data show a general increase in response strength which is roughly coincident with where the slope starts to level out at the top of field. It is not clear as to whether this is archaeologically significant or the result of some kind of agricultural process; the eastern limit appears to be defined by a band of elevated response (B), which could represent a headland, and continues into the field to the south (Area 4B).

- 1.6 A short linear anomaly (C) has a similar appearance to the former field boundary identified in Area 1 but the western end seemingly terminates in the middle of the field with no associated responses connecting to it; it could be an isolated length of land drain rather than a *bona fide* archaeological feature. There are a small number of more amorphous but similarly ambiguous responses across the area which could represent potential archaeological pits, but equally could be natural soil variation or deeply buried ferrous material.

Area 4B

- 1.7 A continuation of the service feature running down the eastern limits of Area 4A can be seen as well as an additional length of the possible headland (B). Hints of ridge and furrow cultivation can be made out, running roughly east – west across the field. The linear group of anomalies along the northern edge of this field is probably modern, given their alignment with the present field boundary which is at odds with respect to the ridge and furrow. A number of weak trends run at approximate right angles to the former cultivation but their significance is unclear.

Area 5

- 1.8 Broad and parallel positive anomalies down the western side of the pond look like the remnants of ridge and furrow cultivation practices with what are possibly further examples, though admittedly less clear, also noted on the eastern side of the pond.
- 1.9 In the eastern third of the data the pattern of response changes; there are still parallel linear anomalies but they are much narrower and contained within a zone of greatly elevated response. These anomalies have been tentatively classified as ?*Archaeology* owing to the differing nature of the response pattern and their correlation with a localised area of quite large earthworks which do not look like obvious natural features. It seems possible that this could be an area of archaeological deposits although they could be associated with a disused railway running down the eastern side of the site, or material dumped from the digging of the pond. It has been assumed however, that the broad band of magnetic disturbance that runs through the centre of the survey area is the result of material cleared from the pond, which might suggest that the terrain to the east is something else.
- 1.10 There are a series of broad positive anomalies running down the extreme eastern edge of this area but it is difficult to ascertain their exact origin; they may simply be an effect of the adjacent fence and railway embankment beyond.

2. Conclusions

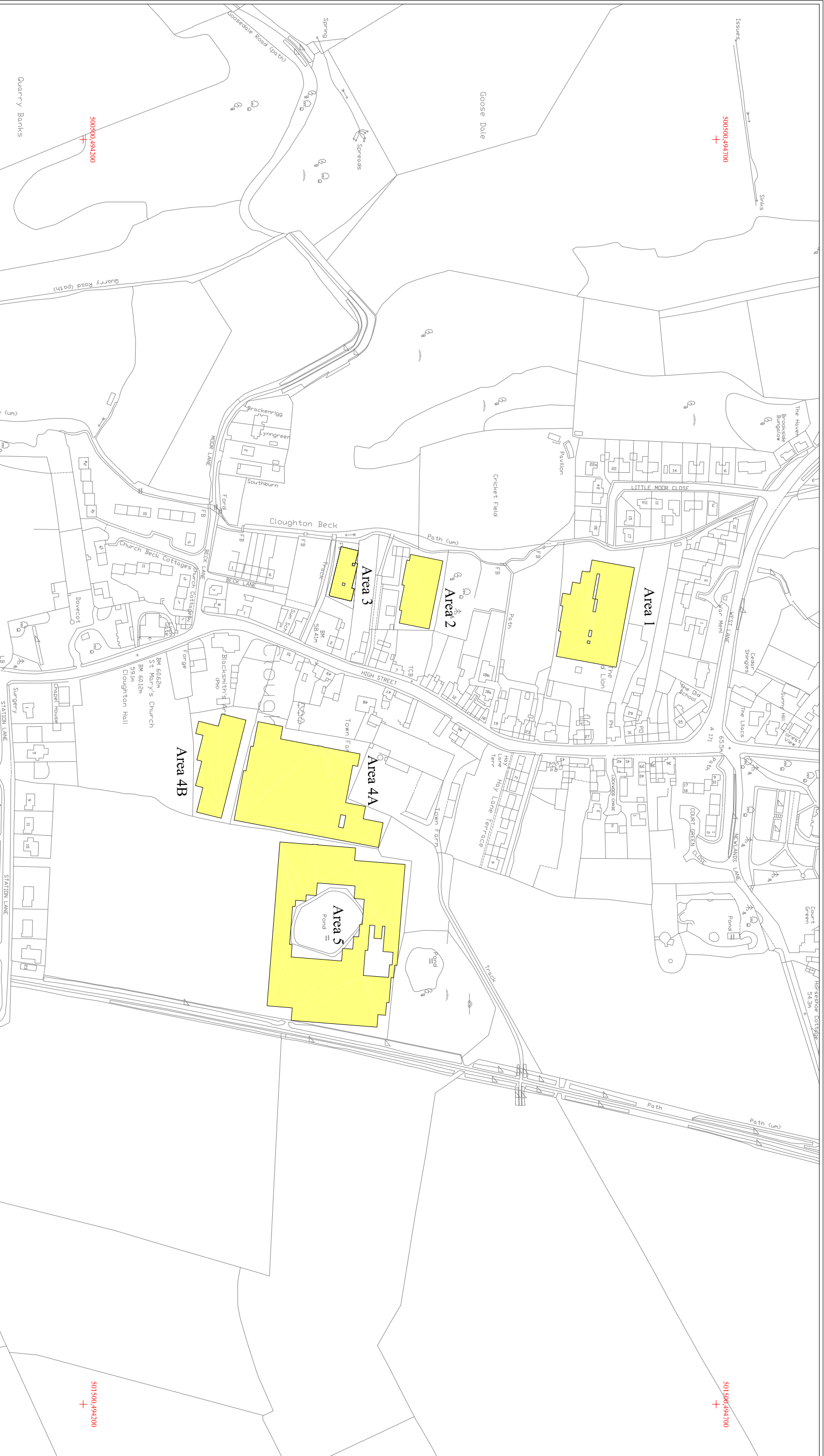
- 2.1 Very few 'clear-cut' archaeological anomalies have been identified owing to all of the data sets having been badly affected by modern factors. This has resulted in much magnetic disturbance and many strong ferrous anomalies which serve to complicate interpretation and can mask other subtler responses. Despite this, it has been possible to identify remnants of former field boundaries in Area 1 and what looks sure to be evidence of ridge and furrow cultivation practices in some of the other areas.
- 2.2 Areas 4A and 5 both revealed zones of increased response which may be of archaeological significance; indeed the zone in Area 5 is coincident with localised earthworks that might suggest archaeological activity. However, the presence of an artificial pond on one side and a disused railway on the other somewhat tempers this interpretation.

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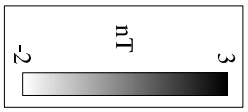
Reference Figures on CD

Figure A1	Area 1: XY Trace Plot & Greyscale Image	1:500
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Figure A3	Area 3: XY Trace Plot & Greyscale Image	1:500
Figure A4	Area 4A: XY Trace Plot & Greyscale Image	1:500
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Figure A7	Area 5: Greyscale Image	1:500
Figure T1	Tie-in Diagram	not to scale

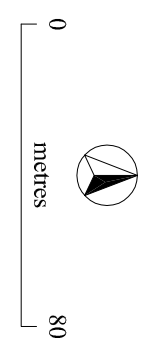
















Location of Survey Areas

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Location of Survey Areas
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Figure 1



GSB PROSPECTION Ltd.
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Summary Greyscales
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Figure 2



-  ?Archaeology
-  Trends
-  ?Ridge & Furrow
-  Uncertain
-  Magnetic Disturbance
-  Increased Magnetic Response
-  Old Field Boundary
-  ?Headland
-  ?Field Drain
-  Ferruous
-  Trends
-  ?Ridge & Furrow
-  Uncertain
-  Magnetic Disturbance

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Summary Interpretations

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Figure 3