



Archaeological Services
University of Durham

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How Hill, Downholme, Defence Training Estate Catterick, North Yorkshire

**topographic, photographic and geophysical
surveys**

on behalf of

Landmarc Support Services Limited

**Report 1834
May 2008**

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*HQ ATE North East, Building 14, Wathgill Camp,
Downholme, Richmond, North Yorkshire DL11 6AH*

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1. Summary

The project

- 1.1 This report presents the results of topographic, photographic and geophysical survey work conducted at How Hill, a univallate hill fort near the village of Downholme, North Yorkshire. The works comprised topographic and photographic survey of the area within and immediately surrounding the hill fort, and geophysical survey of a sample 1ha area within this monument.
- 1.2 The works were commissioned by Landmarc Support Services, and conducted by Archaeological Services in accordance with a Statement of Requirement provided by Defence Estates.

Results

- 1.3 Topographic and photographic surveys at How Hill, Downholme, have recorded well-marked earthworks of both the Iron Age hill fort and medieval cultivation. Post-medieval earthworks have also been recorded; these may be associated with stock management.
- 1.4 One hectare of geomagnetic survey was undertaken. Five probable ring-ditch features were identified in the central part of the survey, almost certainly associated with roundhouses. A number of probable pit features were also detected in this area.
- 1.5 Large soil-filled linear features were identified, probably representing parts of an enclosure ditch around the roundhouses. A number of smaller ditches were also identified.
- 1.6 Traces of former ridge and furrow cultivation were detected across the site. The prehistoric features appear better-preserved under the more substantial medieval and later earthworks.

2. Project background

Location (Figure 1)

- 2.1 The study area is located at How Hill, Downholme, North Yorkshire (NGR: SE 108 979). It covers an area of around 3.7ha, and lies in a field to the west of the village and the A6108 road.

Objective

- 2.2 The aim of the survey was to provide a baseline record of the defences, internal features, boundaries and earthworks associated with the monument and with later phases of its use. The aim of the geophysical survey was to examine by remote sensing whether buried anomalies consistent with the course of the ditch and rampart, and with activity in the internal area of the fort were present and, if so, to assess their nature and extent.

Methods statement

- 2.3 The surveys have been undertaken in accordance with a Statement of Requirement provided by Defence Estates (Appendix), and in accordance with English Heritage (1995) Research and Professional Services Guideline No.1, *Geophysical survey in archaeological field evaluation*; the Institute of Field Archaeologists (2002) Paper No.6, *The use of geophysical techniques in archaeological evaluations*; and the Archaeology Data Service (2001) *Geophysical Data in Archaeology: A Guide to Good Practice*.

Dates

- 2.4 The topographic survey was undertaken between 10th and 14th March 2008, while the geophysical survey was undertaken on the 10th March 2008. This report was prepared after the completion of fieldwork.

Personnel

- 2.5 The topographic survey was conducted by Andy Platell (Supervisor), Alan Rae and Ritchie Villis. Photographs were taken by Matt Claydon. The geophysical survey was conducted by Richie Villis (Supervisor) and Edward Davies. The topographic and photographic survey reports were written by Andy Platell and Richard Annis, and the geophysics report by Richie Villis and Duncan Hale; the illustrations were prepared by David Graham. The Project Manager was Richard Annis.

Archive/OASIS

- 2.6 The site code is **DHH08**, for **Downholme How Hill 2008**. The survey archive will be supplied on CD to the Landmarc Support Services for deposition with the project archive in due course. Archaeological Services is registered with the **Online AccesS to the Index of archaeological investigationS project (OASIS)**. The OASIS ID number for this project is **archaeol3-42501**.

Acknowledgements

- 2.7 Archaeological Services is grateful to the farmer, Mr. Sumter, for his assistance with this survey project.

3. Archaeological and historical background

- 3.1 How Hill is a large univallate hill fort of the Iron Age period. The rampart and ditch of the fort can be seen on the western and northern sides of the hill. Much of the eastern and southern part of the rampart was demolished in the Middle Ages when the whole of the broad summit of the hill, together with the southern and eastern slopes, were ploughed. Air photography, however, reveals that the summit was once fully enclosed, the now infilled ditch being visible and the rig and furrow following the former extent of the rampart circuit. On the western and northern perimeters of the hill the steepness of the slope has deterred later cultivation and therefore a substantial length of rampart and ditch has survived as upstanding earthworks.

4. Landuse, topography and geology

- 4.1 The study area comprises two fields of rough pasture, separated from each other by a ruinous stone wall. Although within the Army Training Estate, it is not used for live firing, but is occasionally used for dry training purposes.
- 4.2 The survey area forms an isolated, roughly conical hill, set within a fork of Swaledale. The ground rises steeply from a general level of around 200m AOD at its base, to a wide, gently undulating top around 250m AOD. Slopes to the north and west are particularly steep.
- 4.3 The underlying solid geology of the area comprises Carboniferous Limestone, which has been quarried in some places towards the bottom of the slope, and is exposed in these old quarries. Elsewhere the limestone is overlain by thin soils.

5. Topographic and photographic surveys

- 5.1 The purpose of the topographic survey was to produce a detailed contour survey of the top of the hill around the perimeter of the hill fort. The lower slopes of the hill and medieval features within the hill fort, were not surveyed in detail. The photographic survey was undertaken to add detail to the topographic survey. The surveys were conducted in accordance with Institute of Field Archaeologists (IFA) *Standard and Guidance*.
- 5.2 Readings were taken at intervals of 1m to 3m along the top and bottom of earthworks identified as being parts of the hill fort rampart, ditch or counterscarp, together with similar readings on a number of prominent medieval earthworks. Elsewhere, readings were taken at 3m to 5m intervals across the top of the hill, with a limited number of readings being taken at 5m to 10m intervals on the lower slopes of the hill to provide an approximate outline. The remaining medieval earthworks were plotted visually from rectified aerial photographs.
- 5.3 A Leica TCR 307 total station theodolite was used to record bearings and distances, with the information being downloaded onto PenMap software for

processing and the creation of a digital terrain model. An arbitrary site datum was used for both horizontal and vertical data in the field. A reading was taken from this arbitrary datum to Downholme Church and this reading was then tied into the Ordnance Survey bench mark there, and the survey recalibrated to this corrected level. Readings were also taken onto suitable field boundaries, and the survey was located onto a base map by best fit to these surveyed points.

- 5.4 Digital photographs were taken with a Nikon D70S SLR camera. High-level views were achieved by mounting the camera on a 5m staff. In a number of shots a measuring tape was laid across earthworks to improve the visibility of faint low-relief features.
- 5.5 The ramparts of the hillfort are well-marked in the north and west sides of the hill; on the east they are weaker and the south side of the circuit is difficult to trace. Medieval ridge and furrow appears all over the hill, apart from the very steep west and north flanks. The ridge and furrow within the circuit of the ramparts is less well-marked in the south-west quadrant. Running east-west across the centre of the hilltop is there are later features; these are a series of four parallel banks, on the same alignment as the ridge and furrow, but clearly overlying it. They are higher and steeper than the other ridges, and while there are no earth-fast stones of any significant size in any part of the site, these banks contain notably more stone than the grassy ridges elsewhere. One bank is connected to a small sub-rectangular feature at the east end of its north side. This looks like a stock pen or an enclosure for a shieling, a temporary hut used by people herding cattle or sheep during the summer months. The function of the parallel banks is less clear but, in conjunction with moveable barriers like hurdles, they might have been used for controlling or corralling stock.
- 5.6 It is noticeable that the strength of the geophysical anomalies discussed below is weaker under the less-pronounced earthworks in the south-west part of the hilltop. It may be that post-medieval cultivation has had the effect of flattening the ridge and furrow and at the same time masking or degrading the subsoil features. Excavation would be required to test this hypothesis, and the suggested interpretation of the other earthworks.

6. Geophysical survey

Standards

- 6.1 The geophysical survey and reporting was undertaken in accordance with English Heritage Research and Professional Services Guideline No.1, *Geophysical survey in archaeological field evaluation, 2nd edition* (David forthcoming); the IFA Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Geophysical Data in Archaeology: A Guide to Good Practice* (Schmidt 2001).

Technique selection

- 6.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a variety of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar and electromagnetic survey. Some techniques are more suitable than others in particular situations, depending on a variety of site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.
- 6.3 In this instance, based on earthwork and aerial photographic evidence, it was considered likely that cut features such as ditches and pits would be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.
- 6.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Field methods

- 6.5 A 20m grid was established across the survey area and tied-in the topographic survey.
- 6.6 Measurements of vertical geomagnetic field gradient were determined using a Bartington Grad601-2 dual fluxgate gradiometer. A zig-zag traverse scheme was employed and data were logged in 20m grid units. The instrument sensitivity was set to 0.1nT, the sample interval to 0.25m and the traverse interval to 1.0m, thus providing 1600 sample measurements per 20m grid unit.
- 6.7 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

- 6.8 Geoplot v.3 software was used to process the geophysical data and to produce both a continuous tone greyscale image and a trace plot of the raw (unfiltered) data. The greyscale image and interpretations are presented in Figures 3-5; the trace plot is provided in Figure 7. In the greyscale image, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.
- 6.9 The following basic processing functions have been applied to the data:

<i>clip</i>	clips, or limits data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic.
<i>zero mean traverse</i>	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities.
<i>destagger</i>	corrects for displacement of anomalies caused by alternate zig-zag traverses.
<i>interpolate</i>	increases the number of data points in a survey to match sample and traverse intervals. In this instance the data have been interpolated to 0.25m x 0.25m intervals.

Interpretation: anomaly types

- 6.10 A colour-coded geophysical interpretation plan is provided in Figure 4. Three types of geomagnetic anomaly have been distinguished in the data:

<i>positive magnetic</i>	regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches.
<i>negative magnetic</i>	regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids.
<i>dipolar magnetic</i>	paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths.

Interpretation: features

- 6.11 A colour-coded archaeological interpretation plan is provided in Figure 5.
- 6.12 Series of parallel, alternate positive and negative magnetic anomalies have been detected across the survey area, almost certainly reflecting former ridge and furrow cultivation. In the northern and central parts of the area this ridge and furrow is aligned broadly east-west; in both the east and west the ridge and furrow is aligned north-south.
- 6.13 Several curvilinear positive magnetic anomalies have been detected in the central and eastern part of the survey area. These anomalies reflect relative increases in high magnetic susceptibility materials and almost certainly represent the remains of soil-filled ditches. Five of these anomalies may represent ring-ditches or slots associated with roundhouses. The largest of these measures about 20m in diameter and encloses a second, narrower ring-ditch. These could all represent post-trenches or other structural features.

- 6.14 A number of amorphous positive magnetic anomalies have been detected in and around the area of the ring-ditches. These anomalies are likely to reflect soil-filled pits, used for either storage or rubbish disposal.
- 6.15 A wide curvilinear strong positive magnetic anomaly has been detected along the north-east edge of the survey area. This almost certainly represents a boundary ditch. Its location is on the edge of the relatively flat plateau before the ground drops sharply to the north-east. The anomaly appears to have a break in the centre, which may be a causewayed entrance into the enclosure.
- 6.16 A wide positive magnetic anomaly has also been detected in the southernmost corner of the survey area. This probably reflects the same enclosure ditch as that identified in the north.
- 6.17 A linear positive magnetic anomaly in the easternmost corner of the survey area is aligned with an existing dry stone wall noted to the north and may represent a boundary ditch.
- 6.18 A linear positive magnetic anomaly to the north-east of the ring-ditches measures about 10m in length and almost certainly represents another soil-filled ditch.
- 6.19 A weak, rectilinear positive magnetic anomaly has been detected within the ridge and furrow in the south-west of the survey area. This soil-filled feature, possibly a rectangular construction slot, measures approximately 11m north-south by 7m east-west. The feature is aligned with the ridge and furrow making interpretation difficult.
- 6.20 A scatter of small, discrete dipolar magnetic anomalies has been detected across the survey area. The majority of these almost certainly reflect items of near-surface ferrous and/or fired debris, although those within the ring-ditch features could possibly reflect hearth or kiln features.

7. Conclusions

- 7.1 Topographic and photographic surveys at How Hill, Downholme, have recorded well-marked earthworks of both the Iron Age hill fort and medieval cultivation. Post-medieval earthworks have also been recorded; these may be associated with stock management.
- 7.2 One hectare of geomagnetic survey was undertaken. Five probable ring-ditch features were identified in the central part of the survey, almost certainly associated with roundhouses. A number of probable pit features were also detected in this area.
- 7.3 Large soil-filled linear features were identified, probably representing parts of an enclosure ditch around the roundhouses. A number of smaller ditches were also identified.

- 7.4 Traces of former ridge and furrow cultivation were detected across the site. The prehistoric features appear better-preserved under the more substantial medieval and later earthworks.

8. Sources

David, A, forthcoming *Geophysical survey in archaeological field evaluation, 2nd edition*, Research and Professional Services Guideline 1, English Heritage

Gaffney, C, Gater, J, & Ovensen, S, 2002 *The use of geophysical techniques in archaeological evaluations*, Technical Paper 6, Institute of Field Archaeologists

Schmidt, A, 2001 *Geophysical Data in Archaeology: A Guide to Good Practice*, Archaeology Data Service, Arts and Humanities Data Service

Appendix: Project specification

Brief for earthwork survey and geophysical survey at How Hill Univallate Hillfort (SM 24500), Defence Training Estate, Catterick, North Yorkshire.

1.0 Introduction

- 1.1 As part of a programme of management of the major archaeological monuments on the Defence Training Estate, Catterick (DTEC), a topographic survey and photographic record of the earthworks associated with How Hill Univallate Hillfort are required. Subject to availability of funding a geophysical survey will also be required.
- 1.2 Defence Training Estate Catterick comprises live firing ranges, dry training areas (i.e. all forms of vehicle and infantry training not involving the use of live ammunition) and an urban area used for Operations in Built Up Areas (OBUA). The training areas are located at Catterick and Feldom in North Yorkshire and Battle Hill in County Durham and occupy in total 8,000 hectares.
- 1.3 The MOD occupies land and property solely to support the delivery of defence capabilities. MOD recognises that there are other interests, especially relating to conservation, agriculture and recreation that need to be taken into account if the Estate is to be sympathetically managed in a way that sustains the various interests.
- 1.4 This Statement of Requirement (SOR) outlines the general approach, standards and methods to be adopted by the contractor. Contractors should satisfy themselves to the precise conditions on-site and implications this may have for the work, before submitting costed schemes of work.

2.0 Archaeological & Historical Background

- 2.1 How Hill is situated on land owned by the MOD and is a large Univallate Hillfort located on a prominent hill in Upper Wharfedale, close to the village of Downholme, North Yorkshire (Grid ref: SE 1083 9799). The site is a scheduled monument (National Monument number 24500).

3.0 Survey objectives

- 3.1 An earthwork survey is required to provide a detailed record and baseline description of the defences, internal features and boundaries and earthworks associated with the monument and later phases of use.
- 3.2 Subject to availability of funding, a geophysical survey of a sample of the ramparts and internal area of the fort will be required
- 3.3 The contractor is asked to indicate under separate headings a fee for the topographic survey and a fee for the geophysical survey.
- 3.4 How Hill is a Scheduled Monument and, whilst scheduled monument consent is not required for topographic survey work, the contractor will need to inform the English Heritage inspector of the survey prior to commencing work.
- 3.5 Should the geophysical survey be required the contractor will need to obtain from English Heritage the appropriate licence for undertaking such work.
- 3.6 The objectives of the topographic survey at How Hill will be to:
 - 3.6.1 obtain an accurate, detailed and comprehensive survey of all of the features associated with the hillfort and any later phases of activity
 - 3.6.2 reproduce the survey results at appropriate scales which show the full extent of the features
 - 3.6.3 reproduce and describe significant individual features
 - 3.6.4 show, where possible, phases of activity as indicated by stratigraphic relationships
- 3.7 The objectives of the geophysical survey at How Hill will be to establish, by remote sensing:
 - 3.7.1 whether buried anomalies consistent with the course of the ditch and rampart are present whether
 - 3.7.2 whether buried anomalies consistent with activity in the internal area of the fort are present

4.0 Recording methods

Topographic survey

- 4.1 An accurate and detailed record shall be made of all standing and collapsed material associated with the hillfort and its later use. An overall plan showing the whole site will also be produced at an appropriate scale and annotated to enable cross referencing to individual feature plans.
- 4.2 Scale drawings will be produced to provide a record of the earthworks, earth-fast stones and any tumbled masonry associated with the defences and internal area of the hillfort. Drawings should be to a suitable scale so that details can be clearly identified. Thus if a future programme of excavation and conservation is undertaken then individual stones can be identified and numbered before they are moved.
- 4.3 During this work, thought should be given to the sequence of construction, alteration and collapse of the individual features and any conclusions as to this sequence should be included in the final report on the work.
- 4.4 Any aerial photographs held by the MOD will be made available to the contractor (subject to copyright) for their use in assisting in the location of features on the ground.

Photographic record

- 4.5 A colour digital photographic record will be made of the site, to consist of:
 - the overall appearance of each major feature
 - any specific and significant architectural/ structural details
- 4.6 The majority of this photographic record should be retained as an indexed archive and does not need to be reproduced in full in the published report. However, appropriate photographs with captions should be included in the report to support the survey information and to inform the reader of any significant architectural and archaeological details.

While this project does not require photogrammetric principles to be adopted, all images should include a suitable scale such as a ranging rod in each image.

Geophysical survey

- 4.7 Should funding be available, the geophysical survey will be undertaken of a sample of the internal area and ramparts of the hillfort. Contractors should provide a fee for an area of 1 hectare using gradiometer survey instrumentation.

5.0 Report and Archive Preparation

- 5.1 A report shall be produced as a stand-alone report, but may well be summarised and referenced in other planning related and interpretation documents relating to the history of the site.
- 5.2 The report should be presented in an ordered state prefaced with a contents listing and it should also include an index and cross-referencing where appropriate. Paper copies of the report should be robustly bound within a protective cover or sleeve. The report should contain a title page listing the site and a project name, district and county together with site NGR, the name of the archaeological contractor and client. The report should be page numbered and supplemented with sections and paragraph numbering for ease of reference.
- 5.3 Six bound copies of the report will be required. In addition, attached to each bound copy of the report will be a CD copy of the report. On the CD the report should be provided in digital format Word© document format and .pdf format. Digital images of figures and illustrations will be presented as tiff files and jpegs.
- 5.4 The CD should also contain the digitised survey information geo-referenced to the OS. This should be provided in ArcView shape files format. Meta-data providing a written description of conventions used in the survey and the digital presentation of GIS information, together with an intuitively based GIS file naming format should also be provided.

Deposition of archive and results

- 5.5 Due consideration will be made to provide the public with information on the archaeological work. This may include enquiries and releases through the media on significant archaeological finds and in the first instance will be directed through the MOD.

6.0 Copyright

- 6.1 Copyright under the Copyright, Designs and Patents Act 1988, in all material and supporting data generated by this contract, shall be passed to Defence Estates unless and except where such material or data is existing material or data acquired from a third party. In the latter case, the contractor will supply details of data sources, a description of what the data shows, the terms under which the material or data was acquired and, where possible, a contact name and address. A credit to the contractor(s) will be displayed at all times in any future use/reproduction.
- 6.2 The project archive, comprising all records relating to that project will be retained and will be prepared to at least the minimum acceptable standard defined in MAP2 (English Heritage)
- 6.3 The archive comprising written, drawn, photographic and electronic media, will be fully catalogued, indexed, cross referenced and checked for archival consistency.

7.0 Other Matters

- 7.1 **Specification:** A detailed project design methodological proposal for the work should be forwarded to, and agreed with, the DE Archaeologist who will discuss and agree the proposal with the DTEC Estate Surveyor prior to work.
- 7.2 **Project Managers** may wish to undertake a site reconnaissance prior to providing a costed Project Design for the survey(s). If so, in the first instance they should contact the Archaeology Advisor at Catterick Garrison who will arrange a site inspection with the DTEC Estate Advisor and Range Control.
- 7.3 **Survey times** may need to be restricted due to an intensive military training schedule. Contractors will need to consider intermittent access as a possibility and factor this into their survey budget.
- 7.4 **Timetable:** It is recognised that commencement and completion of work is subject to range access. It is essential that the field work is completed and a final report is produced by the end of February 2008. The timetable and resources will need to reflect this.
- 7.5 **Monitoring:** No work should commence until authorised by the DE Environmental Advisor (Archaeology) at Catterick or the Estate Surveyor DTEC. One weeks notice will be given to the DE Archaeologist/Estate Surveyor .
- 7.6 **Site Access:** Access to the Training Area is restricted and will need to be arranged through Range Control at Wathgill Camp. The contractor will also be expected to inform the farm tenant of their survey schedule. Contact details can be obtained from the DE Environmental Advisor (Archaeology) at Catterick.
- 7.7 **Health and Safety:** In line with the Health and Safety at Work Act 1974, The Management of Health and Safety Regulations 1992 and The Construction (Design and Management) Regulations 1994 DE will require to see copies of contractors Health and Safety Policies and project specific Risk Assessments prior to the commencement of work. Each site should have a nominated safety officer, and appropriate provision of first aid, telephone and safety clothing as advised in the SCAM manual on archaeological health and safety and further identified in the risk assessment.
- 7.8 **Contractors** are expected to carry their own appropriate insurance for public liability and staff, brief details should be included in any project proposal submitted to DE.
- 7.9 **The area of survey** is within the dry training area and contractors will be required to undertake a safety briefing prior to going on-site.
- 7.10 **Digital mapping** and copies of appropriate documentation where available, can be provided to the contractor. To be discussed on appointment of contractor.
- 7.11 **The survey** should be considered as a project in its own right and not necessarily the first stage of any further work. All correspondence on this matter should be addressed to Phil Abramson, Environmental Advisor (Archaeology), Defence Estates, Gough Road, Catterick Garrison, N. Yorkshire, DL9 3EJ. Tel 01748 875055



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How Hill, Downholme, Defence Training Estate
Catterick, North Yorkshire
topographic, photographic and geophysical surveys

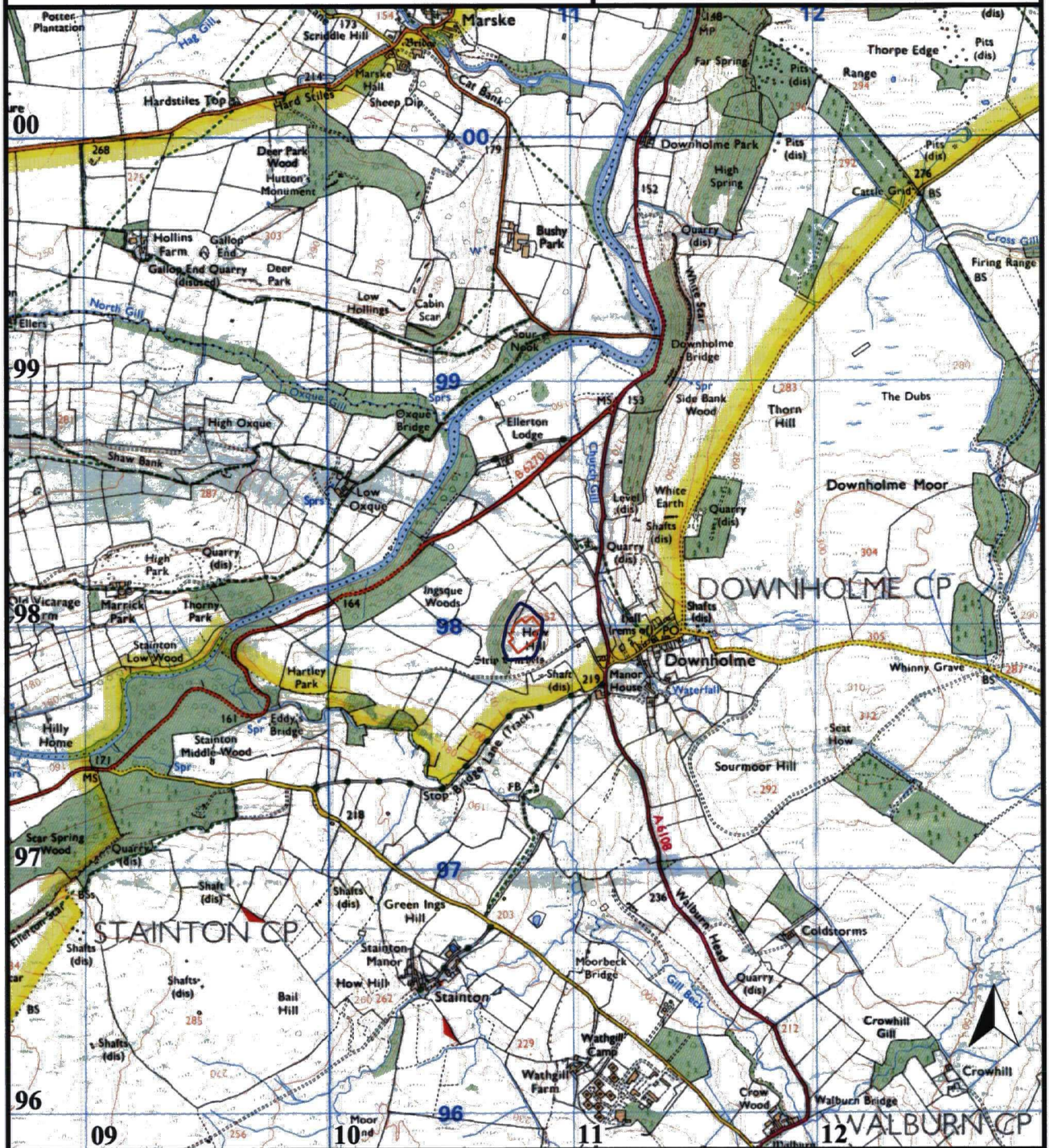
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Figure 1

Location of How Hill surveys

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topographic survey

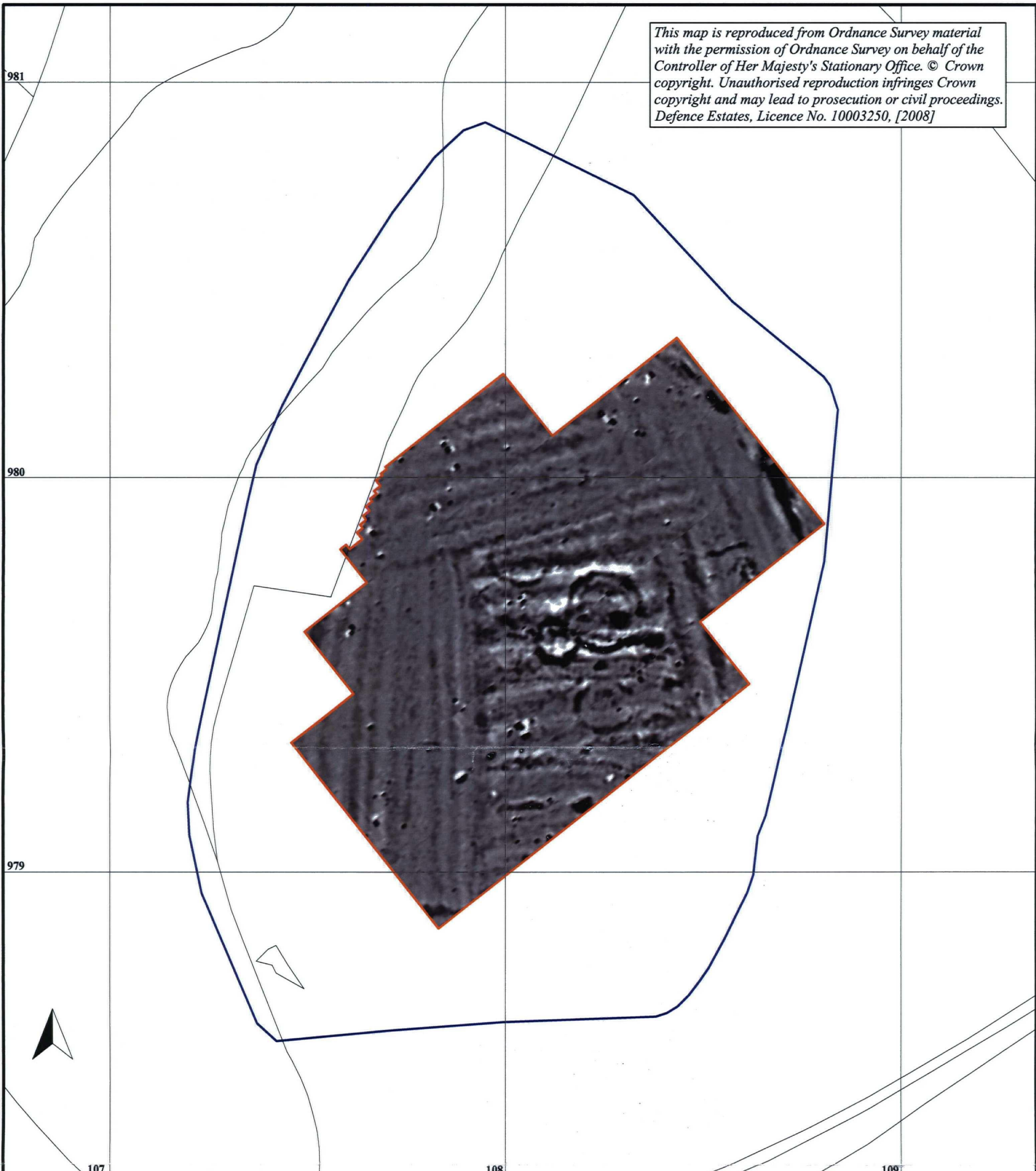


geophysical survey



scale 1:25 000 - for A4 plot

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topographic, photographic and
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

Figure 3

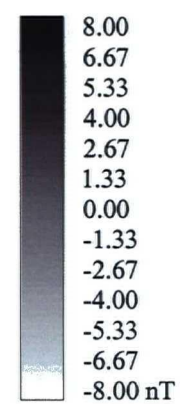
Geophysical survey

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scale 1:1000 - for A3 plot

-  geophysical survey area
-  topographical survey area



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How Hill, Downholme, Defence Training
Estate Catterick, North Yorkshire

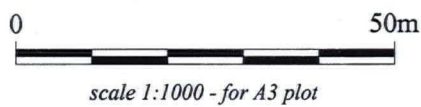
topographic, photographic and
geophysical surveys






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Figure 4

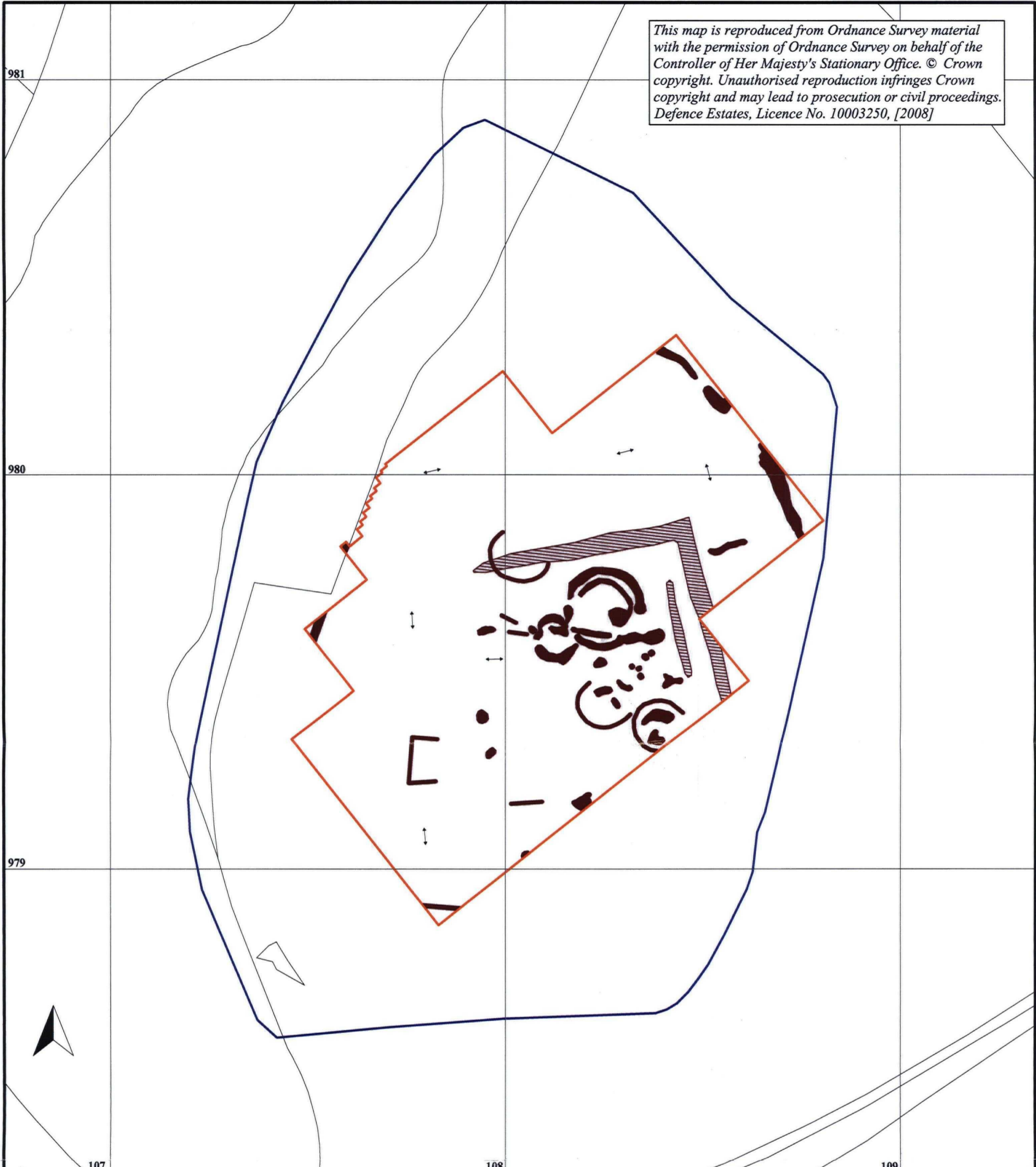
Geophysical interpretation


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-  geophysical survey area
-  topographical survey area
-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies

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How Hill, Downholme, Defence Training Estate Catterick, North Yorkshire

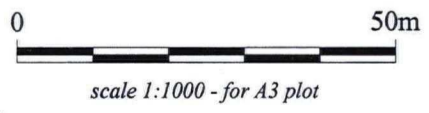
topographic, photographic and geophysical surveys

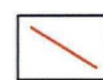


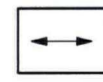
Report 1834

Figure 5

Archaeological interpretation

on behalf of
Landmarc Support Services Ltd



-  geophysical survey area
-  topographical survey area
-  soil-filled features
-  orientation of ridge and furrow



Archaeological Services
University of Durham

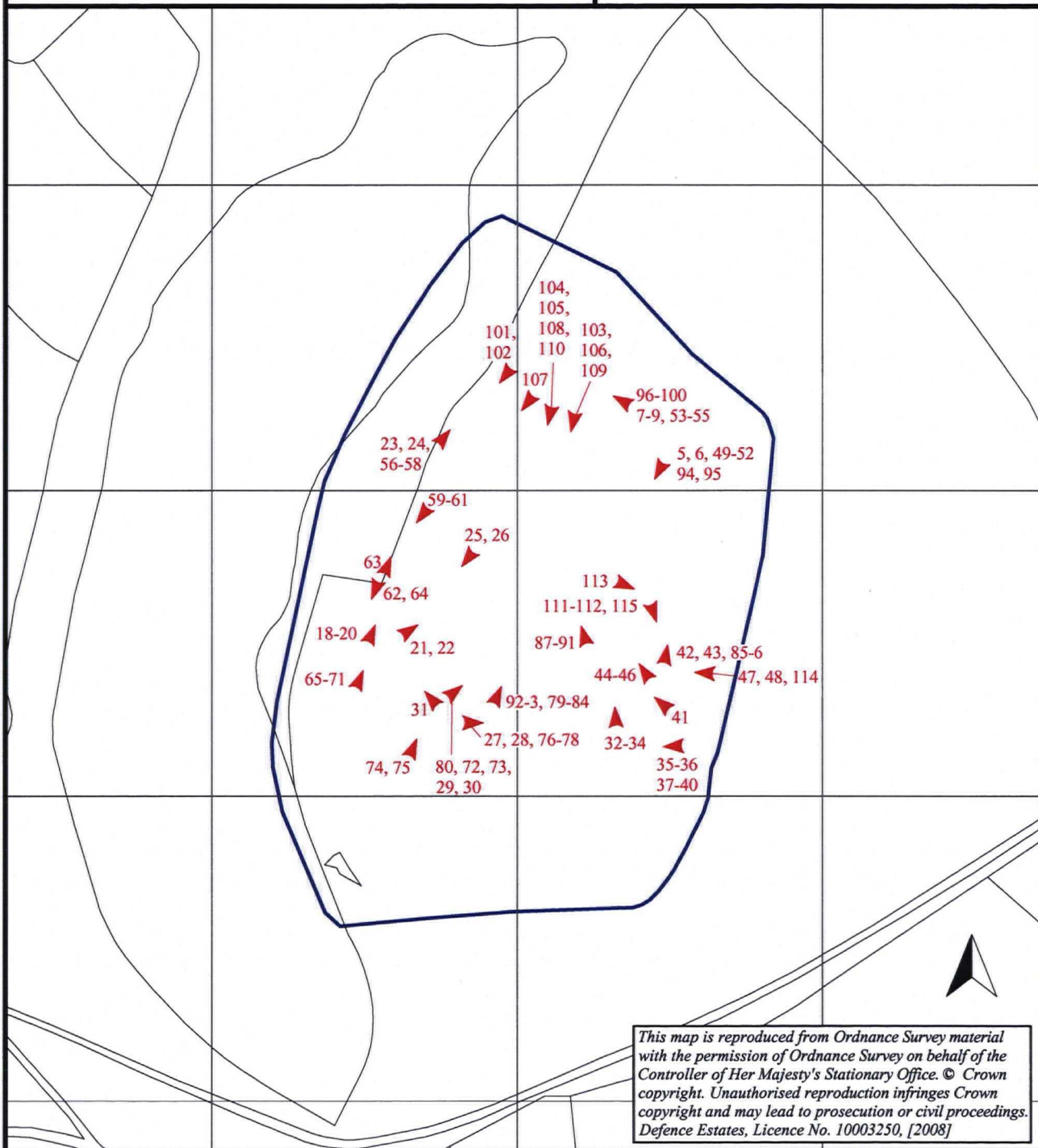
How Hill, Downholme, Defence Training Estate
Catterick, North Yorkshire
topographic, photographic and geophysical surveys

Report 1834
Figure 6
Location of photographs

on behalf of
Landmarc Support Services Ltd



scale 1:2000 - for A4 plot



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topographic survey area

location of photograph

Figure 7: Trace plots of geomagnetic data

Area 1

24.00nT/cm

0 50m
scale 1:1000

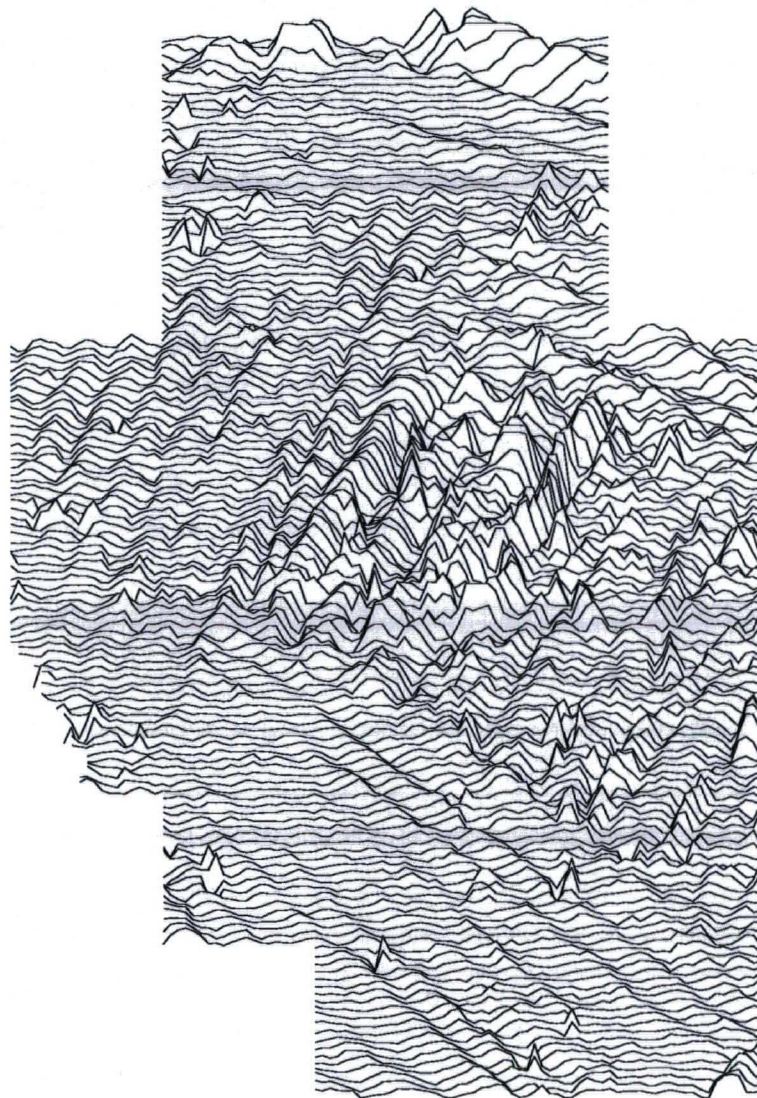




Figure 8
North rampart, looking north-west



Figure 9
North rampart, looking west



Figure 10
North-west rampart, looking south-east



Figure 11
West rampart, looking south-east



Figure 12
South-west rampart, looking north-north-east



Figure 13
General view looking south-west across the interior of the hill fort, showing prominent east-west ridge and furrow



Figure 14

Looking north from the south-east corner of the hill fort; the parallel ridges are clearly apparent. The arrow indicates the enclosure attached to the second ridge from the south

SNV12034

FIGURE 2

TOO LARGE TO SCAN SIZE

ORIGINAL.