

ESKDALEMUIR, EASTERN DUMFRIES AND GALLOWAY, SCOTLAND



Archaeological Evaluation



Oxford Archaeology North

April 2008

Defence Estates

Issue No: 2008-9/812

OA North Job No: L9783

NGR: NT 29374 03745

Document Title: ESKDALEMUIR, EASTERN DUMFRIES AND GALLOWAY,
SCOTLAND

Document Type: Archaeological Evaluation

Client Name: Defence Estates

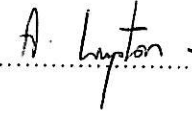
Issue Number: 2008-9/812
OA North Job Number: L9783
National Grid Reference: NT 29374 03745

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SUMMARY

Defence Estates (DE) plans to upgrade two seismic arrays at Eskdalemuir, Eastern Dumfries and Galloway (NT 29374 03745). As part of this work, DE intends to lay a cable across the putative route of the Roman road at Lamblair Knowe, a Scheduled Ancient Monument (AMN 675). In 2006, DE Environmental Support Team undertook a desk-based study to assess the impact of the work on the archaeological resource, and formulated a Statement of Requirements for archaeological investigations. These concluded that the route of the cable in the area of Lamblair Knowe Roman Road should be evaluated prior to the commencement of development groundworks. Accordingly, DE requested that Oxford Archaeology North (OA North) submit a project design for a programme of works, including the excavation of a single trench, 30m long by 1m wide and up to a depth of 1m, to establish the presence of, and preserve by record, any archaeological deposits or features within the limit of impact. Subsequent to approval by Historic Scotland, OA North were commissioned by DE to undertake the work in March 2007.

This report details the results of this work, with a concluding chapter providing a discussion of the results. Initial investigation of the 30m trench, which straddled the southern slope of the depression thought to be occupied by the Roman road, identified no archaeological remains. Accordingly, the trench was extended to a total length of 50m, so that the slope and the crest on the northern side of the depression could be examined; archaeological remains were absent from the entire area under investigation, and the identified stratigraphy appeared natural in origin. If the natural linear depression in this area was utilised as a road (as is suggested for the same depression on slightly higher ground some 300m to the west), then any trace has long-since eroded away. It is, perhaps, more likely that the road skirted the presently investigated boggy depression, on higher ground to the south-east, and thus may lie outside of the Scheduled Area at this location.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Phil Abramson of Defence Estates for commissioning the project, and Adrian Cox of Historic Scotland for his advice and liaison. OA North would also like to thank Stewart Pool and his colleagues at the Seismic Array Station for their co-operation and assistance during the course of the project.

The evaluation excavation was undertaken by Andy Bates, Andrew Frudd and Richard Colebrook. The report was compiled by Andy Bates, illustrated by Marie Rowland and edited by Stephen Rowland, who was also responsible for project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Defence Estates (DE) plans to upgrade two seismic arrays at Eskdalemuir, Eastern Dumfries and Galloway (NT 29374 03745; Fig 1). As part of this work, DE intends to lay a cable across the putative route of the Roman road at Lamblair Knowe, a Scheduled Ancient Monument (AMN 675). In 2006, DE Environmental Support Team undertook a desk-based study to assess the impact of the installation of the seismic cable on the archaeological resource, and formulated a Statement of Requirements for an appropriate scheme of archaeological investigation (*Appendix 1*). These concluded that the route of the cable in the area of Lamblair Knowe Roman Road (Site 1) should be evaluated prior to the commencement of development groundworks. Two further sites, comprising a small, circular, turf-banked enclosure at Flintel Sike (Site 2; NT 2855 0412) and a pair of circular turf-banked enclosures (Site 3; NT 2814 0430) were to be the subject of a watching brief during excavation works for the cable. Accordingly, DE requested that Oxford Archaeology North (OA North) submit a project design (*Appendix 2*) for the recommended programme of works. In the event, it was possible to adjust the cable route to avoid Sites 2 and 3 and, subsequent to the issuing of Scheduled Monument consent by Historic Scotland, OA North were commissioned by DE to undertake the excavation of a single trench across the route of the Roman road (Site 1) in March 2007.
- 1.1.2 The aim of the investigation was to identify the presence, extent, depth and complexity of any archaeological remains associated with the Scheduled Monument within the area of impact from the installation of the seismic cable. Where such remains were identified, through consultation with Historic Scotland and the DE Archaeologist, it would be necessary to undertake a programme of detailed investigation and preservation by record where such remains could not be avoided by the development. To meet these aims, it was intended that a single trench, 30m long by 1m wide and up to 1m deep, should be excavated. This report details the results of this work, with a concluding chapter providing a discussion of the results.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The Roman road at Lamblair Knowe lies some 5km to the north-east of Eskdalemuir, within the Scottish Borders. The area is one of upland moor, near the watershed for the tributary headstreams of the River White Esk, with the site of investigation lying at a height of 400m OD. Lamblair Knowe lies on the route of the Roman road between a signal station at Craik Cross Hill (NT 3303 6046), c 2km to the north-east, and the fort at Raeburn Foot (NT 3251 5991), c 4km to the south-west. The route of the road essentially follows a ridge of high ground, between the valleys of the Archie Grain to the north-west and the Yade Sike to the south-east, but for much of its length, it is thought to run within a linear hollow that follows the crest of the ridge.

- 1.2.2 The underlying solid geology of the area is of Silurian (445-416 million years old) sedimentary rocks, which were folded and raised by the Caledonian Orogeny, the collision of two areas of continental crust (Laurentia and Baltica) 444-416 millions years ago (en.wikipedia.org/wiki/Geology_of_Scotland). The area is covered by a layer of glacial till which dates from the last, Devensian, ice sheets to the cover this area (10,000bp to 70,000bp). Although the site is encompassed by the Forest of Eskdalemuir, there is little natural vegetation, and much of the area is currently utilised for forestry plantation. Similar areas within the immediate environs are used for sheep grazing.

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 **Introduction:** the follow section is derived largely from the DE desktop assessment (DE 2006), which itself draws heavily upon information contained within a comprehensive study of the archaeology of Eastern Dumfriesshire (RCAHMS 1997).
- 1.3.2 **Prehistoric:** the first people in the area are thought to have arrived in the fourth millennium BC. Evidence for this can be found at the Bank Barrow at Raeburnfoot and the Girdle stones near Langholm, some 15km south-west of the site. Palynological evidence suggests people moved into the uplands and started arboreal clearance after 2500 BC, although it is not until the later prehistoric period that large-scale deforestation of these uplands took place in what is now southern Scotland and Northern England. High-status sites, such as Castle O'er, an Iron Age hillfort, situated on the banks of the White Esk some 7.5km from the site and occupied in the early centuries of the first millennium AD, appear to be centres of large estates with cattle ranching being the dominant economic activity. The nearby site of Over Rig is of the same period and is a ritual site without parallel in the British Isles (DE 2006).
- 1.3.3 **Romano-British:** there are a number of Roman sites in the area, including the road that forms the focus of the present study, the signal station at Craik Cross Hill, and the fort at Raeburnfoot (NMRS NY29NE 5). The latter is a small fort with larger annex, dating to the Antonine period (c AD 142-158). An earlier, Agricolan, phase of the Raeburnfoot fort is speculated by Frere (1978, 105), despite excavations in 1959-60, which revealed only a single Antonine phase of occupation (NMRS NY29NE 5). The National Monument Record of Scotland describes the Roman road under investigation (known as the Raeburnfoot - Lamblair Knowe - Craik Cross Hill Roman Road) as having lengthy cuttings and terraces, using the natural rock as the road-surface. The section under investigation at Lamblair Knowe is described as running through a natural cutting 15.2m wide and 1.7m deep (NMRS NT20SE 24). Further towards Craik Cross Hill, the road has been identified as approximately 30m in width and includes not only the road surface, but also associated embankments and lateral drains. Given that the Roman road under investigation links with the signal station and fort, they are likely to be contemporary elements within the landscape, although little is known of the route of the road beyond each of the military installations and the manner in which it ties in with the wider road network (DE 2006).

- 1.3.4 ***Medieval and Post-medieval:*** there is very little evidence of medieval activity in the immediate vicinity of the site, other than occasional cultivation earthworks. Within the immediate environs of the site are a number of U-shaped, turf-built enclosures thought to be used for corralling sheep or cattle. These may well post-date the medieval cultivation also present in the area, and possibly originate from early phases of the pastoral regime still in operation today. The area was also subject to small-scale quarrying, probably of post-medieval and industrial period date, with a number of old workings shown on the present edition of the Ordnance Survey map. In recent times large-scale forestation in Drumfriesshire has dramatically changed the character of the landscape, including in the area of the current investigations.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 With one exception, the Historic Scotland-approved project design (*Appendix 2*) was adhered to throughout the project, and all work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice. The single variation from the project design related to the inadequacy of the originally-proposed 30m-long trench to evaluate the extent of the area within which the Roman road might lie. After consultation with the DE Archaeologist and with Historic Scotland, consent was given to extend the trench to a maximum length of 50m.

2.2 EVALUATION EXCAVATION

2.2.1 A single evaluation trench, measuring 50m long by 1.4m wide and up to 1m deep, was excavated within the Scheduled Area across the putative line of the Roman road (Plates 1 and 2). The trench was orientated in a west-north-west/east-south-east direction, with a slight dog-leg at the east-south-eastern end towards the south-east to avoid current cables of the DE seismic array. Topsoil and overburden was removed by a 3-ton mechanical excavator (minidigger) fitted with a 1.4m wide toothless ditching bucket and operating under archaeological supervision. All further investigation of archaeologically significant deposits or the glacial till was completed manually. All excavated spoil was scanned for artefacts.

2.2.2 The recording comprised a full description and preliminary classification of the deposits and materials revealed on OA North *pro-forma* sheets. A scaled plan was produced showing the location of the trench, with representative sections being drawn at a scale of 1:10 or 1:20, and an indexed photographic record, using monochrome and colour slide formats, was maintained. The position of the trench was located with a total station, this survey being subsequently tied into the Ordnance Survey grid with a Global Positioning System (GPS). This was incorporated with digital map data in a CAD system to create the location map (Fig 1). Following the completion of the archaeological work, the base of the trench was covered with a porous membrane prior and backfilled by the seismic survey team.

2.3 ARCHIVE

2.3.1 A full professional archive has been compiled in accordance with current IFA and English Heritage guidelines (English Heritage 1991). On completion of the project the paper and digital archive will be submitted to DE for deposition with Drumfries Record Office.

3. EVALUATION RESULTS

3.1 INTRODUCTION

- 3.1.1 The following section comprises an overview of the results. Detailed descriptions of each deposit are given in *Appendix 3*.

3.2 EVALUATION TRENCH

- 3.2.1 The vegetated upper-most soil horizons, deposits *1* and *8*, varied in depth considerably across the 50m length of investigation. Within the hollow at the centre of the trench, deposit *1* measured only 0.3m thick, whilst on the higher ground, to the south-east and north-west, deposits *1* and *8* measured 0.86m and 0.55m deep respectively (Figs 2 and 3). On the higher ground, these deposits immediately overlay the natural glacial till (*7*) whilst within the hollow, horizon *1* overlay a 0.3m-thick sequence of water-lain silts interspersed with humic peat, deposits *2*, *3*, *4* and *5* (Fig 3; Plate 3). These in turn sealed 0.1m thick layer *6*, which represented the interface between these silts and the underlying glacial till. The basal deposit revealed across most the trench was composed of glacial till, deposit *7*, through which outcrops of the natural bedrock occasionally projected.
- 3.2.2 No deposits or features were located within the investigated area of the hollow or the raised areas either side that could be attributed to the Roman road. Examination of the excavated arisings produced no finds of any date.

4. CONCLUSIONS

4.1 DISCUSSION

- 4.1.1 The excavated evaluation trench produced no evidence of road construction, either Roman or post-Roman in date, and there was no archaeological evidence that the base of the hollow or the excavated areas either side had at anytime been used as a road. This contrasts with the evidence from near Craik Cross Hill, where earthworks were identified and the natural bedrock was reputed to form the actual road surface (NMRS NT20SE 24). Within the present area of investigation, the amount of exposed bedrock was insufficient to form a road surface, whilst the natural boulder clay that formed the basal horizon within the trench is unlikely to have been an appropriate substitute. Whilst the preservation of banks might be expected to be more intermittent, any ditches would have been immediately recognisable upon removal of overburden deposits, and are thus conspicuous by their absence.
- 4.1.2 The hollow in the area of Lamblair Knowe would appear to be completely natural in origin, although this does not refute the premise that further to the north-east this hollow has been modified by human action. At the time of excavation the hollow was wet and boggy, and it seems likely that the conditions were similar during the Romano-British period. Indeed, the presence of silt deposits and the eroded interface (layer 6) with the underlying boulder clay would suggest the presence on occasion of running water. As such, it seems likely that this natural hollow would perhaps be avoided by the Roman road and, within this context, it is of interest to note that the putative line of the Scheduled Roman road is slightly kinked in this area (Fig 1). If the hollow was avoided, and the position of the road to the north-east and south-west joined, the line of the Roman road would be straightened somewhat. The position of the Roman road would, therefore, be located to the south-east of the excavated evaluation trench in an area currently utilised for forestry.

4.2 IMPACT AND RECOMMENDATIONS

- 4.2.1 The evaluation identified no archaeological remains upon which the route of the cable would impact; however, there is a possibility that the course of the Roman road lies to the south-east of the Scheduled Area, and may still be impacted upon. If so, the road would fall within land under a forestry management regime, and it is likely that any traces of road make-up and banks within such an area will have been badly affected by tree-planting, as would any laid surface; associated road-side ditches cutting glacial till may survive, but are also likely to be affected to a significant depth by bioturbation from tree roots. The recognition of exposed bedrock utilised as a road surface would be dependent upon the presence of rock-cut road-side ditches, as any flanking boulder clay would again be heavily bioturbated. It is suggested that an archaeological watching brief on the excavation of the cable trench to the south of the present Scheduled Area may prove fruitful if it coincides with an area that has not been heavily forested on a long-term basis.

5. BIBLIOGRAPHY

5.1 CARTOGRAPHIC SOURCES

OS 1978 Map of Roman Britain

5.2 ROYAL COMMISSION FOR ANCIENT MONUMENTS OF SCOTLAND

NT20SE 24 Torwood - Raeburnfoot - Newstead Roman Road

NY29NE 5 Raeburn Fort/fort annex

5.3 SECONDARY SOURCES

DE, 2006 *Archaeology and Historic Environment Desktop Assessment Eskdalemuir Seismic Array*, unpublished rep

en.wikipedia.org/wiki/Geology_of_Scotland 03/04/07

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edition, London

Frere, S, 1978 *Britannia*, London

RCAHMS, 1997 *Eastern Dumfriesshire, An Archaeological Landscape* (HMSO); Cited in DE 2006

6. ILLUSTRATIONS

6.1 FIGURES

Figure 1: Site Location Map

Figure 2: Plan of Evaluation Trench

Figure 3: South-west-facing long section of trench and south-west-facing section at Base of Hollow

6.2 PLATES

Plate 1: Working shot of trench, looking west

Plate 2: Centre of excavated trench, looking east

Plate 3: South-facing section, located within base of hollow, looking north

APPENDIX 1: PROJECT BRIEF

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**Statement of Requirement for Archaeological Excavation and
Watching Brief****Site: Eskdalemuir, Eastern Dumfries & Galloway, Scotland****1 GENERAL BACKGROUND**

This Statement of Requirement (SOR) is for the archaeological excavation, watching brief and post-excavation reporting of three archaeological sites associated with the proposed upgrading of a seismic array at Eskdalemuir in Eastern Dumfries and Galloway.

In the first instance the archaeological contract will respond to this SOR by the production of a detailed and costed project design for the works identified below.

2 Archaeological Background

Eastern Dumfries and Galloway is an area rich in archaeological sites and monuments although extensive forestry plantations in Eskdale have served to obscure or even destroy features that were once present in the landscape.

An archaeological Desk-Based Assessment undertaken by the Defence Estates Archaeology Advisor in 2005/06 identified that the route of the proposed east to west seismic array cable trench cuts through the line of the Roman road at Lamblair Knowe, a scheduled monument, and also runs close to several small circular embanked enclosures of probable post-medieval date. Recommendations to mitigate the impact on the proposed works on these sites were as follows:

2.1 Site 1 Impact

The cable trench will cut through the surface, embankment and lateral drains of the Roman Road at Lamblair Knowe (NT 2935 0370) - a scheduled monument approximately 30m wide at this point. Deposits of archaeological significance associated with the road make-up and potential roadside features if present, may be damaged by the proposed groundworks.

2.1.1 Recommendation

The Roman road is a monument of national significance and preservation in situ would normally be the preferred option. However, the orientation of the road is such that it is not possible to amend the route of the cable to avoid cutting across the width of the road. Whilst the 1m wide and 1m deep cable trench will most likely have a direct impact on archaeological deposits, it is considered that the narrow width of the proposed cable trench represents a minute proportion of the remaining length of the road. Preservation by record by means of a hand-excavated trench across the scheduled width of the monument (with the assistance of a small excavation machine to remove topsoil) is therefore recommended as an appropriate strategy to mitigate the development proposals. Scheduled Monument Consent for the proposed works has been granted subject to the approval of a detailed project design submitted to Historic Scotland prior to the commencement of works.

2.2 Site 2 Impact

The proposed cable trench cuts across the northern side of a small circular, turf-banked enclosure, c.6m in diameter, at Flintel Sike (NT 2855 0412). There is a potential for the

groundworks to have an impact on deposits of archaeological significance associated with this feature.

2.2.1 Recommendation

The enclosure, whilst not designated, is nonetheless considered to be a site of archaeological significance. Amendment of the route away from the feature, thus ensuring its preservation in situ is a preferred option. If it is not feasible to amend the route of the cable trench it is recommended that a watching brief of the machine excavation trench across the feature is undertaken and a drawn and written record of any archaeological deposits should be obtained.

A specification for an archaeological scheme of work, approved by the planning authority, will be required prior to the commencement of works on this site.

2.3 Site 3 Impact

The proposed cable trench runs sufficiently close to two circular turf banked enclosures associated with Site 3 at NT 2814 0430 for it to have a potential impact on any buried remains associated with these features.

2.3.1 Recommendation

In order to record any buried features that might be present adjacent to the enclosure it is recommended that a watching brief of the machine excavation trench is undertaken and a drawn and written record of any archaeological deposits should be obtained.

A specification for an archaeological scheme of work, approved by the planning authority, will be required prior to the commencement of works at this site.

3 LAND USE AND TOPOGRAPHY

The array is situated across the watershed between tributary headstreams of the Teviot and Tweed flowing to the north-east, and headstreams of the Esk which generally flow to the south-west. The ground surface is largely open rolling moorland and forest plantations, which in many places is peat covered. The altitude of the seismic pits varies from 275m to 425m. At the time of a site visit by the DE Archaeology Advisor in 2005/06 the archaeological sites were situated on moorland corridors or rides within the forestry plantation.

4 THE EXCAVATION

4.1 Scheduled monument

A detailed project design is required for the archaeological excavation across the Roman Road at Lamblair Knowe – Craik Hill Cross Roman Road, a scheduled monument. The trench will measure approximately 30m long, 1m wide and 1m deep.

The excavation will conform to the highest professional and technical standards and will meet the conditions identified in the Scheduled Monument Consent (see attached document).

Removal of turf and topsoil may be undertaken using an excavation machine with a toothless ditching bucket working at all times under archaeological supervision.

Any archaeological features encountered shall be recorded using written, drawn and photographic methods to an adequate standard

Any finds shall be retained, processed and, where necessary, given an appropriate level of conservation in preparation for further analysis and archiving. Provision must be made for specialist treatment of finds by a conservator.

Comparative levels shall be recorded for each feature or important context encountered, with reference to OS datum, or, if impracticable, a site datum.

Appropriate procedures shall be observed in the event of the discovery of human remains or artefacts, as covered by the terms of the Burial Acts and Treasure Acts (as pertaining to

Scotland).

Contexts will be sampled for dating as appropriate. This will include C14 dating, archaeomagnetic dating and dendrochronological dating. Samples for archaeomagnetic dates would be taken on site by the relevant specialist. Samples for dendrochronological dates would be taken either on site or from recovered timbers by the relevant specialist in accordance with published guidelines (English Heritage, no date). Samples would be processed subsequent to initial post-excavation assessment.

A strategy for the recovery and sampling of environmental remains should be agreed with an environmental consultancy in advance of the project. Opportunity should be afforded to the environmental specialist to visit the site during the evaluation to discuss the sample collection strategy.

4.2 Excavation across non-designated sites

Where the proposed cable trench cuts across a small embanked turf enclosure at Site 2, recording of any archaeological deposits will be undertaken. A detailed project design for the archaeological works on this site is required and will be submitted to the local planning authority for their approval.

4.3 Watching Brief

Where the proposed trench runs adjacent to the enclosures at Site 3 an archaeological watching brief will be undertaken. A detailed project design for the watching brief is required and will be submitted to the local planning authority for their approval.

4.3.1 The archaeological watching brief will be undertaken in tandem with the cable trench excavation and will not cause delay to the contractors timetable. Where this proves unavoidable due to prevailing archaeological conditions, it is desirable that, in the first instance, a mutually convenient working arrangement is agreed between the site contractors and the archaeologists. This will be communicated to the managerial staff of all parties concerned.

5 Reporting

The report should be prepared to a standard in line with the IFA's guidance (see IFA *Standards and Guidance: Field Evaluation Appendix 2*). The report should include:

- Non-technical summary.
- Introductory Statements.
- Aims and purpose of the project.
- Methodology.
- Geological background.
- Archaeological background.
- Results, including full context descriptions and artefact/environmental material summaries.
- Figures (at appropriate scale) summarising the results of the survey.
- Conclusion. A summary of the results and an assessment of the potential for remains to lie buried under the area of the proposed development.
- Recommendations for further works.
- Any specialist assessment report.
- A photographic record, to include general and working conditions shots as well as key archaeological features.
- Appendices
- References.

6 Report Format and production

The report should be presented in an ordered state prefaced with a contents listing and 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 or 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.

7 bound paper copies of the report will be required. In addition the report should be provided in digital format on CD (3 copies), as Word, text only rtf. files and .pdf files with digital images of figures and illustrations as presented as tiff files. All images should be either digital originals saved as high and low resolution images or scanned at both high and low resolution, where high equates to 800-1200 dpi and low to 200dpi. The whole document should also be provided on the CD as a complete text and image file in pdf. format. The CD should also contain the digitised survey information geo-referenced to the OS. This should be provided in ArcView shape file format.

Meta-data providing copyright information as described below, together with a written description of conventions used in the survey and the digital presentation of GIS information and an intuitively based GIS file naming format should also be provided. Mapping data should also include details on source and scale, method of survey and/or data capture, accuracy levels achieved and description of data attributes and fields.

Accuracy of digitised mapping data should conform to Defence Estates adopted practice.

Grid references should be 12 figure numerical in all cases and where possible also presented using OS grid 100KM square letter prefixes.

Digitising accuracy should +/- 0.2metres at base scale

Monument/building surveys should achieve a minimum accuracy of +/- 2 metres in relation to OS background, although obviously survey information itself will be expected to be significantly improved on this.

7 Copyright

Under the Copyright, Designs and Patents Act 1988, 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.

8 GENERAL

Project Design: The contractor will provide a detailed project design for the excavation, watching brief and post-excavation stages of the project. This will be forwarded to, and agreed with, the DE Archaeologist and Historic Scotland prior to the commencement of the work.

SMC Conditions: The contractor will conform in all instances to the conditions of the Scheduled Monument Consent.

Timetable: At present the projected date for works is uncertain. It is possible that the archaeological excavation across the scheduled monument could be programmed as a 'stand-alone' project undertaken in advance of the main contractor's site works.

Deposition of Archive: Arrangements should be made for a copy of the archive to be deposited with the Royal Commission on the Ancient and Historic Monuments (Scotland). An agreement with the relevant museum to accept any artefacts/archive within a period of 12 months should be finalised before commencement of the fieldwork.

Monitoring: No work should commence until authorised by the Project Sponsor. The DE Archaeologist shall be advised immediately a start date is agreed. The DE Archaeology Advisor, representatives of Historic Scotland and the Regional Authority will be allowed access to the site by arrangement.

Site Access: Access to the site is restricted. Authorisation will be arranged through DE/AWE.

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.

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APPENDIX 2: PROJECT DESIGN

**ESKDALEMUIR,
EASTERN
DUMFRIES AND
GALLOWAY,
SCOTLAND**

**Archaeological Excavation
and Watching Brief
Project Design: Version 2**



Oxford Archaeology North

March 2007

Defence Estates

NGR: NT 2935 0370; NT 2855 0412;
NT 2814 0430

OA North Ref No: L9783

1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 Defence Estates (DE) (hereafter the 'client') has requested that Oxford Archaeology North (OA North) submit proposals for an archaeological investigation of an area proposed for the upgrading of a seismic array at Eskdalemuir in Eastern Dumfries and Galloway. The required works, as detailed in the DE Statement of Requirement (SOR) concerns the mitigation of three sites of archaeological potential that will be affected by the excavation of a cable trench;

Site 1: a stretch of Roman road at Lamblair Knowe, known as the Raeburnfoot - Lamblair Knowe - Craik Cross Hill Roman Road (NT 2935 0370; Reference AMH 675). The road is a scheduled monument and is approximately 30m wide at the area of impact, and includes not only the surface but the embankment and lateral drains. Therefore, remains associated with the road make-up and any potential roadside features will be affected by the 1m wide and 1m deep cable trench.

Site 2: small, circular, turf-banked enclosure, c 6m in diameter, at Flintel Sike (NT 2855 0412). The cable trench will cut across the northern side of the feature. This is required under a watching brief.

Site 3: two circular turf-banked enclosures (NT 2814 0430). The cable trench will be excavated close to the two sites of archaeological potential. Consequently, an archaeological watching brief is required during the excavation.

- 1.1.2 The area is largely open moorland and forest plantations, which in many places is peat covered, and at a height of 275m-425m aOD.
- 1.1.3 The following proposals have been prepared in accordance with the DE SOR.

1.2 OXFORD ARCHAEOLOGY NORTH

- 1.2.1 Oxford Archaeology North has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout the North during the past 24 years. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.
- 1.2.2 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) registered organisation, registration number 17, and all its members of staff operate subject to the IFA Code of Conduct (1994).

2 OBJECTIVES

- 2.1 The excavation of a trench in which a seismic array cable will be inserted will adversely affect three sites of archaeological potential. The objective of the archaeological investigation is to mitigate the impact of the cable trench on below-ground archaeological deposits. To this end, the following programme has been designed to achieve these ends:
- 2.2 **Excavation:** to excavate a trench, measuring 30m x 1m, across the Roman road at Site 1, in order to preserve by record archaeological deposits and features in mitigation of the insertion of the cable. Hand excavation is required across the scheduled width of the of the monument. This will be carried out in accordance with the Scheduled Monument Consent and in accordance with the IFA standards (1999); all staff and contractors working on site will be formally advised of the importance and sensitivity of the monument, and of the Scheduled Monument Consent conditions relating to the present scheme of works.
- 2.3 **Watching brief:** to maintain a permanent archaeological presence during ground works associated with the excavation of the cable trench at Sites 2 and 3. The aim is to determine the nature, quality, extent and importance of any archaeological remains encountered that will contribute to the understanding of the circular turf-banked enclosure.

2.4 **Report:** a report will be produced for the client within eight weeks, unless a report submission deadline is agreed with the client at the time of commission.

3 METHOD STATEMENT

3.2 SITE 1: EXCAVATION

3.2.1 The excavation of a trench measuring 30m x 1m x 1m correlates with the width of the cable trench required, whilst incorporating the span of the Roman road at this point, which includes the surface, embankment and lateral drains.

3.2.2 **Methodology:** the SOR allows for the removal of turf and topsoil using a mechanical excavator (fitted with a toothless ditching bucket) under archaeological supervision to the surface of the first significant archaeological deposit. Since the machine will only be involved with topsoil stripping, the smallest practicable mechanical excavator will be utilised which, except when excavating the trench, will only move around the site on existing trackways. When excavating the trench, consideration will be given to the laying of boards on which the machine can run, in order to distribute its weight and limit any damage to archaeological deposits outside of the trench. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the conditions, and inspected for archaeological features.

3.2.3 Excavation will be in a stratigraphical manner, whether by machine or by hand. Trenches will be located by use of GPS equipment which is accurate to $\pm 0.25\text{m}$, altitude information will be established with respect to Ordnance Survey Datum.

3.2.4 As the excavation is prior to destruction of this section of the road the excavation will aim to fully record all features by complete removal of archaeological deposits (where appropriate). If features/deposits are revealed which need to be removed and which are suitable for machine excavation, such as large scale dump deposits or substantial linear cut features, then they would be sample excavated to confirm their homogeneity before being removed by machine.

3.2.5 Pits and postholes will initially be subject to a 50% by volume controlled stratigraphic excavation, with the remainder of the feature to be removed in entirety if further information can be gained. The sampling percentage will not be limited to resource availability.

3.2.6 Linear cut features, such as ditches and gullies, will initially be subject to a 20% by volume controlled stratigraphic excavation, with the excavation concentrating on any terminals and intersections with other features which would provide important stratigraphic information. As with pits and postholes, should it prove necessary to remove the remainder of the feature to expose underlying features and/or deposits, it will be excavated rapidly keeping only that dating evidence which is securely derived from the feature in question.

3.2.7 Structural remains will be excavated manually to define their extent, nature, form and, where possible, date. Any hearths and/or internal features will be 100% sample excavated to provide information on their date and function, and the extent of any associated floor surfaces will be determined.

3.2.8 In accordance with the Scheduled Monument Consent conditions, the maximum width of the trench would be 1m, with the base of the trench no deeper than 1m (as dictated by health and safety constraints relating to the prevailing ground conditions). Should any particularly deep-cut features be revealed, where safety considerations permit, these will be manually excavated to a maximum depth of 1.2m within the 1m wide confines of the trench.

3.2.9 All information identified in the course of the site works will be recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage and in accordance with IFA guidelines. From this a complete stratigraphic sequence can be compiled.

3.2.10 A complete pictorial record, including plans and sections (at an appropriate scale of 1:20 and 1:10), and both monochrome contacts and colour slides, will be maintained to identify and illustrate individual features. The results will be recorded on *pro forma* context sheets. Primary records will be available for inspection at all times.

- 3.2.11 All artefacts and ecofacts will be recorded using the same system, and, following on-site processing, will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration. Should any finds be recovered from the excavation, a Unit Loan Application Form would be completed and submitted to the Treasure Trove Unit. The finds would be stored at a secure location in Scotland with Defence Estates, until consent for their removal to the OA North offices in Lancaster had been received from the Crown Agent.
- 3.2.12 The position of the excavation will be recorded using GPS. The information will be tied in to the National Grid.
- 3.2.13 **Reinstatement:** following the completion of the archaeological excavation, a porous membrane will be laid within the trench to seal any unexcavated archaeological deposits and the backfill of the trench. The full backfilling of the trench would be dependent upon the schedule proposed for the cable-laying. If the cable-laying is scheduled to take place soon after the completion of the archaeological works, in order to minimise disturbance, it would be best if the trench could be left open and secured from egress by the erection of fencing. The cost for supplying and erecting the fencing would need to be agreed with the client as a variation. If there was to be a protracted period between the completion of the excavation and the cable-laying, or if it was impractical to supply fencing to the site, given its locality, OA North would backfill the trench with the excavated arisings, laying any topsoil and turf on top at the cost provided in the *Costings* section of this document. Any requirement to actually return the area would need to be the subject of an agreed variation.

3.3 SITES 2 AND 3: WATCHING BRIEF

- 3.3.1 A programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits during the proposed ground disturbance. These groundworks will be carried out under constant archaeological observation.
- 3.3.2 The watching brief will cover any ground disturbance during the excavation of the cable trench within the outlined areas of Sites 2 and 3. This work will comprise archaeological observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified.
- 3.3.3 Discovery of archaeological remains will require stoppage of the clearance/construction work to allow OA North archaeologists sufficient time to undertake adequate recording. This will be carried out as efficiently as possible in order to minimise disruption. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works will be approximately 2-4 hours. This will include rapid hand excavation of finds and features, sampling and recording.
- 3.3.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 3.3.5 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale digital plan provided by the client. Heights above OD will also be recorded. A photographic record will be undertaken simultaneously.
- 3.3.6 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and any features of archaeological concern. one or more dimensioned sections will be produced.
- 3.3.7 **Contingency plan for unexpected significant or complex discoveries:** in the event of significant archaeological features being encountered during the watching brief, discussions

will take place with DE as to the extent of further works to be carried out. All further works would be subject to a variation to this project design.

- 3.3.8 In addition, should environmental/organic deposits be present on site, it would be necessary to discuss and agree a programme of palaeoenvironmental sampling and or dating with DE.

3.4 GENERAL PROCEDURES

- 3.4.1 **Environmental Sampling:** environmental samples (bulk samples of 40 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Details of samples taken for assessment will be passed to the Treasure Trove Unit via the appropriate application form, and will be stored at a secure location in Scotland until permission for removal has been received. An assessment of the environmental potential of the site will be undertaken through the examination of suitable deposits by the in-house palaeoecology specialist, who will examine the potential for further analysis.
- 3.4.2 The assessment would be undertaken in line with English Heritage guidelines (2001) and will include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect if good deposits are identified and will be subject to the agreement of DE.
- 3.4.3 Advice will also be sought as to whether a soil micromorphological study or any other analytical techniques will enhance the understanding of the site formation processes, including the amount of truncation to buried deposits and the preservation of deposits within negative features. Should this be required the costs for analysis have been provided as a contingency.
- 3.4.4 **Faunal remains:** if there is found to be the potential for discovery of bones of fish and small mammals a sieving programme will be carried out. These will be assessed as appropriate by OA North's specialist in faunal remains, and subject to the results, there may be a requirement for more detailed analysis. A contingency has been included for the assessment of such faunal remains for analysis.
- 3.4.5 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. DE, the police and the Procurator Fiscal will be informed immediately. If removal is essential, the exhumation of any funerary remains will only take place once the relevant legal confirmation has been received, and all works would be undertaken in accordance with any directed legal and environmental health requirements and regulations. Any delays caused by unforeseen and complex excavation of inhumations may be subject to a variation to the cost of the contract and will be agreed with the client.
- 3.4.6 **Treatment of finds:** all finds will be exposed, lifted and a Unit Loan Application Form would be completed and submitted to the Treasure Trove Unit. The finds would be stored at a secure location in Scotland with Defence Estates, until consent for their removal to the OA North offices in Lancaster had been received from the Crown Agent. The resultant information will be fed back to OA North for inclusion in the final report.
- 3.4.7 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the Treasure Trove Unit. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 3.4.8 **Contingency plan:** a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the Costings document and would be in agreement with the client.

3.5 REPORT

3.5.1 Seven bound copies of the report will be supplied to the client, together with three digital copies as per the SOR, within eight weeks of completion of the fieldwork. The report will include;

- a site location plan related to the national grid
- a front cover, to include the NGR
- a concise, non-technical summary of the results
- the circumstances of the project and the dates on which the fieldwork was undertaken, and the aims and objectives of the project
- description of the methodology, including the sources consulted
- a summary of the geological, topographical and historical/archaeological background
- any specialist reports
- discussion of the results, and their significance in their regional and/or national context
- monochrome and colour photographs as appropriate
- a copy of the SOR and this project design, and indications of any agreed departure from that design
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted
- plans and sections showing the positions of deposits and finds
- an index to the project archive

3.5.2 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

3.6 ARCHIVE

3.6.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with Appendix 3 of the current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991) and UKIC (1990). The original record archive (paper, magnetic and plastic media) will be submitted to the Royal Commission on the Ancient and Historic Monuments (Scotland) (RCAHM(S)). Finds from the fieldwork will be deposited with an appropriate museum as part of the Treasure Trove procedure.

4. HEALTH AND SAFETY

4.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be supplied to the client.

4.2 **Services:** full regard will, of course, be given to all constraints (services etc) during the watching brief as well as to all Health and Safety considerations. OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy.

4.3 Any **drawings or knowledge of live cables or services** that may pose a risk to OA North staff during the fieldwork must be made known to the project manager of OA North before site work. This will ensure the risk is dealt with appropriately.

4.4 **Contamination:** any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met.

- 4.5 Should areas of previously unknown contamination be encountered on site the works will be halted and a revision of the risk assessment carried out. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.
- 4.6 A portable toilet and hand washing facilities, as required for health and safety regulations, will be supplied during the excavation, should there be suitable access. This will be located on or adjacent to the site.
5. OTHER MATTERS
- 5.1 **Access:** liaison for basic site access will be undertaken through the client and it is understood that there will be access for both pedestrian and plant traffic to the site.
- 5.2 **Reinstatement:** it is understood that the excavation trench will not require any reinstatement, but will remain open for the insertion of the cable. However, should circumstances regarding the programming of the cable insertion alter, provision for either securely fencing the trench or backfilling will be made. The cost of these options have been included as contingency items.
6. WORK TIMETABLE
- 6.1 **Watching brief:** it is anticipated, from current information, that the watching brief for Sites 2 and 3 will be one day per site, and will run concurrently with one archaeologist in attendance.
- 6.2 **Excavation:** approximately eight days for a team of three people will be required to complete this element, depending on the ground coverage.
- 6.3 **Report:** the report will be produced following the completion of all the fieldwork. The final report will be available within eight weeks of completion of the fieldwork, unless otherwise agreed with the client prior to or at the time of commission.
- 6.4 **Archive:** the archive will be completed by OA North for the evaluation element and forwarded to the client for completion and deposition
7. STAFFING
- 7.1 The project will be under the direct management of **Emily Mercer BA (Hons) MSc AIFA** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 7.2 The watching brief and excavation elements of the fieldwork will be supervised by either an OA North project officer or supervisor experienced in this type of project. Due to scheduling requirements it is not possible to provide these details at the present time. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes.
- 7.3 Once permission for the removal of finds from Scotland had been approved as part of the Treasure Trove process, assessment of the finds will be undertaken under the auspices of OA North's in-house finds specialist **Christine Howard-Davis** (OA North finds manager). Christine has extensive knowledge of finds from many periods, although she does have considerable experience with Roman finds, being involved with the excavations at Ribchester and at present with the Carlisle Millennium Project.
- 7.4 Once permission for the removal of bulk samples from Scotland had been approved as part of the Treasure Trove process, Assessment of any palaeoenvironmental samples will be undertaken by or under the auspices of **Elizabeth Huckerby MSc** (OA North project officer). Elizabeth has extensive knowledge of the palaeoecology of the North West through her work on the English Heritage-funded North West Wetlands Survey.
8. INSURANCE
- 8.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

BIBLIOGRAPHY

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edn, London

English Heritage, 2001 *Environmental Archaeology: a guide to the theory and practice of environmental methods from sampling and recovery to post-excavation*, London

Institute of Field Archaeologists, 1999 *Standard and guidance for archaeological field Evaluations*

SCAUM (Standing Conference of Archaeological Unit Managers), 1997 *Health and Safety Manual*, Poole

APPENDIX 3: CONTEXT DESCRIPTIONS

Trench 1	Dimensions 50m by 1.4m	Orientation east/west
Context	Description	Depth
1	A very dark grey to black silty humic peat layer, with less than 1% sub-angular stone inclusions a maximum of 80mm by 60mm by 35mm in size.	0.3m
2	A layer of mid-brown grey silt. A mix of humic peaty soil and water-lain silts.	0.18m
3	A layer of very dark grey to black silty humic peat.	0.11m
4	A layer of mid-grey silt with lens of mid-orange/brown friable coarse sandy grit. A water-lain deposit.	0.16m
5	A layer of very dark grey to black, silty, humic peat.	0.05m
6	A layer of light grey silty coarse sand with less than 1% sub-rounded and sub-angular stone inclusions a maximum of 0.13m by 0.08m by 0.04m in size. Essentially the interface between glacial till 8 and overlying silt deposits.	0.05m
7	Glacial till. This varies across the site, including a mid- to light grey clay with c 75% sub-rounded stones a maximum of 80mm by 30mm by 20mm; a mid-orange coarse sand; a mid-orange/brown coarse sand clay with 50% to 75% sub-angular stone inclusion a maximum of 0.13m by 0.12m by 0.07m in size; and a light grey clay with 10% to 20% sub-angular stone inclusions a maximum of 70mm by 60mm by 20mm in size. Much of the stone inclusions within the till appear to be frost-shattered material from the underlying bedrock.	
8	A layer of black silty humic peat.	0.44m

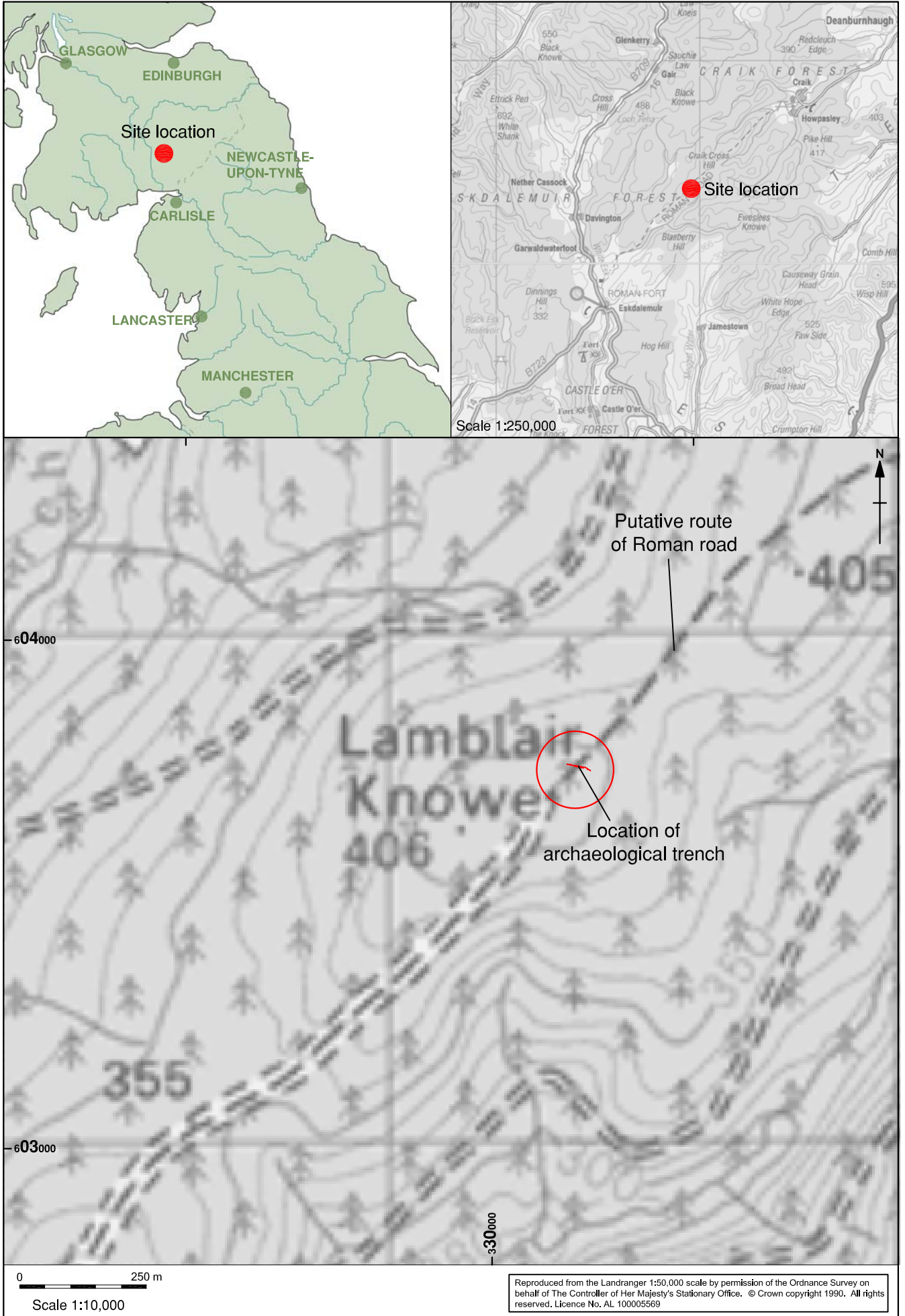


Figure 1: Site Location

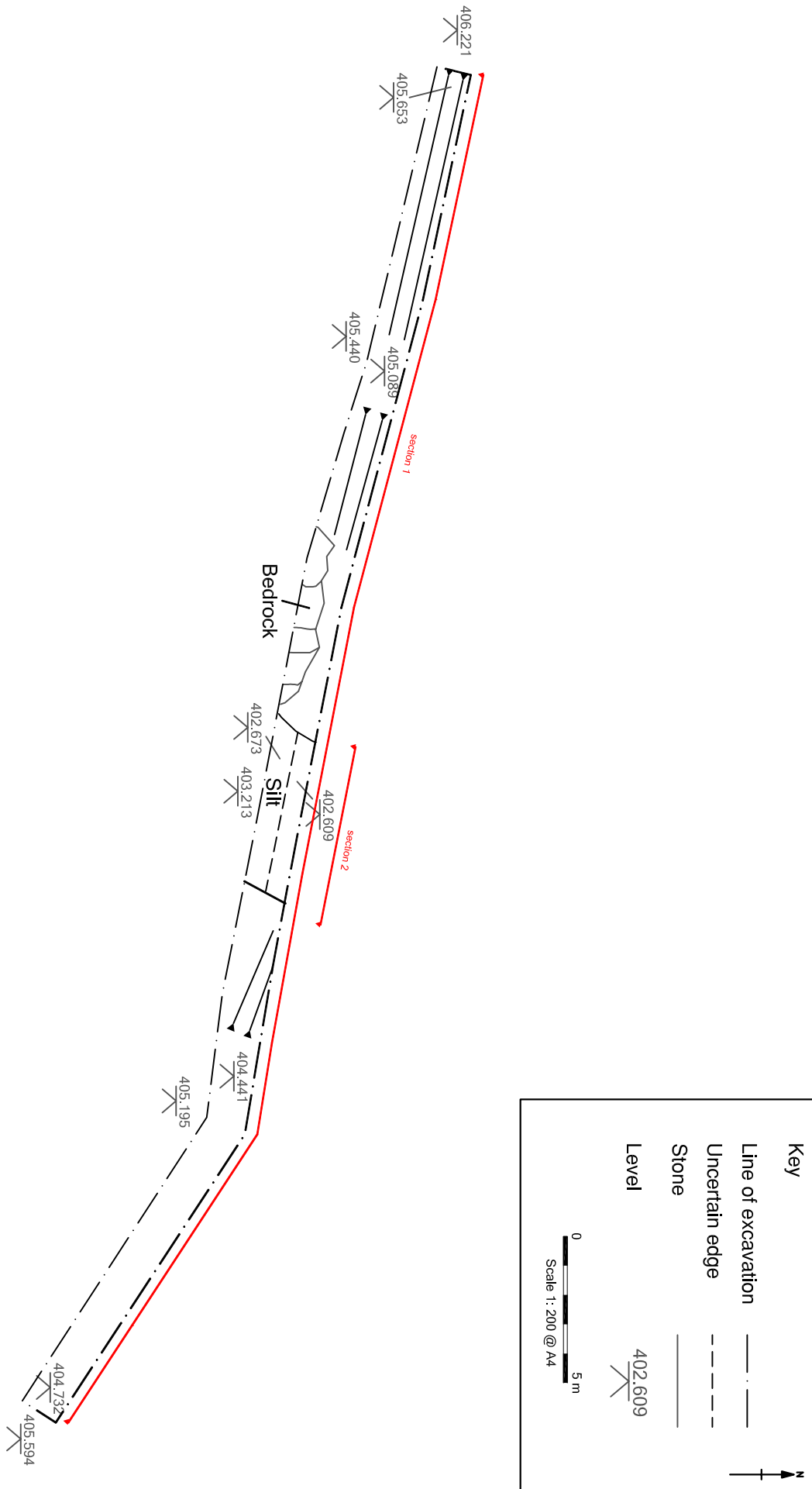


Figure 2: Plan of Evaluation Trench

Key	Uncertain edge
Line of excavation	-----
Feature	-----
	Stone
	Level
	402.609

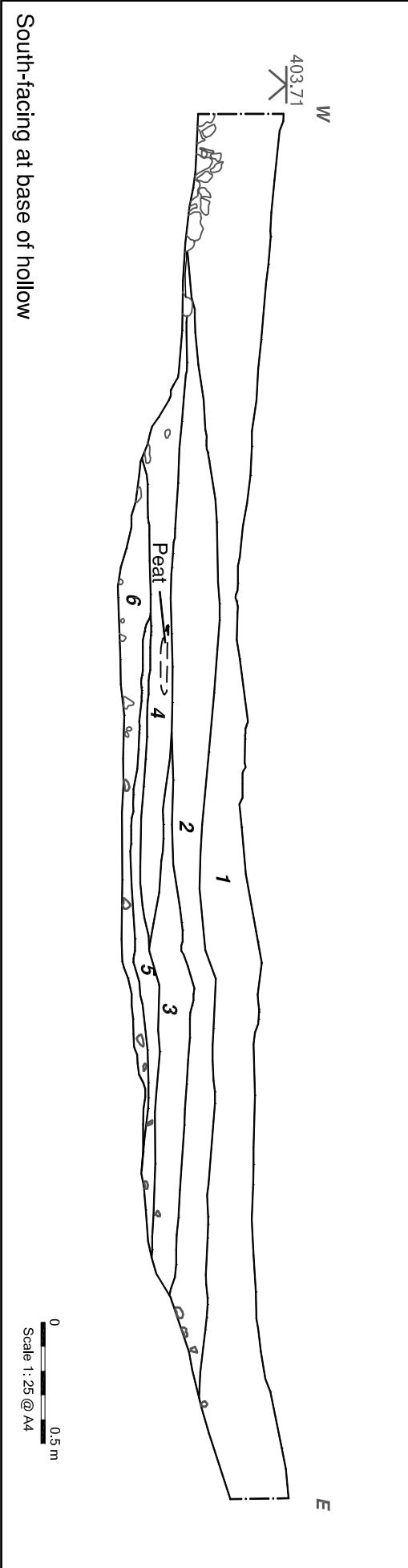
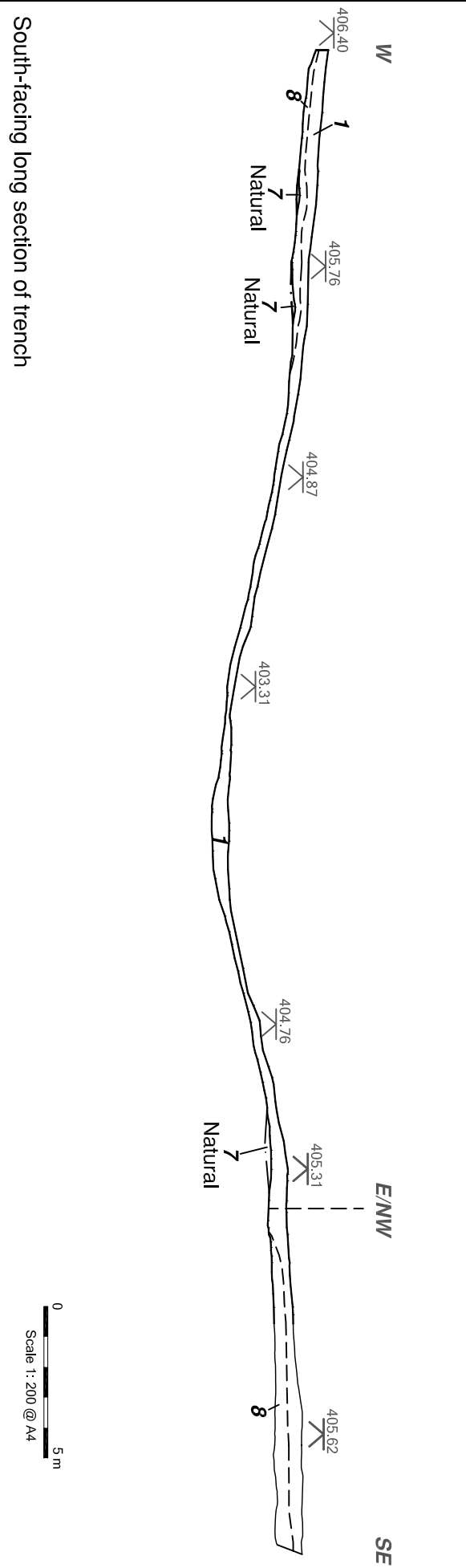


Figure 3: South-facing long section of trench and south-facing section at base of hollow



Plate 1: Working shot of trench, looking west.



Plate 2: Centre of excavated trench, looking east.



Plate 3: South-facing section, located within base of hollow, looking north.