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Finds / Environmental Analysis

Geophysical Survey

Historic Building Recording

Site & Landscape Survey

Interpretation, Design & Display

**Reaps Moss Wind Farm,
Rossendale, Lancashire**

Archaeological Works

Report No. Y197/15

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This document has been prepared in accordance with CFA Archaeology Ltd standard procedures.

**Reaps Moss Wind Farm,
Rossendale, Lancashire**

Archaeological Works

Report No. Y197/15

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Summary

CFA Archaeology undertook a programme of archaeological investigation at Reaps Moss Wind Farm, Rossendale, Lancashire, consisting of site walkovers and topographic surveys, test pitting and a watching brief. The purpose of the work was to gather information regarding the extent, condition and character of any surviving archaeological remains. Archaeological remains recorded included shafts, vents and trial holes, collapsed galleries, and other earthworks relating to early mining activity. The location of the former Clough Head Brickworks and the Limers Gate Tramway were also recorded.

1. INTRODUCTION

1.1 General

This report presents the results of archaeological investigations undertaken by CFA Archaeology Ltd (CFA) during 2013 and 2014 at Reaps Moss Wind Farm, Rossendale, Lancashire (NGR: SD 389299, 423156 centred, Fig. 1). The work was commissioned by Wind Prospect Ltd in advance of the construction of 3 wind turbines with associated crane pads, access roads, and other associated infrastructure.

This report follows the Written Scheme of Investigation (WSI) as prepared by CFA in response to a Specification produced by Peter Iles of Lancashire County Archaeological Service (LCAS) in order to comply with planning conditions in advance of development (Ref. 12/002299/WDF (Calderdale), and 2012/0165 (Rossendale)).

1.2 Site Location and Description

The development area is located on land across the Reaps Moss ridgeline, which forms the boundary between Rossendale and Calderdale. The village of Bacup, in the Borough of Rossendale, is located 2km to the east and the local landscape is one of rolling hills with areas of quarrying and mining, and boggy pastureland.

Levels across the upland moor area vary between 400 and 425m above the Ordnance Datum (AOD), with a high point on the north slope of Hogs Head Law Hill to the south of 435m AOD. Access is from the A681 to the north of site.

The site is currently common land and used for grazing with parts of the site typified by high quality peat bog habitat, whilst other areas are degraded peat bog habitats that have been improved for grazing. Results of a peat probing survey indicate thicknesses of over 1.5m in some areas of the site (Dulas 2012).

The underlying solid geology of the site consists of 'Darwin Flags', carboniferous sedimentary sandstone, while the superficial geology consists of peat and 'organic accumulations' (BGS 2013).

The soils covering the development area comprise predominantly soils of the Wilcocks 1 Association described as slowly permeable seasonally waterlogged fine loamy upland soils with a peaty soil horizon (SSEW 1983, 712c) and Rivington 2 Association described as 'well drained, coarse loamy soils with slight seasonal water logging' (SSEW 1983, 541g).

1.3 Archaeological and Historical Background

The following is a brief summary of the archaeological and historical background of the site and the immediate surrounding areas. More detailed background information may be found in the Environmental Statement (Dulas 2006 and 2012) and the WSI (Appendix 1) The site references in parentheses refer to catalogue entries included in the Environmental Statement.

Evidence for earlier prehistoric, Romano-British or medieval settlement is scarce in this location although artefacts of Mesolithic, Early Neolithic to Early Bronze Age and Bronze Age date have been found within the vicinity of the application site at Tooter Hill (Sites 3 and 4) and Todmorden Moor (Site 84). Although no prehistoric remains have been identified within the application site itself it is possible that this reflects the paucity of previous archaeological research within the area and there is a possibility that further evidence for Mesolithic occupation may be sealed beneath the blanket peat.

No Romano-British or medieval remains or artefacts are known within 500m of the application site.

The site's eastern boundary mostly follows the historic border between Bacup and Todmorden. Whilst these settlements both originally lay within Lancashire, 19th century boundary changes placed Todmorden in Yorkshire. The boundary markers thus define the modern boundary between Lancashire and West Yorkshire. At its northern end the proposed entrance to the application site lies wholly within West Yorkshire. A line of sandstone boundary markers (Sites 2, 10, 11, 38, 39, 45, 46-48, 50, 53, 55, 57-59, 101), indicating the line of the border, survive on the eastern edge of the site and are recorded on the 1849 1st Edition Ordnance Survey.

The Southern Pennines around Rossendale were the focus of a thriving mining and quarrying industry, which operated from the late 18th century until the First World War. The remains of quarries, earthworks and sinkholes deriving from this industry are scattered across the landscape. The undesignated remains of a brickworks (Site 81), a tramway (Site 82), its associated drainage (Site 79), South Graine Colliery (Site 41) and 3 quarries (Sites 15, 77 and 78) are located within the application site.

1.4 Previous Archaeological Work

The cultural heritage chapter of the Environmental Statement consisted of desk-based research and a walkover survey (Dulas 2008 and 2011). CFA Archaeology undertook programmes of topographic and photographic survey prior to the commencement of construction work on the site, the results of which are recorded as addenda to this report.

1.5 Aims

In accordance with the WSI, the aims of the project were to establish and implement a methodology for detecting and recording archaeological remains likely to be impacted upon by the development and to establish and implement a methodology for the protection of remains adjacent to but not immediately threatened by the development.

Research objectives were informed by the relevant research agendas and frameworks (e.g. EH 2010, Gomersall 2005, Roskams and Whyman 2007 and Newman and McNeil 2007a and 2007b).

Specific aims were to:

- establish whether there are any archaeological deposits within the site and to ascertain the extent, depth below ground surface, thickness, character, significance and condition of such deposits;
- integrate any archaeological remains exposed as a result of the work in their wider setting and contribute to our understanding of the history of the region.

2. METHODS

2.1 Watching Briefs

Watching briefs were carried out on the development site in areas of archaeological potential and where there were no deep layers of overlying peat as identified during the walkover survey. A watching brief was also maintained during the construction of the site access roads. All ground works were monitored in these areas and in the event of archaeological remains being encountered they were recorded and evaluated in accordance with CFA methods as outlined in the WSI.

2.2 Standards and Guidance

CFA Archaeology is a registered organisation (RO) with the Chartered Institute for Archaeologists (CIfA). All work was conducted in accordance with relevant CIfA Standards and Guidance documents (CIfA 2014), English Heritage guidance (EH, 2005, 2006, 2008a and 2008b), and CFA's standard methodology.

2.3 Archiving

The project archive, comprising all CFA record sheets, finds, plans, reports, and photographs will be ordered according to nationally recognised standards (CIfA 2014) and will be deposited at a suitable repository.

The archive currently consists of:

Digital Photographs and Survey and other files	1 x CD
Notes and Research materials	1 x A4 folder
Topographic and Survey Plans	
All non-confidential correspondence	
Written Scheme of Investigation	-
Project Reports	-

3. RESULTS

The appendices comprise full lists of contexts recorded, photographs taken and illustrations made. The results below should be read with reference to the relevant figures.

3.1 Watching Briefs

Watching briefs were undertaken at various points across the site in areas identified by the topographic survey (as recorded in Appendix 2) as having potential for surviving archaeological remains.

During the construction of the access road adjacent to Sites 16 and 17 (probable adits), and immediately to the north of Site 16, an adit associated with early mining in the area was discovered after the partial collapse of the road revealed the remains of the structure (Fig. 2, Appendix 1).

Upon further excavation by machine of the adit it was found to be on a north-south orientation (Fig. 3). It was located 2.1m below the current ground surface and continued across the road for approximately 20m. The adit appeared to have been in a state of collapse and partially backfilled with shale, however, the presence of large machinery and groundworking in the area caused voids to appear revealing the structure (Fig. 4).

During the construction of the access road, a stone identified as a likely boundary marker (Site 2.11) had to be removed. Upon excavation of the feature, however, it appeared likely that the stone was a loose fragment likely related to the earlier mining activities, and was not a boundary stone as first thought.

Sites 12 and 12.1 (probable adits) were not excavated during the installation of the access road, and were bridged by infilling with topsoil from the road strip (Fig. 5). Similarly sites 40 and 40.1 (probable mine shafts) were left undisturbed, save backfilling with topsoil.

Site 11 was considered to be an adit during the walk over survey, however, upon excavation the feature appeared to have been caused by a natural depression in the overlying peat deposits (Fig. 6).

The watching brief around the area of Turbine 2, in which a large number of shallow depressions were recorded during the walkover survey (sites 8.1 – 8.13), revealed no evidence of any earlier mining activities once the overlying layers of peat were removed (Fig. 7).

3.2 Protective Fencing

Protective fencing was erected around those archaeological features identified by the walkover survey that were deemed to be close to the development but were unlikely to be directly impacted upon (Fig. 8).

The majority of these were the boundary stones located on the eastern edge of the planning boundary. These were partially fenced by an existing fence line and in most cases limited additional fencing was required to highlight these areas (Figs. 9 and 10).

4. DISCUSSION

No evidence of Mesolithic activity was recorded during the watching briefs carried out across the development.

The site contained very few remains that could be associated with the former Clough Head Brickworks building that previously stood to the northern end of the site. No surviving structural remains were noted during the ground works in this area, and it is likely that any structural remains of the building were removed during later works in the area.

The site of the Limer's Gate Tramway was investigated, but no surviving remains of the structure remained, bar the banking that formed the original trackway which was in use as an access road for local farms.

The watching brief undertaken at various locations across the development identified no archaeological sites or find spot in addition to those already identified during the topographic surveys (Appendix 2). The adit located adjacent to Site 16 was the only feature encountered during the watching brief that clearly related to the 19th to 20th century mining activity in the local area. The collapsed vents and adits identified by the Environmental Statement however, indicated large-scale mining activity and although there is no direct evidence of the colliery building, the remains of the tramway and the mine shafts are clear indications of its former existence.

5. CONCLUSION

No archaeological features or artefacts not associated with mine workings were encountered during the course of the archaeological watching brief and it is likely that the extensive and destructive remains of the mine workings have erased any evidence on site of earlier activity of any age. Where deposits of blanket peat are still extant, however, there is the potential for intact archaeological deposits.

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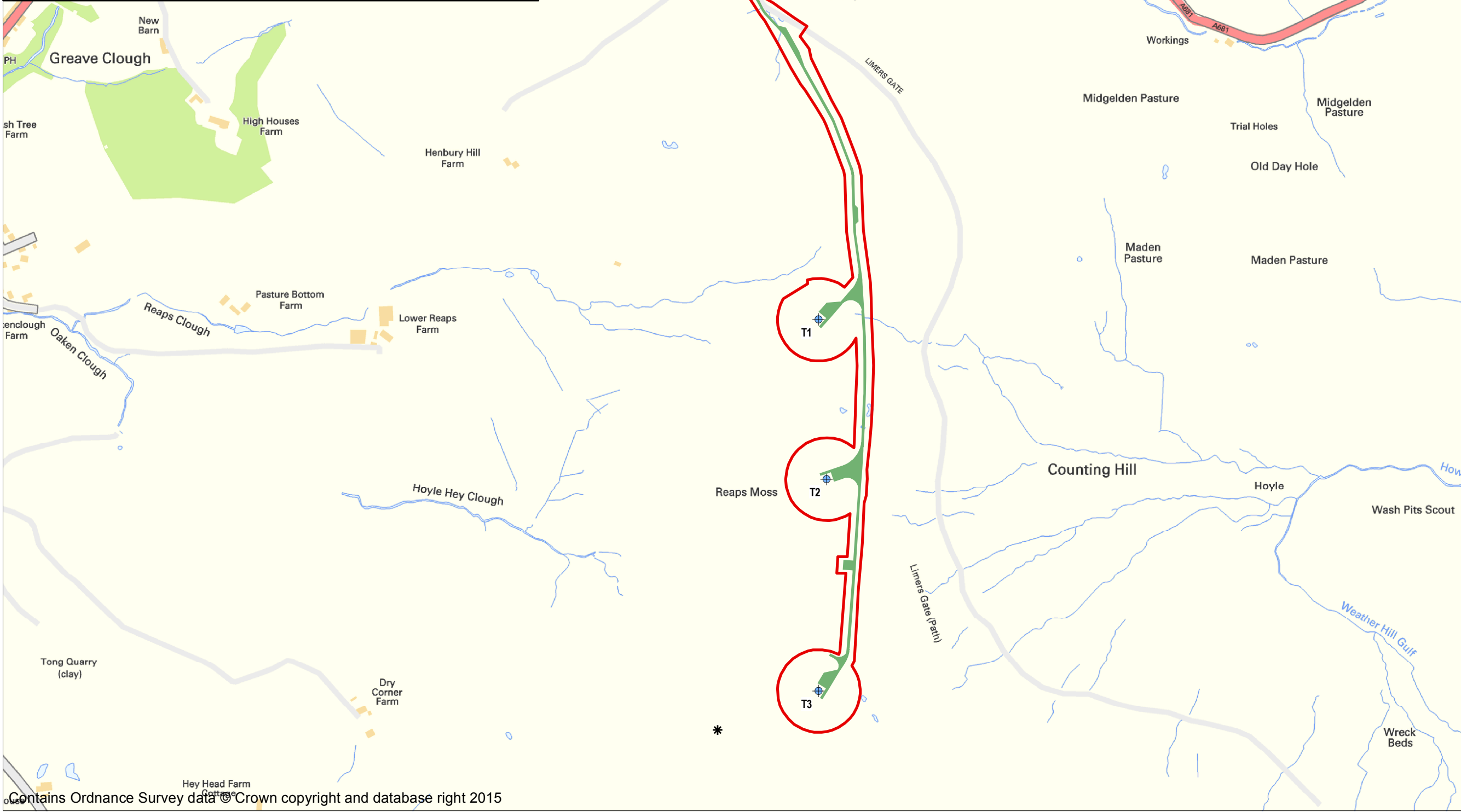
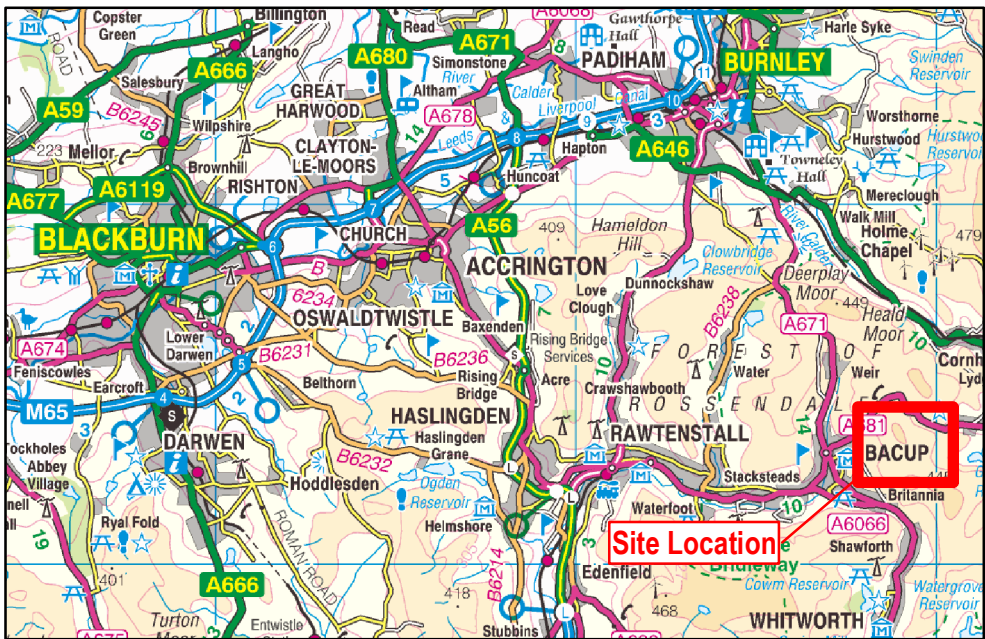
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Figures 1-10



Key:

- Planning Boundary
- Turbine Location
- Met Mast
- Access Track
- Construction Compound
- Substation

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Fig. No:	1	Report No:	Y19715
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Title:	Location Map
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Project:	Reap Moss Wind Farm, Rossendale, Lancashire
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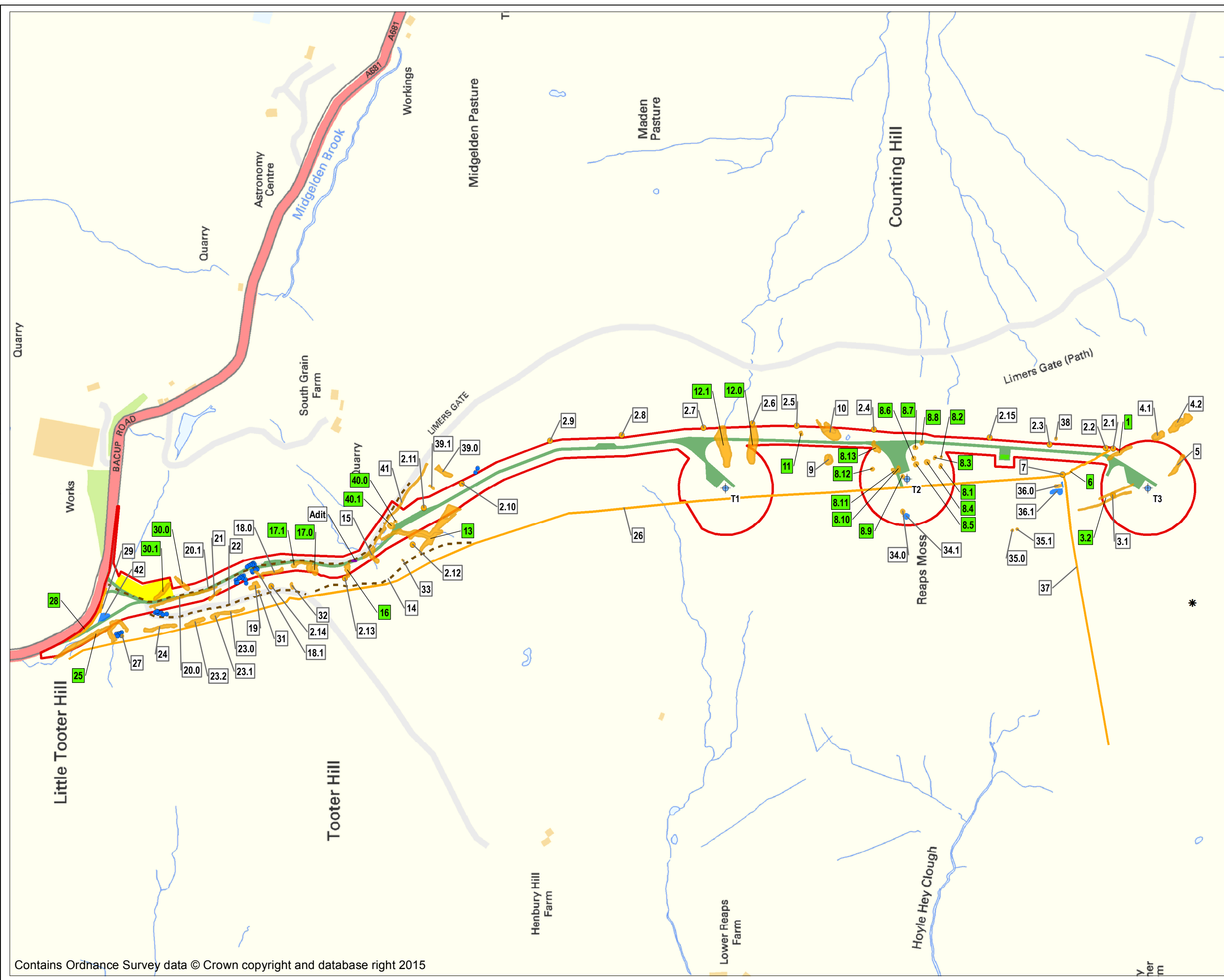
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Key:

- Planning Boundary
- Turbine Location
- Met Mast
- Access Track
- Construction Compound
- Substation
- Cultural Heritage Site (point)
- Cultural Heritage Site (linear)
- Cultural Heritage Site (area)
- Trackway
- Spoil Heap
- Adit
- Watching Brief Area

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Fig. No:	2	Report No:	Y197/15
Title: Watching Brief Areas			
Project: Reap Moss Wind Farm, Rossendale, Lancashire			
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Fig. 3 East facing section of adit in access road



Fig. 4 East facing section of collapsed adit



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Fig. 5 East facing shot of Site 12, backfilled



Fig. 6 Excavation of Site 11



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Fig. 7 Topsoil strip of Turbine 2



Fig. 8 Fencing at Site 16



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Fig. 9 Fenced boundary stone, Site 2.1



Fig. 10 Fenced boundary stone, Site 2.3



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Appendix 1: Written Scheme of Investigation

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**Reaps Moss Wind Farm
Archaeological Works**

Written Scheme of Investigation

Initial Draft for Comment

Author	Martin Lightfoot BA MA MIfA
Date issued	March 2013
Version	1.0 Draft
Planning Applications	2007/0125, 2011/0320 and 2012/0165 (Rossendale)
	2007/00351/NMA, 12/00229/WDF and APP/B2355/A/08/2067355 (Calderdale)
Grid Ref.	Turbine 1: 389300 423159 Turbine 2: 389315 422870 Turbine 3: 389300 422486

12 June 2013

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Figure 1: Planning Application Boundary and Proposed Layout

1. INTRODUCTION

A programme of archaeological works are required as a condition of planning prior to the construction of a wind farm at Reaps Moss. This written scheme of investigation (WSI) deals with the mitigation of the effects of the development on archaeological remains. All work will be undertaken in accordance with relevant standards and guidance; method statements for the work appear below.

2. PROJECT BACKGROUND

2.1 Planning Background

The development scheme is for 3 turbines located in Rossendale (Lancashire) with an access track located mainly in Calderdale (West Yorkshire). Other associated infrastructure include; crane hard standing, an anemometry mast and permanent switchgear/control substation. Access is from the A681 Bacup Road.

Planning permission 12/002299/WDF (Calderdale) was granted on 13 November 2012, subject to planning conditions which included archaeology (Condition 11). Planning permission 2012/0165 (Rossendale) was granted on 15 May 2012, subject to planning conditions which included archaeology (Condition 16). The wording for both archaeological conditions was as follows.

‘No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the local planning authority. -In the event of any previously unidentified or disclosed archaeological remains being found during the course of the development, any works that may affect those said remains shall cease until an archaeological recording/preserving programme has been approved in writing with the local planning authority. The development shall then only proceed in accordance with the details of that approved recording/preserving programme.’

The development scheme involves planning conditions from two councils with the involvement of two curatorial authorities; Lancashire and County Archaeological Advisory Service (LCAS) and West Yorkshire Archaeological Advisory Service (WYAAS). CFA Archaeology approached LCAS to lead on the provision of an archaeological brief for the development area in both authorities. The brief outlined a required programme of archaeological works. This written scheme of investigation is a response to the brief which seeks to satisfy the terms of the planning condition and the National Planning Policy Framework (NPPF).

Relevant paragraphs of the NPPF are:

128: ‘In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to

understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.'

and;

141: 'Local planning authorities should make information about the significance of the historic environment gathered as part of plan making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible.'

2.2 Site Description

The proposed wind farm development site lies within the Metropolitan Boroughs of Rossendale and Calderdale, 2km east of Bacup (Fig. 1), on upland hills with areas of boggy peat moorland. The site is generally hilly and between 400 and 425m above the Ordnance Datum (AOD), with a high point on the north slope of Hogs head Law Hill in the south 435m AOD. Access is off the A681 Road in the north.

2.3 Geology and Soils

The solid geology of the site consists of 'Darwen Flags', carboniferous sedimentary sandstone, while the superficial geology consists of peat and 'organic accumulations (BGS 2013).

The soils covering the development area comprise predominantly soils of the Wilcocks 1 Association described as slowly permeable seasonally waterlogged fine loamy upland soils with a peaty soil horizon (SSEW 1983, 712c) and Rivington 2 Association described as 'well drained, coarse loamy soils with slight seasonal water logging' (SSEW 1983, 541g).

The land use is generally agricultural grazing common land. Parts of the area are typified by high quality peat bog habitat, whilst other areas are degraded peat bog habitats which have been improved for grazing. Results of a peat probing survey indicate thicknesses of over 1.5m in some areas (DULAS 2012).

2.4 Archaeological and Historical Background

The archaeological and historical background of the site and the immediate surrounding area may be found in the Environmental Statement (Dulas 2006 and 2012) and the brief.

2.5 Archaeological Potential

As identified in the brief the archaeological potential on the site consists of:

- possible prehistoric remains within or beneath blanket peat;
- a series of historical boundary markers on the Todmorden-Bacup boundary;
- Quarrying remains;
- remains of a 19th to 20th century brickworks, tramway and associated drainage, and;
- a colliery site, associated in later years with the brickworks.

2.5 Previous Archaeological Work

The cultural heritage chapter of the environmental statement consisted of desk-based research and a walkover survey (Dulas 2006 and 2012).

3. OBJECTIVES

In accordance with the brief, the aims of the project are to establish and implement a methodology for detecting and recording archaeological remains revealed likely to be impacted upon by the development and to establish and implement a methodology for the protection of remains adjacent to but not immediately threatened by the project.

Research objectives will be informed by the relevant research agendas and frameworks (e.g. EH 2010, Gomersall 2005, Roskams and Whyman 2007 and Newman and McNeil 2007a and 2007b.)

4. METHODS STATEMENT

The following section describes the proposed works and the methods which will satisfy the brief, the terms of the planning condition (Section 2.1), and current planning guidance (NPPF). It is proposed that works follow a programme of onsite recording; the fencing and protection of archaeological remains outside the development area but which may be at risk of disturbance; a strip and record and watching brief during construction and a programme of post-excavation and reporting which will bring together the elements in a single report.

4.1 Site walkover, topographic and photographic survey (Stage 1)

The site will be systematically walked over in order to confirm the location of known sites and identify further potential sites. The locations of known sites will be loaded on to an industry-standard GPS and their location will be confirmed and refined if possible. The locations of discovered archaeological remains which may be directly affected by the proposed construction programme would be recorded.

Sites which are outside, but close to the proposed development would similarly recorded and recommendations would be made to fence off those sites for the duration of the construction programme (see below). A figure will be produced which

will identify sites which will be the subject of further recording in the form of topographic survey and sites to be fenced off as protection during construction.

If the in situ preservation of archaeological deposits is to be considered as part of any mitigation, engineering advice must be provided regarding the feasibility of such measures.

Topographic/Photographic Surveys

The location of known boundary markers will be confirmed by GPS and recorded by means of photographs, sketches and CFA standard recording sheets. Any formal inscription or other engraving (but not modern graffiti) will be transcribed as part of the above recording and each completed record incorporated into the main site record. Any boundary markers discovered as a result of the walkover will be recorded in the same way.

A photographic and topographical survey of the standing remains, earthworks and structures at Reaps Moss Tramway, associated drainage and the sites of the Clough Head Brickworks and South Graine/Clough Head Colliery will be undertaken prior to construction commencing on site. Total Station EDM or differential GPS will be used to carry out the surveying the results of which will be tied into the Ordnance Survey grid. Representative photographs will be taken in 35mm digital format of each site surveyed. Each photograph will feature an appropriate scale.

A photographic record will be made of the former quarry site if it is shown by the walkover survey that it will be affected by the development.

Should sections of historic field boundary walls (i.e. those shown on Ordnance Survey 1st-edition mapping) require removal they will be inspected for historic features and recorded by means of a written descriptions, measurements and photographs prior to their removal.

4.2 Fencing of 'at risk; archaeological remains (Stage 2)

Following the survey exercise (Stage 1) if standing features are judged to be of sufficient importance to justify their preservation in situ they will be protected with a suitable buffer by robust and prominent fencing for the duration of the construction work. Additional signs will be displayed indicating that the fencing is in place to protect an archaeological site. The nature of fencing will depend on the proximity of the feature to working areas and the risk of damage; it may consist of high-visibility netlon fencing or post and rail fences as appropriate.

Should the removal of a boundary stone be required by construction then in accordance with the brief:

‘... it shall be marked or labelled in such a way as to securely identify it without causing damage before being carefully lifted and taken to a secure storage area. Any stone removed in this way shall be returned at the completion of the works to their original position or to a position as close as possible to this but still on the boundary line. Where the marker is an

earthwork mound or cairn, the marker should have its main dimensions and shape recorded before it is dismantled or excavated away – these will not need recreation at the end of the project. Where a marker is moved or dismantled its site should be quickly examined for any dating evidence or other objects (e.g. coins) placed in or under it, but formal excavation is not required.’

Written instructions and toolbox talks will be provided by the site archaeologist to inform all construction staff of the presence of the fenced off monuments and that the fencing must not be moved without the prior knowledge of the site archaeologist. The condition of archaeological sites will be photographically recorded prior to and subsequent to construction.

4.3 Strip and Record and Watching Brief (Stage 3)

All groundworks undertaken in association with the development in areas agreed between the client and LCAS will be subject to a programme of ‘strip and record’ in line with the methodology outlined below.

Soil Stripping

Topsoil will be removed mechanically by a machine using a wide toothless ditching bucket, under continuous archaeological supervision no deeper than the formation level and down to the first significant archaeological horizon in successive level spits. No machinery will track over areas that have previously been stripped. The full nature and extent of archaeological features and deposits will be exposed within the working area. Areas containing archaeological features and deposits will be recorded on a pre-excavation plan within the Strip and Record area.

No buried archaeological remains are known within the application area, though there remains the potential for important remains to exist, particularly in the form of discrete ‘flint scatters’ dating to the Mesolithic period. Remains relating to this (an possibly other periods) may need to be investigated under a scheme for ‘further archaeological excavation’ to be agreed with LCAS. Any new scheme will be tailored to the remains encountered and the extent of disturbance required by the development project; it shall be appropriate and proportional to the quantity, importance and complexity of the archaeological remains exposed.

Where such a ‘strip and record’ exercise is impracticable, then formal archaeological supervision (an archaeological ‘watching brief’) shall be undertaken by a suitably qualified archaeologist during the ground disturbance phases of the development, though should significant, previously unexpected archaeological remains be encountered then a further scheme for excavation may have to be developed (as above).

Recording and Excavation

There are particular areas affected by construction which contain features of known interest. These are namely the colliery and brickworks and the Reaps Moss Tramway. The tramway 25% (by length) sample excavated, including both the terminus at the

brickworks and the area around the Clough Head Colliery where any junction arrangements or routes into the mine will be investigated.

All features exposed by the mechanical strip will be fully mapped and a full site plan prepared before decisions regarding the appropriate level of excavation are made. The aim of the strip and record exercise is to record all and any archaeological features present on the site and to undertake sufficient intrusive excavation to enable the date, character, form and stratigraphic relationships of archaeological features to be understood. All archaeological features and deposits will be excavated by hand.

All excavation and on-site recording will be carried out according to standard CFA procedures, principally by drawing, by photography and by completing standard CFA record forms. Photographs will be taken of all archaeological contexts and a register of all photographs will be kept.

In general sampling will be targeted upon potentially significant archaeological deposits or features and should predominantly examine sealed contexts. Sample size will take into account the frequency with which material appropriate for sampling will occur but bulk samples of dry deposits will normally be 20-40 litres and waterlogged samples will be 10-12 litres. Where deposits with a high palaeoenvironmental potential are identified, advice will be sought from the English Heritage Regional Science Advisor, CFA's palaeoenvironmental specialist and from the LCAS on the need to extract, process and further examine environmental samples. Bulk sampling may also be used to collect charcoal for C14 dating where appropriate.

All artefacts and animal bones will be recorded, collected and labelled according to their individual stratigraphic context. Artefacts of clearly modern date will be recorded but not retained for off-site assessment. Finds from each archaeological context will be allocated individual finds bag and waterproof labels will be used for each bag to identify unique individual contexts. In the event of the discovery of human remains, including cremation burials, these will be left *in situ* and not be further examined until LCAS and the client has been contacted and an appropriate licence has been issued by the Ministry of Justice.

A contingency allowance shall be established so that where deposits are encountered that cannot be characterised by rapid and simple works, then a scheme for further archaeological excavation and recording can be designed and agreed with LCAS in order to establish in detail the extent, date, character and significance of the archaeological remains. This scheme is to be tailored to the remains encountered and the extent of disturbance required by the development project; it shall be appropriate and proportional to the quantity, importance and complexity of the archaeology exposed.

4.4 Post-excavation and Reporting (Stage 4)

Following the completion of fieldwork the need for and scope of any formal post excavation assessment report shall be assessed and agreed with LCAS.

The report will consider the wider historic and archaeological context of the area and relevant research frameworks or Strategies and will be submitted to the Lancashire and West Yorkshire Historic Environment Records and made publicly accessible.

A full archive shall be compiled and deposited, along with any artefacts recovered, in a relevant museum or archive collection agreed in advance with the curator not more than twelve months after the completion of the fieldwork.

In the event that the results of the investigation are of sufficient significance to merit full publication, CFA would proceed to this stage subject to the approval of the client and in consultation with LCAS.

All finds and samples will be processed and assessed for significance. A summary of the results of the archaeological works will be submitted for inclusion in OASIS.

The report will include the following sections

- Non-technical summary
- Introductory statement
- Aims and purpose of the project
- Methodology
- Detailed account of the work and its results.
- Significance of archaeological heritage assets and impact upon significance of the development
- Conclusion, including a confidence statement
- Supporting drawn site illustrations at appropriate scales (site plan, evaluation trench locations, plans of deposits and features, site sections [to include deposit relationships to ground surface], feature plans and sections) all CAD sections and plans must include a drawn scale
- Selected site photographs
- Drawn finds illustrations – of representative and/ or key finds to support the interpretation of date/ site function – at appropriate scales
- Supporting data – including a basic quantification of artefacts, ecofacts and structural data tabulated and full specialist reports
- Index to archive and details of archive location
- References

4.5 Standards and Guidance

CFA Archaeology is a registered organisation (RO) with the Institute for Archaeologists (IfA). All work will be conducted in accordance with relevant IfA Standards and Guidance documents (IfA 1995, 2001), English Heritage guidance (EH 2005, 2006, 2007, 2008a, 2008b and 2011) and CFA's standard methodology.

4.6 Monitoring

The archaeological work will be open to monitoring by LCAS, who will be informed (at least 2 weeks) in advance of the works taking place and updated as to progress and any significant archaeological discoveries. Important or unexpected discoveries will be communicated to the client and to LCAS. Monitoring visits will be arranged to

allow inspection of the site and any archaeological records produced. Contact numbers for the site will be forwarded in advance of the work starting.

4.7 Archiving

The project archive, comprising all CFA record sheets, finds, plans and reports, will be ordered in accordance with current guidelines (Brown 2011) and deposited at a suitable repository.

4.8 Health and Safety

CFA is a Constructionline, Achilles and CHAS registered company. All CFA staff have been inducted into CFA's Health and Safety Policy and all site staff have current CSCS cards (Archaeological Technician). All work for the project will be subject to Risk Assessment procedures.

4.9 Outreach

Suitable avenues for outreach and the publicity of results will be explored, subject to the agreement of the client. Such outreach may take the form of a short summary in an appropriate archaeological journal, popular publication or talks to local groups and societies.

5. RESOURCES

5.1 Statement of Experience

CFA Archaeology Ltd (CFA) is a professional cultural heritage consulting and contracting organisation operating throughout the UK. The company was formed in 2000 with the spinning-out from the University of Edinburgh of the *Centre for Field Archaeology*, which had been trading since 1990. Many of CFA's senior staff have been with the company since its earliest days.

CFA is an Institute for Archaeologists (IfA) Registered Organisation (RO). This status is a form of quality assurance conferred by the IfA and is a sign of our commitment to provide the highest standard of professional service.

CFA's main archaeological contracting services include watching briefs, field evaluations, set-piece excavations and standing building recording. We also carry out desk-based assessments, geophysical survey and topographic earthwork surveys. CFA carries out a large number of archaeological excavations a year, ranging from small single trenches to large-scale open area excavations; including urban redevelopment schemes, rural green field developments and major infrastructure projects such as roads and pipelines.

CFA also provides post-excavation services, in support of our own archaeological services and as specialist sub-contractors to others. CFA has its own in-house post-excavation facilities that include on-site storage facilities for artefacts and samples, wet-sieving facilities and a fully equipped laboratory. CFA provides in-house services

including assessment and analysis of artefacts; palaeobotanical and biological material including human remains; and, palaeoenvironmental reconstruction. CFA also has access to a number of other acknowledged specialists for other aspects of post excavation analysis not currently carried out in-house, such as metalworking residues, soil micro-morphology and geochemical analyses.

CFA's publication record ranges from short notes in journals to papers in refereed national and specialist journals and includes monographs and specialist reference books. CFA also provides a range of illustrative and design services including: AutoCad and GIS mapping, 3D archaeological reconstruction, photographic rectification, and exhibition/display materials and book cover design.

5.2 Key Staff

The day to day management of the project would be the responsibility of Martin Lightfoot, who would ensure that the project was completed in accordance with recognised standards and guidance, the brief and this WSI. CVs for staff may be supplied on request.

Project Management: Martin Lightfoot BA MA MifA (Regional Manager)

Graphics and GIS: Leeanne Whitlelaw BA FSA Scot MifA (Graphics Manager)

Post-Excavation: Melanie Johnson MA PhD FSA Scot MifA

Palaeoenvironmental Specialist: Mike Cressey HND BA MSc PhD MifA

Academic Advice: Ian Ralston MA PhD MIFA FSA FSA Scot (Non-Executive Director and Chair)

5.3 List of Specialists

Geophysics	Chris Gaffney (Bradford University)
Conservation Laboratory	The Scottish Conservation Studio (Will Murray BSc PGDip ACR)
Palaeoenvironmental Scientist	Mike Cressey HND BA MSc PhD MifA (CFA Archaeology)
Archaeobotany	Mhairi Hastie BSc MSc AIfA (CFA Archaeology)
Archaeozoology	Sean Bell BA MSc
Soil Micromorphology	Clare Ellis BA PhD MifA
Lithics	Paul Preston BSc M.Phil D.Phil Martin Lightfoot BA MA MifA
Mollusca and fish remains	Ruby Ceron-Carrasco MA PhD (Freelance)
Medieval and post-medieval pottery	Christopher Cumberpatch BA PhD (Freelance)
Prehistoric pottery	Melanie Johnson MA PhD FSA Scot MifA (CFA Archaeology) Elaine Morris BSc PhD FSA
Palynology	Robert McCulloch BA PhD (University of Stirling)
Industrial and domestic waste analysis, archaeological materials and residue analysis	David Starley BSc PhD

The above list is not exhaustive: should unusual or locally specific archaeological materials be discovered, then appropriate specialists will be sought on the advice of the Regional English Heritage Scientific Advisor. CVs and examples of work for all specialists may be supplied on request.

5.4 Quality Assurance

CFA works to the highest achievable standards across the range of its archaeological activities and employs best archaeological practices. CFA is a Registered Organisation (RO) of the Institute for Archaeologists (IfA) and operates according to the appropriate codes and standards.

A quality system has been produced to fulfil the requirements of best archaeological practice. This system comprises the Quality Policy, Quality Manual, project specific Quality Plans, and a series of Standard Operating Procedures, copies all of which may be supplied on request.

CFA staff are instructed in the requirements of the quality system. All staff working on projects are inducted in CFA working practices, including quality responsibilities. Every member of staff is made aware of their individual responsibilities within the project and within the Quality Plan. CFA ensures that all staff are qualified, experienced archaeologists, and that training is conducted in appropriate areas of CFA work procedures and in developing uses of new technologies. All staff are encouraged to apply for membership of the IfA, the recognised professional body for field archaeology, at an appropriate level and are encouraged and assisted through an appraisal system to maintain continuing professional development documentation.

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Figure 1

Appendix 2:
Report on Photographic and Topographic Survey

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This document has been prepared in accordance with CFA Archaeology Ltd standard procedures.

**Reaps Moss Wind Farm,
Rossendale, Lancashire**

Archaeological Works

Report No. Y130/13

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Fig. 2: Identified Cultural Sites

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Plate 10: North facing profile of boundary stone (2.13) and associated metal cross

Summary

CFA Archaeology undertook a walkover and topographic survey at Reaps Moss Wind Farm, Rossendale, Lancashire. The purpose of the work was to gather information regarding the extent, condition and character of any surviving archaeological remains. Archaeological remains recorded included shafts, vents and trial holes, collapsed galleries, and other earthworks relating to early mining activity. The location of the former Clough Head Brickworks and the Limers Gate Tramway were also recorded on the site.

1. INTRODUCTION

1.1 General

This report presents the results of archaeological works undertaken by CFA Archaeology Ltd (CFA) during December 2013 at Reaps Moss Wind Farm, Rossendale, Lancashire (NGR: SD 389299, 423156 Centred) (Fig. 1). The work was commissioned by Wind Prospect Ltd in advance of the construction of 3 wind turbines with associated crane pads, access roads, and other associated infrastructure.

This report follows the details in the WSI as prepared by CFA in response to a specification produced by Peter Iles of Lancashire and County Archaeological Advisory Service (LCAS) (Appendix 3) in order to comply with planning conditions in advance of development (Ref. 12/002299/WDF (Calderdale), and 2012/0165 (Rossendale)).

1.2 Site Location and Description

The proposed development area is located on land across the Reaps Moss ridgeline, which forms the boundary between Rossendale and Calderdale, 2km to the east of the village of Bacup in the Borough of Rossendale, and consists of rolling hills with areas of quarrying and mining, and boggy pastureland.

Levels across the upland moor area vary between 400 and 425m above the ordnance datum (AOD), with a high point on the north slope of Hogs Head Law Hill in the south at 435m AOD. Access is from the A681 road to the north of the site.

The site is currently common land and used for grazing with parts of the site typified by high quality peat bog habitat, while other areas are degraded peat bog habitats that have been improved for grazing. Results of a peat probing survey indicate thicknesses of over 1.5m in some areas of the site (Dulas 2012).

The underlying solid geology of the site consists of 'Darwin Flags', carboniferous sedimentary sandstone, while the superficial geology consists of peat and 'organic accumulations' (BGS 2013).

The soils covering the development area comprise predominantly soils of the Wilcocks 1 Association described as slowly permeable seasonally waterlogged fine loamy upland soils with a peaty soil horizon (SSEW 1983, 712c) and Rivington 2 Association described as 'well drained, coarse loamy soils with slight seasonal water logging' (SSEW 1983, 541g).

1.3 Archaeological and Historical Background

The following is a brief summary of the archaeological and historical background of the site and the immediate surrounding areas: more detailed background information may be found in the Environmental Statement (Dulas 2006 and 2012) and the brief. Sites referred to are those from the Environmental Statement.

Evidence for earlier prehistoric, Romano-British or medieval settlement is scarce in this location although artefacts of Mesolithic, Early Neolithic to Early Bronze Age and Bronze Age date have been found within the vicinity of the application site at Tooter Hill (Sites 3 and 4) and Todmorden Moor (Site 84). Although no prehistoric remains have been identified on the application site itself it is possible that this reflects the paucity of previous archaeological research within the area and there is a possibility that further evidence for Mesolithic occupation may be sealed beneath blanket peat.

No Romano-British or medieval remains or artefacts are known within 500m of the application site.

The site's eastern boundary mostly follows the historic border between Bacup and Todmorden. Whilst these settlements both originally lay within Lancashire, 19th century boundary changes placed Todmorden in Yorkshire. The boundary markers thus define the modern boundary between Lancashire and West Yorkshire. At its northern end the proposed site entrance to the application site lies wholly within West Yorkshire. A line of sandstone boundary markers (Sites 2, 10, 11, 38, 39, 45, 46, 47, 48, 50, 53, 55, 57, 58, 59, 101) indicating the line of the border survive on the eastern edge of the site and are recorded on the 1849 1st Edition Ordnance Survey.

The Southern Pennines around Rossendale were the focus of a thriving mining and quarrying industry, which operated from the late 18th century until the First World War. The remains of quarries, earthworks and sinkholes deriving from this industry are scattered across the landscape. The undesignated remains of a brickworks (Site 81), a tramway (Site 82), its associated drainage (Site 79), South Graine Colliery (Site 41) and 3 quarries (Sites 15, 77 and 78) lie within the application site.

1.4 Previous Archaeological Work

The cultural heritage chapter of the environmental statement consisted of desk-based research and a walkover survey (Dulas 2006 and 2012).

1.5 Aims

In accordance with the brief, the aims of the project were to establish and implement a methodology for detecting and recording archaeological remains revealed likely to be impacted upon by the development and to establish and implement a methodology for the protection of remains adjacent to but not immediately threatened by the project.

Research objectives were informed by the relevant research agendas and frameworks (e.g. EH 2010, Gomersall 2005, Roskams and Whyman 2007 and Newman and McNeil 2007a and 2007b).

Specific aims were to:

- establish whether there are any archaeological deposits at the site and to ascertain the extent, depth below ground surface, depth of deposit, character, significance and condition of such deposits;
- place any remains exposed as a result of the work in their wider setting and contribute to our understanding of the history of the region;

2. METHODS

2.1 Walkover Survey

The site was systematically walked over in order to confirm the location of known sites and identify further potential sites. The locations of known sites were loaded on to an industry-standard GPS and their location was confirmed and refined if possible. The locations of discovered archaeological remains which may be directly affected by the proposed construction programme were recorded and further evaluation or mitigation was then recommended.

Any additional sites or monuments identified during the walkover survey were subject to a rapid assessment and interpretation and located with reference to the Ordnance Survey National Grid.

Sites which were outside, but close to the proposed development were similarly recorded and recommendations were made to fence off those sites for the duration construction.

2.2 Topographic and Photographic Survey

Any newly recorded archaeological features or groups of features identified during the walkover survey, and wholly or partially affected by the development were subject to a topographic survey and/or a photographic survey prior to development commencing. These features included all activity related to former quarrying and mining in the area; spoil mounds, possible shafts, vents and adits, quarry pits and structures, as well as other earthworks and archaeological features such as possible cairns and standing stones.

The topographic survey was undertaken using a Trimble GeoXR GPS, with all data uploaded and referenced to the Ordnance Survey National Grid within a geographical information system (GIS). The photographic survey was undertaken using a Nikon digital camera capable of high resolution images.

2.3 Test Pits and Trenches

A programme of test pitting and test trenching was monitored by CFA archaeology. The full stratigraphy of each of the trial pits and test trenches was recorded and relevant data was noted. In particular the depth of peat in each of the trial pits and test trenches was recorded where present.

2.4 Standards and Guidance

CFA Archaeology is a registered organisation (RO) with the Institute for Archaeologists (IfA). All work was conducted in accordance with relevant IfA Standards and Guidance documents (IfA 1994, 1996 and 2001), English Heritage guidance (EH, 2005, 2006, 2008a and 2008b), and CFA's standard methodology.

2.5 Archiving

The project archive, comprising all CFA record sheets, finds, plans, reports, and photographs will be ordered according to LCAS instructions and to nationally recognised standards (IfA 2001 and Brown 2011) and will be deposited at a suitable repository.

The archive currently consists of:

Digital Photographs and Survey and other files	1 x CD
Notes and Research materials	1 x A4 folder
Topographic and Survey Plans	
All non-confidential correspondence	
Report x1	-

3. RESULTS

3.1 Walkover Survey

In addition to confirming the presence of sites previously recorded, the walkover survey identified a number of new sites of potential archaeological interest. The full results are listed in Appendix 1. Figure 2 shows the location of these sites in relation to the planning application boundary.

The northern end of the proposed site contained a number of features related to early mining activity. In addition to the already recorded Limers Gate tramway and its associated drainage ditch (numbered 20.1 and 20.2 respectively, Plate 1), and the remains of the former brickworks (numbered 29, Plate 2), there were a number of other features likely related to mining activity in this area.

A large north-south orientated likely adit/passageway (numbered 23.0, 23.2 (Plate 3), 24.1, and 25.0), now collapsed, was noted to the west of the planning boundary along with possible vents/shafts associated with this feature (23.1, 27). Towards the eastern edge of the planning boundary were two further adits/passageways (30.0 and 30.1) the latter featuring a shaft/vent at its south-western end. To the south of these features was another north-south orientated adit/passageway (17, 18.0, and 18.1), with the possible foundations of a stone built structure (19, Plate 4) also recorded at the northern end of these features.

Towards the centre of the site evidence for mining activity continued with small adits to the west of the Limers Gate tramway visible (15, 16, and 17), as well as two potential small quarrying pits (40.0 and 40.1). A large mining scar (13), now a series of steep sided ditches, was also recorded in this area.

The areas of the proposed turbine bases also contained some evidence for early mining activity. Turbine base 1 contained two possible east-west orientated adits or collapsed passageways (12.0 and 12.1), while to the south of these features was a large shaft (9, Plate 5) and a possible adit on a north-east to south-west orientation (10).

The location for turbine base 2 contained a number of depressions of varying sizes which may be linked to local mining activities (8.0-8.13), while to the west of the proposed base a brick lined shaft (34.0) and its associated spoil mound (34.1) were recorded.

Towards the southern end of the proposed planning boundary, and around the location of turbine base 3, were other features relating to mining activity. The location of a large probable adit (numbered 1 and 4, Plate 6) was recorded, with this feature on a north-west to south-east alignment and containing evidence of flooded shafts/vents towards the north end of feature 4. Also within the area of the proposed turbine base was a raised earthwork bank (3.1, Plate 7) on a north-west to south-east orientation with two associated drainage ditches (3.2) on a similar alignment either side of the feature. To the north of these was a likely shaft/vent (36.0) along with a number of associated spoil heaps (36.1).

Also identified during the walkover survey were a number of boundary stones (2.1-2.15, Plates 8 and 9) that marked the local borders between Rossendale and Calderdale in this area.

3.2 Topographic and Photographic Survey

The results of the topographic survey can be seen in figures 3.1-3.3. The proposed wind farm layout shows where construction may impact on identified archaeological features. All potential sites of archaeological interest were photographed and a selection of representative shots form plates 1-9.

3.3 Trial Pits and Trenches

The geotechnical trial pits were monitored during excavation and any presence and associated depths of peat were recorded. Three trenches were also excavated in order to determine the size and depth of a known adit (site 10) within the planning boundary area (Fig. 4). A table showing the depths of peat for the individual trial pits and trenches is below.

Test Pit	Peat Depth (m)	Test Pit	Peat Depth (m)	Test Pit	Peat Depth (m)
1	0	11	1.45	21	0.1-0.3
2	0	12	2.15	22	0.9
3	0	13	2.3	23	0.4
4	0	14	2	24	0.35
5	0.1	15	1.45	25	0.35
6	0.3	16	0.5	Trench A	0.1 - 1.0
7	0	17	1	Trench C	0.1-1.0
8	0.5	18	1.35	Trench E	0.1 - 1.0
9	0.35	19	1		
10	0.25	20	0.2-0.6		

Table 3.3.1- Peat depths by trial pit/trench

The results from trial pits 11-19 show that the survival and depth of peat across the site is greatest around the areas of turbine bases 1 and 2. Trial pits 11-15 showed a peat depth of

1.45-2.3m around the proposed turbine bases, with this generally decreasing to the south with depths of 0.1-0.35m recorded in trial pits 20-25.

The trial pits excavated at the northern end of the site area, and particularly those areas closest to the existing road, showed little survival of peat deposits.

The three trial trenches excavated were primarily concerned with confirming the presence and extent of possible adits in the area (numbered as site 10, fig?). However after excavation trenches A, C, and E were all shown to contain peat deposits with a maximum depth of up to 1m.

No finds of flint or any other similar possible Mesolithic materials were recovered during the excavations of the trial pits and trenches.

4. RECOMMENDATIONS FOR MITIGATION

The path of the proposed wind farm infrastructure runs through or disturbs a number of archaeological sites. The full list of proposed mitigation strategies for the individual sites can be found in the gazetteer in Appendix 1 and a brief description of the approach appears below.

4.1 Excavation Prior to Development

No features were identified during the walkover and topographic survey that require pre-development excavation as a result of direct impact from the construction of the wind farm and its associated infrastructure.

4.2 Watching Brief during Development

A large amount of the early mining and quarrying remains to the northern end of the site are likely to be disturbed during the construction of the wind farm infrastructure (Fig. 3.1). Affected adits, shafts and vents will be subject to archaeological monitoring during construction. Similar mining/quarrying remains are located towards the south of the site, and in particular around the area of turbine base 3 (Fig. 3.3), and those features affected by groundworks here will also be subject to archaeological monitoring during construction. A watching brief and strip and record will also be undertaken on areas of the site in accordance with the WSI for Prehistoric remains and its addendum.

A potential small stone structure (Fig. 3.1, 19) lies close to the planning boundary and as such any groundworks directly affecting this area should be subject to archaeological monitoring in order to record features relating to the building.

The area of the former Clough Head Brickworks to the north of the site (Fig. 3.1, 29 and 42) should also be monitored during any potential groundwork associated with the installation of the proposed construction compound area in this location, in order to record any potential surviving features associated with the former buildings. Any groundwork undertaken on the location of the former Limers Gate Tramway (Fig. 3.1, 20.1) within the planning boundary, and particularly the junction of the tramway and the location of the former Clough Head Brickworks should also be monitored.

4.3 Protective Fencing

Archaeological features close to the proposed development, but not directly impacted upon would be protected by robust and prominent fencing for the duration of the construction work. Additional signs will be displayed indicating that the fencing was in place to protect an archaeological site.

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Appendix 1: Gazetteer of Identified Sites and Historical Remains

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
1	Adit/Passage	Field survey	Possible collapsed adit/passageway on a north-south alignment in an area of concentrated mining activity.	389357	422532	Topographic Survey/Photographic Recording
2.1	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Currently located within collapse of stone wall (site 6) suggesting removal from original position. Stone is sub-rectangular in shape with a curved head and measures 0.5m in width by 0.65m in height. Carved into the eastern facing profile is the number '42', while below this are two capitalised letter 'B' in serif font. The reverse of the stone is blank.	389363	422541	Photographic Recording/ Protective fencing (5m buffer)
2.2	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape and measures 0.4m in width by 1.03m in height. Carved into the western facing profile of the stone is the letter 'S', while carved into the eastern facing profile is the letter 'T', both letters in serif font.	389364	422553	Photographic Recording/ Protective fencing (5m buffer)
2.3	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.65m in width by 1.05m in height. Carved into the western facing profile of the stone is the letter 'B', with a series of smaller carvings/graffiti below. These read from top to bottom 'R VOS', 'H. HAEEL?S', 'John, Mary, Tom, ??HA?', 'B. KEARNS', and 'J. HAMER SPIVS 191?'. The reverse of the stone is blank.	389369	422643	Photographic Recording/ Protective fencing (5m buffer)
2.4	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is lying flat to the ground with only one side visible. Stone is sub-rectangular in shape and measures 0.46m in width by 1.40m in height. Carved into the top of the stone is a worn and faded letter 'B' in serif font.	389393	422922	Photographic Recording/ Protective fencing (5m buffer)
2.5	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.65m in width by 0.85m in height. Carved into the western facing profile of the stone is the letter 'B' in serif font. The reverse of the stone is blank.	389399	423046	Photographic Recording/ Protective fencing (5m buffer)

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
2.6	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.6m in width by 1m in height, and is leaning to the south. Carved into the western facing profile of the stone is the letter 'B' in serif font. The reverse of the stone is blank.	389403	423116	Photographic Recording/ Protective fencing (5m buffer)
2.7	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.6m in width by 0.75m in height. Carved into the western facing profile of the stone is the letter 'B' in serif font. The reverse of the stone is blank.	389396	423194	Photographic Recording/ Protective fencing (5m buffer)
2.8	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.65m in width by 0.72m in height. Carved into the western facing profile of the stone is the letter 'B' in serif font. Above this are smaller carvings/graffiti. These read 'TH' in the top left, and 'DK' in the top right of the stone. The reverse of the stone is blank.	389384	423324	Photographic Recording/ Protective fencing (5m buffer)
2.9	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is lying flat to the ground with only one side visible. Stone is sub-rectangular in shape measures 0.5m in width by 1.1m in height. No visible carvings were recorded.	389375	423438	Photographic Recording/ Protective fencing (5m buffer)
2.10	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with a curved head and measures 0.65m in width by 1m in height. Stone is leaning towards the south. Carved into the western facing profile of the stone is the letter 'BN' in serif font, with a second letter 'B' below this. The reverse of the stone is blank.	389308	423579	Photographic Recording/ Protective fencing (5m buffer)
2.11	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is lying flat to the ground with only one side visible. Stone is sub-rectangular in shape measures 0.55m in width by 1.1m in height. No visible carvings were recorded.	389269	423639	Photographic Recording/ Protective fencing (5m buffer)

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
2.12	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape and measures 0.33m in width by 0.7m in height. Carved into the north-western facing profile of the stone is an indistinct letter 'T' in serif font. The reverse of the stone is blank.	389210	423658	Photographic Recording/ Protective fencing (5m buffer)
2.13	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape and measures 0.46m in width by 0.52m in height. Carved into the northern facing profile of the stone is the letter 'B' in serif font. The reverse of the stone is blank. To the immediate west of the stone is a metal (iron) cross with the inscriptions 'BB' and the numbers '40' depicted.	389157	423765	Photographic Recording/ Protective fencing (5m buffer)
2.14	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is sub-rectangular in shape with one corner missing/cracked and measures 0.5m in width by 0.56m in height. Carved into the western facing profile of the stone is the letter 'B' in serif font and a benchmark symbol. Carved on the eastern facing profile of the stone are the letters 'T.S' in serif font, and a very worn arrow pointing to the base of the stone.	389144	423883	Photographic Recording/ Protective fencing (5m buffer)
2.15	Boundary Stone	Field survey; maps	Boundary stone/benchmark depicted on OS maps of the area. Stone is heavily covered by moss/grass and only a small portion is visible (0.45 x 0.7m). Carved into the visible profile of the stone is the letter 'B' in serif font.	389381	422738	Photographic Recording/ Protective fencing (5m buffer)
3.1	Trackway/Bank	Field survey	North-west to south-east orientated possible raised earthwork bank in area of concentrated mining activity. Two parallel ditches either side of the feature. Possible former track/path for mining works? Bank is c.7.5m in width.	389289	422542	Topographic Survey/Photographic Recording/Watching Brief
3.2	Ditch	Field survey	Ditches associated with possible earthwork feature 3.1. Consist of shallow sides with a now water filled base. Ditches measure c.1.2m in width and are on a north-west to south-east orientation and run parallel to 3.1.	389280 389295	422551 422537	Topographic Survey/Photographic Recording/Watching Brief
4.1	Adit/Passage	Field survey	Large adit or collapsed passageway orientated roughly north-west to south-east in an area of intense mining activity. One of a series of similar features in this area.	389404	422434	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
			Consists of moderate sides with a flat base now partially filled with water and overgrown grass/scrub.			
4.2	Shaft, vent	Field survey	The remains of a shaft/vent associated with feature 4.1. Consists of a sub-circular hollow now filled with water although collapse/backfilling has occurred in the past. Measures c.11.2m in diameter.	389383	422470	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
5	Adit/Passage	Field survey	The remains of a possible adit/passageway. Consists of a shallow depression in the ground now filled with water and grass/weeds although collapse/backfilling has occurred in the past. Measures c.5.7m in width and c.40m in length and is on a north-west to south-east alignment.	389337	422439	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
6	Wall	Field survey; maps	Dry stone wall to the north of quarry feature marked as 1. Consists of rough cut, irregularly shaped pieces of stone and is in varying states of repair along the length of the feature. Wall survives to a height of 1.2m in places, and has a width of c.0.8-1.8m.	389340	422584	Topographic Survey/Photographic Recording/Watching Brief
7	Gate	Field survey; maps	Gate/public footpath within length of wall feature (numbered 6). In bad state of repair, likely been used and widened for farm machinery access. Feature is 3m in length.	389322	422622	Topographic Survey/Photographic Recording
8.1	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 7.5 x 3.5m.	389336	422816	Topographic Survey/Photographic Recording/Watching Brief
8.2	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 2.8 x 2.3m.	389350	422815	Topographic Survey/Photographic Recording/Watching Brief
8.3	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 5.7 x 3.4m.	389349	422826	Topographic Survey/Photographic Recording/Watching Brief

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
8.4	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 7.5 x 3.5m.	389342	422838	Topographic Survey/Photographic Recording/Watching Brief
8.5	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 7.2 x 6m.	389339	422855	Topographic Survey/Photographic Recording/Watching Brief
8.6	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 5.6 x 6m.	389347	422859	Topographic Survey/Photographic Recording/Watching Brief
8.7	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 6.6 x 4.9m.	389365	422857	Topographic Survey/Photographic Recording/Watching Brief
8.8	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 6.8 x 5.3m.	389373	422846	Topographic Survey/Photographic Recording/Watching Brief
8.9	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 4.6 x 4m.	389320	422877	Topographic Survey/Photographic Recording/Watching Brief
8.10	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 9.6 x 4m.	389331	422883	Topographic Survey/Photographic Recording/Watching Brief
8.11	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 9.4 x 4.	389327	422890	Topographic Survey/Photographic Recording/Watching Brief
8.12	Quarrying/Mining	Field	Small depression/pit in the ground surface now filled	389331	422925	Topographic Survey/Photographic

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
		survey	with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 5.3 x 5m.			Recording/Watching Brief
8.13	Quarrying/Mining	Field survey	Small depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of quarrying/mining activities in the local area. One of a series of similar features in this area. Measures 19 x 9.4m.	389365	422919	Topographic Survey/Photographic Recording/Watching Brief
9	Shaft/Vent	Field survey	Large shaft/vent associated with former quarrying/mining in the area. Now exists as a large irregularly shaped pit filled with water and vegetation. Feature measures 15.4 x 12m in size.	389346	422995	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
10	Quarrying/Mining	Field survey	Large depression/pit in the ground surface now filled with water/grass. Possible remains/evidence of collapsed quarrying/mining activities in the local area. Measures 13.7 x 15.6m in size.	389390	422992	Topographic Survey/Photographic Recording/Watching Brief
11	Vent/Shaft	Field survey	Area of vent/shaft associated with former quarrying/mining in the local area. Now fenced off from field by wooden stakes/fenceposts. Shaft itself is overgrown and covered with vegetation.	389387	423039	Topographic Survey/Photographic Recording/Watching Brief
12.0	Adit/Passage	Field survey	Large possible adit or passageway orientated roughly west to east in an area of local mining activity. One of a series of similar features in this area. Feature slopes from west to east with some associated drainage channels also visible. Measures c.60 x 12.7m.	389369	423116	Topographic Survey/Photographic Recording/ Watching Brief
12.1	Adit/Passage	Field survey	Large possible adit or passageway orientated roughly west to east in an area of local mining activity. One of a series of similar features in this area. Feature slopes from west to east with some associated drainage channels also visible. Measures c.65 x 19.2m.	389368	423162	Topographic Survey/Photographic Recording/ Watching Brief
13	Quarrying/Mining	Field survey	Area of possible former quarrying; now existing as a large depression with a series of drainage channels/gullies running from west to east. The sides of these channels are steep and run into a larger ditch at the base of the quarrying/mining area.	389236	423631	Topographic Survey/Photographic Recording/Watching Brief
14	Trackway	Field	Crude farm trackway on a north-west to south-east	389165	423685	Topographic Survey/Photographic

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
		survey; maps	orientation to the west of feature 13. Track varies in width from 0.85-1.5m and has an associated drainage ditch on its southern side. Ditch is now water filled and covered with vegetation.			Recording
15	Ditch	Field survey	Large drainage ditch adjacent to former tramway (feature 20.1). Possibly modern in date. Areas of ditch heavily vegetated. May form a adit/passage into hill at this location although this is unclear.	389194	423722	Topographic Survey/Photographic Recording
16	Adit/Passage	Field survey	Large possible adit or passageway orientated roughly west to east in an area of local mining activity. One of a series of similar features in this area. Feature slopes from west to east and measures c.21 x 7m.	389170	423761	Topographic Survey/Photographic Recording/ Watching Brief
17.0	Adit/Passage	Field survey	Large possible adit or passageway orientated roughly west to east in an area of local mining activity. One of a series of similar features in this area. Feature slopes from west to east and measures c.18 x 9.3m.	389170	423813	Topographic Survey/Photographic Recording/ Watching Brief
17.1	Adit/Passage	Field survey	Large possible adit or passageway and associated ditch orientated roughly west to east in an area of local mining activity. One of a series of similar features in this area. Feature slopes from west to east and measures c.14.6 x 7m, with the ditch orientated north-south and measuring c.30m in length.	389177	423832	Topographic Survey/Photographic Recording/ Watching Brief
18.0	Adit/Passage	Field survey	Possible adit/passageway on a north-west to south-east orientation. Exists as a steep sided ditch indicating probable collapse of earlier works. Feature now covered in grass/vegetation and measures c.34.6 x 17.2m.	389167	423878	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
18.1	Adit/Passage	Field survey	Possible adit/passageway on a north-east to south-west orientation to the north of feature 18.0. Exists as a steep sided ditch indicating probable collapse of earlier works. Feature now covered in grass/vegetation and measures c.17.2 x 4.7m.	389162	423901	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
19	Structure	Field survey	Remains of a possible large rectangular stone building. One rough, unbonded fragment of walling survives to a height of 5 courses, with the rest of the structure only visible as foundation levels now heavily covered by moss and grass. Structure is roughly 15 x 9.3m in size with	389145	423909	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
			evidence for possible internal walls still present, although these are covered by heavy vegetation and collapse.			
20.1	Trackway	Field survey; maps	Former Limers Gate tramway as depicted on OS maps of the area. Now exists as a dirt track, with evidence of recent maintenance including the addition of tarmac/concrete to level the track in places. No fittings associated with the previous tramway were recorded. Towards the northern end of the site the tramway has an associated drainage ditch (20.2) on its western side.	389180	423877	Topographic Survey/Photographic Recording/Watching Brief
20.0	Ditch	Field survey; maps	Drainage ditch associated with former Limers Gate tramway. Only visible to the northern end of the site and situated immediately to the west of the tramway (20.1). Ditch is now water filled with vegetation in places.	389125	424029	Topographic Survey/Photographic Recording/Watching Brief
21	Adit/Passage	Field survey	Possible adit/passageway on a north-west to south-east orientation associated with former mineworks/quarrying in the local area. Now exists as a ditch covered by heavy vegetation and measuring 25.6 x 3m in size.	389130	423973	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
22	Trackway	Field survey; maps	Trackway as depicted on OS maps of the area. Now used as farm access track, exists as a tarmac/stone track on a rough north-south orientation. Joins with the former Limers Gate tramway at its northern extent. Track is c.4m in width and has a shallow drainage ditch on its western edge.	389114	423951	Topographic Survey/Photographic Recording
23.0	Adit/Passage	Field survey	Possible adit/passageway on a north to south orientation associated with former mineworks/quarrying in the local area. Now exists as water filled ditch covered by heavy vegetation and measuring c.40 x 5m in size. One of a series (with 23.1, 23.2 and 24) that form part of a larger feature in this area.	389103	423946	Topographic Survey/Photographic Recording
23.1	Shaft/Vent	Field survey	Large vent/shaft associated with former mining in the area. Exists as a large (10m) wide depression now partially filled with water and vegetation. Located at northern end of adit/passage 23.0.	389097	423972	Topographic Survey/Photographic Recording
23.2	Adit/Passage	Field survey	Possible adit/passageway on a north to south orientation associated with former mineworks/quarrying in the local area. Now exists as water filled ditch covered by heavy	389087	424004	Topographic Survey/Photographic Recording

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
			vegetation and measuring c.33.6 x 8m in size. One of a series (with 23.0, 23.1 and 24) that form part of a larger feature in this area.			
24	Adit/Passage	Field survey	Possible adit/passageway on a north to south orientation associated with former mineworks/quarrying in the local area. Now exists as water filled ditch covered by heavy vegetation and measuring c.52.6 x 4.6m in size. One of a series (with 23.0, 23.1 and 23.2) that form part of a larger feature in this area. Stone lintel overlying potential void present at southern extent of the feature although dense vegetation prevented investigation of area below.	389078	424061	Topographic Survey/Photographic Recording
25	Adit/Passage	Field survey; maps	Large north-south orientated series of adits/passageways associated with former mining in the area. Much of the ground here waterlogged and covered in deep, dense vegetation. Part of a series of similar features in this area of the site.	389064	424162	Topographic Survey/Photographic Recording/ Watching Brief
26	Wall	Field survey; maps	Existing dry stone wall as seen on OS maps of the area. Denotes the western edge of the planning boundary. Wall is in various states of repair along its length and consists of irregularly sized blocks of unbonded stone. Now overgrown with moss and grass in places and survives to a width of c.1m.	389254	423431	Topographic Survey/Photographic Recording
27	Shaft/Vent	Field survey	Possible vent/shaft associated with former mining activities in the area. Exists as a sub-circular depression in the ground filled with grass and stone. Measures 3.5 x 3.2m in size.	389065	424120	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
28	Wall	Field survey; maps	Existing dry-stone wall as seen on OS maps of the area. Runs parallel with existing modern road towards the northern end of the planning boundary. Consists of unbonded stone of varying size and shape and survives to a height of c.1.2m in places.	389092	424165	Topographic Survey/Photographic Recording/ Watching Brief
29	Wall	Field survey	Fragments of a possible wall on a north-west to south-east orientation, and running parallel with Wall 28 on its southern side. May represent earlier building structure although very little of the feature has survived. Consists of unbonded dry-stone of varying sizes and survives to a	389108	424153	Topographic Survey/Photographic Recording/ Watching Brief

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
			height of 1.5m.			
30.0	Adit/Passage	Field survey	Possible adit/passageway on a north-east to south-west orientation associated with former mineworks/quarrying in the local area. Now exists as a steep sided ditch covered in grass and other vegetation. Possible shaft/vent towards the western end of the feature. Feature itself measures 29 x 5m in size.	389148	424024	Topographic Survey/Photographic Recording/ Protective fencing (5m buffer)
30.1	Adit/Passage	Field survey	Possible adit/passageway on a north-west to south-east orientation associated with former mineworks/quarrying in the local area. Now exists as a ditch covered in grass and other vegetation, with areas of modern debris also present. Possible shaft/vent towards the north-western end of the feature now partially backfilled with modern concrete/rubble. Feature itself measures 38.5 x 6m in size.	389135	424056	Topographic Survey/Photographic Recording/Watching Brief
31	Shaft/Vent	Field survey	Possible shaft/vent to the west of feature 19. Exists as a shallow depression filled with large stones. Measures 4.6 x 2.8m in size.	389136	423903	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
32	Shaft/Vent	Field survey	Possible collapsed shaft/vent to the east of trackway 25. Feature is on an east-west orientation and consists of gradual sloping sides now covered in grass and other vegetation.	389145	423850	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
33	Shaft/Vent	Field survey	Possible collapsed shaft/vent to the east of trackway 14. Feature exists as a sub-circular depression now filled with dense vegetation and partially filled with water.	389186	423673	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
34.0	Shaft/Vent	Field survey	Large probable shaft/vent associated with former mining activity in the area. Exists as a large sub-circular depression with visible brick/stonework within. Now partially covered by grass/vegetation. Measures 7.1 x 5.4m in size.	389263	422877	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
34.1	Spoil Mound	Field survey	Large area of spoil mounds associated with shaft/vent 34.0. Now covered by grass and other vegetation. Measures c.11 x 11m in size.	389256	422871	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
35.0	Shaft/Vent	Field survey	Possible collapsed shaft/vent/drainage channel associated with former mining activity in the area. Full extent unknown at this location.	389233	422702	Topographic Survey/Photographic Recording/Watching Brief

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
35.1	Shaft/Vent	Field survey	Possible collapsed shaft/vent/drainage channel associated with former mining activity in the area. Full extent unknown at this location.	389235	422694	Topographic Survey/Photographic Recording/Watching Brief
36.0	Shaft/Vent	Field survey	Collapsed shaft/vent now covered by dense vegetation. Possible adit/passage to the north although ground here is hidden by vegetation.	389304	422629	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
36.1	Spoil Mound	Field survey	Area of spoil mounds associated with mining activities at feature 36.0. Consists of a series of small earthworks now covered by grass and other vegetation.	389296	422630	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
37	Wall	Field survey; maps	Existing dry-stone wall as seen on OS maps of the area. Wall is on a rough east-west orientation and consists of varying sizes of unbonded stone in varying states of repair. Wall survives to a height of 0.8m in places.	389106	422587	Topographic Survey/Photographic Recording
38	Shaft/Vent	Field survey	Possible collapsed shaft/vent to the east of the existing planning boundary and fence line. Exists as a shallow sub-circular depression now filled with water and grass vegetation. Measures 4.4 x 3.2m in size.	389379	422633	Topographic Survey/Photographic Recording/Protective fencing (5m buffer)
39.0	Ditch/Drainage	Field survey; maps	Possible drainage ditch/channel on a north-east to south-west orientation to the east of the planning boundary. May form part of early mine working activity in the area.	389326	423608	Topographic Survey/Photographic Recording
39.1	Ditch/Drainage	Field survey; maps	Possible drainage ditch/channel on a north-east to south-west orientation to the east of the planning boundary. May form part of early mine working activity in the area.	389302	423627	Topographic Survey/Photographic Recording
40.0	Shaft/Vent	Field survey	Possible collapsed shaft/vent associated with former mining activity in the area. Exists as a large depression filled with grass and other vegetation. Adjacent to feature 40.1. Measures 4.3 x 3m in size.	389247	423685	Topographic Survey/Photographic Recording/Watching Brief
40.1	Shaft/Vent	Field survey	Possible large collapsed shaft/vent associated with former mining activity in the area. Exists as a large depression filled with grass and other vegetation. Adjacent to feature 40.0. Measures 11.3 x 9.8m in size.	389240	423691	Topographic Survey/Photographic Recording/Watching Brief
41	Ditch	Field survey	Drainage ditch on a north-west to south-east orientation and parallel to former Limers Gate tramway. Shows signs of modern disturbance and widening/cleaning by use of large machinery and may not represent the original extent of the feature. Ditch is between 2.4-3.2m in width.	389277	423675	Topographic Survey/Photographic Recording/Watching Brief

Site No.	Type	Source	Description	X	Y	Investigation/Mitigation
42	Spoil Mound	Field survey	Large spoil mound at northern end of the site, possibly associated with demolition of former brickworks in this area.	389095	424149	Topographic Survey/Photographic Recording/Watching Brief

Appendix 2: Photographic Survey Register

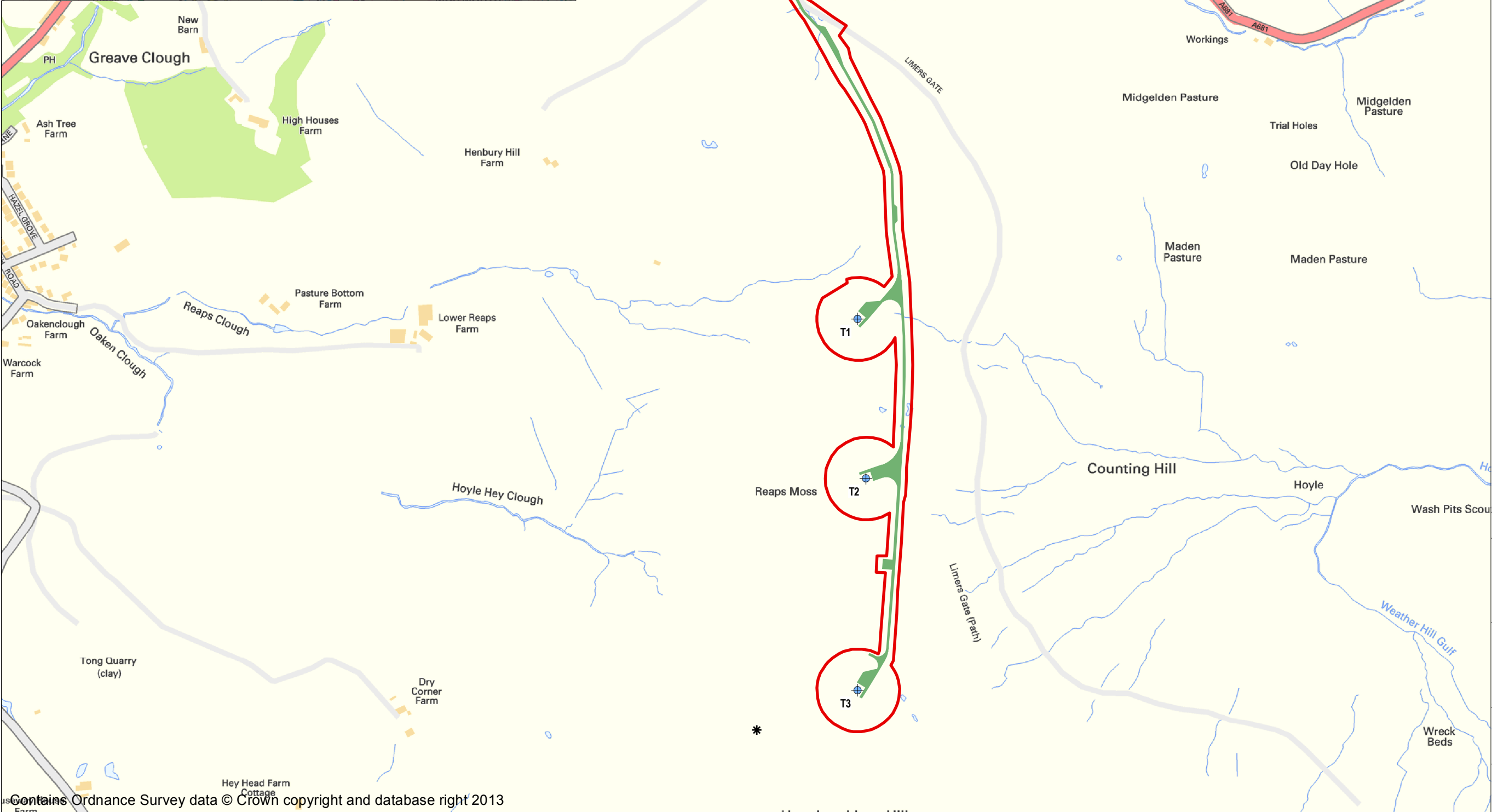
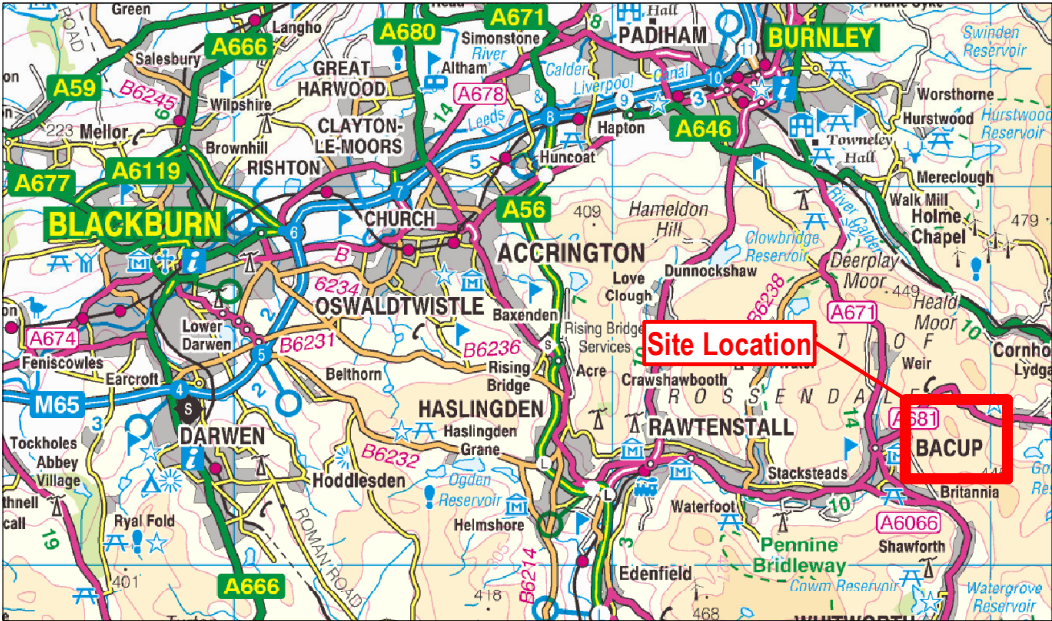
Number	Contexts/description	Facing	Conditions
1	Shot of possible collapsed adit, Site 1	South-east	Bright
2	Oblique shot of possible collapsed adit, Site 1	North-west	Bright
3	Shot of possible collapsed adit, Site 1	North-west	Bright
4	Shot of possible collapsed adit, Site 1	North	Bright
5	Shot of possible collapsed adit, Site 1	South	Bright
6	Shot of possible collapsed vent/shaft, Site 4.0	North	Bright
7	Shot of possible collapse adit or vent/shaft Site 4.0 and 4.1	South	Bright
8	Shot of collapsed vent or shaft 4.0	North	Bright
9	Shot of collapsed vent or shaft 4.0	North-west	Bright
10	Shot of collapsed vent or shaft 4.0	North-west	Bright
11	Shot of western-faced boundary stone 2.2	North-east	Bright
12	Shot of eastern-faced boundary stone 2.2	East	Bright
13	Shot of boundary stone 2.2	North	Bright
14	Shot of boundary stone 2.2	South	Bright
15	Shot of eastern ditch 3.0	North-west	Bright
16	Shot of western ditch 3.1	North-west	Bright
17	General shot of ditches and raised bank 3.0 and 3.1	North-west	Bright
18	Shot of eastern-faced boundary stone 2.1	South-west	Bright
19	Shot of eastern-faced boundary stone 2.1	South-west	Bright
20	Shot of western-faced boundary stone 2.1	North-east	Bright
21	Shot of possible collapsed shaft/vent, Site 5	North-west	Bright
22	Shot of possible collapsed shaft/vent, Site 5	North-east	Bright
23	Shot of collapsed wall site 6 with boundary stone 2.1	South-east	Bright
24	Shot of collapsed wall, Site 6	North-west	Bright
25	Shot of wall, Site 6 in-situ	North-west	Bright
26	Shot of western face of boundary stone 2.3	East	Bright
27	Close up of engraving on bottom of boundary stone 2.3	East	Bright
28	Shot of possible mineworks, Site 8.1	East	Bright
29	Shot of possible mineworks Site 8.4	North-east	Bright
30	Shot of possible mineworks Site 8.3 and 8.2	East	Bright
31	Shot of possible mineworks Site 8.4	East	Bright
32	Shot of possible mineworks sites 8.5 and 8.6	East	Bright
33	Shot of possible mineworks Site 8.7	West	Bright
34	Shot of possible mineworks Site 8.9	East	Bright
35	Shot of possible mineworks Site 8.8	East	Bright
36	Shot of possible mineworks Site 8.10	East	Bright
37	Shot of possible mineworks Site 8.11	North-east	Bright
38	Shot of possible mineworks Site 8.11	South-east	Bright
39	Shot of possible mineworks Site 8.12	East	Bright
40	Shot of possible mineworks Site 8.13	North-east	Bright
41	Shot of fallen boundary stone 2.4	East	Bright
42	Shot of Site 9 collapsed vent or shaft	North	Bright
43	Shot of possible collapsed adit 10	South East	Bright
44	Shot of possible collapsed adit 10	East	Bright
45	Shot of western face of boundary stone 2.5	East	Bright
46	Shot of western face of boundary stone 2.6	East	Bright
47	Shot of possible collapsed adit 12	East	Overcast
48	Shot of western face of boundary stone 2.7	East	Overcast
49	Shot of western face of boundary stone 2.8	East	Overcast
50	Shot of western face of boundary stone 2.9	East	Overcast
51	Shot of western face of boundary stone 2.10	East	Overcast

Number	Contexts/description	Facing	Conditions
52	Shot of western face of boundary stone 2.11	East	Overcast
53	Shot of former mining activity, Site 13	North-west	Overcast
54	Shot of former mining activity, Site 13	South	Overcast
55	Shot of former mining activity, Site 13	North	Overcast
56	Shot of former mining activity, Site 13	North-west	Overcast
57	Shot of former mining activity, Site 13	South-east	Overcast
58	Shot of former mining activity, Site 13	North-west	Overcast
59	Shot of former mining activity, Site 13	North	Overcast
60	Shot of former mining activity, Site 13	West	Overcast
61	Shot of former mining activity, Site 13	South-east	Overcast
62	Shot of former mining activity, Site 13	South-west	Overcast
63	Shot of former mining activity, Site 13	North-west	Overcast
64	Shot of former mining activity, Site 13	North	Overcast
65	Shot of former mining activity, Site 13	North	Overcast
66	Shot of former mining activity, Site 13	North	Overcast
67	Shot of south-eastern face of boundary stone 2.12	North-west	Overcast
68	Shot of north-western face of boundary stone 2.12	South-east	Overcast
69	Oblique shot of north-western face of boundary stone 2.12	North-east	Overcast
70	Shot of north-east to south-west orientated track way Site 14	South-east	Overcast
71	Shot of north-east to south-west orientated track way Site 14	North-west	Overcast
72	Shot of collapsed adit Site 15	South-east	Overcast
73	Shot of collapsed adit and accompanied ditch Site 15	West	Overcast
74	Shot of collapsed entrance/adit, Site 16	West	Overcast
75	Shot of northern face of boundary stone 2.13 with associated metal boundary marker	South	Overcast
76	Shot of southern face of boundary stone 2.13 with associated metal boundary marker	North	Overcast
77	Shot of boundary stone and associated metal marker 2.13	South-west	Overcast
78	Shot of boundary stone and associated metal marker 2.13	West	Overcast
79	Shot of north-south orientated track way, Site 14	South	Overcast
80	Shot of southern adit/entrance, Site 17	West	Overcast
81	Shot of middle adit/entrance, Site 17	West	Overcast
82	Shot of northern adit/entrance, Site 17	North-west	Overcast
83	Shot of eastern face of boundary stone 2.14	West	Overcast
84	Shot of western face of boundary stone 2.14	East	Overcast
85	Oblique shot of collapsed adit ,Site 18	South	Overcast
86	Shot of collapsed adit, Site 18.1	West	Overcast
87	Shot of foundations for building, Site 19	North	Overcast
88	Shot of foundations for collapsed building, Site 19	West	Overcast
89	Oblique shot of collapsed building, Site 19	North-west	Overcast
90	Oblique shot of collapsed building, Site 19	South	Overcast
91	Oblique shot of possible annex/corridor of collapsed building, Site 19	South-east	Overcast
92	Oblique shot of possible annex/corridor of collapsed building, Site 19	South-west	Overcast
93	Shot of collapsed building, Site 19	North-east	Overcast
94	Shot of standing wall of building, Site 19	South-west	Overcast
95	Oblique shot of standing wall of building, Site 19	South	Overcast
96	Oblique shot of standing wall of building, Site 19	North-west	Overcast
97	Shot of collapsed building, Site 19	South-east	Overcast
98	Shot of modern track way/tramway, Site 20	South	Overcast
99	Shot of modern track way/tramway, Site 20	North	Overcast
100	Shot of collapsed adit, Site 21	South-east	Overcast
101	Shot of collapsed adit , Site 21	North-west	Overcast

Number	Contexts/description	Facing	Conditions
102	Shot of modern track way, Site 22	South	Overcast
103	Shot of modern track way, Site 22	North	Overcast
104	Shot of collapsed adit, Site 23	South	Overcast
105	Shot of collapsed adit, Site 23	North	Overcast
106	Shot of collapsed vent or shaft 23.1	North	Overcast
107	Shot of collapsed vent or shaft 23.1	South	Overcast
108	Shot of collapsed adit 23.2	North	Overcast
109	Shot of collapsed adit 23.2	North-east	Overcast
110	Shot of collapsed adit 23.2	South	Overcast
111	Oblique shot of stone lintel of possible culvert, Site 24	South-west	Overcast
112	Shot of collapsed adit 24.1	North	Overcast
113	Shot of collapsed adit 25	East	Overcast
114	Shot of north-south aligned wall, Site 26	South	Overcast
115	Shot of north-south aligned wall, Site 26	North	Overcast
116	Shot of Adit 25 and Wall 26	South	Overcast
117	Shot of collapsed vent or shaft, Site 27	West	Overcast
118	Shot of south-east to north-west orientated wall, Site 29	North	Overcast
119	Oblique shot of south-east to north-west orientated wall, Site 29	North-west	Overcast
120	Shot of Wall 29	South-east	Overcast
121	Oblique shot of Wall 29	East	Overcast
122	Shot of collapsed vent or shaft, Site 31	North	Overcast
123	Shot of collapsed vent or shaft, Site 31	South	Overcast
124	Shot of collapsed vent or shaft, Site 31	East	Overcast
125	Shot of collapsed vent or shaft, Site 31	West	Overcast
126	Shot of collapsed adit, Site 32	East	Overcast
127	Shot of collapsed vent or shaft, Site 33	North-east	Fog
128	Shot of collapsed vent or shaft, Site 33	North-west	Fog
129	Shot of collapsed vent or shaft, sites 34 and 34.1	North-west	Fog
130	Shot of collapsed vent or shaft, sites 34 and 34.1	North-east	Fog
131	Shot of possible cultivation furrows within proposed turbine 2 area	West	Fog
132	Shot of possible cultivation furrows within proposed turbine 2 area	North-east	Fog
133	Shot of collapsed vent or shaft, Site 35	East	Fog
134	Shot of collapsed vent or shaft, Site 35.1	East	Fog
135	Shot of east-west aligned wall, Site 37	West	Fog
136	Shot of east-west aligned wall, Site 37 leading to Site 7	East	Fog
137	General shot of spoil heaps with associated vent/shaft, Site 36	North-west	Fog
138	Shot of collapsed vent or shaft 36	North	Fog
139	Shot of collapsed vent or shaft 36	North-west	Overcast
140	Shot of collapsed vent or shaft 38	West	Overcast
141	Shot of eastern face of boundary stone 2.3	West	Overcast
142	Shot of collapsed boundary stone 2.15	West	Overcast
143	Shot of eastern face of boundary stone 2.5	West	Overcast
144	Shot of eastern face of boundary stone 2.6	West	Overcast
145	Shot of eastern face of boundary stone 2.7	West	Overcast
146	Shot of eastern face of boundary stone 2.8	West	Overcast
147	Shot of eastern face of boundary stone 2.10	West	Overcast
148	Shot of possible drainage channel site 39	North-east	Overcast
149	Shot of possible drainage channel site 39.1	North-east	Overcast
150	Shot of possible collapsed vent or shaft, site 40	South-east	Overcast
151	Shot of possible vent or shaft 40.1 and 41	North	Overcast
152	Shot of possible south-west to north-east drainage ditch	South-east	Overcast

Number	Contexts/description	Facing	Conditions
153	Shot of collapsed vent or shaft 40.1	North	Overcast
154	Shot of possible cut drainage channel.	South	Overcast
155	Shot of possible collapsed shaft or vent, Site 30	North	Overcast
156	Shot of possible collapsed shaft or vent, Site 30	West	Overcast
157	Shot of possible collapsed adit, Site 30.1	North	Overcast
158	Shot of collapsed vent or shaft, Site 9	North	Overcast
159	Shot of collapsed vent or shaft, Site 9	East	Overcast
160	Shot of collapsed vent or shaft, Site 9	North-east	Overcast
161	Shot of collapsed shaft or vent, Site 11	South-east	Overcast
162	Shot of collapsed shaft or vent, Site 11	East	Overcast
163	Shot of collapsed adit, Site 12.0	North-west	Overcast
164	Shot of collapsed adit, Site 12.0	North-east	Overcast
165	Shot of collapsed adit, Site 12.1	South-west	Overcast
166	Shot of collapsed adit, Site 12.1	South-east	Overcast
167	General shot of track way/tramway, Site 20	East	Overcast
168	General shot of track way/tramway, Site 20	North	Overcast
169	Shot of track/tramway, Site 20	South-east	Overcast
170	Shot of track/tramway Site 20 curving to the west	North-west	Overcast
171	Shot of track/tramway Site 20 curving to the north-west	North	Overcast
172	Shot of track/tramway Site 20 curving to the east	South	Overcast
173	Shot of track/tramway Site 20 with associated ditch	North	Overcast
174	Shot of disturbed metal tram lines within ditch	North	Overcast
175	Shot of track/tramway Site 20 with associated ditch	South	Overcast
176	Shot of east-west aligned wall, Site 28	West	Overcast
177	Shot of east-west aligned wall, Site 28	North	Overcast

Figures 1 – 3



- Key
- Planning Boundary
 - Turbine Location
 - Met Mast
 - Access Track
 - Construction Compound
 - Substation

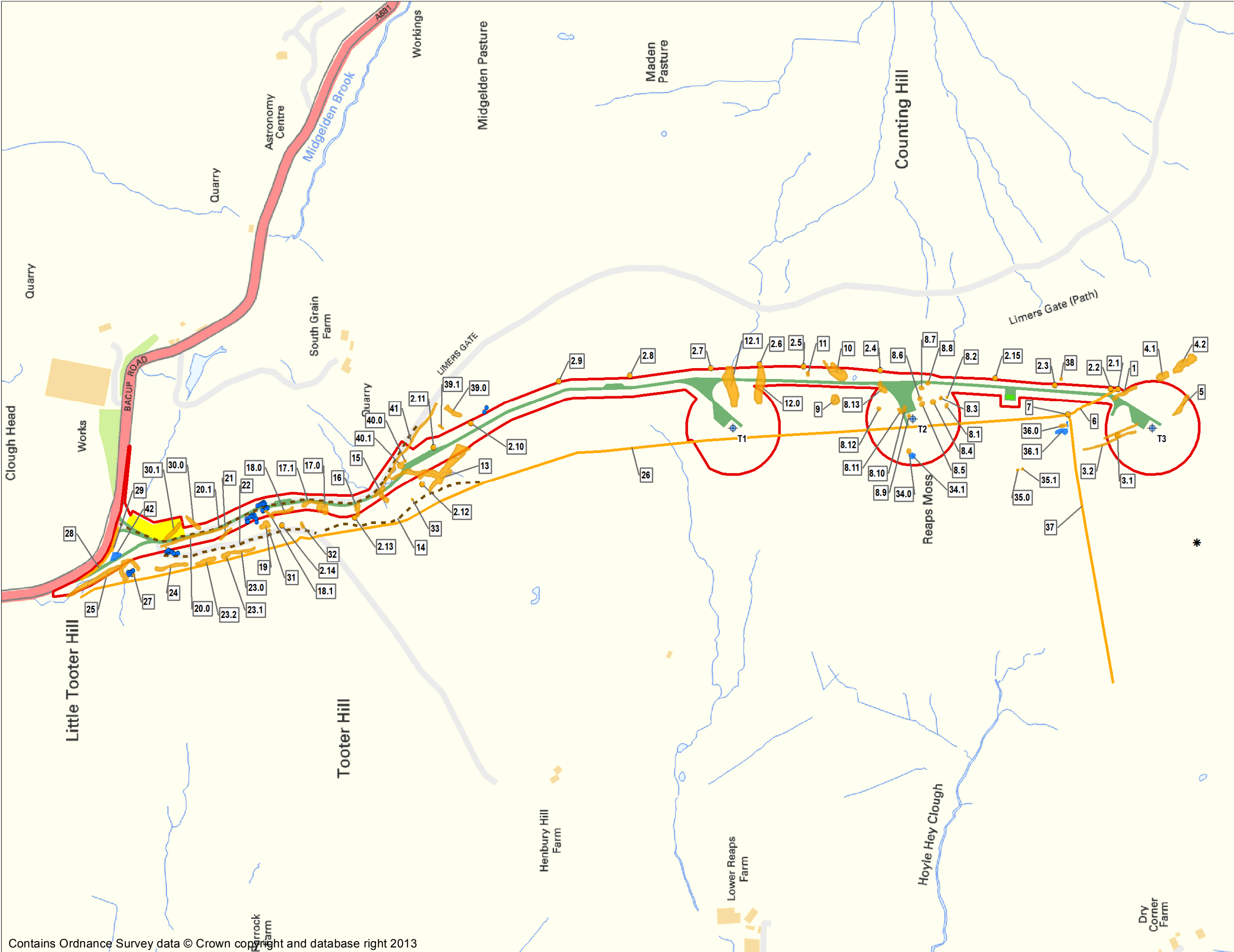


Fig. No	1	Revision
Title	Site Location	
Project	Reaps Moss Wind Farm, Archaeological Works	
Scale at A3	1:7,500	
Client	Wind Prospect Ltd.	
Drawn by:	SW	Checked by: PM
Report No:	Y130/13	

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- Key**
- Planning Boundary
 - Turbine Location
 - Met Mast
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 - Construction Compound
 - Substation
 - Cultural Heritage Site (point)
 - Cultural Heritage Site (linear)
 - Cultural Heritage Site (area)
 - Trackway
 - Spoil Heap

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Fig. No	2	Revision
Title	Sites of Cultural Heritage	
Project	Reaps Moss Wind Farm, Archaeological Works	
Scale at A3	1:5,500	
Client	Wind Prospect Ltd.	
Drawn by:	SW	Checked by: PM
Report No:	Y130/13	



Key

- Planning Boundary
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- Cultural Heritage Site (linear)
- Cultural Heritage Site (area)
- Trackway
- Spoil Heap
- Quarry/Mining
- Shaft, Vent, Adit

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Fig. No	Revision
3.1	

Title
Topographics Survey and Cultural Heritage Sites

Project
Reaps Moss Wind Farm, Archaeological Works

Scale at A3
1:2,500

Client
Wind Prospect Ltd.

Drawn by: SW	Checked by: PM	Report No: Y130/13
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Little Tooter Hill

Works

BACUP ROAD

South Grain Farm

Quarry

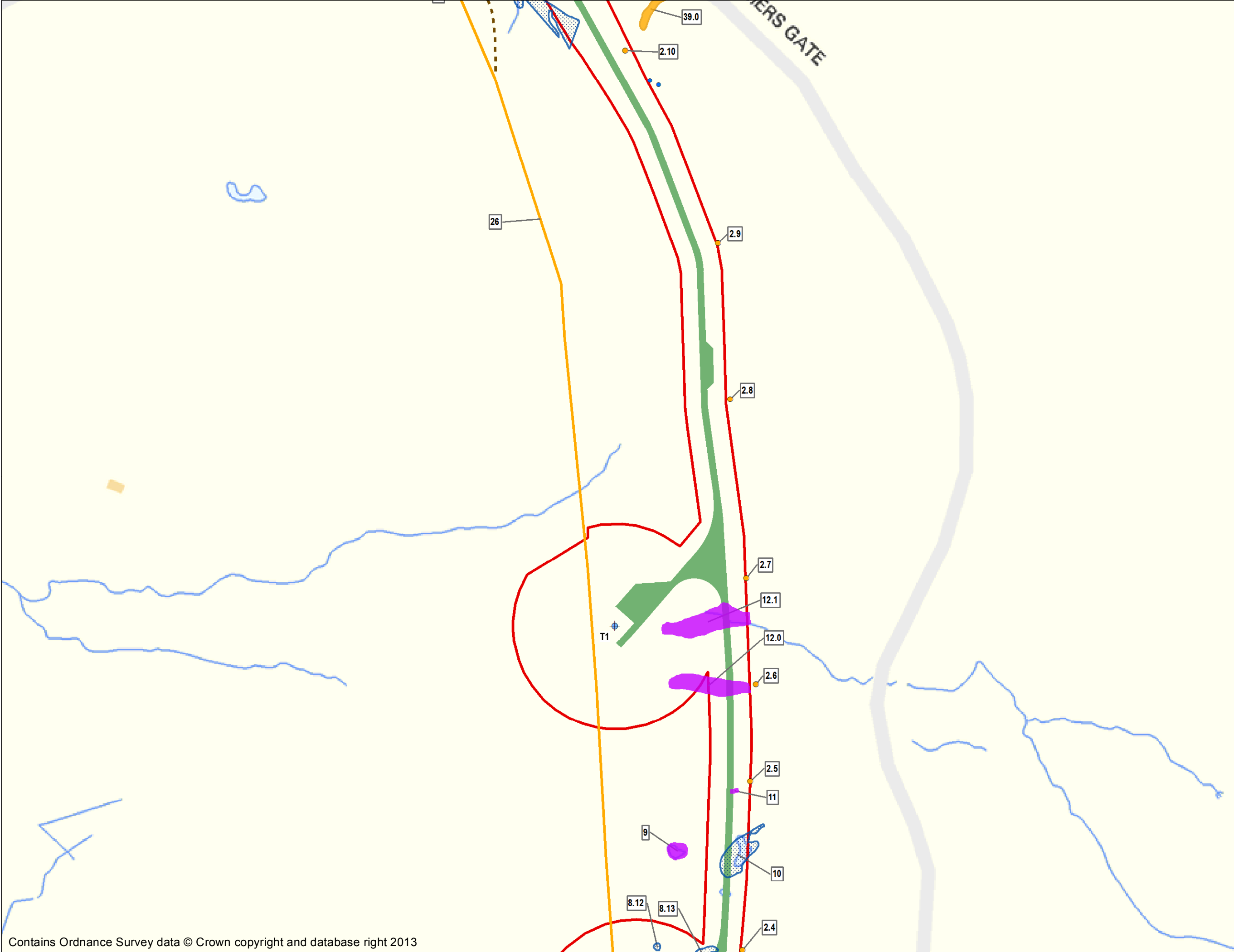
LIMERS GATE

Tooter Hill

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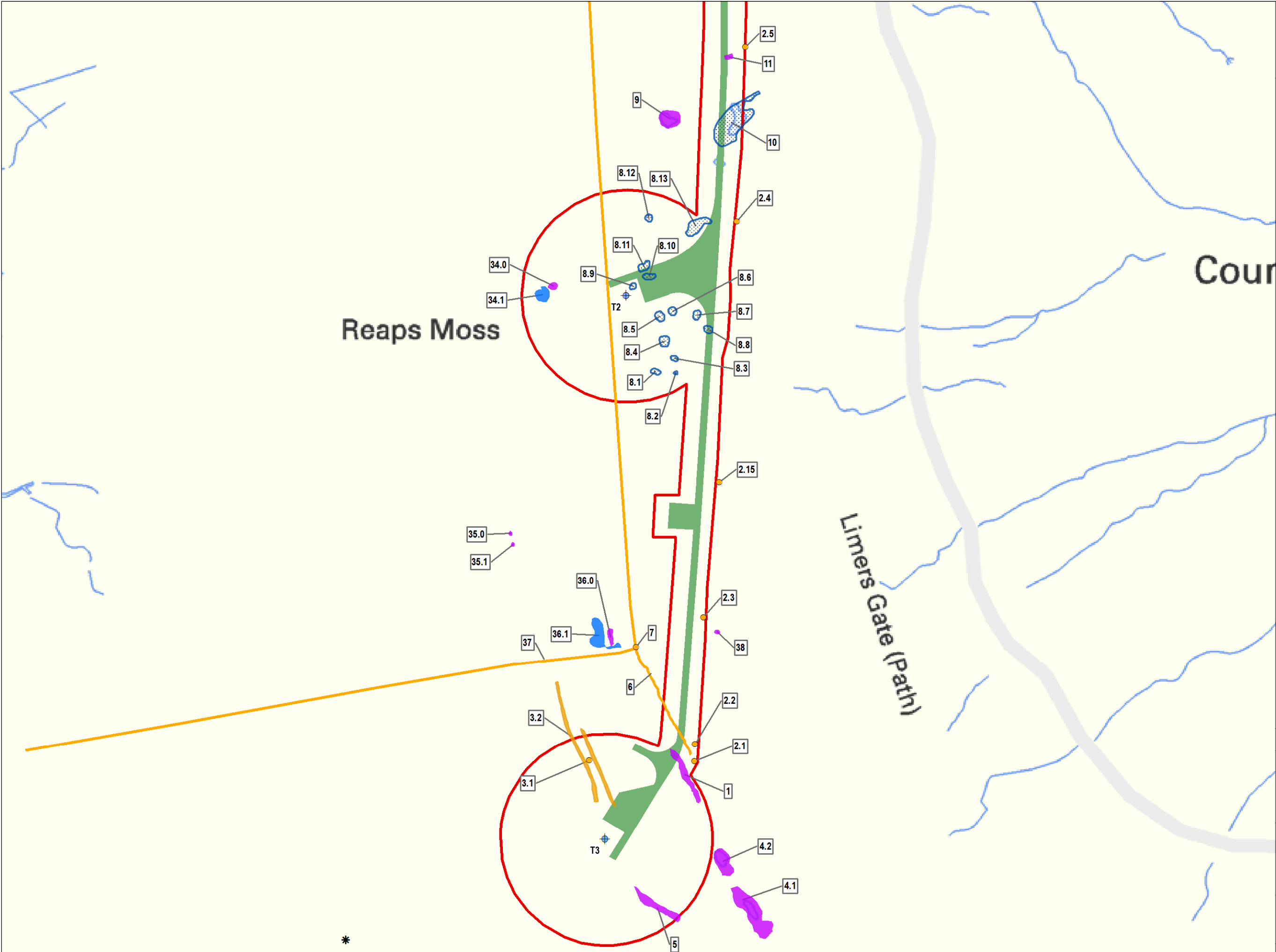
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 - Quarry/Mining
 - Shaft, Vent, Adit



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Fig. No	3.2	Revision
Title		
Topographics Survey and Cultural Heritage Sites		
Project		
Reaps Moss Wind Farm, Archaeological Works		
Scale at A3		
1:2,500		
Client		
Wind Prospect Ltd.		
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SW	PM	Y130/13

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Fig. No	3.3	Revision
Title		
Topographics Survey and Cultural Heritage Sites		
Project		
Reaps Moss Wind Farm, Archaeological Works		
Scale at A3		
1:2,500		
Client		
Wind Prospect Ltd.		
Drawn by:	Checked by:	Report No:
SW	PM	Y130/13

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Plates 1 – 10







Plate No: 1-2		Revision: A	Project: Reaps Moss Wind Farm, Rossendale, Lancashire			CFA ARCHAEOLOGY LTD Unit 22 Moorland's Business Centre Balme Road, Cleckheaton West Yorkshire, BD19 4EZ T: 01274 864245 F: 01274 878494 yorkshire@cfa-archaeology.co.uk
Drawn by: PM	Checked: ML	Report No: Y130/13	Client: Wind Prospect Ltd.			
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Plate 3: Collapsed adit/passage (23.2), north-east facing shot



Plate 4: Foundations of possible stone structure (19), south-east facing shot

Plate No: 3-4		Revision: A	Project: Reaps Moss Wind Farm, Rossendale, Lancashire			CFA ARCHAEOLOGY LTD Unit 22 Moorland's Business Centre Balme Road, Cleckheaton West Yorkshire, BD19 4EZ T: 01274 864245 F: 01274 878494 yorkshire@cfa-archaeology.co.uk
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Plate 9: West facing profile of boundary stone 2.8



Plate 10: North facing profile of boundary stone 2.13 and associated metal cross

Plate No. 9-10	Revision: A	Project: Reaps Moss Wind Farm, Rossendale, Lancashire			CFA ARCHAEOLOGY LTD Unit 22 Moorland's Business Centre Balme Road, Cleckheaton West Yorkshire, BD19 4EZ T: 01274 864245 F: 01274 878494 yorkshire@cfa-archaeology.co.uk
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