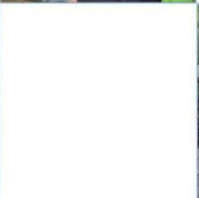
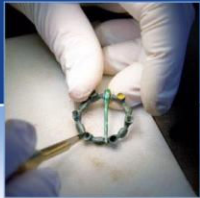


Flimby Wind Farm Watching Brief Data Structure Report

AOC Project 21676
OASIS ID – aocarcha1-136458
30th October 2012



Flimby Wind Farm: Watching Brief Data Structure Report

On Behalf of:	West Coast Energy Ltd Mynydd Awel Mold Business Park Maes Gwern CH7 1XN
National Grid Reference (NGR):	NY 035 333
AOC Project No:	21676
Prepared by:	Kevin Paton
Illustration by:	Stefan Sagrott
Date of Fieldwork:	23rd April 2012 to 29th October 2012
Date of Report:	30th October 2012

This document has been prepared in accordance with AOC standard operating procedures.

Author: Kevin Paton

Date: 31st October 2012

Approved by: Martin Cook

Date: 31st October 2012

Draft/Final Report Stage: Draft

Date: 31st October 2012

Enquiries to: AOC Archaeology Group
Edgefield Industrial Estate
Edgefield Road
Loanhead
EH20 9SY

Tel. 0131 440 3593
Fax. 0131 440 3422
e-mail. admin@aocarchaeology.com



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Abstract

This report presents the results of an archaeological watching brief on all ground breaking works associated with the construction of a three turbine wind farm near Flimby, Cumbria.

In total, 550m of haul road were stripped along with three crane pads, three turbine base footprints, three spoil tip areas, an area for grouting around turbine two, the site compound, the sub station, an area for storing the turbine bases prior to erection, and the cable trenches.

An extensive system of modern drainage was revealed throughout the development area and a modern sewer and mining works were revealed to the north and east respectively. One feature, a shallow ditch of probable post medieval date was revealed and recorded however neither significant archaeological features nor artefacts were encountered during the watching brief.

1 INTRODUCTION

1.1 Background

1.1 AOC Archaeology Group was commissioned by West Coast Energy Ltd. to undertake an archaeological watching brief during all ground breaking works associated with the construction of a three turbine wind farm on hills to the east of Flimby, Cumbria. The watching brief was undertaken in order to satisfy the requirements of the local planning authority, Allerdale Borough Council (planning ref: 2/2009/0418) who are advised on archaeological matters by Cumbria Historic Environment Service. The works were conducted according to the terms of a *Project Design* (AOC 2010) approved on behalf of Allerdale Borough Council by Cumbria Historic Environment Service.

1.2 Location

1.2.1 The proposed development area is centred at NGR: NY 035 333 (Figure 1). The turbines are spread across three fields at the top of a hill over looking the Solway Firth, to the east of the town of Flimby. The fields are currently used for agricultural pasture.

1.3 Archaeological background

1.3.1 The wind farm development is situated within an area containing a number of significant archaeological sites dating from the prehistoric to the modern day. Some examples of these sites are the burial mound under later Roman activity at Rise How, Roman settlements and trackways at Ewanrigg, medieval mining works at Great Broughton, and later post medieval mining at Broughton Collieries (AOC 2008 and 2009).

1.3.2 Cartographic evidence shows that the development area itself is shown as moorland and agricultural land from 1774 (AOC 2008 and 2009) and during an Environmental Impact Assessment (AOC 2008 and 2009), a total of eleven sites of cultural heritage interest were identified within the development area, none of which have been assigned a statutory designation. Of these eleven sites, five relate to the later 19th century mining industry associated with the operation of Seatonmoor Colliery. Given their late date and the frequency of such sites in the surrounding area, these are of limited local significance.

1.3.3 Of the remaining sites in the proposed development area, the ridge and furrow field systems (ES Sites 4 & 8) are judged to be most significance. These extensive tracts of ridge and furrow cultivation remains occupy the majority of the development area. The ridge and furrow is most pronounced in the lower central parts of the site where it measures up to 6 m from ridge to ridge and 0.3 m in height. Headlands and possible lynchets can also be identified in the north of the site close to the boundary with Flimby Great Wood. The majority of cultivation remains identified run NNW-SSE across the proposed development site and appear to respect modern field boundaries. The field boundaries in the south of the site are dictated by the mining remains and trackways and the cultivation remains are oriented at a slight angle to these boundaries suggesting that they conform to an earlier field layout.

2 OBJECTIVES

2.1 The objectives of the archaeological watching brief were:

- i) to safeguard the archaeological resource that may be disturbed by the proposed development works;

- ii) to liaise with Cumbria Historic Environment Service and the client in the event of significant archaeological features and /or small finds being unearthed as to the most appropriate response in safeguarding these features either by preservation *in situ*, if at all feasible, or by archaeological recording.

3 METHODOLOGY

- 3.1 The works involved an archaeological watching brief on all ground breaking within the wind farm development area. This included the stripping of all haul roads, crane pads, spoil tip areas, the site compound, the initial stripping of the turbine footprints, the sub station footprint, an area for storing the turbine bases prior to erection, and all cable trenches (Figure 2). All topsoil stripping down to the natural subsoil was conducted by a tracked 360° excavator utilising a bladed ditching bucket. All ground breaking was monitored by an experienced field archaeologist and all recording was carried out according to AOC Archaeology Group's standard practices.

4 RESULTS

- 4.1 The wind farm development required a total area of around 1.1km² to be stripped under archaeological supervision. This total area included 550m of haul road, three crane pads, three turbine base footprints, three spoil tip areas, an area for grouting around Turbine 2, the site compound, the sub station footprint, an area for storing the turbine bases prior to erection, and all cable trenches (Figure 2).



Plate 1 - Turbine 1 crane pad stripped

- 4.2 The topsoil across the watching brief area was a mid brown clayey silt ranging from 0.2m to 0.4m deep, sitting on a natural subsoil of mottled orange clay. An abundance of modern ceramic tile field

drains were noted within all areas of the excavations. A modern sewer cut was revealed in the crane pad of Turbine 1, and the disturbance from mining activity was present around Turbine 2.



Plate 2 - Working shot of haul road showing field drain



Plate 3 - Sewer cut within haul road 2

4.3 A linear feature [004] running SE-NW, terminating 11m from the eastern edge of haul road 2 was revealed and recorded (Figure 3). It measured 11.24m by 0.69m by 0.15m, with the fill [005] containing one small fragment of 18th century clay pipe stem. The NW terminal was very shallow (0.04m) and there

were clear indications of plough truncation throughout the field. The ditch [004] was also cut by a field drain running NE-SW.



Plate 4 - General shot of ditch [004]

5 CONCLUSION

- 5.1 Neither significant archaeological features nor unstratified artefacts were encountered during the watching brief, the development area proving to be heavily disturbed by modern mining and farming activity.
- 5.2 No further archaeological works are considered necessary. This recommendation will require confirmation by Cumbria Historic Environment Service.

6 BIBLIOGRAPHY

AOC Archaeology 2008 *Flimby Wind Farm Environmental Statement, Chapter 9: Cultural Heritage*. Unpublished AOC Archaeology Client Report

AOC Archaeology 2009 *Flimby Wind Farm Height Increase Environmental Statement, Chapter 9: Cultural Heritage*. Unpublished AOC Archaeology Client Report

AOC Archaeology 2010 *Flimby Wind Farm: Archaeological Works Project Design*. Unpublished AOC Archaeology

Flimby Wind Farm: Watching Brief Data Structure Report

Section 2: Appendices

APPENDIX 1: Context Register

Context No.	Area	Description and Interpretation
001	-	Mid brown clayey silt with occasional stone inclusions measuring between 0.2m to 0.4m throughout the three fields stripped Topsoil
002	-	Compact mottled orange clay with abundant stone and occasional manganese inclusions. Deposit measures 0.1m thick around ditch [004] Natural clay
003	-	Compact dark greyish brown clay with abundant stone and manganese inclusions Natural clay
004	Field 2	Linear cut running SE-NW and terminating 11m from the east edge of HR2. Steep sided with a flat base and filled by deposit [005]. Cut by field drain running NE-SW and plough scars around the area suggest it has been truncated; more so to the NW end as the terminus is only 0.04m deep. Measures 11.24m by 0.69m by 0.15m Agricultural ditch related to Ridge and Furrow
005	Field 2	Mid brown silty clay with occasional stone inclusions filling ditch [004]. Contained one fragment of clay pipe stem (not retained) and measured 11.24m by 0.69m by 0.15m. Fill of ditch [004]

APPENDIX 2: Photographic Register

Digital Photographs

Frame	Area	F. No	Description	From	Date
1-3	F1		Pre ex shots showing fields	VAR	23/4/12
4	HR1		Haul road excavations	S	23/4/12
5	HR1		Field drain showing in subsoil	SE	23/4/12
6	HR1		Field drain excavated	SW	23/4/12
7	HR1		Working shot next to road	E	23/4/12
8	HR1		HR entrance post ex	E	23/4/12
9	C		Field drain post ex	W	24/4/12
10	C		Field drain post ex	N	24/4/12
11	C		Compound strip working shot	S	24/4/12
12	C		Section showing blue clay under orange	S	24/4/12
13	C		Compound stripped	SW	24/4/12
14	HR1		Field drain in haul road	SW	24/4/12
15	HR1		Dark blue clay subsoil	S	24/4/12
16	HR1		Pale blue clay subsoil	W	24/4/12
17	HR1		General shot of haul road strip	S	25/4/12
18	T3		Working shot of T3 strip	W	26/4/12
19	T3		T3 finished	NW	26/4/12
20	HR1		Haul road diversion	N	27/4/12
21	T3		Turbine base footprint	W	27/4/12
22	HR1		Final strip of HR in field 1	E	3/5/12
23	F2		Pre-ex of field 2	E	3/5/12
24	HR2		Field drain (E-W)	E	3/5/12
25	HR2		View of HR in field 1 from existing track	N	3/5/12
26	HR2		View of HR in field 2 from existing track	S	3/5/12
27	HR		View along track	W	3/5/12
28	HR2		Another field drain	E	3/5/12
29	HR2		Detail shot of pipe in slot	E	3/5/12
30	HR2		Another field drain running SW-NE	S	3/5/12
31	HR2		Sewer cut	SE	3/5/12
32	T1		Working shot of T1 crane pad	E	3/5/12
33	T1	004	NW facing section of ditch [004]	NW	3/5/12
34	T1	004	NE facing section at terminus of ditch [004]	NE	3/5/12

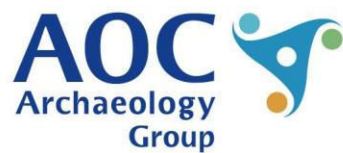
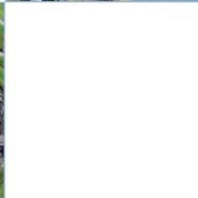
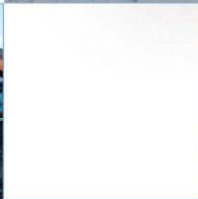
35	T1	004	NW facing section at terminus of ditch [004]	NW	3/5/12
36	T1	004	General shot of ditch [004]	SE	3/5/12
37	T1	004	General shot of ditch [004]	NW	3/5/12
38	T1		T1 crane pad stripped	SW	3/5/12
39	T1		Spoil tip working shot	E	4/5/12
40	T1		Turbine base area stripped	NE	4/5/12
41	F3		Pre-ex of field 3	NE	8/5/12
42	F3		Drainage track in field	S	8/5/12
43	F3		Fenced off sump or pond area	E	8/5/12
44	HR3		Working shot	W	8/5/12
45	HR3		Plastic in subsoil	W	8/5/12
46	HR3		Modern disturbance	W	8/5/12
47	HR3		More disturbance	SE	8/5/12
48	HR3		Haul road finished	SE	8/5/12
49	T2		Field drain directly under topsoil	SE	8/5/12
50	T2		Crane pad stripped	W	8/5/12
51	T2		Spoil tip area working shot	W	8/5/12
52	T2		Modern disturbance	SE	8/5/12
53	SS		Sub station post ex	S	9/5/12
54	T2		Spoil tip area complete	SW	9/5/12
55	HR3		Working shot	SE	9/5/12
56	HR3		Shot showing boundary ditch out with field 3	E	9/5/12
57	HR3		Stone in existing track	SE	9/5/12
58	T2		Working shot – grouting area	W	17/5/12
59	T2		South grouting area stripped	E	22/5/12
60	T2		North grouting area stripped	E	22/5/12
61	CT		Cable track working shot	S	15/10/12
62	CT		Field 1 cable track complete	N	15/10/12
63	CT		Length of cable track stripped in Field 2	E	29/10/12
64	CT		Rubble drain in cable track	W	29/10/12
65	CT		Cable track finished in field 4	E	29/10/12

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Frame	Area	F. No	Description	From	Date
1-2			Registration		3/5/12
3-4	T1	004	NW facing section of ditch [004]	NW	3/5/12
5-6	T1	004	NE facing section at terminus of ditch [004]	NE	3/5/12
7-8	T1	004	NW facing section at terminus of ditch [004]	NW	3/5/12
9-10	T1	004	General shot of ditch [004]	SE	3/5/12
11-12	T1	004	General shot of ditch [004]	NW	3/5/12

APPENDIX 3: Fieldwork Summary Sheet

Site Name/Address Flimby Wind Farm, Flimby	
Township Flimby	District Allerdale
National Grid Reference NY 035 333	
Contractor AOC Archaeology Group	
Date of Work 23 rd April to 29 th October 2012	
Title of Report Flimby Wind Farm: Watching Brief Data Structure Report	
Date of Report 30 th October 2012	
<p>Summary of Fieldwork Results</p> <p>An archaeological watching brief on all ground breaking works associated with the construction of a three turbine wind farm near Flimby, Cumbria.</p> <p>In total, 550m of haul road were stripped along with three crane pads, three turbine base footprints, three spoil tip areas, an area for grouting around turbine two, the site compound, the sub station, an area for storing the turbine bases prior to erection, and the cable trenches.</p> <p>An extensive system of modern drainage was revealed throughout the development area and a modern sewer and mining works were revealed to the north and east respectively. One feature, a shallow ditch of post-medieval date was revealed and recorded however neither significant archaeological features nor artefacts were encountered during the watching brief.</p>	
Author of Summary Kevin Paton	Date of Summary 30 th October 2012



AOC Archaeology Group, Edgefield Industrial Estate, Edgefield Road, Loanhead EH20 9SY
tel: 0131 440 3593 | fax: 0131 440 3422 | e-mail: admin@aocarchaeology.com

www.aocarchaeology.com

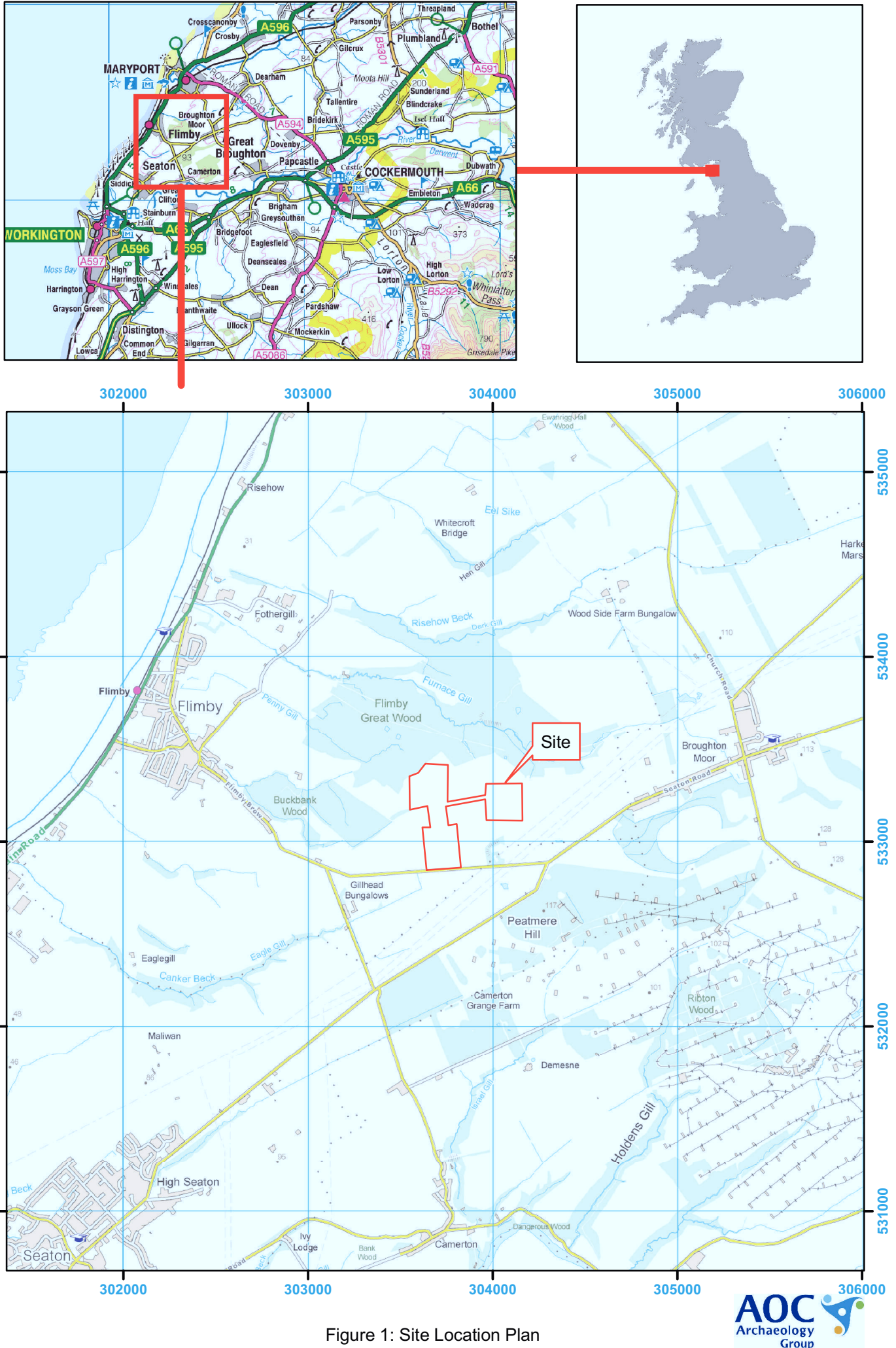


Figure 1: Site Location Plan

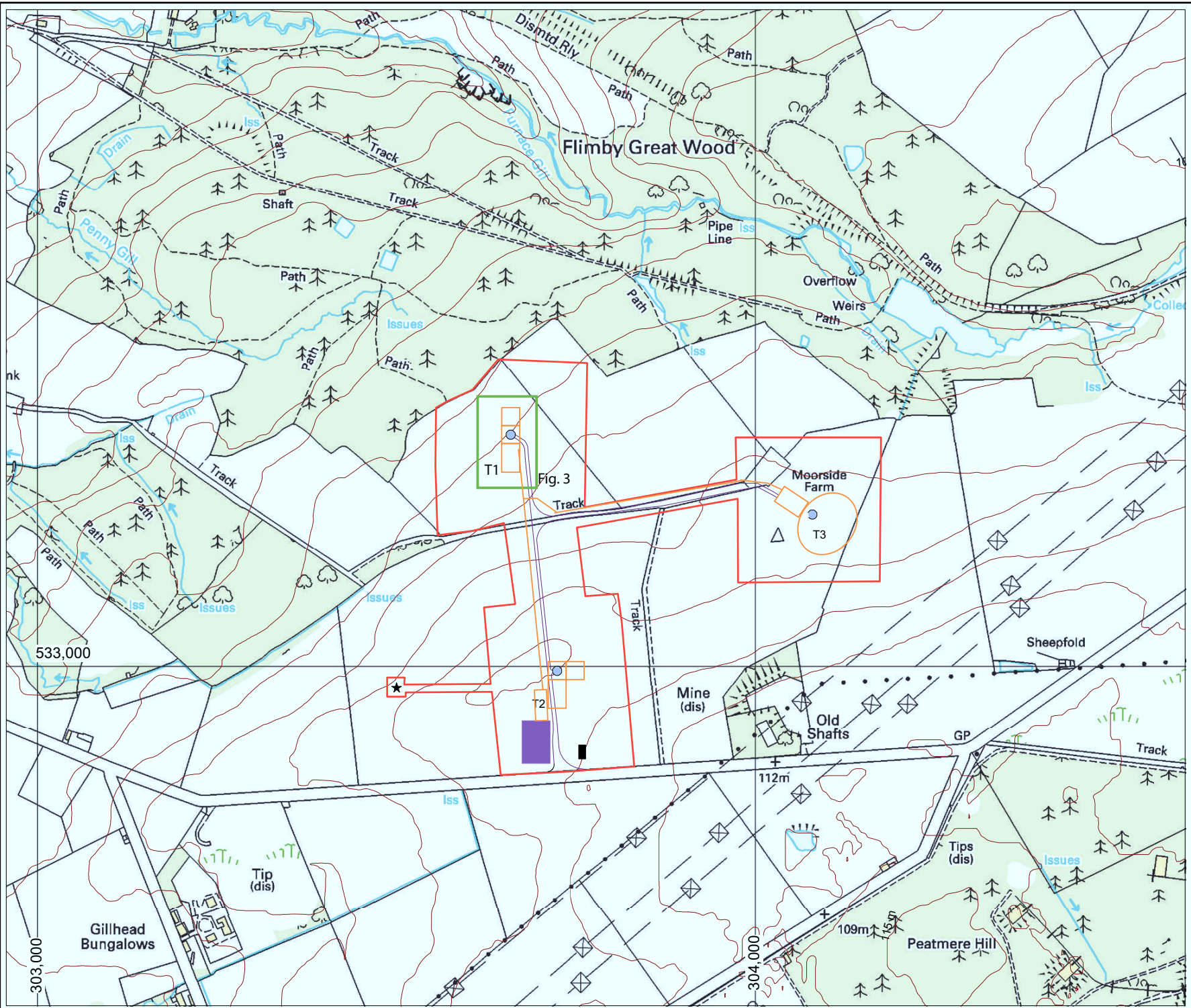
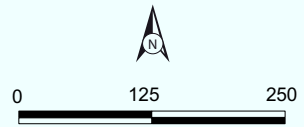


Figure 2: Watching Brief Excavation Areas

- Key**
- Application Boundary
 - Turbine Location
 - Internal Access Tracks
 - Compound Area and Site Office
 - Substation (Not to Scale)
 - ★ Temporary Anemometry Mast
 - Watching Brief area



Metres
Scale: 1:5,000 @ A3

Based on a drawing supplied by the client

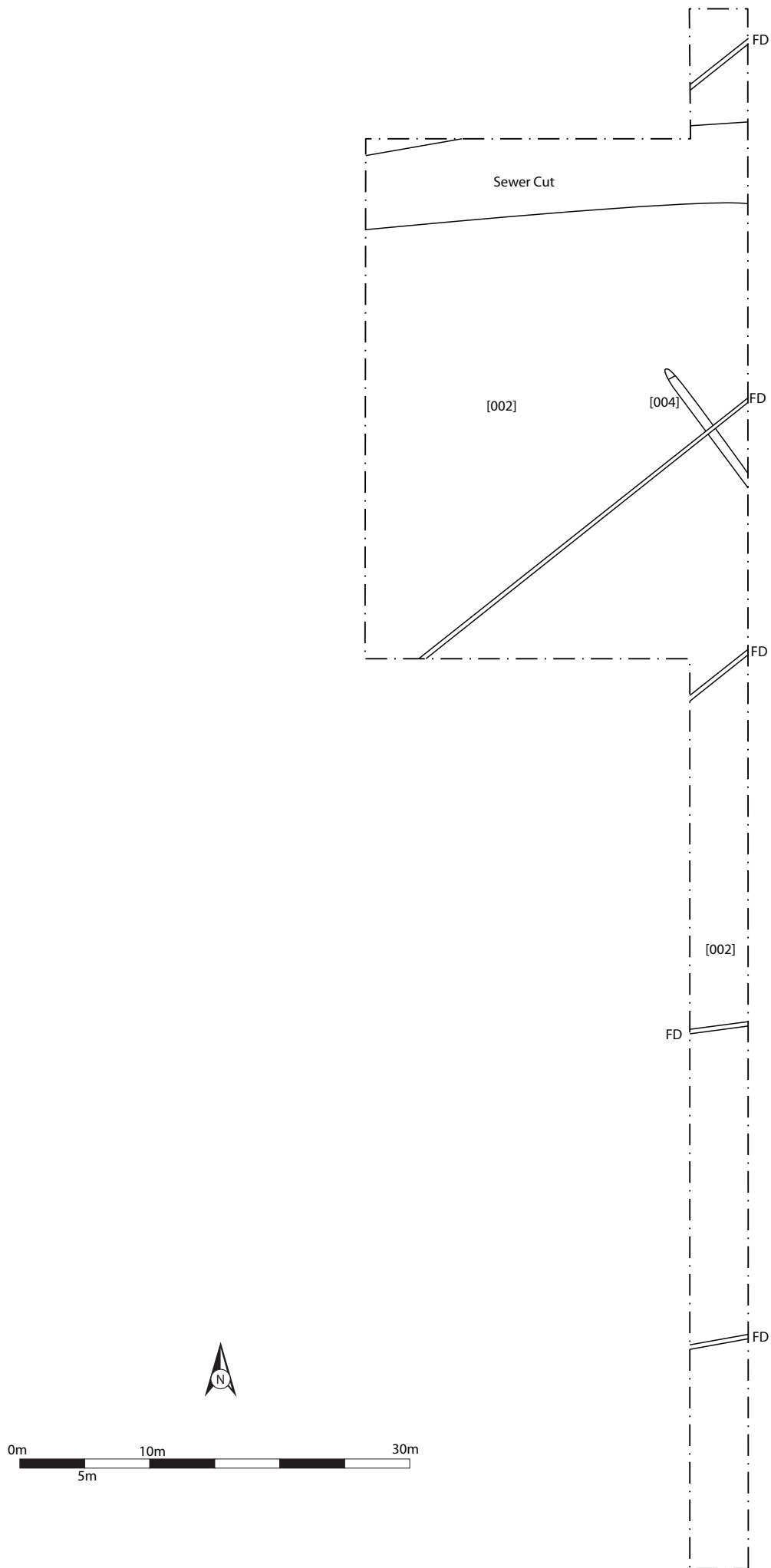


Figure 3: Detail of Watching Brief area at Turbine 1