

1 ARCHAEOLOGICAL EVALUATION

1.1 Introduction

1.1.1 This report describes the results of an archaeological evaluation carried out between 19th and 26th October 2009 by Headland Archaeology Ltd. It is supplementary to the information provided in Chapter 8 of the Environmental Statement submitted in support of the planning application for a nine turbine wind farm on land at Park Head Farm between the villages of Wingates and Netherwitton, Northumberland. Further details of the site location and archaeological background can be found in the abovementioned chapter. The scope of work was agreed in advance of work commencing with the Northumberland County Council County Archaeologist.

1.2 Aims & Methods

1.2.1 The objective of the trial trench evaluation was to ascertain whether there are any archaeological constraints that may affect the proposed development; in particular, to determine the presence or absence of archaeological remains within the development areas and if present to ascertain their quality, nature, extent and character. A 5% sample of the total area (51,690 sq m), which equates to 1292m of linear trenching 2m wide was excavated across the identified turbine micro sites, borrow pit and construction compound. In addition two 25m trenches were excavated across areas of new track focusing on the wide track bends.

1.2.2 A hand-held GPS programmed with the relevant coordinates was utilised to identify the locations of trenches, which were then excavated using a 360° tracked mechanical excavator, fitted with a flat bladed ditching bucket. The machine was operated under continuous archaeological supervision and any potential features identified were hand cleaned, investigated and recorded appropriately.

1.2.3 Archaeological features and deposits were hand excavated and recorded using standard archaeological methods and pro-forma record sheets. The excavated trenches and any archaeological contexts were recorded using a combination of AutoCAD and TheoLT survey related to the National Grid, as well as hand drawing where appropriate. Shallow features containing a single fill were recorded by digital survey and measured sketch on pro-forma record sheets. A copy of the digital archive will be deposited at the ADS (Archaeological Data Service) in line with the recommendations of the AAF (Archaeological Archives Forum). Sediment samples were collected from secure archaeological contexts for processing and assessment. Where possible a minimum 10 litre sample was collected from each archaeological deposit. Two of the collected samples were processed as part of the work undertaken.

1.3 Results

1.3.1 A total of 45 trenches were excavated across the site, ranging in height from 150m to 166m aOD (shown as Figure 1 of this document). The stratigraphy generally comprised 0.25m of mid-brown silt loam topsoil overlying deposits of greyish-orange mottled clays interpreted as glacial till. Turbine 7 is sited in a natural basin and the stratigraphy was composed of 0.35m of dark brown humified peaty topsoil, overlying 0.45m of brownish grey clayey silt alluvium, in turn overlying orange/grey sandy clay till. Agricultural drains were noted in the majority of trenches.

Turbine Microsite Areas

- 1.3.2 **Turbine 1 (Trenches 1-3, 34):** Trenches were located in a field of rough pasture, sloping north to south. Linear feature 008 was identified in Trench 1 (Figures 4 & 5) and interpreted as a boundary or drainage ditch. It was aligned NW-SE; running parallel with a current field boundary. It contained single fill 009 brown sandy clay with stone inclusions at the base. In Trench 2 feature 010 was aligned perpendicular to 008 (N-S), also reflecting the line of a current field boundary, and contained stones at the base of its fill. It was also interpreted as an infilled boundary or drainage ditch, and appeared to discontinue before Trench 3, 35m to the south. Trench 34 contained a roughly curvilinear feature recorded as 014 and 016. The feature was irregular in both plan and section and only 0.1m deep. The surrounding topsoil was markedly shallow and the fill of the feature was almost identical to topsoil. An environmental sample from the fill 017 was processed to test whether the feature included any anthropogenic material, but it was found to be archaeologically sterile (see Section 3). The feature is likely to be of relatively recent origin, and possibly resulted from rutting by heavy agricultural machinery.
- 1.3.3 **Turbine 2 (Trenches 4-6, 39-40,45; Figure 2):** Trenches were located in a field of rough pasture, graded gently from north to south. Trenches 4 and 5 contained no archaeological features. Trench 6 contained feature 018, aligned N-S, which was 0.2m deep and 2.8m in width. 018 had very gently sloping sides and is more likely to be the remains of a furrow than a boundary or drainage ditch. The pale grey colour of the fill (019) inferred leaching of the soil had occurred, suggesting it is not a very recent feature. Trench 39 contained no archaeological features. Trench 40 contained the remnants of a north-south aligned furrow recorded as 023/025. It was 0.15m in depth and 2.2m wide, with gently sloping sides. Similar to 019, the fill was pale grey clayey silt. Trench 45 contained linear feature 021 (Figure 6), which was oriented NW-SE and was 0.19m deep by 1.95m wide. 021 contained fill 022 which was a pale, homogenous deposit comprising greyish brown silty clay. The fill reflected the surrounding subsoil and was similar to the fills of 018 and 023/025. This feature was also interpreted as the base of a furrow, and of no archaeological significance.
- 1.3.4 **Turbine 3 (Trenches 7-9, 41-42):** Trenches were located in a field of rough pasture, on gently sloping ground at the top of a SSE-facing incline. No archaeological features were recorded in the trenches in this area. Trench 7 contained a modern agricultural pit and pieces of plastic observed in the fill.
- 1.3.5 **Turbine 4 (Trenches 11-12, 43-44):** Trenches were located in a field of rough pasture, on a fairly steep S-facing slope. No archaeological features were recorded in the trenches in this area.
- 1.3.6 **Turbine 5 (Trenches 13-16, 35):** Trenches were located in a ploughed arable field, on fairly level ground at the base of a slope. No archaeological features were recorded in the trenches in this area.
- 1.3.7 **Turbine 6 (Trenches 18-19, 32-33):** Trenches were located in a field of rough pasture, on low lying, level ground. No archaeological features were recorded in the trenches in this area.
- 1.3.8 **Turbine 7 (Trenches 20-22):** Trenches were located in a field of rough pasture, on level ground situated in a natural basin. No archaeological features were recorded in the trenches in this area.
- 1.3.9 **Turbine 8 (Trenches 30-31, 37-38).** Trenches were located in fields of both rough pasture and ploughed arable land, on level ground. No archaeological features were recorded in the trenches in this area.
- 1.3.10 **Turbine 9 (Trenches 26, 36):** Trenches were located in a field of rough pasture, on level ground on the brow of a hill. They were in close proximity to the irregular mound cited in Appendix 8.1 as HA No. 10. No archaeological features were recorded in the trenches in this area.

Borrow Pit

- 1.3.11 **Trenches 23-25:** Trenches were located in a ploughed arable field, on ground sloping to the NE. Trenches 23 and 24 contained no archaeological features. Trench 25 contained three very shallow linear features interpreted as the likely remains of furrows or field boundaries-002, 004 and 006. 002 was aligned NW-SE and was 0.09m deep by 1.1m wide. It ran parallel to a current field boundary to the south and was filled by 003 light brown clayey silt with stone inclusions. A sample from the fill was processed to test for anthropogenic material and it was found to be archaeologically sterile (see Section 3). Feature 004 was irregular in plan and was 0.06m deep by 0.95m wide. It was filled by a pale grey sandy clay, 005, which had a fairly diffuse interface with the surrounding subsoil. Feature 006 was 2m to the east of 004 and only 0.05m deep by 0.54m wide. It was oriented NW-SE; perpendicular to feature 004 and parallel with 002. It contained fill 007 light grey/yellow sandy clay with small stone inclusions that was similar to the surrounding subsoil and did not provide a clear deposit interface. 004 and 006 may represent the corner of a field boundary or intersecting furrows.

Construction Compound

- 1.3.12 **Trenches 27-29:** Trenches were located in a field of rough pasture, sloping gently E-W. No archaeological features were recorded in the trenches in this area.

Track Bends

- 1.3.13 **Trenches 10, 17:** Trench 10 was located in a field of rough pasture, on a fairly steep SE facing slope. Trench 17 was also in rough pasture, but located on low lying, level ground. No archaeological features were recorded in either trench.

1.4 Discussion

- 1.4.1 The features recorded within the trenches seem to be representative of cultivation and field improvement. Along with field drains and frequent plough marks, they predominantly take the form of shallow linear features interpreted as infilled field boundaries or furrows. In the area of Turbine 2, the two linear features 021 and 023 may be associated and form the corner of a boundary or an irregular furrow or ditch. Similarly at the borrow pit location, features 004 and 006 may form a boundary corner or be intersecting furrows. During both the fieldwork and in post-excavation analysis no dating or other anthropogenic evidence was recovered from any of the identified features. This confirms that they are likely to have been connected with agricultural use rather than any past settlement.
- 1.4.2 There was a general sparsity of features recorded during the trial trench evaluation, which may be attributable to several factors. In low lying areas where there was a peat content to the topsoil, as around Turbine 7, it is likely the location was very wet and possibly prone to seasonal waterlogging; thus unsuitable for settlement. In the higher areas and hill slopes, more conducive to habitation, the likelihood of the survival of archaeological remains has been diminished by a history of post-medieval field improvement and ongoing modern agricultural practices taking place on fairly shallow topsoil. In addition, the targeted nature of the evaluation means that settlement remains in the landscape are likely to have been avoided.
- 1.4.3 The archaeological potential of the areas targeted during the evaluation is assessed as low.

2 SITE REGISTERS

Context Register

Context No.	Trench	Description
001	-	Topsoil.
002	25	Cut for shallow linear feature. Aligned NW-SE and was 0.09m deep by 1.1m wide. Very shallow sloping sides and slightly curved base.
003	25	Fill of feature 002. Light brown clayey silt.
004	25	Cut of linear feature. Irregular in plan and was 0.06m deep by 0.95m wide. Sloping sides with an uneven base.
005	25	Fill of linear feature 004. Light grey sandy clay.
006	25	Cut of linear feature. 0.05m deep, 0.54m wide and oriented E-W. Steep sloping sides and uneven base.
007	25	Fill of linear feature 006. Light grey/yellow sandy clay.
008	01	Cut of linear feature. It was aligned NW-SE with a depth of 0.27m and width of 0.98m. It had fairly steep sloping sides and uneven, curved base.
009	01	Fill of feature 008. Brown sandy clay.
010	02	Cut of linear feature. It was oriented N-S and was 0.45m deep and 0.82m wide. Steep sloping sides and curved base.
011	02	Fill of feature 009. Mid grey/brown sandy clay.
012	03	Cut of linear feature. It was aligned E-W and was 0.23m deep and 0.62m wide. Irregular sloping sides and flat base.
013	03	Fill of feature 012. Brown sandy clay.
014	34	Cut of curvilinear feature. Irregular in plan, 014 was 0.10m deep and 0.3m wide. Steep sides and flat base.
015	34	Fill of feature 014. Light brown silty clay.
016	34	Cut of feature truncated by 014. It was 0.11m deep and 0.5m wide. Steep sides and flat base.
017	34	Fill of feature 016. Light brown silty clay.
018	06	Cut of shallow linear feature. Aligned N-S, it was 0.2m deep and 2.8m in width. Very gentle sloping sides and rounded base.
019	06	Upper fill of feature 018. Mid grey/brown clayey silt.
020	06	Lower fill of feature 018. Mid grey silty/sandy clay.
021	45	Cut of linear feature. It was oriented NW-SE and was 0.19m deep by 1.95m wide. Steep sides and a flat base.
022	45	Fill of feature 022. Light grey/brown clay.
023	40	Cut of shallow linear feature. It was 0.15m in depth and 2.2m wide, with gently sloping sides.
024	40	Fill of feature 023. Mid grey silty/sandy clay.
025	40	Cut of narrow linear feature. It was aligned N-S and was 0.2m deep by 0.4m wide.
026	40	Fill of feature 025. Mid grey silty/sandy clay.

Photographic Register

Shot No.	Direction	Description
1	-	ID shot. Film 1.
2	NE	Pre-ex landscape shot. Trenches 17-19 locations.
3	E	Post-ex shot, Trench 18.
4	N	Post-ex shot, Trench 19.
5	E	Post-ex shot, Trench 17.
6	NW	Post-ex shot, Trench 10.
7	NE	Post-ex shot, Trench 11.

8	E	Post-ex shot, Trench 12.
9	N	Post-ex shot, Trench 26.
10	E	Post-ex shot, Trench 27.
11	N	Post-ex shot, Trench 28.
12	E	Post-ex shot, Trench 29.
13	SE	Post-ex shot, Trench 13.
14	SW	Post-ex shot, Trench 14.
15	NE	Post-ex shot, Trench 16.
16	NW	Post-ex shot, Trench 15.
17	S	Working shot.
18	S	Working shot.
19	W	Post-ex shot, Trench 23.
20	-	Void.
21	S	Post-ex shot, Trench 24.
22	W	Post-ex shot, Trench 25.
23	SE	Field boundary 002 in Trench 25.
24	E	Modern wheel ruts in Trench 24.
25	N	Modern wheel ruts in Trench 24.
26	W	Post-ex shot, Trench 32.
27	N	Post-ex shot, Trench 33.
28	NE	Post-ex shot, Trench 31.
29	NW	NE-facing section of feature 008.
30	NW	Shot of feature 008.
31	W	Post-ex shot, Trench 2.
32	S	Post-ex shot, Trench 3.
33	NW	Post-ex shot, Trench 34.
34	SE	Post-ex shot, Trench 36.
35	NW	Working shot.
36	NE	Working shot.
37	-	ID shot. Film 2.
38	W	Shot of arable field to site Trenches 13-16, 23-25 & 35.
39	SE	NW-facing section of feature 006.
40	SW	NE-facing section of feature 004.
41	NE	Shot of rough pasture field to site Trenches 26-29 & 36.
42	E	Post-ex shot, Trench 35.
43	S	Sondage through feature 010 in Trench 2.
44	NE	Sondage through feature with cuts 014 & 016 in Trench 34.
45	E	Sondage through feature 012 in Trench 3.
46	E	Post-ex shot, Trench 37.
47	NW	Post-ex shot, Trench 30.
48	W	Post-ex shot, Trench 38.
49	SW	Post-ex shot, Trench 31.
50	NW	Shot of arable field with Trench 31.
51	SE	Shot of rough pasture field to site Trenches 30, 31, 37 & 38.
52	NE	Post-ex shot, Trench 44.
53	N	Post-ex shot, Trench 43.
54	E	Post-ex shot, Trench 10.
55	W	Post-ex shot, Trench 41.
56	SW	Post-ex shot, Trench 9.
57	S	Post-ex shot, Trench 8.
58	SE	Post-ex shot, Trench 7.
59	NE	Post-ex shot, Trench 7 extension.
60	E	Post-ex shot, Trench 42.
61	S	Shot of rough pasture field to site of Trenches 7-9 & 41-42.
62	S	N-facing section of feature 018.

63	E	Post-ex shot, Trench 39.
64	NW	Post-ex shot, Trench 5.
65	E	Post-ex shot, Trench 40.
66	S	Post-ex shot, Trench 4.
67	SW	Shot of rough pasture field to site of Trenches 4-6 & 39-40.
68	SE	Post-ex shot, Trench 6.
69	NE	Feature 021 in Trench 45.
70	N	Linear feature 025.
71	S	Probable furrow 023.
72	W	Probable furrow 023.
73	-	ID Shot. Film 3.
74	S	Working shot in field containing Trenches 20-22.
75	S	Post-ex shot, Trench 20.
76	SE	Post-ex shot, Trench 21.
77	SE	NW-facing section of sondage through alluvial deposits in Trench 22.
78	SE	Post-ex shot, Trench 22.

Drawing Register

Drawing No.	Scale	Description
01	1:10	SE-facing section through alluvial deposits in Trench 22.

Sample Register

Sample No.	Context No.	Description
001	003	Fill of field boundary 002.
002	009	Fill of field boundary 008.
003	011	Fill of field boundary 010.
004	015	Fill of curvilinear feature 014.
005	017	Fill of feature 016.
006	013	Fill of feature 012.

3 PALAEOENVIRONMENTAL SAMPLE ASSESSMENT

Introduction

A total of two samples were processed; Sample 01 from the fill [003] of field boundary [002] and Sample 05 from the fill [017] of Feature [016]. Samples were processed with the aim of finding material to date the site and assessing the potential of features to contain environmental remains.

Methods

All samples were processed in laboratory conditions using a standard floatation method (cf. Kenward et al, 1980). The floating debris (flot) was collected using a 250µm sieve and, once dry, were analysed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification.

Results

The results are presented in Tables 1 (Retent samples) and 2 (Floatation samples).

Environmental

No environmental finds were present in either sample (see Tables 1 and 2). Modern root fragments were the only plant remains present.

Other finds

A rare amount of cinder and coal were present in Sample 05, which are likely to represent background (e.g. blown in from activity elsewhere in the landscape) and natural deposition (see Table 1).

Discussion

The two samples processed failed to produce any environmental material or finds which would be able to provide a date for the site. The only plant material recovered was modern root samples and the coal and cinder are likely to represent natural and background elements. The processed palaeoenvironmental samples thus offer little interpretative information for this site.

References

Kenward, H. K., Hall, A. R. and Jones, A. K. G. (1980). A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits. *Science and Archaeology* 22, 3-15.

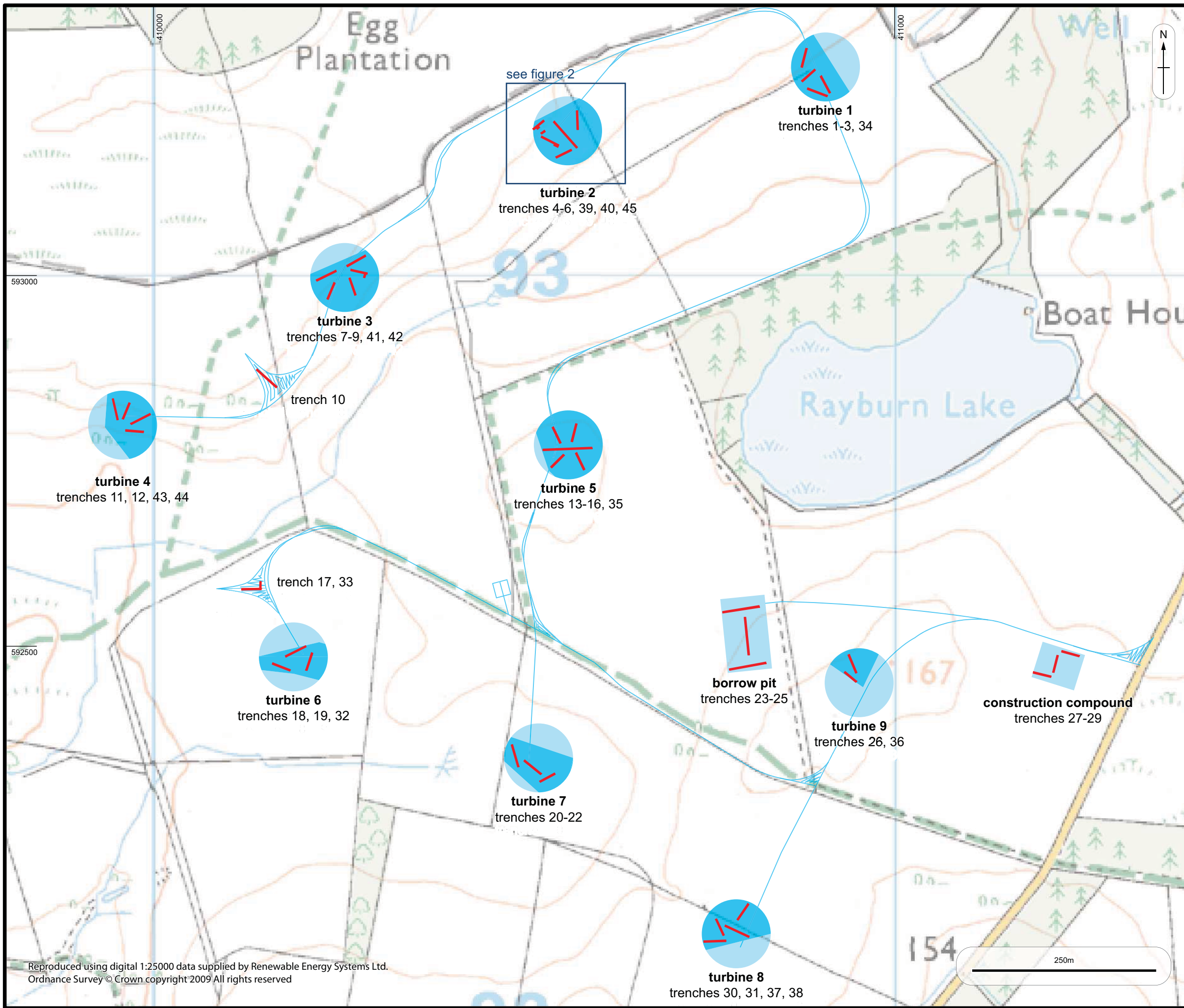


Table 1: PWF09 Retent Sample Results

Context Number	Sample Number	Retent Vol (l)	Cinders	Coal	Material available for AMS	Comments
3	1	10				Archaeologically sterile
17	5	10	+	+		
Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant NB charcoal over 1cm is suitable for identification and AMS dating						

Table 2 PHWF09 Flotation Sample Results

Context Number	Sample Number	Total flot Vol (ml)	Other plant remains	Comments
3	1	8	Modern root and stalk debris +	Archaeologically sterile
17	5	80	Modern root debris ++++	Archaeologically sterile
Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant NB charcoal over 1cm is suitable for identification and AMS dating				



PARK HEAD WIND FARM

Figure 1

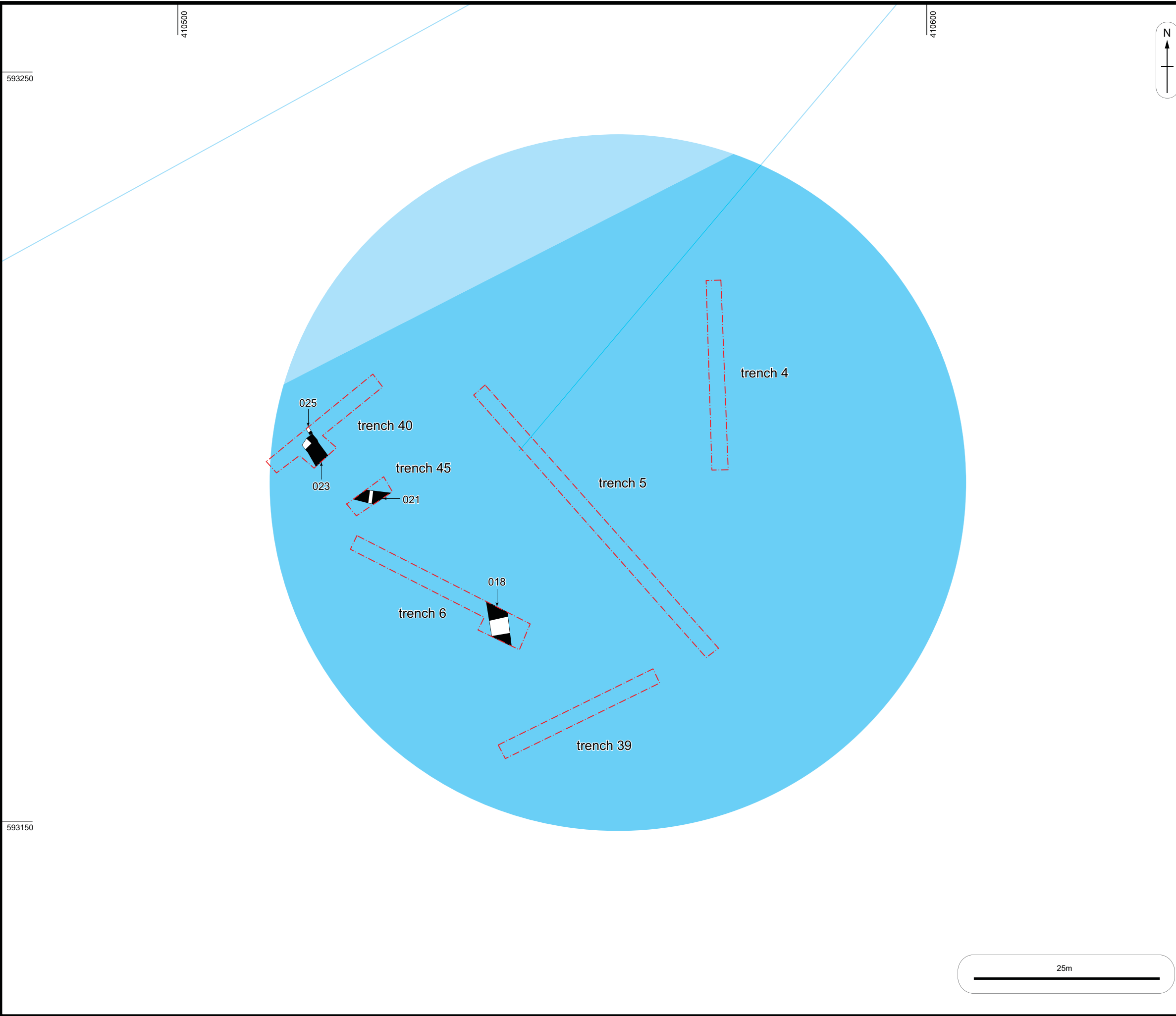
Archaeological Evaluation Trench Location Plan

Key

- turbine location
- microsites
- access tracks
- evaluation trench

LAYOUT DWG	T-LAYOUT NO.
DRAWING NUMBER	
SCALE - 1:5000 @ A3	
250m	
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**PARK HEAD
WIND FARM**

Figure 2

**Archaeological
Evaluation
Detail of Turbine 2**

Key

- turbine location
- micro-siting area
- access tracks
- - - evaluation trench
- archaeological feature
(white areas indicate hand-dug slots)

LAYOUT DWG	T-LAYOUT NO.
DRAWING NUMBER	
SCALE - 1:500 @ A3	
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Figure 3 - Working shot of trench excavations



Figure 4 - Linear feature in trench 1 - typical of those revealed during trenching

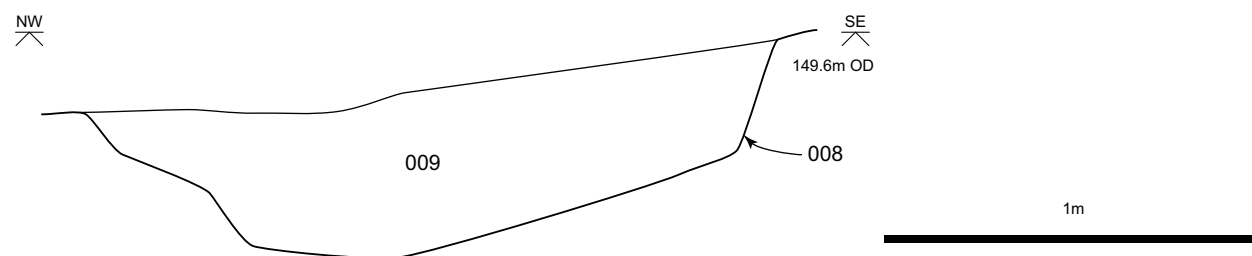


Figure 5 - NE facing section of feature 008 (top), and SW facing section drawing

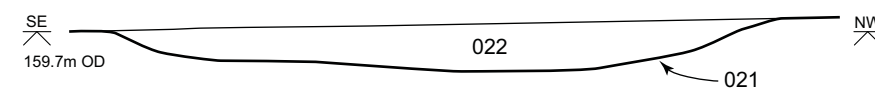


Figure 6 - SW facing section of feature 021 (top), and NE facing section drawing

LAYOUT DWG	T-LAYOUT NO.
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DRAWING NUMBER

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