

AWFC11



ARMISTEAD WIND FARM, OLD HUTTON KENDAL, CUMBRIA

Archaeological evaluation

*for AMEC Environment & Infrastructure UK Ltd
on behalf of Banks Renewables Ltd*

APP/M0933/A/08/2090274

September 2011

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ARMISTEAD WIND FARM, OLD HUTTON, KENDAL, CUMBRIA

Archaeological evaluation

Headland Archaeology (UK) Ltd carried out a programme of archaeological works for AMEC Environment & Infrastructure UK Ltd (AMEC E&I UK) on behalf of Banks Renewables Ltd at the proposed Armistead Wind Farm, Old Hutton, Kendal, Cumbria in order to satisfy a condition of planning consent. The archaeological work followed a Written Scheme of Investigation produced by AMEC E&I UK and agreed by Cumbria County Council's Historic Environment Officer, acting on behalf of South Lakeland District Council. The work was carried out in August 2011.

2 *The archaeological works comprised a trial trench evaluation providing an approximate 5% sample of the footprint of the development area with a total excavated area of 3,222m². A watching brief was also maintained on the excavation of four geotechnical test pits. A simple soil profile of thin topsoil derived from glacial deposits was noted across the development area. In occasional boggy hollows in the topography shallow deposits of peaty topsoil had formed. The only potential features of archaeological significance were a cluster of upstanding clearance cairns at the west of the site; one of which was sample-excavated as part of the evaluation. Sampling established that the stones were set within a matrix of thin topsoil matrix with no apparent indications of antiquity. A recent origin was also suggested by the current occupier of the land, who reported that he had formed the cairns.*

1. INTRODUCTION

This report presents the findings of a programme of archaeological evaluation and watching brief conducted in advance of the construction of Armistead Wind Farm on land to the east of Crosslands Farm, Old Hutton, Kendal. The work was undertaken to satisfy planning condition 16 placed by South Lakeland District Council in response to planning application (APP/M0933/A/08/2090274) acting on the advice of Cumbria County Council's (CCC) Historic Environment Officer (HEO).

Condition 16 states that:

No development shall commence until the applicant, or their agents or successors in title, 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.

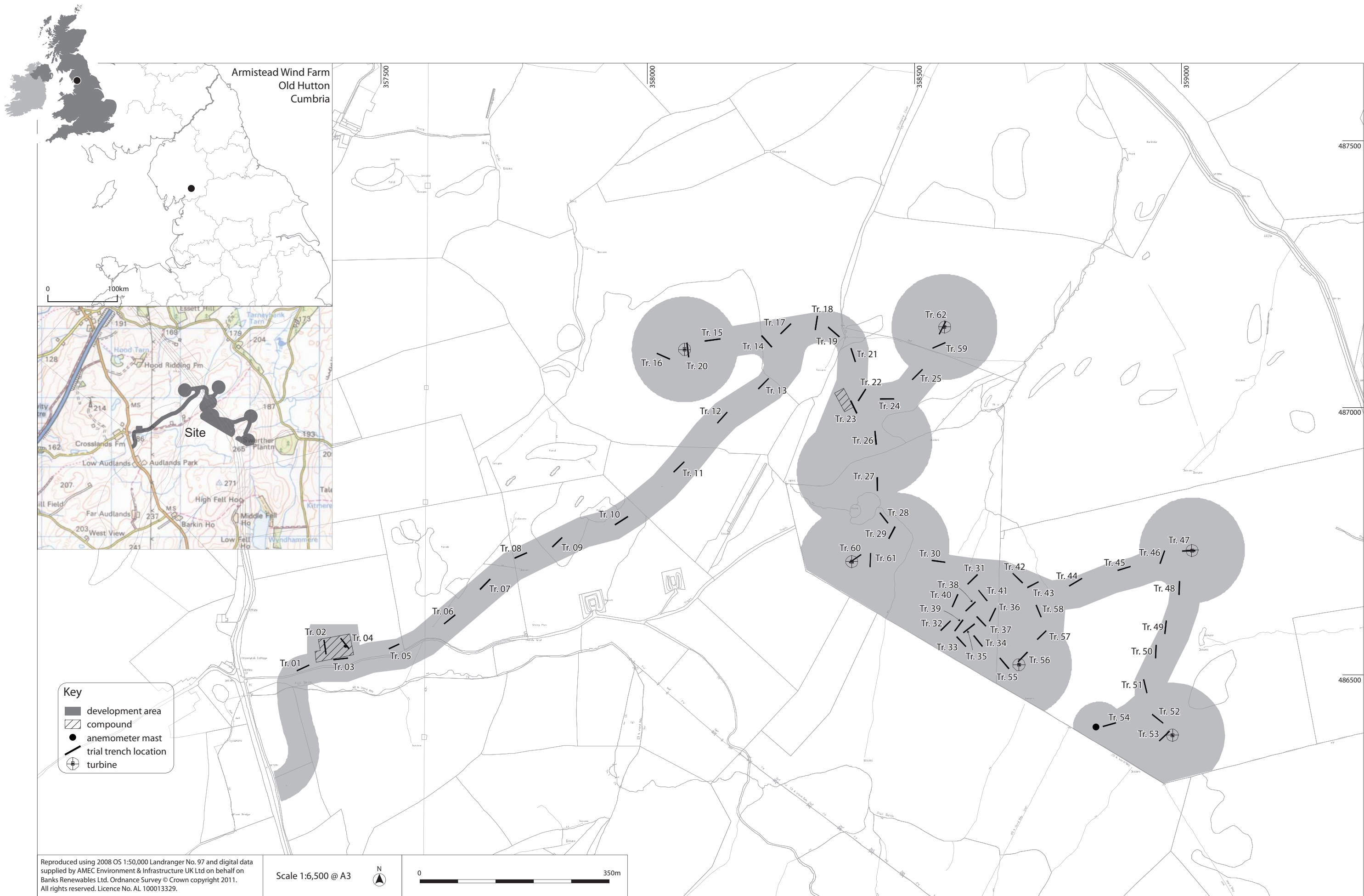
The proposed scope and methodology for the programme of archaeological work required to discharge the above condition were set out in a Written Scheme of Investigation (WSI). This was prepared by AMEC Environment &

Infrastructure UK Ltd (AMEC E&I UK; AMEC 2011a) and agreed by CCC's HEO, acting on behalf of South Lakeland District Council.

The evaluation was intended to provide information further to that obtained as part of an Environmental Impact Assessment (EIA) produced by AMEC E&I UK (AMEC 2011b), which assessed the archaeological potential of land within the footprint of the scheme and its potential impacts.

The objectives of the evaluation were to establish the nature and extent of any archaeological remains within the sampled area and to allow an informed decision to be reached on further mitigation if necessary. The trial trenching aimed to characterise the nature, date and significance of any archaeological features, deposits and structures present across a representative sample of the area.

Headland Archaeology (UK) Ltd were commissioned to undertake the work by AMEC E&I UK on behalf of Banks Renewables Ltd and undertook the work between the 4th and 12th August 2011.



Illus 1
Site location

**Illus 2**

NE facing section through clearance cairn [001]

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2. SITE BACKGROUND

2.1 Archaeological Background

An archaeological desk based assessment was undertaken as part of an EIA and provides a full archaeological background to the site, a summary is included here. The assessment identified few features of heritage interest within the site. A number of features thought to be post-medieval clearance cairns were identified in the vicinity of the proposed compound. Features recorded within the EIA study area but outwith the development area were mostly of post-medieval date, with the exception of a Bronze Age axe found during dredging of Tarney Bank Tarn, to the north of the site. (AMEC 2011b).

An archaeological watching brief had been maintained during geotechnical test pitting of the development area earlier in 2011. A total of 52 trial pits, measuring 2.5m by 1.5m, were excavated ranging from 0.4 to 5m in depth. No features or deposits of archaeological interest were identified during the trial pitting exercise. (Oxford Archaeology North 2011).

2.2 Site Topography and Land Use

The development area occupies undulating upland farmland between 190m and 260m aOD, the land is mainly improved pasture, with some boggy and peat-filled hollows.

The results of geotechnical investigations carried out demonstrate that the subsurface stratigraphy underlying the development generally constitutes thin topsoil deposits, in some places directly overlying bedrock. The glacial till deposits are of the Hafren Association and overlie the solid geology of the Kirkby Moor Flag Formation comprising mudstone, siltstone and sandstone (AMEC 2011a).

3. METHODOLOGY

All works were undertaken in accordance with a Written Scheme of Investigation (AMEC 2011a). An approximate 5% sample (3,250m²) of the footprint of the development area that entailed ground disturbance was proposed for investigation by trial trenching. This was weighted so that an approximate 5% sample was also excavated of

**Illus 3**

General view of windfarm from Turbine 6 showing excavated trenches

each individual element of the Wind Farm. This was envisioned as 65 25m by 2m trenches placed to give good spatial coverage across the development area. An indicative trench plan was produced by AMEC E&I UK and agreed with the CCC's HEO. In addition to the trial trenching a watching brief was maintained on four geological test pits excavated as part of this phase of works.

While conducting the evaluation access was not possible to two of the fields at the western edge of the development area and it was not possible to excavate three of the proposed trenches. This variation to the WSI was discussed with AMEC E&I UK and agreed with CCC's HEO at an on-site meeting on 12 August 2011. The total area of the excavated trenches was therefore 3,222m². One of the trenches in the area of the proposed compound for the development was positioned to target one of the clearance cairns identified during the EIA; none of the other trenches targeted known archaeological features.

All trenches were individually numbered and a pole-mounted Trimble G6 differential GPS programmed with the relevant co-ordinates was used to mark out the locations of trenches. The trenches were excavated using

a 13 ton 360° tracked mechanical excavator, fitted with a 2 m wide flat-bladed ditching bucket. The machine was operated under continuous archaeological supervision and turf, topsoil and subsoil were removed down to the first archaeological horizon or clean geological deposits, whichever was met first. Topsoil and subsoil were stored separately. Any potential features identified were hand cleaned and investigated appropriately. Deposits were recorded using standard archaeological methods and pro-forma record sheets. The excavated trenches and any archaeological contexts were recorded using a Trimble G6 differential GPS, supplemented by hand drawing where appropriate. Photographs were taken in colour slide, colour film, and digital formats. All work was carried out in line with current IfA guidelines and the IfA Code of Conduct.

4. RESULTS

A total of 63 trenches were excavated across the development area with a combined total area of 3,222m² (Illus 1). Four geotechnical test pits were also excavated during this phase of site work under archaeological supervision. Full detailed descriptions of each trench

including heights aOD and individual contexts can be found in the appendices. Results are summarised below.

Undisturbed geological deposits across the development area were orange brown sandy clays [003] with extensive bands of outcropping bedrock; the latter were especially prevalent on higher ground at the east of the site. In places the bedrock was shattered (presumably through freezing/thawing). Also, in places undisturbed geological deposits were overlain by 0.10m to 0.20m of subsoil or interface material, which comprised angular stones, set in a dark grey sandy clay [004]. Topsoil [002] was between 0.10m and 0.40m deep and consisted of dark brown clayey sand and contained rare recent ceramic material (white-glazed pottery; not retained).

The only potential archaeological feature excavated during the evaluation was a clearance cairn located within trench 4 (Illus 2). Cairn [001] was set within a matrix indistinguishable from the topsoil comprising dark brown clayey sand [002] 0.30m deep. The cairn was roughly oval in shape, measuring 5.90m by 6.70m and was 0.32m high. The stones making up the cairn were angular in shape and had a maximum size of 0.35m by 0.10m by 0.05m. They were noted as of the same type as those commonly occurring within the glacial till deposits [003]. While on site the farmer reported that he had created this clearance cairn, and the others that are located in proximity to the proposed compound of the development.

5. DISCUSSION

No sub-surface archaeological features were revealed within the trenches excavated across the site. The thin

topsoil containing occasional, recent ceramic material seen across the site suggests that the development area has not been subject to intensive or regular ploughing and manuring. The area is certainly occupied by rough pasture at the current time (Illus 3) and this may always have been the case. Given this prevalent land-use archaeological remains present on site would have a good chance of surviving as upstanding monuments.

In the west of the site was a small cluster of clearance cairns, one of which was sample-excavated during the evaluation. No stratigraphic or artefactual evidence of antiquity was recovered, and these cairns are thought to be recent in date (the present occupier of the land claimed to have created them).

The cumulative evidence from watching briefs and evaluation confirms that the development area has a very low potential to contain archaeological remains.

6. REFERENCES

- AMEC Environment & Infrastructure UK Ltd, 2011a, *Armistead Wind Farm Written Scheme of Investigation: Archaeological Trial Trench Evaluation*, unpublished client report.
- AMEC Environment & Infrastructure UK Ltd, 2011b, *Armistead Wind Farm Environmental Impact Assessment: Cultural Heritage*, unpublished client report.
- Oxford Archaeology North, 2011, *Armistead Wind Farm, Cumbria: Archaeological Watching Brief Report*, unpublished client report.



7. APPENDICES

7.1 Site registers

Context register

Context no.	Area	Description
001	Trench 4	Field clearance cairn composed of angular stone of maximum size 0.35 by 0.10 by 0.05m. The stone is set within a matrix of dark brown humic clayey sand, similar in nature to the topsoil. The landowner indicated that he had constructed this cairn and the others located in the vicinity.
002	-	Topsoil. Dark brown sandy clay.
003	-	Natural. Orange brown sandy clay with frequent angular stone.
004	-	Subsoil. Angular stone set in pale grey clay.

Photographic register

Photo No.	Direction facing	Description
001	-	ID Shot
002	W	Location of test pit 1
003	W	Section of test pit 1
004	E	Location of test pit 2
005	E	Section of test pit 2
006	E	Location of test pit 3
007	E	Section of test pit 3
008	NE	Section of test pit 4
009	E	General view of site
010	S	General view of site
011	-	ID Shot (Colour Slide)
012	-	ID Shot (Colour Print & Digital)
013	ENE	Trench 1
014	N	Trench 2
015	E	Trench 3
016	NW	Trench 4
017	ENE	Trench 5
018	E	Trench 6
019	NE	Trench 7
020	NE	Trench 8
021	NE	Trench 9
022	NE	Trench 10
023	NE	Trench 11
024	NE	Trench 12

Photo No.	Direction facing	Description
025	NE	Trench 13
026	NW	Trench 14
027	W	Trench 15
028	NWW	Trench 20
029	S	Trench 16
030	NE	Trench 17
031	NNE	Trench 18
032	SE	Trench 19
033	–	ID Shot (Colour Print)
034	SW	NE facing section of clearance cairn [001]
035	SE	Trench 58
036	SW	Trench 57
037	SW	Trench 56
038	SE	Trench 55
039	E	General view of windfarm showing excavated trenches (Digital only)
040	W	Trench 54
041	SW	Trench 53
042	SE	Trench 52
043	S	Trench 51
044	S	Trench 50
045	SW	Trench 49
046	S	Trench 48
047	W	Trench 47
048	SW	Trench 46
049	NE	Trench 44
050	E	Trench 42
051	NE	Trench 41
052	NE	Trench 40
053	SW	Trench 39
054	SE	Trench 38
055	SW	Trench 37
056	SE	Trench 36
057	NE	Trench 35
058	SE	Trench 34
059	NW	Trench 33
060	NE	Trench 32
061	NE	Trench 31
062	W	Trench 30
063	NW	Trench 29
064	N	Trench 28



Photo No.	Direction facing	Description
065	N	Trench 26
066	NE	Trench 25
067	W	Trench 24
068	NE	Trench 22
069	N	Trench 21
070	NE	Trench 62
071	NE	Trench 59
072	SW	Trench 60
073	S	Trench 61
074	E	Working Shot (Digital only)
075	E	Working Shot (Digital only)
076	–	ID Shot (Colour Slide & Digital)
077	NE	View of repaired gate (Digital only)
078	NE	View of repaired gate (Digital only)

Test pit register

Test Pit	Dimensions	Depth	Description
1	3m by 1.5m	0.4m	Located at Turbine 5. No features of archaeological interest
2	3m by 1.5m	0.4m	Located at Turbine 5. No features of archaeological interest
3	3m by 1.5m	0.4m	Located at Turbine 6. No features of archaeological interest
4	3m by 1.5m	0.4m	Located at Turbine 6. No features of archaeological interest

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Trench register

Trench	Length	Max. depth	Height OD	Orientation	Description
1	25.7	0.3	192	NE-SW	No features of archaeological interest.
2	26.6	0.25	193	N-S	Bedrock Outcropping. No features of archaeological interest.
3	27.2	0.3	194	E-W	No features of archaeological interest.
4	25.1	0.3	193	NW-SE	Excavated to half section clearance cairn 001.
5	21	0.3	195	NE-SW	No features of archaeological interest.
6	26.5	0.3	197	NE-SW	No features of archaeological interest.
7	27.2	0.3	201	NE-SW	No features of archaeological interest.
8	25.4	0.2	203	NE-SW	Bedrock outcropping. No features of archaeological interest
9	25.5	0.3	205	NE-SW	No features of archaeological interest.
10	28.7	0.3	209	NE-SW	No features of archaeological interest.
11	27.5	0.2	208	NE-SW	No features of archaeological interest.

Trench	Length	Max. depth	Height OD	Orientation	Description
12	27.4	0.3	207	NE-SW	Bedrock Outcropping. No features of archaeological interest.
13	27.2	0.25	209	NE-SW	No features of archaeological interest.
14	28.6	0.35	212	NW-SE	No features of archaeological interest.
15	29.5	0.35	221	E-W	Three field drains run N-S across trench. No features of archaeological interest
16	26.5	0.3	220	NW-SE	A test pit was encountered at the SE end of this trench but no features of archaeological interest were revealed.
17	27	0.3	208	NE-SW	No features of archaeological interest.
18	26.2	0.3	201	N-S	No features of archaeological interest.
19	28.1	0.2	199	NW-SE	Bedrock Outcropping. No features of archaeological interest.
20	27.2	0.3	225	N-S	No features of archaeological interest.
21	26.9	0.3	203	N-S	No features of archaeological interest.
22	26	0.4	214	NE-SW	No features of archaeological interest.
23	26.1	0.5	213	NW-SE	Bedrock Outcropping. No features of archaeological interest.
24	25.9	0.3	214	E-W	Bedrock Outcropping. No features of archaeological interest.
25	27.1	0.2	214	NE-SW	No features of archaeological interest.
26	25.6	0.25	217	N-S	Trench excavated in a boggy hollow. Peat topsoil overlying pale grey clay natural. No features of archaeological interest.
27	25.4	0.4	215	N-S	No features of archaeological interest.
28	24.4	0.45	217	NW-SE	Ceramic field drain ran N-S across trench. No features of archaeological interest.
29	25.3	0.45	221	NE-SW	No features of archaeological interest.
30	25.3	0.35	229	E-W	No features of archaeological interest.
31	25.8	0.2	236	NE-SW	No features of archaeological interest.
32	25.6	0.2	239	NE-SW	No features of archaeological interest.
33	25	0.2	244	NW-SE	Bedrock outcrops. No features of archaeological interest.
34	25.7	0.3	246	NW-SE	Bedrock Outcropping. No features of archaeological interest.
35	26.6	0.4	245	NE-SW	Bedrock Outcropping. No features of archaeological interest.
36	27	0.4	247	NE-SW	No features of archaeological interest.
37	25	0.4	247	NW-SE	Bedrock Outcropping. No features of archaeological interest.
38	25	0.2	244	NE-SW	Bedrock Outcropping. No features of archaeological interest.
39	25.9	0.25	243	NE-SW	Bedrock Outcropping. No features of archaeological interest.
40	25.8	0.3	238	NE-SW	No features of archaeological interest.
41	25.3	0.3	243	NW-SE	No features of archaeological interest.
42	25.8	0.3	235	NW-SE	No features of archaeological interest.
43	24.1	0.3	235	NE-SW	No features of archaeological interest.
44	27.6	0.2	238	NE-SW	No features of archaeological interest.
45	24.8	0.4	244	E-W	No features of archaeological interest.
46	25.8	0.4	246	NE-SW	No features of archaeological interest.
47	24.5	0.4	246	E-W	No features of archaeological interest.
48	25.5	0.4	250	N-S	No features of archaeological interest.
49	25	0.4	256	N-S	Bedrock Outcropping. No features of archaeological interest.
50	25.1	0.35	258	N-S	Bedrock Outcropping. No features of archaeological interest.



Trench	Length	Max. depth	Height OD	Orientation	Description
51	26.4	0.4	263	NW-SE	No features of archaeological interest.
52	26.2	0.4	263	NW-SE	No features of archaeological interest.
53	26.4	0.4	261	NE-SW	No features of archaeological interest.
54	25.1	0.4	261	E-W	No features of archaeological interest.
55	26	0.4	247	NW-SE	No features of archaeological interest.
56	24.6	0.1	248	NE-SW	Bedrock Outcropping. No features of archaeological interest.
57	23.6	0.5	242	NE-SW	Bedrock Outcropping. No features of archaeological interest.
58	24.3	0.4	238	N-S	No features of archaeological interest.
59	26.1	0.3	214	NE-SW	No features of archaeological interest.
60	26.2	0.25	221	NE-SW	No features of archaeological interest.
61	26.2	0.25	224	N-S	Bedrock Outcropping. No features of archaeological interest.
62	27.1	0.3	214	NE-SW	No features of archaeological interest.

Drawing register

Drawing No.	Plan	Section	Description
001	–	1:20	NE facing section through clearance cairn [001]



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