

**Site Code: SBW02**

**Date: April 2007**

**Client: Kilbraur Wind Energy Ltd.**

**Kilbraur Windfarm, Strath Brora, Golspie, Highland**

**Phase 1 Construction Programme:**

**Archaeological Watching Brief of Excavations for the  
Access Track, Sub-Station and other Groundworks.**

*Alan Matthews*

**PROJECT SUMMARY SHEET (SBW02)**

<b>Client</b>	Kilbraur Wind Energy Ltd.
<b>National Grid Reference</b>	NC 071 770
<b>Project Manager</b>	Chris Lowe
<b>Text</b>	Alan Matthews
<b>Illustrations</b>	Tom Small & Caroline Norrman
<b>Fieldwork</b>	Alistair Robertson Alan Matthews Nick Moignard Kirsty Owen Katie Sludden
<b>Schedule</b>	
Fieldwork	04 January – 22 March 2007
Report	April 2007

***Summary***

*An archaeological watching brief was undertaken at the site of the Kilbraur Windfarm, Strath Brora, Highland. The work was commissioned by Kilbraur Wind Energy Ltd and followed a specification by the Highland Council Planning and Development Service (Archaeology Unit).*

*The work comprised monitoring the excavation for the Main Access Track, including adjustments and the construction of drainage and silt traps along the route. This period of work also involved monitoring of excavation for the movement of the Site Compound, expansion of the Borrow Pit and construction of the Aluminium Road. During this work two clearance cairns were excavated and other sites were marked and avoided. The excavation of the area for the sub-station was also monitored. From this area, tree stumps were recovered showing cut marks and possibly charring. Subsequent trees recovered were recorded and examined in detail.*

## **KILBRAUR WINDFARM, STRATH BRORA, HIGHLAND RESULTS OF AN ARCHAEOLOGICAL WATCHING BRIEF**

### **CONTENTS**

- 1. INTRODUCTION
- 2. OBJECTIVES AND METHOD
- 3. RESULTS Main Site Access Track
  - Borrow Pit
  - Aluminium Road
  - New Compound
  - Sub-Station
- 4. DISCUSSION
- 5. BIBLIOGRAPHY

### **APPENDIX 1: SITE REGISTERS**

- 1.1 Tree Register
- 1.2 Photographic Register
- 1.3 Context Register
- 1.4 Drawing Register
- 1.5 Sample Register

FIGURE 1. Area of watching brief.

FIGURE 2. Location of cairn 003.

FIGURE 3. Plan and sections of cairn 003.

FIGURE 4. Location of cairn 006.

FIGURE 5. Plan and sections of cairn 006.

## 1. INTRODUCTION

This report presents the results for the watching brief associated with the Phase 1 Construction Works for Kilbraur Windfarm, Strath Brora, Highland, for the period January to March 2007. Headland Archaeology Ltd was commissioned by Kilbraur Wind Energy Ltd to carry out this archaeological watching brief. The project was undertaken in accordance with a specification prepared by the Highland Council Planning and Development Service, Archaeology Unit, and followed previous work undertaken in the area in conjunction with the Environmental Statement for the windfarm and its associated mitigation programme (WCE 2004; Dalland & Lowe 2005; Lowe 2006; Haston 2007a; Haston 2007b).

## 2. OBJECTIVES AND METHOD

The Council specification required that all site preliminary groundworks be archaeologically monitored. The Phase 1 programme of works comprised monitoring of the construction of the main site access track as far as the sub-station. Archaeological monitoring of all groundbreaking work within this period of the project was intended to minimise the impact of the development upon all archaeological remains within the development area.

The boundaries of all recognised sites were marked out as necessary in those cases where they were at risk of accidental damage given the proximity of development work. Archaeologists were consulted regarding minor changes in the precise route of the access track and with regards to the position of the new site compound and the aluminium road.

The excavation of the area for the sub-station was also monitored. Tree stumps recovered from this area showed cut-marks and signs of charring. Consequently all trees in this area were recorded in detail (Appendix 1.1).

All excavations were carried out using a 1.6m or 2m wide toothless ditching bucket, under the supervision of an archaeologist. Any archaeology uncovered was, where possible, preserved *in situ*, and where preservation was impossible features were excavated and recorded.



### 3. RESULTS

#### *Main Site Access Track*

Work continued on site with the stripping for the main site access track (Figure 1). Where possible this road was floated, however, in certain areas it continued to be necessary to strip the peat. This road followed the line marked out by wooden stakes, however some alterations had to be made to avoid recognised sites and increase the potential for gravel extraction.

One definite and two possible features of archaeological interest were identified during the course of the watching-brief along the access track. Near Site 1/2, on the edge of the construction foot-print for the access track, was a small clearance cairn (003) (Figures 2 & 3), one of several in the area. The cairn was 6.2 x 4.5m and 0.9m high, and was formed predominantly of small to medium rounded stones with occasional larger stones. It directly overlay a gravelly silt horizon. No artefacts or features were identified within or adjacent to the cairn.

Roughly 130m to the north of Cairn 003 were the possible remains of the base of a heavily robbed cairn (004) – marked by a scatter of stones, some 3 – 4m across (Figure 2). On the slope below Site 48 (prehistoric settlement and field system), where the access track bears north-eastwards at NC 76856 07144, were the vestigial remains of a possible stone dyke (005). The feature was marked by occasional large stones at the base of the excavation.

On the steep slope that approaches Site 102, the track was widened beyond 30m both to increase the potential for gravel extraction and to allow a more manageable approach to the hill. This widening ceased immediately past the crest of the hill where the access track crossed below the line of pylons. No archaeology was observed during this stripping.

Beyond the crest of the hill the route for the access track had originally taken it through the centre of Site 102. The route was revised, in order to preserve the archaeology. The access track took a line along the 25m wide buffer around the south-west of Site 102. No archaeology was disturbed during this stripping. Beyond Site 102 extensive lengths of track could be floated again.

Several small adjustments were made to the course of the access track and some of these required archaeological monitoring.

(a) The access track was widened and remade near the bridge, at the south end of the route near Farlary. Care was required here in order to avoid disturbing the hut circles and field systems that make up Site 1/2.

(b) At the point where the access track re-crosses the pylon line, just before the sub-station, it was necessary to excavate a strip to gain sufficient clearance from the overhead wires. No archaeology was observed during this stripping.

(c) Shallow trenches were excavated at irregular points along the access track in order to drain and channel run-off water and for the construction of silt traps. These trenches varied in depth and length as appropriate to the conditions. Where necessary these excavations were monitored but no archaeology was observed.

### ***Borrow Pit***

Archaeological mitigation works (evaluation and watching-brief during topsoil stripping, followed by excavation: Haston 2007a; Haston 2007b) were undertaken at the borrow pit in advance of quarrying. During excavation of the quarry face, however, it became apparent that the south-east face of the borrow-pit was in danger of being undermined as a result of blasting. Collapse of the face would, in turn, lead to the loss of one of the clearance cairns immediately adjacent. In order to mitigate this, an area 5m wide immediately back from the face was topsoil stripped, under archaeological supervision, and the clearance cairn (cairn 006: Figures 4 & 5) fully excavated. The cairn was 4.1 x 3.25m and 0.6m high. Like Cairn 003 (above) and those excavated by Haston (2007b), it was comprised mainly of small to medium rounded stones with occasional larger stones. It directly overlay a sandy silt horizon, identified as natural subsoil. No artefacts or features were identified within or adjacent to the cairn and no other archaeological remains were disturbed.

### ***Aluminium Road***

In order to deal with problems of site access and the limited amount of rock available at the south end of the construction scheme, an aluminium road was laid in order to give access to the borrow pit and other areas of the site. This road was 6m wide and constructed using large, 3m square, pieces of aluminium sheeting.

In almost all situations the aluminium road was laid without ground disturbance. Only in cases where the ground in the path of the road was particularly uneven was it necessary to engage a mini-digger to landscape the track. In these cases all ground disturbance was monitored and no archaeology was observed during this process.

Beyond the area of the borrow pit the proposed route of the aluminium road took it between Site 6, the depopulated township of Rayen, and the group of

clearance cairns at Site 102. It was unlikely that the road would be able to be constructed along this route while maintaining the 25m buffer between the two sites. After consultation with Highland Council it was agreed that the 25m buffer could be reduced in the case of the aluminium road provided that it did not run directly through an archaeological site. In actuality a minimum 15m clearance was maintained from both sites.

The laying of the aluminium road and its use by small site vehicles appears to have had little or no impact on the underlying sediments. However, when the road was used by large or loaded dumpers it was clear that it could become submerged in the peat. No archaeological remains were disturbed and the aluminium road continued as far as the sub-station.

### *New Compound*

An area near Site 1/2 was stripped in order to provide a new location for the site compound, offices, parking and storage. Site 1/2 was re-marked with canes and hazard tape to prevent intrusion or disturbance and the stripping of the peat was monitored. No archaeology was observed within the stripped area.

### *Sub-Station*

The site of the sub-station partially lay beneath the line of pylons, necessitating the use of a height-restricted digger in those areas. Further difficulties were encountered in the stripping of this area by the depth of peat; more than 1m deep in the southern edge of the site to 2.5m to the north. Several machines were used to handle the peat and manage the spoil but only one machine at a time, under the supervision of an archaeologist, excavated new areas.

During the excavation for the sub-station several tree stumps or pieces of tree were uncovered at various depths in the peat (Appendix 1.1). There appeared to be a band of trees in the peat at approximately 1m deep. These were mostly pine but occasional fragments of other species were noted. No artefacts or structures were disturbed during the stripping for the sub-station.

Four of the tree stumps uncovered during the excavation for the sub-station had signs or possible signs of tool marks. The first of these to be recorded (Tree 1) showed definite axe marks consistent with the tree having been deliberately felled. Of the 76 trees recorded during the stripping of the sub-station, four were recorded as having possible tool marks and five showed evidence of burning. The majority of the tree stumps recovered showed signs of being severely weathered as would obliterate any definite tool marks such

as we see on Tree 1. Tree 1 was found lying horizontally in the peat, which may account for its better preservation.

#### **4. CONCLUSIONS**

During the excavation for the main access track one clearance cairn (003) was identified, excavated and recorded; two possible features (004 & 005) were also identified. Other than these, however, the access track successfully avoided disturbing features or deposits of archaeological interest. The expansion of the borrow pit, making it safe after blasting, involved the excavation and recording of a second clearance cairn (006). No archaeology was disturbed during the excavation for the movement of the site compound or during the construction of the aluminium road.

The area of the sub-station was completely stripped of peat to a depth varying from 1m to 2.5m. During this excavation several trees were recovered showing cut marks or signs of charring. All trees, subsequently recovered from the sub-station area were located, measured and sampled. No artefacts or upstanding features were recovered.

## 5. BIBLIOGRAPHY

Dalland, M & Lowe, C E 2005 *Kilbraur Wind Farm: further supplemental information Part II: Archaeology Sketch Plans and Notations*. Unpublished client Report, August 2005.

Haston, S-J 2007a *Archaeological Evaluation of a proposed borrow-pit; watching-brief on the groundworks for the access road; and survey of Sites 102, 103 & 104*. Unpublished client report, January 2007.

Haston, S-J 2007b *Archaeological Excavation of three clearance cairns and landscape survey of adjacent prehistoric settlement remains*. Unpublished client report, March 2007.

Lowe, C E 2006 *Kilbraur On-Site Borrow Pit: Environmental Statement*. Unpublished client report, July 2006.

WCE (West Coast Energy) 2004 *Kilbraur Windfarm Environmental Statement* (Chapter 9, Cultural Heritage)

## APPENDIX 1: SITE REGISTERS

### 1.1 Tree Register

- All measurements in meters.
- All trees recorded between an elevation of 254m aOD and 256m aOD.

No.	NGR co-ordinates	Type	Depth	X-Section	X-Section	Roots	Burnt	Cuts	Photo	Sample
1	NC-78809-07841	Pine	1.00	0.42	0.40	NA	N	Y	F1, 29-30	Y
2	NC-78840-07874	Pine	1.20	0.50	0.50	NA	N	N	N	Y
3	NC-78840-07876	Pine	1.80	0.65	0.60	NA	N	N	N	Y
4	NC-78838-07869	Pine	1.00	0.60	0.40	NA	N	N	N	Y
5	NC-78838-07865	Pine	0.80	0.50	0.40	NA	N	N	N	Y
6	NC-78828-07874	Pine	1.30	0.70	0.50	NA	N	N	F1, 33	Y
7	NC-78828-07857	Pine	1.00	0.80	0.50	NA	N	N	F1, 32	Y
8	NC-78820-07858	Pine	2.00	0.60	0.50	NA	N	N	N	Y
9	NC-78807-07859	Pine	1.20	0.50	0.50	NA	N	N	N	Y
10	NC-78819-07846	Pine	1.30	0.70	0.40	NA	N	N	F1, 33	Y
11	NC-78819-07839	Pine	0.90	0.30	0.20	NA	N	N	N	Y
12	NC-78803-07842	Pine	1.00	0.40	0.30	NA	N	N	N	Y
13	NC-78782-07830	Pine	0.60	0.40	0.40	NA	N	N	N	Y
14	NC-78799-07823	Pine	0.70	0.40	0.40	1.20	N	N	N	N
15	NC-78815-07845	Pine	0.70	0.40	0.40	6.00	N	N	N	N
16	NC-78814-07838	Pine	1.20	0.40	0.40	6.00	N	N	N	Y
17	NC-78822-07842	Pine	0.50	0.40	0.30	4.00	N	N	N	Y
18	NC-78785-07793	Pine	0.30	0.60	0.40	0.80	N	N	N	Y
19	NC-78735-07793	Pine	0.20	0.35	0.30	NA	N	N	N	Y
20	NC-78777-07792	Pine	0.35	0.40	0.30	NA	N	N	N	Y
21	NC-78779-07786	Pine	0.30	0.30	0.20	NA	N	N	N	Y
22	NC-78774-07791	Pine	0.35	0.35	0.30	NA	N	N	N	Y
23	NC-78778-07807	Pine	0.20	0.30	0.30	NA	N	N	N	Y
24	NC-78784-07773	Pine	0.25	0.25	0.20	NA	N	N	N	Y
25	NC-78797-07798	Pine	0.25	0.35	0.30	NA	Y	N	F2, 2	Y
26	NC-78801-07909	Pine	0.25	0.35	0.30	NA	Y	N	F2, 3	Y
27	NC-78800-07838	Pine	0.50	0.80	0.50	NA	N	N	F2, 5	Y
28	NC-78804-07830	Pine	0.70	0.50	0.50	NA	N	N	F2, 5	Y
29	NC-78826-07847	Pine	0.70	0.55	0.50	NA	N	N	F2, 6	Y
30	NC-78829-07850	Pine	0.55	0.35	0.30	NA	Y	N	F2, 7	Y
31	NC-78805-07827	Pine	0.70	0.75	0.50	NA	N	N	N	Y
32	NC-78805-07815	Pine	0.25	0.20	0.15	NA	N	N	N	Y
33	NC-78809-07821	Pine	0.60	0.20	0.20	1.80	N	N	F2, 8	Y
34	NC-78818-07826	Pine	0.70	0.42	0.20	1.00	N	N	N	Y
35	NC-78821-07824	Pine	0.60	0.65	0.35	0.85	N	N	N	N

36	NC-78824-07824	Pine	0.60	0.30	0.30	1.30	N	N	N	Y
37	NC-78825-07826	Pine	0.45	0.30	0.30	0.50	N	N	N	Y
38	NC-78811-07803	Pine	0.40	0.40	0.30	0.30	N	N	N	Y
39	NC-78825-07837	Pine	1.00	0.45	0.30	1.00	N	N	N	Y
40	<i>record void</i>									
41	NC-78850-07756	Pine	1.10	0.30	0.40	1.00	N	N	N	Y
42	NC-78847-07838	Pine	1.00	0.40	0.30	1.20	Y	N	N	Y
43	NC-78835-07845	Pine	1.00	0.40	0.30	1.00	N	N	N	Y
44	NC-78832-07855	Pine	0.40	0.20	0.20	1.40	N	N	N	Y
45	NC-78832-07855	Pine	1.30	0.40	0.40	1.50	N	N	N	Y
46	NC-78831-07860	Pine	1.20	0.30	0.20	1.00	N	N	N	Y
47	NC-78834-07859	Pine	1.30	0.40	0.30	1.00	N	N	N	Y
48	NC-78835-07859	Pine	1.00	0.40	0.20	1.00	N	N	N	Y
49	NC-78822-07839	Pine	0.80	0.20	0.30	1.40	Y	Y	N	Y
50	NC-78832-07839	Pine	1.20	0.15	0.20	0.80	N	Y	N	Y
51	NC-78831-07834	Pine	0.80	0.30	0.30	1.00	N	Y	N	Y
52	NC-78831-07040	Pine	0.60	0.40	0.30	1.40	N	N	N	Y
53	NC-78834-07840	Pine	0.60	0.30	0.30	1.00	N	N	N	Y
54	NC-78834-07842	Pine	0.60	0.30	0.20	0.70	N	N	N	Y
55	NC-78840-07851	Pine	0.70	0.20	0.20	1.00	N	N	N	Y
56	NC-78840-07854	Pine	0.70	0.20	0.20	1.00	N	N	N	Y
57	NC-78840-07828	Pine	0.80	0.30	0.30	1.50	N	N	N	Y
58	NC-78829-07824	Pine	0.60	0.50	0.40	1.00	N	N	N	Y
59	NC-78833-07817	Pine	0.50	0.70	0.60	1.30	N	N	N	Y
60	NC-78829-07816	Pine	0.50	0.40	0.30	1.50	N	N	N	Y
61	NC-78824-07832	Pine	0.70	0.40	0.40	2.00	N	N	N	Y
62	NC-78840-07837	Pine	1.50	0.40	0.30	3.00	N	N	N	Y
63	NC-78851-07841	Pine	1.30	0.40	0.30	2.50	N	N	N	Y
64	NC-78844-07838	Pine	1.50	0.30	0.20	0.80	N	N	N	Y
65	NC-78844-07838	Pine	1.50	0.50	0.30	1.50	N	N	N	Y
66	NC-78844-07838	Pine	1.50	0.50	0.40	1.50	N	N	N	Y
67	NC-78852-07838	Pine	1.40	0.20	0.20	1.30	N	N	N	Y
68	NC-78840-07825	Pine	1.40	0.40	0.40	1.50	N	N	N	Y
69	NC-78840-07825	Pine	1.40	0.50	0.40	1.00	N	N	N	Y
70	NC-78851-07849	Pine	1.50	0.30	0.20	2.00	N	N	N	Y
71	NC-78854-07848	Pine	1.20	0.60	0.40	1.50	N	N	N	Y
72	NC-78855-07842	Pine	1.00	0.70	0.60	1.00	N	N	N	Y
73	NC-78830-07815	Pine	1.00	0.40	0.30	2.00	N	N	N	Y
74	NC-78846-07821	Pine	1.00	0.30	0.20	1.00	N	N	N	Y
75	NC-78858-07832	Pine	1.20	0.70	0.60	2.00	N	N	N	Y
76	NC-78857-07832	Pine	1.00	0.30	0.30	1.00	N	N	N	Y
77	NC-78837-07792	Pine	0.90	0.40	0.30	0.80	N	N	N	Y

**1.2 Photographic Register**

<b>Film 1</b>			
<b>No.</b>	<b>Direction</b>	<b>Description</b>	<b>Date</b>
1	NA	Registration Shot	8/1/07
2	S	Clearance cairn 003	8/1/07
3	E	NW Quadrant of Cairn 003, deturfed, showing stones.	8/1/07
4	N	SW Quadrant of Cairn 003 deturfed	8/1/07
5	E	W Facing Section, NW quadrant of Cairn 003	9/1/07
6	N	Working Shot. Aluminium Road Laying	11/1/07
7	S	Aluminium Track alongside access route.	11/1/07
8		<i>Record void</i>	
9	S	Working Shot. Borrow Pit Excavation.	11/1/07
10	NW	Shot of area stripped on road w/c 12/2/07	12/2/07
11	N	Shot of area stripped on road w/c 19/2/07	20/2/07
12	S	Shot of area stripped on road w/c 19/2/07	20/2/07
13	S	Shot of area stripped on road w/c 19/2/07	20/2/07
14	E	Aluminium track around Exclusion Zone	20/2/07
15	NE	Pre-Ex of clearance cairn 006	26/2/07
16	N	Pre-Ex of clearance cairn 006	26/2/07
17	SW	Working shot of 006	26/2/07
18	W	Cairn 006 behind borrow pit, deturfed, plan shot	29/2/07
19	E	Cairn 006 behind borrow pit, deturfed, plan shot	29/2/07
20	S	Cairn 006 behind borrow pit, deturfed, plan shot	29/2/07
21	N	Cairn 006 behind borrow pit, deturfed, plan shot	29/2/07
22	S	N facing quadrant section Cairn 006	29/2/07
23	W	E facing quadrant section Cairn 006	29/2/07
24	N	S facing quadrant section Cairn 006	29/2/07
25	E	W facing quadrant section Cairn 006	29/2/07
26	E	Cairn 006 in plan	29/2/07
27	E	Post-excavation Cairn 006	29/2/07
28	W	Cut Marks on Pine Tree	8/3/07
29	E	Working shot of Stripping for Sub-station	8/3/07
30	S	Pine found in Sub-station Peat	8/3/07
31	N	Tree 6 from Sub-station Peat	8/3/07
32	N	Tree 7 from Sub Station Peat	8/3/07
33	N	Tree 10 from sub-station Peat	8/3/07
34	S	Tree 15 from sub-station Peat	12/3/07
35	N	Working shot of Peat Section	12/3/07

<b>Film 2</b>			
<b>No.</b>	<b>Direction</b>	<b>Description</b>	<b>Date</b>
1	NA	Registration Shot	12/3/07
2	N	Working shot of Tree 25, sub-station	14/3/07
3	N	Shot of charcoal around root, Tree 25	14/3/07



4	N	Shot of Tree 26	14/3/07
5	N	Shot of Tree 27 and 28	14/3/07
6	N	Shot of Tree 29	14/3/07
7	N	Shot of Tree 30	14/3/07
8	NA	Shot of Tree 33	15/3/07
9	NA	Working shot of Trees	15/3/07

### *1.3 Context Register*

No.	Description	Date
001	Peat	15/1/07
002	Natural subsoil	15/1/07
003	Clearance Cairn (003), part of Site 1/2	15/1/07
004	Possible levelled clearance cairn (NC 76678 06677)	15/1/07
005	Possible stone dyke. Chainage 1160m (NC 76856 07144)	15/1/07
006	Cairn 006, part of Site 4/5	1/3/07
007	Peat from Cairn 006	12/3/07

### *1.4 Drawing Register*

No.	Type	Description	Date
1	Plan	Clearance Cairn 002 – Deturfed Quadrants	8/1/07
2	Section	West and north facing sections. Clearance Cairn 002	8/1/07
3	Plan	Cairn 006 – Pre-Ex Plan, after Deturfing	1/3/07
4	Section	Cairn 006 – North facing quadrant section	1/3/07
5	Section	Cairn 006 – East facing quadrant section	1/3/07
6	Plan	Cairn 006 – Plan of Quadrants	1/3/07
7	Section	South facing Section of Cairn 006	1/3/07
8	Section	West Facing Section of Cairn 006	1/3/07

### *1.5 Sample Register*

No.	Context	Description	Date
1	007	Peat from Cairn 006	12/3/07

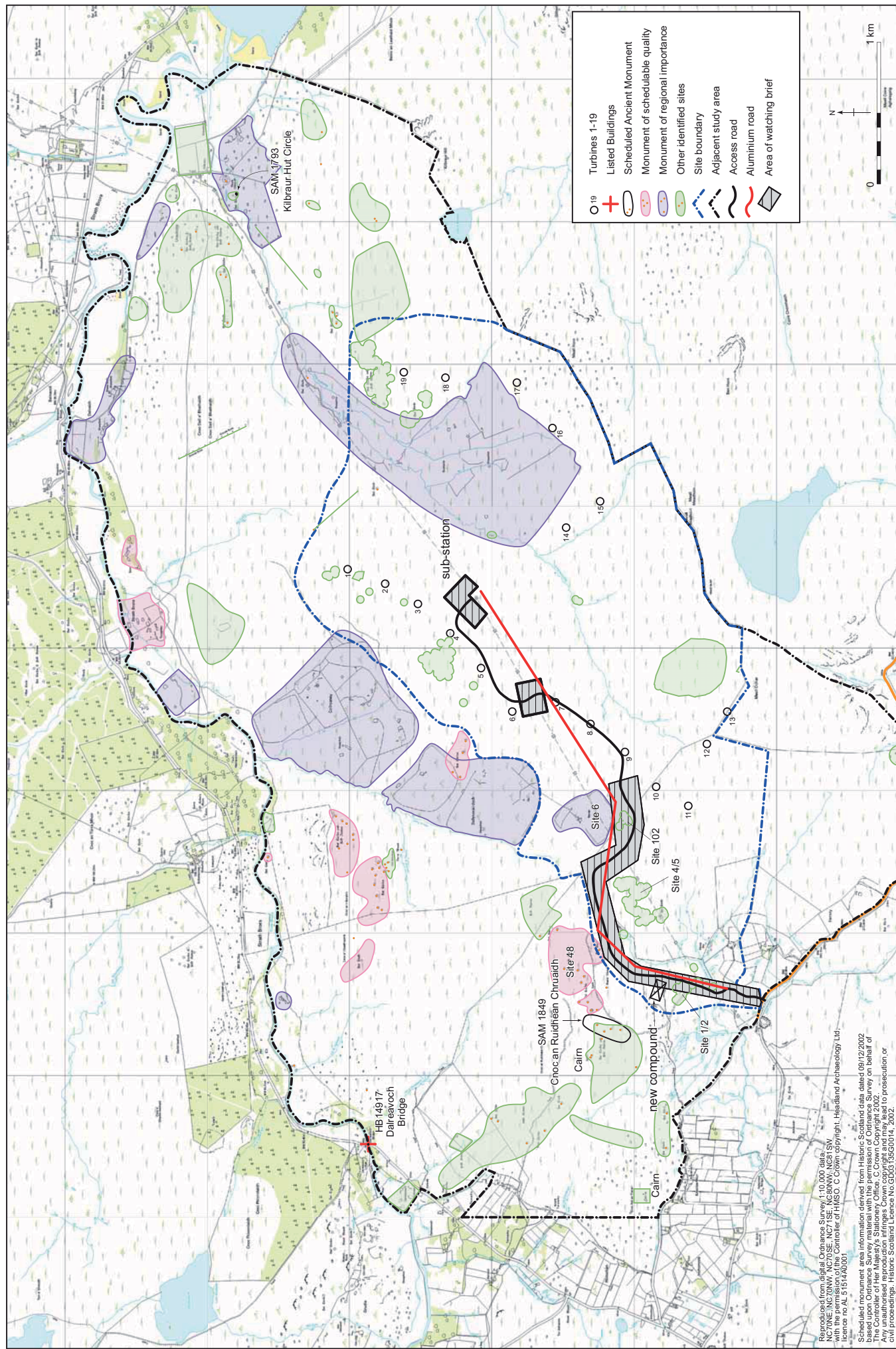


Figure 1: Kilbraur Wind Farm, Watching brief - Location of areas monitored.

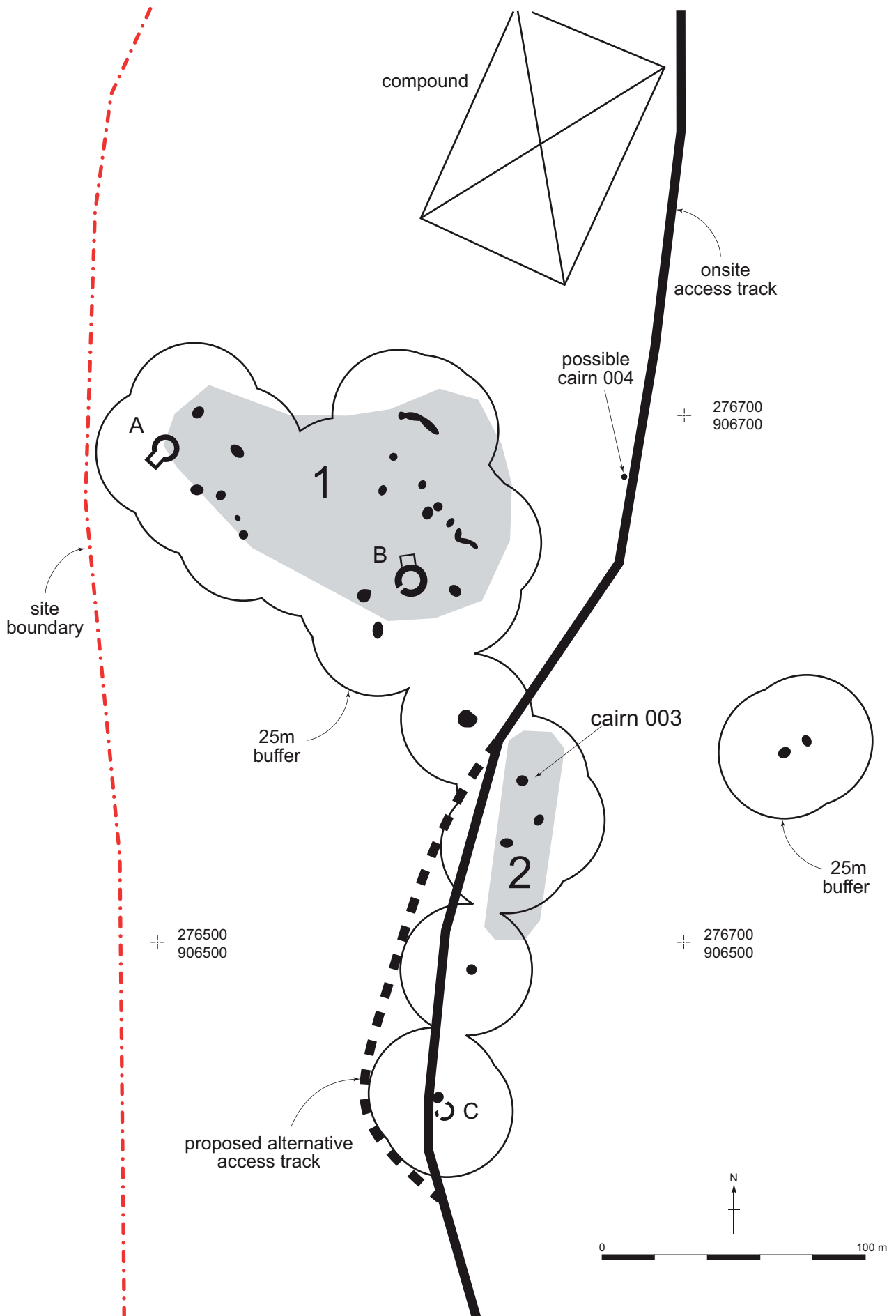
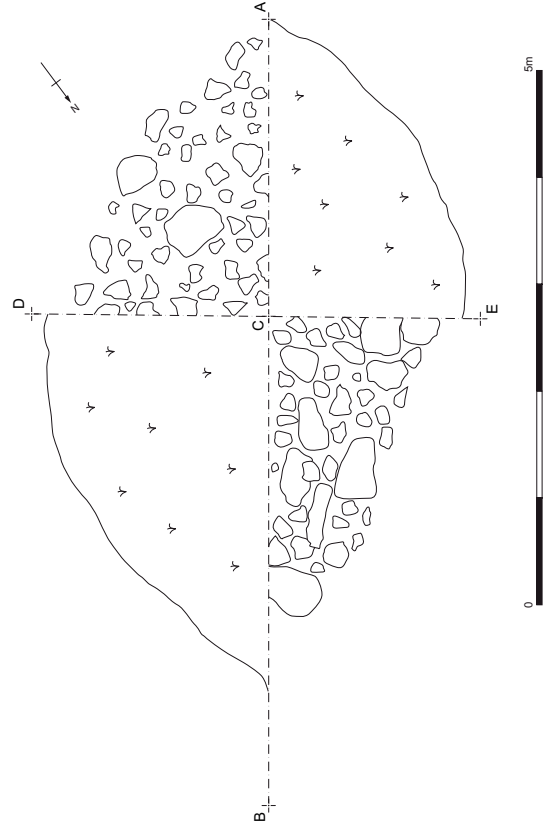


Figure 2: Kilbraur Wind Farm, Watching brief - Location of cairns 003 and 004





Cairn, facing N

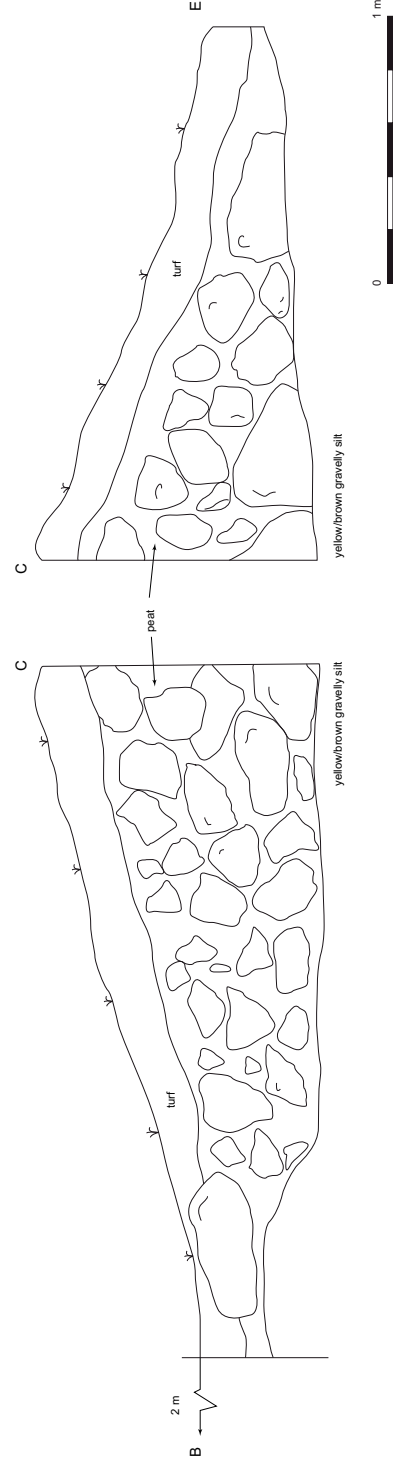


Figure 3: Kilbraur Wind Farm, Watching brief - Plan and section of Clearance Cairn 003.

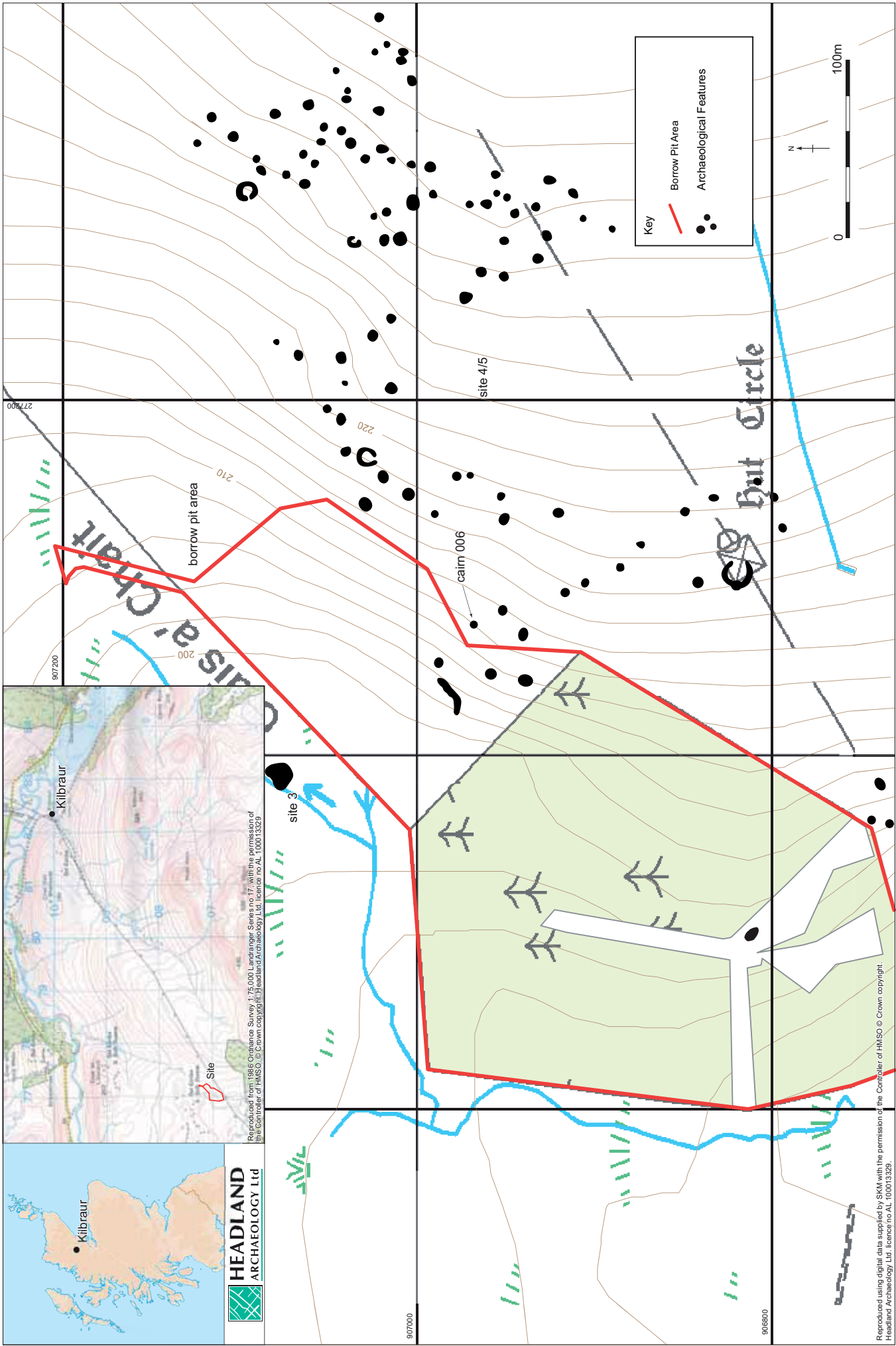


Figure 4: Kilbraur Wind Farm, Watching brief - Location of Clearance Cairn 006.



Cairn, facing E

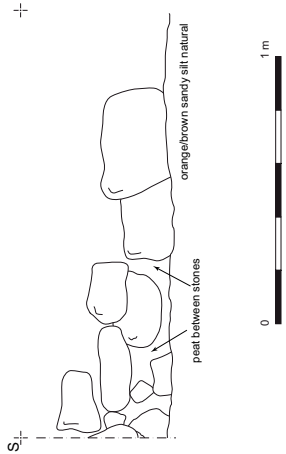
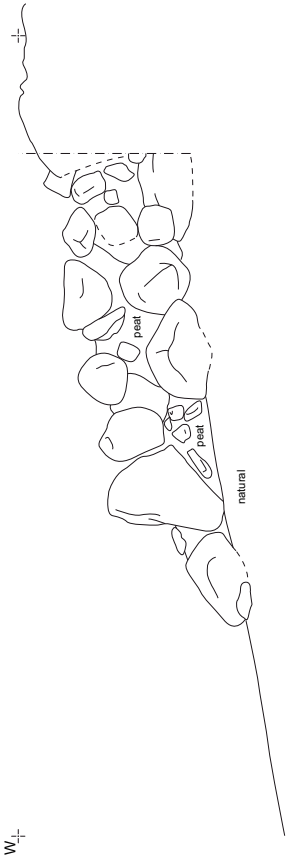
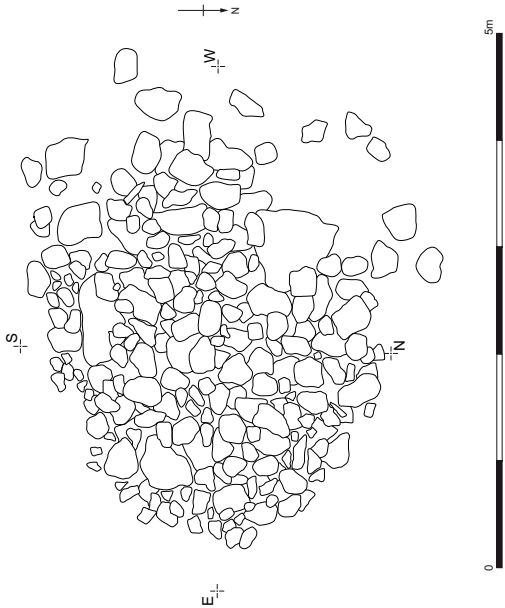


Figure 5: Kilbraur Wind Farm, Watching brief - Plan and section of Clearance Cairn 006.