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Geophysical Survey

**Ray Wind Farm,
Kirkwhelpington,
Northumberland**

Archaeological Mitigation Works

Report No. 3451

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1. INTRODUCTION

1.1 General

This report presents the results of a programme of archaeological mitigation works carried out by CFA Archaeology Ltd (CFA) at Ray Wind Farm, Kirkwhelpington, Northumberland. The work was carried out between August 2015 and April 2016 and was commissioned by Vattenfall Wind Power Ltd.

1.2 Background

Planning permission was granted for the construction of sixteen wind turbines and associated infrastructure at Ray Windfarm, located approximately 16km south-east of Otterburn, Northumberland (see Fig. 1a). The wind farm site comprises commercial forestry and open rough pasture, centred on Ray Fell at 300m AOD.

A desk-based assessment and field survey (RPS 2005) identified 293 cultural heritage sites of significance within the proposed development area. North Pennines Archaeology Ltd then carried out a targeted archaeological field evaluation in 2006 comprising 67 linear evaluation trenches.

A Written Scheme of Investigation (WSI) was prepared for Vattenfall Wind Power Ltd by AMEC Environment and Infrastructure UK Limited, dated December 2014, and was agreed by Northumberland Conservation. The WSI was designed to satisfy Planning Consent Condition 24 and commitments made within the Ray Wind Farm ES and ES Addendum.

1.3 Objectives

The objectives of this phase of works were:

- **Fencing-off Sites.** A 5m-10m buffer zone was erected around the recorded extents of sites in close proximity to construction activities, and demarcated with high visibility fencing.
- **Archaeological Watching Brief.** A watching brief was maintained during all topsoil stripping works.
- **Tool box talk.** A tool box talk was prepared by a senior archaeologist and was issued to all site personnel.

2. WORKING METHODS

CFA follows the Chartered Institute for Archaeologists' Code of Conduct, Standards and Guidance for archaeological watching briefs. Recording of all elements followed established CFA methods.

2.1 Site demarcation

Six archaeological sites, Cairns 1-6, (see Table 1) were demarcated as a requirement of the WSI. A number of sites identified during the watching brief were also demarcated when located in proximity to site works (see Table 2).

The sites were demarcated with robust posts and marker paint in order to avoid any damage associated with nearby groundbreaking works.

2.2 Site excavation

Three of the original six cairns were removed during the construction phase in agreement with Northumberland Conservation. A further 29 of the 66 newly identified sites and features (see Table 2) were investigated as part of the watching brief element prior to road, borrow-pit, hard-standing or turbine base formation. The remaining 37 of these new sites were preserved in situ.

The excavation areas of the cairns were laid out using handheld DGPS surveying equipment and all further excavation to achieve the objectives of the excavation was conducted by hand. Each cairn was half-sectioned and recorded then the remaining half removed to natural. In order to move some of the larger stones, a tracked excavator was employed, equipped with toothless ditching bucket, under the constant supervision of a qualified professional archaeologist.

2.3 Watching Brief

A watching brief was undertaken throughout the duration of groundbreaking works. All groundbreaking works were carried out under archaeological supervision and mechanical excavators were fitted with smooth bladed ditching buckets.

After monitoring several sections of forestry it was agreed with Northumberland Conservation that monitoring on the remainder of the forestry sections could be suspended due to the affected natural subsoil within these areas. Approximately half of the infrastructure within the forestry was monitored before the watching brief requirement ceased.

2.4 Toolbox Talks

Appendix B of the WSI includes the document 'Guidance in Relation to Archaeology'. Construction staff were appraised of its contents and information was included in the contractor's site induction process.

3. ARCHAEOLOGICAL RESULTS

3.1 General

All of the work took place at or above 250m AOD. Most of the area was covered by blanket peat but areas of acidic grassland were also present. The upland environment consisted of overgrown heather and grass-covered peat with mixed light stony clays and occasionally sandstone bedrock, often exposed as weathered craggy outcrops outwith the development area. A full soil profile of the site, including peat analysis, was provided at the evaluation stage by North Pennines Archaeology Ltd (Dodd 2006).

Occasionally, in areas of wetland or bog, depths of up to 1.4m of dark brown peat deposits (**004**) were exposed, depending on the topography of the area, sealed by a thin layer of peaty turf with a maximum depth of 0.22m (**001**). The peat overlay stony, light grey silty clay (**005**) and mid to dark brown sand (**026**), both comprising a colluvial interface between the topsoil and the natural subsoil. The natural subsoil (**002**) was mixed clays with outcrops of sandstone bedrock. The average depth of topsoil and colluvial reduction was 400mm (see Fig. 12 and Fig. 14).

A full context list is provided in Appendix 2.

3.2 Cairns 1-6: Site Demarcation and Excavation Strategy

Cairns 1 to 6 were demarcated for the duration of the project. Cairns 1, 3 and 5 were eventually removed in agreement with Northumberland Conservation due to alterations in the project design, or unforeseen impacts from the existing design (see Fig. 1a-f, Fig. 2-4, Fig. 9-10 and Table 1).

The protective buffer zones on Cairns 4 and 6 were reduced to enable works to proceed whilst preserving the fabric of the cairns themselves. Cairn 2 also survives intact due to the suspension of Borrow Pit 3 works.

Generally, the excavated cairns all appear to represent field clearance or potential location markers. Cairn 1 (see Fig. 2) was the smallest and most recent of the previously identified cairns, producing little evidence of prehistoric activity, with the stones sitting above the colluvial / hill-wash interface within topsoil (**001**).

Lithic artefacts dating to the Late Mesolithic/Neolithic were recovered from hill-wash deposits **043** and **059** from Cairns 3 (Fig. 3) and 5 (Fig. 4 and Fig. 9-10), whose stones sat directly above the natural subsoil. They are both significantly larger stone spreads but are otherwise relatively formless, denuded mounds of stone. Neither marks the top of a hill or other distinct landscape feature. They are, however, located within 20m of other similar features, so they may signify a series of markers or clearance within localised areas of activity.

Table 1: Cairns 1–6

Cairn no.	Size	Depth	Excav.? Y/N	Description	Easting	Northing
1	1.50m by 1.50m	0.50m	Yes	Cairn measuring 1.50m in diameter by up to 0.50m in depth. Agreed removal for turbine A04. The cairn comprised ten medium rounded weathered yellow sandstones each 0.50m-0.60m by 0.20m-0.40m, covered by turf/topsoil sitting on hill-wash (040). No artefacts were recovered. Likely modern field clearance.	395060	585478
2	3m-4m by 2m-3m	-	No	Noted as 'poorly defined' only in plan as the cairn actually forms part of a fairly large mound at the base of slope of a small hillock, up to 1m in height. Located within proposed location for Borrow-pit 3. Demarcated and preserved in situ.	395181	585485
3	7.50m by 4.80m	0.50m	Yes	Location corrected due to inaccurate grid reference in WSI. Agreed removal. Cairn 3 was roughly north-south orientated and comprised scattered weathered sub-rounded sandstone boulders, consistent sizes. Stones appear to sit above natural subsoil surrounded by (059) hill-wash. This hill-wash deposit contained lithics. Potentially field clearance or marker/ boundary cairn.	395464	585389
4	2m-3m in diameter	-	No	Located approx. 20m north-east of Cairn 5 atop the hill. Most of the stones are coursed, exposed, in a pile up to 1m in height. Appears to be relatively modern. Preserved in situ with reduced buffer.	395390	585953
5	7m by 3m	0.70m	Yes	Located within proposed location for Turbine A01. Agreed removal. Cairn was roughly north-south orientated and comprised medium-large weathered sub-rounded sandstone boulders, appear to be placed flat-edge down. Stones appear to sit above (043) hill-wash. No artefacts recovered. Potentially field clearance or marker/ boundary cairn.	395348	585925
6	3m-4m in diameter	-	No	Noted as 'poorly defined' but may represent relict survival of a larger buried structure. Located adjacent to proposed location for Borrow-pit 2. Preserved in situ with reduced buffer. Two linear features [035] and [037] run from under Cairn 6 southwards into the haul road strip. [035] may be remnants of a palaeochannel and [037] rubble drainage suggesting later provenance for Cairn 6.	395081	585801

3.3 Watching Brief

A full watching brief was undertaken during ground breaking works associated with borrow pit locations, the site compound, turbine locations, crane hardstandings and access tracks within the wind farm area.

The site was regularly walked over prior to ground breaking works and fifty-eight new sites and features were identified within 100m of the construction works (see Table 2). Thirty of these sites remained preserved in situ, and when located in proximity to construction activities they were demarcated with robust posts with marker paint to prevent damage. Twenty-eight of these sites were located within the areas of construction activity and were therefore investigated as part of the watching brief element. Locations are provided on Fig. 1b-f and a gazetteer is provided in Table 2.

New Cairns and 'L' Shaped Bank

Twenty-three new cairns were identified (Cairns A-K, N-Y), five of which (Cairns A-C, H and O, see Fig. 5-7) were investigated and removed in agreement with Northumberland Conservation.

Cairns A-C were excavated along with an 'L' shaped bank (see Fig. 11) that appears to form part of post-medieval landscape improvements through field clearance and the construction of enclosures for agricultural purposes. The 'L' shaped bank may form a larger sub-rectangular enclosure bank associated with a possible stone alignment to the south-west and a possible continuation to the south comprising fallen boulders at the base of slope there (see Fig. 1e). No artefacts were recovered from these features.

Cairns O and H produced several lithic artefacts either from around the stones of the cairn or from colluvial deposit **026**, dating to the Late Mesolithic to Late Neolithic or Early Bronze Age. Cairns O and H have a similar stratigraphy to that seen at Cairns 3 and 5.

Lithic Scatter

During the watching brief on Spur 8, an area measuring roughly 2m by 2m was noted to contain a concentration of lithic artefacts within deposit **050**, the hill-wash interface layer at this location (see Fig. 8). A 50cm grid was laid out and the entire deposit was sampled to recover these artefacts. Overlying the hill-wash was a deposit of large boulders within the peaty topsoil overburden forming a large area of scree across this slope. It is possible that the artefacts either pre-date the scree formation or had fallen through gaps in the stones prior to the peaty topsoil formation. The lithics are Mesolithic in date and are described in full in Section 4.

Forestry Section

Two features were encountered at the southern end of the first forestry section beside Borrow Pit 1, within the haul road strip. The first was a very large peaty stony spread (**007**) of unknown origin. A machine-dug trench explored the deposit and it appeared to sit upon the natural clay, with no evidence of anthropogenic origin. If man-made it

had been heavily disturbed by forestry works.

The second feature found was 40m south of (007) and comprised a 2.65m wide stone-lined drain [008]. This had large stone lintels; each stone measuring up to 1.6m long. The drain could be traced as a linear depression in the ground running eastwards for a few hundred metres into the existing moorland. It also appeared to start at this location, likely due to the presence of a potential natural spring here, although it was partially truncated by a forestry furrow at its west end. It may be draining or diverting this spring as waterlogging was observed immediately after excavating a slot through its western end.

Quarry Pits and associated features

There were five locations where evidence of quarrying activity was noted. The first was at Spur 1, Chainage 1100, where six pits (Quarry Pits A-F) and a terrace / grassy working surface was discovered. Quarry Pits A-C were partially removed and found to be small, likely hand-dug holes with slight up-cast turf banks surrounding a central depression. Quarry pits D-F and the terrace remain preserved in situ. No artefacts were recovered from these features. During the strip of the haul road, a drainage ditch [022] (see Fig. 15) was encountered running ESE from Quarry Pit A toward the terrace to the south-east. These appear to form an area of activity along the sandstone bedrock outcrop, and it is likely that they represent post-medieval stone quarries, consistent with similar features across the development area.

Pits A-C (see Fig. 1e) located between Junction 3 and Junction 4 were grass-covered depressions in the ground surface. Pit A and C had what appeared to be up-cast grass-covered banks. Pit A was investigated as part of road widening at Junction 4 and is likely to be a small exploratory test-pit of unknown origin. Pit B was also investigated and proved to be a large sinkhole of natural origin. Pit C was similar to Pit A but remained preserved in situ. No artefacts were recovered from these features.

The third location for quarrying activity lay about 70m north of Spur 5, at turbine B04. Five large quarry pits (Quarry Pits G-K, see Fig. 1e) were discovered between the small forestry plantation and the modern farm track to the south-west, within an area measuring approximately 75m by 50m. The largest of these had a large depression measuring at least 15m-20m in diameter and was being used to store farming waste. These pits were surveyed but none required removal and remain preserved in situ.

Quarry Pits L-N (see Fig. 1d), located to the immediate south of Chainage 3500, just outside the forestry, comprise an area measuring 25m by 35m containing at least three small quarry-pits. These were surveyed, demarcated due to the proximity of the haul road and remain preserved in situ.

The final area for evidence of potential quarrying was along Spur 9 (see Fig. 1c). There is an area measuring 40m by 20m of quarry workings / potential working face and a nearby small quarry pit [057]. The quarry workings were not disturbed but Pit [057] was removed during the haul road watching brief. It was a small sub-rectangular hand-dug depression containing no artefacts. These features are located along the existing public bridleway along Spur 9. There is evidence of a denuded trackway continuing north-east from the bridleway up to a square banked enclosure which may

also be contemporary to this activity. The trackway and square enclosure were recorded and remain preserved in situ. It is likely that all of these features are contemporary, signifying prospecting or mineral extraction works around this location with a dual purpose for the bridleway as both agricultural access and potentially industrial carriage of stone or possibly even coal.

Trackway 1 and the Shieling hut

Trackway 1 runs roughly parallel to Spur 3 leading up to and beyond a semi ruinous shieling hut on Cranester Pike. The trackway is visible as two linear depressions likely formed by modern farm vehicles. However, since the track runs up to the old shieling, it may be of similar date to the hut. Trackway 1 was only partially removed by construction works and it did not intrude into the natural subsoil.

The shieling hut has a relatively prominent position in the landscape and appears to be the same as **Site 83**, identified by North Pennines Archaeology during the evaluation phase (North Pennines Archaeology Ltd; Dodd, 2006). The hut measures up to approx. 4m by 4m externally, with only two walls surviving up to seven stone courses to a height of 1.4m. The shieling hut was demarcated and preserved in situ.

Trackway 2(052)

Trackway 2 (**052**) was first encountered at Chainage 3800 and was only partially visible on the ground at this location. It was bisected by the haul road and was found to be a fairly innocuous single layer of peat-covered stones sitting above the natural clay, at 200-400mm in depth including turfs. It was seen to continue eastwards and was found again running into the stripped area for Turbine A01 at the end of Spur 8. It disappears beyond this. It is likely a drover's road related to the nearby circular dry-stone circular sheepfold, located 50m to the north of its easterly route and is depicted on OS mapping.

Hollow-way

This potential hollow-way is likely the same as **Site 128** (see Fig. 16), identified by North Pennines Archaeology during the evaluation. It is located between Spur 6 and Spur 1, Chainage 3500, forming a large linear depression, covered in heather, running north-north-west to south-south-east, at about 100m long by 4m wide, running down slope to a slight banked area measuring 5m wide by 8m long. This site was not disturbed by construction works and remains preserved in situ.

Boundary Stone

A post-medieval, 18th century boundary stone is located approximately 70m south of Spur 2, Chainage 550 of the haul road, within the existing fence-line. The stone pillar / slab is 0.45m in height with two etched letters on each side (on the east side it reads 'DN' and on the west it reads 'WT'). The stone is likely one of several post-medieval farm boundary stones with similar markings, one to the north-east is known as the 'Gun Stone' (Ref. No. N9441 from Keys to the Past Website). It marks the boundary between Ottercops and Kirkwhelpington farms. It is carved with the letters 'WT', for Walter Trevelyan, who owned Ottercops in the 18th century, 'O' (less visible) for

Ottercops and DN, for the unknown owner of the Kirkwhelpington side. This method of land demarcation was common during this period and there are numerous similar examples of land demarcation within Northumberland.

Features around Cairn 6

Several features were encountered during the haul road strip of Spur 1, from Chainage 3890 up to the location of Cairn 6 (see Fig. 1c). Cairn 6 is located at the entrance to Borrow Pit 2 and, with a reduced buffer, was preserved in situ.

Feature **032** was encountered at Chainage 3890, and was likely a rubble drain running NW to SE downslope toward Spur 8. Pit **033** to the west was a sub-oval pit, possibly a stone setting for a large boulder, approximately 15m ESE of Cairn 6. Feature **035** was a linear feature just north-west of this and ran 6m to the south from Cairn 6. It may be of natural origin, possibly a palaeochannel or even drainage. Feature **037** is a second linear feature that also appeared to extend under Cairn 6, to the south-west, for 7m. Feature **037** appeared to be a rubble drain.

Drainage

Several drains were encountered during the watching brief: **008, 022, 032, 035, 037, 048, 051** and **054**. The drainage varied slightly: some were open-cut land drainage and some formed more discreet enclosed stone-filled drains. The most typical example is **048** (see Fig. 13), a peat-filled land drain along Spur 6. Three of the drains have already been discussed in relation to other associated features such as quarrying or field clearance.

The drainage was easily recognisable against the light coloured natural subsoil and generally represents endeavours for land improvement. They are distributed relatively evenly across the landscape. They are likely post-medieval or later agricultural drainage, if not related to post-medieval quarrying or field clearance. No artefacts were recovered from any of the drains.

3.4 Summary

The landscape around Ray Fell presents a broad sequence of sites of archaeological interest dating from potentially early prehistory to more recent industrial quarrying and agricultural practices.

The larger portion of features encountered during these mitigation works date to the post-medieval period or later and signify quarrying, prospecting and land clearance likely related to the grazing of animals, mineral extraction and agriculture. There is no evidence for settlement activity within the immediate vicinity of the development area.

The evidence for earlier activity comes primarily from lithic-recovery from several cairns and the Mesolithic lithic scatter recovered from Spur 8. There is little evidence to elucidate what this prehistoric activity was, other than the cursory deposition of artefacts. The lithic scatter is likely to be evidence of a single short term event and is unlikely to relate to long term habitation.

The cairns are most likely to be from land clearance efforts: there is no evidence for a funerary function, but it is worth re-iterating that many stand-out in the landscape and may therefore have also served as boundary markers.

Table 2: New sites - gazetteer

Site ID	Excav.? Y/N	Description	Easting	Northing
Cairn A	Yes	Located between Junction 4 and Junction 13, 2m north of haul road. Roughly oval, measured 3m long by 1m wide by 0.60m in height. Large rounded -sub angular stones with a matrix of sandy silt, fragments of sandstone and degraded stone. Fairly scattered. Likely post-medieval field clearance.	395034	586847
Cairn B	Yes	Located between Junction 4 and Junction 13. Measured 2.50m by 1.50m by 0.60m in depth. Large sub-angular and rounded sandstones/ boulders within a matrix of dark brownish grey silty sand. Likely post-medieval field clearance.	394949	586827
Cairn C	Yes	Located between Junction 4 and Junction 13. Sub-circular measuring 3m by 3.20m by 0.60m, comprising a silty sand matrix with large sub-rounded stones. Likely post-medieval field clearance.	394899	586875
Cairn D	No	Located between Junction 4 and Junction 3. Cairn is 2m in diameter. Preserved in situ. Likely post-medieval field clearance.	395232	586875
Cairn E	No	A few stones visible on the surface of a slight mound measuring 3m in diameter.	395232	586912
Cairn F	No	A few stones visible on the surface of a slight mound measuring 3m in diameter. Located at Junction 4.	395169	586912
Cairn G	No	Along fence line of forestry plantation, likely clearance or stone setting for previous boundary. Opposite side of fence line proved archaeologically sterile. Reduced buffer to enable haul road to pass by. Measures 2m in diameter.	395113	586136
Cairn H	Yes	Located at end of Spur 5, B04 Crane Pad. An oval cairn, measured 6m by 4m by 200mm in height. A single layer of stones sitting on hill-wash (026). Likely a clearance cairn. Several lithics were recovered from the hill-wash deposit very close to this cairn during topsoil stripping.	395041	587141
Cairn I	No	Located between Junction 4 and Junction 3. Cairn is 2m in diameter. Preserved in situ.	395404	587116
Cairn J	No	Located between Junction 4 and Junction 3. Cairn is 2m in diameter. Preserved in situ.	395486	587191
Cairn K	No	Located between Junction 4 and Junction 3. Cairn is 2m in diameter. Preserved in situ. Cairn may form part of a larger enclosure of turf and stone banking. Preserved in situ.	385472	587265
Cairn N	No	Large mound of turf and stone, measures 4.5m in diameter at base of slope south of Junction 4. Preserved in situ.	395064	586804
Cairn O	Yes	Cairn discovered within the B04 Crane pad. Measured 4m by 3.8m by 0.60m in height. Comprised mixed large and small angular/sub-angular sandstones, some weathered due to exposure to the elements. Likely field clearance stones of unknown date. A potentially natural hollow or pit [028] was located underneath [025] stones. Lithics were recovered from hill-wash (026) around the stones [025] of this Cairn.	395538	587311
Cairn P	No	Located between Junction 4 and Junction 13. 2m in diameter. Preserved in situ.	394904	586809
Cairn Q	No	Located by B02 Crane Pad, at the base of slope. Cairn measures 2-3m in diameter. Likely field clearance due its	394729	586847

Site ID	Excav.? Y/N	Description	Easting	Northing
		proximity to open cut drainage. Preserved in situ.		
Cairn R	No	Located 30m south of haul road at Chainage 3600. A few large stones measuring 1.5m in diameter.	395232	586026
Cairn S	No	Located east of Cairn E .A few stones visible on the surface measuring 2m in diameter. Preserved in situ.	395225	586914
Cairn T	No	Near Spur 11. Small group of stones located on a slight rise within the peat bog. 1m in diameter.	385110	585207
Cairn U	No	Near Spur 11. Small group of stones located on a slight rise within the peat bog. 2m by 1.5m.	395132	585202
Cairn V	No	Likely modern clearance located north of Spur 1 near Junction 4. An animal trap was found within stones. 1.5m in diameter. Preserved in situ.	396024	587318
Cairn W	No	A small cairn located on top of a hillock north of Spur 1 Chainage 3500. 1.5m in diameter.	395235	586209
Cairn X	No	A small cairn located on top of a hillock north of Spur 1 Chainage 3500. Potentially natural stone scree accumulation. 2m in diameter.	395314	586267
Cairn Y	No	Near Cairn 3. Comprises a turf and stone mound with a slight depression at its centre. 4m in diameter.	395438	585406
L' Shaped bank	Yes	Located at Junction 4. Wide stony embankment. Likely post-medieval enclosure. This enclosure appears to form a sub-rectangular enclosure around the hill, with its northern and south-east extents surviving and only remnants of boulders surviving elsewhere.	394996 394973	586853 586853
Shieling Hut	No	Located along Spur 3. The hut is in a semi-ruinous state. Up to seven courses of stone survive on two walls, measuring up to 1.4m in height. The other two walls have fallen. Located on a stony promontory , with a clear view to the south, along trackway 1.	395305	587385
Track-way 1	Yes	Trackway is only visible on the ground surface and does not cut the natural subsoil. It measured up to 2m in width, comprising two ruts in the turf for farm vehicles. Track leads up to an existing shieling hut.	395305 395559	587427 587356
Track-way 2	Yes	Portion of old drover's road/ farmer's road, bisected by haul road at Spur 1, Chainage 3800. Comprises deposit (052) dark silty peat with large sandstones, 1.5-2m in width by 300-400mm in depth. Trackway runs west to east towards A01 Turbine base but becomes indiscernible further to the east of this. Likely related to the existing post-medieval circular sheepfold located 20m north of this location.	395247	585925
Pit A	Yes	Junction 4. A bank around a pit and 9m long line of reeds leading away from it, on top of a hill. Pit measured 1m with the bank at 3-4m in diameter. Potential early industrial Bell-pit.	395174	586884
Pit B	Yes	Junction 3. Location of a large sinkhole/ grass-filled crater plus two small pits. Upon widening of Junction 3, this was discovered to be a natural feature.	395603	587287
Pit C	No	Junction 3. A circular bank around a pit measuring 1m in diameter with the bank 3-4m in diameter. Likely a natural feature due to proximity to Pit B.	395588	587277
Quarry Pit A	Yes	Chainage 1100 Spur 1. Context (016). Shallow hollow in the subsoil. Quarrying activity or drainage. Measuring 4m by 4m by up to 600mm in depth. Very shallow sandstone bedrock outcrop at this location. Post-medieval.	396286	587504
Quarry Pit B	Yes	Chainage 1100 Spur 1. Context (017). Shallow hollow in the subsoil - early industrial. quarrying activity. Measuring 6m by 7m by up to 500mm in depth. Very shallow	396236	587499

Site ID	Excav.? Y/N	Description	Easting	Northing
		sandstone bedrock outcrop at this location. Post-medieval.		
Quarry Pit C	Yes	Chainage 1100 Spur 1. Context (018). Shallow hollow in the subsoil – early industrial. quarrying activity. Measuring 6m by 8m by up to 700mm in depth. Very shallow sandstone bedrock outcrop at this location.	396236	587489
Quarry Pit D	No	Chainage 1100 Spur 1. Context (019). Depression in the ground, actually a double pit in one hollow – early industrial period. 11m by 8m by up to 2.60m in depth and left in situ.	396229	587480
Quarry Pit E	No	Chainage 1100 Spur 1. (020) Quarry pit E (Small) east side of haul road, 3m in diameter by 0.30m in depth. Preserved in situ – early industrial period.	396270	587501
Quarry Pit F	No	Chainage 1100 Spur 1. (021) Quarry pit F, east side of haul road, 6m by 3m by 0.30m in depth. Preserved in situ – early industrial period.	396285	587513
Quarry Pits G-K	No	A large area north of Spur 5 extension, south of the small forestry plantation, containing at least 5 large depressions in the ground and associated track-way. Potential Bell-pits. Preserved in situ.	395013	587282
Quarry Pits L-N	No	An area 25m by 35m to the immediate south of Spur 1, Chainage 3500. Contains up to three, perhaps more, quarry pits/ depressions in the ground – early industrial period. Preserved in situ.	395130	586126
Quarry Ditch	Yes	Cut of ditch context 022, running ESE from (016)/ Quarry Pit A. 'U' shaped in section measuring 12m long by 0.30m-0.80m wide by 0.18m-0.30 m in depth. Filled with compacted manganese and silt. Likely a drain.	396250 396255	587491 587487
Quarry Terrace	No	Terrace, grassy measuring 22.50m by 15m. Forms plateau in the side of the slope. Likely remnants of a working surface related to early industrial quarrying activity. Preserved in situ.	396286 396273	587494 587495
Holloway	No	Located between Spur 6 and Spur 1. A large linear depression, about 100m long by 4m wide, running SSE down slope to a slight banked area measuring 5m wide by 8m long. Possibly a known site (Site 128 from North Pennines Evaluation Report. Preserved in situ.	395497 395401	586303 586350
Boundary Stone/ March Stone	No	Located near Spur 2 Chainage 550, approximately 70m south of the haul road within the existing fence-line/boundary. It is a large stone boundary marker 45cm in height with two etched letters on each side (on the east side it reads 'DN' and on the west it reads 'WT'). Likely one of several post-medieval farm boundary stones.	396715	587580
(007) Stone spread	Yes	Stone spread within forestry (005). Measures up to 20m long by 17m wide (exposed) by up to 0.40m in depth. Machine cut trench proved this to be a single layer of peat-covered stones sitting on the natural clay. Heavily disturbed by forestry works. Likely natural.	396157 396157	587747 587726
(008) Stone-lined drainage	Yes	Stone-filled and lined ditch, drain or lade? Extends eastwards beyond haul road strip. 8-9m in length exposed by up to 2.65m wide by up to 0.65m in depth. Very large lintel stones, filled with water, potentially from a spring. Later agricultural feature.	396147 396157	587708 587713
Stone setting (033)	Yes	Cut of sub-oval stone setting or pit. NW-SE orientation. Measures 1.20m by 0.65m by 0.45m in depth. Very stony subsoil at this location. Ch 3900-4000, near Cairn 6.	395106	585797
Drain (035)	Yes	Cut of linear continuing under Cairn 6, Ch 3900-4000. NE-SW orientation. Measures 5.50m long by 0.50m-1.50m	395097 395093	585787 585790

Site ID	Excav.? Y/N	Description	Easting	Northing
		wide by 0.28m in depth. Machine-cut slot due to heavily compacted fill. Possible palaeochannel or drainage.		
Drain (037)	Yes	Cut of stone-lined linear continuing under Cairn 6, Ch 3900-4000. NW-SE orientation. Measures 7m by 0.80m wide by 0.45m in depth. Filled with large boulders. Possible drain.	396094 395091	585780 585787
Stone circle (046)	Yes	Stones arranged in a circle near Cairn 5. Large grey weathered sandstones sitting on grass, measuring 8m in diameter. Likely a modern feature.	395349	585912
(047) Stone field bank	Yes	Stone built field bank located on Spur 5. Stones sit within the topsoil and are covered in turf. Orientated NW-SE. Measures >10m by 1.20m wide by 0.50m in depth. Only partially truncated by haul road.	394950 394935	587063 587143
(048) Drain	Yes	Linear located on Spur 6 A02 Crane Pad. 'U' shaped /Concave in section. N-S orientated drain measuring >10m by 1.50m by 0.60m. Likely a field drain.	395318 395314	586529 586538
(050) Lithic Scatter	Yes	Mid brown moderately compacted sand with frequent small stones located on Spur 8. An area of 2m by 2m by up to 100mm in depth contained a concentration of lithics. A 50cm grid was laid out and the entire deposit was sampled for artefact recovery. Underlies a large deposit of natural sandstone boulders covering entire slope of Spur 8 as it leaves Spur 1. Lithic scatter.	395240	585866
(051) Drain	Yes	Linear located on Spur 6, as it leaves forestry. Orientated NW-SE measures >10m-15m by 1.50m wide by 300-420mm in depth. Peat-filled. Likely drainage.	Not surveyed	
(052) Track-way	Yes	Continuation of (041)? A linear spread of dark silty peat and large mixed sandstones measuring >35m long by 1.50m-4m wide by up to 400mm in depth. Located on Spur 8 within A04 Crane pad. Potentially a natural stony deposit but sits on top of the natural subsoil. Aligns to the trackway (041) to the west and is located near circular sheepfold to the north.	395360 395332	585926 585947
(054) Drain	Yes	Linear located in A02 crane pad, Spur 6. Orientated NW-SE, 10m long x 1.5m wide by 120mm in depth. Peat-filled. Likely a drain.	395423 395390	586493 586522
(056) Bridleway	Yes	A potential surface located on Spur 9 comprising a greyish yellow sandstone deposit with small crushed stones. A potential metallised surface comprising the public bridleway, measuring >100m by 2.50m wide by up to 200mm in depth. 100m of this bridleway was exposed and stoned-over for haul road on Spur 9.	395215 395355	585593 585578
(057) Small Quarry pit G	Yes	Cut of sub-square pit and square bank located on Spur 9 Chainage 250. Measures 4.60m-4.7m by 4.60m by 200-230mm in depth. Filled by (001) topsoil. Likely a hand-dug pit with topsoil up-cast bank, dating to post-medieval or early industrial period and quarrying activity nearby.	395293	585571
Quarry Workings Spur 9	No	Large area north of the public bridleway, grassed slope with potential remnants of quarrying. Either a working area or quarry face. Up to 40m long by 20m wide.	395258 395283	585612 585589
Square banked enclosure north of Spur 9	No	Large square bank, approx. 15m by 15m, 1-2m in width with a small entrance at its SE corner. Remnants of a previous enclosure on top of hill with remains of a trackway connecting it to the bridleway to the south.	395498	585786

4. FINDS ASSESSMENT

4.1 Lithics and stone finds

Ann Clarke

Prehistoric flaked lithics and a cup-marked stone were recovered from several sites in the area of the wind farm and they are listed in Table 3 and discussed separately below. A full catalogue is provided in Appendix 6.

Table 3: Quantification of flaked lithics and cup-marked stone

	Flakes	Blades	Cores	Retouched tools	Small flakes	Chips, chunks and spalls	Hammerstone flakes
Lithic scatter (050)	24	34	Split flint pebble	Two Microlith fragments	419	3	0
Cairn 3 (059)	1 (unstrat)	1	0	Microlith fragment; Bifacial invasive point	1	2	5
Cairn 5 (043)	1	0	0	0	0	0	0
Cairn H (026)	0	1	0	Horseshoe scraper; Knife	1	0	0
Cairn O (029)	1	0	0	0	0	0	0
Spur 5 Unstratified	1	0	Platform core	0	3	1	0
Spur 8 Unstratified	0	0	0	Strike-a-light	0	0	0

4.1.1 Results

Mesolithic flint scatter Spur 8 (050)

The 2m x 2m lithic scatter was excavated in 50cm grids and the soil wet-sieved through a 1mm mesh with the result that a large proportion, 87% of the assemblage, comprises small flakes and fragments of <10mm in maximum dimension. The rest of the assemblage was made up of flakes, blades, microliths, a split pebble, and a few chunks and spalls (Table 3).

Material and Technology

Flint is the only material present here, the great majority of which is light grey or mottled grey in colour and is lightly patinated. Where the pebble cortex survives it can be seen to range from a heavily rolled smooth cortex as on the split flint pebble to a rolled chalky cortex on other pieces. The variation in cortex textures indicates that flint from several different nodules was brought to the site to be knapped. Four blades and five small flakes all of red flint were also part of the scatter.

Pebble cortex is present on just a few pieces (14% of the flakes, blades and cores and 4% of the small flakes) and there is one split flint pebble. There are no cores, but the scant evidence from the flakes and blades shows platform working from blade cores, some of which had opposed platforms. The dominance of blades over flakes in the scatter (Table 3) supports the knapping evidence for the preference of blade technology.

Two tiny fragments of microliths occur within the scatter and these would not have been found had the soil samples not been so carefully sieved and sorted (Cat nos. 10 and 36). They are fragments of narrow blades with abrupt edge retouch along the surviving edge. The original forms of these microliths are unidentifiable.

The occupation

The use of blade technology and the presence of two microliths demonstrate that this scatter formed during the use of this area in the Late Mesolithic. Only flint was used – there was no chert, either the Radiolarian chert from Southern Scotland or the Carboniferous chert from Northern England - and this would suggest the flint was collected directly from the NE coast and brought with a group or groups as they travelled inland.

The large proportion of small débitage (87%) from the scatter indicates that flint was worked at that location. The scatter is small and discrete, there is no evidence for a hearth and none of the flint is burnt, all of which suggests that it was formed during a few short episodes of working. A likely scenario is that this was a stop during a journey through the uplands, perhaps for hunting. The two small microlith fragments may have broken during the hunt and were taken off the haft and discarded in preparation for retooling. Other flakes and blades were made from flint nodules brought along on the journey; the small débitage was left behind with the occasional broken pebble and larger flake. The rest, the larger fragments and cores, would have been carefully collected up and taken onward for use during the rest of the trip.

Table 4: Distribution of lithics

1 B (13)	2 BF (26)	3 MICROLITH BF (7)	4 BF (7)
5 (1)	6 4B 4F (84)	7 (5)	8 4B 3F (61)
9 F (26)	10 0	11 MICROLITH 11B 3F (105)	12 4B 5F (38)
13 (9)	14 (10)	15 (16)	16 B Ch (12)

Numbers in red are Grid Quadrant numbers. B – Blades; F – Flakes; Ch – Chunks;
Numbers in brackets are totals of Small Flakes (<10mm maximum dimension).

The lithic scatter was marked into a grid of 50cm x 50cm squares and the material sieved. The main concentration of small flakes came from contiguous squares 6, 8 and 11 which might indicate a focus of activity (Table 4) though if this spread was the product of a few visits then one might not expect the exact same spot to have been used every time. Additional larger pieces of flint were removed during cleaning before the application of the collection grid so it is not known whether they were part of the concentration or on the edges of the scatter.

Cairn 3

Two retouched tools were recovered from context 059 around the cairn. A bifacially worked flake of mottled grey flint is a probable leaf-shaped arrowhead dating to the Neolithic (Cat no. 93). This broad flake has a small amount of rolled pebble cortex down one side of the ventral face and invasive flaking over the rest of this face mainly from each end rather than from the sides of the face. There is also invasive flaking on the opposite face across the proximal end and from right lateral edge. This tool must have broken obliquely across the distal end during manufacture as the broken edge was subsequently used as platform from which to thin the ventral face.

The other retouched tool is a small distal fragment of a probable microlith made from a bladelet with a triangular cross-section (Cat no. 84). There is steep edge retouch on distal end which forms an angle like a scalene triangle but there is no retouch down the sides.

The proximal end of a blade of red flint with a flat platform, parallel blade scar on the dorsal face and 15mm in width was recovered from context (059). It is likely to date to the Late Mesolithic to Neolithic.

The other pieces are simple flake fragments or chips of flint.

A group of five flakes from a cobble of coarse quartz with micaceous inclusions is likely to derive from the shattering of the cobble during its use as a hammerstone (or other means of breakage) rather than it being knapped for usable flakes.

Cairn 5

A flake of mottled grey flint was recovered from (043). It is likely to date from the Late Mesolithic to Neolithic.

Cairn H

Two retouched tools were made during the Late Neolithic, or perhaps Early Bronze Age. The fragment of a shallow horseshoe-type scraper (Cat no. 92) is made from mottled grey flint and was then burnt after manufacture.

A knife-form of pale grey flint (Cat no. 91) is made from a hump-backed blade which has been retouched more steeply on one edge at the narrow proximal end to shape a tang for hafting. Wear from the use of this tool as a knife continues down this edge.

A blade and small flake were also recovered from the hill-wash.

An inner flake of translucent grey flint was recovered from the buried turf horizon (063) under the cairn. It is likely to date from the Late Mesolithic to Neolithic.

Cairn O

An inner flake of translucent grey flint was recovered from the Pit fill (029) under the cairn. It is likely to date from the Late Mesolithic to Neolithic.

Spur 5

All of the lithics from this area are unstratified. The simple platform core was made from a chunky flake fragment of mottled red flint (patinated to a lighter pink colour) with a small amount of rolled chalky cortex surviving. Flakes were detached using the break as a flat platform.

Black chert occurs as an inner chunk possibly broken from a core. The remaining pieces are flint and comprise a burnt flake and three small flakes.

None of these are diagnostic of a particular period of use but are likely to be Late Mesolithic to Neolithic in date.

Spur 8

This unstratified blade of grey flint has a thick triangular cross-section with cortex on one face (Cat no. 83). The coarse crushing and flaking down one edge and lighter damage down another edge indicate that it was most likely used as a strike-a-light. Its use could be from Late Prehistoric to Early Modern.

4.1.2 General discussion

The area was used in the Late Mesolithic as demonstrated by the lithic scatter on Spur 8 and the fragment of a narrow blade microlith from hillwash around Cairn 3. The lithic scatter is of a small size and extent and it most likely represents a few stops to make new tools or re-sharpen, maintain or use existing tools. The lack of a hearth or of any burnt flint amongst the lithic scatter suggests there was no attempt to haft tools here and that the use of the area was transient.

Continued use of the area into the Neolithic is demonstrated by the leaf arrowhead from hillwash around Cairn 3. Indeed the date for this might be earlier as it was found together with a microlith fragment. It is noted that finds of leaf points in this region are often associated with Mesolithic flint scatters which could be explained either by both microlithic and invasive flaking flint working technologies being in use at the same time; or else that both periods favoured the exploitation of a similar landscape (Petts and Gerard 2006).

The horseshoe scraper and knife from the hillwash around Cairn H show that the uplands were also used during the Late Neolithic or Early Bronze Age. The knife and scraper are common tool forms for this period, most likely brought in as personal items of people travelling through the area.

The platform core, flake and debris from Spur 5 as well as single finds of lithics from the areas of Cairn O, Cairn 5 and Spur 8 support the evidence gained from the lithic scatter and the retouched tools that this area was widely used throughout prehistory but that the impact was light and they do not represent anything that could be described as permanent occupation.

5. ENVIRONMENTAL SAMPLING

Mhairi Hastie

Twenty-six soil samples were retained for palaeoenvironmental analysis during the archaeological investigations at Ray Wind Farm.

Nineteen of these samples, taken from a pit (029) and a selection of deposits uncovered on the site from beneath excavated cairns (026, 059, 060, 063) and from the lithic scatter (050), were processed through a system of flotation. The floating debris (flot) was collected in a 250 μ m sieve and the material remaining in the tank (retent) was washed through a 1mm mesh. Both the flots and the retents were air-dried, the retents were then sorted by eye and any archaeological significant material removed. The flots were scanned using a binocular microscope (x10-x200 magnifications) and the presence of any charred plant remains recorded.

Flots were not retained from context 050 as the wet-sieving was designed to collect lithics only.

5.1 Results

The results are summarised in Table 5 (Composition of Samples). The results are organised by feature type and the findings are expressed quantitatively using the following criteria: + = rare, ++ = occasional, +++ = common and ++++ = abundant.

Little in the way of palaeoenvironmental remains were recovered from the samples apart from a small amount of wood charcoal and occasional poorly preserved fragments of nutshell from deposits 059 and 063. The small quantity of material does not allow for any detailed discussion.

Table 5. Composition of Samples

Feature	Sample number	Context number	Fill of	Approx. Vol of flot	Wood charcoal	Nutshell	Comments
Pit	1	029	028	20	+ (SF)		Flot mostly root debris
Deposit	2	026	-	100	+ (VSF)		Flot mostly root debris
Deposit	3	063	-	40	+ (VSF)	+ (SF)	Flot mostly root debris
Deposit	8-9, 12-16, 18-22, 23, 25	050	-	None	++		-
Deposit	25	059	-	200	++	+ (SF)	Flot mostly root debris
Deposit	26	060	-	100	+ (VSF)		Flot mostly root debris

5.2 Recommendations

No further work is recommended.

6. CONCLUSION

A programme of archaeological mitigation works at Ray Windfarm, Kirkwhelpington, Northumberland was carried out. Three of the six known cairns were investigated and removed by the development. A further fifty-eight sites of archaeological interest were identified. Twenty-eight of these were investigated and excavated, therefore preserving thirty sites in situ.

The majority of the features recorded and/or excavated are likely to relate to post-medieval use of the landscape for agricultural and industrial purposes. However, a number of lithic finds suggest earlier prehistoric activity across the site, dating from the Late Mesolithic to the Neolithic or Early Bronze Age. The most significant find was a small lithic scatter on Spur 8 dating to the Late Mesolithic. The lithic scatter is of a small size and extent and it most likely represents a few stops to make new tools or re-sharpen, maintain or use existing tools.

The project archive will be deposited with Great North Museum and copies of reports will be lodged with the Northumberland Council Sites and Monuments Record (SMR).

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APPENDIX 1: Digital Photograph Register

No.	Summary description of subject	Taken from
1	Cairn 1 with Provisional markers	NW
2	Cairn 2 with Provisional markers	NW
3	Cairn 3 with Provisional markers	N
4	Stone scree by Cairn 4 and Cairn 5	S
5	Gowk Hill Cairn	SE
6	SI works at Cairn 4	NW
7	Sheepfold from Cairn 5	SE
8	Cairn 6 with Provisional markers	SW
9	Unusual recumbent stones in an arc by Northern forestry gate	N
10	Unusual recumbent stones in an arc by Northern forestry gate	NW
11	Unusual recumbent stones in an arc by Northern forestry gate	NNW
12	Shieling by B04/B05	SW
13	Borrow Pit 1- Post Ex Area Strip	ENE
14	Borrow Pit 1- Post Ex Area Strip	W
15	(007) Stones Post Ex	N
16	General shot of [008] Stone packed drain with Slot	S
17	Post Ex B07 Crane Pad	NW
18	General shot of Cairn A	S
19	General shot of Cairn A	W
20	L shaped bank near Cairn A	S
21	General shot of Cairn B and Cairn C	E
22	General shot of Cairn B, BANK and Cairn A	W
23	General shot of Cairn D	SE
24	Cairn Y West of Cairn 3	N
25	Cairn 3 demarcated	E
26	Cairn 2 demarcated	N
27	Cairn 1 demarcated	N
28	Cairn 6 demarcated	NW
29	Cairn 6 demarcated	NE
30	Cairn 5 demarcated from Cairn 4	NW
31	Cairn 4 demarcated from Cairn 5	WNW
32	Old stone boundary wall founds? Between Cairn 4 and 5	S
33	Old stone boundary with Sheepfold	SSE
34	Cairn 4 and 5 from Cairn 6	SW
35	Post Ex Haul road strip at north forestry gate	S
36	Sample section at Chainage 1100	SSE
37	Post Ex Haul road strip from Chainage 1100	S
38	Test Pit 80 (Borrow Pit 2)	SE
39	Test Pit 84 (Borrow Pit 2)	SW
40	General post ex shot over Chainage 1100	SSE
41	Pre-ex Ditch [022] at Chainage 1100	SE
42	Pre-ex Ditch [022] at Chainage 1100	E
43	Natural hollow at Chainage 1200 Mid-ex	WNW
44	Natural hollow at Chainage 1200 Mid-ex	ESE
45	Natural hollow at Chainage 1200 Mid-ex	NE
46	Natural hollow at Chainage 1200 Post-ex	E
47	WNW Facing section of slot 1 through ditch [022]	WNW
48	General shot of slot 1 through ditch [022]	N
49	ESE Facing section of slot 2 through ditch [022]	ESE
50	General shot of slot 2 through ditch [022]	SW
51	General view of new features A and B (Junction 3)	E
52	Natural hollow- Pre-ex	E
53	Pit C, circular bank around pit	NE
54	Natural Hollow/ sinkhole	N

No.	Summary description of subject	Taken from
55	Cairn F	SW
56	Cairn F general view	NW
57	Cairn F general view	NW
58	Pit A general view	N
59	Pit A close up	N
60	Cairn F, and Pit A	S
61	J4 with Potential Pit C	W
62	Cairn E	W
63	Cairn E	S
64	General view toward Junction 3	S
65	Cairn E	E
66	Cairn E	S
67	Boundary stone/ March Stone at Spur 2 fence-line Chainage 600 east side	E
68	Boundary stone/ March Stone at Spur 2 fence-line Chainage 600 west side	W
69	General view of Junction 3 toward Junction 4	N
70	Cairn O within B04 Crane pad Pre-ex	N
71	General view toward Shieling hut from B04 crane pad	E
72	Cairn O within B04 Crane pad Mid-ex	S
73	Cairn O within B04 Crane pad Mid-ex	SE
74	Cairn O within B04 Crane pad Mid-ex	E
75	Cairn O within B04 Crane pad Mid-ex	NE
76	Cairn O within B04 Crane pad E facing section (south end)	E
77	Cairn O within B04 Crane pad E facing section (north end)	E
78	Cairn O within B04 Crane pad Mid-ex	NE
79	Cairn O within B04 Crane pad Mid-ex	SE
80	Cairn O within B04 Crane pad Mid-ex	S
81	Cairn O within B04 Crane pad Mid-ex	S
82	Cairn O within B04 Crane pad Mid-ex	S
83	Cairn within B04 Crane pad Mid-ex Stones removed	NE
84	Cairn O within B04 Crane pad E facing section (south end)	E
85	Cairn O within B04 Crane pad E facing section (north end)	E
86	Cairn O within B04 Crane pad Mid-ex Stones removed	S
87	Panorama from URYA03 "Black Down" West to East	ESE
88	Panorama from URYA03 "Black Down" West to East	SE
89	Panorama from URYA03 "Black Down" West to East	S
90	Panorama from URYA03 "Black Down" West to East	SW
91	Panorama from URYA03 "Black Down" West to East	WSW
92	Panorama from URYA03 "Black Down" West to East	W
93	Cairn O within B04 Crane pad Mid-ex turf removed	W
94	Cairn O within B04 Crane pad Mid-ex turf removed	S
95	Cairn O within B04 Crane pad Mid-ex turf removed	E
96	Cairn O within B04 Crane pad Mid-ex turf removed	NE
97	Cairn O within B04 Crane pad Post Ex/ Pre ex ([028] pit	W
98	NW Facing section of [028] pit	NW
99	NW Facing section of [028] pit	NW
100	Post ex of [028] pit close up	NW
101	Post ex of [028] pit within trench	W
102	Old stone boundary wall founds? Between Cairn 4 and 5	W
103	Old stone boundary wall founds? Between Cairn 4 and 5	S
104	Possible ring of stones (046) by Cairn 4	WNW
105	Possible ring of stones (046) by Cairn 4	ESE
106	Toward sheepfold from Cairn 5	ESE
107	Road bell-mouth glass bottles	-
108	Road bell-mouth glass bottles	-
109	Road bell-mouth glass bottles	-

No.	Summary description of subject	Taken from
110	Machine disturbance in compound peat	W
111	Machine disturbance in compound peat	NW
112	General post ex at forestry gate with Cairn G demarcated in backdrop	E
113	Cairn G demarcated	NNE
114	Track-way, pre-ex (052). Spur 1 approaching Spur 8.	W
115	General shot of Cairn S	W
116	Chainage300 past compound (peat post ex)	S
117	General Shot of Cairn R - overgrowth of heather.	E
118	Large stony deposit (007) near BP1 within HR	SSE
119	Large stony deposit (007) near BP1 within HR	S
120	Large stony deposit (007) near BP1 within HR with machine cut slot	SE
121	Large stony deposit (007) near BP1 within HR with machine cut slot	SE
122	Large stony deposit (007) near BP1 within HR with machine cut slot	SW
123	Large stony deposit (007) near BP1 within HR with machine cut slot	S
124	Boundary stone / March Stone Chainage 500 Spur 2 east side	E
125	Boundary stone / March Stone Chainage 500 Spur 2 west side	W
126	Morning sun at Green Rig WF	W
127	Cairn O Sondage Mid Ex	NE
128	Cairn O Sondage Mid Ex	NE
129	Cairn O Sondage Mid Ex	NE
130	Spur 3 Snow on CP	E
131	Spur 3 Snow on HR	W
132	Cairn 1 Sondage covered in snow	SSE
133	Cairn 5 Post Ex working shot	NNE
134	Cairn 5 Post Ex	NNE
135	Cairn 5 Post Ex	NNE
136	Cairn 5 Post Ex	NNE
137	Cairns I-K	SE
138	Cairns I-K	W
139	Cairns I-K	W
140	Cairns I-K	N
141	Spur 8 Stone deposit above lithic scatter (050)	SW
142	Spur 8 Lithic scatter (050) pre-ex	NW
143	Spur 8 Lithic scatter (050) mid-ex	NW
144	Landscape view over Spur 8 from Square enclosure to the SE	SE
145	Landscape view over Spur 8 from Square enclosure to the SE	SE
146	Square bank/ enclosure between spur 8 and spur 9	S
147	Square bank/ enclosure between spur 8 and spur 9	W
148	Landscape view toward Junction 2 from Square enclosure by Spur 8	SW
149	Fossil found at A01 base	
150	Fossil found at A01 base	
151	Fossil found at A01 base	
152	Spur 8 (051) track/ stony deposit machine slot	SW
153	Spur 8 (051) track/ stony deposit machine slot	S
154	Spur 8 (051) track/ stony deposit machine slot	W
155	Spur 8 Eval trench in CP / Turbine base	SE
156	Spur 8 Turbine / Cp strip working shots with stony deposits	W
157	Spur 8 Turbine / Cp strip working shots with stony deposits	S
158	Spur 8 Turbine / Cp strip working shots with stony deposits	NE
159	Spur 8 Turbine / Cp strip working shots with stony deposits	NE
160	Spur 8 Turbine / Cp strip working shots with stony deposits	NE
161	Spur 8 Turbine / Cp strip working shots with stony deposits	NE
162	Spur 8 lithics	
163	Cairn 3 Sondage	NE
164	Cairn 3 Sondage	S
165	Cairn 3 Sondage	S
166	Cairn 3 Sondage	E

No.	Summary description of subject	Taken from
167	Cairn 3 Sondage	E
168	Cairn 3 Sondage	E
169	Cairn 3 Sondage	E
170	Cairn 3 Sondage	E
171	Cairn 3 Sondage	E
172	Cairn 3 Sondage	SE
173	Cairn 3 Sondage	NE
174	Spur 8 removal of stony deposit	SW
175	Spur 8 removal of stony deposit (052) and (046) stone circle	SW
176	Spur 8 removal of stony deposit (052) and (046) stone circle	SW
177	Spur 8 removal of stony deposit	E
178	Spur 8 CP post-ex	NE
179	Spur 8 CP post-ex	NE
180	Spur 6 heather on fire	SW
181	Cairn H Post-Ex	SW
182	Cairn U General shot	E
183	Cairn T General shot	W
184	Cairn N General Shot	SW
185	Cairn V General Shot	N
186	Cairn I General shot	N
187	Cairn W General shot	SW
188	Cairn X General Shot	W
189	Holloway south of Spur 6	NW
190	Disturbed / banked area at the end of Holloway, south of Spur 6.	SE
191	Pre-Ex public bridleway (056)/ track-way on Spur 9	W
192	Quarry workings / face at Spur 9	E
193	Post Ex public bridleway (056)	NE
194	Post Ex slot through (057) Square pit	W
195	Square embankment / enclosure north of Spur 9	SSW
196	(051) possible track-way as exposed.	E
197	Sondage through Pit A (?) Junction 4	SE
198	Cairn A Mid-Ex deturfed	S
199	Cairn B Mid-Ex Section	NE
200	Cairn B deturfed	E
201	Cairn C Mid-Ex section	E
202	L-shaped bank, NNW Facing section	NNW
203	[033] Stone setting SE Facing section.	SE
204	Stone-lined drain [037], N facing section	N
205	Drain [035], S Facing section with Cairn 6 in background.	S
206	Cairn 1 mid-ex with W facing section	W
207	General shot of Cairn P, no scale.	SE
208	Quarry ditch [022] running from (016) Quarry Pit A	SE
209	Quarry ditch [022] running from (016) Quarry Pit A with terrace in backdrop	NW
210	(047) small bank, pre-ex, follows farmers track.	SE
211	[051] drain Spur 6 Haul road	SE
212	[048] Drain on A02 Crane pad. Post ex slot.	NE
213	Deposit (055) stones in topsoil. Natural or clearance from track-way.	SE
214	Potential Quarry Pit G/ Bell Pit, very large, to the north of Spur 5 extension, currently a farmers dump. Preserved in situ.	N
215	Potential Quarry Pit H/ Bell pit. North of Spur 5 extension.	SE
216	Potential Quarry Pit I/ Bell pit. North of Spur 5 extension.	SSE
217	Potential Quarry Pit I/ Bell pit. North of Spur 5 extension.	N
218	Potential Quarry Pit I and Pit H. North of Spur 5 extension.	W
219	Quarry Pits G, H, I with track-way. North of Spur 5 extension.	S
220	Potential Quarry Pit J/ Bell pit. North of Spur 5 extension.	SE
221	Potential Quarry Pit J into another (Pit K)/ Bell pit. North of Spur 5	NE

No.	Summary description of subject	Taken from
	extension.	
222	Cairn H, Mid-ex with stones	SW
223	General Post ex shot along Spur 6 haul road from half way up the hill.	E
224	General Post ex shot of Crane Pad at end of Spur 11.	SE

APPENDIX 2: Context Register

Context no.	Fill of	Description
001		Topsoil. Dark greyish black firm organic silty clay with frequent mixed stones. Average depth of 220mm. 150mm over bedrock and 300mm over deep peat deposits.
002		Natural Subsoil bell-mouth entrance. Light brown silty clay with mixed limestone, sandstone and gravels.
003		Proto peat, dark reddish brown organic clay (greasy) with plant roots. Heavy bio matter. Average thickness of 300mm. Located near main compound.
004		Located at Chainage 900 onwards of Spur 1. Dark greyish black organic clay, few inclusions 100mm thick. Early peat formation. 100mm thick at Chainage 900 but up to 1.4m deep elsewhere.
005		Light greyish white firm organic clay with limestone averaging 100mm thickness. Colluvial deposit. Initially encountered at Chainage 500 but hill-wash covers entirety of the remainder of site.
006		Light greyish white firm sand with frequent rock and limestone. Very mottled, very changeable with clay patches. Natural subsoil.
007		Stone spread within first forestry section on (005). Measures up to 20m long by 17m wide (exposed) by up to 0.40m in depth. Machine cut trench proved this to be a single layer of peat-covered stones sitting on the natural clay. Likely heavily disturbed by forestry works. No anthropic evidence exists for this deposit. Likely natural or denuded field clearance.
008		Stone-filled and lined ditch, drain or lade? Extends eastwards beyond haul road strip. 8-9m in length exposed by up to 2.60m wide by up to 0.65m in depth. Very large lintel stones, filled with water, potentially from a spring. Highly unusual and suggestive of industrious works. Likely a later agricultural feature.
009		Assigned to Cairn A at junction 4, see GPS found during TP
010		L-shaped bank W of (009) Cairn. See New Sites.
011		Assigned to Cairn B West of Cairn O, may be extension of (010)
012		Assigned to Cairn P. W of (009) - out-with cut of HR
013		Assigned to Cairn C - WNW of (009) out with cut of HR
014		Assigned to Cairn D - out with turbine by Junc. 4 (north turb)
015		Assigned to Cairn Y. NW of Cairn 3, out with turbine.
016		Quarry pit A (J2) west side. Eventually removed by way leave widening. Shallow hollow in the subsoil. Quarrying activity. Measuring 4m by 4m by up to 600mm in depth.
017		Quarry pit B (J2) west side. Eventually removed by way leave widening. Shallow hollow in the subsoil. Quarrying activity. Measuring 6m by 7m by up to 500mm in depth.
018		Quarry pit C (J2) west side. Eventually removed by way leave widening. Shallow hollow in the subsoil. Quarrying activity. Measuring 6m by 8m by up to 700mm in depth.
019		Quarry pit D (J2) west side, double pit in one hollow. Very large 11m by 8m by up to 2.60m in depth and left in situ. Eventually subsumed by water logging due to winter conditions.
020		Quarry pit E (Small) east side of haul road, 3m in diameter by 0.30m in depth. Preserved in situ.
021		Quarry pit F, east side of haul road, 6m by 3m by 0.30m in depth. Preserved in

Context no.	Fill of	Description
		situ.
022		Cut of ditch running ESE from (016)/ Quarry Pit A. 'U' shaped in section measuring 12m long by 0.30m-0.80m wide by 0.18m-0.30 m in depth. Filled with compacted manganese and silt. Likely a drain.
023		Terrace, grassy measuring 22.50m by 15m. Forms plateau in the side of the slope. Likely remnants of a working surface related to quarrying activity. Preserved in situ.
024	022	Black silty clay fill of [022]. Very compacted manganese and iron pan at its base. Drainage from Quarry Pit A, HR J2.
025		Stones of Cairn O / BO4, J3 crane pad. Measures 4m by 3.80m by 0.60m in depth. Large mixed angular and sub angular sandstones, some weathered due to exposure to the elements. Stones sit above natural subsoil (027), surrounded by 150mm of hill-wash (026) and a 100-120mm of (001) topsoil.
026		Mid-dark brown firm sand, averaging 150mm in thickness. This deposit covers most of the site. A colluvial deposit containing lithics at Cairn O/ J3 BO4 location.
027		Dark orange-brown compact manganese and iron pan layer under [025] stones. Has been exposed to large amounts of water. Natural Subsoil.
028		Cut of small amorphous shallow pit under Cairn O / B04. Measures 0.80m by 0.40m by 150mm in depth, 'V' shaped in section, orientated north to south. Possibly natural due to irregular nature.
029	028	Fill of [028] pit, Cairn O / B04. Black firm / greasy silty clay with manganese and small stones.
030		Light-mid yellow loose sand. No inclusions (like beach sand) natural subsoil. First encountered at Spur 1 Chainage 3500. Animal burrowing evident.
031		Mid-light brownish yellow sandstone silty gravels with occ. Igneous rock. Natural subsoil. Occurs frequently across site.
032		Linear measuring 18m by 1.50m by 0.50m in depth, 'u' shaped in section. Orientated NW-SE within haul road cut at Borrow Pit 2 just west of Spur 8. Filled with medium to large unworked stones. Partially visible on surface as it travels down slope to the SE. Some very small patches of silty fill. Rubble field drain. Spur 1 Chainage 3890.
033		Cut of sub-oval stone setting or pit. NW-SE orientation. Measures 1.20m by 0.65m by 0.45m in depth. A large boulder was removed from nearby during monitoring. Very stony subsoil at this location. Ch 3900-4000, near Cairn 6.
034	033	Fill of [033], Ch 3900-4000. Near Cairn 6. Mid-grey very compact stony sand with, rough sandstones, manganese and iron pan. Likely of natural origin but a lithic was recovered from (026) hill-wash nearby.
035		Cut of linear continuing under Cairn 6, Ch 3900-4000. NE-SW orientation. Measures 5.50m long by 0.50m-1.50m wide by 0.28m in depth. Machine-cut slot due to heavily compacted fill. Possible palaeo-channel or drainage.
036	035	Fill of [035], Ch 3900-4000. Light grey very compact stony sand with sandstone inclusions. Manganese and iron pan base, water bourn deposit.
037		Cut of stone-lined linear continuing under Cairn 6, Ch 3900-4000. NW-SE orientation. Measures 7m by 0.80m wide by 0.45m in depth. Filled with large boulders. Possible drain.
038	037	Fill of [037], Ch 3900-4000, Cairn 6. Yellow sandstone packing/ lining. Each 250mm by 250mm by 150mm. Unworked.
039		Stones of Cairn 1, Turbine A04. Cairn measuring 1.50m in diameter by up to 0.50m in depth. Agreed removal January 2016 for Turbine at A04. Comprising ten medium rounded weathered yellow sandstones each 0.50m-0.60m by 0.20m-0.40m, enclosed by turf/topsoil sitting on hill-wash (040). No artefacts recovered. Likely relatively modern field clearance.
040		Same as (026) hill-wash. Located on Cairn 1, A04. Mid reddish loose to moderately compact brown silt with small stones and roots. Root disturbance and staining suggests natural provenance. Sign of an area of heavy vegetation/ disturbed interface.

Context no.	Fill of	Description
041		Possible Holloway at A04, CH 4400. Measures 20m long by 4.50m wide by 100-200mm in depth. Continues SE for 15m at least. Hollow / dip in heather growth looks like remnants of a grassy track-way. Only one end truncated by groundworks. Once dug, only a slightly siltier area was evident under this track-way.
042		Stones of Cairn 5. Located within proposed location for Turbine base A01 works. Agreed removal March 2016. Cairn is roughly north-south orientation and comprises medium-large weathered sub-rounded sandstone boulders, piled rather than coursed, although they appear to be placed flat-edge down. Stones appear to sit above (043) hill-wash. No artefacts recovered. Potential field clearance or unknown prehistoric marker/ boundary cairn.
043		Same as (026). Sandy interface (colluvial) Cairn 5. Mid brown moderately compact sand with small stones. Average thickness is 80-110mm.
044		Natural Subsoil. Light brown compact sandy gravel. Cairn 5. Appears to over-lie (045).
045		Natural Subsoil. Orange loose-moderately compact sandy gravel. Cairn 5.
046		Stones arranged in a circle near Cairn 5 to the NE, A04. Large grey weathered sandstones sitting on top surface/ grass, measuring 8m in diameter. Do not appear set into ground.
047		Stone built field bank located on Spur 5. Stones sit within the topsoil and are covered in turf. Orientated NW-SE. Measures >10m by 1.20m wide by 0.50m in depth.
048		Linear located on Spur 6 A02 Crane Pad. 'U' shaped /Concave in section. N-S orientated drain measuring >10m by 1.50m by 0.60m. Likely a field drain.
049		Manganese/iron pan, very compacted Natural subsoil located on Spur 8.
050		Mid brown moderately compacted sand with frequent small stones located on Spur 8. An area of 2m by 2m by up to 100mm in depth contained a concentration of lithics. A 50cm grid was laid out and the entire deposit was sampled for artefact recovery. Underlies a large deposit of natural sandstone boulders covering entire slope of Spur 8 as it leaves Spur 1. Potential lithic scatter. Lithics may have fallen through gaps in boulders or even pre-date them.
051		Linear located on Spur 6, as it leaves forestry - Orientated NW-SE measures >10m-15m by 1.50m wide by 300-420mm in depth. Peat-filled. Likely drainage.
052		Unusual deposit forming a linear of dark silty peat and large mixed sandstones measuring >35m long by 1.50m-4m wide by up to 400mm in depth. Located on Spur 8 within A04 Crane pad. Potentially a natural stony deposit but sits clear on top on the natural subsoil. Aligns to the track-way (041) to the West and is also located near the circular sheepfold to the north.
053		Amphorous grey stony deposit, similar to (052), measures 12m by 6m by up to 600mm in depth but stones extend beyond this depth - likely natural bedrock, Spur 8 A04 Crane Pad.
054		Linear located in A02 crane pad, Spur 6. Orientated NW-SE, 10m long x 1.5m wide by 120mm in depth. Peat-filled. Likely a drain.
055		Spur 5 extension for way leave encountered a deposit of medium sandstones measuring 3.20m by 1.95m by the farmers track. The single layer of stones sit on top of hill-wash (026), likely natural or at most recent clearance as were not cohesive enough to form a structure.
056		A potential surface located on Spur 9 comprising a greyish yellow sandstone deposit with small crushed stones. A potential metallated surface comprising the public bridleway, measuring >100m by 2.50m wide by up to 200mm in depth. 100m of this bridleway was exposed and stoned-over for emplacement of haul road on Spur 9.
057		Quarry Pit G. Cut of sub-square pit and square bank located on Spur 9 Chainage 250. Measures 4.60m-4.7m by 4.60m by 200-230mm in depth. Filled by (001) topsoil. Likely a hand-dug pit with topsoil up-cast bank, dating

Context no.	Fill of	Description
		to post-medieval or early industrial period and clear quarrying activity in the nearby locale.
058		Stones of Cairn 3 measuring 7.50m by 4.80m by 0.50m in depth. Agreed removal March 2016. Cairn is roughly north-south orientation and comprises scattered weathered sub-rounded sandstone boulders, consistent sizes, piled rather than coursed. Stones appear to sit above natural subsoil surrounded by (059) hill-wash. This hill-wash deposit contained lithics. Potentially old field clearance or unknown prehistoric marker/ boundary cairn.
059		Located at Cairn 3. Same as hill-wash / colluvial deposit (026). Mid brown firm silty sand containing lithics, averaging 100-150mm in thickness.
060		Located at Cairn 3. Dark brown firm silty deposit with small angular stones underlying (059) intermittently. Not clear in section. Unknown origin.
061		Stones of Cairn H. Oval cairn with medium sub rounded sandstones. Measuring 6m by 4m by 200mm in depth.
062		Mid-orange brown silty clay. Natural subsoil under Cairn H.
063		Friable silt under (001) topsoil of Cairn H. 2m in diameter by 80mm in depth deposit of buried turfs.
064		Cairn A stones, roughly oval, measuring 3m long by 1m wide by 0.60m in depth. Large rounded -sub angular stones with a matrix of sandy silt, fragments of sandstone and degraded stone. Fairly scattered
065		Cairn C stones, sub-circular measuring 3m by 3.20m by 0.60m, comprising a silty sand matrix (likely colluvial 026 deposit) with large sub-rounded stones. These were much more concentrated than in Cairn A and Cairn B.
066		L' shaped bank measuring from 50-70m in length by up to 3m in width by 0.50m in depth. Mixed sandstones, angular to sub-angular. Post medieval fallen wall or enclosure bank.
067		Pit A. Possible cut for a quarry scoop, or test pit. Measures 0.80m by 0.60m by 0.30m in depth.
068	067	Brownish grey firm silty sand. Redeposited natural.
069		Cairn B. Measures 2.50m by 1.50m by 0.60m in depth. Large sub-angular and rounded sandstones/ boulders within a matrix of dark brownish grey silty sand.
070		Cairn B. Dark brownish grey silty sand.

APPENDIX 3: Drawing Register

Dwg No.	Sheet No.	Scale	Plan / Section	Description/contexts
001	1	1:50	P	[008] Ditch Post-ex of slot through [008]
002	1	1:20	S	[008] Ditch, S facing section of slot through [008]
003	1	1:20	S	[008] Ditch, E facing section of slot through [008]
004	1	1:20	S	[008] Ditch, W facing section of slot through [008]
005	2	1:20	P	Ditch [022] Post-ex plan
006	2	1:10	S	WNW facing section Ditch [022]
007	2	1:10	S	ESE facing section Ditch [022]
008	2	1:20	P	Plan of Cairn O / B04 crane pad [025]
009	2	1:10	S	NW facing section [028] pit Cairn O / B04
010	2	1:20	P	Post-ex Plan [028] pit Cairn O / B04
011	3	1:10	S	E facing section through Cairn O / B04 [025]
012	3	1:20	P	Overlay plan of pit [028] Cairn O / B04
013	4	1:20	P	Cairn "H" Plan
014	4	1:20	S	Cairn "H" Section
015	5	1:20	P	[033] Pit / stone-setting
016	5	1:10	S	[033] SE facing section
017	5	1:20	S	[035] Linear/paleo-channel
018	5	1:10	S	S facing section [033]
019	6	1:10	S	[037] SW facing section and sketch plan
020	6	1:20	P	[039] Plan of stones (Cairn 1)
021	6	1:10	S	W facing section of Cairn 1
022	7	1:50	P	Plan of [042] stones Cairn 5
023	8	1:20	S	E facing section through Cairn 5
024	7	1:50	P	Measured sketch plan of (046) stone ring
025	8	1:50	P	Post-ex sketch plan of Cairn 5 showing natural subsoils
026	9	1:20	P	[057] pit/square bank, plan of slot and bank Spur 9
027	9	1:20	S	NW facing section of [057]
028	10	1:50	P	Cairn 3 Plan of sondage
029	10	1:20	S	SSE facing section[058] Cairn 3
030	11	1:20	P	(052) Spur 8 A01 Track-way Slot.
031	11	1:20	S	(052) on Spur 8 A01, Track-way sketch plan and section
032	11	1:100	P	(052) Sketch plan with slots
033	12	1:20	S	NE facing section of Cairn A
034	12	1:20	P	Cairn A
035	13	1:20	S	E facing section of Cairn C
036	13	1:20	P	Cairn C
037	13	1:20	S	NNW facing section of bank
038	14	1:20	P	S facing section of Pit A
039	15	1:20	S	NE facing section of Cairn B

APPENDIX 4: Sample Register

Sample No.	Area	Context	Feature	Sample type	Volume
1	Cairn O / B04 Cairn	029	28	Bulk	6L
2	Cairn O / B04 Cairn	026		Bulk. Possible lithic recovery.	20L
3	Cairn H	063 (was 101)		Bulk	10L
4	Spur 1 Chainage 4000	034	33	Bulk. Possible lithic recovery.	20L
5	Spur 1 Chainage 4000	036	35	Bulk	20L
6	Cairn 1	040		Bulk	20L
7	Cairn 5	043		Bulk	40L
8	Spur 8 Lithics Scatter	050		Grid Quadrant 1	20L
9	Spur 8 Lithics Scatter	050		Grid Quadrant 2	15L
10	Spur 8 Lithics Scatter	050		Grid Quadrant 3	8L
11	Spur 8 Lithics Scatter	050		Grid Quadrant 4	10L
12	Spur 8 Lithics Scatter	050		Grid Quadrant 5	10L
13	Spur 8 Lithics Scatter	050		Grid Quadrant 6	10L
14	Spur 8 Lithics Scatter	050		Grid Quadrant 7	10L
15	Spur 8 Lithics Scatter	050		Grid Quadrant 8	10L
16	Spur 8 Lithics Scatter	050		Grid Quadrant 9	10L
17	VOID	VOID	VOID	VOID	VOID
18	Spur 8 Lithics Scatter	050		Grid Quadrant 11	16L
19	Spur 8 Lithics Scatter	050		Grid Quadrant 12	8L
20	Spur 8 Lithics Scatter	050		Grid Quadrant 13	8L
21	Spur 8 Lithics Scatter	050		Grid Quadrant 14	8L
22	Spur 8 Lithics Scatter	050		Grid Quadrant 15	8L
23	Spur 8 Lithics Scatter	050		Grid Quadrant 16	8L
24	Cairn 3	059		Bulk	40L
25	Cairn 3	059		Bulk. Possible lithic recovery.	40L
26	Cairn 3	060		Bulk	15L

APPENDIX 5: Finds Quantification

Context		Find type	No.	Wt (g)	Notes
U/S	cairn 3	Lithic	1	1	Flint
U/S	spur 5	Lithic	6	10	Flint
U/S	spur 8	Lithic	1	3	Flint
026	cairn H	Lithic	4	8	Flint
026	cairn 6	Lithic	1	1	Flint
050	cleaning spur 8	Lithic	8	34	Flint
056	spur 9 Chainage 70	Coal	1	7	
059	cairn 3	Lithic	9	14	Flint+Quartz
059	spur 9	Lithic	1	2	Flint

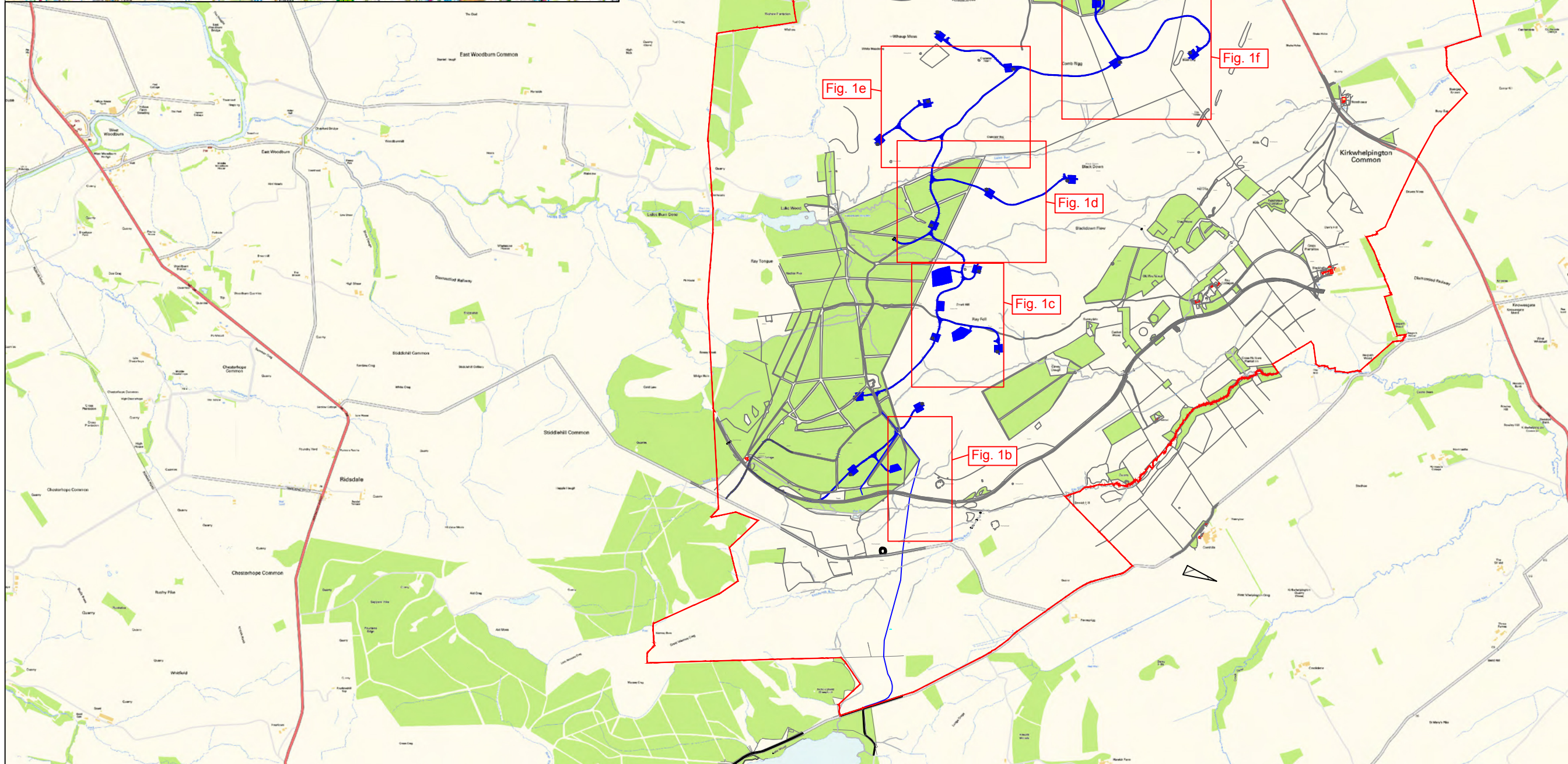
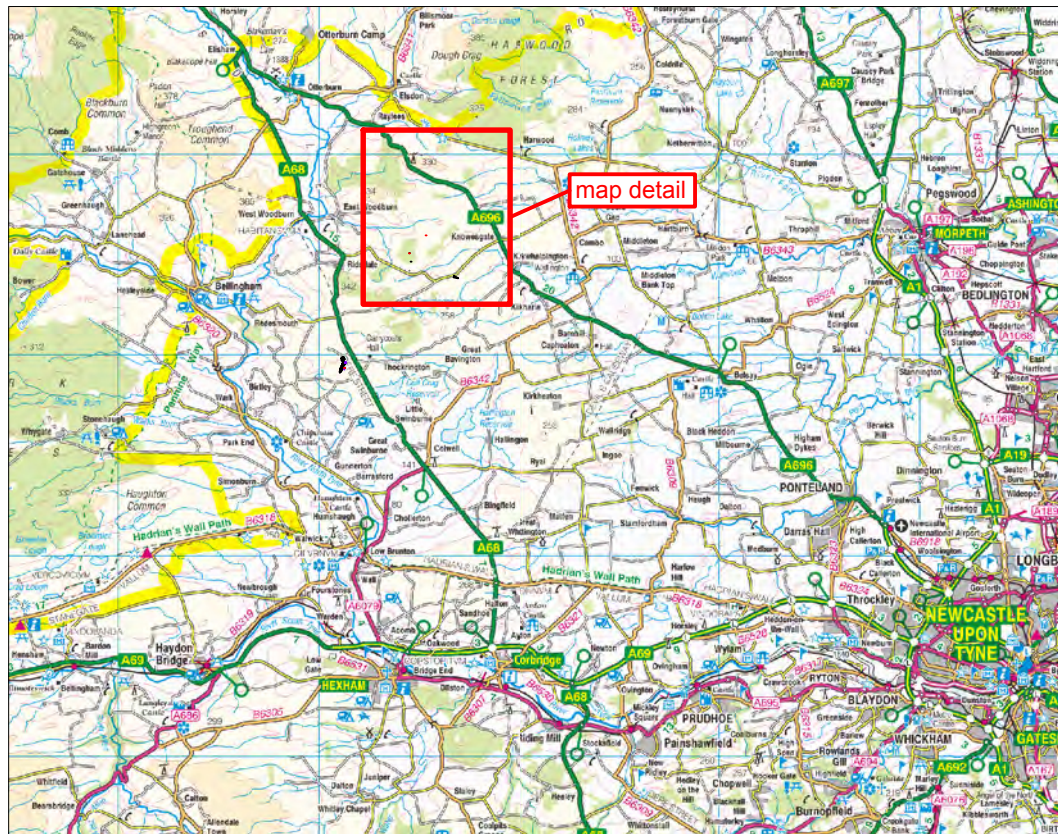
APPENDIX 6: Lithics Catalogue

Context	Grid Quadrant	Sample No.	Cat. No.	Material	Type	Sub-type	No.	Description	ML	MW	MTh
50	1	8	1	Light grey flint	Small flake	Inner	3				
50	1	8	2	Light grey flint	Narrow blade	Inner	1	Segment of blade. Single blade ridge down centre of dorsal face.	broken 12	7	2
50	2	9	3	Light grey flint	Small flake	Secondary	2				
50	2	9	4	Light grey flint	Small flake	Inner	24				
50	2	9	5	Light grey flint	Broad blade	Inner	1	Proximal surviving. Narrow platform.	broken 15	9	3
50	2	9	6	Red flint	Flake fragment	Inner	1	Distal surviving.	broken 12	9	2
50	3	10	7	Light grey flint	Small flake	Inner	7				
50	3	10	8	Light grey flint	Narrow blade	Inner	1	Proximal surviving. Narrow platform. Single blade ridge down centre of dorsal face.	broken 14	8	2
50	3	10	9	Light grey flint	Flake fragment	Inner	1	Proximal surviving. Flat platform.	broken 10	10	3
50	3	10	10	Light grey flint	Microlith fragment	Inner	1	Segment of bladelet. Abrupt retouch down one side.	broken 5	3	2
50	4	11	11	Grey flint	Small flake	Secondary	2				
50	4	11	12	Light grey flint	Small flake	Inner	5				
50	4	11	13	Light grey flint	Broad blade	Inner	1	Distal surviving. Forked blade ridge in centre of dorsal face.	broken 9	10	2
50	4	11	14	Light grey flint	Regular flake	Inner	1	Flat platform.	19	19	3
50	5	12	15	Light grey flint	Small flake	Inner	3				
50	6	13	16	Light grey flint	Small flake	Inner	81				
50	6	13	17	Light grey flint	Small flake	Secondary	3				
50	6	13	18	Mottled grey flint	Regular flake	Inner	1	Flat platform.	19	15	3
50	6	13	19	Mottled grey flint	Regular flake	Inner	1	Flat platform.	16	17	3
50	6	13	20	Light grey flint	Regular flake	Inner	1	Distal surviving.	broken 12	14	2
50	6	13	21	Light grey flint	Narrow blade	Inner	8	Blade fragments.			
50	6	13	22	Mottled grey flint	Flake fragment	Inner	1	Distal surviving.	broken 9	12	2
50	6	13	23	Mottled grey flint	Broad blade	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	15	10	3
50	6	13	24	Mottled grey flint	Broad blade	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	22	11	3
50	6	13	25	Mottled grey flint	Broad blade	Inner	1	Flat platform. Parallel blade ridges down centre of dorsal face.	17		2
50	11	18	26	Light grey flint	Small flake	Inner	101				
50	11	18	27	Red flint	Small flake	Inner	2				
50	11	18	28	Light grey flint	Small flake	Secondary	2				
50	11	18	29	Mottled grey flint	Regular flake	Inner	1	Blade scars on platform indicate that the core was turned.	22	25	8
50	11	18	30	Mottled grey flint	Broad blade	Inner	1	Deep flat platform. Parallel blade scars on dorsal face.	33	18	6
50	11	18	31	Mottled grey flint	Broad blade	Secondary	2	Blade fragments. Chalky cortex.			
50	11	18	32	Light grey flint	Narrow blade	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	15	7	2

Context	Grid Quadrant	Sample No.	Cat. No.	Material	Type	Sub-type	No.	Description	ML	MW	MTh
50	11	18	33	Light grey flint	Narrow blade	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	15	7	2
50	11	18	34	Light grey flint	Bladelet	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	11	3	2
50	11	18	35	Light grey flint	Flake fragment	Secondary	1	Distal survives.	broken 15	12	4
50	11	18	36	Light grey flint	Microolith fragment	Inner	1	Segment of bladelet. Abrupt retouch down one side.	broken 9	3	3
50	7	14	37	Light grey flint	Small flake	Inner	5				
50	8	15	38	Light grey flint	Small flake	Inner	61				
50	8	15	39	Mottled grey flint	Regular flake	Secondary	1	Lot of rolled cortex on distal flake.	17	24	7
50	8	15	40	Mottled grey flint	Regular flake	Inner	1	Narrow flat platform.	18	12	4
50	8	15	41	Mottled grey flint	Regular flake	Inner	1	Platform trimming flake. Narrow flat platform.	15	10	4
50	8	15	42	Mottled grey flint	Narrow blade	Inner	1	Flat platform. Single blade ridge down centre of dorsal face.	16	8	2
50	8	15	43	Mottled grey flint	Narrow blade	Inner	1	Narrow core trimming blade or crested blade.	11	5	3
50	8	15	44	Mottled grey flint	Narrow blade	Inner	1	Flat platform. Hinge termination.	14	9	5
50	8	15	45	Mottled grey flint	Narrow blade	Inner	1	Narrow platform. Single blade ridge down centre of dorsal face.	15	7	1
50	9	16	46	Light grey flint	Small flake	Inner	24				
50	9	16	47	Mottled grey flint	Small flake	Secondary	2				
50	9	16	48	Light grey flint	Regular flake	Secondary	1	Water-rolled cortex. Frost shattering.	26	17	4
50	12	19	49	Grey flint	Small flake	Inner	36				
50	12	19	50	Red flint	Small flake	Inner	2				
50	12	19	51	Light grey flint	Flake fragment	Inner	1	Proximal surviving. Flat platform.	broken 9	13	2
50	12	19	52	Light grey flint	Flake fragment	Inner	1	Proximal surviving. Flat platform.	broken 8	11	2
50	12	19	53	Burnt flint	Flake fragment	Inner	1	Proximal surviving. Flat platform.	broken 10	13	4
50	12	19	54	Red flint	Narrow blade	Inner	1	Narrow platform. Single blade ridge down centre of dorsal face.	14	7	4
50	12	19	55	Light grey flint	Narrow blade	Inner	1	Narrow platform.	17	6	3
50	12	19	56	Light grey flint	Narrow blade	Inner	1	Narrow platform. Single blade ridge down centre of dorsal face.	16	8	3
50	12	19	57	Light grey flint	Narrow blade	Inner	1	Segment.	broken 15	5	2
50	12	19	58	Mottled grey flint	Regular flake	Inner	1	Narrow platform. Wide parallel flake with blade scars at distal end showing opposed platform technique.	28	19	6
50	12	19	59	Mottled grey flint	Regular flake	Secondary	1	Cortical platform.	17	15	5
50	15	22	60	Light grey flint	Small flake	Inner	16				
50	16	23	61	Grey flint	Small flake	Inner	11				
50	16	23	62	Grey flint	Small flake	Secondary	1				
50	16	23	63	Light grey flint	Narrow blade	Inner	1	Narrow platform. Single blade ridge down centre of dorsal face.	14	7	3
50	16	23	64	Mottled grey flint	Chunk	Secondary	1		20	15	8
50	13	20	65	Grey flint	Small flake	Inner	9				
50	14	21	66	Grey flint	Small flake	Inner	10				
50	spur 8	clean	67	Brown flint	Broad blade	Inner	1	Narrow platform. Forked blade scars on dorsal face.	25	12	4

Context	Grid Quadrant	Sample No.	Cat. No.	Material	Type	Sub-type	No.	Description	ML	MW	MTh
50	spur 8	clean	68	Mottled brown flint	Broad blade	Inner	1	Narrow platform. Parallel blade scars on dorsal face from opposed platform.	27	11	4
50	spur 8	clean	69	Mottled grey flint	Regular flake	Inner	1	Core trimming flake.	30	31	9
50	spur 8	clean	70	Mottled grey flint	Regular flake	Inner	1	Narrow platform. Blade ridge down dorsal face.	27	22	6
50	spur 8	clean	71	Mottled grey flint	Regular flake	Inner	1	Narrow platform.	21	21	3
50	spur 8	clean	72	Mottled grey flint	Regular flake	Inner	1	Narrow platform.	21	18	4
50	spur 8	clean	73	Mottled grey flint	Regular flake	Inner	1	Narrow platform.	15	12	3
50	spur 8	clean	74	Mottled grey flint	Small flake	Inner	4				
50	spur 8	clean	75	Mottled grey flint	Flint pebble	Frament	1	Split pebble. Smooth waterworn cortex.	36	35	16
50	spur 8	clean	76	Mottled grey flint	Small flake	Secondary	3				
50	spur 8	clean	77	Mottled grey flint	Spall	Secondary	1	Possible frost shatter.	20	11	3
50	spur 8	clean	78	Mottled grey flint	Spall	Secondary	1	Possible frost shatter.	8	15	3
50	spur 8	clean	79	Mottled grey flint	Broad blade	Secondary	1	Segment survives. Cortex down one side.	broken 19	12	4
50	spur 8	clean	80	Mottled grey flint	Flake fragment	Inner	1	Distal survives.	broken 13	17	3
50	spur 8	clean	81	Mottled grey flint	Broad blade	Secondary	1	Proximal survives.	broken 12	12	4
59	spur 9		82	Mottled red flint	Broad blade	Inner	1	Proximal surviving. Flat platform. Parallel blade scars on dorsal face.	broken 33	14	5
U/S	spur 8		83	Light grey flint	Broad blade	Secondary	1	Thick triangular-sectioned blade. Cortex down one face. Possible use as a strike-a-light as there is coarse crushing flaking down one edge and lighter damage down another edge.	36	10	7
59	cairn 3	25	84	Light grey flint	Microlith fragment	Inner	1	Triangular cross-section. Distal end of bladelet survives. Steep edge retouch on distal end forms angle like a scalene triangle. No retouch down sides.	broken 9	4.5	2
26	cairn 6		85	Mottled grey flint	Regular flake	Inner	1	Narrow platform.	27	13	3
63	cairn H	3	86	Translucent brown flint	Regular flake	Inner	1	Narrow platform.	14	12	3
29	cairn O	1	87	Light grey flint	Regular flake	Inner	1	Narrow platform.	15	10	3
U/S	cairn 3		88	Light grey flint	Regular flake	Secondary	1	Distal surviving.	broken 17	15	3
26	cairn H		89	Burnt flint	Small flake	Inner	1				
26	cairn H		90	Light grey flint	Narrow blade	Inner	1	Narrow platform. Blade ridge down dorsal face.	17	8	3
26	cairn H		91	Light grey flint	Knife	Inner	1	Narrow platform. Parallel blade scars on dorsal face, some from opposed platform. Retouched steeply on one edge at proximal end to shape tang for hafting. Used as knife down side with more acute edge angle.	31	12	6
26	cairn H		92	Mottled grey flint	Horseshoe scraper	Inner	1	Possible frost shattering removing one side. Scraper made on circular shallow flake. Steep regular retouch around surviving distal	30	broken 26	9

Context	Grid Quadrant	Sample No.	Cat. No.	Material	Type	Sub-type	No.	Description	ML	MW	MTh
								end and sides. Classic Neolithic form.			
59	cairn 3		93	Mottled grey flint	Bifacial invasive flaking	Secondary	1	Broad flake with small amount of rolled pebble cortex down one side. Invasive flaking over one face mainly from the direction of both ends rather than from the sides of the face. Invasive flaking on opposite face around proximal end and from right lateral edge. Breakage across distal end used as platform for some flaking. Unfinished or coarsely worked leaf point?	32	27	7
59	cairn 3		94	Mottled grey flint	Small flake	Inner	1				
59	cairn 3		95	Light grey flint	Chip	Inner	2				
59	cairn 3		96	Quartzite	Flake	Secondary	5	Five flakes form a quartzite cobble look like shatter maybe from use as a hammerstone. The material is too irregular to flake well.			
U/S	spur 5		97	Calcined flint	Regular flake	Inner	1	Narrow platform	20	15	6
U/S	spur 5		98	Black chert	Chunk	Inner	1		20	12	7
U/S	spur 5		99	Light grey flint	Small flake	Inner	1				
U/S	spur 5		100	Mottled grey flint	Small flake	Inner	1				
U/S	spur 5		101	Grey flint	Small flake	Inner	1				
U/S	spur 5		102	Mottled red flint	Core	With cortex	1	Patinated to lighter pink. Chalky cortex. Large flake fragment used as core blank. Flaking from flat platform produces step fractures.	24	33	13



Key:

- Site boundary
- Site infrastructure



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Title:
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Project:
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Client:
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Scale at A3:
1:30000

Drawn by: GC	Checked by: SW	Date: 13/01/2016
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Report No: 3451	Fig. No: 1a
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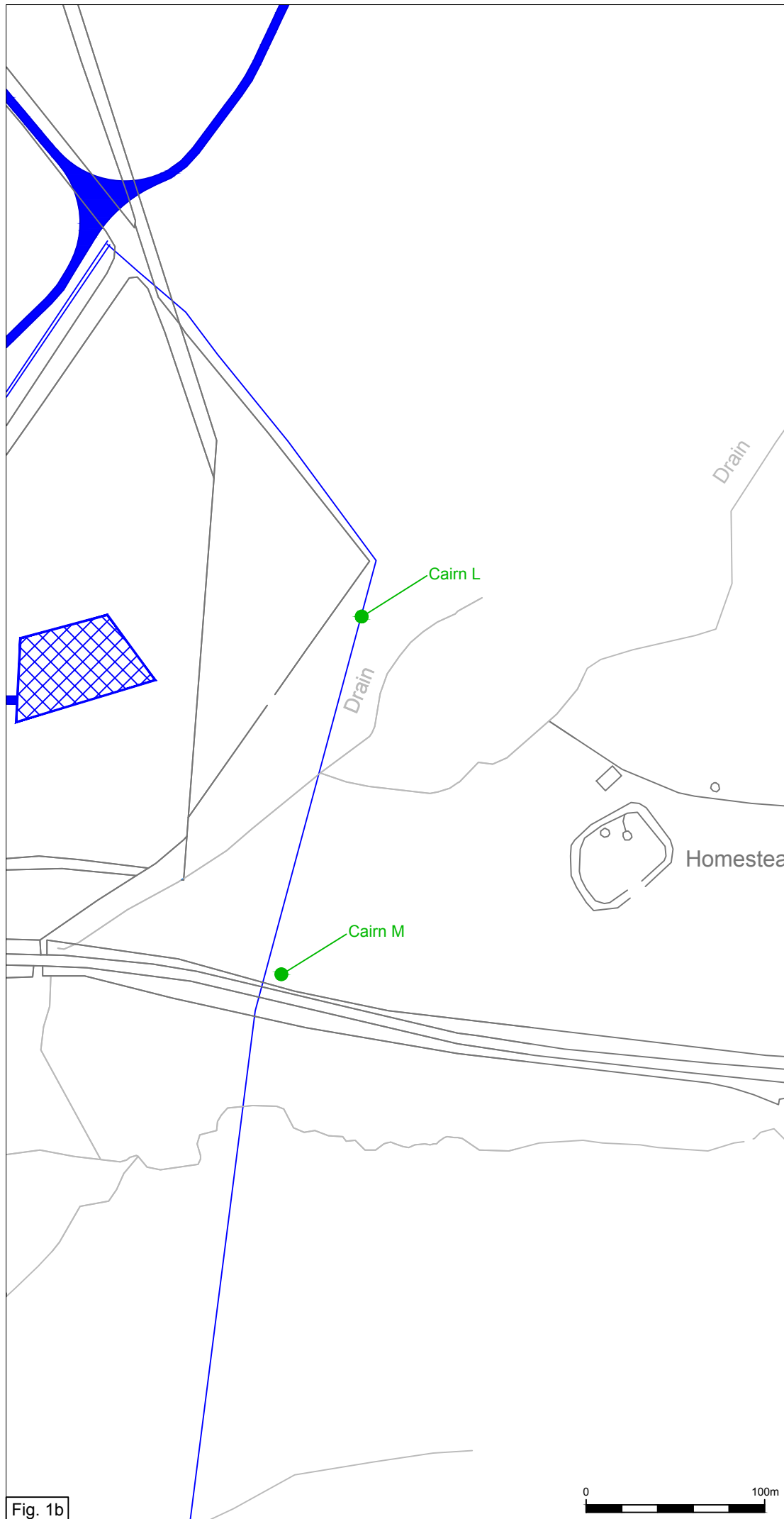


Fig. 1b

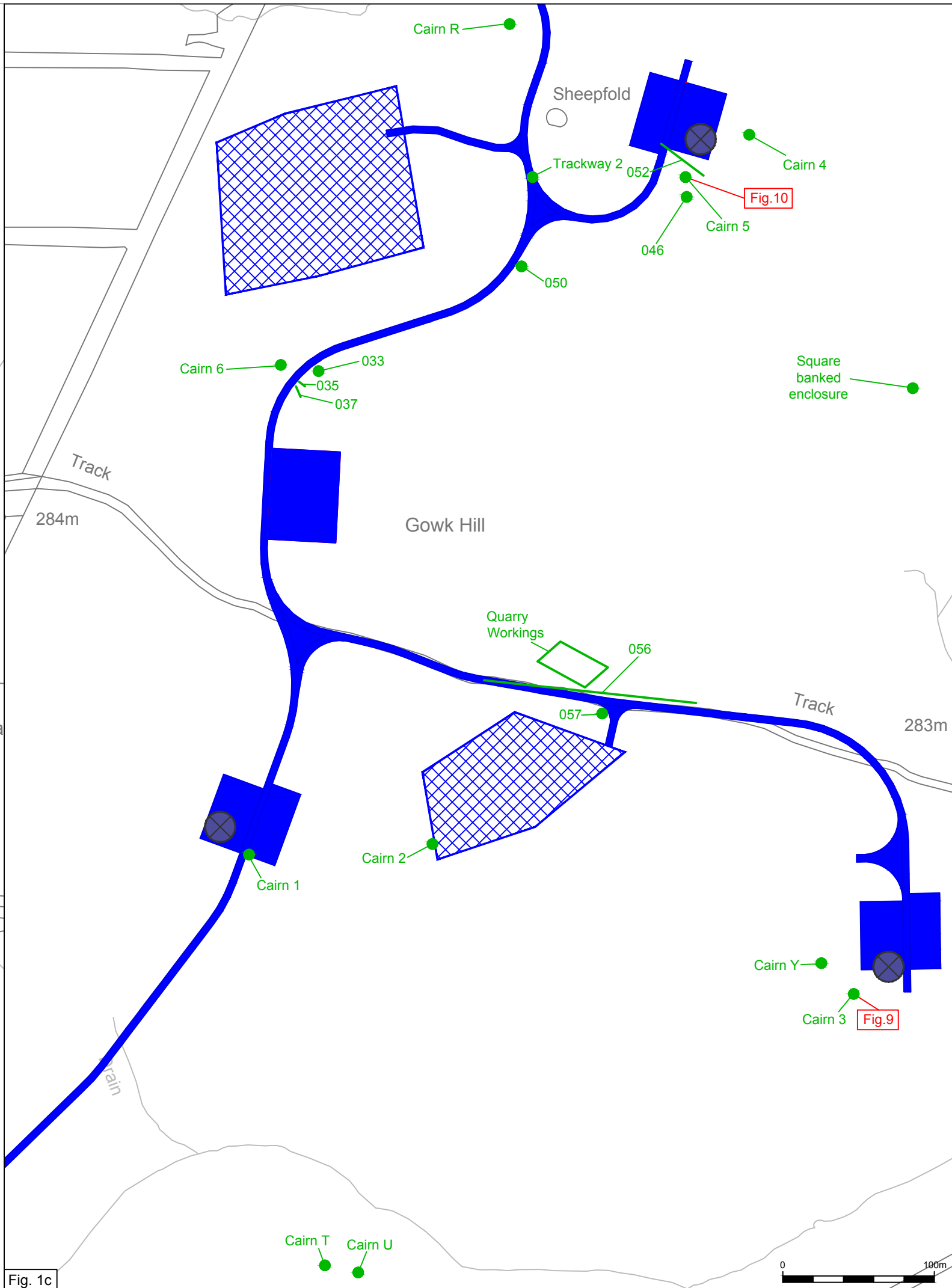


Fig. 1c



Key:

- Site infrastructure
- Borrow pit
- Archaeological feature



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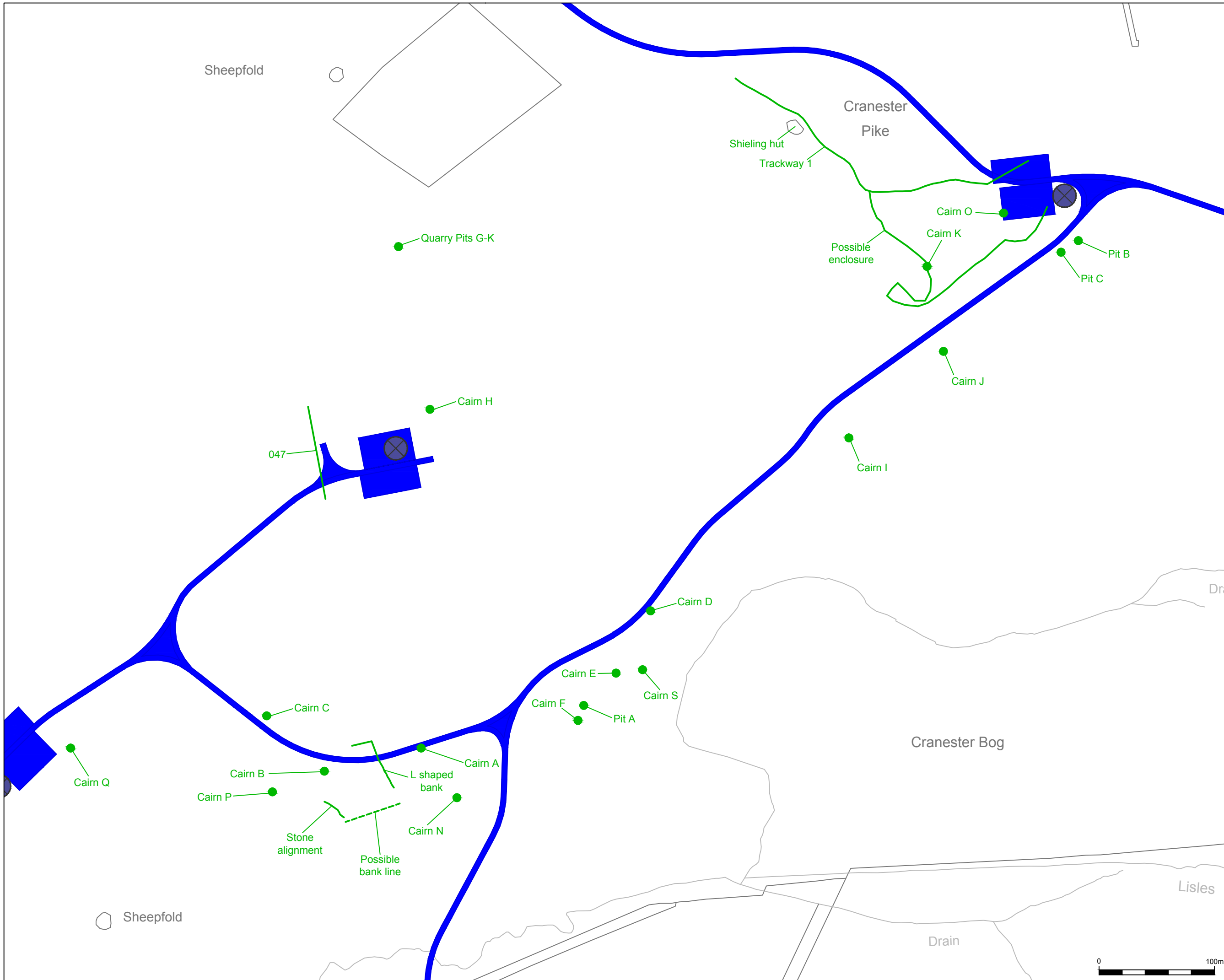
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0 100m



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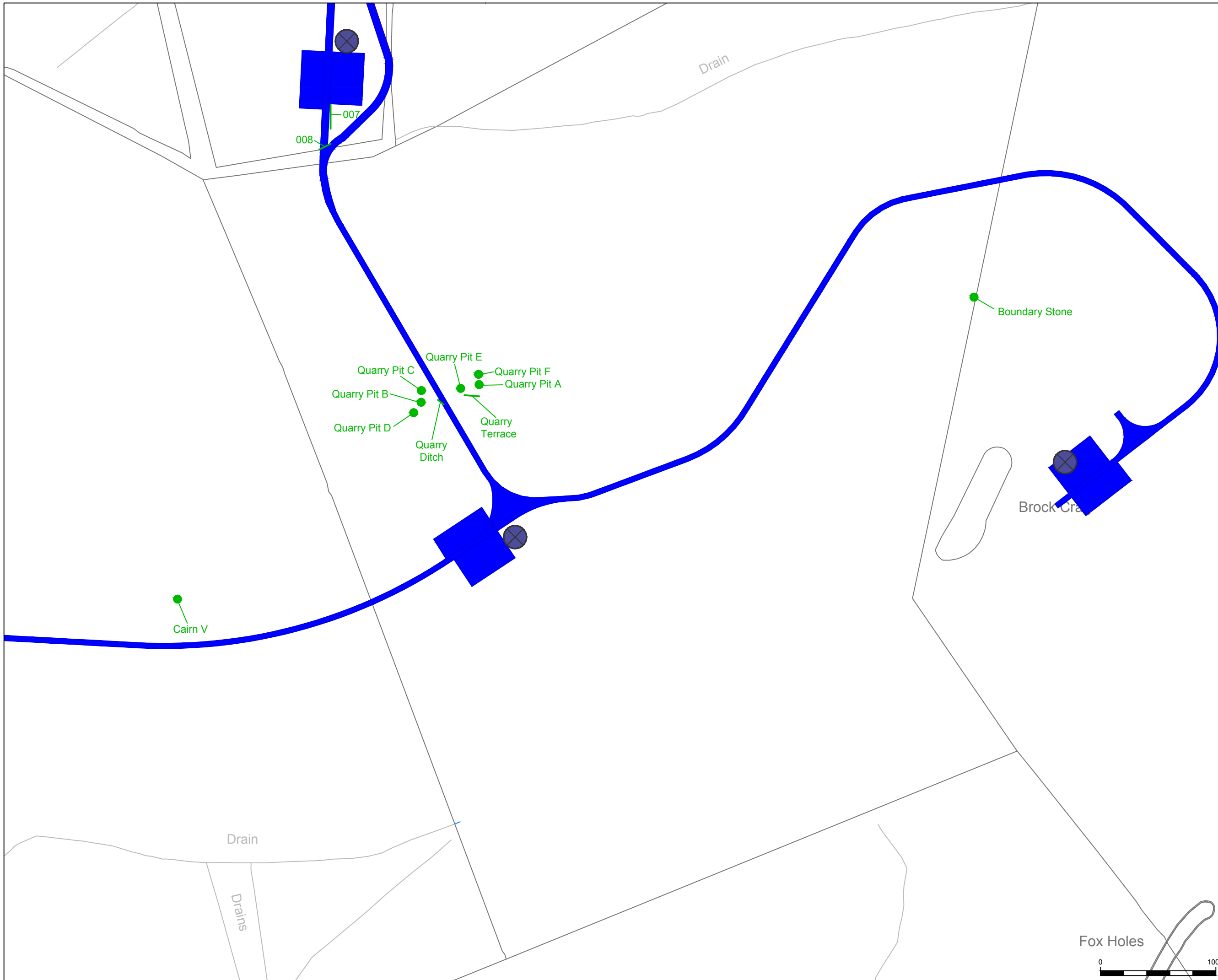
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0 100m



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Report No: 3451	Fig. No: 1f
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Fig. 2 Cairn 1 during excavation



Fig. 3 Cairn 3 during excavation

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Fig. 4 Cairn 5 during excavation



Fig. 5 Cairn A during excavation

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Fig. 6 Cairn B during excavation



Fig. 7 Cairn O during excavation

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Fig. 8 Close up of selection of Lithics from 050 Scatter

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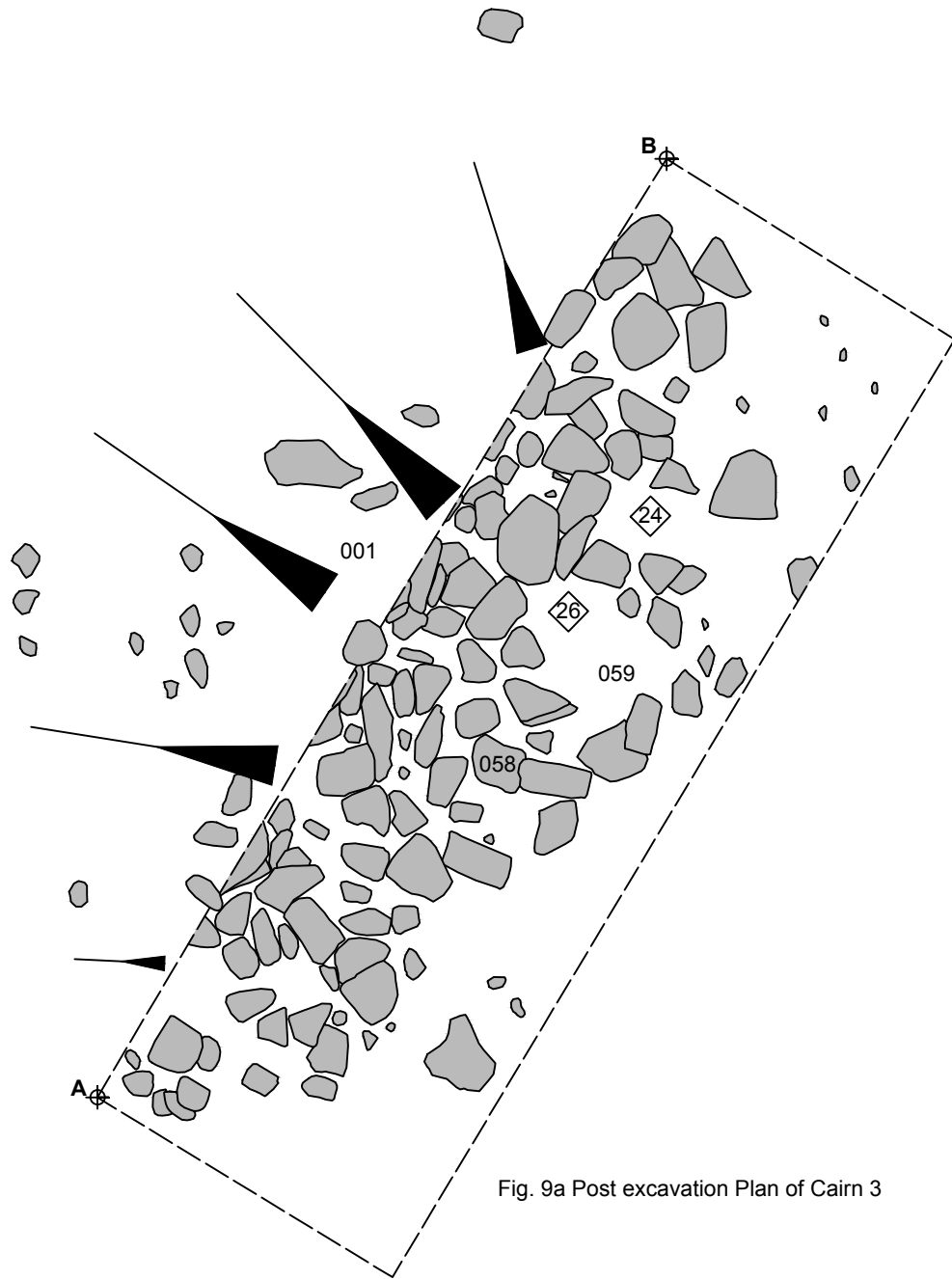


Fig. 9a Post excavation Plan of Cairn 3

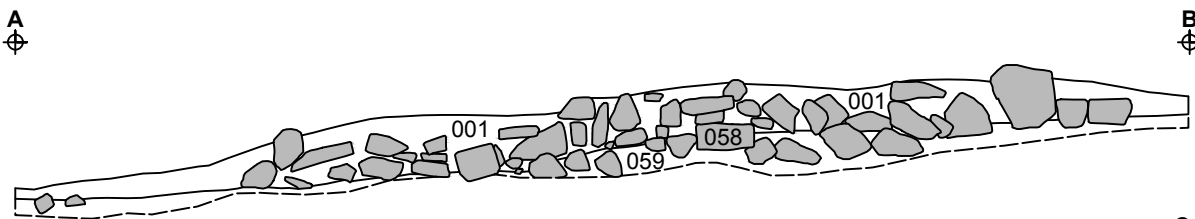


Fig. 9b South-east-facing section of Cairn 3

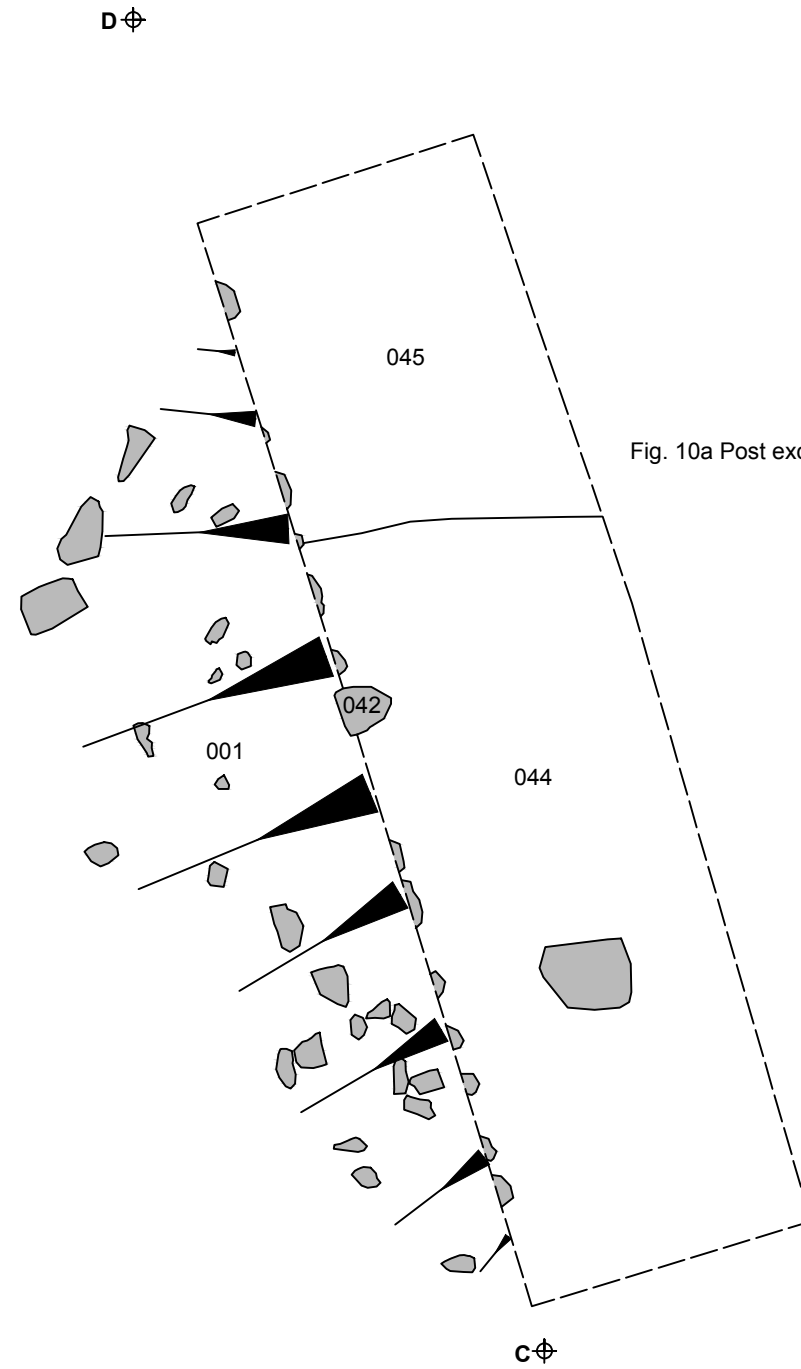


Fig. 10a Post excavation Plan of Cairn 5

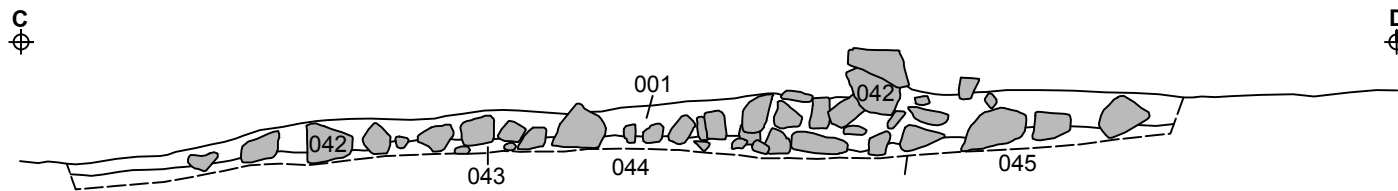


Fig. 10b North-east-facing section of Cairn 5

Key:

Stone



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Plans and sections of Cairns 3 & 5

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Report No: 3451	Fig. No: 9 - 10
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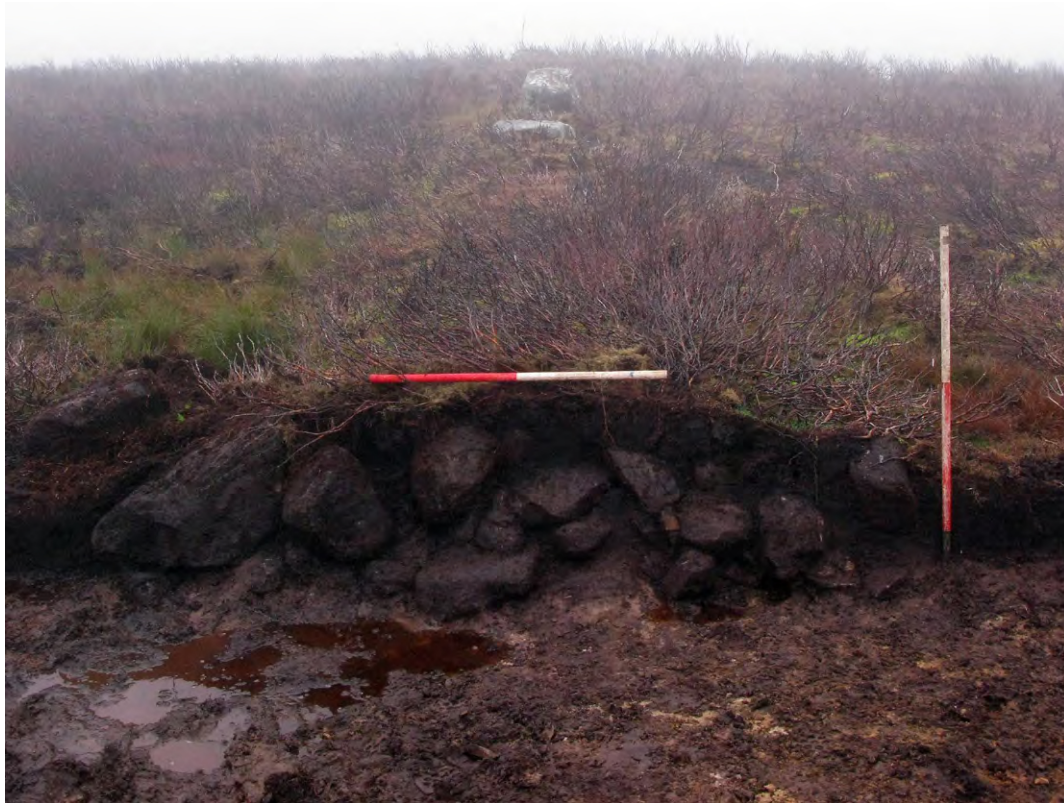


Fig. 11 'L'-Shaped Bank in section



Fig. 12 Post excavation shot of haul road along Spur 6

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Fig. 13 General shot of typical drainage 048 on Spur 6



Fig. 14 Post excavation shot of crane pad at end of Spur 11

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Fig. 15 General shot looking NW over 022 drain



Fig. 16 Site 128, general shot looking SSE

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