## Ellerton Moor Juniper Rigg

## A Bronze Age landscape revealed by a recent heather burn.

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Photo 1 Juniper Rigg. View north eastward across the limit of the burned area to lower Swaledale, with drone in reconnaissance photo survey flight.

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## Note on the Site Name

The area surveyed is located on the top and upper slopes of the prominent spur which forms the western side of Juniper Gill. This spur is located on the southern edge of Swaledale on the inside of a sharp bend of the Swale, (Map 1). The east- facing gentle slope of the Spur provides fine views down through the wooded slopes of Lower Swaledale (Photo 1). The north to west-facing scarp edge of the spur provides fine views through Mid Swaledale and through Arkengarthdale across Stainmore to the Pennine Escarpment overlooking the Vale of Eden (Photo 2). To the traveller on foot during prehistory, this route was the lowest and easiest crossing of the Pennines. Reference 1, Laurie T.C. (1985).

Since the Bronze Age remains which are the subject of this report are all located on the upper slopes of this unnamed spur, and not within Juniper Gill, the site will be more accurately described here as being on Juniper Rigg.


Photo 2: View north eastward across Swaledale from the northern edge of Juniper Rigg. Cairn F17 and co-axial F18 revealed by the burn. Note that the heather is lightly burned here and will recover but that the rocks of the archaeological features are now fully exposed.

## Part One - The Survey

## Survey method

The archaeology features were recorded using a ProMark 120 GPS using its internal antenna only. Post processing used GNSS Solutions software and OS Net Rinex 1 minute data from the RICM station 11.7 km distant. The processed co-ordinates and heights for all features, together with confidences is recorded in Appendix Two.

## Maps Acknowledgments and Copyright

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Map 1: Ellerton Moor Archaeological Features - Location Map


Map 2: Ellerton Moor Archaeological Features in Google earth


Map 3: Ellerton Moor Archaeological Features - Altitude Map
$-49600$

Map 4: Ellerton Moor Archaeological Features - OS 1:10,000 Map
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Map 5: Ellerton Moor Archaeological Features - Heather Fire Extent



Map 7: Ellerton Moor Archaeological Features - LIDAR Coverage


Map 8: Ellerton Moor Archaeological Features - LIDAR Coverage

## Part Two - The Archaeological Report

## Introduction



Photo 3 The Ellerton Round Cairn on Juniper Rigg. View northwest across Swaledale through Arkengarthdale towards Stainmore and the Vale of Eden. Pre-burn May 1994.

## 1. Site Recognition and Pre-Burn Survey

The Bronze Age Cairnfield Settlement Complex at Juniper Rigg on Ellerton Moor to the west of Juniper Gill, which is the current study area and subject of this report, was first recognised and surveyed by Tim Laurie in the 1990's during field work on behalf of the CTA Conservation Group (Figure 1).

Despite the fact that the area with extensive archaeological remains on Juniper Rigg was at that time masked under heather of varying age and density, this previous survey recorded several fragmentary field boundaries, a total of 20 stone cairns including the very large Ellerton Cairn, a ring cairn and several stone banked enclosures. These features extended over moorland at an elevation of 360 m AOD for a distance of almost 1 m westward from Juniper Gill. Further archaeological features, including a standing stone, two small ring works and a large curvilinear stone banked enclosure were recorded at the head and to the east of Juniper Gill, (Figures 1 and 2).

## ELLERTON ABBEY CP - from Hags Gill to Juniper Gill



Figure 1 Ellerton Abbey CP -from Hags Gill to Juniper Gill and beyond. Archaeological remains surveyed 20 years before the Moorland Fire. Unpublished Survey. Tim Laurie 1994, CTA Conservation Group.

The survey of the Bronze Age Cairnfield Complex above Juniper Gill resulting from this fieldwork remained on file and was not published on grounds that it was incomplete. It was realised that the Bronze Age remains, masked below thick heather above Juniper Gill, were more extensive and could only be recognised and recorded when further areas of old heather were burned year on year in the course of the Moorland Heather Management Plan.

The rather similar Bronze Age Cairnfield Settlement Complex (Figure 3) located on the Stainton Moor Ranges some 3 m further east on a south facing open moorland slope at a lower elevation above The White Bog stream (SE092958, centre) was surveyed within the Swaledale Ancient Land Boundaries Project (Reference 2 ) and has been described by Andrew Fleming (Reference 3) and can be compared with that at Juniper Rigg presently under consideration.

The opportunity for the current survey of the fossil Bronze Age landscape on Juniper Rigg, the high moorland spur to the west of Juniper Gill, arose during December 2014 when a large number of additional features were revealed after an area (approximately 8ha) of peat and heather covered moorland was burnt down to the clay subsoil when routine heather burning fires went out of control under conditions of gusting wind.


Photo 4 Three cairns F48 (nearest), F47 (central) and F41 (distant) aligned eastward down Swaledale. Photographed May 1994 showing pre-burn heather management.


Photo 5 the same aligned cairns within heavily burned area, photographed January 2015

Since it was considered essential that mitigation works by heather mulch and stabilisation to limit any further peat erosion should be completed before the nesting season, the survey of the archaeological remains revealed by the fires was undertaken and essentially completed by Stephen Eastmead working with Tim Laurie at the first opportunity, in winter conditions during one continuous period of 6 hours, on $26^{\text {th }}$ January 2015.

In view of the urgency of the need to photograph and record the features which had become recognisable within the burned areas under winter conditions, there has been insufficient opportunity to make the large scale detailed site records of representative features which would form an essential element in a final report. This detailed survey work will follow as soon as weather conditions improve. This Report must therefore be considered as an Interim Report

The Final Report will include detailed plans of these features and will place the Juniper Rigg settlement in context with other archaeological features known to exist, from the western limit of the Ranges at Hags Gill to the StaintonWathgill Road.

Stephen Eastmead, GPS Surveying and Mapping Advisor to SWAAG is responsible for the technical survey and for the resulting maps. Tim Laurie, FSA. CTA Group Member (Archaeology) and Hon President of SWAAG, directed the archaeological survey and is the author of this Archaeological Report.

SWAAG wish to thank Phil Abramson for enabling this Survey, for reading through the Report and for the Supplement of Drone Photographs. SWAAG also thank Dr Moira Owen of arranging to make available the Defence Estates Digital Survey Files of the Burned Area.

## The Site

Juniper Rigg is the high moorland spur forming the western side of Juniper Gill on the southern edge of lower Swaledale at a change of direction of the River Swale and immediately opposite and above Ellerton Priory. This high spur, situated at the inside of the sharp bend on the Swale, commands very fine views through Swaledale both upstream towards Reeth and Calver, downstream towards the woodland defile of the Lower Swale. Northward, Mickle Fell and the high fells of the Pennine Escarpment which overlook the Vale of Eden are distinctly visible through Arkengarthdale across the Pass of Stainmore.

The areas revealed to a varying extent by the recent heather burn and the subject of this survey extends westward from the upper edge of Juniper Gill for a distance of approximately 600 m and southward from the edge of Swaledale for a distance of 500 m . The Bronze Age remains present include areas with stone cairns, stone field banks together with isolated round house enclosures and funerary monuments all of which are characteristic of pioneering pastoralist settlements dated across Northern Upland Britain from the final Neolithic through the Bronze Age. Settlement at this complex of monuments may have been seasonal and intermittent with periods of abandonment followed by adaption and re-occupation over an extended period perhaps from as early as 2400BC to approximately 600BC. Evidence from the excavated cairnfield at Crawley Edge (Reference 6) suggests that cereals were grown on the cleared ground between the cairns.

In view of the need to record the remains exposed by the heather burn before consolidation works, this survey has been confined to the areas exposed by the burn and to other sites visible in the immediate vicinity of the burn.

## Geology, Soils and Aspect

Juniper Gill is a short, steep sided ravine cut by a small stream through glacial till overlying strata of the Richmond Chert Series on the southern edge of Swaledale down to the Main Limestone (Reference 4).

The Main Limestone is exposed at intervals on the steep upper slopes of the Gill where it has been quarried.
The survey area (Maps 1-8 above) is located on the glacial till covered upper NW to NE facing slopes of the prominent spur, known here as Juniper Rigg, which forms the western side of Juniper Gill.

Juniper Rigg is immediately overlooked from the south by a short, steep slope formed by the outcrop of sandstone, the Edge, which underlies the Crow Limestone of the high moorland plateau. This steep Edge forms the southern limit of the area with recognised prehistoric settlement remains. Above this sandstone slope, the lead workings of the Ellerton and Stainton Mines, on the most easterly extension of the Stork Vein are very prominent (Reference 4).

The whole area surveyed was until recently, covered with thin peat soil over glacial clays supporting managed heather dominant heath vegetation. Small areas of bracken occur where settlement disturbance has brought the underlying calcareous clays to the surface.

Three separate zones can be recognised, each having a different aspect and landscape quality. The three zones can be defined as follows:

Zone 1. The steep north to north-west facing scarp slope which forms the southern edge of Swaledale.
Zone 2. The glacial till covered surface of the Rigg which is more or less level before finally dropping steeply at the southern edge of Swaledale.

Zone 3. The gentle north- east facing slopes of the Rigg which lead down to the ravine of Juniper Gill. These high slopes commands fine views directly down Lower Swaledale and over Feldom towards the lowlands of the Vale of Mowbray (Photo 1).

## The Contemporary Prehistoric Environment

On the basis of pollen evidence obtained during the Swaledale Ancient Land Boundaries Project (Reference 2), from a 2-3m deep peat-infilled glacial overflow channel close to the Grinton-Leyburn Road on Ellerton Moor, NGR SE058984, 360m, some 2 km to the west of Juniper Rigg, at the equivalent elevation - the uppermost slopes of Swaledale were in the Bronze Age, open hazel scrub on and below the limestone outcrops which provided excellent grazing to the stock animals of pioneering seasonal/transhumant Bronze Age pastoralist settlers. The clearances of these first unenclosed cairnfield settlements gradually developed to form the wide ranging open grassland managed pastures (the coaxial field systems). The coaxial field systems reached the high plateau at 430m AOD and were formed by clearance downslope, of the mixed deciduous woodland with Lime (Tilia) and Field Maple (Acer campestris) on the calcareous glacial till of the steep dale sides (Reference 5).

The contemporary Bronze Age prehistoric environment was thus very different indeed from the open heather dominant moorland of today which, subsequent to the Bronze Age, developed in consequence of leaching of soils, podsolisation and acidification following climatic deterioration- increased cooling and rainfall, coupled with increased grazing pressure during the Iron Age. The heather dominant moorland of today became established during the period of Roman occupation.

Evidence from trenches cut through stone field banks on Calverside during the SWALB Project (Reference 2), proved that the stone field banks accrued by field clearance to fence lines and in time developed to form hedgebanks with hedgerow trees. Pollen of Field maple (Acer campestris) - a woodland edge and hedgerow tree, was present at Ellerton Moor in the contemporary horizon. This pollen sampling site was close to and overlooked by a very similar Bronze Age cairnfield and field system.

## The Archaeological Remains

For a full list of all features surveyed and their differing categories, see the Gazetteer Appendix One.
All features present on Juniper Rigg conform to those present and which contribute to the designation of 'Cairnfield Settlements' elsewhere throughout Upland Britain. Two cairnfield settlement complexes can be cited as notable regional analogies for the Juniper Rigg Cairnfield. The first of these, with a total of 27 cairns and comparable in size to the Juniper Rigg Complex, is that at Crawley Edge above Stanhope in Weardale which was surveyed and excavated
by Robert Young during 1992, Reference 6. The second with at least 820 cairns and very much larger but otherwise comparable to Juniper Rigg was surveyed and examined in great detail by a collaborative team from Durham University and from the Institute for Material Culture, Polish Academy of Sciences (Poznan Branch) lead by Professors Anthony Harding and, J. Ostoja-Zagorski during the 1980's and 1990.s (Reference 7).

Structural features present at Juniper Rigg and common to most unenclosed and cairnfield type settlements, include:

1. Numbers of small and large stone cairns, most of which are stone clearance heaps although several well constructed cairns with or without visible kerbs do contain cremation burial deposits, as at Crawley Edge. Areas between the cairns are noticeably stone free.
2. A number of cairns of different dimensions, large and small, have been designated as possible funerary cairns on grounds that these selected cairns are, firstly, circular or otherwise reasonably well constructed. Secondly cairns which are located at characteristic viewpoints, for example the Ellerton Cairn, the three aligned cairns on the gentle east slope above Juniper Gill which overlook the lower Swale (F41, 47 and 49, see Photos 2 and 3) and those on the steep scarp edge (Zone 3) which command views through Arkengarthdale and over mid Swaledale. The three aligned cairns are larger than the norm, and are false crested on the eastern slope (Zone 3), so as to overlook the lower Swale Valley and the lowlands beyond.


Photo 6 Well-formed cairn (F6) at viewpoint on edge of the escarpment. Possible burial.


Photo 7 Small circular cairn revealed by the burn. (F55). Possible burial.
3. The Ellerton Cairn (F9) which, being prominently located at a notable viewpoint and being significantly larger than the remaining cairns, can fairly be described as a funerary monument. This cairn, which has been built over a number of radial banks which project beyond the perimeter of the cairn, shows evidence of having been constructed to a pre-conceived plan.


Photo 8 The Ellerton Cairn. (F9). Note the projecting radial banks. Compare with pre burn photo $\mathbf{3}$ above.
4. Stone dump field banks which although fragmentary, do conform to a common axis, i.e. are coaxial, with slight transverse and terminal field banks and offset gateways to suit movement of stock from field to field. Although very small in scale and wavering in the short run are orientated. The aligned field banks at Juniper Rigg do indicate the idea of a managed field system. The field banks may have been formed by clearance against a pre existing fence line and are only occasionally revetted with facing upright stones (orthostats).


Photos 9 and 10 Offset entrance between the two substantial field banks, F55 and F57
6. Round house enclosures. One probable stone banked example (F 19) with east facing elongated entrance feature, has been recognised. Further possible round house enclosures may exist in areas of thick vegetation beyond the areas surveyed here.


Photos 11 and 12. F19 Round house enclosure bank masked below vegetation. At edge of burned area.
7. Ring Cairns. Circular enclosures without entrances defined by circular stone dump banks of cairn material are present at Juniper Rigg, e.g. F27 (Photo 13) and F50 (Photo14) and the scheduled ring cairn, SE 07959585 , enclosure D on the Pre-Burn Survey Map, Figure 1 and surveyed when visible in 1994, see plan below, Figure 2. This very low ring work is outside the area of the burn and is currently hidden below heather. It has been heavily quarried and is over-ridden by a vehicle track.


Photo 13 F27 Ring Cairn on Scarp Edge. Masked below thin peat in lightly burned area.

## Note on urn cremations within circular stone settings and cist burials below cairns.

Although no examples have so far been recognised at Juniper Rigg, urn cremation burials contained within small circular stone settings, which serve the purpose of defining and enclosing one or more cremation burials in pits, are usually present within cairnfield settlements, for example as those present below two stone cairns excavated at Crawley Edge, above Stanhope, Weardale (Reference 6), and at Danby Rigg (Reference 7) on the North York Moors.


Photo 14. F50 Ring cairn tangential to F18 coaxial field bank. This ring cairn was revealed by the burn.

## Affinities of the Juniper Rigg Cairnfield.

The settlement complex at Juniper Rigg has not been excavated and, is at present, updateable except by analogy. The site is however comparable in every respect to the numerous unenclosed upland settlements which have been excavated and dated elsewhere in the North Pennine Fringe, on the North Yorkshire Moors on the fringes of the Lake District and of the Cheviot Hills.

Two references are provided to excavated cairnfield settlements which provide good regional analogies for the Juniper Rigg Complex.:

1. The excavated Bronze Age Cairnfield Complex on Crawley Edge above Stanhope in Weardale. This cairnfield site is directly comparable, both on point of size ( 27 cairns) and in the elevated spur location which overlooks the valley of the River Wear. Two cairns excavated at the Crawley Edge cairnfield produced a collared urn burial within a small stone setting, jet bi-conical necklace and a saddle quern indicating the use if not the growing of cereals. Occupation of this cairnfield is radiocarbon dated to the Late Neolithic and Bronze Age (Reference 6).
2. The very large Bronze Age Cairnfield Complex with at least 820 cairns located on a high moorland spur on Danby Rigg in the North York Moors (Reference 7).

The focus of the very large cairnfield complex on Danby Rigg was the prominent ring cairn which could otherwise described as an embanked stone circle or enclosed cremation cemetery constructed to include a pre-existing standing stone. Very large round cairns and ring cairns are usually present on cairnfield sites elsewhere throughout the uplands of Northern Britain. Unenclosed round house enclosures as F19 at Juniper Rigg, are only occasionally present on cairnfields. The post holes of round houses constructed of timber would leave no visible evidence of their existence.

The Juniper Rig Cairnfield Complex shares the structural features present at these two selected examples which have been examined in detail and which may be safely considered to be the Regional Type Sites for Upland Settlement during the Second Millennium B.C., specifically cairnfield and unenclosed settlements on the high moorland edge and spur locations preferred for cairnfield settlements generally.

For comparative reasons, I include below the unpublished line and offset sketch plan of the Juniper Gill Ring Cairn now hidden and secure below thick heather. This plan can be compared with the survey of the Danby Rigg Ring Cairn. A. F. Harding et al 1992, Illustrations 8, 9 and 10. (Reference 7).


Figure 2 Ring cairn or unenclosed round house on west side of Juniper Gill. Line and offset sketch survey by Tim Laurie. Site D on Location Map, Figure 1 above.

Finally, The Bronze Age cairnfield on Juniper Rigg is not isolated. Similar cairnfields have been recorded in detail on the 1:2000 scale surveys of the Swaledale Ancient Land Boundaries Project (SWALB) (References 1, 2 and 5 below) on Grinton Moor, On Harkerside, notably that centred on the embanked stone circle above Harker Mires, on Calverside, On Marrick Moor and on Skelton Moor.

The final survey completed by SWALB, See Figure 3 below, was the detailed survey of two different settlement complexes on Stainton Moor, some 3 km SE of Juniper Rigg. The first being a Bronze Age cairnfield and field system with two burnt mounds and a ring cairn on south facing moorland north of the White Bog Beck. The other, just within the cleared pastures of Stainton, is a small shieling type complex with rectangular buildings and curvilinear fields of Early Medieval character.


Figure 3 Stainton Moor. The White Bog. The Swaledale Ancient land Boundaries Project Survey.

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## Appendix One - The Gazetteer

The Gazetteer to be read in conjunction with Part One above and specifically, Map 6 Ellerton Moor. Juniper Rigg. Archaeological Features Gazetteer Codes

All recorded features have been assigned within the Gazetteer to one of the following categories:

## Definitions - Feature Categories

Small Cairn or clearance heap: Stone cairn not exceeding 4 m in diameter or any one dimension.
Large Cairn or clearance heap: Cairn exceeding 4 m in diameter and not exceeding 8 m any one dimension. Cairns exceeding 8 m diameter stated separately.

Ring Cairn: Stone dump, embanked circular enclosure, which is not scooped or otherwise thought likely to be a round house or stock enclosure.

Field bank: Any fragmentary stone bank which is not coaxial.
Coaxial field boundary: Stone bank more or less on a shared common axis, dotted where intermittent. Isolated visible fragments should also be considered as further evidence when on this shared axis and otherwise entirely masked below heather or peat.

Field Boundary: Any other stone bank which is not on a common axis or part of an enclosure. Including banks which may be transverse boundaries between coaxials.

Enclosure: Stone banked enclosures which may be round house enclosures or animal pens.

In the table below: Cairns marked with asterisk *, are on point of a false crested view-point location, alignment, semblance of structure or other consideration - may contain burials.

| Map <br> Reference | Photo Image <br> Reference | Description | Burnt Area Details |
| :--- | :--- | :--- | :--- |
| F1 | F1.1-2 | C1 Zone 4. Western slope. Small cairn. Circular <br> Stone setting at large boulder. Possible Burial. <br> At western limit of the cairnfield. | Revealed in part by <br> burn |
| F2 | F2.1-2 | FB1. Coaxial field bank at edge of scarp | In lightly burnt area |
| F3 | F3.1-2 | FB2. Coaxial field bank. Extension of FB1 down <br> slope towards the limit of enclosed pastures. <br> May continue into the pastures, check. | In lightly burnt area |
| F4 | F4.1-4 | C2 Zone 1 Top of scarp slope at view point. I <br> cairn circular and well-constructed. Part only <br> revealed in localised heavy burn. Possible <br> burial. | Localised heavy burn. |
| F5 | F5.1-3 | FB3 Indistinct clearance bank at first aligned <br> with and close to edge of scarp then turning to <br> align on the Ellerton Cairn. | Large area of localised <br> heavy burn. |
|  |  | C3 Not used |  |


|  |  |  |  |
| :--- | :--- | :--- | :--- |
| F6 | F6.1-3 | C4* Zone 1. Edge of scarp. Medium cairn. <br> Circular. Low and undisturbed. Possible burial. <br> Completely revealed by burning. Close to the <br> Ellerton Cairn. Chert flake found nearby. | Large area of localised <br> heavy burn. |
| F7 | F7.1 | C5 Small cairn. Clearance to an earth-fast <br> boulder. Close to the Ellerton Cairn. | Large area of localised <br> heavy burn. |
| F8 | F9.1-6 photos | C6 Remnant of a larger cairn. Possibly robbed <br> away for nearby Ellerton Cairn. | Large area of localised <br> heavy burn. |
| F10 | C7* The Ellerton Cairn. Very large cairn with <br> radial banks projecting from the perimeter. At <br> edge of scarp with views through <br> Arkengarthdale to the Pass of Stainmore and <br> the Eden Fells. Disturbed by recent shelter | Large area of localised <br> heavy burn. |  |
| F10.1-3 | FB4 Indistinct Coaxial field bank. Extends from <br> edge of the scarp to the east of the Ellerton <br> Cairn for a distance of 129m. Shrouded in peat <br> and burnt heather. | Area of burned <br> heather with small <br> areas of locally heavy <br> burning. |  |
| F11 | F11.1-2 | FB5 Fragment of a transverse field boundary. <br> Shrouded under peat. | Area of burned <br> heather with small <br> areas of locally heavy <br> burning. |
| F12 photograph | C12 Small cairn shrouded in peat. |  |  |
| F15 | F12.1-3 | No photograph | C11 Small cairn shrouded in peat. |
| F13 | No photograph | C8 Small cairn, possibly rectangular. Stone <br> heavily burnt by recent fire.. | Area of burned <br> heather with small <br> areas of locally heavy <br> burning. |
| F15 |  |  | Burned area of <br> heather with small <br> areas of locally heavy |


|  |  |  | burning. |
| :---: | :---: | :---: | :---: |
| F17 | F17.1 | C13* Medium cairn revealed by heavy burning. 10 m west of Coaxial FB 18. <br> Zone 1. Close to edge of Scarp. Possible burial. | Burned area of heather with small areas of locally heavy burning. |
| F18 | F18.1-11 | Coaxial Field Boundary. Very prominent where peat burnt off. Extends from edge of the scarp some $x x m$ to the east of the Ellerton Cairn for a distance of 167 m . Extensive damage to stones by fire, see photos. | Burned area of heather with small areas of locally heavy burning. |
| F19 | F19.1-7 | E1. Stone embanked curvilinear enclosure with funnelled entrance to the NE. On slope and possibly levelled as a platform for a round house. Dimensions 23.8 m * 25.9 m overall. Note contrast in vegetation. | Unburned area. <br> The enclosure bank hard to see on photos as it is shrouded by moss, peat and bracken. |
| F20 | F20.1-3 | FB6 Short length of bank on east side of F5 to form a track or droveway. | Severely burned area. |
| F21 | F21.1-3 | FB7 Section through a substantial field bank revealed by the severe burn at the point where the field ban has been quarried away in antiquity. Further west this bank is just visible as a slightly concentrated spread of stone and seems to have continued westward on the scarp edge. | At edge of severely burnt area. |
| F22 | F22.1-2 | FB8 Coaxial fragment revealed by burning of heather, turns at right angle at edge of scarp. | Burned Area |
| F23 | F23.1 | FB9 Coaxial boundary and small cairn C14 revealed by burning. | Burned Area |
| F24 | F24.1-2 | C14 Small cairn. The outline of a small circular stone cairn shrouded under thin peat is revealed after heather burning. | Burned Area |
| F25 | F25.1-5 | C15 Complex cairn structure or possible ring cairn. Shrouded below peat. | Near edge of Burned Area on scarp slope. |
| F26 | No photo | C16 Medium cairn shrouded in peat. | Burned Area on scarp slope. |
| F27 | F27.1-4 | RC1 Ring Cairn. 8m diameter, approximately, outline of circular stone enclosure visible shrouded below peat. | In burned area on scarp slope. |
| F28 | F28.1 | C17 Small cairn shrouded below peat. | At edge of burned area on scarp slope. |
| F29 | F29.1 | C18 Small circular cairn shrouded below peat. | In burned area. |


| F30 | F30.1 | C19 Medium cairn shrouded below peat. | In burned area. |
| :---: | :---: | :---: | :---: |
| F31 | F31.1 | C20 Remnant of a larger cairn. | In burned area at top of slope. |
| F32 | F32.1 | C21 Small cairn with attached small stone platform | In burned area. |
| F33 | F33.1-2 | C22 Complex cairn structure 7 m *5m overall comprising small cairn with rectangular extension enclosing two small open areas. | In burned area. |
| F34 | F34.1 | C23 Medium cairn shrouded below peat. | Edge of burned area. |
| F35 | No photo | C24 Small cairn close to field bank? | Edge of burned area |
| F36 | F36.1 | C25 Small cairn | Edge of burned area. |
| F37 | F37.1 | C26 Medium cairn or possible enclosure bank | Edge of burned area |
| F38 | F38.1 | C27 Medium cairn or part of the enclosing bank to a possible scooped round house. | At edge of burned area |
| F39 | F39.1-3 | C28 Medium cairn at edge revealed by severe burning. | At edge of burned area |
| F40 | F40.1 | C29 Part of a larger cairn revealed by severe burning. | In burned area. |
| F41 | F41.1-3 | C30 Large cairn, lowest of three aligned cairns, part revealed by severe burning. | At edge of severely burned area |
| F42 | F42.1-2 | C31 Large cairn reduced by quarrying with wide spread of cairn material revealed by heavy burning. | In severely burned area. |
| F43 | F43.1 | FB10. Partly covered with heather and peat. The image shown appears to be a large cairn located at one end of the field bank FB10. | At edge of severely burned area |
| F44 | F44.1 | C32 Small cairn with FB10 | At edge of severely burned area |
| F45 | F45.1 | C33 Large cairn part revealed by severe burning. | In burned area. |
| F46 | F46.1 | C34 Large cairn part revealed by severe burning. | In burned area |
| F47 | F47.1-3 | C35 Large cairn with surrounding large spread of cairn material revealed by heavy burning. Central of three aligned large cairns. | In severely burned area. |
| F48 | F48.1-2 | C36 Large cairn. Uppermost and most westerly of three aligned large cairns. | In severely burned area. |
| F49 | F49.1* | C37 Large cairn on line of Coaxial FB 11, part revealed by severe burning. | In severely burned area. |
| F50 | F50.1*-2 | C38 RC2 Ring Cairn tangential to Coaxial FB F52 | In severely burned area. |
| F51 | F51.1-2 | Small platform $2 m * 2 m$ originally peat covered but revealed by burn. | In severely burned area. |
| F52 | F52.1-2 | Coaxial FB11 well defined by substantial stone bank across the whole of the burnt area but intermittent with some gaps. | In severely burned area. |
| F53 | No photo | C39 Located at scarp. In heather | At edge of severely burned area. |


| F54 | F54.1-2 | FB12 Transverse field bank, very substantial. <br> In two staggered sections, with central gap <br> occupied by two cairns. F54 is the more <br> easterly section. Both sections are substantial <br> banks of clearance stones 2.5m wide. The two <br> cairns in the entrance gap between F54 and <br> F57, are C41, F55 and C42, F56. | At edge of severely <br> burned area. |
| :--- | :--- | :--- | :--- |
| F55 | F55.1-3 | C40 Elongated stone mound within the gap <br> between the staggered field banks F54 and F57 |  |
| F56 | F56.1-2 | C41 Circular cairn within the gap between the <br> staggered field banks F54 and F57 |  |
| F57 | F57.1-6 | FB12 Transverse field bank, very substantial. <br> In two staggered sections, with central gap <br> occupied by two cairns. F54 is the more <br> easterly section. Both sections are substantial <br> banks of clearance stones 2.5m wide. The two <br> cairns in the entrance gap between F54 and <br> F57, are C41, F55 and C42, F56. |  |
| F58 | F58.1-2 | C42Small isolated cairn, possibly marking the <br> terminus of F57, FB12. |  |

Appendix Two - Feature GPS British National Grid Coordinates and Altitudes

| Gazetteer / Map | ProMark 120 GPS Rinex processed data. Including plot co-ordinates OSGB (England) 1936, and height in metres, with co-ordinate horizontal and height confidence values in metres. |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Feature Code | Name | Description | BNG 6 digit East | BNG 6 digit North | Ortho <br> height <br> (m) | Survey Horizontal Confidence (m) | Survey <br> Height Confidence (m) |
|  | 354 |  | 407458.946 | 495742.797 | 370.616 | 173.241 | 98.000 |
| Rinex <br> Station | RICM | RICM | 417203.980 | 501973.460 | 230.181 | 34.648 | 19.600 |
|  | 1 | car park | 407459.677 | 495741.947 | 364.623 | 0.188 | 0.172 |
|  | 2 | car park | 407459.680 | 495741.940 | 364.616 | 0.232 | 0.224 |
| F1 | 3 | c1 | 407057.665 | 496127.750 | 360.568 | 0.174 | 0.116 |
| F1 | 4 | c1 | 407056.889 | 496128.435 | 360.337 | 0.162 | 0.109 |
| F1 | 5 | c1 | 407057.050 | 496129.302 | 360.215 | 0.159 | 0.125 |
| F1 | 6 | c1 | 407057.459 | 496129.626 | 361.337 | 0.143 | 0.120 |
| F1 | 7 | c1 | 407058.125 | 496129.112 | 361.418 | 0.153 | 0.122 |
| F1 | 8 | c1 | 407058.298 | 496127.937 | 361.530 | 0.157 | 0.124 |
| F1 | 9 | c1 | 407057.476 | 496127.978 | 361.514 | 0.165 | 0.120 |
| F2 | 10 | fb1 | 406995.195 | 496151.419 | 356.086 | 0.164 | 0.134 |
| F2 | 11 | fb1 | 406995.220 | 496156.718 | 355.244 | 0.166 | 0.133 |
| F2 | 12 | fb1 | 406995.423 | 496164.084 | 354.330 | 0.150 | 0.110 |
| F2 | 13 | fb1 | 406994.321 | 496168.999 | 353.865 | 0.190 | 0.154 |
| F3 | 14 | fb 2 | 406995.387 | 496183.197 | 349.664 | 0.215 | 0.158 |
| F3 | 15 | fb2 | 406996.242 | 496186.776 | 348.596 | 0.217 | 0.161 |
| F3 | 16 | fb2 | 406997.016 | 496190.964 | 347.158 | 0.223 | 0.168 |
| F3 | 17 | fb2 | 406996.646 | 496197.931 | 345.055 | 0.210 | 0.156 |
| F3 | 18 | fb2 | 406996.200 | 496204.929 | 342.806 | 0.207 | 0.154 |
| F4 | 19 | c2 | 407034.024 | 496168.151 | 354.604 | 0.151 | 0.115 |
| F4 | 20 | c2 | 407035.316 | 496168.731 | 354.609 | 0.150 | 0.115 |
| F4 | 21 | c2 | 407035.330 | 496170.886 | 354.387 | 0.148 | 0.123 |
| F4 | 22 | c2 | 407034.682 | 496171.870 | 354.269 | 0.163 | 0.147 |
| F4 | 23 | c2 | 407033.633 | 496172.704 | 354.011 | 0.147 | 0.120 |
| F4 | 24 | c2 | 407032.897 | 496172.525 | 353.884 | 0.145 | 0.118 |
| F4 | 25 | c2 | 407032.374 | 496171.770 | 353.987 | 0.151 | 0.128 |
| F4 | 26 | c2 | 407032.350 | 496170.620 | 354.082 | 0.228 | 0.238 |
| F4 | 27 | c2 | 407033.190 | 496169.841 | 354.246 | 0.245 | 0.256 |
| F4 | 28 | c2 | 407033.102 | 496168.677 | 354.446 | 0.142 | 0.115 |
| F5 | 29 | fb3 | 407008.033 | 496134.503 | 357.829 | 0.060 | 0.056 |
| F5 | 30 | fb3 | 407016.798 | 496141.654 | 357.109 | 0.053 | 0.045 |
| F5 | 31 | fb3 | 407026.084 | 496147.616 | 357.032 | 0.053 | 0.045 |
| F5 | 32 | fb3 | 407034.192 | 496151.278 | 357.384 | 0.054 | 0.045 |
| F5 | 33 | fb3 | 407043.216 | 496154.051 | 357.517 | 0.053 | 0.046 |
| F5 | 34 | fb3 | 407055.939 | 496158.667 | 358.132 | 0.053 | 0.045 |
| F5 | 35 | fb3 | 407062.155 | 496161.305 | 358.388 | 0.055 | 0.048 |
| F5 | 36 | fb3 | 407071.363 | 496163.082 | 358.992 | 0.068 | 0.065 |
| F5 | 37 | fb3 | 407086.998 | 496162.637 | 360.388 | 0.057 | 0.050 |
| F5 | 38 | fb3 | 407100.254 | 496161.342 | 361.366 | 0.056 | 0.048 |
| F6 | 39 | c4 | 407115.375 | 496183.778 | 360.053 | 0.055 | 0.055 |


| F6 | 40 | c4 | 407116.438 | 496184.974 | 359.918 | 0.054 | 0.053 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| F6 | 41 | c4 | 407116.466 | 496186.149 | 359.723 | 0.051 | 0.048 |
| F6 | 42 | c4 | 407116.040 | 496187.533 | 359.429 | 0.148 | 0.131 |
| F6 | 43 | c4 | 407114.625 | 496188.346 | 359.108 | 0.052 | 0.048 |
| F6 | 44 | c4 | 407113.861 | 496187.543 | 359.230 | 0.053 | 0.047 |
| F6 | 45 | c4 | 407112.933 | 496186.392 | 359.226 | 0.065 | 0.062 |
| F6 | 46 | c4 | 407112.803 | 496184.722 | 359.653 | 0.054 | 0.050 |
| F6 | 47 | c4 | 407113.998 | 496183.649 | 359.854 | 0.053 | 0.047 |
| F6 | 48 | c4 | 407115.139 | 496183.747 | 359.871 | 0.051 | 0.043 |
| F7 | 49 | c5 | 407115.387 | 496162.669 | 361.722 | 0.154 | 0.133 |
| F7 | 50 | c5 | 407114.998 | 496161.394 | 361.785 | 0.151 | 0.120 |
| F7 | 51 | c5 | 407115.995 | 496160.790 | 361.896 | 0.152 | 0.118 |
| F7 | 52 | c5 | 407116.970 | 496161.007 | 361.857 | 0.152 | 0.124 |
| F7 | 53 | c5 | 407117.164 | 496162.054 | 361.772 | 0.148 | 0.121 |
| F7 | 54 | c5 | 407116.373 | 496162.911 | 361.597 | 0.147 | 0.119 |
| F8 | 55 | c6 | 407127.674 | 496157.861 | 362.247 | 0.152 | 0.141 |
| F9 | F9 | 87 | c7 | 407139.322 | 496150.962 | 363.899 | 0.055 |
| F9 | 56 | c6 | 407126.877 | 496158.586 | 362.144 | 0.162 | 0.156 |
| F9 | F9 | F9 | F9 | 407141.033 | 496151.926 | 363.645 | 0.053 |


| F9 F9 F9 | 89 90 91 | c7 c7 c7 | 407139.559 407137.727 407135.616 | 496153.708 <br> 496154.502 <br> 496154.543 | 363.669 363.637 363.555 | $\begin{aligned} & 0.058 \\ & 0.053 \\ & 0.050 \end{aligned}$ | 0.057 0.048 0.045 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F10 | 92 | fb4 | 407200.510 | 496201.250 | 357.680 | 0.051 | 0.049 |
| F10 | 93 | fb4 | 407195.947 | 496196.801 | 358.657 | 0.052 | 0.050 |
| F10 | 94 | fb4 | 407191.372 | 496190.691 | 359.731 | 0.058 | 0.058 |
| F10 | 95 | fb4 | 407185.888 | 496181.746 | 361.361 | 0.057 | 0.055 |
| F10 | 96 | fb4 | 407184.192 | 496181.569 | 361.392 | 0.060 | 0.060 |
| F10 | 97 | fb4 | 407185.069 | 496179.042 | 361.940 | 0.087 | 0.087 |
| F10 | 98 | fb4 | 407184.005 | 496180.351 | 361.684 | 0.049 | 0.045 |
| F10 | 99 | fb4 | 407184.272 | 496178.822 | 361.920 | 0.053 | 0.047 |
| F10 | 100 | fb4 | 407185.907 | 496179.360 | 361.881 | 0.051 | 0.044 |
| F10 | 101 | fb4 | 407186.846 | 496180.589 | 361.586 | 0.052 | 0.047 |
| F10 | 102 | fb4 | 407183.645 | 496177.984 | 361.979 | 0.049 | 0.049 |
| F10 | 103 | fb4 | 407181.357 | 496171.790 | 362.711 | 0.048 | 0.046 |
| F10 | 104 | fb4 | 407179.926 | 496162.846 | 363.707 | 0.048 | 0.048 |
| F10 | 105 | fb4 | 407179.674 | 496153.165 | 364.340 | 0.047 | 0.047 |
| F10 | 106 | fb4 | 407179.263 | 496146.896 | 364.694 | 0.051 | 0.052 |
| F10 | 107 | fb4 | 407178.181 | 496136.223 | 365.311 | 0.054 | 0.055 |
| F10 | 108 | fb4 | 407176.442 | 496117.217 | 366.972 | 0.146 | 0.130 |
| F10 | 109 | fb4 | 407166.489 | 496097.374 | 367.674 | 0.138 | 0.125 |
| F10 | 110 | fb4 | 407157.196 | 496078.740 | 367.472 | 0.145 | 0.142 |
| F10 | 111 | fb4 | 407153.214 | 496069.066 | 367.750 | 0.135 | 0.129 |
| F10 | 112 | fb4 | 407147.662 | 496056.056 | 368.053 | 0.152 | 0.132 |
| F11 | 113 | fb13 | 407176.436 | 496049.581 | 366.406 | 0.258 | 0.286 |
| F11 | 114 | fb13 | 407173.714 | 496052.448 | 366.422 | 0.288 | 0.327 |
| F11 | 115 | fb13 | 407170.784 | 496053.639 | 366.369 | 0.270 | 0.303 |
| F11 | 116 | fb13 | 407167.604 | 496053.838 | 366.376 | 0.270 | 0.302 |
| F12 | 117 | c8 | 407179.319 | 496060.974 | 366.746 | 0.232 | 0.240 |
| F12 | 118 | c8 | 407180.362 | 496059.753 | 366.725 | 0.232 | 0.239 |
| F12 | 119 | c8 | 407181.350 | 496060.492 | 366.848 | 0.247 | 0.257 |
| F12 | 120 | c8 | 407180.695 | 496062.531 | 366.867 | 0.231 | 0.238 |
| F12 | 121 | c8 | 407179.257 | 496063.377 | 366.900 | 0.244 | 0.254 |
| F12 | 122 | c8 | 407178.512 | 496062.704 | 366.827 | 0.230 | 0.238 |
| F12 | 123 | c8 | 407178.898 | 496061.252 | 366.840 | 0.221 | 0.227 |
| F13 | 124 | c9 | 407177.064 | 496104.058 | 366.267 | 0.140 | 0.131 |
| F13 | 125 | c9 | 407176.639 | 496102.563 | 366.380 | 0.154 | 0.155 |
| F13 | 126 | c9 | 407177.947 | 496101.882 | 366.538 | 0.237 | 0.247 |
| F13 | 127 | c9 | 407178.517 | 496103.184 | 366.522 | 0.237 | 0.245 |
| F13 | 128 | c9 | 407177.607 | 496105.107 | 366.350 | 0.238 | 0.245 |
| F14 | 129 | c10 | 407176.850 | 496110.866 | 366.257 | 0.235 | 0.244 |
| F14 | 130 | c10 | 407177.877 | 496111.513 | 366.140 | 0.237 | 0.244 |
| F14 | 131 | c10 | 407177.911 | 496111.645 | 366.113 | 0.234 | 0.242 |
| F14 | 132 | c10 | 407176.836 | 496112.392 | 366.145 | 0.232 | 0.241 |
| F14 | 133 | c10 | 407176.289 | 496111.522 | 366.156 | 0.232 | 0.240 |
| F15 | 134 | c11 | 407190.036 | 496094.794 | 367.730 | 0.204 | 0.201 |
| F15 | 135 | c11 | 407189.659 | 496093.543 | 367.898 | 0.238 | 0.241 |
| F15 | 136 | c11 | 407190.953 | 496093.253 | 367.762 | 0.216 | 0.212 |
| F15 | 137 | c11 | 407192.098 | 496094.403 | 367.577 | 0.239 | 0.240 |


| F15 | 138 | c11 | 407190.977 | 496095.365 | 367.618 | 0.224 | 0.223 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F16 | 139 | c12 | 407204.605 | 496119.316 | 366.565 | 0.238 | 0.239 |
| F16 | 140 | c12 | 407205.995 | 496120.271 | 366.535 | 0.242 | 0.242 |
| F16 | 141 | c12 | 407206.581 | 496121.463 | 366.555 | 0.240 | 0.241 |
| F16 | 142 | c12 | 407205.568 | 496122.455 | 366.500 | 0.238 | 0.239 |
| F16 | 143 | c12 | 407203.966 | 496121.936 | 366.654 | 0.238 | 0.239 |
| F16 | 144 | c12 | 407202.646 | 496120.678 | 366.743 | 0.238 | 0.239 |
| F17 | 145 | c13 | 407206.268 | 496154.303 | 364.455 | 0.237 | 0.237 |
| F17 | 146 | c13 | 407208.207 | 496155.017 | 364.369 | 0.239 | 0.238 |
| F17 | 147 | c13 | 407208.857 | 496157.171 | 364.290 | 0.240 | 0.238 |
| F17 | 148 | c13 | 407208.047 | 496158.504 | 364.156 | 0.236 | 0.234 |
| F17 | 149 | c13 | 407206.528 | 496158.971 | 364.167 | 0.236 | 0.234 |
| F17 | 150 | c13 | 407204.489 | 496158.651 | 364.241 | 0.235 | 0.235 |
| F17 | 151 | c13 | 407203.707 | 496156.729 | 364.362 | 0.235 | 0.234 |
| F17 | 152 | c13 | 407203.804 | 496155.113 | 364.501 | 0.234 | 0.234 |
| F18 | 153 | fb5 | 407212.663 | 496198.811 | 357.306 | 0.212 | 0.179 |
| F18 | 154 | fb5 | 407213.694 | 496190.976 | 358.737 | 0.219 | 0.182 |
| F18 | 155 | fb5 | 407214.288 | 496182.032 | 360.530 | 0.219 | 0.182 |
| F18 | 156 | fb5 | 407215.807 | 496171.366 | 361.945 | 0.231 | 0.192 |
| F18 | 157 | fb5 | 407215.589 | 496160.808 | 363.073 | 0.220 | 0.182 |
| F18 | 158 | fb5 | 407215.328 | 496147.628 | 363.876 | 0.229 | 0.194 |
| F18 | 159 | fb5 | 407213.494 | 496136.479 | 364.677 | 0.229 | 0.195 |
| F18 | 160 | fb5 | 407211.576 | 496122.777 | 365.692 | 0.227 | 0.197 |
| F18 | 161 | fb5 | 407209.726 | 496109.508 | 366.636 | 0.226 | 0.194 |
| F18 | 162 | fb5 | 407208.330 | 496095.576 | 367.606 | 0.214 | 0.183 |
| F18 | 163 | fb5 | 407206.469 | 496083.929 | 367.955 | 0.224 | 0.192 |
| F18 | 465 | fb5 | 407206.262 | 496078.027 | 368.536 | 0.295 | 0.269 |
| F18 | 466 | fb5 | 407203.575 | 496064.204 | 368.813 | 0.293 | 0.272 |
| F18 | 467 | fb5 | 407201.843 | 496055.416 | 368.570 | 0.291 | 0.271 |
| F18 | 468 | fb5 | 407198.257 | 496042.535 | 368.652 | 0.271 | 0.253 |
| F18 | 469 | fb5 | 407195.702 | 496034.382 | 368.931 | 0.289 | 0.272 |
| F19 | 164 | e1 | 407252.949 | 496108.669 | 365.796 | 0.048 | 0.045 |
| F19 | 165 | e1 | 407250.436 | 496109.219 | 365.983 | 0.046 | 0.044 |
| F19 | 166 | e1 | 407245.426 | 496104.320 | 366.608 | 0.048 | 0.046 |
| F19 | 167 | e1 | 407240.548 | 496099.172 | 367.270 | 0.047 | 0.045 |
| F19 | 168 | e1 | 407237.985 | 496095.000 | 367.606 | 0.046 | 0.045 |
| F19 | 169 | e1 | 407237.500 | 496090.503 | 367.757 | 0.051 | 0.053 |
| F19 | 170 | e1 | 407239.166 | 496087.176 | 367.827 | 0.048 | 0.046 |
| F19 | 171 | e1 | 407243.380 | 496085.056 | 367.792 | 0.046 | 0.042 |
| F19 | 172 | e1 | 407248.182 | 496086.199 | 367.698 | 0.048 | 0.043 |
| F19 | 173 | e1 | 407252.626 | 496087.573 | 367.565 | 0.048 | 0.043 |
| F19 | 174 | e1 | 407257.129 | 496089.774 | 367.289 | 0.048 | 0.043 |
| F19 | 175 | e1 | 407260.040 | 496090.779 | 367.205 | 0.054 | 0.051 |
| F19 | 176 | e1 | 407261.257 | 496092.591 | 367.005 | 0.050 | 0.043 |
| F19 | 177 | e1 | 407261.782 | 496095.605 | 366.729 | 0.063 | 0.051 |
| F19 | 178 | e1 | 407261.205 | 496099.468 | 366.363 | 0.059 | 0.052 |
| F19 | 179 | e1 | 407259.248 | 496102.822 | 366.161 | 0.049 | 0.043 |
| F19 | 180 | e1 | 407258.221 | 496106.217 | 365.922 | 0.051 | 0.046 |
| F19 | 181 | e1 | 407256.747 | 496107.031 | 365.790 | 0.061 | 0.061 |


| F19 | 182 | e2 | 407254.480 | 496104.579 | 366.193 | 0.075 | 0.078 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F19 | 183 | e2 | 407254.438 | 496104.605 | 366.209 | 0.052 | 0.050 |
| F19 | 184 | e2 | 407250.985 | 496104.449 | 366.405 | 0.064 | 0.064 |
| F19 | 185 | e2 | 407248.339 | 496102.239 | 366.715 | 0.049 | 0.046 |
| F19 | 186 | e2 | 407245.822 | 496099.625 | 367.102 | 0.047 | 0.045 |
| F19 | 187 | e2 | 407243.547 | 496097.164 | 367.363 | 0.047 | 0.044 |
| F19 | 188 | e2 | 407242.310 | 496094.597 | 367.564 | 0.046 | 0.045 |
| F19 | 189 | e2 | 407243.252 | 496091.769 | 367.647 | 0.057 | 0.060 |
| F19 | 190 | e2 | 407246.229 | 496090.069 | 367.662 | 0.049 | 0.047 |
| F19 | 191 | e2 | 407249.221 | 496090.112 | 367.576 | 0.048 | 0.044 |
| F19 | 192 | e2 | 407251.799 | 496091.591 | 367.435 | 0.048 | 0.043 |
| F19 | 193 | e2 | 407254.307 | 496092.971 | 367.262 | 0.047 | 0.041 |
| F19 | 194 | e2 | 407256.836 | 496093.805 | 367.030 | 0.054 | 0.051 |
| F19 | 195 | e2 | 407257.374 | 496094.777 | 366.986 | 0.050 | 0.040 |
| F19 | 196 | e2 | 407257.441 | 496097.396 | 366.761 | 0.061 | 0.054 |
| F19 | 197 | e2 | 407257.387 | 496099.837 | 366.485 | 0.058 | 0.049 |
| F19 | 198 | e2 | 407256.745 | 496101.784 | 366.323 | 0.062 | 0.055 |
| F20 | 199 | f6 | 407221.828 | 496159.009 | 364.354 | 0.224 | 0.262 |
| F20 | 200 | f6 | 407221.559 | 496165.437 | 363.886 | 0.258 | 0.313 |
| F20 | 201 | f6 | 407220.807 | 496171.773 | 363.126 | 0.256 | 0.311 |
| F20 | 202 | f6 | 407219.510 | 496180.699 | 361.911 | 0.241 | 0.288 |
| F20 | 203 | f6 | 407218.526 | 496188.644 | 360.527 | 0.241 | 0.287 |
| F21 | 204 | f7 | 407256.690 | 496174.468 | 360.491 | 0.299 | 0.370 |
| F21 | 205 | f7 | 407263.508 | 496174.705 | 360.528 | 0.299 | 0.369 |
| F22 | 206 | f8 | 407351.347 | 496188.250 | 355.459 | 0.283 | 0.341 |
| F22 | 207 | f8 | 407352.464 | 496196.444 | 353.912 | 0.149 | 0.112 |
| F22 | 208 | f8 | 407353.340 | 496203.695 | 352.232 | 0.169 | 0.142 |
| F22 | 209 | f8 | 407354.199 | 496209.931 | 351.013 | 0.158 | 0.138 |
| F22 | 210 | f8 | 407359.173 | 496207.223 | 351.502 | 0.277 | 0.338 |
| F22 | 211 | f8 | 407364.985 | 496205.681 | 351.725 | 0.295 | 0.368 |
| F22 | 212 | f8 | 407366.528 | 496209.693 | 350.818 | 0.262 | 0.318 |
| F23 | 213 | fb9 | 407409.897 | 496233.770 | 346.658 | 0.249 | 0.312 |
| F23 | 214 | fb9 | 407409.737 | 496224.605 | 348.795 | 0.249 | 0.310 |
| F23 | 215 | fb9 | 407409.433 | 496213.124 | 349.893 | 0.242 | 0.247 |
| F24 | 216 | c14 | 407401.154 | 496223.909 | 348.402 | 0.213 | 0.221 |
| F24 | 217 | c14 | 407402.962 | 496221.577 | 348.694 | 0.220 | 0.230 |
| F24 | 218 | c14 | 407404.551 | 496222.746 | 348.591 | 0.230 | 0.242 |
| F24 | 219 | c14 | 407405.125 | 496224.837 | 348.165 | 0.245 | 0.258 |
| F24 | 220 | c14 | 407403.618 | 496226.441 | 347.782 | 0.135 | 0.124 |
| F24 | 221 | c14 | 407401.487 | 496224.629 | 347.942 | 0.243 | 0.252 |
| F25 | 222 | c15 | 407420.584 | 496235.901 | 344.949 | 0.136 | 0.118 |
| F25 | 223 | c15 | 407423.804 | 496236.674 | 344.672 | 0.230 | 0.234 |
| F25 | 224 | c15 | 407424.813 | 496238.868 | 344.072 | 0.231 | 0.235 |
| F25 | 225 | c15 | 407423.662 | 496241.024 | 343.737 | 0.244 | 0.252 |
| F25 | 226 | c15 | 407421.837 | 496242.252 | 343.664 | 0.230 | 0.236 |
| F25 | 227 | c15 | 407419.138 | 496241.580 | 343.761 | 0.229 | 0.235 |
| F25 | 228 | c15 | 407418.222 | 496239.447 | 344.246 | 0.229 | 0.235 |
| F25 | 229 | c15 | 407418.789 | 496237.863 | 344.496 | 0.242 | 0.250 |
| F26 | 230 | c16 | 407444.821 | 496247.906 | 343.438 | 0.249 | 0.319 |


| F26 | 231 | c16 | 407442.825 | 496246.644 | 343.807 | 0.265 | 0.346 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F26 | 232 | c16 | 407443.022 | 496245.259 | 344.089 | 0.249 | 0.320 |
| F26 | 233 | c16 | 407444.724 | 496245.081 | 344.129 | 0.265 | 0.346 |
| F26 | 234 | c16 | 407446.153 | 496246.482 | 343.888 | 0.171 | 0.154 |
| F26 | 235 | c16 | 407445.616 | 496247.990 | 343.421 | 0.249 | 0.319 |
| F27 | 236 | rc1 | 407455.131 | 496215.598 | 347.412 | 0.135 | 0.122 |
| F27 | 237 | rc1 | 407455.115 | 496215.576 | 347.374 | 0.132 | 0.120 |
| F27 | 238 | rc1 | 407452.606 | 496216.709 | 347.463 | 0.134 | 0.124 |
| F27 | 239 | rc1 | 407450.522 | 496216.491 | 347.533 | 0.265 | 0.301 |
| F27 | 240 | rc1 | 407447.920 | 496215.437 | 347.826 | 0.264 | 0.299 |
| F27 | 241 | rc1 | 407447.675 | 496213.344 | 348.274 | 0.265 | 0.298 |
| F27 | 242 | rc1 | 407449.467 | 496211.569 | 348.568 | 0.139 | 0.122 |
| F27 | 243 | rc1 | 407452.022 | 496210.922 | 348.549 | 0.136 | 0.118 |
| F27 | 244 | rc1 | 407453.974 | 496212.269 | 348.235 | 0.150 | 0.126 |
| F27 | 245 | rc1 | 407455.026 | 496214.330 | 347.855 | 0.249 | 0.269 |
| F28 | 246 | c17 | 407432.829 | 496177.108 | 351.668 | 0.235 | 0.263 |
| F28 | 247 | c17 | 407434.651 | 496176.389 | 352.121 | 0.263 | 0.305 |
| F28 | 248 | c17 | 407436.056 | 496176.124 | 351.872 | 0.264 | 0.308 |
| F28 | 249 | c17 | 407436.097 | 496177.452 | 351.755 | 0.262 | 0.306 |
| F28 | 250 | c17 | 407434.692 | 496178.346 | 351.681 | 0.248 | 0.279 |
| F28 | 251 | c17 | 407435.578 | 496179.534 | 351.402 | 0.247 | 0.271 |
| F28 | 252 | c17 | 407433.412 | 496180.766 | 351.421 | 0.247 | 0.268 |
| F28 | 253 | c17 | 407432.469 | 496179.264 | 351.675 | 0.324 | 0.364 |
| F29 | 254 | c18 | 407387.527 | 496184.438 | 355.558 | 0.239 | 0.275 |
| F29 | 255 | c18 | 407387.678 | 496186.630 | 355.266 | 0.254 | 0.295 |
| F29 | 256 | c18 | 407387.089 | 496188.211 | 355.005 | 0.253 | 0.294 |
| F29 | 257 | c18 | 407385.543 | 496188.313 | 354.869 | 0.253 | 0.295 |
| F29 | 258 | c18 | 407383.707 | 496186.638 | 355.381 | 0.238 | 0.273 |
| F29 | 259 | c18 | 407384.274 | 496184.881 | 355.693 | 0.238 | 0.273 |
| F29 | 260 | c18 | 407386.168 | 496183.421 | 355.658 | 0.253 | 0.292 |
| F30 | 261 | c19 | 407395.439 | 496166.174 | 356.619 | 0.219 | 0.191 |
| F30 | 262 | c19 | 407393.299 | 496167.301 | 356.679 | 0.231 | 0.203 |
| F30 | 263 | c19 | 407390.956 | 496166.406 | 356.789 | 0.231 | 0.200 |
| F30 | 264 | c19 | 407392.400 | 496163.656 | 357.093 | 0.138 | 0.119 |
| F30 | 265 | c19 | 407394.681 | 496162.457 | 357.040 | 0.137 | 0.120 |
| F30 | 266 | c19 | 407397.148 | 496163.526 | 356.735 | 0.147 | 0.122 |
| F31 | 267 | c20 | 407412.329 | 496162.659 | 355.823 | 0.188 | 0.160 |
| F31 | 268 | c20 | 407414.828 | 496162.402 | 355.640 | 0.185 | 0.157 |
| F31 | 269 | c20 | 407416.335 | 496161.007 | 355.656 | 0.188 | 0.159 |
| F31 | 270 | c20 | 407415.623 | 496157.826 | 356.007 | 0.188 | 0.160 |
| F31 | 271 | c20 | 407414.808 | 496157.753 | 356.102 | 0.193 | 0.165 |
| F31 | 272 | c20 | 407413.857 | 496159.173 | 356.120 | 0.197 | 0.167 |
| F31 | 273 | c20 | 407412.493 | 496160.201 | 356.085 | 0.189 | 0.160 |
| F31 | 274 | c20 | 407411.653 | 496161.567 | 356.021 | 0.203 | 0.174 |
| F32 | 275 | c21 | 407460.442 | 496139.830 | 352.997 | 0.239 | 0.218 |
| F32 | 276 | c21 | 407461.662 | 496140.868 | 352.819 | 0.148 | 0.130 |
| F32 | 277 | c21 | 407462.535 | 496141.381 | 352.610 | 0.228 | 0.206 |
| F32 | 278 | c21 | 407464.773 | 496140.686 | 352.475 | 0.141 | 0.124 |
| F32 | 279 | c21 | 407465.060 | 496139.651 | 352.352 | 0.140 | 0.122 |


| F32 | 280 | c21 | 407463.689 | 496138.786 | 352.508 | 0.229 | 0.210 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F32 | 281 | c21 | 407461.730 | 496138.034 | 352.678 | 0.244 | 0.227 |
| F32 | 282 | c21 | 407460.689 | 496138.092 | 352.737 | 0.141 | 0.120 |
| F33 | 283 | c22 | 407464.989 | 496146.502 | 352.096 | 0.244 | 0.228 |
| F33 | 284 | c22 | 407468.407 | 496145.616 | 351.853 | 0.229 | 0.211 |
| F33 | 285 | c22 | 407472.328 | 496145.437 | 351.476 | 0.146 | 0.116 |
| F33 | 286 | c22 | 407472.481 | 496147.098 | 351.291 | 0.243 | 0.224 |
| F33 | 287 | c22 | 407471.694 | 496149.172 | 351.174 | 0.230 | 0.210 |
| F33 | 288 | c22 | 407470.590 | 496151.044 | 351.124 | 0.137 | 0.123 |
| F33 | 289 | c22 | 407468.074 | 496151.156 | 351.257 | 0.138 | 0.124 |
| F33 | 290 | c22 | 407465.537 | 496149.784 | 351.573 | 0.229 | 0.209 |
| F33 | 291 | c22 | 407464.601 | 496148.306 | 351.879 | 0.241 | 0.220 |
| F34 | 292 | c23 | 407428.633 | 496137.693 | 356.779 | 0.228 | 0.225 |
| F34 | 293 | c23 | 407426.284 | 496136.753 | 357.021 | 0.225 | 0.221 |
| F34 | 294 | c23 | 407425.656 | 496133.494 | 356.990 | 0.223 | 0.218 |
| F34 | 295 | c23 | 407427.286 | 496131.879 | 356.810 | 0.224 | 0.219 |
| F34 | 296 | c23 | 407429.349 | 496132.122 | 356.565 | 0.223 | 0.218 |
| F34 | 297 | c23 | 407430.730 | 496134.423 | 356.404 | 0.223 | 0.219 |
| F34 | 298 | c23 | 407430.782 | 496136.316 | 356.325 | 0.225 | 0.221 |
| F35 | 299 | c24 | 407411.272 | 496125.359 | 358.333 | 0.213 | 0.206 |
| F35 | 300 | c24 | 407409.038 | 496126.366 | 358.540 | 0.224 | 0.217 |
| F35 | 301 | c24 | 407408.031 | 496124.272 | 358.933 | 0.226 | 0.220 |
| F35 | 302 | c24 | 407408.987 | 496122.595 | 358.942 | 0.213 | 0.205 |
| F35 | 303 | c24 | 407410.685 | 496122.855 | 358.751 | 0.205 | 0.196 |
| F36 | 304 | c25 | 407411.034 | 496110.202 | 358.799 | 0.225 | 0.218 |
| F36 | 305 | c25 | 407409.717 | 496109.193 | 358.985 | 0.212 | 0.203 |
| F36 | 306 | c25 | 407410.595 | 496108.010 | 358.856 | 0.214 | 0.206 |
| F36 | 307 | c25 | 407411.963 | 496108.275 | 358.664 | 0.213 | 0.203 |
| F36 | 308 | c25 | 407411.937 | 496109.925 | 358.477 | 0.229 | 0.218 |
| F37 | 309 | c26 | 407422.634 | 496109.847 | 356.663 | 0.206 | 0.210 |
| F37 | 310 | c26 | 407423.216 | 496107.360 | 356.726 | 0.227 | 0.235 |
| F37 | 311 | c26 | 407425.156 | 496106.976 | 356.406 | 0.215 | 0.219 |
| F37 | 312 | c26 | 407426.931 | 496108.121 | 356.249 | 0.226 | 0.233 |
| F37 | 313 | c26 | 407426.417 | 496110.513 | 356.270 | 0.227 | 0.235 |
| F37 | 314 | c26 | 407423.303 | 496110.922 | 356.611 | 0.226 | 0.235 |
| F38 | 315 | c27 | 407430.493 | 496100.524 | 355.907 | 0.214 | 0.221 |
| F38 | 316 | c27 | 407428.539 | 496099.431 | 356.237 | 0.225 | 0.233 |
| F38 | 317 | c27 | 407428.629 | 496097.230 | 356.362 | 0.213 | 0.218 |
| F38 | 318 | c27 | 407430.298 | 496096.281 | 356.097 | 0.226 | 0.233 |
| F38 | 319 | c27 | 407432.617 | 496097.010 | 355.795 | 0.213 | 0.218 |
| F38 | 320 | c27 | 407434.381 | 496098.205 | 355.502 | 0.224 | 0.231 |
| F38 | 321 | c27 | 407435.001 | 496099.937 | 355.512 | 0.228 | 0.234 |
| F38 | 322 | c27 | 407432.184 | 496101.140 | 355.733 | 0.226 | 0.233 |
| F39 | 323 | c28 | 407409.502 | 496087.236 | 358.157 | 0.136 | 0.128 |
| F39 | 324 | c28 | 407406.637 | 496086.955 | 358.352 | 0.134 | 0.126 |
| F39 | 325 | c28 | 407405.461 | 496084.587 | 358.615 | 0.135 | 0.126 |
| F39 | 326 | c28 | 407406.643 | 496082.294 | 358.779 | 0.149 | 0.142 |
| F39 | 327 | c28 | 407408.782 | 496081.438 | 358.636 | 0.144 | 0.128 |
| F39 | 328 | c28 | 407411.311 | 496081.771 | 358.430 | 0.143 | 0.117 |


| $\begin{aligned} & \text { F39 } \\ & \text { F39 } \end{aligned}$ | 329 330 | $\begin{aligned} & \text { c28 } \\ & \text { c28 } \end{aligned}$ | 407411.849 407411.501 | 496083.912 496086.101 | $\begin{aligned} & 358.235 \\ & 358.049 \end{aligned}$ | $\begin{aligned} & 0.144 \\ & 0.141 \end{aligned}$ | $\begin{aligned} & 0.117 \\ & 0.138 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F40 | 331 | c29 | 407386.771 | 496089.946 | 359.528 | 0.145 | 0.117 |
| F40 | 332 | c29 | 407385.191 | 496089.966 | 359.621 | 0.147 | 0.119 |
| F40 | 333 | c29 | 407384.742 | 496091.065 | 359.648 | 0.148 | 0.130 |
| F40 | 334 | c29 | 407386.090 | 496092.271 | 359.461 | 0.138 | 0.125 |
| F40 | 335 | c29 | 407387.073 | 496091.731 | 359.254 | 0.148 | 0.147 |
| F41 | 336 | c30 | 407377.496 | 496109.221 | 360.261 | 0.143 | 0.131 |
| F41 | 337 | c30 | 407378.837 | 496111.644 | 360.165 | 0.138 | 0.125 |
| F41 | 338 | c30 | 407378.955 | 496114.274 | 360.024 | 0.137 | 0.135 |
| F41 | 339 | c30 | 407375.524 | 496115.382 | 360.275 | 0.053 | 0.055 |
| F41 | 340 | c30 | 407373.173 | 496113.656 | 360.477 | 0.067 | 0.076 |
| F41 | 341 | c30 | 407373.727 | 496111.103 | 360.451 | 0.049 | 0.044 |
| F41 | 342 | c30 | 407374.931 | 496109.858 | 360.398 | 0.074 | 0.073 |
| F42 | 343 | c31 | 407341.914 | 496151.305 | 359.860 | 0.149 | 0.120 |
| F42 | 344 | c31 | 407340.683 | 496154.859 | 359.768 | 0.160 | 0.134 |
| F42 | 345 | c31 | 407338.274 | 496157.801 | 359.799 | 0.141 | 0.127 |
| F42 | 346 | c31 | 407334.996 | 496159.896 | 359.871 | 0.149 | 0.142 |
| F42 | 347 | c31 | 407332.472 | 496158.674 | 360.055 | 0.141 | 0.136 |
| F42 | 348 | c31 | 407333.390 | 496155.590 | 360.374 | 0.138 | 0.132 |
| F42 | 349 | c31 | 407335.883 | 496151.517 | 360.352 | 0.136 | 0.137 |
| F42 | 350 | c31 | 407339.124 | 496149.695 | 360.078 | 0.150 | 0.152 |
| F43 | 351 | fb10 | 407330.297 | 496136.454 | 361.267 | 0.215 | 0.237 |
| F43 | 352 | fb10 | 407317.921 | 496139.838 | 361.828 | 0.204 | 0.222 |
| F43 | 353 | fb10 | 407307.877 | 496142.927 | 362.224 | 0.218 | 0.237 |
| F44 | 354 | c32 | 407318.409 | 496127.144 | 362.165 | 0.205 | 0.216 |
| F44 | 355 | c32 | 407317.660 | 496129.691 | 362.032 | 0.217 | 0.231 |
| F44 | 356 | c32 | 407315.058 | 496129.329 | 362.164 | 0.143 | 0.124 |
| F44 | 357 | c32 | 407314.405 | 496127.126 | 362.388 | 0.147 | 0.132 |
| F44 | 358 | c32 | 407315.830 | 496125.555 | 362.484 | 0.142 | 0.126 |
| F44 | 359 | c32 | 407317.488 | 496125.579 | 362.311 | 0.145 | 0.122 |
| F45 | 360 | c33 | 407321.671 | 496117.867 | 363.139 | 0.201 | 0.221 |
| F45 | 361 | c33 | 407324.323 | 496116.885 | 363.101 | 0.215 | 0.236 |
| F45 | 362 | c33 | 407324.873 | 496114.602 | 363.156 | 0.202 | 0.220 |
| F45 | 363 | c33 | 407323.684 | 496113.159 | 363.373 | 0.202 | 0.221 |
| F45 | 364 | c33 | 407321.136 | 496112.764 | 363.705 | 0.203 | 0.220 |
| F45 | 365 | c33 | 407319.542 | 496114.467 | 363.650 | 0.203 | 0.220 |
| F45 | 366 | c33 | 407319.150 | 496116.814 | 363.312 | 0.216 | 0.236 |
| F46 | 367 | c34 | 407333.050 | 496121.852 | 362.360 | 0.219 | 0.240 |
| F46 | 368 | c34 | 407335.314 | 496121.330 | 362.325 | 0.204 | 0.221 |
| F46 | 369 | c34 | 407338.748 | 496123.273 | 361.945 | 0.203 | 0.219 |
| F46 | 370 | c34 | 407336.974 | 496125.251 | 361.794 | 0.218 | 0.238 |
| F46 | 371 | c34 | 407334.404 | 496125.738 | 361.858 | 0.203 | 0.218 |
| F46 | 372 | c34 | 407332.849 | 496124.488 | 362.143 | 0.203 | 0.218 |
| F47 | 373 | c35 | 407337.781 | 496092.152 | 364.441 | 0.141 | 0.125 |
| F47 | 374 | c35 | 407334.327 | 496091.306 | 364.523 | 0.142 | 0.124 |
| F47 | 375 | c35 | 407333.934 | 496088.319 | 364.663 | 0.140 | 0.120 |
| F47 | 376 | c35 | 407335.194 | 496086.735 | 364.710 | 0.145 | 0.123 |
| F47 | 377 | c35 | 407337.678 | 496086.209 | 364.558 | 0.149 | 0.124 |


| F47 | 378 | c35 | 407340.220 | 496086.763 | 364.118 | 0.159 | 0.133 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F47 | 379 | c35 | 407342.197 | 496087.720 | 364.071 | 0.159 | 0.133 |
| F47 | 380 | c35 | 407342.372 | 496089.887 | 363.879 | 0.163 | 0.144 |
| F47 | 381 | c35 | 407340.613 | 496092.344 | 363.823 | 0.162 | 0.143 |
| F48 | 382 | c36 | 407320.401 | 496082.555 | 365.061 | 0.153 | 0.127 |
| F48 | 383 | c36 | 407316.864 | 496082.080 | 365.289 | 0.152 | 0.126 |
| F48 | 384 | c36 | 407314.705 | 496079.814 | 365.349 | 0.162 | 0.142 |
| F48 | 385 | c36 | 407315.646 | 496076.698 | 365.379 | 0.160 | 0.134 |
| F48 | 386 | c36 | 407318.777 | 496075.692 | 365.163 | 0.164 | 0.137 |
| F48 | 387 | c36 | 407322.306 | 496075.426 | 364.853 | 0.155 | 0.126 |
| F48 | 388 | c36 | 407325.370 | 496076.719 | 364.474 | 0.165 | 0.138 |
| F48 | 389 | c36 | 407325.895 | 496079.816 | 364.326 | 0.168 | 0.139 |
| F48 | 390 | c36 | 407323.217 | 496082.428 | 364.430 | 0.166 | 0.145 |
| F49 | 391 | c37 | 407307.965 | 496100.039 | 364.917 | 0.151 | 0.121 |
| F49 | 392 | c37 | 407310.758 | 496102.871 | 364.738 | 0.163 | 0.125 |
| F49 | 393 | c37 | 407310.793 | 496107.036 | 364.494 | 0.160 | 0.127 |
| F49 | 394 | c37 | 407306.544 | 496108.020 | 364.575 | 0.157 | 0.130 |
| F49 | 395 | c37 | 407301.578 | 496105.987 | 364.953 | 0.148 | 0.124 |
| F49 | 396 | c37 | 407300.652 | 496102.703 | 364.812 | 0.152 | 0.123 |
| F49 | 397 | c37 | 407303.738 | 496099.839 | 364.946 | 0.157 | 0.138 |
| F50 | 398 | c38 | 407299.647 | 496083.495 | 366.511 | 0.157 | 0.142 |
| F50 | 399 | c38 | 407299.694 | 496079.335 | 366.761 | 0.143 | 0.122 |
| F50 | 400 | c38 | 407295.714 | 496078.753 | 366.966 | 0.188 | 0.180 |
| F50 | 401 | c38 | 407292.789 | 496080.921 | 367.064 | 0.163 | 0.135 |
| F50 | 402 | c38 | 407293.203 | 496083.737 | 366.980 | 0.149 | 0.123 |
| F50 | 403 | c38 | 407296.496 | 496085.642 | 366.636 | 0.276 | 0.280 |
| F51 | 404 | sp1 | 407287.683 | 496050.102 | 368.217 | 0.253 | 0.265 |
| F51 | 405 | sp1 | 407286.066 | 496049.375 | 368.192 | 0.286 | 0.301 |
| F51 | 406 | sp1 | 407286.331 | 496048.093 | 368.163 | 0.287 | 0.300 |
| F51 | 407 | sp1 | 407287.460 | 496047.858 | 367.993 | 0.178 | 0.155 |
| F51 | 408 | sp1 | 407287.929 | 496048.292 | 367.810 | 0.288 | 0.300 |
| F51 | 409 | sp1 | 407287.711 | 496049.781 | 367.819 | 0.288 | 0.300 |
| F52 | 410 | fb11 | 407292.269 | 496022.953 | 367.485 | 0.291 | 0.300 |
| F52 | 411 | fb11 | 407293.856 | 496033.235 | 366.845 | 0.293 | 0.299 |
| F52 | 412 | fb11 | 407295.705 | 496042.857 | 366.385 | 0.292 | 0.295 |
| F52 | 413 | fb11 | 407295.834 | 496052.763 | 366.428 | 0.333 | 0.373 |
| F52 | 414 | fb11 | 407296.745 | 496061.009 | 366.309 | 0.334 | 0.373 |
| F52 | 415 | fb11 | 407297.196 | 496069.548 | 366.448 | 0.161 | 0.126 |
| F52 | 416 | fb11 | 407299.012 | 496079.082 | 365.878 | 0.334 | 0.372 |
| F52 | 417 | fb11 | 407300.388 | 496088.701 | 364.668 | 0.362 | 0.372 |
| F52 | 418 | fb11 | 407302.110 | 496099.097 | 366.900 | 0.161 | 0.119 |
| F52 | 419 | fb11 | 407303.125 | 496106.490 | 365.532 | 0.410 | 0.460 |
| F52 | 420 | fb11 | 407305.368 | 496120.587 | 365.654 | 0.411 | 0.452 |
| F52 | 421 | fb11 | 407307.654 | 496136.803 | 364.399 | 0.157 | 0.118 |
| F52 | 422 | fb11 | 407309.968 | 496149.791 | 362.563 | 0.175 | 0.141 |
| F53 | 423 | c39 | 407315.384 | 496180.965 | 360.548 | 0.146 | 0.110 |
| F53 | 424 | c39 | 407312.960 | 496181.416 | 360.721 | 0.165 | 0.134 |
| F53 | 425 | c39 | 407312.785 | 496183.787 | 360.197 | 0.169 | 0.144 |
| F53 | 426 | c39 | 407314.292 | 496185.341 | 359.823 | 0.311 | 0.321 |


| $\begin{aligned} & \text { F53 } \\ & \text { F53 } \\ & \hline \end{aligned}$ | $\begin{aligned} & 427 \\ & 428 \end{aligned}$ | $\begin{aligned} & \text { c39 } \\ & \text { c39 } \\ & \hline \end{aligned}$ | $\begin{aligned} & 407315.911 \\ & 407316.750 \end{aligned}$ | $\begin{aligned} & 496185.566 \\ & 496182.937 \end{aligned}$ | $\begin{aligned} & 359.642 \\ & 360.046 \end{aligned}$ | $\begin{aligned} & 0.139 \\ & 0.142 \end{aligned}$ | $\begin{aligned} & 0.114 \\ & 0.116 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F54 | 429 | fb12 | 407366.938 | 496054.741 | 363.761 | 0.279 | 0.302 |
| F54 | 430 | fb12 | 407362.596 | 496054.538 | 363.604 | 0.295 | 0.295 |
| F54 | 431 | fb12 | 407359.011 | 496055.102 | 363.850 | 0.294 | 0.295 |
| F54 | 432 | fb12 | 407355.133 | 496054.786 | 363.945 | 0.294 | 0.295 |
| F54 | 433 | fb12 | 407349.370 | 496054.782 | 364.033 | 0.372 | 0.380 |
| F54 | 434 | fb12 | 407347.056 | 496054.663 | 364.373 | 0.275 | 0.274 |
| F55 | 435 | c40 | 407342.215 | 496054.147 | 364.446 | 0.330 | 0.326 |
| F55 | 436 | c40 | 407340.027 | 496054.629 | 364.520 | 0.276 | 0.274 |
| F55 | 437 | c40 | 407338.217 | 496054.536 | 364.572 | 0.192 | 0.176 |
| F55 | 438 | c40 | 407335.941 | 496053.676 | 364.673 | 0.149 | 0.137 |
| F55 | 439 | c40 | 407337.779 | 496051.961 | 364.595 | 0.292 | 0.295 |
| F55 | 440 | c40 | 407340.750 | 496051.242 | 364.533 | 0.147 | 0.123 |
| F55 | 441 | c40 | 407342.791 | 496052.691 | 364.280 | 0.271 | 0.275 |
| F56 | 442 | c41 | 407332.035 | 496050.736 | 364.041 | 0.317 | 0.299 |
| F56 | 443 | c41 | 407332.064 | 496052.450 | 364.064 | 0.317 | 0.300 |
| F56 | 444 | c41 | 407333.465 | 496052.999 | 363.897 | 0.297 | 0.279 |
| F56 | 445 | c41 | 407334.197 | 496051.887 | 363.702 | 0.319 | 0.302 |
| F56 | 446 | c41 | 407334.064 | 496050.437 | 363.840 | 0.322 | 0.307 |
| F57 | 447 | fb12 | 407333.507 | 496045.002 | 364.322 | 0.308 | 0.337 |
| F57 | 448 | fb12 | 407327.757 | 496044.781 | 364.915 | 0.332 | 0.366 |
| F57 | 449 | fb12 | 407324.423 | 496044.832 | 365.145 | 0.334 | 0.366 |
| F57 | 450 | fb12 | 407321.395 | 496044.509 | 365.364 | 0.333 | 0.365 |
| F57 | 451 | fb12 | 407314.982 | 496043.372 | 366.166 | 0.351 | 0.359 |
| F57 | 452 | fb12 | 407307.610 | 496041.448 | 366.312 | 0.350 | 0.359 |
| F57 | 453 | fb12 | 407300.325 | 496039.803 | 366.591 | 0.351 | 0.361 |
| F57 | 454 | fb12 | 407294.860 | 496039.175 | 366.961 | 0.351 | 0.360 |
| F57 | 455 | fb12 | 407286.179 | 496037.564 | 367.204 | 0.307 | 0.312 |
| F57 | 456 | fb12 | 407274.299 | 496035.488 | 367.663 | 0.347 | 0.356 |
| F57 | 457 | fb12 | 407266.569 | 496034.794 | 368.096 | 0.352 | 0.372 |
| F57 | 464 | fb12 | 407234.467 | 496043.184 | 367.141 | 0.165 | 0.132 |
| F58 | 458 | c42 | 407234.397 | 496044.613 | 368.025 | 0.345 | 0.357 |
| F58 | 459 | c42 | 407234.395 | 496047.287 | 368.068 | 0.346 | 0.357 |
| F58 | 460 | c42 | 407232.390 | 496048.123 | 367.894 | 0.321 | 0.329 |
| F58 | 461 | c42 | 407230.620 | 496046.334 | 367.995 | 0.346 | 0.359 |
| F58 | 462 | c42 | 407230.900 | 496045.172 | 368.108 | 0.188 | 0.173 |
| F58 | 463 | c42 | 407232.825 | 496044.090 | 367.196 | 0.344 | 0.359 |

## Appendix Two Notes

1. For location of each feature, See Maps 6 and 7, rough topographic locations are:

Zone 1: Scarp Edge. Northern limit of the site and Southern Edge of Swaledale.
Zone 2: Summit of Juniper Rigg between Scarp edge and Sandstone Edge.
Zone 3: East facing slope of the Rigg leading down to Juniper Gill
2. Cairns marked with asterisk *, are- on point of false crested, view point location, alignment, semblance of structure or other consideration- may contain burials.

