Borders Reinforcement Phase 2:

Calfhill Above Ground Installation and

Newhouses to Calfhill Natural Gas Pipeline

Archaeological Watching Brief Data Structure Report

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1 INTRODUCTION

This report presents the results of two archaeological watching briefs; one undertaken during excavation works for the construction of an Above Ground Installation (AGI) at Calfhill (NT 513 387), north-east of Galashiels; and the other during the construction of a *c*.6.5 km natural gas pipeline in the Scottish Borders between Newhouses (NT 513 448), south of Lauder, and the AGI at Calfhill. The pipeline watching brief requirements also included a topographic survey of rig and furrow earthworks adjacent to Hillslap Tower (NT 512 394), Langshaw, prior to construction, the results of which are also presented in this report.

The construction work was commissioned by Scotland Gas Networks (SGN) and was required to reinforce the existing 19-bar-g Local-Transmission System (LTS) supplying the Scottish Borders with gas, to meet a predicted growth in demand. The main contractor was Land and Marine Project Engineering (LMPE).

The watching brief at the AGI site satisfied an archaeological condition attached to the planning consent for the construction of the Calfhill AGI granted by Scottish Borders Council under the Town and Country Planning (Scotland) Act, 1997 (Planning Application Number 10/00248/FUL). In compliance with that condition, the watching brief was conducted in accordance with a Written Scheme of Investigation (WSI) written by Derek Cater, SGN's Archaeological Advisor, and approved by Christopher Bowles, the Scottish Borders Council Archaeologist (Cater, 2010a).

A separate watching brief was undertaken during the construction of the Newhouses to Calfhill gas pipeline, as part of Scotland Gas Networks' commitment to following best archaeological practice, and in line with a commitment made in a screening report submitted to the Scottish Government in November 2009 (Rhead Group 2009). The screening report was produced to satisfy the requirements of the Public Gas Transporter Pipeline Works (Environmental Impact Assessment) Regulations 1999. This separate watching brief was governed by its own WSI (Cater 2010b), which was also agreed with Christopher Bowles.

The watching briefs monitored the stripping of topsoil and the excavation of subsoil wherever this had the potential to impact upon archaeological remains within the footprint of the AGI and the working width (the fenced easement) of the pipeline. A topographic survey of surviving rig and furrow earthworks was also conducted in two adjacent plots close to Colmslie farmstead, through the lands of which the pipeline route crossed. This relict field system lies adjacent to Colmslie Tower and Hillslap Tower, and closer still to the remains of a possibly contemporary farmstead and enclosure.

Archaeological supervision and investigations were primarily conducted by Mark Ward, LMPE's in-house archaeologist, and occasionally assisted by CFA Archaeology Ltd. The topographic survey of the rig and furrow was also undertaken by Mark Ward with the assistance of LMPE's in-house surveyor.

2 SCOPE OF WORKS

The scope of works included provision for a watching brief during all earth moving operations that had the potential to impact on archaeological remains; to undertake a topographic survey of rig and furrow earthworks west of Colmslie Farmstead; and to ensure acceptable and appropriate post-excavation assessment, reporting, and archiving.

The objectives stated in the agreed WSI (Cater, 2010a) for the watching brief at the Calfhill AGI are as follows:

- To identify and record the presence or absence, extent, condition, character, quality and date of any archaeological remains and to sample any ecofactual, environmental and organic remains of potential archaeological importance, should they exist;

- To provide a methodology for any set piece excavation beyond the resources of the monitoring archaeologist that may derive from significant discoveries during the watching brief;

- And to produce documentary and materials archives of sufficient quality to sustain a post-excavation assessment of potential and subsequent high-quality publications of the fieldwork results, as appropriate.

The above also describes the aims of the separate WSI for the watching brief for activities during construction of the Newhouses to Calfhill pipeline (Cater, 2010b).

The objectives of the topographic survey were as follows (Cater, 2010b):

- To preserve by record the extent and form of the well-preserved rig-and-furrow earthwork remains in two fields adjacent to Colmslie Farmstead in advance of their modification by earthmoving operations, specifically to survey the orientation and profiles of the rig and furrow within the working width;

- To survey the extent of those relict fields beyond the construction area as far as can be determined on the ground or through aerial photographs;

- And to depict the results of the survey in relation to the contemporary remains of a ‘longhouse’, also adjacent to Hillslap Tower and a short distance east of the working width, on a plan of suitable scale, and to produce a short descriptive and interpretative report.

3 BACKGROUND

An archaeological desk-based assessment (DBA) with integral field reconnaissance survey was carried out by Derek Cater (Cater, 2009). It identified 53 cultural heritage assets of varying sensitivity, and recommended that consideration should be given to implementing a staged approach to the identification of negative impacts upon heritage assets.

That DBA formed the basis of the cultural heritage chapter of a report submitted to the Scottish Government in November 2009 (Rhead Group 2009) in support of a request for a screening decision (under the Public Gas Transporter Pipeline Works (Environmental Impact Assessment) Regulations 1999) on whether the application to construct the pipeline (required by the Gas Act 1986) would need to be accompanied by a full Environmental Statement.

The possibility of undertaking a magnetometry survey the results of which would determine the scope of any trial trenching evaluations was discussed with Christopher Bowles and was mooted in the 2009 screening report. Headland Archaeology was subsequently commissioned to undertake a 30 metre-wide magnetometry survey of all suitable plots along the then-proposed pipeline route, and within the footprint of the then-proposed AGI. Headland was also commissioned to do a concurrent topographic survey of the earthwork remains on the site of the former Threepwood farmstead, which had been identified to the immediate south of the Galashiels to Lauder Road by the DBA and reconnaissance survey. The topographic survey was commissioned to assist in the characterization and delineation of the former Threepwood farmstead site, so that it could be avoided and so preserved in situ, by means of a localized rerouting of the then-proposed pipeline. The results of the magnetometry and topographic surveys were presented in a single report (Harrison 2010).

That report revealed a series of high and medium potential magnetic anomalies (and earthwork remains) at the site of the former Threepwood farmstead, two groups of medium potential anomalies adjacent to Colmsliehill farmstead and a number of low potential anomalies including two north of the current Threepwood farmstead.

Thirteen evaluation trenches were subsequently excavated by CFA Archaeology during spring 2010. Five were targeted at positive magnetic anomalies recorded by the earlier magnetometry survey, two at negative anomalies and six targeted on a re-route designed to take the pipeline to the east of the former Threepwood farmstead, as a precautionary check that the remains had been successfully avoided. Only two trenches revealed archaeological features, namely post-medieval / modern agricultural features and the remaining anomalies appeared to reflect variations in the subsoil and bedrock (Mitchell, 2010).

The pipeline working width was subsequently narrowed along the line of the reroute immediately to the north of Moss Burn, *c*. 45m south-east of the former Threepwood farmstead, where a rectangular earthwork was encountered within peat during a route checking survey (Plate 10). It was agreed that all remaining potential impacts upon the archaeological resource could be mitigated by means of the watching briefs reported upon here.

4 LOCATION, GEOLOGY AND TOPOGRAPHY

4.1 Location

(Figures 1 to 5)

The pipeline route is roughly orientated from north to south avoiding difficult terrain and agricultural obstacles where possible. This is particularly the case around Threepwood where geological oscillations force the route to zigzag but this is the exception rather than the rule.

The pipeline begins at Newhouses, near Lauder, and continues for some 2.8 km until Threepwood where it crosses the Lauder road (Road Crossing 1, abbreviated to RDX01) and descends towards Moss Burn. From Moss Burn the route crosses the Blanslie road (RDX02) and steadily ascends Colmslie Hill until dropping steeply into the Allan Water valley and crossing Pacific Drive (RDX03) a total distance of 2.2 km. The final 1.6 km of the route crosses RDX04 where it descends into low lying pasture west of Colmslie before rising steeply to the AGI at Calfhill.

4.2 Topography

The pipeline route traverses a gently undulating plateau surface, defined by dome-shaped hills that reach a height of about 296m AOD to the north of Threepwood House, 290m AOD at Colmsliehill and 253m AOD at Calfhill, which are separated by fairly gentle convex slopes on the intervening valley sides although there are some locally steep gradients.

The route crosses three stream valleys the most northern of which is Moss Burn which runs into Allan Water which itself is crossed north of Colmslie. An unnamed tributary of Allan Water is also crossed south of Colmslie along with a smaller burn.

The ground adjacent to Muir Cleugh lies at a varying height of about 270m to about 220m AOD. The Allan Water, where crossed by the pipeline, lies at about 195m AOD, while that beside Moss Burn and the unnamed watercourse at Colmslie lie at about 246m and about 193m AOD, where crossed, respectively.

4.3 Geology

The solid geology underpinning the pipeline route comprises sedimentary rocks of the Gala Group, which derive from the Llandovery epoch of the Silurian period, that is they were deposited between 443 and 428 million years ago. The Gala Group rocks comprise Buckholm Grits: massive grits with greywacke and shales, and Abbotsford Flags: purple and grey flaggy sandstones. These rocks were folded during the Caledonian Orogeny which occurred between

490 and 390 million years ago and now exhibit a north-easterly dip of between 40 and 75 degrees (Cater, 2009).

British Geological Survey 1:50,000 scale mapping indicates that about 70 per cent of the pipeline development is underlain by Pleistocene boulder clay, while 23 per cent (an area of high ground to the north-west of Threepwood, the top and south-western slopes of Colmsliehill, and at Calfhill) contains little or no drift geology, the bedrock being at or near the surface. Two narrow bands of alluvium, which flank the Allan Water and the Muir Cleugh watercourse, underlie approximately four per cent of the route, while the peat underlying Threepwood Moss comprises about three percent of the study corridor, by surface area (Cater, 2009).

5 METHODOLOGY

5.1 Construction Methodology

5.1.1 AGI Construction

The AGI was constructed on an east-west slope, the higher end being to the West. The area encompassed some 4700 m² and was bisected by a farm track. The south-eastern area had already been subject to ground disturbance during the construction of an earlier gas pipeline. Conversely, the north-western area was undisturbed and it was here that the AGI was to be constructed.

Initially, the whole plot was stripped of topsoil using backhoe mechanical excavators equipped with toothless ditching buckets. The AGI footprint was located at the west of the plot and measured some 750m². The natural deposits within that footprint were terraced using backhoe mechanical excavators fitted with toothed buckets. This entailed the cutting of up to 1.2m of deposits at the western side of the footprint, where the ground was highest, and the filling of the lower ground to the east,, to form a flat platform upon which to construct the AGI.

The new pipeline entered the western end of the AGI site, from the north. It was accommodated in a *c*. 2m deep and 2 m wide pipe trench. A trench of similar dimensions was excavated to accommodate a new short length of pipe (a minimum offtake connection) that linked the new pipeline and AGI to the existing Number 10 Feeder pipeline, which crosses Calfhill a short distance to the east of the new development..

5.1.2 Pipeline Construction

The pipeline was constructed within a working area that was generally 24m wide but it was expanded at road and river crossings, and at pipe lay-down areas. Conversely, the working width was reduced to avoid mature trees or other environmental or cultural heritage assets.

After the installation of the preconstruction drainage and fencing, the topsoil was stripped from about two thirds of the working width using backhoe mechanical excavators equipped with toothless ditching buckets. The remaining un-stripped topsoil formed the base for topsoil storage. The central third of the of the construction area was generally used as the right of way / running track, and the remaining area was devoted to trench excavation.

Wherever the pipeline route was required to negotiate side slopes greater than 5 to 10 degrees, the working width was terraced or ‘benched’.

The pipe trench depth was generally between 1.5 and 2m but was deeper on steep slopes and at open-cut road and river crossings. It was commonly *c*. 0.6m wide at its base, and was between 1 and 2m wide at the machined surface. In particular circumstances, areas of the trench were boxed outwards to about 3 to 4m squares, forming 'bell-pits' to allow welding access.

As a rule, when the trench was required to be deeper, the width would be increased proportionately.

Construction nomenclature for locations on the pipeline describes areas in terms of 'Section' / 'Plot', where Section 0 begins at the origin of the pipeline (in this case Newhouses) and continues to the first road crossed by the pipeline (Road Crossing 1, abbreviated to RDX 1), here at Threepwood. Section 1 then continues from RDX 1 to the second road crossed (RDX 2), etc. 'Plot' refers to each individual field or other discrete parcel of land crossed by the pipeline. On this project, each plot is numbered in sequence returning to 1 at the start of each section. For example, the first plot south of the first road crossing would be identified as "Section 1, Plot 1" and abbreviated to "01/01". The third plot to the south of RDX2 would be defined as 02/03. This referencing is used extensively in this report and is illustrated on figures 2 to 5.

5.1.3 Rig and Furrow Reinstatement

The well preserved rig and furrow in plots 4/06 and 4/07 was reinstated using data from the archaeological topographic survey. Each rig and furrow that had been truncated by constructed activities was realigned across the construction area and the depth and widths sculpted to the original form as best as possible. It is considered that once the vegetation has re-grown the landscape will be seamless.

5.2 Archaeological Methodology

5.2.1 Watching Brief

5.2.1.1 General

All machine topsoil stripping and subsoil excavations (including pipe-trench excavations) were monitored by a suitably qualified and experienced archaeologist. All works were conducted to and above the specifications described in Standard and Guidance for Archaeological Watching Brief (IfA, 2008a) and Standard and Guidance for Archaeological Excavation (IfA, 2008b).

When archaeological remains were encountered, the features were either excavated and recorded immediately, or cordoned off and protected from construction traffic, and returned to later. When archaeology was discovered to underlie the running track, arrangements were made to protect it by covering with geo-membrane, subsoil and bog-matting, thus allowing traffic to flow until such times that the running track could be moved to allow investigations.

When archaeological remains were encountered that were deemed to extend beyond the capabilities of a single archaeologist to excavate and record to the standard set out in the WSI, the archaeology was protected as described above and the SGN Archaeological Advisor contacted to arrange for further assistance. In such an event, archaeologists from CFA assisted in the investigation of a number of features encountered in plots 0/07 and 0/08 (see Sites 3 to 6, below). CFA's archaeologists also wrote an archive report and produced illustrations for these sites which have been synthesised into this report

CFA reported on all the finds and one environmental sample from Site 4. The remaining were processed and reported by James Rackham of the Environmental Archaeology Consultancy. These reports are retained as archive reports and are synthesised into this report.

Topsoil spoil heaps were frequently checked for unstratified finds.

5.2.1.2 Field Records and Methodology

All archaeological contexts were given a unique identifying context number and recorded on *pro-forma* context sheets. Unique context and record numbers were allocated between LMPE's and CFA's archaeologists.

All significant contexts were recorded on hand drawn plans and sections on polyester drafting film. Plans and sections were drawn at a scale of 1:10 or 1:20 depending on the degree of the detail required. Ordnance Datum heights and National Grid References (NGR) were recorded on the plans. Each drawing was given a unique drawing number.

Topsoil, subsoil and natural substrate were allocated a variety of context numbers based on relevance, location and composition, all of which varied along the length of the route.

A photographic record was made of excavated features, and general record shots were taken, using black and white, colour slide, and digital formats. All photographs were numerically indexed with a description. All photos of recorded archaeology were furnished with scales and north arrow.

All records, drawings, finds bags and sample containers were marked with the construction section and plot numbers to act as a check on the recorded location of items. Only a few

stratified artefacts were recovered but a number of unstratified finds of post-medieval and modern date were retained in the possibility they had the potential to indicate past land use. Unstratified finds mostly included post-medieval / modern ceramic material which were subsequently sampled rather than all collected. Each finds bag was marked with the section and plot number. In the event of the recovery of flint or chert, the bag was also marked with a national grid reference.

Samples were routinely taken from sealed contexts for the recovery of ecofacts and artefacts. The volume of the samples varied from 1 litre to 30 litres. The size of the sample generally depended on the size of the available context and in most cases these were small or difficult to access.

Samples were normally collected either in 10 litre tubs or in 5 or 10 litre bags (double bagged) and marked on the outside and labelled inside. Each sample was allocated a unique sample number and corresponding context number, and details were recorded on environmental sample sheets.

Due to the dangerous nature of entering the pipe trench, archaeological remains identified within deep excavations could only be recorded from the trench edge. In such instances, the spoil from the trench excavations was also scanned for finds or ecofacts.

Additional field notes were also recorded on plot record sheets.

5.2.2 Topographic Survey Methodology

The survey of rig and furrow in plots 4/06 and 4/07 was conducted using a Leica DGPS with sub-centimetre accuracy.

Where the extant field systems were crossed by the pipeline construction area, each furrow was surveyed to indicate its depth and orientation.

Two transects were surveyed at right-angles to the alignment of the cultivation earthworks in each field to characterise the depth and pitch of the rigs and furrows. Readings were taken every *c*.0.25m or where the break of slope occurred first. Transects include 1 and 2 in plot 4/07 and 3 and 4 in plot 4/06 (figures 18 to 21.

A further survey was conducted to plot the extent of the surviving rigs and furrows beyond the working area in plots 4/06 and 4/07 (figure 16). This was supplemented by interpretation of a geo-referenced high-resolution vertical aerial photograph (Getmapping, 2007).

6 RESULTS

All excavations were confined to single or small groups of features. CFA Archaeology Ltd assisted by excavating Sites 3 to 6 in plots 0/07 and 0/08, under the guidance and supervision of LMPE's archaeologist. The remaining sites were excavated by LMPE's archaeologist.

Within the text, context numbers are expressed as bold for cuts and normal text for fills / deposits.

6.1 Topsoil Stripping along Pipeline Route

6.1.1 **Site** 1 NT 51153 44488

Site 1 was a sub-circular pit, **006**, orientated north to south and located in the centre of plot 0/06 (figures 6 to 7). It measured 0.6m by 0.48m, and 0.2m deep, and contained two fills. The primary fill 008 was a mid grey-brown silty-sandy clay and contained two large stones and a number of smaller stones. The secondary fill, 007, was a slightly organic mid-grey sandy silt with occasional charcoal and large stones. None of these fills contained any finds. Processed samples contained few charcoal fragments in both deposits, and recent uncharred seeds in context 007 suggest recent disturbance or origins.

6.1.2 **Site 2** NT 51110 44006

Deposit 009, plot 0/06, was within a low lying area *c*. 200m south of plot 0/07. It was located some 5m west of a small stone bank enclosure and amorphous tumble of stones that was located outside the working width (plate 1).

The feature was irregularly shaped in plan, orientated in a north to south direction, and measured 5m by 1.5m and 0.4m deep. The matrix was a mid to dark grey silty clay containing frequent stones. The amorphous shape, nature of the matrix and position in a low lying area suggest a natural accumulation of silts and clays through water-logging possibly in hollows created by decayed or removed scrub or trees.

6.1.3 **Site 3** NT 51067 43736

A linear spread of cobbles, which was aligned east to west across plot 1/07, appeared to represent the remains of a disused track-way, **1017** (figure 13, & plates 2 & 3). This feature was 3.9m wide and up to 0.15m deep, and was formed from mostly small sub-rounded cobbles, 1018, many of which were pressed into the surface of the natural subsoil, 1002. Some of the cobbles were deeply embedded in the natural subsoil and may have a natural origin. Traces of a thin brown soil with orange flecks, 1019, were present around and over the

cobbles. A sondage cut through the track-way revealed that two linear depressions were present in the base of the feature. If these represent wheel ruts, an axle-width of around 1m may be suggested.

The rutting and subsequent metalling suggests repeated use and maintenance. No finds were recovered.

A similar track-way (and currently used) was crossed by the pipeline north-west of Threepwood farmstead and links the farmstead to a track known as the Girthgate (DBA asset 32) via a once well exploited quarry (figure 3).

To the west of track-way **1017**, its projected line is blocked by a woodland plantation shown on the 1863 1st Edition 6" OS Map. That blocking, coupled with the fact that the track-way is not depicted on the 1863 or any later OS map, perhaps suggests that track-way 1017 predates the 1st Edition map and had fallen out of use by 1863.

Quarries are also shown beyond the woodland plantation on the 1863 map (DBA assets 20 & 21). A quarry is similarly shown to the east of the pipeline (DBA asset 15) and lines up with an eastward projection of the track-way. It would not be unreasonable to suggest that the track-way linked all of these quarries (and possibly others to the east / north-east) to the Girthgate, presumably in the first half of the 19th century.

The track-way was not revealed by the geophysical survey (Harrison, 2010).

6.1.4 Site 4 NT 51058 43650

A linear stone-filled ditch, **1009**, was observed crossing plot 0/07 close to the boundary with 0/08 (figures 3 & 8, & plate 4). The ditch was 1.5m wide and up to 0.7m deep with a concave profile. It was aligned approximately north to south and was fed by a French drain, **1010**, that merged gradually from the east. Were this ditch to continue to the south, it would align with an open ditch / drain that fed into a mill-pond to the south (DBA asset 19) recorded on the 1863 1st Edition OS 6" map as possibly disused (Cater, 2009). The ditch is also visible as a faint anomaly on the geophysical survey although its northern and southern extents are unclear (Harrison, 2010).

The stones filling the ditch, **1011**, and the field drain, **1012**, were similar in size, and the matrices around them in their upper levels, 1013 and 1014 respectively, were also comparable, both being a light grey-brown silt. Fill 1013 measured 0.23m deep. Lower down within the ditch, a 0.27m thick deposit of orange-brown clayey silt, 1015, was recorded

around the stones and this overlay a thin primary fill of grey-orange-brown sandy silt, 1016, being up to 0.09m thick.

Three shards of green glass were recovered from the basal fill, 1016, and have been identified as having come from a carboy, a type of industrial storage container of probable 18th century date (Murdoch, forthcoming).

A soil sample of this primary fill was taken and processed. Only a very small quantity of fragmentary charcoal was present and is neither sufficient for C14 dating nor to infer agricultural regimes.

The discovery of 18th-century green glass in the base of the ditch suggests that a formerly open ditch was later in-filled with stones. This infilling may coincide with the construction of the associated French drain, **1012**. The primary fill 1016 also suggests exposure to erosion and possibly flowing water.

Notably, this ditch not only aligns with the existing ditch feeding into the mill pond (DBA asset 19) to the south, but if it continues to the north, it would meet DBA asset 17, a large dilapidated dry-stone built structure assumed to be a post-medieval sheepfold (figure 3). This structure may not necessarily have a function related to hydrological systems but this physical relationship may suggest contemporary (18th century onwards) land use, or even a change in land use. Nevertheless, one would assume that for the benefit of collecting ground water, the ditch would need to continue some 100m toward the summit of the hill to the north-west. The abandonment of DBA asset 17 may have provided the material with which to infill the ditch.

6.1.5 Site 5 NT 51019 43625

Deposit 1008 was located in plot 0/07, 10m north of the boundary with plot 0/08. Initially identified as potential archaeology during the topsoil stripping, the deposit consisted of well-defined red and creamy-red mottled sandy silt, 1008, contrasting with the natural creamy-yellow clay, 1002. However, a sondage revealed that the deposit continued under the natural subsoil and this feature is therefore of demonstrably natural origin.

A number of poorly defined patches of creamy greyish-blue clay containing charcoal flecks were also identified during topsoil stripping in plot 0/08, 10m south of the boundary with plot 0/07. These contrasted with the yellow-grey clay subsoil, 1002. Two of these deposits, 1005 and 1007, were excavated in order to test their archaeological potential. Both were irregular in plan roughly measuring 1m by 1m. Sections revealed that each deposit merged into an underlying natural deposit of orange-yellow silts, sands and gravels at a depth of *c*. 0.05m. No finds were recovered and these deposits are deemed to be of no archaeological interest.

The three excavated natural deposits occurred within low-lying terrain and exhibited both evidence of burnt vegetation and possible water-logging. The features are close to the mill pond (DBA asset19) and one may suppose the area was prone to frequent flooding. The geophysical survey revealed several bipolar anomalies at the boundary between 0/07 and 0/08 (Harrison, 2010), which is typical of modern field boundaries.

6.1.6 Site 6 NT 50992 43568

Two stone deposits, 1003 and 1000, were encountered beneath the topsoil in plot 0/08 (figure 3, & plates 5 & 6). They lay a matter of metres away from DBA asset 18, a rectangular dry-stone structure located off the easement to the east (plate 7).

An oval deposit of small and medium sub-angular cobbles, 1003, was uncovered during topsoil stripping in plot 0/08. The feature lay 15m south of the boundary with plot 0/07 and *c*.5m south of deposits 1005 and 1007. In plan, the feature measured approximately 4m by 2.5m although no structure was apparent. A grey silty clay matrix, 1004, was present around the stones. The site was divided into quadrants, with opposing quarters being fully excavated. This revealed that the stones had a maximum depth of 0.3m and overlay natural subsoil 1002. A small undiagnostic flake of white flint was recovered from the silty clay, 1004, while a second larger flake of brown flint / chert was found within the topsoil, 1006, close to this stone deposit. Both these finds suggest prehistoric activity in the area but not necessarily associated with this feature.

A second stone deposit, 1000, was exposed 10m south of 1003. This (Fig. 4) consisted of an irregular deposit of medium and large sub-angular cobbles with overall dimensions of 2.5m by 2.5m. No structure was apparent. A grey silty clay matrix, 1001, was present around the stones. The site was divided into quadrants, with opposing quarters being fully excavated. This revealed that the stones had a maximum depth of 0.3m and overlay natural subsoil 1002. No finds were recovered.

Excavations showed no evidence of structural form of these stone deposits. Rather, their location on the edge of a wet area and in close proximity to other upstanding stone deposits, suggests these are the product of field clearance. The discovery of a flint flake within one assists little in the dating of these features.

No features were identified from the geophysical survey (Harrison, 2010).

6.1.7 Site 7 NT 51057 42578

Organic deposit 004, plot 0/17, occupied a low area sloping across the 24m construction area in a north-east by south-west direction (plate 8). The deposit measured 5m wide at the slightly

higher south-western side and 30m at the north-eastern down slope side, and up to 0.5m deep. The deposit was a soft dark brown organic silty clay and contained frequent wood fragments which included a whole tree bole some 3m long by 0.3m in diameter. No finds were encountered.

The DBA indicated that at this location a north-east to south-west field boundary was recorded on the 1862 First Edition OS map. It is therefore apparent that this deposit has formed alongside that field boundary in conditions of impeded drainage leading to slow vegetational decay.

The deposit was also represented by the geophysical survey as a broad positive anomaly on an identical alignment (Harrison, 2010).

6.1.8 Site 8 NT 51050 42551

Deposit 005, plot 0/17, was located on top of a small hill 20m from and overlooking Site 7 to the north. The deposit was irregularly shaped in plan and depth, and was filled by firm grey silty clay which contained flecks of charcoal.

It is likely that this deposit is related to the clearance of earlier scrub or tree-lined land divisions, as above.

6.1.9 Site 9 NT 51231 42370

Clearance cairn 067 was located in plot 01/01 at the bottom of a short steep slope where the field bordered plot 01/02, a margin of peat scrubland flanking the Moss Burn (figures 3 & 9, & plate 9). Plot 01/01 is currently used as pasture but earlier arable use is attested by aerial photographic evidence (Getmapping, 2007) showing straight and narrow rig and furrow orientated north-south. The site was located some 45m east-north-east of the nearest of the former Threepwood farmstead buildings (DBA asset 53) which was abandoned and demolished sometime between 1821 and 1852, and relocated to its present position 200m to the north-east. The earlier Threepwood farmstead may have its origins in the medieval period (Cater, 2009). The pipeline was re-routed 100m to the north-east to avoid the location of the earlier farm buildings and associated demolition material, and the working width was also reduced to avoid a rectangular earthwork within the scrub some 30m east of cairn 067 and 5m south of the boundary with plot 01/01. The rectangular earthwork measured some 8m by 5m and was orientated north to south. It was constructed from rough stone and appeared to contain two cells each measuring approximately 3m by 4m internally. The remains stood to a height of c.0.4m, being highest in the centre. It is likely that this building was a shieling or

some other ancillary building for the earlier Threepwood farm. This rectangular structure was not impacted upon by this development, so was not investigated in detail.

No geophysical survey was conducted in this plot and evaluation trenches were excavated on a plateau at the top of the slope to the north. The results from the evaluation revealed only a French drain.

Cairn 067 was revealed during topsoil stripping, when stones were pulled from the baulk edge by a mechanical excavator. Initial investigation revealed it to be a loose and haphazard collection of large stones lying under the topsoil, rather than a complex construction such as a burial cairn, wall or building. From the initial observations, the feature was inferred to be a clearance cairn, and was excavated and recorded in half-section.

The cairn comprised large non-uniform angular greywacke stones, context 018, ranging in size from 0.07m x 0.05m x 0.04m to 0.45m x 0.16m x 0.3m. None of them had been shaped or otherwise worked, and no bonding materials were noted. It is likely that these stones derive from the demolition of the former Threepwood farmstead buildings in the mid-19th century.

The cairn stones were below the topsoil (022) and mostly within the upper layers of a shallow deposit of well-humified and degraded sandy peat, 019, *c*. 0.7m deep. From their position within the section, it is assumed that the stones were thrown onto the surface of the marginal land and then partially sank into the soft peat deposits. This explains the angular declination exhibited by some of the stones. Peaty topsoil later developed over them.

Samples taken from the peat (019) contained wood, and roots and occasional uncharred seeds indicating recent disturbance by terrestrial plants and worms. This suggests that drier episodes have occurred in recent centuries, which have allowed terrestrial plants and worms to colonise the surface of the peat. Such episodes would have also led to drying out and erosion of the peat, such as its present state (Rackham, J, pers. comm.). The peat also contained occasional small stones and sand which may have washed into the side of the bog from the slope. Alternatively, this material may have derived from the cairn stones themselves.

A 19th or 20th century pottery sherd was recovered from the edge of the peat some 20m east of the cairn. It was not securely stratified so cannot date the cairn reliably, but is likely to be of broadly similar date. It is likely to represent domestic refuse derived from the earlier farmstead.

Below the peat was a firm mid to dark grey fine silty clay containing frequent charcoal, 020. This was almost certainly a naturally formed deposit probably denoting water-logging prior to peat formation and is fairly typical of basal peat bog deposits. This deposit is presumed to be

of prehistoric date, but the charcoal it contained was too comminuted for reliable radiocarbon assay. The charcoal content may suggest human activity within the vicinity of the water catchment area although a naturally initiated fire may also be a possible source of the charcoal. Only exiguous evidence of prehistoric activity in the vicinity of Moss Burn was recovered during the fieldwork associated with this development, and no relevant previous discoveries were noted in the DBA. Nevertheless, prehistoric human activity may remain to be identified in this area or may have been destroyed by later agricultural activity.

Along with the charcoal, the environmental sample also produced fragments of dung-beetle which may allow locally kept livestock to be inferred, although a non-domestic animal origin is also possible. Alternatively, the fragments of dung beetle may suggest that this deposit formed or was disturbed during the life of the former Threepwood farmstead, which, given its location immediately adjacent to the burn-side pastures and the Girthgate drove road, is likely to have focussed on cattle production. If the beetle remains were to be late medieval or post-medieval date, all or some of the charcoal could be too. A late date for some of the inclusions in this deposit is possible, because of its location at the edge of the bog, where the peat cover would have been thinnest and where, as a consequence, poaching may have impacted upon the underlying firm deposits. Nevertheless, in the absence of datable material that would confirm the date one way or the other, a prehistoric origin remains the preferred interpretation for the deposits and its inclusions.

Deposit 020 overlay natural deposit, 021, an off-white to light grey clay natural deposit containing frequent angular stones. It is possible that this layer may represent a land surface from an earlier drier period.

A cut feature, **059**, was revealed beneath the peat at the west-south-western extent of the section but as it was not revealed in plan, its form is unclear. The feature was cut through 021 and was filled with a single deposit, 024, which was identical to deposit 020. The feature was confidently sealed by the peat and no indication of disturbance through the peat was noted. Two charred seeds, including a legume, were retrieved from fill 024. A small soil heap 061 was located directly to the east-north-east presumably originating from the excavation of 059. This measured 1.5m wide by 0.24m high. The matrix consisted of a firm off-white to light grey clay, similar to the natural deposit 021. There is no evidence suggestive of a human origin of this feature and it may be considered as the result of animal burrowing prior to the formation of the peat at this location.

At the north-western extent of the section, the peat was abutted by deposit 023, a dark grey organic silty clay deposit that lay at the base of the sloping pasture field. Nothing of significance was noted in this deposit.

6.1.10 Site 10 NT 51229 41652

Deposit 016 was located in plot 2/02, 10m north of the summit of Colmslie Hill (figure 4). This feature was initially thought to be a charcoal rich pit although irregularly shaped in plan. Investigations revealed this to be a shallow hollow within the bedrock containing a charcoal rich loose dark grey to black silty clay. Sprawling root impressions on the weathered edge of the bedrock confirmed this feature to be the vestiges of a burnt tree or shrub.

This feature probably represents geophysical amorphous anomalies at the north of plot 2/02 (Harrison, 2010).

6.1.11 Site 11 NT 51071 39831

A substantial stone built cundy or drain was revealed during topsoil stripping in 4/01 (figure 5 & plate 11). The cundy was already known to cross the easement and was the subject of relining by the construction team. The feature was also revealed as a negative anomaly on the geophysical survey (Harrison, 2010).

The drain was constructed within a cut, **025**, that measured 0.6m deep and 0.7m wide. The masonry was composed of large flat natural stones measuring 0.3m x 0.4m x 0.1m that formed the base, uprights and capstones. No clay lining was observed and neither were any finds retrieved.

The drain originated at a pond some 400m to the west of the pipeline which itself was fed from drains in the hills beyond. The cundy fed into a mill pond at Colmslie farmstead, DBA Feature 39, which is now defunct as a power source.

6.1.12 Site 12 NT 51115 39437

During topsoil stripping in 4/06, the easement was benched through a steep man-made bank, 027, that descended to the unnamed burn dividing plots 4/05 and 4/06 (figures 5). These ground moving works produced a gradual sloping track-way and working area ascending into 4/06 but it also cut into the bank and possible rig and furrow at the western side of the easement. A 9.4m long and 1.2m high section was cleaned and recorded (figure 10, & plates 12 & 13).

The bank was constructed on an east to west alignment, running parallel to the burn on its southern side, and marked the boundary between the sometimes steep and rocky river bank and the viable agricultural land to the south. The southern edge of the bank was largely straight with occasional dog-legs, respecting bends in the river. A maintained dry-stone wall was constructed on top of the bank in most places, but not where crossed by the pipeline.. In

contrast, the north of the burn was bounded by a meandering dry-stone wall only, which was dilapidated in places.

The top of the bank was covered by topsoil 028 at the south and topsoil 029 at the north where the bank sloped towards the burn. Both deposits were dark grey silty clays but 028 was more minerogenic than 029 which appeared slightly organic and contained frequent iron flecks. The depth of 028 varied from 0.28m to 0.1m at the top of the bank, and 029 ranged from 0.35m to 0.16m.

Beneath the topsoil at the southern extent, the main bank was constructed from subsoil deposits 030 and 033. Deposit 030 was 4.3m long and up to 0.48m deep, and comprised grey-brown sandy clay. It was abutted by 031, an almost identical deposit but separated by a subtle tip-line descending from 030. These contexts may have had a common origin but disturbance has removed certainty. Below 030 was the primary bank material, 033. This was composed of well sorted rounded and sub-rounded gravels, and was 3.7m wide and between 0.06m to 0.4m deep.

To the west of 030 and beneath 031 was deposit 040, a rounded dump of orange-brown fine clayey sand that measured 1.24m in length by 0.36m in height. A tip of small rounded gravel, 039, declined from the top western side of 040. The deposit extended beyond the extent of excavation and can only be assumed to be greater than 0.5m long and 0.1m deep.

Deposits 040 and 033 sat on layer 037, a natural deposit of hard mineralised (probably manganese) grey sandy gravel of varying sizes and of probable fluvioglacial origin. The deposit was up to 0.4m deep and extended for 5.5m from beyond the bank at the south to the bank's centre. A stratigraphically equivalent deposit on the eastern side of the bank, 032, was a mid-grey sandy clay containing occasional stones of varying shapes and sizes. This extended from the centre of the bank to 3.2m north where it appeared to taper off as the bank descended to the burn. The relationship between 037 and 032 was obscured due to a large stone in the section but clearly there is some difference in composition of these deposits at the same stratigraphic horizon. This may be caused through differential erosion of the same deposit by spate episodes and / or exposure to the atmosphere at the exposed edge of the bank.

Cut into natural deposit 032 was feature **042**, which was either a shallow pit, gulley or animal burrow but as it was not exposed in plan, it is difficult to state its form with any certainty. This feature measured 0.8m in length and 0.2m deep, and was filled by 036, a well compacted orange-brown clayey-sand.

To the south of **042** was a small mound, 034, that was presumably spoil excavated from the feature. This deposit was a mid to light orange-brown sandy fine grained gravel.

Covering the northern part of 034 and all of 036 was deposit 035, a mid-orange clayey, sandy gravel which was either abutted by or extended from bank deposit 030.

Beneath mineralised deposit 037, at the southern extent of the bank, was a grey sandy gravel deposit, 1.6m long and 0.1m thick. The primary natural drift geology underlying all the described deposits was red boulder clay, 041.

The bank appears to have been constructed as a division between agricultural land and steep marginal land at the edge of a burn for stock control. The bank may have also served as an earlier rig where crops would have been planted. No remains of a turf bank, typical of medieval field boundaries in Scotland, were noted. The disturbance at the south of the bank was probably caused by ploughing causing deposit 031 to infill a furrow and cover deposit 040, the possible remains of an earlier rig as also encountered in this plot (see Sites 13 &14). Feature 042 and associated mound are probably derived from animal activity, such as rabbit, badger, fox or dog. Deposits 035 and 036 are possibly associated with the construction of the bank.

No finds were retrieved from any of the above deposits. Samples taken from deposits 036 and 040 also contained nothing of significance.

6.1.13 Sites 13 and 14

Two plots containing well preserved rig and furrow, 4/06 and 4/07 (DBA assets 43 and 45), were already the focus of a topographic survey, but it was deemed appropriate to machine and hand excavate a trench at right angles to and across the full width of one rig and its adjacent furrow in each of the plots. By these means, it was intended to establish representative measurements of height/depth and width, to record a profile and any evidence of stratification, to record details of the soil matrix and to recover datable artefacts. The furrows were clearly evident on the geophysical survey (Harrison, 2010). Both fields are currently used as pasture.

Site 13 NT 51164 39265

The rig and furrow in 4/06, 010, is situated on a low lying field with two unnamed burns flowing eastwards at its northern and southern boundaries. A ruined farmstead and associated enclosure are located at the north-eastern corner of the field (DBA asset 42). The rig and furrow is aligned in an east-west direction in an inverted-S pattern (figures 5, 16 & 17).

Excavation of a 2m wide and 12.5m long trench at right angles to the earthworks showed the rigs to be 7.5m wide (measured between the centres of successive furrows) and 0.2m high. (figure 11).

A total of three deposits were identified as constituting the rig and furrow; topsoil 057, subsoil 011 and an infrequent clay deposit 012. Both 011 and 012 directly overlaid the red boulder clay natural, 013. The topsoil was a crumbly loose humic silty clay containing frequent stones, and measured between 0.54m and 0.16m deep, being deeper on the rig and shallower in the furrow. Subsoil 011 was a heavy light brown-grey sandy clay with rare charcoal flecks.

Deposit 012 was a sticky blue-grey clay initially thought to derive from water accumulation within the furrows. However, the location of this deposit is not in anyway related to the furrows and it is more likely to be natural in origin, perhaps formed by early post-glacial flooding episodes.

The predominant earthwork furrows are represented by cuts **063** and **066** but, interestingly, earlier furrows, **065** and **064**, were also noted in section beneath existing rigs (figure 11). This correlates with observations of small rigs running within the furrows noted during the topographic survey. These, therefore, must be vestiges of earlier arrangement of rig and furrow.

The rig and furrow was truncated at the south-south-east by a land drain and a French drain.

No finds were retrieved during the undertaking of the watching brief.

Site 14 NT 51220 39103

The rig and furrow in plot 4/07, 014, is aligned roughly north to south and arranged in an inverted-S shape in plan (figure 5, 16 & 17, & plate 14). It is located on a steeply inclined slope which rises from the north and becoming less steep at the south. A short trench measuring 2m by 7m was excavated across the earthwork remains, above the break of the steep slope where the ground was more level.

The rigs were recorded as being 6.5m apart and c. 0.5m high (figure 12). The furrow was recorded as a cut (**062)** through the natural. Only two deposits were identified as constituting the earthwork, topsoil 057 (as above) and subsoil 015. These were laid over the natural red boulder clay, 013. The topsoil measured 0.3m thick on the rig and 0.15m in the furrow. The subsoil was a light orange-brown silty clay containing frequent occasional charcoal flecks and measured 0.07m thick on the rigs and 0.2m deep in the furrow.

No finds were recovered.

6.2 Pipe Trench Excavation along the Pipeline Route

6.2.1 Site 15 NT 51074 44109

A furrow or shallow ditch, **044**, containing two fills was recorded in plot 0/06 during trench excavation (figure 2). This plot exhibited poorly preserved linear rig and furrow earthworks orientated north-east by south-west and it appeared that feature **044** lay beneath or adjacent to an existing rig. This location was close to an area of extensive rig and furrow highlighted as DBA asset 12.

The feature measured 2.2m wide and its greatest depth was 0.38m (plate 15). The primary fill (045) was a mid orange-brown clay containing occasional charcoal and measured 0.2m deep and 0.85m wide. The upper fill, (046), was a grey silty clay which contained a large amount of charcoal.

An environmental sample from 046 produced few identifiable fragments of charcoal, a couple of charred seeds and a mineralised organic fraction which appears to include several degraded seeds and may include some very small fragments of very degraded animal bone. Also present were the highly fragmented remains of possible burnt earth or pottery although given the amount of charred material it is more likely this material is derived from burning of stubble.

Typical of the archaeology discovered within the pipe trench, it proved difficult to determine the nature of this feature. However, as it seems to appreciate the orientation of the existing rig and furrow and is of comparable morphology to furrows encountered elsewhere on the route, it is assumed this is remnant of a rig and furrow field system. Moreover, the feature also corresponded with a geophysical anomaly suggested as a possible furrow (Harrison, 2010). The environmental finds do not shed light on any specific activities although this assemblage may be typical of those associated with cultivated land, deriving from activities such as stubble burning and / or night soiling.

6.2.2 Site 16 NT 51114 41008

A pit or tree-throw, **054**, was recorded in the pipe trench in plot 02/05 during trench excavation (figure 4). The feature was cut into a shallow deposit of drift material in an area of predominate bedrock. The site was located on the side of a hill with good views to the south across the Allan Water valley and beyond.

The feature measured 2.9m wide by 0.4m at its deepest. It was steep sided at the north-north-east and very gradually sloped at the opposite side (figure 14 & plate 16). Of the two fills, the

primary, 056, was a thin deposit of charcoal rich silty clay that lined the base of the feature, and measured 1.2m by 0.07m thick. The upper fill, 055, was a grey silty clay containing charcoal flecks and angular stones of varying sizes.

No finds were encountered but the soil samples from both fills yielded abundant charcoal, including many identifiable fragments. Both samples produced numerous small spores, rare charred herbaceous stem material, and context 056, the primary fill, also produced two small fragments of burnt hazelnut shell. The abundance of charcoal and the two charred hazelnut fragments suggest human activity, possibly of prehistoric date.

The form of this feature, that is steep on one side and shallow on the other, is often typical of a fallen tree where roots and earth have been cast up, and the tree bole falls and indents or flattens the ground. On the other hand, the environmental evidence strongly suggests typical prehistoric deposits so it is likely this is perhaps a pit rather than vegetational disturbance. The burnt residues may reflect in situ burning although no indication of burning was noted of the natural soil. However, a small amount of miceaous stone from 056 did appear to be magnetic, possibly as a result of burning, although these could have travelled down-slope.

It is unclear if this feature or other features were represented by the geophysical survey.

6.2.3 Site 17 NT 51265 42364

Deep peat deposits, 019, were encountered during trenching operations at Moss Burn, plot 1/03, and in the two scrubland fields which bounded the burn, plots 1/02 and 04 (figure 3).

From the pipe trench section, the peat was observed to occupy a moderately shallow concave basin approximately 2m deep and 70m wide. The northern extent of the basin was defined by the north-south slope in plot 1/01 that initially descended at *c.* 30° before breaking to a more gradual descent. From the lowest point, as defined by the course of the burn, the basin ascended gently into the fairly flat low lying fields in plot 1/04.

The edges of the basin were marked by shallow peat deposits, as recorded in Site 9. The peat was deepest on the northern side of the burn and appeared to be ‘raised’ in places, possibly occupying localised pools and forming tussocks. The peat at the southern extent was shallower at *c*. 1m at the deepest, again in isolated ‘raised’ areas. Beneath the peat was a light blue-grey silty clay, 047, up to 3m deep. As discussed in Site 9, charcoal was noted at the northern margin of the basin within silty clay deposit 020 but not within the central deeper area. Beneath the silty clay was red natural boulder clay.

The peat was up to 1.9m deep and was made up of laminar deposits of black and brown peats of differing humicity indicating changes in rainfall, floral species and rates in decomposition (plate 17). The uppermost peat deposits were 0.35m thick and composed of a well humified very dark brown / black peat. Beneath this were thin layers of alternating black and brown peats and generally well humified. At 0.75m a deposit of poorly humified brown peat measured 0.35m deep and contained noticeable remains of sphagnum moss and also numerous wood fragments. Under this was a thin layer of well humified black peat which sealed the lowest deposit, a brown peat measuring 0.68m deep. This peat was very wet and poorly humified, and contained well preserved remains of reeds and wood.

No finds or cultural indicators were recorded in the peat deposits.

6.2.4 Site 18 NT 51028 40024

A light grey and clean silty-sandy deposit containing many large rounded stones, 053, was observed during trenching in plot 3/01 close to RDX4. Initially thought to be anthropogenic in origin, investigations revealed this deposit to extend throughout section 3 and to the Allan Water valley. It was also observed in plot 4/01 both in pipe trench section and on the surface. The depths of these deposits varied from 0.2m to 0.7m, and contained no finds.

Due to the extent of this deposit and the nature of the matrix, one should assume a natural formation, possibly fluvioglacial or fluvial in origin.

6.3 Topsoil Stripping and Excavation at Calfhill AGI

A watching brief was conducted during topsoil stripping and excavation for the construction of an above ground installation (AGI) at Calfhill, in accordance with an agreed WSI (Cater, 2010a)

The AGI construction area was at the southernmost end of the gas pipeline and located some 150m below the summit of a hill commanding good views to the distant North and East, and over Colmslie Farmstead and Hillslap Tower, and the Allan Water valley in the foreground (figure 5).

Although the desk-based assessment did not identify any archaeological potential within the construction area, it did highlight 'Pictshill' (DBA Asset 50) and 'Calfhill' (DBA Asset 51) as lying 95m and 175m to the east of the AGI site, respectively. Pictshill was recorded in the Ordnance Survey Name Book of 1859 as a small knoll immediately north of the house known as Calfhill, and was said (apocryphally) to have been covered with buildings, one of which was a 'tower' (SMR 2140112; NMRS NT53NW 31). Calfhill is recorded in the SMR as a farmstead depicted on Pont's 1644 map as lying 175m east of the proposed AGI site (SMR 2142007) (Cater, 2009). It is now apparent that Calfhill is actually Hillslap (see Section 8, below).

The geophysical survey did not record any archaeologically significant magnetic anomalies (Harrison, 2010) and, consequently, no trial trench evaluations were excavated within or adjacent to the proposed AGI site.

6.3.1 Site 19 NT 51262 38680

No archaeology was observed during topsoil stripping. However, a pit or tree-throw, **048**, was revealed in section during excavation for the AGI foundations (figure 15 & plate 18). This measured 2.5m wide by 0.48m deep and contained a single fill, 050. The sides were gently sloping to a conical base.

The single fill was a light grey sandy-silty clay with orange flecks. The feature was truncated at the east by a French drain. No finds were recovered and a sample produced only a few charcoal fragments and some uncharred seeds, suggesting a recent origin.

The location of the feature is roughly concomitant with a pit-like geophysical anomaly. However, the recent nature of the feature, as suggested by the environmental evidence, suggests this is not an archaeological feature.

6.4 Finds

All finds were assessed by Sue Anderson of CFA.

Only two finds were retrieved from stratified contexts and another from top soil 1006 close to Site 6. The remainder were recovered from top soil and sub-soil deposits throughout the route.

6.4.1 Site 4

Primary ditch fill 1016 produced three shards of green bottle glass. The shards are thin and have abundant air bubbles within their matrix. Similar glass fragments recently recovered from a kiln site at Dunmore, near Falkirk, have been identified as a carboy (a type of industrial storage container) of probable 18th-century date (Murdoch forthcoming).

6.4.2 Site 6

Two flint flakes were recovered, from silt layer 1004 within Site 2 and as an unstratified find 1006 from near Site 2. The former was a small piece of white flint with partial patination, and the latter was a larger flake of brown flint/chert with snapped edges. Both are likely to represent prehistoric activity in the area.

6.4.3 Unstratified

Table 1 summarises the finds quantities from the watching brief. These are quantified by plot number in Table 2 below.

Find type	No.	Wt (g)
Pottery	56	229
CBM	3	14
Glass	1	3
Clay Pipe	5	11
Fe	5	55
Flint	10	33
Stone	26	777
Coal	1	1

Table 1: Finds quantities.

6.4.3.1 Pottery

Fifty-six sherds of modern pottery were recovered from 13 plots (0/12, 0/14–17, 1/01, 1/05, 2/01, 2/04, 2/07–8, 4/02 and 4/10). The majority comprised refined factory-made white earthenwares with a variety of decorative techniques including spongeware, hand-painting and transfer-printing. A few other fabrics were present, including British stonewares, brown glazed and slipped red earthenwares, and yellow ware. Identifiable vessels were mostly tablewares (plates, saucers, cups, teapots), but the stonewares, blackwares and yellow wares were probably fragments of storage jars and kitchen wares. These fabrics have a broad date range of late 18th to 20th centuries, although most sherds were almost certainly of 19th-century date.

6.4.3.2 Ceramic building material

Three fragments of machine-pressed tile were found in 0/12. These are probably pieces of pantiles of 19th-century or later date.

6.4.3.3 Glass

A rim fragment from a moulded white glass vessel with raised decoration in the form of small convex circles was found in 0/17 and is likely to be of recent date.

6.4.3.4 Clay pipes

Fragments of clay pipes included a stem with a narrow bore from 0/15 (19th c.?), a larger stem with a broad bore from 4/02 (17th/18th c.), a fragment of burnt bowl from 0/16 (18th c.?) and a stem fragment with spur-type heel from 2/02 (L.18th–E.19th c.).

6.4.3.5 Iron

Five iron objects were recovered, of which four were nails (0/12, 2/01, 2/05) and one was a thick fragment of uncertain function (4/01). The nails were all handmade with square-section shafts of a type which remained unchanged from the medieval period to the late 18th/early 19th century.

6.4.3.6 Flint, stone and burnt stone/coal

A small quantity of natural gravel flint was recovered from 0/10, 0/12 and 1/01. Large chunks of burnt/singed limestone or chalk were also collected (0/12, 2/01, 2/08, 4/01, 4/07). This material was often added to soils to help reduce acidity. A small fragment of burnt coal was recovered from 0/12 and may be related to the lime. A very dense black stone from 4/10 is unidentified but may be a fossil.

6.4.3.7 Assessment of potential

All finds were of recent date or natural origin. Most probably reached the fields through casual loss or the deliberate importation of night soil and lime to add to the soil as fertiliser, to break up clay soils or to reduce acidity. Whilst of interest as part of the agricultural history of the area, they are of little value in interpreting its material culture. The finds have been catalogued to a level appropriate to their date and context, and no further work is recommended.

The finds will be disposed of as required under Treasure Trove.

6.5 Environmental Sample Assessment

The majority of the samples were processed and analysed by James Rackham of the Environmental Archaeology Consultancy (EAC) although one, sample 1000, was processed by Mhairi Hastie of CFA.

EAC

EAC's soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams, 1973) using a flotation sieve with a 0.5mm mesh and an internal wet-sieve of 1mm mesh for the residue. Samples 5 and 8 were washed over a 0.3mm residue and flot mesh because of possible waterlogged remains. Both residue and flot were dried and the residues subsequently re-floated to ensure the efficient recovery of charred material and mollusc shells. The two possible waterlogged samples were retained wet until they had been checked under the microscope after which sample 8 was dried but 5 kept wet. The dry or wet volume of the flots was measured, and the volume and weight of the residue recorded. Only a subsample of the peat sample 4 was assessed.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The flot of each sample was studied under a low power binocular microscope. The presence of environmental finds (ie snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The flot was then bagged. The flot and finds from the sorted residue constitute the material archive of the samples.

Sample no	context	Site	volume lt	weight kg.	residue vol. ml	flot vol. ml.	char-coal *	
2	007	2	1.5	1.7	10	0.25	-/1	
3	008	2	3	3.25	45	1	2/2	
4	019	9	1	0.8	300	25	-/-	Very degraded peat with abundant rootlets and occasional recent seeds, but with some surviving wood fragments-residue mainly humified peat crumb
5	020	9	3	4	26	150	3/5	A little degraded wood, insects and very abundant uncharred spores. Abundant rootlets
6	024	9	3.5	4	250	4	1/3	1x charred legume+1x charred seed; spores
7	045	15	3.75	4	26	<0.5	1/1	
8	046	15	5	5	75	8	2/4	Mineralised organics, 1 x charred seed; very frequent spores
9	036	12	2	2	350	<0.25	-/-	

10	040	12	3	4	580	<0.2	-/-	
12	050	19	4.5	5	900	0.2	1/1	
14	055	16	4	5	800	125	5/5	Several identifiable charcoal pieces, very rare herbaceous charcoal, small spores frequent.
15	056	16	4.5	5.5	900	258	5/5	2x charred hazelnut shell, charred herbaceous stem and tuber, comminuted charcoal but with identifiable pieces common; 0.6g magnetic component – mainly stone

Table 2: Details of washed samples and their finds

The results from these samples were extremely poor. Several failed to produce any evidence for human activity associated with the deposits, while four had sufficient charcoal present to suggest local activity.

Samples 3, 5, 8, 14 and 15 all produced fragments of charcoal of sufficient size to radiocarbon date, however the charcoal concentration in the first three of these was fairly low. Unless there are significant archaeological reasons for the dating this is not recommended.

Sample 8, Site 15, produced a few tiny fragments of possible burnt earth or pottery but probably too fragmented to differentiate.

Feature **054**, Site 16, on of the other hand, did have an abundance of charcoal, and the lower fill included charred nutshell. A possible prehistoric date might be suggested by the presence of nutshell and the absence of all other charred plant material except charcoal – grains and seeds might be expected in Roman and post-Roman features. If the dating of this feature has some archaeological importance then the charred hazelnut could be AMS dated and it might be appropriate to identify a sub-sample of the larger charcoal fragments from samples 14 and 15 to identify the fuel resources exploited and the trees growing near the site.

Sample 15 also produced a small amount of magnetic micaeous stone which may have possibly been heated.

The peats, 019, from Sites 9 and 17, could be dated from the surviving wood fragments or from the non-fibrous humic component of the peats.

Insect fragments from context 20, Site 9, might afford some information on the formation of this deposit (ie either waterlain or palaeosol) but the poor condition of the peats above in which no guaranteed contemporary insect or plant macrofossils appear to have survived prohibits comparison with this context. Peat deposit, 019, was not assessed for pollen survival which is likely to be present but may be in poor condition, however without an archaeological or radiocarbon date any work on these samples would be of little value.

Unless there is a good archaeological argument for radiocarbon dating some of the charcoal, nutshell or peats from one or more of these samples no further work can be recommended.

CFA

One bulk soil sample, from the primary fill (**1016**) of linear ditch **1009**, was processed through a flotation tank. The floating debris was collected in a 250 μm sieve and air dried. The material remaining in the tank was wet sieved through a 1mm mesh and the material sorted for any archaeological significant material. The flot, once dry, was scanned using a binocular microscope at magnification x10.

Only a small quantity of very fragmentary charcoal was recovered from the sample, and this was not sufficiently large enough for radiocarbon dating. No other finds or palaeoenvironmental remains were recovered.

7 CONCLUSION AND RECOMMENDATIONS

A total of 19 sites were identified along the pipeline route during the course of the watching brief. Nine of the features were recent origin; five were natural; the rig and furrow was possibly medieval in origin but was certainly maintained into the post-medieval period; the pit at Site 16 is considered to be prehistoric and two flints from Site 6 suggest prehistoric activity in the area. The deposits beneath the likely post-medieval clearance cairn may suggest activity in the area prior to the peat formation.

The excavations along the line of the Newhouses to Calfhill Gas Pipeline revealed the following finds and archaeological features:

- An undated pit (Site 1).

- A probable furrow (Site 15), which was recorded in the pipe trench in an area of known rig and furrow of likely 18th or 19th century date. No dating material was recovered but an assemblage of charred material typical of agricultural activities was retrieved from a sample of its fill.

- A cobbled track-way (Site 3) with evidence for the use of wheeled vehicles. To the west, this track would be blocked by woodland that was present on the 1863 OS First Edition 6" map and which it may therefore predate. Quarries are also shown to the east and west of the excavated section of the track on the same map, and it is possible that the track linked them all to the Girthgate. A very similar cobbled track-way, still in agricultural use today, was crossed by the pipeline to the north-west of Threepwood farmstead. It is likely that both tracks link up with the Girthgate, an established track also known to have been present in 1863.

- An approximately north-south substantial stone filled ditch (Site 4) that fed into a mill pond (DBA asset 19). The mill pond and part of the ditch are present on the 1863 OS First Edition 6" map, however, the section of the ditch that crossed the pipeline is not depicted. It is therefore presumed that the ditch had extended beyond the mapped extent but had been back-filled prior to the 1863 survey. The discovery of 18th-century green glass in the base of the ditch perhaps gives some indication to the period when the ditch remained open before later being infilled with stones. The section of the ditch present on the 1863 map running north of the boundary which encloses the mill pond has also been infilled, post 1863. Today, the ditch still remains open within the enclosure around the pond and presumably still drains into it.

- Two truncated deposits of stones (Site 6). Their location on the edge of a wet area and in close proximity to other upstanding stone deposits, suggest these are the product of field clearance. The discovery of a flint flake assists little in the dating of these features other than suggesting evidence of prehistoric activity within the area.

- A former wooded field boundary and other indications of scrub clearance, which was noted south of Threepwood farmstead. The field boundary was present on the 1863 First Edition OS map.

- A clearance cairn (Site 9) that was recorded on the boundary between scrubland and pastureland on the north bank of Moss Burn, and is likely to be the product of the dismantling of the former Threepwood farmstead during the early 19th century. Notable were carbonised remains within deposits sealed by the peat. These may reflect early human activity within the locality, although without positive cultural indicators, a natural source cannot be discounted. A previously unrecorded small rectangular earthwork probably representing a former shieling or ancillary building to the early Threepwood farm was also noted close to the pipeline route within the scrubland.

- Moderately deep stratified peat deposits were also recorded around Moss Burn (Site 17) but similarly to Site 9, further work can not be recommended without relating any palaeoenvironmental evidence to known archaeological sites.

- A pit with carbonised remains including burnt hazel nut shells (Site 16) is suggested as being typical of the prehistoric period. No other similar features were encountered and it is likely that if this is prehistoric, other features may be present to the west. However, one cannot state with full certainty the date of this feature without C14 dating the hazelnut shells, and without other features or significance deposits, it would be difficult to justify these lengths.

- A stone cundy (Site 11) feeding water from a small reservoir and issues to a mill pond at Colmslie Farm, which was revealed west of the farmstead. No dating evidence was recovered but the mill pond is present on the 1863 1st Edition OS 6" map, which suggests the cundy may have also been in use prior to this date. The need for the relining of the cundy during construction works shows its current importance for land drainage.

- An earthen bank and evidence of agricultural disturbance that was present west of Hillslap Tower (Site 12). Although no dating material was recovered, it is likely the

bank is contemporary with the rig and furrow field system and can comfortably be considered as between medieval and 18th or 19th century in date (see topographic survey below). The disturbance at the south of the bank may be related to earlier phases of the field systems, as revealed at Site 13. Any such earlier phases are also likely to be pre-enclosure.

- Well preserved rig and furrow that was excavated in two fields adjacent to Hill Slap tower (Sites 13 and 14). Site 13 in plot 4/06 displayed evidence for an earlier field system whereas Site 14 did not. All rigs and furrows were of comparable dimensions. No dating material was recovered but a possible medieval origin is proposed (see topographic survey below).

- No certain archaeology was encountered at Calfhill AGI, although a pit of probable natural origin was recorded.

In conclusion, very little prehistoric archaeology appears to have survived or possibly even existed along the route. The route is strongly marked by a well enclosed landscape even on the higher areas where the height reaches nearly 300m. Indeed, most of the unstratified finds are dated to the period of enclosure and improvement. It is noteworthy that stratified glass sherds from Site 4 also date to the 18th century. The evidence supports that this period witnessed increased activity and change in the rural landscape.

The inverted-S-shaped rig and furrow at Colmslie is typical of the open field system and precedes the enclosures and improvements of the 18th and 19th centuries although no dating material was recovered. These field systems are discussed in greater detail in Chapter 8, below.

Of those possibly prehistoric features, there exists no dating material other than charred remains. The isolated nature of these features and deposits, and their general insignificance could not warrant a programme of C14 dating. Therefore, no further works are recommended.

8 TOPOGRAPHIC SURVEY OF THE RIG AND FURROW ADJACENT TO HILLSLAP TOWER, PLOTS 4/06 AND 4/07

A topographic survey of the extant rig and furrow west of Hillslap Tower was conducted in accordance with the agreed WSI (Cater, 2010b). For the aims and objectives, and for the methodology, please see Sections 2 and 5 in this report, respectively.

The plan of the survey is presented in figure 17 and shows the surveyed rigs, the surviving extent of field system, the topographic transects and proximal significant archaeology. The profiles of those topographic transects are represented in figures 18 to 21. Each of those profiles is marked with rig and furrow numbers for ease of correlation with the survey plan (figure 17). Figures 20 and 21 are additionally supplemented with a profile showing the Y-axis stretched by 200% to emphasise the pitch of the rig and furrow. Further annotations in red represent relict rigs in figures 20 & 21, transects 3 and 4, where at least two phases have been identified.

The width of each rig has been determined by measuring the distance between the centres of its flanking furrows. Rig height has been determined by measuring from the top of the rig to the bottom of one of its adjacent furrows.

Overall, the survey of the extent of the rig and furrow conformed to the earthwork extents within the two plots visible on the aerial photograph shown in figure 16 (Getmapping, 2007).

Plot 4/06

Plot 4/06 was a large low-lying field measuring 9.5ha. The rig and furrow earthworks (DBA Asset 43) are orientated east-north-east by west-south-west in an inverted-S shape, and measure between 320m to 500m long. A smaller field is located at the north-west of plot 4/06 and contains north-north-east by south-south-west orientated rig and furrow (DBA Asset 44). The two fields presently form one land parcel but a small boundary bank, possibly formed from the headland of the large field and the first rig of the smaller, would have once demarcated the boundary. The smaller field was not surveyed.

A small irregular collapsed bank enclosing an area around a possible former farmstead (DBA Asset 42) occupied the north-east corner of plot 4/06 and enclosed an area of some 0.54ha.

Plot 4/06 was bounded at the west by a maintained dry-stone wall and low-bank in places, and at the east by a recently re-constructed dry-stone wall. To the south the field was divided from plot 4/07 by an un-named burn, and from plot 4/05 by a bank and another un-named burn (see Site 13, above).

Some 30 furrows were surveyed crossing the pipeline route, which defined some 31 strips, if the bank at the north boundary is included. On average, each rig was 6.3m wide. However, as suggested by the excavation, there may be more than one phase of earthworks present, so this average may be a conflation of two separate measurements, as discussed below.

Two transects, 3 and 4, measuring 54m and 57m long respectively, were surveyed at 90 degrees to the axis of the rig and furrow within the construction area at two locations.

As suggested by the excavation, there appeared to be some remnant rigs within the furrows (those marked by a red 'R' in figures 20 to 21) which, if counted, would distort the average measurements of the predominant rigs.

Transect 3 was located at the north of the field and extended from the bank southwards. Nine rigs and nine furrows were recorded, including the bank. Rigs ranged from 3.4m to 9.3m in width, and from 0.1m to 0.66m in height.

The only identifiable early rig in transect 3 is R1, and, therefore, furrow F9 is considered as an earlier furrow associated with R1. Some later disturbance might be inferred from furrow F2. While being visible enough on the ground to warrant a survey, F2 does appear very faint in profile. It is also cut into an existing rig that is clearly part of the dominant rig and furrow system. Therefore, furrow F2 is considered as most recent intervention. This also accounts for a discrepancy between the number of rigs and furrows; that is, the survey was conducted from rig to rig, therefore one would expect a higher number of rigs than furrows to fall within the transect.

By excluding furrows F2 and F9, the average distance between the centres of furrows (or rig width) was 7.2m and the average rig height was 0.38m.

Transect 4 was located at right angles to the southern boundary, and extended northwards, taking in ten rigs and nine furrows. It was evident during the survey and later when analysing the results, that this location was particularly low-lying, and it was also apparent that the rig and furrow was not as pronounced as in transect 3 or in plot 4/07.

In all, the width of the rigs ranged from 3.65m to 10.35m, and their height from 0.04m to 0.31m. Nevertheless, a certain amount of disturbance is noticeable through the presence of a number of early rigs, red R1 to R5 which are preserved at the base of later furrows, as attested in Site 13. A further furrow, F10, was revealed in the profile between furrows F7 and F8, which was only revealed in the transect but not in the plan survey.

In order to assess the dimension of the later extant rig and furrow, the earlier features need to be discounted from any measurements. This entails the removal of furrows F2, F4, F6 and F10. Consequently, the calculations produce an average rig width of 10.7m and an average height of 0.23m.

Interestingly, the distance between the four relict rigs is on average 11.16m which is comparable with the later rigs and indicates no fundamental change in the ploughing regime.

Plot 4/07

This field is a large irregularly shaped plot positioned on a steep north facing slope overlooking Hillslap Tower and Colmslie. The rig and furrow (DBA Asset 45) is well preserved and orientated north to south along the length of the slope, following an inverted-S course. The strips measure between 73m and 288m in length, and occupy an area of 7.7ha. The field was bounded by a dry-stone wall at all sides, except at the north, where it is bordered by an unnamed burn, where the ground was very low lying and wet. A low headland is present at the north of the field but no traces of another were observed at the south. A total of 14 furrows and 15 rigs were surveyed in this plot.

The present boundary with the grounds of Hillslap Tower may have truncated the last few yards of the northern end of the rig and furrow in this plot, as the turning curve of the strips was less pronounced there than elsewhere and the headland was not present. This would also suggest that the current boundary with the land around Hillslap Tower is later than the rig and furrow and is not consonant with the historic barmkin of the tower.

The slope upon which the rig and furrow is positioned is fairly steep at the northern extent until the centre of the field where it breaks to a moderate incline and continues rising in this manner southwards. The western end of the field is rather rocky and consequently defines the extent of the rig and furrow despite the head dyke being some distance away in places. This is probably explained by the impossibility of ploughing bedrock rather than later boundary changes.

The rig and furrow was the subject of two surveyed transects, 1 and 2, which bisected the field system across the working area.

Transect 1 was located on a plateau at the south of plot 4/07, measured 31.3m long and extended across five rigs and four furrows. Transect 2 was located on the slope roughly in the centre of the field and extended 34m across five rigs and four furrows. Unlike the rig and furrow in plot 4/06, no traces of earlier field systems or significant disturbance was noted either from the survey or the excavation at Site 14.

Rig widths ranged in both transects from 6.8m to 9.2m, and were on average 7.4 metres wide. Rig height ranged from 0.1 to 0.47m, and averaged 0.26m.

Discussion

The first evidence for a settlement at this location is from a Royal Charter which states that between 1153 and 1165, Malcom IV granted a site to Melrose Abbey at 'Cumbesley' (Colmslie) upon which they could build a sheepfold and a shed to house 100 cows (MRR, 1917). Colmslie later became part of a larger estate of Appletreeleaves which was occupied by the Darling family initially as tenants of Melrose Abbey and later as feuars as early as 1552 (MRR, 1917).

After the Church's lands were annexed to the Crown in 1567, the Colmslie (or Easter Ladhopemuir) estate was split into Colmslie to the north and Calfhill or Hillslap (both were synonymous place names) to the south (presumably the burn running between plots 4/05 and 4/06 being the boundary), and the estate at Hillslap was bestowed upon Charles Cairncross of Colmslie (MRR, 1917).

Hillslap Tower was built sometime around 1585 judging from an inscription above the main doorway by 'Nicolai Carnecors of Colmslie'. There is also reference in the same year to his brother, Robert, being granted an annual pension of 50 merks by Melrose Abbey

'*from the lands of Maxpopill and Calfhill yielding 20 merks, the lands of Housebyre 18 merks, and the lands of Alanschaws 10 merks and the teinds of Calfhill 4 merks*' (MRR, 1917).

It therefore seems that family was not without wealth.

Later records show that William Cairncross, who inherited the estate in the second half of the 17th century, was an absentee landlord, that there were disputes over unpaid debts, and that there were squabbles between neighbouring tenant famers over animals grazing on each other's crops; a problem commonly encountered with the open field system. When the last Cairncross family members died in 1759 without issue, the estate was split up after a protracted legal dispute, and the tower fell into disrepair (MRR, 1917). There is, however, very little information on how the new owners disposed of their newly acquired estate. By 1821, the tower is documented as a roofless shell in a sketch by Sir David Erskine (Cannel and Lewis, 1995) and is also described by Sir Walter Scott in 1830 as being a 'ruinous mansion' (Scott, 1830). A letter to Scott's publisher from John Borthwick in 1813 describes that the estate and tower house formed part of the estate of Crookston. The next recorded owner of Hillslap Tower is recorded as William Patterson, a wealthy tanner from Galashiels

(Jeffrey, 1864) but there is no mention if his tenure includes the estate lands. The tower was not reoccupied until the early 1980s once the present owners restored the building. The full extent of the former estate is unknown but the fields containing the rig and furrow are currently farmed by Colmslie Farm.

Overall, it is likely that the land around Colmslie and Hillslap was first cultivated by tenant farmers tied to a possible medieval monastic site at Colmslie; later by tenants and feuars of Melrose residing at Colmslie; and consequently by tenants of the landowners residing in Colmslie and Hillslap towers. It would not be beyond suggestion that Comslie, Hillslap and Langshaw were the basis of 'ferm touns' rather than a village, the evidence being the lack of any significant settlement independent from farmhouses or the tower houses.

An interesting insight to the landowners and their tenants is revealed through the Melrose Regality Records for 1680 (MMR, 1917):

Horning - Charles, Earl of Hadintone, etc., eldest lawful son and heir male of deceased John, Earl of Hadinton, who was heir male of deceased Thomas, Earl of Hadintone, his grandfather, the complainer's great-grandfather, titular of the teinds of the parish of Melrose, narrating that he obtained Decreet, 12 April 1680, before ballie-depute of regality of Melrose, against the following persons and their tenants, to pay to him the valued teind duties respectively underwritten, the fifth part and the sums of money allocated out of the foreend thereof to the minister at Melrose being allowed, viz. against William Cairncroce of Hilslope, for his lands of Calfhill in parish of Melrose, and Robert Hilstone in Calfhill his tenant, 46 merks 6 s. 8 d. ; Francis Scot of Longshaw, for his lands of Colmsliehill, George Turner his tenant, 48 merks 10 s.; John Hunter of Colmslie, for his lands of Colmslie, and Francis Scot and Robert Frier his tenants, 133 merks 6 s. 8 d.;

Here the court rolls suggests that each landlord only employed one or two individuals (and their families) to work the land and tend the livestock at the mentioned locations. In the case of Hillslap, it mentions that William Cairncross's tenant is Robert Hillstone who no doubt once occupied the abandoned farmstead west of Hillslap Tower.

The shape and style of the farmstead is typical of the later Middle Ages and the post-medieval period, and consequently suggests pre-enclosure and possibly even medieval origins (Dent & McDonald, 2001). The two nearby 16th century tower houses do not necessarily prove the farmstead had its origins in that period, although that is not an unreasonable suggestion given the proximity of the farmstead to Hillslap Tower and its position within the newly created 16th century estate.

The relationship between the rig and furrow in plot 4/06 and the farmstead and enclosure can be determined from the headland respecting the boundary bank surrounding the house. Moreover, from the aerial photograph, there does not appear to be any relict rig and furrow within the domestic enclosure. This evidence supports that this was the farm from which these fields were tended.

Prior to land improvements mostly during the 18th and 19th centuries, arable agriculture was practiced using the open field system where arable land was made up of strips of cultivated ridges (rigs), surrounding farms and settlements, which would have been farmed communally by tenant farmers. The landscape would have been rather bleak and open with very few trees and certainly few or no walls or hedges separating land parcels.

The inverted-S shape rig and furrow is the classic pre-enclosure arable field system more common throughout England and to some extent in the eastern Scottish Borders and is often attributed to Medieval origins (Halliday, 2001). The distinctive pattern was created by long teams of oxen pulling the fixed mould board plough in a clockwise spiral from the centre of the strip. The length of the ploughteam and the fixed plough forced the team to continually pull to the left in preparation of making a right turn back on to the strip, hence the reversed S-shape. When the ploughteam pulled around to return back on to the field, a certain amount of soil was cast up at right-angles to the strips thus forming the headland. More often than not, the headlands would abut adjacent series of rig and furrow at a right angle thus forming either a low boundary bank or another ridge.

The fields under survey are typical of those described above. Furthermore, the width of the rigs in both fields compares to the typical medieval width of 8m (Hall, 1998), the exception being those in transect 4 which are on average 2.7m wider. This is not an unusual variation and may have been purposefully ploughed to suit the damp low lying position. The depth between the base of the furrow and the peak of rig is more a feature of preservation rather than an indicator of age, and in the case of plot 4/07 and the more recent rig and furrow in plot 4/06, these are considered as moderately to well preserved. The early rigs observed in plot 4/06 are considered poorly preserved.

Corroborative dating of rig and furrow through material remains other than form is often problematic largely due to a lack of dateable material from structured deposits, and the destructive nature of the plough which diminishes the likelihood of such deposits surviving. A case in point is the excavations in plots 4/06 and 4/07 (Sites 13 & 14), where no dateable material was encountered.

The Enclosures and Improvement of the 18th and 19th centuries brought with it massive changes to the farming landscape and rural society. The desire to grow a larger variety of crops and to experiment with new crops and livestock was not conducive to the open field system. Crops needed to be separated and grown on a larger scale to make the venture economically viable. Fields also needed to be stock-proofed which initiated the planting of hedgerows and the building of stone walls.

The introduction of the swing plough and later the adjustable mould board allowed the ploughing of straight strips and no headland, whereby smaller draught teams and no sweeping turns were required. Consequently, rig and furrow arable fields were levelled and reploughed in the new manner. Previously, field boundaries (or actually low banks or headlands) were also curved in respect to the shape of the fields, and these too were straightened.

In light of the fact that these fields retain the rig and furrow earthworks and headland banks that have largely been ploughed flat elsewhere, suggests that these fields had a more sustained history of pastoral farming after enclosure. And to the extent that land use is determined by the changing demand for farming products, it suggests that plots 4/6 and 4/7 were enclosed at a different period from the surrounding land

This different enclosure history may also suggest associated tenurial differences: either the land was part or all of a single holding with a conservative or innovative owner, or ownership was particularly fragmented, preventing coordinated change. Indeed, Dent and MacDonald (2001) propose that such examples of isolated fields of rig and furrow are often dated to the late 17th or early 18th centuries and are the consequence of inheritance, purchase or exchange of small parcels of land. However, there are a small number of anomalies which are worthy of discussion.

The field boundary recorded on the 1863 OS map as crossing both plots (depicted in orange on figure 17) was only noted during the survey in plot 4/07, as a low headland, and was not seen in plot 4/06. However, the 1863 boundary is corroborated by a linear cropmark running across both plots on the aerial photograph (Figure 16) (Getmapping, 2007). The three strands of evidence suggest that the 1863 boundary followed a pre-existing headland in plot 4/07, but deviated to follow a miscellaneous rig in 4/06. Given that the headland mirrored the southern side of the burn, the decision to deviate from headland to rig when laying out the 1863 boundary may have been made to ensure that cattle in each field had ready access to a natural source of drinking water. True, cattle grazing in plot 4/06 today have unimpeded access to the northern burn at the north-eastern corner of the plot, via the slighted remains of the farmstead enclosure. But such access would not have been possible or at least not as readily and conveniently available when the farmstead was in use. Elsewhere in plot 4/06, the descent to

the northernmost unnamed burn is precipitous and dangerous to cattle, and it is possible that the man-made bank flanking the southern side of the burn (Site 12) was in part built to discourage cattle from attempting the descent. The southernmost burn would have been the only natural water source available to cattle grazing in plot 4/07. Furthermore, excluding the northern burn from livestock would have performed an additional function of ensuring a clean and at best uncontaminated water source for the farmstead and the tower house, which, if no other sources of water was available, would suggest that one or both of the buildings were occupied at the time of the initial enclosure.

The aerial photograph depicts a possible headland, oriented north to south, within the centre of plot 4/06, suggesting the field might have contained two open-field furlongs. However, the survey revealed that this pattern was actually an artefact caused by the over-ploughing of a natural ridge, and that a single open-field furlong of east-north-east to west-south-west orientated strips was present in the plot.

The small field at the north-west corner of plot 4/06 containing north by south rig and furrow (DBA asset 44), is separated from plot 4/06 by a low earth covered rubble bank. The bank measured *c.*0.4m high and *c.*0.5m wide and is likely to have been formed by the headland of the rig and furrow to the east and through the clearance of stones from the strips. It is not considered an enclosure.

Evidence that this open field system was once more extensive is positively attested in the field immediately east of plot 4/07, where similar north-south orientated rigs are present. This suggests that the ground enclosed by plot 4/07 and the field to the east once lay within a single open-field furlong. This boundary is also shown on the 1863 First Edition OS map. The survival of this rig and furrow is almost certainly for the same reasons as discussed above, namely, as of the result of a sustained focus on livestock farming after enclosure.

Conclusion

The rig and furrow suggests origins possibly in the Middle Ages but certainly by the early post-medieval period, when the smaller estates, tower houses and attendant farmhouses were probably established. Halliday (2001) suggests that the majority of inverted-S rig and furrow in the Eastern Borders and Lothians bears evidence of later cultivation characterised by narrow curvilinear grooves superimposed on the earlier rig system. The only example of grooves cut into the rigs was F2 in transect 3 but this is the exception rather then the rule. The majority of intercutting furrows were noted as cut well into the subsoil and, furthermore, the earlier rigs in plot 4/06 are comparable in size and morphology with the later field systems, suggesting a continuation rather than modification of that practice. If, as Halliday (*op. cit.*)

proposes, most of the surviving curvilinear rig and furrow in Scotland has endured modification, one might suggest a raised significance of the rig and furrow fields at Hillslap. Interestingly, there is also extensive rig and furrow to the south-west of the Calfhill AGI and ruined buildings of similar construction and size to that in plot 4/06. There is also further rig and furrow in small fields around Colmslie farm.

The enclosure evidence suggests that despite the preservation of three fields of rig and furrow in close proximity to Hillslap Tower and the farmstead, it is possible that these have been fossilised not as an exclusion of enclosure but as a change in agricultural regime from arable to livestock.

It is also likely that there were two enclosure events; one being when the present rig and furrow fields were isolated from the surrounding land and possibly includes the internal division between 4/06 and 4/07; and other when the surrounding fields were enclosed, which might also include the division of 4/07 from the field to the east.

However, it would be difficult to state with complete certainty that the enclosures were initiated by the break up of the estate in the years following 1759, as widespread enclosure was well underway by the late 18th century. And conversely, the Cairncross estate owners may have decided against enclosure while it occurred around their land. It is certain, however, that this landscape demonstrates differences in land ownership, as the consequence of these actions clearly display a statement of choice and independence from the surrounding farmland. However, whatever the reasons that created the field patterns, all the evidence points to the land use of the enclosed strip fields for pasture. The outstanding question is when this actually occurred.

Evidence of occupation of the farmstead (and possibly the tower house, if the first enclosure occurred prior to 1759) may be proposed by the boundary that once divided plots 4/06 and 4/07 and the bank at the north of 4/06. These were purposefully constructed to steer livestock away from the northern burn which may have served as a domestic water source. Furthermore, as stock management and fodder procurement would have been a necessity, one would presume that the farmstead remained occupied by a tenant after the tower house was abandoned and the estate split. Indeed, in Erskine's 1821 sketch, an upstanding thatched building is shown north-east of and in contrast to a ruined Hillslap Tower. It is unlikely the building shown is the farmstead in question but it does suggest a level of maintenance and therefore occupation or other uses.

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APPENDIX 1: FIGURES AND PLATES

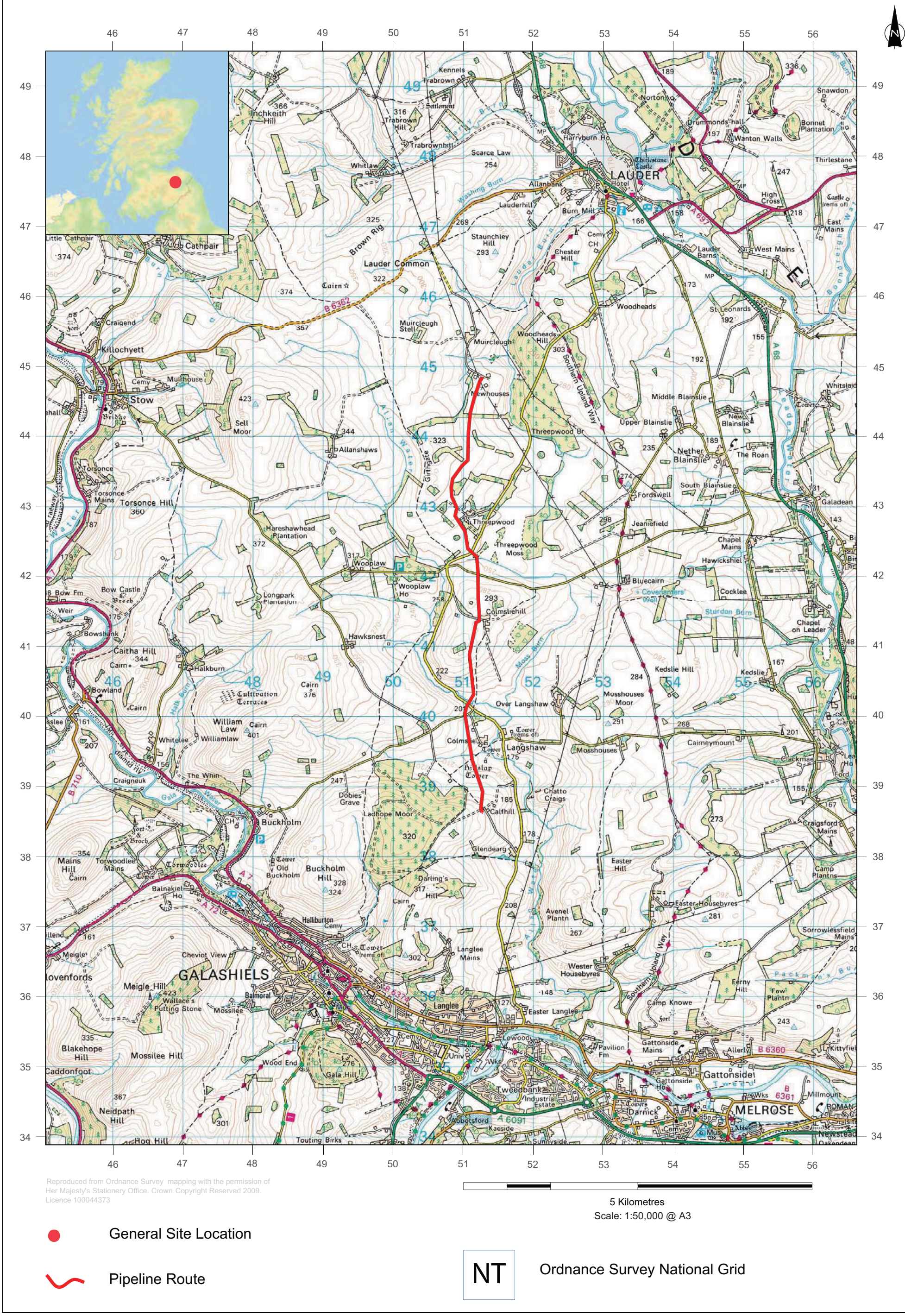

Figure 1: Pipeline Location Map

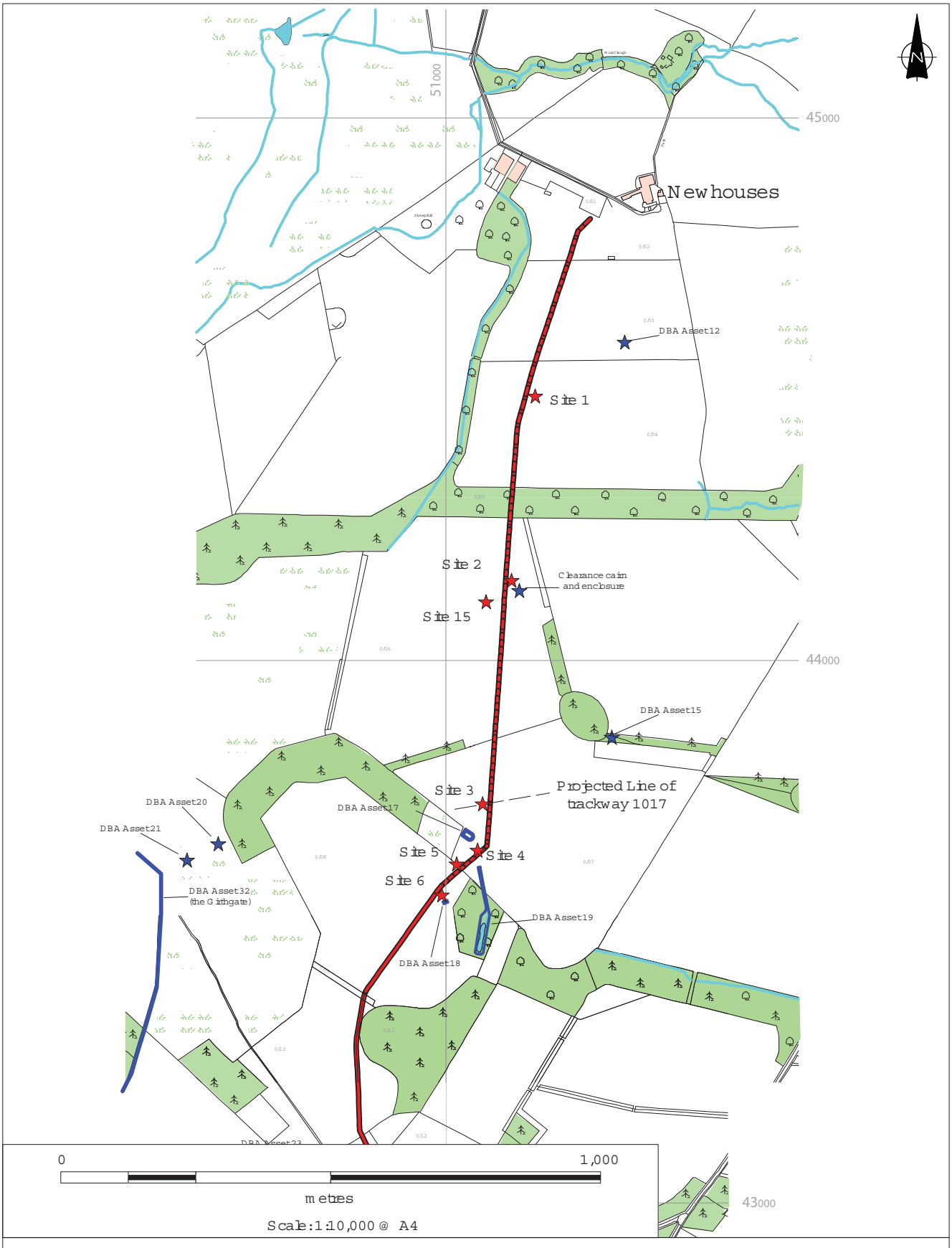

Figure 2: Archaeobgical Site Location Map 1

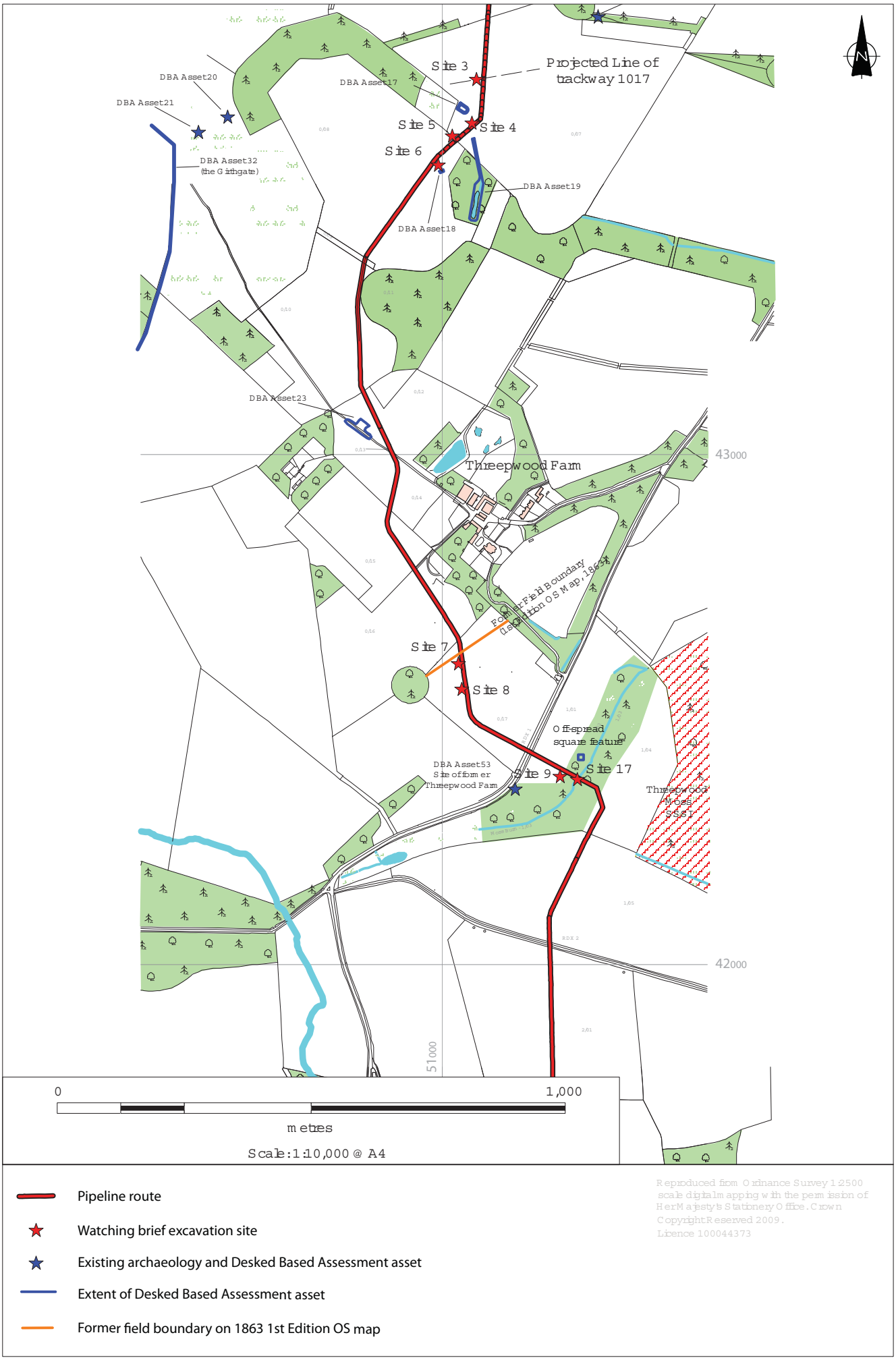

Figure 3: Archaeological Site Location Map 2

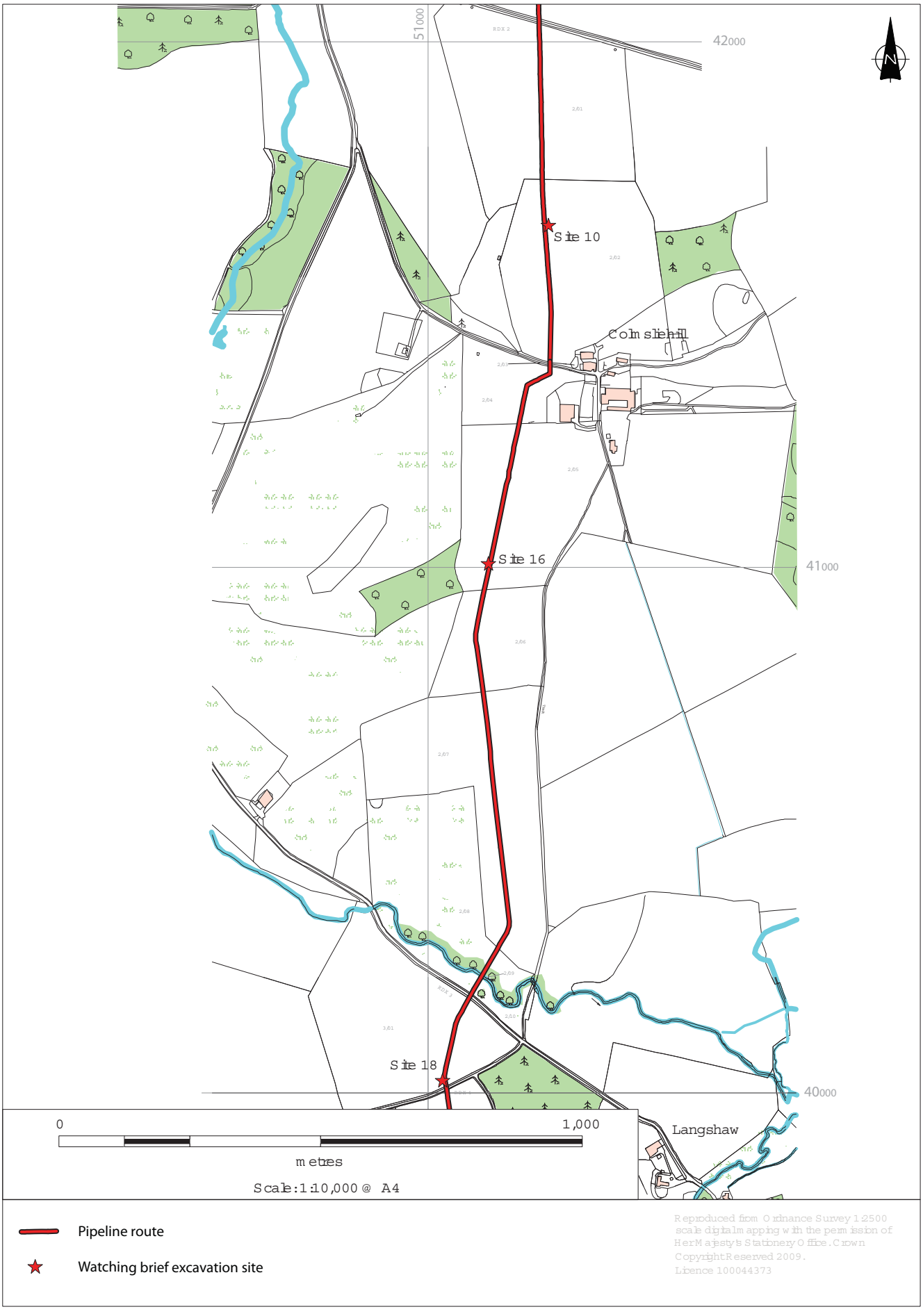

Figure 4: Archaeological Site Location Map 3

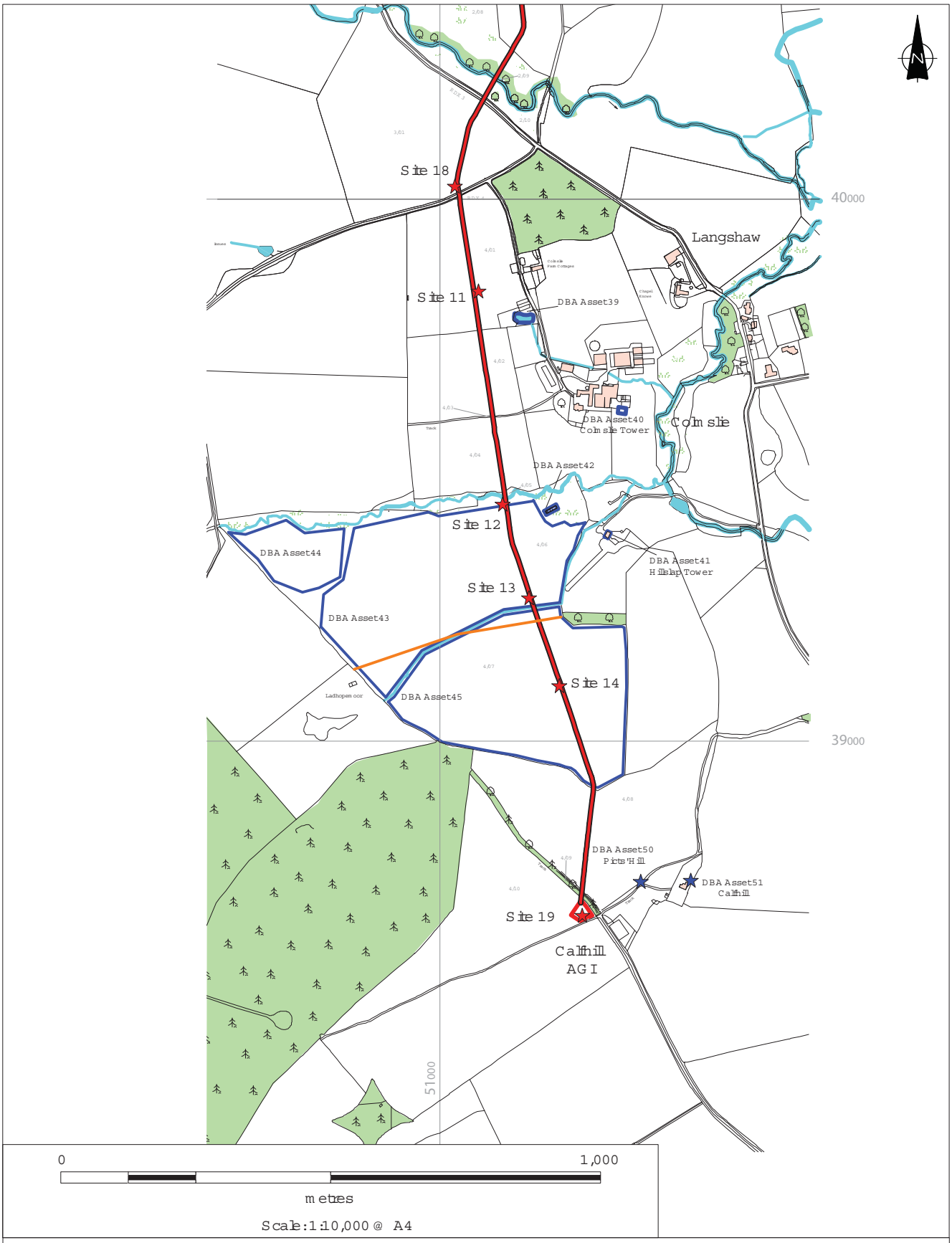

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Figure 5: Archaeological Site Location Map 4

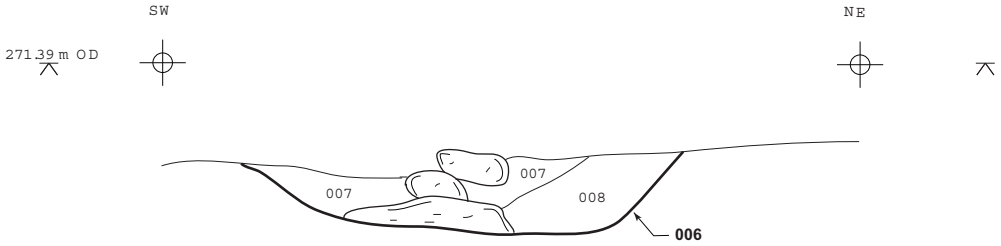

Figure 6: Site 1, Pit 006

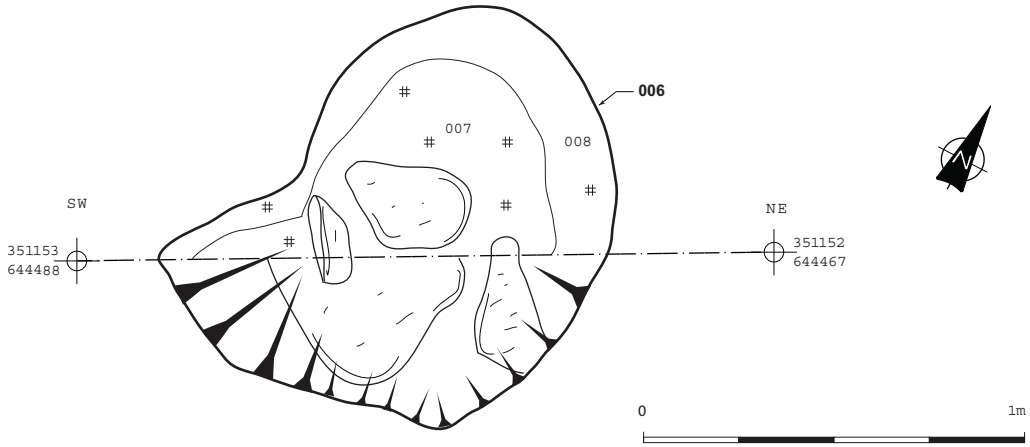

Figure 7: Site 1 Plan, Pit 006

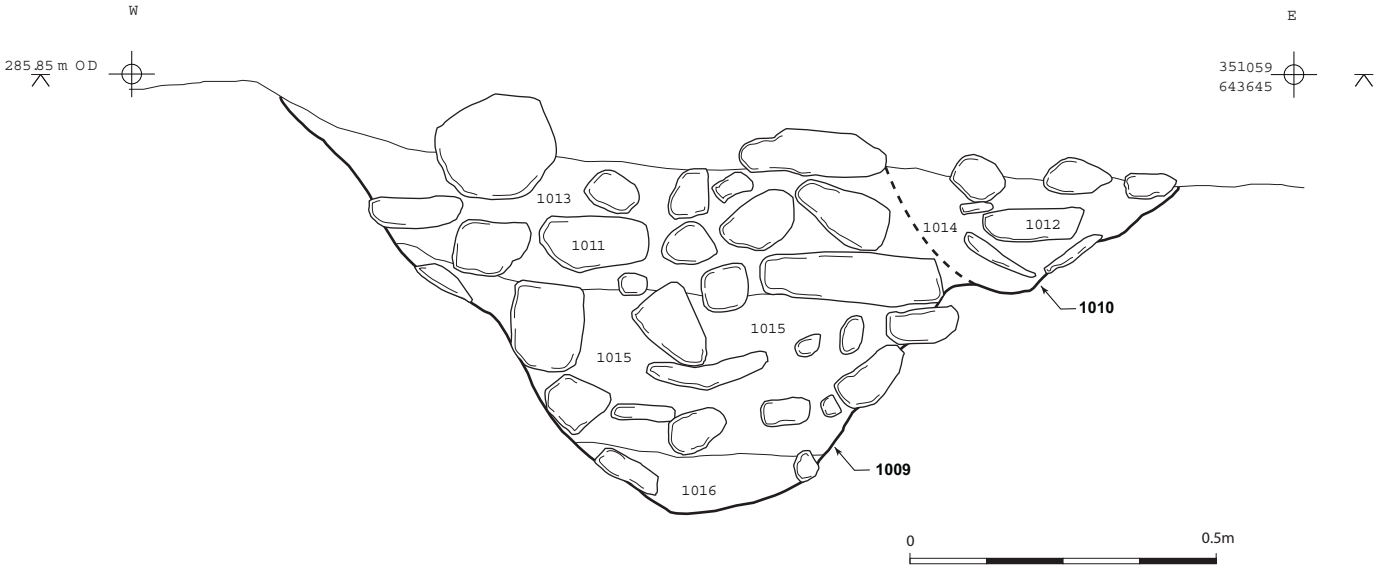

Figure 8: Site 4, Ditch 1009

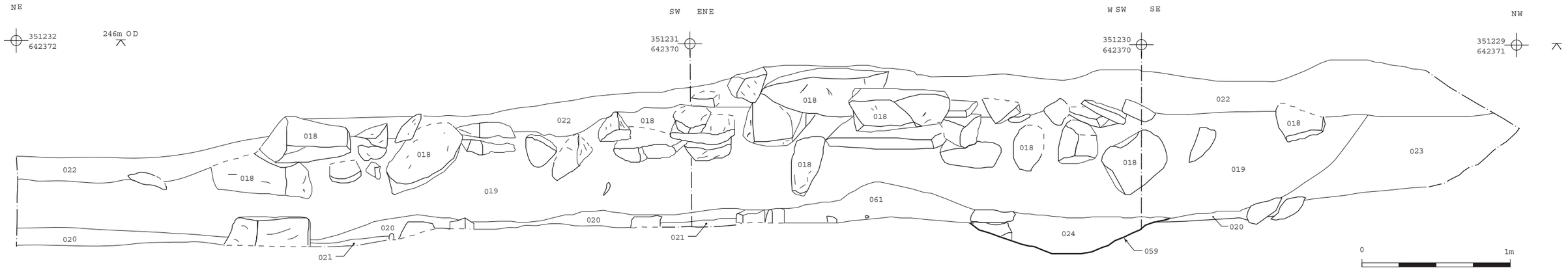

Figure 9: Site 9, Clearance Cairn 067

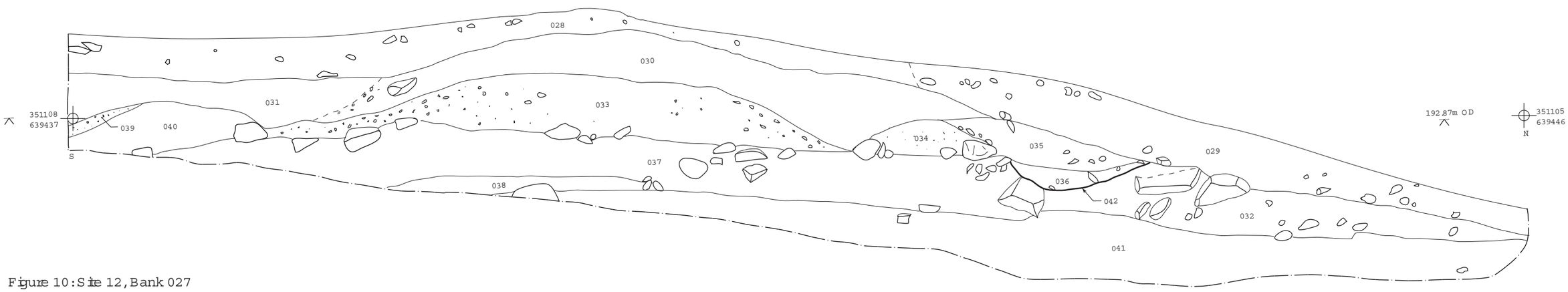

Figure 10: Site 12, Bank 027

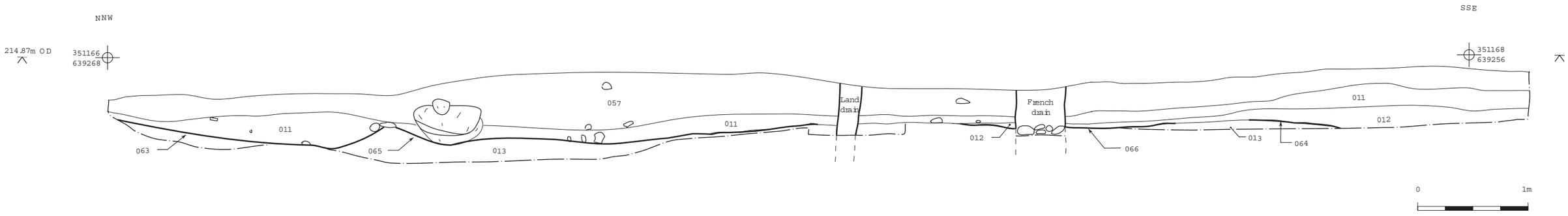

Figure 11: Site 13, Rig and Furrow, Plot 4/06

Figure 12: Site 14, Rig and Furrow, Plot 4/07

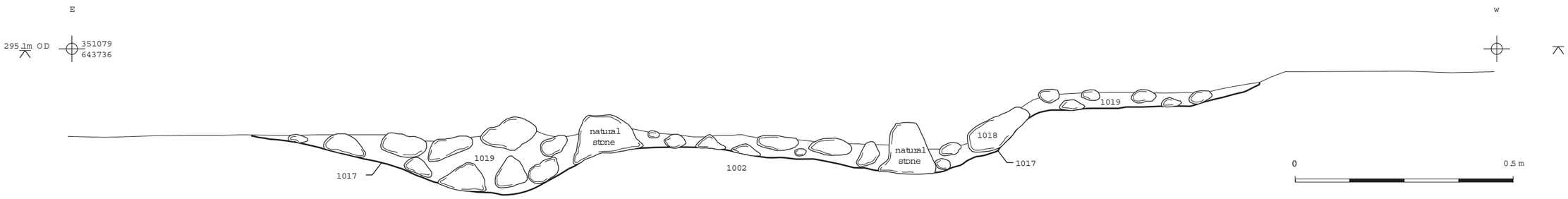

Figure 13: Site 3, Trackway 1017

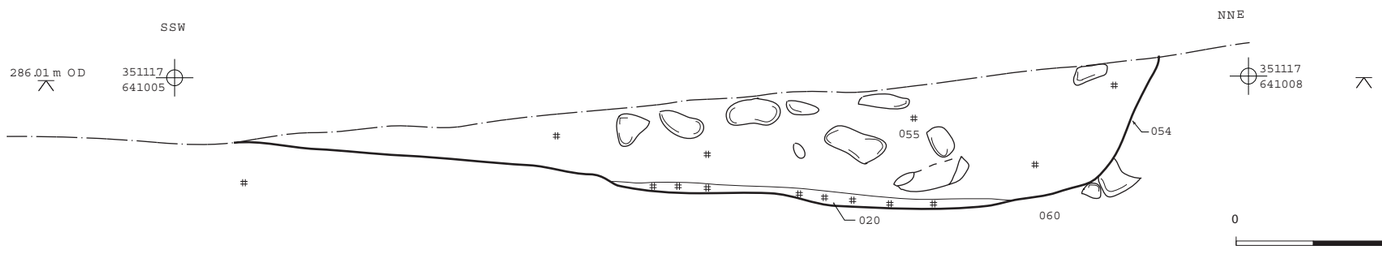

Figure 14: Site 16, Pit 054

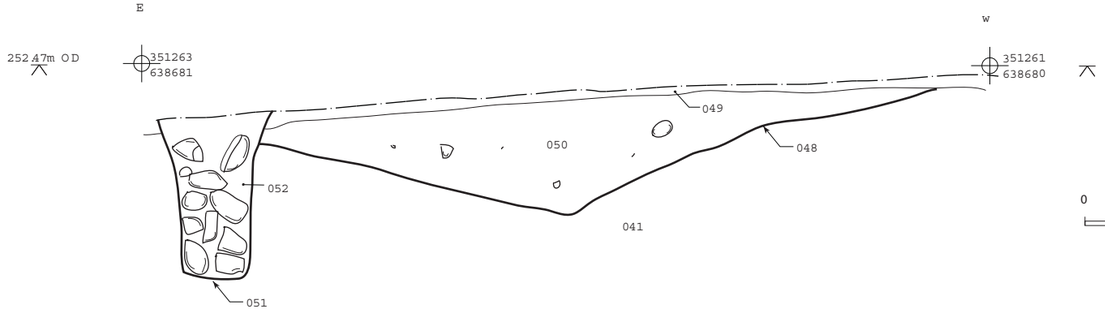

Figure 15: Site 19, Pit 006

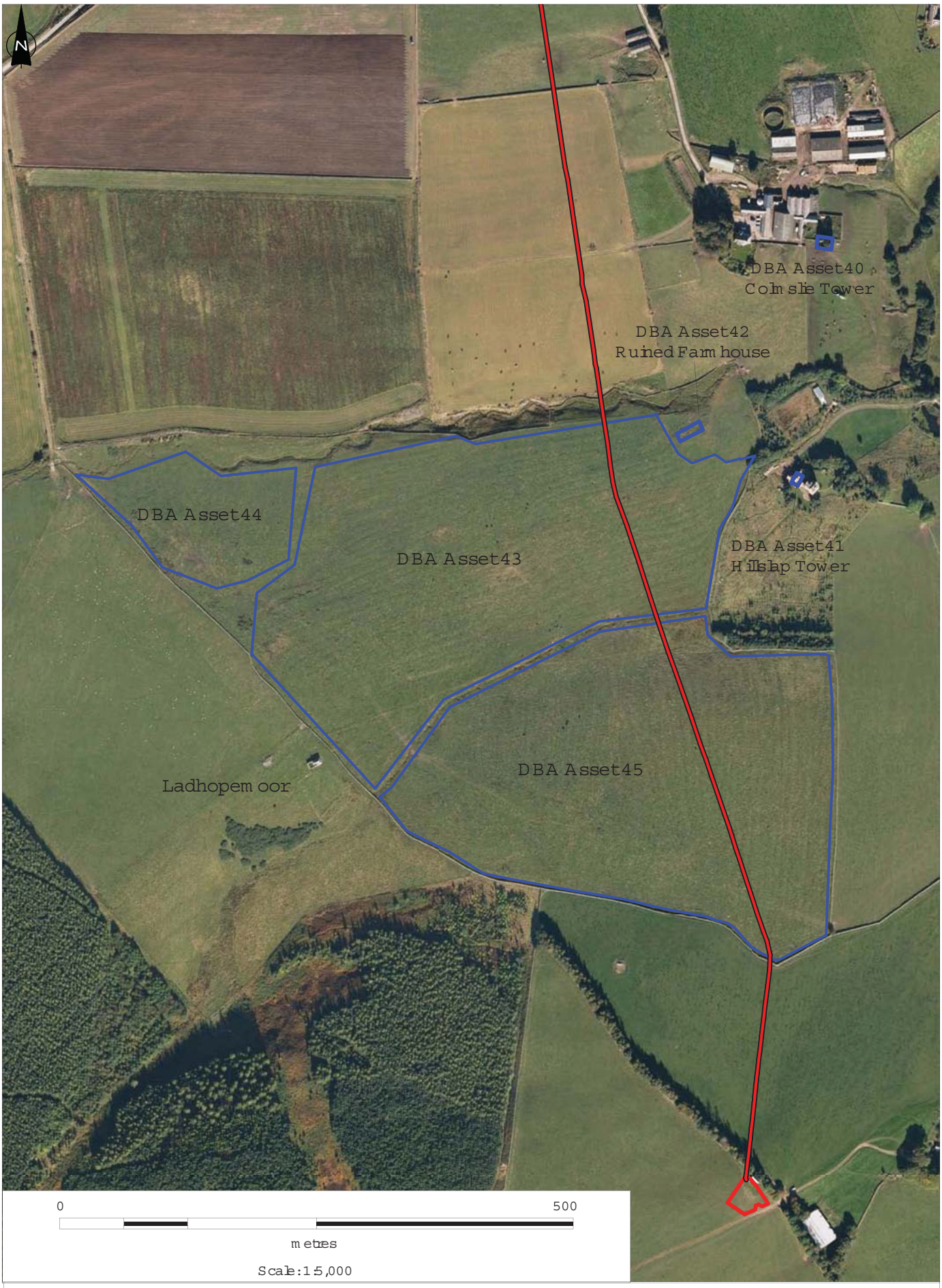

Figure 16: Aerial photo of rig and furrow

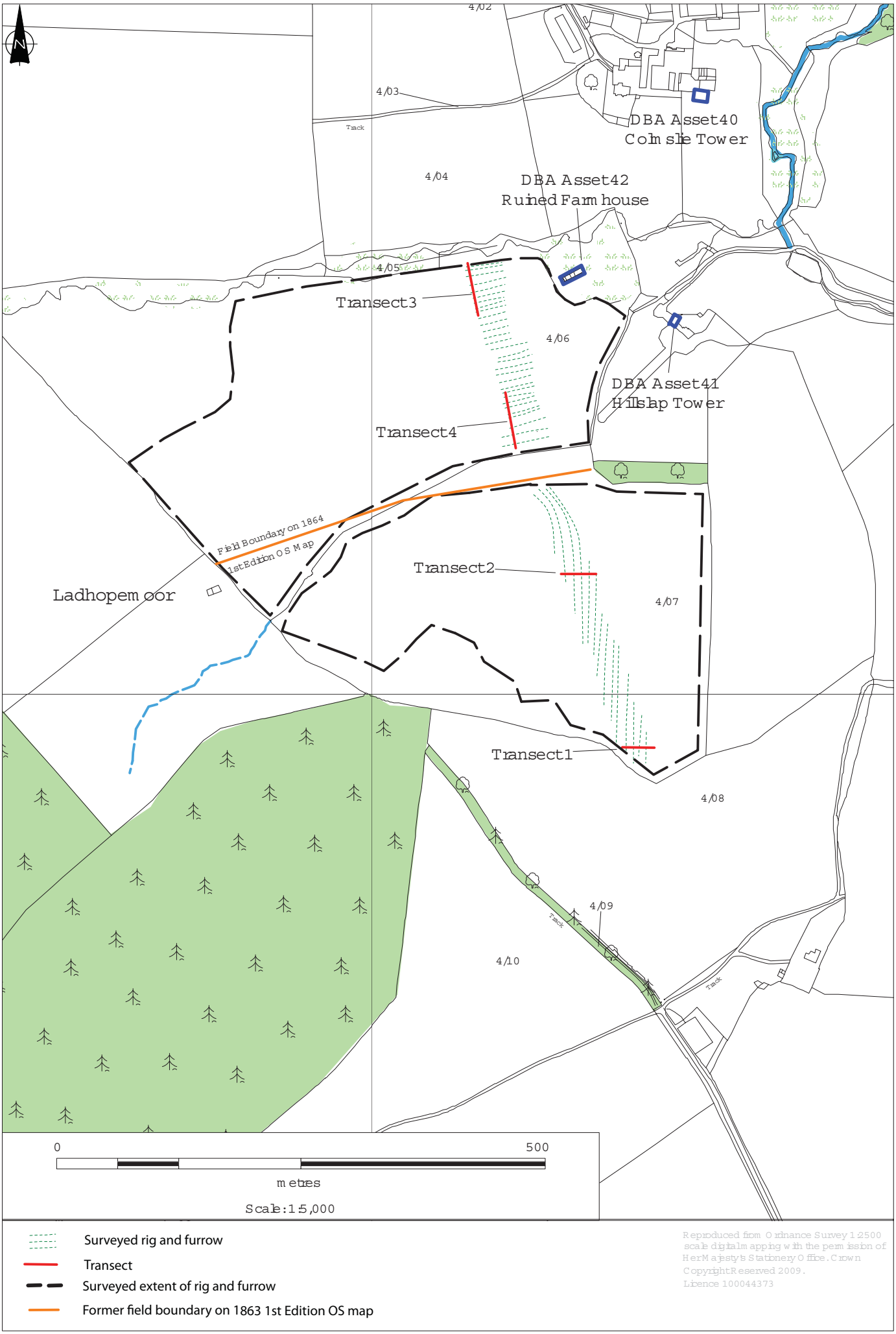

Figure 17: Rig and furrow survey

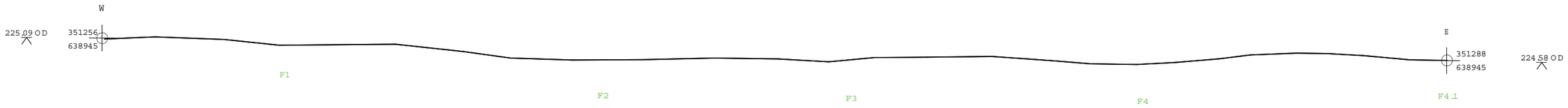

Figure 18: Transect1, pbt4/07. Scale 1:100

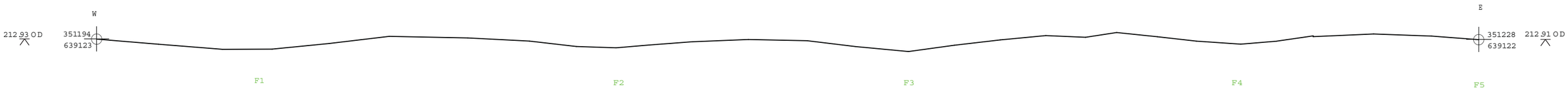

Figure 19: Transect2, pbt4/07. Scale Scale 1:100

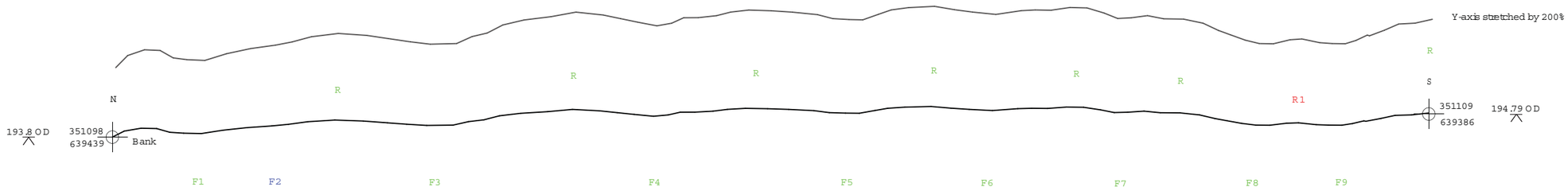

Figure 20: Transect3, pbt4/06. Scale 1:200

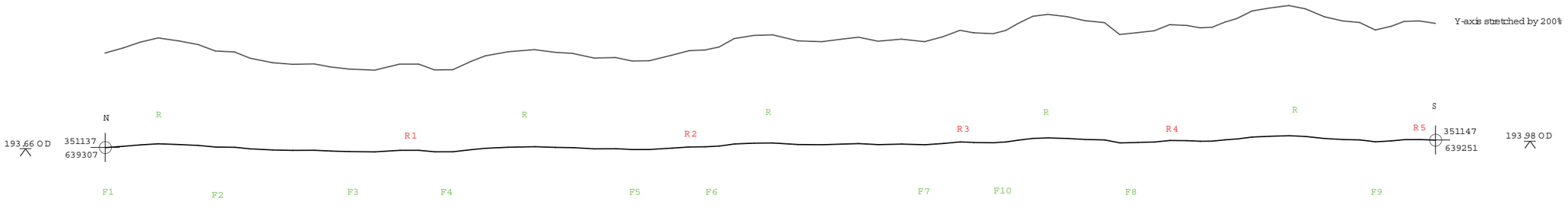

Figure 21: Transect4, pbt4/06. Scale 1:200

F1 Earthwork furrow as surveyed
R Earthwork rig
R1 Relict rig
F2 Later rig

Plate 1: Stone bank and possible clearance cairn adjacent to Site 2, facing south-east

Plate 2: Site 3, trackway 1017, facing south-west

Plate 3: Site 3, track-way 1017, facing north-east

Plate 4: Site 4, ditch 1009, facing south-east

Plate 5: Site 6, stone deposit 1003, facing north-east

Plate 6: Site 6, stone deposit 1000, facing south-west

Plate 7: DBA asset 18 adjacent to Site 6, facing south-east

Plate 8: Site 7, former field boundary, facing north

Plate 9: Site 6, clearance cairn

Plate 10: Rectangular feature adjacent to Site 9, facing south-east

Plate 11: Site 11, stone cundy

Plate 12: Site 12, bank, facing west

Plate 13: Site 12, bank, facing north-west

Plate 14: Rig and furrow in plot 4/07, facing south

Plate 15: Site 15, possible furrow 044

Plate 16: Site 16, pit 054

Plate 17: Site 17, deep peat deposit 019 at Moss Burn

Plate 18: Site 19, feature 048 at Calfhill AGI

APPENDIX 2: CONTEXT REGISTER

Context No.	Site No.	Section / Plot No.	Fill of	Description
001	-	Section 0		Top soil
002	-	Section 0		Natural subsoil
003	-	Section 0		Natural
004	7	0/17		Dark grey organic silty clay deposit infilling natural hollow.
005	8	0/17		Natural hollow in-filled with a grey silty clay with charcoal flecks
006	1	0/04		Pit cut
007	1	0/04	006	Mid grey friable sandy silt with occasional charcoal and large stones. Secondary fill of pit
008	1	0/04	006	Firm mid grey-brown sandy silty clay with a number of small stones and two large stones. Primary fill of pit
009	2	0/06		Dark grey silty clay deposit infilling natural hollow
010	13	4/06		Group number for rig and furrow. Includes 058, 011, 012 and 013.
011	13	4/06		Firm and sticky light brown-grey sandy clay with rare charcoal flecks. Subsoil / former agricultural soil.
012	13	4/06		Firm and very sticky blue-grey clay with infrequent small stones
013	13	4/06		Firm reddish brown clay with frequent rounded stones of varying sizes.
014	14	4/07		Group number for rig and furrow. Includes 058, 015 and 013.
015	14	4/07		Firm light orange brown silty clay with occasional charcoal flecks. Subsoil / former agricultural soil.
016	10	2/02		Quite loose dark grey-black silty clay containing charcoal and frequent angular stones infilling tree-throw.
017	10	2/02		Firm orange brown sandy clay with small angular stones and occasional burnt stone.
018	9	1/01		Loose tumble of mid to light yellowish grey large angular stones. Sizes ranged from 0.07m x 0.05m x 0.04m to 0.45m x 0.16m x 0.3m.
019	9	1/01		Firm black peat containing large stones and occasional wood fragments. Greatest depth beneath 018 is 0.4m and up to 1.9m at deepest in centre.
020	9	1/01		Firm mid-dark grey organic clay containing frequent charcoal
021	9	1/01		Off-white to light grey clay containing frequent angular stones. Natural
022	9	1/01		Loose mid grey-brown clayey silt. Topsoil above 018.
023	9	1/01		Firm but crumbly dark grey organic silty clay at bottom of slope and bordering peat.
024	9	1/01	059	Same as 021
025	11	4/01		Cut for stone lined culvert.
026	11	4/01	025	Large flat stones measuring c. 0.3m x 0.4m x 0.1m. Flat stones at base, flat uprights and flat capstones.
027	12	4/06		Group number for bank comprised of 028, 029, 030, 031, 032, 033, 034, 035, 036, 037, 038, 039, 040, 041 and 042.
028	12	4/06		Loose mid grey silty clay containing frequent sub-rounded and angular stones.
029	12	4/06		Fairly loose mid grey silty clay with frequent rounded and angular stones. Appears reasonably organic and contains

Context No.	Site No.	Section / Plot No.	Fill of	Description
				frequent Fe. flecks.
030	12	4/06		Firm light grey-brown sandy clay containing few rounded, sub-rounded and angular stones. Subsoil.
031	12	4/06		Firm light grey-brown sandy clay containing few rounded, sub-rounded and angular stones. Subsoil.
032	12	4/06		Firm mid grey clayey sand containing medium to large stones.
033	12	4/06		Very firm mid-light orange brown containing well sorted rounded and sub-rounded gravels.
034	12	4/06		Hard mid to light orange brown sandy gravel. Gravel is very small grained, largely flat, rounded and well sorted.
035	12	4/06	42	Firm mid orange brown clayey sandy gravels containing small sub-rounded gravels but also a small number of larger sub-rounded stones.
036	12	4/06	42	Well compacted but quite crumbly mid orange-brown clayey sand containing occasional angular and sub-rounded stone.
037	12	4/06		Solid mineralised light to dark grey sandy gravels. Gravels are of varying sizes including large angular and sub-angular stones.
038	12	4/06		Loose mid-grey sand with frequent small angular and sub-angular stones.
039	12	4/06		Firmly compacted but loose when scraped mid brown gravels. Very small rounded, sub-rounded and angular.
040	12	4/06		Well compacted but quite crumbly mid orange-brown (grey in places) fine clayey sand and rounded pebbles.
041	12	4/06		Very firm red / orange clay containing boulders and stones both rounded and angular.
042	12	4/06		Shallow cut feature with a rounded base. May be animal action.
043				Cancelled
044	15	0/06		Cut of a likely linear feature orientated NE to SW. Gently curving sides to flat base.
045	15	0/06	044	Firm but sticky mid orange-brown clay containing occasional charcoal. Primary fill.
046	15	0/06	044	Firm but often crumbly mid-dark grey silty clay with abundant charcoal. Secondary fill.
047	17	1/02		Firm light blue-grey clay. Natural beneath peat 019.
048	19	4/10		Possible pit cut. Gently and shallow sided at c. 25 degrees. Base is abrupt and pointed.
049	19	4/10		Firm mid grey silty-sandy clay containing angular and sub-rounded stones. Subsoil above 048 and 050.
050	19	4/10	048	Firm but sticky and malleable light grey and orange flecked sandy silty clay. Contains small sub-rounded and angular stones. Single fill of 048.
051	19	4/10		Cut for N-S French drain.
052	19	4/10	051	Contains loose angular and sub-rounded stones. Fill of 051.
053	18	2/10, 3/01& 4/01		Firm but brittle mid-grey sandy silty clay with large sub-rounded stones. Possibly mineralised in places. Fluvioglacial deposit.
054	16	2/05		Cut of pit or tree-throw. Rounded corners with gentle sloping side at SW and steep at the NE. Base is flat.
055	16	2/05	054	Firm to friable dark grey silty clay containing angular stones and charcoal flecks. Secondary fill of 054.
056	16	2/05	054	Firm to friable dark grey to black silty clay containing charcoal. Primary fill of 054.
057	13 & 14	4/06 & 4/07		Very crumbly and loose dark grey humic silty clay containing frequent small rounded stones and occasional flat

Context No.	Site No.	Section / Plot No.	Fill of	Description
				stones. Topsoil.
058	10	2/02		Hard mid to dark grey and occasionally dark red to purple greywacke and old red sandstone unconformities. Bedrock.
059	9	1/01		Cut of possible animal burrow. Gently sloping sides at c. 30 degrees to a gently rounded base. Aspect is probably N-S but unsure if this is a pit or a ditch or gully although no return or continuation observed so may exclude the possibility of being a linear feature.
060	16	2/05		Firm mid to dark weathered rock often within a red clay matrix. Natural.
061	9	1/01		Firm off-white light grey clay containing occasional small angular stones. Spoil up-cast from 059.
062	14	4/07		Furrow 2.8m wide and 0.4m deep from ground level. Slopes at c. 45 degrees on both sides to a flat base. Orientated north-south
063	13	4/06		Later furrow 2.4m wide and 0.5m at deepest from ground level. SSE extent descends at 45 degrees to a short (0.6m wide) flat base before rising gently to the NNW. Orientated east-west.
064	13	4/06		Early furrow 2.4m wide and 0.52m from ground level. Only NNW corner is exposed which is gently sloping (c.10 degrees) but it is likely to have been modified by later ploughing. Base not observed. Orientated east-west.
065	13	4/06		Early furrow 3.8m wide and 0.67m deep from ground level (below rig). Descends at c.30 degrees from the NNW for a short distance before descending gradually to a wide concave base. Descends gradually from the SSE. A large stone sits on the NNW edge of the furrow. Orientated east-west. Filled over by furrow material.
066	13	4/06		Later furrow 2m wide and 0.2m deep from ground level (within earthwork furrow). Both sides are gently sloping (<10 degrees) to a flat base. Orientated East-West. Cut by French drain.
1000	6	0/07		Medium and large natural sub-angular greywacke cobbles
1001	6	0/07		Grey-brown silty clay matrix around stones 1000
1002	3 to 6	0/07 & 0/08		Natural subsoil.
1003	6	0/07		Small, medium and large natural sub-angular greywacke cobbles
1004	6	0/07		Grey-brown silt with occasional grits. Matrix around stones
1005	5	0/07		Grey clay with charcoal flecks (natural deposit)
1006	3 to 6	0/07 & 0/08		Context for unstratified/topsoil finds
1007	5	0/07		Grey clay with charcoal flecks (natural deposit)
1008	5	0/08		Dark red and pink concreted sand with soft sandy silt
1009	4	0/08		Linear cut for ditch
1010	4	0/08		Linear cut for field drain merging with ditch 1009
1011	4	0/08	1009	Small and medium cobbles (assumed field clearance).
1012	4	0/08	1010	Small and medium cobbles (assumed field clearance).
1013	4	0/08	1009	Light grey-brown silt, matrix around stones in 1009
1014	4	0/08	1010	Light grey-brown silt, matrix around stones in 1010
1015	4	0/08	1009	Orange-brown clay-silt under 1013
1016	4	0/08	1009	Grey-orange-brown sandy silt under 1015
1017	3	0/08		Shallow linear cut for track-way
1018	3	0/08	1017	Small and medium pebbles and cobbles. Track-way surface

Context No.	Site No.	Section / Plot No.	Fill of	Description
1019	3	0/08	1017	Brown soil with orange subsoil flecks over 1018

APPENDIX 3: PHOTOGRAPHIC REGISTER

Colour Slides and Monochrome Prints

Photo No.	Plot No.	Description	Taken from
Film 1		**Monochrome**	
1-2	1/01	Site 9, clearance cairn 018	E
3-4	2/02	Site 10, burnt tree roots 016	SE
5-6	2/02	Site 10, burnt tree roots 016	NE
7-9	4/07	Site 14, rig and furrow 014	SW
10	4/06	Site 13, rig and furrow 010	SW
11-19	4/06	Site 13, rig and furrow 010	W
20-21	0/06	Site 2, organic deposit 009	E
22	0/06	Site 2, organic deposit 009	S
23	0/06	Site 2, organic deposit 009	W
24	0/06	Site 2, organic deposit 009	N
25-26	0/04	Site 1, post-ex shot of pit 006	SE
27-28	0/04	Site 1, post-ex shot of pit 006	W
29-30	0/17	Site 8, charcoal flecked clay deposit 005	NE
31	0/17	Site 8, charcoal flecked clay deposit 005	SE
32-35	0/17	Site 7, organic deposit 004	NE
Film 2		**Colour Slide**	
1	1/01	Site 9, general shot of clearance cairn 018	E
2-5	1/01	Site 9, clearance cairn 018	E
6-7	2/02	Site 10, burnt tree roots 016	SE
8-9	2/02	Site 10, burnt tree roots 016	NE
10-12	4/07	Site 14, rig and furrow 014	SW
13	4/06	Site 13, rig and furrow 010	SW
14	4/06	Site 13, rig and furrow 010	NW
15-20	4/06	Site 13, rig and furrow 010	W
21-22	0/06	Site 2, organic deposit 009	E
23	0/06	Site 2, organic deposit 009	S
24	0/06	Site 2, organic deposit 009	W
25	0/06	Site 2, organic deposit 009	N
26-27	0/04	Site 1, post-ex shot of pit 006	SE
28-29	0/04	Site 1, pre-ex shot of pit 006	W
30-31	0/17	Site 8, charcoal flecked clay deposit 005	NE
32	0/17	Site 8, charcoal flecked clay deposit 005	SE
33-34	0/17	Site 7, organic deposit 004	S
35-36	0/17	Site 7, organic deposit 004	SW
Film 3		**Monochrome**	
1-7		Blank	
8-9	2/05	Site 16, pit or tree-throw 054	East
10	3/01	Site 18, natural deposit 053	SE
11-12	3/01	Site 18, natural deposit 053	E
13-14	4/10	Site 19, feature 048	N
15-16	1/02	Site, 17, peat 019	E
17-19	0/06	Site 15, furrow 044	E

Photo No.	Plot No.	Description	Taken from
20-21	4/06	Site 12, bank 027	N
22-23	4/06	Site 12, bank 027	S
24-25	4/06	Site 12, bank 027	E
26-27	4/01	Site 11, stone culvert 026	NW
28-29	1/01	Site 9, clearance cairn 018	S
30-33	1/01	Site 9, clearance cairn 018	SE
34-35	1/01	Site 9, clearance cairn 018	E
Film 4		**Colour Slide**	
1-10		Blank	
11-12	2/05	Site 16, pit or tree-throw 054	E
13	3/01	Site 18, natural deposit 053	SE
14-15	3/01	Site 18, natural deposit 053	E
16-17	4/10	Site 19, feature 048	N
18-19	1/02	Site, 17, peat 019	E
20	0/06	Site 15, furrow 044	SE
21-22	0/06	Site 15, furrow 044	E
23-24	0/07	Site 12, bank 027	N
25-26	0/07	Site 12, bank 027	S
27-28	0/07	Site 12, bank 027	E
29-30	4/01	Site 11, stone culvert 026	NW
31-32	1/01	Site 9, clearance cairn 018	S
33-36	1/01	Site 9, clearance cairn 018	SE
Film 100		**Colour Slide and Monochrome** (Different films but same film number)	
1-2	0/07	Site 1, stones 1000 & matrix 1001 pre-excavation	S
3-4	0/07	Site 1, stones 1000 & matrix 1001 pre-excavation	E
5-6	0/07	Site 2, stones 1002 & matrix 1003 pre-excavation	S
7-8	0/07	Site 2, stones 1002 & matrix 1003 pre-excavation	ESE
9-10	0/07	Site 1, Quad 1, SW facing section	SW
11-12	0/07	Site 1, Quad 1, NW facing section	NW
13-14	0/07	Site 1, Quad 3, SE facing section	SE
15-16	0/07	Site 1, Quad 3, NE facing section	NE
17-18	0/07	Site 1, general view	S
19-20	0/07	Site 3, grey clay patch 1005 pre-excavation	S
21-22	0/07	Site 4, grey clay patch 1007 pre-excavation	NE
23-24	0/08	Site 6, stone filled drain 1009 cleaned	S
25-26	0/08	Looking N from Site 6 showing drain emerging from field as an open ditch before running through woodland towards mill-pond	S
27-28	0/08	Site 6 general view	N
29-30	0/08	Site 5, red/orange patch 1008 pre-excavation	ESE
31-32	0/07	Site 3, grey clay patch 1005 section	N
33-34	0/07	Site 4, grey clay patch 1007 section	NE
35-36	0/08	Site 5, red/orange patch 1008 section	NE
Film 101		**Colour Slide and Monochrome** (Different films but same film number)	
1-2	0/07	Site 2, Quad 3, E facing section 1003-4	E
3-4	0/07	Site 2, Quad 3, S facing section 1003-4	S

Photo No.	Plot No.	Description	Taken from
5-6	0/07	Site 2, Quad 2, N facing section 1003-4	N
7-8	0/07	Site 2, Quad 2, W facing section 1003-4	NW
9-10	0/07	Site 2, general views post-excavation	E
11-12	0/07	General views of Plot 07 from Plot 08	SW
13-14	0/08	Site 6, Slot 1,S facing section 1009, 1013, 1015, 1016	S
15-16	0/08	Site 6, Slot 1,N facing section1009, 1013, 1015, 1016	N
17-18	0/08	Site 6, Slot 1,general view 1009, 1013, 1015, 1016	W
19-20	0/08	Site 7, cleaned pre-excavation 1017-1019	E
21-22	0/08	Site 7, cleaned pre-excavation1017-1019	W
23-26	0/08	Site 7, cleaned pre-excavation1017-1019	N
27-28	0/08	Site 7, soil profile showing topsoil 1006 overlying 1019 over 1018	ESE
29-32	0/07	Site 2 in foreground with slight terrace leading towards field gate beyond. Edge of pipeline section recut to show no archaeology is present	S
33-34	0/08	Site 7, Slot 1, 1017-1019 section	E
35-36	0/08	Site 7, Slot 1, 1017-1019 general view	S
Film 102		**Colour Slide and Monochrome** (Different films but same film number)	
1-2	0/08	Site 7, Slot 1, 1017-1019 section	W

Digital Photos

Photo No.	Plot No.	Description	Taken from
1	0/08	DBA Asset 18, showing line of denuded wall	N
2	0/17	Topsoil stripping general shot	N
3	0/17	Stripping of at site 7, deposit 004	S
4	0/17	Log retrieved from deposit 004, Site 7	W
5	0/17	Slot through 005, Site 8	E
6	0/17	Drainage trench through 004	W
7	0/13	General shot of plot 0.13	S
8	1/02	Building in plot 1/02, off spread	W
9	0/08	General shot of plot 0/08	N
10	0/06	General shot of plot 0/06	N
11	0/17	Stripping of RDX1 pipe-dump	S
12	1/05	General shot of plot 1.05	SW
13	0/06	Site 2, natural deposit 009	NE
14	0/06	Off spread ruined building or clearance cairn adjacent to Site 2	NW
15	2/05	General shot of plot 2/05	N
16	4/07	Pre-ex shot of rig and furrow in plot 4/07	N
17	4/01	Site 18, large stone deposit in plot 4/01	N
18	4/01	Site 18, large stone deposit in plot 4/01	N
19	4/06	General shot of stripped rig and furrow in plot 4/06. Note rig and furrow at edge of plot	N
20	4/10 & 4/11	General shot of top-spoil stripping at AGI site	NE
21	4/12	General shot of top-spoil stripping at AGI site	W
22	4/10	General shot of top-spoil stripping at AGI site	SE
23	4/10	General shot of top-spoil stripping at AGI site	N

Photo No.	Plot No.	Description	Taken from
24	2/02	Site 10, burnt tree roots 016	SE
25	2/02	Site 10, burnt tree roots 016	E
26	1/01	Site 9, clearance cairn 018	N
27	1/01	Dressed grey sandstone outside spread west of 1/01. Probably derived from the former Threepwood Farm.	E
28	1/01	Site 9, working shot	N
29	4/06	Pre-excavation shot of Site 12, field bank	SE
30	4/01	Site 11, culvert	W
31	4/01	Mill pond (DBA asset 42) as fed by culvert	NW
32	4/06	Post excavation shot of Site 12, field bank	E
33	4/06	Post excavation shot of Site 12, field bank	NW
34	4/06	Post excavation shot of Site 12, field bank	SE
35	0/02	General shot of pipe-trench	N
36	0/04	Silt deposits in pipe-trench	SE
37	0/06	Site 15, rig and furrow in pipe-trench	E
38	0/08	General shot of pipe-trench	S
39	1/02	Site 17, peat 019 and clay 047	N
40	1/02	Site 17, peat 019 prior to sampling	E
41	1/02	Site 17, peat 019 being sampled	E
42	1/02	Site 17 showing pipe-trench	S
43	0/14	Pipe-trench. Unconformity or tilt in 0.14.	S
44	1/01	Pipe-trench, looking towards Site 17	N
45	4/10	Cut for AGI footings	W
46	4/10	Site 19, feature 048	N
47	Section 4	Rig and furrow at Hillslap. Taken from 2/06.	N
48	2/02	Irregular angulation and bedding of bedrock	N
49	2/02	Clay band at Southern end of plot	N
50	3/01	Site 18, natural deposit 053	S
51	4/01	Site 18, natural deposit 053 in plot 4/01	N
52	2/05	Site 16, pit 054	E
53	2/06	General trench shot	N
54	4/07	Trench at un-named burn crossing	N
55	2/08	Top-soil stripping low-lying area around Allan Water	SW
56	2/08	Trenching towards Allan Water	NE
57	4/08	General trenching shot; note clay deposits.	S
58	2/08	Trenching towards Allan Water	NE
59	2/10 & 2/09	Allan Water trench	SW
60	2/10	Allan Water trench	SW
1001-2	07	Site 1, stones 1000 & matrix 1001 pre-excavation	S
1003	07	Site 1, stones 1000 & matrix 1001 pre-excavation	E
1004-6	07	Site 1 pre-ex and panorama W to S showing upstanding clearance cairn in the field to the south	E to N
1007-8	07	Site 2, stones 1002 & matrix 1003 pre-excavation	S
1009-10	07	Site 2, stones 1002 & matrix 1003 pre-excavation	ESE
1011	07	Site 1, Quad 1, SW facing section	SW
1011	07	Site 1, Quad 1, NW facing section	NW
1013	07	Site 1, Quad 3, SE facing section	SE

Photo No.	Plot No.	Description	Taken from
1014	07	Site 1, Quad 3, NE facing section	NE
1015-6	07	Site 1, general view	S
1017-8	07	Site 3, grey clay patch 1005 pre-excavation	S
1019-20	07	Site 4, grey clay patch 1007 pre-excavation	NE
1021-2	08	Site 6, stone filled drain 1009 cleaned (with Site 7 top right)	S
1023-4	08	Looking N from Site 6 showing drain emerging from field as an open ditch before running through woodland towards millpond	S
1025-6	07/08	View W from Site 6 towards Sites 1-2	W
1027-9	08	Site 6 general view	N
1030-1	08	Site 5, red/orange patch 1008 pre-excavation	ESE
1032-33	07	Site 3, grey clay patch 1005 section	N
1034-5	07	Site 4, grey clay patch 1007 section	NE
1036-7	08	Site 5, red/orange patch 1008 section	NE
1038	08	Continuation of the Site 6 ditch to the south	N
1039	07	Site 2, Quad 3, E facing section 1003-4	E
1040-1	07	Site 2, Quad 3, S facing section 1003-4	S
1042	07	Site 2, Quad 2, N facing section 1003-4	N
1043	07	Site 2, Quad 2, W facing section 1003-4	NW
1044-5	07	Site 2, general views post-excavation	E
1046	07	General views of Plot 07 from Plot 08	SW
1047-52	07/08	General views of Sites 1-7 (11/06/10) in Plots 07-08	Various
1053	08	Working shot, Site 6 planning in progress	-
1054-6	08	Site 6, Slot 1,S facing section 1009, 1013, 1015, 1016	S
1057	08	Site 6, Slot 1 general view	E
1058-60	08	Site 6, Slot 1,N facing section1009, 1013, 1015, 1016	N
1061-2	08	Site 6, Slot 1,general view 1009, 1013, 1015, 1016	W
1063-5	08	Site 7, cleaned pre-excavation 1017-1019	E
1066-7	08	Site 7, cleaned pre-excavation1017-1019	W
1068-9	08	Site 7, cleaned pre-excavation1017-1019	N
1070-4	08	Site 7, general views of the cobbles 1018	Various
1075	08	Site 7, soil profile showing topsoil 1006 overlying 1019 over 1018	ESE
1076-7	07	Site 2 in foreground with slight terrace leading towards field gate beyond. Edge of pipeline section recut to show no archaeology	S
1078-80	08	Site 7, Slot 1, 1017-1019 section	E
1081	08	Site 7, Slot 1, 1017-1019 general view	S
1082-3	08	Site 7, Slot 1, 1017-1019 section	W
1084-6	08	Threepwood Farmstead. General views of cobble trackway (currently in use) crossing the pipeline route & leading downhill to the farmstead	N & NW

APPENDIX 4: FIELD DRAWINGS REGISTER

Dwg No.	Sheet No.	Plot No.	Scale	Plan / Section	Description/contexts
1	LM1	0/04	01:20	S	Pit 004 post-excavation, SE facing
2	LM1	0/04	01:20	P	Pit 004 post-excavation
3	LM1	4/06	01:20	S	Rig and furrow 010 post-excavation, WSW facing
4	LM1	4/07	01:20	S	Rig and furrow 014 post-excavation, SW facing
5	LM2	1/01	01:10	S	Clearance cairn 067 post-excavation, various facing
6	LM2	4/06	01:20	S	Bank 027 post-excavation, East facing
7	LM2	4/10	01:20	S	Feature 048 post-excavation, N facing
8	LM2	2/05	01:10	S	Pit 054 post-excavation, ESE facing
1000	CFA1	0/07	01:20	P	Stones 1000 and matrix 1001 pre-excavation
1001	CFA1	0/07	01:10	S	Stones 1000 and matrix 1001, Quad 3, SE facing
1002	CFA1	0/07	01:10	S	Stones 1000 and matrix 1001 Quad 1, NW facing
1003	CFA1	0/07	01:10	S	Stones 1000 and matrix 1001 Quad 3, NE facing
1004	CFA1	0/07	01:10	S	Stones 1000 and matrix 1001 Quad 1, SW facing
1005	CFA2	0/07	01:20	P	Stones 1003 and matrix 1004 pre-excavation
1006	CFA3	0/07	01:10	S	Stones 1003 and matrix 1004, Quad 3, E facing
1007	CFA3	0/07	01:10	S	Stones 1003 and matrix 1004, Quad 3, S facing
1008	CFA3	0/07	01:10	S	Stones 1003 and matrix 1004, Quad 2, N facing
1009	CFA3	0/07	01:10	S	Stones 1003 and matrix 1004, Quad 2, W facing
1010	CFA4	0/08	01:20	P	Linear ditch 1009 & drain 1010 & fills pre-excavation
1011	CFA4	0/08	01:10	S	Linear ditch 1009 & fills S facing
1012	CFA5	0/08	01:20	P	Track-way 1017 pre-excavation
1013	CFA6	0/08	01:10	S	Track-way section E facing 1017-9
1014	CFA5	0/08	01:20	P	Track-way 1017, post-ex plan of trench through track-way

APPENDIX 5: SAMPLE REGISTER

Sample No.	Plot No	Context No.	Description	Volume (l.)
1	0/17	004	*Wood in humic peaty deposit	-
2	0/04	007	Sandy silt secondary fill of pit 006	1.5
3	0/04	008	Silty sandy clay primary fill of pit 006	3
4	01/01,02	019	Peat beneath clearance cairn 018	-
5	01/01	020	Grey organic clay with charcoal beneath peat 019	3
6	01/01	024	Feature 059 under 019	3.5
7	0/06	045	Primary clay fill of ?furrow 044	3.75
8	0/06	046	Secondary fill of 044	5
9	4/06	036	Sandy clay fill of ?furrow 042	2
10	4/06	040	Sandy clay fill of ?furrow 043	3
11	1/02	019	*Column of peat underlying clearance cairn	-
12	4/10	050	Fill of pit 048	4.5
13	3/01	053	*Deposit in 3/01 –possibly fluvio-glacial deposit	-
14	2/05	055	Secondary fill of 054	4
15	2/05	056	Primary fill of 054	4.5
1000	0/08	1016	Primary fill of linear ditch 1009	2

*** Not submitted for assessment**

APPENDIX 6: FINDS REGISTER **(by Sue Anderson)**

Site	Plot	Context*	Find type	No.	Wt (g)	Notes	Spotdate (century)
-	0/10	u/s	Flint	8	29	natural gravel	
-	0/12	u/s	Flint	1	1	natural gravel	
-	0/12	u/s	Coal	1	1	burnt	
-	0/12	u/s	Pottery	15	35	12 REFW (incl spongeware, TP, PEW), 1 BRSW, 2 YELW	19
-	0/12	u/s	Fe	2	7	nails	
-	0/12	u/s	CBM	3	14	machine-pressed	19-20
-	0/12	u/s	Stone	11	426	burnt lime	
-	0/14	u/s	Pottery	1	1	REFW rim	19-20
-	0/15	u/s	Clay Pipe	1	1	stem, narrow bore	19
-	0/15	u/s	Pottery	5	21	4 REFW (TP & spongeware), 1 LSRW	19
-	0/16	u/s	Pottery	4	27	2 REFW, 1 REFR, 1 LSRW	19
-	0/16	u/s	Clay Pipe	1	4	frag of bowl, burnt	
-	0/17	u/s	Pottery	4	22	LSRW	19
-	0/17	u/s	Pottery	6	33	5 REFW (HP & TP), 1 REFR handle	19
-	0/17	u/s	Glass	1	3	white moulded glass rim	19-20
-	1/01	u/s	Pottery	5	16	3 REFW, 1 LSRW, 1 REFR	19
-	1/01	u/s	Flint	1	3	prob natural	
-	1/01	019 (u/s?)	Pottery	1	11	YELW	19-20
-	1/05	u/s	Pottery	1	1	REFW (HP)	
-	2/01	u/s	Stone	1	155	burnt lime	
-	2/01	u/s	Stone	1	76	limestone/chalk	
-	2/01	u/s	Pottery	2	5	2 REFW (HP & BG)	19
-	2/01	u/s	Fe	1	7	nail	
-	2/02	u/s	Pottery	2	6	REFW base & small HP handle	19
-	2/02	u/s	Clay Pipe	1	2	stem with heel	L.18-E.19
-	2/04	u/s	Pottery	3	11	2 REFW rim (TP), 1 BRSW	19
-	2/05	u/s	Fe	1	6	nail	
-	2/07	u/s	Pottery	1	3	REFW rim	19-20
-	2/08	u/s	Pottery	2	14	LBW coarse fabric	19
-	2/08	u/s	Stone	7	8	burnt chalk, orange	
-	4/01	u/s	Clay Pipe	1	2	stem	
-	4/01	u/s	Stone	4	84	burnt lime	
-	4/01	u/s	Fe	1	35	unident lump	
-	4/02	u/s	Clay Pipe	1	2	stem, wide bore	17/18
-	4/02	u/s	Pottery	2	22	REFW base, LSRW rim	19
-	4/07	u/s	Stone	1	5	limestone/chalk	
-	4/10	u/s	Pottery	2	1	REFW	
-	4/10	u/s	Stone	1	23	fossil?	
4	0/07	1016	Glass	3	17	Thin green bottle glass with numerous bubbles	18
6	0/08	1004	Flint	1	1	Small flake of white flint with some	Prehist.

Site	Plot	Context*	Find type	No.	Wt (g)	Notes	Spotdate (century)
						patination	
6	0/08	1006 (u/s)	Flint	1	4	Flake of brown flint / chert	Prehist.

APPENDIX 7: DISCOVERY AND EXCAVATION IN SCOTLAND ENTRY

LOCAL AUTHORITY:	Scottish Borders
PROJECT TITLE/SITE NAME:	Borders Reinforcement Phase 2: Newhouses to Calfhill Natural Gas Pipeline
PROJECT CODE:	CALF3 / NHC10
PARISH:	Melrose
NAME OF CONTRIBUTOR:	Ian Suddaby and Mark Ward
NAME OF ORGANISATION:	CFA Archaeology Ltd on behalf of Land and Marine Project Engineering
TYPE(S) OF PROJECT:	Gas pipeline watching brief and excavation
NMRS NO(S):	None
SITE/MONUMENT TYPE(S):	Pits, rig and furrow, clearance cairns, ditch, track-way, deep peat deposits
SIGNIFICANT FINDS:	None
NGR (2 letters, 6 figures)	NT 513 387 - NT 513 448
START DATE (this season)	01/06/10
END DATE (this season)	30/07/10
PREVIOUS WORK (incl. *DES* ref.)	Evaluation, DES 2010 (CFA)
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	A programme of archaeological works was undertaken during construction of a natural gas pipeline between Calfhill and Newhouses in the Scottish Borders. A watching brief during the removal of topsoil and trench excavation was carried out by archaeological personnel from Land and Marine Project Engineering. A number of sites were revealed including clearance cairns, a ditch, a track-way, rig and furrow, pits and deep peat deposits. A number of unstratified finds were recovered dating mainly to the 18th and 19th centuries. Flint fragments where also recovered but helped little in dating any of the above features. Excavations were conducted by staff from Land and Marine Project Engineering and CFA.
PROPOSED FUTURE WORK:	N/A
CAPTION(S) FOR ILLUSTRS:	N/A
SPONSOR OR FUNDING BODY:	Land & Marine Project Engineering
ADDRESS OF MAIN CONTRIBUTOR:	Land and Marine Project Engineering, Dock Road North, Bromborough, Wirral, CH62 4LN. CFA, The Old Engine House, Eskmills Park, Musselburgh, East Lothian, EH21 7PQ.
EMAIL ADDRESS:	cfa@cfa-archaeology.co.uk mark.ward@landandmarine.com
ARCHIVE LOCATION (intended/deposited)	National Monuments Record for Scotland (NMRS) Scottish Borders Council Sites and Monuments Record (SMR)