



CLAPHAM CLUSTER WASTE WATER TREATMENT WORKS PIPELINE,

North Yorkshire

**Strip and Record
Investigation and
Watching Brief**



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SUMMARY

United Utilities proposed the construction of a waste water pipeline in the Clapham area of North Yorkshire (SD 7270 6970 – SD 7640 6720 and SD 7420 6870 – SD 7360 6760). Following the recommendations outlined in the Desk-based Assessment, Walkover and Topographic Surveys (OA North 2009), and in consultation with the North Yorkshire County Council Heritage and Environment Section, sections of the pipeline easement were subject to a strip and record investigation. This was targeted on Sites **41**, **49**, **52** and **54** (OA North 2009). In addition, a watching brief was maintained for all areas of undisturbed ground along the easement. The fieldwork was completed in May and June of 2009.

Site **41**, the largest of the sites to be investigated, comprised an extensive area of earthworks - platforms, banks and ditches, suggestive of a medieval settlement. However, other than the internal cobbled floor of a barn and a field boundary, no archaeological features were observed. Conversely, the possibility that this site does represent some sort of settlement or other human activity cannot be completely ruled out. There would appear to be at least one hollow-way, and it should be noted that the majority of the earthworks lie outside of the pipeline easement. Similarly, no significant archaeology was detected at Sites **49**, **52** and **54**, which had the appearance of being building platforms. The remains of a stock-yard (Site **52**) and agricultural drainage were observed elsewhere along the route.

The archaeology observed during the watching brief was largely agrarian in nature, comprising such features as walls, and field boundaries. The large finds assemblage retrieved during the watching brief comprised mesolithic period microliths, second century pottery sherds, and a significant amount of twelfth to sixteenth century pottery. Post-medieval metalwork, glass and clay pipes were also retrieved. The assemblage demonstrated that there was significant prehistoric activity in the areas, in addition to continuous settlement from the medieval into the post-medieval period.

No further work is recommended for the pipeline scheme.

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Ric Buckle, Tim Christian, Becky Wegiel and Ailsa Westgarth carried out the strip and record fieldwork. Pascal Eloy undertook the watching brief. Christine Howard-Davis assessed the finds, and Mark Tidmarsh produced the drawings. Becky Wegiel wrote the report, and Alison Plummer managed the project and edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCE OF PROJECT

- 1.1.1 A proposal was submitted by United Utilities to North Yorkshire County Council Heritage and Environment Section (NYHER) for the construction of a waste water pipeline in the Clapham area of North Yorkshire. The proposed pipeline (Fig 1) is aligned in a north-west to south-east direction, from Newby pumping station to Austwick pumping station (SD 7270 6970 – 7640 6720), with a length of 4600m. There is an additional perpendicular section aligned southwards from Clapham Waste Water Treatment Works (SD 7420 6870 – 7360 6760), with a length of 1450m. Following the results of a desk-based assessment, walkover and topographic survey (OA North 2009), and in consultation with the NYHER, a programme of archaeological works was undertaken, comprising a strip and record investigation and watching brief.

1.2 SITE LOCATION AND TOPOGRAPHY

- 1.2.1 The proposed pipeline is situated just to the south of the A65 road, which passes through the Newby, Clapham, and Austwick areas of North Yorkshire (Fig 1). The site is located on gently undulating land lying between 130m and 80m AOD, situated to the north of the River Wenning. This largely agricultural landscape occupies the comparatively low-lying transitional region between the Yorkshire Dales to the north, and the Bowland Fells to the south, a lowland hiatus known as the Craven Gap.
- 1.2.2 The underlying geological deposits comprise carboniferous Namurian Millstone Grit (British Geological Survey 2007), which is overlain by Brickfield II soils (British Geological Survey 1983).

1.3 HISTORICAL BACKGROUND

- 1.3.1 The following section presents a summary of the historical and archaeological background of the general area. This is presented by historical period and has been compiled in order to place the study area into a wider archaeological context.

1.4 THE PREHISTORIC PERIOD

- 1.4.1 *Prehistoric*: although the evidence for Upper Palaeolithic activity in Yorkshire is not abundant (see Manby 2003, 31), a late Palaeolithic flint was found at Raven Scar Cave in Chapel le Dale, to the north of the western end of the study area (Howard 2004, 8). Later Mesolithic industry sites have been found to the east of the study area, in the environs of Malham and Malham Tarn (Manby 2003, 33). Later Mesolithic assemblages have been recovered from the areas of the main east-west routes across the Pennines, to the north of the study area, at Teesdale, Swaledale, and Wensleydale (*op cit* 33), so it is surprising that the key cross-Pennine route of the Craven Gap has not

produced more evidence of Mesolithic activity. The importance of the Craven area as a early prehistoric access route, beyond simply providing a valley through potentially taxing upland terrain, has been suggested by Raistrick (1970, 22), who posits that the open scrubland along the limestone terraces would have provided ease of movement through a heavily forested and swamp-dominated environment.

- 1.4.2 The Mesolithic was the latest cultural epoch in Britain during which people employed a subsistence strategy based wholly upon hunting, gathering, and fishing. Following the introduction of farming to the British Isles, from around 4000 BC, the Neolithic period saw the beginning of the widespread construction of monumental architecture, and in the Craven area such sites are represented by chambered cairns, such as Giant's Grave (SD 856 732) and Devils Altar (SE 009 476), (Manby *et al* 2003, 101–3). The cairns are, however, situated at higher elevations than that of the study area. The other predominant Neolithic site-type in the area, comprising cave sites with burial and ritualistic functions (*ibid*), such as Victoria Cave (SE 838 650), clearly has a geographically restricted distribution. Known field systems and nucleated settlement sites in the Craven area that have often been ascribed to the Iron Age, but which are likely to predate this period, also tend to occupy the higher ground to the north of the study area, for example in the upper Wharfedale and Ribblesdale areas (*op cit* 103). Even a single find of a stone axe (NYHER SD76NE9) from Crow Nest Farm, at Lawkland, just to the east of the study area and a possible Neolithic enclosure from Clapdale, just to the north of Clapham (Howard 2004, 8), are located in areas where the elevation of the land begins to rise. The Craven Gap does, however, appear to have been used as a trade route for Langdale axes (*op cit*, 9), an activity that is likely to be under-represented by material remains.
- 1.4.3 The beginning of the Bronze Age in Britain, defined mainly by the introduction of the use of copper alloy metals, developed gradually out of the preceding Neolithic during the mid third millennium BC (Parker Pearson 2000, 13). Some of the caves utilised during the Neolithic continued in use in to the Bronze Age, such as Raven Scar Cave (Manby *et al* 2003, 103). It is also clear that some of the locales of the 'Celtic field systems' in the area were in use during the Bronze Age, as demonstrated by a Beaker period inhumation at High close, Grassington, and suggested by the presence of typically Bronze Age monuments, such as ring works and stone circles (*ibid*). Once again, however, the known sites of this period are restricted to more elevated land or areas where caves were located, particularly the raised limestone areas to the east of Austwick.
- 1.4.4 The prominence of the nearby uplands during the prehistoric period is emphasised by the presence of Ingleborough Hillfort to the north-west of the study area. Although this has been ascribed to the Iron Age there are suggestions that this site may have had an earlier, ceremonial, function prior to any Iron Age use (Howard 2004, 10). Although these upland sites are beyond the study area, the possible importance of the Craven Gap as an access route to these upland areas should not be overlooked.

1.4.5 **The Iron Age (c 700 cal BC – AD 43):** the site of a possible Iron Age settlement is located just to the north of the study area (Craven District Council 1993a; NYHER SD76NE12), to the north-east of Radcliffe House, although few prehistoric sites are known in this general area at these low-lying elevations (c 150m AOD). There are so-called ‘Celtic’ field systems in the wider Craven area, occupying more elevated land, although these may predate the Iron Age (Manby *et al* 2003, 103). A group of five Iron Age burials (NYHER SD76NE8), around 3.5km to the east of the study area, followed the typical pattern of prehistoric sites in the area by occupying raised land, above 250m AOD. One findspot that was located on land at a comparable elevation to that of the study area was an Iron Age bronze cauldron found in a dried-up tarn near Wharfe, to the east of the study area (NYHER SD76NE4591). The location of this item within a former tarn, however, suggests that it may have formed a deliberate deposition in a watery place, as has been suggested for many other finds from similar contexts throughout the prehistoric period (Middleton 1996, 45). This might suggest that the specific body of water was significant at this time, rather than the general low-lying land of the area being used habitually for settled activity.

1.5 THE HISTORIC PERIOD

1.5.1 **The Romano-British Period (c AD 43 – AD 409):** the study area lies to the south-east of the Romano-British settlement at Broadwood (Johnson 2004), and to the north-west of the Roman fort at Elslack (Howard 2004, 11) and within one of the key cross-Pennine communication routes. A Roman road is suggested to have run from Skipton to Ingleton, via Clapham (Margary 1957, 139, road 722), therefore passing through the study area, although no associated earthworks have been identified from aerial photographs by the National Mapping Programme. It was, however, suggested that a linear feature was visible on aerial photographs running north-west from the area of Harden Bridge Hospital (Craven District Council 1993b), which would correspond with the projected route of the road derived from Margary (1957, 139). If the Roman road did follow the route suggested by Margary (*ibid*), then the proposed pipeline would run slightly to the south of the road. The exact route of the road, however, is not known and the proposed pipeline route runs very close to the projected line of this road.

1.5.2 Romano-British evidence has been recorded from locations in the wider locale of the study area, such as pottery found at Cave Ha (NYHER SD76NE6) and a bronze mirror found at Austwick (NYHER SD76NE4592), both to the east of the study area, although these do not represent dense concentrations of material. It should also be considered that the settlement immediately to the north of the study area, that has sometimes been ascribed to the Iron Age (Craven District Council 1993a; NYHER SD76NE12), may have continued in use into the Romano-British period, a pattern that has been observed in relation to native British settlements elsewhere (Howard, 2004, 11). In this context, it should be noted that Romano-British pottery has been recovered from the putative Iron Age hillfort at Ingleborough, lying to the north-west of the study area (*op cit* 10).

- 1.5.3 **Early Medieval Period (c AD 410 – AD 1066):** the place-name ‘Craven’ has been interpreted as being indicative of an ancient British territory that incorporated the Welsh word *craf*, meaning scoured land, which may have been a reference to the presence of limestone pavements in the area (Loveluck 2003, 158). Alternatively, the *craf* element has also been interpreted as meaning ‘garlic’ (Faull 1981, 184), although whether this might relate to locally occurring ramsons, or wild garlic, has not been examined. Much of the interpretation of this British territory is, however, dependant upon the antiquity of the place-name Cravescire, which is mentioned in Domesday Book (Loveluck 2003, 158). It has also been suggested (Faull 1981, 171) that the Craven kingdom was preserved solely as the later administrative units of Cravescire warpentake and Craven archdeaconry, without any surviving records of the independent kingdom, due to an early absorption into the Anglo-Saxon lands of Deira, to the east.
- 1.5.4 Anglo-Saxon influence in the area is suggested by local place-name evidence with Austwick (Ousteuc) having been derived from the Old English *austr* and *wic* meaning ‘eastern dairy farm’, and being mentioned in Domesday Book in 1086 (Smith 1957, 228–9). The local Anglo-Saxon influence also appears to be reinforced by the place-names of Clapham and Newby. Clapham, also mentioned in 1086, is derived from the elements *claepe* and *ham*, possibly meaning ‘homestead by the noisy stream’ (*op cit*, 232–3), and Newby is derived from *niwe* and *by*, meaning ‘new farmstead’ and was mentioned in charters from at least the mid-twelfth century (*op cit*, 233). It is possible, however, that the Old English *niwe* may have replaced an earlier Old Norse element of *nyr* (Thurlow 1979, 50), which might suggest a slightly later origin for local settlement than the earliest Anglo-Saxon period. Without earlier records of the use of this place-name, however, we can not be sure that the name was used prior to the Norman Conquest, as linguistic continuity could have allowed the introduction of an Old English place-name during the twelfth century. The Austwick and Clapham place-names strongly suggest that there was agricultural activity in the local area prior to the Norman Conquest. Although there is no current archaeological evidence to support this assertion, it remains possible that the current towns of Clapham and Austwick may occupy the location of earlier nucleations and, therefore, have concealed or destroyed some earlier settlement evidence. Indeed, it has been suggested (Raistrick 1970, 29) that a network of Anglo-Danish villages in the lowland areas of the Yorkshire West Riding formed the basis for the present countryside pattern.
- 1.5.5 **Medieval Period (c AD 1066 – AD 1540):** it was suggested by Speight (1892, 147), in his nineteenth century romanticised descriptions of Yorkshire, that the manor of Clapham was granted to William de Clapham by Roger de Mowbray around 1170. The manor passed out of the hands of the de Claphams in 1572–3, when it was purchased by John Ingleby, who obtained amongst other holdings a water mill and fulling mill in the area (*op cit*, 147–8). Documents relating to the ownership and lease of Newby corn mill (CRO(NY) PR/CPM 16/2–5), to the south of the western end of the study area, show this mill to have been in existence from at least 1589, although whether this was the same

mill as that purchased by John Ingleby, and whether these mills were extant during the medieval period, is unclear.

- 1.5.6 In addition to the place-name evidence cited above, several sites in the broader locale of the study area demonstrate that there was activity within the general area during the medieval period. A fifteenth-century church tower is located on Church Avenue in Clapham (Craven District Council 1993b), although it has been suggested that a church was recorded in the area as early as 1091–4 (Winstone 2007, 4). The stepped pedestal and stone socket of a fourteenth century cross (SAM 24520) also survive in Clapham. The house at Newby Hall also originates from the fifteenth century, and it has been suggested that Austwick Hall might incorporate a medieval Pele Tower (NYHER SD76NE1). There are also two sites, identified as groups of earthworks, in the close vicinity that are suggestive of abandoned, or depopulated, medieval settlements. One site lies around 2km to the south-east of the study area, at Lawkland Green, and is traditionally held to have been destroyed in the early fourteenth century by Scottish raiders (NYHER SD76NE2). The other is situated within 1.5km of the east of the study area (NYHER SD76NE16).
- 1.5.7 ***Post-Medieval to Industrial Period (AD 1540-1901)***: the Clapham area is one of the few in England where the manorial tradition survives to the present day, with the manor of Clapham retaining occupation by a landlord. The manor of Clapham was bought by James Farrer in 1856 (Speight 1892, 148), and the manor of Austwick has been held by the Farrer family since 1782 (Austwick 2007). The manors of Clapham and Austwick remain in the hands of the Farrer family and are currently owned by Dr John Clapham (*ibid*, Clapham and District Newsletter 2006, 6). The survival of one of the few remaining lowland moors in England, at Newby Moor (Winchester 2006, 77), may be partly attributable to the particular character of this private ownership (J Quartermaine *pers comm*). This moor has resisted agricultural improvement, including the installation of field boundaries, and lies just to the south of the western end of the study area. This apparently conservative attitude towards land development seems to characterise this area, where little intensive industrial activity is evident. The landscape is characterised by agricultural field systems interspersed with stands of plantation and semi-natural ancient woodland (Craven District Council 1993b).
- 1.5.8 There is evidence of sandstone quarrying at Lawkland and Austwick, and gravel extraction at Clapham, as well as some limekilns in the general area (Network Archaeology Ltd 2005). The presence of ‘Brickkiln Plantation’, shown for the first time on the second edition Ordnance Survey map of 1893, to the south-east of Lodge Bank, suggests industry close to Newby, although such industries are not evident within the study area. The urban areas of Clapham and Newby have expanded since the production of the first edition Ordnance Survey map of 1851, although this expansion has not been particularly dramatic. The most evident modifications of the landscape during the post-medieval period were the development of the current A65 and the Little North Western railway line.

1.5.9 The current route of the A65 diverts to the south in order to bypass Clapham. Other than this short diversion, however, the road in this area conforms to the route of the Keighly and Kendal turnpike road. The Keighly and Kendal Turnpike Trust obtained an act for the creation of this turnpike in 1753, and road improvement, as well as the creation of new sections of road, was undertaken throughout the second half of the eighteenth century, with the Clapham to Ingleton section being added as late as 1823–6 (Brigg 1968, 12, 36). In 1823, the Clapham tollgate was moved from its position at the south of the village to a position further east along the road (*op cit* 56), where the ruined building is still visible. The opening of the Little North Western Railway in 1847, to the south-west of the study area, adversely affected the income generated by the road tolls, and following many years of financial difficulty the Trust expired in 1878 (*op cit* 45). The road had mainly been introduced as a transport means to connect the manufacturing areas of Yorkshire and Westmoreland, although traffic also allowed partially manufactured goods, such as combed wool, to be taken to craftspeople based in villages and farms for further work (*op cit* 12). It may, therefore, be significant that the demise of the road network as a primary means of transportation also seems to have coincided with a decrease in the population of the more rural parts of the locality. From 1851 to 1901 the populations of the townships of Clapham, Austwick, and Lawkland reduced by around 25–30% (Page 1974, 540). Alternatively, Giggleswick, which is only prevented from conjoining with the large agglomeration of Settle by the spatial divide of the River Ribble, increased in population by nearly 300 people over the same time-span (*ibid*).

2. METHODOLOGY

2.1 STRIP AND RECORD INVESTIGATIONS

- 2.1.1 Four separate sections of the pipeline easement (Sites **41**, **49**, **52** and **54**) were subject to the strip and record investigations (Fig 2). These comprised various arrangements of earthworks and hollows (*Section 3.1*), suggestive of building platforms and possible settlement remains.
- 2.1.2 The topsoil and subsoil were removed using a mechanical excavator fitted with a 2m wide ditching bucket down to the level of the natural geology. This was then cleaned by hand using either hoes or shovels, depending on the ground conditions, and was inspected for archaeological remains.
- 2.1.3 Any archaeological remains encountered were subject to sample excavation, being not less than ten percent of the total length of the feature, and recorded using a system derived from the Centre for Archaeology of English Heritage. The archive includes both a photographic record and plans at an appropriate scale. Recording was principally in form of *pro forma* Context Record sheets for each feature.

2.2 WATCHING BRIEF

- 2.2.1 The remainder of the pipeline easement not covered by the strip and record investigations was subject to an archaeological watching brief. The topsoil was removed by a mechanical excavator fitted with a 2m wide ditching bucket to the underlying subsoil or natural geology, which was inspected for archaeological remains. Any archaeological features were excavated and recorded using the method above (*Section 2.1.3*).

2.3 ARCHIVE

- 2.3.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in the North Yorkshire Record Office on completion of the project.

3. FIELDWORK RESULTS

3.1 STRIP AND RECORD INVESTIGATION

- 3.1.1 **Site 41:** an extensive network of potential hollow-ways and building platforms (Fig 4) was present on the east-facing slope of the hill traversed by the pipeline easement. Similar features were also visible between the trees within the Crina Bottom Plantation across the road to the east (not part of the pipeline works). The nature of the earthworks was suggestive of human activity, such as medieval settlement remains or possible mineral extraction.
- 3.1.2 The topsoil (**1018**), stripped along this section of the easement comprised a mid greyish-brown clay silt 0.20m in depth. This overlay mid brownish-grey soft silt clay, **1019**, measuring 0.1m in depth. Beneath the subsoil light yellowish-brown, natural boulder clay was observed. In the depressions between the earthwork banks/platforms a colluvial deposit, **1029**, had built up to a depth of 0.1m.
- 3.1.3 Towards the north-east end of the field, and beneath the topsoil, a cobbled surface, **1025**, was exposed (Plate 4). This comprised medium- to large-sized limestone cobbles and covered an area 11m in length by 4.75m in width (to the limit of the easement). The position of the cobbles corresponds to the location of a field barn shown on both the Tithe Map of 1847 and the First Edition Ordnance Survey, 1851 (Plates 1 and 2), and so are interpreted as the internal floor of the barn. A linear depression seen along the northern extent of the cobbles is most likely to be a drainage channel.
- 3.1.4 No further archaeological remains were exposed within this section of the easement.
- 3.1.5 **Site 49:** this comprised an area of ridge and furrow, aligned north-west/south-east across the field. The ridge and furrow was enclosed by ditch and bank field boundaries. In addition, two low earthen mounds were present (Fig 5). The easement crossed directly over one of the mounds, and one of the field boundaries. The remainder lay outside of the working area.
- 3.1.6 The topsoil, **1021**, as described above (*Section 3.1.2*) was stripped down to subsoil **1022**, a light greyish-brown soft silty-clay, 0.1m deep. Beneath this, the natural to the north of the field, **1023**, was a light greyish-yellow plastic silty-clay. To the south of the field, approximately 50m from the road, the natural geology changed to a dark greyish-brown friable to loose glacial till (**1030**).
- 3.1.7 The mound within the easement, the westernmost of the two, proved to be glacial till. The bank and ditch field boundary was observed in section. The ditch, **1026**, was shallow (0.32m), and had an uneven U-shaped profile. The southern edge was particularly irregular, but the base was quite flat. The ditch had two fills, the lower being mid brownish-grey soft silty-clay (**1027**) with occasional fragments of limestone, 0.11m deep, and was most likely a

waterborne deposit. The upper fill, **1028**, was mid reddish-brown firm clay-sand, also with occasional fragments of limestone, and measured 0.28m in depth. This probably represented a silting up of the ditch over a period of time. The bank, **1031**, was made from material excavated from the ditch and comprised a dark greyish-brown loose silty-gravel to a height of 0.3m.

- 3.1.8 **Site 52**: a further mound also suggestive of a building platform (Fig 6) had been identified within Field 25 as crossed by the pipeline easement (Fig 3). The topsoil (**1000**) a dark brown soft clay-silt, 0.2m deep, and the subsoil (**1001**), a mid reddish-brown soft silty-clay, 0.1m deep, were stripped down to the natural geology. This varied between a light reddish-yellow silty-clay (**1002**), and a mottled whitish-grey/ black-brown loose silty-clay with gravel inclusions (**1003**). Following the removal of the topsoil and subsoil a metre deep slot was hand-excavated through the mound, which proved to be a natural deposit of dark greyish-brown and reddish-brown silty-clay (**1007**).
- 3.1.9 A stone-built culvert, **1005**, constructed from roughly-hewn limestone was observed towards the southern end of the site. Pottery sherds found in the silty fill, **1004**, were eighteenth century in date.
- 3.1.10 Two cobbled areas (**1008** and **1009**) were exposed at the northern end of the site. The most easterly of these (**1008**) measured approximately 5m by 4m and comprised small-sized cobbles up to 0.15m. A small area of larger cobbles, within this, **1010**, would appear to be a repair. All finds retrieved from this area were of eighteenth century date or later. The cobbles almost certainly represent the remains of small stock-yard associated with the small field barn present in the eastern corner of the field, adjacent to the A65 road.
- 3.1.11 The second cobbled surface, **1009**, was located further to the north-west, and comprised the same rough mix of uneven cobbles, with diameters of between 0.12m and 0.2m. Again, all of the finds retrieved indicate a date later than the eighteenth century.
- 3.1.12 **Site 54**: this site comprised a group of three possible building platforms clustered around two ditches or hollow-ways. Topsoil **1011**, a dark greyish-brown soft clay-silt, 0.35m deep, with frequent sub-angular limestone fragments and rounded pebbles, and subsoil **1016**, a mid reddish-brown soft clay-silt, >0.1m deep, were removed down to the level of natural, **1012**, a mid yellowish-brown and bluish-grey sandy-clay.
- 3.1.13 The earthen mounds proved to be built up from redeposited natural, which comprised 60% small limestone fragments, and 20% small rounded pebbles in a mid brownish-grey firm sandy-clay matrix, 0.63m deep (**1013**). This also contained fragments of the field drainage pipes. The redeposited natural overlay patches of buried topsoil, **1014**, a dark greyish-brown soft clay-silt, >0.1m deep. A modern water main cut through the site on a north-west/south-east alignment. The origin and function of the mounds could not be determined.
- 3.1.14 To the south-east of the site a stone culvert, **1017**, was aligned north-east/south-west. It was built from roughly-hewn limestone, and appeared to

run between a modern manhole cover and a washout marker on the north-eastern edge of the field.

3.1.15 The line of the ditches (Fig 4) could not be traced following topsoil stripping activities, this suggests they were of a very shallow nature. Field boundaries are shown in a similar position on the First Edition map of 1851 (Plate 2).

3.2 WATCHING BRIEF

3.2.1 The fields along the route of the pipeline easement were numbered 1 to 37, and 29 of these were subject to the watching brief (Table 1, below). Archaeological features were observed within 11 of the 29 monitored fields.

3.2.2 The topsoil, which was generally a dark greyish-brown soft clay-silt with frequent sub-angular limestone fragments and rounded pebbles, was observed to be an average of 0.25m in depth. This overlay mid reddish-brown soft silty-clay subsoil, which was no deeper than 0.1m. The natural geology mainly comprised a dark greyish-brown friable to loose glacial till. Areas of mid yellowish-brown and bluish-grey sandy-clay were confined to the higher ground.

Field No	Results
1	Not stripped as part of the pipeline.
2	Demolition rubble, <i>120</i> , comprised roughly-hewn sandstone blocks and cobbles. This was all that remained of the south-west corner of a field barn.
3	No archaeology observed.
4	No archaeology observed.
5	No archaeology observed.
6	No archaeology observed.
7	No archaeology observed.
8	No archaeology observed.
9	No archaeology observed.
10	No archaeology observed.
11	No archaeology observed.
12	No archaeology observed.
13	Not stripped as part of the pipeline.
14	Not stripped as part of the pipeline.
15	An east/west aligned former field boundary, <i>115</i> , was of cobble construction and measured 3-3.5m in width. North/south aligned plough scars were also present in this field. Two drains, one cobble-filled and the other stone-lined,

	were also observed.
16	A stone embankment, 113 , on an east/west alignment and constructed from water-worn pebbles, 5.4m wide was associated with a further stone embankment, 114 .
17	Not stripped as part of the pipeline.
18	A north/south aligned cobble stone wall 107 , was present and measured 0.6m in width.
19	No archaeology observed.
20	Strip and Record Investigation, Site 41
21	Strip and Record Investigation, Site 49
22	Not stripped as part of the pipeline.
23	No archaeology observed.
24	No archaeology observed.
25	Cobbled surface, 1008 , was included in the strip and record investigation of Site 52 (see <i>Section 3.1.10</i>). Three former field boundaries were present (103 , 104 and 105). 103 was aligned north-west/south-east and was constructed from water-worn cobbles. It measured 0.5m in width. 104 was of similar construction, north/south aligned and measured 2.5m wide x 0.5m deep. 105 was an earthfast bank.
26	Strip and Record Investigation, Site 52
27	Not stripped as part of the pipeline.
28	Strip and Record Investigation, Site 54
29	No archaeology observed.
30	No archaeology observed
31	No archaeology observed.
32	No archaeology observed.
33	Not stripped as part of the pipeline.
34	Not stripped as part of the pipeline.
35	Cobble-built wall foundation, 112 .
36	No archaeology observed.
37	Drainage ditch 109 , was aligned north-east/south-west. Former field boundary 106 was aligned north/south, cobble-built and 0.5m in width.

Table 1: Summary of Archaeology observed by field

4. FINDS

4.1 THE FINDS ASSEMBLAGE

4.1.1 In all, some 362 artefacts or fragments of artefacts were recovered during the course of the project. Their distribution between fields is tabulated below (Table 2), divided by material, in order to give an indication of the general composition of the groups recovered.

	Ceramic Vessel	Clay tobacco pipe	CBM	Glass vessel	Glass window	Copper alloy	Iron	Lead	Ind debris	Worked stone	Animal bone	Natural stone	Totals
Field 2	2	0	0	1	0	2	0	1	0	3	0	0	9
Field 7	0	0	0	0	0	0	0	0	0	2	0	0	2
Field 9	1	0	0	0	0	0	0	0	0	0	0	0	1
Field 9 and 7	0	0	0	2	1	1	0	3	0	1	0	1	9
Field 10	0	0	0	0	0	0	0	0	5	1	0	1	7
Field 11	4	0	0	0	0	3	0	0	0	1	0	0	8
Field 15	26	3	0	2	0	15	14	18	0	8	6	2	94
Field 16	13	8	0	0	0	0	0	0	0	1	0	1	23
Field 18	14	9	3	1	0	2	0	1	1	1	0	1	33
Field 18 and 19	0	0	2	0	0	0	0	0	0	0	0	0	2
Field 25	55	3	0	1	1	2	16	6	1	12	7	10	114
Field 26	1	0	0	0	0	0	0	0	0	0	0	0	1
Field 28	1	0	0	0	0	0	0	0	0	0	0	0	1
Field 32	20	1	0	3	1	0	1	0	0	1	0	0	27
Field 35	7	0	0	1	0	0	0	0	0	1	0	0	9
Field 36	17	0	0	2	4	0	0	0	0	2	0	0	25
Field 37	7	0	0	0	0	0	2	0	0	6	0	1	16
Field 41	0	0	0	0	0	0	4	0	0	0	0	0	4
Unstrat	6	0	0	0	0	0	1	0	0	0	0	0	7
Totals	174	24	5	13	7	25	38	29	7	40	13	16	362

Table 2: Distribution of finds

- 4.1.2 **Field 2:** in all, nine objects were recovered from Field 2. The earliest objects were three fragments of white flint, all of them showing signs of modification, one is possibly a burin, suggesting a Mesolithic date. The two fragments of pottery date to the late seventeenth-eighteenth century, and the single fragment of glass is of late nineteenth-century or later date. A large plain copper alloy buckle is likely to fall into the same date range, but fragments of copper alloy sheet and lead strip cannot be dated.
- 4.1.3 **Field 7:** a fragment of worked grey chert, and an irregular grey flint blade point to some Mesolithic activity in this area, but only at the level of 'background noise', with nothing to suggest intensive activity.
- 4.1.4 **Field 9:** only a single fragment of black-glazed pottery was collected. It is probably of nineteenth or early twentieth century date.
- 4.1.5 **Between Fields 7 and 9:** nine objects were collected between the two fields. One small fragment of grey flint is likely to have been worked, whilst a second fragment of chert is clearly unmodified. The base of a greenish glass bottle is probably of late seventeenth or eighteenth-century date, and a small mid-pane fragment of window glass is probably slightly later. A small embossed copper alloy button could be as early as the seventeenth-century, but cannot be dated with precision. Three fragments of lead cannot be dated.
- 4.1.6 **Field 10:** a blade fragment in pale grey flint suggests Mesolithic activity in this area, but only at the level of 'background noise', with nothing to suggest intensive activity. An unmodified nodule of black chert was also recovered. Small crumbly fragments of what appears to be burnt soil, cannot be further identified.
- 4.1.7 **Field 11:** in all, eight objects were collected in this field. The earliest is a probable core preparation flake in grey flint, probably Mesolithic or early Neolithic in date. The four fragments represent two or three black-glazed redware pottery plates or dishes and are all probably of nineteenth-century or later date. Two flat round buttons are of a similar date, and a badly worn copper alloy coin is likely to be a late seventeenth or eighteenth-century halfpenny.
- 4.1.8 **Field 15:** 88 fragmentary artefacts and five small fragments of animal bone were collected from this field. The amount of metalwork from the site is surprising, being almost 56% of the assemblage (49 fragments), and extremely unusual under normal field collection conditions. Worked flint comprises the earliest material from the field, with seven worked flints, a nodule of natural chert, and a fragment of ironstone. Again, the group is of Mesolithic or early Neolithic date. In all, 26 fragments of pottery were recovered, some of them little more than crumbs. There were, however, 16 fragments which could be identified as of medieval date, and although no detailed study was made of the fabrics, all probably fall within a period from the mid-twelfth to the mid-fourteenth centuries. A decorated lead spindle whorl, and an embossed lead or pewter token are both probably medieval, the latter perhaps of late thirteenth or fourteenth-century date.

- 4.1.9 The remaining 10 fragments of pottery need not be later than the end of the eighteenth century, and two small fragments of glass vessels fall into the same range. A clay pipe bowl (one of only three fragments from the field) is of seventeenth-century date. One of the three copper alloy coins from Field 15 has been identified as a halfpenny of George I, dating 1717-19, and although both badly worn, the other two are most likely to be of broadly the same date, one a halfpenny, the other a farthing. Most of the 12 copper alloy objects have proved difficult to identify, but a double-looped buckle frame could be of seventeenth-century date. A group of three small fittings cannot be identified with certainty, but could be book or box fittings, again likely to be of sixteenth- or seventeenth-century date. Similarly, the flat round buttons with a single loop to the rear could also be as early as the seventeenth century. None of the 14 fragments of iron could be identified, and only a single piece of pistol shot, a cast decorative panel, and a champagne bottle seal dated 1862 could be identified amongst the remainder of the lead.
- 4.1.10 Material from Field 15 shows two distinct concentrations, with medieval activity suggested by pottery and lead artefacts, and earlier post-medieval settlement in the proximity suggested by late seventeenth and earlier eighteenth-century pottery and glass and a range of copper alloy coins and other domestic artefacts. Very little of later date was recovered, suggesting that settlement activity had ceased by the late eighteenth century.
- 4.1.11 **Field 16:** this field produced a single small fragment of worked chert, alongside a natural nodule of black chert. Other material included two small fragments of medieval pottery, and 11 of late seventeenth to mid-eighteenth-century date, as well as a clay tobacco pipe bowl of c 1690-1710.
- 4.1.12 **Field 18:** in total, the field produced 33 fragments, approximately half of them pottery. The earliest find was a small scraper in grey chert, of late Mesolithic or early Neolithic date. There were 11 fragments of medieval pottery, including fully-reduced green-glazed wares of fourteenth to sixteenth-century date, and probable Cistercian wares of fifteenth to sixteenth-century date. There were, in addition, three fragments of late seventeenth to mid-eighteenth-century pottery, and a single small fragment of a late eighteenth-century wine bottle. Four clay tobacco pipe bowls, one stamped, can be dated to the mid to late seventeenth century. An embossed copper alloy plaque is probably later than the bulk of the finds from the site, being late nineteenth or twentieth century in date. A few fragments of slag, and fired daub hint at industrial activity in the area, but probably not on any significant scale.
- 4.1.13 **Between Fields 18 and 19:** two fragments of brick were collected between these two fields, one of them clearly hand-made.
- 4.1.14 **Field 25:** a total of 113 fragments of artefacts and ecofacts was recovered from this field. Twenty fragments of stone were collected, seven of them unworked nodules of chert, twelve worked flint or chert, and one a small fragment of a slate roof tile. Although undoubtedly of prehistoric date, the lithics from Field 25 were largely undiagnostic, serving to indicate a relatively significant level of activity, but not sufficient to indicate what that activity was.

- 4.1.15 In all there were 55 fragments of pottery, and although abraded, it is of note that the majority of the fragments found (33 fragments) derive from medieval vessels, spanning a date range from (probably) the mid-twelfth to the sixteenth century. Few of the fragments are large enough to give any suggestion of the vessel type, and there were few rim fragments or other diagnostic sherds. The earliest of the post-medieval material can be dated to the later seventeenth century, suggesting that activity in the vicinity could well have continued unbroken from the medieval period. The latest pottery recovered was probably eighteenth-century at the latest. Only three fragments of clay tobacco pipe were recovered, one of these a bowl which can be dated to *c* 1660-90 and both stem fragments being of large bore, again suggesting a relatively early date. Only two fragments of glass were noted, one of these, blown window glass, was of the thin greenish type typical of the later seventeenth to eighteenth century.
- 4.1.16 Metalwork from Field 25 comprised two fragments of copper alloy, one of them a military cap badge bearing the legend 'The West Riding', the other unidentifiable; 16 fragments of ironwork, including fragments of a bone-handled knife, and a single fiddle-key horseshoe nail; six fragments of lead, one object being pistol shot, the rest drips and other unidentifiable fragments. There was, in addition, a single fragment of industrial debris, probably from blacksmithing. There were, in addition, seven small fragments of unmodified animal bone.
- 4.1.17 **Field 26:** a single fragment of Staffordshire slip-decorated ware, probably of late seventeenth-century date, came from this field.
- 4.1.18 **Field 28:** a single fragments of a black-glazed storage vessel from this field probably dates from the nineteenth century.
- 4.1.19 **Field 32:** 27 fragments of artefact were collected from this field, the earliest being a small utilised grey flint flake. Apart from an abraded fragment of late seventeenth-century Metropolitan ware, the pottery is unlikely to be earlier than the late eighteenth-century in date. A stem fragment of clay tobacco pipe and a single iron nail are not closely dateable. A single small fragment of dark olive green glass wine bottle is probably also of eighteenth-century date, but fragments of a late nineteenth to early twentieth century mould-blown embossed bottle and modern window glass, make it clear that the field was still accumulating finds in the twentieth century.
- 4.1.20 **Field 35:** nine fragments were recovered from this field. Of these, the earliest was a single struck flake of black chert, again indicating some prehistoric activity in the vicinity. A base fragment from a dark olive green glass wine bottle is of late seventeenth century date, as is one of the seven fragments of pottery. The remainder are later in date, probably dating to the nineteenth century.
- 4.1.21 **Field 36:** 25 fragments of artefacts were collected. Two struck flakes of flint and chert suggest some prehistoric activity, but cannot be closely dated. Two small and abraded fragments of medieval pottery were recovered, perhaps suggesting low level, if prolonged activity in the vicinity, from about the

thirteenth century. The remainder of the pottery represents only two vessels, a jar or jug in a typically eighteenth-century cream-bodied black-glazed fabric, and a small part of a large upright storage vessel of similar date. There were, in addition, two fragments of late seventeenth to eighteenth-century dark green wine bottle and four small fragments of thin greenish window glass of a similar date.

4.1.22 **Field 37:** a total of 16 fragments of artefacts was recovered. Of these, five were small struck flakes of chert or flint; a sixth was a small blade, possibly of late Mesolithic origin; a seventh fragment is probably unmodified. All seven of the fragments of pottery from this field were potentially of medieval date, most were heavily abraded and cannot be dated with any precision, but one was the base of a Cistercian ware cup, and can perhaps be dated to the sixteenth century, although it must be noted that vessels of this type continued to be produced into the seventeenth century. Two iron objects were recovered, one probably the iron reinforcement for a clog, the other a relatively small spherical object, perhaps some kind of shot.

4.1.23 **Field 41:** three iron nails and a large staple, perhaps a cart fitting, were recovered. They cannot be closely dated.

4.2 THE LITHIC ASSEMBLAGE

4.2.1 In all, 60 fragments of worked and unworked stone were collected. Of these, closer examination has established that 17, mainly small fragments of grey, black and banded chert, were unmodified and can be discounted from further consideration. The worked material comprised 27 items of flint, and 16 of chert. Although all clearly worked, very few of the pieces were formal tools, being, for the most part, struck debitage, some of the fragments utilised on an *ad hoc* basis. Recognisable tools were two small microliths (both from Field 15), suggesting a Mesolithic date, with, amongst the struck material, several blade fragments (from Fields 10, 25, and 37), again typical of the Mesolithic period, and a probable burin from Field 2. A roughly-made chert scraper from Field 18 is made on a blade, and could also be of Mesolithic date. The remainder of the material comprises small flakes, some showing slight retouch as a result of use, but with little evidence that they represent anything other than the *ad hoc* use of convenient fragments. It is thus difficult to date most of the material, although the predominance of struck flakes might point to a Neolithic date. Finally, one item from Field 15 is a carefully-worked gunflint of post-medieval date.

4.3 THE POTTERY

4.3.1 In all, 189 fragments of pottery were collected. They varied considerably in size and preservation, from small and abraded crumbs to substantial parts of vessels. The group includes material ranging in date from the later prehistoric (?) period to the modern day.

4.3.2 Only one fragment has been identified as of possible prehistoric date (from context **109**, a ditch, where it is undoubtedly residual). The thick, but heavily

abraded sherd is relatively undiagnostic, but the distinctive soft shelly reduced fabric is unlike local native Romano-British fabrics, or late-Roman Dales ware. Similarly, only two fragments of Roman pottery were noted, a small fragment of samian, from the base of a plain vessel form, and the base of a greyware jar. Both were recovered unstratified, but together hint at some local activity, most probably in the second century AD.

4.3.3 Medieval pottery comprised a significant amount (37%) of the pottery assemblage, being 70 fragments, from Fields 15, 16, 18, 25, 36, and 37. The sherds are all heavily abraded, with no obvious joins. The fabrics represented have not been analysed in detail, but are largely sandy, incompletely reduced fabrics which can be dated broadly to the mid-twelfth to mid-fourteenth centuries. There were very few indications as to the forms represented, although glazed fragments, strap handles from Fields 15 and 25, and a rod handle from the latter, make it obvious that jugs were present; a sherd with pinched cordons makes it obvious that some of the vessels were decorated. A heavily sooted base from Field 15 is probably from a cooking pot. Although present in much smaller numbers, there are also some sherds from fully-reduced green-glazed vessels, more typical of the fourteenth to sixteenth centuries, and also Cistercian wares, best represented by a cup base from Field 37, and probably in use in Yorkshire in the later fifteenth century, and continuing well into the sixteenth century.

4.3.4 There is also a range of seventeenth- and eighteenth-century pottery from Fields 15, 16, 18, 25, 26, and 32. These include the slip-decorated black-glazed wares, which developed out of the Cistercian ware tradition, other slip-decorated flatwares, some probably of Staffordshire origin, manganese-speckled ware, and tin-glazed ware. Although, again, there are few sherds diagnostic to form, most are likely to be tablewares and kitchenware, and to have originated from domestic waste. Little of the pottery recorded can be regarded as later than the end of the eighteenth century, although it is possible that some of the blackwares are of nineteenth-century or later date as many of the kitchenwares changed little over a long period. There is also a few fragments of painted or transfer-printed white earthenware, a fabric that does not become popular until the early nineteenth century, and continues in use today, as well as late brown stonewares, and other late nineteenth to early twentieth-century fabrics.

4.4 CERAMIC BUILDING MATERIAL

4.4.1 Only 18 fragments of ceramic building material were collected. Two items were single bricks, probably of relatively recent date, recovered from between Fields 18 and 19, the remainder were small and undiagnostic fragments of daub, from Field 18. The fragments are not well-enough preserved to suggest any origin or function.

4.5 THE CLAY TOBACCO PIPE

4.5.1 Seven of the 26 fragments of tobacco pipe recovered came from bowls, which can be dated with relative precision. All are known Yorkshire or North East

types, and all can be dated to the mid-to-late seventeenth century. Only one is stamped, however, and although the stamp is largely illegible, it could have been made in York, c 1660-90. Pipe bowls were confined to Fields 15, 16, 18, and 25, and in Field 15 they fit within the date range suggested by other finds groups, with an appreciable amount of early post-medieval activity.

4.6 THE METALWORK

- 4.6.1 Twenty-five fragments of copper alloy were recovered, the majority from Field 15. Four very worn coins and a fifth featureless disc were noted, one from Field 11, the remainder from Field 15. Only one was identified, and is post-medieval in date, probably George I. Most of the other copper alloy objects are items associated with dress, being buckles, other belt fittings, and buttons. Nothing in the group can be identified with confidence as medieval, although three distinctive belt-fittings from Field 15 are similar to an example from Bewsey Old Hall, Cheshire (Howard-Davies, *C pers comm*), which was from a medieval context. It is, however, more likely that they are early post-medieval in date, having been found in close proximity to a fragmentary hooked clasp of a type typical of the early post-medieval period (Read 2008, 170 no 635 or 636). Part of a double buckle from Field 15 is again, of similar date. Flat round buttons from Fields 11 and 15 are likely to be more recent, perhaps nineteenth-century or later, but a smaller embossed example from between Fields 7 and 9, is possibly earlier, and could be, perhaps, of seventeenth-century date.
- 4.6.2 A military cap badge from Field 25, can be identified as that of the Duke of Wellington's (West Riding) regiment, raised in the mid-eighteenth century, and stood down in 2006. An embossed plate from Field 18 is illegible but is probably no earlier than the mid-late nineteenth century.
- 4.6.3 Few of the 41 items of ironwork can be identified with confidence. Most are hand-forged nails, which cannot be dated with any accuracy. A horseshoe came from Field 25, and a single fiddle-key horseshoe nail, a medieval type, from Field 15. A bone-handled knife from Field 25 is in poor condition and cannot be dated. The large object from Field 41 is probably from a cart, or some other agricultural equipment, and is likely to be of relatively recent date.
- 4.6.4 Most of the 29 fragments of lead were solidified drips or offcuts of sheet, probably generated by the use of molten lead in building and other structural tasks. There were, however, several other items of interest. An embossed token from Field 15, possibly of pewter rather than lead, bearing a geometric pattern, could be of late medieval date, although little is known of these objects. Their use seems to begin in the later thirteenth century, but geometric designs such as this one are more common in the later medieval period. Two biconical spindle whorls from Field 15 could also be of medieval date, although again, their use continued into the early post-medieval period. A cast decorative object from Field 15 remains unidentified and undated.
- 4.6.5 Lead pistol shot was found in Fields 15 and 25, the former still retaining a casting sprue, whilst the latter had been carefully trimmed; both are of post-

medieval date. Finally, a small seal from Field 15 comes from the closure of a Champagne bottle, and is dated 1862.

- 4.6.6 There is, in addition, a very small amount of industrial debris, with single fragments from Fields 18 and 25. Both are probably secondary iron-working slags, generated by small-scale blacksmithing.

4.7 THE GLASS

- 4.7.1 Relatively little glass was recovered during the project, and all is of post-medieval date. None of the thirteenth fragments of vessel glass is likely to date any earlier than the late seventeenth-century, the earliest fragment, from Field 15, being from a small free-blown green pharmaceutical bottle with a date range from the late seventeenth to the mid-eighteenth century. Other fragments from Field 15 are from dark olive green wine bottles typical of the eighteenth century. A machine-made, mould-blown bottle from Field 32, embossed 'Lung Tonic' are probably of early twentieth-century date. Five of the eight fragments of window glass are of the thin greenish, cylinder-blown type which can be dated to the late seventeenth or early eighteenth century, and presumably reflect buildings of some antiquity in the proximity of Fields 25 and 36, where they were found.

4.8 ANIMAL BONE

- 4.8.1 Fourteen very small fragments of animal bone were recovered from Fields 15 and 25. All were too small for further identification, and at least three fragments were heavily calcified.

5. DISCUSSION

5.1 STRIP AND RECORD INVESTIGATIONS

- 5.1.1 All four of the sites targeted by the strip and record element of the archaeological programme of work along the pipeline easement were earthwork-type features, which had the potential to be of local and regional archaeological significance. Three of the four sites (**49**, **52**, **54**) were potential building platforms, the other site (**41**) was larger and more extensive, and suggestive of settlement remains.
- 5.1.2 **Site 41:** despite the presence of platform-like features the cobbled surface relating to the field barn was the only archaeological feature positively identified at this site. The absence of demolition material suggests the dismantling of the building and the re-use of the building material elsewhere. The barn was present on the 1847 Tithe Map but gone by the publication of the 1909 Ordnance Survey Map.
- 5.1.3 During the strip and record investigation no physical evidence was encountered, which would allow the tentative interpretation of the site as a deserted settlement to be confirmed. None of the finds retrieved from site (all unstratified) were earlier than the eighteenth century. However, the programme of archaeological works was restricted in area by the size of the pipeline easement and topsoil stripping techniques, and so only a small percentage of the extent of the earthworks was available for investigation.
- 5.1.4 **Site 49:** the platform-like features at this site appeared to be natural in origin. An historic ditch and bank field boundary was observed, and in association with the ridge and furrow provides a small insight into localised agricultural activity.
- 5.1.5 **Site 52:** the cobbled stock-pen and post-medieval culvert observed at this site, again provide a further small insight into local agricultural practices.
- 5.1.6 **Site 54:** the two raised areas in this field were slightly more convincing on the surface as building platforms, as the tops were relatively flat and the corners more regular in shape. On removal of the topsoil the whole area appeared to have been built up with redeposited natural. The likely origin of the material was the nearby agricultural underpass, with spoil generated from the construction being deposited in the field.

5.2 WATCHING BRIEF

- 5.2.1 The topsoil stripping of the easement did not generally reach the depth of the natural geology, consequently, the main types of feature recorded were upstanding remains, such as wall foundations, and drains. All of the archaeological features observed were related to agricultural land-use, comprising field boundaries, evidence for drainage, and the remains of a field barn.

5.2.2 The large finds assemblage retrieved during the watching brief comprised Mesolithic period microliths, second century pottery sherds, and a significant amount of twelfth to sixteenth century pottery. Post-medieval metalwork, glass and clay pipes were also retrieved. The assemblage demonstrated that there was significant prehistoric activity in the areas, in addition to continuous settlement from the medieval into the post-medieval period.

5.3 RECOMMENDATIONS

5.3.1 No recommendations are made for further work during pipeline construction activities associated with this project.

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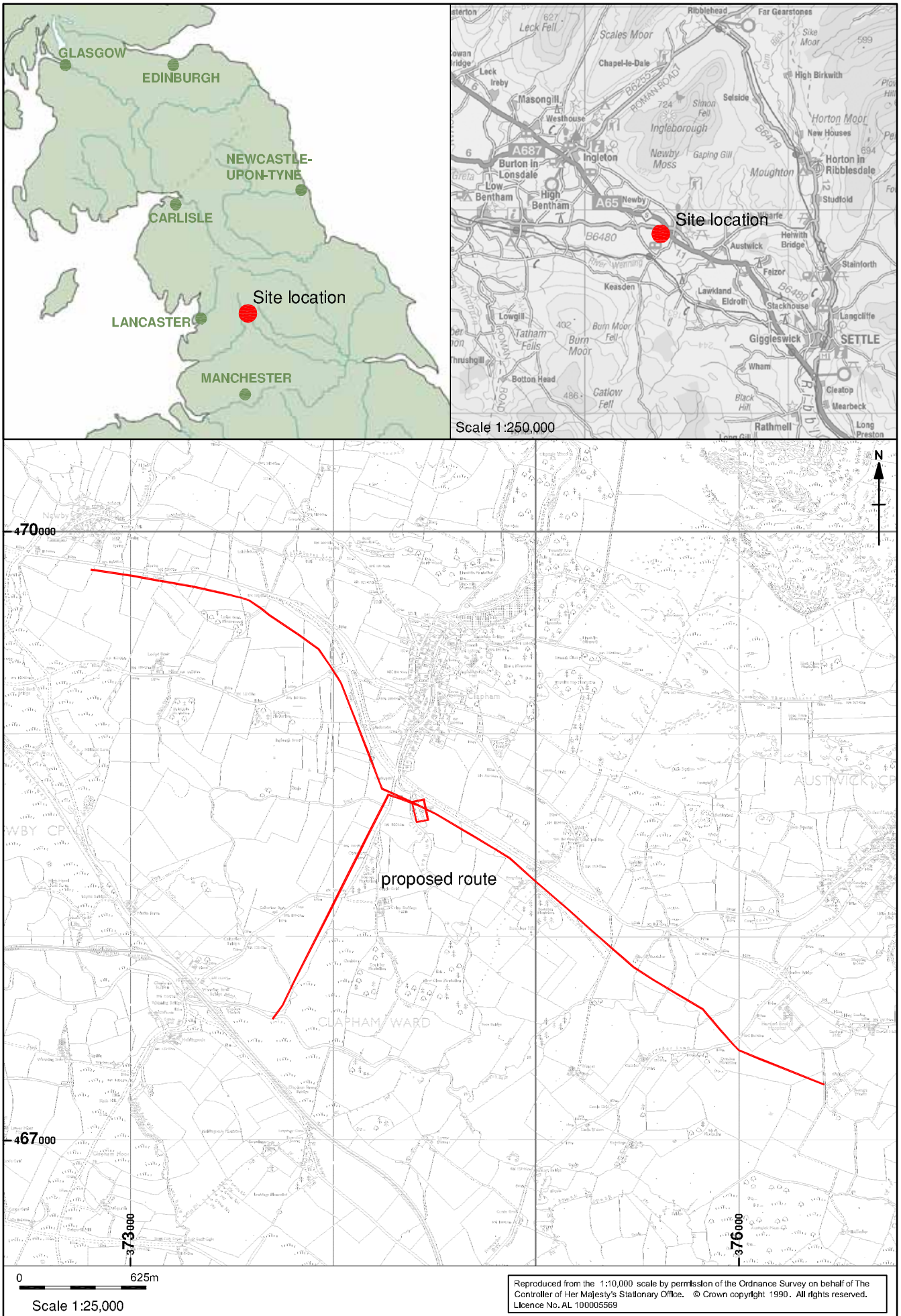


Figure 1: Site Location

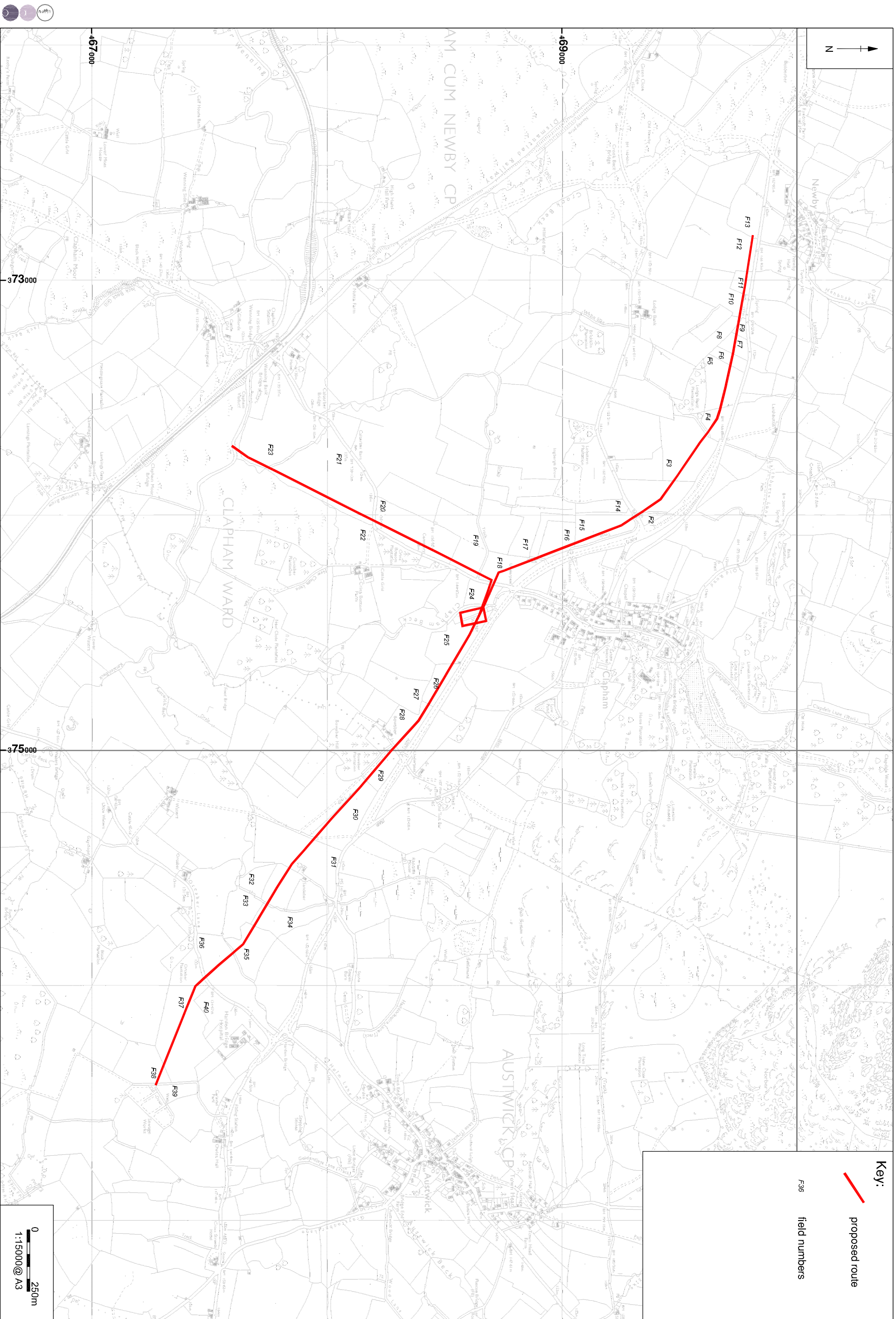


Figure 2: Route of pipeline easement, showing field numbers

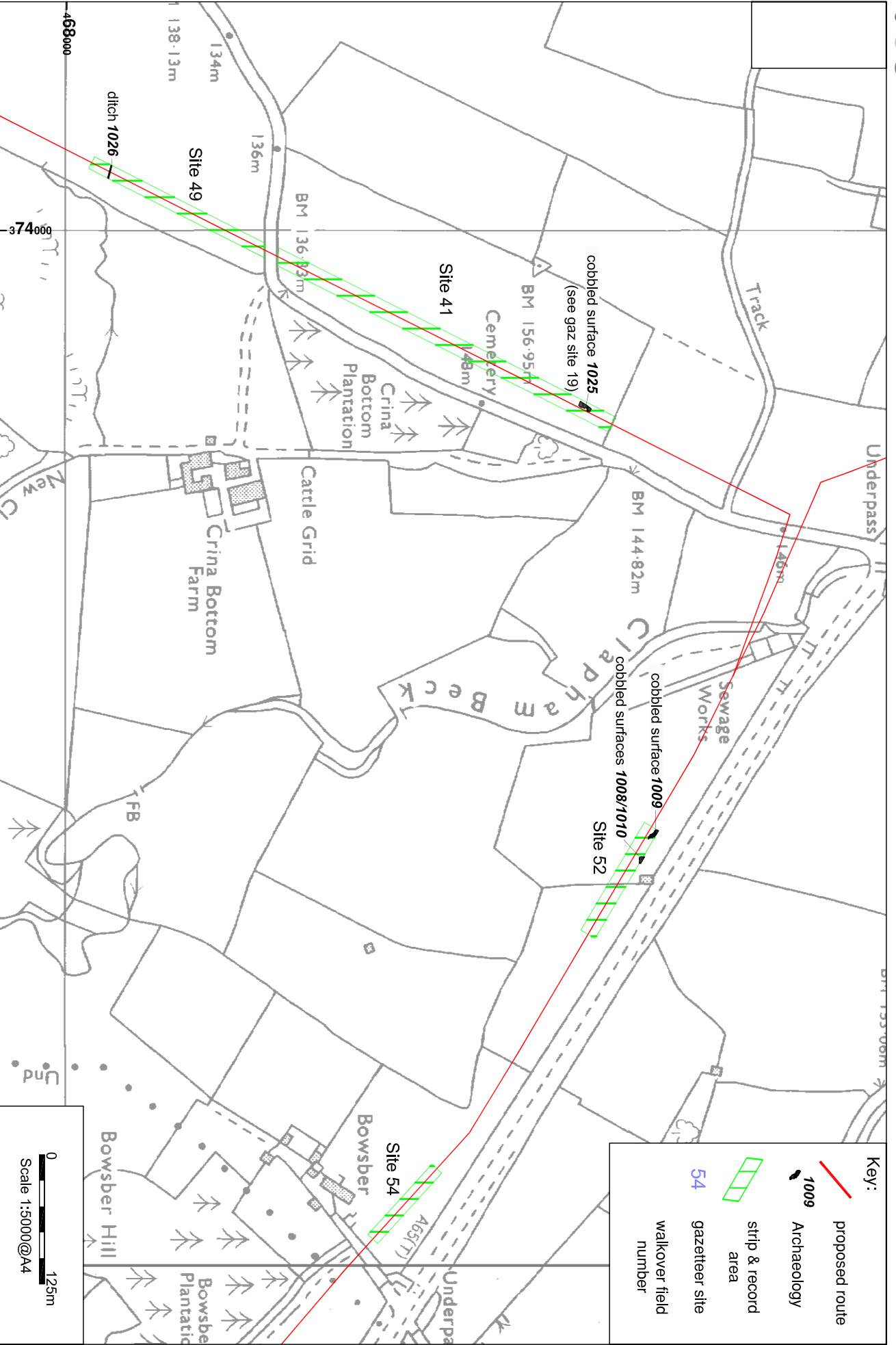







Figure 3: Strip and Record sites location plan



Key:

-  Proposed route
-  OS detail
-  Ridge and furrow
-  Gazetteer site
-  Topographic survey

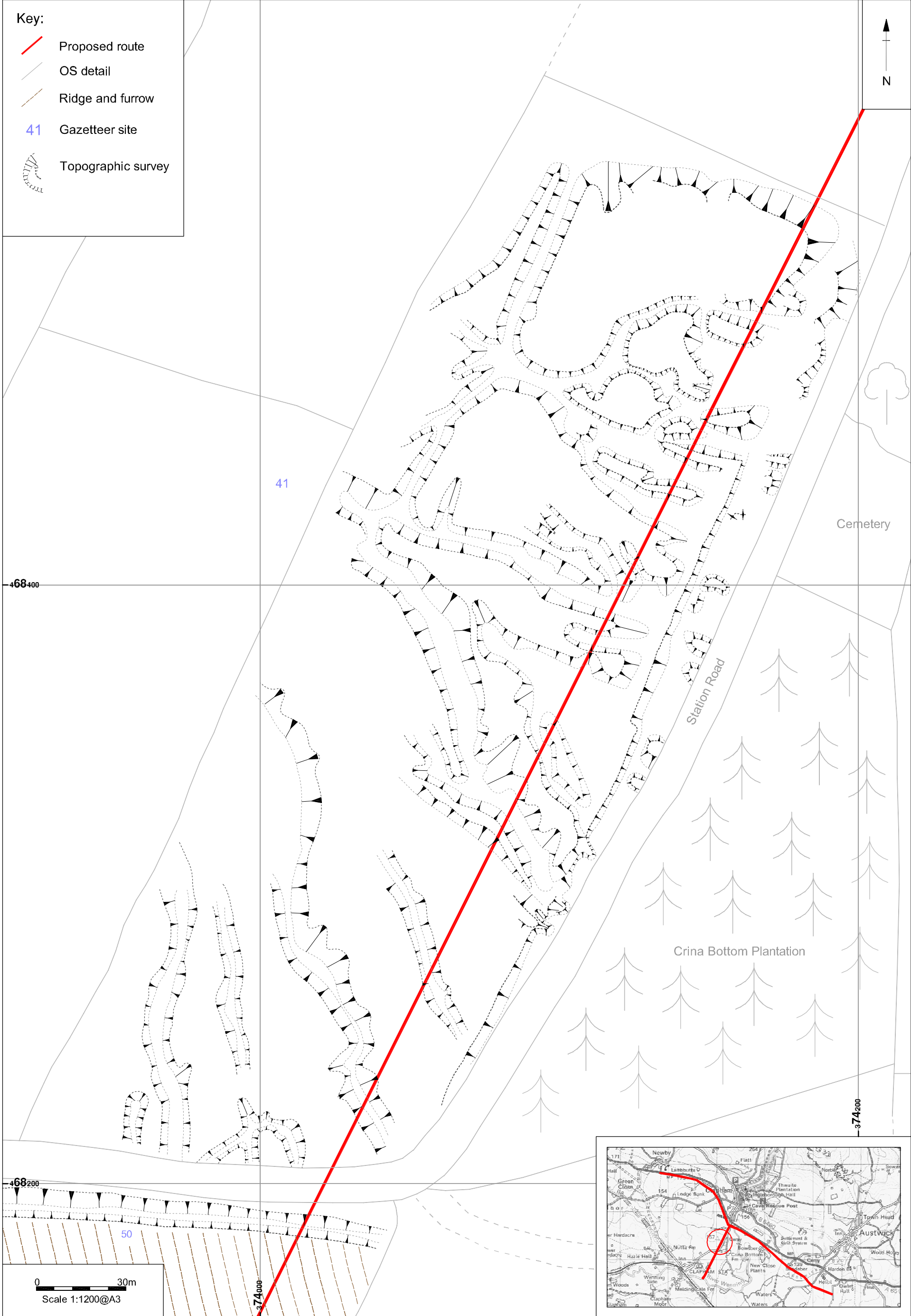


Figure 4: Topographic Survey, Site 41

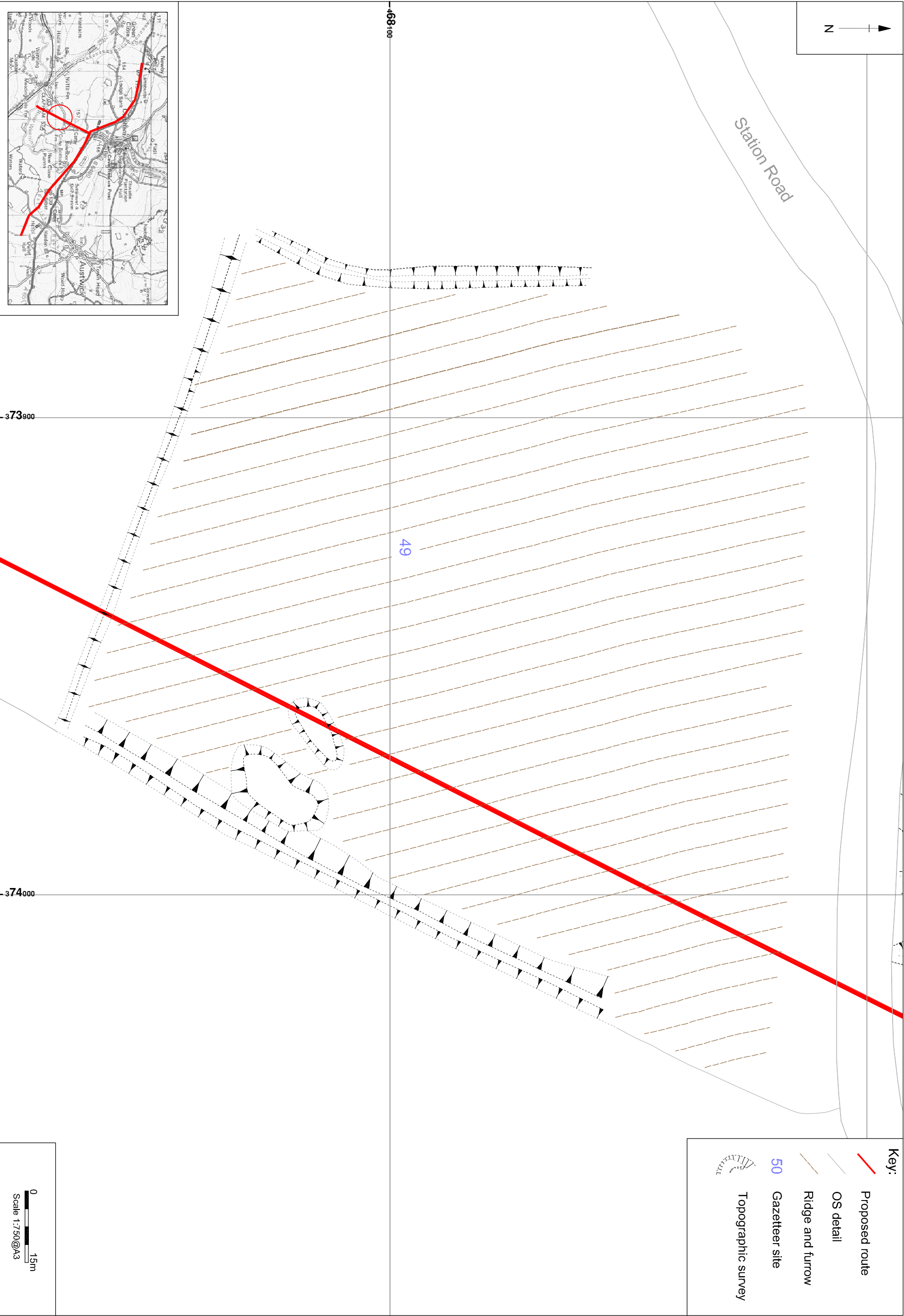


Figure 5: Topographic Survey, Site 49

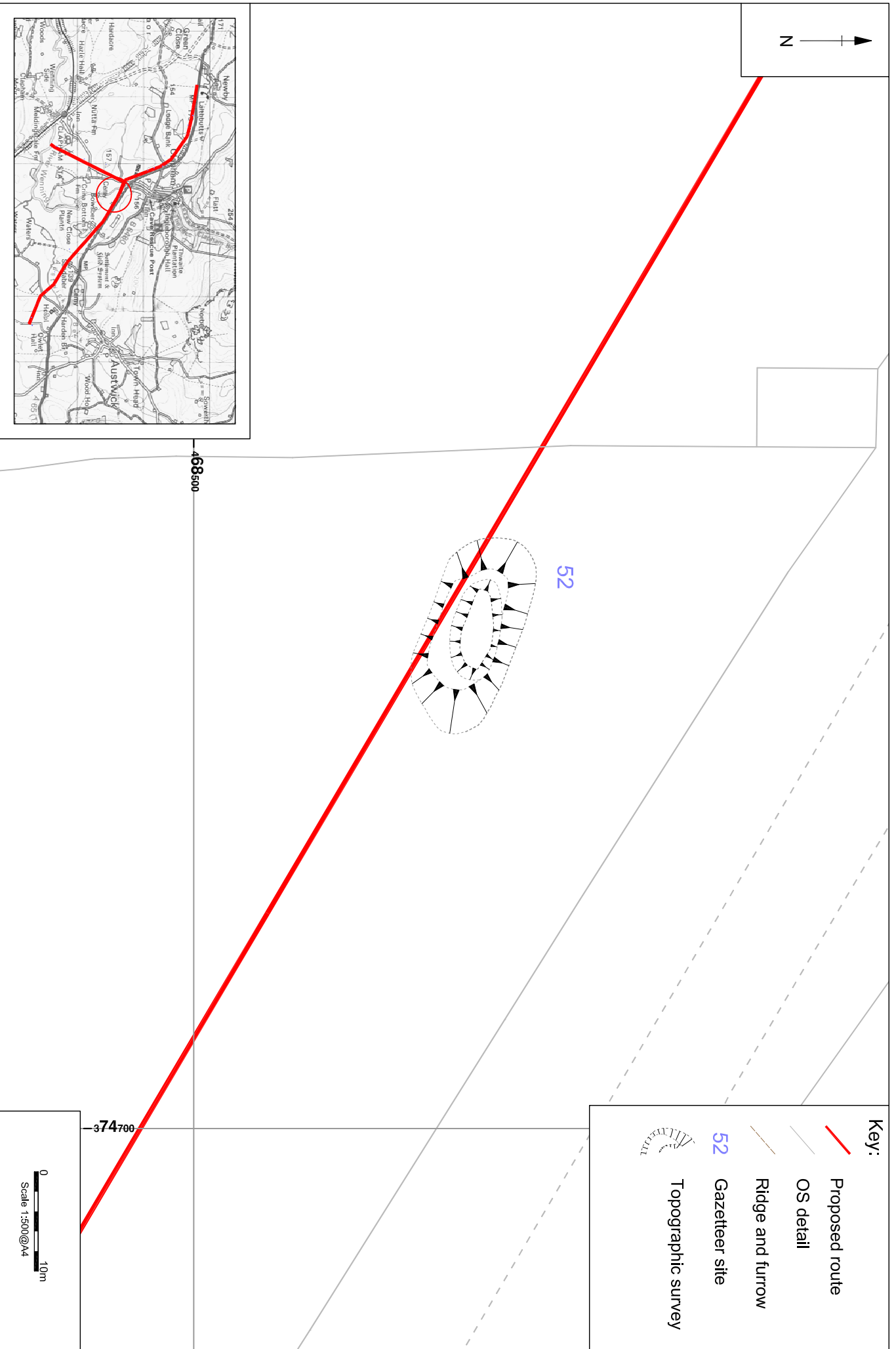


Figure 6: Topographic Survey, Site 52

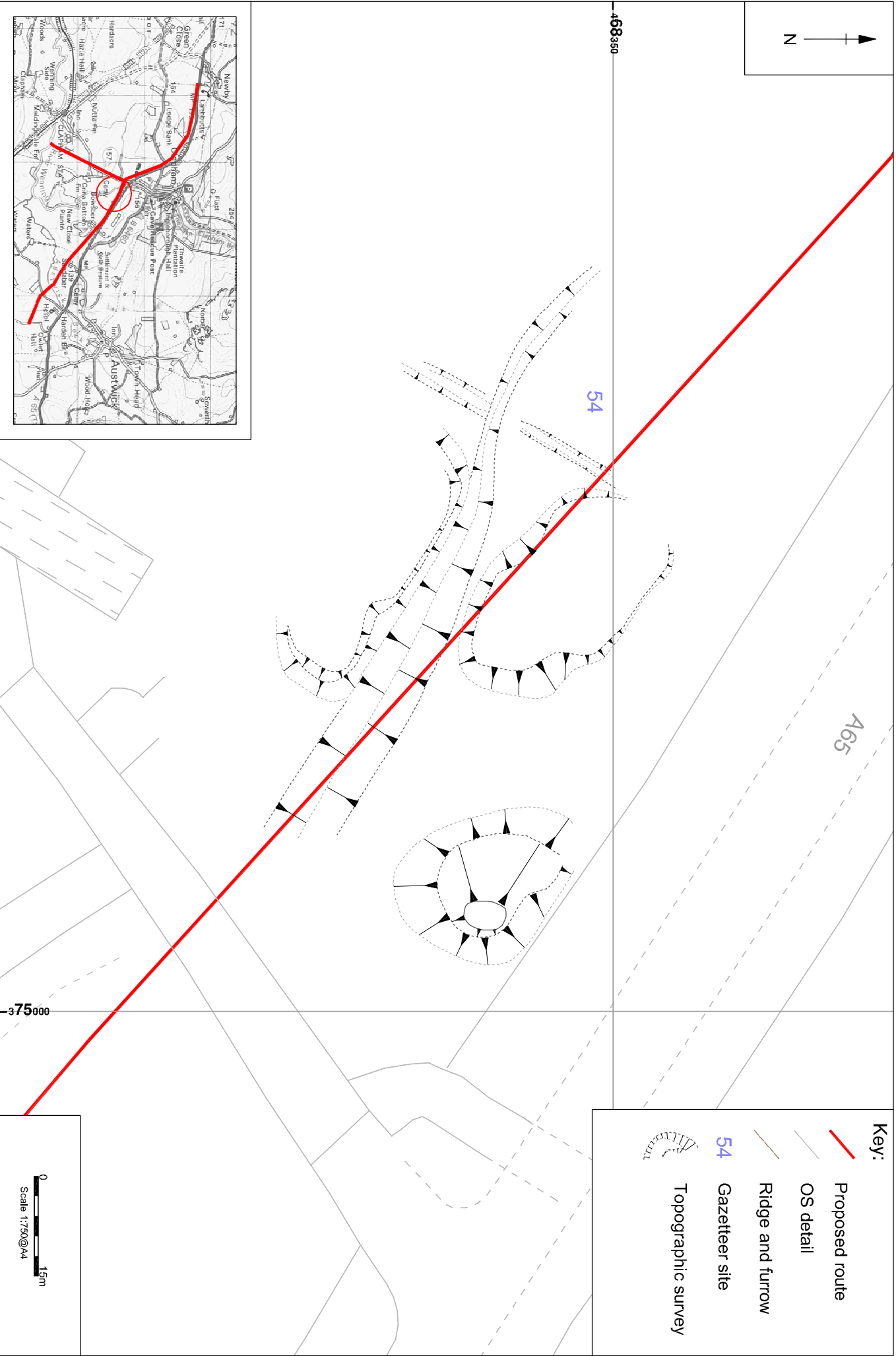


Figure 7: Topographic Survey, Site 54

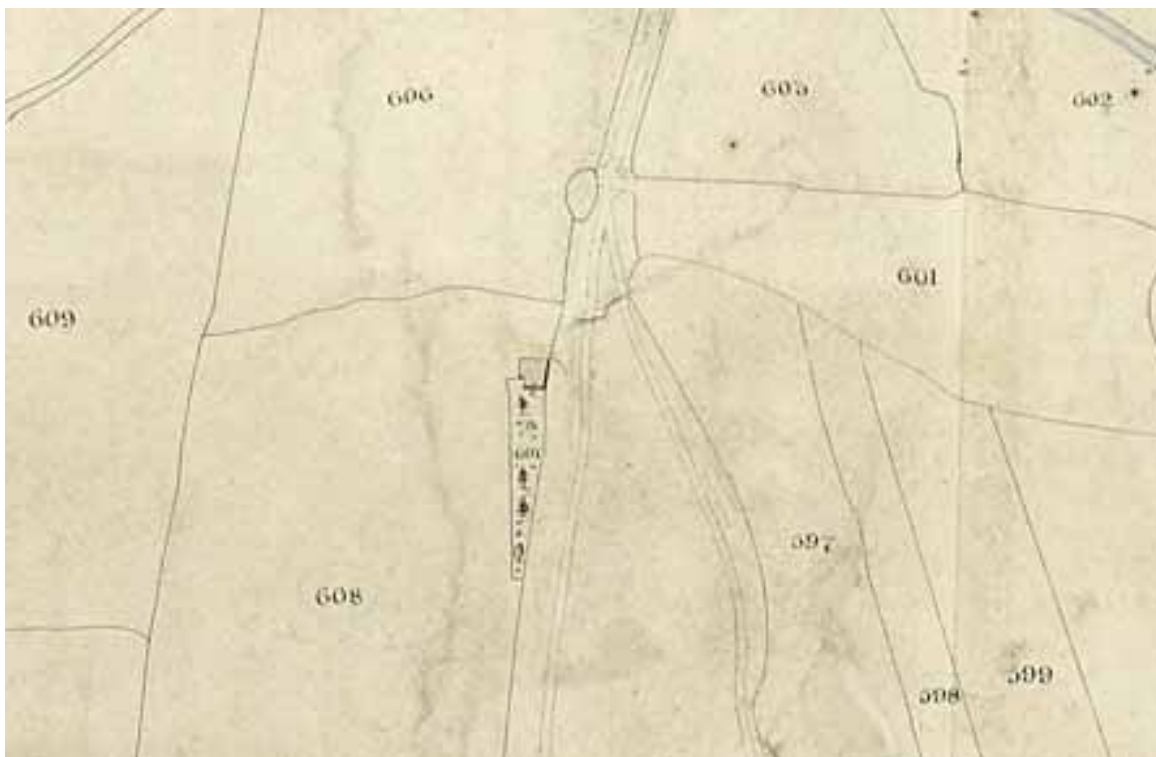


Plate 1: Tithe Map, 1847, centred on Site 41

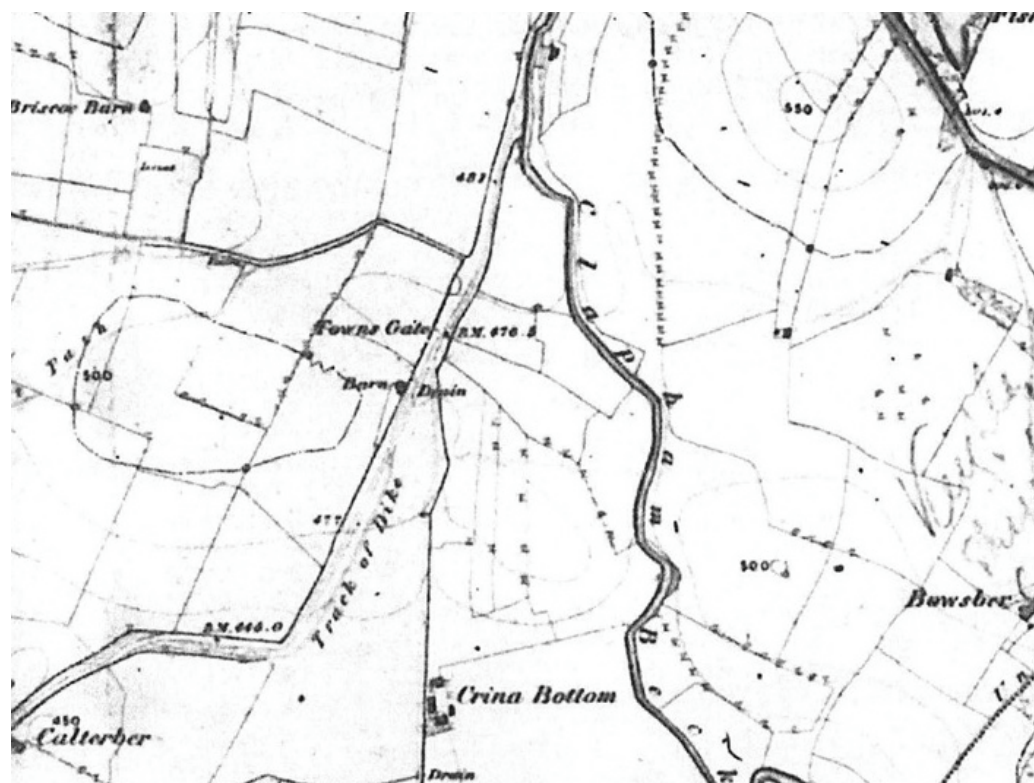


Plate 2: Ordnance Survey First Edition 6" to 1 mile, 1851, centred on Site 41



Plate 3: Site 41, prior to topsoil stripping. The holloway can be seen in the centre of the picture, with possible house platforms to either side.



Plate 4: Cobbled surface, 1025, internal surface of field barn



Plate 5: Site 49, prior to topsoil stripping



Plate 6: Site 49, field boundary ditch and bank, 1026.



Plate 7: Site 52, prior to topsoil stripping



Plate 8: Cobbled stock yard, Site 52



Plate 9: Site 52, stone drain, 1004



Plate 10: Site 54, prior to topsoil stripping



Plate 11: Platform of redeposited natural, 1013, Site 54

APPENDIX 1: PROJECT DESIGN

1. INTRODUCTION

- 1.1 **Strip and Record:** the objective of this exercise is to make a full graphic, photographic and written record of the archaeological evidence, in a manner whereby the extent, nature, form, date, function and relationships of archaeological features and/or deposits can be established to achieve reservation by record in advance of the development. This methodology will be applied to the more extensive and complex sites.
- 1.2 The strip and record investigations (sites shown in *Table 1 below*) will be undertaken in two stages: Stage 1 - in the first instance, topsoil and overburden material will be removed to expose the first archaeological horizon. All archaeological features thus exposed will be sufficiently cleaned to allow them to be recorded, and a pre-excavation plan will be produced; Stage 2 - then, following agreement of a strategy with the relevant Planning Archaeologist, any archaeology revealed in the strip will be sample excavated and recorded. The sample will be appropriate and proportional to the importance, quantity and complexity of the archaeology exposed, as well as its perceived research value.

Strip and Record Sites	Total approximate strip length (width as defined by the working easement is taken to be 30m)
Site 41, Crina Bottom Settlement Earthworks	400m
Site 49, Clapham Moor Field System and Building Platform	100m
Site 52, Bowsber Building Platform	50m
Site 54, Bowsber Building Platform	50m

Table 1: Sites subject to strip and record exercise

- 1.3 **Watching Brief:** the primary aim of the watching brief is to determine the character, extent, integrity and, where possible, the date of the surviving archaeological resource within specified sections and for targeted sites within the proposed development area.
- 1.4 The watching brief will entail the manual cleaning and recording of the archaeological resource, **all ground disturbances** associated with the pipeline easement stripping activities will be monitored.
- 1.5 **Report and Archive:** a report will be produced for the Client within twelve weeks of completion of the fieldwork. The report will assess the significance of the data generated by the archaeological programme of fieldwork within a local and regional context. Where appropriate it will make recommendations for further work.
- 1.6 An archive will be compiled and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long-Term Storage* (Walker 1990). It

will be prepared during the fieldwork programme, and supplemented as necessary during report writing process. The archive will be prepared to professional standards for deposition in an appropriate repository.

2. METHOD STATEMENT

2.1 STRIP AND RECORD INVESTIGATIONS

2.1.1 **Stage 1:** the initial topsoil stripping will be designed to expose the character and nature of the archaeological remains, and assess their potential research value. The primary aims will be:

- To expose archaeological remains across the whole archaeological site by the mechanical removal of topsoil and any masking subsoil;
- To create a pre-excavation plan of exposed deposits;
- To collect datable/activity specific material from the surface of exposed deposits;
- To confirm the priorities for further archaeological investigation.

2.1.2 **Stage 2:** further archaeological investigations will be designed to recover data sufficient to allow for “preservation by record” and establish the extent, date, character and significance of the archaeological remains. The primary aims will be:

- To characterise the overall nature of the archaeological resource and to understand the process of its formation;
- To create a detailed plan of all archaeological features;
- To establish the character of those features in terms of cuts, soil matrices and interfaces;
- To recover, where appropriate, across the archaeological site representative ecofactual and palaeoenvironmental samples to provide evidence of function and past landuse;
- To establish in outline a dated sequence of structures and/or deposits and thus to define changes in site organisation over time.

2.1.3 **Stage 1 - Stripping:** during the strip and record investigation, the topsoil will be removed under archaeological supervision by a mechanical excavator fitted with a toothless ditching bucket. A banksman should be present at all times. Stripping will proceed until the uppermost horizons of significant archaeological remains have been revealed or, where these are absent, the natural substrate. The topsoil will be stockpiled separately from other deposits. The stripped areas, including the edges if necessary, will be cleaned sufficiently to enhance the definition of features.

2.1.4 The mechanical excavator used to accomplish the topsoil strip will be fitted with a toothless ditching bucket. If appropriate, further machine excavation will be carried out after hand excavation and recording of such deposits has

been completed. (Such techniques are only appropriate for the removal of homogenous low-grade deposits, which may give a "window" into underlying levels; or for characterising features where there is no danger of removing important stratigraphic relationships and sufficient stratigraphy will remain to allow the excavation of hand excavated samples). The machine used will be safe, in good working order and powerful enough for the work and to be able to mound spoil and overburden neatly, at a minimum distance of 1m from the trench edges. The topsoil will be stripped in a systematic and logical manner, to ensure that where practicable the excavators and machines used to remove spoil do not rut, compact or otherwise damage buried or exposed archaeological features and deposits by crossing previously stripped areas. The topsoil and subsoil will be piled separately at a safe working distance from the excavations.

- 2.1.5 **Mapping:** the strip and record area will be planned using either a Total Station or dGPS and the resulting plan tied into the national grid. The stripping team will pay close attention to achieving a clean-stripped surface, using the mechanical plant under close archaeological supervision, to reduce the need for extensive hand cleaning. Limited areas may still require hand cleaning, to clarify complex feature intersections. The principal aim of the initial work will be to produce a plan of the revealed features that can be used to define and quantify the second stage of formal and detailed excavation. Plans will be maintained as stripping progresses and features will be defined on the ground. A general site plan will be produced at an appropriate scale to map the exposed features.
- 2.1.6 **Stage 2 - Sampling:** the research value of the archaeology and the necessity to achieve "preservation by record" in advance of the development will inform the second stage excavation sampling strategies. The exact sampling levels will be determined by the nature of the remains.
- 2.1.7 Any structures will be excavated to the extent that they are sufficiently characterised and understood, this will involve excavating a representative range of structural elements such as post-holes, construction trenches, hearths etc. Some sufficiently important structures eg hearths, kilns, midden deposits etc may require 100% samples. In the case of industrial sites it is not envisaged that walls/foundations will be removed but rather large features such as tanks, drains and chambers will be sample excavated.
- 2.1.8 Any positive archaeological feature or deposit likely to obscure earlier features will be completely removed in the most appropriate fashion, after being recorded.
- 2.1.9 Linear features will be excavated to the extent that they are characterised and understood. This will include 100% of terminals and ditch intersections and sufficient interventions to provide evidence of dating and formation. As a guide linear features up to 5m in length will be subject to a 20% sample while linear features over 5m long will be subject to 10% (samples to be at least 1m wide);

- 2.1.10 An appropriate range of discrete/isolated features (pits, postholes etc) and non-linear negative features will be investigated. It should be noted that in most cases such features will be half-sectioned, but where either no dating/functional evidence has been obtained, or where artefacts have been recovered of such a nature that the recovery of additional material of a similar nature is thought to be worthwhile, then further sampling will be undertaken. Where clusters of like features occur, it may prove sufficient to investigate a representative sample. Features within industrial sites will be cleaned out by the judicious use of a mechanical excavator down to maximum disturbance or natural geology, whichever comes first.
- 2.1.11 All contexts will be recorded using standard recording systems in accordance with the IFA Standards and Guidance for archaeological excavations; planning and surveying will be based on a site grid tied into the Ordnance Survey National Grid and ordnance datum levels will be taken where appropriate.
- 2.1.12 Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation *in situ*. Any hand excavation will respect the stratigraphy of archaeological layers, features, deposits and structures. When required, each context will be excavated in sequence.
- 2.1.13 Complex features and excavated interventions will be recorded by, individual hand-drawn plans made at a scale of 1:20 or 1:10. These detailed plans and the area plan produced in Stage 1 will be digitised and combined to produce a post-excavation plan of the site. Sections will be drawn at 1:10 or 1:20 unless circumstances dictate otherwise. All features revealed in the excavated area will be planned. A full digital photographic record will also be maintained.
- 2.1.14 ***Finds Policy:*** OA North employs artefact and palaeo-ecology specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation. In addition, OA North maintains close relationship with Ancient Monuments Laboratory staff at the University of Durham, and access to conservation advice and facilities can be made available if necessary. Finds recovery will be in accordance with best practice (following current Institute of Field Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner and an appropriate recipient museum prior to the work taking place.
- 2.1.15 ***Environmental Sampling:*** environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). In general terms, the sampling strategy will be aimed at recovering palaeo-botanical, palaeo-zoological and pedological evidence, although the precise scope of the programme will be agreed with the Client prior to commencement of the fieldwork. All samples will processed at OA North's offices in Lancaster, and will be subject to a rapid preliminary

analysis by the in-house palaeo-environmentalist in order to allow an assessment of their potential.

- 2.1.16 **Human Remains:** human remains are not expected to be present, but if they are found they will, if possible, be left *in-situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.
- 2.1.17 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.

2.2 WATCHING BRIEF

- 2.2.1 A programme of field observation will record accurately the location, extent, and character of any surviving archaeological features and/or deposits within all easement stripping activities and ground disturbance associated with the development works, and within the excavation for the pipe trench where no easement exists. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.
- 2.2.2 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (ie selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 2.2.3 If significant archaeological deposits or features are identified that might be affected by machine tracking or the pipe trench cutting then the area will be sealed off to protect it and there will be a site meeting between the interested parties (including the relevant curators and United Utilities Project Manager) to discuss use of the contingency fund to allow a rescue excavation and recording exercise to take place.
- 2.2.4 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered. This would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing.
- 2.2.5 The finds policy, environmental sampling and treatment of human remains will be undertaken as above (*Sections 3.1.9 to 3.1.12*)

2.3 ARCHIVE/REPORT

- 2.3.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the relevant HERs (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Offices, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OA North recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.
- 2.3.2 The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.
- 2.3.3 **Report:** at this stage it is envisaged that two reports will be compiled. The results of the evaluation trenching and the strip and record investigations will be combined into one report. Due to the duration of the pipeline works, the watching brief will be presented as a separate report. Both reports will be presented as drafts for comments to the relevant curators within twelve weeks of completion of the fieldwork. In the event that archaeological remains are encountered of such significance that would warrant MAP2 post-excavation assessment, then individual assessment reports would be compiled.
- 2.3.4 The reports will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.
- 2.3.5 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans.

2.4 OTHER MATTERS

- 2.4.1 **Preservation in-situ:** specific measures for preserving *in-situ* the remains of important archaeological sites encountered will be discussed with the relevant curator. Following such discussions detailed engineering solutions and a method statement would be presented. During the course of these discussions the specific site would be fenced and made secure.
- 2.4.2 **Health and Safety:** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties for inclusion in the safety file. It is assumed that the Client will provide any available information regarding services within the study area, if available. It is also assumed that the Client will provide secure fencing. The client is also expected to provide welfare facilities.
- 2.4.3 **Confidentiality:** the report is designed as a document for the specific use of the Client, for the particular purpose as defined in the project design, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project design, or for any other explicit purpose can be fulfilled, but will require separate discussion and funding.
- 2.4.4 **Insurance:** the insurance in respect of claims for personal injury to or the death of any person under a contract of service with the unit and arising out of an in the course of such person's employment shall comply with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of OA North, in respect of personal injury or damage to property by negligence of OA North or any of its employees, there applies the insurance cover of £2m for any one occurrence or series of occurrences arising out of one event.
- 2.4.5 **Project Monitoring:** OA North will consult with the Client and the clients contractor regarding access to the site. The Client will be kept fully informed of the work and its results, and any proposed changes to the project design will be agreed in consultation with the Client.
- 2.4.6 **Contingencies:** if there are more complex or generally deeper deposits than can be anticipated from the evidence available, there may need to be a corresponding increase in costs, which will be subject to agreement with the Client and the archaeological curators. Similarly, there will be a recourse to a contingency if there is any requirement to fully excavate any human remains that may be present. This would also apply to the full excavation of sites not covered by the schedule of costs. These contingency costs are in accordance with the Institute of Field Archaeologists guidance and are defined in the costings section.

4 WORK TIMETABLE

- 4.1 Prior to the fieldwork taking place a programming meeting will be arranged with the client and his construction contractor. OA North could commence the archaeological programme of works within two weeks of receipt of written notification from the Client. The following timetable is a guide to the duration of the fieldwork.
- 4.2 The strip and record investigations (Stage 1, stripping and plan) will take in the region of 30 days Site 41 15 days; Sites 49, 52 and 54 5 days each). Further investigation of these sites will be programmed on a site by site basis once Stage 1 is completed, and in consultation with the relevant curator.
- 4.3 The duration of the watching brief will be dependent upon the progress of the pipeline contractor.
- 4.4 A draft report will be completed within twelve weeks following completion of the fieldwork, and submitted for comment to the archaeological curator.

5 STAFFING

- 5.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OA North Senior Project Manager) to whom all correspondence should be addressed. Alison has considerable experience in the management of pipeline related works, encompassing the entire range of fieldwork and the nature of the sites subject to investigation.
- 5.2 The fieldwork is likely to be directed by an (OA North Project Officer). It is not possible to provide details of specific archaeologists that will be involved with the fieldwork at this stage, but all shall be suitably qualified archaeologists with proven relevant experience. It is anticipated that two or three small teams will be required during the course of the fieldwork.
- 5.3 Assessment of any finds recovered from the excavation will be undertaken by OA North's in-house finds specialist **Christine Howard-Davis BA** (OA North Finds Manager). Christine has extensive knowledge of all finds of all periods from archaeological sites in northern England, and is a recognised expert in the analysis of post-medieval artefacts.
- 5.4 Assessment of any palaeoenvironmental samples which may be taken will be undertaken by **Elizabeth Huckerby MSc MIFA** (OA North Project Officer). Elizabeth has extensive knowledge of the palaeoecology of the North West through her work on the English Heritage-funded North West Wetlands Survey.

REFERENCES

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edn, London

Institute of Field Archaeologists (IFA), 1992 *Guidelines for data collection and compilation*

OA North, 2008a *West-East Link Main, Impact Assessment Report*

OA North 2008b *West-East Link Main, Targeted Research Report*

APPENDIX 1: SITE SUMMARIES

SPRING WATER BLEACH WORKS, RADCLIFFE (SITE 70)

HER Summary:

Site Name: Spring Water Bleach Works, (site of), Radcliffe
Site Type: Factory/Industrial Site/Reservoir/Bleach Works/Building
Period: Post-Medieval/Modern
HER No. 7637.1.0
NGR: SD 7990 0680

Description: A large complex of buildings which comprises the area of the works named “Spring Water Print Works”. The site was also marked as a “Bleach Works” with five reservoirs and various outbuildings, including tanks and other features. The buildings had been demolished before 1980 but the whole area still shows signs of past industrial activity. The site is now landscaped as a park.

RINGLEY FOLD (SITE 61, 272)

HER Summary:

Site Name: Possible Prehistoric Settlement Site
Site Type: Prehistoric Settlement Site (possible)
Period: Unknown
HER No: 4496.1.0
NGR SD 76365 04405

Description: A promontory site overlooking the River Irwell. Potentially a good site for prehistoric settlement.

WINDLE COLLIERY, WINDLE, ST HELENS (SITES 117-120, 129-130, 136-141, 148)

HER Summary:

Site Name: Windle Collieries
Site Type: Coal Workings
Period: *Industrial*
HER No: 4897-003,004, 4896-020, 021, 022, 023, 024, 025
NGR SJ 4923 9743 and SJ 4861 9690

Description: Two clusters of Coal Workings varying in date from late eighteenth century to later nineteenth century, and early twentieth century. The site as a whole includes, pits (**118, 120, 148**), shafts (**130, 137, 138, 139, 140**), buildings (**136, 141**) and a boiler (**119**).

GARSWOOD HALL, GARSWOOD (SITE 270)***HER Summary:***

Site Name: Garswood Hall
Site Type: Manor house
Period *Medieval*
HER No: NME8758
NGR: SJ 54500 98500

Description: Site of a medieval? Manor house. During demolition a medieval muniment chest was recovered. Located in a medieval park and surrounded by a multiple moated enclosure and fishponds.

ALPHA FINISHING WORKS, OUTWOOD (SITE 41)***HER Summary:***

Site name Two structures (site of) south of Ringley Road
Site type Building, finishing works, settlement, house
Period Post-medieval - 19th century
HER No 4023.1.0
NGR SD 7812 0571

Description On the 1850 map two detached structures: a rectangular building with western cross-wing fronted the turnpike road and to the rear (south) a T-shaped structure. 1894 showed none of these earlier structures. The buildings shown on the site by that time extended over a larger area to include a rectangular building at SD 7806 0572 and were called Alpha Finishing Works. By 1909 this site appears to have been occupied by three groups of terraces without an industrial usage.