

KIRKBY STEPHEN TO MIDLAND COTTAGES WwTW,

CUMBRIA



**Archaeological Desk-
Based Assessment
and Walkover Survey
(Final Version)**



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SUMMARY

Oxford Archaeology North (OA North), undertook a desk-based assessment and walkover survey on behalf of United Utilities Ltd during March 2005. The assessment covered a 1km corridor of land around the proposed pipeline route from Kirkby Stephen to Midland Cottages Waste Water Treatment Works, Cumbria (NY 7716 0760 to NY 7621 0678).

The desk-based assessment comprised a search of both published and unpublished records held by the Cumbria County Historic Environment Record (HER) in Kendal, the Cumbria County Record Office, also in Kendal, and the archives and library held at OA North. In total, 27 sites were identified from the HER, including two Scheduled Monuments (Sites **10** and **23**) at Kirkby Stephen. Another 21 sites were identified through the examination of early maps, aerial photographs and previous archaeological assessments carried out in the area. In total, 8 sites identified by the desk-based assessment are likely to be affected by the proposed development: a Roman road (Site **01**), a coal depot (Site **14**), a quarry (Site **15**), a building (Site **19**), two parks (Sites **20** and **30**), and two enclosures (Sites **33** and **34**).

The walkover survey identified a further 10 sites, making a total of 58 sites identified by the two surveys. This added a further four sites that are likely to be affected by the development: an enclosure (Site **53**), a stone wall (Site **51**), a mound (Site **54**) and a stone outcrop (Site **58**).

The most significant sites within the study area are the settlement-type sites of the prehistoric period (Sites **10**, **23**, **45**, and **46**), as these represent not only some of the largest and most diverse sites in the area, but they are also well preserved. A number of the sites of medieval and post-medieval date have some potential for providing additional information, but it is the sites of unknown date (Sites **12-3**, **24-6**, **36-9**, **42-3** and **47**) that have the greatest potential. Many of these are large in size and are possibly prehistoric in date and so could add a great deal to the understanding of this period in the general area.

It is considered probable that moving the proposed pipeline would do little to lessen the impact on archaeological remains, although it could potentially be minimised. Whatever route is taken is likely to have some impact on archaeological remains, be they recorded or as yet unknown.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to Jo Mackintosh and Arnold Webster of the Cumbria Historic Environment Record, and all the staff of the Cumbria County Record Office in Kendal for their assistance with this project.

Jo Dawson and Daniel Elsworth undertook the desk-based assessment, and Dave McNicol carried out the walkover survey. Daniel Elsworth, Jo Dawson and Dave McNicol wrote the report, and Mark Tidmarsh produced the drawings. Alison Plummer managed the project and also edited the report, together with Alan Lupton.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 United Utilities propose to construct a new transfer pipeline from Kirkby Stephen to Midland Cottages Wastewater Treatment Works, Cumbria (NY 7716 0760 to NY 7621 0678). The Assistant Archaeologist at Cumbria County Council's Historic Environment Service advised that the route passed through an area of archaeological potential. Specifically, in the vicinity of the proposed route there were several prehistoric, Romano-British and medieval settlement and agricultural sites recorded in the Historic Environment Record. It was therefore considered that important archaeological remains may survive along the route, which would be damaged or destroyed by the proposed works. Because of this, the Assistant Archaeologist recommended that a rapid archaeological desk-based assessment and walkover survey be carried out.
- 1.1.2 The desk-based assessment comprised a search of both published and unpublished records held by the Cumbria County Historic Environment Record (HER) in Kendal, the Cumbria County Record Office, also in Kendal, and the archives and library held at OA North. In addition to this, a walkover was carried out on the site of the proposed development, in order to relate the landscape and surroundings to the results of the desk-based assessment, and to identify further sites of archaeological potential. This report sets out the results of the desk-based assessment in the form of a short document, outlining the findings, followed by a statement of the archaeological potential and significance, and an assessment of the impact of the proposed development.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 OA North submitted a project design (*Appendix 1*) in response to a request from United Utilities for a desk-based assessment and walkover survey of a proposed water transfer pipeline route in Kirkby Stephen. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 DESK-BASED ASSESSMENT

2.2.1 The core study area focused on the proposed pipeline route and the land up to 0.5km east and west of the it. An extended study area of 0.5km to 1km outside the proposed route was considered for the purposes of the archaeological and historical background (*Section 3*, below). The principal sources of information consulted were historical and modern maps of the Kirkby Stephen area although published and unpublished secondary sources were also used. All archaeological sites within the core study area have been included in the Site Gazetteer (*Section 4*, below). The results were analysed using the Secretary of State's criteria for the scheduling of ancient monuments, outlined in Annex 4 of *Planning Policy Guidance 16: Archaeology and Planning* (DoE 1990).

2.2.2 ***Cumbria County Historic Environment Record (HER)***: the Cumbria County Historic Environment Record (HER) held in Kendal was consulted to establish the sites of archaeological interest already known within the study area, and the extent and number of these. The HER is a Geographic Information System (GIS) linked to a database of all archaeological sites in Cumbria, and is maintained by Cumbria County Council. For each entry, a short note was obtained, which was added to the site gazetteer (*Section 4*) and marked on a location plan (Fig 2). A large number of aerial photographs of archaeological sites close to the proposed development area were also examined.

2.2.3 ***County Record Office, Kendal (CRO(K))***: the County Record Office in Kendal was visited to examine maps relating to the study area. Both published and manuscript maps were consulted, as well as secondary published sources. Aerial photographs of known sites within the study area were also consulted (Plates 9-10).

2.2.4 ***Oxford Archaeology North***: OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise as the Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.

2.3 WALKOVER SURVEY

- 2.3.1 Following the desk-based assessment, a Level 1 walkover survey (*Appendix 1*) was undertaken to relate the existing landscape to research findings. It encompassed a 100m corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape were recorded using the relevant OA North *pro forma* sheets, and the features were positioned using a global positioning system device (GPS). A short note for each site was added to the gazetteer (*Section 4*).

2.4 ARCHIVE

- 2.4.1 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 Cumbria County Record Office in Kendal on completion of the project.

3. BACKGROUND

3.1 INTRODUCTION

3.1.1 The area around Kirkby Stephen has been subject to a number of recent archaeological assessments and investigations ranging from small evaluations to large surveys. Much of the information used in the background is taken from these reports, although it has been made relevant to the present assessment through reference to sites identified within the study area where suitable examples exist.

3.2 LOCATION, TOPOGRAPHY AND GEOLOGY

3.2.1 The proposed development route runs from the foot of Stenkrith Hill, to the south of Kirkby Stephen (NY 7716 0760), south-west as far as the proposed Kirkby Stephen - Midland Cottages waste water pumping station, which lies on the east side of the A685 (Fig 2). From there it continues in a south-westerly direction along the east side of the A685, before crossing over to Midland Cottages, which lie immediately to the east of the former Midland Railway, now the Settle to Carlisle Railway (NY 7621 0678).

3.2.2 The land along the proposed route lies at approximately 200m above mean sea level in the north, and rises fairly steadily to approximately 250m in the south (Ordnance Survey 1984). The landscape is typically a mix of gentle river valleys and more rugged higher ground (Countryside Commission 1998), with a number of large streams and rivers forming important elements.

3.2.3 The solid geology of the area is a complex mix of limestone, red sandstone and mudstone, ranging from the Carboniferous to the Triassic eras in date (OA North 2003, 9). The drift geology largely derives from glacially deposited till (boulder clay), although alluvial material is also present along the river valleys (*op cit*, 10). The overlying soils are general typical brown earths of the Eardiston Association (*ibid*).

3.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

3.3.1 **Prehistoric Period:** there is considerable evidence for prehistoric activity within the general area, much of it within the study area. Evidence for activity in Cumbria following the end of the last Ice Age is generally sparse however, and tends to be concentrated along the coast and in the south-western part of the county (Young 2002). Closer to the development area remains dating to this period are rare, although two bone harpoon points discovered at Crosby-on-Eden in 1875 are probably Late Upper Palaeolithic or early Mesolithic in date, although they were considered at the time to have come from Terra del Fuego (Hodgson 1895). Artefacts dating to the Neolithic period have been found across the local area, and include flint tools (Cherry and Cherry 1987, 64-7) and polished stone axes (Sowerby 1948, 3; Richardson 1980). During the Bronze and Iron Ages settlement sites became more permanent and there are several

- thought to date to this period from across the area (Higham and Jones 1975; RCHME 1936, 236; Plate 8).
- 3.3.2 The study area passes through the centre of an area rich in sites of probable or definite prehistoric date (Higham and Jones 1975; Plate 7). Several of these are listed in the gazetteer, including a round barrow (Site **35**) thought to be of Bronze Age date but possibly with an earlier cremation (Greenwell 1877), a Neolithic polished stone axe (Site **03**), part of a quern of Bronze Age or Iron Age date (Site **05**), a hillfort, presumably of Iron Age date (Site **10**; Plate 9), and a defensive earthwork, again assumed to be late prehistoric (Site **45**). There are several other sites of unknown date including a number of dykes and earthworks, which may form part of a large multi-phased prehistoric landscape that covered the whole area (Plates 7 and 10).
- 3.3.3 **Romano-British:** it is likely that a number of the settlement sites in the general area continued in use through the late prehistoric period and into the Roman occupation. Only one example of this type of site has been excavated, at Waitby, and although it shared features in common with sites considered to be prehistoric in date pottery dated to the fourth century AD was recovered from it (Webster 1972). It is likely that the Romans did have some form of presence in the area, even if it was only diplomatic and economic, and numerous finds of coins have been reported from the general area (Shotter 1988; 1989; 1991; 1992). There is as yet though, no known Roman settlement in the immediate area.
- 3.3.4 Within the study area two sites of Roman date are recorded. The first of these is one of the discoveries of coins (Site **04**), although the exact details of the location are not known (Shotter 1988; 1989). A Roman road (Site **01**) is also thought to have run through Kirkby Stephen (Site **01**), the line of which would continue into the study area (Anderson and Swailes 1985). This is based on evidence in the form of the word 'street' occurring in a number of locations and a limited attempt at mapping its location, although its existence has yet to be proved.
- 3.3.5 **Early Medieval:** physical evidence dating to the early medieval period is scarce in the region, although it is likely to have formed part of the Anglian kingdom of Northumbria by the early seventh century (Anderson and Swailes 1985, 12). Local place-names including the Anglian word 'tun', such as Wharton demonstrate this (*op cit*, 13), although the majority suggest a strong Norse influence across the entire area (Smith (ed) 1967). Kirkby Stephen is thought to mean 'village or farmstead with a church' (*op cit*, 8-9) and Waitby and Nateby both contain the Norse word for farmstead (*op cit*, 20 and 24). Physical evidence for the period is not particularly forthcoming, however, although fragments of carved stone crosses and hog back grave stones are known in Kirkby Stephen itself, including the famous 'Loki' stone (Birkbeck 2000, 4).
- 3.3.6 There are no recorded sites of early medieval date within the study area, although it is possible that some of the earlier settlement sites would have continued in use into this period.

- 3.3.7 **Medieval:** the entire study area is within the parish of Kirkby Stephen and much of it, along with parts of Nateby, Wharton and Hartley, is recorded as being granted by Ivo de Talebois to the convent of St Mary in York in 1088 (Nicolson and Burn 1777, 533-4). This grant was confirmed by subsequent bishops of Carlisle and remained the case until the sixteenth century. Following the Dissolution it was granted to the Musgrave family of Hartley in 1547, who sold most of it to Lord Wharton in 1548 (*op cit*, 535). Kirkby Stephen was granted a market charter in 1351-2 (Whellan 1860, 742), making it the most significant settlement in the area. The majority of the manors of Nateby, Waitby and Wharton were held by local families, although most came into the hands of the Musgraves and then Lowthers by the beginning of the eighteenth century (*op cit*, 747-8).
- 3.3.8 A small number of sites of medieval or probable medieval date are recorded within the study area, all of which relate to agricultural activity. These include lynchets (Sites **07-8** and **31**), ridge and furrow (Site **09** and **22**), Wharton Park (Site **30**) and a field system (Site **40**). Wharton Park is described by Whellan thus: '[it] was very large...[and] was extended over the ancient village, which was destroyed, and the inhabitants driven to Wharton Dikes, on the opposite side of the Eden' (1860, 748).
- 3.3.9 **Post-Medieval:** the landscape probably changed very little during the early part of the post-medieval period, it being rural and relatively isolated. The consolidation of land holdings by the Lowther family saw a decline in the fortunes of the former Wharton estate and by 1860 the hall is described as having '*long been in ruins; a small part of it is still occupied as a farm-house*' (Whellan 1860, 748). Kirkby Stephen was positioned on an important road route to the North East from Kendal, but it was not until the 1840s and 1850s, with the coming of the railways, that the area was truly opened to new development (LUAU 1993a, 14). The railways at first linked Kirkby Stephen to Barnard Castle and Tebay, before an Eden Valley branch was added, and this was followed by the construction of the Midland Railway's route between Settle and Carlisle (*ibid*). As a result Kirkby Stephen became '*the main centre of trade and distribution*' (*ibid*).
- 3.3.10 Many of the sites within the study area date to the post-medieval period. Some of these relate to the railway and other important transport facilities (Sites **02**, **11**, **14**, **16-7** and **21**). Others relate to quarrying and lime burning, both part of what was evidently an important industry in the area (Sites **06**, **15**, **27-9**, **44** and **48**). The remaining sites are more unique, such as Jubilee Park (Site **20**) or the water mill (Site **18**), while others are of unknown function (Sites **19**, **33-4** and **41**).

3.4 MAP REGRESSION ANALYSIS

- 3.4.1 **Jeffreys 1770 (Plate 1):** although not detailed by comparison with later maps this does provide some information regarding Wharton Park (Site **30**). It would appear to be significantly smaller at this date, and is shown as having a high fence around it, suggesting it was used as a deer park.

- 3.4.2 **Greenwood and Greenwood 1824 (Plate 2) and Hodgson 1828:** these are two of the earliest detailed maps of the area prior to the Tithe Maps, although they do not provide much information by comparison. Only a few sites were identified through reference to these maps, most of which were included in the HER, including the Kirkby Stephen Toll house (Site 02), Stenkrith Bridge (Site 16) and the water mill (Site 18). The extent of Wharton Park (Site 30) is also clearly depicted, and has evidently been expanded to the west since Jeffreys map of 1770 (Plate 1).
- 3.4.3 **Tithe Maps 1839-46 (CRO(K) WDRC/8/58; CRO(K) WDRC/8/162; CRO(K) WDRC/8/169):** these are the first maps to depict the area to a high level of detail and are important because they include field names, which can identify past activity in the area. This essentially provides a plan of the arrangement of the fields much as it must have been for the preceding few centuries. Only a single site was identified by reference to this map, the field name 'Saxon Close' (Site 24), which may be a reference to the known Romano-British settlement in the immediate vicinity (Site 23) or to another, as yet unrecognised site.
- 3.4.4 **Enclosure map 1850 (CRO(K) WQR/1/51):** only one relevant enclosure map for the area was examined, that of Kirkby Intake. A single site, a house (Site 41), was identified through the examination of this map.
- 3.4.5 **Ordnance Survey (c1860-1862; Plates 3-4):** the landscape shown in the first edition Ordnance Survey maps of c1860 and 1862 is notably different because the Midland Railway, running north-west/south-east in the west end of the study area, has not been constructed. Many of the sites listed in the HER were identified from these maps although a small number of additional sites were recorded. These include a coal and goods depot associated with the North Eastern Railway (Site 14), two quarries (Sites 15 and 44), a small building (Site 19), the line of the former North Eastern Railway (Site 21) and a small enclosure (Site 33).
- 3.4.6 **Ordnance Survey (1899-1920; Plates 5-6):** by the very end of the nineteenth century the construction of the Midland Railway had dramatically changed the landscape, and it is only at this time that Midland Terrace (now Midland Cottages) at the far west end of the proposed pipeline appear. A small number of additional sites were added through reference to these maps, almost all of which relate to substantial changes in the landscape. These include Jubilee Park, formerly a recreation ground (Site 21), and another small enclosure (Site 34).

3.5 ARCHAEOLOGICAL INTERVENTIONS

- 3.5.1 Only one properly recorded archaeological excavation is known to have taken place in the vicinity of the study area prior to 1993, the excavation of a Romano-British settlement site at Waitby (Webster 1972). This was carried out in 1967 and identified walls constructed with a double line of large blocks filled with rubble. Animal bones and Huntcliff ware dated to the fourth century AD were found among the remains of the collapsed walls (*ibid*).

- 3.5.2 More recently an extensive assessment of the proposed A585 Kirkby Stephen bypass, which passed north-east/south-west to the north of the study area but was never built, was carried out between 1993 and 1995 (LUAU 1993a; 1993b, 1995). This identified a large number of sites, many of which were surveyed and evaluated. The evaluation trenches revealed few features of great archaeological interest, although a single piece of possible medieval pottery was recovered from within the present study area near Midland Cottages (LUAU 1995). Evaluations within Kirkby Stephen at Melbecks on the east side of the town (The Brigantia Archaeological Practice 2003), and Rowgate on the west, near Croglam Castle (North Pennines Heritage Trust 2003), identified little of archaeological significance.
- 3.5.3 The area has been subject to two other large-scale surveys, one examining aerial photographs (Higham and Jones 1975), which identified large field systems across much of the area, all of which are included in the HER. More recently an extensive topographic survey of the Hartley Fold estate to the east of Kirkby Stephen identified remains of field systems and settlements dating to the Romano-British and medieval periods (OA North 2003).

4. WALKOVER SURVEY

4.1 RESULTS

4.1.1 The walkover survey (Fig 4) was undertaken along the proposed route of the pipeline, encompassing an area 100m each side of the projected easement. The main aim of the fieldwork was to record the existence, location and extent of any previously unrecorded sites of archaeological interest. In total, ten further sites were identified (Sites **49-58**), two of these, Sites **53** and **54**, lying directly on the proposed route, and two more, Sites **51** and **58**, lying in an area which will potentially be affected by the development (Fig 5). The results are presented in Table 1 below.

Field No.	Description/Land use	Results
Field 1	Gently sloping pasture.	No archaeological features were observed.
Field 2	Gently sloping pasture.	No archaeological features were observed.
Field 3	Gently sloping pasture.	No archaeological features were observed.
Field 4	Gently sloping pasture.	A post-medieval limekiln (Site 29) was located at the north-eastern end of the field, but is unlikely to be affected by the proposed development. No other archaeological features were observed.
Field 5	Fairly flat pasture.	A previously unrecorded rectangular low mound (Site 49) (Plate 11), was located at north-eastern end of the field. The feature ran roughly east/west and measured approximately 15m by 4m, with a maximum height of 0.5m. There were stones partially visible within the mound. The function of this feature is unknown, but it may be contemporary with the stone wall, which runs alongside it. It is unlikely that this feature will be affected by the proposed development.
Field 6	Undulating pasture.	A previously unrecorded large, shallow sub-rectangular depression (Site 50) (Plate 12), was located at the north-eastern side of the field. The depression was approximately 20m by 8m with a maximum depth of 1m. It is likely to have been the site of a field pond, since a spring is shown at this location on the 1916 OS Map (Plate 6). It is unlikely that this feature will be affected by the proposed development.
Field 7	Undulating pasture.	No archaeological features were observed.
Field 8	Sloping woodland and allotments.	Two parallel drystone walls (Site 51), running east/west were located within the overgrown woodland, to the south-east of the field. Both walls were in a derelict state, and only a maximum of one course survives. These are probably associated with an earlier phase of the allotment gardens. A

		previously unrecorded ridge (Site 52) (Plate 13), was located towards the eastern end of the field. The function of this feature is unknown, although it may be associated with the landscaping of the allotment gardens. It is possible these features will be affected by the proposed development.
Field 9	Wooded parkland.	This field contained a post-medieval building (Site 19).
Field 10	Gently sloping pasture.	A disused stone barn (Site 20) is located in the eastern corner, which will be affected by the proposed development. A previously unrecorded rectangular banked enclosure (Site 53) (Plate 14), is located at the south-eastern edge of the field, continuing on into Field 11. The enclosure measures approximately 200m north/south by 50m east/west. The bank measures approximately 1m wide with a maximum height of 0.5m. This feature will be affected by the proposed development.
Field 11	Gently sloping pasture.	Site 53 continues into this field from Field 10.
Field 12	Flat pasture.	No archaeological features were observed.
Field 13	Flat pasture.	No archaeological features were observed.
Field 14	Flat pasture.	No archaeological features were observed.
Field 15	Gently sloping pasture.	A previously unrecorded sub-circular low mound (Site 54) (Plate 15), was located near the eastern corner of the field. The mound measures approximately 5m by 2m, with a maximum height of 0.25m. The function of this feature is unknown, but it is likely to be affected by the proposed development. Another previously unrecorded sub-circular low mound (Site 55) (Plate 16), was located slightly south-east of the middle of the field. The mound measures approximately 3m by 2m, with a maximum height of 0.25m. The function of this feature is unknown, but it is unlikely to be affected by the proposed development. A previously unrecorded circular stony depression (Site 56) (Plate 17), was located along the southern edge of the field. The depression measures approximately 3m by 3m, with a maximum depth of 0.5m. The function of this feature is unknown, although it may be a field pond due to its close location to a spring shown on the 1860 OS Map (Plate 4). It is unlikely that this feature will be affected by the proposed development.
Field 16	Gently sloping pasture.	No archaeological features were observed.
Field 17	Gently sloping pasture.	This field contained a World War II pill box (Site 32).
Field 18	Valley with stream running through it.	A previously unrecorded rectangular depression (Site 57) (Plate 18), was located near the northern

		corner. The depression measures approximately 4m by 2.5m with a maximum depth of 0.4m, and is orientated roughly north/south. The function of this feature is unknown, and it is unlikely that it will be affected by the proposed development.
Field 19	Gently sloping pasture.	This field contained a post-medieval quarry and a prehistoric earthwork (Sites 44 and 45). A previously unrecorded stone outcrop (Site 58) (Plate 19), was located at the north-western edge of the field. This feature is probably associated with the nearby quarry (Site 44). It is possible that this feature will be affected by the proposed development.
Field 20	Gently sloping pasture.	No archaeological features were observed.
Field 21	Gently sloping pasture.	No archaeological features were observed.

Table 1: Results of the Walkover Survey

4.1.2 Of the ten sites identified during the walkover survey none can be attributed to a particular period with any degree of certainty. Most would appear to be associated with agricultural processes, land management or local industry.

5. GAZETTEER OF SITES

Site number	01
Site name	Streetside Road
NGR	377630 508720
Site type	Road
Period	Roman
SMR No	15536
Statutory Designation	-
Sources	HER; Anderson and Swailes 1985; The Brigantia Archaeological Practice 2003
Description	The approximate line of a possible Roman road heading towards Sedbergh as described by Anderson and Swailes (1985). An evaluation carried out on the line of it on the east side of Kirkby Stephen did not find any evidence for its existence (The Brigantia Archaeological Practice 2003).
Assessment	The line of the possible road is crossed near Jubilee Park (36979 507286) and so it will be affected by the proposed development. It also has a similar alignment to the route of the pipeline for part of its length and so could be more severely affected, depending on its actual position.
Site number	02
Site name	Kirkby Stephen Toll House
NGR	377230 507995
Site type	Site of Toll House
Period	Post-medieval
SMR No	15651
Statutory Designation	-
Sources	HER; Hodgson 1828; Ordnance Survey <i>c</i> 1860
Description	Kirkby Stephen gate toll house on the main road south of Kirkby Stephen, shown on Hodgson's map of 1828 and the Ordnance Survey map of <i>c</i> 1860.
Assessment	The site lies outside of the development area and is unlikely to be affected.
Site number	03
Site name	Kirkby Stephen Stone Axe Find
NGR	377000 508000
Site type	Find spot
Period	Prehistoric: Neolithic
SMR No	17751
Statutory Designation	-
Sources	HER; Richardson 1980
Description	A polished stone axe was found at Kirkby Stephen, but no details exist to give the circumstances of the find. It is now in the possession of Mr R. Stephen-Murray, West Lothian, Scotland. Visual examination suggests a fine-grained tuff of the Borrowdale Volcanic Series. Apart from chip marks in the area of the cutting edge, some of recent origin, the axe is in good condition. Where chipping has revealed the fresh rock the core material is greenish-grey in colour, while the surface is smooth and carries a thick grey patina. Maximum length 11.55cm, maximum thickness 3.62cm, estimated cutting edge 6.8cm, width across butt 2cm, maximum facet width 1.2m.
Assessment	The site lies outside of the development area and is unlikely to be affected, although its uncertain location makes a detailed assessment difficult.

Site number	04
Site name	Coin Finds, Kirkby Stephen
NGR	377000 508000
Site type	Find spot
Period	Roman
SMR No	19083
Statutory Designation	-
Sources	HER; Shotter 1988; 1989
Description	Three coins have been reported from the Kirkby Stephen area. A <i>denarius</i> of Vespasian, a <i>sestertius</i> of Faustina II and a <i>denarius</i> of Commodus.
Assessment	The site lies outside of the development area and is unlikely to be affected, although the uncertain location makes a detailed assessment difficult.

Site number	05
Site name	Kirkby Stephen Rotary Quern
NGR	37000 508000
Site type	Find spot
Period	Prehistoric: Bronze Age – Iron Age
SMR No	15651
Statutory Designation	-
Sources	HER
Description	The upper stone of a rotary quern of Shap granite discovered in Kirkby Stephen, exact provenance unknown. It is now at 34 South Road, Kirkby Stephen
Assessment	The site lies outside of the development area and is unlikely to be affected, although its uncertain location makes a detailed assessment difficult.

Site number	06
Site name	Brockram Quarries, Kirkby Stephen
NGR	377300 507810
Site type	Site of quarries
Period	Post-medieval
SMR No	15649
Statutory Designation	-
Sources	HER; Ordnance Survey c1860
Description	Brockram Quarries lay west of Stenkrith Hill and Nateby Road.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	07
Site name	Stenkrith Hill Lynchets
NGR	377603 507876
Site type	Lynchets
Period	Medieval
SMR No	1989
Statutory Designation	-
Sources	HER; RCHME 1936; Manchester University 1975, MU CS 28: 27
Description	There are lynchets on the north slope of Stenkrith Hill half a mile south of the church. They vary in length from 70yds upwards. The average width is 12ft.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	08
Site name	Lynchets North East of Croglam Castle, Kirkby Stephen
NGR	376908 507650

Site type	Earthworks
Period	Medieval
SMR No	1988
Statutory Designation	-
Sources	HER; RCHME 1936; Cumbria County Council 1984, 2440: 2; Manchester University 1975, MU CS 28: 28; 32: 35
Description	Faint traces of lynchets, which the RCHME describes as largely obliterated. Five are still visible orientated north-west/south-east and in a fair/poor condition. There are more above these but they are barely discernible.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	09
Site name	Ridge and furrow, Croglam Lane
NGR	376373 507882
Site type	Ridge and furrow
Period	Medieval – Post-medieval
SMR No	-
Statutory Designation	-
Sources	Cumbria County Council 1984, 2440: 3
Description	A small area of ridge and furrow is visible on an aerial photograph of 1984 to the north-west of Croglam Castle. It is orientated north-west/south-east.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	10
Site name	Croglam Castle, Kirkby Stephen
NGR	376843 507689
Site type	Hillfort
Period	Prehistoric: Bronze Age – Iron Age
SMR No	2000
Statutory Designation	SM 193
Sources	HER; Cumbria County Council 1984, 2440: 3; Manchester University 1975, MU CS 28: 28; 32, 35; 46: 20
Description	An oval enclosure of 1½ acres defined by a ditch with an external bank. An entrance gap occurs on the north-east site. No hut foundations or other features are visible in the interior. The banks stand 0.75m high. There is a ruined stone barn on the north-west side and some informal features are visible on aerial photographs (Cumbria County Council 1984, 2440, 3).
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	11
Site name	Kirkby Stephen Railway Station
NGR	376880 507520
Site type	Railway station
Period	Post-medieval
SMR No	15648
Statutory Designation	-
Sources	HER; Ordnance Survey c1860; 1916
Description	Kirkby Stephen railway station lies south of Kirkby Stephen on the dismantled Durham and South Lanes Railway. There is an associated signal box, turntable, weighing machines and crane. An associated engine shed is shown to the north on the Ordnance Survey map of 1916.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number 12
Site name Croglam Dykes
NGR 376743 507616
Site type Dykes
Period Unknown
SMR No 2007
Statutory Designation -
Sources HER; Cumbria County Council 1984, 2440: 3
Description There are at least three dykes running up to Croglam Castle visible in aerial photographs. All are in a fair/poor condition.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 13
Site name Intake Bottom Farm, Kirkby Stephen
NGR 376700 507500
Site type Ring ditch
Period Unknown
SMR No 2785
Statutory Designation -
Sources HER; Cumbria County Council 1984, 2440: 3, 6; Manchester University 1975, MU CS 32: 36; 28: 28; 23: 27; Higham and Jones 1975
Description A ring dyke/ditch around Intake Bottom Farm was identified by Higham and Jones (1975) although it does not appear to be evident on the aerial photographs.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 14
Site name Kirkby Stephen goods and coal depot
NGR 377095 507503
Site type Coal depot
Period Post-medieval
SMR No -
Statutory Designation -
Sources Ordnance Survey 1862
Description A coal depot comprising several buildings and associated rail sidings is shown on the Ordnance Survey maps from 1862 onwards associated with the former North Eastern Railway (now disused).
Assessment The site lies within of the development area and will be affected.

Site number 15
Site name Kirkby Stephen quarry
NGR 377221 507599
Site type Quarry
Period Post-medieval
SMR No -
Statutory Designation -
Sources Ordnance Survey 1862
Description An old quarry is shown here from the Ordnance Survey map of 1862 onwards.
Assessment The site lies close to the development area and may be affected.

Site number 16
Site name Stenkrieth Bridge, Kirkby Stephen
NGR 377300 5074707500

Site type Bridge
Period Post-medieval
SMR No 15615
Statutory Designation -
Sources HER; Ordnance Survey 1862; Hodgson 1828
Description A massive single-arched bridge built into the limestone gorge formed by the River Eden. Another smaller arch has been blocked up. There is a further large rectangular opening where the now disused railway also crosses the river (the viaduct has been dismantled) The bridge is in good condition and in use.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 17
Site name Hydro electric power station at Stenkrith Bridge, Kirkby Lonsdale
NGR 377324 507463
Site type Power station
Period Post-medieval
SMR No 17946
Statutory Designation -
Sources HER
Description Site of a power station at Stenkrith Bridge on the River Eden. According to T. Hay two of the turbines are now in Swaledale. The Hydro Electric Station was a North East Railway undertaking to provide power for lighting, signals and the shed at the adjoining railway station. The power station was installed in 1902 and operated until c1950.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 18
Site name Stenkrith Watermill, Kirkby Stephen
NGR 377440 507490
Site type Water mill
Period Post-medieval
SMR No 15650
Statutory Designation -
Sources HER; Hodgson 1828; Ordnance Survey 1862
Description The site of Stenkrith water mill. No traces remaining.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 19
Site name Building, Jubilee Park
NGR 377043 507362
Site type Building
Period Post-medieval
SMR No -
Statutory Designation -
Sources Ordnance Survey 1862
Description A small building is shown on the Ordnance Survey map of 1862, and is still present.
Assessment The site lies close to the development area and may be affected.

Site number 20
Site name Jubilee Park, Kirkby Stephen
NGR 376976 507367
Site type Gardens

Period	Post-medieval
SMR No	-
Statutory Designation	-
Sources	Ordnance Survey 1862; 1916
Description	An area marked 'Recreation Ground' is shown on the Ordnance Survey map of 1862. By at least 1916 it has been transformed into gardens named Jubilee Park, suggesting it was constructed as part of Queen Victoria's jubilee celebrations.
Assessment	The site lies close to the development area and may be affected.

Site number	21
Site name	Former North Eastern Railway
NGR	375902 508632 – 377046 507479 – 378452 508637
Site type	Railway line
Period	Post-medieval
SMR No	-
Statutory Designation	-
Sources	Ordnance Survey 1862
Description	The line of the former North Eastern Railway Line is crossed by the proposed pipeline.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	22
Site name	Intake Bottom, Kirkby Stephen
NGR	376421 507609
Site type	Ridge and furrow
Period	Medieval – post-medieval
SMR No	-
Statutory Designation	-
Sources	Manchester University 1975, MU CS 16: 0
Description	An area of ridge and furrow orientated north-west/south-east is shown on an aerial photograph of 1975.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	23
Site name	Intake Bottom, Kirkby Stephen
NGR	376300 507600
Site type	Settlement
Period	Romano-British
SMR No	1990
Statutory Designation	SM 510
Sources	HER; Cumbria County Council 1984, 2440: 6; Manchester University 1975, MU CS 24: 9-10; 26: 0-2; 28: 29; 32: 36; Higham and Jones 1975
Description	A dispersed settlement of probable Roman date identified in aerial photographs. There are the remains of a sub-rectangular enclosure, the north-west quadrant of which has been obliterated, which includes a circular hut foundation and at least one smaller rectangular division. There is a golf tee in the middle of the site from a disused golf course. The site is best preserved in its southern half and generally poorly defined in its northern half. The southern half has some erosion damage due to cattle feeders and farm vehicles.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	24
Site name	Intake Bottom, Kirkby Stephen
NGR	376242 507635
Site type	Field name
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	Tithe Map 1842 (CRO(K) WDRC/8/169)
Description	The Tithe Map of 1842 names this field 'Saxon Close', perhaps suggesting there is some form of early settlement or activity in the area. It may be a reference to Site 23 , to the south-east.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	25
Site name	Intake Bottom, Kirkby Stephen
NGR	376312 507429
Site type	Earthworks
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	Manchester University 1975, MU CS 26: 0
Description	A collection of dispersed linear earthworks are visible on an aerial photograph of 1975. They may relate to Site 23 , to the north.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	26
Site name	South of Intake Lane, Kirkby Stephen
NGR	376400 507300
Site type	Enclosures
Period	Unknown
SMR No	17758
Statutory Designation	-
Sources	HER
Description	Three small enclosures. One at NY 76350727 is c22m by 22m and has scattered remains of orthostats partially overlain by a later field wall. Two others, directly to the east, are 9m by 5m and 9m by 10m. These are raised, platform-like features that could be coney beds. In fair/poor condition.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	27
Site name	Kirkby Stephen, Intake Quarries
NGR	376520 507300
Site type	Quarries
Period	Post-medieval
SMR No	15647
Statutory Designation	-
Sources	HER; Ordnance Survey 1862
Description	A large group of quarries to the south-west of Kirkby Stephen.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	28
Site name	Intake Lane limekiln, Kirkby Stephen
NGR	376600 507248
Site type	Lime kiln
Period	Post-medieval
SMR No	17719
Statutory Designation	-
Sources	HER
Description	A very large limekiln built with large pieces of the local brockram. The bowl is oval (3.75m in diameter), largely filled in and now unlined. The draw-hole opening has two arched draw-holes, which are now blocked with rubble. The draw-hole opening has a shallow arch springing from 1.5m (height 2m, width 2.2m, depth 2.2m). It is barrel vaulted to 1.5m, corbelled from the rear and the original floor level is retained except at the rear. There is a very wide loading ramp (10m). Although the bowl is now largely filled in and some of the top courses are missing, this kiln is still very impressive. It was obviously designed to burn large quantities of lime.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	29
Site name	Intake limekiln, Kirkby Stephen
NGR	376670 507205
Site type	Lime kiln
Period	Post-medieval
SMR No	17720
Statutory Designation	-
Sources	HER
Description	A large square kiln built of limestone. It is built into the hill with a splayed ramp. The draw hole opening has a shallow arch, and it is now largely filled in (width 2.2m, depth 2.3m). The draw hole has collapsed and the round bowl is filled in and turfed over. Despite this, the kiln is in good condition apart from missing the top courses. It may have originally stood on common land, since the present enclosing field wall must have been built at a later date.
Assessment	The site lies close to the development area but is unlikely to be affected.

Site number	30
Site name	Wharton Park
NGR	376840 506531 (centre)
Site type	Park
Period	Medieval – post-medieval
SMR No	-
Statutory Designation	-
Sources	Greenwood and Greenwood 1824; Hodgson 1828; Tithe Map 1846 (CRO(K) WDRC/8/162); 1839 (CRO(K) WDRC/8/58)
Description	A park surrounding Wharton Hall is shown on Greenwood and Greenwood's map of 1824 and Hodgson's map of 1828. The Tithe Maps have various fields incorporating the name 'park' within this area. A house now named 'Halfpenny House' is situated at the north end of the park on the road in and was evidently originally the lodge; it is named 'Park Ho' on Greenwood and Greenwood's map of 1824 and 'Park Gate' on Hodgson's map of 1828.
Assessment	Parts of the site lies within the development area and will be affected.

Site number	31
Site name	Nateby lynchets
NGR	377990 506910

Site type	Lynchets
Period	Medieval
SMR No	1997
Statutory Designation	-
Sources	HER
Description	Lynchets. The field may have been drained, but not across the site. They are now very faint and are best seen from a distance, extending in a north-east/south-west direction. In poor condition.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	32
Site name	Whinney Hill WW II, pill box
NGR	376700 506900
Site type	Pill box
Period	Modern
SMR No	6341
Statutory Designation	-
Sources	HER
Description	A WWII pill box recorded by T Clare. It is reasonably intact and is in fair condition.
Assessment	The site lies close to the development area but is unlikely to be affected.

Site number	33
Site name	Near Midland Cottages
NGR	376319 506788
Site type	Enclosure
Period	Post-medieval
SMR No	-
Statutory Designation	-
Sources	Ordnance Survey 1862; 1899
Description	A small semi-circular enclosure is shown against a field boundary on the Ordnance Survey map of 1899. It is shown as a possible pond on the Ordnance Survey map of 1862.
Assessment	The site lies close to the development area and may be affected.

Site number	34
Site name	Near Midland Cottages
NGR	376269 506814
Site type	Enclosure
Period	Post-medieval
SMR No	-
Statutory Designation	-
Sources	Ordnance Survey 1899; 1915
Description	A small square enclosure is shown on the Ordnance Survey map of 1899, and another larger enclosure has been added to the south-east by 1915.
Assessment	The site lies close to the development area may be affected.

Site number	35
Site name	Wiseber Hill round barrow
NGR	376080 507050
Site type	Round barrow
Period	Prehistoric: Bronze Age

components, the first, was a pair of lynchets to the east of the site, each lynchet being approximately 1m high and 25m long. The second element comprised a pair of banks, no more than 2m wide and c0.5m high, which would have originally been a single bank, possibly a field boundary. They were difficult to discern at their southern end and were obscured by the railway embankment in the north. The banks were interrupted by a probable gateway, 3m wide. The final element of the field system was a hollow-way, aligned approximately north/south, between the western lynchet and the field boundary. It was visible for c60m and measured 2m in width. There were further trackways and terraces associated with this system but these were not within the working corridor. The superimposition of field boundaries and hollow way would suggest that the hollow way was orientated through a now relict field system.

Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 39
Site name Near Midland Cottages
NGR 375837 506887
Site type Quarry
Period Unknown
SMR No -
Statutory Designation -
Sources LUAU 1995, Site 208
Description A small sub-circular grass-filled depression 10m in diameter and approximately 1m in depth. It was located to the immediate south of the present field wall and did not appear to continue on the other side. The feature coincides with a right turn in the original wall.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 40
Site name Near Midland Cottages
NGR 375902 506815 (centre)
Site type Field system
Period Medieval – post-medieval
SMR No -
Statutory Designation -
Sources LUAU 1995, Sites 200-210
Description A large collection of earthworks identified and surveyed prior to the construction of the proposed Kirkby Stephen bypass (LUAU 1995). They comprise a variety of features including hollow ways, quarries, lynchets and trackways. Ten trenches were excavated across this area. No significant archaeology or finds were discovered, apart from a single piece of possibly medieval pottery found on the surface of a platform.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 41
Site name Near Midland Cottages
NGR 375787 506827
Site type House
Period Post-medieval
SMR No -
Statutory Designation -
Sources Enclosure map 1850 (CRO(K) WQR/1/51)
Description A small building named on the enclosure map of 1850 as ‘field house’.
Assessment The site lies outside of the development area and is unlikely to be affected.

Site number	42
Site name	Near Midland Cottages
NGR	375873 506613
Site type	Hollow way
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	LUAU 1995, Site 93
Description	A series of shallow intersecting hollow ways. The two main features were aligned north/south and run parallel to the present road, either side of a low flat mound c25m long and 6m wide. These then split into a series of hollow ways, with two running in deep curving hollows, up to 2m, down the slope to the west. Two more continue parallel to the road until they are truncated by a small ditch for the present drystone wall. They are probably associated with sites to the north.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	43
Site name	Petty Brow, Wharton
NGR	376050 506490
Site type	Mound
Period	Unknown
SMR No	15640
Statutory Designation	-
Sources	HER; Ordnance Survey 1862
Description	A mound described as a pile of stones on the Ordnance Survey map of 1862.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	44
Site name	Near Midland Cottages
NGR	376251 506692
Site type	Quarry
Period	Post-medieval
SMR No	-
Statutory Designation	-
Sources	Ordnance Survey 1862
Description	An 'old quarry' is marked on the Ordnance Survey map of 1862.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	45
Site name	Near Midland Cottages
NGR	376300 506600
Site type	Earthwork
Period	Prehistoric: Iron Age
SMR No	1344
Statutory Designation	-
Sources	HER
Description	A sub-oval earthwork gouged out of the natural hilltop creating a double bank c90m long, which appears to be part of a defensive rampart and ditch. The bank is c1.5m high on the outer lip (inside 0.1m to 0.2m), grassed over, with very few stones showing. The field has been improved, but the feature is in good condition apart from minor erosion damage. There are other amorphous earthworks within the field. The site enjoys commanding views in all directions.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	46
Site name	Easegill Head Settlement, Wharton
NGR	376290 506360
Site type	Field system
Period	Romano-British
SMR No	3493
Statutory Designation	-
Sources	HER; Higham and Jones 1975
Description	Traces of enclosures, banks and ditches visible on aerial photographs, which could be the remains of a settlement. Ridge and furrow is also visible in the vicinity and also some ploughed-down lynchets. This appears to be part of Site 47 , which has been cut the railway, and there are possible medieval remains associated with it.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	47
Site name	Easegill Head Settlement Site, Wharton
NGR	376550 506410
Site type	Settlement
Period	Unknown
SMR No	1992
Statutory Designation	-
Sources	HER; RCHME 1936; Manchester University 1975, MU CS 23: 32-4, 37; Cumbria County Council 1984, 2440: 4
Description	A very fragmentary settlement site 650 yards north-west of Wharton Hall. There appears to have been a roughly rectangular enclosure c16yds by 10yds and a second one 9yds by 9yds with traces of wall foundations between them. It is possible that the smaller enclosure may be natural, but there is also the possible remains of an isolated stone-founded hut c40m to the north-east. The site appears more complex, with traces of other enclosures, one of which is c12m by 13m and sub-oval in shape. There are also fragments of other banks. Near the railway there is another circular feature, c5m by 5m. This hut circle, on a raised platform, consequently does not seem isolated but appears to form part of this fairly extensive site which also extends into the field on the opposite side of the railway bank. Damaged by quarrying.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	48
Site name	Gallows Hill quarry
NGR	376745 506600
Site type	Quarry and limekiln
Period	Post-medieval
SMR No	15635
Statutory Designation	-
Sources	HER; Ordnance Survey 1862
Description	A quarry shown on the Ordnance Survey map of 1862 with an associated limekiln. The limekiln is very large, built of massive blocks and built into the hillside. The bowl is oval and unusually large and is lined with sandstone and then yellow brick. The rim of the bowl is formed by sandstone voussoirs. The draw hole opening has a shallow arch springing from 1.5m, it is barrel vaulted and corbelled from the rear (height 2m, width 2.5m, depth 2.6m). The draw holes were probably square, but they have now collapsed. This must have been an impressive kiln, presumably supplying lime both for building and land at Wharton Hall. The main structure is in

good condition, though the upper courses of the face are now missing and the bowl is filled in. The kiln was severely damaged in 1996 when it was robbed of stone from the south-east corner without the owner's knowledge or permission.

Assessment The site lies outside of the development area and is unlikely to be affected.

Site number 49
Site name North-east of Intake Lane
NGR 378736 509309
Site type Unknown
Period Unknown
SMR No
Statutory Designation -
Sources Walkover survey
Description Rectangular low mound located at north-eastern end of the field. Aligned roughly east/west and measures approximately 15m by 4m, with a maximum height of 0.5m. There are stones partially visible within the mound. The function of this feature is unknown, but it may be contemporary with the stone wall, which runs alongside it

Assessment The site lies close to the development area but is unlikely to be affected.

Site number 50
Site name South of Intake Bottom
NGR 378766 509345
Site type Possible Field Pond
Period Unknown
SMR No -
Statutory Designation -
Sources Walkover survey
Description Large, shallow sub-rectangular depression located at the north-eastern side of the field. The depression is approximately 20m by 8m with a maximum depth of 1m. It is likely to have been the site of a field pond, since a spring is shown at this location on the 1916 OS Map.

Assessment The site lies close to the development area but is unlikely to be affected.

Site number 51
Site name Allotment Gardens
NGR 378833 509313
Site type Possible Old Field Wall
Period Unknown
SMR No
Statutory Designation -
Sources Walkover survey
Description Two parallel drystone walls running east/west located within the overgrown woodland, to the south-east of the field. Both walls are mostly destroyed, and only a maximum of one course survives. These are probably associated with an earlier phase of the allotment gardens.

Assessment The site lies close to the development area and is likely to be affected.

Site number 52
Site name Allotment Gardens
NGR 378874 509359
Site type Ridge
Period Unknown
SMR No -

Statutory Designation -
Sources Walkover survey
Description A Ridge located towards the eastern end of the field. The function of this feature is unknown, although it may be associated with the landscaping of the allotment gardens
Assessment The site lies close to the development area but is unlikely to be affected.

Site number 53
Site name South of Jubilee Park
NGR 378894 509229
Site type Banked Enclosure
Period Unknown
SMR No
Statutory Designation -
Sources Walkover survey
Description Rectangular banked enclosure located at to the south of Jubilee Park. The enclosure measures approximately 200m north/south by 50m east/west. The bank measures approximately 1m wide with a maximum height of 0.5m.
Assessment The site crosses the proposed development and is likely to be affected.

Site number 54
Site name South of Allotment Gardens
NGR 378856 509261
Site type Mound
Period Unknown
SMR No -
Statutory Designation -
Sources Walkover survey
Description A sub-circular low mound located near the eastern corner of the field. The mound measures approximately 5m by 2m, with a maximum height of 0.25m. The function of this feature is unknown.
Assessment The site crosses the proposed development and is likely to be affected.

Site number 55
Site name South of Allotment Gardens
NGR 378806 509171
Site type Mound
Period Unknown
SMR No
Statutory Designation -
Sources Walkover survey
Description A sub-circular low mound located slightly south-east of the middle of the field. The mound measures approximately 3m by 2m, with a maximum height of 0.25m. The function of this feature is unknown.
Assessment The site lies close to the development area but is unlikely to be affected.

Site number 56
Site name North of High Park
NGR 378789 509083
Site type Possible Field Pond
Period Unknown
SMR No -

Statutory Designation -
Sources Walkover survey
Description A circular stony depression located along the southern edge of the field. The depression measures approximately 3m by 3m, with a maximum depth of 0.5m. The function of this feature is unknown, although it may be a field pond due to its close location to a spring shown on the 1860 OS Map (Plate 4).
Assessment The site lies close to the development area but is unlikely to be affected.

Site number 57
Site name North of Whinney Hill
NGR 378665 509060
Site type Rectangular Depression
Period Unknown
SMR No -
Statutory Designation -
Sources Walkover survey
Description A rectangular depression located near the northern corner of the field. The depression measures approximately 4m by 2.5m with a maximum depth of 0.4m, and is orientated roughly north/south. The function of this feature is unknown.
Assessment The site lies close to the development area but is unlikely to be affected.

Site number 58
Site name Near Midland Cottages
NGR 378381 508736
Site type Stone Outcrop
Period Unknown
SMR No -
Statutory Designation -
Sources Walkover survey
Description A stone outcrop located at north-western edge of the field. This feature is probably associated with the nearby quarry (Site 44).
Assessment The site lies close to the development area and is likely to be affected.

5. SIGNIFICANCE OF THE REMAINS

5.1 INTRODUCTION

5.1.1 In total, 58 sites of archaeological interest were identified within the study area. Of these, 27 were already listed in the HER. Of the remaining 31, 21 sites were identified through examination of early maps, aerial photographs and previous archaeological assessments carried out in the area. A further 10 were identified during the walkover survey.

5.1.2 Of the 27 sites listed in the HER two are Scheduled Monuments, Sites **10** and **23** (SM Nos 2000 and 1990). There were further Scheduled Monuments just outside of the study area (SM Nos 510, 27811 and 431), which are not included in the gazetteer. There were also three Listed Buildings within 1km of the pipeline, although these were not included in the gazetteer, as they will not be affected.

Period	No of sites	Sites
Neolithic	1	Axe (03)
Bronze Age	1	Round barrow (35)
Iron Age/ Romano-British	5	Quern stone (05), hillfort (10), settlement (23), earthwork (45), field system (46)
Roman	2	Road (01), coins (04)
Medieval	3	Lynchets (07-8, 31)
Medieval – post-medieval	4	Ridge and furrow (09, 22), park (30), field system (40)
Post-medieval	19	Toll-house (02), quarries (06, 15, 27, 44), railway station (11), coal depot (14), bridge (16), power station (17), water mill (18), building (19), park (20), railway line (21), limekilns (28-9, 48), enclosures (33-4), house (41)
Modern	1	Pill box (32)
Unknown	22	Dykes (12), ring-ditch (13), field name (24), earthworks (25, 52), enclosures (26, 53), hollow way (36-8, 42), quarry (39), mound (43, 49, 54-55), settlement (47), depression (50, 56-57), wall (51), stone outcrop (58)

Table 1: Number of sites by period

5.2 CRITERIA

- 5.2.1 There are a number of different methodologies used to assess the archaeological significance of sites; that to be used here is the ‘Secretary of State’s criteria for scheduling ancient monuments’ which is included as Annex 4 of PPG 16 (DoE 1990). The sites previously listed (see *Section 4*, above) were each considered using the criteria, with the results below.
- 5.2.2 **Period:** of the various types of site belonging to the prehistoric period several are of some significance. The settlements and field systems are major sites for the period (Sites **10**, **23**, **45**, and **46**) and very significant. The round barrow (Site **35**), although damaged by previous excavation, is also an important monument for the period. The other sites (**03** and **05**) are stray finds and, therefore, of less importance. The sites of Roman date (**01** and **04**) are also either unconfirmed or stray finds and so are less significant to the period. Similarly, all of the sites of the medieval and post-medieval period are of limited significance for their period.
- 5.2.3 **Rarity:** the settlement sites (Sites **10**, **23**, **45**, and **46**) are rare sites for the prehistoric period due to their level of survival and are therefore significant. The medieval lynchets (Sites **07-8** and **31**) are also relatively rare as is the post-medieval power station (Site **17**).
- 5.2.4 **Documentation:** few of the sites are documented to any great degree, and where excavations have been carried out (Site **35**) there is not a detailed record. None of the sites therefore have any great significance on account of their potential for documentary evidence, although some of those of post-medieval date, particularly the buildings, railway-related sites and industrial structures (**02**, **11**, **14**, **17-19**, **21**, **28-9**, **41** and **48**) may have some potential.
- 5.2.5 **Group Value:** all of the settlement-type sites of prehistoric date (Sites **10**, **23**, **45**, and **46**) form part of a larger area of activity evident around Kirkby Stephen and, therefore, have an increased significance based on their group value. There are also a number of sites that relate to the railway (Sites **11**, **14** and **17**), as well as several sites connected to related industry (Sites **06**, **15**, **27-9**, **44** and **48**), and these all have increased significance as a result of their group value.
- 5.2.6 **Survival/Condition:** the settlement sites of prehistoric date (Sites **10**, **23**, **45**, and **46**) are also very significant because of their good level of survival. Similarly, the medieval lynchets (Sites **07-8** and **31**) represent a good level of survival of such ephemeral features. Undoubtedly, many of the sites of post-medieval date also survive in a good condition, although this is largely because of their relative age, and they also have some increased significance because of this.
- 5.2.7 **Fragility/Vulnerability:** all of the sites that cover large areas (Sites **01**, **07-10**, **21-3**, **25**, **30-1**, **40** and **45-7**) are potentially vulnerable because they are more susceptible to damage, particularly from long-term processes such as agriculture. The remaining sites are probably less fragile as they are either well-built structures or sites of stray finds that are no longer present.
- 5.2.8 **Diversity:** all of the prehistoric settlement-type sites have a high potential on account of their diversity (Sites **10**, **23**, **45**, and **46**). Similarly, some of the other field systems of unknown or medieval date have some significance on these

SMR No	2013
Statutory Designation	-
Sources	HER; Greenwell 1877; RCHME 1936
Description	A tumulus sited on a convex hill, 4.4m in diameter and 0.45m high. It was excavated by Greenwell in the 1880s, who discovered a central pit containing a 'trapezoidal coffin' 0.69m below the old ground surface. Planks formed the sides of the coffin while the base was a 'slightly hollowed' slab of wood. No traces of a corpse were present, but where the head might have been there was a very thin bronze bowl. The only other object was a bluish glass bead, 'thickly splashed with red and yellow'. The coffin appeared to be inserted into an earlier cremation. Near the latter, but not necessarily associated was a small 'leaf-shaped' flint described by Greenwell as an arrow head. A low flat grass covered mound showing evidence of earlier excavation and probably now only 0.35m to 0.4m high. The feature is still fairly well defined.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	36
Site name	Wiseber Hill
NGR	375987 507077
Site type	Hollow way
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	LUAU 1995, Site 213
Description	A north/south aligned hollow way, which was probably the continuation of Site 37. This feature was not very prominent, and was no more than 0.2m in depth. At its northern end it splits into two and is disturbed by a quarry.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	37
Site name	Wiseber Hill
NGR	375970 507091
Site type	Hollow way
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	LUAU 1995, Site 212
Description	A north-east/south-west aligned hollow way, which is parallel to the existing field wall. It had a width across the base of 1.8m, with an uneven profile, being steeper and higher to the east, and gradually sloping to the west. The northern and southern ends of the feature were difficult to discern. A trench excavated across this feature revealed nothing of interest and only modern finds.
Assessment	The site lies outside of the development area and is unlikely to be affected.

Site number	38
Site name	Wiseber Hill
NGR	375864 506986
Site type	Hollow way
Period	Unknown
SMR No	-
Statutory Designation	-
Sources	LUAU 1995, Site 211
Description	A system of hollow ways and lynchets on a west-facing slope associated with a pair of gateways in the southern boundary wall. The east site comprised three

grounds (Sites **25**, **40** and **47**). The features making up the former coal depot (Site **14**) are also of some significance because of their diversity.

- 5.2.9 **Potential:** the most diverse sites within the study area all arguably have the highest potential (Sites **10**, **14**, **23**, **25**, **40** and **45-7**). All of the sites of unknown date have a high potential (Sites **12-3**, **24-6**, **36-9**, **42-3** and **47**), as many may be of early date. The possible Roman road (Site **01**) has some potential, but it remains unconfirmed.

5.3 SIGNIFICANCE

- 5.3.1 The most significant sites within the study area are the settlement-type sites of the prehistoric period (Sites **10**, **23**, **45**, and **46**), as these represent not only some of the largest and most diverse sites in the area, but they are also well preserved. A number of the sites of medieval and post-medieval date have some potential for providing additional information, but it is the sites of unknown date (Sites **12-3**, **24-6**, **36-9**, **42-3** and **47**) that have the greatest potential. Many of these are large in size and are possibly prehistoric in date and so could add a great deal to the understanding of the general area.

6. IMPACT AND RECOMMENDATIONS

6.1 IMPACT

6.1.1 Considering the high number of sites of archaeological interest within the study area, and the wider area, the proposed pipeline crosses few of great significance. Nevertheless, a number of sites are likely to be affected by it and these are presented below (Table 2). The high potential of the area in general also means that there is a possibility of further remains being affected by the development that were not identified by the desk-based assessment, particularly those of prehistoric date.

6.2 RECOMMENDATIONS

6.2.1 A list of recommendations for further work for those sites that are considered likely to be affected by the development is presented below:

Site No	Type	Period	Impact	Recommendations
01	Road	Roman	Severe to part	Evaluation
14	Coal Depot	Post-medieval	Severe to part	Photographic survey
15	Quarry	Post-medieval	Minor	Topographic survey
19	Building	Post-medieval	Minor	Avoid/Building investigation
20	Park	Post-medieval	Minor	Watching brief
30	Park	Medieval – post-medieval	Severe to part	Evaluation
33	Enclosure/pond	Post-medieval	Minor	Topographic survey
34	Enclosure	Post-medieval	Minor	Topographic survey/evaluation
51	Stone Wall	Unknown	Minor	Watching brief
53	Enclosure	Unknown	Severe to part	Topographic survey/Evaluation
54	Mound	Unknown	Severe	Topographic survey/Evaluation
58	Stone Outcrop	Unknown	Minor	Topographic survey

Table 2: Sites likely to be affected by the development

6.2.2 It is also recommended that the entire pipeline route be subject to additional evaluation trenching evenly spaced across its entire length in order to assess the

likelihood of buried and unrecorded archaeological remains being present. Such remains, particularly those of prehistoric to medieval date, are likely to be very ephemeral and would be unlikely to be identified during a watching brief, hence evaluation is considered more appropriate. Similarly the presence of such large-scale field systems as those recorded in the general area would suggest a high likelihood of such remains continuing into the study area, which would potentially be affected by the development. This is particularly evident on examination of the results of the aerial photographic survey by Higham and Jones (1975; Plate 7), which suggests that there are linear features (presumably dykes) coming into close proximity with the development area. Should they continue on these orientations the pipeline route would cross them.

- 6.2.3 There are a number of hazard areas listed in the HER for sites of archaeological interest within the general area, and although these have not been included in the gazetteer as individual sites, elements making them up have been. The position of these areas is shown in Figure 3, in order that their extent and the potential impact of the development upon them is evident. Similarly, all Scheduled Monument areas are also shown, as well as Conservation Areas. The pipeline passes through a single hazard area, for Wharton Park and close to a Conservation Area around the former Midland Railway (which incorporates Midland Cottages). The potential for impact on Wharton Park and the recommendations for further work are presented in Table 2 above. It is considered unlikely that the decommissioning of the current treatment works adjacent to Midland Cottages will have any adverse affect on the Conservation Area.
- 6.2.4 It is considered probable that moving the proposed pipeline would do little to lessen the impact on archaeological remains, although it could potentially be minimised. Whatever route is taken is likely to have some impact on archaeological remains, be they recorded or as yet unknown.

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8. ILLUSTRATIONS

8.1 FIGURES

Figure 1: Location Map

Figure 2: Gazetteer Sites Plan

Figure 3: Previously Identified Areas of Potential Archaeology

Figure 4: Field Location Map Showing Walkover Sites

8.2 PLATES

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Plate 2: Part of Greenwood and Greenwood's map of 1824 showing Wharton Park (Site **30**) and the associated Park House

Plate 3: Part of the Ordnance Survey map of c1860 (c1860a) showing the north end of the study area, including Croglam Castle (Site **10**), Kirkby Stephen Station (Site **11**), the coal depot (Site **14**), Stenkrith Bridge (Site **16**), Stenkrith Mill (Site **18**) and quarries (Sites **06**)

Plate 4: Part of the Ordnance Survey map of c1860 (c1860b) showing the south end of the study area, including Wharton Hall and park (Site **30**), the earthwork (Site **45**) and several quarries

Plate 5: Part of the Ordnance Survey map of 1915 showing enclosures near Midland Terrace, now Midland Cottages (Sites **33-4**)

Plate 6: Part of the Ordnance Survey map of 1916 showing Croglam Castle (Site **10**), the coal and goods depot (Site **14**), Kirkby Stephen Station and engine shed (Site **11**) and Jubilee Park (Site **20**)

Plate 7: Settlement and enclosure sites recorded in the vicinity of Kirkby Stephen by Higham and Jones (1975, Fig 7)

Plate 8: A settlement at Waitby Intake, typical of many of the late prehistoric or Romano-British sites in the general area (after RCHME 1936, 236)

Plate 9: Croglam Castle (Site **10**) and neighbouring earthworks (Sites **08-9** and **12**) (Cumbria County Council 1984, 2440, 3)

Plate 10: Complex field system of probable late prehistoric or Romano-British date to the south of the west end of the study area. Site **45** is visible in the top right corner (Cumbria County Council 1984, 2440, 4)

Plate 11: Rectangular low mound, Site **49**, Field 5

Plate 12: Shallow, sub-rectangular depression, Site **50**, Field 6

Plate 13: Ridge, Site **52**, Field 8

Plate 14: Rectangular banked enclosure, Site **53**, Fields 10 and 11

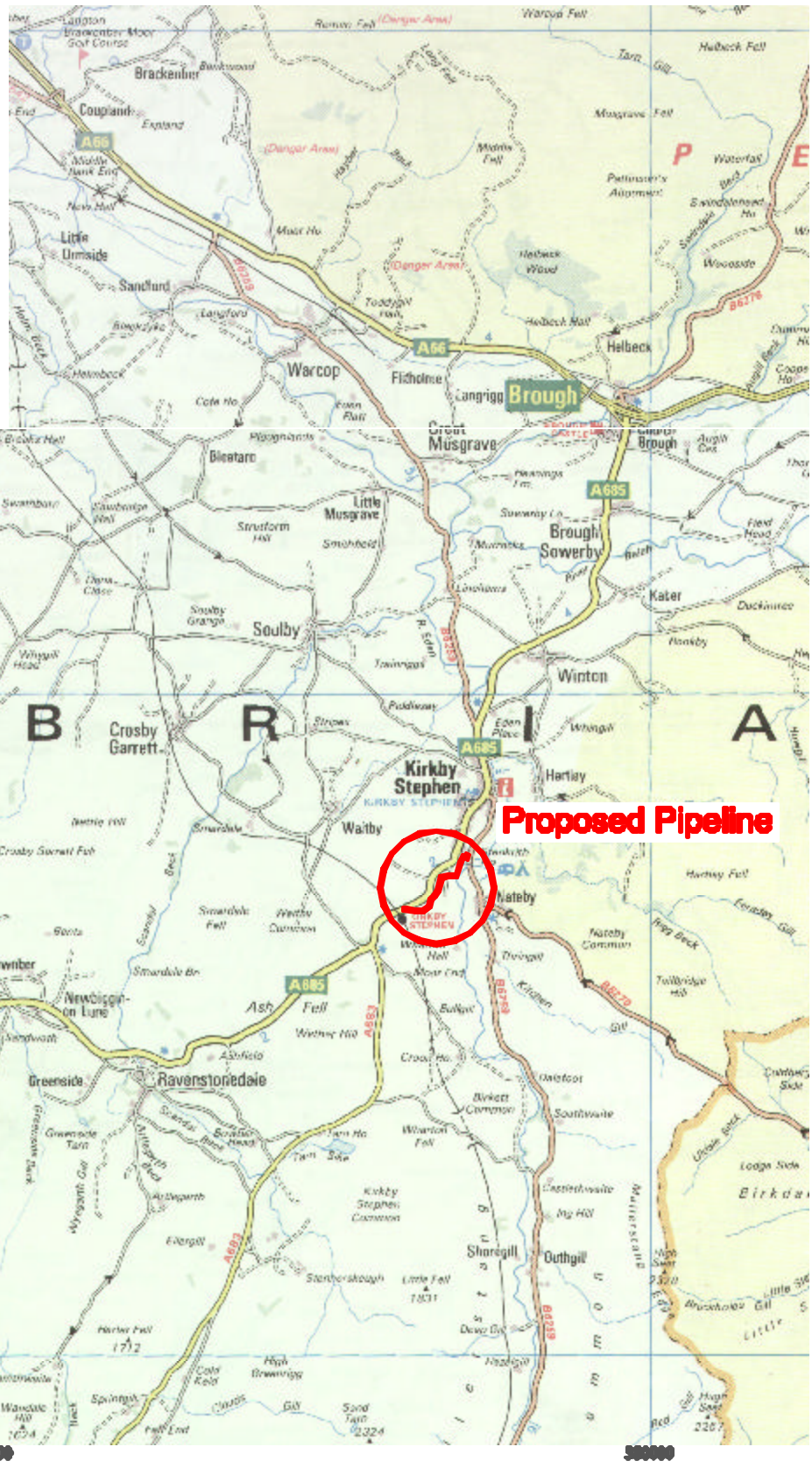
Plate 15: Sub-circular low mound, Site **54**, Field 15

Plate 16: Sub-circular low mound, Site **55**, Field 15

Plate 17: Circular stony depression, Site **56**, Field 15

Plate 18: Rectangular depression, Site **57**, Field 18

Plate 19: Stone outcrop, Site **58**, Field 19



based upon the Ordnance Survey 1:10000
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Figure 1: Location Map

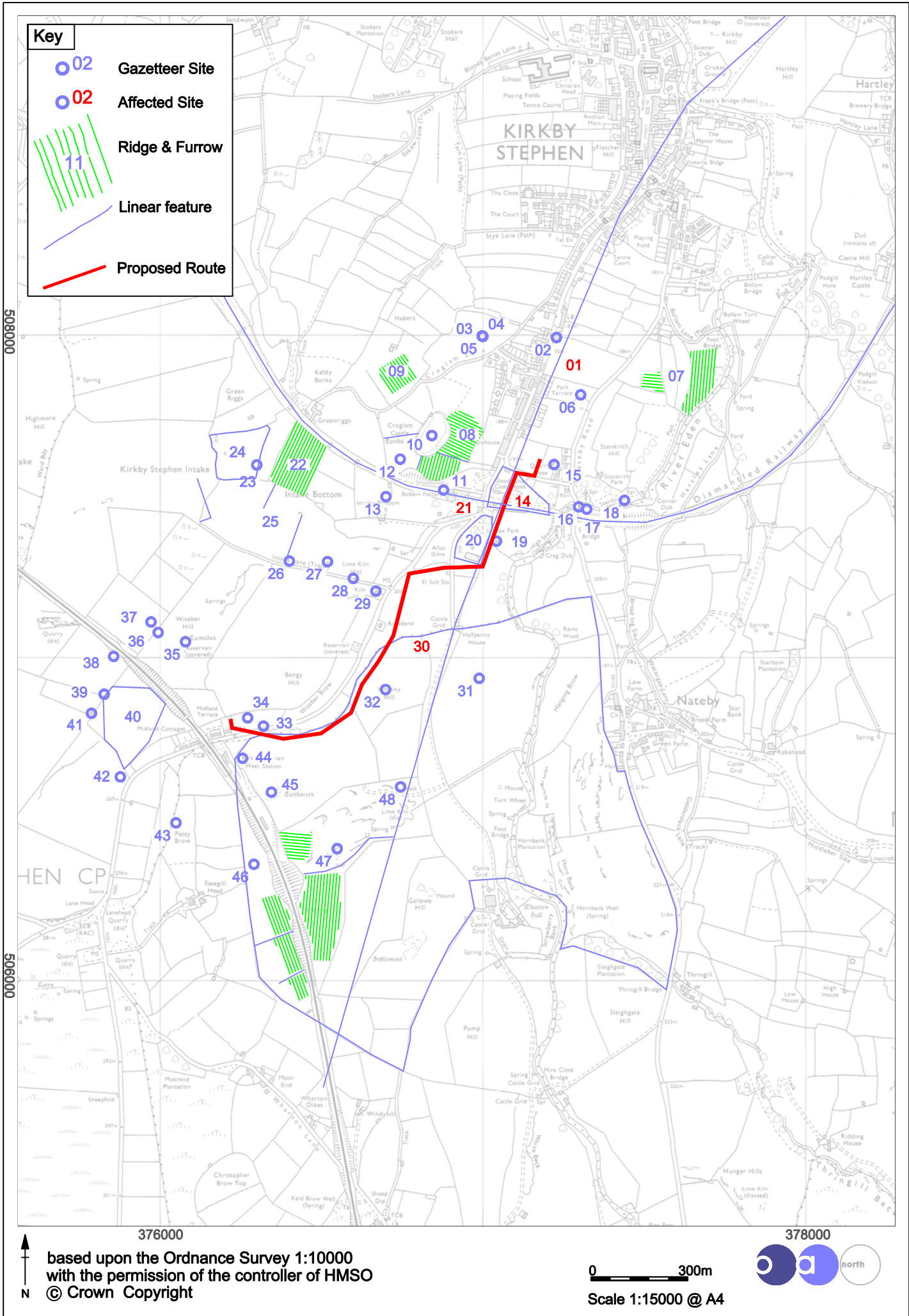


Figure 2: Gazetteer sites plan

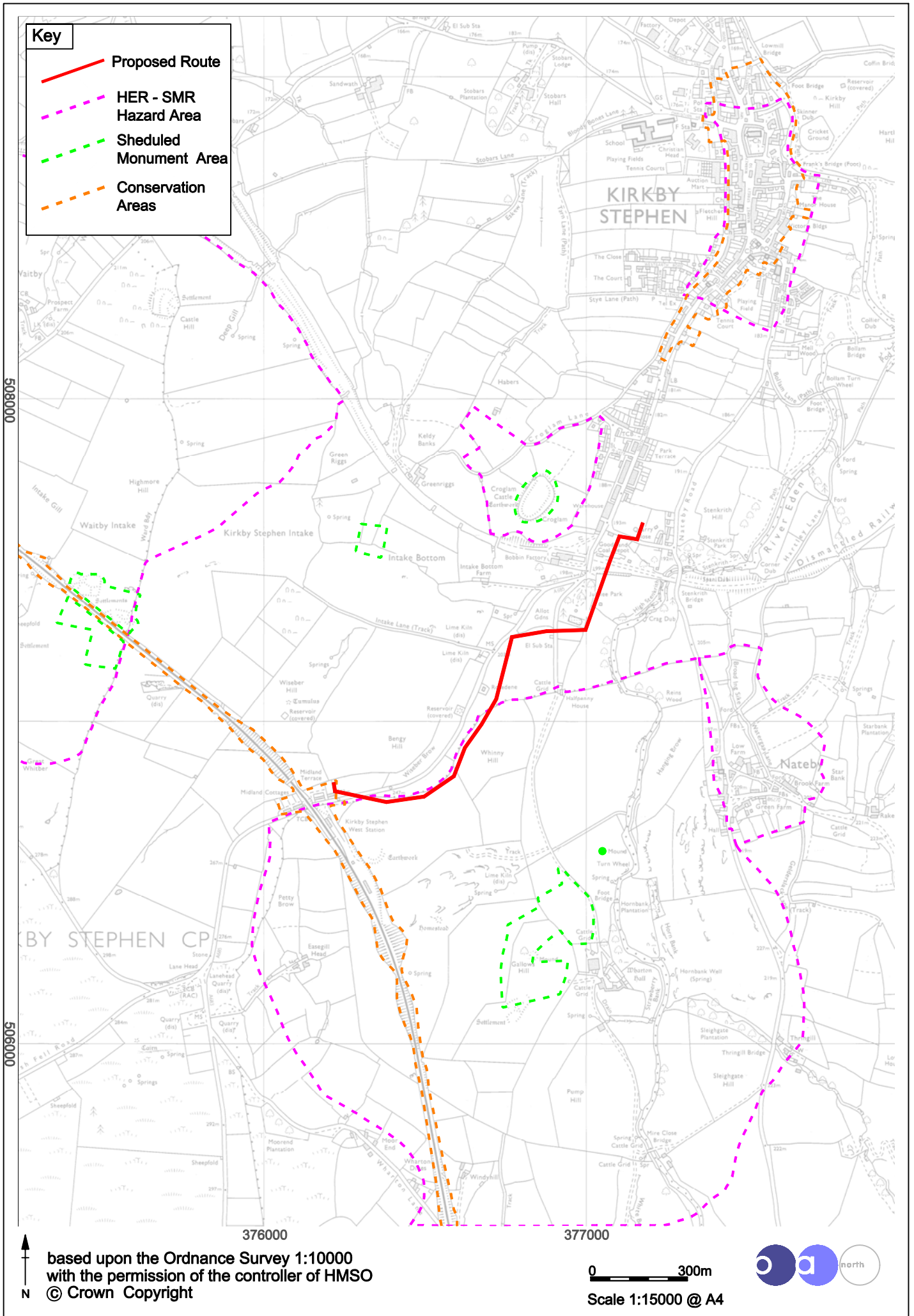


Figure 3: Previously identified areas of potential archaeology

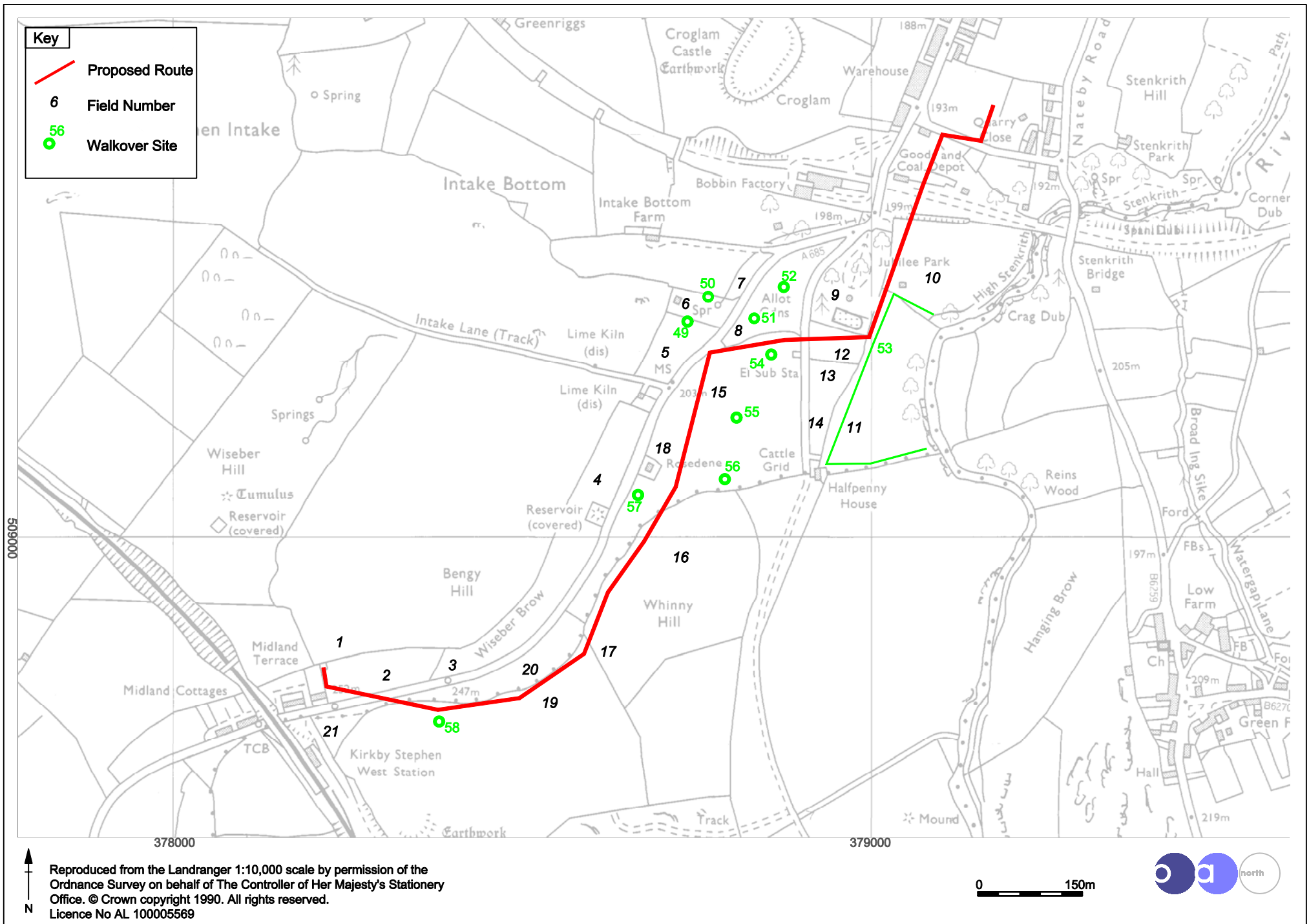


Figure 4: Field Location Map, showing Walkover Sites

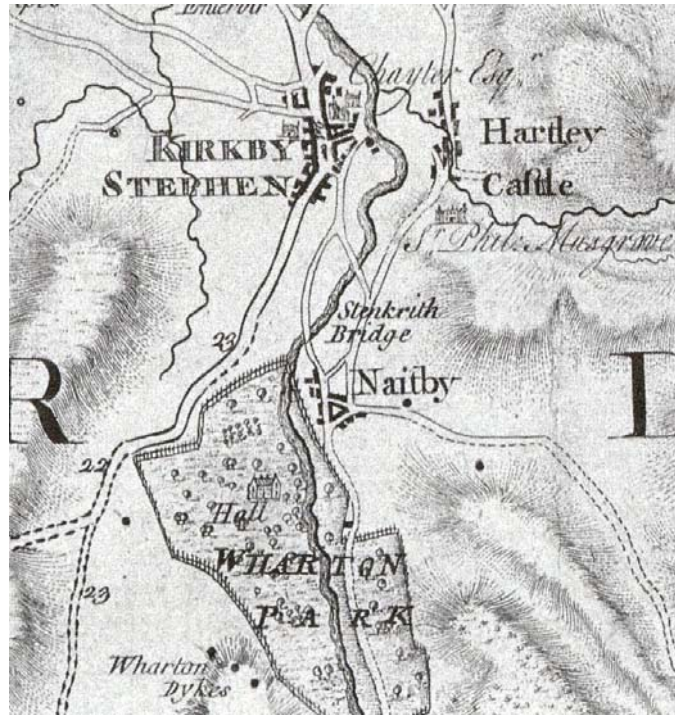


Plate 1: Part of Jeffreys' map of 1770 showing Wharton Park (Site 30)

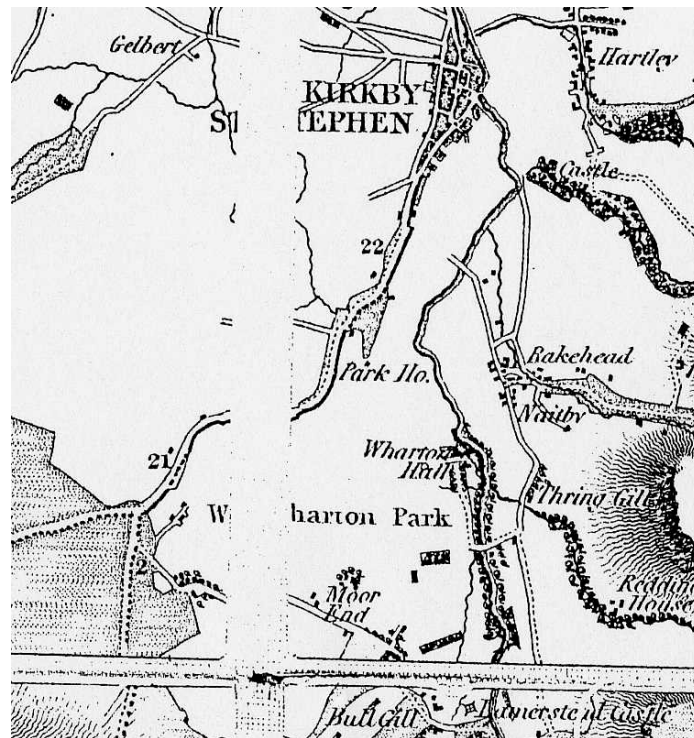


Plate 2: Part of Greenwood and Greenwood's map of 1824 showing Wharton Park (Site 30) and the associated Park House



Plate 3: Part of the Ordnance Survey map of c1860 (c1860a) showing the north end of the study area, including Croglam Castle (Site 10), Kirkby Stephen Station (Site 11), the coal depot (Site 14), Stenkrith Bridge (Site 16), Stenkrith Mill (Site 18) and quarries (Sites 06)

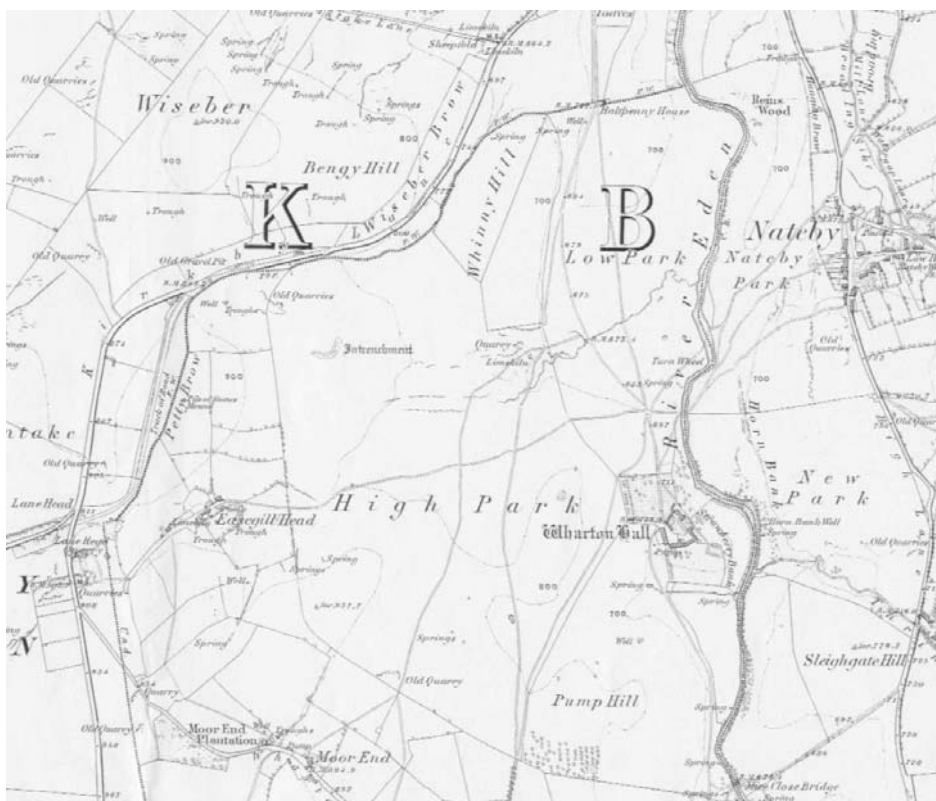


Plate 4: Part of the Ordnance Survey map of c1860 (c1860b) showing the south end of the study area, including Wharton Hall and park (Site 30), the earthwork (Site 45) and several quarries

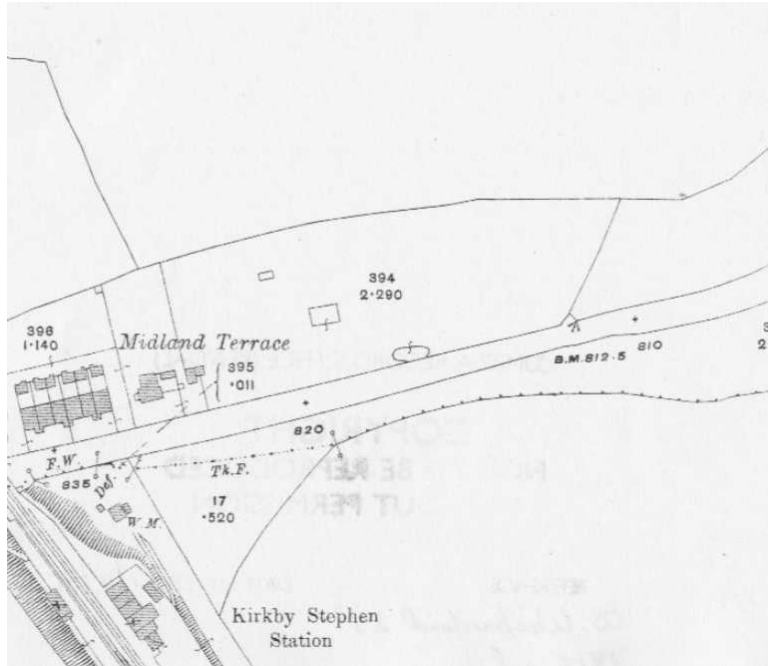


Plate 5: Part of the Ordnance Survey map of 1915 showing enclosures near Midland Terrace, now Midland Cottages (Sites **33-4**)

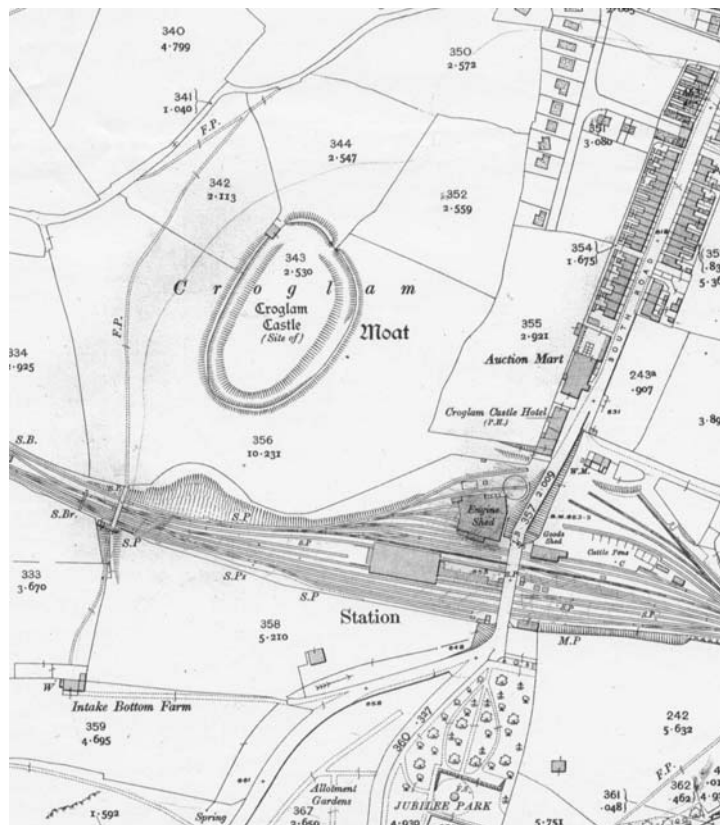


Plate 6: Part of the Ordnance Survey map of 1916 showing Croglam Castle (Site **10**), the coal and goods depot (Site **14**), Kirkby Stephen Station and engine shed (Site **11**) and Jubilee Park (Site **20**)

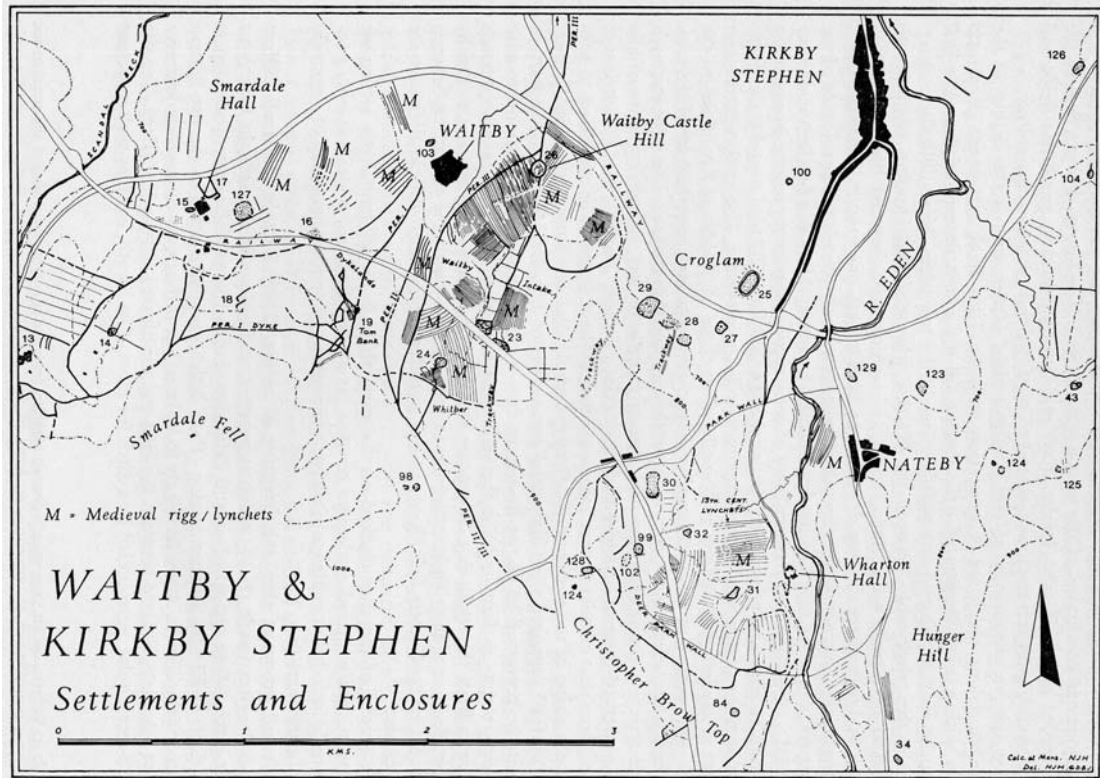


Plate 7: Settlement and enclosure sites recorded in the vicinity of Kirkby Stephen by Higham and Jones (1975, Fig 7)

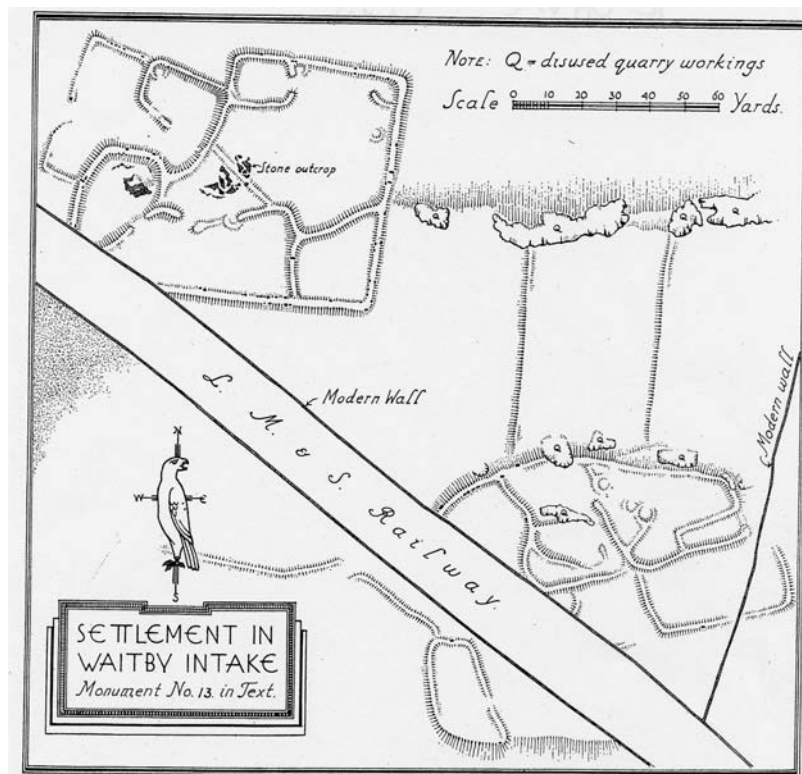


Plate 8: A settlement at Waitby Intake, typical of many of the late prehistoric or Romano-British sites in the general area (after RCHME 1936, 236)



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(Cumbria County Council 1984, 2440, 3)



Plate 10: Complex field system of probable late prehistoric or Romano-British date to the south of the west end of the study area. Site **45** is visible in the top right corner
(Cumbria County Council 1984 2440, 4)



Plate 11: Rectangular low mound, Site **49**, Field 5



Plate 12: Shallow, sub-rectangular depression, Site **50**, Field 6



Plate 13: Ridge, Site 52, Field 8



Plate 14: Rectangular banked enclosure, Site 53, Fields 10 and 11



Plate 15: Sub-circular low mound, Site **54**, Field 15



Plate 16: Sub-circular low mound, Site **55**, Field 15



Plate 17: Circular stony depression, Site **56**, Field 15



Plate 18: Rectangular depression, Site **57**, Field 18



Plate 19: Stone outcrop, Site **58**, Field 19

1 INTRODUCTION

- 1.1 This project design has been compiled for United Utilities (hereafter the client). It presents proposals for the assessment of a proposed new transfer pipeline from Kirkby Stephen to Midland Cottages Wastewater Treatment Works, Cumbria. Section 2 of this document states the objectives of the project, Section 3 deals with OA North's methodology. Section 4 addresses other pertinent issues including details of staff to be involved, and project costs are presented in Section 5.
- 1.2 Cumbria County Council's County Historic Environment Service (CCCHES) has recommended that a desk-based assessment and walkover survey are undertaken of the proposed pipeline route as it appears to have potential for prehistoric, Romano-British and medieval settlement and agricultural practices. Known earthwork remains include HER Nos 1344, 1992, 1997, 2013, 3490, 3493 and 5620. This programme of work will allow a decision to be made as to whether any areas of identified archaeological significance need to be avoided or a programme of mitigation works undertaken.
- 1.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an **Institute of Field Archaeologists (IFA) registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

- 2.1 The following programme has been designed to provide for accurate recording of any archaeological deposits that are disturbed by topsoil stripping activities and trench cutting associated with the pipeline. A desk-based assessment will precede a walkover survey to place any findings that are made in to the context of known archaeological sites and/or artefact discovery sites in the immediate
- 2.2 A written report will assess the significance of the data generated by the desk-based assessment and subsequent fieldwork, within a local and regional context.

3 METHOD STATEMENT

3.1 DESK-BASED ASSESSMENT

- 3.1.1 The following will be undertaken as appropriate, depending on the availability of source material. The level of such work will be dictated by the time scale of the project.
- 3.1.2 **Documentary and Cartographic Material:** this work will comprise an assessment and investigation of the existing resource. It will include an appraisal of appropriate sections of County histories, early maps, and such primary documentation (tithe and estate plans etc.) as may be reasonably available. Particular emphasis will be upon the early cartographic evidence, which has the potential to inform the post-medieval occupation and land-use of the area. Any photographic material lodged in the Historic Environment Record (HER) will also be studied. Published documentary sources will also be examined and assessed. The study will examine place and field name evidence for the site and its environs.

- 3.1.3 This work will involve visits and or correspondence searches of the following repositories: Cumbria Historic Environment Record and the County Record office.
- 3.1.4 **Map Regression Analysis:** available cartographic sources will be consulted in an attempt to trace the development of the landscape back to the earliest available cartographic source. This will provide information on additional sites not included in the HER, as well as ascertaining potentially any areas of more recent development.
- 3.1.5 **Aerial Photography:** a brief survey of the extant air photographic cover will be undertaken. The HER will be consulted for aerial photography.
- 3.1.6 **Physical Environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken. It will be based on published geological mapping and any local geological surveys in the possession of the County Council or the Client. This will not only set the archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field inspection.

3.2 WALKOVER SURVEY

- 3.2.1 **Visual Inspection:** following the desk-based assessment a level I walkover survey (*Appendix 1*) will be undertaken to relate the existing landscape to research findings. This will encompass one-hundred metre corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape will be recorded using the relevant OA North pro forma, and the features accurately positioned with the use of either a GPS, which can achieve accuracies of $\pm 0.1\text{m}$ with respect to the OS national grid, or by manual survey techniques which will tie in new features to features already shown on the relevant OS map.
- 3.2.2 **Contingency plan:** in the event of significant archaeological features being identified during the desk-based assessment and walkover survey discussions will take place with the Archaeological Officer, as to the extent of further works to be carried out, and in agreement with the Client. All further works would be subject to a variation to this project design. Further stages of work are likely to include a watching brief during topsoil stripping and trench opening activities.

3.3 REPORT/ ARCHIVE

- 3.3.1 **Interim Statement:** in the event that further work is recommended an interim statement will be issued. In this instance or in the event that the client specifically requests an interim statement it should be noted that all illustrations will be copies of field drawings and not completed CAD drawings.
- 3.3.2 **Final Report:** two copies of the final report will be submitted to the client and a further two to CCCHES Both paper and digital copies will be provided on CD-ROM in pdf format. The report will present the following information:
- (i) **Summary:** a summary statement of the findings;
 - (ii) **Introduction:** the background to the project including location details;

- (iii) **Methodology:** an outline of the methodology of all elements of the programme of work;
 - (iv) **Historical Background:** an historical background to the site;
 - (v) **Results:** an account of the past and present land use of the study area;
An account of known sites identified through the study of documentary sources;
Any evidence for the remains of archaeological sites identified by the walkover;
An account of archaeological features identified during the course of the watching brief;
 - (vi) **Discussion:** a discussion of the relative significance of sites within the study area;
A description of the significance of the study area in its local and regional context;
 - (vii) **Impact/Recommendations:** the identification of areas where further development will impact upon the archaeological resource in addition to the impacts of the current development;
 - (viii) **Illustrations:** maps, plans, sections and copies of the site photographic archive;
 - (ix) **Appendices:** a copy of the brief and this project design;
- 3.3.3 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained.
- 3.3.4 **Confidentiality:** all internal reports to the Client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- 3.3.5 **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. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the SMR (the index to the archive and a copy of the report). Arrangements for deposition of the full site archive will be made the Cumbria County Record Office.
- ## 4 OTHER MATTERS
- 4.1 **Project Monitoring:** whilst the work is undertaken for the Client, the Cumbria Archaeological Officer will be kept fully informed of the work. Any proposed

changes to the project design will be agreed with the Archaeological Officer and the Client.

- 4.1.1 **Access:** OA North will consult with the Client regarding access to the site.
- 4.1.2 **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.
- 4.1.3 **Work Timetable:** the desk-based element is expected to take approximately six days to complete and the walkover in the region of one day. The report will be completed within approximately eight weeks following completion of the fieldwork.
- 4.1.4 **Staffing:** 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.
- 4.1.5 **Daniel Elsworth MA, PIFA** (OA North Project Supervisor) will undertake the desk-based assessment. Daniel has a great deal of experience in documentary research and in particular for the North West. Present timetabling constraints preclude who will be undertaking the walkover survey, although it is likely that this will be undertaken by an OA North supervisor suitably experienced in this field.
- 4.1.6 **Insurance:** OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

APPENDIX 1: LEVEL 1 SURVEY

The survey outlined is based on survey levels defined by the Royal Commission on the Historical Monuments of England (RCHM(E)) and are in accordance with stages of evaluation defined by the Association of County Archaeological Curators (ACAO 1993).

Level 1 Survey (Assessment)

This is a rapid level of survey (Site Inspection in project design) typically undertaken alongside a desk-top study as part of the site assessment (ACAO 1993, 14). It is an initial site inspection, which helps the local planning authority to consider fully the archaeological implications of a planning proposal and also serves as the basis for undertaking and planning further archaeological work on the site.

The Level 1 survey represents the minimum standard of record and is appropriate to exploratory survey aimed at the discovery of previously unrecorded sites. Its aim is to record the existence, location and extent of an archaeological site. The emphasis for the recording is on the written description, which should record type and period and would not normally exceed *c.* 50 words.

The location and extent of the sites is typically shown on 1:2,500 or 1:10,000 OS maps as requested by the client. The extent of a site is only defined for sites greater than 50m in size and smaller sites are shown with a cross.

There are two alternative techniques (Levels 1a and 1b), which provide different accuracy levels and have different applications:

Level 1a

The sites are located by manual distance measurement techniques (eg pacing) with respect to field boundaries and provide an accuracy of +/- 10m (8 figure grid ref.). The loss of accuracy is offset by the slightly reduced costs; however, it is only appropriate for enclosed land, because of the paucity of usable topographic detail.

Level 1b

The sites are located using Global Positioning System (GPS) techniques, which uses electronic distance measurements along radio frequencies to satellites to enable a fix in Latitude and Longitude, which can be converted mathematically to Ordnance Survey National Grid. As long as differential GPS techniques are employed then it is possible to achieve accuracies of better than +/- 1m. There is a slightly increased cost implication by comparison with Level 1a survey, but it can be undertaken in most terrains, even some woodland.