

# SOLWAY COAST, WASTEWATER TREATMENT IMPROVEMENTS CUMBRIA



## Desk-Based Assessment, Watching Brief and Walkover Survey

Oxford Archaeology North



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## SUMMARY

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Following a proposal by United Utilities for a development between Bowness-on-Solway (NY 22568 62811) and Drumburgh (NY 26720 59797), Cumbria, a programme of archaeological investigation including a desk-based assessment, watching brief and walkover survey was requested by Cumbria County Archaeological Service in consultation with English Heritage. The development was to consist of improvements to wastewater treatment facilities, including the construction of new treatment works and pipeline. This work is to take place in an area of very high archaeological potential with numerous Scheduled Ancient Monuments associated with and including Hadrian's Wall, a World Heritage Site, which the pipeline route crosses five times. The route also runs in close proximity, and crosses, the Carlisle Navigation Canal (later Carlisle Railway), and there are remains relating to both the prehistoric and medieval periods from the general area. This report presents the results of the desk-based assessment, watching brief and walkover survey. Oxford Archaeology North (OA North) carried out the assessment in November of 2003 and the watching brief in December 2003.

A brief outline of the topographical and historical background of the assessment area was produced, covering all periods, in order to give a general context in which to view the results. Two large monuments dominate the history of the area; Hadrian's Wall and the Carlisle Navigation Canal (later Carlisle Railway), although there are remains relating to other periods also present. The desk-based assessment examined all of the relevant secondary and primary sources, concentrating particularly on early maps of the area, held in the County Record Office in Carlisle. The Sites and Monuments Record (SMR) was also visited and all of the sites identified along the route were listed in a site gazetteer and plotted onto a map of the development area.

In total, 90 sites were identified within the development area. Seventy-three of these were as a result of the desk-based assessment and the remainder from the walkover survey. This large number is in part due to the proximity of Hadrian's Wall and the canal/railway, but there were a number of other sites also present. A large number of the sites are Roman in date (12), and an even larger large number are Post-medieval (18). Significant remains of other periods such as fortified medieval houses and a possible grange are also present, as well as a number of stray finds of various periods. A number of sites (16) that are likely to be adversely affected by the development were identified, and recommendations for further work were presented. These vary from evaluation of specific sites, those thought to be of some national and international significance, to watching briefs for others. It is also recommended that, if possible, the route of the development avoid certain sites that will be particularly seriously affected, such as Scheduled Monuments.

The archaeological watching brief was undertaken to monitor the groundworks associated with geological testing along the proposed route of the pipeline. A total of ten trial pits were excavated under close archaeological supervision predominantly along part, or in close proximity to, the embankment of the Carlisle Navigation Canal. Trial Pit 1 (TP1) located three cut and worked timbers, which were left *in situ*. No further finds deposits or layers worthy of further detailed archaeological investigation was identified in any of the other trial pits. This may be because many

of the trial pits were located on land comprised of made-up ground associated with the railway embankment and adjacent canal. It is particularly recommended that prior to any further ground works being undertaken in the area of TP1 an archaeological evaluation of the area be instigated to characterise the archaeological resource of this part of the study area.

## ACKNOWLEDGEMENTS

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Oxford Archaeology North would like to thank United Utilities for commissioning and funding the work. Further thanks are also due to Bette Hopkins at the Cumbria Sites and Monuments Record, and the staff of the Cumbria County Record Office in Carlisle for all their help and information.

Daniel Elsworth carried out the desk-based assessment, the walkover survey by Andy Bates and Andy Lane and the watching brief by Arran Ferguson. Daniel Elsworth, Andy Bates and Arran Ferguson co-wrote the report. Mark Tidmarsh produced the drawings. Alison Plummer managed the project and edited the report, together with Alan Lupton.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 An application to carry out improvements to the wastewater treatment systems between Bowness-on-Solway (NY 22568 62811) and Drumburgh (NY 26720 59797) on the Solway Coast, Cumbria (Fig 1), was made by United Utilities. The proposed development area is close to the area of the Hadrian's Wall World Heritage Site and is an area of high archaeological significance. As a result it was recommended by Cumbria County Archaeological Service (CCAS) in consultation with English Heritage that a programme of archaeological investigation be carried out prior to any groundwork. This was to consist initially of an archaeological desk-based assessment, to be followed by walkover survey and evaluation excavations and watching brief. A verbal project brief was provided by CCAS, in response to which OA North provided a project design (*Appendix 1*). Following the acceptance of this, OA North was commissioned to carry out the work in 2003. This report details the results of the desk-based assessment, watching brief carried out on the geological test-pitting and walkover survey, together with a concluding chapter outlining recommendations for any further work.
- 1.1.2 The pipeline runs from the east side of the village of Bowness-on-Solway, following the road along the shore and passing through Port Carlisle (NY 24080 62154). Between these two settlements it comes close to Knock Cross Roman camp (NY 23011 62761) and crosses the probable line of Hadrian's Wall on the edge of Port Carlisle near Fisher's Cross (NY 23987 62277). It crosses the wall again near Kirkland House, where there is also a Turret (number 78a) (NY 24323 61747). South of Port Carlisle the route runs alongside the line of the former Port Carlisle Railway and Carlisle Canal, crossing the proposed line of Hadrian's Wall again, though its exact location in this area remains uncertain, and the line of the railway and canal near Westfield Marsh (NY 24847 61251). The pipeline continues to run alongside the canal/railway to Drumburgh, where it crosses both it and the line of Hadrian's Wall (NY 26749 59885). The close proximity to a number of sites relating to Hadrian's Wall, the Carlisle Navigation Canal and the Port Carlisle Railway mean that there are a large number of archaeological sites in the general area of the pipeline.



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## 2. METHODOLOGY

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### 2.1 PROJECT DESIGN

2.1.1 A project design (*Appendix 1*) was submitted by OA North in response to a request by United Utilities for an archaeological programme of investigation of the route of proposed water treatment improvements between Bowness-on-Solway and Drumburgh. The project design was compiled following consultations with both the CCAS and English Heritage. The work undertaken followed the method statement detailed in the project design (*Appendix 2*) and complied with current legislation and accepted best practice, including the Code of Conduct and the relevant professional standards of the Institute of Field Archaeologists (IFA).

### 2.2 DESK-BASED ASSESSMENT

2.2.1 Several sources of information were consulted, in accordance with the project design. The study area consisted of a corridor 1km wide along the line of the proposed route, which is slightly less than 6km in length. The principal source of information, given the nature of the study area, was maps and plans, in particular early Ordnance Survey maps, enclosure maps and the Tithe Map. These allow the historical development of the landscape to be studied through a process known as map regression analysis.

2.2.2 ***Cumbria Sites and Monuments Record (SMR)***: the Cumbria SMR, held in Kendal, was consulted to establish which sites of archaeological interest are already known in the area, and the extent and character of these. The SMR is a database of known archaeological sites within the county, and is maintained by the County Council. For each site a short descriptive note was obtained, which was added to the site gazetteer (*Appendix 2*) and marked on the location plans (Fig 2), along with relevant sources and other information. The position of the study area, close to Hadrian's Wall, also means that there are a number of Scheduled Monuments (SM) in the vicinity, the details of which were also obtained. The details for any Listed Buildings along the route of the proposed work were also obtained but these were not included in the gazetteer as they were not at risk from the development (*Appendix 2*).

2.2.3 ***County Record Office (Carlisle) (CRO)***: the County Record Office in Carlisle was visited to consult primary records relating to the study area. Due to the nature of the study area, the most useful source of information consisted of maps and plans, ranging from individual villages to the entire area. Other primary sources were also examined, many of which proved to not be useful, and several secondary sources were also examined.

2.2.4 ***Hadrian's Wall Path National Trail Project***: OA North has been particularly involved in the archaeological monitoring of the development of the Hadrian's Wall Path National Trail. This has involved carrying out a considerable number of watching briefs along the whole length of Hadrian's Wall, and has generated a large archive of information. This was also consulted.

2.2.5 **OA North Archive:** OA North has carried out a number of projects in the area and the results of these were consulted. It also holds a large collection of secondary sources relevant to the region.

### 2.3 WATCHING BRIEF

2.3.1 The programme of field observation recorded accurately the location, extent, and character of any surviving archaeological features. This work comprised observation during the groundworks, the examination of any horizons exposed, and the accurate recording of all archaeological features, horizons and any artefacts found during the excavations. Close liaison between OA North staff and the site contractors, and a permanent presence during the excavations was maintained at all times.

2.3.2 The recording comprised a full description and preliminary classification of features or structures revealed on OA North *pro-forma* sheets and their accurate location in plan. In addition, a photographic record in colour slide and monochrome formats was compiled.

### 2.4 WALKOVER SURVEY

2.4.1 The survey covered an area 100m either side of the pipeline route, as detailed in the project design (*Appendix 1*). The field observations recorded the character, with brief descriptions of all elements of each site located on OA North *pro-forma* sheets. An accurate location, with reference to the National Grid, was achieved for each site using a Garmin GPSII Plus, which is accurate to within 10.0m. A photographic archive in both colour slide and monochrome formats was also compiled.

### 2.5 GAZETTEER OF SITES

2.5.1 Each site of archaeological interest identified along the route of the proposed work was added to an overall gazetteer (*Appendix 2*) and shown on a plan of the area (Fig 2).

### 2.6 ARCHIVE

2.6.1 A full archive has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in the Cumbria County Record Office (Carlisle) and to English Heritage on completion of the project. A copy of the report will be deposited with the Cumbria SMR in Kendal.

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## 3. BACKGROUND

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### 3.1 INTRODUCTION

- 3.1.1 The background is compiled largely from secondary sources, and is intended to provide a context against which the results of the assessment can be compared. It is therefore brief and general in nature, with specific detail only being added regarding individual sites where appropriate.

### 3.2 GEOLOGY AND TOPOGRAPHY

- 3.2.1 The underlying solid geology of the area comprises Triassic Mudstones and siltstones of the Mercia Mudstones Group or Keuper Marls (British Geological Survey 1982). The drift geology is boulder clay, commonly found across the region, which was deposited in the immediate post-glacial period. In the last 10,000 years, subsequent to the formation of the boulder clays, soils of the Newport I Association have accumulated in the area around Bowness-on-Solway, which are well-drained typical brown soils (Ordnance Survey 1983). The majority of the area is, by contrast, covered by alluvial gley soils of the Rockcliffe Association (*ibid*).
- 3.2.2 The landscape is typically flat and exposed to the prevailing southwesterly winds (Countryside Commission 1998, 19). It is commonly used for dairy farming with large areas of pasture predominating in many areas as a result of extensive land improvement (*ibid*). Much of this improvement concentrated on the mosses and wetlands, although elements of this remain in places (*op cit*, 20).

### 3.3 HISTORY AND ARCHAEOLOGY

- 3.3.1 **Prehistory:** although evidence for immediate post-glacial activity in the area is severely lacking, sites dating to the late Mesolithic are known from almost the entire length of the Cumbrian coast (Cherry and Cherry 2002; Young 2002). Few actual remains dating to the Mesolithic are known in North Cumbria, although occasional finds have been made (OA North 2002, 6). Such sites are not well known along the south side of the Solway Estuary, but they have been identified on the north side (Morrison 1981, Hodgkinson *et al* 2002, 110). Extensive remains thought to represent all-year settlement, have been investigated on the coast at Eskmeals to the south (Bonsall *et al* 1994), and further such sites undoubtedly remain to be found. There is evidence for human impact on the vegetation of the North Cumbrian coast from as early as c6000 BC (Hodgkinson *et al* 2000, 107). A sequence of acute sea-level changes is also known to have affected the area from c5000 BC. This at first resulted in a dramatic rise in relative sea level, before a gradual retreat to current levels (Lloyd *et al* 1999). This resulted in the development of extensive wetlands, which grew out of areas of shallow water held in a number of smaller basins (Hodgkinson *et al* 2000, 99). This sequence of events was also probably responsible for the creation of a sub-merged forest discovered during the nineteenth century between Glasson and Kirkland (*op cit*, 87).

- 3.3.2 Sites of Neolithic date are elusive within the area, although discoveries of artefacts such as axes are not uncommon, and their relationship with wetland environments may be significant (*op cit*, 111). Excavation at Plasketlands, near Mawbray (Bewley 1993) identified a timber structure dated to the mid-fourth millennium BC. This remains a rare discovery, although the large number of stone axes of Neolithic date discovered across the Solway plain would suggest that further settlements existed (Hodgkinson *et al* 2000).
- 3.3.3 Sites dating to the Bronze Age are difficult to recognise; although a number of sub-circular enclosures have been identified through the interpretation of aerial photographs (Bewley 1994), many of which may be Bronze Age or Iron Age. Settlements of this type are unlikely to have surviving aboveground remains in an area of intense agriculture such as the Solway coast (McCarthy 2002, 45). Environmental evidence has identified cereal pollen dating from c2000 cal BC (Hodgkinson *et al* 2000, 113), demonstrating the presence of agriculture by at least the Bronze Age. The remains of timber palisades in the moss at Bowness Common, perhaps dating to the late prehistoric period, have also been discovered (Hodgson 1904), but little can be said with any certainty about these. A small collection of flint artefacts was discovered during excavations at Bowness fort (Potter 1979, 326), one of which is thought to be Bronze Age in date. Canoes, presumably but not necessarily prehistoric in date, have also apparently been discovered in the mosses at Drumburgh, and Bowness (Neilson 1974).
- 3.3.4 **Roman:** the few sites of late prehistoric date that have been excavated have often been shown to have a long period of use, sometimes lasting well into the Roman occupation (Bewley 1992). Roman activity in the area is, of course, graphically demonstrated by the presence of Hadrian's Wall (Plate 1). Hadrian's wall was created between cAD 122 and 130, as part of an attempt to construct a permanent frontier border with the native tribes to the north (Daniels 1978, 5). This had been an ongoing process since the area was taken in the later first century, and was the culmination of several attempts to bring stability to the region (*op cit*, 4-5). Shortly after it was completed the wall was largely abandoned and a new frontier, the Antonine Wall, was constructed between the Forth and the Clyde (*op cit*, 5). The Antonine Wall's period of use was short, however, and by AD 155 it was permanently abandoned and Hadrian's Wall was reoccupied (*ibid*).
- 3.3.5 The section of the wall between Drumburgh and Bowness-on-Solway has been examined in a piecemeal fashion, with little large-scale excavation. In general, the wall and its associated milecastles were initially constructed of turf and timber (although the turrets were stone), which was later replaced with stone, in some cases on a different alignment (*op cit*, 19). Specific details, such as the order in which this happened and the dates, are more difficult to acquire, although there is some evidence to suggest the change was carried out during the mid-second century AD (*op cit*, 253). Excavations at Drumburgh (at the east end of the study area) initially identified a stone fort (Haverfield 1900a), while later work revealed an earlier earth structure aligned with the turf wall (Simpson and Richmond 1952). The associated line of the wall to the east of Drumburgh is not distinct, although it was identified in some places in 1899 (Haverfield 1900a), and elements have been identified

even further east since (Bellhouse 1962, 60), although the positions of turrets and milecastles have not been discovered.

- 3.3.6 West of Drumburgh the remains of a number of turrets and milecastles, which are relatively densely concentrated compared to other parts of the wall, have been subject to small-scale excavation (e.g. Wilmott 1999), as have elements of the wall and *vallum*. The exact line of the wall has, however, been disturbed by the development of Port Carlisle (Daniels 1978, 252-3; Lancaster University Archaeological Unit 1995). Some parts of the line of the wall and *vallum* are still visible between Port Carlisle and Bowness-on-Solway, although large parts of it are lost on the approach to Bowness, and there are records of some deliberate, and quite large-scale, destruction (Daniels 1978, 253). At Bowness-on-Solway a fort known as *Maia* was located, the second largest on Hadrian's Wall (*op cit*, 255). Again, piecemeal excavation in a number of areas has identified elements of the fort, including the west gate (Birley 1931) and the west rampart (Mohamed 1971). More extensive excavations inside the fort revealed evidence for internal buildings and the gate towers, with dating evidence for activity into the fourth century AD (Potter 1975; 1979). Evidence for a civilian settlement to the south has also been identified (Birley 1931; Duff 1939; Carlisle Archaeology Ltd 2000; 2001a; OA North 2002), but this has yet to be examined in detail. There are also possible remains outside the fort to the east, tentatively interpreted as part of the *vicus* (Caruana and James 1987).
- 3.3.7 **Early Medieval:** there is a distinct gap in the record following the collapse of Roman administration, both in the written sources and archaeological evidence. Place-name evidence suggests that there was a degree of continuity within the indigenous population, with 'Celtic' name elements surviving in a number of places (Haverfield 1900b; Armstrong *et al* 1950). A sequence of small regional kingdoms was established following Roman rule, although the influence of each fluctuated over time (Rollinson 1996, 33). One of the most significant is that of Rheged, which was probably established some time in the later sixth century AD, and formed part of a greater kingdom under the auspices of Strathclyde (McCarthy 2002, 141-2). Over time the Anglian kingdoms of the northeast also began to exert an influence on the area and the renewed spread of Christianity also made its mark (*op cit*, 149-51). These factors, coupled with Viking settlement during the centuries immediately prior to the Norman invasion, which is commonly seen across the county (Rollinson 1996, 37-8) have had a very mixed affect on the landscape. Place-name evidence tends to be dominated by Norse words (Armstrong *et al* 1950), while physical evidence for continuity of settlement and activity in the early medieval period is not obvious within the study area. It has, however, been identified in Carlisle and at Birdoswald fort in the form of reused late-Roman military buildings (McCarthy 2002, 134). Within Glasson Moss there is evidence for hemp retting thought to date to the seventh century AD (Cox *et al* 2000). Although this is unlikely to extend into the study area it demonstrates that settlement and related infrastructure must have existed at this time.
- 3.3.8 **Medieval:** while the Norman Conquest may have marked a turning point in British history, it was not until 1092, when William Rufus took Carlisle and

the surrounding area from Scotland (Rollinson 1996, 43), that its impact was truly felt in the region. Bowness-on-Solway and the neighbouring area formed part of the Barony of Burgh, having passed from the de Moulton family and Baronry of Gilsland, which was given to Gamel le Brun, who resided at Drumburgh (Nicolson and Burn 1777; Whellan 1860, 149). Permission was granted to fortify the manor house at Drumburgh in 1307, but the manor was dispersed to various families by the end of the fourteenth century (*op cit*, 149). It was, however, reunited with the Barony of Burgh at a later date (*ibid*). The area was very volatile throughout the medieval period, at first due to continuous cross-border conflict with Scotland (Rollinson 1967, 87-9) and later as a result of general lawlessness associated with the border reivers, although the focus of this conflict tended to be further east (Fraser 1995). This led to the construction of a number of fortified houses in the wider area, which included that at Drumburgh.

- 3.3.9 Medieval remains have been found at Bowness (Potter 1979), and one of the ditches of Bowness fort seems to have been re-cut during the thirteenth century (Daniels 1978, 255). There may also have been a grange at Drumburgh, later attached to the castle (Simpson and Richmond 1952, 12), of which an L-shaped ditch remains. There is also evidence for a chapel existing at Drumburgh (Dennis Perriam pers comm). Little seems to have changed in the general area throughout the medieval period, however, and most of the settlements remained small until the nineteenth century (Whellan 1860). A plan of Drumburgh dated to 1681 shows the extent of the village at the end of the medieval period (Fig 4); probably little changed in the last 400 years.
- 3.3.10 **Post-medieval:** the rural situation of the study area left it largely unaffected by the changes of the Industrial Revolution. An experimental alum works is thought to have been set up by Peter Spencer, who had taken out a patent for a process using coal waste in 1845, initially near Burgh-by-Sands and later possibly to the south of Drumburgh, (Pickle 2002, 17). However, it was alterations to the transport network brought about because of this that led to major changes in the landscape during the early nineteenth century. Plans to improve Carlisle's connections with the coast had been made as early as the late eighteenth century (Hadfield and Biddle 1970, 336-7). In 1807 moves were made to encourage the construction of a canal from Carlisle to the sea in order to facilitate coal supplies to the city (Ramshaw 1997, 9). At first, despite gaining support, the scheme came to nothing, and it was not until 1817 that the plan was finally put into action (*op cit*, 10; D/Lons/L5/3/1/72). Following meetings between all of the relevant parties and the passing of an act of parliament work began in 1820 (*op cit*, 12). The Carlisle Navigation Canal was finally opened in 1823 (*op cit*, 25), reaching the sea at Port Carlisle (Plate 2). The canal was successful, and in 1836 plans were made to expand the capacity of the docks at Port Carlisle (D/Lons/L5/3/54), although these were evidently never carried out. It was, however, intended that the canal should ultimately connect with similar schemes that would provide a link all the way to Newcastle-upon-Tyne (Ramshaw 1997, 6).
- 3.3.11 The coming of the canal led to the expansion of many of the adjoining villages. Port Carlisle, formerly known as Fisher's Cross (Fig 5 and 6), is recorded as containing only two houses in 1830 – Kirkland House (Site 90)

and a small inn called The Binnacle (Site **31**) (Whellan 1860), which had expanded to its current, albeit relatively small, size 30 years later. In time though, the canal was not considered profitable enough, and railways were being favoured over them. It had never achieved its aim of forming part of a connection to Newcastle, and the coming of the railways had meant that they were now forming the major part of the national transport network (Ramshaw 1997, 135). In 1848 a proposal was put forward to convert the canal into a railway but this was turned down (*op cit*, 123). Nevertheless, the scheme was not forgotten. There were some improvement in the operation of the canal in its final years, largely as a result of the removal of the Ravenbank Jetty (Site **73**), which had caused the canal dock to silt up rather than improve its navigation as intended, but this was not enough to save it. The construction of the railway began in 1853, following the draining of the canal and dismantling of the locks, and the last boats to have used it were sold off or went elsewhere (*op cit*, 135-7).

## 4. RESULTS

### 4.1 DESK-BASED ASSESSMENT

4.1.1 In total, 73 sites of archaeological interest were identified within the study area. Those considered likely to be affected by the proposed development are covered in *Section 5*. Many of these form parts of larger structures such as Hadrian's Wall and its associated forts and turrets, the Carlisle Navigation Canal and the Port Carlisle Railway. The extent of these large features and the individual sites making up parts of them are shown in Figure 2 and arranged in Table 1 below.

<i>Type of Site</i>	<i>Site Numbers</i>	<i>Periods</i>
Canal/railway structures	<b>34, 35, 38, 39, 40, 43, 44, 48, 57, 73</b>	Post-medieval
Agricultural features	<b>01, 26, 54, 65</b>	Medieval – post-medieval
Structures relating to Hadrian's Wall	<b>03, 07, 19, 27, 28, 36, 47, 49, 58, 61, 63, 67</b>	Roman
Find spots	<b>02, 05, 06, 09-11, 32, 59, 60, 68</b>	Roman –Medieval
Religious structures	<b>08</b>	Medieval
Industrial Sites	<b>04, 15, 17, 18, 20, 45, 50, 72</b>	Post-Medieval
Settlements	<b>13, 14, 23, 25, 29, 31, 42, 62</b>	Prehistoric? – Medieval
Fortified buildings	<b>12, 55, 64, 71</b>	Medieval
Archaeological intervention	<b>21, 37, 51-53, 56, 69, 70</b>	Modern
Other sites	<b>16, 22, 24, 30, 33, 41, 46, 66</b>	Medieval – post-medieval

Table 1: Sites located during the desk-based assessment, arranged by type

### 4.2 SITES AND MONUMENTS RECORD (SMR)

4.2.1 In total, 55 individual sites were already recorded in the Cumbria SMR. Many of these formed parts of Scheduled Monument areas, of which there were ten within the study area (Fig 2, *Appendix 3*), mostly forming parts of Hadrian's Wall. Examination of the aerial photographs held at the SMR identified a further two sites (Sites **01** and **65**), which were not listed in the SMR.



### **4.3 CUMBRIA COUNTY RECORD OFFICE (CARLISLE)**

- 4.3.1 A number of documents or maps were consulted, principally early maps of the area. Estate records belonging to the Lonsdale archives were also examined and several secondary sources were examined. This search added an additional 14 sites to the gazetteer.
- 4.3.2 **Hodgkinson and Donald 1789:** although not a detailed map it does show the principal features of the area (Fig 5). A single additional site of archaeological interest to those recorded by the SMR was identified on this map, that of Bog Hall (Site **42**). However, the scale and detail of the map does not allow any further details of this site to be ascertained.
- 4.3.3 **Greenwood and Greenwood 1822:** again, this map is not detailed compared to the later Ordnance Survey, but it shows more than Hodgkinson and Donald's. Several sites were identified by reference to this map. It was compiled shortly after the completion of the Carlisle Navigation Canal and shows two bridges crossing this (Sites **43** and **48**), which are no longer present. It also shows Bog Hall (Site **42**).
- 4.3.4 **Tithe Map 1838 (PR119/25):** examination of the Tithe Map revealed several sites of interest, although Bog Hall (Site **42**) is no longer present. The field-names listed in the Tithe Apportionment of 1845 (DRC8/24) identified sites such as a gallows (Site **16**), a shipyard (Site **17**), 'whale jaws' (Site **24**), ridge and furrow (Site **25**), a brick field (Site **45**), and a pond (Site **46**). It is difficult to be sure of the exact nature of a number of these sites. In many cases they may be of little or no archaeological interest, or refer to an area some distance from the development area.
- 4.3.5 **Ordnance Survey 1868:** in total, two additional sites are shown on the Ordnance Survey 1<sup>st</sup> edition map of 1868: a mill race and possible mill (Sites **18** and **15** respectively).
- 4.3.6 **Ordnance Survey 1892-1900:** additional sites, not identified in the SMR, were also recorded from the later edition Ordnance Survey maps (Fig 7). These include a railway station (Site **57**), and a small enclosure (Site **66**).
- 4.3.7 **Secondary Sources:** a further site, a jetty at Ravenbank (Site **73**), was identified by reference to secondary sources (Ramshaw 1997, 130).

### **4.4 HADRIAN'S WALL NATIONAL TRAIL ARCHIVE**

- 4.4.1 Although no further sites of archaeological interest were revealed through examination of the Hadrian's Wall National Trail Archive the line of the trail is shown in Figure 2. The impact of the proposed development on the Trail is considered in *Section 5.2.4*.

### **4.5 OA NORTH ARCHIVE**

- 4.5.1 Oxford Archaeology North has a large collection of secondary sources relating to the study area, as well as copies of unpublished client reports for work carried out there. Several of these were consulted.

4.5.2 Two additional sites were identified through reference to secondary sources. These included a watchtower (Site **64**) and possible *vicus* to the east of Bowness fort (Site **13**).

#### 4.6 WATCHING BRIEF

4.6.1 For the purposes of geological evaluation a series of eleven trial pits were excavated. The pits typically measured 2m x 2m and were 3m deep in all cases. A Trial Pit (TP1) (Fig 2) located three cut timbers at a depth of 1.9m at the eastern extremity of the trial trench, no discernible cut was evident for the timbers though close examination of the *in situ* remains was not possible on health and safety grounds (Plate 3). All further trial pits were void of any archaeological deposits or finds.

#### 4.7 WALKOVER SURVEY

4.7.1 In total, 17 sites were identified by the walkover survey. These are summarised in Table 2.

<i>Type of Site</i>	<i>Site Numbers</i>	<i>Periods</i>
Agricultural Features	<b>74, 78, 79, 80, 81, 84, 87, 89</b>	Medieval/Post-medieval?
Historical Buildings	<b>82, 90</b>	Post-medieval
World War II Structures	<b>77</b>	20th Century
Coastal Structures	<b>75, 76, 83, 85</b>	Post-medieval
Culvert	<b>86</b>	Post-medieval
Earthwork	<b>88</b>	Post-Roman

Table 2: Sites located by the walkover survey, arranged by type

4.7.2 The most common category of site was that of agricultural features, with suggested dates ranging from the medieval to post-medieval periods, including five examples of ridge and furrow. Of these, Sites **81** (Plate 4) and **84** are considered the result of medieval ploughing with oxen, Site **80** the result of post-medieval ploughing with horses and Site **74** the result of post-medieval steam ploughing. It was not clear whether the ridge and furrow at Site **87** was the result of either ploughing with oxen or horses. Also within this category are two ponds (Site **79** and **89**) and one post-medieval trackway (Site **78**) (Plate 5).

4.7.3 Historic buildings include the former site of Westfield Cottage (Site **82**) and Kirkland House (Site **90**) (Plate 6). Site **77** comprises a World War II lookout post and a post-Roman earthwork is visible as a flat platform to the east of Milecastle 79 (Site **28**). This latter site is also visible on an aerial photograph of the area, but is not thought to relate to the Roman frontier as Milecastle 79,

adjacent to this location, has already been located and excavated (Richmond and Gillam 1952; Manchester University 1977 NY2362/R-S; Wilmott 1999). The remaining coastal structures comprise a jetty (Site **75**), a ruined structure reminiscent of a boat-house (Site **76**), a section of ruined sea wall (Site **83**) (Plate 7) and a promenade (Site **85**)

## 5. IMPACT AND RECOMMENDATIONS

### 5.1 PREVIOUS WORK

- 5.1.1 A large number of archaeological interventions have been carried out in the vicinity of the proposed development. Most were very small, consisting of little more than limited excavations or watching briefs intended to answer specific questions or monitor developments. Some of these appear in the gazetteer as individual sites (Sites **21**, **37**, **51-53**, **56**, **69**, **70** for example). Others are included within larger sites, such as those making up Bowness fort (Site **3**) and *vicus* (Sites **13** and **14**), or are shown in the more general extent of features, such as Hadrian's Wall, as depicted in Figure 2.
- 5.1.2 The large number of archaeological sites within the study area, the evidence from previous evaluations and the presence of monuments of some archaeological significance suggest that there is a general potential for further, as yet unknown, sites to be identified. It is therefore recommended that a general watching brief be maintained on all ground works along the whole route, excepting those areas where evaluations are already taking place.

### 5.2 SPECIFIC GAZETTEER SITES

- 5.2.1 In total, 16 specific sites listed in the gazetteer (*Appendix 2*) are likely to be directly affected by the proposed development. These are listed in Table 3 below, and shown in Figure 2. Other sites, which are close to the proposed development, but less likely to be affected, are also listed in the gazetteer.

Site No.	Type	Period	Impact	Recommendations
<b>22</b>	Standing stone/cross/mound	Prehistoric?	May be affected	Watching brief
<b>23</b>	Marching camp	Roman	Likely to be affected	Watching brief
<b>25</b>	Settlement?	Unknown	Likely to be affected	Evaluation
<b>31</b>	Building	Post-medieval	May be affected	Watching brief
<b>38</b>	Railway station	Post-medieval	Likely to be affected	None
<b>43</b>	Bridge	Post-medieval	Likely to be affected	None
<b>46</b>	Pond?	Unknown	Likely to be affected	None
<b>47</b>	Turret	Roman	May be affected	Evaluation
<b>48</b>	Bridge	Post-medieval	Likely to be affected	None
<b>57</b>	Railway station	Post-medieval	Likely to be affected	Watching Brief

<b>73</b>	Jetty	Post-medieval	May be affected	Watching brief
<b>75</b>	Jetty	Post-medieval	May be affected	Watching brief
<b>78</b>	Trackway	Post-medieval	Will be affected	None
<b>81</b>	Ridge and Furrow	Medieval?	May be affected	Topographic Survey
<b>82</b>	Former site of Westfield Cottage	Post-medieval?	Will be affected	Evaluation
<b>86</b>	Culvert	Post-medieval	Will be affected	None
<b>TP1</b>	Wood located in Trial Pit	Post-medieval	Will be affected	Evaluation

Table 3: Sites (other than Hadrian's Wall) possibly affected by development

5.2.2 **Recommendations:** where it is considered important and is practical to do so, an archaeological evaluation should be carried out. In other cases a permanent-presence watching brief should suffice. In both cases, further excavation should be considered if significant archaeological remains are encountered.

### 5.3 HADRIAN'S WALL

5.3.1 The projected line of Hadrian's Wall, designated a World Heritage Site, is potentially crossed *five times* by the proposed development. The locations are listed in Table 4 below and shown in Figure 2.

<b>Location</b>	<b>Grid reference</b>	<b>Mitigating factors</b>
Fisher's Cross, Port Carlisle	NY 23990 62275	Beneath road
Kirkland House/Turret 78a	NY 24320 61751	Scheduled Monument/beneath road
Westfield Marsh	NY 24826 61254	Between Scheduled areas/beneath railway and/or canal
East of Glasson Farm	NY 25768 60356	Scheduled monument/beneath railway and/or canal
East of Drumburgh	NY 26751 59886	Confirmed (Bellhouse 1962, 60)/beneath railway and/or canal

Table 4: Points at which the line of Hadrian's Wall is crossed by the proposed development

5.3.2 It is clear that in most cases the development will cause a minimum of damage to Hadrian's Wall, which having been previously crossed by the canal/railway will have suffered a deal of damage in these areas. In other areas it is beneath the road or, in the case of the section east of Drumburgh, its exact extent is not clear, although 'substantial remains' were apparently revealed in this area in 1960 (Bellhouse 1962, 60). Nevertheless, some of those sections that will be affected do form parts of Scheduled Monuments, and further investigation would undoubtedly be worthwhile.

5.3.3 **Recommendations:** where practical all five of the points at which Hadrian's Wall will be crossed should be evaluated. This includes areas where it coincides with the canal/railway or roads, as the condition of the wall beneath these features is, as yet, unknown. Where significant or well-preserved remains are identified efforts should be made to preserve as much as possible *in situ*. As the presence of Hadrian's Wall east of Drumburgh (NY 26751 59886) is not certain, it is recommended that only a watching brief be carried out in this area.

#### 5.4 HADRIAN'S WALL PATH NATIONAL TRAIL

5.4.1 The route of the Hadrian's Wall Path National Trail (Capita 2002) as shown in Figure 2, will potentially be affected by the proposed development. This is less likely to be the case in the southern half of the development, at which point the trail has a course wide of the route of the proposed development. However, near Kirkland House, the trail crosses the wall and is itself crossed by the development. From Port Carlisle to Bowness-on-Solway, the proposed development follows the route of the trail. The impact of the development across this section of the National Trail could be considerable, affecting both its scenic qualities and, potentially, causing access difficulties. It is conceivable that in a number of places between Westfield and Bowness-on-Solway access to the trail might be restricted while work is ongoing.

5.4.2 **Recommendations:** it is recommended that United Utilities liase closely with the Hadrian's Wall Path National Trail Officer regarding the potential impact of the proposed development.

#### 5.5 CARLISLE CANAL/PORT CARLISLE RAILWAY

5.5.1 Of all the large monuments of archaeological interest in the vicinity of the proposed development the route of the Carlisle Canal and Port Carlisle Railway is the most likely to be severely affected. A total of nine individual sites relate to this structure (Sites 34, 35, 38, 39, 40, 43, 44, 48, 57) and between Kirkland House and Drumburgh the proposed development runs adjacent to the line of the former canal/railway. The impact again depends largely on the specific nature of the proposed work and the fact that a large monument such as a railway is relatively difficult to damage. The potential to gain valuable information from further archaeological investigation of the railway line is also debatable, although examining the canal which lies beneath it (and has not been visible in 150 years) would be extremely worthwhile.

5.5.2 **Recommendations:** where possible the route should be altered to avoid the line of the canal/railway. Where it is likely to affect large sections of it some

form of further archaeological investigation should be carried out. A limited evaluation of selected areas and a watching brief of the remainder should give sufficient understanding (Table 3).

## 5.6 SUBMERGED FOREST

- 5.6.1 Whellan (1860, 152) describes a submerged forest that was exposed during the construction of the Carlisle Canal '*near the banks of the Solway Frith*'. It is described as consisting of trees that were '*all prostrate... fallen with little deviation, in a northern direction, or a little eastward of it*' (*ibid*). He states that it was present from a point '*about half a mile north-west of the village (Glasson), and extending into Kirkland*' (*ibid*) (Fig 2). This forest represents an extremely interesting palaeo-environmental feature in the landscape, probably the result of a substantial change in sea-level recognised along the coast of Cumbria and North Lancashire beginning at the end of the Mesolithic (Hodgkinson *et al* 2000, 106).
- 5.6.2 An opportunity to examine it through archaeological excavation would be extremely valuable. This may be exposed in a number of places as the proposed development follows the line of the canal along this section (between NY 24375 61694 and 24684 61337), as well as others, and Whellan describes it as extending over '*a considerable tract of ground*' (1860, 152). Some of the submerged timber uncovered during the construction of the canal was also reportedly used '*in forming jetties at the outlet of the canal into the Solway Frith*' (*ibid*), and so may be identified in other areas during the present development. There, however, is some potential for confusion here. Hadrian's Wall is, at this point, also described as being built on a layer of timber piles, which are also described as being used in the construction of a jetty for the railway (Daniels 1978, 252). It may, therefore, actually be the case that it was timber piles used in construction of the wall that were identified during the construction of the canal, or that both piles and submerged forest were present, the true picture is far from clear.
- 5.6.3 The scale of this feature makes extensive evaluation impractical. However, selected sample evaluations and adequate environmental sampling is recommended. The general landscape is made up of a number of other mosses (Hodgkinson *et al*, 2000), and although none of the larger ones are likely to be affected by the development it is possible that isolated areas might be revealed during the work. It is recommended that further environmental samples should be taken as considered necessary during the course of the works, depending on the presence or lack of areas of moss within the development area.

## 5.7 SPECIFIC TREATMENT WORKS

- 5.71 A total of five new treatment works are proposed along the route. The position of many of the treatment works is, as yet, not confirmed and so a further assessment of their impact may need to be taken into consideration as soon as this is known. As these typically involve excavation to a depth of 4m or 5m their potential to damage archaeologically sensitive layers is different to that of the pipeline. Each work will be considered individually.
- ***Bowness Septic Tank and Transfer Pumping Station (NY 22569 62830)***: although not likely to affect any specific site, its proximity to

the line of the wall and Sites **14** and **15** mean that there is some potential to affect archaeological deposits. **Recommendations:** archaeological evaluation.

- **Port Carlisle Transfer Pumping Station and Overflow (NY 23988 62327):** again this part of the development is not particularly close to any specific site, but it is within c55m of the suggested line of Hadrian's Wall. There is therefore some potential for archaeological deposits to be affected. **Recommendations:** archaeological watching brief.
- **Westfield Marsh Transfer Pumping Station (NY 24658 61329):** this part of the development is within 40m of the line of the wall to the south and the canal/railway to the north, although it is not close to any other specific sites. Its position also puts it within the area of the submerged forest (Whellan 1860, 152), and so, should any deep excavations be involved, this may be exposed. Its close proximity to the line of the wall and the railway/canal also suggest that there is, in general, a high possibility of archaeological deposits being affected. **Recommendations:** archaeological evaluation.
- **New Collection Chamber on Existing Glasson Outfall (NY 25914 60329):** this site is already disturbed by existing buildings, although its position close to the canal/railway makes it possible that archaeological features might be affected. **Recommendations:** archaeological evaluation.
- **Drumburgh Septic Tank and Transfer Pumping Station (NY 26716 59798):** this part of the development is in proximity to a number of sites of archaeological interest, but is unlikely to affect any specific archaeological deposits. **Recommendations:** archaeological evaluation.



## 6. CONCLUSIONS

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### 6.1 ARCHAEOLOGICAL RESOURCE

6.1.1 As is perhaps to be expected in an area close to Hadrian's Wall the number of individual archaeological sites identified within the study area is very high, with an average of approximately 14 sites per kilometre of the proposed development. Not all of these relate directly to Hadrian's Wall, however, or even date to the Roman period. There are also a number of medieval sites, fortified buildings in particular and post-medieval sites. Many of the post-medieval sites relate to either the canal or the railway that followed it and form part of a considerable landscape feature of some local importance. The nature of the canal, buried beneath the railway, means that it has not been possible to examine it in detail for 150 years.

### 6.2 ARCHAEOLOGICAL IMPLICATIONS OF DEVELOPMENT

6.2.1 The proposed development will have a considerable impact on the archaeological resource in the area. Not only does it cross Hadrian's Wall (a World Heritage Site) five times; it would also be likely to affect a number of smaller sites of archaeological interest (see *Section 5.2.2*). Of particular significance amongst these is the group of sites at Knock Cross (Sites **22**, **23**, and **25**). Without more details of the proposed route it is impossible to fully assess the potential impact, but it seems likely that there will be some.

6.2.2 Of particular concern is the likely impact on remains of the canal and railway. The deliberate policy of following the route of this feature, while probably avoiding more well-preserved parts of Hadrian's Wall, is likely to have a major impact on the canal/railway itself. It could, of course, be a matter of some debate how much damage would be done to remains of the railway, and how much information would be gained by further archaeological investigation of it. The condition of the canal, by contrast, is unknown and any further information gained would be very beneficial to its understanding.

6.2.3 The remains of the submerged forest are more difficult to quantify. The vague nature of the original reference is countered by the sheer extent of the feature. There is a need for some form of assessment, and the potential for palaeo-environmental information to be acquired would suggest that there is a need for a detailed sampling strategy.

6.2.4 The limited watching brief carried out on the trial pits has already revealed some evidence of potential archaeological features along the proposed pipeline route in Trial Pit 1. This would suggest that in some areas further archaeological remains are likely to be recovered.

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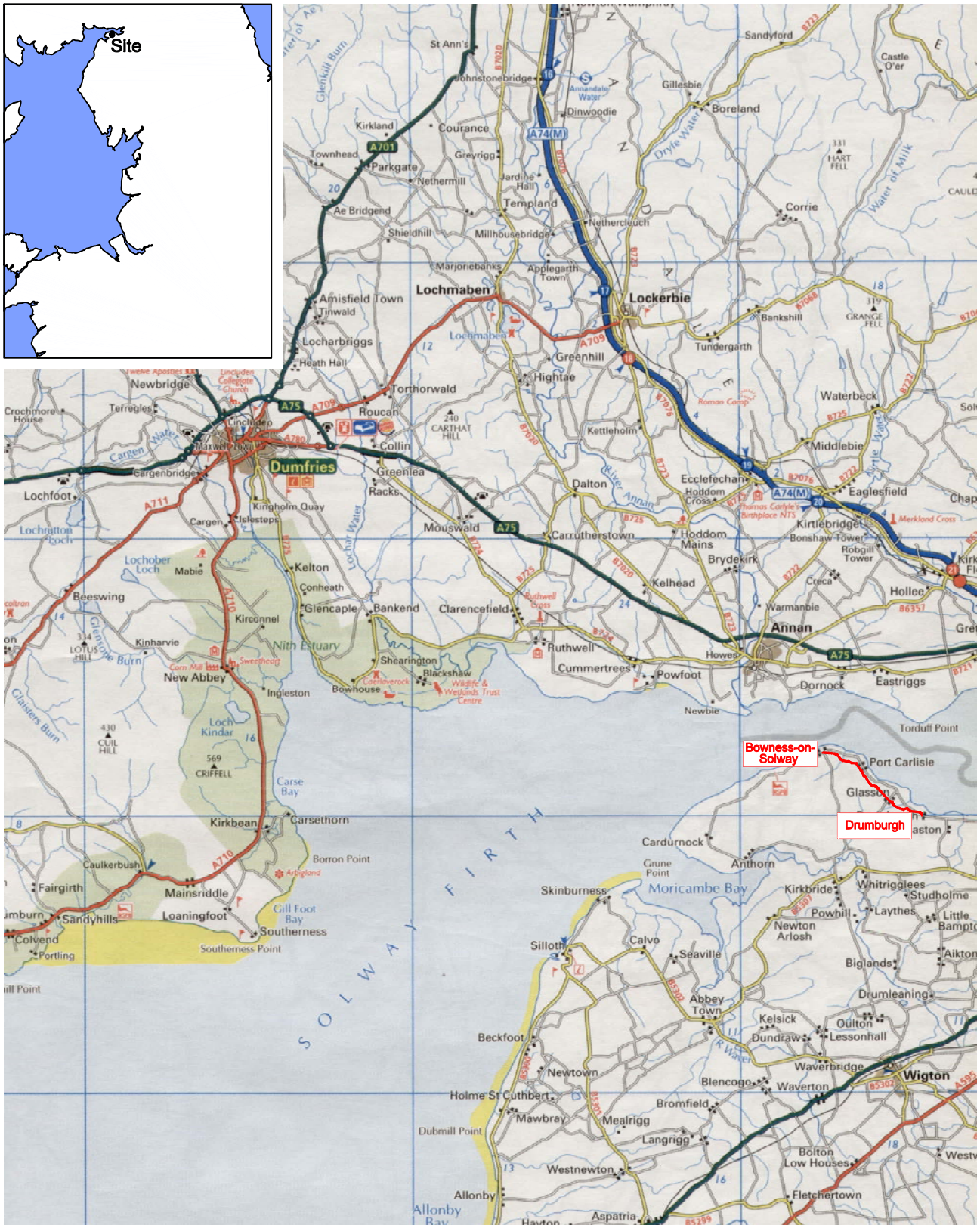
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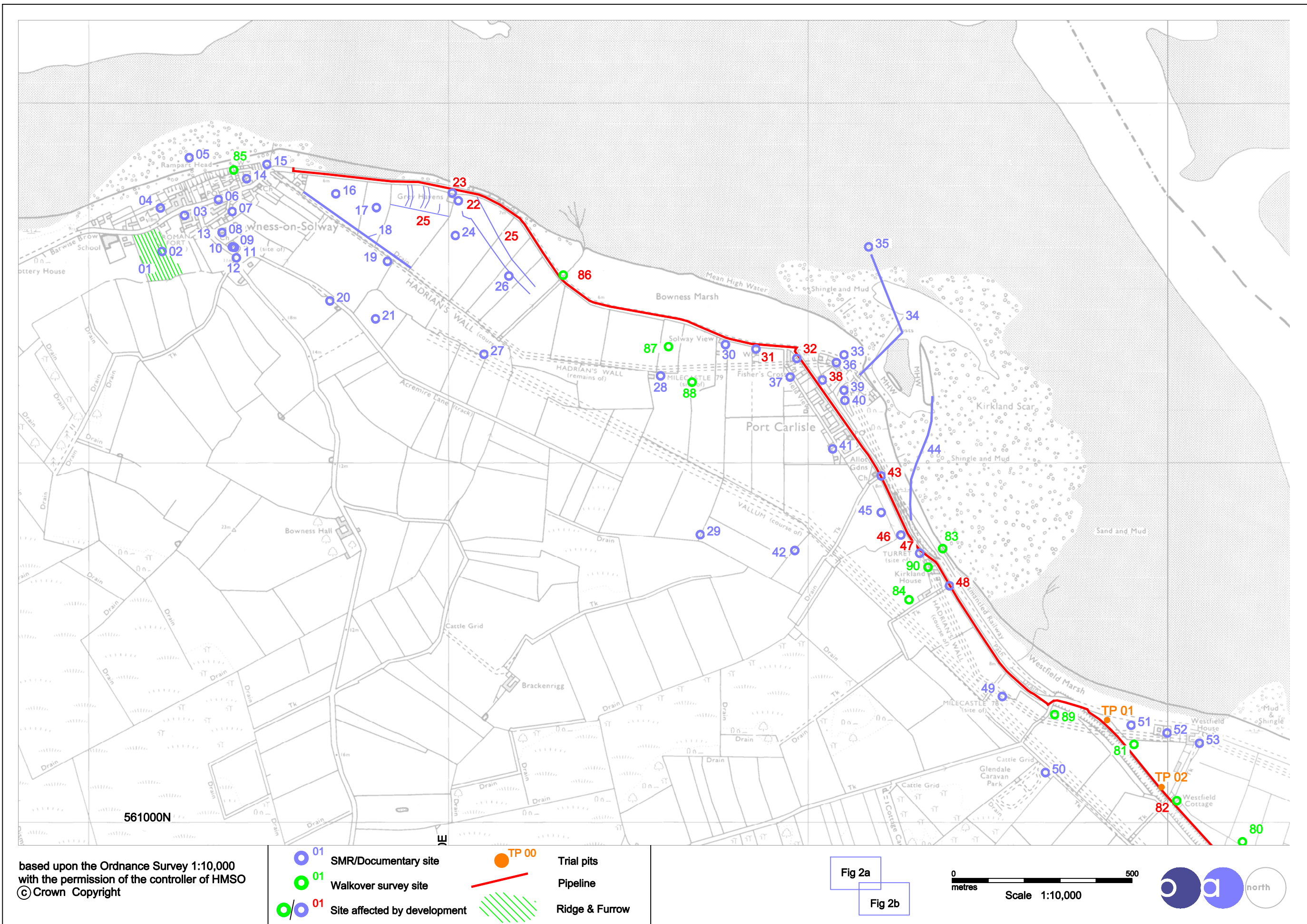




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Figure 1: Location Map



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- |  |                                 |  |                  |
|--|---------------------------------|--|------------------|
|  | 01 SMR/Documentary site         |  | TP 00 Trial pits |
|  | 01 Walkover survey site         |  | Pipeline         |
|  | 01 Site affected by development |  | Ridge & Furrow   |

Fig 2a  
Fig 2b

0 500  
metres Scale 1:10,000



Figure 2a : Gazetteer sites and trial pits

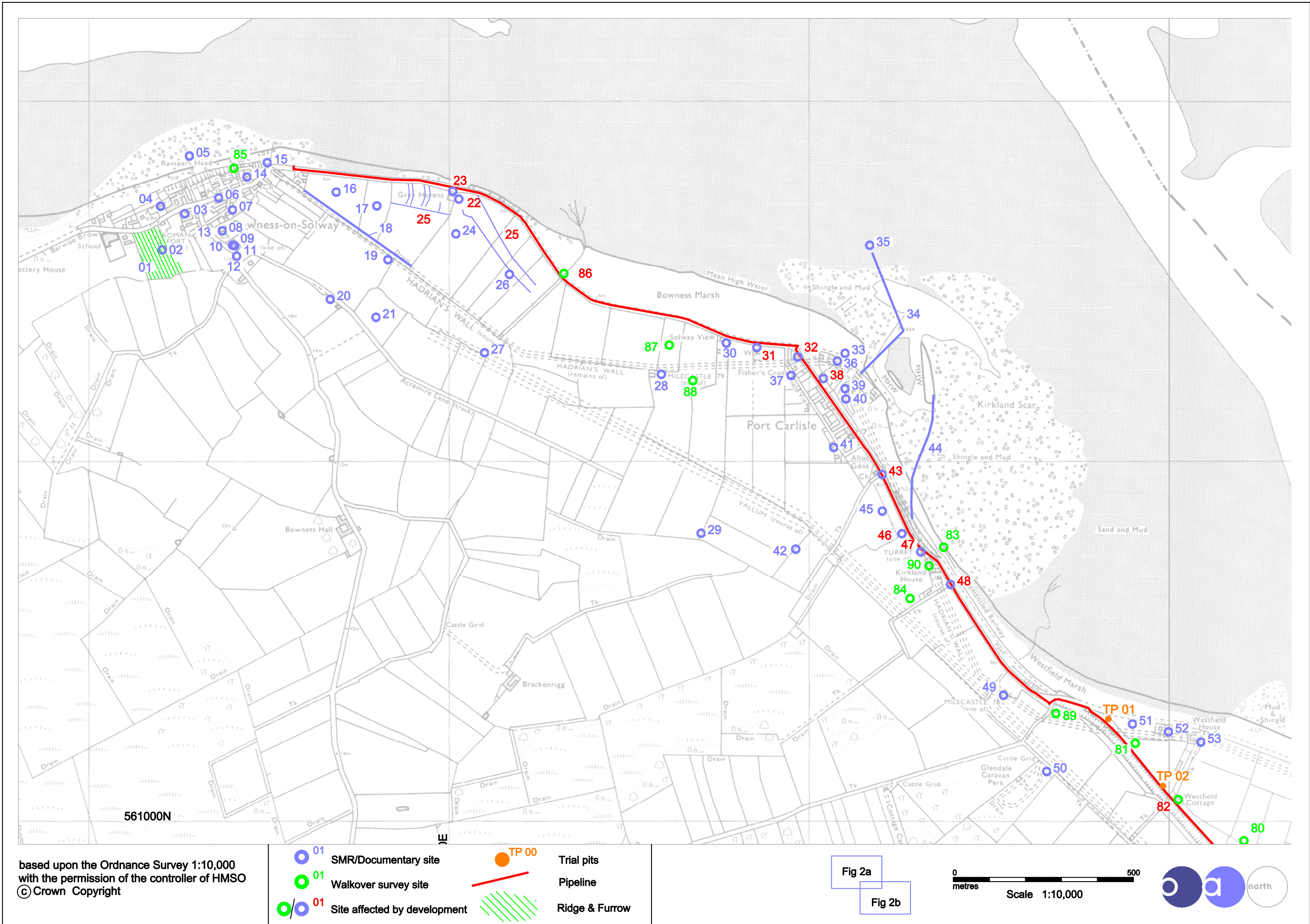


Figure 2a : Gazetteer sites and trial pits

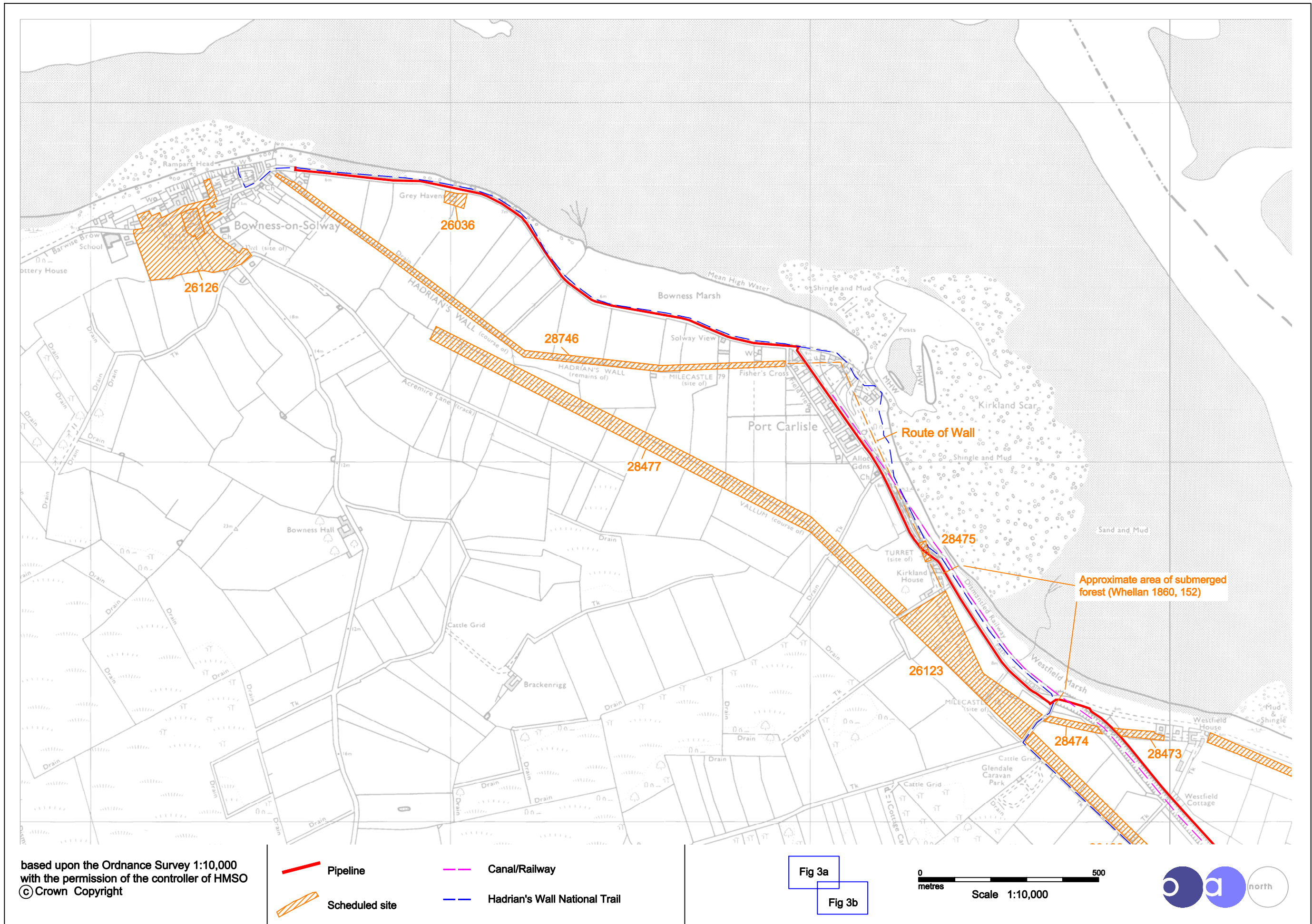
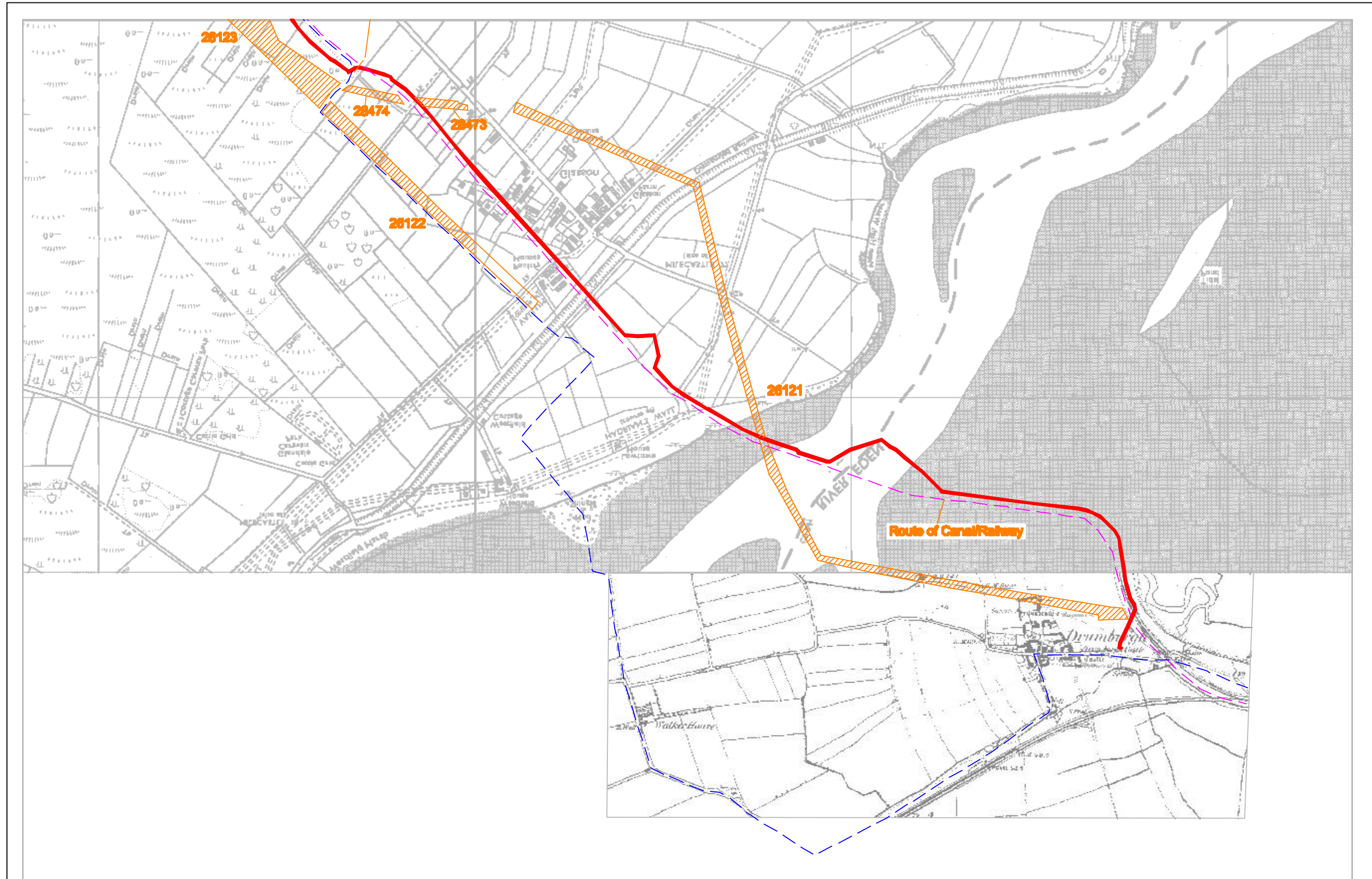


Figure 3a : Plan showing scheduled sites



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- Pipeline
- - - Canal/Railway
- Hadrian's Wall National Trail
- Scheduled site

Fig 3a

Fig 3b



Figure 3b : Plan showing scheduled sites

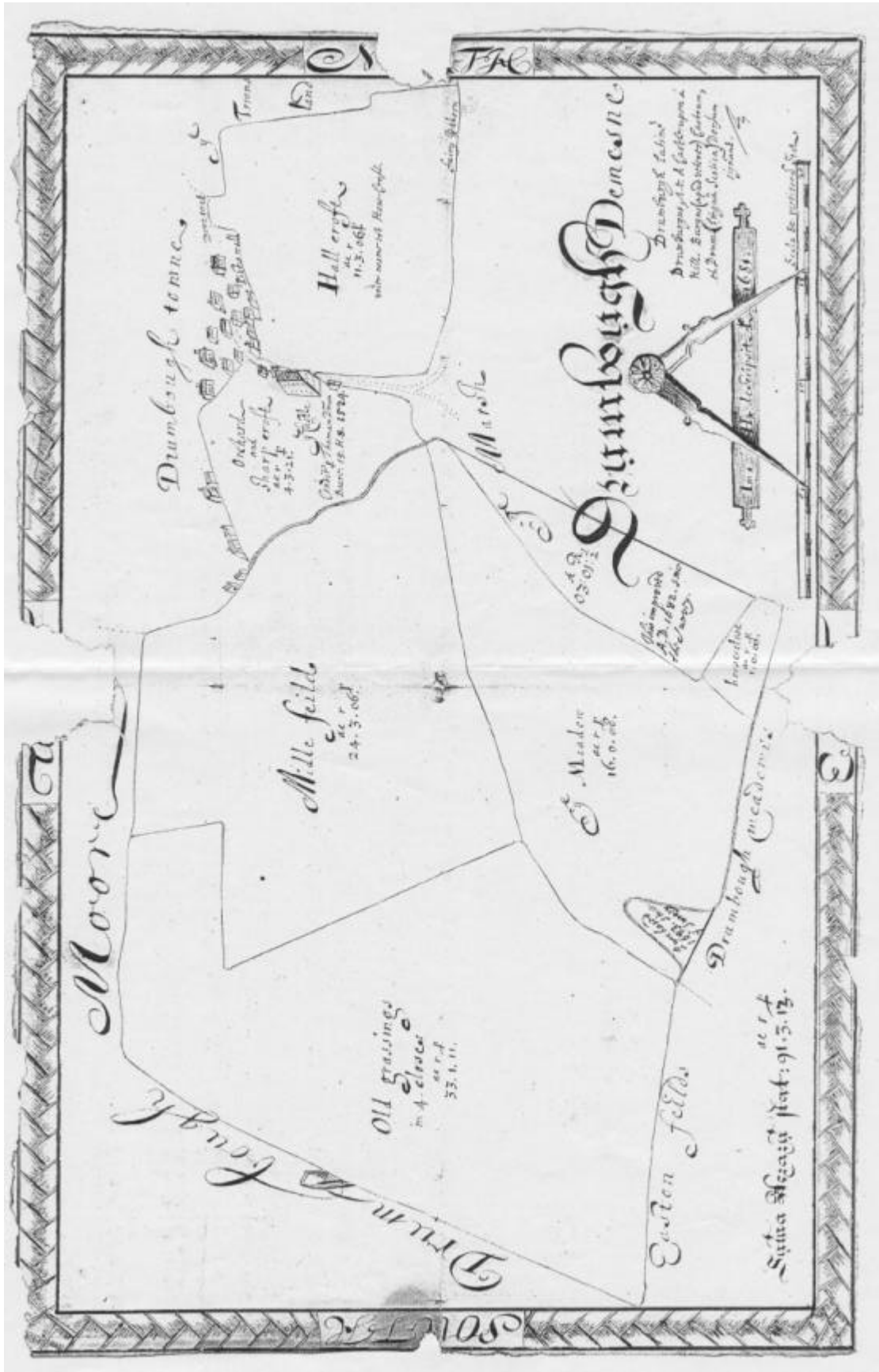


Figure 4: Plan of Drumburgh Dated 1681 (D/Lons/LS/3/49)

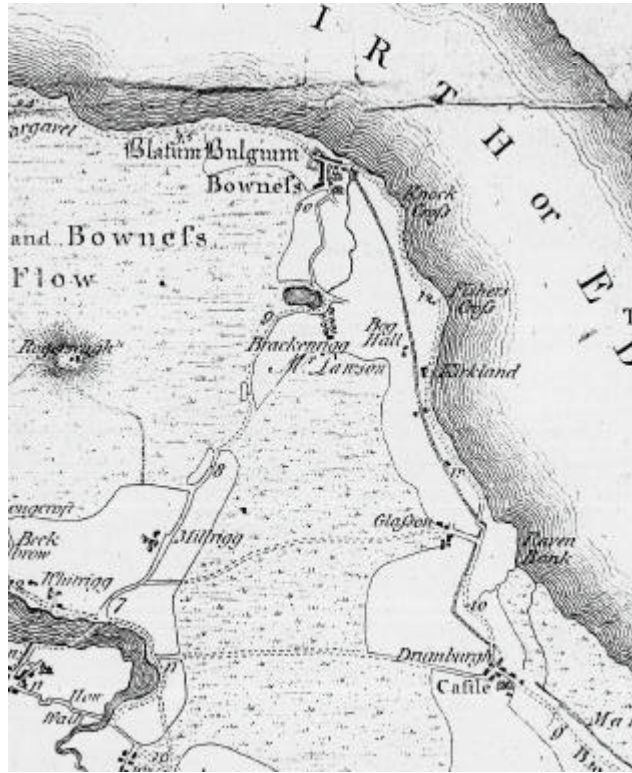


Figure 5: Part of Hodgkinson and Donald's Map of 1789 showing Knock Cross (Site 22), Fishers Cross (Site 33), and Bog Hall (Site 42)



Figure 6: Part of the OS 25": 1 Mile Cumberland Sheet 15.5 1892, showing Fisher's Cross (Site 33), and the Port Carlisle railway station (Site 38)



Figure 7: Part of the OS 25": 1 Mile Cumberland Sheet 15.9, 1900, showing Glasson railway station (Site 57)





Plate 1: Filled-in canal and railway embankment at NY 25838 68733



Plate 2: Hadrian's Wall at NY 24286 61598



Plate 3: Timbers located in Trial Pit 1 during archaeological watching brief



Plate 4: Site **81**, ridge and furrow, looking north-east



Plate 5: Site **78**, trackway, looking north-east



Plate 6: Site **90**, Kirkland House, looking north-east



Plate 7: Site **83**, ruined sea defences, looking south-east



Plate 8: Cropmarks showing Knockcross Roman camp (Site **23**), the mound (Site **22**) and other features (Site **25**)

## APPENDIX 1: PROJECT DESIGN

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**Oxford  
Archaeology  
North**

**October 2003**

## **SOLWAY COAST WASTEWATER TREATMENT IMPROVEMENTS**

### **ARCHAEOLOGICAL DESK-TOP ASSESSMENT PROJECT DESIGN**

#### ***Proposals***

*The following project design is offered in response to a request by United Utilities for an archaeological desk-based assessment in advance of wastewater treatment improvements from Bowness-on-Solway to Drumburg, Cumbria.*

## **1. INTRODUCTION**

- 1.1 United Utilities (hereafter the client) are proposing improvements to wastewater treatment along the Solway Coast from Bowness-on-Solway to Drumburgh, Cumbria. The route runs through an area of high archaeological potential and affects a number of known sites including the Hadrian's Wall World Heritage Site (HWWHS). Following discussions between the client, the Cumbria County Archaeology Service (CCAS) and the Hadrian's Wall Archaeologist, it has been proposed that the development area be subjected to a desk-based assessment as a first stage of archaeological investigations. Following the completion of the assessment, discussions will be held with both CCAS and English Heritage, and it is likely that a further programme of archaeological work will be necessary. This document details the desk-based assessment, a further project design will be compiled for any additional work that arises as a result of recommendations.
- 1.2 The route of the proposed improvement runs in close proximity to the line of Hadrian's Wall, and crosses it in several locations. It also passes to the north of Knockcross Roman Camp. Other sites of significance are the dis-used railway, the route of the Carlisle canal and the potential for locating Peter Spencers experimental Alum works near Drumburgh.
- 1.3 OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.
- 1.4 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 A rapid desk-based assessment will precede a programme of fieldwork to place any findings that are made in to the context of known archaeological sites and/or artefact discovery sites in the immediate vicinity.
- 2.2 A written report will assess the significance of the data generated by the desk-based assessment, within a local and regional context and will serve as a basis for recommending a programme of further archaeological investigations.

## **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 a rapid desk-based assessment of the existing resource. It will include an appraisal of the data in the County Sites and Monument Record (Kendal), appropriate sections of County histories, early maps (printed and manuscript), and such primary documentation (tithes and estate plans etc.) as may be reasonably available. Particular attention will be paid to field and place names recorded on early cartographic sources relating to estate and parish boundaries, field boundaries, woodlands and routes, as these often provide important evidence of archaeological activity and transformation of the historic landscape. All available published and unpublished documentary sources will also be examined and assessed. The Cumbria Record Office (Carlisle) and relevant local studies library will also be consulted.

3.1.3 **Aerial Photography:** any relevant photographic material held by Cumbria County Council will also be studied. This may indicate the range and survival of archaeological and structural features in the designated area no longer visible at ground level.

3.1.4 **Physical Environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken in order to set the archaeological features in context. Any engineering and/or borehole data relating to the site will also be examined.

3.1.5 **OA North Resources:** OA North retains its own extensive research archive, which will be consulted for the purposes of the study. Rachel Newman (OA North Director) is currently, and has been for over five years, retained as a consultant by the Countryside Agency for the Hadrian's Wall Path National Trail project. Rachel has an almost unrivalled knowledge of the archaeology of Hadrian's Wall, and an extensive project archive, which will be made available for this project.

### 3.2 FURTHER ARCHAEOLOGICAL INVESTIGATIONS

3.2.1 English Heritage has suggested that the following areas should be subject to archaeological evaluation:

- i) **Bowness-on-Solway:** the site lies in close proximity to Hadrian's wall at its western extent;
- ii) **Bowness to Port Carlisle:** the area adjacent to Knockcross Roman Camp;
- iii) **Port Carlisle:** the area to the north of Hadrian's Wall;



- iv) **Port Carlisle to Westfield Marsh:** the pipeline crosses the line of Hadrian's Wall in two locations, these being south of the proposed pumping station, and to the west of Kirkland House;
- v) **Westfield Marsh:** the pipeline runs slightly to the south of Hadrian's Wall;
- vi) **Westfield to Glasson:** the route crosses the line of Hadrian's Wall in two places along this section;
- vii) **Glasson:** the site of the proposed water treatment works is close to Hadrian's wall;
- viii) **Glasson to Drumburgh:** at its eastern end the pipeline crosses the wall.
- 3.2.2 The necessity for further work will be discussed with both CCAS and English Heritage following completion of the desk-based assessment.
- 3.3 ARCHIVE/REPORT
- 3.3.1 **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. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. 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 CSMR (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 Office, 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.
- 3.3.2 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.
- 3.3.3 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further three copies submitted to the Cumbria SMR within eight weeks of completion of fieldwork. The Hadrian's Wall Archaeologist will also receive a copy of the report. The report 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.

- 3.3.4 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. This report will be in the same basic format as this project design; a digital copy of the report can be provided, if required.
- 3.3.5 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.
- 3.3.6 **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.

## **4 PROJECT MONITORING**

- 4.1 Monitoring of this project will be undertaken through the auspices of the CCAS Archaeologist and the Hadrian's Wall Archaeologist, both of whom will be informed of the start and end dates of the work.

## **5 WORK TIMETABLE**

- 5.1 The desk-based assessment is expected to take in the region of six days to complete.
- 5.2 The client report will be completed within eight weeks following completion of the fieldwork.

## **6 STAFFING**

- 6.1 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.
- 6.2 Daniel Elsworth MA (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 county of Cumbria.

## **7 INSURANCE**

- 7.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

## APPENDIX 2: SITE GAZETTEER

---

**Site Name** Bowness-on-Solway, ridge and furrow  
**Site Number** 01  
**NGR** NY 22182 62579  
**SMR No** -  
**Site Type** Ridge and furrow  
**Period** Medieval – post-medieval  
**Source** AP Manchester University 1977 NY2262/D

**Description**

An area of ridge and furrow is visible in an aerial photograph across part of the area thought to be occupied by the Roman fort at Bowness-on-Solway.

**Assessment**

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

---

**Site Name** Bowness Temple Site  
**Site Number** 02  
**NGR** NY 22200 62590  
**SMR No** 177  
**Site Type** Altar find  
**Period** Roman  
**Source** Patten nd; Daniels 1978

**Description**

An inscribed red sandstone slab was discovered in approximately this position in 1790 and subsequently lost before being rediscovered in 1879. The inscription is dedicated by Antonianus to Matras and asks for a profitable trading trip, with the promise that should it be successful he will gild the letters of the inscription (Daniels (ed) 1978, 258). However, no trace of gilding is apparent.

**Assessment**

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

---

**Site Name** Bowness-on-Solway, *Maia* Roman Fort  
**Site Number** 03  
**NGR** NY 22240 56210  
**SMR No** 166; SM 26126  
**Site Type** Fort  
**Period** Roman  
**Source** Birley 1931; Daniels 1960; Potter 1975; Potter 1979; Carlisle Archaeology Ltd 2000; 2001a; OA North 2002

**Description**

The Roman fort of *Maia* (SM 26126), now partially under the town of Bowness-on-Solway. Camden noted traces of streets, walls and a silted-up harbour in 1599. The fort is located on a clay knoll rising 20m above sea level. The extent of the fort has been established since excavation in 1930 (Birley 1931). It is unusual in that it is aligned with its long axis running along the length of Hadrian's Wall. The northern rampart has presumably been eroded away by the sea. The south-west angle of the fort survives as a slightly raised platform with an outer ditch, apparently re-cut in the thirteenth century. The position of the fort wall and gate has been established by excavation on the west side. Remains of the north wall have been partially identified and the area covered by the fort makes it the second largest on Hadrian's Wall. Internally, buildings made of timber have been identified while the defences were originally turf and timber, later replaced in stone. Most recently, a watching brief carried out along the road leading south from the village identified substantial Roman remains, including waterlogged deposits and a probably oven (Carlisle Archaeology Ltd 2000; 2001a). Similar work within the centre of Bowness also identified potential Roman remains, although these were damaged by later activity (OA North 2002).

**Assessment**

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

---

**Site Name** Bowness Windmill  
**Site Number** **04**  
**NGR** NY 22200 62710  
**SMR No** 10213  
**Site Type** Windmill  
**Period** Post-medieval  
**Source** OS c1892b; Hughes 1972; 1973; OA North 2002

**Description**

The site of a windmill shown on the OS 1<sup>st</sup> edition 25": 1 Mile map of c1892. The probable remains of it were identified during a watching brief (OA North 2002).

**Assessment**

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

---

**Site Name** Bowness-on-Solway  
**Site Number** **05**  
**NGR** NY 22280 62850  
**SMR No** 19781  
**Site Type** Copper alloy object  
**Period** Unknown  
**Source** SMR

**Description**

An unidentified copper alloy object was found on the foreshore below High Bank and the Roman fort.

**Assessment**

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

---

**Site Name** Bowness altar find  
**Site Number** **06**  
**NGR** NY 22360 62730  
**SMR No** 183; SM 26126  
**Site Type** Altar find  
**Period** Roman  
**Source** SMR

**Description**

An inscribed Roman altar, dated to the third century AD, was found here prior to 1783 either south or south-west of Bowness. It is now built into the wall of a barn on the north side of the village. The find spot lies within the Scheduled Monument (SM 26126).

**Assessment**

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

---

**Site Name** Bowness architectural feature  
**Site Number** **07**  
**NGR** NY 22400 62700  
**SMR No** 181  
**Site Type** Architectural feature  
**Period** Roman  
**Source** SMR

**Description**

An inscribed stone was discovered here in 1739 and remained in the possession of Baron Clerk before eventually disappearing. It reappeared at a later date and was given to the National Museum of Antiquities, Edinburgh in 1857. It is inscribed "V VI P FF".

**Assessment**

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

---

**Site Name** St Michael's Church, Bowness  
**Site Number** 08  
**NGR** NY 22370 62640  
**SMR No** 4584  
**Site Type** Church  
**Period** Medieval – post-medieval  
**Source** SMR; Pevsner 1967

**Description**

A late Norman church, heavily restored in 1891. The outer masonry shows use of Roman stones from Hadrian's Wall and the fort, and there is a blocked c twelfth century doorway.

**Assessment**

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

---

**Site Name** Bowness inscribed stone and coin hoard  
**Site Number** 09  
**NGR** NY 22400 62600  
**SMR No** 178  
**Site Type** Inscribed stones  
**Period** Roman  
**Source** Hutchinson 1794; Ferguson 1880; Birley 1931

**Description**

Two inscribed stones were found prior to 1597 when digging the rectory garden and described by Hutchinson (1794). They were laid face to face, apparently reused in a later building. One was inscribed, probably to Caracalla, and below the lower of the two was a hoard of 15 or more coins. The other was a sepulchral slab of red sandstone carved with a standing female figure with a dog and dove. This slab was later rediscovered in the churchyard in 1878.

**Assessment**

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

---

**Site Name** Carved torso find, Bowness-on-Solway  
**Site Number** 10  
**NGR** NY 22400 62600  
**SMR No** 19718  
**Site Type** Effigy  
**Period** Medieval  
**Source** Richardson 1998

**Description**

A carved torso was found in the garden of the Rectory at Bowness-on-Solway in 1988-9. It is carved in a weathered red sandstone and depicts a medieval mailed figure. The head and neck are missing and all that remains is part of the neck base. Much of the detail has been eroded but it is evident that the hands are crossed in front and rest on the hilt of a sword (?). A strap runs diagonally across the body over the right shoulder. The left arm is mailed and there are parallel rows of small vertebral incisions on the right upper arm and neck base indicating chain mail.

**Assessment**

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

---

**Site Name** Effigy find, Bowness-on-Solway  
**Site Number** 11  
**NGR** NY 22400 62600  
**SMR No** 19717  
**Site Type** Effigy  
**Period** Medieval  
**Source** Bower 1899; Richardson 1998

**Description**

An ecclesiastical figure carved in red sandstone was recovered from the wall of the Rectory stable or outbuilding which was demolished in 1988-9. It was previously recorded *in situ* and described as 'headless'. It appears to show a figure wearing pre-reformation clerical headgear and holding a book.

It was presumably originally part of a recumbent grave slab, although the head and cap appear to have been added after it was built into the wall. It is not clear how it relates to other figures from the adjacent area, such as Site 10.

**Assessment**

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

---

**Site Name** Bowness fortified house  
**Site Number** 12  
**NGR** NY 22410 562570  
**SMR No** 163  
**Site Type** Fortified house  
**Period** Medieval  
**Source** Graham 1911

**Description**

Bowness tower thought to be a fourteenth or fifteenth century peel tower. It is first mentioned in 1539 and it is stated as belonging to the parsonage in 1580. Leland mentions it in 1539, and in 1593 it is described as situated near the gates of the old rectory. It was apparently demolished at the beginning of the nineteenth century when it was noted that it had particularly large foundations (Graham 1911).

**Assessment**

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

---

**Site Name** Bowness vicus  
**Site Number** 13  
**NGR** NY 22369 62624  
**SMR No** 167, 13653; SM 26126  
**Site Type** Settlement  
**Period** Roman  
**Source** Birley 1931; Duff 1939; Cambridge n.d. NY2262/A; Manchester University 1977 NY2262/B-G, NY2262/I; Carlisle Archaeology Ltd 2000; 2001a; OA North 2002

**Description**

Substantial Roman remains have been known to exist in the area south of the fort for some time and Birley (1931) identified traces of buildings. A sewer trench excavated in 1938 uncovered pottery, leather and a gold *ligula*. Recent watching briefs also found considerable archaeological remains, including waterlogged deposits (Carlisle Archaeology Ltd 2000; 2001a). These remains are thought to represent the extra mural settlement, and may have extended around all of the three landward sides of the fort, although only those to the south are scheduled (SM 26126).

**Assessment**

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

---

**Site Name** Bowness, possible vicus  
**Site Number** 14  
**NGR** NY 22440 6279  
**SMR No** (167; SM 26126)  
**Site Type** Settlement  
**Period** Roman  
**Source** Caruana and James 1987

**Description**

Over 1m of Roman deposits overlying a buried soil horizon were identified to the east of the fort at Bowness during modernisation of a house and barn. Roman layers were discovered just 0.4m below the surface consisting of spreads of clay and a substantial burnt deposit with some pottery. The remains are undated but may suggest settlement outside of the fort extended to the east as well as the south. The site lies outside the area included within the Scheduled Monument (SM 26126).

**Assessment**

The site lies close to the proposed development area and may to be affected, although its full extent is not known.

**Site Name** Bowness, possible mill  
**Site Number** 15  
**NGR** NY 22495 68230  
**SMR No** -  
**Site Type** Mill?  
**Period** Medieval - post-medieval  
**Source** Ordnance Survey 1868  
**Description**  
A building named 'Millend' is shown as early as 1868. It appears to be directly associated with the millrace to the south-east (Site 18).  
**Assessment**  
The site lies close to the proposed development area and may to be affected, although its full extent is not known.

---

**Site Name** Bowness, possible gallows site  
**Site Number** 16  
**NGR** NY 22688 62748  
**SMR No** -  
**Site Type** Site of gallows?  
**Period** Post-medieval?  
**Source** Tithe Map 1838 (PR119/25)  
**Description**  
The field is named 'Gillauds' on the Tithe Map of 1838, which may be a corruption of the word gallows.  
**Assessment**  
The site lies close to the proposed development area and may to be affected, although its full extent is not known.

---

**Site Name** Bowness, possible shipyard  
**Site Number** 17  
**NGR** NY 22798 62712  
**SMR No** -  
**Site Type** Shipyard  
**Period** Post-medieval?  
**Source** Tithe Map 1838 (PR119/25); Hadfield and Biddle 1970  
**Description**  
The field is named 'Ship yard' on the Tithe Map of 1838, which might suggest that ships were constructed in the immediate area. It may, alternatively, be a reference to ships being moored along the coast, which was particularly common prior to the completion of the canal (Hadfield and Biddle 1970, 337).  
**Assessment**  
The site lies close to the proposed development area and may to be affected, although its full extent is not known.

---

**Site Name** Bowness, mill race  
**Site Number** 18  
**NGR** NY 22895 62542  
**SMR No** -  
**Site Type** Mill race  
**Period** Medieval – post-medieval  
**Source** Ordnance Survey 1868  
**Description**  
An 'old mill race' is show on the OS map of 1868 running towards Bowness-on-Solway. It appears to be associated with Site 15.  
**Assessment**  
The site lies outside of the proposed development area and is unlikely to be affected.

---



**Site Name** Turret 79b, Hadrian's Wall, Bowness-on-Solway  
**Site Number** 19  
**NGR** NY 22830 56260  
**SMR No** 161  
**Site Type** Turret  
**Period** Roman  
**Source** Simpson *et al* 1935

**Description**

The site is indicated by a slight platform. It was partially excavated in 1934 when it was found to be built on a layer of cobbles and clay with stone masonry (Simpson *et al* 1935). It was originally built as a free-standing tower abutted by the turf wall, and was retained when the wall was rebuilt in stone.

**Assessment**

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

---

**Site Name** Bowness, Marlpit  
**Site Number** 20  
**NGR** NY 22670 62450  
**SMR No** 10340  
**Site Type** Marlpit  
**Period** Unknown  
**Source** OS 1862

**Description**

A marl pit is shown on the Ordnance Survey 25": 1 Mile sheet (15.5) of 1862

**Assessment**

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

---

**Site Name** Excavation, Jeffrey Croft, Acremire Lane, Bowness  
**Site Number** 21  
**NGR** NY 22800 62400  
**SMR No** 17810  
**Site Type** Excavation  
**Period** Roman  
**Source** Bellhouse 1988

**Description**

Excavations in this location failed to locate the position of a turn in the vallum.

**Assessment**

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

---

**Site Name** Bowness, standing stone and mound  
**Site Number** 22  
**NGR** NY 23030 62730  
**SMR No** 156  
**Site Type** Mound and cross/standing stone  
**Period** Prehistoric?  
**Source** Tithe Map 1838 (PR119/25); Collingwood 1926; Collingwood 1929; Cambridge University n.d. NY2362/A

**Description**

Knockcross mound, said in 1929 to have resembled a barrow, though nothing remains today (Plate 8). A sword hilt and part of a blade of unknown date and origin were found here. Collingwood suggested that it was part of a watch tower for the vallum (1929) but there is no further evidence of this. An upright stone is said to have stood there in 1785, and Knock Cross is marked as a cross on the Tithe Map in 1838.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Knockcross Temporary Camp, Grey Havens, Bowness  
**Site Number** 23  
**NGR** NY 23008 62742  
**SMR No** 158; SM 26036  
**Site Type** Marching camp  
**Period** Roman  
**Source** Collingwood 1929; Cambridge University n.d. NY 2362/A; Manchester University 1977 NY2362/B, NY2362/B-G, NY2362/I-M

**Description**

A marching camp is visible in aerial photographs at Knockcross near Bowness (SM 26036) (Plate 8). It has a gate and tumulus visible on the east side (probably the same identified by Collingwood as a watch tower (Site 22)) and a gate with probable outer earthwork on the west side. It occupies an area of level ground on the seaward edge of a low cliff on the south shore of the Solway Firth. The south side and most of the east and west sides have been identified but the full extent is difficult to ascertain due to erosion on the north side. There are further cropmarks visible to the west and east (see Site 25).

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Field name, near Knock Cross  
**Site Number** 24  
**NGR** NY 23018 62632  
**SMR No** -  
**Site Type** Unknown  
**Period** Unknown  
**Source** Tithe Map 1838 (PR119/25)

**Description**

The field is named 'Whale Jaws' but it not clear what the meaning of this is. It may have a connection to the tumulus (Site 22) or camp (Site 24), but may equally suggest that a pair of whale jaws were once positioned in this area.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Bowness settlement  
**Site Number** 25  
**NGR** NY 23100 62600  
**SMR No** 3293  
**Site Type** Settlement  
**Period** Unknown  
**Source** Manchester University 1977 – NY 2362/B-H and NY2362/K-Q

**Description**

An area of crop marks suggest there is settlement in the area (Plate 8). They may also relate to the camp and tumulus at Knock Cross (Sites 22 and 23). Aerial photographs of the area show parallel lines adjacent to the camp (Site 23), which presumably relate to the settlement but it is not clear what these represent.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Holme Riggs, Knockcross  
**Site Number** 26  
**NGR** NY 23171 62524  
**SMR No** -  
**Site Type** Ridge and furrow  
**Period** Medieval – post-medieval  
**Source** Tithe Map 1838 (PR119/25)

**Description**

Three strip fields are named "Holme Riggs" on the Tithe Map of 1838, suggesting that they were formerly cultivated as ridge and furrow.

---

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Turret 79a, Hadrian's Wall, Bowness  
**Site Number** 27  
**NGR** NY 23100 62300  
**SMR No** 162  
**Site Type** Turret  
**Period** Roman  
**Source** SMR

**Description**

The assumed position of wall Turret 79a. Its exact position is not certain and there are no surface features. This position is based on the typical spacing of turrets.

**Assessment**

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

---

**Site Name** Milecastle 79, Hadrian's Wall, Bowness  
**Site Number** 28  
**NGR** NY 23590 62240  
**SMR No** 165  
**Site Type** Milecastle  
**Period** Roman  
**Source** Richmond and Gillam 1952; Manchester University 1977 NY2362/R-S; Wilmott 1999

**Description**

A milecastle originally built in turf and built on an artificial platform to raise it above flooding. This was later razed and replaced with a stone milecastle, with pottery dating from the second to fourth centuries. A timber framed building stood in the eastern half of the stone structure.

**Assessment**

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

---

**Site Name** Bowness, unclassified earthworks  
**Site Number** 29  
**NGR** NY 23700 61800  
**SMR No** 3751  
**Site Type** Unknown  
**Period** Unknown  
**Source** Cambridge University n.d. 2361/A; RCHME 1986 2361/G; CCC 1977 2361/S

**Description**

An area of earthworks of unknown function or date recorded in aerial photographs. These may relate to Site 42.

**Assessment**

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

---

**Site Name** Port Carlisle, Pump  
**Site Number** 30  
**NGR** NY 23770 62330  
**SMR No** 10211  
**Site Type** Pump  
**Period** Post-medieval  
**Source** Ordnance Survey 1892

**Description**

A pump is shown on the OS 1<sup>st</sup> edition 25": 1 mile.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle, Binnacle  
**Site Number** 31  
**NGR** NY 23860 62310  
**SMR No** 10212  
**Site Type** Building  
**Period** Post-medieval  
**Source** Tithe Map 1838 (PR119/25); Ordnance Survey 1892; Whellan 1860

**Description**

A building called 'Old Binnacle' is shown on the Tithe Map of 1838. Whellan describes it as an inn, one of only two original buildings making up what was to become Port Carlisle after the construction of the canal (the other being Kirkland House). By the OS 1<sup>st</sup> edition nothing is present except for a pump (shown in 1892).

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Bowness, Port Carlisle, Altar find  
**Site Number** 32  
**NGR** NY 23970 62290  
**SMR No** 4585  
**Site Type** Altar  
**Period** Roman  
**Source** SMR

**Description**

An inscribed Roman altar found before 1834, built over the door of the Steamer Tavern, now Heskett House, Port Carlisle. The altar is inscribed 'Matri bus suis milite(s)', and is still located over the doorway of this building.

**Assessment**

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

---

**Site Name** Port Carlisle, Mound and finds, Bowness  
**Site Number** 33  
**NGR** NY 24100 62300  
**SMR No** 157  
**Site Type** Cross, finds  
**Period** Prehistoric - medieval  
**Source** Tithe Map 1838 (PR119/25); Ordnance Survey 1892; Collingwood 1926

**Description**

There is a tradition of an upright stone at Fisher's Cross, probably a cross shaft, and it is shown as such on the Tithe Map of 1838. A stone coffin, skeleton and coins were reportedly found there. There are no visible remains, the site having been destroyed by the construction of the docks and railway. It is marked as site of cross and tumulus on the OS map of 1892 (Fig 6).

**Assessment**

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

---

**Site Name** Port Carlisle, jetty  
**Site Number** 34  
**NGR** NY 24143 62244 – 24175 62579  
**SMR No** 10338  
**Site Type** Jetty  
**Period** Post-medieval  
**Source** Ordnance Survey 1868

**Description**

A jetty connecting to the docks at Port Carlisle is shown on the OS map of 1868.

**Assessment**

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

---

**Site Name** Burness Marsh Lighthouse  
**Site Number** 35  
**NGR** NY 24170 62600  
**SMR No** 10337  
**Site Type** Lighthouse  
**Period** Post-medieval  
**Source** Ordnance Survey 1868

**Description**

The site of a lighthouse, shown on the OS 6": 1 mile on the end of the jetty (Site 34).

**Assessment**

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

---

**Site Name** Estimated Position of Turret 79a, Port Carlisle  
**Site Number** 36  
**NGR** NY 24080 62280  
**SMR No** 4595  
**Site Type** Turret  
**Period** Roman  
**Source** SMR

**Description**

The estimated position of Turret 79a. A mound, which may have represented its remains was destroyed by the construction of the docks and railway although Roman coins are said to have been found here. Its position is calculated from the position of others.

**Assessment**

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

---

**Site Name** Watching brief, Hawthorn Cottage, Port Carlisle  
**Site Number** 37  
**NGR** NY 23950 62240  
**SMR No** 13655  
**Site Type** Watching brief  
**Period** -  
**Source** Austen 1977

**Description**

Examination of foundations for a garage 25-30m south of the line of Hadrian's Wall, 350m east of the site of Milecastle 79. No observations were made.

**Assessment**

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

---

**Site Name** Port Carlisle Railway Station  
**Site Number** 38  
**NGR** NY 24040 62230  
**SMR No** 10336  
**Site Type** Railway Station  
**Period** Post-medieval  
**Source** Ordnance Survey 1868

**Description**

The site of the former Port Carlisle Railway Station, shown on the OS 1<sup>st</sup> edition 6": 1 Mile map and 1892 25" map (Fig 6).

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle Harbour  
**Site Number** 39  
**NGR** NY 24100 62200  
**SMR No** 6295  
**Site Type** Harbour  
**Period** Post-medieval  
**Source** Ordnance Survey 1868; 1892; Marshall and Davies-Sheil 1969; Manchester University 1977 NY2462/A-B; Ramshaw 1997

**Description**

The harbour and terminus of the Port Carlisle Canal. Well preserved remains of the entrance lock, inner basin, main canal lock and a good length of quay wall still survived into the late twentieth century. Two former warehouses, now cottages are situated at the west end. Behind the inner basin is the platform and site of the railway terminus. There are also remains of the old 'Dandy' shed used to house a horse-drawn carriage which ran between Port Carlisle and Crumburgh Junction.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle Canal  
**Site Number** 40  
**NGR** NY 24100 62200  
**SMR No** 6296  
**Site Type** Canal  
**Period** Post-medieval  
**Source** Marshall and Davies-Sheil 1969; Ramshaw 1997

**Description**

The Port Carlisle Canal connects Carlisle to the coast. It was built in 1818-23, and contained eight locks over a distance of 11½ miles. Most of the canal can still be followed, but at the Port Carlisle end and at Carlisle itself it is largely overlain by later railways. It remained in operation until 1853.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle pump  
**Site Number** 41  
**NGR** NY 24070 62040  
**SMR No** 10210  
**Site Type** Pump  
**Period** Post-medieval  
**Source** Ordnance Survey 1892

**Description**

A pump is shown on the OS 1<sup>st</sup> edition 25": 1 Mile map.

**Assessment**

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

---

**Site Name** Port Carlisle, hall  
**Site Number** 42  
**NGR** NY 23964 61755  
**SMR No** -  
**Site Type** Hall  
**Period** Post-medieval  
**Source** Hodkinson and Donald 1789; Greenwood and Greenwood 1822

**Description**

A building or group of buildings is marked in approximately this position and named 'Bog Hall'. It is not clear how old this building is but it does not appear on the Tithe Map of 1838.

**Assessment**

The site lies close to the proposed development area and may be affected.

**Site Name** Port Carlisle, bridge  
**Site Number** 43  
**NGR** NY 24202 61963  
**SMR No** -  
**Site Type** Bridge  
**Period** Post-medieval  
**Source** Greenwood and Greenwood 1822

**Description**

A bridge crossing the canal is shown in this position.

**Assessment**

The site is crossed by the proposed development area and is likely to be affected.

---

**Site Name** Port Carlisle Quay  
**Site Number** 44  
**NGR** NY 24286 61840 – 24345 62185  
**SMR No** 10339  
**Site Type** Quay  
**Period** Post-medieval  
**Source** Ordnance Survey 1868

**Description**

A quay with a railway running along part of it is shown on the OS 1<sup>st</sup> edn 6": 1 Mile map. Towards the far end of the quay a crane is shown and there are several 'stones' along its length.

**Assessment**

One end of the site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle, brick field  
**Site Number** 45  
**NGR** NY 24202 61862  
**SMR No** -  
**Site Type** Brick production site  
**Period** Post-medieval  
**Source** Tithe Map 1838 (PR119/25)

**Description**

Two fields named 'brick field' on the Tithe Map of 1838. These presumably had something to do with the production of bricks – either quarrying or kilns.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Hurling Dubs, Port Carlisle  
**Site Number** 46  
**NGR** NY 24259 61801  
**SMR No** -  
**Site Type** Pond?  
**Period** Unknown  
**Source** Tithe Map 1838 (PR119/25)

**Description**

A probable pond, with several channels leading into it, named Hurling Dub is shown on the Tithe Map of 1838. The name would suggest it is of some antiquity.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Turret 78a, Hadrian's Wall, Port Carlisle  
**Site Number** 47  
**NGR** NY 24310 61750  
**SMR No** 169  
**Site Type** Turret  
**Period** Roman  
**Source** SMR; Simpson *et al* 1952; Manchester University 1977 NY2461/B

**Description**

Hadrian's Wall survives here as buried remains with no indications visible on the ground. Its course here is known from the identification of turret 78a in the eighteenth century by antiquarian John Horsley and was excavated in 1948 (Simpson *et al* 1952).

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Port Carlisle, Bridge  
**Site Number** 48  
**NGR** NY 24394 61659  
**SMR No** -  
**Site Type** Bridge  
**Period** Post-medieval  
**Source** Greenwood and Greenwood 1822

**Description**

A bridge crossing the canal is shown on Greenwood and Greenwood's map of 1822.

**Assessment**

The site is crossed by the proposed development area and is likely to be affected.

---

**Site Name** Milecastle 78, Hadrian's Wall  
**Site Number** 49  
**NGR** NY 24310 61750  
**SMR No** 169  
**Site Type** Milecastle  
**Period** Roman  
**Source** Simpson *et al* 1935; Moore and Wilmott 2000

**Description**

The milecastle was located and partly excavated in 1934. Only the west wall was examined and was found to be 2.8m wide. One course of masonry survived of the inner face above the footings, but the outer face had been robbed. It was originally built with turf ramparts, with timber gates and buildings, only to be rebuilt in stone in the second half of the second century. The remains of the stone phase were identified but there is no record of whether turf walls were identified. More recent work confirmed these results and showed that the fort remained in relatively good condition despite having been robbed.

**Assessment**

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

---

**Site Name** Tilekilns, Port Carlisle  
**Site Number** 50  
**NGR** NY 24660 61140  
**SMR No** 10335  
**Site Type** Tile kiln  
**Period** Unknown  
**Source** Ordnance Survey 1868

**Description**

A building named 'Tilekilns' is shown as early as 1868. It is now demolished and covered by a caravan site.

**Assessment**

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

---



**Site Name** Westfield House, watching brief  
**Site Number** 51  
**NGR** NY 24900 61270  
**SMR No** 13654  
**Site Type** Watching brief  
**Period** -  
**Source** Austen 1978a

**Description**

Intermittent inspection of the foundations and service trenches during construction of bungalows to the north of Hadrian's Wall. The services avoided encroaching onto the line of the wall and no archaeological deposits were discovered.

**Assessment**

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

---

**Site Name** Westfield House, watching brief  
**Site Number** 52  
**NGR** NY 24900 61270  
**SMR No** 13654  
**Site Type** Watching brief  
**Period** -  
**Source** Austen 1978c

**Description**

Two trial trenches were excavated in advance of a new garage. Despite possibly being on the line of Hadrian's Wall no features of interest were identified.

**Assessment**

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

---

**Site Name** Westfield House, watching brief  
**Site Number** 53  
**NGR** NY 25090 61220  
**SMR No** 13657  
**Site Type** Watching brief  
**Period** -  
**Source** Austen 1978b

**Description**

Examination was carried out of the foundations for the uprights for a frame-constructed barn across the line of Hadrian's Wall immediately east of the farm complex. No indications of Hadrian's Wall or the ditch were exposed and the ground was heavily disturbed.

**Assessment**

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

---

**Site Name** Architectural feature, Glasson  
**Site Number** 54  
**NGR** NY 25200 60400  
**SMR No** 170  
**Site Type** Inscribed building stone  
**Period** Roman  
**Source** Ferguson 1890

**Description**

An inscribed sandstone building stone was found shortly before 1782 in a wall of the East Lane leading to the church at Glasson. It is inscribed 'Leg II Aug COH III'. It was apparently built into the wall of a house in Bowness in 1890 (Ferguson 1890, 82), and is now in Tullie House museum.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** The Barras, Glasson  
**Site Number** 55  
**NGR** NY 25300 60500  
**SMR No** 4688  
**Site Type** Bastle  
**Period** Medieval  
**Source** SMR

**Description**

A bastle was reported as undergoing modernisation in 1977, and reported by D Perriam. The present condition of the building is not known.

**Assessment**

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

---

**Site Name** Glasson, watching brief  
**Site Number** 56  
**NGR** NY 25330 60500  
**SMR No** 13656  
**Site Type** Watching brief  
**Period** -  
**Source** Austen 1976

**Description**

A watching brief was maintained during the excavation of foundation trenches for two new houses to the east of 'The Lookout', on the line of the vallum. No archaeological features were identified.

**Assessment**

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

---

**Site Name** Glasson Station  
**Site Number** 57  
**NGR** NY 25398 60644  
**SMR No** -  
**Site Type** Station  
**Period** Post-medieval  
**Source** Ordnance Survey 1892

**Description**

A small building marked 'station' is shown in this position on the Ordnance Survey maps of 1892 and 1900 (Fig 7).

**Assessment**

The site is crossed by the proposed development area and is likely to be affected.

---

**Site Name** Milecastle 77, Raven Bank  
**Site Number** 58  
**NGR** NY 25660 60650  
**SMR No** 171  
**Site Type** Milecastle  
**Period** Roman  
**Source** SMR

**Description**

The exact location of Milecastle 77 has not yet been confirmed. Excavations by Dorothy Charlesworth in 1973 were inconclusive. It is positioned on this spot on the basis of usual spacing.

**Assessment**

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

---

**Site Name** Ravens Bank, Glasson, pottery find  
**Site Number** 59  
**NGR** NY 26070 60750

**SMR No** 16504  
**Site Type** Find: pottery  
**Period** Roman  
**Source** SMR

**Description**

Several sherds of pottery thought to be medieval were discovered at the foot of a cliff at Ravens Bank. They were subsequently identified as Roman.

**Assessment**

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

---

**Site Name** Drumburgh, coin find  
**Site Number** 60  
**NGR** NY 26000 60000  
**SMR No** 397  
**Site Type** Find: coin  
**Period** Prehistoric  
**Source** SMR

**Description**

A Macedonian silver coin was found at Drumburgh, although the exact location is unknown. Its present location is not known.

**Assessment**

The site lies outside of the proposed development area and is unlikely to be affected, although its exact location is not clear.

---

**Site Name** Turret 76a, Hadrian's Wall, Drumburgh  
**Site Number** 61  
**NGR** NY 26200 59970  
**SMR No** 383  
**Site Type** Turret  
**Period** Roman  
**Source** Simpson *et al* 1952

**Description**

Turret 76a was located in 1948 east of Drumburgh Schoolhouse. Its remains survive as buried features with no traces visible above ground.

**Assessment**

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

---

**Site Name** Medieval boundary ditch, Drumburgh  
**Site Number** 62  
**NGR** NY 26440 59910  
**SMR No** 388  
**Site Type** Boundary ditch  
**Period** Medieval  
**Source** Haverfield 1900a; Simpson and Richmond 1952

**Description**

A medieval ditch cuts obliquely across the area of the Roman fort (Site 63). It appears to be the boundary of a medieval grange described as being part of Drumburgh Castle in 1829 (Simpson and Richmond 1952). Excavation in 1899 demonstrated that it was not part of the Roman fort.

**Assessment**

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

---

**Site Name** Drumburgh Roman Fort  
**Site Number** 63  
**NGR** NY 26470 59570  
**SMR No** 387; 26121

**Site Type** Fort  
**Period** Roman  
**Source** Haverfield 1900a; Simpson and Richmond 1952; Bellhouse 1989

**Description**

The Roman fort at Drumburgh, known as *Congavata* (SM 26121), commanding an outlook to the north and east over the Inner Solway. Little work has been carried out but the remains of the stone fort were identified in 1899 (Haverfield 1900a), which was found to be within the remains of a larger turf and timber fort in 1947 (Simpson and Richmond 1952). Pottery finds show that it was occupied into the late Roman period.

**Assessment**

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

---

**Site Name** Watch tower, Drumburgh House  
**Site Number** 64  
**NGR** NY 26500 59924  
**SMR No** -  
**Site Type** Watch tower  
**Period** Post-medieval  
**Source** Hogg 1953; Perriam pers comm

**Description**

Hogg identified a small building on the side of Drumburgh House as a probably watch tower for observing activity on the Solway. Dennis Perriam also suggested that this was the case.

**Assessment**

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

---

**Site Name** Drumburgh, ridge and furrow  
**Site Number** 65  
**NGR** NY 26627 59922  
**SMR No** -  
**Site Type** Ridge and furrow  
**Period** Medieval – post-medieval  
**Source** SMR

**Description**

A large area of ridge and furrow is visible in aerial photographs of the area around Drumburgh in the field known as How or Hall Croft.

**Assessment**

The site lies close to the proposed development area and may be affected.

---

**Site Name** Drumburgh  
**Site Number** 66  
**NGR** NY 26707 59914  
**SMR No** -  
**Site Type** Unknown  
**Period** Post-medieval?  
**Source** Ordnance Survey 1900

**Description**

A small square structure is shown on the OS 2<sup>nd</sup> edition 25": 1 Mile map. It may be the same as Site 67, but it is not clear what it represents.

**Assessment**

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

---

**Site Name** Milecastle 76, Hadrian's Wall, Drumburgh  
**Site Number** 67  
**NGR** NY 26680 59880  
**SMR No** 384

**Site Type** Milecastle  
**Period** Roman  
**Source** SMR; Cambridge University n.d. NY2659/A; Bewley 1984 NY2659/B

**Description**

The exact location of Milecastle 76 is not confirmed. A faint platform amongst the ridge and furrow could be its remains but this is not certain.

**Assessment**

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

---

**Site Name** Coin find, Drumburgh  
**Site Number** 68  
**NGR** NY 26500 59800  
**SMR No** 17697  
**Site Type** Find: coin  
**Period** Roman  
**Source** Shotter 1991

**Description**

A very abraded coin was found in c 1975, although the exact location is unknown. It is inscribed 'FEL TEMP REPARATIO' dated AD 350-360.

**Assessment**

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

---

**Site Name** Watching brief, Four Stones, Drumburgh  
**Site Number** 69  
**NGR** NY 26420 59810  
**SMR No** 13659  
**Site Type** Watching Brief  
**Period** Roman  
**Source** Austen 1989

**Description**

A watching brief was carried out after contractor's excavation of the area. When visited the foundations were already in place but there were no obvious signs of archaeological deposits in the spoil.

**Assessment**

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

---

**Site Name** Drumburgh, Stoop find  
**Site Number** 70  
**NGR** NY 26400 59800  
**SMR No** 4548  
**Site Type** Font or stoop  
**Period** Medieval  
**Source** SMR

**Description**

A sculptured font or holy water stoop was found built into the wall of an outhouse on the Nixon-Lawson estate at Drumburgh. It consists of a basin ornamented on three sides, which suggests it is a stoop. It is red sandstone, ornamented on three sides only, with ball-flowers on stalks, and possibly dates to the end of the twelfth century.

**Assessment**

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

---

**Site Name** Drumburgh Castle  
**Site Number** 71  
**NGR** NY 26560 59770  
**SMR No** 4549

**Site Type** Tower house  
**Period** Medieval  
**Source** Perriam and Robinson 1998

**Description**

A tower house, now a farm house, dated to the thirteenth century with a licence to crenellate in 1307. There are alterations dated to 1518, and a coat of arms belonging to Thomas Lord Dacre over the entrance. Further alterations were carried out in 1678-81 and the nineteenth century. It has thick walls of coursed red sandstone, probably reused from Hadrian's Wall, on a chamfered plinth, with a parapet over the entrance with carved stone eagle finials. It is three storeys, with a single storey extension to the left and a nineteenth century gabled brick porch. The end wall may have been original, but was apparently taken down and rebuilt in facsimile in the 1970s. Many original features are retained internally.

**Assessment**

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

---

**Site Name** Drumburgh forge  
**Site Number** 72  
**NGR** NY 26500 59670  
**SMR No** 10502  
**Site Type** Forge  
**Period** Post-medieval  
**Source** Ordnance Survey 1892

**Description**

A building marked as a smithy on the OS 25": 1 mile map.

**Assessment**

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

---

**Site Name** Ravenbank Jetty  
**Site Number** 73  
**NGR** NY 26580 60161  
**SMR No** -  
**Site Type** Jetty  
**Period** Post-medieval  
**Source** Ramshaw 1997

**Description**

A jetty was built into the Solway Firth at Ravenbank, c1848, with the intention of improving the navigation of the estuary. It failed, actually increasing silting at the dock, and was removed in 1851 following complaints from Lord Lonsdale (Ramshaw 1997, 130-1).

**Assessment**

The site lies close to the proposed development area and may be affected, although its exact location is unclear.

---

**Site Name** Drumburgh  
**Site Number** 74  
**NGR** NY 26482 59962  
**SMR No** -  
**Site Type** Earthwork  
**Period** Post-medieval?  
**Source** Survey

**Description**

NNW/SSE aligned ridge and furrow, present across the whole field. The distance between strips, measuring 7.0m to 8.0m, makes this a good candidate for post-medieval steam ploughing.

**Assessment**

The site lies to the south of the pipeline easement, and should not be affected by the development.

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**Site Name** Ravenbank  
**Site Number** 75  
**NGR** NY 26703 60181  
**SMR No** -  
**Site Type** Jetty  
**Period** Post-medieval  
**Source** Survey

**Description**

A total of five posts in two rows, of three posts and two posts, 2.75m apart, aligned in a NNW/SSE direction. The posts measured 0.3m<sup>2</sup> and standing on average 0.5m above ground level. A single horizontal timber was present, 2.0m long, at the southern end of the western post alignment. The structure is located at the waters edge, and represents the remains of a wooden jetty perhaps related to Site 73 a few meters to the east.

**Assessment**

The southern extent of the jetty can not necessarily be located without excavation, and the site may, therefore, be affected by the development.

---

**Site Name** Near Glasson  
**Site Number** 76  
**NGR** NY 26089 60817  
**SMR No** -  
**Site Type** Structure  
**Period** Post-Medieval  
**Source** Survey

**Description**

Site 76 comprises a rounded stone and mortar wall, aligned in an east/west direction, 2.5m thick and with ashlar blocks facing stones. Each end appears to have had stone either robbed or eroded by the sea, leaving 5.5m of its length standing. Within the base of the wall is a surviving sandstone arch, 0.75m high and 1.5m wide, in roughly the centre, and one partial arch or three stones on the eastern side of the wall. These arches go right through the structure. At the western end, aligned north/south extending south, is a second sandstone wall 1.25m wide, 2.0m long, continuing into the turf. Extending from the waters edge to the north, and leading up to the arches, was the remains of two lines of sandstone wall 0.5m wide, 18.0m long, with intermittent wooden posts. This represents the remains of a slipway. The complete structure may comprise the remains of a boat house.

**Assessment**

The site lies to the north of the actual survey area, and will not therefore be affected by the development.

---

**Site Name** Near Glasson  
**Site Number** 77  
**NGR** NY 26085 60815  
**SMR No** --  
**Site Type** Building  
**Period** 20th Century  
**Source** Survey

**Description**

World War II lookout post. Comprises a single skin of red brick with a concrete roof, forming a room measuring 2.1m<sup>2</sup>. From the south-western corner of this structure, extending to the south, was a second room of the same construction, measuring 2m by 1.1m; presumably a toilet.

**Assessment**

The site lies outside of the survey area, and as such will not be affected by the development.

---

**Site Name** Longton House  
**Site Number** 78  
**NGR** NY 25233 60813  
**SMR No** -  
**Site Type** Trackway

**Period** Post-medieval  
**Source** Survey

**Description**

Old trackway with copped embankment on either side, 5.0m apart. The site was described by farmer as old lane to Lowtown house, prior to railway being put in. It looks like it cuts through, or is respected by, the canal embankment.

**Assessment**

The site cuts across the pipeline route, and will be directly affected by the development.

---

**Site Name** Near Poultry Houses  
**Site Number** 79  
**NGR** NY 25095 60766  
**SMR No** -  
**Site Type** Pond  
**Period** Post-medieval  
**Source** Survey

**Description**

Pond 8.0m by 8.0m, in western corner of field. The site lies within the area of the vallum of Hadrian's Walls (SM26122), but the pond is not part of this monument.

**Assessment**

The site lies to the south of the study area, and as such will not be effected by the development.

---

**Site Name** Near Westfield Cottage  
**Site Number** 80  
**NGR** NY 25209 60946  
**SMR No** -  
**Site Type** Ridge and Furrow  
**Period** Post-medieval?  
**Source** Survey

**Description**

North-east/south-west aligned ridge and furrow, with 3.5m to 4.0m between strips.

**Assessment**

The site lies to the north of the pipeline easement, and will not be affected by the development.

---

**Site Name** Near Westfield House  
**Site Number** 81  
**NGR** NY 24908 61215  
**SMR No** -  
**Site Type** Ridge and Furrow  
**Period** Medieval?  
**Source** Survey

**Description**

East/west aligned ridge and furrow, with approximately 5.5m between strips. This is present up to the canal embankment situated along the southern edge of the field.

**Assessment**

The site lies to the north, and adjacent to, the development area. The visible remains should not be affected as long as the development confines itself to the canal/railway embankment, although it is possible that the ridge and furrow survive buried beneath the embankment.

---

**Site Name** Westfield Cottage  
**Site Number** 82  
**NGR** NY 25005 61075  
**SMR No** -  
**Site Type** Building  
**Period** Post-medieval



**Source** Survey/Map

**Description**

Enclosure approximately 30.0m by 25.0m. Cottage marked on modern maps is no longer present. Modern and 19th century bricks present within enclosure, with modern north-east/south-west aligned footing visible. This appears to be constructed over an area of canal embankment. Buildings were visible in this location on 1868 Ordnance Survey map.

**Assessment**

The site lies across the pipeline route, and will be affected by the development.

---

**Site Name** Near Kirkland House

**Site Number** 83

**NGR** NY 24374 61762

**SMR No** -

**Site Type** Sea Wall

**Period** Post-medieval

**Source** Survey

**Description**

Part of sea wall, largely demolished by sea, but visible for 62.4m in length and standing a maximum of 2.75m high. The sea wall is a sandstone construction, maximum 0.95m thick, with a scalloped outer face.

**Assessment**

The site lies to the north of the pipeline route, and should not be affected by the development.

---

**Site Name** Near Kirkland House

**Site Number** 84

**NGR** NY 24286 61599

**SMR No** -

**Site Type** Field Boundary and Ridge and Furrow

**Period** Medieval?

**Source** Survey

**Description**

North-west/south-east aligned ridge and furrow, with 5.5m between strips, with an associated grubbed-out field boundary on the same alignment 3.5m wide.

**Assessment**

The site lies to the north of the pipeline route, and should not be affected by the development.

---

**Site Name** Bowness-on-Solway

**Site Number** 85

**NGR** NY 22486 62816

**SMR No** -

**Site Type** Promenade

**Period**

**Source** Survey

**Description**

Promenade, with ornamental spring in the shape of a well, altered to a certain degree by works associated with the Hadrian's Wall Trail.

**Assessment**

The site lies to the east of the pipeline route, and should not be affected by the development.

---

**Site Name** Bowness Marsh

**Site Number** 86

**NGR** NY 23318 62518

**SMR No** -

**Site Type** Culvert

**Period** Post-medieval

**Source** Survey

**Description**

Red sandstone culvert, measuring 6.0m wide and 2.5m high, allowing drain to run under road.

**Assessment**

The site lies across the pipeline route, and will be affected by the development.

---

**Site Name** Near Solway View

**Site Number** 87

**NGR** NY 23613 62324

**SMR No** -

**Site Type** Ridge and Furrow

**Period** Medieval/Post-medieval?

**Source** Survey

**Description**

NNE/SSW aligned ridge and furrow, measuring 4.5m between strips.

**Assessment**

The site lies adjacent to the pipeline route, but should not be affected by the development as long as the route remains confined to the road.

---

**Site Name** Near Milecastle 79

**Site Number** 88

**NGR** NY 23679 62224

**SMR No** -

**Site Type** Earthwork

**Period** Post-Roman?

**Source** Survey

**Description**

Flat area thought to represent an archaeological site, measuring 50.0m square. The site is located adjacent, and to the south of, Hadrian's Wall in the same field and to the east of Milecastle 79. Possibly a post-Roman structure (Rachel Newman pers comm), visible on an aerial photograph of the area available from old-maps.co.uk.

**Assessment**

The site lies south of the pipeline route and should not be affected by the development.

---

**Site Name** Near Westfield Marsh

**Site Number** 89

**NGR** NY 24685 61300

**SMR No** -

**Site Type** Pond

**Period** Medieval/Post-medieval?

**Source** Survey

**Description**

Sub-circular pond measuring 10.0m by 10.0m.

**Assessment**

The site lies to the south of the pipeline easement, and should not be affected by the development.

---

**Site Name** Kirkland House

**Site Number** 90

**NGR** NY 24334 61710

**SMR No** -

**Site Type** Building

**Period** Post-medieval?

**Source** Survey

**Description**

Post-medieval farm, possibly with earlier origins, with elements of Hadrian's Wall within its construction. Date stone above doorway has inscription "JSM 1729", although the building complex may have earlier origins.

**Assessment**

The site lies to the south of, and adjacent to, the pipeline route, but should not be affected by the development as long as it remains within the confines of the current road.

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## APPENDIX 3: SCHEDULED MONUMENT GAZETTEER

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**Scheduled Monument Number** 26036  
**Monument Name** Knockcross Roman temporary camp at Grey Havens  
**National Grid Reference** NY 23026271

**Description**

The monument includes the Roman temporary camp known as Knockcross (Site **23**), which lies 650m east of the fort at Bowness-on-Solway, and 190m north of the line of Hadrian's Wall. It survives as a series of buried features clearly visible as cropmarks on aerial photographs.

The camp occupies level ground on the seaward edge of a low cliff on the south shore of the Solway. The south side and most of the east and west sides have been identified, but the full extent of the east and west sides cannot now be identified due to erosion on the north side. The total area enclosed would be around 0.6ha. There are entrances in the east and west sides, which are both guarded by external defence works.

All field boundaries are excluded from scheduling, but the ground beneath is included

---

**Scheduled Monument Number** 26121  
**Monument Name** Drumburgh Roman fort and Hadrian's Wall between Burgh Marsh and Westfield House in wall miles 76 and 77  
**National Grid Reference** NY 2590 6036

**Description**

The monument includes Drumburgh Roman fort (Site **63**) and the section of Hadrian's Wall and its associated features between Burgh Marsh in the east and Westfield House in the west.

Hadrian's Wall survives as a buried features throughout the whole of this section. Excavations by Haverfield in 1899 located the Wall between Burgh Marsh and Drumburgh fort. The Wall measured 2.95m wide and the wall ditch was 8.9m wide and lay 8m north of the wall. Excavations by Charlesworth in 1973 confirmed the course of the wall north of Glasson. Geophysical survey has also located the line of the Wall or wall ditch to the north-easts of Glasson.

The exact location of milecastle 76 has not yet been confirmed. Excavations by Charlesworth in 1973 proved inconclusive in determining its position. On the basis of the usual spacing it is expected to be situated about 50m south of the junction of the Glasson road with the Bowness-Carlisle road.

Turret 76a was located in 1948 just east of Drumburgh schoolhouse by Simpson *et al* (1952). Its remains survive as buried features with no traces visible above ground.

The exact locations of turrets 76b, 77a and 77b have not yet been confirmed. On the basis of the usual spacing turret 76b is expected to be located about 90m south of where the dismantled railway crosses Hadrian's Wall east of Glasson and turret 77 approximately 140m south-east of Lowtown House. Turret 77b is believed to be beneath Westfield House or its yard, but is not included in the scheduling.

The course of the Roman road known as the Military Way, which ran along the corridor between the Wall and vallum linking turrets, milecastles and forts, has not been confirmed in this section. It is expected to run parallel to the course of the Wall set back a few metres to the south.

Drumburgh Roman fort, known to the Romans as *Congavata*, commanded an outlook to the north and east over the Inner Solway. There has been very little archaeological work carried out on this fort and it remains one of the least well known Wall forts. Small-scale excavations were carried out in 1899 by Haverfield who located the remains of a small stone fort. A subsequent excavation in 1947 by Simpson and Richmond (1952) showed that the stone fort lay within an earlier and larger turf and timber fort with ramparts made from the readily available alluvial clay. Pottery finds attested an occupation continuing into the late Roman period. The remains of the fort survive as buried features. The right-angled ditch west of Drumburgh House was at one time thought to be the ditch of the Roman fort. The excavations in 1899 however discovered it to be a medieval ditch, although its association has not been confirmed.

Evidence suggests that Hadrian's Wall did originally pass through the Burgh Marsh to the east. No remains however have been identified here and hence this area is not included in the scheduling

All field boundaries, road surfaces and buildings, including The Grange, Drumburgh House and its attached outbuildings which are listed Grade II, are excluded from the scheduling, but the ground beneath them is included.

---

**Scheduled Monument Number** 26122  
**Monument Name** Hadrian's Wall vallum between the watercourse 400m south-east of Glasson and the access road to Glendale caravan park in wall miles 76 and 77

**National Grid Reference** NY 2515 6070

**Description**

The monument includes the section of Hadrian's Wall vallum between the watercourse 400m south-east of Glasson in the east and the east-side of the access road to Glendale caravan park in the west.

The vallum survives as a feature visible on the ground throughout most of this section. At the eastern end of the monument the vallum ditch is utilised by a modern drainage ditch 5.7m wide and 2m deep. The course of the vallum between the watercourse 400m south-east of Glasson and Burgh Marsh has not yet been confirmed and is therefore not included in the scheduling. West of Glasson the line of the vallum ditch is visible as a faint shallow depression but at the west-end of the monument it survives in the field immediately east of the access track to Glendale caravan park as a more obvious earthwork up to 0.8m in depth.

All field boundaries and road surface are excluded from the scheduling, but the ground beneath them is included.

---

**Scheduled Monument Number** 26123  
**Monument Name** Hadrian's Wall and vallum between the access road to Glendale caravan park and the track south of Kirkland House in wall miles 77 and 78

**National Grid Reference** NY 2445 6140

**Description**

The monument consists of the section of Hadrian's Wall and the vallum between the access road to Glendale caravan park in the east and the track south of Kirkland House in the west.

Hadrian's wall survives throughout this section as a buried feature. West of Milecastle 78 the Wall turns northwards to follow the Solway coast in contrast to the vallum which runs straight in this section. It is not certain whether the ditch to the north of the Wall was provided in this section, as a ditch would have been superfluous so close to the shore and liable to tidal flooding. There is no evidence for the ditch on its depicted line. The Wall in this sector was initially constructed in turf, which was replaced in the second half of the second century by the stone wall.

Milecastle 78 was located and partly excavated in 1934 by Simpson, Richmond and MacIntyre (1935). It is situated 110m north-west of the access road to the Glendale caravan park. Only the west wall was examined in the excavations and was found to be 2.8m wide. One course of masonry survived of the inner face above the footings, but the outer face had been robbed. The overall dimensions of the milecastle are not yet known. Like all milecastles in the western part of Hadrian's Wall, it was originally built with turf ramparts and timber gateways, and buildings, but was replaced in stone in the second half of the second century. The remains of the stone milecastle survive as buried remains. The excavators did not record whether remains of the primary turf and timber phase of the milecastle survive, but they are likely to survive beneath and alongside the remains of the stone milecastle also as buried remains.

The course of the Military Way has not yet been confirmed in this section.

The course of the vallum is known in this section. The vallum ditch can be traced as a depression up to 0.8m deep. The vallum mounds are not visible in this section and have been reduced and levelled by ploughing. They survive as buried features.

All field boundaries are excluded from the scheduling, although the ground beneath them is included.

---

**Scheduled Monument Number** 26126  
**Monument Name** The Roman fort and associated civil settlement and a medieval tower house at Bowness-on-Solway at the west-end of Hadrian's Wall in wall mile 80.

**National Grid Reference** NY 2226 6260

**Description**

The monument includes the Roman Wall fort (Site **3**) and its associated features (Sites **3**, **6** and **13**) and a medieval tower house (Site **12**) at Bowness-on-Solway.

---

The course of Hadrian's Wall here is thought to have run from Linden House at the east end of the modern village of Bowness to join with the north-east corner of the fort. It will have consisted of the Turf Wall, which was later replaced by the Stone Wall. Its survival and precise line have however not been confirmed and it is thought that the line of the Wall near the fort has been lost through erosion of the sea cliff. Bainbrigg in 1601 described remains of the Wall on the shore west of the fort. The Wall here, would have closed the gap between the north west corner of the fort and the sea at the western end of the Wall at Wallsend. However its precise location and survival have not been confirmed since. For these reasons, the line of the Wall is not included in the scheduling.

The exact location of milecastle 80 has not yet been confirmed although it is believed that it survives as a buried feature. On the basis of the usual spacing it is expected to be located below the remains of Bowness fort. However, erosion of the seaward face of the escarpment at Bowness may have removed some of the remains.

The course of the Military Way, has not been confirmed at Bowness. However the position of the east gate of the fort has been indicated from excavations in 1988 by Austen (1989), to coincide with the modern east/west road opposite the house immediately east of the Post Office. The Military Way is presumed to have entered the fort through this gateway where it is expected to survive as a buried feature. Its precise course approaching the fort has however not yet been confirmed and the Military Way east of the fort is not included in the scheduling.

The course of the vallum has not yet been confirmed at the western terminus of the Wall, although it may survive as a buried feature. Soil test pits dug in the courtyard of the old rectory in advance of the building of a new rectory in 1988. They revealed a feature approximately 2m deep filled with greenish organic material characteristic of the fill of the vallum ditch found elsewhere, although as the edges were not found it is not confirmed that this was in fact the vallum ditch. A geophysical survey in 1991 to the east of the fort was unable to locate the course of the vallum, and the vallum is not therefore included within the scheduling.

Bowness Roman Fort, known to the Romans as *Maia*, is located on a clay knoll rising to 20m above sea level at the west-end of the modern village. The perimeter and overall extent of the fort have been determined by excavations since 1930. Unusually on Hadrian's Wall, the fort has its long axis east/west parallel to the course of the Wall. Only the forts at Housesteads and Great Chesters are similarly orientated. To the north of the fort lies the Solway Firth with commanding views of the opposing coastline, although the view to the south is restricted by rising ground south of the old rectory. There are few traces of the fort's remains visible above ground and most of the remains survive as buried features. The south-west angle of the fort survives as a slightly raised platform, bounded by the slight hollow reflecting the line of the fort ditches, the outermost of which was recut in the 13th century 15m wide. Excavations by Birley in 1930 (1931) and Potter in 1973 (1975; 1979) confirmed the location of the south-west defences and also confirmed the position of the west gate by locating its north guard chamber immediately north of the modern road. The structures were covered over after the excavations and will survive as buried remains. These excavations established the width of the fort north/south as 128m, while excavations by Austen in 1988 (1989) found the eastern defences between the Post Office and High Bank, establishing the east/west length of the fort as 186m. The fort occupies an area 2.38ha, making it the second largest on Hadrian's Wall after the fort at Stanwix. The north wall of the fort is thought to have been built on the line taken by Hadrian's Wall, but it has been demonstrated by excavations by Birley in 1930 (1931) and confirmed by Potter in 1976 (1979) that the northern edge of the fort has been lost through erosion of the sea cliff. Little is known of the interior layout other than building which were either barracks or stables which were excavated by Potter in 1976 (1979) immediately west of the Post Office. The remains were wholly excavated in advance of a housing development and no longer survive. These buildings, despite being rebuilt and modified during the period of occupation of the fort, were always of timber construction. This is contrast to the defences, where the walls, gateways, and interval towers are known from Potter's 1973 (1975; 1979) and Austen's 1988 (1989) excavations to have been initially constructed of turf and timber, but later reconstructed in stone. The bend in the modern road west of the road junction may reflect the position of the headquarters building, known as the *Principe*, which is also likely to have been built in stone.

The extra-mural settlement associated with the fort, known as a *vicus*, is known from excavations and observations of remains exposed during development to have extended round the three landward sides of the fort. Vague traces are visible as low grass covered mounds in the fields on the south and west sides of the village. A sewer trench cut across the fields on the south-west of St Michael's Church yielded Roman material including a gold *ligula*. Observation of building work east of the fort to the south-east of Rampart Head by Caruana in 1984 (1987) indicated possible remains of the *vicus*. The

full extent of the *vicus* has not been determined and only the remains on the south and west-side area are included in the scheduling.

The remains of a peel tower were recorded by Leyland in 1539 and the same building is again recorded by Auditor king in 1593 as situated at the gate of the old rectory. A local eyewitness in the middle of the nineteenth century described its destruction at the beginning of that century, noting the massive nature of its foundations. No remains are visible on the surface but the foundations are expected to survive as buried remains.

All field and property boundaries, street furniture and road surface and buildings are excluded from the scheduling, but the ground beneath these features is included. The built up areas containing Bowderhead Farm and the adjacent houses south-west of the 'T' junction and west of the King's Arms public house is totally excluded from the scheduling.

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**Scheduled Monument Number** 28473

**Monument Name** Hadrian's Wall between Apple Garth, Westfield and the dismantled railway in wall mile 77.

**National Grid Reference** NY 2491 6124

**Description**

The monument includes the section of Hadrian's Wall between the western boundary of the garden belonging to Apple Garth, Westfield in the east and the dismantled railway 200m to the west of Westfield House in the west.

Hadrian's Wall survives throughout this section as a buried feature. There is no evidence for the ditch to the north of the Wall, and it is likely that in this section, parallel and close to the Solway shore, the ditch was not provided.

All field boundaries are excluded from scheduling, although the ground beneath them is included.

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**Scheduled Monument Number** 28474

**Monument Name** Hadrian's Wall between the dismantled railway and the access road to Glendale caravan park in wall mile 77.

**National Grid Reference** NY 2472 6127

**Description**

The monument includes the section of Hadrian's Wall between the dismantled railway 200m west of Westfield house in the east and the access road to Glendale caravan park in the west.

Hadrian's Wall survives throughout this section as a buried feature. It is not known whether the ditch to the north of the Wall was provided here as the wall runs parallel and close to the Solway shore in this section of the monument.

All field boundaries are excluded from the scheduling, although the ground beneath them is included.

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**Scheduled Monument Number** 28475

**Monument Name** Hadrian's Wall north of Kirkland House, Port Carlisle in wall mile 78.

**National Grid Reference** NY 2432 6174

**Description**

The monument consists of a 50m length of Hadrian's Wall and the associated turret 78a north of Kirkland house, Port Carlisle.

Hadrian's Wall survives here as buried remains with no indications visible on the ground. However, its course is known here from the identification of turret 78a in the nineteenth century by the antiquarian John Horsley. The excavation in 1948 by Simpson, Richmond and Hodgson (1952) confirmed the location. The remains of turret 78a survive as buried remains under the hedge on the south side of the road to Port Carlisle 30m north of Kirkland House Farm.

All field boundaries and road surfaces are excluded from scheduling, but the ground beneath them is included.

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**Scheduled Monument Number** 28476

**Monument Name** Hadrian's Wall between Port Carlisle and Bowness-on-Solway in wall miles 78 and 79.

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**National Grid Reference** NY 2393 6226 - NY 2252 6279

**Description**

This monument includes the section of Hadrian's Wall between Field View Lane, Port Carlisle, in the west and Bowness-on-Solway in the east, in wall miles 78 and 79.

Hadrian's wall runs westwards along the crest of a raised beach from Port Carlisle for 700m and then turns north west to run towards Bowness-on-Solway. West of the site of milecastle 79, for a distance of 200m. The remains of the Wall lie beneath the field boundary visible as a bank 1m high surmounted by a hedge. The indications are that the Wall survives as upstanding remains of the core and probably also the faces several courses high with undisturbed tumble on either side beneath the earth bank. At the west end of this length, the Wall is exposed either side of a modern field gate, standing up to four courses high with footing flags exposed across the gateway. However, around the site of milecastle 79 and west of the north-westerly turn in direction the Wall survives as a buried feature with no visible indications on the ground. The Wall in this sector was initially constructed in turf, which was replaced on the same line in the second half of the second century AD by the Stone Wall. It has not yet been determined whether the Wall was fronted by a ditch in this section. The proximity of the coast would have made a ditch of normal Wall-ditch proportions superfluous and liable to tidal flooding.

Milecastle 79 is situated 350m west of Field View Lane. Excavations of the milecastle were undertaken in 1949 by Richmond and Gillam (1952). Like all milecastles in the western part of Hadrian's Wall, it was originally of turf construction. It measured 14.9m east/west and 12.5m north/south internally. This was replaced by a stone built milecastle, which measured 17.7m internally. The gates of the stone milecastle were found to have been reduced in size after the initial construction. A timber-framed building is also known to have stood in the eastern half of the stone milecastle.

The exact position of Turret 79a has not yet been confirmed. On the basis of the usual spacing it is expected to be located approximately 400m west of milecastle 79 where the Wall changes direction. Turret 79a is expected to survive as buried remains.

Turret 79b is situated approximately 250m south-east of the houses at the east end of Bowness-on-Solway in the field known as Jeffrey Croft. Its site is indicated by a very slight platform, visible on the ground. It was partly excavated in 1934 by Simpson, Richmond and MacIntyre (1935) to confirm whether the Turf Wall extended westwards as far as the west end of Hadrian's Wall at Bowness. The south wall was found to be 1.12m wide and the west wall, 0.96m wide, was traced for 4.64m from the south-west corner. It was constructed on a foundation of two layers of cobbles sandwiched in red clay, with three courses of masonry surviving above. The difference in thickness of the south and west walls and the evidence that it was originally built as a free-standing tower abutted by the Turf Wall demonstrated it to be the type of turret known on Hadrian's Wall. When the Wall was rebuilt in stone the Turf Wall turrets, which were originally built in stone themselves were retained with the new wall. The course of the military Way has not been confirmed in this section. It is expected to run parallel to the Wall a few metres from its south face.

All field boundaries and buildings are excluded from the scheduling, although the ground beneath them is included.

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**Scheduled Monument Number** 28477

**Monument Name** Hadrian's Wall vallum between the track south of Kirkland House and Bowness-on-Solway in wall miles 78 and 79.

**National Grid Reference** NY 2425 6157 - NY 2294 6236

**Description**

The monument includes the section of Hadrian's Wall vallum between the track south of Kirkland House in the east and Bowness-on-Solway in the west.

The course of the vallum is known in this section with intermittent surface traces visible. The vallum ditch survives as a faint shallow depression and a short section of the south mound is visible as an earthwork averaging 0.5m high to the southwest of milecastle 79. Elsewhere the vallum mounds are not visible on the ground and survive as buried remains.

The course of the vallum westwards is not known from a point 150m west of the measured site of turret 79a, and its western terminus is therefore not included in the scheduling west of this point.

All field boundaries are excluded from the scheduling but the ground beneath them is included.