



Solway II, Bowness-on- Solway to Drumburgh, Cumbria

Archaeological Evaluation



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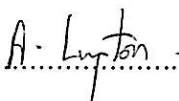
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SUMMARY

United Utilities have proposed to improve the wastewater treatment system along the Solway Coast in Cumbria, from Bowness-on-Solway (NY2257 6281) to Drumburgh (NY 6272 5980). The route of the improvements crosses the line of Hadrian's Wall at a number of points and, subsequently, a programme of archaeological works was undertaken by Oxford Archaeology North between February and June 2007. In late 2008, United Utilities decided to change the route of the pipeline at Drumburgh. This new route again traversed the proposed line of Hadrian's Wall and, subsequently, Mike Collins, the English Heritage archaeologist for Hadrian's Wall requested that a small evaluation trench should be excavated, in order to assess whether any remains of the wall would be affected by the altered route.

The trench was excavated in early January 2009, but no evidence for remains of the wall were encountered, nor were any other archaeological features observed. Despite this, the potential for archaeological remains associated with the wall are high. Therefore, further work in the form of a watching brief, has been recommended by Mike Collins.

ACKNOWLEDGEMENTS

OA North would like to thank United Utilities for commissioning the project. Thanks are also extended to KMI for facilitating the groundworks. The evaluation was undertaken by Becky Wegiel and Ric Buckle. Becky Wegiel wrote the evaluation report, and Mark Tidmarsh produced the illustrations. Alison Plummer managed the project and edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 United Utilities are proposing improvements to wastewater treatment along the Solway coast in Cumbria, from Bowness-on-Solway (NY2257 6281) to Drumburgh (NY 6272 5980) (Fig 1). The route runs through an area of high archaeological potential including Hadrian's Wall World Heritage Site (HWWHS). Evaluation trenches were placed at strategic points along the route between February and June of 2007 (OA North 2007).
- 1.1.2 At the end of 2008 the proposed route was changed slightly at the Drumburgh end of the pipeline. The new course crossed the projected line of Hadrian's Wall in an area where previously the line of the wall had only been supposed. Following discussions between United Utilities and Mike Collins, the Hadrian's Wall archaeologist for English Heritage, it was decided that there should be another evaluation trench placed on the projected line of the wall, and so at the beginning of January 2009, the trench was excavated.

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 Drumburgh pumping station (NY 2672 5980) is located at the eastern end of the proposed scheme, approximately 100m east of the village of Drumburgh, on the northern side of the Carlisle to Bowness-on-Solway road.
- 1.2.2 The landscape is typically flat and exposed to the prevailing south-westerly 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 moorlands and wetlands, although elements of this remain in places (*op cit*, 20).
- 1.2.3 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*).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 **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* 2000, 110). Recent work by OA North (forthcoming) on the Carlisle Northern Development Route has uncovered a potentially significant Mesolithic site. This work is presently ongoing, but diagnostic material within a substantial quantity of flint, including a pronounced microlith component, suggests a late Mesolithic date for the assemblage. In addition preserved organic remains have been unearthed beneath the flints and in an adjacent Paleo-channel. Subsequent trial-trenching has since uncovered three further Palaeo-channels and a burnt mound.

- 1.3.2 Extensive remains thought to represent all-year settlement, have been investigated on the coast at Eskmeals to the south-west (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 *c* 6000 BC (Hodgkinson *et al* 2000, 107). A sequence of acute sea-level changes is also known to have affected the area from *c* 5000 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).
- 1.3.3 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).
- 1.3.4 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 above ground remains in an area of intense agriculture such as the Solway coast (McCarthy 2002, 45). Environmental evidence has identified cereal pollen dating from *c* 2000 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).
- 1.3.5 **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. Hadrian's Wall was created between *c* AD 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*).

- 1.3.6 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 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.
- 1.3.7 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).
- 1.3.8 **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 (McCarthy 2002, 141-2). Over time the Anglian kingdoms of the north-east and Strathclyde to the north 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 (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 in the surrounding area.

- 1.3.9 **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 Barony 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.
- 1.3.10 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).
- 1.3.11 **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, (Pickles 2002, 17). However, it was alterations to the transport network brought about because of this experimental alum works that lead 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). 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. The canal was successful, and in 1836 plans were made to expand the capacity of the docks at Port Carlisle, 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).

- 1.3.11 The coming of the canal led to the expansion of many of the adjoining villages. Port Carlisle, formerly known as Fisher's Cross, is recorded as containing only two houses in 1830 (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 improvements in the operation of the canal in its final years, largely as a result of the removal of the Ravenbank Jetty, 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). However, by 1914 the railway was restricted to carrying freight and within a further seven years went out of use entirely (Ramshaw 1997).

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 No project design was requested for this evaluation due to the small nature of the project. However, work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA) and generally accepted best practice.

2.2 EVALUATION

- 2.2.1 The topsoil was removed by a mechanical excavator (fitted with a toothless ditching bucket, 1.5m in width) under archaeological supervision to the surface of the first significant archaeological deposit. This deposit was cleaned by hand and inspected for archaeological features.
- 2.2.2 The trench was then surveyed using a Differential Global Positioning System (GPS). GPS instrumentation uses electronic distance measurement along radio frequencies to satellites to enable a positional fix in latitude and longitude, which can be converted mathematically to the National Grid. It uses a post-processed system by comparing a roving station with a similar station on a fixed known point in order to achieve high levels of accuracy, which are typically between $\pm 0.25\text{m}$.
- 2.2.3 Following this, the evaluation trench was backfilled, with no further reinstatement taking place.

2.3 ARCHIVE

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

3. RESULTS OF THE EVALUATION

3.1 TRENCH 1

- 3.1.1 Trench 1 was excavated to the north-east of the Drumburgh pumping station. on the supposed line of Hadrian's Wall where it would intercept the pipeline (Figs 1, 2a and 2b). The trench was aligned north-west/south-east, measured 3m by 1.2m, and was excavated to a maximum depth of 1m.
- 3.1.2 Topsoil **100**, a mid greyish brown soft silty-clay, was removed and observed to be an average depth of 0.3m (Fig 3) (Plates 1 and 2). This was overlaying deposit **101**, a mottled light orange brown and light brownish grey compact silty-clay. This had a high proportion of angular sandstone pieces and rounded pebbles, and was an average depth of 0.5m. This layer was interpreted as made ground, possibly associated with the nearby disused railway embankment, however the deposit was very clean, and it could be surmised that this was natural, same as **102**. Natural **102** was a mottled mid orange brown - light greyish blue compact boulder clay. No archaeological features or artefacts were observed.

3.2 CONCLUSIONS

- 3.2.1 The exact route of Hadrian's Wall at this location is not known; the trench was located where it would seem reasonable to expect to see remains of the wall, whether these were stone foundations or evidence of the turf wall phase of the structure. However, no such remains were located. This could mean that the wall was never present in this location, either passing further north or south of this point on the pipeline, or that the construction of the railway or canal has obliterated all evidence of it here. It has been suggested that the wall between Burgh-by-Sands and Drumburgh has long since been lost by coastal erosion since its abandonment, or even that the wall stopped deliberately between these points (Breeze 2006, 357-8). The results of the evaluation could support this theory.

4. IMPACT AND RECOMMENDATIONS

4.1 IMPACT AND RECOMMENDATIONS

- 4.1.1 There was no evidence to suggest that work on the wastewater treatment improvements would impact on Hadrian's Wall at this point. However, given the potentially archaeologically sensitive nature of the surrounding area, it is recommended by Mike Collins that a watching brief be maintained during any groundworks at this site.

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6. ILLUSTRATIONS

6.1 FIGURES

Figure 1: Site location

Figure 2a: Plan showing location of additional trench, with original scheme

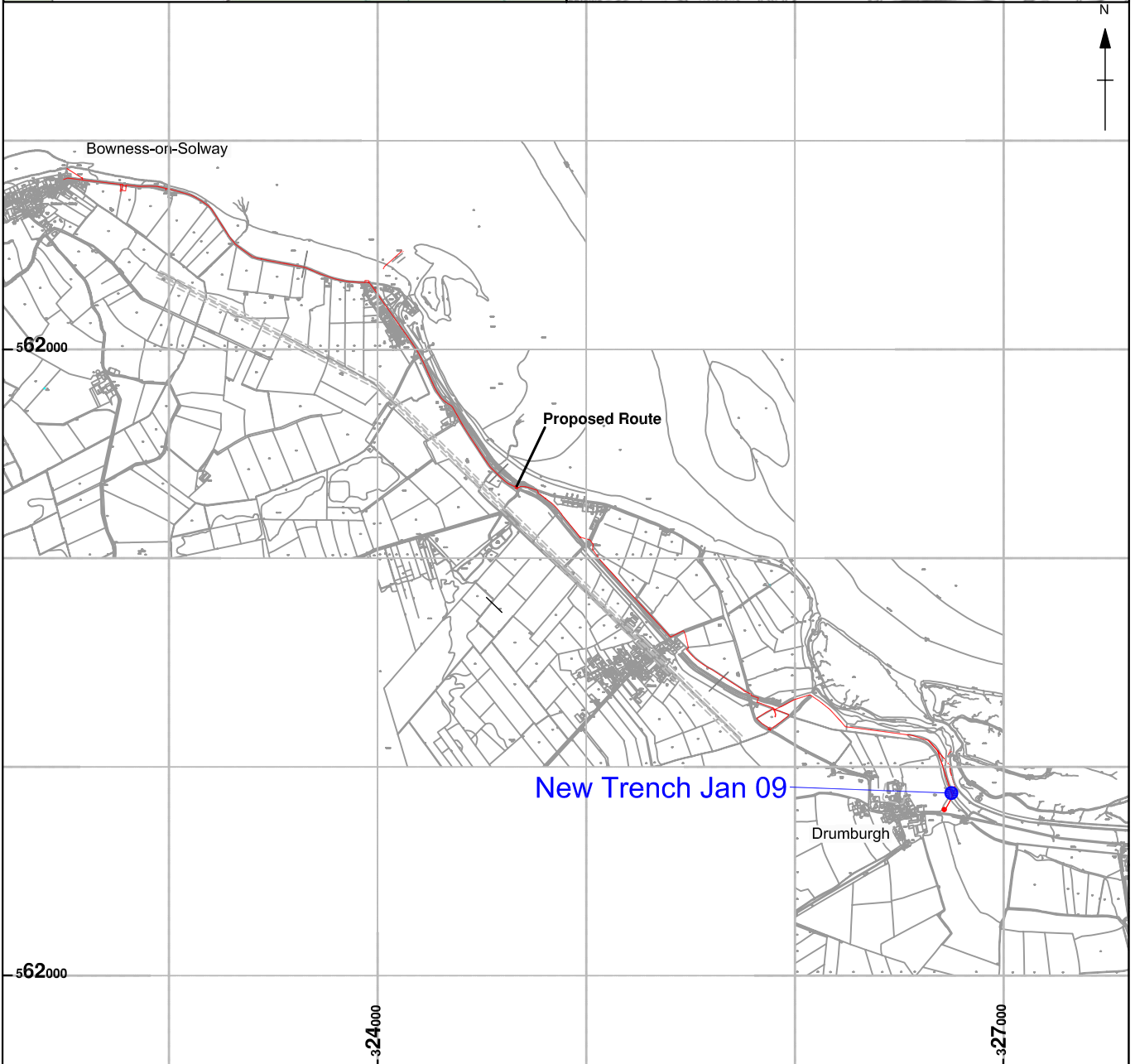
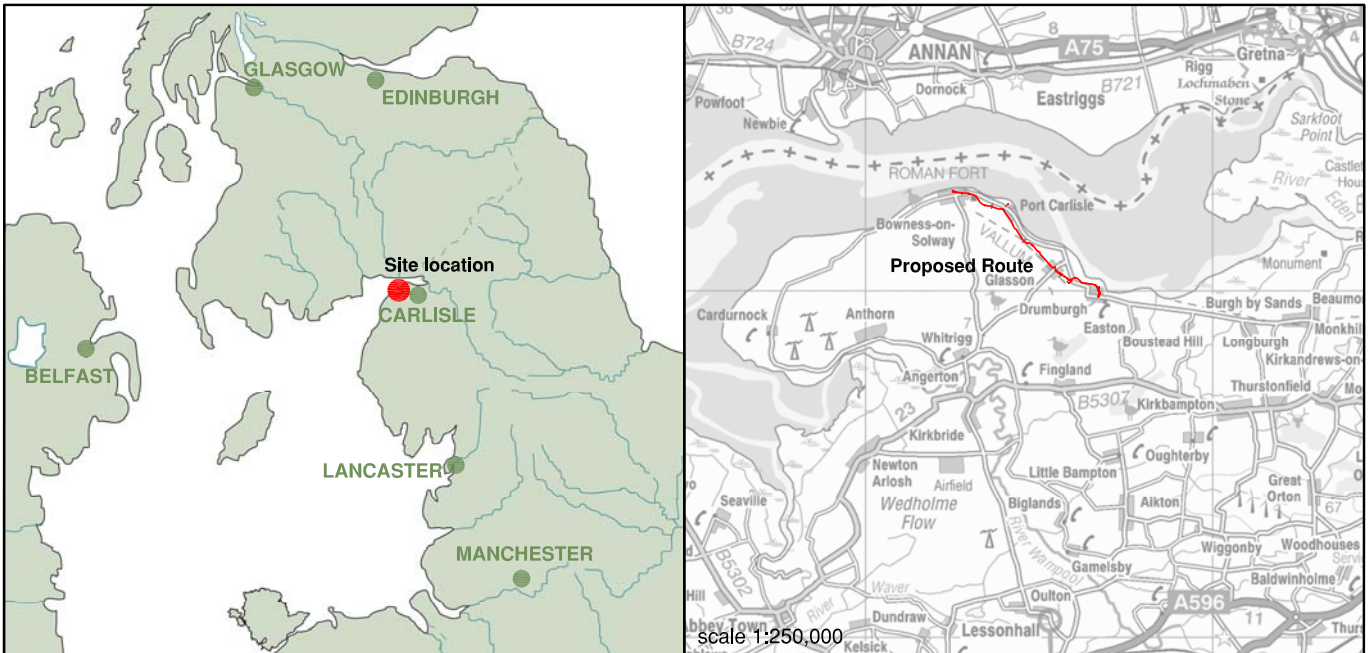
Figure 2b: Detailed plan showing location of additional trench

Figure 3: North-east-facing section through Trench 1

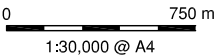
6.2 PLATES

Plate 1: North-east-facing section through Trench 1

Plate 2: Trench 1 in plan



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Figure 1: Site location

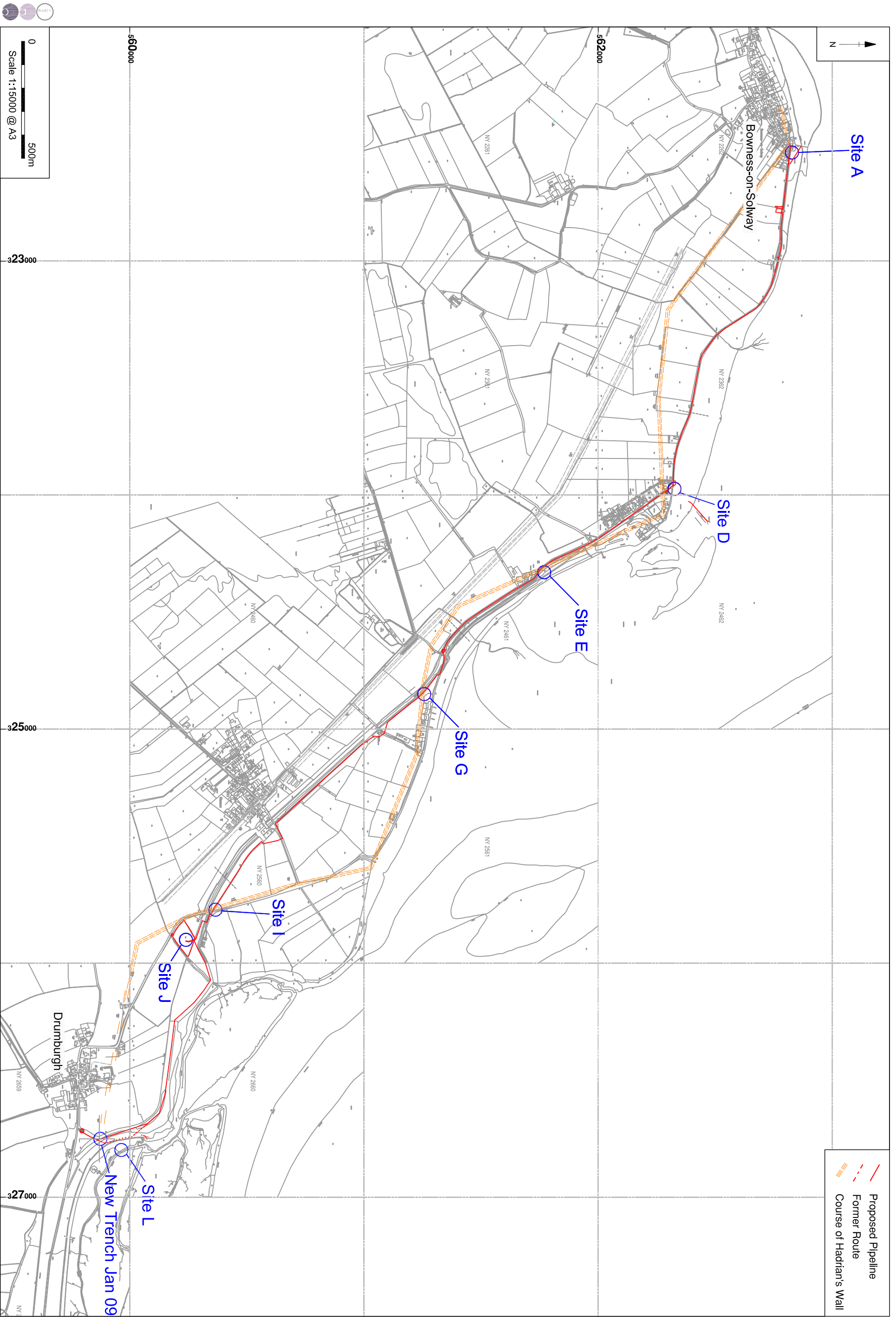
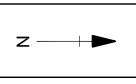


Figure 2a: Plan showing location of additional trench, with original scheme

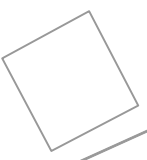
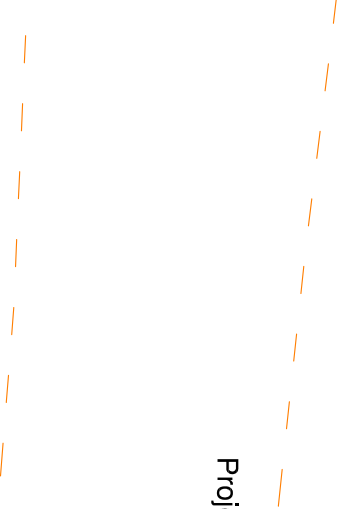


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(site of)

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

Projected course of wall



Trench 3 x 1.2m



326750

-  Proposed Pipeline
-  Former Route
-  Course of Hadrian's Wall

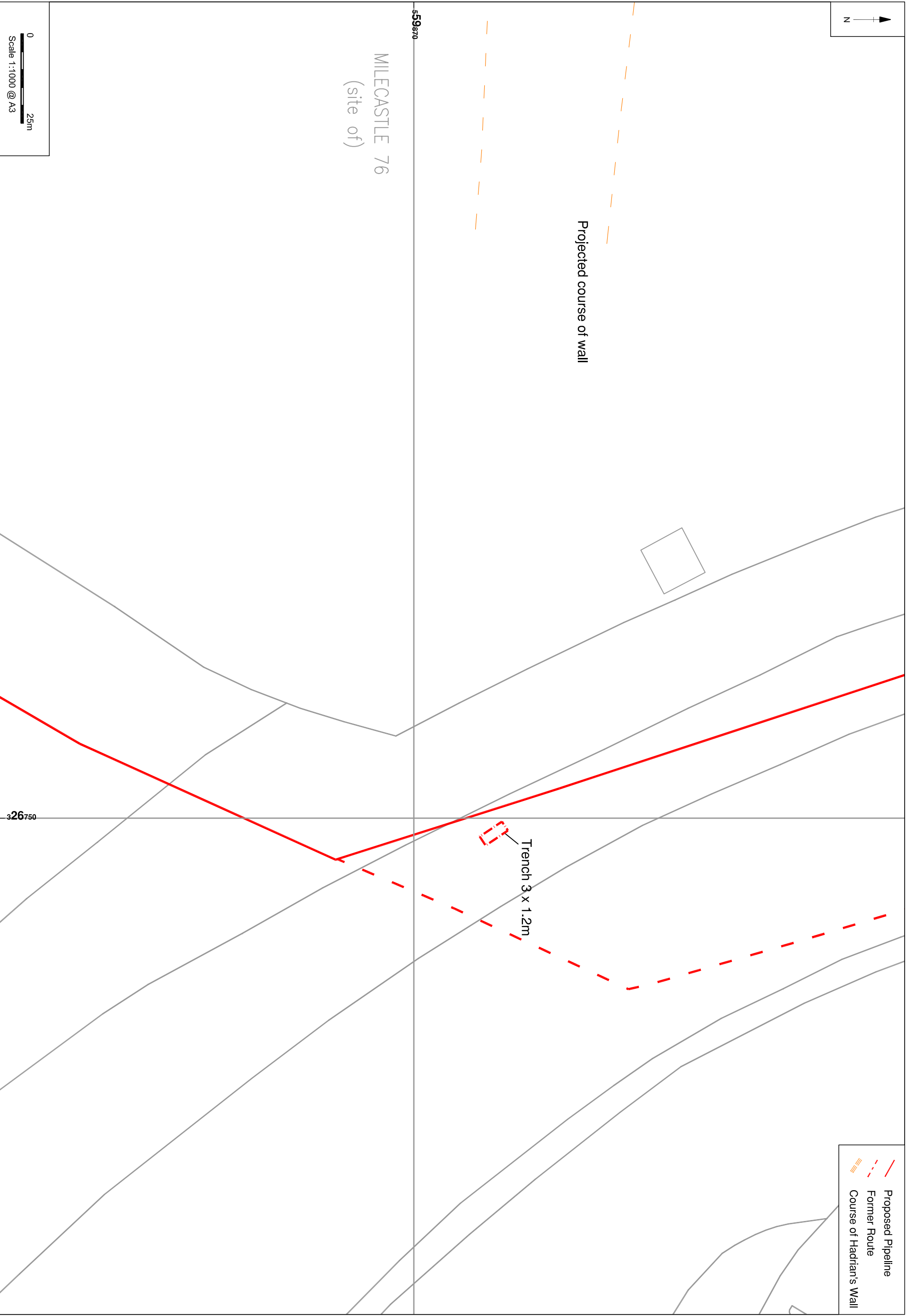


Figure 2b: Detailed plan showing location of additional trench

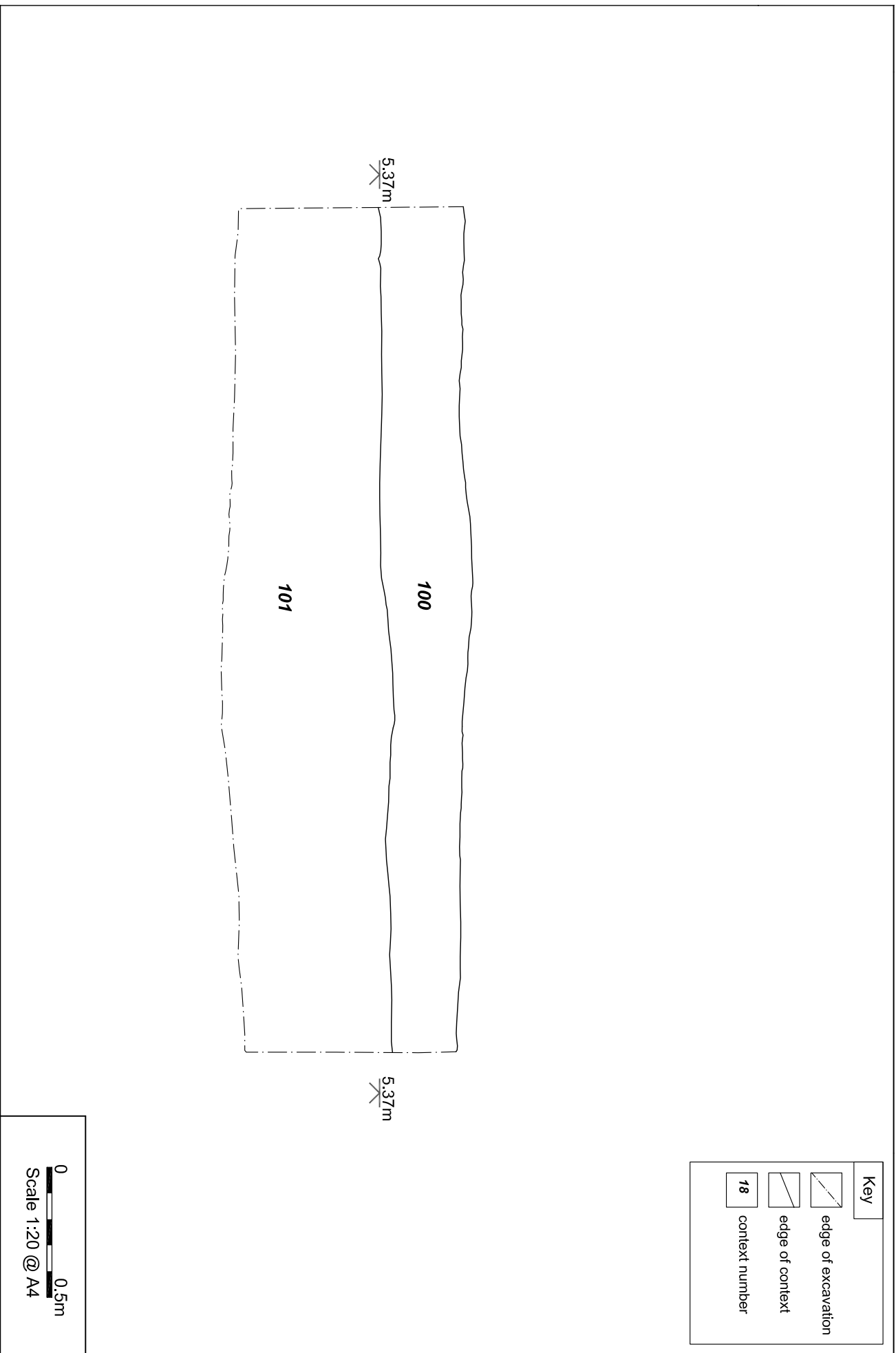


Figure 3: North-east-facing section through trench 1



Plate 1: North-east-facing section through Trench 1



Plate 2: Trench 1 in plan