

KIRKBY STEPHEN CRICKET CLUB, HARTLEY ROAD, KIRKBY STEPHEN, CUMBRIA

Archaeological Building Recording and Watching Brief



Client: Kirkby Stephen Cricket Club

NGR: 377637 508985

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July 2021



The Site	
Site Name	Kirkby Stephen Cricket Club, Hartley Road, Kirkby Stephen
County	Cumbria
NGR	377637 508985

Client	
Client Name	Kirkby Stephen Cricket Club

Planning	
Pre-planning	No
Planning Application No.	15/0488
Plans (e.g. conversion, extension, demolition)	Creation of access road and bridge and new parking area
Condition number	3
Local Planning Authority	Eden District Council
Planning Archaeologist	Jeremy Parsons (Cumbria County Council)
Groundworks subject to watching brief	Cutting through mill leat for access road

Archiving	
Relevant Record Office(s)/Archive Centre(s)	Kendal
Relevant HER	Cumbria
Relevant museum	Penrith and Eden Museum

Staffing	
Building Recording	Dan Elsworth
Watching brief	Dan Elsworth
Report writing	Dan Elsworth
Report editing	Jo Dawson
Illustrations	Tom Mace
Date building recording and watching brief carried out	15 th August 2018 and 22 nd June 2021

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Non-Technical Summary

Following the submission of a planning application for the construction of a carpark and access road at Kirkby Stephen Cricket Club, Hartley Road, Kirkby Stephen a condition was placed requiring the archaeological recording of an affected section of wall that forms part of an historic mill leat and that an archaeological watching brief be carried out on the associated groundworks. Greenlane Archaeology was appointed by Phil Hunter on behalf of the Kirkby Stephen Cricket Club to carry out the work, which was undertaken in August 2018 and June 2021.

There is evidence for human activity in the area around Kirkby Stephen from the prehistoric period onwards but the most pertinent aspect of the site's history is the mill that is fed by the mill leat and was known as Low Mill. This is thought likely to be the same as a mill recorded from at least the 14th century during Scottish raids on the area and was part of the estates belonging to Hartley Castle. It is recorded in the post-medieval period and by the 19th century mapping shows the mill leat as it is today.

The initial phase of archaeological work involved a recording of the extant mill leat, which comprised an earth bank revetted along the north-west side by a drystone wall. Elements of a probable sluice gate were also present to the south-west, immediately before the former mill building, now converted for residential use. This was subsequently followed up by a watching brief where the mill leat was to be cut through to form the new access road. This revealed that this section had already been demolished and then reconstructed, the revetted wall rebuilt on a concrete foundation. Finds recovered from the reconstructed bank revealed that this could not have been before 1989, which fits with anecdotal evidence that it was carried out due to the installation of a sewage pipe c30 years ago.

Although the results of the watching brief did not provide any additional evidence about the origin and development of the mill leat, and by extension about the mill, it did recover a chert thumbnail scraper of Neolithic or Bronze Age date, demonstrating the sort of background evidence for human activity at that time seen in the wider area. The project did, however, provide an opportunity to record the mill leat in more detail.

Acknowledgements

Greenlane Archaeology would like to thank the Kirkby Stephen Cricket Club for commissioning the project, in particular Phil Hunter, and for their help during the project.

The building recording and watching brief were carried out by Dan Elsworth, who also wrote this report. The finds were processed and assessed by Dan Elsworth, with the exception of the post-medieval pottery, which was assessed by Jo Dawson. The illustrations were produced by Tom Mace and the report was edited by Jo Dawson. Dan Elsworth managed the project.

1. Introduction

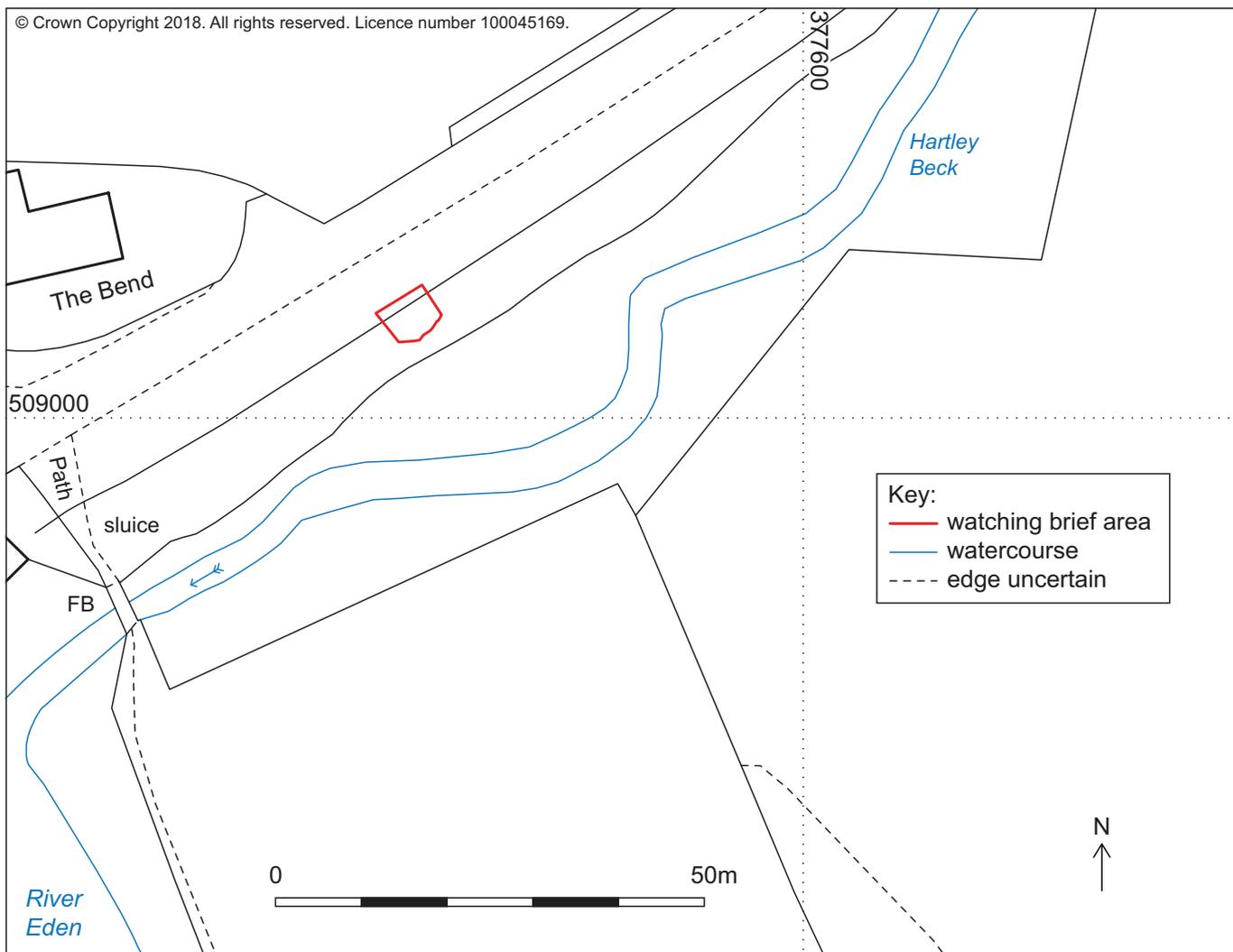
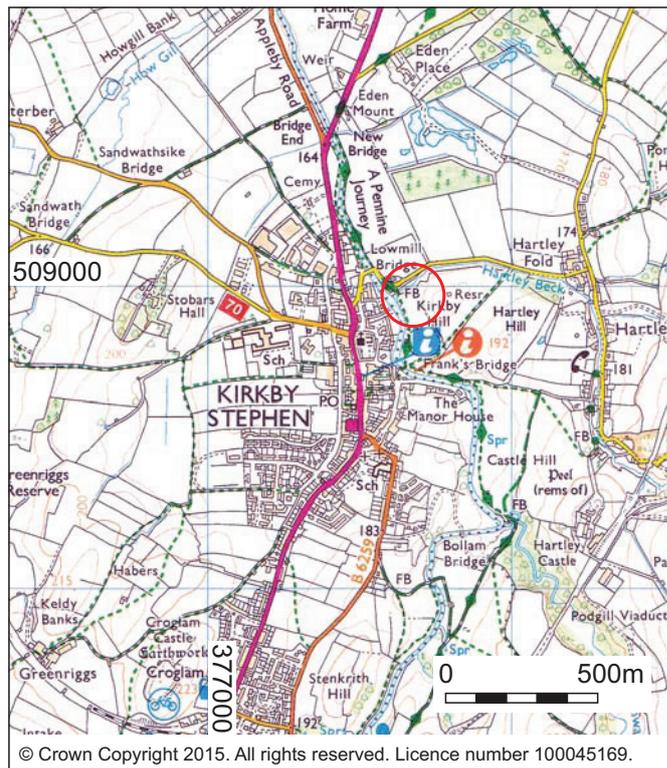
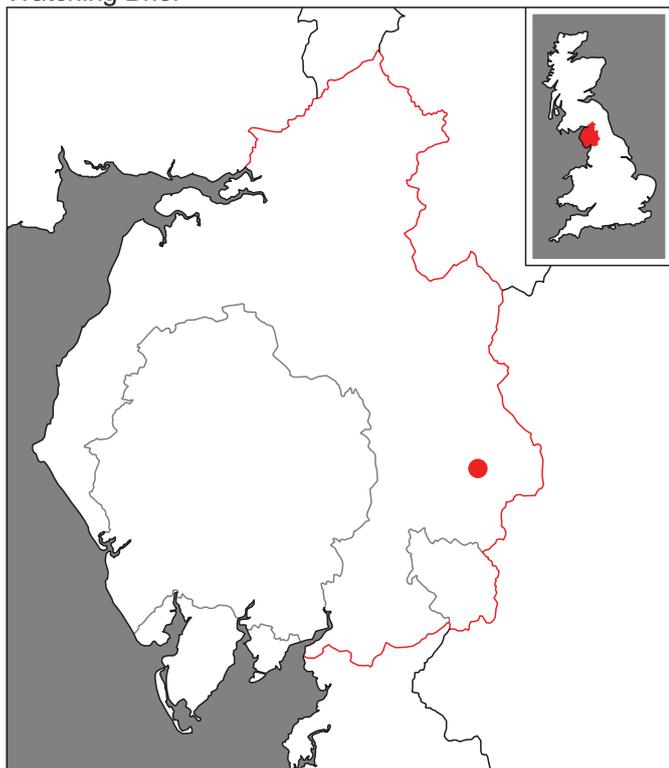
1.1 Circumstances of the Project

1.1.1 Following the submission of a planning application (ref. 15/0488) for the construction of a carpark and access road at Kirkby Stephen Cricket Club, Hartley Road, Kirkby Stephen, Cumbria (NGR 377637 508985) a condition was placed requiring the archaeological recording of an affected section of wall that forms part of an historic mill leat and that an archaeological watching brief be carried out during the associated groundworks in this area. Greenlane Archaeology was approached by Phil Hunter on behalf of the Kirkby Stephen Cricket Club (hereafter 'the client'), to carry out the archaeological work. The building recording was carried out on the 15th August 2018 and the watching brief on 22nd June 2021.

1.2 Location, Geology, and Topography

1.2.1 The site is located on the north-west edge of the outskirts of Kirkby Stephen to the east of the River Eden and across Hartley Beck (Figure 1). It is approximately 170m above sea level (Ordnance Survey 2015). Kirkby Stephen is a civil parish and small market town in Cumbria, within the Orton Fells to the south end of the Eden Valley. The Orton Fells are sparsely settled and characterised by rolling upland farmland, bounded by high dry-stone walls, and limited woodland (Countryside Commission 1998, 56-59).

1.2.2 The solid geology of the Orton Fells largely comprises carboniferous limestone, although beds of sandstone and Eden shales are also present, with expanses of limestone pavement and rocky outcrops prevalent where the underlying solid rocks are not covered by deposits of boulder clay and till (Countryside Commission 1998, 56-57). Kirkby Stephen lies at the junction of Mercia Mudstone and Sherwood sandstone of Triassic age with Upper Permian age St Bees Shales further to the south and east (Moseley 1978, plate 1).



Client: Kirkby Stephen Cricket Club

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Figure 1: Site location

2. Methodology

2.1 Desk-Based Assessment

2.1.1 A rapid desk-based assessment was carried out in accordance with the guidelines of the Chartered Institute for Archaeologists (CIfA 2014a). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the compilation of the desk-based assessment:

- **Online resources:** early maps of the site were compiled from a variety of online resources in order to show the manner in which the building had developed and identify any features that might have impacted on the area being monitored;
- **Greenlane Archaeology:** Greenlane Archaeology holds copies of some of the relevant early maps of the area in its library, as well as a number of additional secondary sources. These were consulted in order to provide information for the site background.

2.2 Archaeological Building Recording

2.2.1 The building recording was carried out equivalent to Historic England Level 2 type standards (Historic England 2016) and according to the standard and guidance of the CIfA (CIfA 2014b), which provides a relatively detailed record of the structure, without necessarily incorporating the results of the desk-based assessment in the discussion of its development. The recording comprised the following elements:

- **Written record:** descriptive records of all parts of the building were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs:** photographs in colour digital format (as both 12meg JPEG and RAW files) were taken of the main features of the structure, its general surroundings, and any features of architectural or archaeological interest. A selection of the colour digital photographs is included in this report, and the remaining photographs are in the project archive;
- **Drawings:** a plan of the structure and associated earthworks, based on hand-annotating the available Ordnance Survey mapping of the area, was produced, while a cross-section was produced by hand on site. The drawings produced ultimately comprised:
 - i. a plan at a scale of 1:500;
 - ii. a cross-section at a scale of 1:500.

2.3 Archaeological Watching Brief

2.3.1 All groundworks associated with the construction of the access route where it cut through the former mill leat were monitored by an archaeologist.

2.2.2 All aspects of the archaeological recording were carried out according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014c) and Greenlane Archaeology's own excavation manual (2007). The deposits encountered were recorded in the following manner:

- **Written record:** descriptive records of all deposits were made using Greenlane Archaeology's *pro forma* record sheets;
- **Photographs:** photographs in 35mm colour print and colour digital format (both 12 meg JPEG and RAW file format) were taken of the site as well as general working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology's *pro forma* record sheets;

- **Drawings:** a plan of the watching brief area was produced at a scale of 1:500 based on a site plan supplied by the client and cross-sections of the cutting through the mill leat were produced at a scale of 1:20.

2.2.3 No environmental samples were taken because no suitable deposits were encountered.

2.3 Archive

2.3.1 A comprehensive archive of the project has been produced in accordance with current ClfA standard and guidance (ClfA 2014d). The paper and digital archive and a copy of this report will be deposited with the relevant archive centre as detailed on the cover sheet of this report on completion of the project. A digital and paper copy of this report will be provided for the client, as required, and one will be retained by Greenlane Archaeology. In addition, a digital copy of the report will be provided to the relevant Historic Environment Record (HER) and a digital record of the project will be made on the *Online Access to the Index of Archaeological Investigations* (OASIS) scheme.

3. Desk-Based Assessment

3.1 Map Regression

3.1.1 **Introduction:** early maps of the area tend to be relatively lacking in detail, the earliest useful maps are therefore only from the 19th century.

3.1.2 **Tithe map, 1839:** the site is north of Hartley Beck on the south side of the mill race (NA IR 29/37/34 1839; Plate 1). The site is part of the plot numbered 165 on the accompanying schedule (NA IR 29/37/34 1844). The details of the land owner, occupier, field name and type of cultivation recorded in the accompanying schedule are presented in Table 1.

Plot	Owner	Occupier	Name	Description
165	Sir George Musgrave	Joseph Clarke	Waste	Pasture

Table 1: Details of the owners and occupiers of the site in 1844

3.1.3 **Ordnance Survey, 1862:** the first 1:10,560 edition of the Ordnance Survey map shows much the same information as the tithe map (Plate 2; cf. Plate 1). Low Mill corn mill is labelled to the west.



Plate 1 (left): Extract from the tithe map of 1839

Plate 2 (right): Extract from the Ordnance Survey map of 1862

3.1.4 **Ordnance Survey, 1898:** the site is largely unchanged from the earlier edition of the Ordnance Survey, however, a long embankment is shown along the south side of Hartley Beck, sloping down towards the beck, and the mill race is clearly labelled (Plate 3; cf. Plate 2).

3.1.5 **Ordnance Survey, 1915:** the site is unchanged (Plate 4).

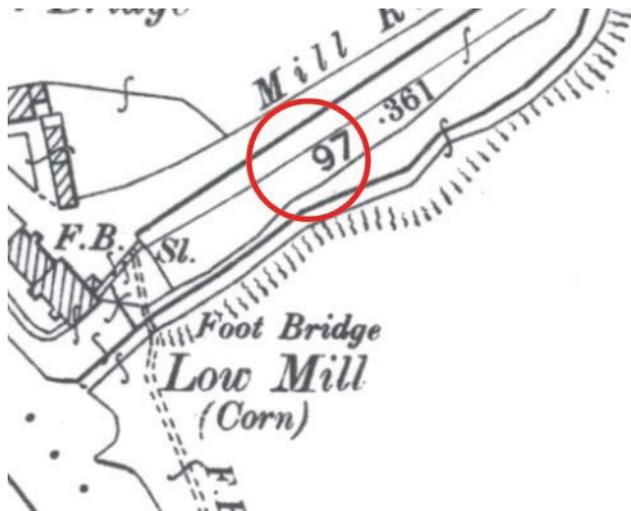


Plate 3 (left): Extract from the Ordnance Survey map of 1898

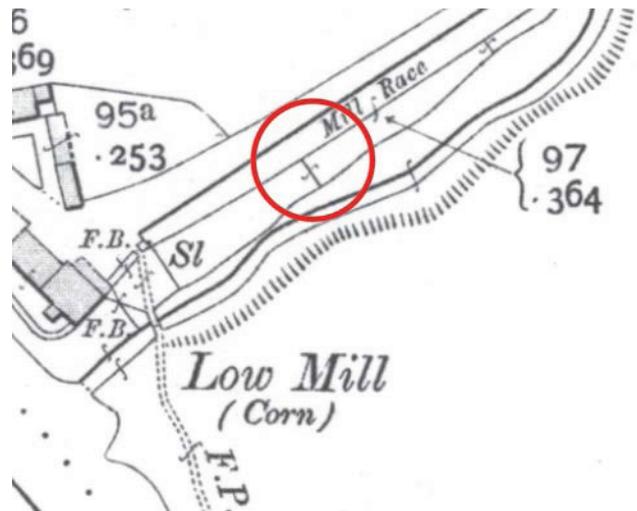


Plate 4 (right): Extract from the Ordnance Survey map of 1915

3.2 Lidar

3.2.1 It is not possible to discern any additional features from freely available lidar imagery of the site (Houseprices.io 2018; Plate 5).



Plate 5: Lidar imagery of the site (Houseprices.io 2018)

3.3 Conclusion

3.3.1 It is apparent from the available mapping that the site has formed part of the mill leat associated with the mill, known as Low Mill and labelled as a corn mill, from at least the early 19th century.

4. Site History

4.1 Prehistoric Period (c11,000 BC – 1st century AD)

4.1.1 While there is limited evidence for activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay. Excavations of a small number of cave sites have found artefacts of Late Upper Palaeolithic type and the remains of animal species common at the time but now extinct in this country (Young 2002), with human remains found in one of these caves also dated to the end of this period (Smith *et al* 2013). A small group of bone harpoon points found near Crosby-on-Eden perhaps belong this period, in which case they would be the closest examples to the site (Hodgson 1895). The county was also clearly inhabited during the following period, the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field walking and eroding from sand dunes along the coast, but these are typically concentrated in the west coast area and on the uplands around the Eden Valley (Cherry and Cherry 2002). More recent work has identified an extensive area of Mesolithic activity on the River Eden near Carlisle (Clark 2010) and field walking elsewhere on the same river has provided further evidence (Clarke *et al* 2008), perhaps demonstrating the importance of the Eden and its tributaries. These discoveries demonstrate that further remains of similar date are likely to exist in the local area, and conform to the notion that river valleys, lakesides, and coastal areas are common places for such remains to be discovered (Middleton *et al* 1995, 202; Hodgkinson *et al* 2000, 151-152).

4.1.2 In the following period, the Neolithic (c4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and one of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale (Hodgson and Brennand 2006, 45). Probable Neolithic remains closer to the site include the large stone circle at Gamelands at Orton, and Shap Avenue (Barrowclough 2010, 109-110), as well as a number of burial mounds excavated by Canon Greenwell in the late 19th century such as at Raiset Pike and Orton (*op cit*, 95-98). During the Bronze Age (c2,500 – 600 BC) monuments, particularly those thought to be ceremonial in nature, become more common still, and it is likely that settlement sites thought to belong to the Iron Age have their origins in this period. There are considerable numbers of such sites in the area around Kirkby Stephen, with many undated mounds recorded before the early 20th century, which may be Bronze Age burials (RCHME 1936), but also large areas of field systems, including a large area at Hartley to the north-east of Kirkby Stephen (OA North 2003) and possibly fortified sites with associated settlements at Castle Hill near Waitby and Croglam Castle (Higham and Jones 1975). The majority of these sites have not seen modern excavation and so their exact dating is uncertain, but, in some cases at least, they are likely to have originated in at least the Bronze Age and continued to be occupied until the Roman period and perhaps beyond.

4.2 Romano-British to Early Medieval Period (1st century AD – 11th century AD)

4.2.1 The Roman military presence in the North West is apparent from the existence of forts, which in many cases led to the formation of nearby towns or *vici* and the supply network of roads and coastal trade, as well as the incidence of Roman artefacts such as coins (Philpott 2006, 71). The Lune and Eden valleys provided a route of access to Carlisle for the Roman advance (*ibid.*, 63) and the route northwards is still apparent along the modern A6 between Carlisle and Penrith (Shotter 2004, 31). A large proportion of the identified Romano-British settlement sites in Cumbria are located to the south and east of Penrith (Philpott 2006, 75) and, as mentioned, it is likely that many of the rural settlements in the area around Kirkby Stephen, which appear to have prehistoric origins, continued to be used into and throughout the Roman period. The status of such sites is debatable, although the discovery of a Roman parade helmet on a supposedly 'native' site at Crosby Garrett may indicate close contacts with quite high-status members of the Roman military (Breeze and Bishop 2013). While there are no known Roman military sites in Kirkby Stephen itself the line of a supposed Roman road running approximately north/south is recorded on the east side of the town. The nearest Roman fort is that at Brough to the north, which is associated with a system of signal stations along Stainmore (Higham and Jones 1975, 23-24). Stray finds

of Roman coins are known from the Kirkby Stephen area, including a hoard of more than 200 *radiates*, the details of which are unclear, although one is a relatively uncommon issue of Marius (AD 268) (Shotter 1991, 274; 1992, 277), and other stray coin finds ranging from the 1st to the 3rd centuries AD are known (Shotter 1989; 1991; 1992, 278). The later first century coins perhaps indicate a commercial relationship between local farmers and Roman military units or the distribution of land to Roman army veterans and the spatial distribution of second century coins in the region perhaps reflects the importance of focal points along the north/south route through the Eden and Lune Valleys (Shotter 1989, 44).

4.2.2 Following the cessation of Roman administration in the early fifth century the region fragmented into smaller kingdoms and it is difficult to form a coherent picture of the nature of political control. Much of what is now Cumbria probably came under the control of Rheged, a kingdom that seems likely to have extended across the border between what became England and Scotland and whose central territory may have been focussed on the nearby Lynvenet valley (Clarkson 2010, 68-78; Breeze 2012). However, by the mid-seventh century the area seems to have been securely under Northumbrian rule (Kirkby 1962, 80-81). Firmly dated archaeological evidence for the immediate post-Roman period in the county is sparse due in part to poor site visibility, which often consists of traces of rural settlements which have been heavily truncated (see discussion in Philpott 2006, 59). Furthermore, there is inevitably a great deal of uncertainty with dating settlement sites on stylistic grounds alone given the persistence of traditional styles from the Roman to the early medieval period. However, a rectangular building with earth-fast timber posts excavated at Shap has tentatively been dated to the seventh to eighth century on the basis of loom weight fragments found nearby (Heawood and Howard-Davis 2002, 157-8). In the wider context of possible Anglian settlement at Fremington and Brougham (although again the evidence for this classification is slight), a settled rural hinterland around the foci at Dacre and Penrith is suggested for the early medieval period (*ibid*, 168).

4.2.3 The arrival of Norse settlers between perhaps the late ninth and early 10th century had a considerable effect on the area, in particular on local place-names (Edwards 1998, 7-8). Physical evidence for settlement is, however, rare, although an increasing number of burials of Norse type from both rural and urban contexts are known (see Paterson *et al* 2014; McCarthy and Paterson 2015; McCarthy *et al* 2015) with a furnished Viking burial known at Hesketh-in-the-Forest, north of Penrith perhaps the closest to the site (Edwards 1998, 10-12). Several complete and fragmentary 'Viking Age' (late ninth and early 10th century) silver brooches have also been found in the Penrith area, most notably on Flusco Pike, three miles to the west of Penrith (Edwards 1998, 33-36; Richardson 1996). Kirkby Stephen's name indicates that there was an established settlement by the Norse period, presumably somewhere on the current site of the town, which had a church (Smith 1967, 8-9), but what form that settlement took is unknown. Several fragments of carved stone cross of early medieval date found in Kirkby Stephen further demonstrate that there was a church there from an early date (CCC and EH c2002, 4).

4.3 Medieval Period (11th century AD – 16th century AD)

4.3.1 The medieval period in Cumbria was one of considerable initial growth, followed by serious decline in the 14th century resulting from the combined effects of the Scottish raids and disease in both people and animals (Winchester 1987, 46-47). The present town of Kirkby Stephen is essentially of medieval origin, with a plan form typical of the period, although it is thought that its original centre might have been around Union Square (CCC and EH c2002). Its economy was primarily based on agriculture; it had three water-powered corn mills and a market charter, granted in 1352 (*op cit*, 5).

4.3.2 It is during the medieval period that references to the mill first begin to appear (as recounted in detail by Jones and Jones 2021, although it has not been possible to confirm the original source for this; see also McWilliams 2015, 98-100). An account of the Scottish attack on the area in 1318 recounts how they besieged Hartley Castle on their way to Kirkby Stephen, having already sacked Penrith and Appleby, and the 'the king's watermill' in Kirkby Stephen (Jones and Jones 2021). This is thought to be a reference to what became known as 'Low Mill', although there were a number of other mills in the town (Birkbeck 2000, 25). It is, however, logical that if the Scots came to Kirkby Stephen via Appleby on the

Hartley Road this is the first mill they would have come to. A subsequent record of 1324 refers to repairs made to the '*watermill which was burnt by the Scotch rebels*', again named the 'King's Watermill' (Jones and Jones 2021). Low Mill was evidently the property of the Musgrave family of nearby Hartley Castle (*op cit*; see *Section 3.1.2* above), who acquired the estate, which had originally belonged to the de Harcla family, although they had removed to a new home at Eden Hall by the late 18th century (Nicholson and Burn 1777, 587).

4.4 Post-medieval Period (16th century AD – present)

4.4.1 By the end of the medieval period there was a gradual economic improvement across the region (Winchester 1987, 48). How much this was apparent at Kirkby Stephen is uncertain, although its market charter was confirmed by James I in 1606 (CCC and EH c2002, 7). In general, it was not until the beginning of the post-medieval period that rural areas such as this began to see substantial new development as the population began to rise again and demand for land and the need for new housing grew (Pearsall and Pennington 1989, 256). It is likely that several of the earliest surviving farm buildings in the town relate to this period. The general industrialisation that took hold across the country during the 18th and 19th centuries is not particularly evident in Kirkby Stephen, which clearly remained largely reliant on agriculture.

4.4.2 There are more specific references to Low Mill from the 18th century onwards, as well as detailed map evidence (see *Section 3.1* above). There is a record of repairs made by Sir Philip Musgrave for a new cog wheel and 'trunls' in 1754 (Jones and Jones 2021; 'trunls' perhaps a reference to trundle wheels). A datestone of 1785 is also present within the building, although it is not clear what phase of construction this refers to (*ibid*). Records of the millers and the occupiers of the mill then appear in a number of sources in the 19th century, in particular the Clark family (see also *Section 3.1.2*), who were involved in the operation of a number of mills in the wider area (*ibid*). Low Mill was eventually sold by the Musgrave family in 1914 and passed through a number of families; it remained in use as a mill into the 20th century, although a land swap in 1968 meant that the mill leat was separated from the mill building in 1968, which suggests that it was not water-powered from after that date; the weir on the River Eden was destroyed in the winter of 1962/3 (Anderson and Swailes 1985, 47) but the dam on the Hartley Beck that provided water for the Low Mill seems to have survived (McWilliams 2015, 100). It had certainly gone out of use in 1974, when permission was gained to convert the mill building into a dwelling, and it has subsequently been altered several times in order to facilitate this (Jones and Jones 2021).

5. Results

5.1 Introduction

5.1.1 The results deal with the different aspects of the project separately, with the building recording described first followed by the watching brief. The finds recovered during the watching brief are also discussed in the results.

5.2 Archaeological Building Recording

5.2.1 The wall was orientated approximately north-east/south-west and was constructed from rough limestone blocks laid in generally random courses. The affected section was 0.7m tall with five courses visible and topped with flags in a fine-grained stone, presumably sandstone (Plate 6). It was flat on top (Plate 7) and 1.4m thick before dropping down slope approximately 2m over a distance of 9m (Plate 8), to a flat terrace adjoining the watercourse to the south-east. On the north-west side of the wall the ground comprised a level verge 7m wide running up to Hartley Road (Plate 9), into which was set a modern metal inspection cover for a drain below which running water could be heard (Plate 10).



Plate 6: The wall, viewed from the north



Plate 7: The top of the wall, viewed from the north-east



Plate 8: The slope down from the south-east side of the wall, viewed from the south-east



Plate 9: General view of the wall in relation to the road from the north-west



Plate 10: The inspection cover to the north-west of the wall, viewed from the north-west

5.2.2 Outside of the affected area the wall continued parallel to Hartley Road, although it was difficult to examine due to the dense undergrowth in these areas. At the south-west end it was visible, however, and was by a row of upright stone flags with a long rectangular block set against their south-west side, perhaps forming part of a sluice gate (Plate 11 and Plate 12). Beyond this the structure was closer to 2m wide and where it was crossed by a footpath leading to a footbridge, the resulting erosion showed it was clearly constructed from an outer skin of rough blocks and an inner face of upright slabs (Plate 13). Some additional flags had been laid across it on the line of the footpath. Beyond a fence line the structure could be observed continuing towards the building to the south-west (Low Mill), but stopping a few metres short of it, where there was an evident step in its line. A loose millstone was laid against it on the north-west side at this point.



Plate 11: Possible sluice gate at the south-west end of the structure, viewed from the north-east



Plate 12: Possible sluice gate at the south-west end of the structure, viewed from the south-west



Plate 13: The line of the structure extending towards Low Mill to the south-west, viewed from the north-east

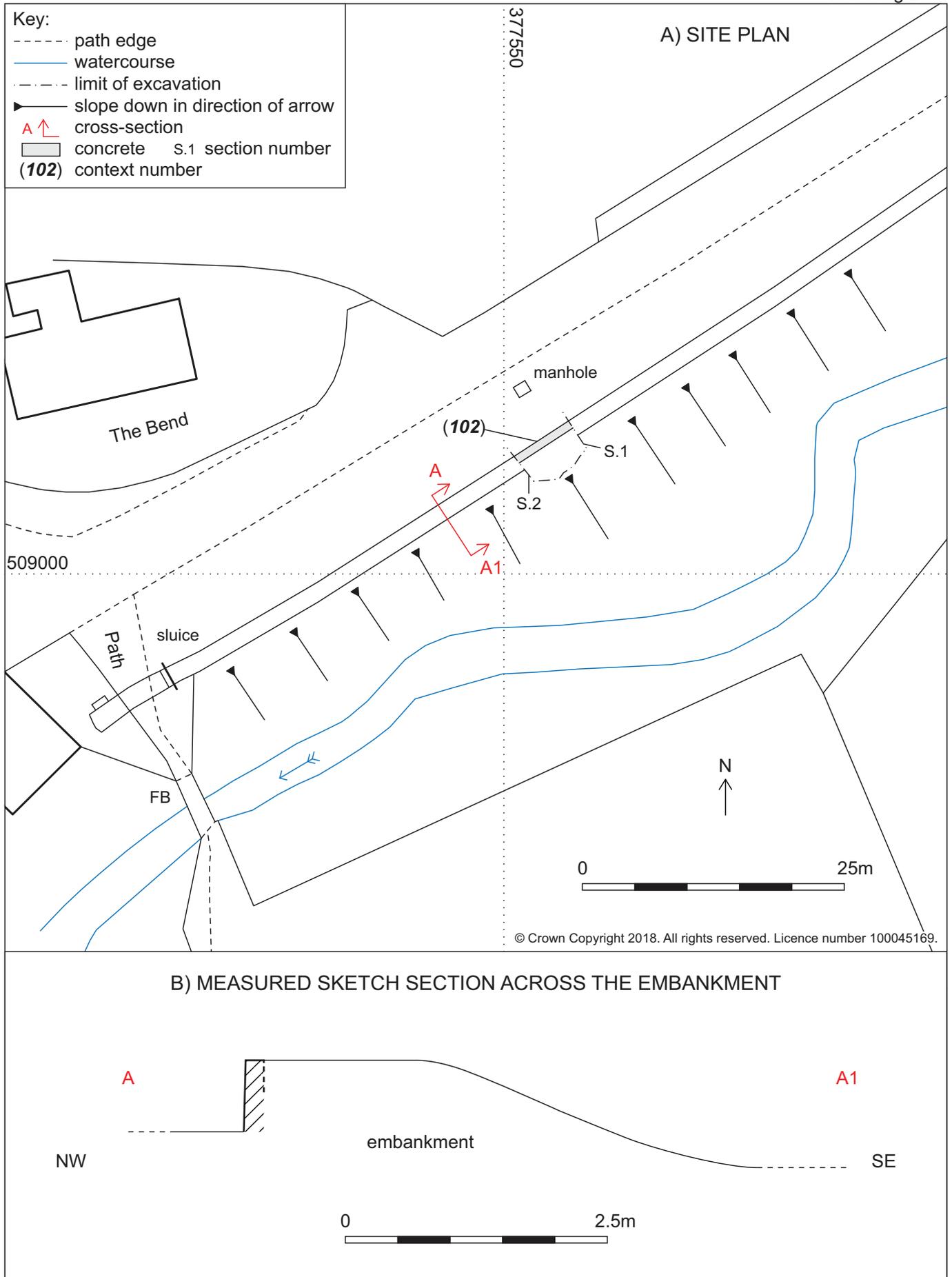


Figure 2: A) Site plan; B) Measured sketch section across the embankment

5.3 Watching Brief

5.3.1 The groundworks entailed cutting through an approximately 6m long section of the former mill leat using a small tracked excavator fitted with a narrow, toothed bucket (Plate 14 and Plate 15). This soon revealed that the whole of the bank behind (to the south-east) of the retaining wall was constructed from a compacted mid orangey-brown sandy silt, with 10% rounded and sub-angular cobbles as well as fragments of salt-glazed stoneware drainage pipe, some brick fragments, including a frogged example marked 'CLAUGHTON MANOR BRICK CO', and a section of wire fence on the south-west side (**100**) (Plate 16 and Plate 17). This deposit was uniform and up to 0.8m thick, becoming shallower as the slope dropped down towards the beck to the south-east. The retaining wall (**101**) was typically 0.6m thick and mostly constructed from large limestone blocks but with some rounded cobbles and larger blocks at the base (Plate 16 and Plate 17). It was revealed to be sat on a foundation comprising a gravelly pale grey concrete 0.8m wide and at least 0.1m thick (**102**) (Plate 18). Below **100** the natural was encountered in a few places, and comprised a mid orangey-brown loose gritty sandy clay more than 0.2m thick at containing 10% rounded cobbles (**103**) (Plate 16).



Plate 14 (left): Working shot showing the excavator cutting through the former mill leat, viewed from the north

Plate 15 (right): Working shot showing the excavator cutting through the former mill leat, viewed from the south-west



Plate 16 (left): Section through the former mill leat showing the bank (100), wall (101) and concrete foundation (102), viewed from the south-west

Plate 17 (right): Section through the former mill leat showing the bank (100), wall (101) and concrete foundation (102), viewed from the north-east



Plate 18: Concrete footing 103 fully exposed, viewed from the north

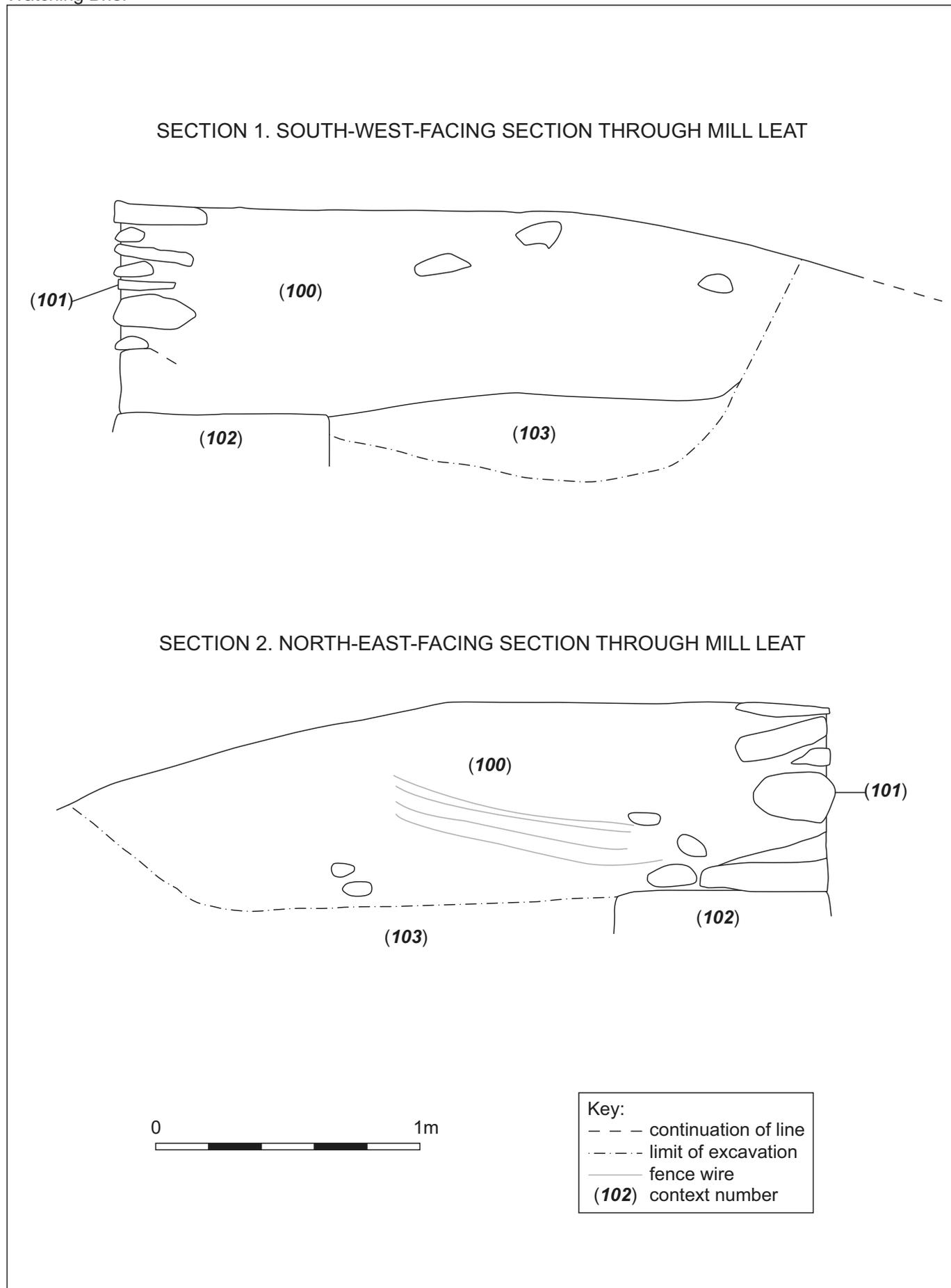


Figure 3: Sections 1 and 2

5.4 Finds

5.4.1 **Introduction:** a total of five finds were recovered during the watching brief, all from context **100**. These were of various types of material and all post-medieval or modern, with one exception.

5.4.2 **Polystyrene:** a small chunk of broken polystyrene block was recovered, probably deriving from a larger piece of packaging. This is at least late 20th century in date.

5.4.3 **Iron:** a thin strip of corroded iron was recovered, of uncertain function. This is difficult to date but almost certainly post-medieval.

5.4.4 **Aluminium:** a crushed drinks can with most of the decoration worn off was recovered. It is clearly branded 'Coca Cola' and has a bar code and push-tab. The form of the decoration and tab indicate that it cannot be dated to earlier than 1989 (Chan 2013; Air Control Industries 2021).

5.4.5 **Post-medieval pottery:** a bone china saucer rim fragment was recovered. This is of 19th to early 20th century date and was probably deposited on the site as rubbish.

5.4.6 **Stone:** a small dark grey chert thumbnail scraper was recovered. This is likely to be Neolithic or Bronze Age in date and demonstrates the background presence of prehistoric activity that occurred across the whole county, rather than necessarily denoting any extensive settlement in the immediate locality.

6. Discussion and Conclusion

6.1 Discussion

6.1.1 The building recording revealed that substantial elements of the former mill leat connecting to the former mill building to the south-west are preserved, including elements of the sluice, although these were not impacted upon by the development. The documentary evidence indicates that a mill has been present on the site from at least the 14th century, part of the estates of Hartely Castle, although the exact form that it took and the arrangement of its water supply are unknown. The available map evidence shows that the extant mill leat has been in existence since at least the middle of the 19th century. Unfortunately, the watching brief revealed that the excavated section of the mill leat had already been removed and then reconstructed. The finds recovered from the rebuilt leat revealed that this cannot have been before c1989, which fits with anecdotal evidence that a sewage pipe was installed across it c30 years ago. The finds did, however, include a chert thumbnail scraper of Neolithic or Bronze Age date, which, while residual, is indicative of human activity in the wider area at that time.

6.2 Conclusion

6.2.1 The watching brief was only able to demonstrate that the section of the leat directly affected by the development had already been effectively destroyed. As such it was of limited use in understanding the origin and development of the leat or the mill and was not able to confirm a medieval origin. However, the wider project provided an opportunity to produce a detailed record of the mill leat and associated structural elements, which will add to the wider understanding of the structure.

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Appendix 1: Project Design

KIRKBY STEPHEN CRICKET CLUB, HARTLEY ROAD, KIRKBY STEPHEN, CUMBRIA

Archaeological Building Recording and Watching Brief Project Design



Client: Kirkby Stephen Cricket Club

August 2018

Planning Application Ref. 15/0488

NGR 377637 508985 (centre)

1. Introduction

1.1 Project Background

1.1.1 Following the submission of a planning application (Ref. 15/0488) for the construction of an access road and carpark at Kirkby Stephen Cricket Club, Hartley Road, Kirkby Stephen, Cumbria (NGR 377637 508985 (centre)), a condition was placed requiring a watching brief on the associated groundworks preceded by the recording of an affected section of wall forming part of a former mill leat. Greenlane Archaeology was appointed by the Kirkby Stephen Cricket Club (hereafter 'the client') to carry out the work and this project design was been produced in response.

1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 30 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Chartered Institute for Archaeologists' (CIfA) Code of Conduct. All aspects of the work will be carried out according to the Standards and Guidance of the Chartered Institute for Archaeologists (CIfA 2014a-d).

1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), AIfA)**. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has recently managed a wide variety of projects including building recordings of various sizes, watching briefs, and excavations in the region.

1.3.2 The building recording and watching brief will be carried out by **Dan Elsworth** or by **Tom Mace (BA (Hons), MA, MIfA)** or another suitably qualified member of staff, depending on scheduling constraints. Tom has extensive experience of working on a variety of archaeological projects, especially watching briefs, but also excavations, evaluations, and building recordings, as well as report writing and illustration production. He joined Greenlane Archaeology in 2008 having worked for several previous companies including Archaeological Solutions and Oxford Archaeology North.

1.3.3 All artefacts will be processed by Greenlane Archaeology, and it is envisaged that they will initially be assessed by Jo Dawson, who will fully assess any of post-medieval date. Medieval pottery will be assessed by Tom Mace, and other finds will be assessed by specialist sub-contractors as appropriate.

1.3.4 Environmental samples and faunal remains, should significant deposits of these be recovered, will be processed by Greenlane Archaeology. It is envisaged that charred plant remains will be assessed by staff at Headland Archaeology Ltd, and faunal remains by Jane Richardson at ASWYAS. Should any human remains be recovered for assessment it is envisaged that these will be examined by Malin Horst at York Osteoarchaeology, following appropriate advice on initial processing.

2. Objectives

2.1 Rapid Desk-Based Assessment

2.1.1 To examine documentary sources relating to the site, to put the results of the archaeological building recording and watching brief in context.

2.2 Archaeological Building Recording

2.2.1 To make a detailed photographic and written record of the affected area of the wall of the former mill leat.

2.3 Watching Brief

2.3.1 To identify any surviving archaeological remains and to investigate and record any revealed archaeological remains or deposits.

2.4 Report

2.4.1 To produce a report detailing the results of the archaeological building recording and watching brief, which will outline the nature, form, extent, and date of any archaeological remains discovered.

2.5 Archive

2.5.1 Produce a full archive of the results of the project.

3. Methodology

3.1 Rapid Desk-Based Assessment

3.1.1 An examination of various sources, particularly early maps and plans relating to the site, will be carried out, but including other relevant primary and secondary sources. The sources that will be used as part of the desk-based assessment will include:

- **Online resources:** the majority of original and secondary sources relating to the site are deposited in the Cumbria Archive Centre in Kendal, which is currently closed for refurbishment until November 2018. As a result information will primarily be compiled from a range of online resources. This will principally comprise early maps of the area;
- **Greenlane Archaeology:** a number of copies of maps, local histories, and unpublished primary and secondary sources of relevance, in particular previous reports relating to the site, are held by Greenlane Archaeology. These will be consulted in order to provide information about the history and archaeology of the site and the general area.

3.2 Archaeological Building Recording

3.2.1 This will primarily comprise a photographic record of the affected section of leaf wall. Photographs in colour digital (JPEG and RAW) and 35mm colour print format will be taken. These will cover both general and detailed shots of the structure, but also scaled photographs of specific features of architectural or archaeological interest. In addition, a record of the associated landscape and nearby buildings will also be made. Digital photographs will also be used for illustrative purposes within the report, and a written record will be kept of all of the photographs that are taken. Written records of the wall will also be made on Greenlane Archaeology *pro forma* record sheets for use in the report.

3.3 Watching Brief

3.3.1 The groundworks associated with the construction of the proposed bridge and car park, as well as any other relevant groundworks will be monitored, with one archaeologist on site. If there are several areas being excavated concurrently it may be considered necessary to have more than one archaeologist on site.

3.3.2 The watching brief methodology will be as follows:

- All excavation will be carried out under supervision by staff from Greenlane Archaeology;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not, and photographs in both colour print and colour digital format. In addition, photographs will also be taken of the site before work begins and after completion;
- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;

- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have, for example, preserved environmental remains, industrial residues, and/or material suitable for scientific dating will be sampled. Bulk samples of between 20 and 60 litres in volume (or 100% of smaller features) where possible, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (e.g. gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors (see *Section 1.3.4* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;
- Any articulated human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. The client will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and securely stored off-site, or covered and protected on site if immediate removal is not possible;
- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of Lead Strategy Adviser: Historic Environment at the Lake District National Park Authority and ground works in that area halted so that the need for further work can be determined. Any additional work (which would result in additional costs) will be agreed with Lead Strategy Adviser: Historic Environment at the Lake District National Park Authority, and subject to a variation to this project design.

3.4 Report

3.4.1 The results of the project will be compiled into a report, which will contain the following sections as necessary:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the archaeological building recording describing the remains encountered;
- Results of the watching brief including descriptions of any deposits identified, their extent, form and potential date, and an assessment of any finds or environmental remains recovered during the watching brief;
- Discussion of the results incorporating information compiled during the desk-based assessment, where relevant;
- Illustrations at appropriate scales including:
 - a plan showing the location of the ground works;
 - plans and sections of the watching brief ground works, as appropriate, showing any features of archaeological interest;
 - photographs taken during the building recording and watching brief, including both detailed and general shots of features of archaeological interest and the areas of excavation;
 - photographs of individual artefacts as appropriate.

3.5 Archive

3.5.1 The archive, comprising the drawn, written, and photographic record of the building recording and watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Cumbria Archive Centre in Kendal. The archive will be compiled according to the standards and guidelines of the ClfA (ClfA 2014c). In addition details of the project will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.5.2 A copy of the report will be supplied to the client, and within three months of the completion of fieldwork one copy will be provided to Cumbria County Council Historic Environment Record. In addition, Greenlane Archaeology Ltd will retain one copy, and a digital copy will be deposited with the OASIS scheme as required.

3.5.3 The client will be encouraged to transfer ownership of the finds to a suitable museum. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible and necessary would be made of them beforehand.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project from the **13th August 2018**, or at another date convenient to the client. It is envisaged that the project will involve tasks in the following order:

- **Task 1:** rapid desk-based assessment;
- **Task 2:** archaeological building recording;
- **Task 3:** watching brief;
- **Task 4:** post-excavation work on archaeological watching brief, including processing of finds and production of draft report and illustrations;
- **Task 5:** feedback, editing and production of final report, completion of archive.

4.2 Please note, depending on what is found, it may be necessary to publish the results in a suitable journal. The requirement for this would be up to the Cumbria County Council Historic Environment Service and would involve additional costs.

5. Other matters

5.1 Access

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£1,000,000**. Details of this can be supplied if requested.

5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally- and ethically-sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

6. Bibliography

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Appendix 2: Summary Context List

Context	Type	Description	Interpretation
100	Deposit	Mid-orangey brown firm sandy silt, 10% rounded and sub-angular cobbles, some ceramic drain fragments and brick, up to 0.7 thick	Rebuilt bank of mill leat
101	Structure	Revetted drystone wall, mostly large limestone blocks, some rounded cobbles, larger blocks at the base. 0.6m thick and standing 5-8 courses (0.8m) tall	Rebuilt retaining wall of mill leat
102	Structure	0.8m wide, off-white gravelly concrete	Footing for wall 101
103	Deposit	Mid-orangey brown loose gritty sandy clay, 10% rounded cobbles, at least 0.2m thick	Natural geology

Appendix 3: Summary Finds List

Context	Type	Quantity	Description	Date range
100	Polystyrene	1	Lump of polystyrene, probably packaging	Late 20 th century onwards
100	Fe	1	Corroded strip of thin iron, 160mm long by 40mm wide, originally less than 5mm thick	Post-medieval
100	Alu	1	Crushed drinks can, 'Coca Cola', with push tab. Brand name and bar code visible but otherwise decoration worn off	Post-1989 (Chan 2013; Air Control Industries 2021)
100	Stone	1	Small thumbnail scraper in dark grey chert	Neolithic or Bronze Age
100	Pottery	1	Bone china saucer rim fragment	19 th – early 20 th century