

THE GATEHOUSE, CALDER BRIDGE, SEASCALE, CUMBRIA

Archaeological Watching Brief



Client: Mr and Mrs Clarke

NGR: 304959 506395

Scheduled Monument Consent
Application No.: S00193751

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June 2019



| The Site | |
|-------------------------------|--|
| Site Name | The Gatehouse, Calder Bridge, Seascale |
| County | Cumbria |
| NGR | 304959 506395 |
| Scheduled Monument No. | SM CU 307, HA 1007166 |
| Listed Building Grade and No. | Grade II*; No. 1086629 |

| Client | |
|--------------------------|-------------------|
| Client Name | Mr and Mrs Clarke |
| Client's architect/agent | Martin Howell |

| Scheduled Monument Consent | |
|--|--|
| Scheduled Monument Consent Application No. | S00193751 |
| SMC Condition | Watching brief |
| Historic England | Andrew Davison |
| Groundworks subject to watching brief | Excavation for installation of posts for mezzanine floor |

| Archiving | |
|---|------------------------|
| Relevant Record Office(s)/Archive Centre(s) | Whitehaven |
| Relevant HER | Cumbria |
| Relevant museum | The Beacon, Whitehaven |

| Staffing | |
|---------------------------------|--|
| Watching brief | Dan Elsworth |
| Report writing | Dan Elsworth |
| Report editing | Jo Dawson |
| Illustrations | Tom Mace |
| Date watching brief carried out | 11 th and 12 th April 2019 |

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Non-Technical Summary

Following proposals to renovate the former gatehouse, Calder Bridge, Gosforth, Cumbria, including the insertion of a new mezzanine floor, Historic England requested an archaeological watching brief be carried out on the associated groundworks. Greenlane Archaeology was appointed by the client to carry out the work, which was undertaken in April 2019.

The former gatehouse formed part of the wider complex of Calder Abbey, which was established in 1134 as a daughter house of Furness Abbey. Despite its remote location and the continuing threat from cross-border conflict with Scotland it thrived, reaching its peak in the 13th and 14th centuries, although it was never a particularly rich establishment. It was closed as part of the Dissolution in 1535 and then passed into private hands, with the Irwin family carrying out many alterations during the late 18th and 19th century. A previous archaeological building recording associated with the current development revealed that the gatehouse had been converted into an agricultural building, probably in the late 18th or early 19th century, but that there were probably also other alterations carried out after the Dissolution.

The groundworks comprised the hand excavation of nine pits, each typically 0.7m square and 0.7m deep. In each pit the initial layer of cobbles was bedded on soft orange sand, below which was typically a sequence of dumped stony deposits and earlier cobbled surfaces, all of which probably represent former floor surfaces, or material dumped after phases of alteration within the building. The majority of these deposits are probably post-medieval, although dating evidence was limited. No definite floor surfaces of medieval date were encountered but a hole cut in the masonry of the south wall was revealed in one of the trenches, which might indicate that the floor was originally timber and raised off the ground. One of the most significant discoveries were numerous fragments of roofing slate, of a type not local to the area and most like material from the Highland Boundary quarries in central Scotland.

Although relatively limited in scope the watching brief did reveal that there is a sequence of deposits of archaeological interest still present beneath the present floor. While most of these are probably post-medieval and relate to material dumped during alterations to the building or as *ad hoc* floor surfaces, it is possible that some might be earlier. The presence of imported slate from Scotland is also significant because it is likely to have been imported through a connection that Calder had in the area. Calder is not known to have had any land holdings or granges in Scotland, but its mother house, Furness Abbey, had another daughter house at Saddell on the Mull of Kintyre, although there is at present no specific reason to connect this with the slate from Calder.

Acknowledgements

Greenlane Archaeology would like to thank the Mr and Mrs Clarke for commissioning the project, and their architect Martin Howell for providing drawings of the building. Special thanks are also due to Stephen Grindrod, Steve Beck, and Andrew Dixon who carried out the groundworks for their assistance during the project. Additional thanks are also due to Iain McNicol and Dawn Elsworth for logistical support. The slate was examined and subject to XRD analysis by consultant geologist Dr Joan Walsh.

1. Introduction

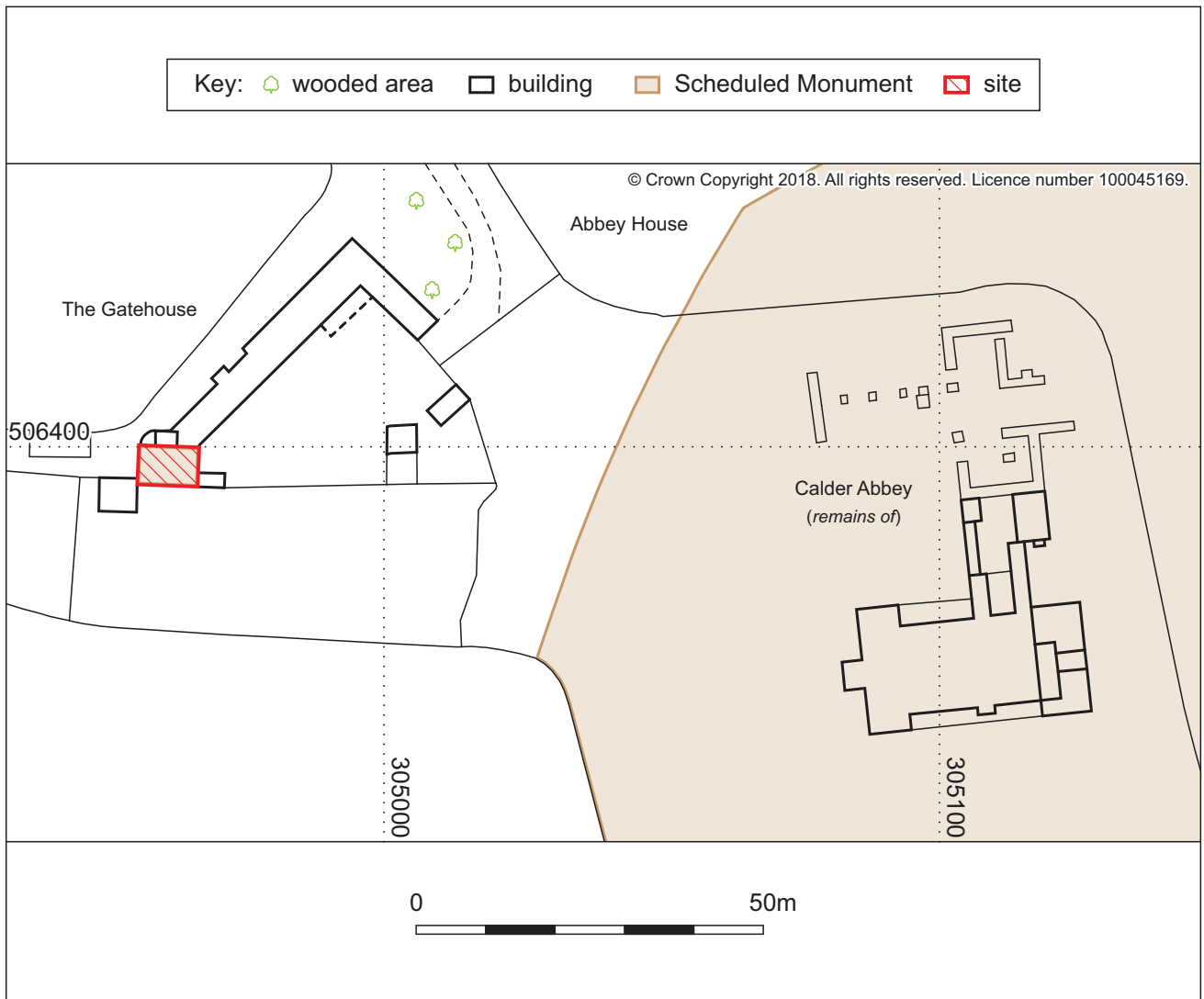
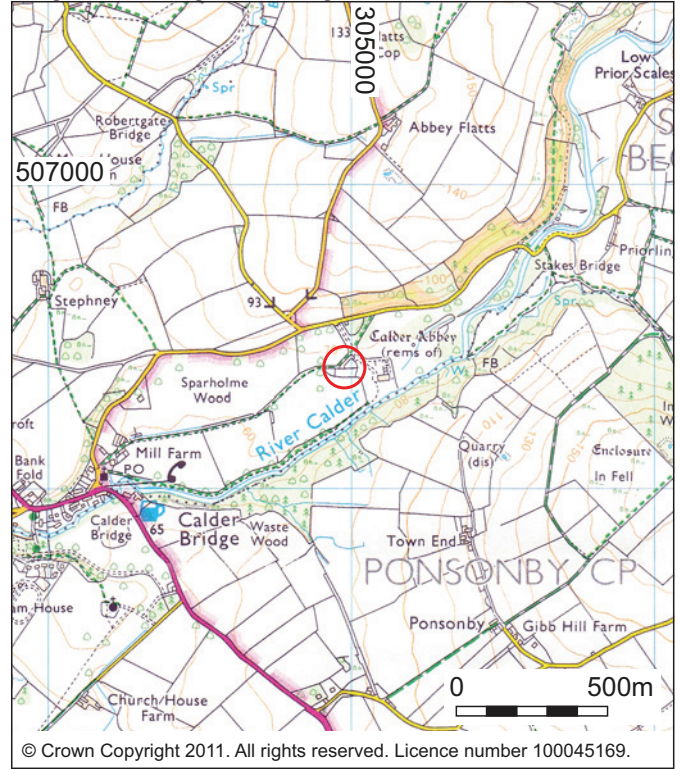
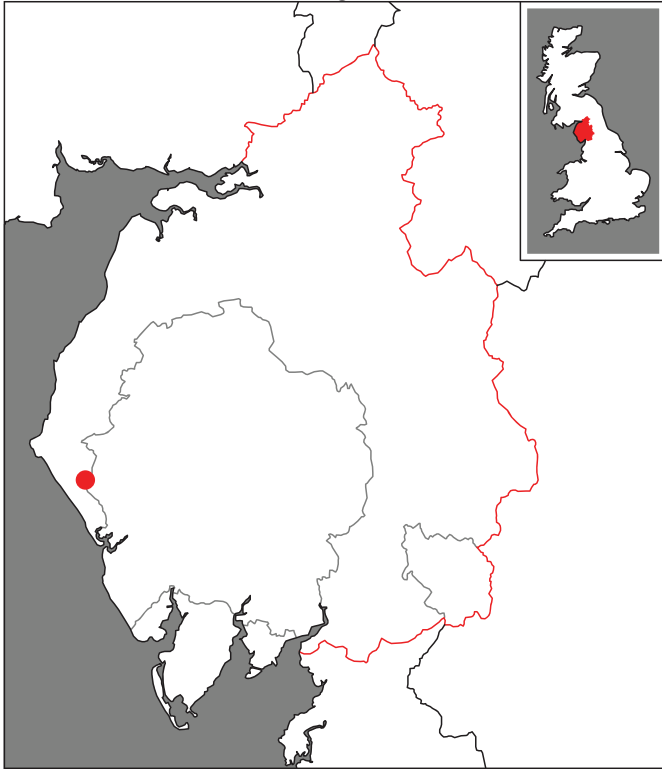
1.1 Circumstances of the Project

1.1.1 The circumstances of the project are set out on the inside cover of this report.

1.2 Location, Geology, and Topography

1.2.1 The gatehouse is approximately 1km north-east of the village of Calder Bridge on the Irish Sea coast of Cumbria and lies between 60m and 70m above sea level (Ordnance Survey 2011; Figure 1).

1.2.2 Calder Bridge is within the West Cumbria Coastal Plain, which is characterised by varied open coastline of mudflats, shingle and pebble beaches, lowland river valleys, and gently undulating or flat improved pasture with hedgerows, however, the immediate area is dominated by the former power plant and nuclear reprocessing facilities at Sellafield (Countryside Commission 1998, 25). The solid geology comprises mudstone (Moseley 1978, plate 1), which is overlain by glacially-derived boulder clay with, in places, sand and gravel (Countryside Commission 1998, 27).



Client: Mr and Mrs Clarke

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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 for the previous phase of work at the site, which involved an archaeological building recording (Greenlane Archaeology 2018). All background information for the watching brief is taken from that report.

2.2 Archaeological Watching Brief

2.2.1 The groundworks comprised the excavation of nine pits through the cobbled floor of the Gatehouse. The watching brief therefore monitored the hand excavation of these, which involved digging down by up to 0.7m below the current ground level.

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 2014a) 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 1:100 based on a site plan supplied by the client.

2.3 Environmental Samples

2.3.1 No environmental samples were taken as no appropriate deposits were encountered.

2.4 Finds

2.4.1 **Processing:** all of the artefacts recovered from the watching brief were washed, with the exception of metal objects, which were dry-brushed. They were then naturally air-dried or dried in the drying oven and packaged appropriately in self-seal bags with white write-on panels.

2.4.2 **Assessment and recording:** the finds were assessed and identified in the first instance by Jo Dawson. The finds were recorded directly into the catalogue produced as part of this report (*Appendix 3*). Selected samples of slate were examined by X-ray Diffraction (XRD) and were compared with samples from Bute.

2.5 Archive

2.5.1 The archive of the project will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this report, together with a copy of the report. The archive has been compiled according to the standards and guidelines of the CIfA guidelines (CIfA 2014b). In addition details 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. A digital copy of the report will be provided to the client and to the relevant Historic Environment Record, as detailed on the cover sheet of this report.

3. Site History

3.1 Site History

3.1.1 **Medieval:** since the gatehouse forms part of the medieval Calder Abbey it is only worthwhile examining the history of the site from the medieval period onwards. Calder Abbey was founded on 10th January 1134 following a grant of land by Ranulf Meschin, the Lord of Cumberland, with additional lands granted soon after (Wilson 1905, 147-178; see also Loftie 1888). The initial colony of 12 monks who settled at Calder came from Furness Abbey to the south and they survived four years at the site until the cross-border war with Scotland led to a number of substantial raids on the area one of which destroyed the relatively new establishment at Calder (*ibid*). The monks returned to Furness hoping for help but were refused entry and eventually were taken in at Byland Abbey in Yorkshire (*ibid*). Following an attempt to free themselves from their connection to Furness and return to Calder under the jurisdiction of Byland the monks were ultimately re-established at Calder under the control of Furness in 1143 (*ibid*). New grants of land were soon made and Calder saw its fortunes improve with a number of local lords making substantial donations throughout the 13th century but Calder was never a particularly rich house (*ibid*). There is little recorded of the abbey's buildings and it is thought that they were under-developed until the time of Thomas de Multon, Baron of Gilsland in the early 13th century (*ibid*). The abbey was first visited by Henry VIII's commissioners in 1535 and surrendered to the commissioners on the 4th February 1536, at which point the site of the Abbey was granted to Thomas Leigh LL.D '*the notorious commissioner for the northern suppression*', who was also granted some of the other lands (*ibid*).

3.1.2 **Post-Dissolution:** the post-Dissolution history of the Abbey is outlined in some detail by Fair (1953, 96-97). Leigh's descendants sold the estate in 1586 to Sir Richard Hutton and it was subsequently purchased by Sir Richard Fletcher of Hutton-in-the-Forest, from whose descendants it passed to Bridget Fletcher, his sister. She in turn married John Patrickson, from whom it passed to his son who married Ursula Dodding of Conishead Priory near Ulverston. In 1695 they released the estate to John Aglionby, and several mortgages were taken out against it and after this foreclosed his heirs mortgaged it to John Tiffin of Cockermouth in 1730. He then bequeathed it to his grandson, John Senhouse, and it eventually passed through the marriage to Mr Thomas Irwin, through whose descendants it was sold to Thomas Rymer in 1885, whose family retained the bulk of the abbey site into the 20th century. It is not clear how much alteration these various owners carried out to the wider abbey site but members of the Irwin family were certainly named as responsible for various alterations during the late 18th and early 19th century (Loftie 1886; Fair 1953) and it was presumably they who built much of the current mansion on the site, which is largely of late 18th and early 19th century date (Hyde and Pevsner 2010, 216). Fortunately, the Rymer family carried out a considerable amount of restoration work after their acquisition of the site in 1885 to the extent that it was remarked that their '*energetic efforts to preserve and fully reveal the beauty of this venerable ruin will be appreciated by all who have visited Calder Abbey, and even more by those who visit it long years hence*' (Anon 1903, 392).

3.1.3 **Previous investigation:** given the significance of the site Calder Abbey as a whole has seen relatively little investigation, the earliest excavations seemingly only being in the late 19th century (Loftie 1883; 1886) although these inevitably concentrated on the main part of the abbey buildings and do not appear to have included the gatehouse at all. The earliest account to do so in any detail is from 1886 (Loftie 1886, 471) and is repeated below in full:

'The abbey gate house itself, has been much altered from time to time; we can see the pointed arches, now built up, dating from the 13th or 14th century, in its west and east faces, and over them four mullioned windows, of a much later date; the roof is now of a very low pitch, and dates, the gables of it at least, from the time when the square headed windows were put in; these windows themselves also seem to have been, at some time, reduced in size; for below the west one, we can trace, built into the wall, a mullion which formed part of the lower division; this must have almost touched the top of the pointed arch, and been on a level with the floor of the porter's room.

When this building was no longer required as an entrance from the public road to the abbey grounds... the owner ruthlessly turned it into a cow house, or byre! A new floor was put in to serve as a hayloft, at a

much lower level than the original one, being built across the entrance archways; and access to the cow house below was given by small square doors within the walled up arches. In A.D. 1794, when Hutchinson's history of Cumberland was published this building seems to have been in use as an entrance to the abbey.'

There is now no trace of stairs, to give access to the upper chamber, nor of any fire place, or chimney; the doorway broken into the north wall of the loft, is of course quite modern.'

3.1.4 A later account from 1953 is also of interest as it too describes the gatehouse in some detail (Fair 1953, 85):

'The Gatehouse is to the right of the present carriage-drive as you enter it; it still retains its 13th century entry arches, though they are now built up; it has two portals and a passage between them. The upper storey has been completely altered, with a roof of much lower pitch and a new floor at a much lower level than the original one, put in to make it serve as a hay-loft; the mullioned windows and a fireplace are also of relatively recent date. The chapel and guest-house, which would adjoin the gatehouse, have completely disappeared; but the adjoining range of stables, coach-houses, etc., is largely built of abbey stones, and the top stone of the staircase leading from the former coachman's quarters is a very large corbel.'

3.2.5 The original Pevsner volume states that the gatehouse '*seems to be of 14th century date*' (Pevsner 1967, 86), while the revised states more strongly that it is 14th century and in use as a garage (Hyder and Pevsner 2010, 217). The recent listing also suggests it is 14th century in date, that it was in used as a garage by the time of the listing survey in 1984 and that the roof had been renewed in 1970 (Historic England 2018a; *Appendix 1*).

3.2 Map and Image Regression

3.2.1 **Introduction:** although there are early, typically county-wide, maps, such as on Donald's map of 1774, that include the area they are generally very small scale and of limited use in interpreting a single building. The site is also not shown on the relevant enclosure map. The only available maps that are detailed enough are therefore the Ordnance Survey maps of the area, which appear in the late 19th century. While there are numerous early images of Calder Abbey in existence few show the gatehouse, but those that could be discovered are also included in the map regression.

3.2.2 **View of Calder Abbey, c1730:** this image of Calder Abbey by Matthias Read is considered by Loftie to date to c1710 (Loftie 1886, 477). The original is now held at Abbot Hall Art Gallery and is now considered to be more likely to date to c1730, the point where the estate was acquired by John Tiffin (Historic England 2018b; the original is reproduced in Burkett and Sloss 1995, plate 6, and see page 45). It is of uncertain accuracy but appears to show the east end of gatehouse on its right hand edge. This clearly depicts the large arched opening, apparently still open, with the window above. What is also of interest is that the adjoining buildings to the north and east are not present but there is a tall boundary running to the east and possibly another running to the north.

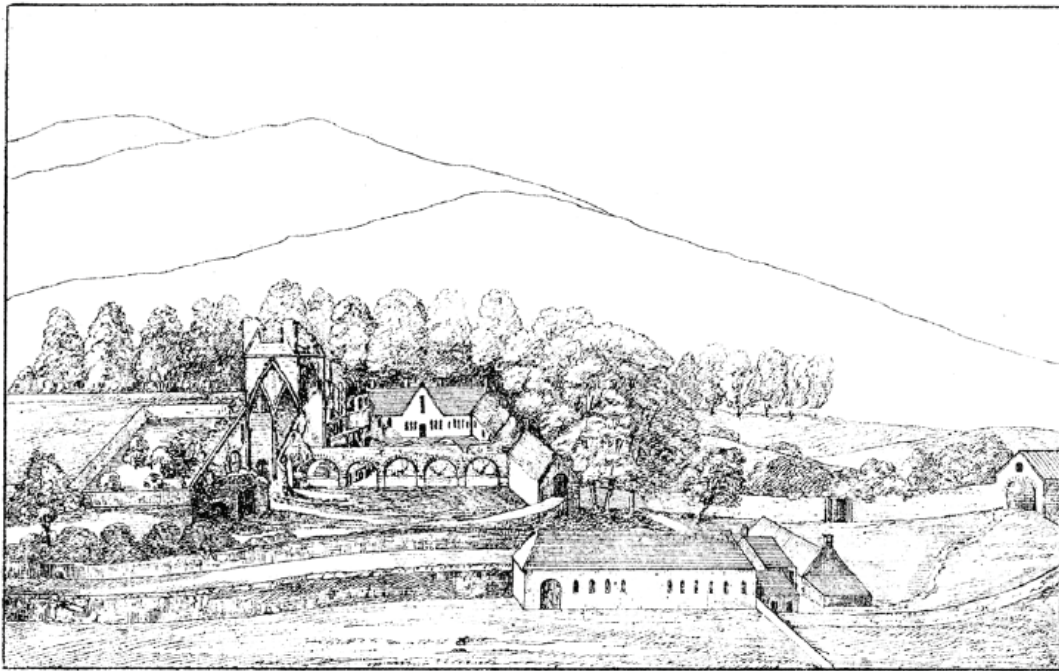


Plate 1: Image of Calder Abbey c1730, reproduced by Loftie (1886)

3.2.3 **Plan of Calder Abbey, 1788:** this plan was evidently produced during the ownership of Joseph Tiffin and shows many of the outbuildings now extant to the north of the gatehouse as extant, but not those immediately adjoining it. Curiously, despite this plan being very detailed, the gatehouse itself is not shown although the space in which it would stand is easily identifiable. Given that it is clearly present on the earlier image and on the later maps it seems unlikely that it simply did not exist in 1788. This map perhaps therefore suggests that at this time it was roofless and so was not depicted.

3.2.4 **Ordnance Survey, 1867:** the earliest Ordnance Survey map of the area was the 1: 10,560 map published in 1867. The scale means it is not as detailed as those that come after it but it is possible to make out the gatehouse, at the end of a linear block of buildings running north-east/south-west. It is clear that by this date it has a range of additions attached to it, on the south and east sides (Plate 2).

3.2.5 **Ordnance Survey, 1894:** although published in 1894 this map was surveyed in 1860 and so shows broadly the same information as that published in 1867 (Plate 3; cf. Plate 2). However, the larger scale makes it apparent that the addition to the south is a glasshouse.

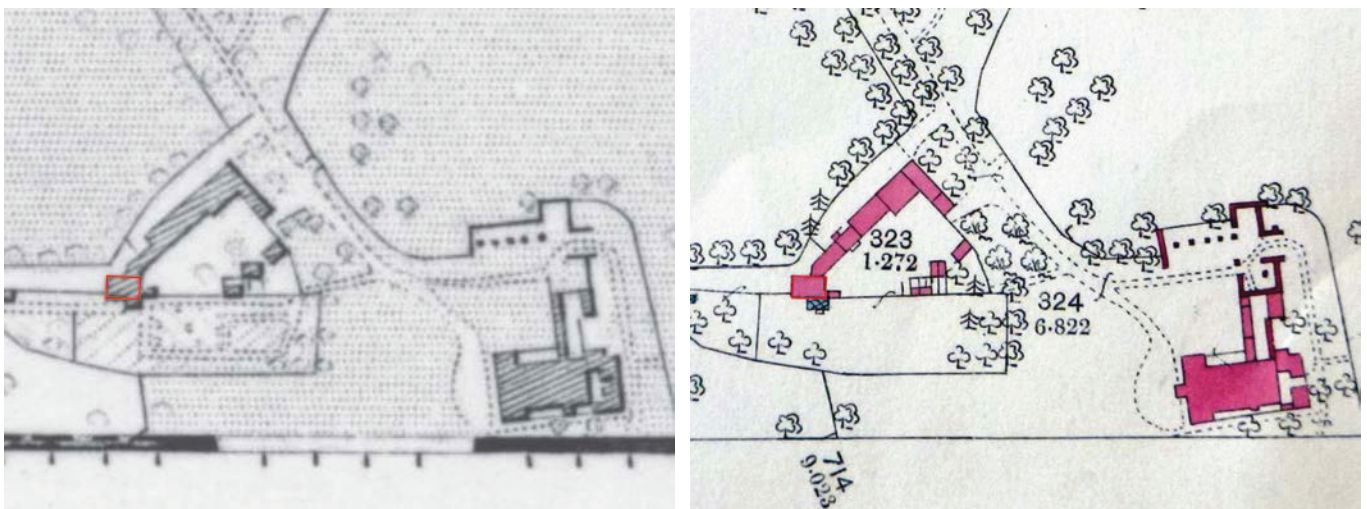


Plate 2 (left): Extract from the Ordnance Survey map of 1867

Plate 3 (right): Extract from the Ordnance Survey map of 1894

3.2.6 **Sketch, 1886:** a sketch of the gatehouse, apparently signed 'JRL' accompanies Loftie's second account of the remains of Calder Abbey (Loftie 1886) (Plate 4). There are clearly some discrepancies in terms of the dimensions of the building compared to later views (see Plate 5 and Plate 8) but some important details are apparent. Firstly, the arched opening on the east side has clearly been largely blocked by this date leaving a smaller doorway. Secondly, the chimney on the south-east corner is shorter than it is now and as it is depicted in later images, while the building attached to the north side was clearly a stable or animal housing. The building otherwise appears much as it does today.

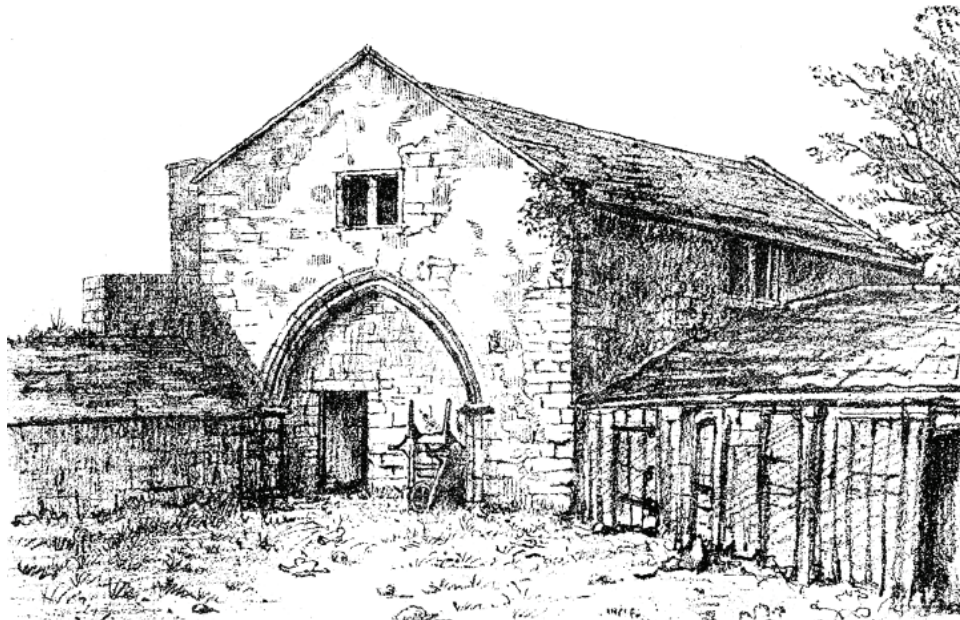


Plate 4: Sketch of the gatehouse by 'JRL' reproduced by Loftie (1886)

3.2.7 **Sketch, 1889:** a pencil sketch by an unknown artist dated October 1889 is present in the archives in Carlisle (CAC(C) DX 2114/1 c1892-1894). Again there are some inaccuracies in the drawing, which has made the building appear taller and thinner than it actually is, but this drawing otherwise shows a number of features of interest. While it is apparent that the building has changed relatively little since the previous sketch was produced it does show that the original arched gateway on the east side was still mostly blocked leaving a smaller doorway (Plate 5). In addition, the slope of an outshut on the south side of the gatehouse is just visible, confirming the presence of an adjoining building, as shown on the early plans.



Plate 5: Sketch of the gatehouse dated 1889 (CAC(C) DX 2114/1 c1892-1894)

3.2.8 **Ordnance Survey, 1899:** this shows essentially the same information as the earlier map published in 1894 (Plate 6; cf. Plate 3).

3.2.9 **Ordnance Survey, 1925:** this map shows a broadly similar arrangement to the previous ones, although the glasshouse attached to the south side of the gatehouse has clearly become slightly larger and additional glasshouses have been built in the gardens to the west (Plate 7; cf. Plate 6).

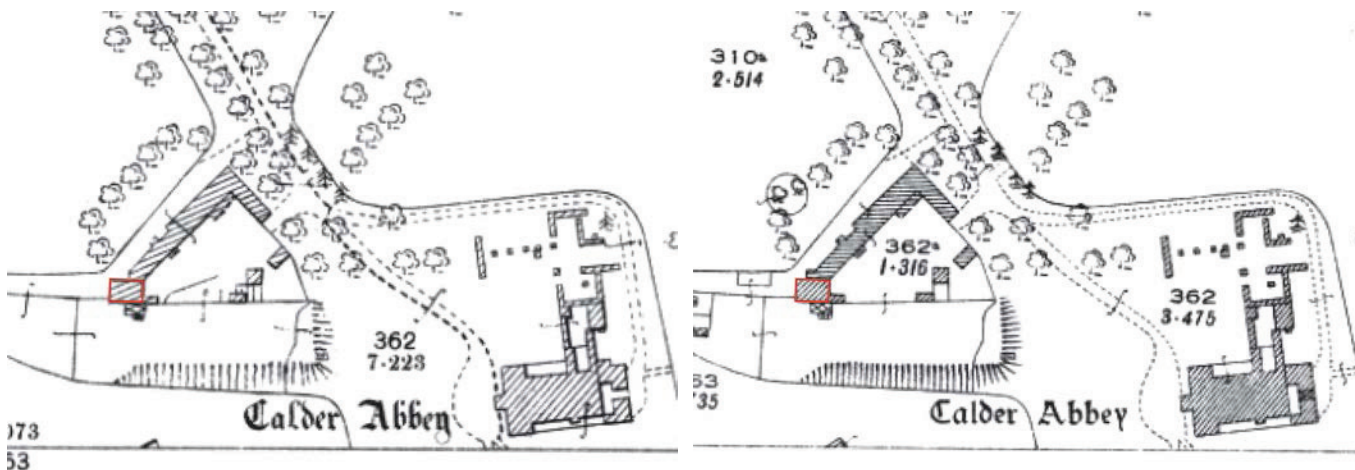


Plate 6 (left): Extract from the Ordnance Survey map of 1899

Plate 7 (right): Extract from the Ordnance Survey map of 1925

3.2.10 **Photograph, c1920s:** a photograph held in the Cumbria Image Bank shows the gatehouse from the east in what is thought to be the 1920s (Cumbria Image Bank 2018; ref ct12356). It is remarkable how little the building has apparently changed since the production of the earlier sketch (Plate 8; cf. Plate

5), although it is apparent that the site was somewhat neglected by this date as the adjoining yard is very overgrown.



Plate 8: Photograph of the gatehouse from the 1920s (Cumbria Image Bank 2018)

3.2.11 **Summary:** it is evident from the cartographic sources that by at least 1860 a number of buildings had been built against the former gatehouse, comprising a long range including a stable block or animal housing to the north, a glasshouse to the south, and another outbuilding to the east. The latter of these elements are clearly visible in two early images of the building, which also demonstrate that the original east door had been largely blocked with stone by at least 1889 with only a small door remaining.

4. Watching Brief

4.1 Introduction

4.1.1 The groundworks comprised the excavation nine pits, typically 0.7m square and all 0.7m deep, although one (**Pit 9**) ended up being c1.5m long due to initially being mislocated, but the north half was only excavated to a depth of approximately 0.1m-0.2m. In each case the pit was excavated through the cobbled floor surface, which was present throughout the building (Plate 9). The excavation was entirely carried out by hand, with spoil deposited in a trailer on site for removal.



Plate 9: Pre-excitation view of the cobbles in the area of Pit 4, taken from the south-east

4.2 Results

4.2.1 **Pit 1:** the cobbles of the current floor (**100**) were removed and were found to be 0.1m thick. They were set in a very loose dark reddish orange sand (**101**), with 10% rounded gravel, which was c0.1m thick. Below this was a more compacted dark reddish slightly grey deposit with lots of lime, some mussel shell and occasional rounded/sub-angular cobbles (**102**), c0.3m thick. Below this was a firm orange gritty clay natural with rounded cobbles (**103**). Along the south side was a possible plinth of the wall, which was 0.2m wide, and 0.2m tall (Plate 10).

4.2.2 **Pit 2:** the cobbles (**200**) were set on top of loose orange sand (**201**), with a more compacted layer beneath, which was 0.1m thick, and contained lime, brick, and fine-grained slate fragments in sandy clay 0.1m thick (**202**). There was an earlier cobbled surface below this (**203**), which comprised larger flatter cobbles but was again little more than 0.1m thick (Plate 11). Below this was a layer containing lots of loose lime mortar (**204**), 0.1m-0.15m thick. This lay over the natural mid orange gravelly clay (**205**) (Plate 12). There was a pad stone for the door jamb in the west wall in the north-west corner of the pit, below deposit **201**.



Plate 10 (left): Pit 1 fully excavated showing the plinth below the south wall, viewed from the north

Plate 11 (right): The earlier cobble surface (203) in Pit 2, viewed from the north



Plate 12 (left): Pit 2 fully excavated, viewed from the east

Plate 13 (right): Cobble floor 302 and plinth in Pit 3, viewed from the north

4.2.3 **Pit 3:** the cobbles (300) lay on top of loose orange sand (301), beneath which was a compacted dark red sandy clay with some mortar and rounded cobbles (302) and parts of a cobbled floor 0.1m – 0.2m thick (Plate 13). There is a possible plinth or footing for the door jamb on the north side. Below this was a more definite layer of cobbles (303), 0.2m thick (Plate 14), over a layer of loose lime with roofing slate (very fine grained grey material) (304) 0.15m thick, with natural dark orange gravelly clay below (305) (Plate 15).

4.2.4 **Pit 4:** the cobbles (400) lay on loose orange sand (401) c0.1m thick. Below this was a more compacted greyish brown layer with lots of lime, with 20% cobbles and 0.2m thick (402). Below that was the natural firm mid orange gritty clay (403) (Plate 16). The footings for the north wall were seen to be 0.25m below the floor surface.



Plate 14 (left): Cobbled surface 303 and plinth in Pit 3, viewed from the north

Plate 15 (right): Pit 3 fully excavated, viewed from the south



Plate 16: Pit 4 fully excavated, viewed from the south

4.2.5 **Pit 5:** the cobbles (**500**) lay on top of a loose fine orange sand (**501**), within which was a lump of bitumen. On the west side, below **501**, was a layer of handmade bricks (**502**) extending out of the side of the trench (Plate 17), presumably part of a small area of flooring. These were laid on a layer of loose orange sandy clay containing lots of lime (**503**), with some very fine-grained roofing slate, as in **Pit 2**. The dressed blocks in the wall extend to the base of the footing were 0.3m below the floor surface (Plate 17). Layer **503** was on top of the natural mid-dark orange gravelly clayey sand (**504**) (Plate 18).

4.2.6 **Pit 6:** the cobbles (**600**) lay on top of loose orange sand (**601**) which was 0.1m thick, which in turn lay on top of a compacted layer of darker orangey brown rounded gravel, becoming darker with depth (**602**) (Plate 19). It was less than 0.1m thick, and lay on a layer of lime-rich gravelly clay (**603**), with rounded gravels, 0.1m thick. On the north side of the trench was a deposit of soft sand with 2% rounded cobbles (**605**), which was actually the backfill of a linear cut with a narrow bore iron pipe in the bottom

[604] (Plate 20). Cut **604** was broadly U-shaped, at least 0.4m wide at the top and 0.4m deep. It cut through a compacted lime- and cobble-rich deposit (**606**), which was dark greyish orange and 0.3m-0.4m thick. This lay on top of the natural dark brownish orange sandy rounded gravel (**607**) (Plate 21).



Plate 17 (left): Brick layer 502 and dressed blocks in wall footing in Pit 5, viewed from the north

Plate 18 (right): Pit 5 fully excavated, showing brick layer 502 in section, viewed from the east



Plate 19 (left): Deposit 602 in Pit 6, viewed from the south

Plate 20 (right): Pipe cut 604 and deposit 606 following excavation in Pit 6, viewed from the north



Plate 21: Pit 6 fully excavated, showing pipe within pipe cut 604, viewed from the east

4.2.7 **Pit 7:** the cobbles (700) were set in loose sand (701) containing pieces of polystyrene and timber, c0.1m thick. Below this was deposit 702, a layer comprising large sandstone blocks and lime mortar, 0.2m-0.3m thick (Plate 22). One of the blocks in deposit 702 extended below the footing of the wall to the north, at a depth of 0.25m below the floor surface (Plate 23). Deposit 702 lay on top of natural mid-orange gravelly clay and pebbles (703) (Plate 23).



Plate 22 (left): Deposit 702 in Pit 7, viewed from the south

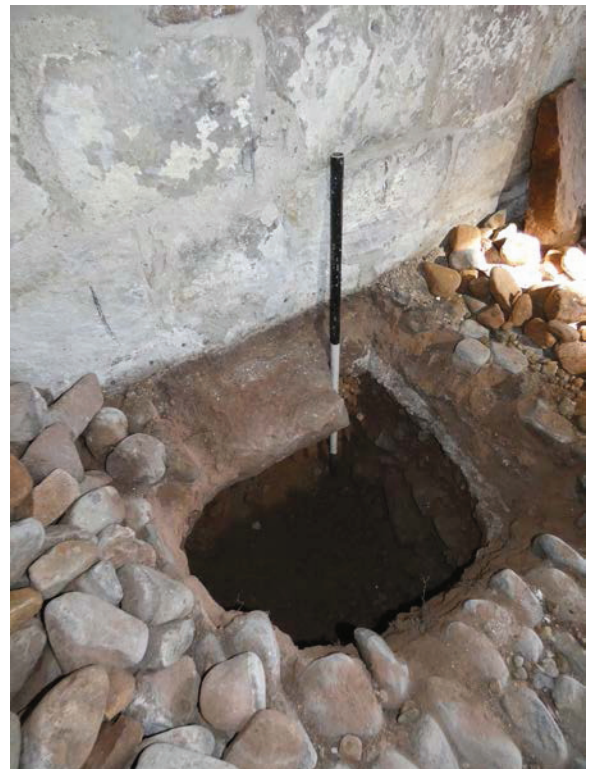


Plate 23 (right): Pit 7 fully excavated, viewed from the south-west

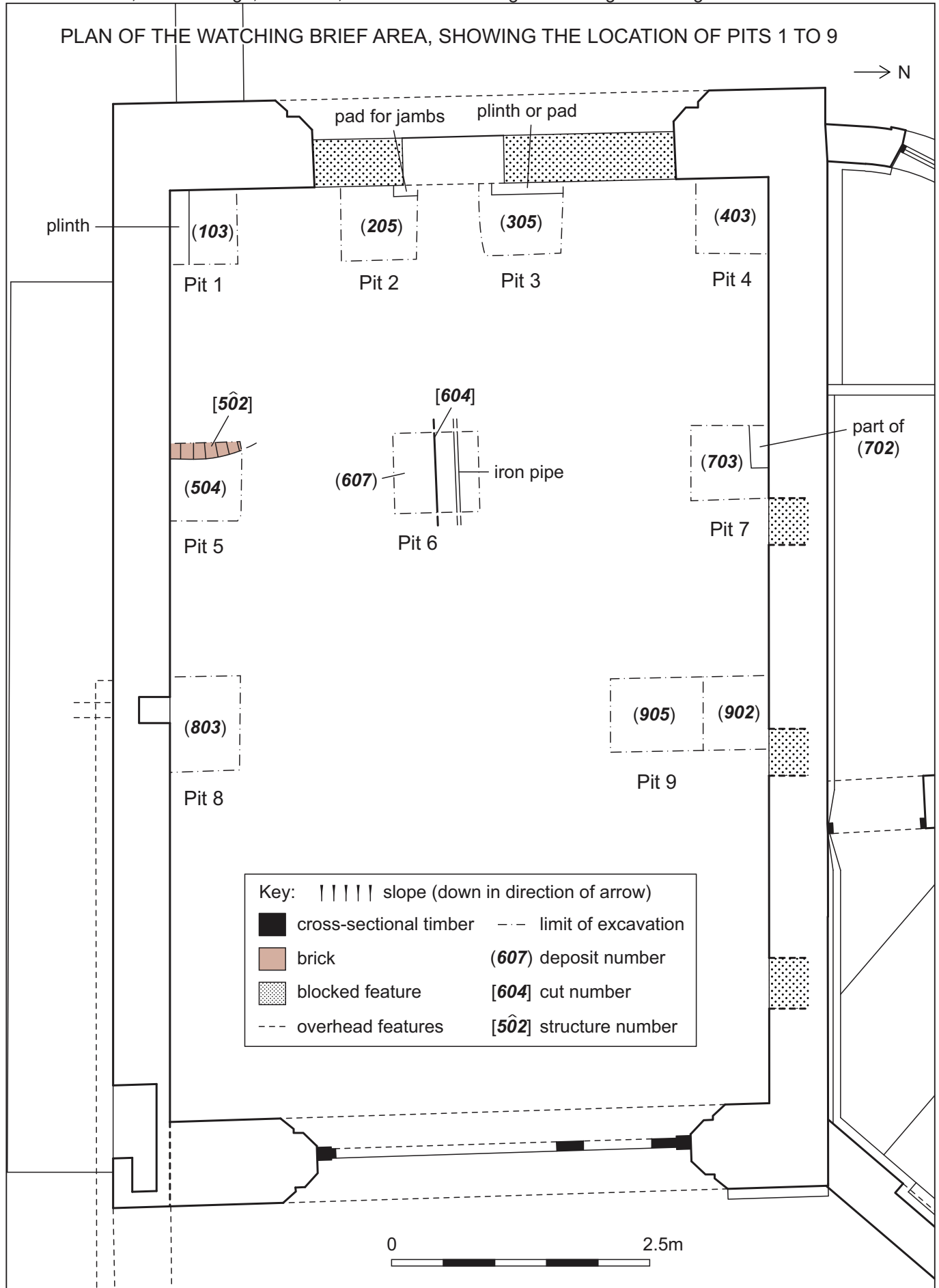
4.2.8 **Pit 8:** the cobbles (**800**) were removed, and below them was a loose soft orange sand (**801**) less than 0.1m thick. This in turn lay on top of a layer of slightly firmer and darker gritty sand (**802**) with fragments of grey fine-grained slate, potash, dressed red sandstone, and iron concretions/slag, c0.3m thick. This lay on top of a natural dark brown loose gravel (**803**). The dressed blocks of the wall extended approximately 0.3m below the floor surface and there was an approximately 0.2m square hole cut into one of them that extended back 0.3m into the wall (Plate 24).

4.2.9 **Pit 9:** the cobbles (**900**) lay on a deposit of loose soft sand (**901**), less than 0.1m thick. Below this was a compacted dark greyish red deposit with lots of gravel and lime (**902**) and lumps of dressed red sandstone. This pit was initially dug to close to the north wall and so was extended to the south. Layer **902** also had some of the fine-grained slate within it and was 0.1m thick. Below this was a looser darker greyish brown deposit, c0.1m-0.15m thick, with lime and charcoal (**903**) and post-medieval pottery. Below this was another layer of concreted mid orange sandy clay with 30% rounded cobbles and gravel (**904**) and some dressed sandstone fragments. This deposit was 0.1m-0.15m thick, and lay on top of the natural mid orange sandy rounded gravel (**905**), with a patch of mid brown silt on the north side (Plate 25).



Plate 24 (left): Pit 8 fully excavated, showing the hole in the wall, viewed from the north

Plate 25 (right): Pit 9 fully excavated, viewed from the east



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Figure 2: Plan of the watching brief area, showing the location of Pits 1 to 9

4.3 Finds

4.3.1 **Introduction:** a total of 12 finds were recovered during the watching brief from the deposits underlying the cobbled floor and the sand bedding for the cobbles, mainly comprising roofing slate fragments (five fragments), all of which were fine-grained grey slate, one of which had a peg/nail hole in it.

4.3.2 **Pottery:** a single fragment black-glazed red earthenware with a strap handle terminal was recovered from context **903**. While such pottery is typically difficult to date the fine nature and form is suggestive of a late 17th to 18th century date.

4.3.3 **Iron:** a corroded nail was recovered from context **503** and a concreted lump from context **903**. Neither are closely dateable without further investigation but they are likely to be post-medieval in date.

4.3.4 **Animal bone:** a complete carpometacarpus was recovered from **903**. This bone is from the tip of a bird's wing (the species was not identified).

4.3.5 **Industrial residue:** a fragment of potash was recovered from context **802** and cinders (burnt coal or coke) from context **903**. Again these are difficult to date but are likely to be post-medieval in date; potash was produced during the burning of plant matter, typically bracken in this area, and was used in various industrial processes and as a fertiliser.

4.3.6 **Stone:** six fragments of roof slate were recovered from three contexts (**202**, **503** and **903**; see examples in Plate 26 and Plate 27). A visual inspection of the slate indicated that it was all of a similar material, most closely resembling that extracted from the Highland Boundary quarries in Central Scotland, which stretch from Arran in the West to Dunkeld in the east. Three samples of the slate were examined using X-ray Diffraction (XRD) and compared to material from Bute. This revealed that the samples from Calder Abbey are not exactly the same as those from Bute and so, while they are still likely to be from the Highland Boundary group, it is not possible to more accurately identify where without further analysis.



Plate 26 (left): Slate recovered from context 203

Plate 27 (right): Slate fragments recovered from context 503, including piece with peg hole

5. Discussion and Conclusion

5.1 Discussion

5.1.1 The relatively limited nature of the groundworks inevitably means that it is difficult to provide a detailed interpretation of the results of the watching brief, although the depth of excavation means that in all of the pits the full range of deposits above the natural ground were encountered. The general lack of dating evidence makes phasing of the deposits difficult and it is clear that while there was some correlation in the form of the deposits between the different pits, direct comparisons could not always be made. Nevertheless, five phases could be identified.

5.1.2 **Phase 1 – Natural:** the earliest deposits in each pit were represented by the naturally occurring gravelly, occasionally sandy, clay (locally known as ‘pinnel’), which varied slightly in colour but was typically a dark orange (**103, 205, 305, 403, 504, 607, 703, 803** and **905**). In **905** it had a slight variation in the form of a patch of fine mid-brown silt.

5.1.3 **Phase 2 – medieval?:** while no deposits of certain medieval date were encountered and no medieval finds were recovered, some evidence relating to the fabric of the medieval gate house was identified. This was primarily that in general the foundations seem to have consisted of very little, with the dressed blocks continuing directly onto the natural ground. It was apparent that in places there was a plinth of sorts (**Pit 1**) but that this was not continuous, but also that the building has seemingly seen more movement on the south side, where the dressed blocks were deeper below the current floor surface. Also of interest was the square hole cut into these blocks revealed in **Pit 8**; this perhaps originally held a timber joist, which would indicate that the building originally had a timber floor raised off the ground. Given the functional and low-status nature of the building, when compared to the rest of the Abbey, this seems perhaps unlikely but it would explain the lack of a consistent early floor surface.

5.1.4 **Phase 3 – medieval?/post-medieval:** in every pit there was at least one deposit of mixed material that probably represented former floor surfaces and associated bedding layers. In some cases these were very obvious – the cobbles in **Pit 2 (203)** and **Pit 3 (302 and 303)**, the bricks in **Pit 5 (502)**, and perhaps the stony deposit in **Pit 7 (702)**, with bedding layers most likely represented by the numerous lime-rich deposits (**204, 304, 503** and **903**). However, a number of other deposits also probably represent more *ad hoc* attempts at forming floors or at least creating a compacted surface (**103, 204, 402, 603, 802, 902** and **904**) although these could equally represent material from one or more phases of demolition or rebuilding. Dating these deposits is difficult given the lack of diagnostic finds, but the pottery from **903** is clearly post-medieval in date, so this phase probably represents repeated attempts to provide a solid floor in the building after it was converted for use as a cow house in the late 18th to early 19th century (Greenlane Archaeology 2018, 32). However, the dating of the pottery from **903** suggests some of this activity took place in the 17th to 18th century, which corresponds to the conclusions of the earlier building recording, which suggested that some extensive rebuilding associated with the insertion of the (re-used) mullion windows took place before the early 18th century (*ibid*). That these deposits might be earlier than the 18th or 19th century changes interpreted in the building recording is also suggested by the presence of pads in **Pit 2** and **Pit 3** apparently supporting the door jambs of the doorway included in the blocking of the original west entrance. These were noticeably on top of all of the underlying surface deposits, suggesting that the deposits are much earlier. The fragments of roofing slate recovered from deposits belonging to this phase are of particular interest, even though they cannot be specifically dated, because they appear to be of a type of material that originated in Scotland, specifically the quarries of the Highland Boundary (see *Section 4.3.6*).

5.1.5 **Phase 4 – late post-medieval:** in **Pit 6** the earlier deposits had been cut through for the insertion of an iron pipe [**604**] the cut of which was filled by loose sand (**605**), which had then been overlain by a compacted deposit (**602**). This is presumably late 19th or early 20th century.

5.1.4 **Phase 5 – modern:** the upper most deposits in each pit comprised the current cobbled surface (**100, 200, 300, 400, 500, 600, 700, 800** and **900**), which was bedded in a deposit of loose orange fine-grained sand (**101, 201, 301, 401, 501, 601, 701, 801** and **901**). This appears to be very recent; the presence of polystyrene within **701** certainly seems to demonstrate this, although this could be intrusive.

5.2 Conclusion

5.2.1 The relatively limited investigation has revealed that deposits of some archaeological significance are present within the building. However, the nature of the groundworks and the lack of dateable finds makes understanding them difficult. It is likely that many of them represent former floor surfaces, some well-constructed others more *ad hoc*, and they are all likely to be of post-medieval date, representing the period in which the former gatehouse was converted into an agricultural building following the Dissolution. The lack of definite medieval deposits and an original floor is perhaps explained by the square hole revealed cut into the stonework in the south elevation in **Pit 8**, which might indicate that there was originally a timber floor raised off the ground. If the fragments of roofing slate recovered during the watching brief are indeed from Scotland this is potentially quite significant to the wider understanding of the abbey at Calder and its wider connections. Calder is not known to have any specific land holdings or granges in Scotland, although the site of Calder was granted to Furness by William, nephew of King David of Scotland (West 1774, 62), so it is conceivable that it also included some land in Scotland. In addition, the mother house of Calder Abbey, Furness Abbey, also had another daughter house at Saddell on the Mull of Kintyre (Wood 1998, 24). There is no particular reason to associate the stone with this location, although it is in the correct general area, close to Bute and Arran and on the western seaboard and so therefore with good connections to the west coast of Cumbria.

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Appendix 1: Project Design

Archaeological Watching Brief Cover Sheet and Project Design

| The Site | |
|-----------|--|
| Site Name | The Gatehouse, Calder Bridge, Gosforth |
| County | Cumbria |
| NGR | 304959 506395 |

| Client | |
|--------------------------|-------------------|
| Client Name | Mr and Mrs Clarke |
| Client's architect/agent | Martin Howell |

| Planning | |
|--|--|
| Pre-planning? | No |
| Planning Application No. | 4/18/0426/3 |
| Plans (e.g. conversion, extension, demolition) | Refurbishment of the gatehouse |
| Condition number | On Scheduled Monument Consent |
| Historic England | Andrew Davison |
| Local Planning Authority | Copeland Borough Council |
| County Planning Archaeologist | Jeremy Parsons |
| Groundworks subject to watching brief | Excavation for installation of posts for mezzanine floor |

| Archiving | |
|---|------------------------|
| Relevant Record Office(s)/Archive Centre(s) | Whitehaven |
| Relevant HER | Cumbria |
| Relevant museum | The Beacon, Whitehaven |



Client: Mr and Mrs Clarke

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1. Introduction

1.1 Project Cover Sheet

1.1.1 All the details specific to this project are set out on the cover sheet of this project design. The project design itself covers all elements that are involved in an archaeological watching brief.

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 worked continuously in commercial archaeology since 2000 and 1999 respectively, 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. The watching brief will be carried out according to the Standards and Guidance of the CIfA (CIfA 2014a).

1.3 Staff

1.3.1 **Dan Elsworth (MA (Hons), ACIfA)** 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 managed many recent projects in Cumbria and Lancashire including several archaeological building recordings and watching briefs. He is very experienced at building recording, having carried out numerous such projects, mainly in Cumbria and Lancashire.

1.3.2 **Tom Mace (BA (Hons), MA, MIfA)** 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. He currently works on a broad range of projects and is also responsible for the production of all illustrations for reports and publications as well as some post-excavation assessments. He is a Member of the Chartered Institute for Archaeologists.

1.3.3 **Jo Dawson (MA (Hons), ACIfA)** graduated from University of Glasgow in 2000 with a joint honours degree in Archaeology and Mathematics, and since then has worked continuously in commercial archaeology. Her professional career started at Glasgow University Archaeological Research Division (GUARD), following which she worked for Headland Archaeology, in Edinburgh, and then Oxford Archaeology North, in Lancaster. During this time she has been involved in a range of different archaeological projects. She has extensive experience of both planning and pre-planning projects, and has undertaken assessments of all sizes. Since establishing Greenlane Archaeology in 2005 she has managed numerous projects in south Cumbria, including desk-based assessments and evaluations. She currently mainly carries out quality control of reports and post-excavation assessments. She is an Associate member of the Chartered Institute for Archaeologists.

1.3.4 **Specialists:** Greenlane Archaeology have a range of outside specialists who are regularly engaged for finds and environmental work. Engagement is dependent upon availability, but specialists typically engaged are as follows:

| Specialism | Specialist |
|--|--|
| Animal bone | Naomi Sewpaul |
| Ceramic building material, medieval and Roman | Phil Mills |
| Conservation | York Archaeological Trust |
| Clay tobacco pipe | Peter Davey (or Tom Mace in house for smaller assemblages) |
| Flots | Headland Archaeology, Edinburgh |
| Human bone | Malin Holst |
| Industrial residue | Gerry McDonnell |
| Medieval pottery | Chris Cumberpatch for assemblages from the North East of England |
| Miscellaneous find types, for example Roman glass and medieval and earlier metalwork | Chris Howard-Davis |
| Prehistoric pottery | Blaise Vyner |
| Radiocarbon dates | Scottish Universities Environmental Research Centre |
| Roman pottery | Ruth Leary |
| Samian | Gwladys Monteil |
| X-ray of metal finds | York Archaeological Trust |

2. Objectives

2.1 Desk-Based Assessment

2.1.1 Where an archaeological desk-based assessment has not already been carried out in a previous phase of work, the objective will be to examine early maps of the site and any other relevant primary and secondary sources in order to better understand its dating and development, and set it in its historic context.

2.2 Watching Brief

2.2.1 To carry out an archaeological watching brief on the relevant areas of groundworks, in order to identify any and record surviving any archaeological remains that are revealed.

2.3 Report

2.3.1 To produce a report detailing the results of the watching brief.

2.4 Archive

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

3. Methodology

3.1 Desk-Based Assessment

3.1.1 Where an archaeological desk-based assessment has not already been carried out in a previous phase of work, an examination of various sources, particularly early maps and plans relating to the site, will be carried out, including other relevant primary and secondary sources. The sources that will be used as part of the desk-based assessment will include:

- **Record Office/Archive Centre:** the majority of original and secondary sources relating to the site are deposited in the relevant Record Office(s) or Archive Centre(s), as specified in the cover sheet of this project design. Of principal importance are early maps of the site. These will be examined in order to establish the development of the site, date of any structures present within it, and details of land use, in order to set the site in its historical, archaeological, and regional context. In addition, any details of the site's owners and occupiers will be acquired where available;
- **Online Resources:** where available, mapping such as Ordnance Survey maps and tithe maps will be consulted online;
- **Greenlane Archaeology:** Greenlane Archaeology's office library includes maps, local histories, and unpublished primary and secondary sources. These will be consulted where relevant, in order to provide information about the history and archaeology of the site and the general area.

3.2 Watching Brief

3.2.1 The relevant area of 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.

3.2.2 The watching brief methodology will be as follows:

- All excavation will be carried out under supervision by staff from Greenlane Archaeology. Should the excavation technique utilised be deemed liable to have an adverse effect on any archaeological deposits that might be present an alternative method will be sought, where feasible;
- 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, 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 loose human bones discovered during the watching brief will be retained and removed from site for specialist assessment before being returned in order to be reinterred;
- 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 the Planning Archaeologist so that the need for further work can be confirmed. Any additional work will be carried out following discussion with the Planning Archaeologist and subject to a new project design, and the ensuing costs will be agreed with the client. It is considered unlikely in this case that the excavation will be deep enough to reach the significant archaeological deposits encountered during a previous period of archaeological investigation.

3.3 Report

3.3.1 The results of the watching brief will be compiled into a report, which will provide a summary and details of any sources consulted. It will include the following sections:

- 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 watching brief, including finds and samples;;
- Discussion of the results including phasing information;
- Bibliography;
- Illustrations at appropriate scales including:
 - a site location plan related to the national grid;
 - a plan showing the location and extent of the area subject to archaeological watching brief;
 - plans and sections of any features discovered during the watching brief;
 - photographs of any features encountered during the watching brief;

- copies of selected historic maps and plans of the site relevant to the understanding of its development.

3.4 Archive

3.4.1 The archive, comprising the drawn, written, and photographic record of any deposits of archaeological interest and/or working shots identified during the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this project design, together with a copy of the report. The archive will be compiled according to the standards and guidelines of the ClfA (ClfA 2014b). In addition details 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.

3.4.2 A copy of the report will be provided to the client and a copy will be provided for the relevant Historic Environment Record, as detailed on the cover sheet of this project design.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project on the date specified on the Order Form, or at another date convenient to the client. It is envisaged that the elements of the project will be carried out in the following order:

- **Task 1:** rapid desk-based assessment (where this has not already been carried out as a previous phase of archaeological work);
- **Task 2:** archaeological watching brief;
- **Task 3:** production of draft report including illustrations;
- **Task 4:** feedback on draft report, editing and production of final report;
- **Task 5:** finalisation and deposition of archive.

5. Other matters

5.1 Access and clearance

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s). It is assumed that the watching brief will be able to be undertaken without obstruction. Greenlane Archaeology reserves the right to increase the price if problems with access result in delays to the work.

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, and 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

ClfA, 2014a *Standard and Guidance for an Archaeological Watching Brief*, Reading

ClfA, 2014b *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*, Reading

Client: Mr and Mrs Clarke

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Appendix 2: Summary Context List

| Context | Type | Description | Interpretation |
|---------|-----------------------|---|---------------------------------|
| 100 | Structure | Cobbles | Cobbled surface |
| 101 | Deposit | Loose very dark reddish orange sand with 10% rounded gravel, c0.1m thick | Bedding for cobbles |
| 102 | Deposit | Compacted dark reddish slightly grey deposit with lots of lime, some mussel shell and occasional rounded/sub-angular cobbles, c0.3m thick | Dumped deposit or rough surface |
| 103 | Deposit | Firm orange gritty clay with rounded cobbles | Natural |
| 200 | Structure | Cobbles | Cobbled surface |
| 201 | Deposit | Loose sand | Bedding for cobbles |
| 202 | Deposit | Compacted sandy clay with lime, brick, and slate flags, 0.1m thick | Dumped deposit or rough surface |
| 203 | Structure | Larger flatter cobbles than 200 | Cobbled surface |
| 204 | Deposit | Loose lime mortar, 0.1m-0.15m thick | Bedding for cobbles? |
| 205 | Deposit | Mid orange gravelly clay | Natural |
| 300 | Structure | Cobbles | Cobbled surface |
| 301 | Deposit | Loose sand | Bedding for cobbles |
| 302 | Deposit/ structure | Compacted dark red sandy clay with some mortar and rounded cobbles and parts of a cobbled floor, of perhaps two layers 0.1m – 0.2m thick | Dumped deposit or rough surface |
| 303 | Structure | Cobbles 0.3m deep, 0.2m thick | Cobble floor |
| 304 | Deposit | Loose lime with roofing slate (very fine grained grey material), 0.15m thick | Dumped deposit or rough surface |
| 305 | Deposit | Dark orange gravelly clay | Natural |
| 400 | Structure | Cobbles | Cobbled surface |
| 401 | Deposit | Loose sand c0.1m thick | Bedding for cobbles |
| 402 | Deposit | Compacted greyish brown layer with lots of lime, with 20% cobbles and 0.2m thick | Dumped deposit or rough surface |
| 403 | Deposit | Firm mid orange gritty clay | Natural |
| 500 | Structure | Cobbles | Cobbled surface |
| 501 | Deposit | Loose fine orange sand with a lump of bitumen within it | Bedding for cobbles |
| 502 | Structure | Handmade bricks extending out of the side of the trench | Floor |
| 503 | Deposit | Mainly orange loose sandy clay with lots of lime, with some roofing slate, very fine grained as in Pit 2 | Dumped deposit or rough surface |
| 504 | Deposit | Mid-dark orange gravelly clayey sand | Natural |
| 600 | Structure | Cobbles | Cobbled surface |
| 601 | Deposit | Loose orange sand 0.1m thick | Bedding for cobbles |
| 602 | Deposit | Compacted darker orangey brown rounded gravel, becoming darker, less than 0.1m thick | Dumped deposit or rough surface |
| 603 | Deposit | Lime-rich gravelly clay, with rounded gravels, 0.1m thick | Dumped deposit or rough surface |
| 604 | | Linear cut with a narrow bore metal pipe in the bottom, broadly U-shaped, at least 0.4m wide at the top and 0.4m deep | Cut for iron pipe |
| 605 | Deposit | Soft sand with 2% rounded cobbles | Backfill of 604 |
| 606 | Deposit | Compacted lime- and cobble-rich deposit, dark greyish orange, 0.3m-0.4m thick | Dumped deposit or rough surface |
| 607 | Deposit | Dark brownish orange sandy rounded gravel | Natural |
| 700 | Structure | Cobbles | Cobbled surface |
| 701 | Deposit | Loose sand with pieces of polystyrene and timber, c0.1m thick | Bedding for cobbles |
| 702 | Deposit | Large sandstone blocks and lime mortar, 0.2m-0.3m thick | Rough surface |
| 703 | Deposit | Mid-orange gravelly clay and pebbles | Natural |
| 800 | Structure | Cobbles | Cobbled surface |
| 801 | Deposit | Loose soft orange sand less than 0.1m thick | Bedding for cobbles |

| | | | |
|------------|-----------|--|---------------------------------|
| 802 | Deposit | Firmer and darker gritty sand with fragments of grey fine-grained slate, potash, dressed red sandstone, and iron concretions/slag, c0.3m thick | Dumped deposit or rough surface |
| 803 | Deposit | Dark brown loose gravel | Natural |
| 900 | Structure | Cobbles | Cobbled surface |
| 901 | Deposit | Loose soft sand, less than 0.1m thick | Bedding for cobbles |
| 902 | Deposit | Compacted dark greyish red deposit with lots of gravel and lime and lumps of dressed red sandstone, and fine-grained non-local slate, 0.1m thick | Dumped deposit or rough surface |
| 903 | Deposit | Loose darker greyish brown deposit, c0.1m-0.15m thick, with lime and charcoal and post-medieval pottery | Dumped deposit or rough surface |
| 904 | Deposit | Concreted mid orange sandy clay with 30% rounded cobbles and gravel and some dressed sandstone fragments, 0.1m-0.15m thick | Dumped deposit or rough surface |
| 905 | Deposit | Mid orange sandy rounded gravel, with a patch of mid brown silt on the north side | Natural |

Appendix 3: Summary Finds List

| Context | Type | Quantity | Description | Date range |
|---------|--------------------|----------|---|--|
| 202 | Stone | 1 | Fine-grained grey slate (roofing?) slate fragment | Medieval – post-medieval |
| 503 | Stone | 2 | Fine-grained grey slate roofing slate fragments, one with a peg/nail hole | Medieval – post-medieval |
| 503 | Fe | 1 | Corroded nail | Not closely dateable |
| 802 | Industrial residue | 1 | Potash? | Not closely dateable |
| 903 | Stone | 2 | Fine-grained grey slate (roofing) slate fragments | Medieval – post-medieval |
| 903 | Stone | 1 | Small chunk of fine-grained white stone (flint or marble?) with greyish core, finished to neat corner with flat surfaces. Thin coating of possible limewash on all surfaces | Not closely dateable |
| 903 | Industrial residue | 1 | Cinder | Post-medieval |
| 903 | Fe | 1 | Iron concretion? | Not closely dateable |
| 903 | Pottery | 1 | Fine black-glazed red earthenware body fragment from hollow-ware vessel with strap handle terminal | Late 17 th – 18 th century |
| 903 | Animal bone | 1 | A complete carpometacarpus from a bird's wing (species not identified); length: 93mm; maximum width at proximal end: 21mm | Uncertain |

Appendix 4: Scheduled Monument and Listed Building Descriptions

Calder Abbey

Scheduled Monument List Entry Number: 1007166

Date first listed: 10-Apr-1915

Date of most recent amendment: 06-May-2015

The monument is centred on NY05110640.

Statutory Address: Calder Abbey, Calder Bridge, Seascale, CA20 1DZ

County: Cumbria

District: Copeland (District Authority)

Parish: St. Bridget Beckermeth

National Park: LAKE DISTRICT

National Grid Reference: NY0511506379

Summary: The upstanding remains, earthworks and buried remains of a medieval Cistercian abbey.

Reasons for Designation: Calder Abbey is scheduled for the following principal reasons:

- * Survival: a substantial proportion of standing medieval fabric survives, including considerable architectural detail of the claustral complex, together with earthworks and below-ground archaeological deposits;
- * Rarity: the 'Monk's Oven' is considered to be a rare survival of a medieval corn drying kiln and is among the best preserved in the country;
- * Potential: a large proportion of the site is undisturbed and unexcavated, including much of the claustral complex, and will therefore hold a high degree of potential for further archaeological investigation;
- * Documentation: Calder Abbey is relatively well documented in historical and archaeological terms, which provide a valuable contribution to our knowledge and understanding of the site.

History: From the time of Augustine's mission to re-establish Christianity in England in AD 597 to the reign of Henry VIII (1509-1547), monasticism formed an important facet of both religious and secular life in the British Isles. Settlements of religious communities, including monasteries, were built to house communities of monks, canons (priests), and sometimes lay-brothers, living a common life of religious observance under some form of systematic discipline. It is estimated that over 700 monasteries were founded in England. They belonged to a wide variety of different religious orders, each with its own philosophy: as a result, they vary in the detail of layout and appearance although all possess the basic elements of church, domestic accommodation, and work buildings.

Calder Abbey was initially a Savigniac foundation but later became a Cistercian monastery. The Savigniac Order developed in France in the early 12th century as a reaction against the corruption and excesses which characterised established orders. The founding house at Savigny in France was established between 1109 and 1112. Their order was based upon the Rule of St Benedict but included greater simplicity of life and seclusion from the secular world. The order of Savigny established 13 houses in England and Wales before being absorbed into the Cistercian order in 1147. Their monasteries were founded on lands so infertile or exposed that the communities were unable to survive. Several moved sites before eventually becoming Cistercian houses. The Cistercians, known as the 'White Monks' from their undyed habits, believed in a life of austerity, prayer and manual labour. They established a total of 62 abbeys in England.

In 1135 a group of twelve monks were sent from Furness Abbey, Barrow-in-Furness, Cumbria, to found the Savigniac abbey at Calder, under the leadership of Abbot Gerald. The land was granted by Ranulf le Meschin, Lord of Copeland who had his seat at nearby Egremont Castle. Its first possessions, confirmed in a papal bull, included a mill, a house, two saltworks in Whitehaven, fisheries of Derwent and Ehen, and pannage for pigs. In 1138 the monks were driven out by Scottish raids and returned to Furness Abbey with their possessions in a cart pulled by eight oxen. Once they arrived there was a dispute; Abbot Gerald was unwilling to resign his abbacy, and they were not admitted. The monks moved to several sites before settling near Coxwold, North Yorkshire, where they established Byland Abbey. In about 1143 a second group of monks led by Abbot Hardred was sent from Furness to

re-founded Calder Abbey, this time successfully. It became Cistercian after the Savigniac Order was united with the Cistercians in 1147.

Initially, at least, Calder Abbey was probably constructed in timber but by 1175 a stone church had been built, of which the Norman west door is the main survivor. Between 1215 and 1240 the abbey was rebuilt in the Early English style by Thomas de Multon of Egremont. It was never a wealthy monastic house. A papal taxation survey in 1291 reveals that its income from 'temporalities' (i.e. possessions other than churches) was £32. By 1314 income had dropped to just £5, probably due to the wars with Scotland raids and a series of bad harvests. In 1535 it is recorded that there were 'gardens, small orchards, close and [a] mill within the precincts', and a survey of the following year shows that its total net income was just over £93 (Thorley 2004, 154).

The Abbey was dissolved in 1536 and purchased by Thomas Leigh who stripped the roofs and sold the contents. The south range of the cloister was altered to form a house, now known as Calder Abbey House. Stone was gradually carted off for use in nearby properties. Eventually the south transept of the church was altered to form a cow-byre and the west gatehouse became a hayloft. The abbey is depicted in a painting of circa 1730 by Matthias Read in Abbot Hall Art Gallery, Kendal, which shows the church and east range largely in its current ruinous condition but with gabled ranges on the south and west side of the cloister, and a barn at the north-west angle of the church. Also shown is: a long rectangular gabled range and two smaller buildings north of the claustral complex; a churchyard or walled garden at the east; the west gatehouse; and a fishpond to the south-west. An estate survey plan of 1788 in Whitehaven Archive Centre depicts the abbey and surrounding land.

Calder Abbey House was re-fronted by the Senhouse family in the 1780s, who diverted the road and planted woods. In the 1840s Mary Senhouse married Thomas Irwin, and together they had the north wing of the house rebuilt, a west porch added, and a new riverside walk created to the parish church at Calder Bridge. In the late C19 part of the abbey ruins were restored by the owner Thomas Rymer, including the west doorway and chapterhouse. Further repairs were carried out to the chapterhouse vault at the beginning of the C21 when an asphalt covering was applied.

INVESTIGATION HISTORY In 1881 a small excavation was undertaken on the site by Dr Parker and Rev. Arthur Loftie when the steps to the west door, part of the pulpitum (chancel screen), the chancel and part of the south transept were excavated. In 1947 some trial-pits were dug on the site of the monastic infirmary, to the south-west of the cloister, by Mr Marlow of the Abbey Estate. A measured survey was carried out in 1985-86 by Cumbria County Council, which identified the earthworks of a former fishpond to the east of the abbey, among other features.

Details

PRINCIPAL ELEMENTS The upstanding remains, earthworks and buried remains of a Cistercian abbey, known as Calder Abbey. It is situated on gently sloping ground at the foot of the Calder River valley, 1km north-east of Calder Bridge.

PRECINCT The monastic precinct at Calder Abbey is considered to have covered about 30 acres. There are no known traces of a precinct boundary, although the west gatehouse remains upstanding. Beyond the gatehouse are the monastic church and cloister and further east (in the field now called 'Abbey Mews') were several other buildings, now surviving as buried remains; the Infirmary, agricultural buildings and mill, as well as the upstanding remains of a corn-drying kiln. The abbey water-supply was obtained by a stone-lined leat from the river to the north-east, which remains intact for a large part of its course.

THE CLAUSTRAL PLAN The ground plan of the claustral complex consisted of a large abbey church at the north and domestic buildings surrounding a cloister immediately south of the nave. In a clockwise direction these comprised: an east range with a book cupboard, chapter house, slype (covered passage), parlour and monks' dorter (dormitory); a south range with a warming house, monks frater (refectory), kitchen and probably a reredorter (communal latrine); and a west range with a cellar. To the east of the east range of the cloister was an infirmary hall.

THE CHURCH The monastic church, which is about 45m long and 25m wide across the transepts, survives as upstanding and buried remains. It is cruciform in plan with an aisled nave, a crossing tower, north and south transepts each with two chapels, and a rectangular chancel. This was a typical Cistercian layout except for the unusual provision of the crossing tower. The church is now roofless but the upstanding remains include part of the west front, the north arcade, crossing tower, the north and south transept, and the west end of the chancel. In common with the rest of the claustral complex, it is built of coursed and dressed red sandstone with a rubble stone core. The north part of the west front remains upstanding to nearly 4m high and includes the west doorway into the nave. It was built in about 1175 and has a round-headed arch of three orders springing from water-leaf capitals on colonnettes. The nave is five bays long with foundations of the pulpitum (chancel screen) in the second bay from the crossing. Only the north arcade, built between 1215 and 1240, remains upstanding. The north and south aisle

walls are no longer visible but will survive as below-ground foundations. The north arcade is formed of five pointed, chamfered arches carried on alternating octagonal and quatrefoil piers with water-holding bases. The third pier from the west is distinguished by zig-zag leaf decoration, which is also seen on a hoodmould at nearby Egremont Castle.

Further north the crossing tower remains upstanding to about 2m above the level of the arches. The arches are twice chamfered with canted responds at the north and south and semi-circular responds resting on brackets at the east and west. The scar of a steeply pitched roof can be seen on the west side of the tower. Further successive scars indicate downsizing over time. The north transept retains the (now blocked) arch of the north chapel arcade, springings of a vaulted ceiling, and an early C13 north doorway; a pointed arch of two moulded orders.

The chancel is cut short at the west reveals of a pair of tall transomed lancet windows. Partial excavation has recorded the footings of the walls beyond. At the west end, near the crossing tower, are four effigies; three C14 recumbent knights in armour and an abbot under an ogee canopy. In the south wall are three sedilia (seats for the clergy) and a pointed doorway leading to the south transept chapel. These are gathered into one composition under trefoil-headed arches.

The south transept has two bays of pointed arches, supported on a central quatrefoil pier, leading into two chapels at the east. Above these arches is a triforium arcade formed of chamfered and pointed arches with large quatrefoils in the spandrels. In the east and west wall of each bay is a set of two lancet windows, and above the latter is a further set of tall trefoil-headed lights. A pointed doorway 2.7m above floor level in the south wall marks the position of the timber night-stair giving access to the dorter and a newel stair in the tower.

EAST RANGE Abutting the south transept is the chapter house. It is approached from the cloister through a pointed doorway of three moulded orders, set between two similar openings containing Y-tracery. That at the north provides access to a small rib-vaulted book cupboard. The chapterhouse was formed of three rib-vaulted bays although only the eastern vault remains intact. In the east wall is a late C13 window with some remains of geometrical tracery. Immediately south of the chapterhouse is a slype and an undercroft. Above them was the dorter (dormitory), lit by a row of lancet windows. It was linked to the monk's night-stair by a passage across the chapterhouse.

SOUTH RANGE The south range originally incorporated the warming house, kitchen, frater, and probably the reredorter. However the remains of this range are now largely incorporated into Calder Abbey House (Grade I listed), which is excluded from the scheduling.

WEST RANGE AND CLOISTER The cloister originally incorporated an open courtyard surrounded by an ambulatory (covered walkway), and the west range provided the monks cellarium (cellar). These buildings are no longer standing but will survive as below-ground foundations. Attached to the north-east angle of the church was a barn that was added in the C16 or C17 and will also survive as below-ground remains. It is shown on the 1788 abbey estate plan.

Immediately south-west of the cloister are the buried remains of another building, recorded as earthworks during a measured survey in 1985-6. It is partly covered by building stone from the abbey.

CEMETERY Immediately to the east of the chancel of the abbey church, in the field now known as Abbey Mews, are the buried remains of the cemetery.

INFIRMARY The monastic infirmary survives as below-ground remains immediately south-east of the claustral complex, within Abbey Mews. Partial excavation has indicated that it is L-shaped in plan with a main range, approximately 37m long and 9m wide, and a projecting south wing. The walls are constructed of freestone masonry and rubble to nearly 1m wide, which indicates that they were dwarf walls carrying a timber superstructure. A doorway is situated at the east end and internally the building is partitioned by cross-walls.

WEST GATEHOUSE The west gatehouse, a C14 building that was converted to agricultural use in the C17 or C18, remains upstanding and is Grade II* listed. It is two storeys high and built of coursed and dressed red sandstone with a gabled slate roof. In the east and west elevations are pointed wagon arches of two chamfered orders. The west arch springs from chamfered imposts but the east arch, now blocked by coursed rubble, is continuously moulded. In the north wall are three small splayed windows, now blocked, to the ground floor and an inserted doorway. At first floor level there are C17 two-light mullioned windows in each side. Internally there are two king post roof trusses and a C20 timber gallery at the west end. The former byre range (now a house) attached to the north, the boundary walls at the east and west, and the lean-to at the east, are all excluded from the scheduling. The timber doorways in the east and west elevations of the gatehouse and the C20 timber gallery fitted internally are also excluded but the ground beneath them is included.

MONK'S OVEN, MILL AND DOVECOTE About 115m north-east of the church is a (Grade II* listed) building that is traditionally known as the 'Monk's Oven', although it probably served as a corn-drying kiln. It is shown on the 1788

abbey estate plan. The building is constructed of coursed rubble but much of the exterior stonework has been robbed out leaving an earth-covered mound. At the south is a moulded round-headed arched doorway with large, prominent, voussoirs. Internally it is nearly 4m in diameter and about 1.5m high with a tightly-packed stone rubble floor and domed roof. Adjacent to the oven are the buried remains of a mill that was fed by the stone-lined leat that runs north-east to south-west to the cloistral complex. Approximately 22m south-east of the 'Monk's Oven' are the buried remains of a building with a circular foundation, probably a dovecote.

About 50m WNW of the 'Monk's Oven' are earthworks of possible building foundations, indicating a long rectangular range orientated east-west with internal (north-south) partition walls. It appears as cropmarks on aerial photographs taken in February 1981.

Immediately north-east of the 'Monk's Oven' is a C19 turbine house; a rectangular building with a crow-stepped gabled roof, which is excluded from the scheduling.

FISHPOND Approximately 145m east of the church are the earthworks of a medieval fishpond recorded by measured survey in 1985-6. It is orientated north to south and forms a broadly rectangular depression about 37m long by 15m wide. A bank, about 1m high and 5m wide, delimits the west side.

EXCLUSIONS The monument excludes all modern fences and fence posts, gates and gate posts, railings, garden ornaments, telegraph poles and oil tanks but the ground beneath these features is included. Calder Abbey House and the C19 turbine house to the north-east are completely excluded.

Sources

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Oil Painting entitled 'Prospect of Calder Abbey' by Matthias Read, circa 1730, Abbot Hall Art Gallery, Kendal, Cumbria

Whitehaven Archive and Local Studies Centre, *May 1788 Survey and Plan of Calder Abbey and Stephney estates of Joseph Tiffin Senhouse*, Surveyor R Lawson, Ref: YDX37/5 and YDX37/2/1

GATEHOUSE TO CALDER ABBEY

Listed Building Grade: II*

List Entry Number: 1086629

Date first listed: 14-Jul-1989

Statutory Address: GATEHOUSE TO CALDER ABBEY

County: Cumbria

District: Copeland (District Authority)

Parish: St. Bridget Beckermest

National Park: LAKE DISTRICT

National Grid Reference: NY 04960 06396

ST BRIDGET BECKERMET CALDER ABBEY NY 00 NW 3/58 Gatehouse to Calder Abbey - II* Gatehouse to Calder Abbey, used as a garage at time of survey (April 1984). Probably C14 with later alterations including conversion to agricultural use in C17 or C18. Stone blocks with quoins. Graduated slate roof (of reduced pitch?) renewed in 1970s. 2 storeys, 2 bays. Wide, pointed wagon arch in each gable end of 2 chamfered orders. Chamfered imposts and plinths to eastern arch, western arch blocked with door inserted. 3 small splayed windows, now blocked, to ground floor left in north wall with inserted loft door to right; 2-light C17 unglazed mullioned window to 1st floor on each wall, all probably re-used. Stone copings and kneelers to roof. Interior: floor removed during renovation; single king post roof truss. Byre range adjoining to north not of interest. The gatehouse forms a major part of an important group of monastic buildings.

Listing NGR: NY0496006396