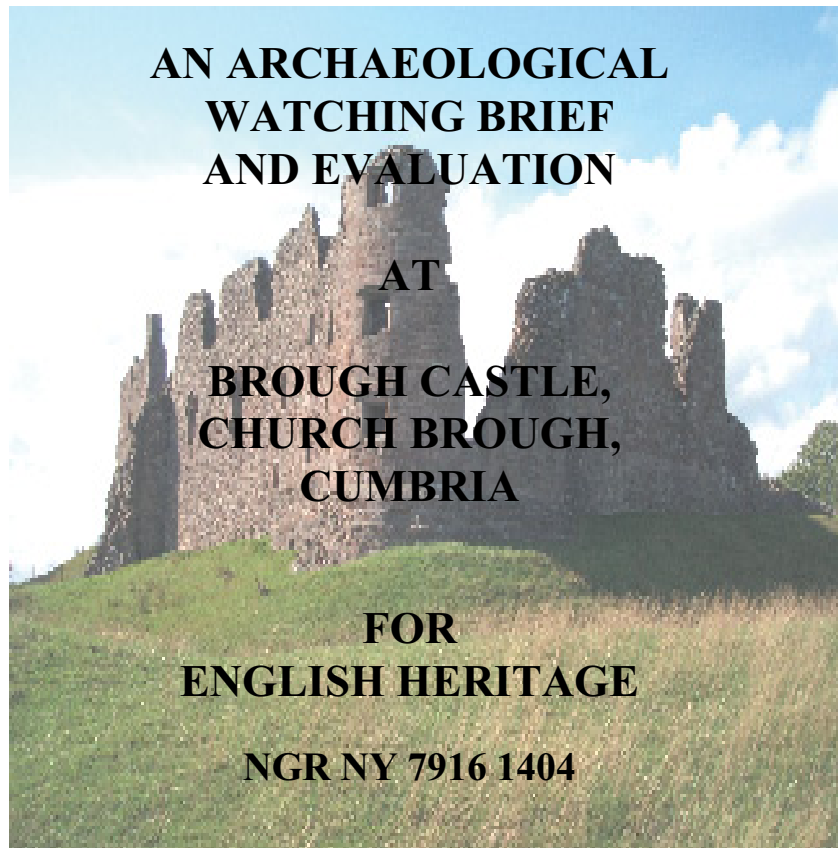

NORTH PENNINES ARCHAEOLOGY LTD

Client Report No. CP966/09



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CONTENTS

	<i>Page</i>
LIST OF ILLUSTRATIONS.....	III
EXECUTIVE SUMMARY	IV
ACKNOWLEDGEMENTS	V
1 INTRODUCTION.....	1
1.1 CIRCUMSTANCES OF THE PROJECT	1
2 METHODOLOGY.....	2
2.1 PROJECT DESIGN.....	2
2.2 THE WATCHING BRIEF.....	2
2.3 ARCHAEOLOGICAL EVALUATION	2
2.4 ARCHIVE	3
3 BACKGROUND.....	4
3.1 LOCATION, TOPOGRAPHY AND GEOLOGY.....	4
3.2 HISTORICAL BACKGROUND	4
3.3 PREVIOUS ARCHAEOLOGICAL WORKS.....	5
4 WATCHING BRIEF RESULTS.....	7
4.1 PHASE 1 WATCHING BRIEF	7
4.2 PHASE 2 WATCHING BRIEF	14
5 EVALUATION RESULTS.....	20
5.1 INTRODUCTION	20
5.2 TRENCH 1.....	20
5.3 TRENCH 2.....	21
6 FINDS	24
6.1 INTRODUCTION	24
7 ENVIRONMENTAL RESULTS	26
7.1 INTRODUCTION	26
8 CONCLUSION.....	29
8.1 ARCHAEOLOGICAL POTENTIAL	29

CONTENTS

8.2 CONCLUSIONS	30
9 BIBLIOGRAPHY	31
9.1 SECONDARY SOURCES	31
APPENDIX 1: CONTEXTS	33
APPENDIX 2: FIGURES.....	34

LIST OF ILLUSTRATIONS

Page

FRONTISPIECE: BROUGH CASTLE	FRONT COVER
FIGURE 1: LOCATION OF BROUGH CASTLE	APPENDIX 2
FIGURE 2: PLAN OF DRAINAGE ROUTE AROUND BROUGH CASTLE MOAT	APPENDIX 2
FIGURE 3: PHASES OF CONSTRUCTION AT BROUGH CASTLE AND TRENCH LOCATION PLAN	APPENDIX 2
FIGURE 4: TRENCH 1 SECTIONS	APPENDIX 2
FIGURE 5: TRENCH 2 SECTIONS	APPENDIX 2
PLATE 1: LOOKING NORTH TO POINT C	PAGE 7
PLATE 2: LOOKING SOUTH AWAY FROM POINT C	PAGE 7
PLATE 3: UNDISTURBED GROUND PARALLEL TO OLD PIPE TRENCH LOOKING SOUTH	PAGE 8
PLATE 4: EAST FACING SECTION OF TRENCH BETWEEN POINTS C AND B	PAGE 8
PLATE 5: TRENCH CONTINUING ALONG EAST SIDE OF CASTLE, LOOKING NORTHEAST	PAGE 9
PLATE 6: TRENCH ON EAST SIDE OF CASTLE LOOKING NORTH	PAGE 10
PLATE 7: TURNING AROUND SOUTHEAST CORNER OF CASTLE LOOKING SOUTHWEST	PAGE 10
PLATE 8: RODDING EYE TRENCH AT POINT B LOOKNG NORTH	PAGE 10
PLATE 9: POINT B WHERE WATER WAS PONDING IN THE MOAT	PAGE 10
PLATE 10: LOOKING EAST TOWARDS POINT D	PAGE 11
PLATE 11: NORTH FACING SECTION WITHIN CASTLE ACCESS WAY	PAGE 11
PLATE 12: SOUTH FACING SECTION THROUGH CASTLE ENTRANCE WAY	PAGE 12
PLATE 13: VIEW ALONG THE TRENCH AT THE SAME POINT	PAGE 12
PLATE 14: UNKNOWN WALL FEATURE IN SOUTH FACING SECTION JUST WEST OF POINT D	PAGE 12
PLATE 15: TRENCH REACHING MAXIMUM DEPTH THROUGH CASTLE ENTRANCE WAY	PAGE 12
PLATE 16: LOOKING WEST THROUGH ENTRANCE WAY TO CASTLE	PAGE 12
PLATE 17: LOOKING EAST BACK THROUGH ENTRANCE WAY SHOWING COLLAPSED SECTION	PAGE 12
PLATE 18: LOOKING WEST TOWARDS POINT A	PAGE 13
PLATE 19: LOOKING EAST FROM POINT A TOWARDS BACKFILLED ENTRANCE WAY	PAGE 13
PLATE 20: LOOKING NORTH TOWARDS POINT C	PAGE 13
PLATE 21: LOOKING WEST TOWARDS POINT D	PAGE 13
PLATE 22: END OF TRENCH AT POINT A BEING BACKFILLED	PAGE 14
PLATE 23: LOOKING SOUTHEAST, SHOWING THE WORK ON THE BANK SLIP	PAGE 14
PLATE 24: LOOKING EAST ALONG THE MOAT, WITH THE INTERRUPTION TO THE BANK	PAGE 15
PLATE 25: LOOKING NORTH, SHOWING POINT 1 AND THE FIRST SECTION OF THE DRAIN TRENCH IN THE MOAT	PAGE 16
PLATE 26: SHOWING RECOVERED MASONRY FROM THE DRAIN TRENCH IN THE MOAT	PAGE 17
PLATE 27: SECTION FACING NORTH SHOWING MASONRY STONES IN SITU	PAGE 17
PLATE 28: LOOKING WEST, AT MANHOLE 3 WHERE A CHANGE IN SOIL IS SHOWN	PAGE 18
PLATE 29: SHOWING THE TRENCH NORTH-SOUTH DOWN THE BANK	PAGE 19
PLATE 30: SHOWING THE TRENCH NORTH-SOUTH DOWN THE BANK	PAGE 19
PLATE 31: LOOKING EAST SHOWING THE E-W DRAIN TRENCH RUNNING ACROSS THE BANK	PAGE 19

LIST OF ILLUSTRATIONS

PLATE 32: NORTH FACING SECTION OF CURTAIN WALL FACING SOUTH, TRENCH 1.....	PAGE 22
PLATE 33: NORTH CURTAIN WALL, FROM ABOVE	PAGE 22
PLATE 34: NORTH FACING SECTION OF CURTAIN WALL, TRENCH 2	PAGE 23
PLATE 35: WEST FACING, SHOWING TUMBLE WITHIN DEPOSIT (104)	PAGE 23

EXECUTIVE SUMMARY

In 2007 and 2009 North Pennines Archaeology Ltd (NPAL) was invited by English Heritage to undertake two phases of archaeological monitoring at Brough Castle, Church Brough, Cumbria (NGR NY 7916 1404). The work involved a structured watching brief to observe, record and excavate any archaeological horizons or features revealed during drainage works within the castle moat. This was required as the site is a Scheduled Ancient Monument (no. CU 334), parts of which date back to the 12th century, and as such required Scheduled Monument Consent prior to any works being undertaken. It was considered that there was the possibility that important archaeological remains would be present within the scheme of works, as the drainage pipe was not only located within the moat but also crossed the entranceway to the castle. As Brough Castle sits on top of *Veterae* Roman fort there was the chance that features or artefacts of both the medieval and Roman periods could survive in the area.

The first phase of work (Phase 1) was carried out between Tuesday 16th October and Friday 26th October 2007, with most of the trench returning nothing of archaeological interest. The only feature of note was a stone construction located just to the east of the present castle gateway. As the depth of the trench at this point prevented access into it, the structure could not be fully identified. The structure comprised either two facing walls with rubble infill, or an arch again in-filled with stone rubble. What was particularly notable about the structure was that although it was observed in the south facing section of the trench, it was not seen in the north facing section, meaning that it did not extend that far. No parallel feature was seen on the western side of the entrance way.

The second phase of archaeological monitoring (Phase 2) was carried out between the 29th of June and the 2nd of July 2009. The work during this phase was concentrated on the north side of the castle and involved the insertion of drainage pipes in the moat leading down the bank towards the river, and some remedial work on an eroding area of the north-facing bank. A quantity of Roman pottery and animal bone was recovered from the bank to the North of Brough Castle, indicating the possible presence of a Roman midden.

In September 2008, North Pennines Archaeology Ltd undertook an archaeological field evaluation at the site. The work was commissioned by English Heritage, in order to provide further information on the depth and condition of the north curtain wall foundations. It had been observed by English Heritage that the northern side of the castle was potentially suffering from the effects of subsidence, accelerated by the positioning of the north curtain wall on the side of a steep slope. The effects of subsidence, combined with the gradient of the hillside would therefore cause significant damage to both this Scheduled Monument and the associated Roman earthworks.

Archaeological deposits (comprising three distinct archaeological horizons), and the foundations of the north curtain wall were encountered in both trenches. In Trench 1 the evenly coursed foundations were observed at a depth of approximately 0.9m from the current ground level, and were vertically faced. No finds were recovered from this trench. In Trench 2 the foundations were observed to a depth of approximately 0.6m from the current ground level and were also vertically faced. Within the middle of the section of the wall was observed an area which seemingly represents a rebuild phase as the coursing becomes uneven and irregular. Tumble was recorded within the upper horizons of the trench, within which was a stone observed to have decorative moulding on both sides.

The evaluation at Brough Castle revealed that the foundations of the north curtain wall were present to a depth of between 0.6m and 0.9m below the current ground level. Within Trench 1

EXECUTIVE SUMMARY

was noted the presence of an offset belonging to part of a possible 13th century buttress. However, within both Trench 1 and Trench 2 no offset was observed to the foundation, and within Trench 2 there was evidence of a phase of rebuilding. It is possible that these relate to rebuilding of the wall in 1245, as well as the construction of latrines in the 17th century (Salter 2002).

The evaluation also revealed that the angle of repose between the foundations of the wall and the gradient of the slope below is less than 45 degrees which suggests that damage to the castle and its associated earthworks is likely to be accelerated if no intervention occurs. The findings of the evaluation therefore suggest that a mitigation strategy to stabilise or repair the north curtain wall should be implemented in order to prevent further damage of the northern parts of the castle wall, and the Roman earthworks associated with it.

ACKNOWLEDGEMENTS

North Pennines Archaeology Ltd would like to thank Steven Garland of English Heritage, for commissioning the project and for his continued assistance throughout the work.

Further thanks are extended to George and Diane Beckwith and their family at Brough Castle Farm for their patience and generosity, and to Victor, Paul and Andrew and the team from Historic Property Restoration Ltd for conducting all the drain works diligently and with professionalism.

The archaeological watching brief Phase 1 was undertaken by Nicola Gaskell, and the Second Phase was undertaken by Frances Wood. The project was managed by Frank Giecco, Technical Director for NPA Ltd. The report was edited by Matt Town and Martin Railton, Project Managers for NPA Ltd.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 North Pennines Archaeology Ltd (NPAL) was invited by English Heritage to undertake an archaeological watching brief within the moat of Brough Castle, Brough, Cumbria (Figure 1, NGR NY 7916 1404) during two phases of drainage works in 2007 and 2009 (Figure 2). All excavation associated with the laying of the new drains was undertaken under a full watching brief condition, as a requirement of the Scheduled Monument Consent for the works. The objective of this watching brief was to obtain an adequate record of any archaeological deposits or finds which were disturbed or exposed by work associated with the development. All stages of the archaeological work were undertaken following approved statutory guidelines (e.g. IfA 2008a) and professional standards.
- 1.1.2 In September 2008 North Pennines Archaeology Ltd also undertook an archaeological field evaluation, at the request of English Heritage. Observation of the monument over a period of time has suggested that the northern side of the castle is possibly suffering from subsidence, caused by the weight of the wall and its position on the side of a steep hillside. The effects of this subsidence would severely damage or destroy parts of the monument, and as such English Heritage requested that an archaeological field evaluation, consisting of two targeted trial trenches located against the north curtain wall, be undertaken (Figure 3). This was in order to provide further information regarding the stability of the monument, and the necessity for a programme of reparative works. The focus of the evaluation was to determine the depth and condition of surviving foundations of the north curtain wall of the castle. It also served to investigate the presence or absence of archaeological remains within the proposed development area. All work was undertaken in accordance with the Institute for Archaeologists, *Standards and Guidance for Archaeological Field Evaluations* (IfA 2008b).
- 1.1.3 Brough Castle has its origins in the immediate post-Conquest period and was established by William Rufus just before AD1100. However, the castle also stands upon the earlier monument of *Veterae* Roman Fort, and there was the potential for Roman features or artefacts to be disturbed by the scheme of works.
- 1.1.4 This report comprises the results of all three phases of the archaeological work programme, namely: the archaeological monitoring of the groundworks associated with the drainage of the moat, and the hand excavation of two trial trenches on the northern side of the castle.

2 METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 A project design was prepared by NPAL in response to the written instructions issued by Steven Garland of English Heritage via telephone and e-mail correspondence. The instructions were adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA), and generally accepted best practice.

2.2 THE WATCHING BRIEF

- 2.2.1 The archaeological monitoring and supervision of groundworks associated with the development commenced on Tuesday 16th October 2007 and ran for nine consecutive days (Phase 1). The second phase of monitoring took place between the 29th June and the 2nd of July (Phase 2). The works involved a structured watching brief to observe, record and excavate any archaeological deposits from the development site (Figure 2). A full written and photographic record of all features encountered was taken, in accordance with the Project Design (English Heritage 2009).

2.3 ARCHAEOLOGICAL EVALUATION

- 2.3.1 The field evaluation consisted of the manual excavation of two trial trenches, the first of which measured 0.5m in width by 0.5m in length, and was excavated to a depth of 1.2m. The second trial trench measured a length of 1.80m and was 1.0m in width, and was excavated to a depth of 0.9m.
- 2.3.2 Trial trenches were excavated in order to assess the condition and presence of the castle's north curtain wall foundations. The location and size of the trial trenches were as specified by English Heritage (Figure 3). In summary, the main objectives of the evaluation were:
- to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record these where they are observed;
 - to establish the character of those features in terms of cuts, soil matrices and interfaces;
 - to recover artefactual material, especially where useful for dating purposes;
 - to recover palaeoenvironmental material where it survives in order to understand site and landscape formation processes;
 - to assess how the presence/absence, of archaeological remains will impact on the proposed repair works.
- 2.3.3 The main site-specific aim of the evaluation was defined as follows:

- *‘to determine the depth and condition of the foundations of the north curtain wall of the castle, to provide further information about the archaeological resource of the monument, and lead to the formulation of an appropriate response or mitigation strategy to repair or stabilise the monument’* (Douglas 2008).

2.3.2 A total of two trenches were excavated to record the presence or absence of the north curtain wall, as well as any other archaeological features, and to characterise the nature and significance of any recorded features. The trenches were excavated manually to the natural substrate or the top of archaeological deposits, whichever was encountered first. Each trench was then cleaned and any putative archaeological features investigated and recorded according to the North Pennines Archaeology Ltd standard procedure as set out in the NPAL Excavation Manual (Giecco 2003).

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the Project Design, and with current UKIC (1990) and English Heritage guidelines (1991). The archive for each phase of work will be deposited within an appropriate repository and a copy of the report given to the Cumbria County Council Historic Environment Services in Kendal, Cumbria, where viewing will be available on request. The archives can be accessed under the unique project identifiers NPA (07-09), BRC(A-C).

2.4.2 North Pennines Archaeology supports the Online Access to the Index of Archaeological Investigations (OASIS) project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this study will be made available by North Pennines Archaeology, as a part of this national project.

2.4.3 The OASIS references for the three phases of work are: BRC-A: northpen3-35768, BRC-B: northpen3-48396, BRC-C: northpen3-61730.

3 BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The site lies within a rural context on the western edge of the village of Church Brough immediately south of the A66 road and 36km east of Penrith (NGR NY 7916 1404) (Figure 1). It consists of an upstanding stone monument with an associated moat on three sides of the castle; the northern side of the site is delimited by a steep bank that runs down to Swindale Beck. The route of the drain pipe cuts through the present grassed surface of the moat and through the earthen built bank that forms the present access into the castle.
- 3.1.2 Church Brough lies on the border where the Permo-Triassic Sandstone meets the Carboniferous Limestone. The drift geology is glacial comprising boulder clay with sand and gravel deposits (Countryside Commission 1998).

3.2 HISTORICAL BACKGROUND

- 3.2.1 **Introduction:** this historical background is compiled mostly from secondary sources, and is intended only as a brief summary of historical developments specific to the study area.
- 3.2.2 The castle occupies part of a Roman fort (*Veterae*) and Roman activity is known to exist immediately beneath the present site. Occupation of the three acre fort at Brough continued into the 4th century AD as it is mentioned twice in the *Antonine Itinerary*, itself from the 4th century, and the *Notitia Dignitatum* from the 4th – 5th century gives the name of the garrison unit stationed there as *Numerous Directorum* - The Company of Plain Speakers, which appears among the list of units assigned to the ‘Duke of the Britons’. A *numerous* was an irregular unit of auxiliary soldiers, usually part-mounted with a compliment of approximately four hundred troops. The meaning of the name of the unit, however, remains unclear (Roman Britain website). Yet the history of the fort remains only poorly understood as little excavation has taken place and much of the site is covered and/or badly disturbed by the medieval castle (Woolliscroft and Lockett, 1996). The fort has produced no clear evidence of its structural sequence, although its long term importance has been attested by the large collection of lead sealings of various army-units found there (Shotter, 2004). Traces of the Roman barracks were found in 1925 during consolidation works and various finds were made that included coins. The cemetery and vicus appear to be to the east of the fort and the cemetery came under partial excavation in 1971 during a road realignment scheme, but the vicus has so far only been viewed through trial trenching.
- 3.2.3 The establishment of Brough Castle in approximately 1095 by William Rufus may mean that a settlement was already in existence in the vicinity, surviving on from the Roman *vicus* that was quite extensive outside of the fort. Similar events occurred at Lancaster and Brougham where a castle was erected upon presumably still-surviving rampart circuits (Shotter, 2004). Church Brough had a chequered history for five

hundred years following its establishment, (presumably as a deliberately planned village associated with the castle, founded soon after 1092). The actual date of its origin is uncertain, but the visible plan of today has strong affinities with other villages created as market towns by the lords of adjacent castles or manorial halls. A large amount of damage was inflicted on Church Brough on several occasions during Border raids and wars with the Scots, including 1174, 1314 and 1319, and the castle lay in ruins after an accidental fire in 1521 until its restoration in the middle of the 17th century. A survey of 1314, taken after a Border raid, indicates that there were more than 30 houses (many of them burnt), in Church Brough, compared to the two-dozen cottages in Market Brough. As Market Brough received a charter in 1330, a mere century after its foundation is perhaps evidence that by that time it had become the dominant market and fair. The inability of Church Brough to develop further is ascribed principally to the historical events of continued raiding, and to the harvest failures and livestock plagues of 1315-22, which affected a wide area. The evidence of earthworks in this area relate to the village shrinking sometime during the medieval period. There are no traces of early house platforms but traces of medieval field systems are apparent south of the church and castle. Although the economy improved from the late 15th century onwards, it was a further hundred years or so before peaceful conditions prevailed in this area of Cumbria (Jones, 1989). To attest to the fact that Brough Castle was continuously occupied an arrowhead recovered from the hillslope approximately 30m below the Castle Keep in 1956 was identified as a hunting arrowhead rather than one used for battle and was dated to the late 14th – early 15th centuries (Simpson, 1956). Recent work undertaken within the castle precinct was conducted in 1993 by English Heritage when 66m of the eastern side of the Castle ditch was excavated prior to drainage works. A mass of facing stones and wall core material indicated a collapse of part of the castle wall into the ditch. Pottery of 12th and 13th century date as well as some Roman material was recovered from the ditch fills (Archaeological Data Service website).

- 3.2.4 In the 12th century, Hugh de Morville constructed the keep and courtyard castle. The Clifford family then added a new hall, flanked by Clifford's Tower in the 14th century but the buildings were destroyed by a great fire in 1521. During the mid 17th century, Lady Anne Clifford restored the castle and converted it into a country mansion. The castle was abandoned by the early 18th century.

3.3 PREVIOUS ARCHAEOLOGICAL WORKS

- 3.3.1 Investigation of the earthworks at Brough began in 1925, when consolidation of the medieval castle was instigated. Traces of Roman barracks were found, affirming that some of the earthworks were not medieval in date (Birley 1958).
- 3.3.2 Excavations however, did not begin until 1971, when in advance of the construction of the A66, the Roman cemetery complex of *Verteris* was discovered to the east of the fort, and included the graves of 50 individuals, 2 lead caskets and associated Roman pottery. Further work was carried out in 1972, when floors, walls, pits, timber dwellings and a bath house of 2nd-3rd century date, were all uncovered to the south of the castle (Archaeological Data Services website).

- 3.3.3 In 1993, an archaeological evaluation was carried out by English Heritage. Conducted in advance of drainage works, comprising of 66m of pipe running through the eastern side of the castle ditch, the evaluation found part of the collapse of the castle wall and pottery from the 12th to 13th centuries.

4 WATCHING BRIEF RESULTS

4.1 PHASE 1 WATCHING BRIEF

- 4.1.1 The Phase 1 watching brief was carried out between Tuesday 16th October and Friday 26th October 2007, over nine consecutive days. It was undertaken in one continuous stage and the 'points' references are those points as listed on the English Heritage sketch layout for the scheme of works (see Figure 2, Appendix 1).
- 4.1.2 **Point 'C':** this point was positioned to the northwest of the northwestern corner of the castle where the outflow pipe for the drain extended out of the ground to allow the excess water to run down the bank to Swindale Beck (Plates 1 and 2). This is the point where the digging commenced, as it was to the south of Point C, towards Point B where the worst of the ponding was occurring.



Plate 1: Looking North to Point C



Plate 2: Looking South away from Point C

- 4.1.3 The initial 7m of the trench never reached a depth greater than 1.50m. Beneath the mid-grey sandy silt topsoil was up to 1.20m of re-deposited sub-soil with which the 1993 drain pipe had been covered after its insertion (ADS website). This comprised dark reddish-brown clay/sand/silt mix that carried frequent small to large sized stone inclusions (one stone possibly being a piece of roughly hewn masonry, fallen from the castle in antiquity). In the first 12m section of trench virgin ground was never encountered, as the trench followed the route of the 1993 pipe. The next section dug on

the following day continued alongside (immediately to the west) of the earlier pipe and the trench cut appeared to be in previously undisturbed ground (Plate 3). It comprised mid pinkish-red sandy clay with occasional stone inclusions. From the ground surface the average depth of the trench in this section was 1.70m (Plate 4), to maintain the correct gradient of slope for the pipe. By the end of the second day approximately 30m of the trench had been excavated. The third day's excavation continued alongside the eastern side of the castle towards Point B. The topsoil maintained an average thickness of 0.25m, and was mid brownish-grey sandy silt which overlaid an apparently untouched moderately compacted, dark grey smooth silty clay with occasional inclusions of medium to large sized stones (some of which may have been fallen masonry). Along the eastern side of the castle the ground excavated remained consistent. Towards Point B the ground became more sodden causing trench section slips, which then had to be re-excavated.



Plate 3: Undisturbed ground parallel to Old pipe trench, looking south



Plate 4: East facing section of trench between points C and B

- 4.1.4 **Point 'B':** At this point the trench was only required to be approximately 0.40m deep (Plates 7 and 9), because of the low lying level of the ground surface that was the major cause for the ponding of water at this point. A rodding eye trench was excavated (Plate 8) at an angle from the main drain trench for a length of 1.50m. The main trench continued to curve to the west following the turn of the moat and headed towards the access for the castle. The ground surface began to rise and in consequence the depth of the trench began to get deeper again. Continuing west on the south side of the castle structure the trench remained almost consistent at a depth of approximately 0.40m, utilizing the natural slope of the ground in this area. The topsoil measured

approximately 0.20m in thickness and was compacted mid to dark grey clayey-silt with almost no inclusions. The subsoil comprised greyish brown clayey silt, quite sodden with groundwater and was moderately compacted with occasional small to medium sized stone inclusions. Slow excavation progress was made through the entrance way mound into the castle, the maximum depth of the trench reached up to 2.80m and was very unstable with several section collapses which made it too dangerous to enter (Plates 11-13 and 15-17). The topsoil remained approximately 0.20m in thickness with most of the material beneath it comprising of pinkish-red coarse sand that contained high percentage of stone inclusions, medium to large in size and all sub-angular or angular. A structure was observed in the south facing section of the trench, but was not seen to extend through the trench (which measured 0.80m wide) into the north facing section, indicating that it either stopped at the point at which it was seen or only extended into the trench but not beyond.



Plate 5: Trench continuing along east side of castle, looking northeast

- 4.1.5 The structure appeared to be either a wide stone wall with facing stones on either side and a rubble core or possibly a stone built archway for an entrance into the castle or even an abutment (Plate 14 Appendix 2). It measured up to 2.50m in height and approximately 1.40m in width. Its position was immediately to the east of the present cobbled entrance into the castle, and if it extended north under the unexcavated ground would run parallel to the main castle entrance. The outer faces of the structure showed a possible leaning in towards each other, though whether it was designed in that manner or if disturbance over time has led it to look that way is unknown. No datable artefacts were recovered from the vicinity of the feature to aid with either interpretation of its date or primary purpose.
- 4.1.6 **Point 'A':** Towards Point A (Plates 18 and 19 Appendix 2), the end of the trench, the depth returned to approximately 0.40m as it went beyond the castle entranceway and continued for a distance of approximately 20m, with both the topsoil remaining consistent and the subsoil comprising dark red sandy silt. No other artefacts or features of interest were recorded within the trench.



Plate 6: Trench on east side of castle looking north



Plate 7: Turning around southeast corner of castle looking southwest



Plate 8: Rodding eye trench at point B, looking north



Plate 9: Point B where water was ponding in the moat



Plate 10: Looking east towards point D



Plate 11: North facing section within castle access way



Plate 12: South facing section through castle entrance way



Plate 13: View along the trench at the same point



Plate 14: Unknown wall feature in south-facing section just west of point D



Plate 15: Trench reaching maximum depth through castle entrance way

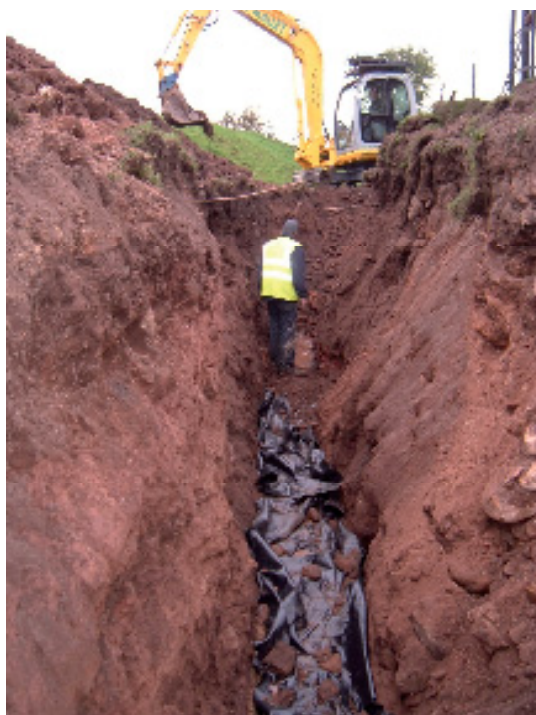


Plate 16: Looking west through entrance way to castle



Plate 17: Looking east back through entrance way showing collapsed section



Plate 18: Looking west towards point A



Plate 19: Looking east from point A
towards backfilled entrance way



Plate 20: Looking north towards point C



Plate 21: Looking west towards point D



Plate 22: End of trench at point A being backfilled

4.2 PHASE 2 WATCHING BRIEF

- 4.2.1 Phase 2 of the Watching Brief took place over 4 days, beginning on the 29th of June 2009, on the north side of the castle, in the moat and down the bank (Figure 2). The work was undertaken for two main reasons. The first being to shore up an area of slippage on the bank and the other was to insert drainage pipes to divert the surface water from the eroding bank to prevent further damage.



Plate 23: Looking southeast, showing the remedial work on the bank slip.

- 4.2.2 On the 29th of June the area of subsidence was addressed. This was located close to the top of the bank that runs from the north side of the castle down to the Swindale Beck. The area of the slip was levelled out and a wire mesh placed on it, before backfill material from the drain works was tipped on it.
- 4.2.3 Three clear layers were visible in the material surrounding the bank erosion. The topsoil was reddy pinkish brown, overlaid with thick turf. There were some grey stone inclusions, and the condition of the soil was loose and crumbly. This layer was between 0.25m and 0.40m in thickness. Beneath this layer was a layer of subsoil, also reddy pinkish brown in colour, but paler than the topsoil. It also had some grey stone inclusions and was made up of firmly compacted silty clay. The depth was hard to gauge because of the nature of the slip but appeared to average 0.40m in depth. In some places below the subsoil on the slip, the natural was visible. This was also firmly compacted and consisted of red clay with some grey angular stone inclusions.
- 4.2.4 The area of the erosion measured approximately 5m across by 7m. All the work was carried out by hand under dry conditions and no archaeological deposits or features were uncovered in this phase of the works.
- 4.2.5 The drainage trench began from a point in the moat to the west of the castle (Point 1), in line with the north west corner of the castle. The trench ran in the centre of the moat northwards (Point 2), then followed the moat in an easterly direction, until it reached an interruption in the bank surrounding the castle (Point 3). From this point it turned north and headed through the gap in the bank and down the hill towards the stream (Figure 2).



Plate 24: Looking east along the moat, with the interruption to the bank.



Plate 25: Looking north, showing Point 1 and the first section of the drain trench in the moat.

- 4.2.6 The drain trench cut through soil that was a silty sandy material, of a dark brown colour and covered by a thin layer of turf. The trench was excavated to a depth of 0.40m, with a width of 0.33m. This layer appeared to continue beyond the extents of the trench. Many pieces of reddish sand stone were uncovered from this layer; some were square cut. It is presumed that these are tumble from the castle walls. These stones were kept to one side in case of future restoration works on the castle. The majority of these came from the western end of the east-west section of the drain trench. Some smaller pieces of both red and yellow were recovered from throughout the trench, these averaged between 0.10m and 0.30m thick.



Plate 26: Showing recovered masonry from the drain trench in the moat.

- 4.2.7 A total of 3 manholes were inserted into the trench along with the drain pipe. Manhole 1 was located at the start of the trench, Manhole 2 was located 13.4m north of Manhole 1 and Manhole 3 was situated at the top of the bank at the point where the trench headed down hill. The depth of the manholes was 0.50m, with a diameter of 0.47m. The ground at this depth continued to be made up of the silty sandy dark soil observed in the drain trench. The total length of this trench was approximately 40m, from Manhole 1 to the gap in the bank.



Plate 27: Section facing North showing masonry stones in situ.

- 4.2.8 This work was carried out by hand and no archaeological features were observed, however a small quantity of bone and C.B.M. (Ceramic Building Material) was recovered.

- 4.2.9 At the point where the drain trench changed direction at Manhole 3, a clear change in soils was observed. The darker soil of the moat area gave way to the previously observed soil of the bank slip; a much redder topsoil. The depth of this trench continued to be 0.40m. The topsoil was observed to a depth of 0.20m and the top of the bank, however this deepened at 12m from the top of the bank as the trench progressed down and continued to vary beyond that. The topsoil continued to overlay the subsoil and the trench was not deep enough to reveal the natural. At 35m down the hill from Manhole 3, the trench ended in a soak away which was 0.60m deep with a diameter of 0.50m. The ground changed at this depth, below the topsoil was a layer of gritty mid brown sand and alluvial cobbles.



Plate 28: Looking West, at Manhole 3 where a change in soil is shown.

- 4.2.10 The work was all carried out by hand, and although no archaeological features were exposed, a quantity of bone and pottery was uncovered. The first piece of pottery was a piece of Roman Mortaria and this was revealed at 14m down the bank; the majority of the rest of the bone and all the pottery came from below this point (see Section 6).



Plates 29 and 30: Showing the trench north-south down the bank.

- 4.2.11 A further trench was excavated across the bank, from 13m down the hill, west towards a point just below the area of the bank slip. This trench was also 0.40m in depth and extended for 12m. Some bone and some Roman pottery were also uncovered from this trench. The finds came from the eastern end of the trench, near the point where it joined the trench running the length of the bank. There was a slight variation in the soil here; it was more clay like but looser in consistency and of a darker hue.



Plate 31: Looking East showing the east-west drain trench running across the bank.

5 EVALUATION RESULTS

5.1 INTRODUCTION

- 5.1.1 The hand excavation of the trenches down to an ascribed depth (Douglas 2008) permitted an examination of the curtain wall foundations and any archaeological remains within the site. All trench locations are depicted in Figure 3; detailed sections for both Trenches are depicted in Figures 4 and 5.

5.2 TRENCH 1

- 5.2.1 Trench 1 was positioned to abut the north curtain wall, located next to a buttress, on a slight downhill slope. Trench 1 measured 0.5m in length and 0.5m in width and was excavated to a depth of 1.20m. No discrete archaeological features were encountered, although the foundations were observed within the section (see Plates 32 and 33).
- 5.2.2 The earliest deposit observed, was encountered at a depth of approximately 0.40m from ground level. It consisted of loosely compacted orange-brown sandy silt, **(102)**. This deposit had frequent inclusions of large rounded to sub-angular stones, which represented the bedding layer for the foundations.
- 5.2.3 The foundations of the wall **{106}** were observed to a depth of 0.95m below the current ground level, and were positioned on top of deposit **(102)**. Five courses were observed within the trial trench, and consisted of evenly coursed rectangular blocks of red sandstone, approximately 0.3m in length and 0.15m in width, which were bonded with a lime based mortar.
- 5.2.4 In the eastern section face of Trench 1, an offset belonging to a buttress was observed. This offset and the construction of the buttress is likely to be part of a 13th century renovation of the wall, and it is possible that this buttress was constructed to provide support for an already fragile northern limit.
- 5.2.5 Overlying the earliest deposit **(102)**, and enclosing the foundations, deposit **(101)** was observed to a depth of 0.3m from the current ground level. This consisted of loosely compacted reddish-brown sandy silt with some inclusions of sub-rounded stones and pebbles, which represents tumble and displacement of the stones from within the foundations.
- 5.2.6 Above this deposit, the topsoil **(100)**, consisted of loosely compacted dark brown silty-clay. This was observed to be up to 0.2m in depth and had frequent inclusions of roots and sub-angular stones, which represent tumble that fell from the top of the curtain wall.
- 5.2.7 No archaeological finds were retrieved from this trench.

5.3 TRENCH 2

- 5.3.1 Trench 2 was aligned east to west, measured 1.8m in length by 1m in width, 0.90m in depth, and was positioned to abut the north curtain wall. It was located against the 17th century latrines and was also on a slight downhill slope. No discrete archaeological features were encountered, although the foundations were observed, (see Plate 34 and 35).
- 5.3.2 The earliest deposit observed (**105**), consisted of loosely compacted blackish-brown, silty sand and was encountered 0.7m below ground level. This had inclusions of sub-angular stones and fragments of lime mortar, and was the bedding for the foundations.
- 5.3.3 The foundations of the north curtain wall **{106}**, were observed just above deposit (**105**), and were observed to a depth of approximately 0.55m below the current ground level. Four courses were observed within this trench and consisted of evenly coursed rectangular blocks of red sandstone, approximately 0.3m in length by 0.15m in width, bonded with a lime based mortar.
- 5.3.4 Observed within the central section of the trench, the foundation coursing appears to become uneven and disrupted, suggesting that some form of collapse, and a phase of subsequent rebuilding occurred.
- 5.3.5 No offset for the foundations was observed in Trench 2, which was placed next to the latrines. These were a late addition in the 17th century and led to the destruction of approximately 11m of the north curtain wall. It is possible the 13th century renovations had occurred on this part of the wall too, as seen within Trench 1, but that these were entirely destroyed during the 17th century works.
- 5.3.6 Overlying deposit (**105**) and sealing the foundations, deposit (**104**) was observed to a depth of 0.55m. This comprised loosely compacted light orange-red silty sand. Observed within the upper horizon of this deposit, tumbled stones were recorded in plan (see Plate 4), one of which was observed to have decorative moulding on both sides, and appeared to be a voussoir.
- 5.3.7 Overlying all deposits, topsoil (**103**) was observed to a depth of 0.1m and comprised loosely compacted dark brown silty clay, which had frequent inclusions of large sub-rounded stones, which represents the recent tumble from loose stones at the top of the wall.
- 5.3.8 Animal bone was observed within deposits (**104**) and (**105**) and soil samples were taken from both these deposits, which were retained for further analysis. No finds were recovered from this trench.



Plate 32: North facing section of curtain wall foundations within Trench 1.



Plate 33: North curtain wall foundations within Trench 1, from above.



Plate 34: North facing section of curtain wall foundations within Trench 2.



Plate 35: Tumble within upper horizons of (104), within Trench 2, (facing east)

6 FINDS

6.1 Introduction

- 6.1.1 All of the finds were from Phase 2 of the watching brief and were mostly from the Roman period. In total 1.134kg of pottery was recovered. Out of this, 0.859kg was amphora. The context numbers used here refer to the Phase 2 Watching Brief, not the evaluation.

Watching Brief Context	Area	Material	Quantity	Weight (kg)	Period
100	E-W drain down bank	Pottery	7	0.108	Roman
100	E-W drain down bank	C.B.M	1	0.001	Unknown
103	Drain in moat	Bottle glass	1	0.031	Post Medieval
103	Drain in moat	C.B.M	1	0.008	Unknown
100	Drain down the bank	Pottery	6	0.998	Roman
100	Drain down the bank	C.B.M	4	0.278	Unknown
100	Drain down the bank	Fe	2	0.017	Unknown
100	Drain down the bank	Pottery	2	0.024	Roman
100	Drain down the bank	C.B.M	4	0.013	Unknown
100		Pottery	2	0.004	Roman
100		Fe	1	0.0013	Unknown

Table 1: Finds Recovered During the Watching Brief

- 6.1.2 Context (**100**) occurred in two trenches, the trench running down the bank and the trench running east-west across the gradient of the bank to the north of Brough Castle.
- 6.1.3 The pottery recovered included two sherds of BB1 (fabric 1), one from a dish and one from a cooking pot, seven sherds of local grey ware (fabric 11) which included two cooking pot rim fragments of probable second century date. There was one tiny fragment of oxidised ware (fabric 12).
- 6.1.4 The group included only one sherd of mortarium – a rim sherd from Mancetter-Hartshill of second century or early third century date. There were three sherds of South Spanish amphora (fabric 207), Peacock and Williams (1986) Class 25, of first-third century date and one sherd of Central Gaulish samian of Form 18/31R (incomplete section) of second century date. A list of the fabric types recovered is included in Table 2, below

Fabric Type	Description
1	Black burnished ware 1 (BB1) DOR BB1
11	Unidentified grey ware. The products of one or more sources, all of which are likely to be local.
12	Unidentified oxidised ware.
207	BAT AM 2 – South Spanish amphora fabric – Dense hard fabric. Fine appearance with thick grey core and buff external surface.
324	MAH WH Mancetter-Hartshill - Usually fine-textured, creamy-white fabric, varying from a softish texture to very hard; sometimes with a pink core. Usually self-coloured, it may occasionally appear to have a pale buff slip. Trituration grit consists of hard red-brown or blackish, re-fired pottery fragments.

Table 2, Fabric Types

- 6.1.5 Also recovered from the drain trench running down the bank (**100**) was a quantity of C.B.M. Three pieces of this were sherds of Roman flue tile, made of a red terracotta type material, with marks on the inside where they would have stuck to the wall. This could be interpreted as evidence for a hypocaust system. They measured between 1cm and 2cm thick. There was one sherd of Roman roof tile and four small fragments of brick also included in the assemblage.
- 6.1.6 Also recovered from (**100**) was a handmade iron nail with a square section, measuring 4.7cm in length. Other iron fragments were recovered from (100) in the drain trench down the hill. One is possibly a fragment of another handmade nail, the other is staple shaped, measuring 4.5cm across.
- 6.1.7 Context (**103**) was from the drain trench running along the moat. It may be significant that there was very few finds recovered from this area. One piece of C.B.M. was uncovered, this was a small sherd and is possibly from a brick or a tile, and is quite pale in colour. A neck of a green glass bottle was also uncovered, this is post-medieval in date.
- 6.1.8 From this finds assemblage it is clear that the majority of the articles are Roman in date and were found down the bank to the north of Brough Castle. It is known that Roman pottery has been found in gardens in close proximity to Brough Castle. It is interesting to note that despite the history of the castle, no medieval pottery was recovered from any of the trenches. The majority of the finds came from the trenches on the north bank of the castle. This could represent an area where the Roman settlers deposited their rubbish.

7 ENVIRONMENTAL RESULTS

7.1 INTRODUCTION

- 7.1.2 All of the animal bone recovered from the site at Brough was from the Phase 2 watching brief, and consisted of a relatively small assemblage (a total of 67 fragments). As such this does not present a number large enough to allow strong, statistically viable interpretations of the site as a whole. However, there is much evidence from the bone fragments to suggest human exploitation and modification of the bones through butchery, cooking and also other taphonomic activity in the case of the antler. In particular, the numbers of possible deer bone recovered is of note (4 antler fragments and 3 bone fragments).
- 7.1.3 From context (100), the section of the drain running down the hill, eleven bone fragments were recovered. These consisted of bones from several species. A longitudinal section of Red deer antler may be a fragment of the larger section described below. It was identified through the distinctive guttering on the external surface. Five rib fragments were recovered of which one has been tentatively identified as that of a deer, based on its size and appearance in cross-section, at the head of the rib. The other four fragments were unidentifiable, all representing short (less than 10cm) sections of the mid-section of the rib. A vertebral fragment was identified as being from a deer, due to the appearance of the spinous process in section view and the size. This fragment also appeared to have two butchery cut marks. One fragment of a possible scapula blade was recognised but was too fragmentary to be identified further to species. Three sections of long bone were identified, but none could be classed to a particular species due to their fragmentary nature. One appeared to be a femur, identified due to the presence of the rough tendon attachment below the lesser trochanter. Possible butchery marks were identified on this section of bone. The other two fragments of long bone remain unidentified to species.
- 7.1.4 Again from context (100) thirty-three bone fragments were recovered. Eight rib fragments were identified, all but one of which came from the mid section of the rib. It is suggested that two are from rabbit due to their size, and 6 from a larger mammal. One rib fragment had elements of the head present, as well as a clear butchery mark.
- 7.1.5 An axis fragment was identified which appeared to be from a deer, identified due to its appearance in profile.
- 7.1.6 Two metatarsal/metacarpal fragments were recovered, possibly from a sheep. Two teeth from a sheep were also recovered. A scapula fragment was recovered, which appeared to be from a rabbit. One vertebrae fragment from the vertebral section was identified though it was too fragmentary to identify further. The proximal end of a mature cow scapula was identified, with butchery marks near the articulating element. This bone showed evidence of being exposed to heat. It is suggested here that this was not the result of direct cooking of the bone, as the burned element was restricted

to one side of the bone. Instead, this bone may have been discarded near a fire, which resulted in the burning evidence now evident on the bone. The absence of cooking evidence on the rest of the bones of the assemblage suggests that they weren't cooked; the bones being defleshed and then discarded. A section of the distal end of a cow tibia-fibula was also identified. Seven unidentified long bone fragments and eight unidentified bones were also present in this sample.

- 7.1.7 A sample from the east-west drain **(100)** on the bank produced 20 fragments of bone. One mandible fragment was identified due to the presence of sections of the coronoid and condylar processes. Two rib fragments were identified, one of which had a head section, the other coming from the mid section. One metatarsal/metacarpal was identified, probably from a sheep. A section of skull was identified as being from the parietal area, though the species could not be identified. Three fragments of vertebrae were recognised and also three fragments of scapula but not to any species. Nine unidentified fragments were recovered from the sample.
- 7.1.8 A sample from a drain trench running downhill **(100)** produced 25 fragments of bone and antler. Six fragments of Red deer antler were identified due to the presence of distinctive guttering on the antler surface. Ten fragments of rib mid-section were identified. Due to its similarity to another rib fragment also from **(100)** it is suggested that at least one of these came from a deer. One rib fragment (one of the possible deer bones) also had visible butchery marks. Nine unidentified bone fragments were also recovered.
- 7.1.9 The antler found at the site consisted of one fragment of Roe deer antler and nine fragments of Red deer antler, of which the largest fragments consisted of a large beam segment.
- 7.1.10 The Roe deer antler from Context **(103)** consisted of a c.15cm section of the proximal beam. A section of the pedicle was attached, suggesting the antler had been artificially removed, rather than naturally shed as the pedicle is part of the skull. A lower section of a tine (branch) was also present and showed possible signs of being sawn. The beam was guttered and the coronet (adhering point of the antler to the skull) was present at the proximal end. The distal section of the beam was heavily worn and so it was unclear whether it had been sawn or was broken. Also from context **(103)** a section of lumbar vertebrae was recovered, probably from a mature pig.
- 7.1.11 The Red deer antler from Context **(100)**, was in three sections, but two of these were less than c.5cm, and consisted of thin fragments of the external guttered beam portion. The main sample of the antler was a c.25cm section of the proximal beam. A clear guttered surface could be seen along its length. There was evidence that the coronet had been artificially removed by sawing through the section above the coronet.
- 7.1.12 These samples may not allow a detailed examination of the site as a whole, due to the small size of the assemblage. However, the presence of deer bone and antler from two different species of deer should be noted in the event further archaeological work is conducted near these areas. It is possible that a portion of a Medieval/Early Modern context was exposed during the work.

Table 3: Animal Bone from the Phase 2 Watching Brief.

WB Context no	Number of fragments	Type and description
100	1	Antler beam section of Red deer. Sheep, horn core.
103	1	Antler and coronet of Roe deer.
103	1	Lumber vertebrae, possibly pig.
100	11	Longitudinal section of Red deer antler. Fragment of scapula, 5 rib fragments (1 of which was possibly from a deer). 3 longbone fragments (1 being a possible femur). Vertebral fragment (possibly deer).
100	33	8 rib fragments (2 possible rabbit), 1 antler fragment (Red deer), 2 metatarsal/carpal fragment (possibly sheep), 2 teeth (sheep), 1 scapula frag (possible rabbit), 1 axis fragment (possible deer), 1 vertebrae fragment, 1 scapula fragment (possible cow), one poss tibia fragment (possible cow), 7 longbone fragments, 8 unidentified fragments.
100	20	1 mandible fragment, 2 rib fragments, 1 metatarsal/carpal fragment (possible sheep), 1 skull fragment, 3 vertebrae fragment, 3 scapula fragments, 9 unidentified fragments.
100	25	6 fragments of Red deer antler, 10 fragments of rib (various species, one fragment identified as possible deer), 9 unidentified fragments.

8 CONCLUSION

8.1 ARCHAEOLOGICAL POTENTIAL

- 8.1.1 Brough Castle is situated in an archaeologically diverse area, associated strongly with both the Roman occupation of the area, as well as the early Norman period which saw the construction of a chain of castles in the Eden Valley. The site itself is a Scheduled Ancient Monument, comprising of a Norman castle built upon parts of a Roman fort.
- 8.1.2 Approximately 50% of the ground excavated for the drain during the Phase 1 watching brief had already been disturbed in 1993 for an earlier land drain. This helped to minimize the impact into undisturbed deposits within the castle moat. Beyond the extent of the earlier drain (which ended at the eastern side of the castle entrance way mound) the ground had not previously been excavated, this area represented the greatest chance of encountering previously unrecorded layers or features. However, the trench was almost devoid of anything of archaeological interest with the exception of the stone built structure noted in the south facing section of the trench just to the east of the main castle entrance. Constructed either as an access way into the lower parts of the castle (kitchen and service ranges), or a drain or part of the drawbridge/portcullis system, it could only be viewed from outside the trench as the depth was too great and the trench sides were too unstable to permit access. The apparent disturbance to the stones on the facing sides of the feature allowed them to lean towards each other, giving the impression of a possible archway, but there was no key stone at the apex of the feature, so the interpretation of the feature as a tunnel remains conjectural. This feature is not in danger from the present maintenance works.
- 8.1.3 Two trial trenches were excavated in order to assess the depth and condition of the foundations of the north curtain wall of the castle. The evaluation also provided the opportunity to assess any archaeological features that may have existed within this area. The foundations of the north curtain wall were encountered at a depth of between 0.55m to 0.85m below the current ground level. Horizons of archaeological deposits were encountered at a depth of between 0.20m and 1.0m beneath the current ground level. During the course of the evaluation it was observed that no trenches were dug for the foundations, and so appears that the construction method for this part of the castle was based upon the Norman technique of compaction of the surrounding earth, and then subsequent construction of the foundations which would have included an offset created by a rubble layer composed of gravel, chalk and stone (Salzman 1952).
- 8.1.4 In Trench 1, the limited dimensions of the trench meant that it is not possible to say with certainty whether the buttress seen in the eastern side of the section of the wall, is providing significant support to the curtain wall. However, the offsets of this appeared to be substantial, suggesting that this section of the wall is relatively stable. It is also interesting that the addition of two buttresses (built in the 13th and 15th centuries), appears to have been part of a consolidation effort to the original curtain wall which dates from the 12th century.

- 8.1.5 In Trench 2, no substantial offsets were observed belonging to the foundations of either the wall or the latrines. This section of the wall dates from the 17th century, and construction appears to have utilised the ruined remains of parts of the original curtain wall, with rubble being dumped into the base of the wall and levelled off at ground level to create a level course on which to build. The fact that such a large section of the wall was removed during the 17th century, and that collapse can be viewed within Trench 2, suggests that this area is adversely affected by the positioning over a vertical drop. The results from within Trench 2 suggest that consolidation to the north curtain wall appears to have been virtually ongoing since the original 12th century curtain wall was first constructed.
- 8.1.6 The north part of the curtain wall is located directly over a steep hill, with a gradient that has an angle of repose less than 45 degrees to the foundations. This 45 degree angle is needed to provide stability to the monument to prevent the weight of the wall pushing down on the foundations and causing subsidence. The height difference between the outer part of the north curtain wall and the outermost ditch of the fort is approximately 6m. Any loose material which falls from the outer wall therefore has the potential to gather a momentum that would have safety implications for the lower area of the site, which is currently a footpath alongside the Swindale Beck.
- 8.1.7 Phase 2 of the Watching Brief failed to locate any archaeological features, however, the quantity of Roman pottery and tile recovered from the trenches cut into the north bank of the castle would suggest a potential for the further study. It is possible that the ground associated with the moat trench was already disturbed by previous work.

8.2 CONCLUSIONS

- 8.2.1 The results of the evaluation appear to suggest that a mitigation strategy is required to prevent further damage to the monument, and to stabilise the monument from future collapse.
- 8.2.2 An Archaeological Watching Brief is recommended on any further work, as Brough Castle is a monument of great historical importance. There is scope for further research regarding the possible presence of a Roman midden, as suggested by the quantity of animal bone and pottery found on the north bank.

9 BIBLIOGRAPHY

9.1 SECONDARY SOURCES

Birley, R. 1958, *Excavations at Brough Castle*, Cumberland and Westmoreland Antiquarian and Archaeological Society, 58:31

British Geological Survey, 2001, *Solid Geology Map: UK North Sheet 1:625 000*, 4th edition, NERC.

Countryside Commission, 1998, *Countryside Character, Volume 2: The North-West: The Eden Valley*. Countryside Commission.

Curwen, J.F, 1909, *Brough Castle*, Cumberland and Westmoreland Antiquarian and Archaeological Society.

Douglas M, 2008, *Brough Castle Cumbria: Brief for Archaeological Recording Work*. English Heritage unpublished document.

Giecco, F.O. 2003, *North Pennines Archaeology Ltd Excavation Manual*. Unpublished document

English Heritage, 1991 *Management of Archaeological Projects (MAP2)*. London: English Heritage.

English Heritage, 1995 *A Strategy for the Care and Investigation of Finds* Ancient Monuments Laboratory

English Heritage, 2002 *Environmental Archaeology a guide to the theory and practice of methods, from sampling and recovery to post-excavation*. Centre for Archaeology Guidelines

Institute for Archaeologists, 2008a, *Standard and Guidance for an archaeological watching brief*. Reading, IfA.

Institute for Archaeologists, 2008b, *Standard and Guidance for archaeological excavation*. Reading, IfA.

Peacock, D P S, and Williams, D F, 1986, *Amphora and the Roman Economy*, London

Perriam, D.R and Robinson, J, 1998, *The Medieval Fortified Buildings of Cumbria: An Illustrated Gazetteer and Research Guide*, Cumberland and Westmoreland Antiquarian and Archaeological Society.

Salter, M, 2002, *The Castles and Tower Houses of Cumbria*. Folly Publications.

Salzman, L.F, 1952, *Building in England down to 1540: A Documentary History*. Oxford University Press.

Shotter, D, 2004, *Romans and Britons in North-West England*, University of Lancaster

Town, M, 2008 *Project Design for an Archaeological Field Evaluation at Brough Castle, Brough, Cumbria*, North Pennines Archaeology Ltd, unpublished document.

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APPENDIX 1: CONTEXTS

Context Number	Trench	Category	Interpretation
(100)	1	Deposit	Topsoil
(101)	1	Deposit	Subsoil
(102)	1	Deposit	Archaeological deposit
(103)	2	Deposit	Topsoil
(104)	2	Deposit	Subsoil
(105)	2	Deposit	Archaeological deposit
{106}	1 and 2	Feature	Foundations of north curtain wall

APPENDIX 2: FIGURES

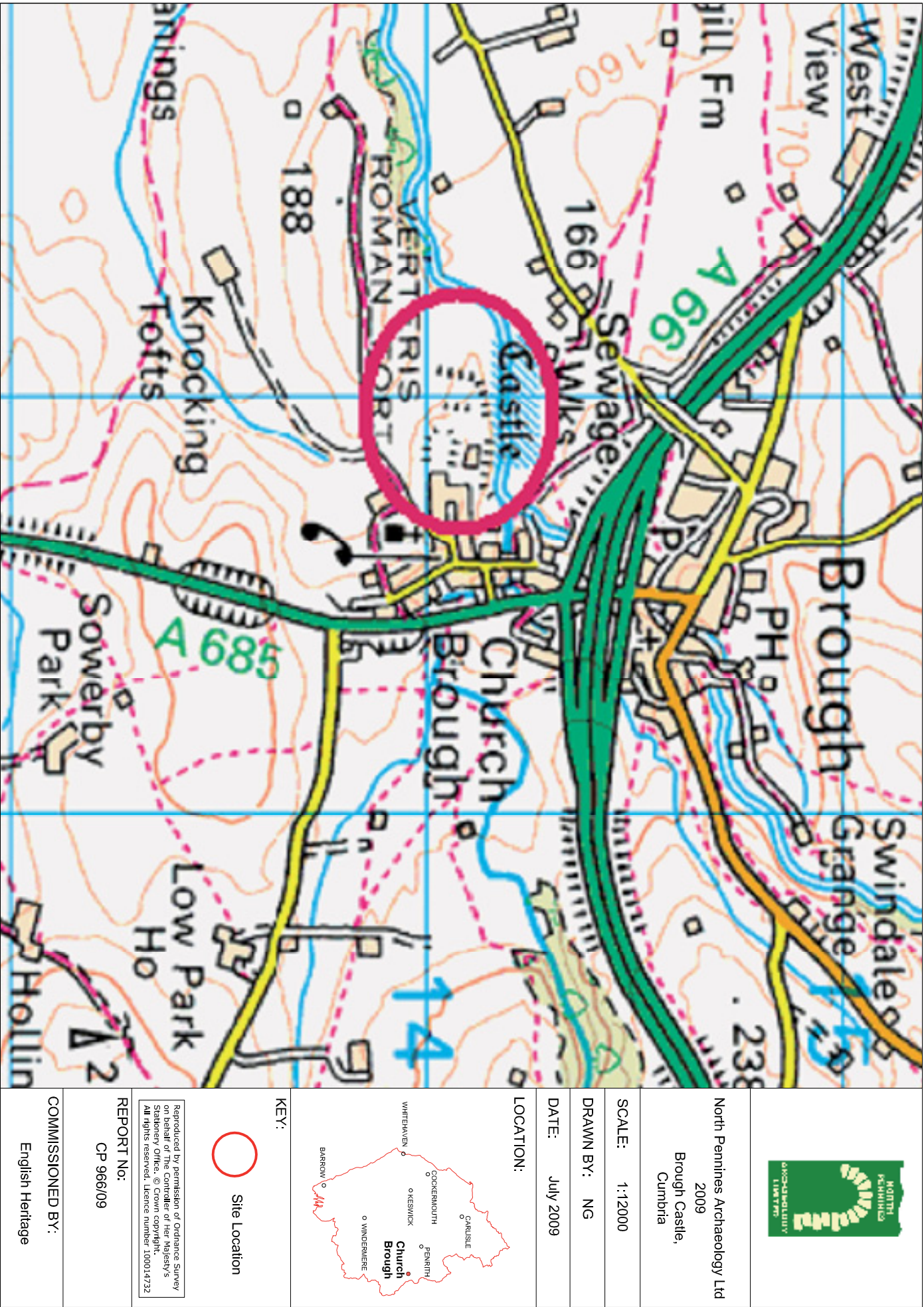


Figure 1 : Site Location

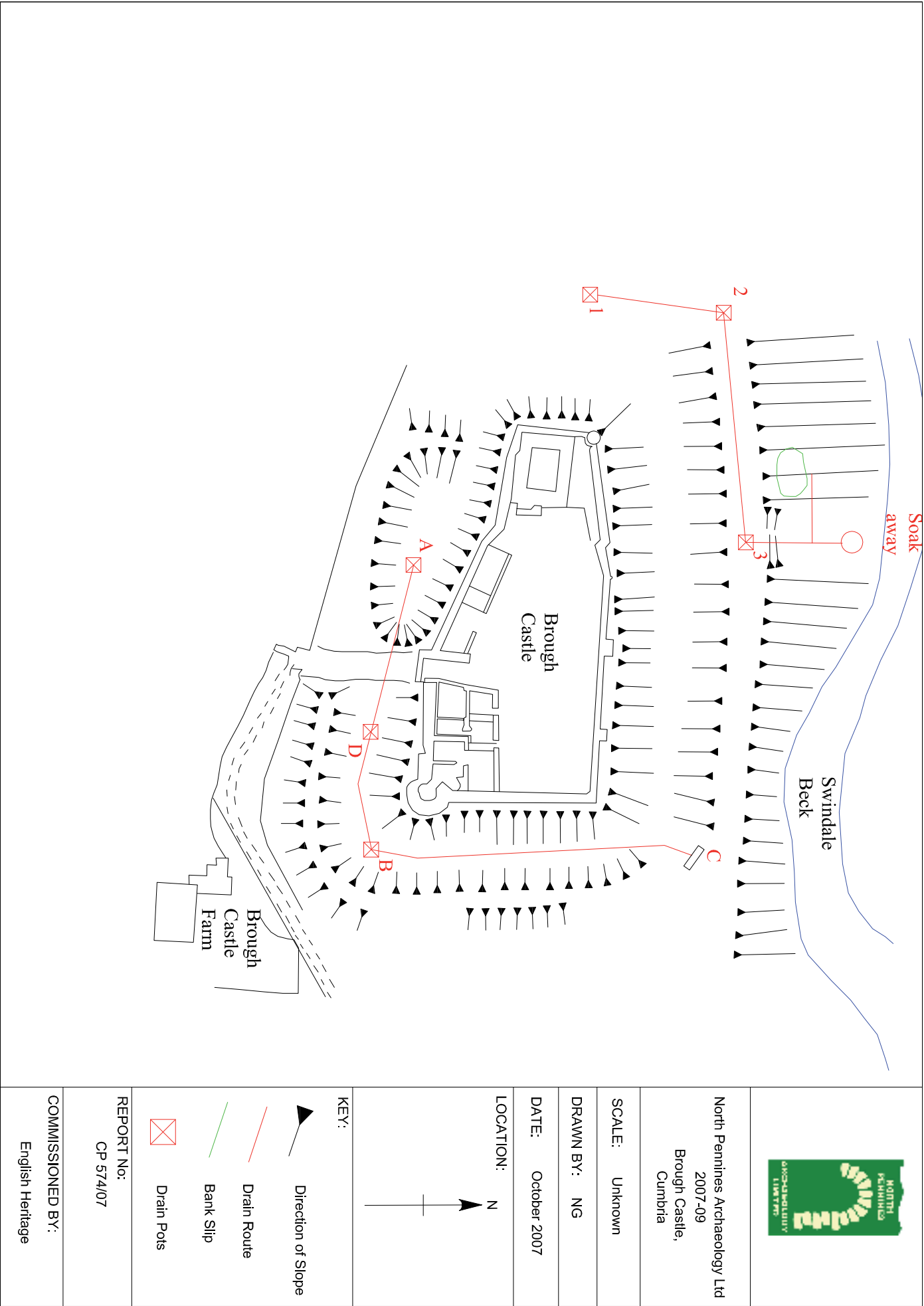
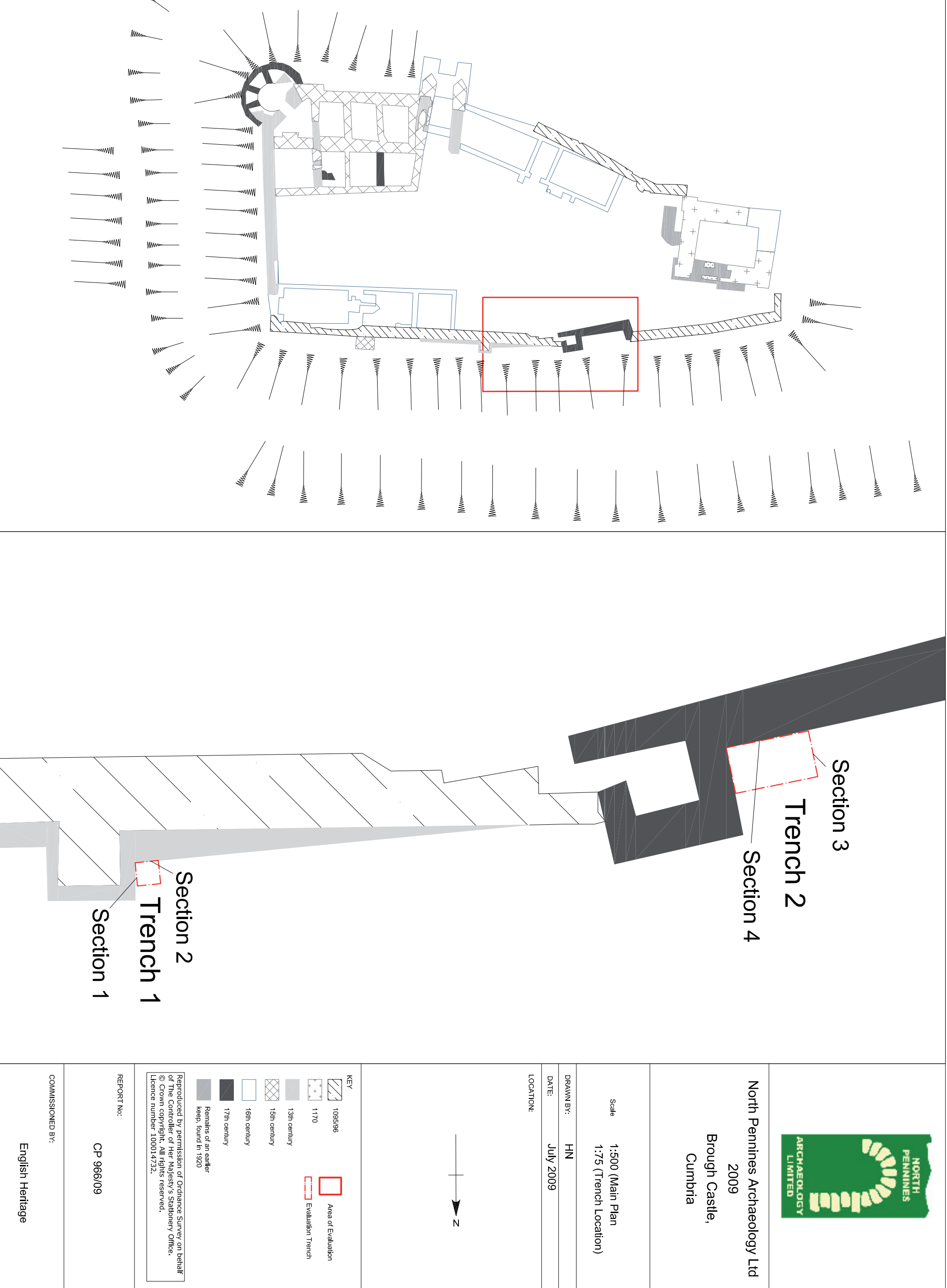


Figure 2 : Plan of Drain Route Around Castle Moat



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Figure 3: Phases of construction at Brough Castle (left; after Perriam and Robinson, 1998) and Trench Location Plan (right)



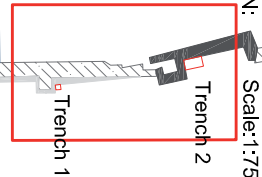
North Pennines Archaeology Ltd
2009
Brough Castle,
Cumbria

Scale 1:10


DRAWN BY: HN

DATE: July 2009

LOCATION: Scale:1:750



KEY:

 Lime Mortar

 Red sandstone

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REPORT No:

CP 966/09

COMMISSIONED BY:

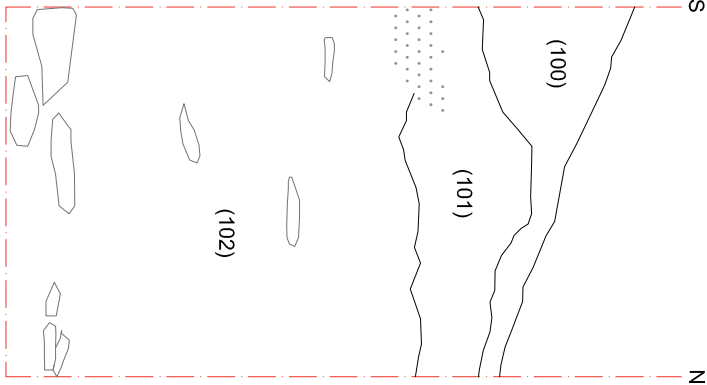
English Heritage

189.31
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Section 1

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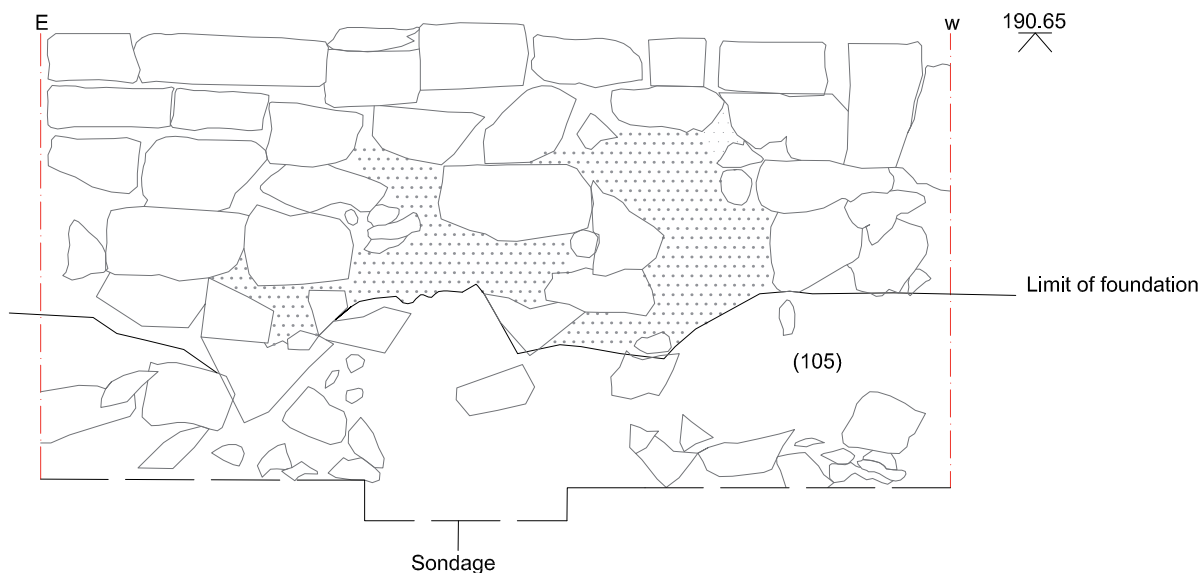


Section 2

Figure 4 :Trench 1 Sections.



Section 3



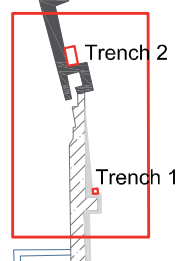
Section 4





North Pennines Archaeology Ltd
2009

PROJECT: Brough Castle, Cumbria
SCALE: 1:15
REPORT No: CP 966/09
CLIENT: English Heritage
DRAWN BY: HN
DATE: July 2009

LOCATION: Scale: 1:750



KEY:

-  Lime mortar
-  Red Sandstone

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Figure 5 :Trench 2 Sections