



# Moorhouse to Thurstonfield Pipeline, Moorhouse, Cumbria

## Rapid Desk-Based Research



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## CONTENTS

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<b>SUMMARY .....</b>	<b>2</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>3</b>
<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1 Circumstances of the Project .....	4
1.2 Site Location, Geology and Topography .....	4
<b>2. METHODOLOGY .....</b>	<b>6</b>
2.1 Rapid Desk-Based Research .....	6
2.2 Archive .....	6
<b>3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND.....</b>	<b>7</b>
3.1 Introduction .....	7
3.2 The Prehistoric Period (30,000 BC – AD 43) .....	7
3.3 The Historic Period .....	8
3.4 Map Regression .....	10
3.5 Aerial Photographs .....	11
<b>4. RESULTS.....</b>	<b>12</b>
4.1 Synthesis.....	12
<b>5. BIBLIOGRAPHY .....</b>	<b>13</b>
5.1 Primary and Cartographic Sources .....	13
5.2 Secondary Sources .....	13
<b>6. ILLUSTRATIONS.....</b>	<b>15</b>
6.1 List of Figures.....	15
6.2 List of Plates .....	15
<b>APPENDIX 1: GAZETTEER OF SITES .....</b>	<b>16</b>
<b>APPENDIX 2: LISTED BUILDINGS .....</b>	<b>21</b>

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## SUMMARY

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United Utilities proposed the construction of a pipeline from Bow, to the south of Moorhouse, Cumbria (NGR NY 33363 55606), following the B5307 road through Moorhouse village to Thurstonfield (NGR NY 33162 55661) approximately 1 mile to the west. The proposed development area lies a short distance to the south of Hadrian's Wall, a Scheduled Monument (SM no. CU2819) and a World Heritage Site, and, consequently, a condition was placed on planning consent for the proposed development, comprising a programme of archaeological works. Cumbria County Council Historic Environment Service (CCCHES) recommended rapid desk-based research was undertaken to investigate the application area in advance of the proposed development. In addition, a watching brief during the course of ground works for the construction of the pumping station was also recommended. Oxford Archaeology North (OA North) was subsequently commissioned by United Utilities to undertake this work. The desk-based research was undertaken in December 2008. The watching brief will be subject to a separate report.

In total, 18 sites within the study area were identified as a result of the rapid desk-based research, eight of these were recorded in the HER and a further ten were added as a result of consultation of historic maps. The results have been collated into a Gazetteer (*Appendix 1*) and are illustrated on Figure 2. The sites comprise six post-medieval sites including the site of a windmill (Site **01**), a corn mill/watermill (Site **05**), a farmhouse/farmstead (Site **08**), a tannery (Site **10**), a smithy (Site **12**), a Grade II listed hall (Site **18**) and a modern boat house (Site **09**). Also identified was the site of an early medieval Bow Stone (Site **11**) and a medieval village (Site **02**), a road (Site **06**), former field boundary (Site **13**) and a parish boundary (Site **14**). Consultation of aerial photographs referenced in the HER also revealed two features, listed on the HER, of unknown date, comprising earthworks (Site **03**) and soilmarks (Site **04**).

The proposed pipeline follows the highway in its entirety and, as a result, it is unlikely that any of the sites within the study area will be adversely affected by the scheme. However, if the scheme is diverted from the highway then further mitigation measures should be considered.



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## ACKNOWLEDGEMENTS

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OA North would like to thank United Utilities for commissioning the project. In addition, thanks are due to the staff of Cumbria County Council Historic Environment Services, Kendal (CCCHES) and Carlisle Record Office (CRO(C)), for their help and assistance.

Vicki Bullock undertook the rapid desk-based research and wrote the report. Mark Tidmarsh produced the drawings. Alison Plummer managed the project and also edited the report.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 United Utilities proposed the construction of a pipeline from Bow (NGR NY 33363 55606) through Moorhouse and onto Thurstonfield, Cumbria (NGR NY 33162 55661). The proposed construction area lies adjacent to the south of the line of Hadrian's Wall, part of the "Frontiers of the Roman Empire" World Heritage Site (UNESCO serial id 430bis-001). This is a trans-national UNESCO (United Nations Educational, Cultural and Scientific Organisation) monument designation, which initially comprised the Hadrian's Wall complex and the German 'limes'. Hadrian's Wall and its associated features were first inscribed as a World Heritage Site in 1987. Hadrian's Wall is also protected as a Scheduled Monument (SM No. CU2819), although the proposed development lies outside of the scheduled area.
- 1.1.2 The planning archaeologist at Cumbria County Council Historic Environment Services (CCCHES) requested a programme of archaeological works ahead of the proposed construction of the pipeline and, consequently, issued a verbal brief for this work. The brief recommended rapid desk-based research be undertaken to cover the application area in advance of the proposed development. A watching brief during the course of the ground works associated with the pumping station was also recommended.
- 1.1.3 United Utilities subsequently commissioned Oxford Archaeology North (OA North) to carry out this work. This report sets out the results of the rapid desk-based research, outlining the findings in the form of a short document. The sites have been collated into a Gazetteer (*Appendix 1*) and details of the Listed Buildings within the study area have also been included (*Appendix 2*). The watching brief will be subject to a separate report.
- 1.1.4 The work was consistent with the relevant standards and procedures of the Institute for Field Archaeologists (IFA) and generally accepted best practice.

### 1.2 SITE LOCATION, GEOLOGY AND TOPOGRAPHY

- 1.2.1 The proposed pipeline route (Fig 1) runs from Bow, to the south of Moorhouse, Cumbria (NGR NY 33363 55606), following the B5307 through Moorhouse village and west along Moorhouse Road to Thurstonfield (NGR NY 33162 55661), approximately 8km to the west of Carlisle (Countryside Commission 1998, 145–7).
- 1.2.2 The landscape is typically flat and exposed to the prevailing south-westerly winds (Countryside Commission 1998, 19). It is commonly used for dairy farming with large areas of pasture predominating in many areas as a result of extensive land improvement (*ibid*). Much of this improvement concentrated on former mosses and wetlands, although elements of these remain in places (*op cit*, 20).

- 1.2.3 To the west of Carlisle Liassic mudstones and limestones, of Jurassic age overlie the Permo-Triassic rocks, forming a small outlier around Great Orton and Wiggonby. Coal measures, mudstones, sandstones and a few coals, of Carboniferous age, lie beneath the Permo-Triassic rocks. Following the last glaciation vast quantities of rock debris was deposited as boulder clay, which was locally moulded into drumlins. Glacial meltwaters deposited spreads of sand and gravel. Peat mires are also important features locally ([www.bgs.ac.uk](http://www.bgs.ac.uk)).

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## 2. METHODOLOGY

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### 2.1 RAPID DESK-BASED RESEARCH

- 2.1.1 The desk-based research was undertaken to identify the archaeological potential of the proposed development site. The study focused on an area within 0.25km either side of the pipeline, forming a corridor 0.5km wide. Relevant information from a wider area was summarised to place the results of the desk-based research into an archaeological and historical context. The known archaeological sites within the 0.5km study area have been included in the Site Gazetteer (*Appendix 1*). There are a large number of Listed Buildings in Moorhouse and these include clay dabbins or clay daubin structures, parts of which date to the medieval period. However, as the proposed pipeline will follow the existing road, these will not be affected by the development and have been included as an Appendix to the report (*Appendix 2*).
- 2.1.2 Several sources of information were consulted as part of the research, which have provided a good understanding of the developmental history of the study area. Archive sources that were consulted include:
- 2.1.3 ***Cumbria County Council Historic Environment Record (CCCHER), Kendal:*** the Historic Environment Record was consulted to establish the presence of sites of cultural heritage interest already known within a 0.25km radius centred on the proposed pipeline route. Secondary sources for the area were limited, but ‘grey literature’, published sources and aerial photographs were studied where available.
- 2.1.4 ***Cumbria County Record Office, Carlisle (CRO(C)):*** the Record Office holds Ordnance Survey (OS) maps and other cartographic and documentary sources relating to the study area.
- 2.1.5 ***Oxford Archaeology North:*** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise of Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.

### 2.2 ARCHIVE

- 2.2.1 A full professional archive has been compiled in accordance with current IFA and English Heritage guidelines (English Heritage 2006). The paper and digital archive will be provided in the English Heritage Centre for Archaeology format and will be submitted to the Cumbria Record Office (Carlisle) on completion of the project. The Arts and Humanities Data Service (AHDS) online database Online Access index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project.

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### 3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

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#### 3.1 INTRODUCTION

- 3.1.1 The following background was compiled mainly from secondary sources and is intended only as a brief summary in order to place the study area into a wider historical and archaeological context.

#### 3.2 THE PREHISTORIC PERIOD (30,000 BC – AD 43)

- 3.2.1 Evidence for immediate post-glacial activity in the area although sites dating to the late Mesolithic are known from almost the entire length of the Cumbrian coast (Cherry and Cherry 2002; Young 2002). Recent work at CNDR, Carlisle has shown significant evidence of Mesolithic activity in the area (OA North forthcoming). Extensive remains thought to represent all-year settlement, have been investigated on the coast at Eskmeals (Bonsall *et al* 1994). There is evidence for human impact on the vegetation of the North Cumbrian coast from as early as *c* 6000 BC (Hodgkinson *et al* 2000, 107). A sequence of acute sea-level changes is also known to have affected the area from *c* 5000 BC. This at first resulted in a dramatic rise in relative sea level, before a gradual retreat to current levels. This resulted in the development of extensive wetlands, which grew out of areas of shallow water held in a number of smaller basins (Hodgkinson *et al* 2000, 99). This sequence of events was also probably responsible for the creation of a submerged forest discovered during the nineteenth century between Glasson and Kirkland (*op cit*, 87).
- 3.2.2 Sites of Neolithic date are elusive within the area, although discoveries of artefacts, such as axes, are not uncommon, and their relationship with wetland environments may be significant (*op cit*, 111). Again, recent excavations at CNDR, Carlisle have shown significant evidence of Neolithic activity in the area (OA North forthcoming). Excavation at Plasketlands, near Mawbray (Bewley 1994) identified a timber structure dated to the mid-fourth millennium BC. This remains a rare discovery, although the large number of stone axes of Neolithic date discovered across the Solway Plain would suggest that further settlements existed (Hodgkinson *et al* 2000). There are no sites of Neolithic date within the study area.
- 3.2.3 Sites dating to the Bronze Age are difficult to recognise; although a number of sub-circular enclosures have been identified through the interpretation of aerial photographs (Bewley 1994), many of which may be Bronze Age or Iron Age. Settlements of this type are unlikely to have surviving above ground remains in an area of intense agriculture such as the Solway coast (McCarthy 2000). Environmental evidence has identified cereal pollen dating from *c* 2000 cal BC (Hodgkinson *et al* 2000, 113), demonstrating the presence of agriculture by at least the Bronze Age.
- 3.2.4 There are numerous remains possibly dating from the prehistoric period in the fields surrounding Moorhouse and Thurstonfield which survive as cropmarks

or soilmarks (Sites **03** and **04**). Site **03** survives as a cropmark complex (Fig 2) to the east of Moorhouse. There is a collection of regularly-shaped enclosures adjoining what appears to be a central north-west/south-east axis. A small sharp-cornered rectangular enclosure, apparently with an entrance in the south-east side, possibly bi-vallate is also present. There is also a roughly oval-shaped enclosure and a sub-rectangular shaped enclosure. Numerous other lines cut across the complex, usually at 90 degrees to the main axis. Site **04** survives as possible soilmarks shown on aerial photographs (Fig 2).

### 3.3 THE HISTORIC PERIOD

- 3.3.1 **Romano-British (AD 43 - AD 410)**: the few sites of late prehistoric date that have been excavated have often been shown to have a long period of use, sometimes lasting well into the Roman occupation (Bewley 1994). Roman activity in the area is, of course, graphically demonstrated by the presence of Hadrian's Wall (constructed *c* AD 122-30). There was also a Roman fort at Burgh by Sands, just to the north of Moorhouse (*Aballava*) which appears to have been occupied from the mid-second to the late fourth century AD. There is no visible trace of this fort except for a distinct drop in the road over the western defences. A carved stone was found at Bow (Site **11**; Fig 2), to the south of Moorhouse. The sculptured stone possibly originated as either a lintel, or the jamb to a Christian building in the sub-Roman period. It was later reused for an unknown function in the fourteenth-fifteenth century when a sword was incised on one side. A Roman vase and *Denarii* of Constantine and Diocletian, found in 1855, is recorded to the east of Bow on the First Edition Ordnance Survey map of 1867 (Fig 3). The map also marks the position of 'Roman Antiquities' found at Kirkstead (Bewley 1994).
- 3.3.2 **Early Medieval (AD 410 – AD 1066)**: place-name evidence suggests that there was a degree of continuity within the indigenous population, with 'Celtic' name elements surviving in a number of places (Armstrong *et al* 1950). A sequence of small regional kingdoms was established following Roman rule, although the influence of each fluctuated over time (Rollinson 1996, 33). One of the most significant is that of Rheged, which was probably established some time in the later sixth century AD. Over time the Anglian kingdoms of the north-east also began to exert an influence on the area and the spread of Christianity also made its mark (*op cit*, 149-51). The carved stone found at Bow (Site **11**) may provide evidence of early medieval activity in the area if it was, as suggested, used as a lintel or jamb to an early Christian building during the sub-Roman period.
- 3.3.3 These factors, coupled with Viking settlement during the centuries immediately prior to the Norman invasion, which is commonly seen across the county (Rollinson 1996, 37-8) have had a very mixed affect on the landscape. Place-name evidence tends to be dominated by Norse words (Armstrong *et al* 1950), while physical evidence for continuity of settlement and activity in the early medieval period is not obvious within the study area, although it is possible that the design of the clay longhouses of the fifteenth century may have originated in the Viking period.

- 3.3.4 **Late Medieval (AD 1066 – AD 1540):** while the Norman Conquest may have marked a turning point in British history, it was not until 1092, when William Rufus took Carlisle and the surrounding area from Scotland (Rollinson 1996, 43), that its impact was truly felt in the region. Bowness-on-Solway and the neighbouring area formed part of the Barony of Burgh. The area was very volatile throughout the medieval period, at first due to continuous cross-border conflict with Scotland (Rollinson 1967, 87-9), and later as a result of general lawlessness associated with the border reivers.
- 3.3.5 Moorhouse (Site **02**) is a township of the parish and barony of Burgh by Sands (Plate 1). The village has medieval origins and is well-documented, with manorial surveys for 1589, 1638 and 1691, manorial records for freehold and customary properties from 1476, and manorial court books from the end of the seventeenth century. The village has numerous clay buildings of considerable historical interest. At least seven Moorhouse buildings still have crucks and at least three of the nine farms were longhouses (Jennings 1993). A number of re-used timbers of the Royal Oak Cottage, Moorhouse have been dendro-dated to the late fourteenth or possibly very early fifteenth century (Jennings 2003, 56). Moorhouse Hall, is a Grade II listed mid-eighteenth century house marked on Hodgkinson and Donald's map of Cumberland (surveyed 1770), as the house of Joseph Liddle.
- 3.3.6 Until the construction of the railways most building materials used on the Solway Plain were transported only a few miles, except in the case of churches, manor houses and possibly watermills, and this meant that a clay mixture together with cobbles, straw and reeds was all that was available to most people. The buildings constructed were known as clay dabbins or clay daubins some of which have stood for five centuries or more. The cruck-framing of the roofs used less timber, in an area of limited supply, than any other structure before the introduction of load-bearing stone walls (*op cit*).
- 3.3.7 **Post-Medieval and Industrial Period (AD 1540 - 1901):** the Solway Plain had long been an agricultural area, but with small-scale industry, such as handloom weaving, basket making and tanneries in some of the villages. The villages also had their own joiners, blacksmiths, tailors, cloggers and other craftsmen and were largely self-sufficient (Jennings 2003, 11). In a history of Cumberland and Westmorland, Whellan describes Moorhouse as having three corn mills and a tannery (Whellan 1860). There was also a tannery in Thurstonfield. The mills (Sites **01**, **05** and **08**) were all constructed during post-medieval period. Site **01** is a demolished windmill dated to the seventeenth century. The windmill is extant on a map from a survey of the Barony of Burgh by Sands dated 1685 (CRO(C) D/Lons/L marked as '*Stordy's watermill*' (Plate 1). On the First Edition Ordnance Survey map of 1867 (Fig 3) the mill is marked as Low Mill (corn) but it is unnamed on the Second Edition of 1901 (Fig 4). High Mill (Site **05**) is shown on the First Edition Ordnance Survey map of 1867, and was also a water-powered corn mill.
- 3.3.8 A Wesleyan Methodist Chapel (Site **17**) was constructed in Thurstonfield in 1861 and was associated with the Carlisle Methodist Circuit. In Moorhouse there was also a Quaker Meeting House and burial ground of 1733, continuing

in use until 1913 (Sites **15** and **16**). The building was then used by Methodists, and is now used as a barn ([www.pastscape.org.uk](http://www.pastscape.org.uk)).

### 3.4 MAP REGRESSION

- 3.4.1 ***Tithe Map of Burgh by Sands, 1847***: a tracing of this map was taken, it shows both Moorhouse and Thurstonfield. Moorhouse Hall (Site **18**) is shown and the numbers on the map correspond to an accompanying schedule which list the owners and occupiers of the land. All of the relevant numbers referred to within each village were homesteads and crofts but the entries contained no further information on either the names or functions of the other structures within each village.
- 3.4.2 ***Ordnance Survey First Edition map, 1867 (Fig 3)***: the hamlet of Bow is marked and comprises at least three farmsteads. Following the road north into Moorhouse, the Friends Meeting House (Site **15**; Plate 2) and Burial Ground (Site **16**) are marked. A possible former tree-lined boundary (Site **13**) is visible in a field to the west of the road, to the rear of Moorhouse Hall (Site **18**) and a boundary marked with R.H. (Root of Hedge) is also shown (Site **14**). Orchard Farm (Site **07**; Plate 5) is present but not named. Moorhouse Hall (Site **18**; Plates 3) is also marked, as is Moorhouse Green. Following the road west towards Thurstonfield, Longwath, is shown as is Low Mill (Site **05**) to the rear of Moor Park. High Mill (Site **08**) is on the edge of the village adjacent to Thurstonfield Lough. A Wesleyan Methodist Chapel (Site **17**) is also marked to the rear of the site of High Mill (Site **08**).
- 3.4.3 Thurstonfield Lough is formed in boulder clay and is thought to be a natural feature, although the water levels are now controlled by sluice. The Lough was used as the header tank for the artificial water courses which run towards the Solway Firth. The Lough provided water to the corn mills even in times of low rainfall. Different mills worked on different days of the week to maintain the flow of water. This water management allowed each settlement down stream to run its own mill.
- 3.4.4 ***Ordnance Survey Survey Second Edition map, 1901 (Fig 4)***: there has been little change in either the layout of the villages or the structures. The site of the ‘Sculptured Stone’ is marked to the south-east of Bow and Rose Cottage had been constructed to the north of Moorhouse. A ‘Smy’ (smithy; Site **12**) is marked at the crossroads in Moorhouse which was not marked on the First Edition map. The Friends Meeting House (Site **15**) is shown although the burial ground (Site **16**) is not annotated. Low Mill (Site **05**) is no longer marked on the map, although a rectangular structure is still present. High Mill (Site **08**) is marked on the map. A Boat House (Site **09**) is marked adjacent to the Methodist Chapel (Site **17**) and Thurstonfield Lough and a ‘Tannery’ (Site **10**). The south-western section of Thurstonfield Lough, to the west of the road south from Thurstonfield, appears to be at least partially drained and is shown as marsh.
- 3.4.5 ***Ordnance Survey Third Edition map, 1926***: there appear to have been no significant changes to Moorhouse since 1901, although the Smithy (Site **12**) is



no longer shown. The Friends Meeting House and Burial Ground are still marked, as is the site of the Sculptured Stone (Site **11**) at Bow. High Mill (Site **08**), the Boat House (Site **09**), the Methodist Chapel and the Tannery (Site **10**) are all marked on the map.

- 3.4.6 ***Ordnance Survey Special Edition map, 1938***: this mapping is very similar to the Ordnance Survey map from 1926, with no significant changes within the study area.
- 3.4.7 ***Ordnance Survey 1: 10000 map 1974, (Fig 5)***: Low Bow and High Bow are marked, as is Spinney Corner at Bow. Moorhouse Farm and Orchard Farm (Site **07**) are both marked, as is Hall Farm, Longwath and Rose Cottage. The rectangular building on the site of Low Mill (Site **05**) is no longer present. Moor Park is still present. There is a structure in the same position as the Boat House (Site **09**) but it is not named. Lough House has been constructed adjacent to the Lough which is smaller in size than on earlier maps and there appears to have been planting around the lake edge. The chapel (Site **17**) is still present. In Thurstonfield only Field House and Hill Farm are named.

### 3.5 AERIAL PHOTOGRAPHS

- 3.5.1 Relevant aerial photographs held at CCCHES in Kendal were consulted during the rapid research. The Moorhouse enclosure cropmarks (NY 338 568; Site **03**) were visible on a series of these photographs as were the soilmarks (Site **04**). The double-enclosure was visible as a rectangular feature with a visible opening. The cropmarks seem to continue into the adjacent field but as the field had been ploughed none were visible. Reproduction of the aerial photographs was not permitted under copyright restrictions.

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## 4. RESULTS

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### 4.1 SYNTHESIS

- 4.1.1 In total, 18 sites were identified within the study area as a result of the rapid desk-based research. Of these, eight were listed on the HER and the remaining ten were identified following consultation of historic maps. These included a stone of possible early medieval date (Site **11**), and the medieval village of Moorhouse (Site **02**). Post-medieval sites included a windmill (Site **01**), two corn mills (Sites **05** and **08**), a Grade II listed farm (Site **07**), a tannery (Site **10**), a smithy (Site **12**), a Quaker Meeting House and burial ground (Sites **15** and **16**), a Wesleyan Methodist Chapel (Site **17**) a Grade II listed Hall (Site **18**) and a modern boat house (Site **09**). There are also five sites of unknown date including a road (Site **06**), enclosure (Site **03**), soilmarks (Site **04**) and two historic boundaries (Sites **13-14**).
- 4.1.2 The proposed route of the pipeline follows the highway for its entire course and, as a result, none of the sites, or the listed buildings within the study area (*Appendix 1* and *Appendix 2*), should be adversely affected by the pipeline. There is, however, a requirement for a watching brief during the ground disturbance should the pipeline be re-routed out of the highway, and within the site of the proposed pumping station.

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## 5. BIBLIOGRAPHY

---

### 5.1 PRIMARY AND CARTOGRAPHIC SOURCES

Barony of Burgh by Sands Tithe Map, PR 44/20 1843

CRO(C) D/Lons/L *Sirvey of the Barony of Burgh by Sands* , 1685

Ordnance Survey First Edition 6" map Cumberland Sheet XXIII and XXII, 1867

Ordnance Survey Second Edition 6" map Cumberland Sheet XXII NE and XXXIII NW, 1901

Ordnance Survey Third Edition 6" map Cumberland Sheet Sheet XXII NE and XXXIII NW, 1926

Ordnance Survey Sepcial Emergency Edition 6" map, Revised Edition, Cumberland Sheet XXIII NW, 1938

Ordnance Survey Modern Series 1: 10000 map, 1974 sheet NY 35 NW

### 5.2 SECONDARY SOURCES

Armstrong, AM, Mawer, A, Stenton, FM, and Dickens, B, 1950 *The Place-names of Cumberland*, Engl Place-name Soc, **20-22**, Cambridge

Bewley, RH, 1994 Prehistoric and Romano-British Settlement in the Solway Plain, Cumbria, Oxbow monog **36**, Oxford

Bonsall, C, Sutherland, DG, and Payton, RW, 1994 The Eskmeals coastal foreland: archaeology and shoreline development, in (eds J Boardman and J Walden) *Quat Res Assoc Cumbria Field Guide*, 90-102, Oxford

British Geological Survey Index: [www.bgs.ac.uk/geoindex/index.htm](http://www.bgs.ac.uk/geoindex/index.htm), accessed December 2008

Cherry, PJ and Cherry, J, 2002 Coastline and Upland in Cumbrian Prehistory - A Retrospective, *Trans Cumberland Westmorland Antiq Arch Soc*, 3<sup>rd</sup> ser, **2**, 1-20.

Countryside Commission, 1998 *Countryside Character: the Character of England's Natural and Manmade Landscape*, vol 2: the North West, Cheltenham

English Heritage, 2006 *Management of Research Projects in the Historic Environment*

Hodgkinson, D, Huckerby, E, Middleton, R, and Wells, CE, 2000 *The Lowland Wetlands of Cumbria, North West Wetlands Survey* 6, Lancaster Imprints 8, Lancaster

Institute of Field Archaeologists, 1999 *Standard and guidance for archaeological Desk-based Assessments*

Jennings, N, 1993 *The buildings of Moorhouse, Burgh by Sands* TCWAAS Vol XCII, Stroud, 237-269

Jennings, N, 2003 *Clay Dabbins; Vernacular Buildings of the Solway Plain* CWAAS Extra Ser Vol XXX, Kendal

McCarthy, MR, 2000 *Roman and Medieval Carlisle: The Southern Lanes*, Carlisle Archaeology Limited Res Rep, 1, Carlisle

OA North, 2003 *Standingstones, Wigton, Cumbria, Archaeological Assessment and Evaluation*, unpubl rep

OA North forthcoming *Excavations on the Carlisle Northern Development Route: Post-Excavation Assessment*

Rollinson, W, 1996 *A History of Cumberland and Westmorland* (2nd ed), Chichester

Whellan, W, 1860 *The History and Topography of the Counties of Cumberland and Westmorland*, Pontefract

Young, R, 2002 The Palaeolithic And Mesolithic Periods in Northern England: An Overview, in Brooks, C, Daniels, R and Harding, A eds, *Past Present and Future, The Archaeology of Northern England*, Architect Arch Soc Durham Northumberland, res rep 5, Durham Illustrations

## 5.2 WEBSITES

[www.pastscape.org.uk](http://www.pastscape.org.uk)

[www.bgs.ac.uk](http://www.bgs.ac.uk)

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## 6. ILLUSTRATIONS

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### 6.1 LIST OF FIGURES

Fig 1: Site Location

Fig 2: Plan of Gazetteer Sites

Fig 3: Proposed route superimposed upon the Ordnance Survey First Edition 6" to 1 mile map, 1867

Fig 4: Proposed route superimposed upon the Ordnance Survey Second Edition 6" to 1 mile map, 1901

Fig 5: Proposed route superimposed upon the Ordnance Survey Second Edition 1:10000 map, 1974

### 6.2 LIST OF PLATES

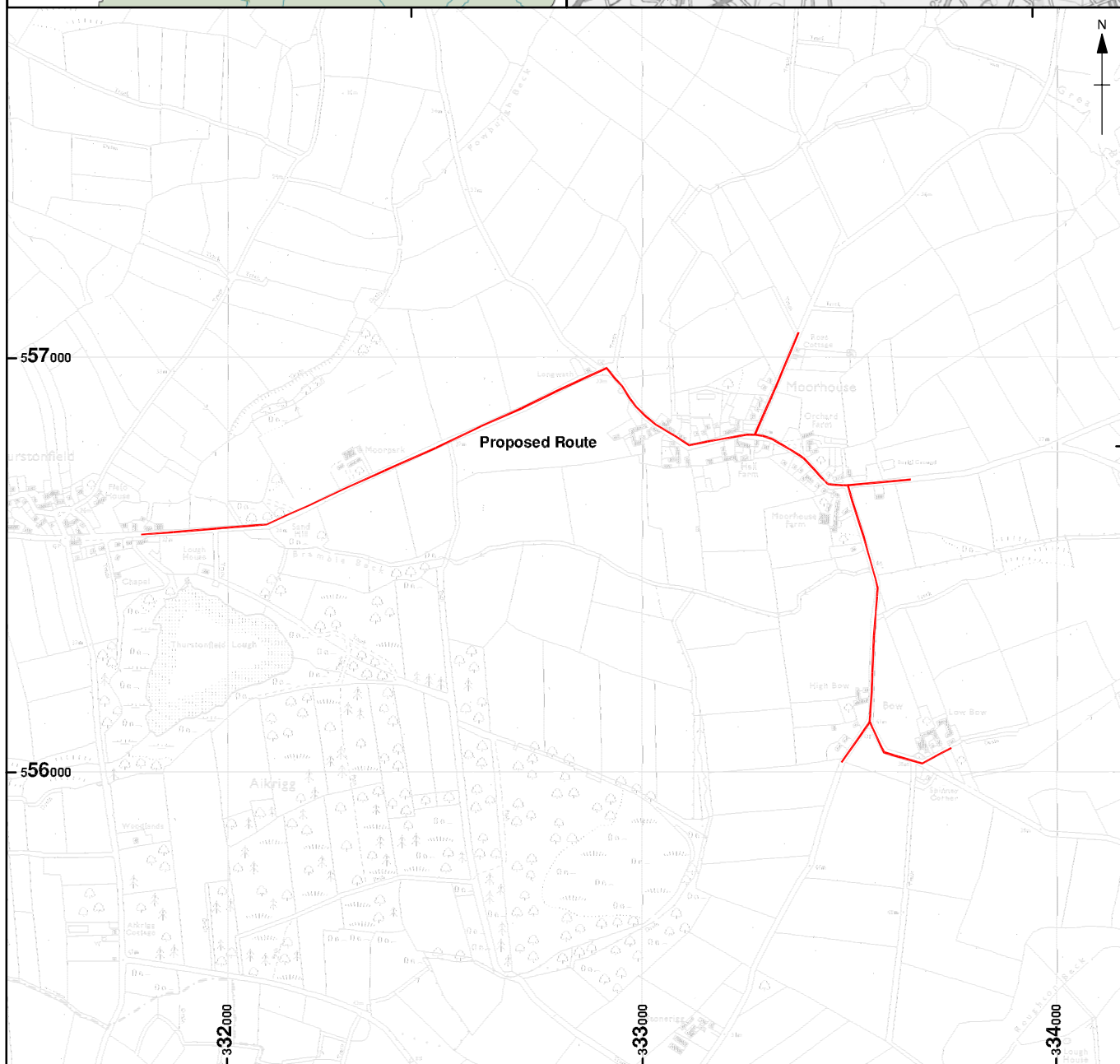
Plate 1: Extract from a survey of the Barony of Burgh by Sands, 1685

Plate 2: Former Friends Meeting House, Moorhouse erected 1733

Plate 3: Moorhouse Hall marked on Hodgkinson and Donalds map of Cumberland, 1770, as home of Joseph Liddle

Plate 4: Farmhouse of late seventeenth century date. Whitewashed, rendered clay walls

Plate 5: Orchard House Farm, a late seventeenth century farmhouse partially constructed using clay



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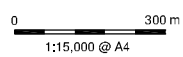


Figure 1: Site location

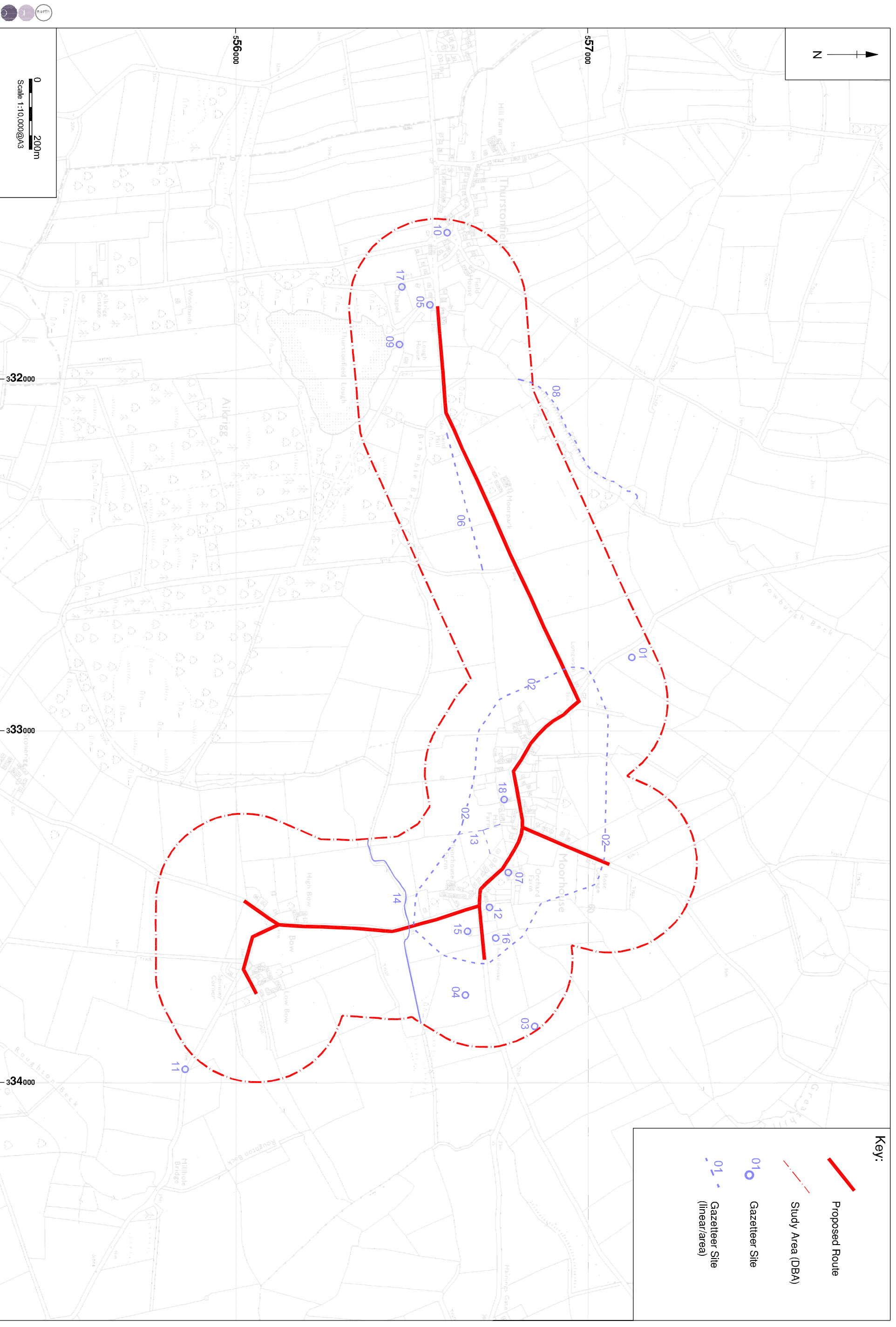


Figure 2: Plan of gazetteer sites



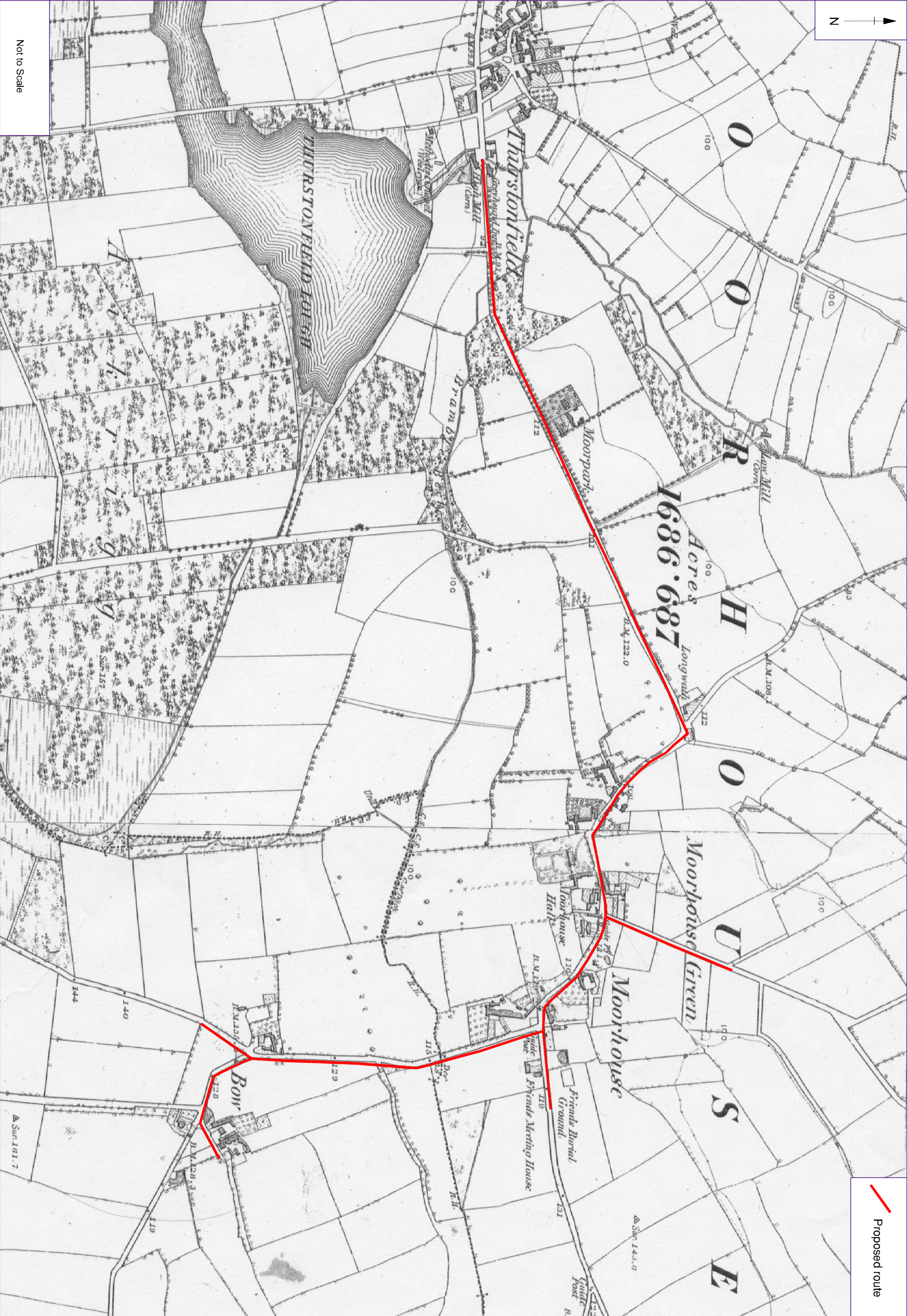


Figure 3: Proposed route superimposed upon the Ordnance Survey First Edition 6"-1 mile map, 1867



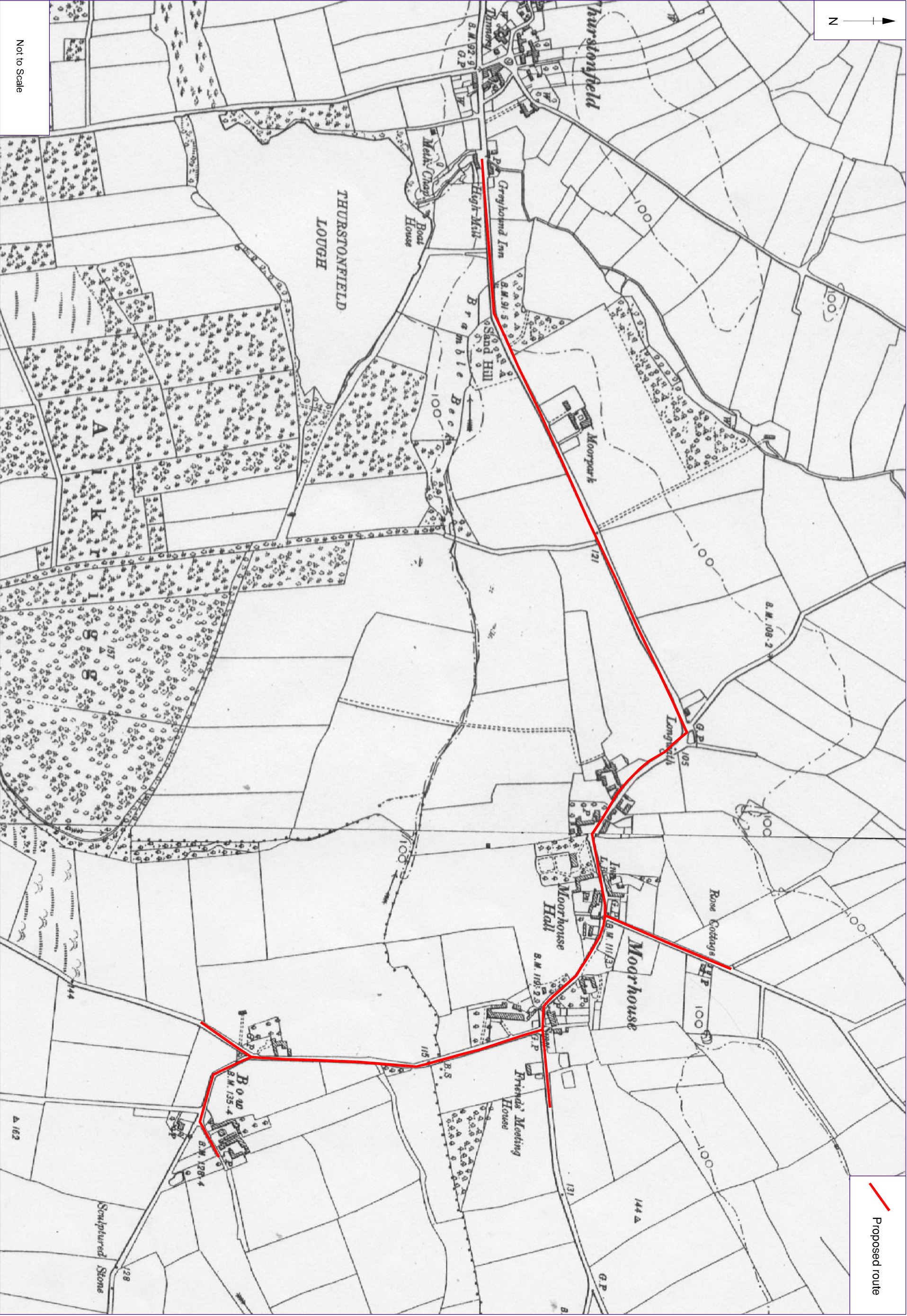


Figure 4: Proposed route superimposed upon the Ordnance Survey Second Edition 6"-1 mile map, 1901



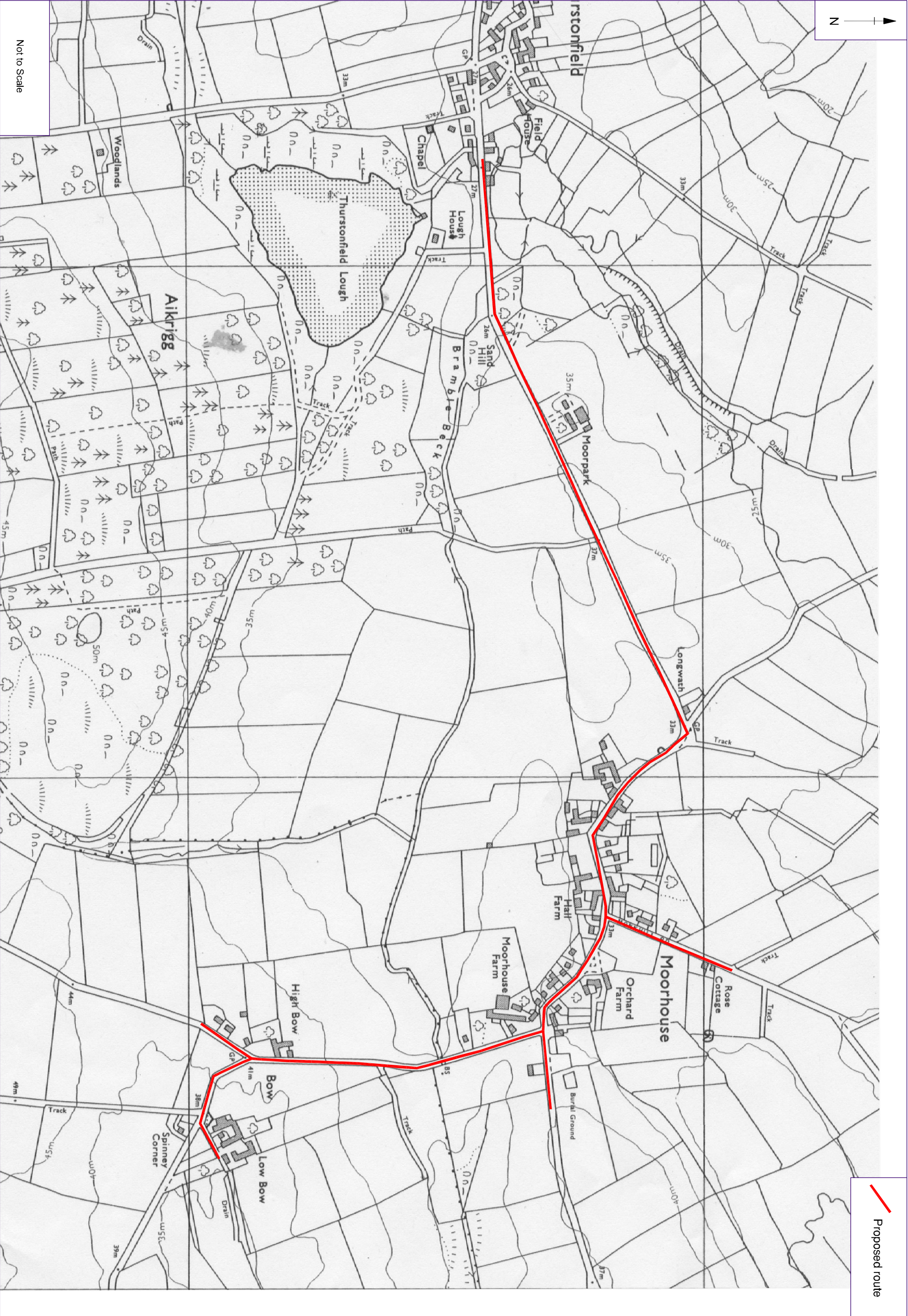


Figure 5: Proposed route superimposed upon the Ordnance Survey 1:10000 map, 1974



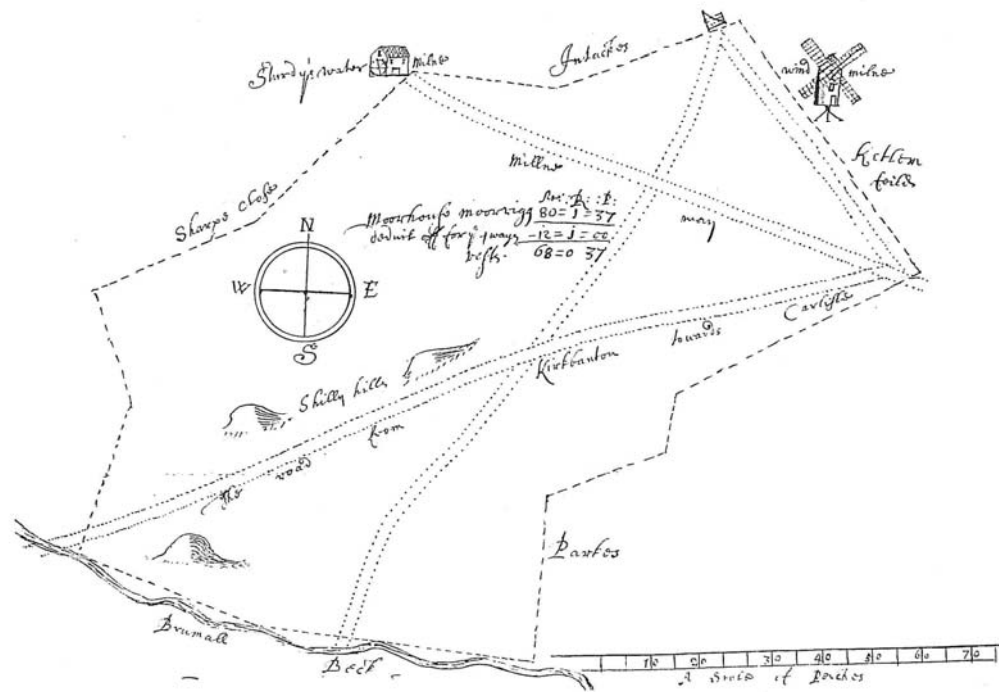


Plate 1: Extract from a survey of the Barony of Burgh by Sands, 1685



Plate 2: Former Friends Meeting House, Moorhouse erected 1733



Plate 3: Moorhouse Hall marked on Hodgkinson & Donald's map of Cumberland, 1770, as home of Joseph Liddle.



Plate 4: Farmhouse of late seventeenth century date. Whitewashed, rendered clay walls.



Plate 5: Orchard House Far, a late seventeenth century farmhouse partially constructed using clay

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## APPENDIX 1: GAZETTEER OF SITES

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<b>Site number</b>	<b>01</b>
<b>Site name</b>	<b>Moorhouse Windmill (site of)</b>
<b>NGR</b>	332790 557120
<b>HER No</b>	<b>4393</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Windmill</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	CCCHER
<b>Description</b>	The site of demolished windmill dated to the seventeenth century. The windmill is shown as extant on a map of 1685 (Barony of Burgh-by-Sands 1685).
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>02</b>
<b>Site name</b>	<b>Moorhouse Medieval Village</b>
<b>NGR</b>	333200 556800
<b>HER No</b>	<b>19154</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Village</b>
<b>Period</b>	Medieval
<b>Sources</b>	CCCHER
<b>Description</b>	The general area for Moorhouse village.
<b>Assessment</b>	Although the pipeline will run through the village, the village will not be affected as the works are to be contained within the highway

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<b>Site number</b>	<b>03</b>
<b>Site name</b>	<b>Moorhouse Enclosure cropmarks</b>
<b>NGR</b>	333850 556900
<b>HER No</b>	<b>9728</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Enclosure</b>
<b>Period</b>	Unknown
<b>Sources</b>	CCCHER
<b>Description</b>	Identified on aerial photographs: There is a collection of regularly-shaped enclosures adjoining what appears to be a central north-west/south-east axis. A small sharp-cornered rectangular enclosure, apparently with an entrance in the south-east side, possibly bi-vallate is also present.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>04</b>
<b>Site name</b>	<b>Burgh by Sands soilmarks</b>
<b>NGR</b>	333750 556650
<b>HER No</b>	<b>16709</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Soilmarks</b>
<b>Period</b>	Unknown
<b>Sources</b>	CCCHER
<b>Description</b>	Possible soilmarks shown on aerial photographs.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>05</b>
<b>Site name</b>	<b>High Mill, Thurstonfield, Burgh By Sands</b>
<b>NGR</b>	331790 556550
<b>HER No</b>	<b>10325</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Corn Mill/Watermill</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	CCCHER
<b>Description</b>	The site of a demolished cornmill.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>06</b>
<b>Site name</b>	<b>Moorhouse Road, Burgh By Sands</b>
<b>NGR</b>	332170 556600
<b>HER No</b>	<b>4394</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Road</b>
<b>Period</b>	Unknown
<b>Sources</b>	CCCHER
<b>Description</b>	Former course of road.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>07</b>
<b>Site name</b>	<b>Orchard Farm, Moorhouse, Burgh By Sands</b>
<b>NGR</b>	333400 556770
<b>HER No</b>	<b>41998</b>
<b>Statutory Designation</b>	Grade II Listed Building
<b>Site type</b>	<b>Farmhouse/Farmstead</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	CCCHER
<b>Description</b>	A farmstead shown on the First Edition Ordnance Survey map of 1867. The farmhouse is late-seventeenth century with early nineteenth century alterations and additions
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>08</b>
<b>Site name</b>	<b>Sturdy's Mill/Low Mill, Burgh By Sands</b>
<b>NGR</b>	332340 557140
<b>HER No</b>	<b>42181</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Corn Mill/Mill Race/Watermill</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	CCCHER
<b>Description</b>	Site of a former watermill, named Sturdy's Mill on a Barony of Burgh-by-Sands survey map after the Sturdy family of Thurstonfield and Moorhouse. It is marked as a cornmill and named Low Mill on the First Edition Ordnance Survey map of 1867 but is unnamed on the Second Edition map of 1901, and is not marked on modern mapping.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>09</b>
<b>Site name</b>	<b>Boat House</b>
<b>NGR</b>	331901 556465
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Boat House</b>
<b>Period</b>	Modern
<b>Sources</b>	Ordnance Survey Second Edition 6" map, 1901
<b>Description</b>	Site of a Boat House not present on First Edition map of 1867.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>10</b>
<b>Site name</b>	<b>Tannery</b>
<b>NGR</b>	331584 556601
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Tannery</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	Ordnance Survey Second Edition 6" map, 1901
<b>Description</b>	Site of a Tannery not named on Ordnance Survey First Edition map of 1867
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>11</b>
<b>Site name</b>	<b>The Bow Stone (site of)</b>
<b>NGR</b>	333960 555857
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Stone</b>
<b>Period</b>	Early Medieval
<b>Sources</b>	Ordnance Survey Second Edition 6" map, 1901
<b>Description</b>	Site of a sculptured stone, not marked on Ordnance Survey First Edition map of 1867, which possibly originated as either a lintel, or the jamb to a Christian building in the sub-Roman period. It was later reused for an unknown function in the 14th-15th century when a sword was incised on one side.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>12</b>
<b>Site name</b>	<b>Moorhouse Smithy</b>
<b>NGR</b>	333500 556721
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Smithy</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	Ordnance Survey Second Edition 6" map, 1901
<b>Description</b>	Site of a smithy not shown on Ordnance Survey First Edition map of 1867 or Third Edition of 1926.

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<b>Site number</b>	<b>13</b>
<b>Site name</b>	<b>Former tree-lined boundary</b>
<b>NGR</b>	333283 556669
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None

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<b>Site type</b>	<b>Boundary</b>
<b>Period</b>	Unknown
<b>Sources</b>	Ordnance Survey First Edition 6" map, 1867
<b>Description</b>	A possible former tree-lined boundary visible in a field to the west of the road, to the rear of Moorhouse Hall.
<b>Assessment</b>	The site lies outside of the proposed pipeline route and is unlikely to be affected

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<b>Site number</b>	<b>14</b>
<b>Site name</b>	<b>Parish Boundary</b>
<b>NGR</b>	333557 556492
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	
<b>Period</b>	Unknown
<b>Sources</b>	Ordnance Survey First Edition 6" map, 1867
<b>Description</b>	A civil parish boundary crossing the road between Bow and Moorhouse in an east/west direction to the south of the Friends Meeting House.
<b>Assessment</b>	The boundary is truncated by the road and should not be affected by the proposed pipeline.

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<b>Site number</b>	<b>15</b>
<b>Site name</b>	<b>Friends Meeting House, Moorhouse</b>
<b>NGR</b>	333568 556660
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Quaker Meeting House</b>
<b>Period</b>	Post-Medieval
<b>Sources</b>	Ordnance Survey First Edition 6" map, 1867
<b>Description</b>	A Friends Meeting House on the eastern perimeter of the village with an associated burial ground (Site <b>16</b> ).
<b>Assessment</b>	The boundary is truncated by the road and should not be affected by the proposed pipeline.

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<b>Site number</b>	<b>16</b>
<b>Site name</b>	<b>Friends Burial Ground, Moorhouse</b>
<b>NGR</b>	333587 556739
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Quaker Burial Ground</b>
<b>Period</b>	Post-Medieval
<b>Sources</b>	Ordnance Survey First Edition 6" map, 1867
<b>Description</b>	A Friends Burial Ground on the eastern perimeter of the village with an associated Meeting House (Site <b>15</b> ).
<b>Assessment</b>	The boundary is truncated by the road and should not be affected by the proposed pipeline.

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<b>Site number</b>	<b>17</b>
<b>Site name</b>	<b>Wesleyan Methodist Chapel, Thurstonfield</b>
<b>NGR</b>	331737 556473
<b>HER No</b>	<b>None</b>
<b>Statutory Designation</b>	None
<b>Site type</b>	<b>Chapel</b>
<b>Period</b>	Post-Medieval
<b>Sources</b>	Ordnance Survey First Edition 6" map, 1867

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<b>Description</b>	A Methodist Chapel on the southern perimeter of the village constructed in 1861 and associated with the Carlisle Methodist Circuit.
<b>Assessment</b>	The boundary is truncated by the road and should not be affected by the proposed pipeline.

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<b>Site number</b>	<b>18</b>
<b>Site name</b>	<b>Moorhouse Hall</b>
<b>NGR</b>	333195 556763
<b>HER No</b>	-
<b>Statutory Designation</b>	Grade II listed (No 510239)
<b>Site type</b>	<b>Hall</b>
<b>Period</b>	Post-medieval
<b>Sources</b>	Historic maps
<b>Description</b>	A mid 18th century house with painted stucco on chamfered plinth with raised painted quoins and a graduated greenslate roof with brick chimney stacks. It is two storeys high. There are extensions and outbuildings.
<b>Assessment</b>	Although the pipeline will run through the village, the hall will not be affected as the works are to be contained within the highway

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## APPENDIX 2: LISTED BUILDINGS

EH Listed Building No	LB HER No	Grade	Building Name	Description
429266	27280	II	Barn to the West of Stonehouse, Moorhouse	Farm outbuilding of eighteenth century date. Clay walling. Listed for group value with the Stone House with which it is associated visually. Special interest as of clay wall construction.
78248	21607	II	Moorhouse Farmhouse and stables	Late seventeenth century date, walls partially constructed of clay.
78249	21608	II*	Barn adjoining to north of Moorhouse Farmhouse	Late seventeenth century. Clay walls repaired with brick and cobbles.
78250	21609	II	Cruck cottage at entrance to Moorhouse Farm	Former cottage probably of eighteenth century date. Rendered clay walls repaired with cobble and brick.
78251	21610	II	Farmhouse opposite Stonehouse	Farmhouse of late eighteenth date and Flemish bond brickwork.
78252	21611	II	Barn and byres south-east of farmhouse	Barn and byres of early nineteenth century date
78253	21612	II	Moorhouse Hall	House of mid-eighteenth century date. Marked on Hodgkinson & Donald's map of Cumberland 1770 as home of Joseph Liddle.
78254	21613	II	Hall Farm	Farmhouse of late seventeenth century date. Whitewashed, rendered clay walls.
78255	21614	II	Fairfield	Late eighteenth century house with painted rendered walls.
78256	21615	II	Low Moorhouse	A house dated 1734 with initials T & MO over entrance.
78257	23570	II	Former Friends Meeting House	Barn, formerly Friends Meeting House dated 1733. Interior may have remains of original woodwork.

<b>EH Listed Building No</b>	<b>LB HER No</b>	<b>Grade</b>	<b>Building Name</b>	<b>Description</b>
78258	23571	II	Boundary Wall north of Friend's Meeting House	Boundary wall in front of Friends Meeting House of mid-eighteenth century date.
78259	23572	II	Graveyard Wall north of the Friends Meeting House	Wall enclosing graveyard with dated 1694 over entrance.
78260	23573	II	Stonehouse and adjoining outbuilding	House and barn dated 1706 over repositioned entrance in extension dated 1760 on quoin with the initials W&J (or T) S (Stordy). Former barn (now garage) to right has whitewashed clay walls.
78261	23574	II	Orchard House	Late seventeenth century farmhouse partially clay.
78263	21616	II	Shepards Hill Farmhouse, Thurstonfield	Late seventeenth century farmhouse with nineteenth century alterations. Painted, rendered clay walls on rubble plinth.
78264	21617	II	Kokied Cottage, Thurstonfield	House and former stables of late eighteenth or early nineteenth century date.
78266	21619	II	The Beeches and adjoining barn, Thurstonfield	Farmhouse and barn dated 1756 with the initials T&SS over entrance.
78267	21620	II	The Hollies, Thurstonfield	Late eighteenth century farmhouse.
78368	21720	II	High Bow Farmhouse and barn adjoining	Farmhouse and barn. Early nineteenth century house but eighteenth century or earlier barn.
78369	21721	II	Bow	Late eighteenth or early nineteenth century farmhouse.
78370	21722	II	The Bow	Farmhouse dated 1769.