

Levens WwTW to Milnthorpe WwTW Pipeline

Cumbria



Documentary Research and Walkover Survey



Oxford Archaeology North

September 2008

United Utilities Ltd

Issue No: 2008-09/806

OAN Job No: L9999

NGR: SD 4900 8170 to SD 4860 8515

Document Title: LEVENS WWTW TO MILNTHORPE WWTW PIPELINE

Document Type: Documentary Research and Walkover Survey

Client Name: United Utilities Ltd

Issue Number: 2008-09/806

OA Job Number: L9999

National Grid Reference: SD 4900 8170 to SD 4860 8515


Prepared by: Vicki Bullock
Position: Supervisor
Date: October 2008

Christina Robinson
Supervisor

Checked by: Alison Plummer
Position: Project Manager
Date: October 2008

Signed.....

Approved by: Alan Lupton
Position: Operations Manager
Date: October 2008

Signed.....

Oxford Archaeology North

Mill 3
Moor Lane
Lancaster
LA1 1GF
t: (0044) 01524 848666
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

© Oxford Archaeological Unit Ltd (2008)

Janus House
Osney Mead
Oxford
OX2 0EA
t: (0044) 01865 263800
f: (0044) 01865 793496

Oxford Archaeological Unit Limited is a Registered Charity No: 285627

Disclaimer:

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

CONTENTS

CONTENTS	1
SUMMARY	2
ACKNOWLEDGEMENTS	3
1. INTRODUCTION.....	4
1.1 Circumstances of Project.....	4
1.2 Location, Topography and Geology	4
2. METHODOLOGY	6
2.1 Project Brief.....	6
2.2 Documentary Research	6
2.3 Walkover	6
2.4 Archive	7
3. HISTORICAL BACKGROUND.....	8
3.1 Introduction	8
3.2 Background	8
3.3 Map Regression Analysis.....	13
4. WALKOVER SURVEY	15
4.1 Introduction	15
4.2 Results	15
5. IMPACT AND RECOMMENDATIONS	17
5.1 Impact.....	17
5.2 Recommendations.....	17
6. BIBLIOGRAPHY	19
6.1 Cartographic Sources	19
6.2 Secondary Sources.....	19
7. ILLUSTRATIONS	22
7.1 List of Figures.....	22
7.2 List of Plates	22
APPENDIX 1: PROJECT BRIEF	23

SUMMARY

Following proposals by United Utilities for the construction of a new water main from Levens Wastewater Treatment Works (WwTW) to Milnthorpe WwTW, Cumbria (NGR SD 4900 8170 to SD 4860 8515), the Cumbria County Council Historic Environment Service (CCCHES) recommended the completion of documentary research, a walkover survey and a watching brief relating to the application area. Oxford Archaeology North (OA North) was subsequently commissioned by United Utilities to undertake this work. The following comprises the results of the first two elements of the archaeological programme, whilst the watching brief will be subject to a separate report.

In total, 10 sites of archaeological interest were identified within the study area during the documentary research and walkover survey. Five sites were identified during the documentary research. The sites included a possible platform (Site **01**), one listed building (Site **02**), an historic farmhouse (Site **03**), a railway embankment (Site **04**) and an historic parish boundary (Site **05**).

The walkover identified a further five sites, two of which are post-medieval drainage systems (Sites **06** and **07**). The remaining three sites are likely to relate to the medieval fortified house (**02**) that was identified in the documentary research at Nether Levens. These sites were a 'D'-shaped earthwork (Site **08**) of indeterminate function, the remains of ridge and furrow ploughing (Site **09**) and a platform that has several earthworks on it (Site **10**). The walkover also confirmed the presence of the Furness Railway embankment (Site **04**).

Due to the nature of the landscape through which the pipeline will pass, which comprises overlying peats and marine silts, CCCHES has recommended that a permanent watching brief be maintained for the proposed scheme. The two drainage systems (Sites **06** and **07**) are the only features that are going to be directly affected by the proposed pipeline, but due to their negligible archaeological significance no further works will be recommended. However, it is recommended that evaluation trenches be located at the northern end of the scheme to target potential peripheral features relating to sites **08-10**. In addition, a programme of palaeoenvironmental investigation should be undertaken due to the routing of the pipeline through Levens Moss, which has the potential for buried deposits containing important information about previous land use.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities Ltd for commissioning the project. Thanks are also due to Jo Mackintosh of Cumbria County Council Historic Environment Service (CCCHES), and all the staff of the County Record Office in Kendal for their assistance with this project.

Vicki Bullock undertook the documentary research, Christina Robinson undertook the walkover, with the drawings produced by Mark Tidmarsh. The project was managed by Alison Plummer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 United Utilities proposed the construction of a pipeline between Milnthorpe WwTW, Cumbria and Levens WwTW, Cumbria (NGR SD 4860 8515 and SD 4900 8170; Fig 1). The total length of the proposed pipeline is approximately 3.6km. Following recommendations made by the Cumbria County Council Historic Environment Officer, United Utilities commissioned Oxford Archaeology North (OA North) to undertake a documentary research and walkover survey of the proposed development area followed by a permanent presence watching brief, which will be subject to a separate report.
- 1.1.2 The documentary research comprised a search of both published and unpublished records held by the Historic Environment Record (HER) in Kendal, the County Record Office in Kendal, and the archives and library held at OA North. This report sets out the results of the documentary research and walkover survey in the form of a short document, outlining the findings, followed by a statement of the archaeological potential and significance, and an assessment of the impact of the proposed development. The significance criteria detailed in PPG 16 (DoE 1990) was employed during the research.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed route of the pipeline runs in a linear north/south direction. Milnthorpe is located on the route of the modern A6 between Lancaster and Kendal, which itself follows the line of a more ancient thoroughfare. For much of its length the pipeline runs alongside the Kent estuary, before the estuary bends westwards and the pipeline continues north, crossing the River Kent to the south of Levens Moss before reaching the sewerage works at Nether Levens. Nether Levens is situated to the west of Levens Hall, approximately 2km to the north of Heversham, and to the south of the modern A590. The area was formerly part of the old County of Westmorland. The pipeline crosses both Milnthorpe Marsh and Levens Moss; the drainage ditches and place names, such as Marsh Farm and Moss Lane, are likely to be indicative of coastal raised mires or former palaeochannels.
- 1.2.2 The varied character of the area has been determined by the interrelationships between species-rich grassland, semi-natural woodland, limestone hills, salt marsh and the vast expanse of Morecambe Bay. Low cliffs are prominent along the coastal fringe. The majority of the area comprises undulating coastal pasture. The lowland raised mires (mossland) surrounding the limestone outcrops are now largely reclaimed for agriculture and the area is of high nature-conservation importance.
- 1.2.3 Levens Moss to the north of the study area is an extensive area of valley moss approximately 7km² encompassing a large part of the Lyth Valley, which has been extensively enclosed and drained. Current land-use is dominated by pasture with one small area of mixed woodland. Fieldwork undertaken as part of the North West Wetlands Survey did not reveal evidence of peat deposits

and little of archaeological or palaeoecological value. The Lyth Valley is undulating, agricultural land with small areas of mosslands. The valley slopes are characterised by blocks of woodland and small rocky outcrops. The valley bottom is flat and largely treeless, with rectangular fields divided by hedges and drainage ditches with the remnants of raised mires (Countryside Commission 1998).

- 1.2.4 This distinctive landscape was determined largely by outcrops of Lower Carboniferous Limestone dating from 345 and 280 million years ago (British Geological Survey 2007). Overlying the solid geology are drift deposits of glacial material. Glacial deposits, mainly boulder clay (till), constitute most of the valleys which separate the limestone hills. In post-glacial times the area experienced a series of sea-level changes (Hodgkinson *et al* 2000). The soils, which underlie the Milnthorpe area are of the Denbigh 1 Series, are typical brown earths (Soil Survey of England and Wales 1983) and characteristically form good agricultural land.

2. METHODOLOGY

2.1 PROJECT BRIEF

- 2.1.1 United Utilities consulted CCCHES regarding a proposed pipeline route between Milnthorpe WwTW and Levens WwTW. The proposed scheme affects an area considered to have high archaeological potential and, consequently a programme of archaeological works comprising documentary research, walkover survey was required. In response to a Project Brief issued by CCCHES (*Appendix 1*), OA North were commissioned to undertake the work. The work was carried out in accordance with IFA guidelines (IFA 1999) and English Heritage Guidelines (English Heritage 1991).

2.2 DOCUMENTARY RESEARCH

- 2.2.1 Several sources of information were consulted in accordance with the Project Brief (*Appendix 1*). The study area consisted of an area 250m either side of the proposed pipeline to form a corridor 0.5km wide. The principal sources of information were the HER, Kendal, historic maps and secondary sources.
- 2.2.2 ***Historic Environment Record (HER):*** the Cumbria County Historic Environment Record (HER) held in Kendal was consulted to establish the sites of archaeological interest already known within the study area, and the extent and character of these. For each entry a short note was obtained, which was marked on a location plan (Fig 2). The HER is a database of all archaeological sites in Cumbria, and is maintained by Cumbria County Council.
- 2.2.3 ***County Record Office (CRO(K))***, the County Record Office in Kendal was visited to consult primary records relating to the study area. Ordnance Survey maps were consulted for the study area, as well as the Land Valuation of 1910 and directories of Westmorland. Secondary sources were also investigated.
- 2.2.4 ***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.
- 2.2.5 ***The National Monuments Record, Swindon:*** the website was accessed and the database consulted to determine whether there were any sites within the study area not listed in the HER.

2.3 WALKOVER

- 2.3.1 Following the documentary research a level I-type survey (*Section 4*) was undertaken to relate the existing landscape to research findings. This encompassed a one hundred metre corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape were recorded using the relevant OA North *pro forma*, and the

features located using differential GPS survey, which can achieve an accuracy of +/- 5m with respect to the OS national grid.

2.4 ARCHIVE

- 2.4.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IFA (1999) and English Heritage (1991) guidelines. The paper and digital archive will be deposited with the Cumbria Record Office in Kendal on completion of the project.

3. HISTORICAL BACKGROUND

3.1 INTRODUCTION

- 3.1.1 The following section presents a summary of the historical and archaeological background of the general area. This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological and palaeoenvironmental context.

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 3,500 BC
Neolithic	3,500 – 2,200 BC
Bronze Age	2,200 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c1750
Industrial Period	cAD1750 – 1901
Modern	Post-1901

Table 1: Summary of British archaeological periods and date ranges

3.2 BACKGROUND

- 3.2.1 **Prehistoric Period:** around 11,000 BC the ice-sheets, which had covered much of the Lake District and the Furness peninsula, withdrew. This led to a rapid amelioration in climate and gradual colonisation of the landscape, firstly by vegetation then by animals and eventually humans. There is no evidence for Palaeolithic occupation within the immediate area but within the region of the South Lakes and the Furness peninsula there are indications of anthropogenic activity. Possible Upper Palaeolithic evidence has been uncovered at nearby locations, notably Kirkhead Cave and Bart's Shelter, Scales (Hodgkinson *et al* 2000). During the Mesolithic period, between 5000 BC and 3500 BC, archaeological evidence has shown coastal exploitation, particularly centred on large parts of the west coast of Walney Island (*ibid*, 34), with sites located on sand dunes consisting mainly of casual flint finds from exposures. Such coastal sites would have been favoured due to the presence from both the land and sea resources, with the populace following seasonally variable gatherer-hunter exploitation patterns. It should be noted that immediately to the east of the study area on Milnthorpe Marsh, just south of Russell's Wood, the site of a Mesolithic flint working area is recorded in the HER (3370).
- 3.2.2 Closer to the study area are the mosses at Arnside and Silverdale, both now under permanent pasture. However, the presence of marine clays in Silverdale Moss does suggest that it was once open to the influence of the sea. A sequence of peats and marine and freshwater silts ending c 4000 cal BC suggests that the basin at Silverdale had been filled with a lake in the late glacial period. Subsequent gradual terrestrialsation during the post-glacial

period saw a developing fen over all except the eastern side of the moss. Mire development was curtailed by a marine incursion, dated to c 4450-3967 cal BC on the Fylde coast. A moss is likely to have developed on top of these marine deposits, which has now been removed. Neither Arnside Moss nor Silverdale Moss have produced any archaeological material. Nevertheless, palaeoecological work has found evidence of late prehistoric anthropogenic activity with the occurrence of weed pollen in the profile from Silverdale Moss, although there are no obvious clearance phases (Middleton *et al* 1995, 135). Evidence for Mesolithic activity has also been found at Levens itself (Turnbull and Walsh 1996) in the form of charcoal and flint assemblages which included microliths, tools, cores and wasteflakes.

- 3.2.3 Generally, there is evidence for activity throughout the South Lakes during the Neolithic and Bronze Age periods, from 3500 cal BC onwards, in the form of stray finds such as stone axes, adzes and axe-hammers, and quern stones (Hodgkinson *et al* 2000). Settlement activity has been identified on the fringe uplands of the Kent estuary at Sizergh Fell. In addition, barrows have been found at Levens (Howard-Davis *et al* 1988; Turnbull and Walsh 1996). The range of artefactual evidence across the general area indicates a shift from a hunter gatherer existence to a more settled farming lifestyle (Barnes 1968), although some of the more mobile patterns of exploitation may not have been wholly abandoned.
- 3.2.4 Iron Age activity is not generally well represented within the archaeological record for the region. However, there exists some substantial Iron Age stone-built settlements and hillforts in the vicinity. In particular, the impressive hillfort at Warton Crag, near Carnforth, a quadrilateral fort enclosing 6.2ha. Two sides are protected by cliffs and two sides are protected by three widely spaced ramparts. Six miles to the north-west is the small promontory fort at Castlehead (Hazelgrove 1996, 67). In addition, five Iron Age inhumation burials have also been found within the centre of Levens (OA North 2002, 2004).
- 3.2.5 The first substantial woodland clearance with prolonged open conditions in South Cumbria took place in the Lyth Valley around 350-200 cal BC with an increase in forest clearance beginning in the Late Iron Age which follows the trend for the North West region (Hodgkinson *et al* 2000, 46).
- 3.2.6 **Romano-British Period:** the evidence for the late Iron Age/early Romano-British period is sparse in South Cumbria. There is a scattering of defended enclosures and enclosed settlement, some of which appear to overlook the wetlands. These include Skelmore Heads (HER 248), Banishead Quarry (HER 3219), Castlehead near Grange (HER 2446) and Warton Crag in North Lancashire. The pattern of rural settlement changes little with Roman invasion. The greatest change in the archaeological record is the appearance of military structures, such as the forts at Watercrook (HER 2078), Lancaster and Ambleside (Shotton 1997). There are also scattered Romano-British finds across the area. A site within Levens Park known as the 'Temple of Diana' (HER 2645) to the west of the study area has yielded first-century material with superimposed post-Roman structures (*op cit*).
- 3.2.7 There are no sites of Romano-British date within the study area.

- 3.2.8 **Early Medieval Period:** a period of high arboreal pollen values and low non-arboreal pollen values in all areas suggests a recession in agricultural activity and the regeneration of woodland at the end of the Romano-British period. Oldfield (1969), summarising data from north Morecambe Bay constructs a sequence in which fifth- to sixth-century AD regeneration was interrupted by some clearance then low-level farming activity in the sixth to eighth centuries AD, followed by a distinct regeneration in the tenth or eleventh century. Oldfield suggests this is a response to political rather than climatic events (Higham 1986, 317).
- 3.2.9 Archaeological evidence is again scarce for the immediate post-Roman period, with only documentary evidence for a monastic settlement at Heversham, although this has never been located (Bingham 1987), and for the granting of land around Cartmel to St Cuthbert by King Ecgrith of Northumbria (Higham 1986, 271). In c AD 850 a sculptured stone cross was erected, fragments of which survive in the porch and below a window of Heversham parish church. The sole site excavated from this period was inspected in 1911, when trenching in Levens parish revealed four human skeletons on an east/west alignment (HER 4068). The nearest analogies are an early Christian burial, which has been reported at Roosebeck (HER 2614) whilst at Rampside Church a Scandinavian dagger and sword (HER 2596, HER 2595) have been found in the graveyard.
- 3.2.10 During the ninth and tenth centuries the region was subject to incursions of populations of Hiberno-Norse extraction. The placename evidence (Smith 1967) indicates the presence of these people in the landscape throughout Cumbria and it is probable that they colonised and inhabited new settlements with Norse/Scandinavian names but would also have been found in other previously occupied settlements (Fellows-Jensen 1985, 80). Stronger evidence of settlement in the region is shown from the excavations of field systems and structures at Bryant's Gill in the Kentmere valley to the north of Kendal (Newman 2006; Dickinson 1985). There is some indication from the placename evidence that the origins of Milnthorpe may have been during this period when the placename element '*porp*' (pronounced *thorp*) was first attributed to locations predominantly inhabited by Danes (Fellows-Jensen 1985, 67). The name indicates a hamlet or more specifically a dependent secondary settlement (*ibid*). There is also the suggestion that these possible settlers may have arrived from Yorkshire rather than from the sea. The '*miln*' element of Milnthorpe almost certainly derives from '*myln*', which was originally an Old English name for mill (Smith 1967).
- 3.2.11 By the last quarter of the eleventh century, prior to the Norman invasion of 1066, the manor of Heversham, which included Heversham, Milnthorpe, Hincaster, Levens, Upper or Over Levens, Nether or Under Levens, Stainton, Preston Richard and others, was held by Tosti of Northumberland. It part of the Barony of Kendal. There is some evidence for a surviving relationship between present parish boundaries and their estates as recorded in the Domesday Survey of 1086 (Winchester 1990).
- 3.2.12 The settlement at Milnthorpe was not mentioned in the Domesday Survey (Faull and Stinson 1986) as Cumbria was not part of England at this time; the earliest specific mention appears to be in the Register of St Bees of 1282

(Somerville 1930,74). Milnthorpe formed a joint township and manor with Heversham. Heversham obtained a charter from Edward I in 1280 for a market and fair, which were always held at Milnthorpe (Mannex and Co 1851, 269). Part of the manor was later in possession of St Mary's Abbey, York (*ibid*).

- 3.2.13 **Late Medieval period:** it was during this time that the economic conditions in the region began to decline.. This was partly due to the numerous raids and skirmishes from Scotland throughout the fourteenth century, down to as far south as Kendal (Winchester 1990). This is likely to account for the significant number of pele towers, or defensive structures, around the Kent Estuary at this time. The peles included Arnside to the south and Wraysholme to the north, as well as Hazelslack, Dallam, Heversham and others. In addition, there were also widespread outbreaks of sheep murrain from 1280 onwards and poor harvests lead to famines between 1315 and 1317. However, the economic decline did not persist and by the end of the thirteenth century the region's economy entered a period of growth (Munby 1985, 110). From the thirteenth century the mosses were being utilised for seasonal, summer grazing (Farrer 1923, 118). A later grant of 1352 is illuminating. It states that beasts straying within a moiety of 30 acres of waste at a place called 'Le Mossebank,' in Levens, would not be impounded but those crossing the highway would be seized and fines levied (*op cit*). The reference to Le Mossebank may imply an earthwork of some sort, possibly a drainage dyke or peat-cutting bank. It does however confirm that certain areas had been enclosed and divided, and had differing status (Hodgkinson *et al* 2000, 50).
- 3.2.14 Recently evidence of a complex series of fish traps constructed from timber and stone have been uncovered at Cowp Scar, on the north side of Morecambe Bay. The structures comprise stone and timber walls with ponds and sluices, covering an area of approximately 275m by 350m. Radiocarbon dates suggest that some were operating in the fourteenth century and continued into the post medieval period (Newman 2006, 117).
- 3.2.15 The Medieval rural settlement pattern, which has been identified on first edition Ordnance Survey maps (Roberts and Wrathmell 2000), shows large tracts of uninhabited land in the uplands and a generally high density of dispersed settlement elsewhere. Notwithstanding this, the settlement pattern was often mixed with significant numbers of nucleated village-type settlements, for example along the Morecambe bay littoral (Newman 2006, 117).
- 3.2.16 By late medieval times the area was extensively cleared with predominantly open conditions. The background of this activity probably lies with the establishment of Furness Abbey in 1127 which promoted clearance of land on a large scale (Hodgkinson *et al* 2000, 49). A long period of enclosure and sheep pasturing began in South Cumbria. On the suppression of the Abbey in 1537 the land was divided between a class of yeoman farmers, which led to a mixed agricultural economy.
- 3.2.17 Nether Levens (Site **02**), a Grade II listed farmhouse house to the west of Levens Hall, was constructed during this period. It belonged to the Preston family from 1452 to the latter part of the seventeenth century when it passed to the Montgomery family, who in 1694 sold the house to the Wilson's of

Dallam Tower (Curwen 1913, 385). The house is of two storeys, the walls are of rubble and the roofs are slate-covered (RCHME 1966). The curtain wall was twelve feet high to the rampart walk, remnants of which, may still be visible. Park House and barn to the south are probably also of late fifteenth or sixteenth century date. These are shown on the earliest maps and were surrounded by medieval parkland (*ibid*).

- 3.2.18 **Post-medieval period:** it is from the seventeenth and eighteenth centuries that the majority of the evidence for intensive working of the mosses originates. A large number of title deeds exist outlining the rights of turbary that landowners held on the mosses. By the eighteenth century the mosses were providing the locality with peat, which was the preferred fuel for domestic fires. Peat from the Lyth Valley was also used to supply Kendal with fuel for domestic purposes, in addition to both the woollen and tanning trades, and local furnaces (Bingham 1987). The first serious attempts to drain and reclaim the wetlands may have been by the Parliamentary enclosures in the eighteenth and nineteenth centuries. The mosses of the Lyth Valley have seen some of the earliest documented agricultural activity on the mosses in Cumbria and also some of the most intensive exploitation of the wetland landscape in the county. Eighteenth-century cartographic evidence (Jeffery's map of 1770) clearly depicts the Lyth Valley as settled along fringes of the steep wooded hillsides of Whitbarrow and Underbarrow, but with negligible settlement within the clearly marked 'PEAT MOSSES'.
- 3.2.19 The result of the enclosure movement was the creation of a large area of land suitable for cultivation and the establishment of large farms. The tithes for the whole Parish were commuted by an allotment of 650 acres given to the Vicarage and 663 acres given to the Masters, Fellows and Scholars of Trinity College, Cambridge in lieu of Rectorial tithes (Curwen 1930, 5). Plans to improve the area continued into the nineteenth century with establishment of improved communication routes (Hodgkinson *et al* 2000, 53). Fences and ditches had to be created between the individual allotments. These had to be constructed according to the instructions of the Inclosure Award (Fig 5).
- 3.2.20 The Turnpike Acts for the area around the Morecambe Bay Sands were quite early since they were an important link in the region. The first act was passed in 1759 and concerned the area around Milnthorpe (Hindle 1998, 169). The building of the railways, with the main line north/south opening in 1846 and then in 1876 the eventual opening of the Arnside Branch, later known as the Furness Branch, had a significant effect on road transport (Bingham 1995). As a result, revenue from takings at the turnpike gates decreased in the following decades. The principal use of the branch line was for the transport of coal and coke but passengers grew in importance. The line remained as it was until 1963-1966 when it was abandoned and the viaduct (HER 12597), which had been built west of Milnthorpe over the Bela River, was dismantled (*ibid*). Also, just outside the study area to the east of Marsh Drain and west of Moss Side Farm were the sites of Moss Side Ponds and Moss Side Gravel Pit (HER 12605 and HER 12606). The former was a series of flooded extractive ponds which had supplied Heversham Brickworks during the nineteenth century and the latter a gravel pit shown on the ordnance survey maps. Manufacture was started at the Brickworks when the Lancaster to Kendal Canal was in the course of construction, in order to provide bricks for the Hincaster tunnel and

various bridges. Manufacture was resuscitated by John Thomas Sharples in 1845 when the Lancaster and Carlisle Railway was under construction. Bingham (1995) refers to the presence of a cottage present until 1850, a quarter of a mile from the south end of Marsh Lane, possibly used by herdsmen or shepherds. Reference is also made to a former racecourse on Milnthorpe Marsh in existence before the enclosures. It possibly ran between the present marsh dyke and the sewerage farm, but its exact provenance is unknown.

3.3 MAP REGRESSION ANALYSIS

- 3.3.1 ***Jeffery's map of Westmorland (1770)***: the map clearly depicts the Lyth Valley as settled along the fringes of the steep wooded hillsides of Whitbarrow and Underbarrow, but with negligible settlement within the clearly marked 'PEAT MOSSES'. Nether Levens is shown, as is Ninezergh and Park House.
- 3.3.2 ***Inclosure Award Heversham (1815)***: the plan contained in the Inclosure Award for Heversham and Milnthorpe shows the delineation of the individual allotments and the larger areas commuted for tithes to Trinity College and the Vicar. The plan also shows Moss Side and the Quarry. The individual drains are also marked and the plan clearly shows a dyke on the seaward side but Marsh Farm is not present.
- 3.3.3 ***Greenwood's map of Westmorland (1824)***: the extent of the enclosure of the mosses subsequent to the nineteenth century Inclosure Award is shown on Greenwood's map. In addition to a system of drainage, further improvements included the provision of public roads on the moss. Nether Levens, Park House and Moss side are all shown on this map with the newly constructed roads across the study area.
- 3.3.4 ***Ordnance Survey First Edition map 6" to 1 mile (1863: Fig 3)***: the result of the enclosure movement in creating a large tract of land suitable for cultivation and habitation can be seen clearly on this map. Nether Levens (Site **02**) is marked as Low Levens, with an orchard behind the house and limekiln to the north of the road. Ninezergh is still shown although this is just outside the study area. College Green Farm (Site **03**) to the south of the river Kent has been constructed. An area of strip fields and orchards is shown on Milnthorpe Marsh with a gravel pit to the east. Marsh Lane is marked running north/south through Milnthorpe Marsh, with a number of strip fields running in an easterly direction from the road.
- 3.3.5 ***Ordnance Survey Westmorland Sheet 6" to 1 mile (1899; Fig 4)***: a bridge has been constructed over the road to the north of Nether Levens (Site **02**). The orchard behind Nether Levens is less extensive. College Green is shown, as are the strip fields to the south-west. Marsh Farm has been constructed on the western side of Marsh Lane. Marsh Drain is marked to the east of Marsh Road (Marsh Lane) following the same alignment. The rectangular, narrow strip fields running eastwards from Marsh Road contrast with the larger more irregular fields to the west. The main change, in the south of the study area is the construction of the Furness Railway (Site **04**) running in a north-east

direction towards Heversham. The parish boundary (Site **05**) runs across the south of the study area in an easterly direction towards Heversham.

- 3.3.6 ***Ordnance Survey Westmorland Sheet 6" to 1 mile (1920; Fig 5)***: the limekiln to the north of the study area, across the river Kent and within Levens Moss is referred to as 'Old Limekiln'. Nether Levens is shown but there has been little or no change within the rest of the study area.
- 3.3.7 ***Ordnance Survey Westmoreland 1: 10,000 series (c 1975; Fig 6)***: the most obvious additions are the pair of wastewater treatment plants at either end of the pipeline, which are labelled as *sewage works*. At Nether Levens (**02**), there would appear to have been some alterations undertaken. The most northerly of the outbuildings appears to have been demolished and rebuilt on a north/south alignment, whilst College Green Farm (**03**) appears to have been extended or considerably rebuilt.

4. WALKOVER SURVEY

4.1 INTRODUCTION

- 4.1.1 The walkover survey aimed to determine both the survival of above ground remains of sites recorded during the documentary research and also to identify previously unrecorded sites along the proposed pipeline route.
- 4.1.2 All of the fields adjacent to the proposed pipeline route were walked systematically and the ground conditions were generally good for identifying sites by walkover survey. Most of the fields inspected were under pasture and had a covering of short grass. Several fields were under crop or ploughed and this made the identification of features difficult.

4.2 RESULTS

- 4.2.1 In total, six sites were identified during the walkover survey (Table 1), one of which was previously identified within the documentary research. Three of the sites have post-medieval dates and the remaining three are likely to be medieval in date.

Site no	Site Type
<i>Agrarian features</i>	
06	Drainage system with possible removed boundary
07	Drainage system
09	Ridge and furrow
<i>Railway</i>	
04	Furness Railway, Arnside Branch, Beetham
<i>Earthworks</i>	
08	Earthwork of unknown date or function, 'D' shaped bank
10	A square platform, likely to be a building platform associated with Nether Levens

Table 2: Sites observed during the walkover survey by category

- 4.2.2 The agrarian features make up half of the sites identified on the walkover with post-medieval drainage systems (Sites **06** and **07**; Plate 1) being the most prolific. The other agrarian feature comprised the remains of ridge and furrow ploughing (Site **09**; Plate 2) that is likely to be associated with the medieval site of Nether Levens.
- 4.2.3 The Furness Railway, Arnside Branch, Beetham (Site **04**; Plate 3), that was identified in the documentary research, was confirmed to be present on the walkover survey. Access was not permitted onto the railway embankment.

- 4.2.4 The two earthwork sites (**08** and **10**) are likely to be related to the house at Nether Levens which has its origins in the medieval period. This could indicate that these two earthworks may also be medieval in date. Site **08** (Plate 4) is a 'D'-shaped bank with an unknown function. The remaining earthwork (Site **10**; Plate 5) is a platform that is surrounded by a ditch and sits to the west of Nether Levens (Plate 6). On the top of the platform are several earthworks, comprising three linear ditches, three oval pits, one circular pit and one sub-round oblong feature. These are all of unknown function or date, but may relate to the medieval farmhouse.

5. IMPACT AND RECOMMENDATIONS

5.1 IMPACT

- 5.1.1 The documentary research and walkover survey identified ten sites of archaeological interest within the study area. These sites are related mainly to a medieval and post-medieval agricultural, marginal landscape. Site **02** has medieval origins and the earthworks, (Sites **08** and **10**), around the site may relate to this period of activity. The area of ridge and furrow ploughing (Site **09**), identified by the walkover survey, may also belong to this period.
- 5.1.2 The exploitation of coastal margins would have been an important aspect of medieval life in the area, but little archaeological evidence has been recovered for these activities. Studies of how settlement across a township or manor accessed the exploitable resources of their environs can be elucidated by a range of techniques, including palaeoenvironmental sampling of landscapes and selective excavation (Brennand and Hodgson *et al* 2007, 119). Wetland reclamations are also imperfectly understood and waterlogged deposits associated with existing and former drainage ditches have the potential to provide dateable sequences of changes in local land use and ecology (*op cit*).
- 5.1.3 The drainage systems (Sites **06** and **07**) also identified by the walkover survey are probably post-medieval in date. They may be connected to the period of enclosure when marginal land was being reclaimed (Whyte 2003). The parish boundary (Site **05**) is also a feature of the post-medieval landscape, but could be much earlier. These divisions are important when viewed in the context of historic landholdings and settlement patterns (Brennand and Hodgson *et al* 2007, 101). The most significant post-medieval industry was agriculture. Little survives of farm buildings before the eighteenth century and the process of pre-Parliamentary enclosure is not fully understood (*op cit*, 119).
- 5.1.4 A single site, the railway embankment (Site **04**) within the study area was identified as dating from the industrial period. Such sites can be viewed as linear monuments and catalysts for landscape change as the emergence of the transport system changed the relationship between town and rural hinterland (Brennand and Hodgson *et al* 2007, 136).
- 5.1.5 The post-medieval drainage systems are the only two sites (Sites **06** and **07**) which will be directly affected by the route of the proposed pipeline. The remaining eight sites will not be affected by the proposed pipeline.

5.2 RECOMMENDATIONS

- 5.2.1 The two sites **06** and **07** that are going to be directly affected by the proposed pipeline are of a negligible archaeological significance. However, due to the nature of the landscape, with overlying peats and marine silts, there is potential for hidden archaeological remains and CCCHES have recommended a permanent watching brief for the proposed scheme.

- 5.2.2 It is also recommended that evaluation trenches (the number of which to be determined in consultation) be located at the northern extent of the scheme, within the immediate vicinity of Nether Levens. These trenches will investigate any potential peripheral features associated with Sites **08-10**.
- 5.2.3 It is further recommended that a programme of palaeoenvironmental investigation be undertaken, due to the routing of the pipeline through Levens Moss and the potential for buried deposits.

6. BIBLIOGRAPHY

6.1 CARTOGRAPHIC SOURCES

Jeffery's map of Westmorland 1770

Inclosure Award Heversham 1815

Greenwood's map of Westmorland 1824

First Edition Ordnance Survey map 1863

Second Edition Ordnance Survey Westmorland Sheet 1899

Third Edition Ordnance Survey Westmorland Sheet 1920

6.2 SECONDARY SOURCES

Barnes, F, 1968 *Barrow and District*, 2nd edn, Barrow-in-Furness

British Geological Survey 2007, Geoindex www.bgs.ac.uk/geoindex/index.htm

Bingham, RK, 1987 *The Chronicles of Milnthorpe*, Milnthorpe

Bingham, RK, 1995 *Kendal. A Social History*, Milnthorpe

Brennand, M, 2006 *The archaeology of north west England, an archaeological research framework for north west England: volume 1, resource assessment*

Brennand, M, 2007 *The archaeology of north west England, an archaeological research framework for north west England: volume 2, resource assessment*

Countryside Commission, 1998, *Countryside Character, Volume 2: North West*, Cheltenham

Curwen, JF, 1913 'Castles and Fortified Towers of Cumberland, Westmorland and Lancashire North of the Sands' Cumberland and Westmorland Antiquarian and Archaeological Society Extra Series XIII, Kendal

Department of the Environment (DoE), 1990 *Planning Policy Guidance Note 16*, London

Dickinson, TC, 1985 'Bryant's gill, Kentmere: another 'Viking-Period' Ribblehead?' in Baldwin, JR and Whyte, ID (eds), *The Scandinavians in Cumbria*, 83-8, Edinburgh

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edn, London

Farrer, W (ed), 1923 *Records relating to the Barony of Kendale*, 2, Cumberland Westmoreland Antiq Archaeol Soc, Rec Ser, 5, Kendal

- Faull, ML and Stinson, M, 1986 *The Domesday Survey of Yorkshire*, in Morris, J, (ed), Domesday Book, 30, Chichester
- Fellows-Jenson, G, 1985 *Scandinavian settlement names in the North West*, Copenhagen
- Haselgrove, C, 1996 'The Iron Age', in Newman, R (ed), *The Archaeology of Lancashire: Present State and Future priorities*, 61-73, Lancaster
- Higham, N 1986 *The Northern Counties to AD 1000*, London
- Hindle, BP, 1998 *Roads and Tracks of the Lake District*, Milnthorpe
- Hodgson, J, and Brennand, M, 2006 Prehistoric period resource assessment, in M Brennand (ed) *The archaeology of north west England, an archaeological research framework for north west England: volume 1, resource assessment*, 23–58
- Hodgkinson, D, Huckerby, E, Middleton, R and Wells, C, 2000 *The Lowland Wetlands of Cumbria*, Lancaster Imprints, 8, Lancaster
- Howard-Davis, C, Stocks, C and Innes, J 1988 *Peat and the Past*, Lancaster Univ, Lancaster
- Institute of Field Archaeologists, 1999 *Standard and guidance for archaeological Desk-based Assessments*
- Middleton, R, Wells, CE & Huckerby, E 1995 *The Wetlands of North Lancashire*, North West Wetlands Survey, Lancaster Imprints 4, Lancaster
- Middleton, R, 1997 'Hunter Gatherers and Early Farmers in the Lancashire Wetlands', ANW 12, 140-145
- Mannex, PJ, and Co, 1851 *History, Topography and Directory of Westmorland with Lonsdale and Amounderness in Lancashire*, Bekermet (Michael Moon 1978 reprint)
- Munby, J, 1985 Medieval Kendal: the First Borough Charter and its Connexions, *Trans Cumberland Westmorland Archaeol Antiq Soc*, n ser, 85, 95-114
- Newman, C, 2006 The Medieval Period Resource Assessment, in M Brennand (ed) *The archaeology of north west England, an archaeological research framework for north west England: Volume 1, resource assessment*, 115-145
- OA North 2004 11 *The Square, Milnthorpe, Cumbria* unpubl rep
- Oldfield F. 1969. Pollen analysis and the history of land use, in *Advancement of Science* 25: 298–311
- Roberts, BK, and Wrathmell, S, 2000 *An Atlas of Rural Settlement in England*, London

RCHME (Royal Commission on Historic Monuments (England)), 1966 *An inventory of the ancient and historical monuments in the county of Westmorland, accredited to a date before 1714*, London

Shotter, DCA, 1997 *Romans and Britons in north-west England* (2nd ed), Centre for North-West Regional Studies, Lancaster University

Smith, AH, 1967 *The Place-names of Westmorland* English Place-name Society, Cambridge

Soil Survey of England and Wales, 1983 *Soils of Northern England*, 1: 250000

Somerville, J, 1930 *Water Power Mills of South Westmorland and The Kent, Bela and Gilpin and Their Tributaries*, Kendal

Turnbull, P and Walsh, D, 1996 A Beaker Burial in Levens Park, in *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society* Vol XCVI, 13-26

Whyte, I, 2003 *Transforming Fell and Valley*, Centre for North-West Regional Studies, University of Lancaster, 63-88

Winchester, A, 1990 *Discovering Parish Boundaries*, Princes Risborough

7. ILLUSTRATIONS

7.1 LIST OF FIGURES

Figure 1: Site Location Map

Figure 2: Plan of Gazetteer Sites

Figure 3: Ordnance Survey 6" to 1 mile, 1864

Figure 4: Ordnance Survey 6" to 1 mile, 1899

Figure 5: Ordnance Survey 6" to 1 mile, 1920

Figure 6: Ordnance Survey 1:10,000, c1975

7.2 LIST OF PLATES

Plate 1: Site **07**, drainage system

Plate 2: Site **09**, ridge and furrow

Plate 3: Site **04**, Furness Railway embankment

Plate 4: Site **08**, 'D'-shaped earthwork

Plate 5: Site **10**, possible building platform

Plate 6: Site **02**, Nether Levens



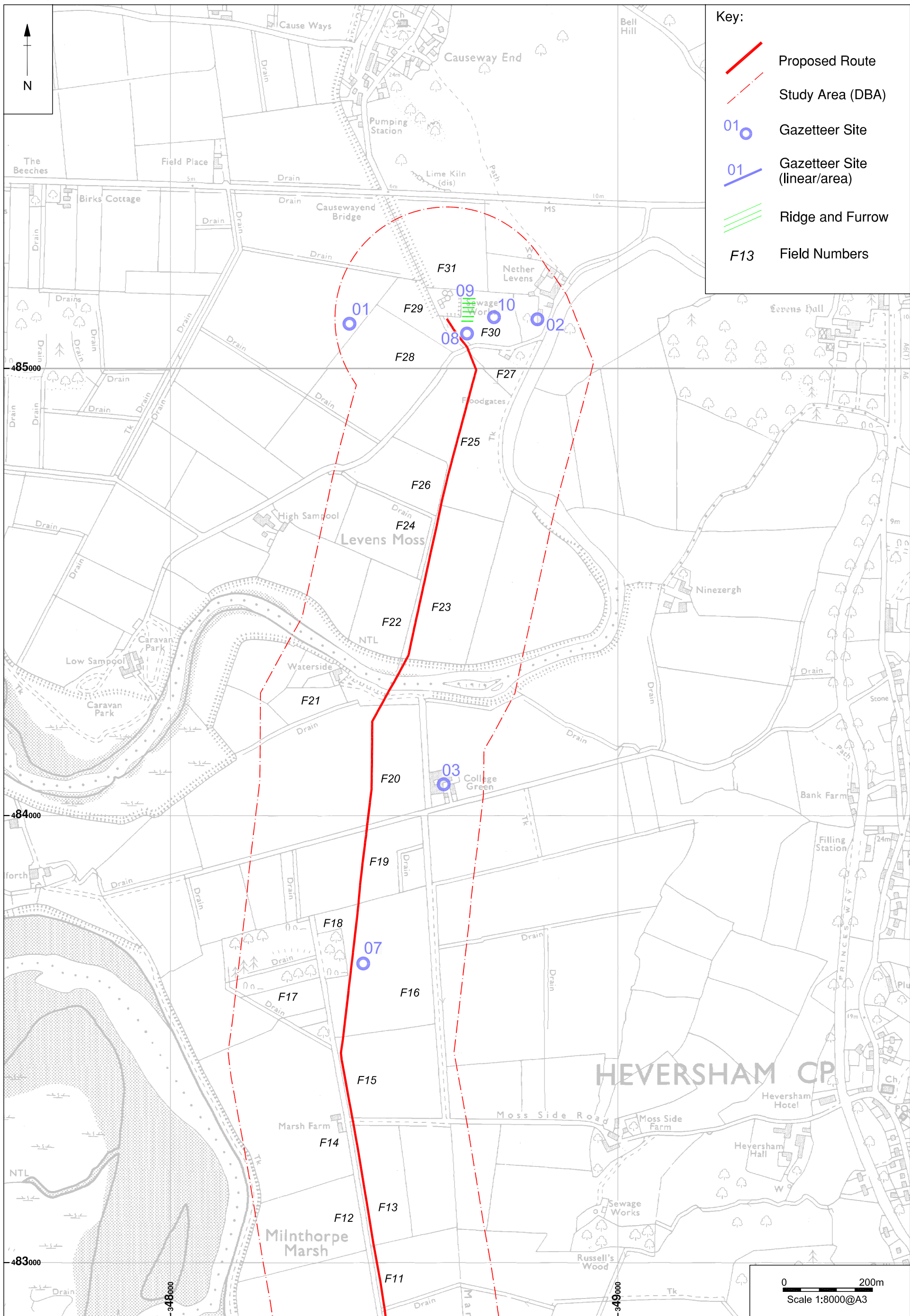


Figure 2a: Gazetteer sites plan(north)

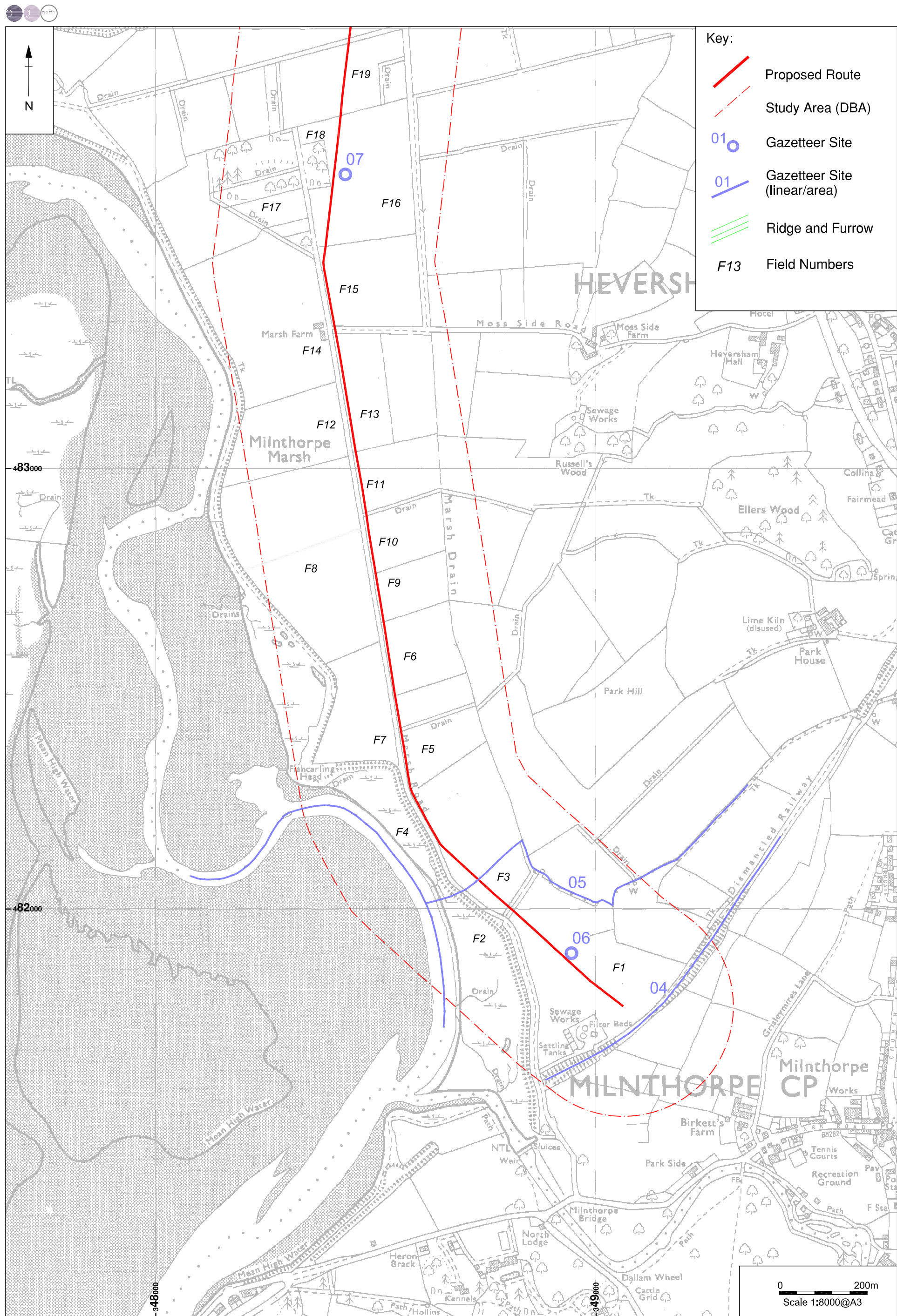


Figure 2b: Gazetteer sites plan (south)

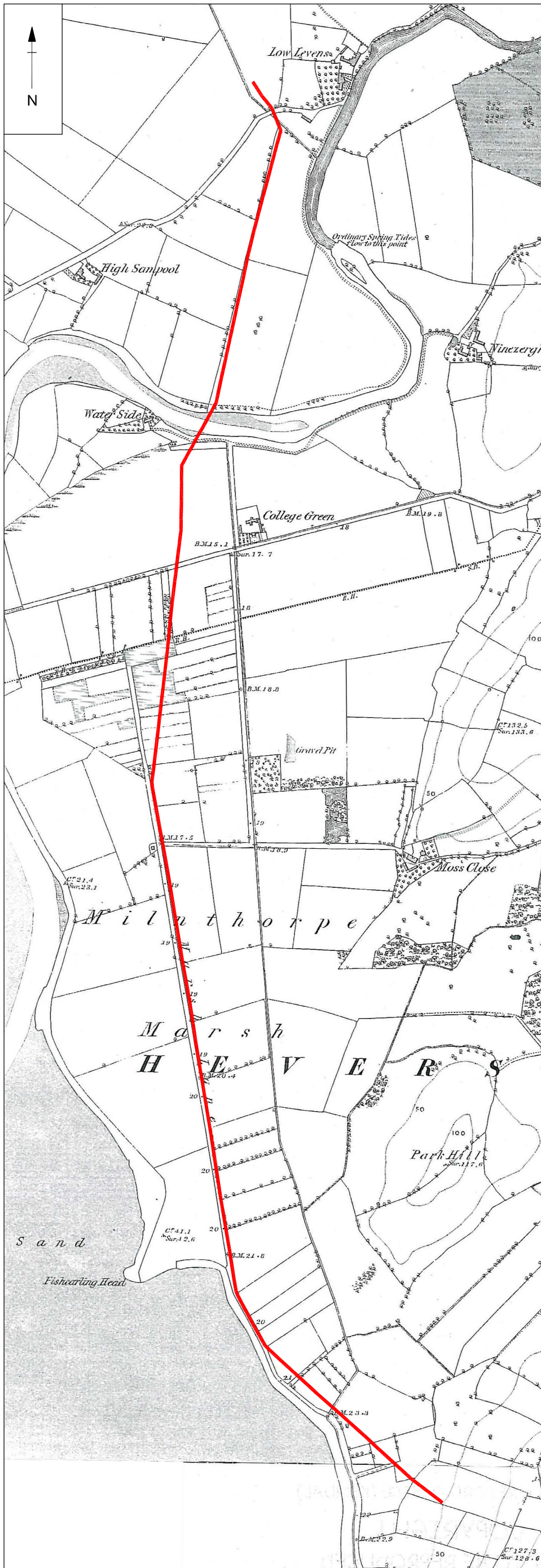


Figure 3: Ordnance Survey 6" to 1 mile, 1864

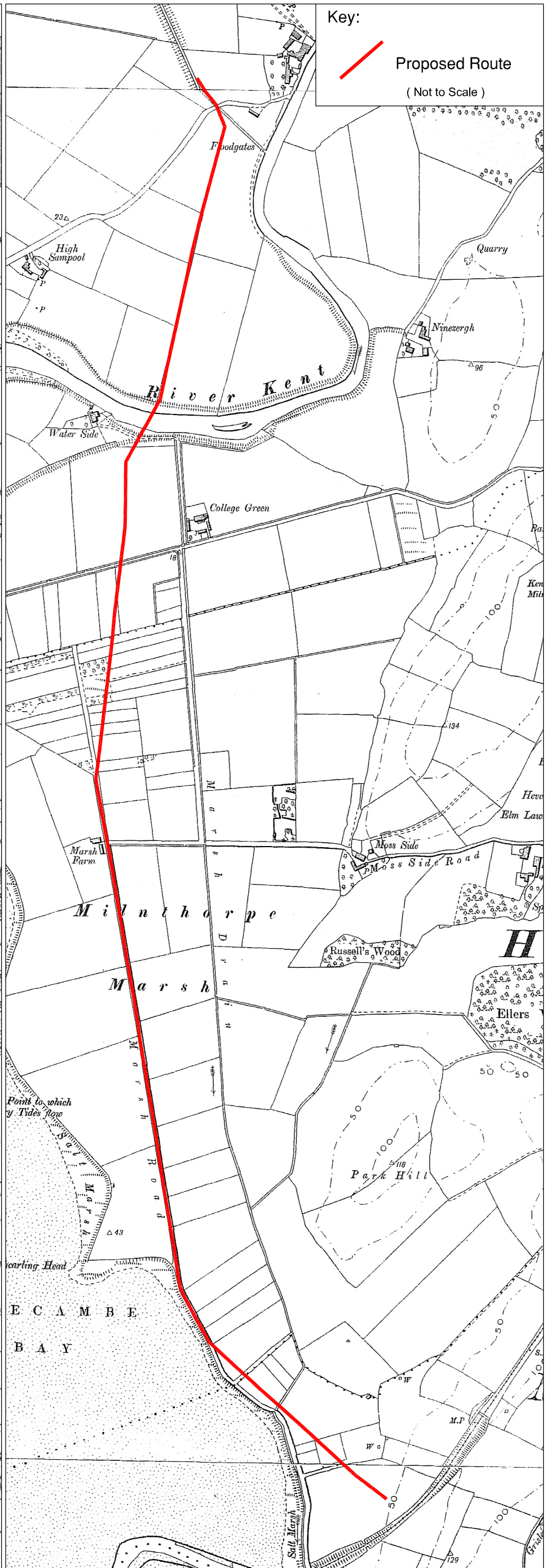


Figure 4: Ordnance Survey 6" to 1 mile, 1899

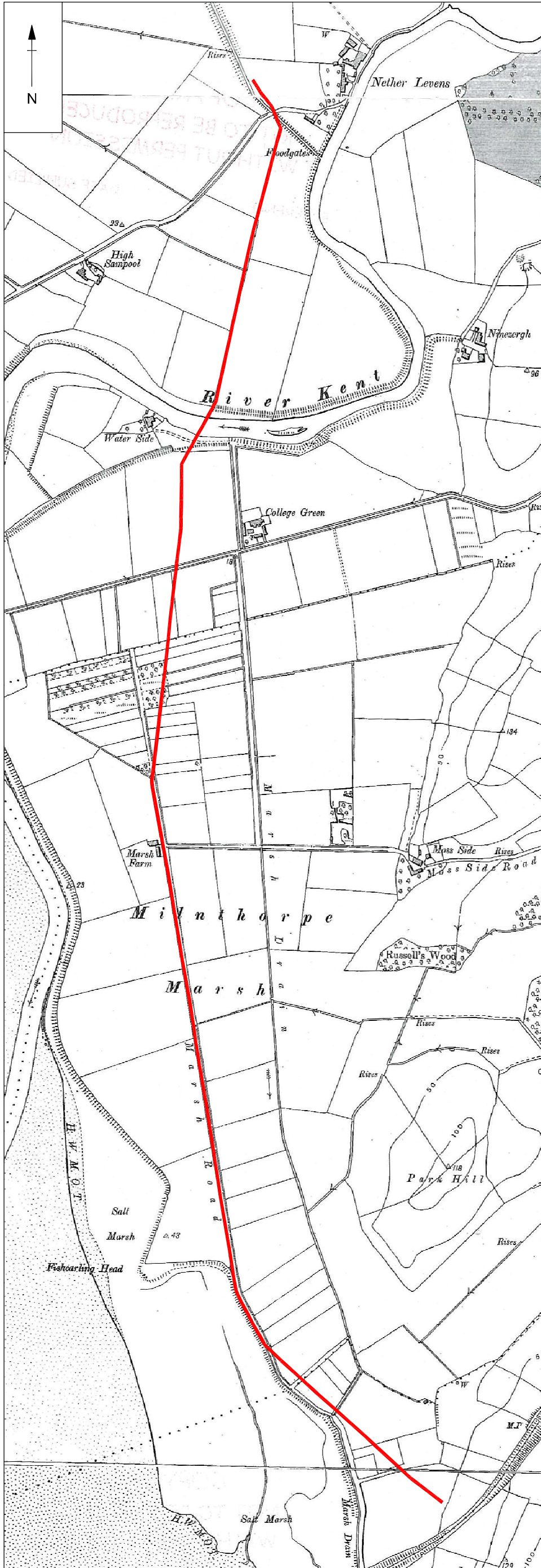


Figure 5: Ordnance Survey 6" to 1 mile, 1920

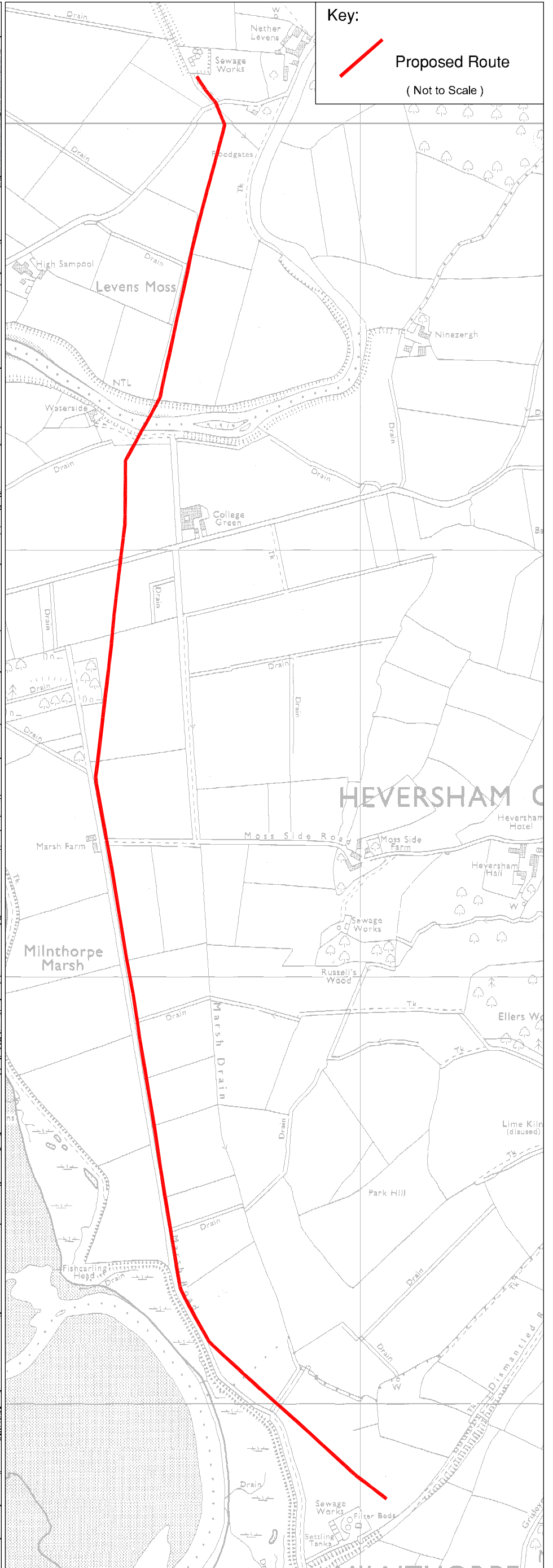


Figure 6: Ordnance Survey 1:10,000, c1975



Plate 1: Site **07**, drainage system



Plate 2: Site **09**, ridge and furrow



Plate 3: Site **04**, Furness Railway embankment



Plate 4: Site **08**, 'D'-shaped earthwork



Plate 5: Site **10**, possible building platform



Plate 6: Site **02**, Nether Levens

APPENDIX 1: PROJECT BRIEF

**BRIEF FOR A DESK-BASED ASSESSMENT, WALKOVER SURVEY & WATCHING BRIEF
ON THE PIPELINE ROUTE BETWEEN LEVENS WWTW & MILNTHORPE WWTW, CUMBRIA**

Issued by the

County Historic Environment Service

Environment Unit, Economy, Culture and Environment



Date of Brief: 20 December 2007

This Design Brief is only valid for 1 year after the above date. After this period the County Historic Environment Service should be contacted. Any specification resulting from this Brief will only be considered for the same period.

1. SITE DESCRIPTION AND SUMMARY

Site: Pipeline between Levens WwTW & Milnthorpe WwTW

Grid Reference: between SD 4900 8170 and SD 4860 8515

Approximate Length Of Pipeline: 3.6km

Detailed proposals and tenders are invited from appropriately resourced, qualified and experienced archaeological contractors to undertake the archaeological project outlined by this Brief and to produce a report on that work. The work should be under the direct management of either an Associate or Member of the Institute of Field Archaeologists, or equivalent. Any response to this Brief should follow IFA Standard and Guidance for an Archaeological Watching Brief, 2001. No fieldwork may commence until approval of a specification has been issued by the County Historic Environment Service.

2. PLANNING BACKGROUND

- 2.1 Cumbria County Council's County Historic Environment Service (CCCHES) has been consulted by United Utilities regarding a proposed pipeline route between Levens WwTW & Milnthorpe WwTW.
- 2.2 The proposed scheme affects an area considered to have a high archaeological potential and consequently a programme of archaeological works comprising a desk-based assessment, walkover survey and watching brief is required.
- 2.3 This advice is given in accordance with the advice of the Code of Practice on Conservation, Access and Recreation 2000.

3. ARCHAEOLOGICAL BACKGROUND

- 3.1 The proposed route runs through an area of former wetland and the North West Wetland Survey shows that peat deposits in the immediate vicinity of the site contain prehistoric and palaeoenvironmental remains.
- 3.2 The route also runs close to Nether Levens, which has medieval origins, and there are a series of earthwork remains surviving nearby that are probably associated with the house. The site of Heversham medieval park also lies on the route.

4. SCOPE OF THE PROJECT

4.1 Objectives

- 4.1.1 To identify and record any surviving above and below ground archaeological remains within the working easement, soil strip and pipe trench cut.

4.2 Work Required

4.2.1 Desk-Based Assessment

A desk-based assessment of the existing resource, to be undertaken before any work commences on site. This should include an assessment of primary and secondary maps and documents relating to the site, to set the evaluation results in their geographical, topographical, archaeological and historical context. Records and aerial photographs held by the County Historic Environment Record and County Records Office in Kendal should be consulted.

4.2.2 Walkover Survey

A walkover survey of the pipeline route, encompassing the proposed working easement as a minimum, before any ground works commence. Any surface features of potential archaeological interest should be recorded together with areas of potentially significant disturbance, and hazards and constraints to undertaking further archaeological work on site (including the siting of live services, Tree Preservation Orders and public footpaths). The extent (for sites over 10m in size) and location of the archaeological sites should be recorded at an accuracy of +/- 1m.

4.2.3 Watching Brief

The site should be examined once the topsoil has been stripped for any working easement and once the excavation of the pipe trench has been completed. It is not considered necessary for the ground works of the proposal to be carried out under archaeological supervision, unless this is the only logistical method of archaeologically monitoring the pipeline route. Any putative archaeological features must then be cleaned by hand and if possible a stratigraphic record made. Finds and environmental samples should be retrieved as appropriate. A reasonable period of uninterrupted access should be allowed to the archaeologist for all necessary archaeological recording.

5. SPECIFICATION

- 5.1 Before the project commences a specification must be submitted to and approved by the County Historic Environment Service.
- 5.2 Proposals to meet this Brief should take the form of a detailed specification prepared in accordance with the recommendations of *The Management of Archaeological Projects*, 2nd ed. 1991, and must include:
 - ❖ A description of the methods of observation and recording system to be used
 - ❖ A description of the finds and environmental sampling strategies to be used
 - ❖ A description of the post excavation and reporting work that will be undertaken
 - ❖ Details of key project staff, including the names of the project manager, site supervisor, finds and environmental specialists and any other specialist sub-contractors to be employed
 - ❖ Details of on site staffing, e.g. the number of people to be employed on site per day
 - ❖ A projected timetable for all site work and post excavation work (through to final publication of results)
- 5.3 Any significant variations to the proposal must be agreed by the County Historic Environment Service in advance.

6. REPORTING AND PUBLICATION

- 6.1 The archaeological work should result in a report, this should include as a minimum:
 - ❖ A site location plan, related to the national grid
 - ❖ A front cover/frontispiece which includes the planning application number and the national grid reference of the site
 - ❖ A concise, non-technical summary of the results
 - ❖ A date when the project was undertaken and by whom
 - ❖ A description of the methodology employed, work undertaken, and the results obtained
 - ❖ Plans and sections at an appropriate scale showing the location and position of deposits and finds located
 - ❖ A list of, and dates for, any finds recovered and a description and interpretation of the deposits identified
 - ❖ A description of any environmental or other specialist work undertaken and the results obtained
- 6.2 Three copies of the report should be deposited with the County Historic Environment Record within six months of completion of fieldwork. This will be on the understanding that the report will be made available as a public document through the County Historic Environment Record.

- 6.3 A summary report should be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork. If archaeological remains of significance are identified, one or more full reports should also be submitted to a suitable journal or other publication in due course.
- 6.4 Cumbria HER is taking part in the *Online Access to Index of Archaeological Investigations* (OASIS) project. The online OASIS form at <http://ads.ahds.ac.uk/project/oasis> must therefore also be completed as part of the project. Information on projects undertaken in Cumbria will be made available through the above website, unless otherwise agreed.

7. THE ARCHIVE

- 7.1 An archive must be prepared in accordance with the recommendations in Brown, DH, 2007, *Archaeological Archives A Guide To Best Practice In Creation, Compilation, Transfer and Curation*, Archaeological Archives Forum. Arrangements must be made for its long term storage and deposition with an appropriate repository. A copy shall also be offered to the National Monuments Record.
- 7.2 The landowner should be encouraged to transfer the ownership of finds to a local or relevant specialist museum. The museum's requirements for the transfer and storage of finds should be discussed before the project commences.
- 7.3 The County Historic Environment Service must be notified of the arrangements made.

8. PROJECT MONITORING

- 8.1 One weeks notice must be given to the County Historic Environment Service prior to the commencement of fieldwork.

9. FURTHER REQUIREMENTS

- 9.1 It is the archaeological contractor's responsibility to establish safe working practices in terms of current health and safety legislation, to ensure site access and to obtain notification of hazards (eg. services, contaminated ground, etc.). **The County Historic Environment Service bears no responsibility for the inclusion or exclusion of such information within this brief or subsequent specification.**
- 9.2 The Code of Conduct of the Institute of Field Archaeologists must be followed.
- 9.3 The involvement of the County Historic Environment Service should be acknowledged in any report or publication generated by this project.

10. FURTHER INFORMATION

For further information regarding this Brief, contact

Jeremy Parsons
Historic Environment Officer
Cumbria County Council
County Offices
Kendal
Cumbria LA9 4RQ
Tel: 01539 773431
Email: Jeremy.Parsons@cumbriacc.gov.uk