



WEST CUMBRIA PIPELINE, CUMBRIA

Desk-based Assessment of Expanded Route Options



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SUMMARY

United Utilities have proposed the installation of a pipeline along roads, and through fields, along a route that extended from the vicinity of the northern end of Thirlmere reservoir to the north of Bassenthwaite Lake, within the Allerdale District of Western Cumbria, which lies within the northern part of the Lake District National Park (NY 24385 26504, NGR centred). This is one of three groups of potential pipeline options being considered as part of the overall scheme, with the other two groups of pipeline options being assessed by Wardell Armstrong Archaeology and CFA Archaeology Ltd. The pipeline under assessment here measures 67.5km.

As a result of the potential for negative impacts upon heritage assets of archaeological interest during the works associated with the pipeline, United Utilities requested Oxford Archaeology North (OA North) to undertake a rapid desk-based assessment of the immediate environs of the proposed pipeline. The desk-based assessment examined a corridor that was 100m wide and was undertaken between February and May, and during July and August, 2014.

The historic research enabled the compilation of a gazetteer of 156 heritage assets, most of which comprised elements of the agricultural landscape or sites of former industry. Previously unidentified sites of uncertain character and extent were also identified within the study area during the desk-based assessment and the potential remains for the presence of further previously unidentified heritage assets. Two sites with statutory designations fall within the study area. These comprise one Grade II listed building (Site **30**, Toll Bar Cottage, LB 71768) and one scheduled monument (Site **45**, Castle How Hillfort, SM 1013384). Neither of these heritage assets will be affected in terms of physical impacts or as a result of significant visual impacts upon their settings, due to the concealed character of the pipeline in these areas once completed. The consideration of the potential for impacts on the settings of these assets during the construction phase will be considered during the walkover survey.

The study area partially lies wholly within the boundary of the Lake District National Park, which is a statutorily protected landscape. Consequently, all heritage assets within this area are considered to have a significance of at least 'District or County (lesser)' level. The Lake District National Park has been nominated for World Heritage Site (WHS) status by the UK government as 'The English Lake District' and is to be considered for inscription on the World Heritage List by UNESCO in 2017 (LDWHPP 2013, DCMS 2014). For the purposes of this assessment, the nominated WHS (Site **113**) has been considered as if inscribed and the potential for an impact of intermediate/minor scale has been assessed as the result of impacts upon numerous heritage assets that are considered to contribute to the Outstanding Universal Value (OUV) of the nominated WHS.

The potential exists for negative impacts upon a total of 95 heritage assets within the study area and there is an unknown potential for impacts upon 24 sites. However, the potential for many of these impacts could be reduced or removed by the considered routing of the pipeline and easement within the proposed study area corridor during the detailed design stage.

Further investigation will be necessary in order to characterise potential heritage assets of uncertain character and extent (Sites **27, 28, 36, 56-64, 67-8, 75, 80, 101-2, 104-6, 119, 120, 121, 131-5, 137, 148-9, 156**). The first stage of further investigation should comprise a walkover survey focused on these sites. Following detailed design, a further walkover survey should examine the sites of all identified heritage assets and examine the whole proposed route for indications of further unidentified heritage assets.

Following the walkover survey, the most effective means of subsequently determining the likelihood of sub-surface remains associated with some of these sites may be geophysical survey. Any anomalies identified during the geophysical survey would inform the necessity for further archaeological investigation by evaluation trenching or open-area topsoil stripping and archaeological excavation.

Heritage assets that have been previously identified may also require archaeological evaluation in advance of ground works in order to establish the character and extent of surviving remains and to inform the necessity for further archaeological works.

Where impacts cannot be avoided, recommendations for archaeological mitigation comprise topographic and photographic survey, watching brief, and preservation by record; the means of which will be determined following the further investigations described above.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to the staff of the Lake District Historic Environment Record, which is maintained by the Lake District National Park Authority.

Alastair Vannan undertook the historic research and also compiled the report. Mark Tidmarsh produced the drawings. Alan Lupton managed the project and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 United Utilities have proposed the installation of a pipeline along roads, and through fields, along a route that extended from the vicinity of the northern end of Thirlmere reservoir to the north of Bassenthwaite Lake, within the Allerdale District of Western Cumbria, which lies within the northern part of the Lake District National Park (NY 24385 26504, NGR centred). This is one of three groups of potential pipeline options being considered as part of the overall scheme, with the other two groups of pipeline options being assessed by Wardell Armstrong Archaeology and CFA Archaeology Ltd. The pipeline under assessment here measures 67.5km (Fig 1).
- 1.1.2 As a result of the potential for negative impacts upon heritage assets of archaeological interest during the works associated with the pipeline, United Utilities requested Oxford Archaeology North (OA North) to undertake a desk-based assessment of the immediate environs of the proposed pipeline. The desk-based assessment examined a corridor that was 100m wide and was undertaken between February and April 2014. All identified heritage assets were compiled within a gazetteer (*Appendix 1*) and plotted on Figures 2-5.

1.2 TOPOGRAPHY AND GEOLOGY

- 1.2.1 The route of the proposed pipeline runs along, and through, a combination of pre-existing roads and fields and through a variety of landscapes, from the rising ground at the base of fell-land to improved agricultural land in the valley bottoms, lake fringes, and the suburban fringes of Keswick (Figs 6,7, and 7a). The route occupies land within the valley bottoms in the vicinity of Bassenthwaite Lake and the environs of Keswick and Smathwaite, which lies to the north of Thirlmere reservoir. The land varies across the proposed pipeline route between approximately 210m and 80m (aOD). The local solid geological deposits comprise Felsic Tuff and Mafic Lava in areas to the south of Keswick, and mudstone, siltstone, and sandstone across the majority of the study area. The solid deposits are overlain by alluvium comprising clay silt and sand to the north, north-east, and south of Bassenthwaite Lake and to the north of Thirlmere reservoir (British Geological Survey 2014). The overlying deposits within the remainder of the study area consist of glacial till (*ibid*).

1.3 HISTORIC LANDSCAPE CHARACTER

- 1.3.1 The study area passes through three different historic landscape character areas as defined by Cumbria County Council (2009). The northern part of the study area occupies Character Area 6: Bassenthwaite and Lorton Valley (Cumbria County Council 2009). The settlement in this area is mostly dispersed with some small hamlets and the area features several country houses and ornamental parks, including Armathwaite Hall. The field systems in this area are based around several former common fields, which are larger

than many of those found elsewhere in the Lake District, and these are surrounded by areas of ancient enclosure. With the exception of a small number of intakes, the remainder is largely made up of planned enclosures. The planned enclosures include areas of former common waste and private enclosure of extensive parks. Hedgerows dominate the field boundaries, with some stone walls around planned enclosures on the higher ground. There are only a few fragmentary areas of ancient woodland and much of the plantation woodland is confined to areas of planned enclosure and reflects the ornamental nature of much of the landscape in this area.

- 1.3.2 The central portion of the study area lies within Character Area 31: Keswick and Derwent Water (*op cit*, 82). To the west of Keswick is an area of ancient enclosures and a large area of intakes lies to the north of the town. The Greta Valley features ancient woodland, and the field boundaries comprise hedgerows with numerous standard trees. The lower part of the study area lies partly within the northern portion Character Area 44: Thirlmere (*op cit*, 101), although the description provided does not include details that are pertinent to this specific area.

1.4 PLANNING BACKGROUND AND LEGISLATIVE FRAMEWORK

- 1.4.1 National planning policies on the conservation of the historic environment are set out in the National Planning Policy Framework (NPPF), which was published by the Department of Communities and Local Government (DCLG) in March 2012. Sites of archaeological or cultural heritage significance that are valued components of the historic environment and merit consideration in planning decisions are grouped as ‘heritage assets’; ‘heritage assets are an irreplaceable resource’, the conservation of which can bring ‘wider social, cultural, economic and environmental benefits...’ (DCLG 2012, Section 12.126). The policy framework states that the ‘significance of any heritage assets affected, including any contribution made by their setting’ should be understood in order to assess the potential impact (DCLG 2012, Section 12.128). In addition to standing remains, heritage assets of archaeological interest can comprise sub-surface remains and, therefore, assessments should be undertaken for a site that ‘includes or has the potential to include heritage assets with archaeological interest’ (DCLG 2012, Section 12.128).
- 1.4.2 NPPF draws a distinction between designated heritage assets and other remains considered to be of lesser significance; ‘great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be; substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, including scheduled monuments, protected wreck sites, battlefields, grade I and II* listed buildings and grade I and II* registered parks and gardens and World Heritage Sites, should be wholly exceptional’ (DCLG 2012, Section 12.132). Therefore, preservation in-situ is the preferred course in relation to such sites unless exception circumstances exist.

- 1.4.3 It is normally accepted that non-designated sites will be preserved by record, in accordance with their significance and the magnitude of the harm to or loss of the site as a result of the proposals, to ‘avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposals’ (DCLG 2012, Section 12.129). Non-designated heritage assets of archaeological interest will also be subject to the policies reserved for designated heritage assets if they are of equivalent significance to scheduled monuments (DCLG 2012; Section 12.132).

2. METHODOLOGY

2.1 HISTORIC RESEARCH

2.1.1 The archaeological assessment has focused on the study area as defined in the project brief, which comprises a 100m wide corridor, although information for the immediate environs has been considered in order to provide an essential contextual background. The assessment was carried out in accordance with the relevant IfA guidelines (IfA 2012, *Standard and Guidance for Archaeological Desk-based Assessments*). The principal sources of information consulted were historical and modern maps, although published and unpublished secondary sources were also reviewed. The following repositories were consulted during the data-gathering process:

2.1.2 The sources consulted included the Lake District Historic Environment Record (CHER), at the Lake District National Park Authority, historic mapping and published and unpublished materials held by the County Record Office (CRO) in Carlisle, and the OA North library. The results of the historic research were collated into a gazetteer of sites, which is found in *Appendix 1*.

- ***Lake District National Park Authority Historic Environment Record (LDNPA HER):*** the LDNPA HER holds data on the historic environment for the Lake District National Park. It includes listed buildings, all known archaeological sites, along with the location and results of previous archaeological interventions in a linked GIS and database format;
- ***Cumbria Record Office, Carlisle (CRO(C)):*** holds an extensive series of mapping for Carlisle and Allerdale Districts, as well as a collection of secondary sources about the area;
- ***On-line resources:*** the following on-line resources were consulted with regard to comprehensive aerial photographic coverage and mapped designation extents and to provide information on both designated and non-designated heritage assets: Bing Mapping, Pastscape, Heritage Gateway, National Heritage List for England, Images of England, the Portable Antiquities Scheme and MAGIC;
- ***Oxford Archaeology North:*** OA North has an extensive archive of secondary sources relevant to the study area, incorporating both published work and unpublished client reports.

2.2 ARCHIVE

2.2.1 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project. Copies of the report will be sent to the

Lake District National Park Authority's Historic Environment Record, Oxenholme, where viewing will be available on request.

2.3 METHODOLOGY

2.3.1 The results of the assessment have identified the significance of the known archaeological resource of the study area. In order to assess the potential impact of the pipeline proposals, consideration has been afforded to:

- the magnitude of impact;
- reviewing the evidence for past impacts that may have affected the heritage assets identified during the desk-based assessment;
- assessing the likely effect on heritage asset significance that may occur as a result of a given magnitude of impact;
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce, or remediate adverse impacts.

2.3.2 Such impacts on the identified archaeological sites may be:

- positive or negative;
- short, medium or long term;
- direct or indirect;
- reversible or irreversible.

Significance	Designation	Asset types and justification	Preferred response to negative impact
International	Sites inscribed on the UNESCO World Heritage list	World Heritage Sites are described as designated heritage assets of the highest significance (NPPF planning practice guidance para 32: DCLG 2014)	Avoid negative impact where asset contributes to the WHS's defined outstanding universal values (NPPF s138)..
National	Statutorily designated heritage assets.	Scheduled monuments, grade I and II* listed buildings (NPPF s132).	Avoid negative impact.
National	Non-statutorily designated heritage assets.	Registered battlefields, grade I and II* Registered Parks and Gardens (NPPF s132).	Avoid negative impact.
National	Non-designated heritage assets of demonstrable equivalence to a scheduled monument (NPPF s138).	Assets where assessment for designation is pending, assets that have been assessed as being capable of designation but have not been designated at the SoS discretion, assets worthy of designation but which are outside the scope of the 1979 Act (NPPF s139).	Avoid negative impact.
District or County (Higher)	Statutorily designated heritage assets.	Grade II listed buildings (NPPF s132).	Limit negative impact (avoid substantial harm) and mitigate.
District or County (Higher)	Non-statutorily designated heritage assets.	Conservation area (NPPF s127), grade II registered park and garden (NPPF s132).	Limit negative impact (avoid substantial harm) and mitigate.
District or County (Lesser)	Non-designated heritage assets within a national park or AONB.	Any extant heritage assets that do not justify being assigned a higher level of significance (NPPF s115).	Limit negative impact and mitigate.
District or County (Lesser)	Non-designated heritage assets.	Heritage assets placed on a local planning authority list that do not justify being assigned a higher level of significance (NPPG).	Limit negative impact and mitigate.
District or County (Lesser)	Non-designated heritage assets.	Any area of potential listed in a local plan that do not justify being assigned a higher level of significance (NPPG).	Limit negative impact and mitigate.
Local	Non-designated heritage assets.	Any extant heritage assets outside of a national park or AONB that do not justify being assigned a higher level of significance.	Mitigate.
Negligible	Non-designated heritage assets.	Heritage assets recorded in the HER that are no longer extant, individual findspots or structures of no heritage value.	No action.

Table 3: Definition of heritage asset significance

Magnitude of impact	Heritage Asset		
	Archaeological Remains (Archaeological Interest)	Historic Buildings (Architectural/Artistic Interest and/or Historic Interest)	Historic Landscapes (Historic Interest)
Loss	Removal or change to most or all key archaeological materials, such that the resource is totally altered and its heritage significance completely reduced	Demolition or change to key historic building elements, such that the asset is totally altered and its heritage significance completely reduced.	<ul style="list-style-type: none"> Major alteration to historic landscape character resulting from: Changes to most key historic landscape elements, parcels or components. Extreme visual effects Major change to noise or change to sound quality such that the opportunity to appreciate the landscape is removed Major changes to use of highways and PROW resulting in loss of access.
	<i>Major changes to setting where the setting elements affected are key to the significance of the asset</i>		
Substantial	Changes to many key archaeological materials, such that the resource is clearly modified.	Changes to many key historic building elements, such that the asset is significantly modified.	<ul style="list-style-type: none"> Considerable change to historic landscape character resulting from: Changes to many key historic landscape elements, parcels or components Visual change to many key aspects of the historic landscape Widespread noticeable differences in noise or sound quality reducing the ability to appreciate the landscape. Changes to use or access of highways and PROW greatly reducing access.
	<i>Major changes to the setting where setting elements affected make a contribution to the significance of the asset</i> <i>Moderate changes to setting where setting elements affected are key to the significance of the asset</i>		
Less than substantial	Changes to key archaeological materials, such that the asset is slightly altered	Change to key historic building elements, such that the asset is slightly different	<ul style="list-style-type: none"> Limited change to historic landscape character resulting from: Changes to some key historic landscape elements, parcels or components Slight visual changes to some key aspects of the historic landscape Limited changes to noise levels or sound quality Slight changes to use highways and PROW slightly reducing access.
	<i>Moderate changes to setting where setting elements affected make a contribution to the significance of the asset</i> <i>Slight changes to setting where setting elements affected are key to the significance of the asset</i>		
Minor alteration with no change in significance	Very minor changes to archaeological materials	Slight changes to historic buildings elements	<ul style="list-style-type: none"> Very small change to historic landscape character resulting from: Very minor changes to key historic landscape elements, parcels or components Virtually unchanged visual effects Very slight changes to noise levels or sound quality Very slight changes to use or access
	<i>Slight changes to setting where setting elements affected make a contribution to the significance of the asset</i>		
No change	No change		

Table 2: Definition of Magnitude of Impact

- 2.3.3 Key impacts have been identified as those that would potentially lead to a change to the heritage asset. Each potential impact has been determined as the predicted deviation from the baseline conditions, in accordance with current knowledge of the asset and the proposed development. Table 1 shows the sensitivity of the asset scaled in accordance with its relative importance using the following terms for the cultural heritage and archaeology issues, with guideline recommendations for a mitigation strategy.
- 2.3.4 The impact is assessed in terms of the sensitivity of the site to the magnitude of change during any future redevelopment scheme. The magnitude of an impact is often difficult to define, but will be termed as loss, substantial, less than substantial, minor, or no change, as shown in Table 2.
- 2.3.5 The interaction of the magnitude of impact (Table 2) and the significance of the heritage asset (Table 1) produces the scale of impact upon heritage asset significance. This may be calculated by using the matrix shown in Table 3:

Resource Value (Significance)	Magnitude of Impact				
	Loss	Substantial	Less than substantial	Minor	No change
National/ International	Very major	Very Major	Major	Intermediate/ Minor	Neutral
District/County (Higher)	Very major	Major	Major/ Intermediate	Minor	Neutral
District/County (Lesser)	Major	Intermediate	Intermediate	Minor	Neutral
Local (low)	Intermediate	Intermediate/ Minor	Minor	Minor/ Neutral	Neutral
Negligible	Neutral	Neutral	Neutral	Neutral	Neutral

Table 3: Scale of impact upon heritage Asset Significance

- 2.3.6 The impact significance category for each identified heritage asset will also be qualified, and recommended mitigation measures will be provided, where possible at this stage, for minor impacts upon heritage asset significance or above.
- 2.3.7 It is also considered important to attribute a level of confidence by which the predicted impact has been assessed. For the purpose of this assessment, the criteria for these definitions are set out in the table below.

Confidence in Predictions	
Confidence Level	Description
High/Certain	The predicted impact is either certain, <i>ie</i> a direct impact, or believed to be very likely to occur, based on reliable information or previous experience, and may be estimated at 95% chance or higher.
Medium/Probable	The probability can be estimated to be above 50%, but below 95%.
Low/Unlikely	The predicted impact and its levels are best estimates, generally derived from the experience of the assessor. More information may be needed to improve the level of confidence, which can be estimated using the present information at above 5% but less than 50%.
Extremely Unlikely	The probability can be estimated at less than 5%.

Table 4: Impact Prediction Confidence

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 context. The primary purpose of this background section is to provide an understanding of the historical development of the locale and, therefore, an indication of the potential for sites of archaeological interest within the study area. General historical detail that is not pertinent directly to this purpose, such as the familial histories of landowners, is not, therefore, presented. However, information has been included regarding the character and extents of former landholdings, such as estates and baronies, which might allow understandings of historical land uses to be discerned.

Period	Date Range
Palaeolithic	c30,000 – 10,000 BC
Mesolithic	c10,000 – 3,800 BC
Neolithic	c4000 – 2,500 BC
Bronze Age	c2,500 – 700 BC
Iron Age	c700 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 THE PREHISTORIC PERIODS

- 3.2.1 **Mesolithic Period:** the Mesolithic was the latest cultural epoch in Britain during which people employed a subsistence strategy based wholly upon hunting, gathering, and fishing. The earliest indications within the pollen record of human influence in the natural landscape of Northern Cumbria comprise possible indicators of forest clearance at c5850-5750 cal BC from the northern side of the Solway estuary (Hodgkinson *et al* 2000, 107). Charcoal fragments and pollen evidence from northern Cumbria may also be suggestive of the use of fire in woodland clearance during the c sixth millennium BC (*ibid*). The earliest definite indicators of woodland clearance in Northern Cumbria occur within the pollen record at c 4520-3990 cal BC and 4036-3780 cal BC (*op cit*, 109). Such woodland clearances would have allowed the regeneration of plants and encouraged browsing animals (Hodgson and Brennand 2006, 25), therefore, allowing humans to exercise a greater degree of control over the productivity of hunting grounds. Much of the artefactual evidence for the Cumbrian Mesolithic derives from flint scatters at coastal sites, with only one site having been identified in the central Lake District, close to the Roman Fort at Ambleside (*op cit*, 25–6). No sites of Mesolithic date demonstrating human activity are known from the study area.

- 3.2.2 **Neolithic Period:** there appears to have been a great deal of continuity between the late-Mesolithic and early-Neolithic periods in Cumbria, with typically Mesolithic tool types continuing in use until the end of the fourth millennium BC (Cherry and Cherry 2002, 2–3) and landscape clearance, by burning, being undertaken during both periods (Hodgkinson *et al* 2000, 155). Indeed, it has been suggested that the exploitation of wild resources may have continued to play a primary role in the subsistence strategies of the populations of north-western England (Hodgson and Brennand 2006, 31). However, as demonstrated by pollen evidence from western Cumbria, the early Neolithic period was also a time of great cultural change, with the adoption of agriculture on a large scale leading to more extensive woodland clearances (Hodgkinson *et al* 2000, 68). The uplands of the Lake District experienced dramatic changes in vegetation with, for example, reductions in elm and pine, as has been observed in the analysis of pollen from Angle Tarn and Langdale Coomb (Walker 1965a; Pennington 1975). By the Bronze Age the central uplands had become extensively cleared of woodland (Pearsall and Pennington 1973), although some valleys of the central Lake District, such as Borrowdale, may not have experienced widespread clearances until *c* AD 1000 (OA North 2007, 14).
- 3.2.3 The Neolithic period saw the introduction of monumental funerary and ritual architecture, with some of the earliest stone circles in Britain being constructed in Cumbria (Burl 2000, 109). Indeed, Castlerigg stone circle, which lies 0.5km to the south of the pipeline at the eastern side of Keswick, has been suggested to date to between 3100-2900 BC (*op cit*, 109). A stone circle on Elva Plain, 1.5km to the west of the northern end of the study area, is suggested to date approximately 2900-2500 BC. The presence of these circles demonstrates that humans were active within the wider area during the Neolithic or Bronze-Age periods. A Neolithic stone axe (Site **05**) was found in Keswick and a second axe of uncertain date (Site **13**) was also found in this area.
- 3.2.4 **Bronze Age:** the beginning of the Bronze Age in Britain, defined mainly by the introduction of the use of copper, developed gradually out of the preceding Neolithic during the mid third millennium BC (Parker Pearson 2000, 13). The tradition of monumental architecture continued into the Bronze Age, with new ritual and religious traditions developing that were associated with new monument types (*see* Hodgson and Brennand 2006, 41-5).
- 3.2.5 The limited environmental evidence available for Cumbria suggests that the pattern of small clearances evident in the Neolithic continued throughout the Bronze Age (Hodgson and Brennand 2006, 31). There has been speculation that deterioration of the climate during the late Bronze Age, leading to wetter conditions, may have caused retreats of populations from peripheral upland landscapes (Wells 2003, 690), although this does not preclude the possibility of some residual settlement or activity from this period. There is evidence for Bronze Age activity in the local area, with a settlement complex situated on Threlkeld Common (Scheduled Ancient Monument (SAM) 23791), 6km from Keswick, and comprising stone hut circles, a field system, and trackways (Robinson and Millward 1970).

- 3.2.6 **Iron Age:** the Iron Age is notoriously underrepresented in North West England (Hodgson and Brennand 2006, 51; Haselgrove 1996, 61). This is probably influenced as much by the poor survival of material of this date, the lack of a temporally distinct material culture, and the inherent difficulty of recognising potentially subtle regional site-types (Hodgson and Brennand 2006, 53; Cowell 2005, 75; Haselgrove 1996, 64) as it is by the often-quoted suggestion of a low population density (Haselgrove 1996, 64).
- 3.2.7 Large field systems and agriculturally improved areas have been identified in the uplands of the Lake District (Leech and Quartermaine 2012) and both the uplands and lowlands of Cumbria have produced evidence of numerous enclosed settlements that may date to the Iron Age (Hodgson and Brennand 2006, 52). A series of enclosures on Aughertree Fell, to the north-east of the study area, potentially represent a long sequence of occupation throughout the later prehistoric periods (*ibid*). Intensive aerial survey has also revealed extensive settlement remains across the Solway plain, to the north of the study area (Bewley 1994). However, a lack of identifiable material culture has made it difficult to date these sites (Hodgson and Brennand 2006, 52). When excavations have taken place at settlement sites in Cumbria, the presence of Romano-British pottery, in contrast to a lack of Iron Age material culture, may have led to sites being categorised according to their final, Romano-British, phase of occupation with earlier settlement activity being masked and obscured (Hoare and Loney 2004, 42). Along with the apparent absence of Iron Age settlement sites, there was an episode of forest recovery in the Iron Age, which is reflected within several upland pollen diagrams. This implies that there was an extensive retreat from the marginal uplands at a time that approximately coincided with a climatic decline evidenced by palaeobotanical data (*ibid*).
- 3.2.8 The declining climatic conditions, coupled with a lack of dateable sites for the Iron Age, has led to the traditional belief that there was a lack of Iron Age settlement in Cumbria due to inhospitable conditions. However, there are numerous un-dated sites across the uplands, which could have Iron Age origins, phases of use continuing from the Bronze Age, or use pre-dating their assigned Romano-British date. In fact, pollen evidence demonstrates that there was clearance and cereal cultivation in the region during the Late Iron Age (Hodgson and Brennand 2006, 52). Therefore, although the deterioration of the climate during the late Bronze Age and Iron Age is well attested (Wells 2003, 69), the subsequent impact upon levels of occupation may have been overstated (*ibid*).
- 3.2.9 Castle How hillfort (Site **30**; SM 23792) is a hilltop site of possible Iron-Age date and occupies a steep rocky hillock at the western side of Bassenthwaite Lake. A second hillfort of possible Iron-Age date lies to the south of the southern end of the study area, close to Shoulthwaite Gill (SM 1012942).

3.3 THE HISTORIC PERIODS

- 3.3.1 **Romano-British:** in Cumbria, 866 enclosures, and up to 332 settlements, have been identified as cropmarks and earthworks but very few of these sites have been investigated by excavation and they have not been closely dated (Philpott 2006, 74). The similarity between indigenous rural settlement sites of the Iron

Age and Romano-British periods means that these sites could potentially date to either period, or have been used during both periods (*op cit* 73–4). A series of circular earthworks with sunken interiors (High Nook Farm (NTSMR 27581), Lanthwaite Green (NTSMR 20389), Lambling Knott (NTSMR 20381), and Rannerdale (NTSMR 29273)) have been identified in the environs of Crummock Water and Loweswater, in the adjacent valley to the west of the study area (OA North 2009, 16–21). These have been preliminarily dated to the Romano-British period, although it is possible that close dating could reveal phases of prehistoric activity (*ibid*). The presence of the probable Iron-Age hillfort at Castle How (Site **30**) suggests that there was indigenous settlement activity within the study area prior to the Romano-British period and evidence from the wider region suggests that rural settlement continued, although perhaps varying in intensity, from the Iron Age into, and throughout, the Romano-British period (*ibid*).

3.3.2 In addition to the potential for continuity of indigenous settlement into the Romano-British period in this part of Cumbria, changes to the landscape were introduced with the occupation of the region by the Roman military, which had established a timber fort at Carlisle by AD 72–3 (Philpott 2006, 64). A fort was established to the north of the study area at Caermote (SM 9904), which lies to the south-east of Bothel, during the first century AD and a fortlet was built at this site during the second century. A possible Roman road (Site **17**) is visible as a linear feature running north-west from Keswick towards Caermote fort. The putative route of the road is crossed by the course of the modern A591 three times, although the courses of the two roads converge for only a very short stretch of approximately 200m. The HER traces the putative course of the Roman road as far north as Bowness Farm, close to the Bowness Wood peninsula, which is the site of a putative Roman signal station (NThER 4232). However, if this road did connect with Caermote fort then the line of the road would have continued northwards and would have been likely to have been crossed by the route of the A591, and the proposed pipeline route, to the north-east of Bassenthwaite Lake. The southern end of the putative route of the road has been traced as far as Great Crosthwaite, although it is unclear whether a military site was established at Great Crosthwaite or Keswick, or if the road followed this route in order to utilise a preferred crossing of the River Greta. A gully that may have been associated with the road was found during an archaeological evaluation by Wardell Armstrong Archaeology (Site **114**). The remains of a second Roman Road (LDHER 1103) have been identified to the north-east of Braithwaite, just to the east of the study area. This road was subject to excavation, which confirmed that it was a metalled road of Roman style. Portions of a Roman road to the east of Keswick, at Burns Farm, have also been subject to excavation (LDHER 17808). Finds of Roman date have also been found within the general area, such as a brooch (NThER 18926) and armlet (NThER 13853) found to the south-west of the study area, near to Coledale Cottage in Braithwaite and Roman pottery (NYHER 4234) found to the south-west of the southern end of the study area at Castlerigg Fell.

3.3.3 **Early medieval period:** little is known of the political situation in the Lake District after the withdrawal of Roman rule. It is generally assumed that the British kingdom of Rheged was located on the Solway, and may well have

incorporated most or all of the Lake District (Higham 1986). This seems to have been subsumed into the Anglian kingdom of Northumbria by the mid-seventh century, which held sway over the area north of the Ribble and Humber until political anarchy descended in the ninth century, in part linked to the pressure of Viking incursions. Many of the Norse settlers who came into Cumbria during the tenth and eleventh centuries came from settlements in Ireland, the Isle of Man and the Western Isles, which resulted in the west of the region becoming more heavily settled.

- 3.3.4 There is a lack of archaeological information for this period in the Lake District, which, at least in part, is due to a lack of dating evidence for structures. Palaeobotanic evidence from the Lake District suggests that land management in the uplands increased during the ninth-tenth centuries (Quartermaine and Leech 2012). The analysis of pollen deposits from peat bogs indicates major wood clearance episodes in the interior valleys (Oldfield 1969; Pennington 1970) during the second half of the first millennium. Archaeological evidence for early medieval activity in this area mainly comes from the coastal strip to the west of the study area.
- 3.3.5 The presence of pre-Scandinavian sculptural fragments in churches generally indicates that the church had a foundation date pre *c* 900; although the role of these churches, and the extent of their influence on the wider area, is not certain (Winchester 1987, 23-4). In the Copeland deanery, within which part of the study area lies, pre-Conquest sculpture is extant at 15 out of 25 medieval parish churches (*ibid*). St Kentigern's Church (LDHER 4464) at Great Crosthwaite lies approximately 100m to the north of the proposed pipeline route and was reputedly established on the site of St Kentigern's preaching cross, which dated to *c* AD 600, although such an early the date for the foundation of the ecclesiastical site has been disputed (Gott 1994, 6).
- 3.3.6 Several place-names within the study area have linguistic roots that are suggestive of pre-Conquest origins. The place-name of Allerdale, which has Old Norse influence, was recorded as early as 1150 and means 'the valley of the Ellen' (Armstrong *et al* 1950a, 1). The Copeland place-name was recorded as early as 1125 and comes from the Old Norse *Kaupaland*, meaning 'bought land' (*op cit*, 2).
- 3.3.7 The 'thwaite' element of Bassenthwaite derives from Old Norse and featured in the name of the manor as early as 1160, meaning the clearing or land of *Bastun* (Armstrong *et al*, 1950b, 263; Armstrong *et al*, 1952, 494). The 'thwaite' element occurs in several local place-names, including Armathwaite, which was first recorded in 1278 as *Ermicetwayth* and means 'hermit's clearing' (Armstrong *et al*, 1950b, 263-4). Thornthwaite, first recorded in 1230 may relate to the clearing of thorns (*op cit*, 371), Braithwaite was first recorded in 1160 and means a broad clearing (*op cit*, 370), Crosthwaite was first recorded in 1150 and is likely to mean a clearing that was marked by a cross (*op cit*, 302), which may refer to St Kentigern's preaching cross (LDHER 4464). Place-name evidence should, however, be used with caution as some words with Norse and Anglian origins continued to be used into much later periods. The Norse word 'thwaite' was used widely in the central Lake District and, subsequently, became part of the Cumbrian dialect and was

applied to new clearings as late as the thirteenth century (Winchester 1987, 41). Place-names can not, therefore, be equated automatically with the settlement of ethnic groups in the absence of accompanying historical or archaeological evidence. The name of Setmurthy appears to mean ‘Murdoch’s pasture’ and to incorporate a version of the Old Irish *Muiredach*, which was common in the North during the eleventh or twelfth centuries (Armstrong *et al* 1950b, 434), and the Old Norse *saetr* and to suggest that the area was a ‘summer pasture’ during a period of Scandinavian settlement (Winchester 1987, 160). Threlkeld may also have Norse linguistic roots and has been suggested to mean ‘Thrall’s spring’ (Armstrong *et al* 1950a, 252-3), and Fornside appears to derive from the Old Norse meaning ‘Forni’s sheiling’ (Armstrong *et al*, 1950b, 312-13). Legburthwaite also appears to be of Norse origin and to mean a clearing associated with the personal name ‘Leggr’ (*ibid*).

- 3.3.8 In addition to place-names deriving from Scandinavian linguistic roots, early place-names also occur within the local area of British and Anglo-Saxon origin. The River Derwent flows into and out of Bassenthwaite Lake and the name was recorded by Bede as early as AD 750 (Armstrong *et al* 1950a, 3). The river name derives from the Old British word *Deruentio*, which means ‘abounding in oaks’ (*ibid*). Keswick derives from the Old Anglian *cese wic*, meaning cheese wic, although it appears to have been affected by Scandinavian influence with the introduction of the ‘k’ (Armstrong *et al*, 1950b, 301-2). The *wic* element relates to a settlement or farm and Keswick is likely to translate as a dairy farm (Armstrong *et al*, 1952, 497-8). The Wythop place-name appears to be of Old English origin and to mean ‘withy valley’ (*op cit*, 457) and Wythburn has the same meaning, although it combines Old English and Old Norse elements (*op cit*, 316).

3.3.9 **Medieval period:**

- 3.3.10 *Baronies*: part of the study area lay within the former Barony of Allerdale, which later became the ward of Allerdale below Derwent and lay to the east of the River Derwent (Armstrong *et al* 1950b, 1; Plate 1). The barony of Allerdale, meaning ‘valley of the Ellen’ (*ibid*) corresponded with the spatial extents of the ward of the same name and was one of many ancient wards that appears to have been defined according to geographical characteristics and, therefore, may have possessed some cohesion as a territorial unit prior to the Conquest (Winchester 1987, 16). Allerdale formed part of the great royal forest of Inglewood during the late twelfth century, but this had been reduced in size and excluded the barony by 1300 (*op cit*, 22). The Barony and ward of Copeland lay to the west of the River Derwent, and later became the ward of Allerdale above Derwent (Armstrong *et al* 1950a, 2; Winchester 1987, 16). The Barony of Copeland, which is presumed to be the same area as early medieval Copeland, was established sometime after 1120 (Todd 1995). The Copeland place-name was recorded as early as 1125 and comes from the Old Norse *Kaupaland*, meaning bought land (Armstrong *et al* 1950a, 2).

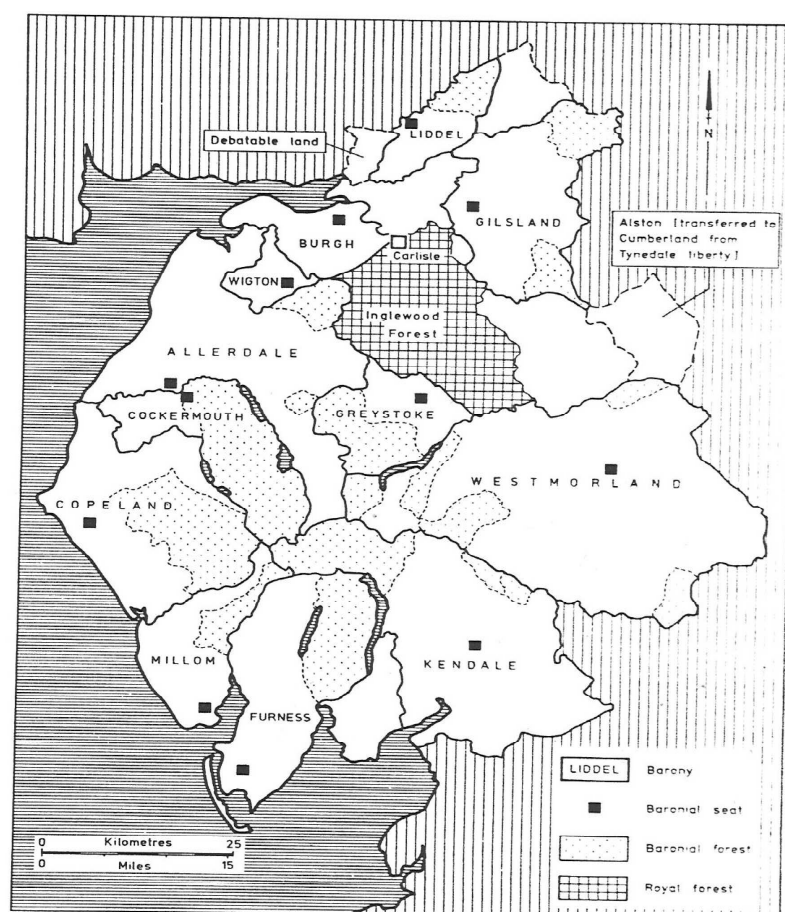


Plate 1: Plan showing the framework of feudal lordship: baronial estates and forest areas (Winchester 1987)

- 3.3.11 A tripartite division of the large feudal Barony of Copeland created the smaller estates of the *Honour of Cockermouth*, the *Barony of Egremont*, and the *Seigniory of Millom* (Winchester 1987, 26; Plate 2). The western part of the study area runs through the former Honour of Cockermouth, which was split into a lowland portion called Five Towns, and an upland section called Derwentfells that consisted of the uplands to the west of Bassenthwaite Lake, between the rivers Cocker and Derwent (*ibid*). From the twelfth century, the Honour of Cockermouth had overlordship of the Barony of Allerdale (Lancaster University 2014).
- 3.3.12 The barony of Greystoke lies to the east of Allerdale (Plate 1) and was granted to Forne between 1100 and 1135, during the reign of Henry I (Winchester 1987, 16). This barony corresponds approximately with the western part of the ward of Leath and is one of several small units of Norman overlordship that may have existed prior to the Conquest as federal estates (*op cit*, 19). Only a short portion of the proposed pipeline falls within the barony of Greystock and this lies to the south of Threlkeld, which lay within the baronial forest (*op cit*, 17; Plate 1).

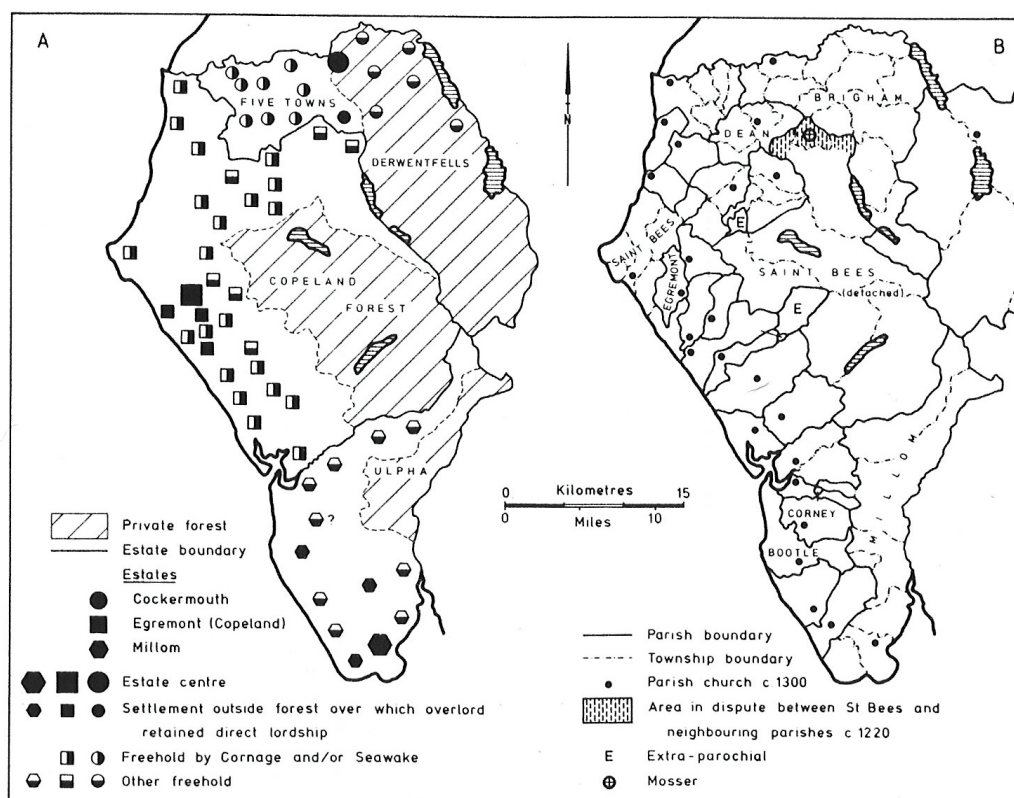


Plate 2: Plan showing the feudal tenure and parish boundaries of Copeland (Winchester 1987)

- 3.3.13 *Parishes, manors, and townships:* the ancient parish of Crosthwaite covered a large portion of the environs of Keswick, to both the east and the west of the River Derwent (Lysons and Lysons 1816, 81-9). This parish encompassed several townships through which the proposed pipeline passes, including Crosthwaite, Great Crosthwaite, Braithwaite, Portingscale, and Thornthwaite to the west of the river, and those of St. John's, Castlerigg, Underskiddaw, Ormathwaite, and Keswick to the east of the river (*ibid*).
- 3.3.14 Bassenthwaite formed a parish and a manor and the church of Bassenthwaite was given to the Abbey of Jedworth by Waldeof, son of Gospatric, during the twelfth century (*op cit*, 18-22). The manor of Bassenthwaite lay to the east of the River Derwent and was divided into the two moiety estates of High and Low Bassenthwaite during the early fourteenth century (*op cit*, 18-22). The Mire House estate, at the eastern shore of Bassenthwaite Lake, was formerly the demesne holding of the manor of High Bassenthwaite *ibid*. The north-western part of the study area lay within the parish of Brigham and included the former chapelry and township of Wythop (Lewis 1848, 703-7; Lysons and Lysons 1816, 28-31).
- 3.3.15 Portingscale, Braithwaite and Thornthwaite, Wythop, and Setmurthy lay within the manor of Derwentfells and Great Crosthwaite and Under-Skiddaw formed part of the manor of Brundholme. The manor of St John and Castlerigg and the manor of Keswick were part of the Derwentwater estate and, prior to the reign of Edward the First (1272 to 1307), this belonged to the De Derwentwater family (*ibid*; Winchester 1987).

3.3.16 The ancient parish of Greystoke contained four chapelries, including Threlkeld, which has been suggested to have been the oldest chapelry in the diocese of Carlisle, although its date of foundation is not known with certainty (Lysons and Lysons 1816, 100-109). Threlkeld was also the name given to the local manor and township, and was used by the family who owned the manor from at least as early as the reign of Edward I (*ibid*).

3.3.17 *Non-tenurial history:*

3.3.18 **Bassenthwaite and Underskiddaw:** the earliest surviving reference to Bassenthwaite Lake is from *c* 1220, at which date the lake was named 'Bastunwater' (Armstrong *et al*, 1950a, 32). The name is likely to be of post-Conquest origin and to have included the Anglo-French nick-name *Bastun*, meaning 'baton' or 'stick', and the Middle English 'water', which may have replaced the earlier Old Norse 'lake' and was, in turn, replaced by 'thwaite' (*ibid*), which previously featured in the name of Bassenthwaite manor. The church of St Bega, on the eastern shore of the lake, was established by at least as early as the medieval period and this Grade II* listed building (LB no 72100) was restored in 1874 and stands to the north-west of Mire House. A deserted medieval village has also been recorded to the west of the church (LDHER 17366) and appears to have been referred to in historical documents as early as the twelfth century. Fish garths, or fish traps, were recorded at Bassenthwaite Lake, in the Crosthwaite estate, as early as 1540 when they were confiscated from Fountain Abbey (Nicholson and Burn 1777, 92). A house named 'Bog House' lies to the west of the study area on the eastern bank of the River Derwent at Underskiddaw and has been tentatively identified as a medieval dwelling called Normanthwaite, which was recorded in a charter of 1210/19 (LDHER 32739). Field systems and broad ridge and furrow of possible medieval date have been identified within this area from historic mapping and aerial photographs (Sites **71, 96, 97, 99, 100, 107-111**).

3.3.19 St Kentigern's church was established at Great Crosthwaite in 1175 (LDHER 1175) and a deserted medieval village that may have been recorded as early as the twelfth century has also been recorded in this area (LDHER 1106). A possible medieval bee bole (Site **16**, LDHER 31083) has been recorded within the study area, at the western side of Crosthwaite. An unofficial market appears to have been held at the church in *c*1300 and was the subject of legal complaints against Isabel de Fortibus, as the holder of the estate of Crosthwaite. Isabel denied that she held a market at the church and said that local men met there on feast days and sold fish and flesh (Whellan 1860, 333-4). However, by 1306, the inhabitants of Cockermouth petitioned parliament against this activity on the grounds that it included a very wide range of goods and was having a negative impact on the market in their town and a proclamation was issued that appears to have ended the practice (*ibid*).

3.3.20 **Keswick:** the core of the medieval settlement at Keswick lay at the western side of the modern town and the extent of tenements of medieval date have been traced from the River Greta south-eastwards across much of the modern town centre (Site **09**). In 1303, 30 burgesses, or holders of burgage plots, were recorded in Keswick and these plots appear to have been built in a regular pattern fronting the market place and to have measured approximately 40 feet

(12.2m) wide (Bott 1994, 12-13). The basic form of the medieval core with burgage plots was recorded on a later map of 1787 (Plate 3). Markets were held at Keswick prior to 1300 and markets and fairs continued to be a central feature of the town during the medieval and post-medieval periods (Whellan 1860, 333-4). The location of Keswick close to communication routes from Borrowdale, Lorton (via the Whinlatter Pass), Cockermouth, Bassenthwaite, and Keswick created conditions that were favourable for the development of a market centre, although the town did not necessarily thrive throughout all periods and was described by Leland in the 1530s as a 'lytle poor market town' (Bott 1994, 14).

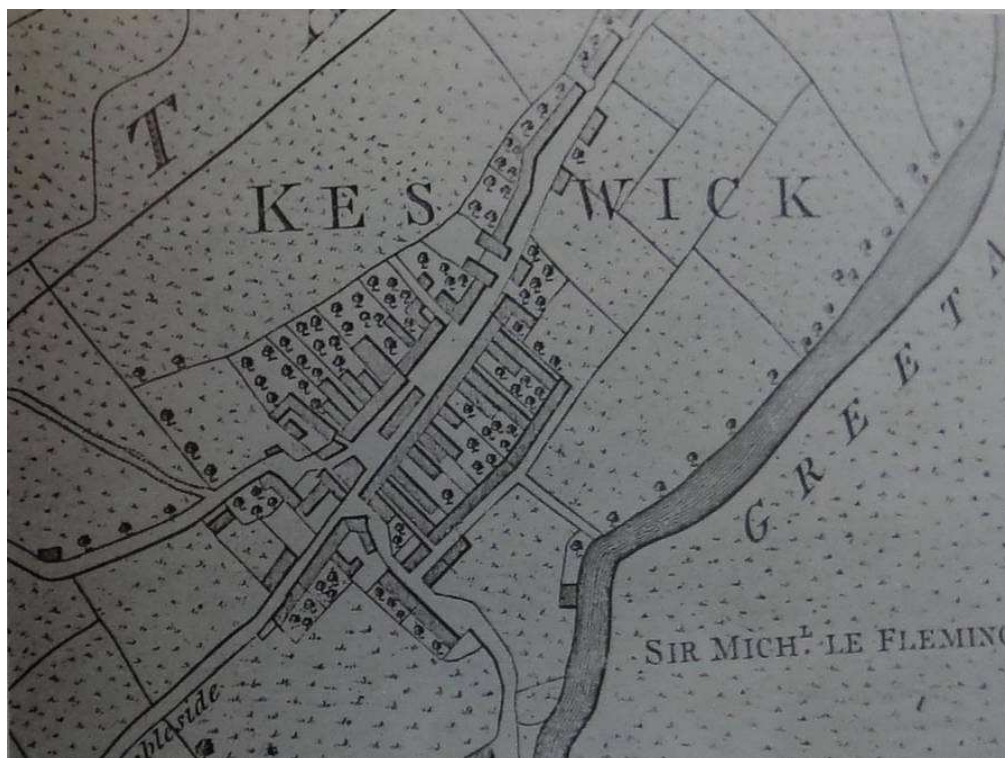


Plate 3: the medieval layout of Keswick preserved in the form of the town as surveyed in 1787 (as reproduced by Bott 1994)

- 3.3.21 The main copper orefield for the North West of England stretches across the Lake District and documentary evidence exists for copper mining by the Crown in the Keswick area during the fifteenth century (Newman 2006, 134). This includes references to the introduction of German experts to the region, although no archaeological evidence for this mining has yet been identified (*ibid*).
- 3.3.22 **Portinscale, Thornthwaite, Braithwaite, Wythop, and Setmurthy:** an ancient road known as the *magnum chiminum* was mentioned in a thirteenth-century charter of Fountains Abbey and it has been suggested (Gott 1994, 4) that this may have represented the continued use of a Roman road, a section of which was subject to archaeological investigation to the north-east of Braithwaite (LDHER 1103). This road may have run towards the Whinlatter Pass from the vicinity of Keswick (Gott 1994, 4). A settlement had been established at How, which lies to the north of Portinscale approximately 250m to the north of the

study area, by 1292 (LDHER 32741). The core settlement at Setmurthy appears to have expanded into the low-lying areas close to Bassenthwaite Lake during the twelfth and thirteenth centuries (Winchester 1987, 160). Woodland industry formed part of the local economy during the medieval period and a tanning mill had been established within Braithwaite prior to 1437 and tanning continued to form part of the industry of the farming community in Thornthwaite during the later sixteenth century (Winchester 1987, 104). Field systems and broad ridge and furrow of possible medieval date have been identified within this area from historic mapping and aerial photographs (Sites **94**, **95**, and **112**).

3.3.23 **Threlkeld:** it is likely that the village had been founded by the medieval period as a chapel was present by 1341 (Whellan 1860, 553) and curving strip fields (Site **136**) indicative of medieval cultivation practices are visible to the south of the village on historic maps (DRC/8/186). These strip fields may indicate the former extent of a former large open townfield that was later sub-divided using lines defined by the cultivation strips, or furlongs (*see* Winchester 1987, 72-4). Free warren was granted to Henry de Threlkeled as early as the reign of Edward I and it is likely that this succeeded and earlier such grant (Whellan 1860, 552).

3.3.24 **St John's, Castlerigg, and Wythburn:** field systems and broad ridge and furrow of possible medieval date have been identified from historic mapping and aerial photographs to the east of Castlerigg farm (Sites **98** and **103**).

3.3.25 ***Post-medieval and Industrial periods:***

3.3.26 A strong agricultural focus for the local economy appears to have been common throughout much of the study area during the post-medieval period, with the exception of Keswick as the major urban centre of the locality. As such, the histories of the area that were compiled in the late eighteenth and mid-nineteenth centuries tended to describe the development and administration of churches, charities, and schools, as well as the histories of familial succession of the major local landowners. This means that these histories omit much of the information that might be informative in terms of understanding the development of the physical landscape of the locale and the range of activities undertaken by local people.

3.3.27 **Bassenthwaite:** In the late-eighteenth century, the eastern side of Bassenthwaite Lake was described as an area of cultivated lands that gently descended from Skiddaw mountain and were interspersed with meadows, scattered cottages and woodland, and field systems defined by 'growing fences' (Hutchinson 1794, 234) with many varieties of fish and fowl being obtainable from the lake (Nicholson and Burn 1777, 93). 'Scattered coppices' were also described at the eastern side of Bassenthwaite Lake in 1794 (Hutchinson 1794, 235), although it is unclear whether this term was used in the true sense to describe areas of woodland that are managed sustainably by periodic cutting to produce harvests of long straight poles. The local economy depended primarily on fishing and farming, although woollen cloth manufacture was also undertaken and blue slate quarries were mined during the seventeenth centuries (Wane 2012).

- 3.3.28 The parish and manor of Bassenthwaite was held by the Earl of Egremont during the late-eighteenth and early-nineteenth centuries, who was also the proprietor of Bassenthwaite Lake and held the sole right of navigation and right to land goods on any part of the shore, and held all of the rights of fishery with the exception of three, which were held in common with the Earl by the Speddings in 1794 (*ibid*; Lysons and Lysons 1816, 18-22). The fisheries held by the Speddings were at Ouse (or Ewes) Bridge (to the east of Dubwath), Stone Wall, and Ellers Stile (Hutchinson 1794, 235; Nicholson and Burn 1777, 93), and the family owned Armathwaite Hall until 1796 (Lysons and Lysons 1816, 18-22). The rights to the use of these three fisheries by individuals other than the proprietor of Bassenthwaite Lake continued until at least as late as 1860 (Whellan 1860, 284). By 1794, Mire House had been subject to plantation (Hutchinson 1794, 236) and, in 1802, John Spedding acquired the Mire House estate and established further extensive plantations, which extended over a large portion of Skiddaw (Lysons and Lysons 1816, 18-22).
- 3.3.29 Several attempts were made to mine antimony at the Robin Hood Mine, to the north of Bassenthwaite village, during the nineteenth century (Whellan 1860, 283). However, the quantities produced were not sufficient to justify the costs of the enterprise and the mine had ceased to operate by 1860 (*ibid*).
- 3.3.30 Unlike the remainder of the study area, the lands within Bassenthwaite were not subject to the commutation of tithes in the mid-eighteenth century and the production of subsequent tithe mapping. The former system of tithe payments in Bassenthwaite was already obsolete by the time of the Tithe Commutation Act of 1836, and had been discontinued following the enclosure of the commons in 1771 (Hutchinson 1794, 237; CRO(C) Q/RE/192). Compensation for the loss of tithes was provided by grants of allotments of land that were enclosed from the commons (Hutchinson 1794, 237).
- 3.3.31 *Underskiddaw*: this township was not associated with a village of the same name but consisted of several hamlets, such as Great Crosthwaite, Millbeck, and Applethwaite (Whellan 1860, 328). A mill had been present in Millbeck from at least as early as 1688 and was developed into a woollen mill complex in c1760, which was supported by fulling and carding mills and a second woollen mill was in operation at Apperthwaite in 1847 (Apperley and Denman 2012). Factories producing coarse woollen goods were recorded in Millbeck and Applethwaite in 1860 (Whellan 1860, 328). The Keswick station of the Cockermouth, Keswick, and Penrith Railway (Site **21**), which opened in 1864, and the associated Keswick Hotel, which opened in 1869, were both situated within Underskiddaw (Apperley and Denman 2012). The Keswick School of Industrial Arts, which produced work in wood and metal, was situated in Underskiddaw from 1894 and was funded by the sale of its products (*ibid*).
- 3.3.32 *Threlkeld*: agriculture was recorded as the primary source of employment in Threlkeld during the mid-nineteenth century (Whellan 1860, 552) and evidence of agricultural practices is conspicuous from the inspection of historic mapping and documents (Q/RE/1/93; DRC/8/186). Curving strip fields defined by field boundaries to the south of the village (Site **136**) indicate areas where arable agriculture will have been undertaken in a large formerly open area likely to have corresponded with a townfield. It is likely that the

townfield gradually decreased in extent, with the ad-hoc enclosure of fields in the northern and eastern parts, leaving the south-eastern corner as a remaining open area of common land plots until 1842. Indeed, at least one field (Field 193) in the northern portion of this area was named 'townfield' on the schedule accompanying the tithe map of 1849 and numerous fields in the south-western area were also recorded as 'townfield' (DRC/8/186). The boundaries of these plots were depicted in an enclosure document of 1842 (Q/RE/1/93), which described the area as a townfield and detailed the different individuals who utilised each plot. This document described how this remaining area of open field would be rationalised and demarcated, and which plots would be assigned to each individual.

- 3.3.33 A fair for sheep, cattle, and wool was being held in Threlkeld in 1860 and the contemporary village was described as being small and clean with a population of 120 people (Whellan 1860, 553). Small-scale lead mining was undertaken at this time and continued into the early-nineteenth century (*op cit*, 552; Hall 2014). The Threlkeld Granite Quarry opened in 1864 and a granite and concrete works opened near to Threlkeld Railway Station in the 1890s. Wrestling, hunting and fishing were described as recreational activities (Whellan 1860, 552; 554).
- 3.3.34 The road between Penrith and Keswick passes through Threlkeld and was turnpiked in 1762 (Hall 2014). The Cockermouth, Keswick, and Penrith railway (Site **21**) passed to the south of Threlkeld and Threlkeld Station was established to the south of the River Glenderamackin. A pedestrian entrance tunnel (Site **139**) to the platform lay within the study area.
- 3.3.35 *Keswick*: the earldom of Derwentwater was created in the late seventeenth century by James II and the second earl, James, was executed as a result of being implicated in the Jacobite rebellion of 1715 (Lysons and Lysons 1816, 81-9). The manors of Castlerigg and Keswick thereby forfeited to the crown and were settled upon the Royal Greenwich Hospital for Seamen by an act of parliament (*ibid*). In addition to freehold estates of woodland and leased farmland, the Royal Greenwich Hospital also
- 3.3.36 Copper mining became a significant industry in the environs of Keswick during the 1560s and the Society or Company of the Mines Royal, incorporated in 1568, granted privileges and monopolies to Daniel Hechstetter and Thomas Thurland (Bott 1994, 17-19). Prospection and extraction had been undertaken in the local area by Hechstetter since 1564 and this increased considerably during the later 1560s at numerous workings in the surrounding valleys (*ibid*). In addition to the mines, substantial processing works and facilities and habitation for the mine workers were established, including a large complex at Brigham, at the eastern side of Keswick, to the east of the study area (*ibid*). The intensive activity at forges, such as Brigham, would have created a considerable demand for fuel, such as coal, peat, and charcoal (*op cit*, 19), and the local woodlands are highly likely to have been used as a source of charcoal. The impact, for example, of small scale iron bloomeries in Cumbria is attested by the prohibition of bloomeries in 1564, as a result of their effect on local woodlands (Marshall and Davis-Shiel 1977, 32) and the use of early coppicing to provide timber for charcoal, from around the

fourteenth century (Bowden 2000, 6; Winchester 1987, 104), was gradually eclipsed by the introduction of managed coppicing from the fifteenth and sixteenth centuries (Bowden 2000, 6; Winchester 1987, 100; 105–7). The production of timber and charcoal in association with copper mining and processing is likely to have been undertaken in tandem with bark peeling, as bark was a necessary resource for use in the local leather industries (Denman 2012a). Copper mining in the Keswick area had declined by c1625 (*ibid*) and although attempts were made to mine a variety of minerals from the local area between the seventeenth and nineteenth centuries, including lead (galena) and cobalt, these enterprises were generally small in scale and short lived (Bott 1994, 27).

3.3.37 Wad, or black lead, were names given to graphite that was mined in Borrowdale (*ibid*). The graphite was, however, processed and traded in Keswick and was used in medicines, in glazing vessels that were subject to intense heat, as a preservative for metals, a way of reducing friction in machinery, and as a means of casting iron, such as canon balls (Bott 1994, 21–2). Graphite was also used to make pencils and pencil manufactories were established in the town (Sites 10, 11, and 15). There is dispute about the earliest date of pencil production in Keswick and suggestions range from the Elizabethan period to 1792 (*ibid*). Records of pencils being made in the town are available from the early 1800s, when it may have been a cottage industry, and the first factory was established at Forge Mill in 1832 by Banks and Co (*ibid*). By 1886, the businesses established by Abraham Wren on Penrith Road, and Hogarth and Hayes at Greta Bridge had combined at a premises on Southey Hill and Ann Banks and Co established a factory at a disused woollen mill at Greta Bridge (*op cit*, 23).

3.3.38 Writing in 1794, the historian William Hutchinson was unimpressed with Keswick and described a sense of disappointment with the ‘low and meanly built’ houses and an ugly shambles that obscured the best part of the town although he did describe beautiful views in the local area (Hutchinson 1794, 153). Hutchinson stated that there was little appearance of trade or manufactory in Keswick, but did describe a ‘considerable’ weekly market that sold a variety of freshwater fish and ‘the finest mutton in the island of Great Britain’ (*ibid*). Markets and fairs at Keswick had been established during the medieval period and continued to be significant attributes of the town during the post-medieval and Industrial periods (Lewis 1848, 18–22). Three annual fairs associated with Keswick were recorded in 1794 and, by 1816, a weekly Saturday market took place for general provisions and numerous cattle fairs occurred throughout the year (*ibid*). The importance of the market was sufficient to warrant the construction of a new market house with a turret in 1813 (*ibid*).

A ‘manufactory house’ had been established at Keswick as early as the seventeenth century (Lewis 1848, 18–22) and goods, including woollen goods, carpets, and linen, were being manufactured in the town in 1794 (Hutchinson 1794, 153). A cotton mill had also been built on the River Greta soon before 1794, although the trade in leather, which had previously been considerable, had declined by this date (*ibid*). Industries associated with textile production in

Keswick during the late-eighteenth century included carding, spinning, dyeing, and weaving (Denman 2012a). The River Greta was used for motive power, with water wheels being established in the town although, by 1852, the textile industry had declined (*ibid*).

- 3.3.39 The search for picturesque beauty became popular during the late-eighteenth century and led to the desire to find and visit viewpoints from which landscapes could be viewed as vistas with aesthetically pleasing form and composition (*eg* Hindle 1998, 79). Thomas West (West 1778) wrote a guide to the Lake District in 1778 that included descriptions of stations that were located around Derwentwater and Bassenthwaite Lake, from which picturesque vistas could be viewed. The locations of these stations were later depicted on maps of these two lakes produced by Peter Crosthwaite in c1800. The popularity of the quest for the picturesque increased tourism to Keswick and, by 1793, the population had grown slightly to 1093 from 945 in 1688 (Denman 2012a). By 1811, Keswick contained 352 houses and was occupied by 1633 inhabitants (Lewis 1848, 18-22).
- 3.3.40 During the nineteenth century, Keswick was transformed by the introduction of rail links and steamer services operating along Windermere. From 1847 these communication routes enabled effective connectivity with Barrow and Manchester and facilitated the growth of tourism to Keswick (McNeil and Newman 2006, 178). The Cockermouth, Keswick and Penrith Railway (Site 21) was established as a mineral line in order to provide a link in the railway network between Workington and Durham, both of which were major sites of iron working industry during the nineteenth century (Cockermouth Tourist Information Centre 2014). The line was built between 1862 and 1864 and the railway company did not own any locomotives and very little rolling stock, with the line being worked by the London and North Western Railway and the North Eastern railway companies (*ibid*). There were stations at Bassenthwaite Lake (Site 116), Braithwaite, and Keswick. By 1891, the population had increased to 3760 (Denman 2012a).
- 3.3.41 *Portinscale, Thornthwaite, Braithwaite, Wythop, and Setmurthy*: these townships were primarily of rural character during the post-medieval and Industrial periods, although they were associated with nucleated settlements. However, the proposed pipeline route bypasses most of the nucleated settlement in these areas and follows the road through the field systems to the eastern side of Thornthwaite, Braithwaite, and Setmurthy, and along the western shore of Bassenthwaite Lake through Wythop. The ancient townships of Braithwaite, Portinscale, and Newlands were included within the later township of Above Derwent (Denman 2012c).
- 3.3.42 The only large settlement within these townships that lies within the study area is that of Portinscale. In addition to agriculture, lead mining was undertaken in Portinscale by the Keswick Mining Company and there was also a factory producing woollen goods in the township (Whellan 1860, 350).
- 3.3.43 During the mid-nineteenth century, there were a woollen factory, two corn mills, and a pencil factory within the township of Braithwaite and lead was also mined within the township (*op cit*, 351). A bobbin mill, a woollen factory,

and a sand mill were also present in the township of Thornthwaite during the nineteenth century (*ibid*). The plantations in Thornthwaite were created by the Greenwich Hospital from 1815 and by the Marshall family in 1846-8, and were later acquired by the Forestry Commission after the World War I, who remain the largest landowner in the local area (Denman 2012c). A bobbin mill was situated in Thornthwaite during the nineteenth century and lead was worked in Thornthwaite as late as the twentieth century (*ibid*). Woodland management was undertaken to produce coppices in the local area that supplied timber for use in mining, tanning, and the production of bobbins (*ibid*).

3.3.44 It has been suggested that Wythop was named in association with the willows, or withies, that grew in the chapelry (Nicholson and Burn 1777, 63) and this might indicate that willow coppicing was undertaken in the area. The chapelry formed a waste portion of Allerdale Above Derwent (*ibid*), within the Derwentfells estate. A chapel and hall at Wythop overlook Bassenthwaite lake and an enclosed park was shown associated with the hall on mapping produced by John Speed in 1611. The park was shown on mapping as late as 1760 (Bowen and Kitchin 1760) but this area was defined only by roads and tracks on Donald's map of 1770-71. The park appears to have enclosed Sale Fell and to have been defined at the eastern side by a boundary that followed the course of the road immediately adjacent to the lake from Beck Wythop at the south to Peel Wyke (Pheasant Inn) at the north and excluding Castle How. Although the chapel appeared to be in use in 1777 (Nicholson and Burn 1777, 63), it was ruined by 1848 and Wythop Hall was in use as a farmhouse by the mid-eighteenth century (Lewis 1848, 707-9). Old quarry works are visible within the township and a corn mill was formerly operational at Wythop Mill (Asquith 2012a). Much of Wythop Forest, which is now managed by the Forestry Commission lies within Wythop township (*ibid*). In 1860, it was recorded that the sole employment of the inhabitants of Setmurthy was agriculture (Whellan 1860, 310), although minor quarrying and gravel extraction were also undertaken within this area in the late-nineteenth century and forestry plantations were established that are now managed by the Forestry Commission (Asquith 2012b).

3.3.45 *St John's, Castlerigg, and Wythburn*: the earliest recognised records of Pow Gill and Naddle Becks are from 1578 and 1629 respectively (Armstrong *et al* 1950a, 22; 24). Most of the commons in the Castlerigg and Derwentwater estates were enclosed in 1849, although large expanses of land in Wythburn and St John's remain registered as unenclosed common land (Denman 2012b). St John's Beck was formerly called the River Bure and, within the northern part of Castlerigg, the ruins of forges, mills, and work buildings were visible in 1777 (Nicholson and Burnn 1777, 80). These were reportedly used in association with extensive lead and copper mining and were in use until 1641-2, at which date they are said to have been burnt by Parliamentarians in the Civil War (*ibid*). Several mills were situated along St John's Vale, including those at Legbuthwaite (Site 119) and Wanthwaite (Whellan 1860, 347). Wanthwaite Mill lay just to the west of the proposed pipeline route, at the western side of Naddle Beck and to the south of St John's, and was named on the St John's, Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/5). That

at Legburthwaite (Site **119**) was named as a corn mill on the OS map of 1867. Although a natural feature, Castle Rock, situated at the southern end of St John's Vale, has significance as a place of cultural heritage as it featured in a poem by Sir Walter Scott called *The Bridal of Triermain* (*ibid*) and this association. The general area was described in 1860 as being populated by people who engaged in agriculture and attended the Keswick markets (*op cit*, 310, 345).

3.3.46 Woodland industry appears to have been undertaken within the St John's, Castlerigg, and Wythburn area and field names meaning willow and coppice (Site **134**) were recorded on the tithe map of 1840 (DRC/8/55/5). Indeed, the Wythburn place-name derives from the word willow (Armstrong *et al*, 1952, 498). A bobbin mill was shown on the tithe map slightly to the east of the study area, at Bram Crag, to the east of St John's Beck.

3.3.47 The most conspicuous development within this township was the establishment of the Thirlmere Reservoir by the Manchester Corporation Waterworks to the south of the study area, which opened in 1894 and necessitated the flooding of the majority of the dwellings in Wythburn (Denman 2012b). Although the lake was named as 'Leathes Water' on the St John's, Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/5), it was associated with the name Thirlmere prior to the establishment of the reservoir and was named as *Thurlemer Flu* on Saxton's map of 1607. The lake had several names that appear to have been used interchangeably, and not simply to refer to different parts of the water, including Wythburn Water and Brackmere, and Leathes Water appears to have been names after the family of the same name who bought the manor of Dalehead in Wythburn in 1577 (Ritvo 2009, 73). The road running between the current A591 and Smaithwaite was depicted for the first time on the OS mapping of 1899 and had not been shown on the previous OS mapping, dating to between 1864 and 1881 (OS 1864; OS 1881; OS 1899).

3.3.48 *Modern period:*

3.3.49 Very little of the study area was been subject to conspicuous change during the twentieth and early-twenty-first centuries. Most of the area continued to comprise agricultural field systems crossed by primary routeways. Examination of historic mapping shows that some changes to layout of field systems occurred gradually between the late nineteenth and late twentieth centuries, with some irregularly shaped fields being reorganised as geometric holdings. The most obvious developments have occurred within the town and suburbs of Keswick, where gradual expansion of the town has increased the associated residential area and has included expansion into neighbouring areas, such as Great Crosthwaite.

3.3.50 The examination of historical OS mapping shows that the area to the north-east of Braithwaite village comprised field systems and scattered farmsteads in 1900 (OS 1900). By 1925, the area between the two roads running northwards from the village had begun to become infilled with houses and gardens (OS 1925) and this gradual ribbon development continued throughout the twentieth century (OS 1956-7; OS 1968-72; OS 1977-9).

- 3.3.51 One of the most conspicuous changes to the central portion of the study area during the later twentieth century comprised the construction of the modern A66, which provides a major thoroughfare that bypasses Keswick by diverting traffic to the north of the town. This road was opened in 1977 and utilised the portion of the track bed of the dismantled Cockermouth, Keswick and Penrith Railway line (Site **21**) that lies at the western side of Bassenthwaite Lake (*ibid*). The road was first shown on the OS mapping produced in 1977-83.
- 3.3.52 The Cockermouth, Keswick and Penrith Railway (Site **21**), which ran along the western side of Bassenthwaite Lake and to the north of Keswick, was depicted on OS mapping as late as 1957. The Beeching Report of 1963 recommended that the line should be closed and, on 18th April 1966, the passenger services to the west of Keswick Station were withdrawn (Cockermouth Tourist Information Centre 2014). The railway at the western side of Bassenthwaite Lake was shown as having been dismantled on the OS mapping of 1970-71. The final withdrawal of all passenger services took place on 6th March 1972 (*ibid*). The ruined remains of Bassenthwaite Lake station (Site **116**) remain visible amongst trees from the A66.
- 3.3.53 One example of slight observable changes to the physical landscape of the rural portions of the study area is at Little Crosthwaite. Although the fell side to the north of Little Crosthwaite, at Watch Crag, is currently covered by dense plantation woodland, this area was depicted as open ground as late as the OS mapping of 1900 and appears to have been relatively sparsely covered with trees as late as 1956-7.
- 3.3.54 The study area was included within the Lake District National Park from 1951, and the tourism represents the primary provider of employment within the town (Denman 2012a). Opportunities for leisure and tourism remain important across much of the study area, with the Bassenthwaite Sailing Club and small hotels operating in Setmurthy, numerous footpaths and walking routes running through the area, and accommodation, food, and drink, being provided for visitors who come to walk, cycle, drive, and to make use of the local lakes.

3.4 MAP REGRESSION

- 3.4.1 **Introduction:** numerous maps were consulted, spanning 1607 to the present day, most of which depicted few obvious changes in the landscape of the northern and southern parts of the study area from the character and appearance of those areas in the present day. The most conspicuous changes occurred in the environs of Keswick as a result of urban expansion during the seventeenth to twentieth centuries. In order to avoid repetition, a selection of the most relevant examined sources is described below. Relevant details from some maps have also been incorporated within the historic background section (above).
- 3.4.2 *Christopher Saxtons map of Cumberland of 1607:* this map showed the study area with limited detail, but did depict four bridges crossing the River Derwent close to Armathwaite, Little Crosthwaite, Brigham, and to the north of Keswick. The estate seats at Bassenthwaite, Little Crosthwaite, Setmurthy,

Wythop (*Widehope*), Thornthwaite, Braithwaite, and Portinscale were depicted and the prominence of Keswick as a town with a market charter was recognised in the iconography. Threlkeld was named as 'Threlcott' and St John's, Fornside, and Legburthwaite (Legburthwat) were named. Thirlmere Reservoir was named as *Thurlemer Flu*.

- 3.4.3 *John Speed's map of Cumberland of 1611*: Speed's map (Fig 9) was very similar to that produced by Saxton, but did not depict the bridge over the Derwent near to Little Crosthwaite. The most conspicuous difference between this map and that produced by Saxton was the addition of an enclosed park (Site 68) at Wythop (*Wide Hope*). This enclosure was shown to extend as far as the western shore of Bassenthwaite Lake. Almost identical depictions of the study area were published by Johann Blaeu in 1645 and by Robert Morden in 1695, with the latter map appearing to show indications of some of the local roads to the east of Bassenthwaite Lake and Keswick.
- 3.4.4 *Herman Moll's map of 1724*: Moll's map (Fig 10) presented a similar depiction to the preceding maps but presented the roads to the east of Keswick and Bassenthwaite Lake with a greater degree of definition than Morden's map of 1695. Although the low degree of detail and accuracy of the map means that it can not be treated as a wholly reliable source for analysing specific aspects of the landscape, it does appear to show a short portion of road extending north-westwards from a bend of the current A591 at the south-eastern side of Bassenthwaite Lake. This road corresponds with the general orientation and position of the putative route of the Roman road between Keswick and Caermote fort, via Bowness Farm (Site 17). A place named 'Cust' was shown on the route of the A591 to the south of Castlerigg and in the approximate location of Nest farm.
- 3.4.5 *Bowen and Kitchen's map of 1760*: this map (Fig 11) presented a slightly higher degree of detail than the previous maps, although the accuracy of scale does not appear to have improved considerably from the earlier maps. The enclosed park at Wythop (Site 68) was clearly shown to extend as far as the western shore of Bassenthwaite Lake, with the eastern edge of the enclosure being defined by the edge of the lake. This map was the first to depict rudimentary representations of buildings at Keswick and associated with some villages and farmsteads.
- 3.4.6 *Donald's map of 1770-71*: Donald's map (Fig 12) appeared to present a good level of accuracy of scale, as well as an improved level of detail in comparison to the earlier maps. This map depicted the road system in the local area to a higher degree of detail than had been previously shown and was the earliest of the examined maps to show a road or track running along the western shore of Bassenthwaite Lake. This map did not show an enclosure at Wythop (Site 68) but did show an approximately triangular area defined by the road and track network surrounding Sale Fell. The increased level of detail was sufficient to depict several individual farmsteads flanking the roads within the study area that had not been depicted on previous mapping. Smithy Green (Site 27) was shown for the first time on this map to the western side of the lake. This was the earliest map to depict the road between Threlkeld and Legburthwaite and

also the road and tracks in the vicinity of St John's. Castlerigg stone circle was depicted and named as 'Druid's Stones'.

- 3.4.7 *Conder's map of 1784*: Conder's map (Fig 13) was not particularly detailed, but was the latest map to depict the enclosure at Wythop (Site 68). This is likely, however, to have been the result of copying this detail from an earlier survey as no such park had been shown on the preceding map of 1770-71.
- 3.4.8 *Clarke's map of 1787*: an extremely detailed map (Fig 14) of the immediate environs of Bassenthwaite Lake was produced in 1787 that was the first map to show the field boundaries within this whole area, although some portions had been surveyed in detail when the Bassenthwaite enclosure plans were produced in 1771. Although the map was somewhat stylistic in execution, a conspicuous curvilinear field boundary was depicted at the eastern side of Bassenthwaite Lake, running approximately northwards from Mire House towards Bowness church, and then continuing beyond the church. This boundary formed a shared axis for the fields in this area and was, therefore, one of the earliest boundaries to have been established in this area. It is possible that this line represents the course of the Roman road between Keswick and Caermote fort (Site 17).
- 3.4.9 *Crosthwaite's maps of Bassenthwaite Lake and Derwent Water 1800*: although initially surveyed in 1783, these editions of detailed maps of Bassenthwaite Lake and Derwent Water were revised and published in 1800 and included the viewing stations established by Thomas West as well as stations established by Crosthwaite. However, the maps were focused primarily on the lake and major landmarks and were produced for use by tourists visiting the area to view the landscape and did not provide a high degree of detail beyond the edge of the water.
- 3.4.10 *Greenwood's map of 1823 and the first edition Ordnance Survey map of 1840 at 1" to 1 mile*: each of these maps (Figs 15 and 16) provided surveys of the overall area that were accurately scaled. Some major bounded plots were depicted on each map, such as some areas of plantation, but field systems were not depicted. Farms were named and farm buildings were represented with a certain degree of differentiation in size and shape.
- 3.4.11 ***Enclosure mapping***
- 3.4.12 Several enclosure plans were examined that applied to portions of former common land falling within the townships crossed by the proposed pipeline route. However, many of these former commons lay beyond the extent of the study area and most of the enclosure maps did not, therefore, provide relevant detail.
- 3.4.13 *Bassenthwaite enclosure plan of 1771 (Q/RE/1/92)*: the enclosure plan included parts of the northern end of the study area and a portion of the north-eastern routes situated approximately between Parker Gate and Mire House. The enclosure plan depicted parcels of land that were to be assigned to various private owners and provided only the minimum detail necessary to enable this. Some of the outlines of these plots correspond with fields that visible on later

mapping and some do not, suggesting that they were either superseded by later layouts or that the proposed boundaries shown on the enclosure plan were not established. The map labelled an irregular plot (Site **71**; Fig 17) lying between the current Parker Gate and the Ravenstone Hotel, on the western side of the A591 as 'Joseph Bow's ancient inclosed lands', indicating that this preceded the enclosures of the 1770s and may have been of some antiquity.

- 3.4.14 *Threlkeld enclosure plan of 1842 (Q/RE/1/93)*: this document detailed the act to enclose Threlkeld townfield (Site **136**). The act was illustrated with two plans that showed the extent of the townfield at the time of enclosure, although it is likely that it was formerly considerably larger and that this represented the diminished extent of the final portion of open field. The first plan (Fig 19) showed the layout of plots prior to enclosure and these were described as 'salts' or 'dales'. The 'proprietors' or 'persons interested' of each dale was listed and the size of each dale was given. A second plan (Fig 20) showed the townfield divided into allotments and the size of each area and the name of the proprietors were given. The formerly slightly curving strips of the dales were replaced in the act by rationalised geometric enclosed fields. Whereas more than one spatially disconnected dale might have been owned by a single person, fewer allotments were created so that each individual could own a single defined area. Although the areas owned by each person before and after enclosure were roughly similar, it is notable that the land provided for the churchwarden and overseer of the poor of the township reduced in size by 19 perches (approximately 1/8 of an acre). The plans allow the development of the fields in this area to be better understood and also demonstrate the pre-enclosure date of the trackway (Site **129**) running north-east/south-west across the townfield and a second track (Site **130**) running north-west/south-east across the southern part of the field.

3.4.15 *Estate plans*

- 3.4.16 *Greenwich Hospital estate plan of 1832 (D/LAW/1/171)*: the Greenwich Hospital estate plan was the first map to depict Keswick town centre in detail and with a good degree of accuracy. The map showed that two buildings lay within areas that are now occupied by roads along which the proposed pipeline will lie. Site **72** is the site of a building fronting the northern side of Main Street and Site **73** is the site of a toll bar at the eastern end of Penrith Road (Fig 21).
- 3.4.17 *Manor of Castlerigg and Derwentwater estate plan of 1855 (DB/74/P/22)*: this plan showed a similar depiction of the area to the earlier tithe mapping (below) with some slight differences in the areas that were selected to be mapped.

3.4.18 *Tithe mapping*

- 3.4.19 *Setmurthy tithe map of 1840-41 (DRC/8/204)*: the Setmurthy tithe map depicted the area prior to the establishment of the railway line or the subsequent A66 road and showed that the proposed pipeline route follows the routes of roads that had already been established by 1840-41, in the northern

part of the township, and passes through land that was occupied by field systems at this date. The accompanying tithe award detailed the land use of most of the local fields as being pasture, arable, or woodland. The lines of several field boundaries appeared to continue to each side of the road, suggesting that proportions of these field systems had been established before the road was built. Many of the field names were topographic and descriptive, such as Field 275: 'Mire Close Meadow', meaning literally an enclosed meadow in the mire. Field 229, within the study area to the south of Low Ruddings, was named as 'Kiln Hauth', which is likely to record the former presence of a kiln in the nearby area (Site 67; Fig 22). The location of this structure is not known and may have been located in the vicinity of one of the buildings at High or Low Ruddings or at Low Barkhouse, or it may have stood as a separate structure that had been destroyed by the time of the production of the map. The building name of Barkhouse may record the use of the structure to store bark for tanning (Armstrong *et al* 1950a, 435) and this is likely to indicate woodland industries being undertaken in the local area. The northern and southern boundaries of the township were demarcated by water courses (the River Derwent and Dubwath Beck) and, therefore, these may not necessarily have been reinforced with extensive boundary markers, such as embankments.

3.4.20 *Wythop tithe map of 1844-5 (DRC/8/204) and Wythop estate map of c nineteenth-century date (D/Van/Wythop)*: the study area was shown on the tithe map to have been extensively wooded by 1844-5 and the road between Peelwyke and Keswick had been established by this date (Figs 23 and 24). The element 'dub' is present in the local area in Dubwath Beck and the field names near and far 'Dub How'. Dub is a northern dialect word referring to a muddy or stagnant pool or a deep dark pool in a river (Armstrong *et al* 1950a, 470). Given that 'how' refers to a hill, it seems possible that Dub How was a former name of the hill that Castle How hillfort (Site 30) now occupies. The township boundaries comprised Dubwath Beck to the north and a line that bisected a shallow promontory at Beck Wythop. The Beck ran to the south of the boundary and it is, therefore, possible that there was a physical marker of the boundary, which is also likely to have been the boundary of the former park (Site 68) that was shown on earlier mapping. Smithy Green (Site 27) was depicted in detail on this map. The estate map showed a very similar depiction of the study area and is likely to be of similar, but slightly earlier, date as a conspicuous field boundary to the west of Castle How was shown on the tithe map and subsequent maps that was not depicted on the estate map.

3.4.21 *Over Derwent tithe map of 1840-1 (Braithwaite and Thornthwaite; DRC/8/55/7)*: the tithe map and award showed that the majority of the study area was in use as arable land, pasture, or meadow and the proposed pipeline route runs through land that consisted primarily of field systems. Most of the fields were irregular in shape and size and appeared to have developed gradually in an ad hoc manner and some of them may have been of some antiquity at the time of the tithe survey, with evidence of large enclosures having been gradually sub-divided (Site 94; Fig 22). The area to the east of Braithwaite village comprised numerous parallel curvilinear strip fields (Site 95; Fig 23) that are likely to have been formed in association with arable

agriculture and to have been utilised for medieval-style ridge and furrow cultivation, with narrow parallel strips of land defining allotments of land subject to cultivation by different individuals. Similarly to other parts of the study area, Over Derwent featured several field names with the element 'whinny', which is of likely Scandinavian origin and means gorse (Armstrong *et al* 1950, 497). Once more, the field names in this township were primarily descriptive of topography and agricultural land use. There was evidence of woodland management within the study area with the field name 'Raine End Coppice' (Field 467) at the northern end of the township.

- 3.4.22 *Portinscale tithe map of 1844-5 (DRC/8/55/7)*: the proposed pipeline route crossed only a small part of the Portinscale tithe map and this area was primarily occupied by agricultural fields. The proposed route crosses the routes of two tracks or roads that were shown on the tithe map and also runs along part of the road between Braithwaite and Portinscale.
- 3.4.23 *Keswick tithe map of 1840-3 (DRC/8/55/2)*: the Keswick tithe map did not depict the town of Keswick, as this area was not subject to tithe commutation. The portions of the study area that were detailed on the map primarily consisted of agricultural field systems on the outskirts of the town. Mill buildings and workers cottages associated with Wick Mill and Wren's Mill were shown lying to the south of the River Greta (Fig 27).
- 3.4.24 *Underskiddaw tithe map of 1840 (DRC/8/55/3)*: the tithe map and award showed that the majority of the study area was in use as arable land and pasture, with some meadows and woodland, and the proposed pipeline route runs through land that consisted primarily of field systems. Several field names (eg Fields 493 and 494) included the Scandinavian element 'whinny', meaning gorse (Armstrong *et al* 1950, 497) and four fields to the west of Applethwaite village (Fields 180, 183, 184, and 224) featured the evocative name of 'Gallowbarrow' (Site 64), which is of unclear origin but could indicate the site of a mound or of a former gallows. A road on the line of the current A591 was depicted along much of the study area to the east of Bassenthwaite Lake and the River Derwent. Calverts Bridge (Site 65) was shown crossing the River Greta and Keswick Bridge (Greta Bridge; Site 66) was also depicted. Field systems of possible medieval origin lie to the south-west of Applethwaite and are characterised by parallel strip fields (Site 96) and irregular plots within one or more larger enclosures (Site 97; Fig 28). These enclosed fields may have been established within a formerly open common townfield.
- 3.4.25 *St John's Castlerigg, and Wythburn tithe map (part 1) of 1840 (DRC/8/55/5)*: the tithe map showed that part of the study area to the south-east of Keswick remained common land at this date, with Chestnut Hill (A591) running through unenclosed land and enclosures associated with farms, such as Brow Top, Moor, and Castlerigg (Fig 29) were conspicuous within the field system patterns (Site 98; Fig 30). A possible quarry (Site 69) was depicted as a small area defined by a dotted line to the south-east of Moor farm within a field (Field 441a) called Far Whitebarrow. Shoulthwaite Road Bridge (Roughow Bridge, Site 52) was depicted on the tithe map crossing Shoulthwaite Gill, but was not named. Causeway Foot farm was depicted and named and a nearby

field (Field 633) was named as Causeway Dales. This suggests that a causeway (Site **70**) was present in the area, which is likely to correspond with the line of a footpath that runs north-eastwards from Causeway Foot to cross Naddle Beck and several tributaries. This line was defined by field boundaries on the tithe map, including a stretch of parallel walling that represents a walled trackway and confirms that this was a route way. A building was shown to the north of Castlerigg Farm within the study area that is no longer present and associated sub-surface remains could survive (Site **74**). A field named 'Chapel Close' (Field 626; Site **135**) lay to the north of Dale Bottom and a second field named 'Grave Field' (Field 631) lay to the north of this, beyond the study area. These may indicate a former ecclesiastical site in the area.

- 3.4.26 The tithe map and schedule recorded field names (eg Field 509) that included elements such as 'wither', which are likely to derive from the Old English for willow, and which features in the place-name of Wythburn (Armstrong *et al*, 1952, 498). This may be indicative of the former presence of areas of managed plantation and coppicing and a field named 'coppice' was recorded to the east of Keswick (Field 485; Site **134**). Historic agricultural land use was indicated by the field name 'Laithey Hill' (Field 510; Site **132**), which is likely to derive from the Old Norse *hlada*, meaning barn (*op cit*, 477). A field (Field 310; Site **133**) named 'Sandbeds', may relate to a former use for sand extraction. The general antiquity of agricultural use in the area defined by roads to the north of Goosewell Farm is suggested by the field name 'Townfield' recorded on the schedule for the tithe map of 1840 (Field 319), beyond the pipeline corridor, which suggests that this may have been a common arable field as early as the medieval period. Bram Crag farm, to the east of St John's Beck, was described as the site of a bobbin mill on the tithe map.
- 3.4.27 *St John's, Castlerigg, and Wythburn tithe map (part 2) of 1840 (DRC/8/55/6)*: this map showed the area surrounding and to the north of Thirlmere, which was named as Leathes Water (Fig 31). The area immediately to the north of the lake was depicted differently to the current appearance of this area as the extent of the water increased with the establishment of the reservoir and structures were added at this time. A field (Field 834; Site **131**; Fig 31) at the southern end of the western proposed pipeline route was named 'Barrow House and Lawn', which may indicate a natural hill or a mound in the vicinity. Legburthwaite Mill (Site **119**) was shown and labelled as 'mill', although no associated structures were depicted within the proposed pipeline route.
- 3.4.28 *Threlkeld tithe map of 1838-49 (DRC/8/186)*: the tithe map showed curving strip fields defined by field boundaries to the south of Threlkeld village and depicted the reduced area of Threlkeld townfield (Site **136**; Fig 32) with dashed internal divisions. These dashed divisions followed the pattern of the plots prior to their enclosure in c1842, suggesting that the map was produced prior to enclosure. At least one field (Field 193) in the northern part of this field system was named 'townfield' on the schedule accompanying the tithe map and numerous fields in the south-western area were also recorded as 'townfield'. Fields 183, 186, 187, 188, and 189 featured the name 'Mill Yard' (Site **137**), although it is unclear to which mill these relate. Townfield Bridge (Site **141**) was depicted, but was not named on this map.

3.4.29 *Ordnance Survey mapping*

- 3.4.30 *OS first edition of 1867 mapping at 6" to 1 mile*: this was the first detailed mapping that was produced covering the whole of the study area. There is overlap between the dates of these maps and some of the OS mapping that was produced at 25" to 1 mile. As the mapping at 25" to 1 mile provides a more detailed view of the landscape than that at 6" to 1 mile, the more detailed mapping has been used primarily for the reproduction of historic mapping. However, first edition OS mapping at 6" to 1 mile showing Keswick town centre has been reproduced (Fig 33) in order to illustrate the gradual change in the urban fabric.
- 3.4.31 At this time the road running towards Thirlmere Reservoir from the A591 had not yet been built and this area comprised fields in the vicinity of Smaithwaite Farm. An area to the north-west of Smaithwaite Farm was labelled 'Adam's Cross' (Site **75**) although there was no indication whether this related to a standing monument. A causeway (Site **76**) was shown crossing Shouldthwaite Gill amongst fields to the east of Shouldthwaite farm, in an area where the A591 would later be established.
- 3.4.32 The lake where the reservoir is situated was named as Thirlmere on the OS map. Legburthwaite saw mill (Site **119**) was shown on the mapping, although no associated structures were evident within the proposed pipeline corridor. Townfield Bridge (Site **141**) was named and shown crossing the River Glenderasmackin.
- 3.4.33 Four buildings were depicted in the centre of Keswick in areas that are now occupied by roads along which the proposed pipeline will lie (Fig 33). One building (Site **79**) fronted Main Street and a second larger building (Site **78**) was slightly set back from the road frontage. This area is currently partly occupied by Bank Street. A large building (Site **77**), which may have been a brewery, was shown on the western side of Brewery Lane, with a second building (Site **81**) to the eastern side of the lane. This area is currently partially occupied by Victoria Street.
- 3.4.34 Armathwaite Hall was shown lying within open and lightly wooded parkland (Site **54**), including a rectangular formal garden that straddles the western driveway and falls just beyond the study area. Strip fields (Site **100**) were evident within the part of the study area that lies to the west of Bassenthwaite village and these may be of medieval origin.
- 3.4.35 A small building (Site **82**) was shown lying to the west of the northern end of the current A591 and a cluster of three buildings (Site **83**) was shown to the south of Parker Gate. A probable ancient enclosure (Site **99**) associated with Mire Side was visible within the layout of fields to the north of Parker Gate. A cluster of buildings (Site **84**) were shown to the western side of the current enclosed curtilage of Far House (now Dyke Nook) although the remaining depicted buildings fell within the current perimeter of the farm yard. The lodge at Sand Hill (Site **85**) was shown as a different shape to the current lodge and lying slightly to the north. By this date, the gardens at Mire House (Site **86**) had been subject to landscaping and the creation of a formal layout.

- 3.4.36 Two wells (Sites **87** and **88**), with associated rectangular structures, were shown in the vicinity of Kiln How, with one lying to each side of the current A591. A well (Site **89**) was also shown lying to the north of Long Close. Formal gardens (Site **90**) were shown to the west of Lyzzick Hall lodge, within land that is now largely occupied by buildings associated with Lyzzick Hall hotel. A cluster of buildings (Site **91**) that is no longer present was shown to the south of Crookety Bridge.
- 3.4.37 *OS first edition mapping of 1864-95 at 25" to 1 mile*: the first edition mapping produced at 25" to 1 mile was surveyed at different times in differing areas and, as the study area passes through a wide area, there is a significant range in the dates of mapping available. Generally, the OS mapping at this scale provides a similar depiction of the study area to that provided by the mapping of 1867, but with a considerably higher degree of detail. It is evident that the rate of change in the rural portions of the study area was extremely slow during the mid-nineteenth century.
- 3.4.38 Given the high level of detail, the maps at this scale are useful in providing illustrations of some of the heritage assets identified (Figs 29-39). These include the causeway (Site **76**) crossing Shouldthwaite Gill (Fig 35), Castle How hillfort (Site **30**; Fig 36), the parkland at Armathwaite Hall (Site **54**; Fig 37), a cluster of three buildings (Site **83**) to the south of Parker Gate and an ancient enclosure associated with Mire Side (Site **99**; Fig 38), strip fields to the west of Bassenthwaite village (Site **100**; Fig 34), a cluster of buildings (Site **84**; Fig 39) to the western side of Far House (now Dyke Nook), the gardens at Mire House (Site **86**; Fig 40), a building to the north of Highfield Wood (Site **126**; Fig 41), formal gardens (Site **90**) to the west of Lyzzick Hall lodge (Fig 42), and a cluster of buildings (Site **91**) to the south of Crookety Bridge (Fig 42). The road running towards Thirlmere Reservoir from the A591 had not yet been built and the road system in the vicinity of Roughow Bridge (Site **52**) had yet to be rationalised (Fig 43). Legburthwaite Corn Mill was shown and named on this map (Site **119**; Fig 44).
- 3.4.39 The four buildings in the centre of Keswick that lie within the proposed pipeline route (Sites **77**, **78**, **79**, and **81**; Fig 45), and the other details of the town centre, were depicted with greater clarity on this map. An additional building (Site **92**) was depicted to the west of Site 77 and a small building (Site **93**) was shown to the east of Richardson's Lane (Otley Road). A row of terraced houses named High Briery (Site **145**) was depicted to the east of Keswick (Fig 46).
- 3.4.40 *OS mapping of 1899 at 25" to 1 mile*: by 1899, there had been significant redevelopment within the part of Keswick town centre through which the proposed pipeline route passes (Fig 47). The corridor for potential movement of the pipeline within this area is extremely narrow due to the built-up character of the urban environment and only the courses of the current road system have been examined as being subject to potential disturbance as a result of the proposed works. Victoria Street had been established by this date, running between Station Street and Brewery Lane. This road overlay the site of a building (Site **81**) that had previously fronted Brewery Lane. Bank Street had also been established by this date and overlay the site of one former

building (Site 79) and part of the footprint of a second building (Site 78), which was labelled as a post office. The building complex associated with the probable brewery (Site 77) had expanded by this date with the addition of several ancillary buildings. The small building (Site 93) to the east of Richardson's Lane (Otley Road) was not shown on this map. This map was the first to depict the road that runs between the current A591 near Smaithwaite and Thirlmere reservoir; the reservoir having been built in 1894. The road to the south of St John's Beck, running between the reservoir and Green farm, had also been built by this date.

- 3.4.41 *OS mapping of 1924 at 25" to 1 mile:* the mapping of 1924 showed that Keswick town centre had expanded further, with road widening and the construction of more buildings (Fig 48). The probable brewery complex (Site 77) had expanded with the addition of further small buildings and a very large building had been established at the eastern side of Otley Road, which had previously been a narrower road called Richardson's Lane.
- 3.4.42 *OS mapping of 1925 at 25" to 1 mile:* the mapping of 1925 showed that several buildings associated with Legburthwaite Saw Mill (Site 119; Fig 49) had been established adjacent to the road.
- 3.4.43 *OS mapping of 1938 at 25" to 1 mile:* few significant changes were evident on this map from the mapping of 1924, although the map recorded the continued gradual increase in the urbanisation of Keswick town centre (Fig 50).
- 3.4.44 *OS mapping of 1966-71 at 6" to 1 mile:* this mapping was the first to depict changes to the road layout in the southern part of the study area, which comprised the rationalisation of the current A591 as a gentle curve that bypassed Roughow Bridge (Site 52) and the tight bends associated with that former course of the road (Fig 51).
- 3.4.45 *OS mapping of 1968 at 25" to 1 mile:* by 1968, the probable brewery complex (Site 77) had been replaced by a single rectangular structure, which may have incorporated elements of the earlier buildings (Fig 52). The expansion of Bank Street to join Victoria Street had not yet been undertaken.

3.5 AERIAL PHOTOGRAPH INSPECTION

- 3.5.1 Aerial photographs were consulted in order to examine the area for indications of previously unrecorded features, such as earthworks, and sub-surface remains that might be visible as crop marks.
- 3.5.2 ***Current vertical colour aerial photographs:*** current aerial photographs available through Bing mapping were examined. Areas of broad ridge and furrow, which could represent cultivation dating to as early as the medieval period, were visible in several locations across the study area (Sites 103, 107-12). It is likely that further examples are present within the study area that were not visible on the aerial photographs as their visibility is affected by the light conditions at the time of the photographs and some survive as very slight earthworks.

- 3.5.3 A series of earthworks was visible to the north and east of Castlerigg Farm (Sites **101**, **102**, **104-106**; Figs 53 and 54). One of these earthworks comprised a prominent linear bank aligned north/south that continued the line of a field boundary (Site **101**) and a second possible bank on the same alignment lay to the west of this (Site **104**). A pair of parallel earthworks (Site **102**) running north-west/south-east might represent a hollow way. A sub-ovoid earthwork (Site **105**) was also visible in this area, and is of uncertain date or function. A long curving mark (Site **106**) visible as a distinctive area of parching that coincided with a concentrated growth of dark vegetation ran to the south of Moor (Fig 54). A sub-ovoid cropmark (Site **156**) of unknown date or function was visible to the south-west of Applethwaite (Fig 55). Earthworks that appear to represent part of the Roman Road between Keswick and Caermote Fort (Site **17**) were visible to the north-west of Mire House Cottage (Fig 56).

3.6 PREVIOUS ARCHAEOLOGICAL WORK

- 3.6.1 Although several desk-based assessments have been undertaken within the study area, only two intrusive archaeological investigations have been recorded. One of these comprised the excavation of parts of the medieval tenements in Keswick (Site **09**) by LUAU in 1989. A geophysical survey and archaeological evaluation was undertaken in association with an underground electricity scheme between Mirehouse and Long Close Farm at the eastern side of Bassenthwaite Lake in 2012 by Wardell Armstrong Archaeology. This identified a gully (Site **114**) of possible Roman date that might have been associated with the Roman road in this area (Site **17**).

3.7 GAZETTEER OF HERITAGE ASSETS

- 3.7.1 The results of the historic research were collated into a gazetteer of heritage assets, which is contained in *Appendix 1*.

4. ASSESSMENT OF THE SIGNIFICANCE OF THE REMAINS

4.1 INTRODUCTION

- 4.1.1 In total, 156 heritage assets have been identified within the study area during the desk-based assessment. Although one Grade II listed building (Site **30**, Toll Bar Cottage, LB 71768) and one scheduled monument (Site **45**, Castle How Hillfort, SM 1013384) lie within the study area, neither of these heritage assets will be affected in terms of physical impacts or as a result of significant visual impacts upon their settings, due to the concealed character of the pipeline in these areas once completed. The consideration of the potential for impacts on the settings of these assets during the construction phase will be considered during the walkover survey.
- 4.1.2 The study area partially lies wholly within the boundary of the Lake District National Park, which is a statutorily protected landscape. Consequently, all heritage assets within this area are considered to have a significance of at least 'District or County (lesser)' level. This is consistent with section 115 of the National Planning Policy Framework, which states that the conservation of such heritage assets should be given great weight.
- 4.1.3 The Lake District National Park has been nominated for World Heritage Site (WHS) status by the UK government as 'The English Lake District' and is to be considered for inscription on the World Heritage List by UNESCO in 2017 (LDWHPP 2013, DCMS 2014). The significance of any heritage asset within a World Heritage Site is influenced by the contribution that the asset makes to the Outstanding Universal Values (OUV) that define the WHS. The nominated OUV for the Lake District is defined within the *Technical Evaluation of the Future World Heritage Nomination for the English Lake District* (LDWHPP 2013) and includes the importance of the area as the prime example of a landscape that results from the 'combined works of nature and man'. It is described as a unique example of the long evolution of an agro-pastoral society, with the physical elements of farming and the spectacular natural setting creating scenic beauty that was appreciated by writers and artists, and fuelled the picturesque movement of the late-eighteenth century. The Lake District is also recognised as the origin of the practice of applying principles of conservation to scenic and cultural landscapes and the creation of protected landscapes. The three core elements that form the basis of the OUV of the nominated WHS are:
- Continuity of traditional agro-pastoralism and local industry in a spectacular mountain landscape;
 - Discovery and appreciation of a rich cultural landscape;
 - Development of a model for protecting cultural landscape (LDWHPP 2013, 6-7).
- 4.1.4 For the purposes of this assessment, the nominated WHS (Site **113**) will be considered as if inscribed.

Likely Period of Origin	No of Sites	Site
Neolithic/ Bronze Age	2	Sites 05, 13
Iron Age	1	Site 30
Romano-British	1	Sites 17, 114, 121
Early Medieval	-	-
Late Medieval	17	Sites 09, 16, 68, 71, 94-100, 107-12, 122, 129-30, 136, 150-55
Post-medieval	4	Sites 18, 47, 50, 103, 141
Post-medieval/ Industrial	35	Sites 08, 14, 19, 22-3, 25, 29, 33, 37, 39, 40-2, 48, 51, 55, 65-6, 69, 72-4, 77-9, 81-6, 90-3, 115, 118, 126, 133-4, 138, 142-4, 146-7
Industrial	15	Sites 07, 10-12, 15, 20-1, 26, 31-2, 34, 44-6, 54, 116, 119, 139, 140
Modern	2	Sites 24, 49, 125
Undated	35	Sites 01-04, 06, 27-8, 35-6 38, 43, 52-3, 56-64, 67, 70, 75-6, 80, 87-89, 101-02, 104-06, 117, 120, 127-8, 131-2, 135, 137, 145, 148, 156
N/A	1	Site 113

Table 2: Number of sites by period

4.2 SIGNIFICANCE

4.2.1 Based on current knowledge, one heritage asset is of international significance (Site **113**), one heritage asset is of national significance (Site **30**), and four heritage assets are of are considered to be of county/district (higher) significance (Sites **17, 45, 86, and 114**). Five heritage assets are of potential county/district (lesser) significance, or higher (120-21, 133-5), but require further investigation in order to characterise associated remains. Three heritage assets are of potential county/district (higher) significance (Sites **27, 28, and 36**), but also require further investigation in order to characterise associated remains. There are 115 heritage assets of lesser county/district significance, the assessment of many of which is influenced by their occurrence within the statutorily protected landscape of the Lake District National Park. There are three heritage assets of negligible significance (Sites **05, 13, and 43**) and 24 heritage assets of unknown significance that require further investigation (Sites **56-64, 67-8, 75, 80, 101-2, 104-6, 131-32, 137, 148-9, and 156**). There are no non-statutorily designated Conservation Areas within the study area. There are no locally listed assets or areas of archaeological sensitivity defined in a local plan within the study area.

4.3 POTENTIAL FOR PREVIOUSLY UNIDENTIFIED REMAINS

- 4.3.1 The potential exists for the presence of previously unidentified remains of archaeological interest across the study area. The existence of such sites, and their character and extent, is uncertain and, thus, the potential impact upon them is also currently uncertain. Although such previously unidentified sites could relate to any period, prehistoric, Romano-British, and early medieval sites are often particularly underrepresented in histories and databases of heritage assets. The neighbouring valleys, such as Buttermere/Crummock Water, have demonstrated the potential for prehistoric rock art and burnt mounds (OA North 2009), and the presence of Castle How hillfort suggests human activity in the study area during the Iron Age. Several sunken settlements of prehistoric or Romano-British date are known from the vicinity of Buttermere, Crummock Water, and Loweswater (OA North 2009) and it must be considered a possibility that such settlement sites may be present in the wider area. Industry, including metal processing, is well attested in the environs of the study area, and bloomeries and lead smelting sites may be present within the study area. Such processing required charcoal as fuel and, therefore, charcoal production sites (pitsteads) may be present within the study area, and other types of woodland industry, such as potash kilns, may also be represented.
- 4.3.2 In total, 34 specific areas with the potential to be associated with previously unidentified remains of archaeological interest were identified during the desk-based assessment (Sites **27, 28, 36, 56-64, 67-8, 75, 80, 101-2, 104-6, 119, 120, 121, 131-5, 137, 148-9, 156**). Remains of earthworks and structural remains associated with these sites may be present within the study area that would be identifiable during walkover survey. Associated sub-surface remains of archaeological interest that are not represented by visible remains at ground level may also be present.
- 4.3.3 Using the guideline criteria outlined in Table 3, and informed professional judgement, each of the sites listed in the gazetteer has been assessed for significance as a heritage asset of archaeological interest (Table 4).

Site No.	Site Name	Significance
01	Site of smelt mill near Brigham	District or County (Lesser)
02	Site of smelt mill, Calvert's Bridge	District or County (Lesser)
03	Site of smelt mill, Keswick	District or County (Lesser)
04	Site of smelt mill, Penrith Road, Keswick	District or County (Lesser)
05	Blencathra Street, Keswick, axe find	Negligible
06	Site of mill (corn), Penrith Road, Keswick	District or County (Lesser)
07	Fountain, Station Road, Keswick	District or County (Lesser)
08	Site of tannery, Keswick	District or County (Lesser)
09	Site of Keswick medieval tenements	District or County (Lesser)

10	Site of pencil mill, Keswick	District or County (Lesser)
11	Site of pencil mill, Keswick	District or County (Lesser)
12	Viewing station, Crosthwaite's Observatory, Keswick	District or County (Lesser)
13	Girls High School, Keswick, axe find	Negligible
14	Flood defences at Greta Bridge	District or County (Lesser)
15	Site of Keswick Mill (pencil), Near Greta Bridge, Keswick	District or County (Lesser)
16	Bee hole at Greta Grove, Great Crosthwaite	District or County (Lesser)
17	Roman Road from Keswick to Caermote Fort, Underskiddaw	District or County (Higher)
18	Site of Braithwaite Bridge farm buildings, Underskiddaw	District or County (Lesser)
19	Site of saw mill, Portinscale, Above Derwent	District or County (Lesser)
20	Turnpike Road at Newlands beck Bridge, Underskiddaw	District or County (Lesser)
21	Cockermouth, Keswick and Penrith Railway	District or County (Lesser)
22	Thornthwaite smelt mill, Above Derwent	District or County (Lesser)
23	Thornthwaite Mine, Above Derwent	District or County (Lesser)
24	Possible machine gun post at Blackstock Point, Bassenthwaite	District or County (Lesser)
25	Woodend Brow quarry, Above Derwent	District or County (Lesser)
26	Viewing station, Beck Wythop, Wythop	District or County (Lesser)
27	Smithy Green place-name	Potentially District or County (Lesser) or (Higher)
28	Kilnhill/Low Kilnhill place-name, Bassenthwaite	Potentially District or County (Lesser) or (Higher)
29	Peelwyke quarry	District or County (Lesser)
30	Castle How Hillfort, Wythop	National
31	Nineteenth-century footbridge, southwest of Dubwath	District or County (Lesser)
32	Signal post on railway, area south of Brathay Hill	District or County (Lesser)

33	Well site north-east of Crag, Setmurthy	District or County (Lesser)
34	Viewing station, Ouse Bridge Inn, Bassenthwaite	District or County (Lesser)
35	Kilnhill forge, Bassenthwaite	District or County (Lesser)
36	Castlehill place-name site, Bassenthwaite	Potentially District or County (Lesser) or (Higher)
37	Pinfold at Kilnhill, Bassenthwaite	District or County (Lesser)
38	Saw mill, Skill Beck, Dodd Wood	District or County (Lesser)
39	Potash kiln, Kiln How, Little Crosthwaite	District or County (Lesser)
40	Narrow ridge and furrow of post-medieval date at Kiln How, Underskiddaw	District or County (Lesser)
41	Rose Cottage quarry	District or County (Lesser)
42	Longclose Farm quarry	District or County (Lesser)
43	Greta, north of Keswick, bead find	Negligible
44	Keswick toll house	District or County (Lesser)
45	Toll Bar Cottage, Keswick	District or County (Higher)
46	Bank barn at Moor Farm, Castlerigg, Keswick	District or County (Lesser)
47	Moor Farm, Castlerigg, Keswick	District or County (Lesser)
48	Bank barn at Moor Farm, Castlerigg, Keswick	District or County (Lesser)
49	Toilet at Moor Farm, Castlerigg, Keswick	District or County (Lesser)
50	Farmhouse at Moor Farm, Castlerigg, Keswick	District or County (Lesser)
51	Sheep house at Moor Farm, Castlerigg, Derwentwater, Borrowdale	District or County (Lesser)
52	Shoulthwaite road bridge	District or County (Lesser)
53	Shoulthwaite Moss quarry	District or County (Lesser)
54	Landscape park at Armathwaite Hall, Blindcrake	District or County (Lesser)
55	Bassenthwaite quarry	District or County (Lesser)
56	Township boundary: Braithwaite/Underskiddaw (River Derwent)	Unknown

57	Township boundary: Underskiddaw/Keswick (River Greta)	Unknown
58	Township boundary: Keswick/St John's St John's, Castlerigg, and Wythburn (?stream channel))	Unknown
59	Township boundary: Braithwaite and Thornthwaite/Portinscale (B5292 and eastward extension)	Unknown
60	Township boundary: Braithwaite and Thornthwaite/Wythop	Unknown
61	Township boundary: Wythop/Setmurthy (Dubwath Beck)	Unknown
62	Township boundary: Isel Old Park/ Bassenthwaite (River Derwent)	Unknown
63	Township boundary: Bassenthwaite/Underskiddaw	Unknown
64	Gallowbarrow place-name, Applethwaite	Unknown
65	Calverts Bridge, Keswick	District or County (Lesser)
66	Keswick Bridge (Greta Bridge), Keswick	District or County (Lesser)
67	Kiln Hauth place-name	Unknown
68	Wythop Park	Unknown
69	Possible quarry	District or County (Lesser)
70	Causeway	District or County (Lesser)
71	Ancient enclosure	District or County (Lesser)
72	Site of building shown on Greenwich enclosure plan	District or County (Lesser)
73	Site of toll bar shown on Greenwich enclosure plan	District or County (Lesser)
74	Site of building shown on St John's tithe map	District or County (Lesser)
75	Adam's Cross	Unknown
76	Causeway over Shoulthwaite Gill	District or County (Lesser)
77	Site of building on Brewery Lane	District or County (Lesser)
78	Site of building on Main Street	District or County (Lesser)
79	Site of building on Main Street	District or County (Lesser)

80	Township boundary: Setmurthy/Isel Old Park	Unknown
81	Site of building east of Brewery Lane	District or County (Lesser)
82	Site of building to the west of A591	District or County (Lesser)
83	Site of building cluster to the south of Parker Gate	District or County (Lesser)
84	Site of buildings to the west of Parker gate	District or County (Lesser)
85	Site of lodge and spout at Sand Hill	District or County (Lesser)
86	Mire House garden	District or County (Higher)
87	Well near Kiln How	District or County (Lesser)
88	Well near Kiln How	District or County (Lesser)
89	Well north of Long Close	District or County (Lesser)
90	Gardens at Lyzzick Hall lodge	District or County (Lesser)
91	Site of buildings to the south of Crookety Bridge	District or County (Lesser)
92	Site of building west of Brewery Lane	District or County (Lesser)
93	Site of building east of Richardson's Lane	District or County (Lesser)
94	Enclosed fields east of Thornthwaite	District or County (Lesser)
95	Strip fields east of Braithwaite	District or County (Lesser)
96	Strip fields south-west of Applethwaite	District or County (Lesser)
97	Enclosed fields south-west of Applethwaite	District or County (Lesser)
98	Enclosed fields at Castlerigg	District or County (Lesser)
99	Enclosed fields at Mire Side	District or County (Lesser)
100	Strip fields west of Bassenthwaite	District or County (Lesser)
101	Linear earthwork visible on aerial photographs	Unknown
102	Parallel linear earthworks visible on aerial photographs	Unknown
103	Broad ridge and furrow visible on aerial photographs	District or County (Lesser)
104	Linear earthwork visible on aerial photographs	Unknown

105	Sub-ovoid earthwork visible on aerial photographs	Unknown
106	Curvi-linear earthwork visible on aerial photographs	Unknown
107	Broad ridge and furrow	District or County (Lesser)
108	Broad ridge and furrow	District or County (Lesser)
109	Broad ridge and furrow	District or County (Lesser)
110	Broad ridge and furrow	District or County (Lesser)
111	Broad ridge and furrow	District or County (Lesser)
112	Broad ridge and furrow	District or County (Lesser)
113	Nominated English Lake District WHS	International
114	Roman gully	District or County (Higher)
115	Field barn at Kiln How	District or County (Lesser)
116	Bassenthwaite Lake Station (Peelwyke)	District or County (Lesser)
117	Naddle Bridge Causeway	District or County (Lesser)
118	Bramcrag Quarry	District or County (Lesser)
119	Legburthwaite Saw Mill	District or County (Lesser)
120	Dyke and enclosure	Potentially District or County (Lesser) or (Higher)
121	Naddle Bridge Roman road	Potentially District or County (Lesser) or (Higher)
122	Broad ridge and furrow	District or County (Lesser)
123	Number not used	-
124	Number not used	-
125	Fake medieval keep	District or County (Lesser)
126	Building at Highfield Wood	District or County (Lesser)
127	Possible field boundary	District or County (Lesser)
128	Possible field boundary	District or County (Lesser)
129	Trackway through Threlkeld townfield	District or County (Lesser)
130	Trackway through Threlkeld townfield	District or County (Lesser)
131	Barrow House and lawn	Unknown

132	Laithey Hill	Unknown
133	Sandbeds	Potentially District or County (Lesser)
134	Coppice	Potentially District or County (Lesser)
135	Chapel Close	Potentially District or County (Lesser) or (Higher)
136	Threlkeld townfield	District or County (Lesser)
137	Mill at Threlkeld (place-name)	Unknown
138	Plantation at Catstocks Wood	District or County (Lesser)
139	Entrance tunnel at Threlkeld Station	District or County (Lesser)
140	Legburthwaite Quarry	District or County (Lesser)
141	Townfield Bridge	District or County (Lesser)
142	Well	District or County (Lesser)
143	Denton Well	District or County (Lesser)
144	Crookelty Bridge	District or County (Lesser)
145	High Briery	District or County (Lesser)
146	Farm buildings at Lowthwaite	District or County (Lesser)
147	Farm building near Bridge End	District or County (Lesser)
148	Township boundary: Keswick/St Johns, Castlerigg, and Wythburn respecting Castlerigg Common	Unknown
149	Township boundary: Threlkeld/St Johns, Castlerigg, and Wythburn	Unknown
150	Broad and narrow ridge and furrow	District or County (Lesser)
151	Broad and narrow ridge and furrow	District or County (Lesser)
152	Broad and narrow ridge and furrow	District or County (Lesser)
153	Broad and narrow ridge and furrow	District or County (Lesser)
154	Broad ridge and furrow	District or County (Lesser)
155	Broad and ridge and furrow	District or County (Lesser)
156	Sub-ovoid feature	Unknown

5 LIKELY IMPACT OF DEVELOPMENT

5.1 IMPACT

- 5.1.1 Heritage assets are an ‘*irreplaceable resource*’ (DCLG 2012). Therefore, it has been the intention of this study to identify the archaeological significance and potential of the study area, and assess the impact of the proposed development, thus allowing the policy stated in NPPF (DCLG 2012) to be enacted upon.
- 5.1.2 The impact is assessed in terms of the significance of the site and the magnitude of potential impact during the proposed scheme. The magnitude, or scale, of an impact will be defined as: loss, substantial, less than substantial, minor alteration with no reduction in significance, or no change, as shown in Table 5, below.
- 5.1.3 **Previous disturbance:** the extent of any previous disturbance to buried archaeological horizons is an important factor in assessing the potential impact of the development scheme. Depending upon the precise finalised route of the pipeline, there are several types of potential previous disturbance that should be considered.
- 5.1.4 The majority of the study area comprises agricultural fields and this is likely to have been the predominant local land use throughout the historic, and during the later prehistoric, periods. The scale of agricultural production, and the quantity of land used for agriculture; particularly the quantity of enclosed land, will have fluctuated, but is likely to have gradually increased throughout the medieval, post-medieval, industrial, and modern periods. Ploughing and poaching, or churning of soil, by livestock can cause damage to sites of archaeological interest this does not preclude the potential for the survival of extensive sub-surface remains in such areas.
- 5.1.5 Roads and tracks have been established along the route of most of the proposed pipeline. These may have obscured the presence of earlier sites and caused disturbance to underlying deposits, but will not necessarily have caused the destruction of sub-surface remains as many early metalled surfaces may have required little, or no, ground preparation, with later resurfacing being applied directly over the existing surface. Indeed, the provision of a metalled surface can halt deterioration of the ground surface resulting from erosion by animals and vehicles and can help to preserve sub-surface remains. However, in some areas, it may have been necessary to undertake works to terrace the road platform and such works are likely to have caused disturbance to underlying deposits. Some of these route ways represent historic elements of the landscape and, although they may have been subject to periodic repair and re-surfacing, fabric relating to their establishment is likely to exist as sub-surface or, in some case, visible remains.
- 5.1.6 The establishment of the Cockermouth, Keswick, and Penrith Railway (Site 21) resulted in the construction of an embankment along part of the study area lying to the west of Keswick and along the western side of Bassenthwaite Lake. This embankment was later used for part of the course of the A66 road and may have provided a level of protection for underlying remains of

archaeological interest from intrusive impacts. There may have been some areas where the establishment of the railway necessitated the provision of a cutting, which may have caused disturbance to underlying deposits. The A66 does not follow the course of the railway to the north and east of Keswick and the construction of the road is likely to have caused damage to sub-surface remains in these areas. The establishment of other minor road diversions and extensions may also have caused disturbance and the construction of buildings associated with the establishment and development of Thirlmere Reservoir may also have caused disturbance.

- 5.1.7 **Nominated WHS:** of the 115 heritage assets identified within the Lake District National Park, 71 are considered to contribute to the OUV of the English Lake District nominated WHS. Most of these sites relate to either the traditions of farming (Sites **16, 18, 33, 37, 40, 46-51, 70, 71, 76, 87-9, 91, 94-100, 103, 107-12, 115, 117, 122, 126-30, 132, 136, 139-40, 142-3, 146-7, 150-55**) or industry (Sites **01-04, 06, 08, 10-11, 15, 19, 21-3, 25, 27-9, 32, 35, 38, 39, 41, 42, 53, 55, 67, 69, 82-4, 116, 118-19, 134, 137, 145**) in the local area. In some cases, such as patterns of ancient field systems and the presence of ridge and furrow cultivation earthworks, these sites contribute to the current character of the area and represent visible traces of the gradual development of the physical landscape as a result of agro-pastoral practices, which is a fundamental element of the OUV of the nominated WHS (LDWHPP 2013). Other heritage assets, such as sites of former industry, may only survive as sub-surface remains and, as such, possess evidential value as they can inform us of the practices that helped to shape the current landscape of the nominated WHS, which has developed gradually over hundreds of years. The survival of such remains of archaeological interest is cited as contributing to the authenticity of form of the nominated WHS (LDWHPP 2013, 11). The remaining sites are associated with the picturesque movement, which both encouraged the appreciation of the cultural landscapes and led to the instigation of aesthetic landscape design and modification. These include viewing stations (Sites **12, 26, 34**) associated with picturesque views and formal gardens, landscape design, and villas (Sites **54, 85-6, 90, 138**). The suggested OUV of the nominated WHS relates primarily to experienced attributes of the natural and cultural landscape, such as the physical aspects that represent the visible and legible development of the landscape and ongoing cultural traditions. Heritage assets that possess these qualities will, therefore, provide a higher contribution to the OUV of the nominated WHS than those that possess only evidential value, such as sub-surface remains of archaeological interest, although these can contribute to the understanding and legibility of the visible physical landscape. Given the very large physical scale of the nominated WHS, impacts upon individual undesignated heritage assets will translate to minimal impacts on the nominated WHS as a whole, although the potential for ongoing cumulative deterioration of the heritage assets that contribute to the OUV should be considered.

5.2 ASSESSMENT OF LIKELY SCALE OF IMPACT

- 5.2.1 **Assessment assumptions:** the potential effects of impacts have been determined based on the overall boundary of the proposed pipeline and an assumption that the potential exists for intrusive ground works, including the

cutting of the pipe trench, to be undertaken within any part of this area. This preliminary assessment is based upon the information derived from the desk-based assessment and will need to be refined following walkover surveys of the proposed pipeline route and the production of detailed scheme proposals. Where additional information is required to inform the assessment the effect is stated as unknown.

5.2.2 Where the proposed pipeline route runs through areas constrained by urban development, such as Keswick town centre, it is assumed that only the immediate environs of the roads in these areas have the potential to be affected by ground works. It is also assumed that standing buildings will be avoided by the pipeline and associated easement. Although the scheduled area of Castle How Hillfort (Site **30**) lies largely within the study area, it is assumed that the steep topography in this area will preclude any pipeline works on the hillside that would fall within the scheduled area.

5.2.3 The results are summarised in Table 7, below, in the absence of mitigation.

Site No.	Site Name	Route Option	Nature of impact	Significance	Magnitude of Impact	Scale of impact	Confidence Rating
01	Site of smelt mill, Brigham	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Low
02	Site of smelt mill, Calvert's Bridge	B, D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Low
04	Site of smelt mill, Penrith Road, Keswick	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Low
09	Site of Keswick medieval tenements	B	Impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Less than substantial	Intermediate	Medium
14	Flood defences at Greta Bridge	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Minor	Minor	Low
16	Bee bole at Greta Grove, Great Crosthwaite	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (walkover will establish location of bee bole and the pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Loss	Major	Medium
17	Roman Road from Keswick to Caermote Fort,	A, B, C, F	Impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (Total avoidance will not be	District or County (Higher)	Substantial	Major	High

	Underskiddaw		possible but the pipeline could be routed within the proposed corridor to minimise the areas impacted)				
18	Site of Braithwaite Bridge farm buildings, Underskiddaw	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to minimise the areas impacted)	District or County (Lesser)	Substantial	Intermediate	Medium
19	Site of saw mill, Portinscale, Above Derwent	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to minimise the areas impacted)	District or County (Lesser)	Substantial	Intermediate	Medium
21	Cockermouth, Keswick and Penrith Railway	A, B, C, D, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Minor	Minor	Low
22	Thornthwaite smelt mill, Above Derwent	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to minimise the areas impacted or avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
23	Thornthwaite mine, Above Derwent	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to minimise the areas impacted or avoid the site)	District or County (Lesser)	Minor	Minor	Medium
26	Viewing station, Beck Wythop, Wythop	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (walkover may establish the character and location of the site and the pipeline could be routed within the proposed corridor to minimise the areas impacted or avoid the site)	District or County (Lesser)	Minor	Minor	Low
27	Smithy Green place-name	B	Unknown	Unknown: potentially District or County (Lesser) or higher	Unknown	Unknown	-
28	Kilnhill/Low Kilnhill place-name,	C	Unknown	Unknown: potentially District or	Unknown	Unknown	-

	Bassenthwaite			County (Lesser) or higher			
31	Nineteenth-century footbridge, southwest of Dubwath	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
32	Signal post on railway, area south of Brathay Hill	B, C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
34	Viewing Station, Ouse Bridge Inn, Bassenthwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (walkover may establish the character and location of the site and avoidance may be possible)	District or County (Lesser)	Minor	Minor	Low
35	Kilnhill forge, Bassenthwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
36	Castlehill place-name site, Bassenthwaite	C	Unknown	Unknown: potentially District or County (Lesser) or higher	Unknown	Unknown	-
37	Pinfold at Kilnhill, Bassenthwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
39	Potash kiln, Kiln How, Little Crosthwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
40	Narrow ridge and furrow of post-medieval date at Kiln How, Underskiddaw	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium

52	Shoulthwaite road bridge	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
54	Landscape park at Armathwaite Hall, Blindcrake	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
56	Township boundary: Braithwaite/Underskiddaw (River Derwent)	B	Unknown	Unknown	Unknown	Unknown	-
57	Township boundary: Underskiddaw/Keswick (River Greta)	A, B, C, D	Unknown	Unknown	Unknown	Unknown	-
58	Township boundary: Keswick/St John's, Castlerigg, and Wythburn (?stream channel))	A, D, E	Unknown	Unknown	Unknown	Unknown	-
59	Township boundary: Braithwaite and Thornthwaite/Portinscale (B5292 and eastward extension)	B	Unknown	Unknown	Unknown	Unknown	-
60	Township boundary: Braithwaite and Thornthwaite/Wythop	B	Unknown	Unknown	Unknown	Unknown	-
61	Township boundary: Wythop/Setmurthery (Dubwath	B	Unknown	Unknown	Unknown	Unknown	-

	Beck)						
62	Township boundary: Isel Old Park/ Bassenthwaite (River Derwent)	C	Unknown	Unknown	Unknown	Unknown	-
63	Township boundary: Bassenthwaite /Underskiddaw	C	Unknown	Unknown	Unknown	Unknown	-
64	Gallowbarrow place-name, Applethwaite	C	Unknown	Unknown	Unknown	Unknown	-
65	Calverts Bridge, Keswick	A, B, C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench	District or County (Lesser)	Substantial	Intermediate	Medium
66	Keswick Bridge (Greta Bridge), Keswick	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench	District or County (Lesser)	Substantial	Intermediate	Medium
67	Kiln Hauth place-name	C	Unknown	Unknown	Unknown	Unknown	-
68	Wythop Park	B	Unknown	Unknown	Unknown	Unknown	-
70	Causeway	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	Medium
71	Ancient enclosure	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	Medium
72	Site of building shown on Greenwich enclosure plan	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Substantial	Intermediate	Medium
73	Site of toll bar shown on Greenwich enclosure plan	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Less than substantial	Intermediate	Medium
74	Site of building shown on St John's tithe map	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor	District or County (Lesser)	Substantial	Intermediate	Medium

			to avoid the site)				
75	Adam's Cross	A	Unknown	Unknown	Unknown	Unknown	-
76	Causeway over Shoulthwaite Gill	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
77	Site of building on Brewery Lane	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
78	Site of building on Main Street	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
79	Site of building on Main Street	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
80	Township boundary: Setmurthy/Isel Old Park	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Unknown	Unknown	Unknown	-
81	Site of building east of Brewery Lane	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
82	Site of building to the west of A591	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
83	Site of building cluster to the south of Parker Gate	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
84	Site of buildings to the west of Parker gate	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
85	Site of lodge and spout at Sand Hill	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor	District or County (Lesser)	Substantial	Intermediate	Medium

			to avoid the site)				
86	Mire House garden	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Higher)	Substantial	Major	High
87	Well near Kiln How	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
88	Well near Kiln How	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
89	Well north of Long Close	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
90	Gardens at Lyzzick Hall lodge	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Minor	Minor	High
91	Site of buildings to the south of Crookety Bridge	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	Medium
92	Site of building west of Brewery Lane	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
93	Site of building east of Richardson's Lane	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench.	District or County (Lesser)	Minor	Minor	Medium
94	Enclosed fields east of Thornthwaite	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High

95	Strip fields east of Braithwaite	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
96	Strip fields south-west of Appleshwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
97	Enclosed fields south-west of Appleshwaite	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
98	Enclosed fields at Castlerigg	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
99	Enclosed fields at Mire Side	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
100	Strip fields west of Bassenthwaite	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
101	Linear earthwork visible on aerial photographs	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Unknown	Substantial	Intermediate	High
102	Parallel linear earthworks visible on aerial photographs	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Unknown	Substantial	Unknown	High
103	Broad ridge and furrow visible on aerial photographs	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
104	Linear earthwork visible on aerial photographs	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Unknown	Substantial	Unknown	High
105	Sub-ovoid earthwork visible on aerial	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor	Unknown	Substantial	Unknown	High

	photographs		to avoid the site)				
106	Curvi-linear earthwork visible on aerial photographs	A	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Unknown	Substantial	Unknown	High
107	Broad ridge and furrow	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
108	Broad ridge and furrow	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
109	Broad ridge and furrow	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
110	Broad ridge and furrow	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
111	Broad ridge and furrow	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
112	Broad ridge and furrow	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
113	Nominated English Lake District WHS	A-F	Potential impact on heritage assest contributing to the OUV of the nominated WHS as a result of intrusive ground works associated with the proposed pipe trench and easement.	International	Minor	Intermediate /Minor	High
114	Roman gully	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Higher)	Substantial	Major	High
115	Field barn at Kiln How	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Substantial	Intermediate	High

116	Bassenthwaite Lake Station (Peelwyke)	B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement. (The pipeline could be routed within the proposed corridor to avoid the site)	District or County (Lesser)	Less than substantial	Intermediate	High
117	Naddle Bridge Causeway	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
119	Legburthwaite Saw Mill	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
120	Dyke and enclosure	D, E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Potentially District or County (Lesser) or higher	Substantial	Intermediate	Medium
121	Naddle Bridge Roman road	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Potentially District or County (Lesser) or higher	Potentially Substantial	Potentially Major	Medium
122	Broad ridge and furrow	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
126	Building at Highfield Wood	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
127	Possible field boundary	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
128	Possible field boundary	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
129	Trackway through Threlkeld townfield	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
130	Trackway through Threlkeld townfield	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High

131	Barrow House and lawn	D	Unknown	Unknown	Unknown	Unknown	-
132	Laithey Hill	E	Unknown	Potentially District or County (Lesser) or higher	Unknown	Unknown	-
133	Sandbeds	D, E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	Potentially District or County (Lesser)	Minor	Minor	-
134	Coppice	D	Unknown	Potentially District or County (Lesser)	Unknown	Unknown	-
135	Chapel Close	A	Unknown	Potentially District or County (Lesser) or higher	Unknown	Unknown	-
136	Threlkeld townfield	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
137	Mill at Threlkeld (place-name)	E	Unknown	Unknown	Unknown	Unknown	-
138	Plantation at Catstocks Wood	F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
139	Entrance tunnel at Threlkeld Station	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
140	Legburthwaite Quarry	E	Potential impact on former buildings as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Less than substantial	Intermediate	High
141	Townfield Bridge	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
142	Well	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High

143	Denton Well	A, B	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
144	Crookelty Bridge	C	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
145	High Briery	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
146	Farm buildings at Lowthwaite	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
147	Farm building near Bridge End	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
148	Township boundary: Keswick/St Johns, Castlerigg, and Wythburn respecting Castlerigg Common	A, D, E	Unknown	Unknown	Unknown	Unknown	-
149	Township boundary: Threlkeld/St Johns, Castlerigg, and Wythburn	E	Unknown	Unknown	Unknown	Unknown	-
150	Broad and narrow ridge and furrow	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
151	Broad and narrow ridge and furrow	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
152	Broad and narrow ridge and furrow	D	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
153	Broad and narrow ridge	E	Potential impact as a result of intrusive ground works associated	District or County	Substantial	Intermediate	High

	and furrow		with the proposed pipe trench and easement.	(Lesser)			
154	Broad ridge and furrow	E	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
155	Broad and ridge and furrow	C, F	Potential impact as a result of intrusive ground works associated with the proposed pipe trench and easement.	District or County (Lesser)	Substantial	Intermediate	High
156	Sub-ovoid feature	C, F	Unknown	Unknown	Unknown	Unknown	-

Table 7: Assessment of the impact significance on each site during development

5.2.4 Table 7 indicates that the potential exists for negative impacts upon 95 heritage assets within the study area and that there is an unknown potential for impacts upon 24 sites. However, the potential for many of the impacts could be reduced or removed by the considered routing of the pipeline and easement, within the proposed study area corridor during the detailed design stage.

6 RECOMMENDATIONS

6.1 INTRODUCTION

- 6.1.1 A desk-based assessment is usually the first stage of an iterative process of investigating the archaeological resource within the proposed development area. Having identified the potential for remains of archaeological interest, further investigation is often required to determine the exact nature, survival, extent, and date of the remains so that effective mitigation strategies can be proposed.

6.2 FURTHER ARCHAEOLOGICAL INVESTIGATION

- 6.2.1 Uncertainty about the character and extent of some potential heritage assets identified during the desk-based assessment means that further investigation would be necessary in order to characterise these sites (Sites **27, 28, 36, 56-64, 67-8, 75, 80, 101-2, and 104-6, 119, 120, 121, 131-5, 137, 148-9, 156**). The first stage of further investigation should comprise a walkover survey of all the pipeline route options in order to examine the character of visible remains at ground level and to inspect the routes for the visible presence of further previously unidentified heritage assets.
- 6.2.2 The most effective means of subsequently determining the likelihood of sub-surface remains associated with some of these sites may be geophysical survey. Any anomalies identified during the geophysical survey would inform the necessity for further archaeological investigation by evaluation trenching or open-area topsoil stripping and archaeological excavation.
- 6.2.3 Heritage assets that have been previously identified may also require archaeological evaluation in advance of ground works in order to establish the character and extent of surviving remains and to inform the necessity for further archaeological works.
- 6.2.4 The potential also exists for the presence of further previously unidentified sub-surface remains that are not indicated by above-ground traces or during the inspection of historical maps and records.

6.3 PROPOSED MITIGATION

- 6.3.1 The *National Planning Policy Framework* instructs that in the case of heritage assets which either have designated status or are non-designated but are of a significance demonstrably comparable with a Scheduled Monument, *ie* of national importance, the general assumption should be in favour of conservation. Where the loss of the whole or a part of a heritage asset's significance is justified by a development, the developer should be required first to record that asset and advance understanding of its significance, in a manner proportionate to the asset's importance and the impact (NPPF, p 32 para 141).

6.3.2 Where impacts cannot be avoided, recommendations for archaeological mitigation comprise topographic and photographic survey, watching brief, and preservation by record; the means of which will be determined following the further investigations described above.

Site No.	Site Name	Significance	Scale of impact	Mitigation
01	Site of smelt mill, Brigham	District or County (Lesser)	Minor	Preservation by record through watching brief
02	Site of smelt mill, Calvert's Bridge	District or County (Lesser)	Minor	Preservation by record through watching brief
04	Site of smelt mill, Penrith Road, Keswick	District or County (Lesser)	Minor	Preservation by record through watching brief
09	Site of Keswick medieval tenements	District or County (Lesser)	Intermediate	Preservation by record through watching brief
14	Flood defences at Greta Bridge	District or County (Lesser)	Minor	Preservation by record through watching brief
16	Bee bole at Greta Grove, Great Crosthwaite	District or County (Lesser)	Major	Any such impact would require considerable justification. The heritage asset should be avoided by the works and preserved <i>in-situ</i>
17	Roman Road from Keswick to Caermote Fort, Underskiddaw	District or County (Higher)	Major	Any such impact would require considerable justification. It would not be possible to avoid the site and, therefore, preservation by record through archaeological excavation should be undertaken. This is likely to be required to be preceded by archaeological evaluation trenching
18	Site of Braithwaite Bridge farm buildings, Underskiddaw	District or County (Lesser)	Intermediate	Preservation by record through watching brief
19	Site of saw mill, Portinscale, Above Derwent	District or County (Lesser)	Intermediate	Preservation by record. Evaluation trenching may be required to inform mitigation requirements.
21	Cockermouth, Keswick and Penrith Railway	District or County (Lesser)	Minor	Preservation by record through watching brief.
22	Thornthwaite smelt mill, Above Derwent	District or County (Lesser)	Intermediate	Preservation by record. Evaluation trenching may be required to inform mitigation requirements.
23	Thornthwaite mine, Above Derwent	District or County (Lesser)	Minor	Preservation by record through watching brief.

Site No.	Site Name	Significance	Scale of impact	Mitigation
26	Viewing station, Beck Wythop, Wythop	District or County (Lesser)	Minor	Potential preservation by record. Further information required from walkover survey.
27	Smithy Green place-name	Unknown: potentially District or County (Lesser) or higher	Unknown	Further investigation required: walkover survey and possible geophysical survey.
28	Kilnhill/Low Kilnhill place-name, Bassenthwaite	Unknown: potentially District or County (Lesser) or higher	Unknown	Further investigation required: walkover survey and possible geophysical survey.
31	Nineteenth-century footbridge, southwest of Dubwath	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
32	Signal post on railway, area south of Brathay Hill	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
33	Well site north-east of Crag, Setmurthy	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
34	Viewing Station, Ouse Bridge Inn, Bassenthwaite	District or County (Lesser)	Minor	Potential preservation by record. Further information required from walkover survey.
35	Kilnhill forge, Bassenthwaite	District or County (Lesser)	Intermediate	Further investigation required: walkover survey and possible geophysical survey.
37	Pinfold at Kilnhill, Bassenthwaite	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
39	Potash kiln, Kiln How, Little Crosthwaite	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
40	Narrow ridge and furrow of post-medieval date at Kiln How, Underskiddaw	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey
52	Shoulthwaite road bridge	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
54	Landscape park at Armathwaite Hall, Blindcrake	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
56	Township boundary: Braithwaite/Underskiddaw (River Derwent)	Unknown	Unknown	Further information required from walkover survey.
57	Township boundary: Underskiddaw/Keswick (River Greta)	Unknown	Unknown	Further information required from walkover survey.

Site No.	Site Name	Significance	Scale of impact	Mitigation
58	Township boundary: Keswick/St John's St John's, Castlerigg, and Wythburn (?stream channel))	Unknown	Unknown	Further information required from walkover survey.
59	Township boundary: Braithwaite and Thornthwaite/Portinscale (B5292 and eastward extension)	Unknown	Unknown	Further information required from walkover survey.
60	Township boundary: Braithwaite and Thornthwaite/Wythop	Unknown	Unknown	Further information required from walkover survey.
61	Township boundary: Wythop/Setmurthy (Dubwath Beck)	Unknown	Unknown	Further information required from walkover survey.
62	Township boundary: Isel Old Park/ Bassenthwaite (River Derwent)	Unknown	Unknown	Further information required from walkover survey.
63	Township boundary: Bassenthwaite/Underskiddaw	Unknown	Unknown	Further information required from walkover survey.
64	Gallowbarrow place-name, Applethwaite	Unknown	Unknown	Further information required from walkover survey.
65	Calverts Bridge, Keswick	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record through watching brief if impacted.
66	Keswick Bridge (Greta Bridge), Keswick	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record through watching brief if impacted.
67	Kiln Hauth place-name	Unknown	Unknown	Further information required from walkover survey.
68	Wythop Park	Unknown	Unknown	Further information required from walkover survey.
70	Causeway	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
71	Ancient enclosure	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
72	Site of building shown on Greenwich enclosure plan	District or County (Lesser)	Intermediate	Preserve by record through watching brief.
73	Site of toll bar shown on Greenwich enclosure plan	District or County (Lesser)	Intermediate	Preserve by record through watching brief.
74	Site of building shown on St John's tithe map	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.

Site No.	Site Name	Significance	Scale of impact	Mitigation
75	Adam's Cross	Unknown	Unknown	Further information required from walkover survey.
76	Causeway over Shoulthwaite Gill	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
77	Site of building on Brewery Lane	District or County (Lesser)	Minor	Preserve by record through watching brief.
78	Site of building on Main Street	District or County (Lesser)	Minor	Preserve by record through watching brief.
79	Site of building on Main Street	District or County (Lesser)	Minor	Preserve by record through watching brief.
80	Township boundary: Setmurthy/Isel Old Park	Unknown	Unknown	Further information required from walkover survey.
81	Site of building east of Brewery Lane	District or County (Lesser)	Minor	Preserve by record through watching brief.
82	Site of building to the west of A591	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
83	Site of building cluster to the south of Parker Gate	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
84	Site of buildings to the west of Parker gate	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
85	Site of lodge and spout at Sand Hill	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
86	Mire House garden	District or County (Higher)	Major	Any such impact would require considerable justification. The heritage asset should be avoided by the works and preserved <i>in-situ</i> .
87	Well near Kiln How	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
88	Well near Kiln How	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
89	Well north of Long Close	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
90	Gardens at Lyzzick Hall lodge	District or County (Lesser)	Minor	Avoid where possible. Preserve by record if impacted.
91	Site of buildings to the south of Crookety Bridge	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.

Site No.	Site Name	Significance	Scale of impact	Mitigation
92	Site of building west of Brewery Lane	District or County (Lesser)	Minor	Preserve by record through watching brief.
93	Site of building east of Richardson's Lane	District or County (Lesser)	Minor	Preserve by record through watching brief.
94	Enclosed fields east of Thornthwaite	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
95	Strip fields east of Braithwaite	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
96	Strip fields south-west of Applethwaite	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
97	Enclosed fields south-west of Applethwaite	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
98	Enclosed fields at Castlerigg	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
99	Enclosed fields at Mire Side	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
100	Strip fields west of Bassenthwaite	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief. Reinstall boundaries following works.
101	Linear earthwork visible on aerial photographs	Unknown	Intermediate	Further information required from walkover survey.
102	Parallel linear earthworks visible on aerial photographs	Unknown	Intermediate	Further information required from walkover survey.
103	Broad ridge and furrow visible on aerial photographs	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief

Site No.	Site Name	Significance	Scale of impact	Mitigation
104	Linear earthwork visible on aerial photographs	Unknown	Unknown	Further information required from walkover survey.
105	Sub-ovoid earthwork visible on aerial photographs	Unknown	Unknown	Further information required from walkover survey.
106	Curvi-linear earthwork visible on aerial photographs	Unknown	Unknown	Further information required from walkover survey.
107	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
108	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
109	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
110	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
111	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
112	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
113	Nominated English Lake District WHS	International	Intermediate/Minor	Applying appropriate mitigation to the impacts identified for heritage assets that contribute to the OUV of the nominated WHS: Sites 01-04, 06, 08, 10-12, 15, 16, 18, 19, 21-3, 25-9, 32-5, 37-42, 46-51, 53-5, 67, 69-71, 76, 82-91, 94-100, 103, 107-12, 115, 116, 117, 118, 119, 122, 126-30, 132, 134, 136-40, 142-3, 145-7, 150-55
114	Roman gully	District or County (Higher)	Major	Any such impact would require considerable justification. The heritage asset should be avoided by the works and preserved <i>in-situ</i>
116	Bassenthwaite Lake Station (Peelwyke)	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.

Site No.	Site Name	Significance	Scale of impact	Mitigation
117	Naddle Bridge Causeway	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
119	Legburthwaite Saw Mill	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
120	Dyke and enclosure	Potentially District or County (Lesser) or higher	Intermediate	Avoid where possible. Preserve by record if impacted. This may be required to be preceded by archaeological evaluation trenching
121	Naddle Bridge Roman road	Potentially District or County (Lesser) or higher	Potentially Major	Any such impact would require considerable justification. It may not be possible to avoid the site and, therefore, preservation by record through archaeological excavation should be undertaken. This is likely to be required to be preceded by archaeological evaluation trenching
122	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
126	Building at Highfield Wood	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
127	Possible field boundary	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
128	Possible field boundary	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
129	Trackway through Threlkeld townfield	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief.
130	Trackway through Threlkeld townfield	District or County (Lesser)	Intermediate	Preserve by record through topographic and photographic survey followed by watching brief.
131	Barrow House and lawn	Unknown	Unknown	Further information required from walkover survey.
132	Laithey Hill	Potentially District or County (Lesser) or higher	Unknown	Further information required from walkover survey.
133	Sandbeds	Potentially District or County (Lesser)	Minor	Further information required from walkover survey.

Site No.	Site Name	Significance	Scale of impact	Mitigation
134	Coppice	Potentially District or County (Lesser)	Unknown	Further information required from walkover survey.
135	Chapel Close	Potentially District or County (Lesser) or higher	Unknown	Further information required from walkover survey.
136	Threlkeld townfield	District or County (Lesser)	Intermediate	Preserve early boundaries by record through topographic and photographic survey followed by watching brief. Reinststate early boundaries following works.
137	Mill at Threlkeld (place-name)	Unknown	Unknown	Further information required from walkover survey.
138	Plantation at Catstocks Wood	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
139	Entrance tunnel at Threlkeld Station	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
140	Legburthwaite Quarry	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
141	Townfield Bridge	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
142	Well	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
143	Denton Well	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
144	Crookelty Bridge	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
145	High Briery	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
146	Farm buildings at Lowthwaite	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
147	Farm building near Bridge End	District or County (Lesser)	Intermediate	Avoid where possible. Preserve by record if impacted.
148	Township boundary: Keswick/St Johns, Castlerigg, and Wythburn respecting Castlerigg Common	Unknown	Unknown	Further information required from walkover survey.
149	Township boundary: Threlkeld/St Johns, Castlerigg, and Wythburn	Unknown	Unknown	Further information required from walkover survey.

Site No.	Site Name	Significance	Scale of impact	Mitigation
150	Broad and narrow ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
151	Broad and narrow ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
152	Broad and narrow ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
153	Broad and narrow ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
154	Broad ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
155	Broad and ridge and furrow	District or County (Lesser)	Intermediate	Preservation by record by topographic and photographic survey followed by watching brief
156	Sub-ovoid feature	Unknown	Unknown	Further information required from walkover survey.

Table 8: Summary of site-specific proposals for archaeological mitigation

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APPENDIX 1: GAZETTEER OF HERITAGE ASSETS

Site number	01
Site	Site of smelt mill near Brigham
NGR	NY 327500 523750
Site Type	Smelt mill
HER number	30624
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	A site of old smelters. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	02
Site	Site of smelt mill, Calvert's Bridge
NGR	NY 327360 523810
Site Type	Smelt mill
HER number	30622
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The site of an early smelters. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	03
Site	Site of smelt mill, Keswick
NGR	NY 32 52
Site Type	Smelt mill
HER number	30623
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The site of an early smelters. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site will not be affected by the proposed pipeline.

Site number	04
Site	Site of smelt mill, Penrith Road, Keswick
NGR	NY 32 52
Site Type	Smelt mill
HER number	30620
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The site of a lead smelters. This site is included on M Davies Shiel's annotated map of 1990.

Assessment The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number 05
Site Blencathra Street, Keswick, axe find
NGR NY 327150 523490
Site Type Findspot
HER number 1114
Statutory Designation -
Period Neolithic
Source LDNPA HER
Description An unpolished stone axe was found whilst extending Blencathra Street by Mr William Hodgson and was displayed in Keswick Museum. The axe was a Neolithic rough out of Lake District stone and was also recorded as the Skiddaw Hotel find.
Assessment The find has been removed and will not be affected by the proposed pipeline.

Site number 06
Site Site of mill (corn), Penrith Road, Keswick
NGR NY 327030 523530
Site Type Watermill
HER number 30621
Statutory Designation -
Period Uncertain
Source LDNPA HER
Description The site of a Corn Mill. This site is included on M Davies Shiel's annotated map of 1990.
Assessment The site will not be affected by the proposed pipeline.

Site number 07
Site Fountain, Station Road, Keswick
NGR NY 326870 523590
Site Type Fountain
HER number 18957
Statutory Designation -
Period Industrial
Source LDNPA HER
Description In 1862 Keswick had no drinking fountains, but by 1865 they had acquired one in memory of Frances Rolleston, which was situated near the bridge over Greta and in the wall of Upper Fitz Park (the exact location is unknown). It has a polished red granite basin arched in a green slate surround with biblical text.
Assessment The site will not be affected by the proposed pipeline.

Site number 08
Site Site of tannery, Keswick
NGR NY 326830 523560
Site Type Tannery
HER number 30616
Statutory Designation -
Period Post-medieval/Industrial
Source LDNPA HER
Description The site of a Tannery. This site is included on M Davies Shiel's annotated map of 1990.

Assessment	The site will not be affected by the proposed pipeline.
Site number	09
Site	Site of Keswick medieval tenements
NGR	NY 326700 523500
Site Type	Tenements
HER number	6322
Statutory Designation	-
Period	Medieval
Source	LDNPA HER
Description	The area occupied by the Keswick Medieval tenements has been updated with information taken from the Extensive Urban Survey.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
Site number	10
Site	Site of pencil mill, Keswick
NGR	NY 326770 523580
Site Type	Mill
HER number	30615
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The site of a pencil mill. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site will not be affected by the proposed pipeline.
Site number	11
Site	Site of pencil mill, Keswick
NGR	NY 326710 523660
Site Type	Mill
HER number	30614
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The site of a pencil mill. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site will not be affected by the proposed pipeline.
Site number	12
Site	Viewing station, Crosthwaite's Observatory, Keswick
NGR	NY 326480 523640
Site Type	Vantage point
HER number	32089
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	This viewing station was marked on Crosthwaite's Derwent Water as 'Crosthwaite's Observatory', near his museum. The exact location has not been determined.
Assessment	The site will not be affected by the proposed pipeline.

Site number	13
Site	Girls High School, Keswick, axe find
NGR	NY 326420 523710
Site Type	Findspot
HER number	1119
Statutory Designation	-
Period	Neolithic
Source	LDNPA HER
Description	A grooved stone axe was found in 1868 in the Girls High School gardens at Keswick and is now housed at Abbott Hall.
Assessment	The find has been removed and will not be affected by the proposed pipeline.

Site number	14
Site	Flood defences at Greta Bridge
NGR	NY 326300 523720
Site Type	Flood defence
HER number	60580
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	Part of a previous river defence pre-dating the construction of the modern flood defence wall was seen at the southern edge of a borehole excavated under an archaeological watching brief by OA North in 2008.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	15
Site	Site of Keswick Mill (pencil), Near Greta Bridge, Keswick
NGR	NY 326002 524005
Site Type	
HER number	4178
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The site of a pencil works, which was converted for use as a youth club. It lies to the west of the main road bridge over the river to the north-west of the Grammar School. In September 2007 a desk-based assessment and level 2 building survey were undertaken for the Youth Club. The documentary research and building survey suggested that the range was built in c.1800 as a woollen mill. By the second half of the nineteenth century the woollen industry was in decline and the premises were taken over as a pencil mill. It was concluded that the buildings retained little or no original fixtures and fittings but that further work should be conducted when the building is demolished. The building was demolished in 2012 without further work being undertaken.
Assessment	The site will not be affected by the proposed pipeline.

Site number	16
Site	Bee bole at Greta Grove, Great Crosthwaite
NGR	NY 326002 524005
Site Type	Bee bole
HER number	31083
Statutory Designation	-
Period	Medieval

Source	LDNPA HER
Description	The site of a bee bole, although the exact location requires confirmation. This site was visited as part of research for a BSc dissertation in 1999.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	17
Site	Roman Road from Keswick to Caermote Fort, Underskiddaw
NGR	NY 324130 526540
Site Type	Road
HER number	32746
Statutory Designation	-
Period	Romano-British
Source	LDNPA HER
Description	The site of a possible Roman road is visible as a linear feature traced along the eastern side of the River Derwent heading north-west from Keswick to Caermote fort. Earthworks that appear to represent the line of the road are visible to the north-west of Mire House Cottage.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	18
Site	Site of Braithwaite Bridge farm buildings, Underskiddaw
NGR	NY 324700 523700
Site Type	Building
HER number	32744
Statutory Designation	-
Period	Post-medieval
Source	LDNPA HER
Description	The location of a farm tenement during the early seventeenth century. Buildings and a house were recorded in 1609 and 1614. No buildings currently stand at this location.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	19
Site	Site of saw mill, Portinscale, Above Derwent
NGR	NY 324690 523670
Site Type	Saw mill
HER number	30611
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of a Sawmill, which is included on M Davies Shiel's annotated map of 1990.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	20
Site	Turnpike Road at Newlands beck Bridge, Underskiddaw
NGR	NY 324050 523600
Site Type	Toll road
HER number	32745
Statutory Designation	-

Period	Industrial
Source	LDNPA HER
Description	This site is the line of an eighteenth-century turnpike road, an early modern road, and a medieval road.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	21
Site	Cockermouth, Keswick and Penrith Railway
NGR	NY 25000 24220
Site Type	Railway
HER number	11531, 11817, and 10815
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The site of a disused railway, which has been dismantled. It opened in 1865 and closed in 1966.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	22
Site	Thornthwaite smelt mill, Above Derwent
NGR	NY 22500 25900
Site Type	Smelt mill
HER number	5629
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	This is the site of a smelting mill.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	23
Site	Thornthwaite Mine, Above Derwent
NGR	NY 22450 26000
Site Type	Lead mine
HER number	12418
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of Thornthwaite Mine was shown as late as the OS 1:10000 map of 1979.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	24
Site	Possible machine gun post at Blackstock Point, Bassenthwaite
NGR	NY 22200 27300
Site Type	Gun post
HER number	32763
Statutory Designation	-
Period	Modern
Source	LDNPA HER

Description	A square concrete sandbag machine gun emplacement from World War II is located at Blackstock Point and is similar to one found at Hassness, Buttermere.
Assessment	The site will not be affected by the proposed pipeline.

Site number	25
Site	Woodend Brow quarry, Above Derwent
NGR	NY 21770 27680
Site Type	Quarry
HER number	11804
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of a quarry shown on the OS 1:10000 map of 1979.
Assessment	The site will not be affected by the proposed pipeline.

Site number	26
Site	Viewing station, Beck Wythop, Wythop
NGR	NY 21470 28700
Site Type	Vantage point
HER number	32069
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	This viewing station was marked as West's Fourth Station on Crosthwaite's Bassenthwaite map.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	27
Site	Smithy Green place-name
NGR	NY 21080 28420
Site Type	Forge
HER number	12417
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The name 'Smithy Green' in Wythop Woods, suggests that this was possibly the site of a Forge.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	28
Site	Kilnhill/Low Kilnhill place-name, Bassenthwaite
NGR	NY 21610 32450
Site Type	Kiln
HER number	10848
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The place-name suggests that this was the site of a kiln. There were no indications of kilns on the OS mapping of 1881.

Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	29
Site	Peelwyke quarry
NGR	NY 20450 30770
Site Type	Quarry
HER number	10850
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	A site previously used for quarrying.
Assessment	The site will not be affected by the proposed pipeline.

Site number	30
Site	Castle How Hillfort, Wythop
NGR	NY 20170 30820
Site Type	Hillfort
HER number	886
Statutory Designation	SM 1013384
Period	Iron Age
Source	LDNPA HER
Description	Castle How is a small hillfort that occupies a kidney-shaped plateau measuring 40m by 20m, which is cut into by an old quarry on the north-eastern side. The ground falls away steeply on the northern and southern sides. The defences include a series of four rock cut ditches with banks and counterscarps on the western side, and two rock cut ditches with banks and counterscarps on the eastern side. Access into the interior is on the eastern side via a path which passes through a gap in the outer bank and across a causeway over the inner ditch. A cobble stone revetment was visible in the innermost western and outermost eastern ditches and along the northern edge of the hillfort just below the summit. There is no trace of any internal structures. Some potboilers and pieces of tooled red sand-stone were found. The worked sandstone featured parallel chisel tooling that Collingwood interpreted as being of Roman in character and a possible Roman roofing tile was also found.
Assessment	The site will not be affected by the proposed pipeline.

Site number	31
Site	Nineteenth-century footbridge, southwest of Dubwath
NGR	NY 19583 31045
Site Type	Footbridge
HER number	60165
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The site of a footbridge shown on historic OS mapping.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	32
Site	Signal post on railway, area south of Brathay Hill
NGR	NY 19230 31030
Site Type	Signpost
HER number	60164
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	A signal post alongside the railway was recorded on historic OS mapping.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	33
Site	Well site north-east of Crag, Setmurthy
NGR	NY 19203 31479
Site Type	Well
HER number	60145
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of a well was shown on nineteenth-century OS mapping.
Assessment	The site will not be impacted upon by ground works associated with the proposed pipeline works.

Site number	34
Site	Viewing station, Ouse Bridge Inn, Bassenthwaite
NGR	NY 20130 32190
Site Type	Vantage point
HER number	32065
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	A viewing station marked as 'a very excellent station' on Crosthwaite's Bassenthwaite map.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	35
Site	Kilnhill forge, Bassenthwaite
NGR	NY 21580 32750
Site Type	Forge
HER number	10849
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	Roofed buildings were labelled as an Old Forge on the OS mapping of 1881 and a smithy was shown on the diagonally opposite side of the road junction.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	36
Site	Castlehill place-name site, Bassenthwaite
NGR	NY 21600 323640
Site Type	Castle place-name
HER number	10825
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	The OS map of 1900 at 6" to 1 mile describes the site as Castle Hill, although this place-name does not appear on later maps. A site named Castle Inn was shown on the opposite side of the road.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	37
Site	Pinfold at Kilnhill, Bassenthwaite
NGR	NY 21600 32500
Site Type	Pen
HER number	32815
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	This site is a small rectangular pinfold that is almost derelict but parts of all four walls appear to survive. It was shown on the OS map of 1867. The local area is known as Pinfold this feature was located and recorded during the Pounds and Pinfolds in Cumbria Project in 2005.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	38
Site	Saw mill, Skill Beck, Dodd Wood
NGR	NY 23520 28200
Site Type	Saw mill
HER number	30610
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	This site of a saw mill is now the café and entrance for Dodd Wood walks and for Mire House. This site is included on M Davies Shiel's annotated map of 1990.
Assessment	The site will not be affected by the proposed pipeline.

Site number	39
Site	Potash kiln, Kiln How, Little Crosthwaite
NGR	NY 323430 27450
Site Type	Potash kiln
HER number	30592
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	A Potash Kiln measuring 10 feet by 10 feet by 5 feet was included on M Davies Shiel's annotated map of 1990. This site was also included in an assessment of the historic landscape between Bassenthwaite Lake and Derwent Water undertaken by The Archaeological Practice Ltd. in 2007.

Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	40
Site	Narrow ridge and furrow of post-medieval date at Kiln How, Underskiddaw
NGR	NY 23350 27537
Site Type	Ridge and furrow
HER number	60651
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	An area of narrow ridge and furrow cultivation ridges occupying an area c30m by 40m enclosed by ridges along the north-west, south-west, and south-eastern sides.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	41
Site	Rose Cottage quarry
NGR	NY 23550 27450
Site Type	Quarry
HER number	11807
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of a quarry was shown on the OS 1:10000 map of 1979.
Assessment	The site will not be affected by the proposed pipeline.

Site number	42
Site	Longclose Farm quarry
NGR	NY 23980 26740
Site Type	Quarry
HER number	11809
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	The site of a quarry was shown on the OS 1:10000 map of 1979.
Assessment	The site will not be affected by the proposed pipeline.

Site number	43
Site	Greta, north of Keswick, bead find
NGR	NY 27000 24000
Site Type	Findspot
HER number	4273
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	A glass bead was found by a Mr Donaldson while fishing in 1862. It is opaque, red, and blue and these colours are divided by opaque white lines.
Assessment	The site will not be affected by the proposed pipeline.

Site number	44
Site	Keswick toll house
NGR	NY 27500 23800
Site Type	Toll house
HER number	4179
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	This is the site of a rectangular toll house.
Assessment	The site will not be affected by the proposed pipeline. (Route A)

Site number	45
Site	Toll Bar Cottage, Keswick
NGR	NY 27800 23300
Site Type	Toll house
HER number	4180
Statutory Designation	Grade II listed building (LB 71768)
Period	Industrial
Source	LDNPA HER
Description	A late-eighteenth-century toll house built in stone and slate with a slate roof. The building has small-paned casement windows and features a polygonal projection with a pyramidal roof. The building has single-storeyed flanking wings with catslide roofs.
Assessment	The site will not be affected by the proposed pipeline.

Site number	46
Site	Bank barn at Moor Farm, Castlerigg, Keswick
NGR	NY 28327 22995
Site Type	Bank barn
HER number	38559
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	A very good example of a typical Lakeland bank barn built along the slope with a 5-bay threshing barn above, and a stable, cart shed and cow house below. It is a fine building, well-constructed, and in very good condition, and is one of a few building of this type to have been built as late as 1905. A later addition includes loose boxes with a loft above and a milk cooling house.
Assessment	The site will not be affected by the proposed pipeline.

Site number	47
Site	Moor Farm, Castlerigg, Keswick
NGR	NY 28340 23008
Site Type	Farmstead
HER number	33827
Statutory Designation	-
Period	Post-medieval
Source	LDNPA HER
Description	Moor Farm has belonged in the Bellas family for generations and a plaque on the front of the house dated to 1702 and a plaque on the Bank barn dated 1905 both refer to the Bellas family. The house is of many different phases of construction and the farm is quite small with only a few main buildings. Amongst these there are three examples of the common local building type; the bank barn, variant and true including the 1905 barn which is one of the last building to have been built in this

style in the area. The farm once held dairy cattle, sheep, and also fell ponies; the last owner, the late Mr. R. Bellas was a National Fell Pony judge. The buildings are in good condition.

Assessment The site will not be affected by the proposed pipeline.

Site number 48
Site Bank barn at Moor Farm, Castlerigg, Keswick
NGR NY 28367 22999
Site Type Bank barn
HER number 38558
Statutory Designation -
Period Post-medieval/Industrial
Source LDNPA HER
Description This is a variant bank barn built lengthways across the slope of the field with a threshing barn above and a cow byre below part of the barn. At one end there is a lean-to shed and at the other near the road, is a pig or down house joined onto the byre. The barn replaced an earlier building that shared the same orientation as the house. The barn stands at right-angles to the house and incorporates the end gable wall of the earlier barn and some of its roof timbers.

Assessment The site will not be affected by the proposed pipeline.

Site number 49
Site Toilet at Moor Farm, Castlerigg, Keswick
NGR NY 28345 22976
Site Type Toilet
HER number 38562
Statutory Designation -
Period Modern
Source LDNPA HER
Description The outside lavatory is situated behind the house and was built for farm workers. This fairly recent construction could have replaced an earlier drop-box style commode.

Assessment The site will not be affected by the proposed pipeline.

Site number 50
Site Farmhouse at Moor Farm, Castlerigg, Keswick
NGR NY 28351 22997
Site Type Farmhouse
HER number 38557
Statutory Designation -
Period Post-medieval
Source LDNPA HER
Description It is difficult to define precisely the development of the house, which appears to have been subject to five or six phases of construction. The house may have been built prior to 1702, with subsequent modifications that included a plaque bearing this date.

Assessment The site will not be affected by the proposed pipeline.

Site number 51
Site Sheep house at Moor Farm, Castlerigg, Derwentwater, Borrowdale
NGR NY 28457 22829
Site Type Sheep house
HER number 38561
Statutory Designation -

Period	Post-medieval/Industrial
Source	LDNPA HER
Description	This is a small rectangular structure built into a bank. It would originally have had two storeys, but the upper floor does not survive.
Assessment	The site will not be affected by the proposed pipeline.

Site number	52
Site	Shoulthwaite road bridge
NGR	NY 30100 20600
Site Type	Road bridge
HER number	2974
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	This is the site of a disused road bridge in the vicinity of Roughow Bridge.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	53
Site	Shoulthwaite Moss quarry
NGR	NY 330750 20450
Site Type	Quarry
HER number	11620
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	This is the site of a disused quarry that opened and closed between 1900 and 1979. The site was shown on the OS 1:10000 map of 1979 and is marked on modern OS mapping.
Assessment	The site will not be affected by the proposed pipeline.

Site number	54
Site	Landscape park at Armathwaite Hall, Blindcrake
NGR	NY 20350 32580
Site Type	Landscape park
HER number	60142
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The area to the north, west, and north-west of Armathwaite Hall was shown on mid- and later- nineteenth-century OS maps as a landscaped park.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	55
Site	Bassenthwaite quarry
NGR	NY 20820 30030
Site Type	Quarry
HER number	10852
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER

Description	This is a site of former quarrying.
Assessment	The site will not be affected by the proposed pipeline.
Site number	56
Site	Township boundary: Braithwaite/Underskiddaw
NGR	NY 25114 23987
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Over Derwent tithe map of 1840-1 (Braithwaite and Thornthwaite; DRC/8/55/7)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary follows the line of the River Derwent.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
Site number	57
Site	Township boundary: Underskiddaw/Keswick
NGR	NY 26247 23810
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Keswick tithe map of 1840-3 (DRC/8/55/2)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary follows the line of the River Greta.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works. (Routes A, B, C)
Site number	58
Site	Township boundary: Keswick/St Johns, Castlerigg, and Wythburn
NGR	NY 28229 23598
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	OS 1867
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary was shown on the OS map of 1867 and may follow the line of a stream channel, as well as field boundaries, and a road.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
Site number	59

Site	Township boundary: Braithwaite and Thornthwaite/Portinscale
NGR	NY 24536 23579
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Over Derwent tithe map of 1840-1 (Braithwaite and Thornthwaite; DRC/8/55/7)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary follows the line of the current B5292 and its extension to the east, although this is likely to be a relatively early road.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	60
Site	Township boundary: Braithwaite and Thornthwaite/Wythop
NGR	NY 21454 28482
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Wythop tithe map of 1844-5 (DRC/8/204)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. The Beck at Wythop ran to the south of the township boundary, as depicted on the Wythop tithe map of 1844-5, and it is, therefore, possible that there was a physical marker of the boundary in this area, which is also likely to have been the boundary of the former Wythop Park (Site 68).
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	61
Site	Township boundary: Wythop/Setmurthy
NGR	NY 19717 31062
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Wythop tithe map of 1844-5 (DRC/8/204)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary followed the line of Dubwath Beck.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	62
Site	Township boundary: Isel Old Park/ Bassenthwaite
NGR	NY 19932 32101

Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. This boundary followed the line of Coal Beck.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	63
Site	Township boundary: Bassenthwaite/Underskiddaw
NGR	NY 23501 28216
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3):
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. There is no clear topographic marker for the line of this boundary, which is very straight.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	64
Site	Gallowbarrow place-name, Applethwaite
NGR	NY 25748 25506
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)
Description	Four fields shown on the tithe map of 1840 to the west of Applethwaite village (Fields 180, 183, 184, and 224) featured the evocative name of 'Gallowbarrow', which is of unclear origin but could indicate the site of a mound or of a former gallows.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	65
Site	Calverts Bridge, Keswick
NGR	NY 27432 23832
Site Type	Bridge
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)

Description	Calverts Bridge was shown crossing the River Greta on the tithe map of 1840.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works. (Routes A and C)

Site number	66
Site	Keswick Bridge (Greta Bridge), Keswick
NGR	NY 26308 23730
Site Type	Bridge
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)
Description	Keswick Bridge was shown crossing the River Greta on the tithe map of 1840.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	67
Site	Kiln Hauth place-name
NGR	NY 19429 31853
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Setmurthy tithe map of 1840-41 (DRC/8/204):
Description	Field 229, which was shown on the tithe map of 1840-1 within the study area to the south of Low Ruddings, was named as 'Kiln Hauth', which is likely to record the former presence of a kiln in the nearby area
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	68
Site	Wythop Park
NGR	NY 20719 30353
Site Type	Enclosed deer park
HER number	-
Statutory Designation	-
Period	?Medieval
Source	John Speed's map of Cumberland of 1611; Bowen and Kitchen's map of 1760; Donald's map of 1770-71; Wythop tithe map of 1844-5 (DRC/8/204)
Description	The park was first depicted as an enclosure at 'Wide Hope' on Speed's map of 1611. This enclosure was shown to extend as far as the western shore of Bassenthwaite Lake. The park was shown on Bowen and Kitchen's map of 1760, and Donald's map of 1770-1 provided a more detailed view of the area that did not name the park, but showed an approximately triangular area defined by the road and track network surrounding Sale Fell that appeared to represent the park. The Beck at Wythop ran to the south of the township boundary, as depicted on the Wythop tithe map of 1844-5, and it is, therefore, possible that there was a physical marker of the boundary in this area, which is also likely to have been the boundary of the former park.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	69
Site	Possible quarry
NGR	NY 28684 22701
Site Type	Quarry
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map (part 2) of 1840 (DRC/8/55/6)
Description	A possible quarry was depicted on the tithe map of 1840 as a small area defined by a dotted line to the south-east of Moor farm within a field (Field 441a) called Far Whitebarrow.
Assessment	The site will not be affected by the proposed pipeline.

Site number	70
Site	Causeway
NGR	NY 29381 21852
Site Type	Causeway
HER number	-
Statutory Designation	-
Period	Uncertain
Source	St John's Castlerigg, and Wythburn tithe map (part 2) of 1840 (DRC/8/55/6)
Description	Causeway Foot farm was depicted and named on the tithe map of 1840 and a nearby field (Field 633) was named as Causeway Dales. This suggests that a causeway was present in the area, which is likely to correspond with the line of a footpath that runs north-eastwards from Causeway Foot to cross Naddle Beck and several tributaries. This line was defined by field boundaries on the tithe map, including a stretch of parallel walling that represents a walled trackway and confirms that this was a route way.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	71
Site	Ancient enclosure
NGR	NY 23430 30008
Site Type	Enclosure
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Bassenthwaite enclosure plan of 1771 (Q/RE/1/92)
Description	The enclosure plan labelled an irregular plot lying between the current Parker Gate and the Ravenstone Hotel, on the western side of the A591 as 'Joseph Bow's ancient inclosed lands', indicating that this preceded the enclosures of the 1770s and may have been of some antiquity.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	72
Site	Site of building shown on Greenwich enclosure plan
NGR	NY 26553 23539
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial

Source	Greenwich Hospital estate plan of 1832 (D/LAW/1/171)
Description	This is the site of a building that was shown on the estate plan of 1832 fronting the northern side of Main Street
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	73
Site	Site of toll bar shown on Greenwich enclosure plan
NGR	NY 27332 23701
Site Type	Toll bar
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	Greenwich Hospital estate plan of 1832 (D/LAW/1/171)
Description	This is the site of a toll bar that was shown on the estate plan of 1832 at the eastern end of Penrith Road.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	74
Site	Site of building
NGR	NY 28151 22900
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map (part 2) of 1840 (DRC/8/55/6)
Description	This building was shown on the tithe map of 1840 but is no longer present and may survive as sub-surface remains.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	75
Site	Adam's Cross
NGR	NY 30832 20340
Site Type	Cross site
HER number	-
Statutory Designation	-
Period	Uncertain
Source	First edition OS map of 1867 at 6" to 1 mile
Description	An area to the north-west of Smaithwaite Farm was labelled 'Adam's Cross' on the OS mapping of 1867, although there was no indication whether this related to a standing monument.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	76
Site	Causeway over Shoulthwaite Gill
NGR	NY 30150 20465
Site Type	Causeway
HER number	-
Statutory Designation	-

Period	Uncertain
Source	First edition OS map of 1867 at 6" to 1 mile
Description	A causeway was shown crossing Shouldthwaite Gill amongst fields to the east of Shouldthwaite farm, in an area close to where the A591 would later be established on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	77
Site	Site of building on Brewery Lane
NGR	NY 26703 23546
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	First edition OS map of 1867 at 6" to 1 mile
Description	A large building, which may have been a brewery, was shown on the western side of Brewery Lane on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	78
Site	Site of building on Main Street
NGR	NY 26574 23541
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	First edition OS map of 1867 at 6" to 1 mile
Description	A building was shown on slightly set back from Main Street on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	79
Site	Site of building on Main Street
NGR	NY 26566 23528
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	First edition OS map of 1867 at 6" to 1 mile
Description	A building was shown fronting Main Street on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	80
Site	Township boundary: Setmurthy/Isel Old Park
NGR	NY 20067 32218
Site Type	Boundary
HER number	-
Statutory Designation	-

Period	Uncertain
Source	Setmurthy tithe map of 1840-41 (DRC/8/204)
Description	The township boundaries in this area may have been established as very early territorial boundaries pre-dating the medieval period. The boundaries tend to utilise natural features, such as stream and river channels and it is not known whether they are associated with man-made markers, such as banks, ditches, or boundary stones. The boundary follows the line of the River Derwent.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	81
Site	Site of building east of Brewery Lane
NGR	NY 26699 23532
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	This building was shown to the western side of Brewery Lane on the OS map of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	82
Site	Site of building to the west of A591
NGR	NY 22139 32028
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	This building was shown to the west of the northern end of the current A591 on the OS map of 1867
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	83
Site	Site of building cluster to the south of Parker Gate
NGR	NY 23409 30279
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	A cluster of three buildings was shown to the south of Parker Gate on the OS map of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	84
Site	Site of buildings to the west of Parker gate
NGR	NY 23451 29950
Site Type	Buildings
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	A cluster of buildings were shown to the western side of the current enclosed curtilage of Far House (now Dyke Nook) although the remaining depicted buildings fell within the current perimeter of the farm yard.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	85
Site	Site of lodge and spout at Sand Hill
NGR	NY 23351 28859
Site Type	Lodge
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	The lodge at Sand Hill was shown as a different shape to the current lodge on the OS map of 1867 and lying slightly to the north of the current lodge.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	86
Site	Mire House garden
NGR	NY 23432 28284
Site Type	Garden
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	The gardens at Mire House had been subject to landscaping and the creation of a formal layout by the time of the production of the OS map of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	87
Site	Well near Kiln How
NGR	NY 23503 27485
Site Type	Well
HER number	-
Statutory Designation	-
Period	Uncertain
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	Two wells (Sites 87 and 88), with associated rectangular structures, were shown on the OS mapping of 1867 in the vicinity of Kiln How, with one lying to each side of the current A591.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	88
Site	Well near Kiln How
NGR	NY 23487 27485
HER number	-
Statutory	
Designation	-
Period	Uncertain
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	Two wells (Sites 87 and 88), with associated rectangular structures, were shown on the OS mapping of 1867 in the vicinity of Kiln How, with one lying to each side of the current A591.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	89
Site	Well north of Long Close
NGR	NY 23967 26702
HER number	-
Statutory	
Designation	-
Period	Uncertain
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	A well was shown on the OS mapping of 1867 lying to the north of Long Close.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	90
Site	Gardens at Lyzzick Hall lodge
NGR	NY 25047 36064
Site Type	Garden
HER number	-
Statutory	
Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	Formal gardens were shown to the west of Lyzzick Hall lodge within land that is currently largely occupied by buildings associated with Lyzzick Hall hotel.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	91
Site	Site of buildings to the south of Crookety Bridge
NGR	NY 25322 25796
Site Type	Buildings
HER number	-
Statutory	
Designation	-
Period	Post-medieval/Industrial
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	A cluster of buildings that is no longer present was shown to the south of Crookety Bridge.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	92
Site	Site of building west of Brewery Lane
NGR	NY 26666 23561
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition mapping of 1864-95 at 25" to 1 mile
Description	This building was shown to the west of Brewery Lane on the OS mapping of 1864-95.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	93
Site	Site of building east of Richardson's Lane
NGR	NY 26640 23581
Site Type	Building
HER number	-
Statutory Designation	-
Period	Post-medieval/Industrial
Source	OS first edition mapping of 1864-95 at 25" to 1 mile
Description	A small building was shown to the east of Richardson's Lane (Otley Road) on the OS mapping of 1864-95.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	94
Site	Enclosed fields east of Thornthwaite
NGR	NY 22517 26103
Site Type	Enclosed fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Over Derwent tithe map of 1840-1 (Braithwaite and Thornthwaite; DRC/8/55/7)
Description	Most of the fields shown in this area on the tithe map of 1840-1 were irregular in shape and size and appeared to have developed gradually in an ad hoc manner and some of them may have been of some antiquity at the time of the tithe survey, with evidence of large enclosures having been gradually sub-divided.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	95
Site	Strip fields east of Braithwaite
NGR	NY 23426 23829
Site Type	Strip fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Over Derwent tithe map of 1840-1 (Braithwaite and Thornthwaite; DRC/8/55/7)
Description	The area to the east of Braithwaite village comprised numerous parallel curvilinear strip fields, as depicted on the tithe map of 1840-1, which are likely to have been formed in association with arable agriculture and to have been utilised for medieval-

Assessment	style ridge and furrow cultivation, with narrow parallel strips of land defining allotments of land subject to cultivation by different individuals. The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	96
Site	Strip fields south-west of Applethwaite
NGR	NY 25952 25383
Site Type	Strip fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)
Description	The area to the south-west of Applethwaite comprised parallel curvilinear strip fields, as depicted on the tithe map of 1840, which are likely to have been formed in association with arable agriculture and to have been utilised for medieval-style ridge and furrow cultivation, with narrow parallel strips of land defining allotments of land subject to cultivation by different individuals.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	97
Site	Enclosed fields south-west of Applethwaite
NGR	NY 25827 25349
Site Type	Enclosed fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)
Description	Irregular plots within one or more larger enclosures were depicted to the south-west of Applethwaite on the tithe map of 1840.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	98
Site	Enclosed fields at Castlerigg
NGR	NY 28365 22888
Site Type	Enclosed fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	St John's Castlerigg, and Wythburn tithe map (part 2) of 1840 (DRC/8/55/6)
Description	The tithe map of 1840 showed that part of the study area remained common land at this date, with Chestnut Hill (A591) running through unenclosed land and enclosures associated with Moor, and Castlerigg farms were conspicuous within the field system patterns.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	99
Site	Enclosed fields at Mire Side
NGR	NY 323275 31043
Site Type	Enclosed fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	A probable ancient enclosure associated with Mire Side was visible within the layout of fields to the north of Parker Gate on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	100
Site	Strip fields west of Bassenthwaite
NGR	NY
Site Type	Strip fields
HER number	-
Statutory Designation	-
Period	? Medieval
Source	OS first edition of 1867 mapping at 6" to 1 mile
Description	Strip fields were evident on the OS mapping of 1867 to the west of Bassenthwaite village and these may be of medieval origin.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	101
Site	Linear earthwork visible on aerial photographs
NGR	NY 28932 22536
Site Type	Earthwork
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Modern aerial photographs
Description	A prominent linear bank aligned north/south that continued the line of a field boundary was visible on aerial photographs to the west of Castlerigg farm.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	102
Site	Parallel linear earthworks visible on aerial photographs
NGR	NY 28763 22642
Site Type	Earthwork
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Modern aerial photographs
Description	Parallel linear earthworks aligned north-west/south-east that might represent a hollow way were visible on aerial photographs to the west of Castlerigg farm.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	103
Site	Broad ridge and furrow visible on aerial photographs
NGR	NY 29055 22454
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was visible on modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	104
Site	Linear earthwork visible on aerial photographs
NGR	NY 28882 22552
Site Type	Earthwork
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Modern aerial photographs
Description	A linear bank aligned north/south that continued the line of a field boundary was visible on aerial photographs to the west of Castlerigg farm.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	105
Site	Sub-ovoid earthwork visible on aerial photographs
NGR	NY 28861 22585
Site Type	Earthwork
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Modern aerial photographs
Description	A sub-ovoid earthwork was also visible to the west of Castlerigg farm, and is of uncertain date or function.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	106
Site	Curvilinear crop and parch mark visible on aerial photographs
NGR	NY 28527 22855
Site Type	Crop and parch mark
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Modern aerial photographs
Description	A long curving mark visible on modern aerial photographs as a distinctive area of parching that coincided with the concentrated growth of dark vegetation ran to the south of Moor.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	107
Site	Broad ridge and furrow
NGR	NY 25788 25394
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	108
Site	Broad ridge and furrow
NGR	NY 23293 29085
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	109
Site	Broad ridge and furrow
NGR	NY 23363 30934
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	110
Site	Broad ridge and furrow
NGR	NY 23239 31328
Site Type	Broad ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	111
Site	Broad ridge and furrow
NGR	NY 21209 32667
Site Type	Broad ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	112
Site	Broad ridge and furrow
NGR	NY 21209 32667
Site Type	Broad ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was identifiable from modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	113
Site	Nominated English Lake District World Heritage Site (WHS)
NGR	-
Site Type	Nominated WHS
HER number	-
Statutory Designation	-
Period	Multiple periods contribute to the Outstanding Universal Significance (OUV) of the nominated WHS.
Source	LDWHPP 2013
Description	The Lake District National Park has been nominated for World Heritage Site (WHS) status by the UK government as 'The English Lake District' and is to be considered for inscription on the World Heritage List by UNESCO in 2017 (LDWHPP 2013, DCMS 2014). The nominated Outstanding Universal Value (OUV) for the Lake District is defined within the <i>Technical Evaluation of the Future World Heritage Nomination for the English Lake District</i> (LDWHPP 2013) and includes the importance of the area as the prime example of a landscape that results from the 'combined works of nature and man'. It is described as a unique example of the long evolution of an agro-pastoral society, with the physical elements of farming and the spectacular natural setting creating scenic beauty that was appreciated by writers and artists, and fuelled the picturesque movement of the late-eighteenth century. The Lake District is also recognised as the origin of the practice of applying principles of conservation to scenic and cultural landscapes and the creation of protected landscapes. The three core elements that form the basis of the OUV of the nominated WHS are: Continuity of traditional agro-pastoralism and local industry in a spectacular mountain landscape; Discovery and appreciation of a rich cultural landscape; Development of a model for protecting cultural landscape (LDWHPP 2013, 6-7). Heritage assets within the study area that contribute to the OUV of the nominated WHS are: Sites 01-04, 06, 08, 10-12, 15, 16, 18, 19, 21-3, 25-9, 32-5, 37-42, 46-51, 53-5, 67, 69-71, 76, 82-91, 94-100, 103, 107-12, 115
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	114
Site	Roman gully
NGR	NY 23628 27250
Site Type	Gully
HER number	60653
Statutory Designation	-
Period	Romano-British
Source	LDNP HER
Description	This gully is considered to be of possible Roman date, due to its alignment along the proposed route of a Roman road between Keswick and Caermote (Site 17). It measures less than 0.7m wide and less than 0.45m deep with a rounded base and steep sides. It was identified during an archaeological evaluation by Wardell Armstrong Archaeology Ltd in 2012.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	115
Site	Field barn at Kiln How
NGR	NY 23500 27468
Site Type	Barn
HER number	60652
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER
Description	This standing barn is adjacent to the road in the north-east of the field and is aligned north-east/south-west. It has stone walls and a slate roof.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	116
Site	Bassenthwaite Lake Station (Peelwyke)
NGR	NY 19891 30986
Site Type	Railway station
HER number	10815
Statutory Designation	-
Period	Industrial
Source	LDNPA HER; OS first edition of 1867 mapping at 6" to 1 mile
Description	This station was marked on the OS mapping of 1867 as Peelwyke Station and formed part of the Cockermouth, Keswick and Penrith Railway (Site 21), which opened in 1865 and closed in 1966.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	117
Site	Naddle Bridge Causeway
NGR	NY 230100 24200
Site Type	Causeway
HER number	6688
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	Earthworks that may represent an embanked causeway were identified by T Clare in February 1989.

Assessment The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number 118
Site Bramcrag Quarry
NGR NY 32000 22000
Site Type Quarry
HER number 11742
Statutory Designation -
Period Industrial/modern
Source LDNPA HER; OS 1956; OS 1979
Description Bramcrag Quarry opened and closed between 1900 and 1956 and was shown on the OS mapping produced in 1979.
Assessment The site is unlikely to be impacted upon by ground works associated with the proposed pipeline works.

Site number 119
Site Legburthwaite Saw Mill
NGR NY 31820 19750
Site Type Saw mill
HER number 12093
Statutory Designation -
Period Industrial
Source LDNPA HER; OS 1867; OS 1899; OS 1925
Description A saw mill was depicted on the first edition OS map at 6" to 1 mile. This site was identified during a field survey conducted by LUAU in 1996. Several phases of buildings associated with the mill were established within the proposed pipeline route during the later-nineteenth and early-twentieth century (OS 1899; OS 1925). The mill was identified as Legburthwaite Corn Mill on the OS map of 1867.
Assessment Buildings at the western side of the have the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number 120
Site Dyke and enclosure, St John's, Castlerigg, and Wythburn
NGR NY 29900 24300
Site Type Earthworks
HER number 13569
Statutory Designation -
Period Uncertain
Source LDNPA HER; St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description Various earthworks, including dykes, trackways, and an enclosure, are visible on aerial photographs from the Cumbria County Council Collection. The site was visited in August 1994 as part of the Monument Protection Programme. Nothing could be seen at ground level and the aerial photographs were not available at that time. The site was not, therefore, put forward for scheduling. The antiquity of agricultural usage in this general area is suggested by the field name 'Townfield' recorded on the schedule for the tithe map of 1840, which suggests that this may have been a common arable field as early as the medieval period.
Assessment The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	121
Site	Naddle Bridge Roman road, St John's, Castlerigg, and Wythburn
NGR	NY 30100 23900
Site Type	Roman road
HER number	17807
Statutory Designation	-
Period	Romano-British
Source	LDNPA HER
Description	Excavations were undertaken in October 1977 but appear to have been inconclusive, neither definitely confirming or disallowing the existence of a road. An article on the unpublished excavations on and off the roman roads in Cumberland appears in the 1988 volume of C&WAAS.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	122
Site	Broad ridge and furrow visible on aerial photographs
NGR	NY 21042 32454
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was visible on modern aerial photographs to the east of Armathwaite Hall.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	123 – Number not used
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Site number	124 – Number not used
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Site number	125
Site	Fake medieval keep at Legburthwaite, Thirlmere
NGR	NY 30980 19020
Site Type	Keep
HER number	31819
Statutory Designation	-
Period	Modern
Source	LDNPA HER
Description	This copy of a Medieval keep is a gritstone tower building with rusticated quoins on the corners and a turret tower on its south west corner. A parapet, which has fake machicolations and crenellations, is present on the top. The turret is octagonal with long arrow slits with circles on each end. All of the trimmings are in sandstone and the top of the tower is corbelled outwards by 0.2m. On the western side are four tall narrow slot windows with stained glass in them and on the northern side are another three slot windows that are this time just battered. On the eastern side are two smaller slot windows which are stained. The main doorway is on the southern side and above this is another slot window and a plaque. The door has a two-centred arch top and a large round moulding. The door is rectangular and is trimmed in sandstone. The lower 2m of the tower is battered out at a very slight angle. This is actually a valve house built on a large constructed platform with hatches leading down. This site was located during field survey conducted by LUAU in 1996.

Assessment	The site is an extant house and is unlikely to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	126
Site	Building at Highfield Wood, Bassenthwaite
NGR	NY 22948 28956
Site Type	Building
HER number	60647
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER; OS 1895
Description	This ruined building survives to 0.3m high. Occasional bricks are included in the stone rubble construction and suggest that this building is of relatively late date (i.e. post-medieval/Industrial). The remains of a stone flagged roof are also present. The site was identified during a walkover survey conducted by Wardell Armstrong Archaeology Ltd in 2012. A building was shown in this location on the OS map of 1895.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	127
Site	Possible field boundary of unknown date at Highfield Wood, Bassenthwaite
NGR	NY 23003 28651
Site Type	Field boundary
HER number	60648
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	A low earth bank crosses the field east/west and turns south near the confluence of two streams. The bank measures c5-6m wide and c0.3-0.4m high. It was identified during a walkover survey conducted by Wardell Armstrong Archaeology Ltd.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	128
Site	Possible field boundary of unknown date at Highfield Wood, Bassenthwaite
NGR	NY 23003 28651
Site Type	Field boundary
HER number	60649
Statutory Designation	-
Period	Uncertain
Source	LDNPA HER
Description	A line of stones c5-6m wide by 0.3-0.4m high and aligned east/west was included in a walkover survey conducted by Minerva Heritage Ltd.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	129
Site	Trackway through Threlkeld townfield
NGR	NY 31976 24944
Site Type	Track
HER number	-
Statutory Designation	-

Period	? Medieval
Source	Threlkeld tithe map of 1842 (Q/RE/1/93)
Description	A trackway pre-dating the enclosure of Threlkeld townfield was depicted running north-east/south-west across the townfield on the Threlkeld enclosure plan. north-west/south-east across the southern part of the field. This track was also incorporated within the Threlkeld township boundary (Site 149), which may indicate that the line of the track is of some antiquity.
Assessment	The site is likely to be impacted upon by ground works associated with the proposed pipeline works.

Site number	130
Site	Trackway through Threlkeld townfield
NGR	NY 32005 24813
Site Type	Track
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Threlkeld tithe map of 1842 (Q/RE/1/93)
Description	A trackway pre-dating the enclosure of Threlkeld townfield was depicted running north-west/south-east across the southern part of the townfield on the Threlkeld enclosure plan. This track was also incorporated within the Threlkeld township boundary (Site 149), which may indicate that the line of the track is of some antiquity.
Assessment	The site is likely to be impacted upon by ground works associated with the proposed pipeline works.

Site number	131
Site	Barrow House and Lawn
NGR	NY 31020 19126
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/5)
Description	A field (Field 834) shown on the tithe map of 1840 to the north of Thirlmere was named 'Barrow House and Lawn', which could indicate the site of a mound.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	132
Site	Laithey Hill
NGR	NY 29015 24343
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	A field (Field 510) shown on the tithe map of 1840 to the east of Keswick was named 'Laithey Hill', which may derive from the Old Norse meaning barn and could indicate the presence of a former structure.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	133
Site	Sandbeds
NGR	NY 29591 24554
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	A field (Field 310) shown on the tithe map of 1840 to the east of Keswick was named 'Sandbeds', which may relate to a former use for sand extraction.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	134
Site	Coppice
NGR	NY 28325 23656
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	A field (Field 485) shown on the tithe map of 1840 to the east of Keswick was named 'Coppice', which is likely to reflect its former use as an area of managed coppice woodland.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	135
Site	Chapel Close
NGR	NY 29472 21794
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	
Description	A field named 'Chapel Close' (Field 626; Site 135) lay to the north of Dale Bottom and a second field named 'Grave Field' (Field 631) lay to the north of this, beyond the study area. These may indicate a former ecclesiastical site in the area.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	136
Site	Threlkeld townfield
NGR	NY 32027 24914
Site Type	Field system
HER number	-
Statutory Designation	-
Period	?Medieval
Source	Threlkeld tithe map of 1838-49 (DRC/8/186); Threlkeld enclosure plan of 1842 (Q/RE/1/93)
Description	Curving strip fields defined by field boundaries to the south of the village indicate areas where arable agriculture will have been undertaken in a large formerly open area likely to have corresponded with a townfield. It is likely that the townfield

	gradually decreased in extent, with the ad-hoc enclosure of fields in the northern and eastern parts, leaving the south-eastern corner as a remaining open area of common land plots until 1842. Indeed, at least one field (Field 193) in the northern portion of this area was named 'townfield' on the schedule accompanying the tithe map of 1849 and numerous fields in the south-western area were also recorded as 'townfield' (DRC/8/186). The boundaries of these plots were depicted in an enclosure document of 1842 (Q/RE/1/93), which described the area as a townfield and detailed the different individuals who utilised each plot. This document described how this remaining area of open field would be rationalised and demarcated, and which plots would be assigned to each individual.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	137
Site	Mill at Threlkeld
NGR	NY 31841 25070
Site Type	Place-name
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Threlkeld tithe map of 1838-49 (DRC/8/186)
Description	Fields 183, 186, 187, 188, and 189, in the vicinity of the River Glenderamickin, featured the name 'Mill Yard', although it is unclear to which mill these field names relate.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	138
Site	Plantation at Catstocks Wood
NGR	NY 23002 28173
Site Type	Plantation
HER number	60650
Statutory Designation	-
Period	Post-medieval/Industrial
Source	LDNPA HER; OS 1895
Description	A roughly circular line of stones was identified demarcating an area of tall trees between Mire House and Bassenthwaite Water. This may indicate an area of plantation and was identified during a walkover survey by Wardell Armstrong in 2012. The site was depicted on the OS mapping of 1895.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	139
Site	Entrance tunnel at Threlkeld Station
NGR	NY 32020 24578
Site Type	Structure
HER number	60496
Statutory Designation	-
Period	Industrial
Source	LDNPA HER
Description	The well-preserved remains of a pedestrian entrance tunnel providing access to the station platform via an underpass, and switch gear to operate the rails, were recorded in advance of the development of the site. Part of the platform structure was also

Assessment	recorded above ground during the walkover survey. The rails have been removed and the lines have been filled in with rubble. The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	140
Site	Legburthwaite Quarry
NGR	NY 31500 19368
Site Type	Quarry
HER number	12028
Statutory Designation	-
Period	Industrial
Source	LDNPA HER; OS 1899; OS 1978-9
Description	The sites of a quarry shown on the OS map of 1899 and marked as unused on the OS mapping of 1978-9
Assessment	Buildings associated with the site have the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	141
Site	Townfield Bridge
NGR	NY 31946 24839
Site Type	Bridge
HER number	-
Statutory Designation	-
Period	?Post-medieval
Source	Threlkeld tithe map of 1838-49 (DRC/8/186); OS 1867
Description	Townfield Bridge was depicted on the Threlkeld tithe map, although not named, and was named on the OS mapping of 1867.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	142
Site	Well
NGR	NY 28685 24051
Site Type	Well
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	OS 1867
Description	The OS mapping showed a well to the south-east of a bobbin mill.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	143
Site	Denton Well
NGR	NY 27352 23720
Site Type	Well
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	OS 1867; OS 1864-95
Description	The OS mapping showed Denton's Well to the south of Keswick Bridge.

Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.
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Site number	144
Site	Crookelty Bridge
NGR	NY 25328 25837
Site Type	Bridge
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	Underskiddaw tithe map of 1840 (DRC/8/55/3)
Description	Crookelty Bridge was depicted and named on the tithe map of 1840.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	145
Site	High Briery
NGR	NY 28745 23980
Site Type	Houses
HER number	-
Statutory Designation	-
Period	Uncertain
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6); OS 1867
Description	A row of terraced houses was depicted on the tihe map of 1840 and named as High Briery on the OS mapping of 1867. The houses have been demolished.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	146
Site	Farm buildings at Lowthwaite
NGR	NY 31842 22555
Site Type	Buildings
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	An L-shaped building range was depicted at the eastern side of the Lowthwaite farm yard on the tithe map of 1840. The building has been demolished and the diversion of the road has since separated this area from the surviving cluster of farm buildings.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	147
Site	Farm building near Bridge End
NGR	NY 31572 19481
Site Type	Building
HER number	-
Statutory Designation	-
Period	?Post-medieval/Industrial
Source	St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	A single rectangular building was depicted within a small enclosure named as part of Black Steps in the accompanying schedule. The function of the building was not

	given but as there was no mention of a house in the schedule it is assumed that this was a barn.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	148
Site	Township boundary: Keswick/St Johns, Castlerigg, and Wythburn respecting Castlerigg Common
NGR	NY 27894 23438
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Keswick tithe map of 1840-3 (DRC/8/55/2); St John's Castlerigg, and Wythburn tithe map of 1840 (DRC/8/55/6)
Description	The tithe maps showed a relatively indistinct boundary between the townships, with Castlerigg common appearing to define the limit of the St John's, Castlerigg, and Wythburn township. This was, however, different to the line of the township boundary recorded on the OS map of 1867 (Site 58).
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	149
Site	Township boundary: Threlkeld/St Johns, Castlerigg, and Wythburn
NGR	NY 31970 24881
Site Type	Boundary
HER number	-
Statutory Designation	-
Period	Uncertain
Source	Threlkeld tithe map of 1842 (Q/RE/1/93); OS 1867
Description	The township boundary in this area mainly followed the line of the River, but also deviated from this to follow field boundaries and the lines of two trackways (Sites 129 and 130).
Assessment	The site is likely to be impacted upon by ground works associated with the proposed pipeline works.

Site number	150
Site	Broad and narrow ridge and furrow visible on aerial photographs
NGR	NY 31179 19350
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad and narrow ridge and furrow was visible on modern aerial photographs.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	151
Site	Broad and narrow ridge and furrow visible on aerial photographs
NGR	NY 30011 21531
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad and narrow ridge and furrow was visible on modern aerial photographs.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

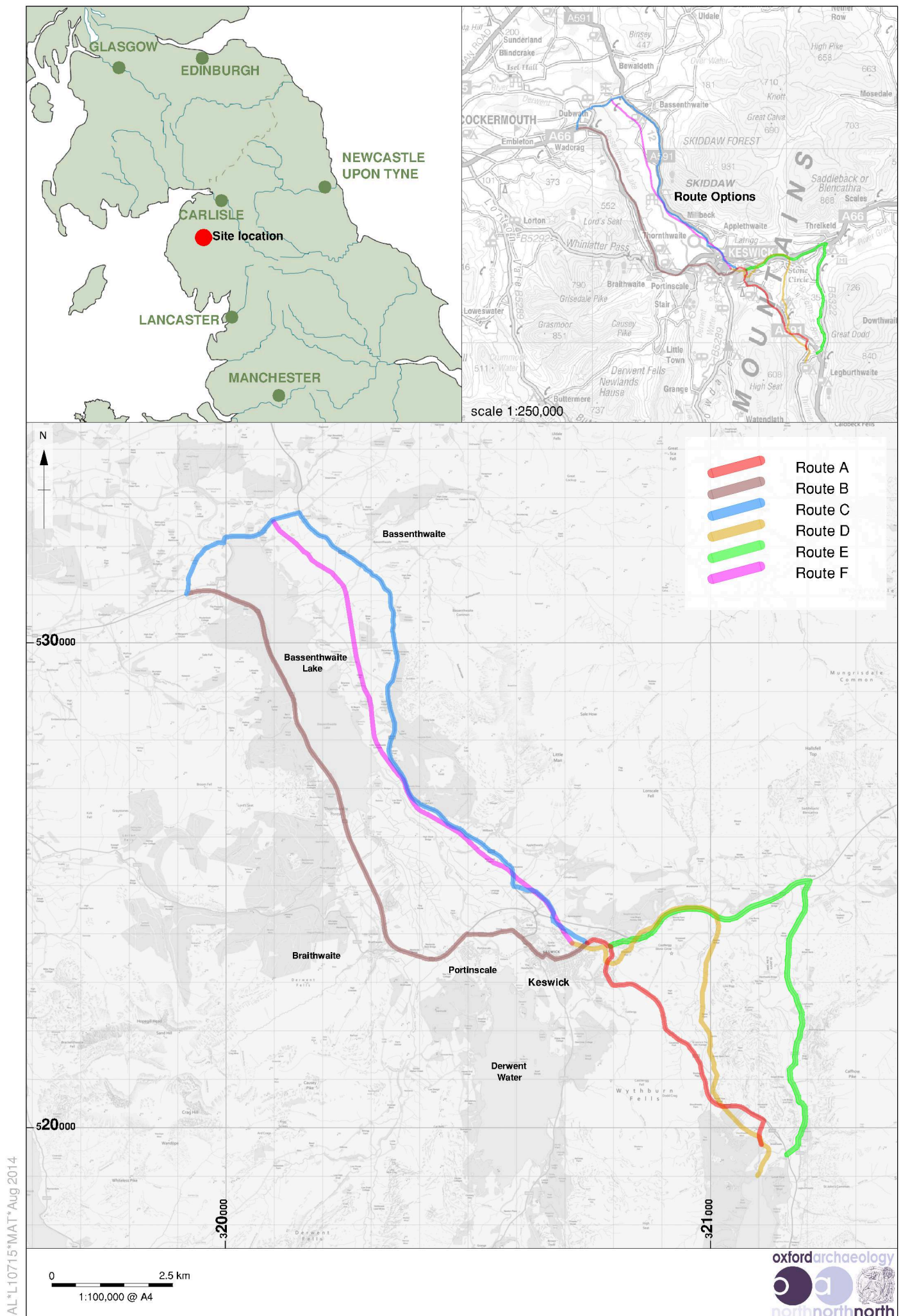
Site number	152
Site	Broad and narrow ridge and furrow visible on aerial photographs
NGR	NY 31179 19350
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad and narrow ridge and furrow was visible on modern aerial photographs.
Assessment	The site will be impacted upon by ground works associated with the proposed pipeline works.

Site number	153
Site	Broad and narrow ridge and furrow visible on aerial photographs
NGR	NY 31689 22617
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad and narrow ridge and furrow was visible on modern aerial photographs.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.

Site number	154
Site	Broad ridge and furrow visible on aerial photographs
NGR	NY 31817 22452
Site Type	Ridge and furrow
HER number	-
Statutory Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was visible on modern aerial photographs.
Assessment	The site is likely to be impacted upon by ground works associated with the proposed pipeline works.

Site number	155
Site	Broad ridge and furrow visible on aerial photographs
NGR	NY 26770 24233
Site Type	Ridge and furrow
HER number	-
Statutory	
Designation	-
Period	? Medieval
Source	Modern aerial photographs
Description	Broad ridge and furrow was visible on modern aerial photographs.
Assessment	The site is likely to be impacted upon by ground works associated with the proposed pipeline works.

Site number	156
Site	Sub-ovoid feature visible on aerial photographs
NGR	NY 25701 25477
Site Type	Sub-ovoid feature
HER number	-
Statutory	
Designation	-
Period	Unknown
Source	Modern aerial photographs
Description	A sub-ovoid feature of unknown date, or origin was visible on modern aerial photographs to the south-west of Applethwaite.
Assessment	The site has the potential to be impacted upon by ground works associated with the proposed pipeline works.



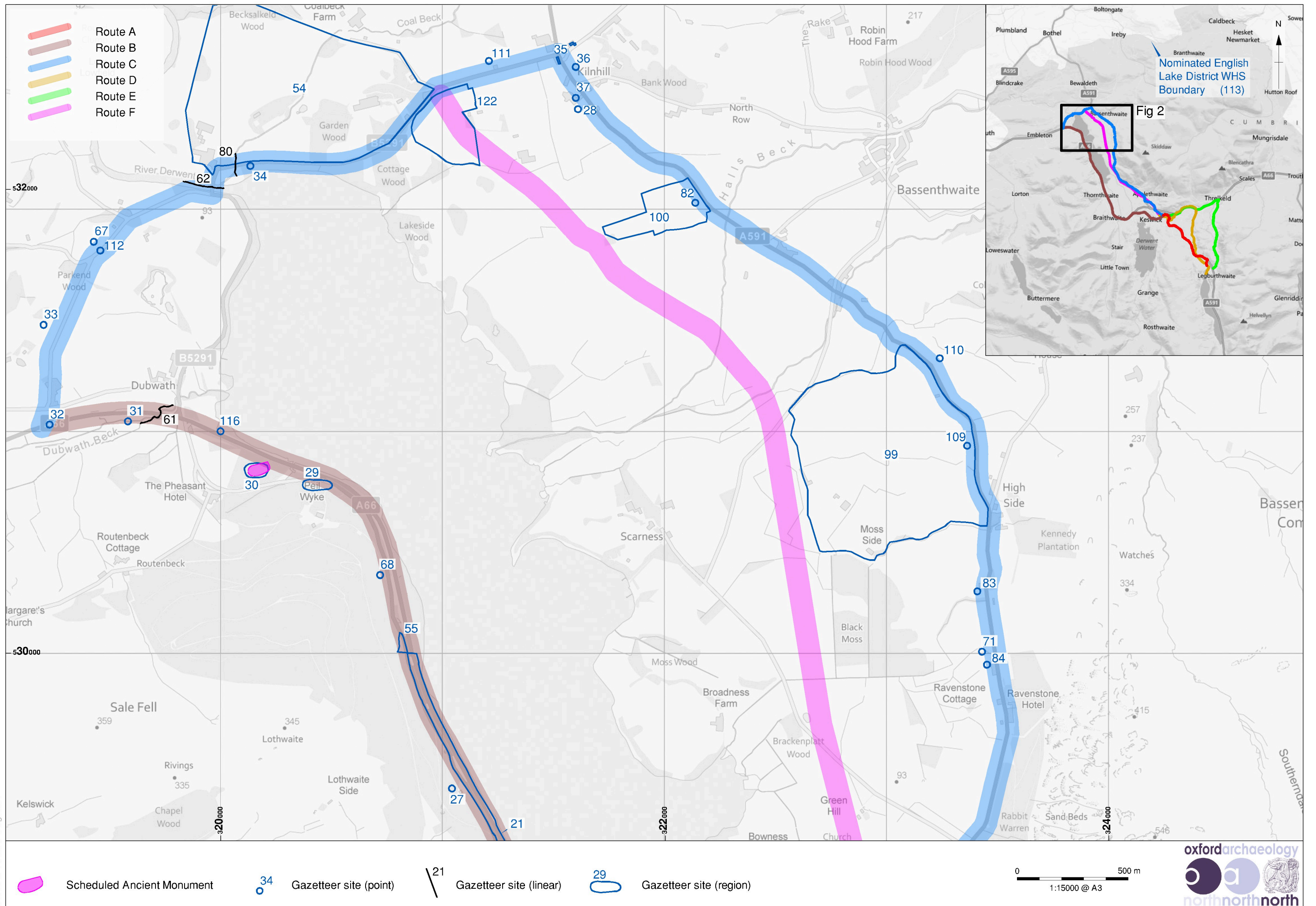
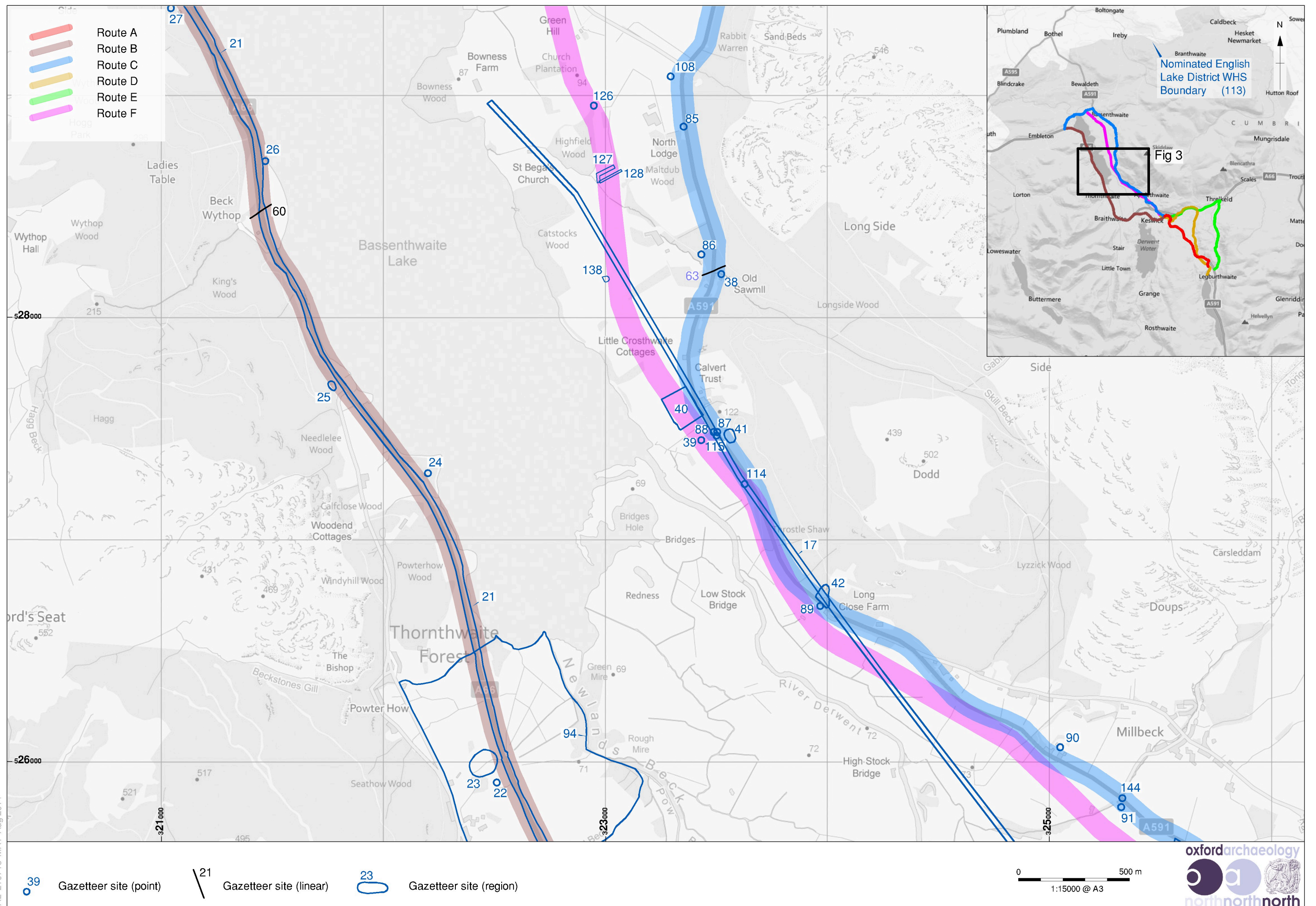


Figure 2: Plan of gazetteer sites (north)



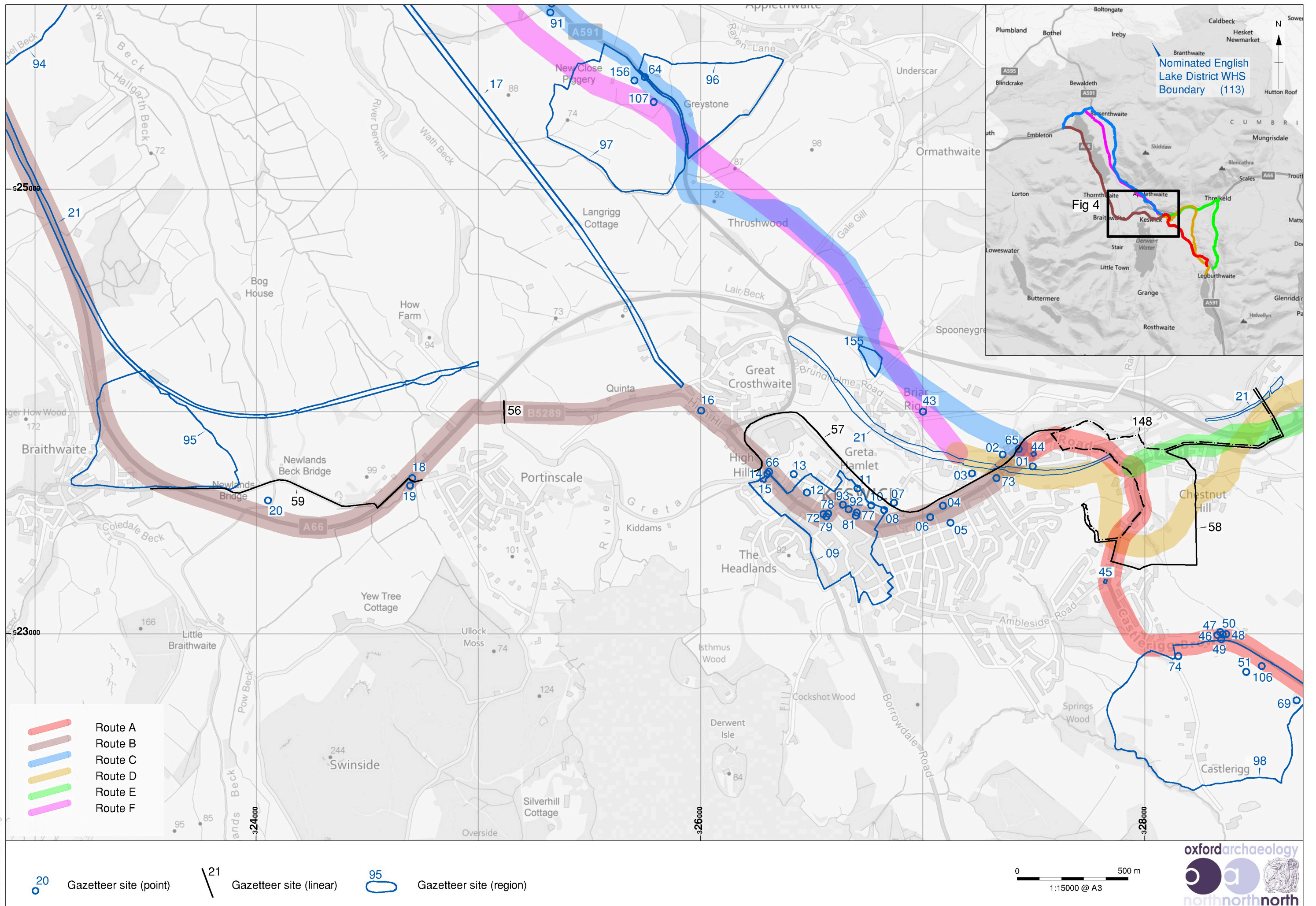
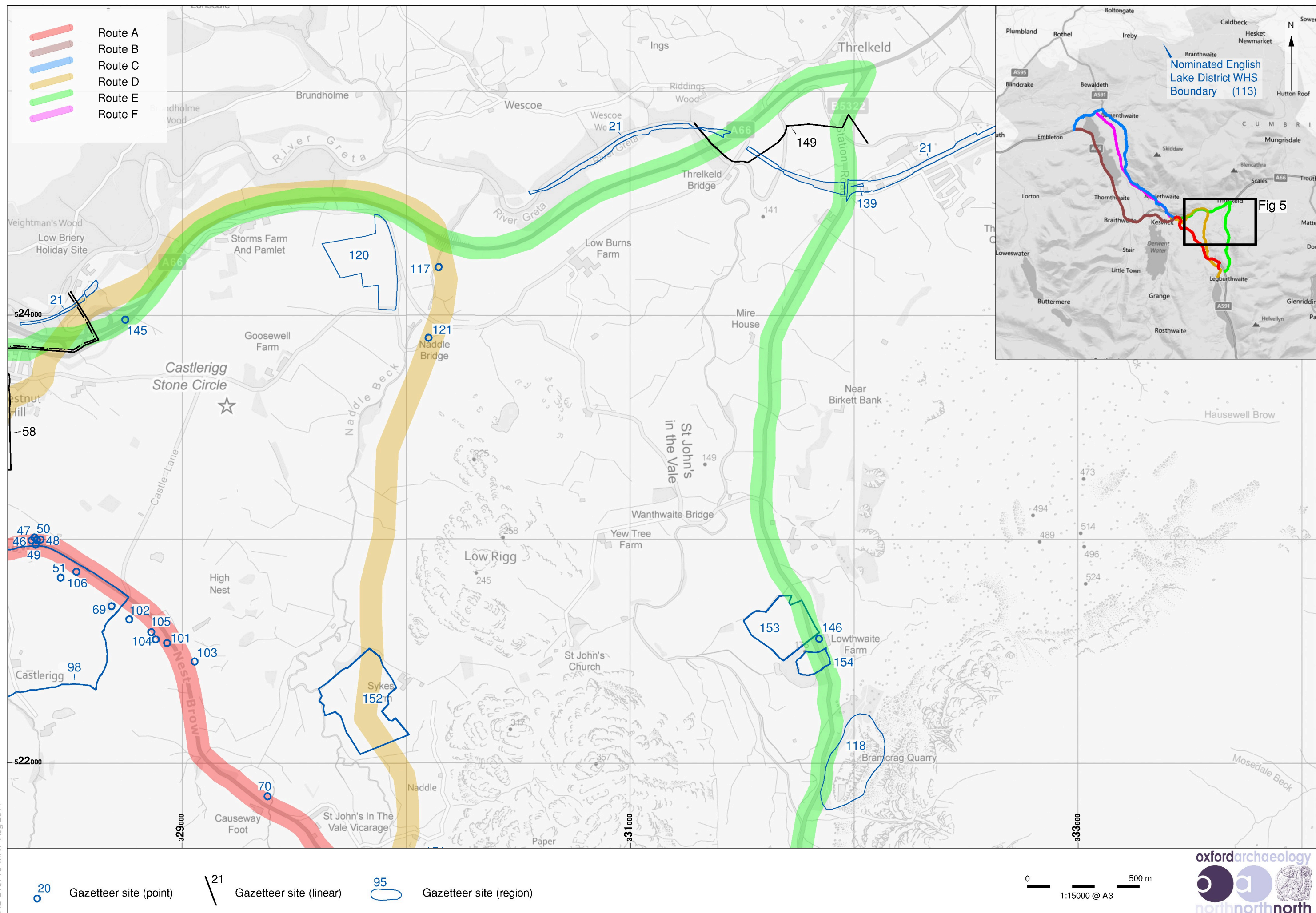
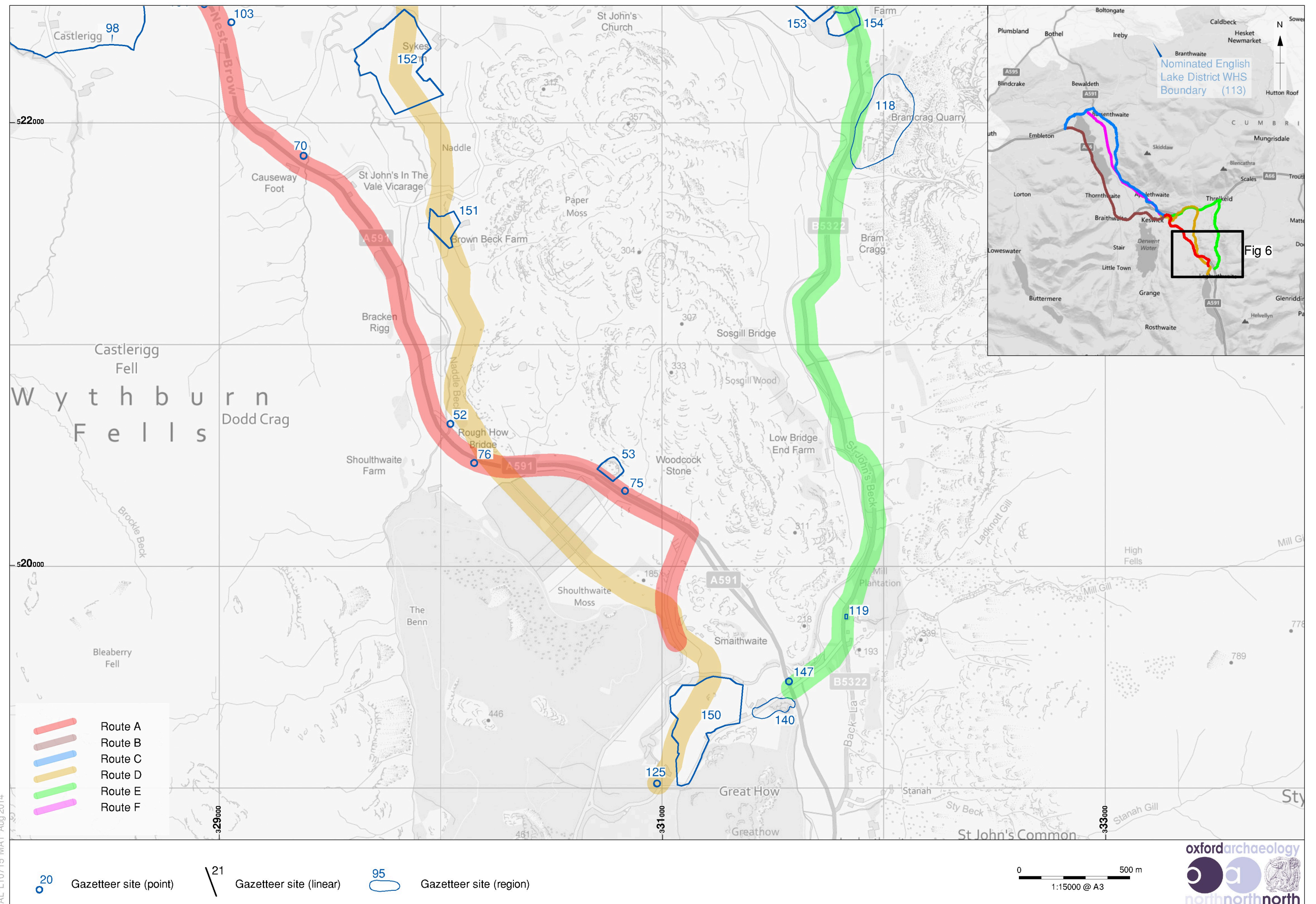


Figure 4: Plan of gazetteer sites (south central)





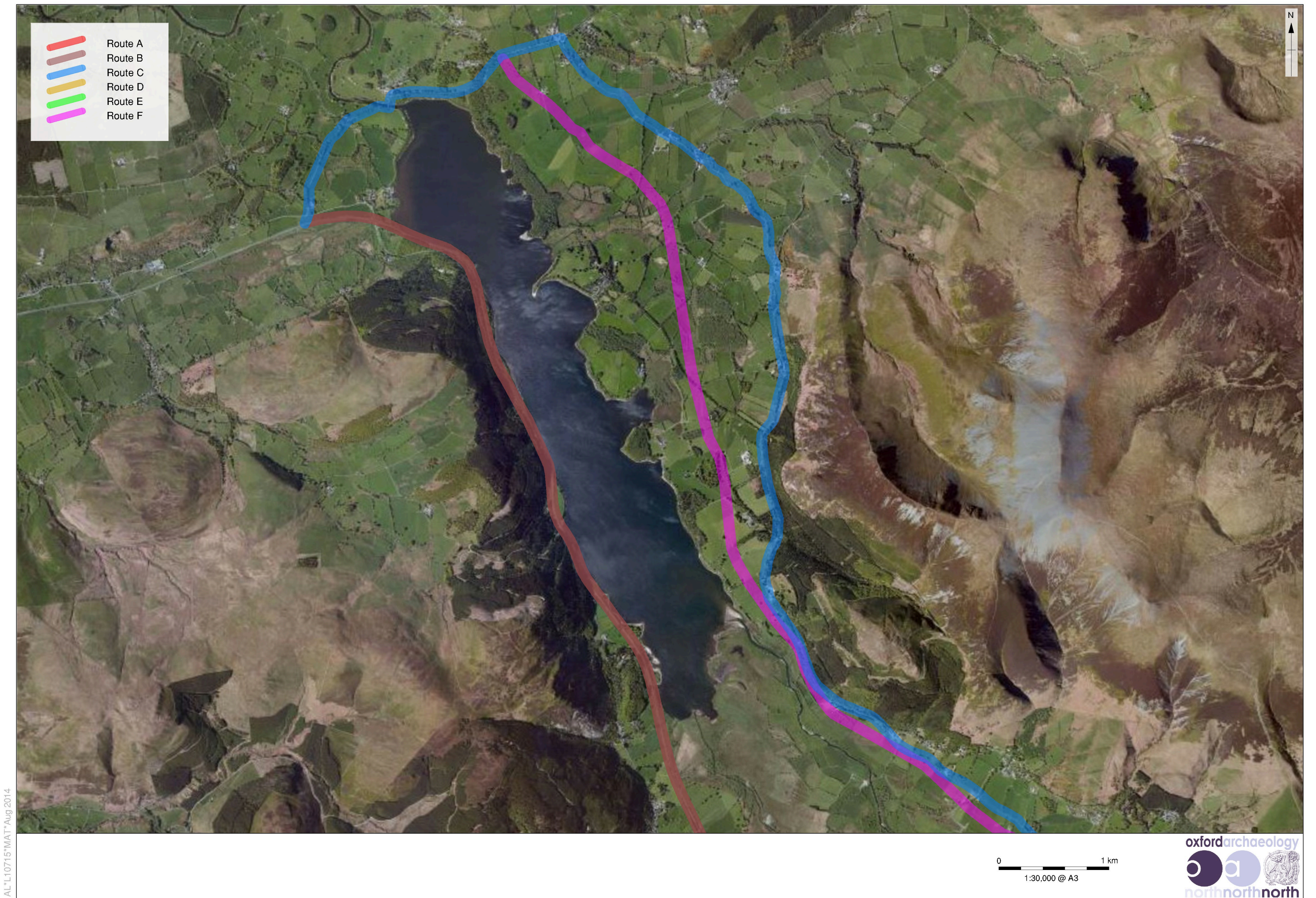


Figure 7: Route options in the northern section of the study area superimposed on aerial photography

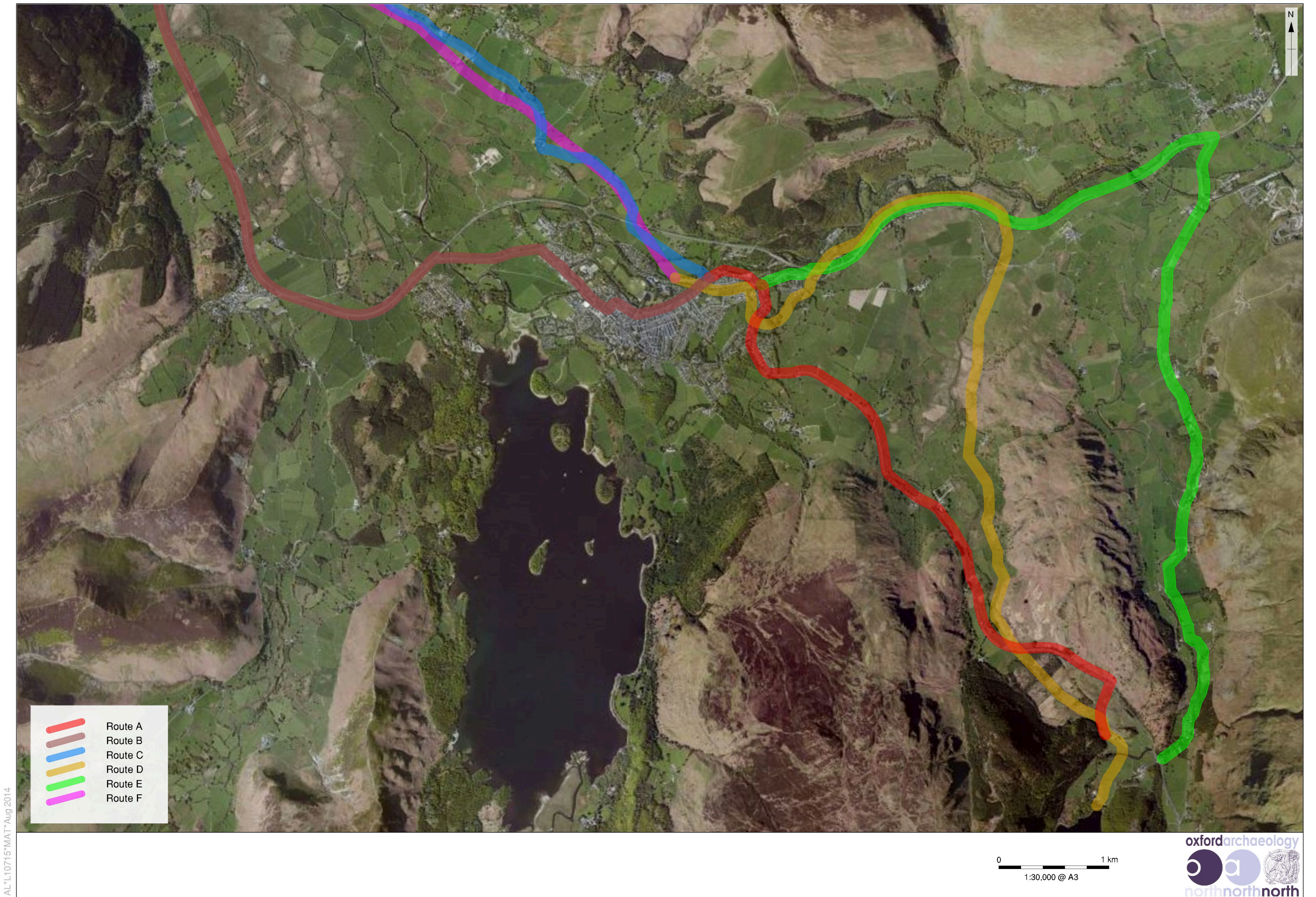


Figure 8: Route options in the southern section of the study area superimposed on aerial photography

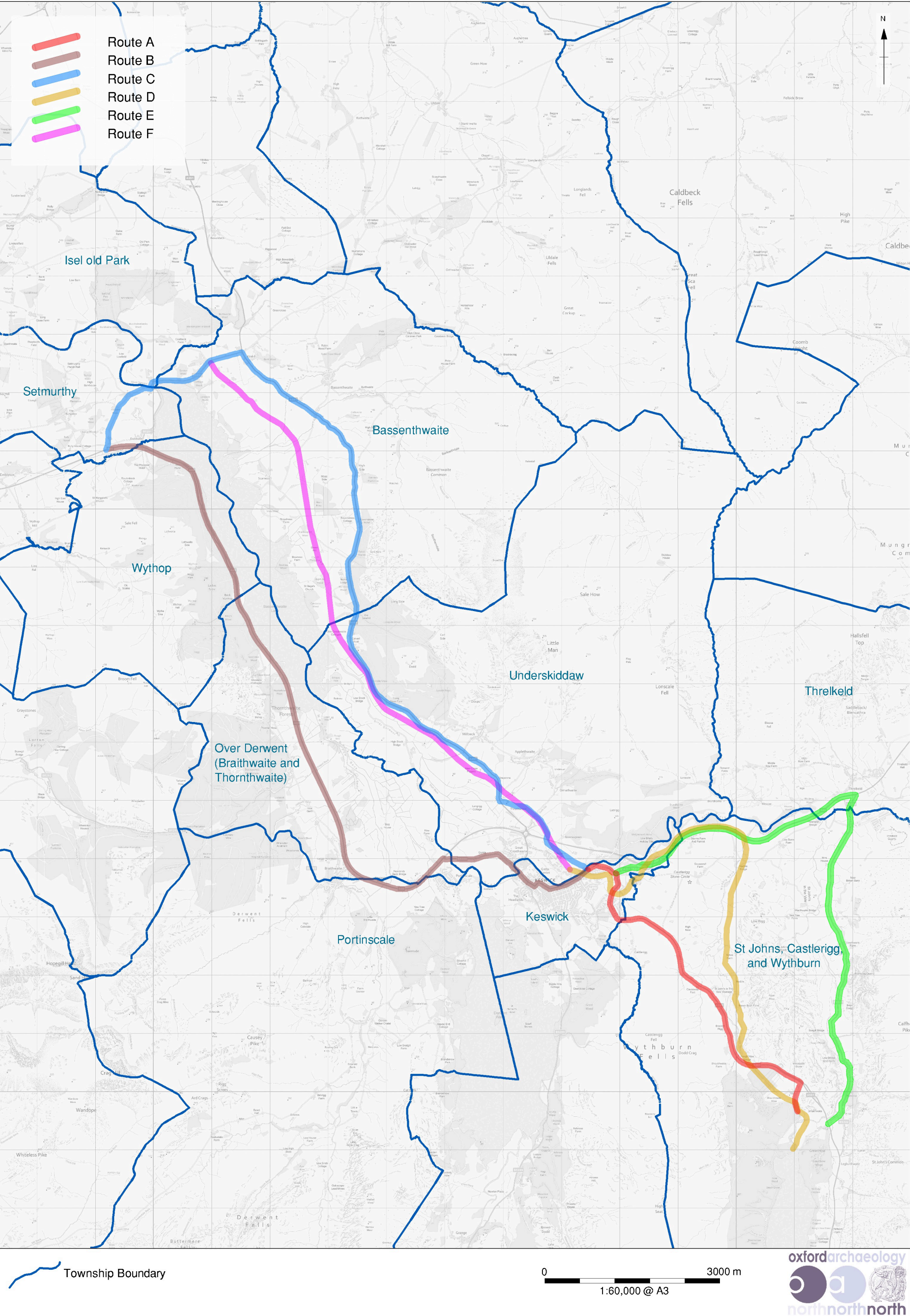


Figure 9: Plan of Township Boundaries

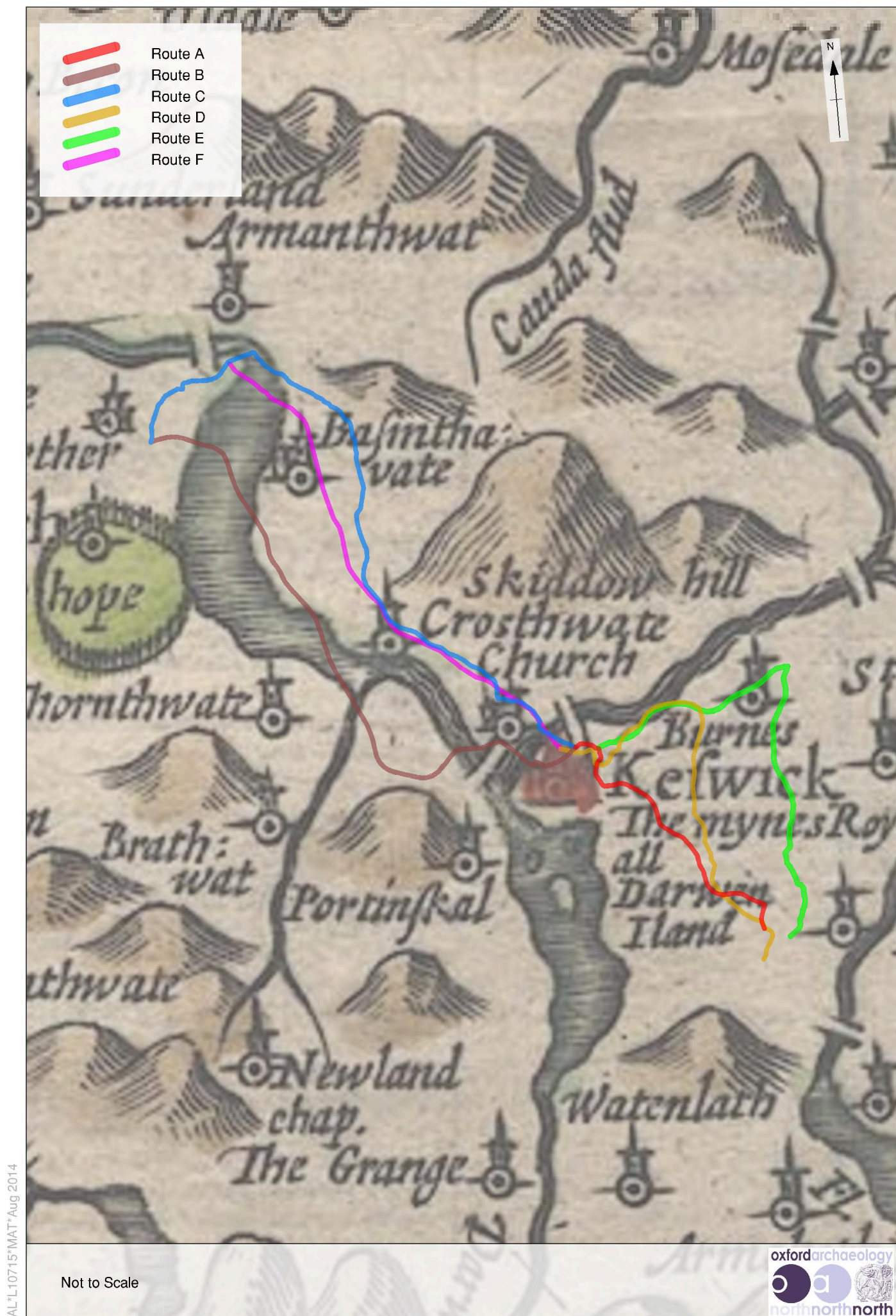


Figure 10: Approximate location of route options superimposed on Speed's map of Cumberland, 1610

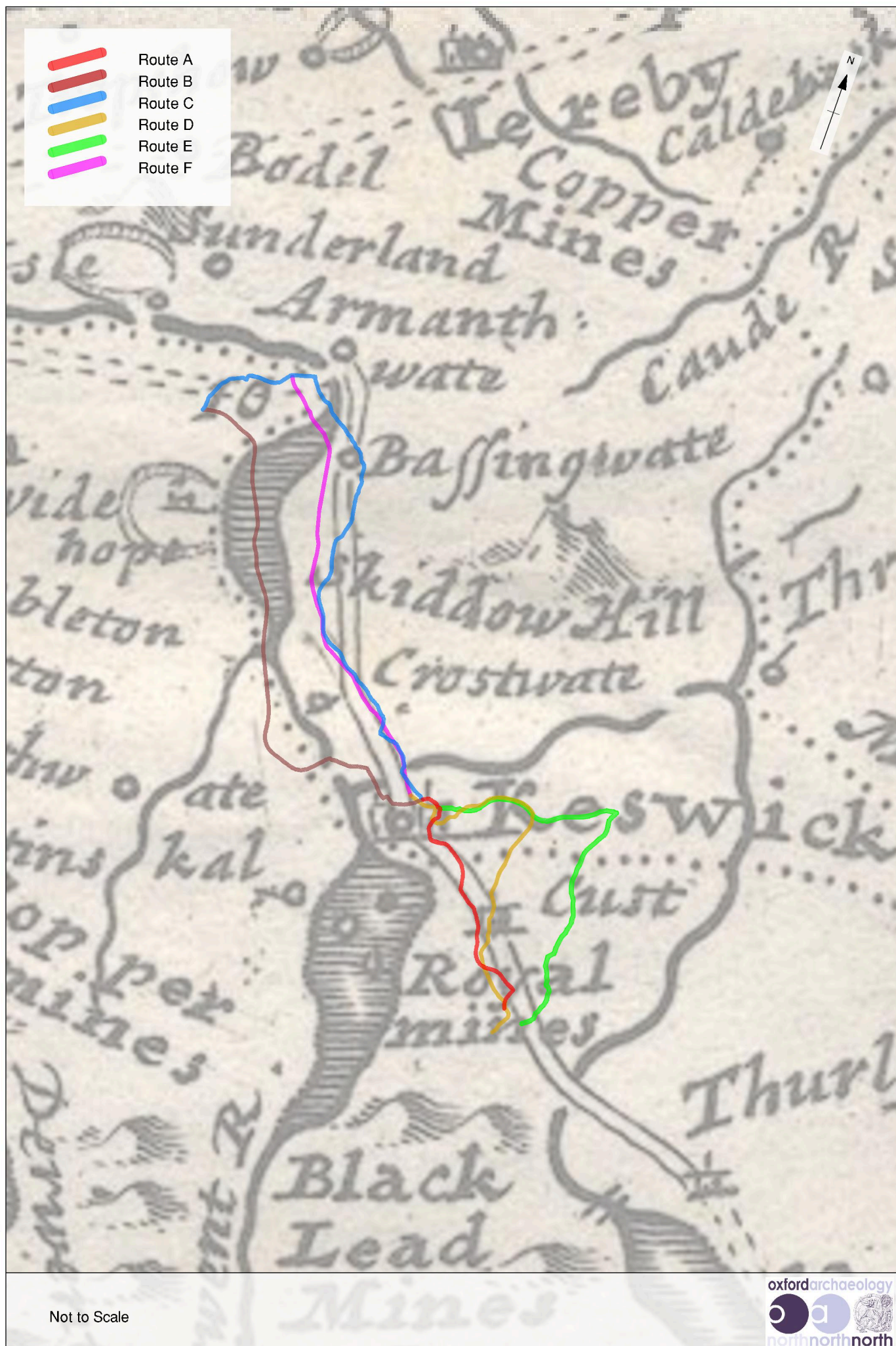


Figure11: Approximate location of route options superimposed on Moll's map of Cumberland, 1724



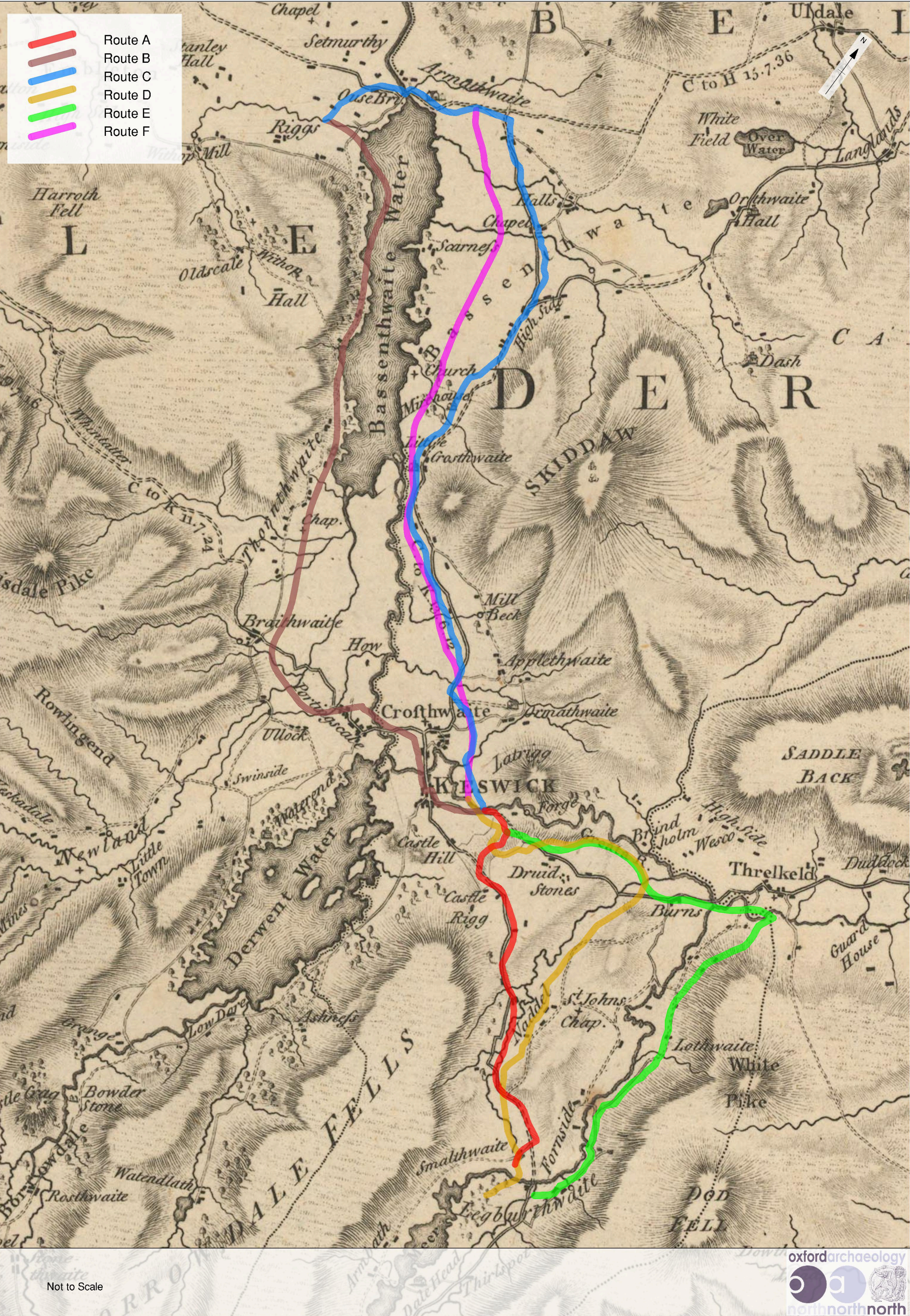


Figure 13: Approximate location of route options superimposed on Donald's map of Cumberland, 1770



Figure 14: Route options superimposed on Hogg's map of Cumberland and Westmorland, 1784



Figure 15: Approximate location of route options superimposed on Clarke's map of Broadwater, 1787

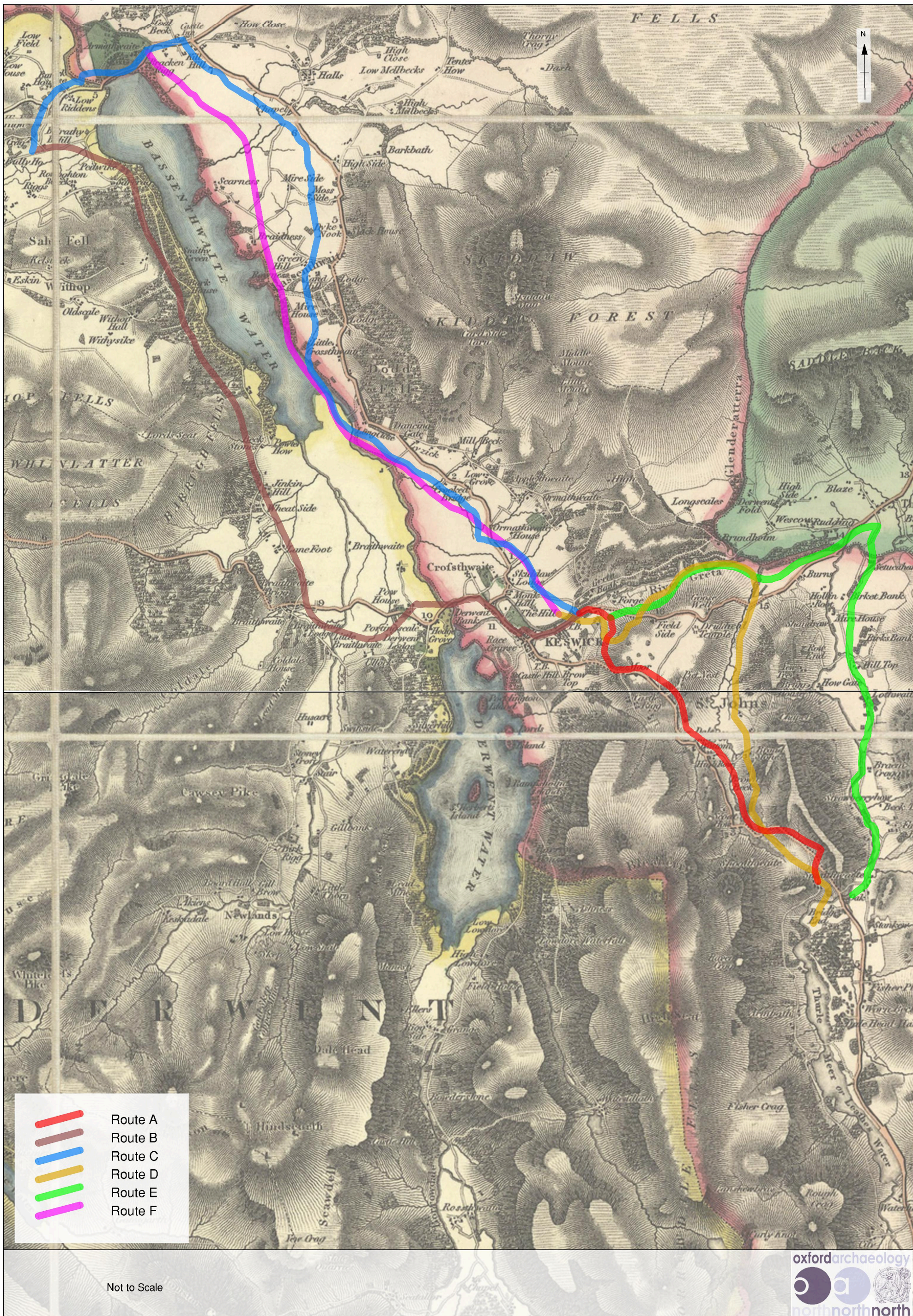


Figure 16: Approximate location of route options superimposed on Greenwood's map of Cumberland, 1824

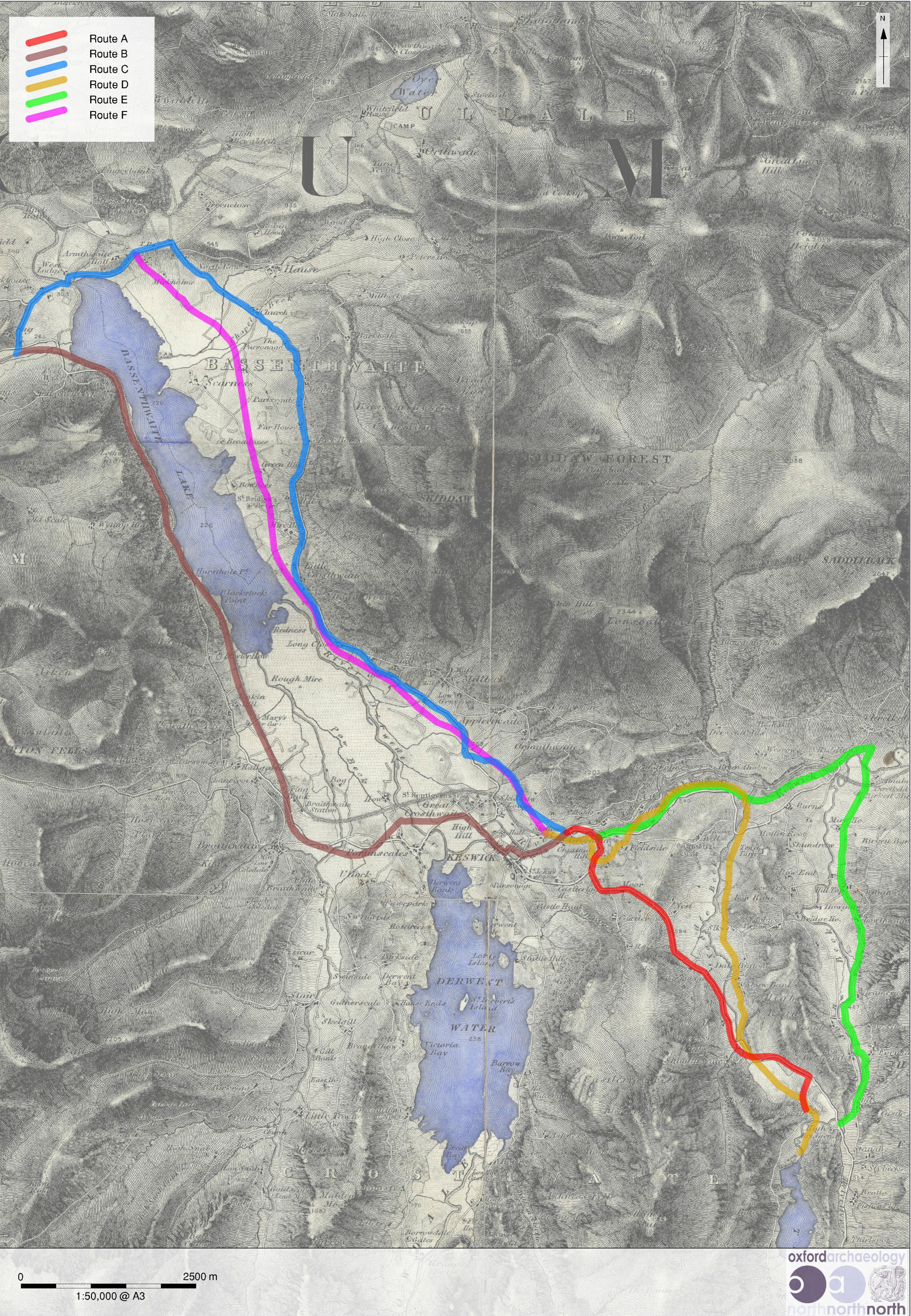
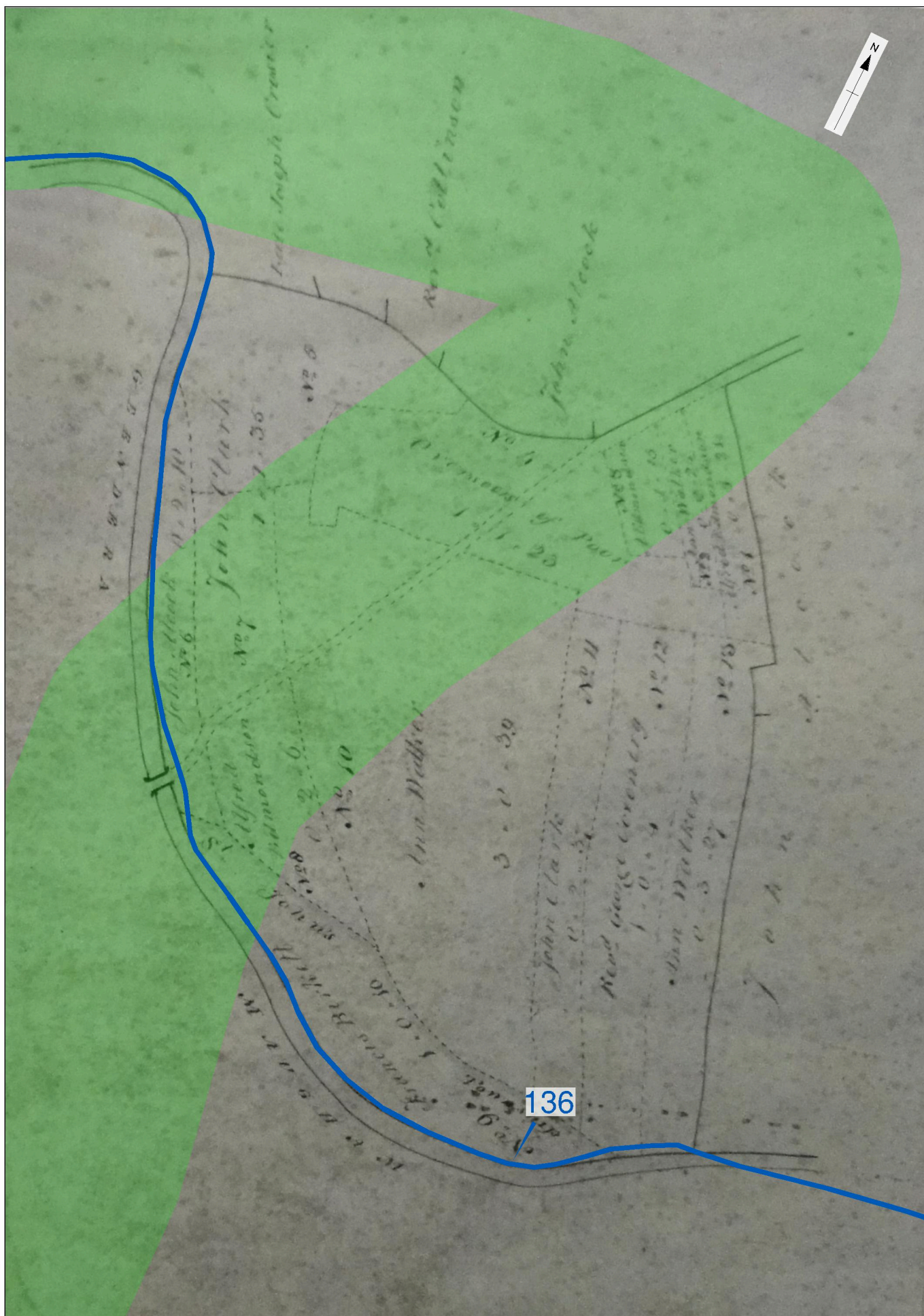


Figure 17: Location of route options superimposed on the Ordnance Survey 1":1 mile map of 1840

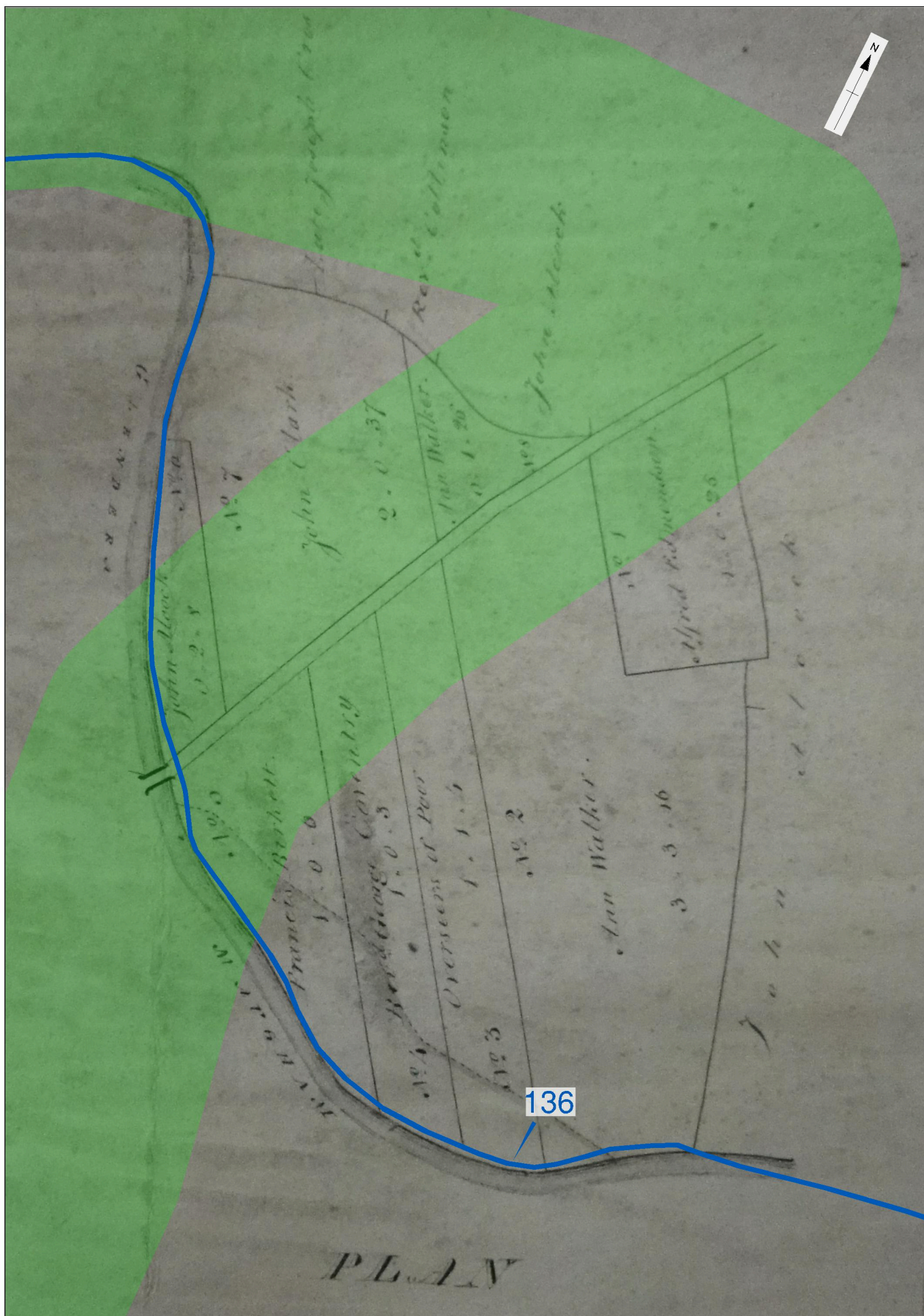


Figure 18: Route options, centred on Site **71**, superimposed on the Bassenthwaite enclosure plan of 1771



not to scale

Figure 19: Route E, centered on Threlkeld townfield (site **136**), superimposed on the pre-enclosure plan depicted on the Threlkeld enclosure act of 1842



not to scale

Figure 20: Route E, centered on Threlkeld townfield (site **136**), superimposed on the enclosure plan depicted on the Threlkeld enclosure act of 1842

Figure 21: Route options, centred on Sites **72** and **73**, superimposed on the Greenwich Hospital estate plan of 1832



Not to Scale

Figure 22: Route C, centred on Site **67**, superimposed on the Setmurthy tithe map of 1840-41

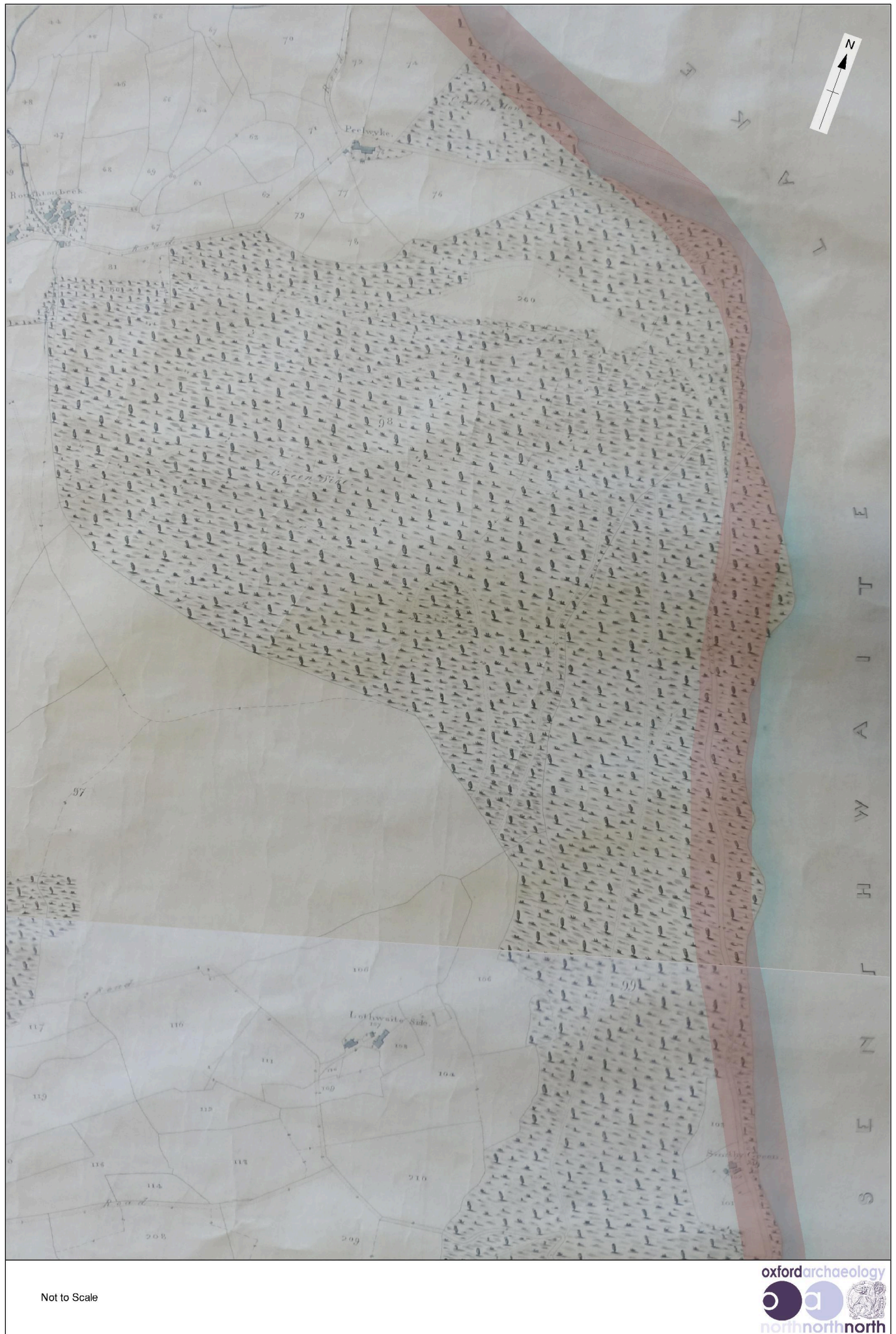


Figure 23: Route B superimposed on the northern section of the Wythop tithe map of 1844-45

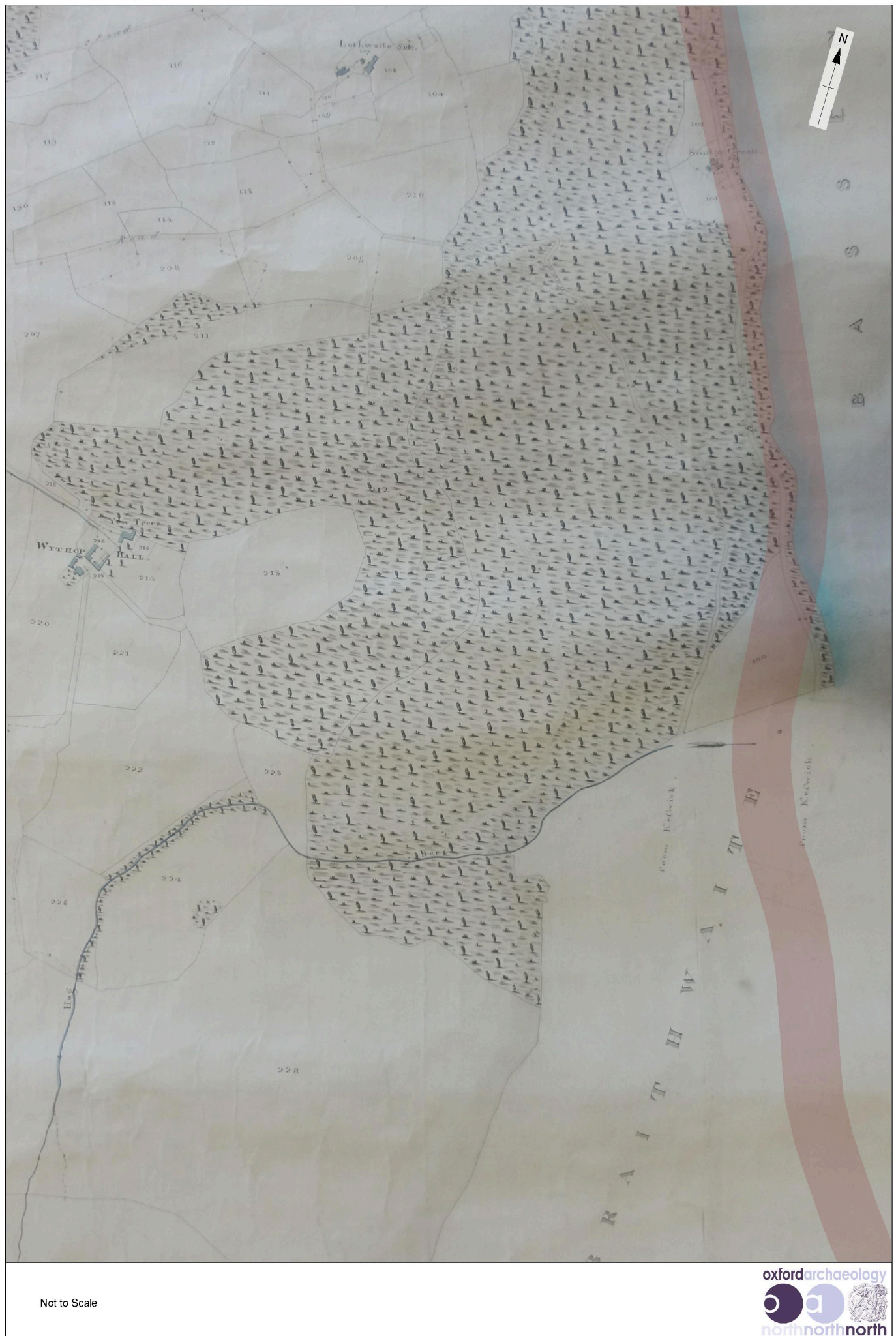


Figure 24: Route B superimposed on the southern section of the Wythop tithe map of 1844-45

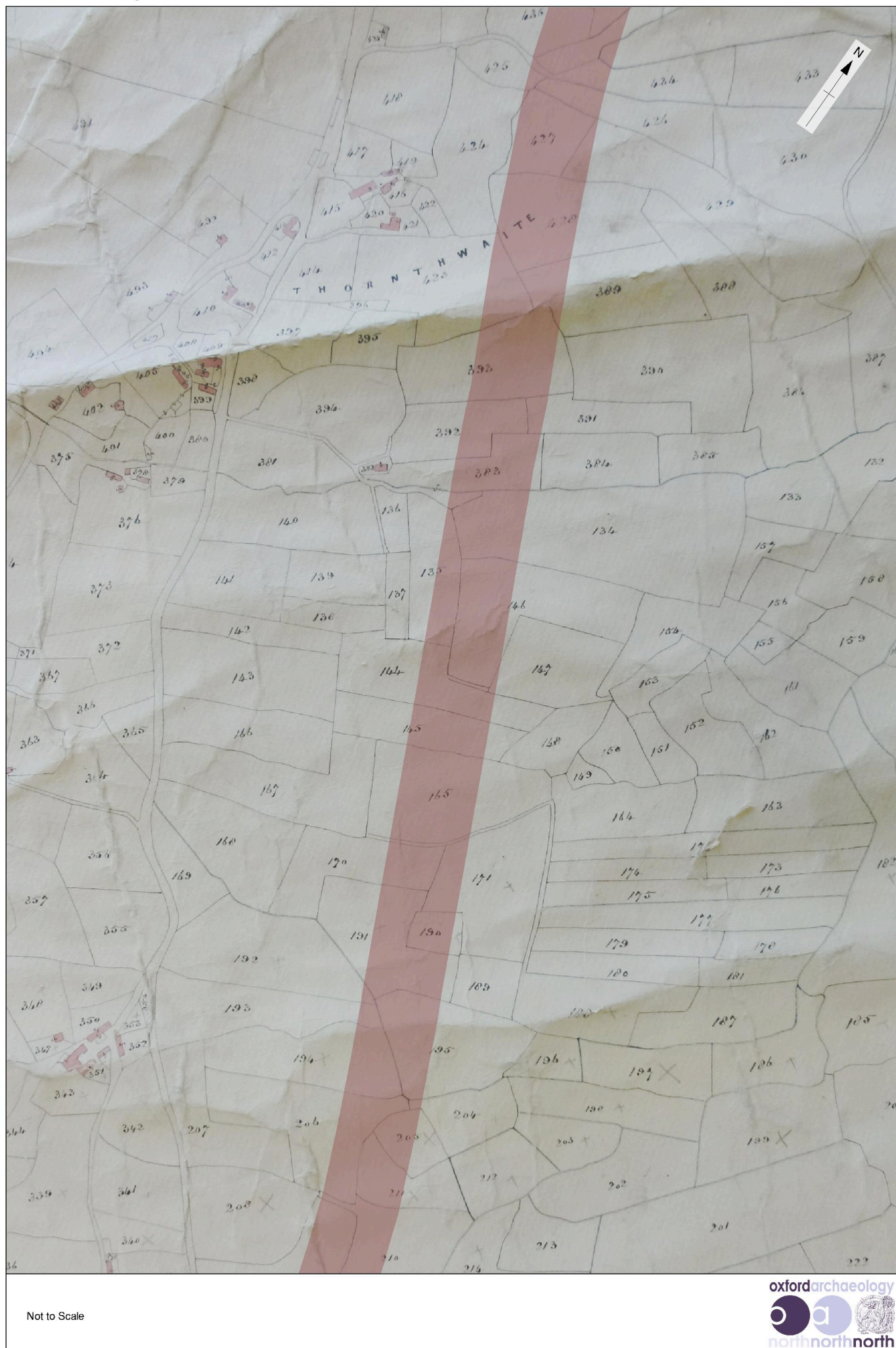


Figure 25: Route B, in the vicinity of Thornthwaite, superimposed on the Over Derwent tithe map of 1840-41

Figure 26: Route B, in the vicinity of Braithwaite, superimposed on the Over Derwent tithe map of 1840-41



Figure 27: Route options superimposed on the Keswick tithe map of 1840-43

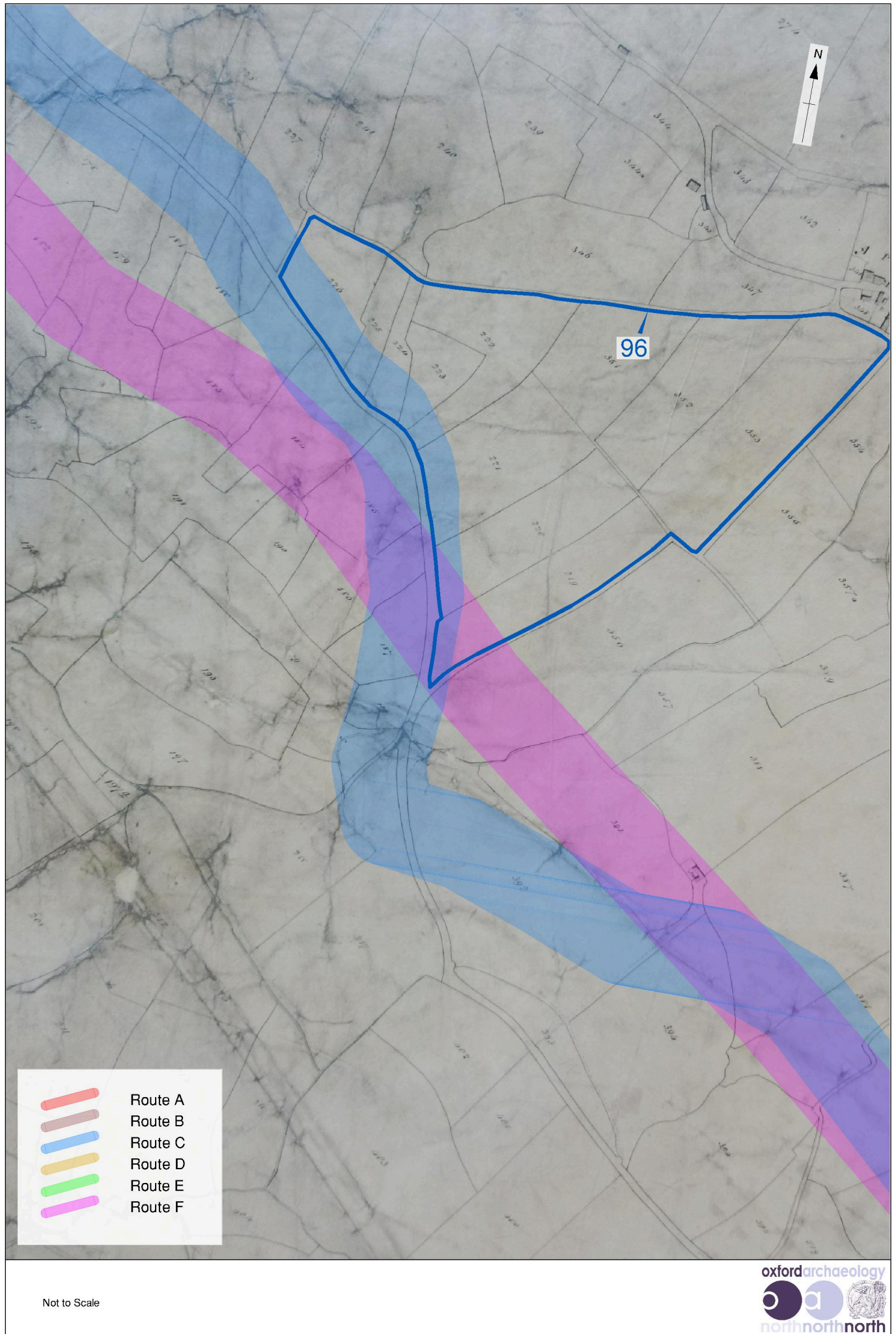
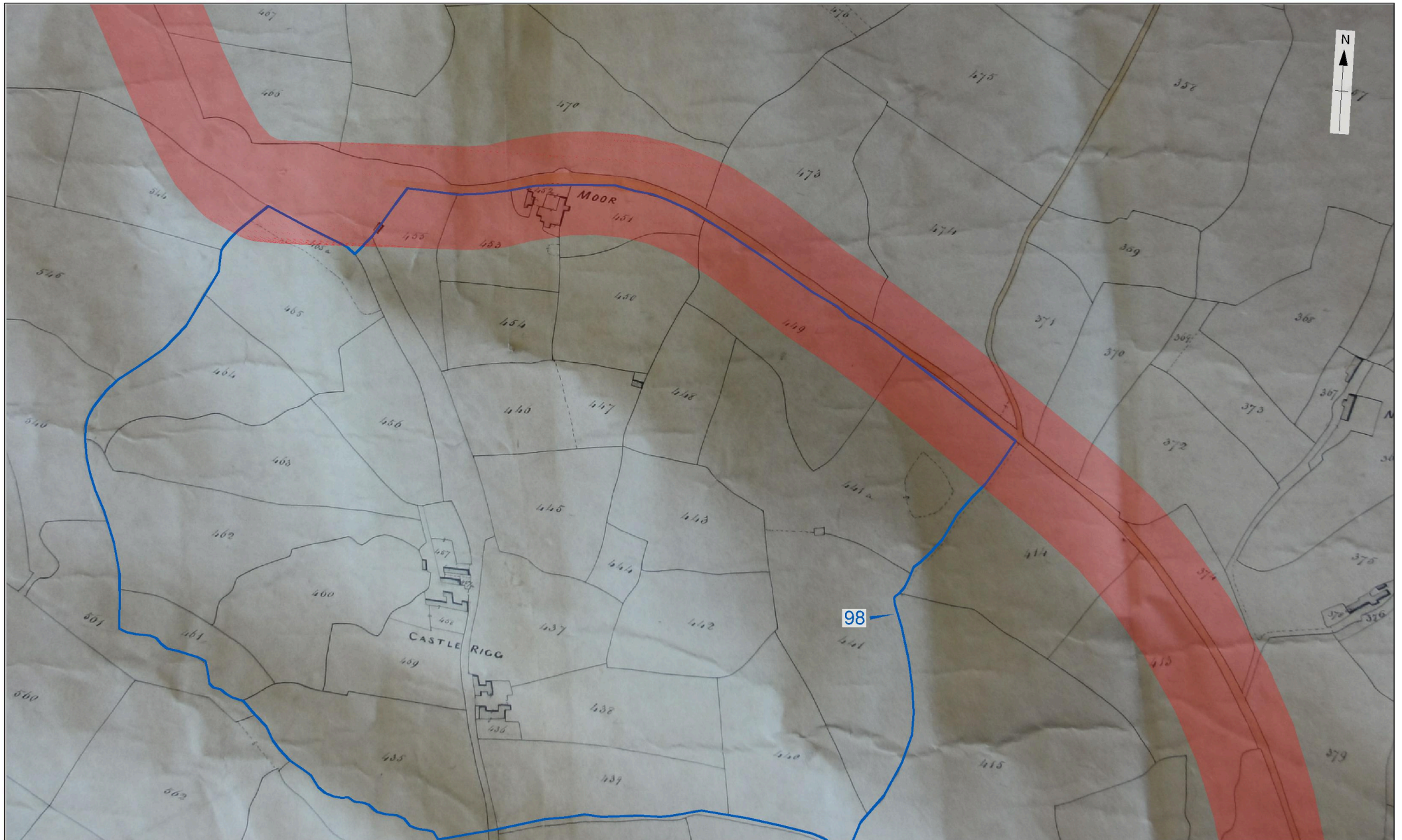


Figure 28: Route options, centred on site **96**, superimposed on the Underskiddaw tithe map of 1840



Figure 29: Route options, in the vicinity of Brow Top, superimposed on the St John's Castlerigg and Wtyhburn tithe map of 1840



Not to Scale

Figure 30: Route A, centred on site **98**, superimposed on the St John's Castlerigg and Wtyhburn tithe map of 1840

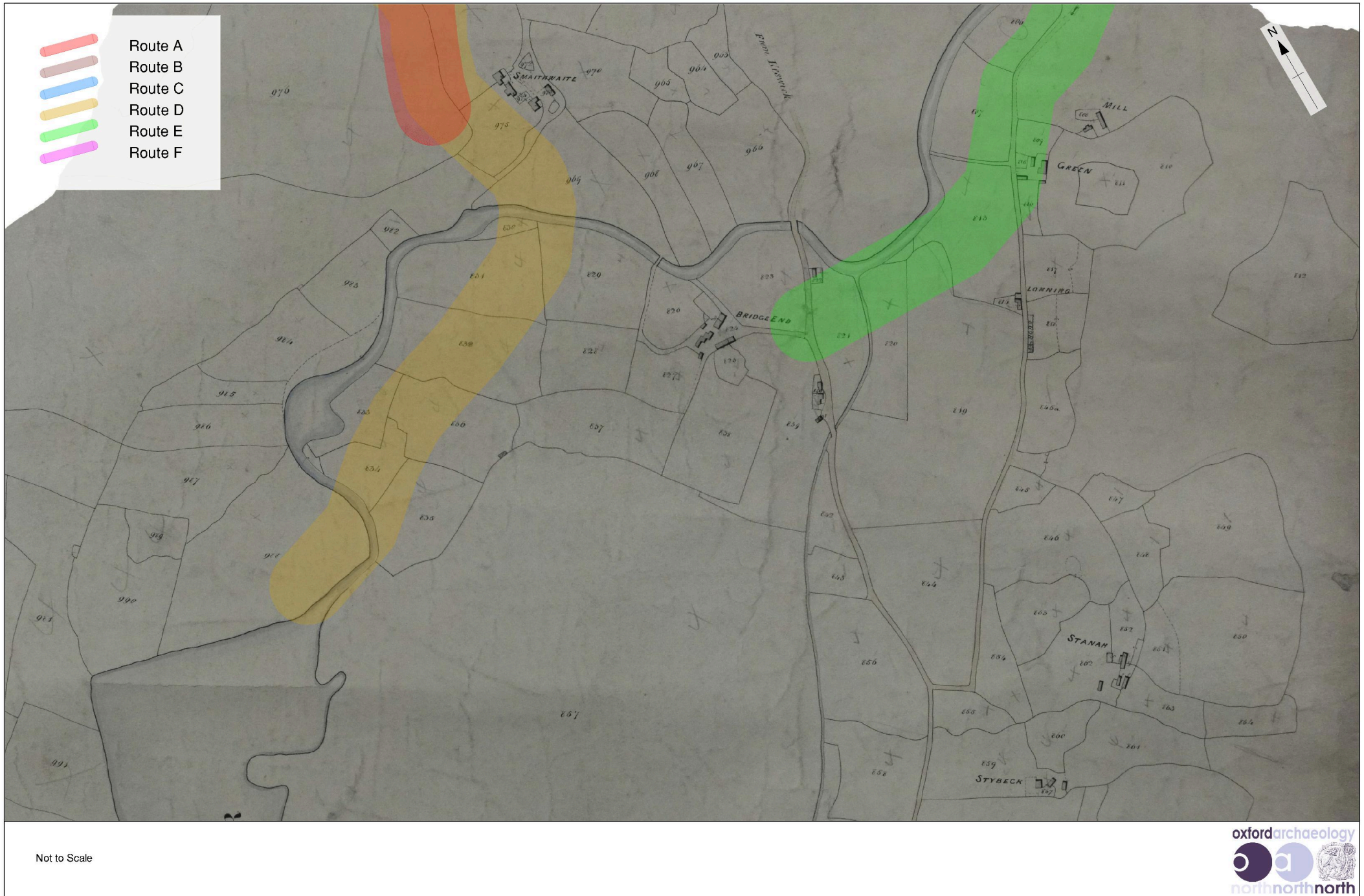


Figure 31: Route options north of Thirlmere reservoir (Leathes Water) superimposed on the St John's Castlerigg and Wythburn tithe map of 1840



Not to Scale

Figure 32: Route E, centred on Threlkeld townfield (Site **136**), superimposed on the St John's Castlerigg and Wythburn tithe map of 1840



Not to Scale

Figure 33: Route options, centred on sites 77, 78, 79 and 81, superimposed on the Ordnance Survey first edition 6":1 mile map of 1867

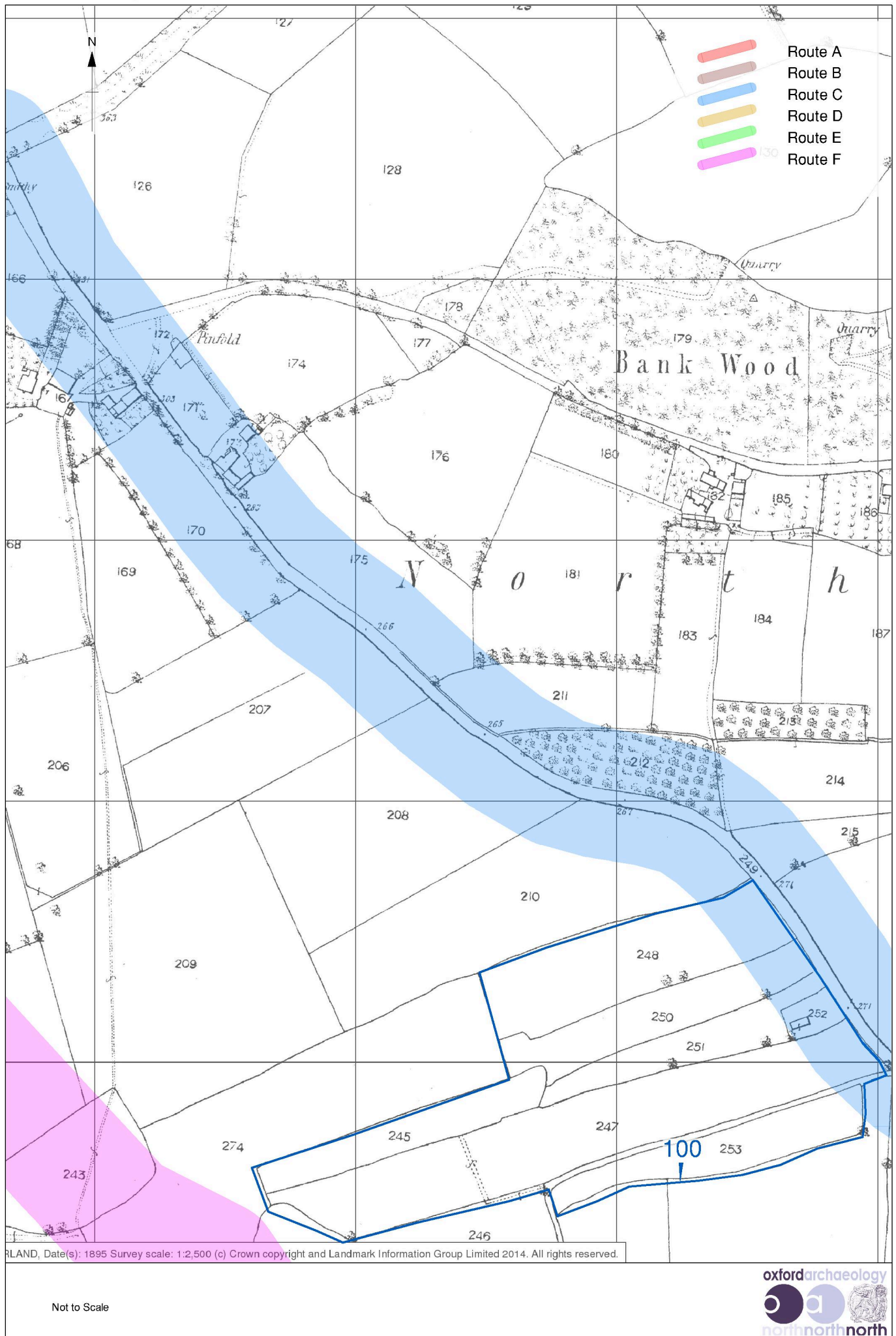


Figure 34: Route options, centred on site **100**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

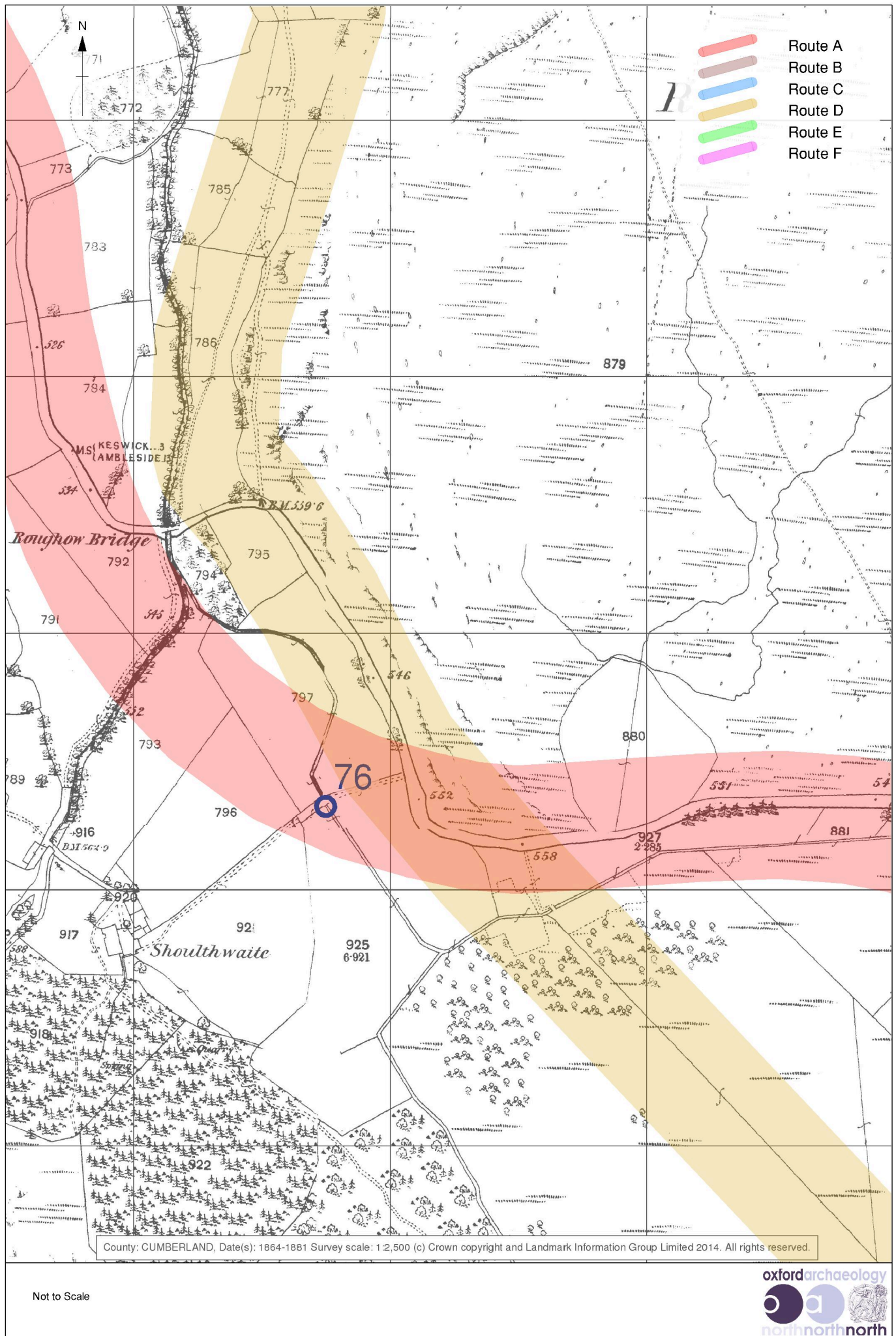


Figure 35: Route options, centred on site 76, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

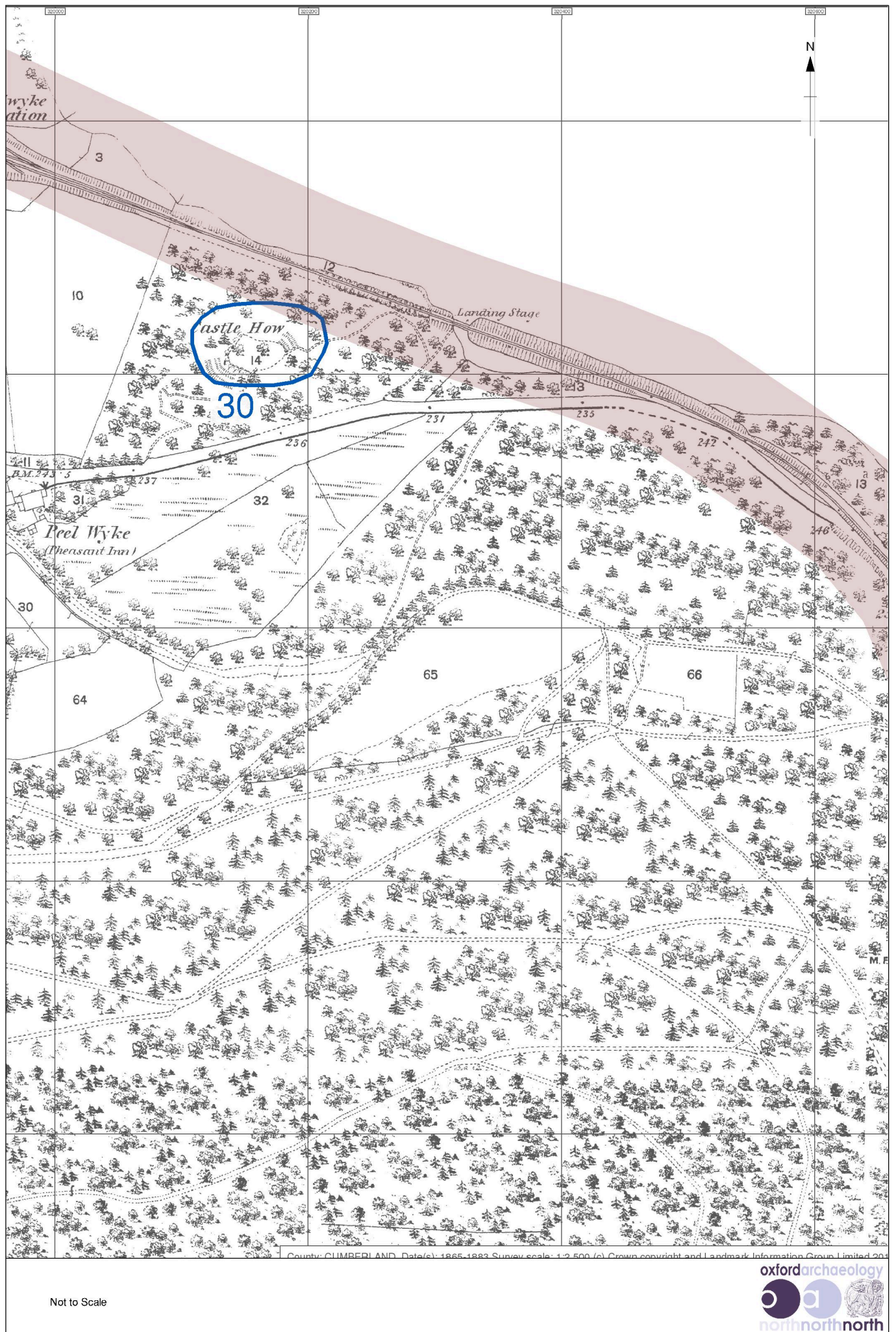


Figure 36: Route B, centred on site 30, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

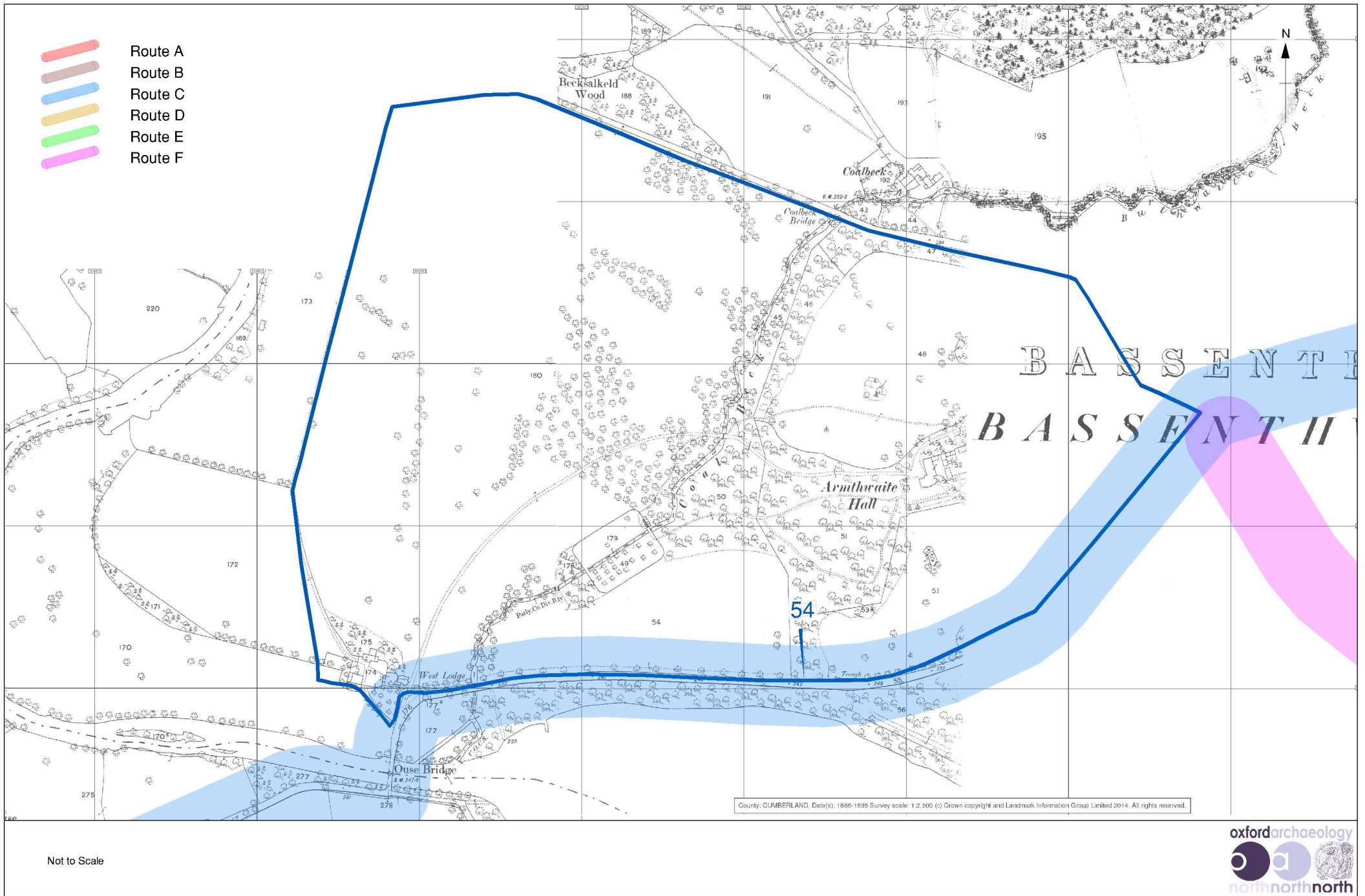


Figure 37: Route options, centred on site **54**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

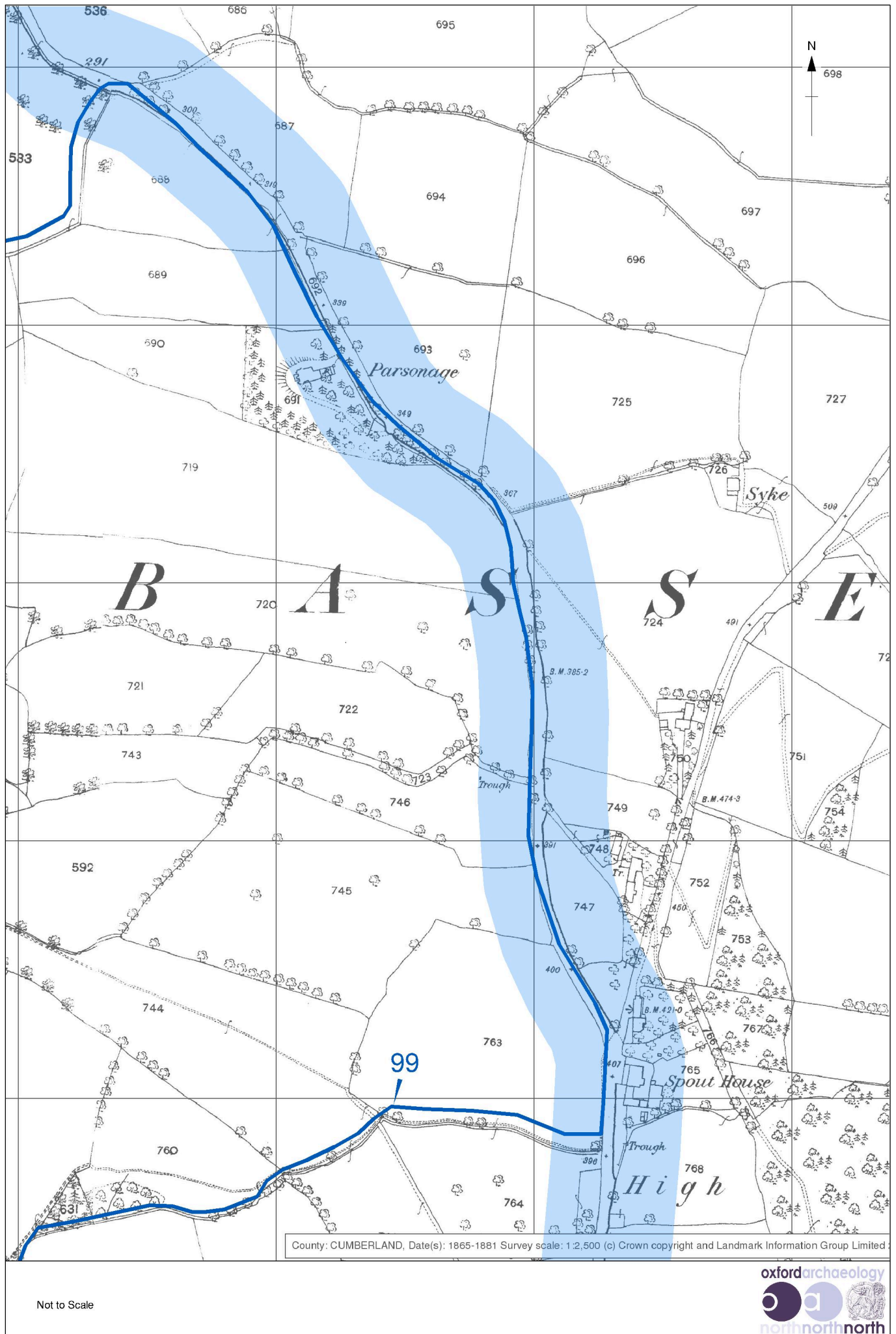
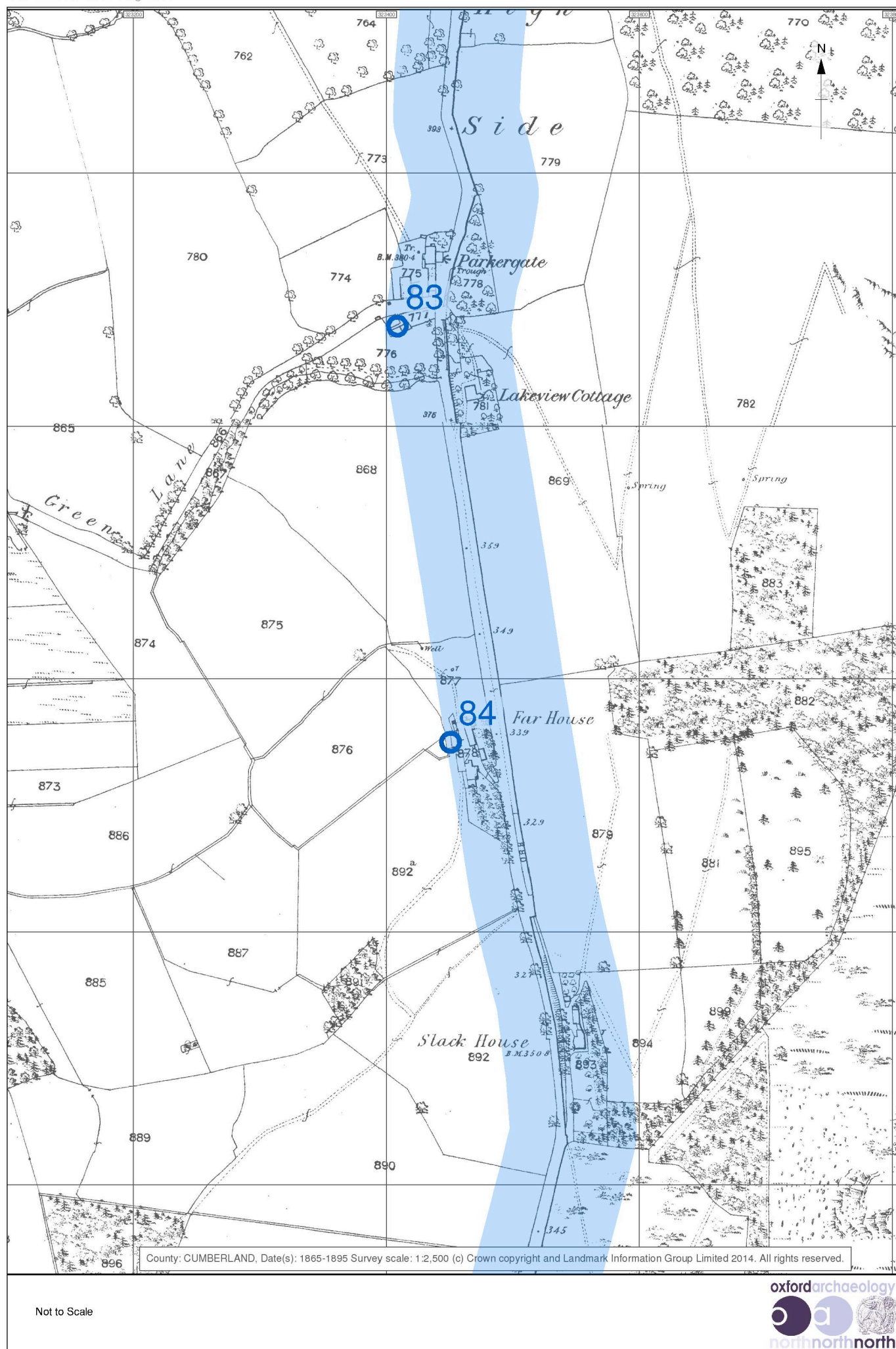


Figure 38: Route C, centred on site **99**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

Figure 39: Route C, centred on Sites **83** and **84**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

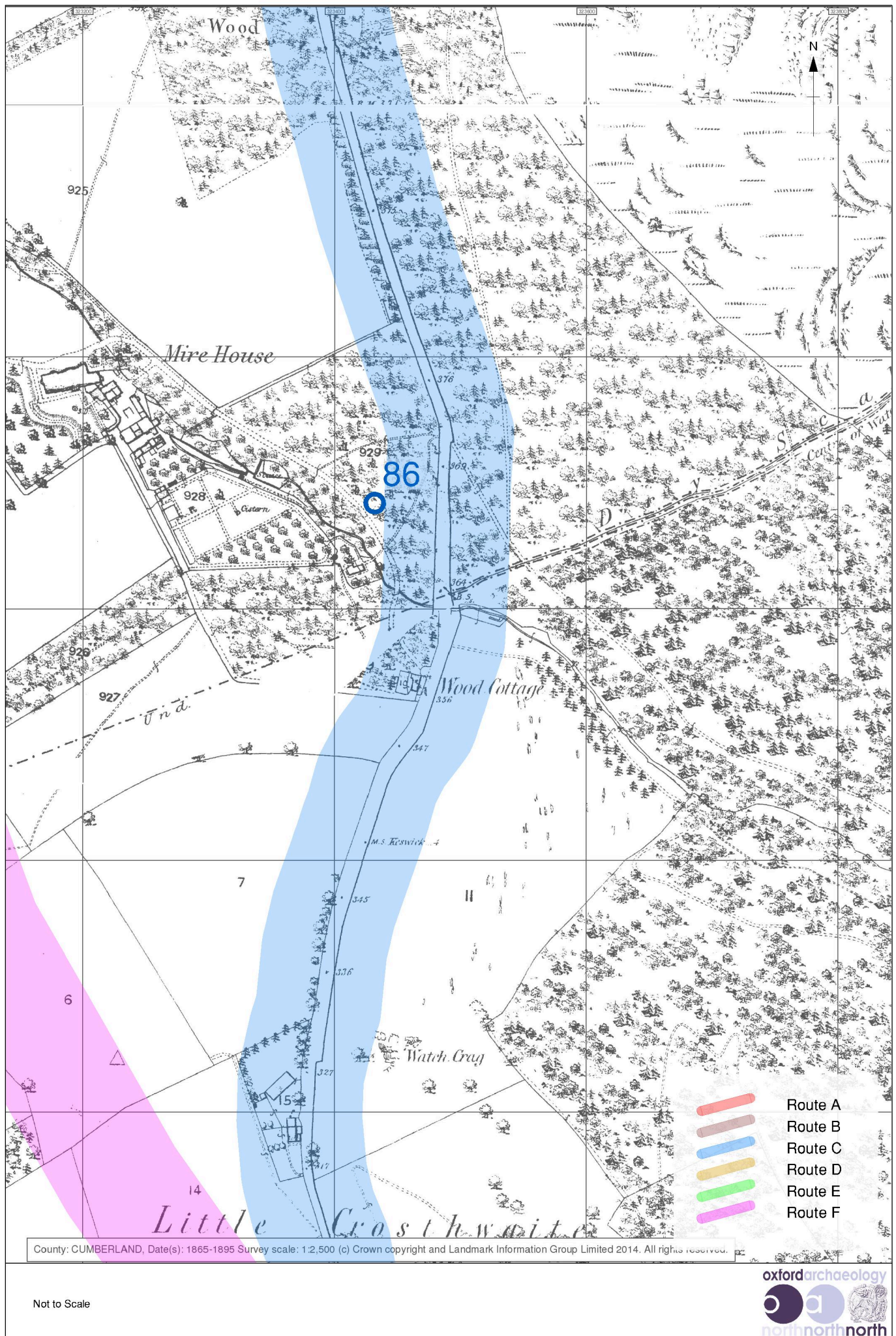


Figure 40: Route options, centred on Site 86, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

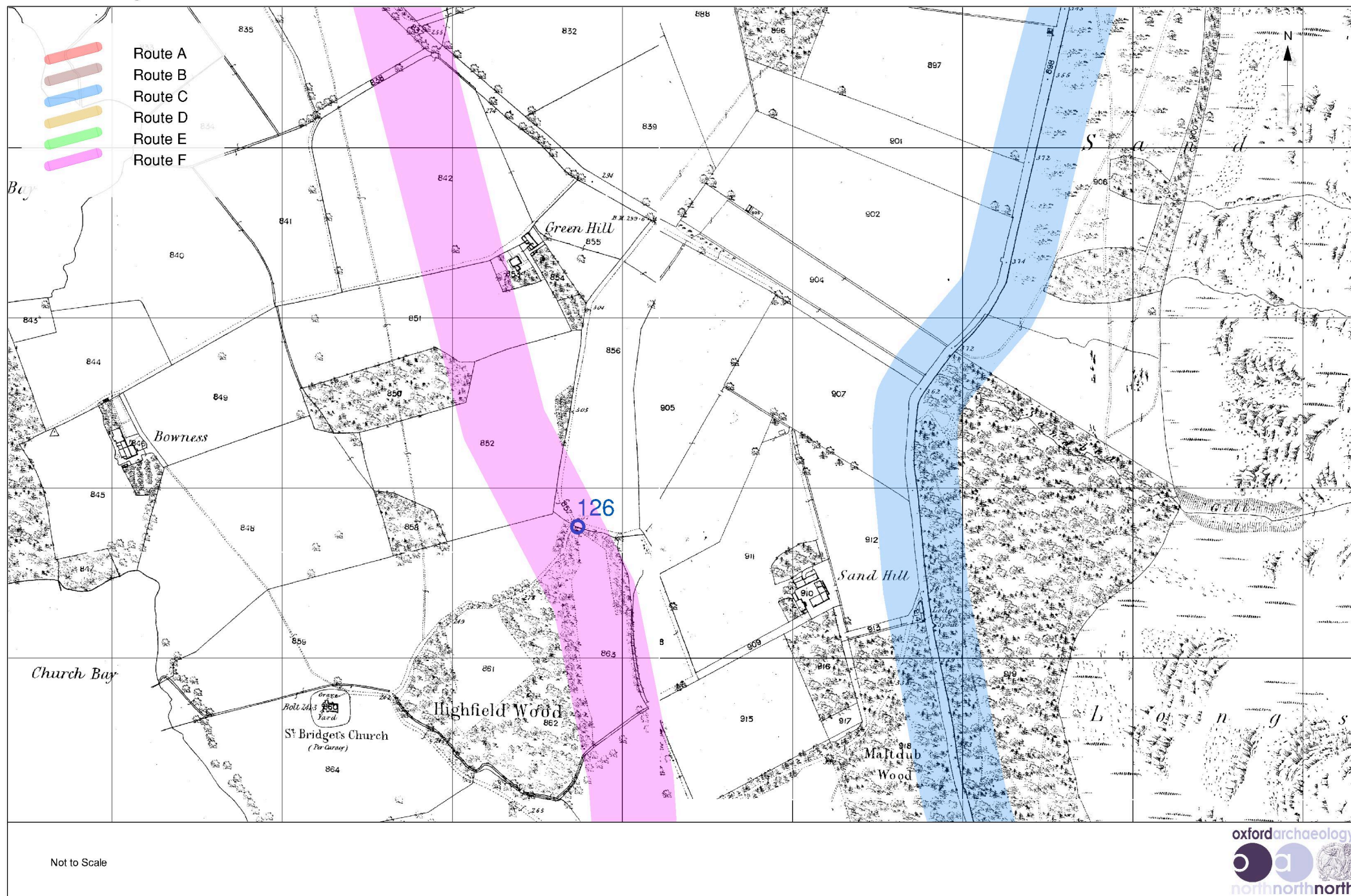


Figure 41: Route options, centred on Site **126**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

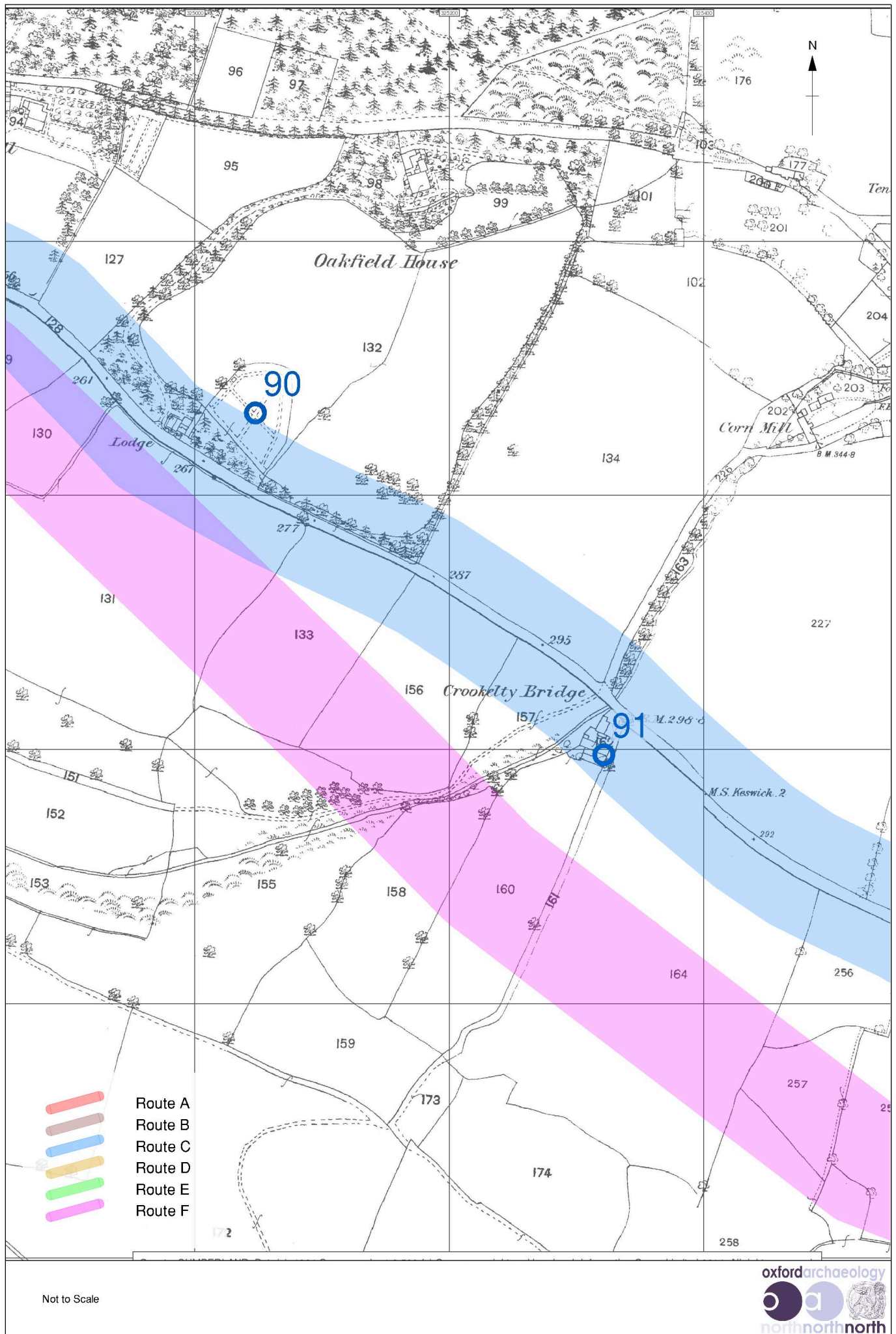


Figure 42: Route options, centred on Site **90** and **91**, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

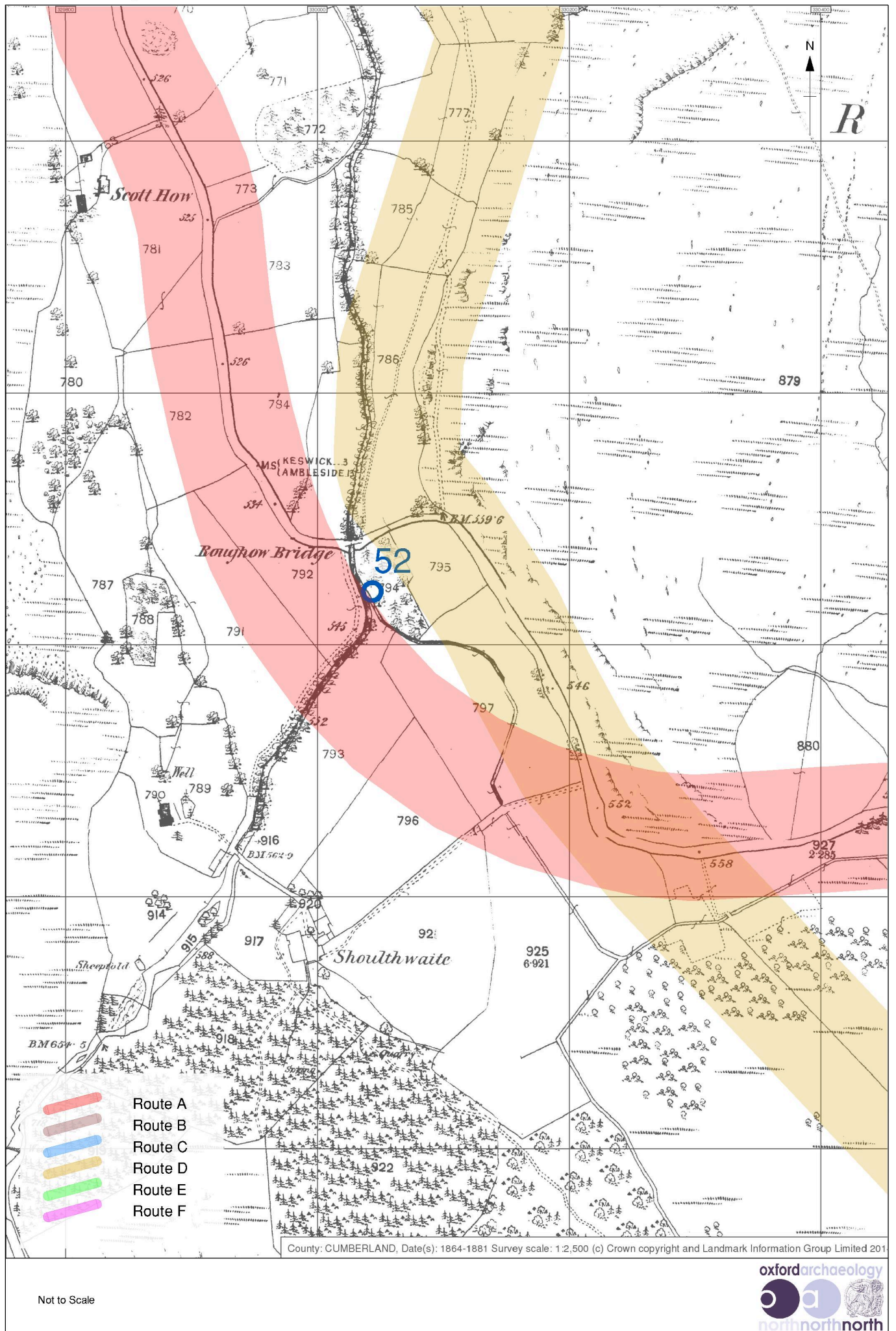


Figure 43: Route options, centred on Site 52, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

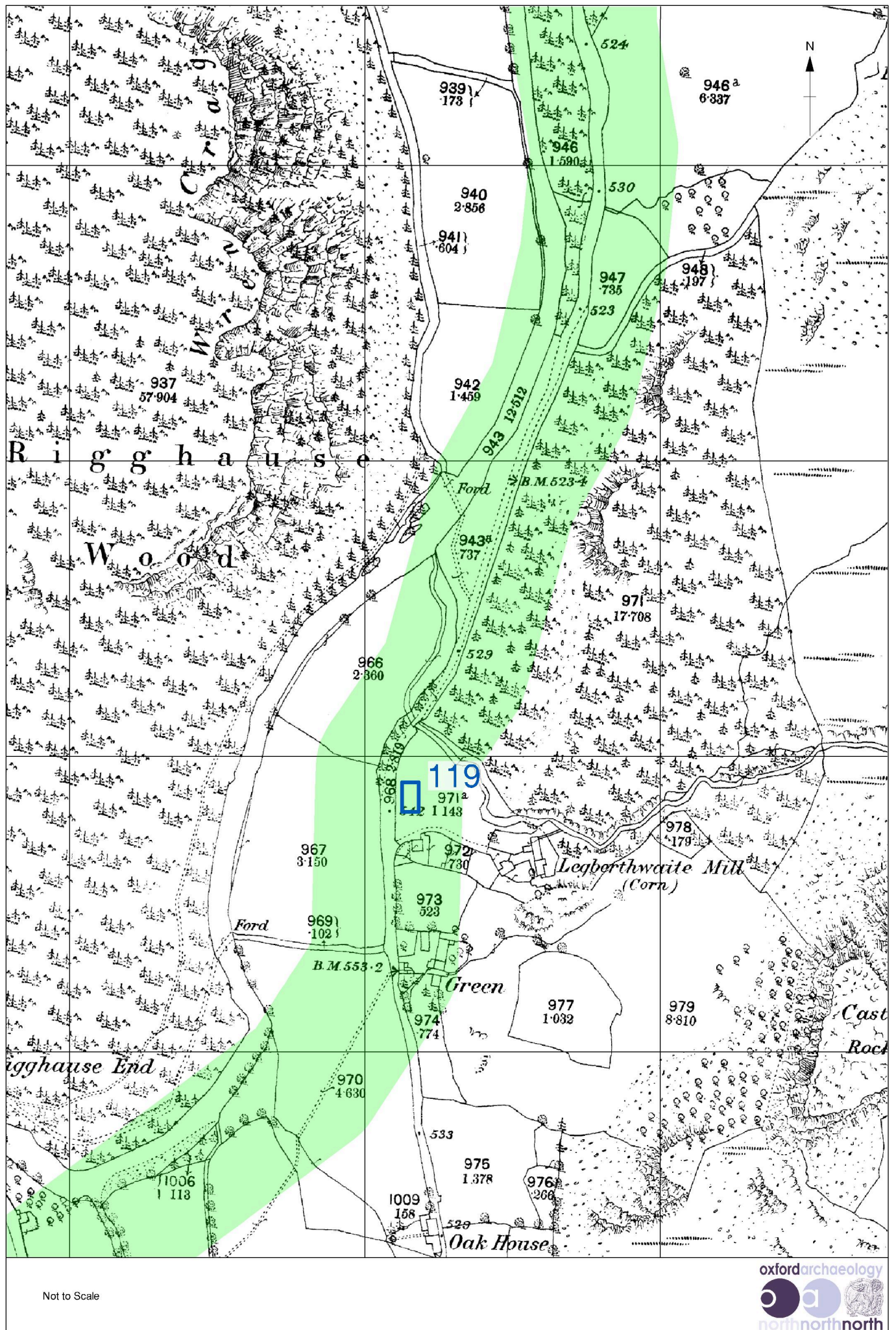


Figure 44: Route E, centred on Site 119, superimposed on the Ordnance Survey 25":1 mile map of 1864-95

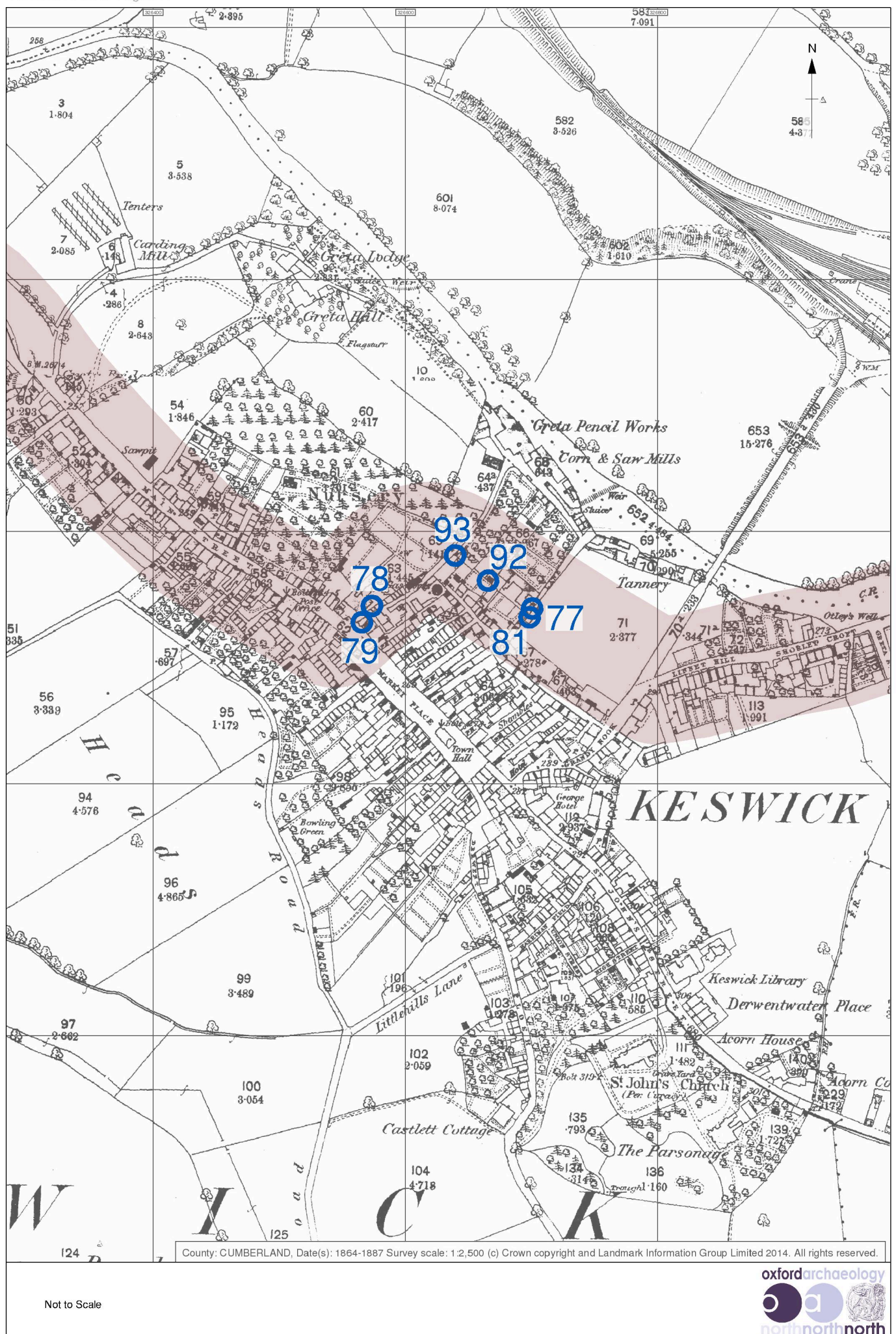


Figure 45: Route B, centred on sites 77, 78, 79, 81, 92 and 93, superimposed on the Ordnance Survey first edition 25":1 mile map of 1864-95

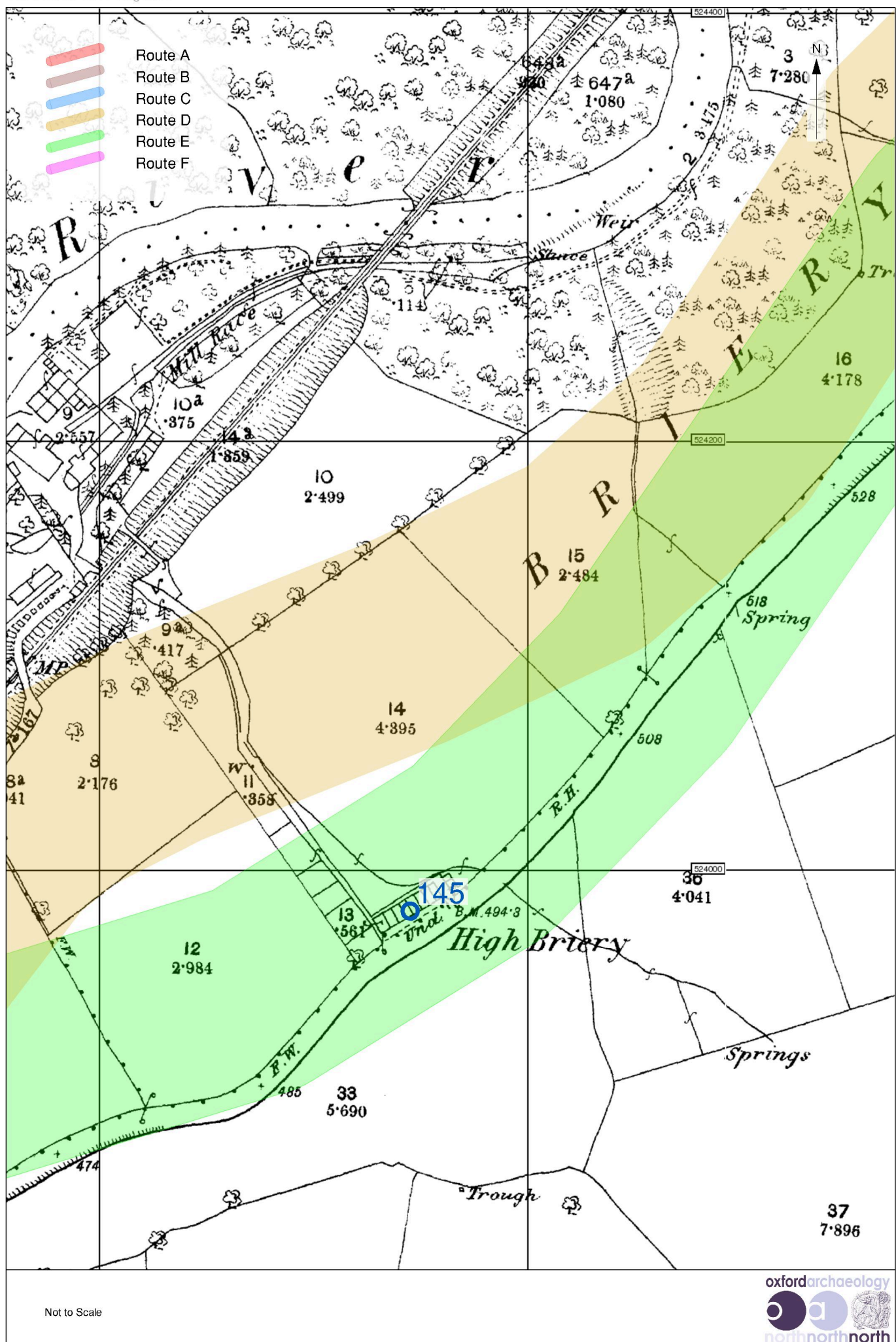


Figure 46: Route options, centred on site **145**, superimposed on the Ordnance Survey first edition 25":1 mile map of 1864-95



Figure 47: Route B, centred on sites **77**, **78**, **79**, **81**, **92** and **93**, superimposed on the Ordnance Survey 25":1 mile map of 1899



Figure 48: Route B, centred on sites **77, 78, 79, 81, 92** and **93**, superimposed on the Ordnance Survey 25":1 mile map of 1924-25

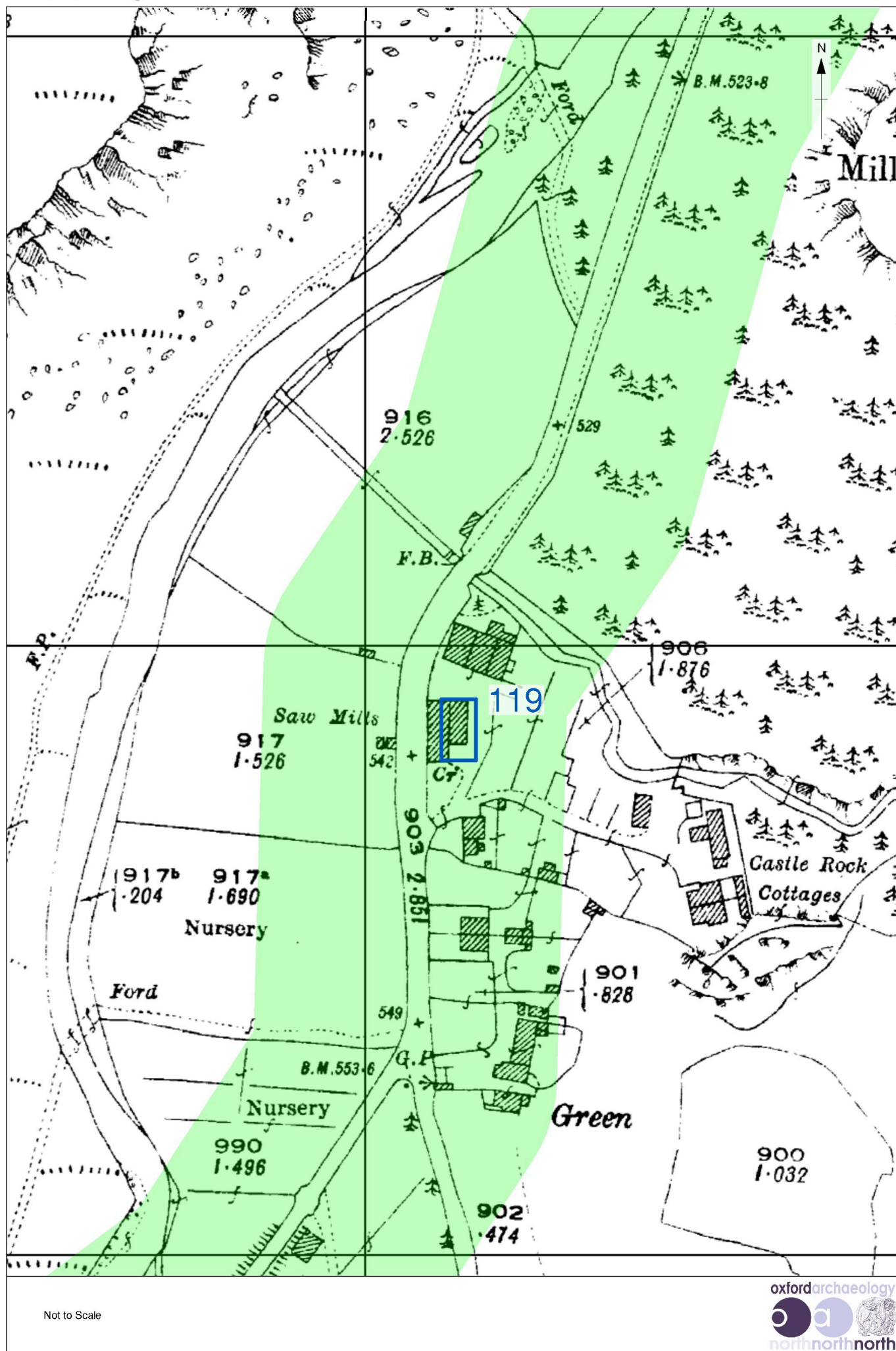


Figure 49: Route E, centred on Site 119, superimposed on the Ordnance Survey 25":1 mile map of 1925



Figure 50: Route B, centred on sites **77**, **78**, **79**, **81**, **92** and **93**, superimposed on the Ordnance Survey 25":1 mile map of 1938

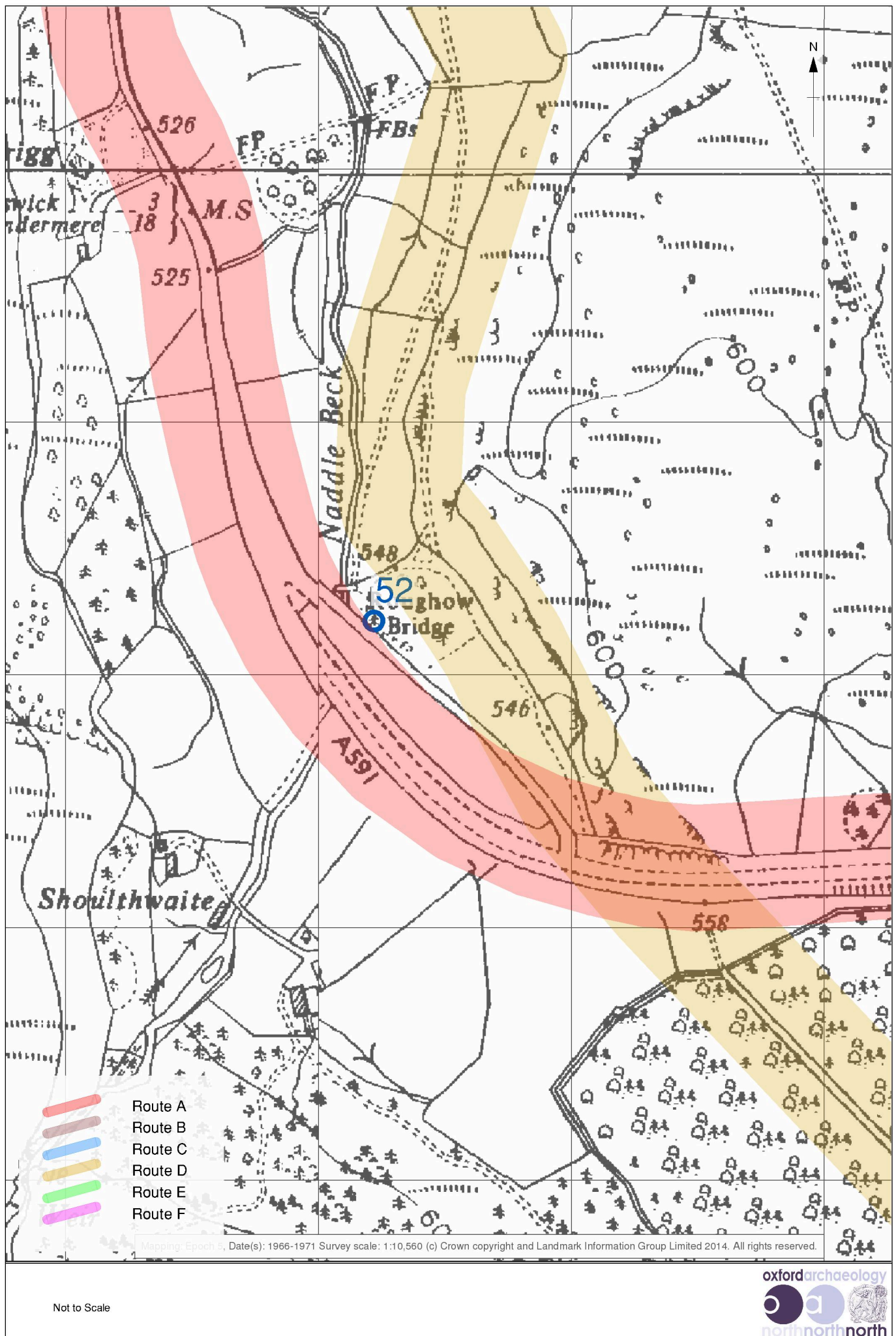


Figure 51: Route options, centred on Site 52, superimposed on the Ordnance Survey 25":1 mile map of 1866-71



Not to Scale

Figure 52: Route B, centred on sites 77, 78, 79, 81, 92, and 93 superimposed on the Ordnance Survey 25":1 mile map of 1968



Not to Scale

Figure 53: Route A, centred on Sites **101**, **102**, **104** and **105**, superimposed on aerial photography



Not to Scale

Figure 54: Route A, centred on Site **106**, superimposed on aerial photography

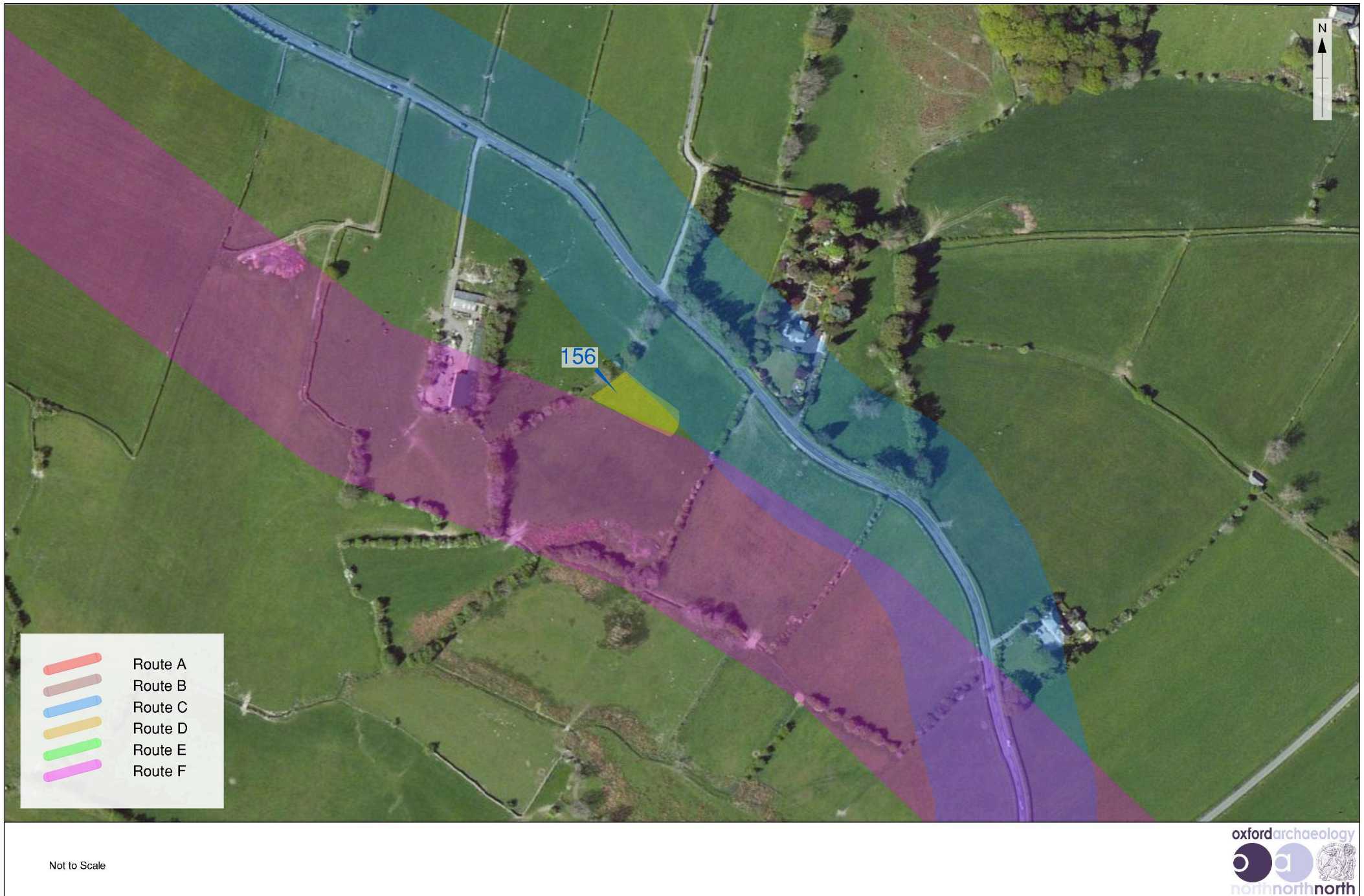


Figure 55: Route options, centred on earthworks associated with Site **156**, superimposed on aerial photography

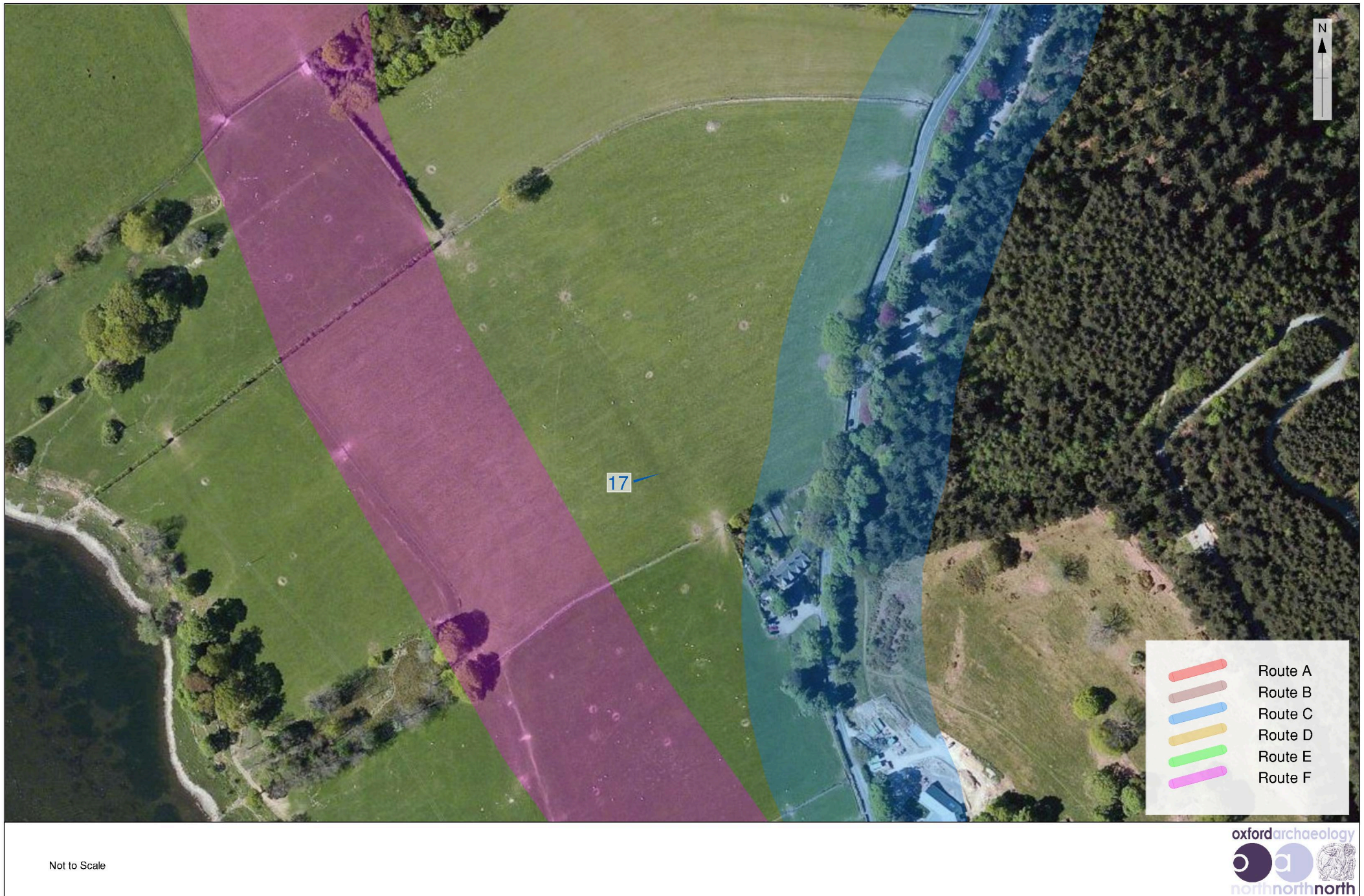


Figure 56: Route options, centred on earthwork associated with Site 17, superimposed on aerial photography