

wa-archaeology.com

DESK BASED ASSESSMENTS
ARCHAEOLOGICAL EVALUATION
ARCHAEOLOGICAL EXCAVATION
GEOPHYSICAL SURVEY
TOPOGRAPHICAL AND LANDSCAPE SURVEY
HISTORIC BUILDING RECORDING
ENVIRONMENTAL SERVICES



UNITED UTILITIES,

PAPCASTLE WASTEWATER TREATMENT WORKS, CUMBRIA

HERITAGE IMPACT ASSESSMENT

February 2017


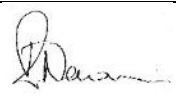
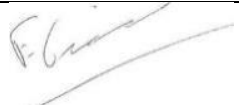
DATE ISSUED: February 2017
JOB NUMBER: CL11960
OASIS REFERENCE: **wardella2-275717**
REPORT NUMBER: RPT-001
GRID REFERENCE: NY 08256 30727 to NY 10341 30944 and NY 10363 31278

UNITED UTILITIES

PAPCASTLE WASTEWATER TREATMENT WORKS, CUMBRIA

HERITAGE IMPACT ASSESSMENT

February 2017

PREPARED BY:	EDITED BY:	APPROVED BY:
Cat Peters	Richard Newman	Frank Giocco
		
Researcher	Project Manager	Technical Director

This report has been prepared by Wardell Armstrong Archaeology with all reasonable skill, care and diligence, within the terms of the Contract with the Client. The report is confidential to the Client and Wardell Armstrong Archaeology accepts no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be reproduced without the prior written approval of Wardell Armstrong Archaeology.



Wardell Armstrong Archaeology is the trading name of Wardell Armstrong LLP, Registered in England No. OC307138.

Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

UK Offices: Stoke-on-Trent, Cardiff, Carlisle, Edinburgh, Greater Manchester, London, Newcastle upon Tyne, Sheffield, Taunton, Truro, West Bromwich. International Offices: Almaty, Moscow

DESK BASED ASSESSMENTS
ARCHAEOLOGICAL EVALUATION
ARCHAEOLOGICAL EXCAVATION
GEOPHYSICAL SURVEY
TOPOGRAPHIC AND LANDSCAPE SURVEY
HISTORIC BUILDING RECORDING
ENVIRONMENTAL SERVICES

CONTENTS

SUMMARY	1
ACKNOWLEDGEMENTS	2
1 INTRODUCTION	3
1.1 Circumstances of Project	3
1.2 The Purpose of the Heritage Impact Assessment	3
1.3 National Planning Policy and Legislative Framework	3
1.4 Local Planning Policies	4
2 METHODOLOGY	5
2.1 Introduction	5
2.2 Documentary Sources	5
2.3 Site Visit	5
2.4 Impact Assessment Tables	5
2.5 Heritage Impact Assessment	6
2.6 Reporting	7
2.7 Glossary	7
3 DESCRIPTION	9
3.1 Location and Geology	9
3.2 Historic Landscape Character	9
3.3 Archaeological and Historical Background	9
3.4 Previous Archaeological Works	14
3.5 Designated Heritage Assets	14
3.6 Undesignated Heritage Assets	15
3.7 The Character of the Development	16
4 SITE VISIT	17
5 DISCUSSION	19
5.1 Summary of Heritage Asset Significance	19
5.2 Magnitude of Impact on Heritage Assets	20
5.3 Heritage Statement	20
6 BIBLIOGRAPHY	22
6.1 Primary Sources	22
6.2 Secondary Sources	22
6.3 Internet Sources	23
6.4 Other Sources	23
APPENDIX 1: HERITAGE IMPACT ASSESSMENT TABLES	24

APPENDIX 2: LIST OF HERITAGE ASSETS	27
APPENDIX 3: FIGURES	32

LIST OF ILLUSTRATIONS

FIGURES

Figure 1: Site location	
Figure 2: Detailed site location	
Figure 3: Location of heritage assets within a 200m study area of the pipeline route	
Figure 4: Hodskinson and Donald’s Plan of Cumberland, 1774	
Figure 5: Papcastle Tithe Award Plan, 1838	
Figure 6: First Edition Ordnance Survey Map, 1866	
Figure 7: Second Edition Ordnance Survey Map, 1900	
Figure 8: Third Ordnance Survey Map, 1925	
Figure 9: Ordnance Survey Map, 1960	

PLATES

Plate 1: Showing features highlighted by Grampus’ Geophysical Surveys	11
Plate 2: Northern field, facing north-east	17
Plate 3: Southern field, facing south-east	17
Plate 4: Former cultivation marks to the north-east, facing north-east	18
Plate 5: Shrubbery and trees on bank to the south-east, facing west	18

SUMMARY

Wardell Armstrong Archaeology was commissioned by United Utilities to undertake a Heritage Impact Assessment for a proposed new pipeline route for Papcastle Wastewater Treatment Works (linking NGR: NY 08256 30727 to NY 10341 30944 and NY 10363 31278), to inform on the potential archaeological features in the vicinity prior to discussions on the scheme with the County Archaeologist. This work comprised a consultation of readily available sources relating to the area's development and a site visit. This Heritage Impact Assessment summarises the results of the research and site visit.

The majority of the proposed pipeline route has been found to follow a turnpike road, established as such in the mid 18th century, within a wider hinterland of agricultural land utilised as such perhaps from as early as the Roman period, though a Mesolithic pit and stray finds of the Bronze Age have also been found in the study area. Towards the eastern extent of the proposed pipeline route, a boundary ditch, an enclosure, hut circle and post holes have been identified and are likely to be of Roman origin, and a Roman road may extend into the area. A possible early medieval large timber building has also been found in the vicinity. Friar's Walk, to the east of the proposed pipeline route has been suggested to indicate a medieval friary in the vicinity, and the route itself may lead to a river crossing close to the proposed pipeline route.

Features relating to a former railway line which ran within the southern part of the field north of Low Road and south of the River Derwent are likely to be directly impacted upon by the development. At the western extent of the proposed pipeline route, a quarrying complex had been established by 1866, of which the present Kirk Cross Quarry is a surviving trace.

This study has found that the proposed pipeline route would result in a limited impact on heritage significance in relation to the route of a former railway line. This level of impact may require further archaeological work prior to any groundworks occurring, dependent upon advice from Cumbria County Council's Historic Environment Team.

There remains the potential for further as-yet unknown remains to survive within the area of direct impact, south of the River Derwent and north of Low Road. This is based on the recent discovery of features of the Mesolithic and Roman eras and the potential for features relating to an early medieval large timber building and possible medieval friary.

ACKNOWLEDGEMENTS

Wardell Armstrong Archaeology thanks United Utilities who commissioned the project. Wardell Armstrong Archaeology also thank staff at the Cumbria Archive Centre at Carlisle and the librarians at Cockermouth Library for all assistance.

The site visit and the documentary research was undertaken by Cat Peters.

The report was written by Cat Peters and the figures were produced by Adrian Bailey. Frank Giocco managed the project and Richard Newman edited the report.

1 INTRODUCTION

1.1 Circumstances of Project

1.1.1 Wardell Armstrong Archaeology (WAA) was commissioned by United Utilities to undertake archaeological research, to be written up in the form of a Heritage Impact Assessment, for a proposed new pipeline route for Papcastle Wastewater Treatment Works, to inform on the potential archaeological features in the vicinity prior to discussions on the scheme with the County Archaeologist. The proposed pipeline route comprises a linear route following a roughly west to east route beginning at the sewage works north-west of Brigham, west of Kirk Cross Quarry (NGR NY 08256 30727) and ending at the sewage works either side of the River Derwent and east of the A595 bypass (NGR NY 10341 30944 and NY 10363 31278; Figure 2).

1.1.2 The proposed pipeline route lies within an area known to have the potential to contain archaeological assets. Papcastle was an important settlement in the Roman period, and recent work has indicated that settlement and field systems relating to it have spread far further than previously thought.

1.2 The Purpose of the Heritage Impact Assessment

1.2.1 This Heritage Impact Assessment is designed to show the potential impact of the proposed development on the heritage significance of heritage assets within a 200m wide corridor, centred on the proposed pipeline, an area hitherto referred to as the study area.

1.2.2 The Heritage Impact Assessment seeks to address in detail the issues of impacts on heritage significance and to do this it both seeks to understand the significance of the assets before evaluating the impact of the development proposals upon them.

1.3 National Planning Policy and Legislative Framework

1.3.1 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 in March 2012. This is supported by *National Planning Practice Guidance* (NPPG) which was published in March 2014.

1.3.2 The NPPF draws a distinction between designated heritage assets and other remains considered to be of lesser significance. With regard to designated heritage assets, “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' (NPPF, para 132). Therefore, preservation in-situ is the preferred course in relation for such sites unless exceptional circumstances exist.

1.3.3 The NPPF advises that local planning authorities should look for opportunities for new development within Conservation Areas and within the setting of heritage assets in order to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably (NPPF, para 137).

1.4 Local Planning Policies

1.4.1 The *Allerdale Local Plan, July 2014: Strategic and Development Management Policies* was adopted on 16th July 2014. Policy S27 relates to Heritage Assets (Allerdale Borough Council 2014, 119). This states that *"only proposals which do not harm any positive qualities of the heritage asset(s) will be approved"* (*ibid*, 120). The council will work to seek *"the conservation and enhancement of all designated or non-designated heritage assets"* (*ibid*, 119).

1.4.2 It further states that *"in determining applications that could affect the significance... of a heritage asset and/or archaeological asset, the following factors will be taken into account:*

- *The level of significance of the heritage asset(s)*
- *The impact of the proposal on the significance (including setting) of the heritage asset(s)*
- *How the significance and/or setting of the asset could be better revealed*
- *Opportunities for mitigating climate change without damaging significance"* (*ibid*, 119-120)

2 METHODOLOGY

2.1 Introduction

2.1.1 The preparation of the Heritage Impact Assessment has been undertaken in accordance with guidance recommended by English Heritage and prepared by Bassetlaw District Council (2011). Note is also taken of the English Heritage guidance on understanding place (2010 and 2011) and on the setting of heritage assets (2012).

2.1.2 The data underlying the Heritage Impact Assessment was gathered through desk-based study of documentary sources and via a site visit. The impact of the development on upstanding assets within the study area, was assessed using a series of standard tables (see Appendix 2).

2.2 Documentary Sources

2.2.1 The primary and secondary sources were used to provide the background to the historical character of the study area. Much of the information in this Heritage Impact Assessment was derived from readily available sources derived from Cumbria County Council's online Historic Environment Record database, and from a number of previous archaeological works undertaken recently in the vicinity.

2.2.2 Historic England's guidance on historic area assessments, conservation areas and heritage asset setting was used to establish the compliance of the development scheme proposals with best practice planning guidance.

2.3 Site Visit

2.3.1 The site and its environs were visited on the 8th February 2017. Access was gained through publicly accessible footpaths and routes.

2.3.2 The study area was inspected to:

- identify any as yet unknown features within the proposed pipeline route
- identify whether any known features identified during the research are still present within the proposed pipeline route
- consider the impact of the proposed residential development on the heritage significance of the heritage assets within a 200m linear buffer

2.4 Impact Assessment Tables

2.4.1 The assessment of the impact of development proposals is undertaken using a series of heritage impact tables (Appendix 2). These tables use standard assessment

methods as used by Government agencies, as for example those used in the Highway Agency's *Design Manual for Roads and Bridges* (2007). These tables first establish the significance of the heritage asset against set criteria, secondly they estimate the magnitude of impact and, taking the results of these two together, allow a calculation of impact on overall heritage significance.

2.5 Heritage Impact Assessment

- 2.5.1 For the purposes of this report, the term '*proposed pipeline route*' is used to refer to the area due to be directly affected by the pipeline development (Figure 2) and the term '*study area*' is used for the 200m wide corridor centred on the proposed pipeline route, a contextual area surrounding the site (Figure 3).
- 2.5.2 Several sources of information were consulted, in accordance with professional guidelines (CIfA 2014) and local curatorial requirements. A further search of online resources was undertaken in order to identify any designated sites such as scheduled monuments, listed buildings and conservation areas, around the proposed development area. This was done in order to help assess the possible impact of the proposed development on archaeologically sensitive areas. The principal sources of information were historical maps and secondary sources.
- 2.5.3 ***Cumbria County Council Historic Environment Record (HER)***: the online HER, maintained by Cumbria County Council, was consulted in February 2017 in order to obtain information regarding known designated heritage assets (for example listed buildings, scheduled monuments and conservation areas), and non-designated heritage assets, i.e. sites of historic or archaeological interest which are not designated, from within the study area.
- 2.5.4 Full details of all these assets are included in Appendix 1 and their locations are represented by asset numbers in Figure 3.
- 2.5.5 ***Cumbria Archive Centre, Carlisle (CACC)***: early cartographic sources were consulted at the archive centre at Carlisle, and a search was undertaken for any other relevant documentary or cartographic information. References to information found here are included in the text as appropriate.
- 2.5.6 ***Cockermouth Library Local Studies Section (CLSS)***: the shelves, and map collection held in the local studies section of Cockermouth library were checked for relevant material. References to information found here are included in the text as appropriate.

2.5.7 **Wardell Armstrong Archaeology:** various publications and unpublished reports on excavations and other work in the vicinity are held within the Wardell Armstrong Archaeology library and these were examined.

2.5.8 **Websites:** various websites were checked for information relevant to the site's assessment, including Google Earth™, the British Geological Survey, and the Archaeological Data Service. These are listed, as appropriate, in the bibliography.

2.6 Reporting

2.6.1 A final copy of the report will be deposited with Cumbria County Council's Historic Environment team, where viewing will be made available on request.

2.6.2 WAA support the Online Access to the Index of archaeological investigations (OASIS) project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological work. As a result, details of the results of this study will be made available by WAA, as a part of this national scheme, under code: **wardella2-275717**

2.7 Glossary

2.7.1 The following standard terms for compiling a Heritage Impact Statement are used throughout the report:

- Designation – the process that acknowledges the significance of a heritage asset and thus advances its level of consideration/protection within the planning process. Designated assets can either be statutory, like listed buildings, or non-statutory such as registered parks and gardens or conservation areas.
- Heritage Asset – a building, monument, site, place, area or defined landscape positively identified as having a degree of heritage significance that merits consideration in planning decisions.
- Historic Environment Record – an information service, usually utilising a database that provides public access to up-to-date and dynamic resources relating to the historic environment of a defined geographic area.
- Mitigation – action taken to reduce potential adverse impacts on the heritage significance of a place.
- Setting – the surroundings in which a heritage asset is experienced. The extent is not fixed and will vary according to the historic character of the asset and the evolution of its surroundings.

- Significance – the value of a heritage asset to present and future generations attributable of its heritage interest. That interest may be archaeological, architectural, artistic or historic (including historical associations).

3 DESCRIPTION

3.1 Location and Geology

3.1.1 The area to be affected by the proposed pipeline route, lies between the sewage works north-west of Brigham and the sewage works west of Papcastle (Figure 1). The proposed pipeline route links three sewage works, one, at the north-west of Brigham (NGR 08256 30727), and the others, either side of the River Derwent, west of Papcastle (NGR NY 10341 309444 and NY 10363 31278; Figure 2).

3.1.2 The proposed pipeline route follows a road which is predominantly surrounded by pasture land in the Derwent Valley. The eastern extent of the route passes through two fields of pasture to the north and south of the River Derwent, with the A595 to the west, Low Road to the south and the River Derwent and surrounding agricultural land to the north and east.

3.1.3 The geology of the site consists of basalt, and igneous bedrock of the Cocker mouth Volcanic Formation formed approximately 352 to 359 million years ago in the Carboniferous Period (BGS 2017). The overlying superficial area mapped as clay, sand and gravel River Terrace Deposits, formed up to the 3 million years ago in the Quaternary Period, on the north side of the Derwent, and clay, silt, sand and gravel Alluvium on the south side, formed up to 2 million years ago in the Quaternary Period (BGS 2017).

3.2 Historic Landscape Character

3.2.1 The proposed pipeline route lies within the 'Area 18: Ellen and Marron Valleys' Historic Landscape Character area (Cumbria County Council 2009, 62). This character area is dominated by a mix of large and small nucleations, and the fieldscape is dominated by former arable commonfields. The area's legacy is "*a mixed pattern of modern and older settlements and field enclosure with strong legibility of landscape elements of medieval origin*" (*ibid*).

3.3 Archaeological and Historical Background

3.3.1 The historical and archaeological background is compiled from secondary sources and primary records consulted in February 2017, and is based on the results of previous archaeological works, including Grampus's work at Papcastle (Graham 2011) and recent work on the West Cumbria Network Mains pipeline route (Jackson *et al* 2015; McElligot and Johnson 2015). It is intended only as a summary of historical developments around the site. The locations of known heritage assets within the study

area are shown in Figure 3, and summarised in Appendix 2.

- 3.3.2 **Prehistoric:** discoveries of a Bronze Age urn (Asset 1), and a Bronze Age knife blade (Asset 2), perhaps associated with each other, have been found in the study area in the 19th century. Furthermore, aerial photography revealed features in the field to the immediate west of the north-eastern extent of the proposed pipeline route, part of the same field prior to the construction of the A595 bypass. These were investigated by geophysical survey, after the floods of 2009 (Graham 2011) and subjected to archaeological evaluation as part of the West Cumbria Network Mains pipeline route (McElligot and Johnson 2015). The evaluation encountered a small pit containing charred material dating to the Mesolithic period and an undated ditch. The absence of finds suggested these were of prehistoric rather than Roman origin (*ibid*, 1). The geophysical survey indicated further features beyond the area targeted by the evaluation, including a possible roundhouse, beyond the area investigated by the groundworks, indicating a wider area of archaeological potential (Graham 2011; Asset 3).
- 3.3.3 Work as part of the West Cumbria Network Mains pipeline route also encountered Bronze Age pottery in the field to the south-west of the roundabout to the south-west of the eastern extent of the proposed pipeline route (McElligot and Johnson 2015).
- 3.3.4 **Roman Periods:** Derwentio, a Roman fort at Papcastle, to the north-east of the study area, has been the focus of antiquarian and modern archaeological interest. Recent discoveries suggesting it was an important settlement site which included a vicus, and geophysical surveys have identified a large surrounding area that was used for associated cultivation during the Roman period. The programme of geophysical surveys by Grampus after the floods of 2009, mentioned above, also targeted areas to the east of the present proposed pipeline route (Plate 1). The high number of archaeological anomalies indicates the increasing awareness of the importance of the Roman site at Papcastle. The three year community project has encountered a mansion (2011), a forge (2011), a bath house (2012), Roman roadside strip house (2013), a D-shaped enclosure on the west side of the A595 (2013) and parts of the bridge foundations from crossing the Derwent to the east of proposed pipeline route (2013). Heading west from the bridge foundations, a Roman road was uncovered, which headed west. This may be following the River Derwent, and, as no traces of it have been found during archaeological work on the south side of Low Road (Frank Giecco *pers. comm.*), it could be that this extends into the proposed pipeline route. The most north-westerly features shown in Plate 1, nearest the eastern extent of the

proposed pipeline route, have not yet been investigated (Plate 1). This illustrates the potential for more archaeological features of the Roman era to survive in the vicinity.

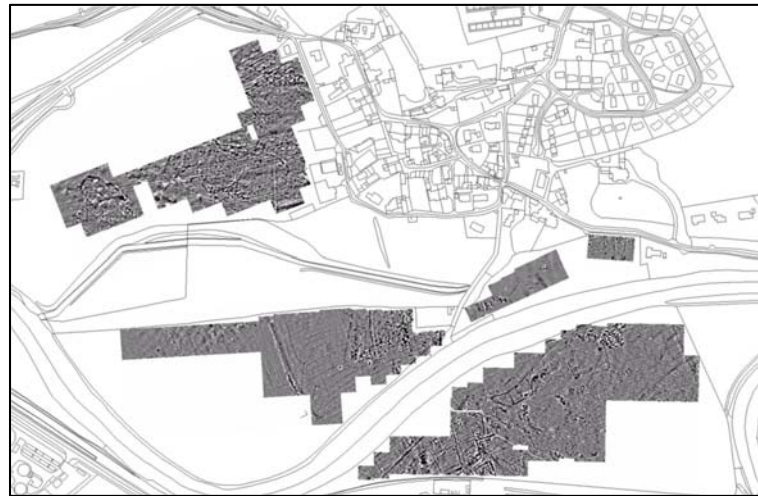


Plate 1: Showing features highlighted by Grampus' Geophysical Surveys (after Graham 2011)

- 3.3.5 A possible boundary ditch (Asset 8) of the Roman period was identified in the study area during an excavation in 1989 which preceded a geophysical survey, and this identified the ditch as being 1m wide and containing sherds of Romano-British pottery including a piece from an East Gaulish cup. Iron nails encountered at regular intervals along the ditch were attributed to a former timber fence once within or at the edge of this ditch. Turnbull suggested that the ditch formed a boundary in 3rd century agricultural exploitation of the land. Papcastle was at the junction of four Roman routeways, two of which, one running to Lamplugh Woodmoor (Asset 5) and one known as Friar's Walk (Asset 9), traverse across the study area. When the A595 bypass, to the west of the eastern extent of the proposed pipeline route, was constructed, a Roman dress-fastener find was discovered by a metal detectorist in the spoilheap (Asset 4).
- 3.3.6 There are a number of further cropmarks (Asset 12), and earthworks (Assets 7, 11, 20, 21 and 22), in the study area at various points along the route, of unknown type or date, which may date to the Roman or prehistoric periods.
- 3.3.7 **Medieval Period:** Anglian dated material was encountered during the archaeological evaluation as part of the West Cumbria Network Mains pipeline route that also encountered a small Mesolithic pit and an undated ditch (*confer* 3.3.2; McElligot and Johnson 2015). This was associated with a possible large timber building in the field to the west of the north-easternmost field through which the proposed pipeline route is

due to pass, and suggests a large early medieval building.

- 3.3.8 There is evidence that the area continued to be cultivated during the medieval period. Known areas of ridge and furrow have been identified in the study area (Asset 10), parts of which were observed to the north-east of the eastern extent of the proposed pipeline route during the site visit (*confer* 4.1.3). In addition, the use of the name Friar's Walk, for the Roman road to the east of the eastern extent of the proposed pipeline route has been noted as possible evidence for a medieval friary existing in the vicinity (Asset 9). This route, seen to head south-westwards towards the River Derwent, to the east of the eastern extent of the proposed pipeline route, must lead to somewhere, and it is possible there is a related river crossing of at least medieval date, perhaps earlier, somewhere in the vicinity.
- 3.3.9 **Post Medieval Period:** in the late 18th century, as shown on Hodkinson and Donald's Plan of 1774 (Figure 4), the study area remained largely agricultural with small settlements dotting the Derwent Valley. The Cockermouth to Workington Road, a turnpike road by this date, and the predecessor of Low Road, is shown to the south of the proposed pipeline route. The milestones in the study area relate to this road (Assets 6 and 24). St Bridget's Church, to the north of the study area, is illustrated on Hodkinson and Donald's Plan of 1774 (Figure 4), though none of the other buildings within the study area are. This may be because of the level of detail on the map, rather than meaning they did not exist by this date.
- 3.3.10 The Papcastle Tithe Award of 1838 (CACC DRC 8/149) shows only the northern field, but this indicates that the proposed pipeline route lay in agricultural land at this time (Figure 5). No tithe map was found to cover the rest of the proposed pipeline route. The Papcastle Tithe map shows a north-west to south-east orientated field boundary running to the bank of the River Derwent, and two other adjoining field boundaries, together forming an irregular rhomboid enclosed area (Assets 13, 14, 15). This enclosed an area labelled '52', with the surrounding area to the east being '49' (CACC DRC 8/149). Both of these plots of land were owned by 'The Reverend Anthony Stratton' at this time, and occupied by 'Little Grave', presumably a nickname. Plot '49' was called 'Anthony's Croft', and '52', 'Mill's Leas'. The Reverend Anthony Watson also owned plots 10, 48, 64 and 67; 10 being the house associated with the land. He is also listed at that location on Wood's Plan of Cockermouth of 1832 (CACW DRC/2/30). As this house lies to the immediate east of plot '49', these strips of land could be remnants of the medieval croft and toft system.

- 3.3.11 The study area remained largely unaffected by post medieval industrial development, remaining within the hinterland of the burgeoning town of Cockermouth, and not targeted by coal exploitation that occurred nearby. However, Brigham quarries, established by at least 1866 (Asset 28; Figure 6) did lie to the south of the proposed pipeline route, and north of the centre of Brigham. This seemed to be a large complex, including four limekilns, and had an associated 'Limekiln Inn'. In addition, a railway line, established primarily to export coal from the mines in the area to Workington, was established to the immediate south of the proposed pipeline route in the mid 19th century (Asset 16). A tramway linked the quarries (Asset 28) to the railway, by 1866 as shown on the First Edition Ordnance Survey map (Figure 6), indicating that limestone was also transported on the railway. The Cockermouth and Workington Railway Company was incorporated under an Act of 21st July 1845 and dissolved and joined the London and North Western Railway in 1866 (National Archives RAIL 122). The line was 8.5 miles long, authorised in 1845 and completed about 1847. About $\frac{3}{4}$ of the traffic was in coal (Vision of Britain 2017). Much of the route in the vicinity of the study area ran to the north of the proposed pipeline route, the A66 now follows it westwards. The railway line closed in the 1960s, although part of its route can be identified from an overgrown linear bank to the south-east of eastern extent of the proposed pipeline route, noted during the site visit (*confer* 4.1.3). This bank had been levelled and removed in the area in which the proposed pipeline route is due to cross it.
- 3.3.12 The Vicarage, with associated gates and piers (Asset 26) and trackway (Asset 27), was a replacement for the former vicarage which lay to the west of St Bridget's Church, and was rebuilt after the construction of the railway line. They are shown on the First Edition Ordnance Survey map of 1866, which also is the earliest map to show several former small buildings no longer in existence (Assets 18, 19, 23 and 29) and a former Bread & Beer House, now Elleridge Cottage (Asset 25).
- 3.3.13 Traces of the three former field boundaries identified from the Tithe Award Plan (Assets 13, 14, 15) can also be seen on the First and Second Editions of the Ordnance Survey maps of 1866 (Figure 6) and 1900 (Figure 7), but had been removed by the publication of the Third Edition in 1925 (Figure 8). No traces of these former field boundaries were observed at the time of the site visit, though traces may survive sub-surface (*confer* 4.1.2). Also noted from 19th century maps is the site of a former well (Asset 17) to the east of the proposed development at Friar's Walk (Asset 9), shown on the First, Second and Third Editions of the Ordnance Survey maps of 1866 (Figure

6), 1900 (Figure 7) and 1925 (Figure 8) but not on the 1962 edition (Figure 9).

3.3.14 Brigham Quarries (Asset 28) continued to expand between 1866 (Figure 6) and 1900 (Figure 7), occupying the northern part of the road too by the latter date, with a second mineral railway/ tramway linking in to the main railway line to the north (Asset 16). The quarries further extended into the 20th century, extending to the west on the north side of the road (Figure 8) up to meet 'Sewage Tanks' (the western extent of the proposed pipeline route) which are first marked on this Third Ordnance Survey map of 1925 (Figure 8). By 1960 (Figure 9), this later quarry extension, to the east of the 'Sewage Works', is labelled 'Kirk Cross Quarry (Disused)' (Asset 30).

3.3.15 The wastewater treatment works, forming the eastern extent of the proposed pipeline, south of the River Derwent, is first shown on the Second Edition of the Ordnance Survey series of 1900 (Figure 7), indicating its origins date to between 1866 (Figure 6). It was extended westwards between 1900 (Figure 7) and 1925 (Figure 8), and eastwards after 1962 (compare Figures 9 and 2).

3.3.16 **Modern Period:** between 1938 and 1957 an additional sewage works was established to the west of Papcastle on the north side of the River Derwent, forming the north-eastern extent of the proposed pipeline route. Between 1983 and 1993, the A595 western bypass for Cockermouth and Papcastle was established running to the west of the eastern extent of the proposed pipeline route. Otherwise, the proposed pipeline route has remained unaffected by modern developments in the vicinity

3.4 Previous Archaeological Works

3.4.1 A number of previous archaeological works have been undertaken in the vicinity. The most significant for this scheme relate to work undertaken in the vicinity of Roman Papcastle, as outlined above, and indicate the potential for associated Roman period remains to extend to within the proposed pipeline route.

3.5 Designated Heritage Assets

3.5.1 There are no designated assets within the site boundary (Figures 2 and 3).

3.5.2 There are three designated assets within the study area, two grade II listed milestones (Assets 6 and 24) and one grade II set of entrance piers and wall (Asset 26), but as these will not be intervisible with the proposed development once complete, and as the impacts on setting will be temporary, i.e. only affected by the construction phase of the works, no impact is anticipated.

3.6 Undesignated Heritage Assets

3.6.1 There are 27 undesignated assets within the study area, summarised in Appendix 2 and included in the text above (*confer* 3.3).

3.7 The Character of the Development

- 3.7.1 The proposed development is for a new pipeline to link the sewage works to the north-west of Brigham (NGR NY 08256 30727) to the two sewage works either side of the River Derwent west of Cockermouth and Papcastle (NGR NY 10341 30944 and NY 10363 31278). The pipeline will be buried, and follow the road for much of its distance, and the compound for undertaking the groundworks will be provided at the existing wastewater treatment works to the south. In the easternmost area, the plan is for the directional drilling to be at depth (4m below the river), starting as close to the road in the field to the south of the River Derwent as possible, and culminating within the compound in the Sewage Works west of Papcastle on the north side of the river. As such, no direct impact is likely, except in the area in the field north of Low Road, and any long-term impact on the setting of assets in the study area from the development is anticipated to be minimal and short-term, only affected by the construction phase of the development.
- 3.7.2 The initial drilling in the field north of Low Road and south of the River Derwent at the eastern extent of the pipeline route has the potential to impact on surviving sub-surface archaeological remains. It is anticipated that the pit for the drilling will be as close as possible to the road, but this may still have a direct impact on surviving features relating to the known former railway (Asset 16), as well as further potential as-yet unknown features, particularly of the prehistoric, Roman or medieval periods.

4 SITE VISIT

- 4.1.1 The site was visited on Thursday 9th February 2017. The site visit targeted the area of direct impact on non-road areas, i.e. the eastern extent of the proposed pipeline route where the route is due to cross two fields either side of the River Derwent. The site was assessed from publicly accessible areas, including from the A595 bypass to the west of the site, and from Low Road to the site. A public footpath also follows the north bank of the River Derwent through the northerly of the two fields proposed to be affected by the development, and this was also accessed as part of the site visit.
- 4.1.2 Both the northern and the southern fields were laid to pasture at the time of the site visit, and visibility was good, though a low winter sun affected photography options. Both fields comprised low-lying agricultural land in the River Valley, and no traces of archaeological features, including the three former field boundaries known to have existed in the vicinity in the 19th century (Assets 13, 14 and 15), were noted in the vicinity of the proposed pipeline route (Plates 2 and 3).



Plate 2: Northern field, facing north-east



Plate 3: Southern field, facing south-east

4.1.3 A banked area to the north east, in the vicinity of Friar's Walk (Asset 9) did appear to show traces of ridge and furrow, earlier cultivation marks (Plate 4), but this was beyond the area of direct impact. These may be the same as the known area of ridge and furrow (Asset 10). A bank, the former railway embankment for the Cockermouth and Workington Railway line (Asset 16), was also visible to the south-east, overgrown and dotted with trees, but this too was beyond the area of direct impact (Plate 5).



Plate 4: Former cultivation marks to the north-east, facing north-east



Plate 5: Shrubbery and trees on bank to the south-east, facing west

5 DISCUSSION

5.1 Summary of Heritage Asset Significance

- 5.1.1 The majority of the proposed pipeline route has been found to follow a turnpike road, established as such in the mid 18th century, within a wider hinterland of agricultural land utilised as such perhaps from as early as the Roman period, though stray finds of the Bronze Age have also been found in the study area, as well as a Mesolithic pit. The eastern extent of the proposed pipeline route has been found to cross such agricultural land. In this eastern area, a boundary ditch and cropmarks interpreted as an enclosure, hut circle and post holes have been identified during previous archaeological investigations, and are likely to be of Roman origin. A possible early medieval large timber building has also been found in the vicinity. Friar's Walk, to the east of the proposed pipeline route has also been suggested to indicate a medieval friary in the vicinity, and the route itself must lead somewhere, perhaps to a river crossing close to the proposed pipeline route. Known former field boundaries have been identified to have once existed within the northern of the two fields due to be directly impacted upon by the development, and a railway line is known to have run within the southern part of the southern field, attesting to post medieval land use of the site. Towards the western part of the proposed pipeline route, a quarrying complex with associated tramways, limekilns and inn had been established by 1866, extending into the 20th century, of which the present Kirk Cross Quarry is a surviving trace. The existing sewage works, forming the western, and south-eastern and north-eastern extents of the proposed pipeline, have been found to date to the early 20th, late 19th and mid 20th centuries respectively.
- 5.1.2 Of the heritage assets within the study area, four of the total of 30 lie within the eastern part of the proposed pipeline route (*confer* Appendix 2). Three are former field boundaries identified from a tithe map of 1838 and all were removed between 1900 and 1925 (Assets 13, 14 and 15). These are considered to be of local significance (Appendix 1, Table 1), but due to the engineering plans for directional drilling at depth, these will not be directly impacted upon by the pipeline route. The fourth is part of the former line of the Cocker mouth and Workington Railway (Asset 16), also considered to be of local significance (Appendix 1, Table 1) and this may be directly impacted upon.
- 5.1.3 Of the 26 heritage assets outside the proposed pipeline route boundary, three are grade II listed (Assets 6, 24 and 26), and therefore of district of county (higher)

significance (Appendix 1, Table 1).

5.1.4 Of the remaining 23 heritage assets outside the proposed pipeline route boundary, 20 are, as non-designated heritage assets, of local significance (Assets 3, 5, 7-12, 17, 18-23, 25 and 27-30; Appendix 1, Table 1). The remaining three heritage assets are findspots, and are therefore of negligible significance (Assets 1, 2 and 4; Appendix 1, Table 1).

5.2 Magnitude of Impact on Heritage Assets

5.2.1 As the development plan for the easternmost area is for directional drilling at depth, it is anticipated that the only area to be directly impacted on by the proposed pipeline route will be within the field north of Low Road and south of the River Derwent. The proposal is for the excavation here to be as close to the road as possible. This could result in a potential direct impact on surviving sub-surface traces of the former railway route (Asset 16), and, as such, the magnitude of impact is likely to be less than substantial, as those features would be completely removed within the excavated area, and not loss, because sections of the former railway surviving beyond the pipeline route will survive (Appendix 1, Table 2).

5.2.2 The magnitude of impact of the redevelopment proposals on the assets of district or county significance would be no change (Appendix 1, Table 2) as there will be no intervisibility with the development, and the impact will be restricted to the construction phase. This applies to two grade II listed milestones and the gates and entrance piers to the vicarage (Assets 7, 24 and 26).

5.2.3 For the 26 heritage assets of local significance outside the area of direct impact, including the three field boundaries found to have lain within the eastern part of the proposed pipeline route but beyond the scope of direct impact, the magnitude of impact would be minor (Appendix 1, Table 2). For the three findspots of negligible significance, the magnitude of impact would be no change (Appendix 1, Table 2).

5.3 Heritage Statement

5.3.1 For the asset within the area of direct impact of the proposed pipeline route, a substantial magnitude of impact on a heritage asset of local significance will result in a limited impact on heritage significance. This is the case for the former railway line (Assets 16), and, depending on advice from Cumbria County Council's Historic Environment Team, this level of impact may require further archaeological mitigationary work (Appendix 1, Table 3).

- 5.3.2 A magnitude of impact of no change, on heritage assets of district or county significance as with the milestones and gates and entrance piers (Asset 6, 24 and 26) would result in no appreciable limited impact on heritage significance, likely to require no further mitigation (Appendix 1, Table 3).
- 5.3.3 For the remaining 26 heritage assets of local and negligible significance for which the magnitude of impact would be minor, the impact on heritage significance would be no appreciable impact, and therefore no further archaeological mitigation would likely be likely to be required (Appendix 1, Table 3).
- 5.3.4 There remains the potential for further as-yet unknown remains to survive within the area of direct impact, the field north of Low Road and south of the River Derwent. This is based on recent archaeological discoveries in the area, including Mesolithic features, Roman structures and finds, as well as the potential for features related to an early medieval large timber building and possible medieval friary.

6 BIBLIOGRAPHY

6.1 Primary Sources

Hodskinson and Donald's Plan of Cumberland, 1774
Wood's Plan of Cockermouth, 1832 (CACW DRC/2/30)
Papcastle Tithe Award, 1838 (CACC DRC 9/149)
Ordnance Survey Map First Edition, 1866, 25 inch to 1 mile scale
Ordnance Survey Map Second Edition, 1900, 25 inch to 1 mile scale
Ordnance Survey Map Third Edition, 1925, 25 inch to 1 mile scale
1960 Ordnance Survey map

6.2 Secondary Sources

Allerdale Borough Council 2014, *Allerdale Local Plan (Part 1): Strategic and Development Management Policies*, Allerdale Borough Council
Bassetlaw District Council 2011, *A Guide to Heritage Impact Assessments*
DCLG 2014, *Technical Guidance to the National Planning Policy Framework*, Department of Communities and Local Government: London
DCLG 2012, *National Planning Policy Framework*, Department of Communities and Local Government: London
DEFRA 1997, *The Hedgerow Regulations 1997: A Guide to the Law and Good Practice*, Department of the Environment, Transport and the Regions: London
English Heritage 2010, *Understanding Place: Historic Area Assessments in a Planning and Development Context*, English Heritage: Swindon
English Heritage 2011, *Understanding Place: Conservation Area Designation, Appraisal and Management*, English Heritage: London
English Heritage 2012, *The Setting of Heritage Assets*, English Heritage: London
English Heritage nd, *Valuing Places: Good Practice in Conservation Areas*, English Heritage: Swindon
Graham, M, 2011, 'Unlocking Hidden Heritage Project: Community Geophysical Survey at Papcastle and Cockermouth, Cumbria', *unpublished report relating to the Bassenthwaite Reflections Heritage Lottery project*

Jackson, D, Peters, C, Newman, R, and Johnson, E, 2015, Network Mains from Quarry Hill to Stainburn and Cockermouth, Cumbria: archaeological desk-based assessment and walkover survey', *unpublished grey literature report by Wardell Armstrong Archaeology*

6.3 Internet Sources

BGS 2017, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>, accessed 8th February 2017

Cumbria County Council Historic Environment Record 2017, <http://maps.cumbria.gov.uk/eggp/eggp.aspx?dept=Environment&scriptname=1%20Historic%20Environment>, accessed 8th February 2017

NHL 2017, <https://historicengland.org.uk/listing/the-list/map-search?clearresults=true>, accessed 8th February 2017

PastScape 2017, <http://www.pastscape.org.uk/>, accessed 8th February 2017

Vision of Britain 2017, <http://www.visionofbritain.org.uk/descriptions/827710>, accessed 8th February 2017

6.4 Other Sources

Frank Giocco *pers. comm.* 2017, conversation regarding recent archaeological work, 13th February 2017

APPENDIX 1: HERITAGE IMPACT ASSESSMENT TABLES

Table 1 Measuring Significance

Significance	Designation	Asset types and justification	Preferred response to negative impact
International	Non-statutorily designated heritage assets	World Heritage Site (NPPF s132)	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). Grade A Listed Buildings in Scotland	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). Grade B Listed Buildings in Scotland	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 (NPPF s115)	Limit negative impact and mitigate
District or County (Lesser)	Non-designated heritage assets	Heritage assets placed on a local planning authority list (NPPG). Grade C Listed Buildings in Scotland	Limit negative impact and mitigate
District or County (Lesser)	Non-designated heritage assets	Any area of potential listed in a local plan (NPPG)	Limit negative impact and mitigate
District or County (Lesser)	Non-designated heritage assets	Historic Hedgerow as defined under the Hedgerow Regulations 1997	Limit negative impact and mitigate
Local	Non-designated heritage assets	Any extant heritage assets outside of a national park or AONB.	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 2: Establishing the Magnitude of Impact

Magnitude of Impact	Heritage Asset		
	Archaeological Remains (Archaeological Interest)	Historic Buildings (Architectural/Artistic Interest and/or Historic Interest)	Historic Landscapes (Historic Interest)
Loss	<ul style="list-style-type: none"> Change to most or all key archaeological materials, such that the resource is totally altered Comprehensive changes to setting 	<ul style="list-style-type: none"> Change to key historic building elements, such that the resource is totally altered Comprehensive changes to setting 	<p>Major change to historic landscape character resulting from:</p> <ul style="list-style-type: none"> Changes to most key historic landscape elements, parcels or components Extreme visual effects Major change to noise or change to sound quality Major changes to use or access
Substantial	<ul style="list-style-type: none"> Changes to many key archaeological materials, such that the resource is clearly modified Considerable changes to setting that affect the character of the asset 	<ul style="list-style-type: none"> Changes to many key historic building elements, such that the resource is significantly modified Changes to setting of an historic building such that it is significantly modified 	<p>Moderate change to historic landscape character resulting from:</p> <ul style="list-style-type: none"> Changes to many key historic landscape elements, parcels or components Visual change to many key aspects of the historic landscape Noticeable differences in noise or sound quality Considerable changes to use or access
Less than substantial	<ul style="list-style-type: none"> Changes to key archaeological materials, such that the asset is slightly altered Slight changes to setting 	<ul style="list-style-type: none"> Change to key historic building elements, such that the asset is slightly different Changes to setting of an historic building such that it is noticeably changed 	<p>Limited change to historic landscape character resulting from:</p> <ul style="list-style-type: none"> Changes to few key historic landscape elements, parcels or components Slight visual changes to few key aspects of the historic landscape Limited changes to noise levels or sound quality Slight changes to use or access
Minor	<ul style="list-style-type: none"> Very minor changes to archaeological materials 	<ul style="list-style-type: none"> Slight changes to historic buildings elements or setting that hardly affect it 	<p>Very small change to historic landscape character resulting from:</p> <ul style="list-style-type: none"> 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
No change	No change		

Table 3 Impact on Heritage Significance

Assessment Matrix to define the degree of impact on heritage asset significance		Magnitude of impact				
		No change	Minor alteration with no reduction in significance	Less than substantial	Substantial	Loss
Significance of Heritage Asset	National	Blue	Yellow	Dark Green	Red	Red
	District/County (Higher)	Blue	Yellow	Light Green	Dark Green	Red
	District/County (Lesser)	Blue	Yellow	Light Green	Light Green	Dark Green
	Local	Blue	Blue	Yellow	Light Green	Light Green
	Negligible	Blue	Blue	Blue	Blue	Blue

Blue (no appreciable impact) = no mitigation necessary
 Yellow (very limited impact) = low level mitigation eg photographic record/watching brief etc
 Light green (limited impact) = may need evaluation to establish appropriate mitigation which may include site survey/excavation etc
 Dark green (major impact) = may not be agreed and then only with significant justification, may require evaluation and will require significant mitigation such as excavation, detailed building survey, visual restoration, some in-situ preservation and on-site interpretation
 Red (very major impact) = unlikely to be agreed except in exceptional circumstances and only with a high level of mitigation

APPENDIX 2: LIST OF HERITAGE ASSETS

Heritage Assets within the linear 200m search radius centred on the proposed pipeline (study area):

Asset No.	Reference	Site Name	Description	Grid Reference	Period
1	CCC HER 4271	Urn Find	A Bronze Age urn found at Papcastle prior to 1870. Now in the British Museum. Probably found in association with Asset 2	310000,531000	Bronze Age
2	CCC HER 4272	Knife Find	A bronze knife blade (now in the British Museum) possibly associated with Asset 1	310000,531000	Bronze Age
3	CCC HER 13560	Ring Ditch Cropmark	Cropmarks investigated by geophysical survey and interpreted as an enclosure, hut circle and postholes for a large timber building. Possibly associated with the extramural settlement around Papcastle Roman Fort	310100,531200	Unknown
4	CCC HER 19500	Dress Fastener Find	Cast bronze disc headed fastener with enamel decoration found by metal detector in a spoil heap during the building of a by-pass on the A595 road	310000,531000	Roman
5	CCC HER 1036	Route of a Roman Road	Site of a former 7 mile Roman road between Papcastle fort (CCC HER 872) and Lamplugh Woodmoor	310458,531123 to 309585,530893	Roman
6	NHL 1138167	Grade II listed milestone	Milestone west of Cockermouth, thought to date to the early 19 th century, for the Cockermouth to Workington Turnpike. The Turnpike was established in 1753 (Hindle 1984, 139)	310634,530824	Post Medieval
7	CCC HER 13557	Unclassified Earthworks	Unclassified earthworks	310300,531250	Unknown

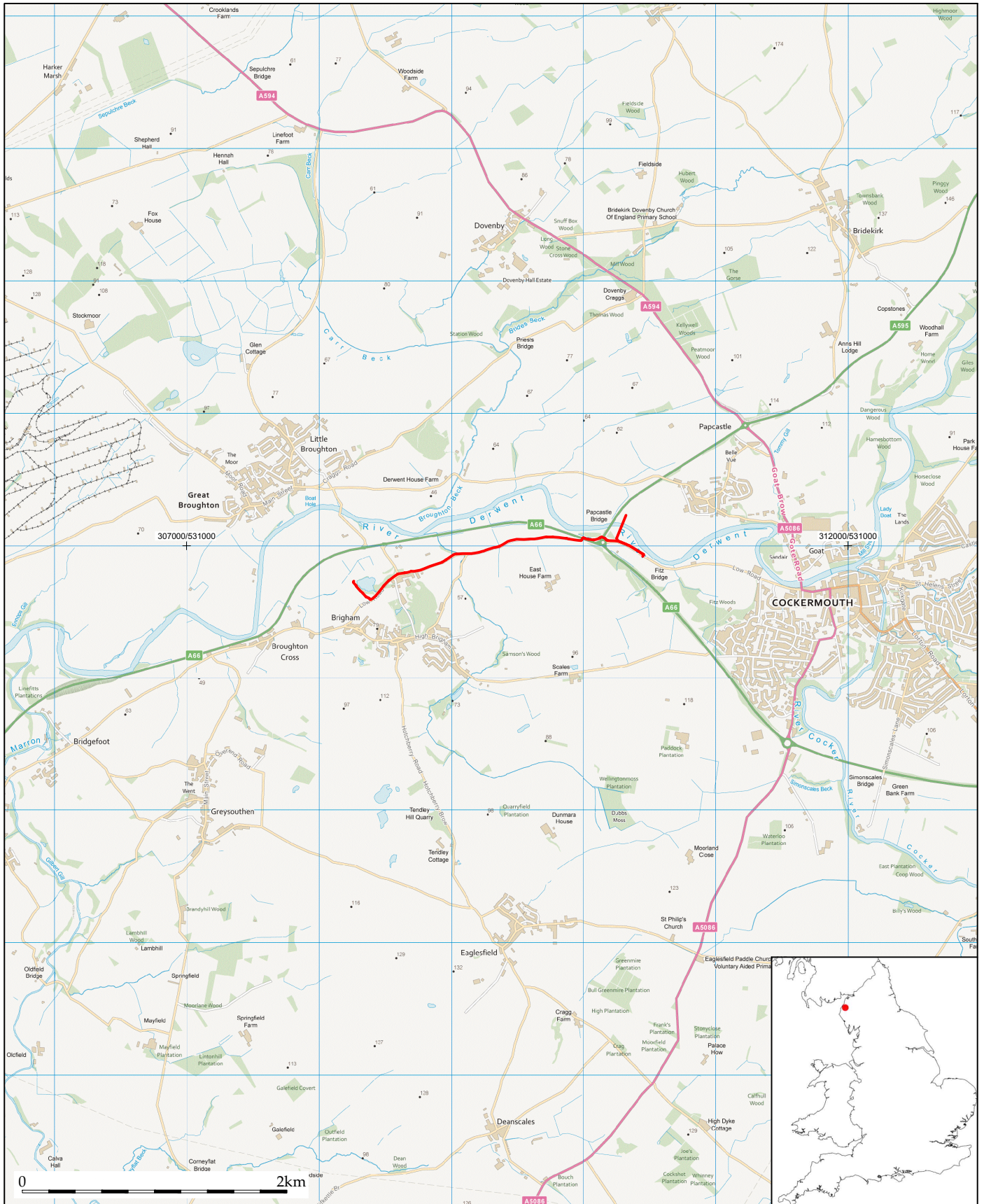

Asset No.	Reference	Site Name	Description	Grid Reference	Period
8	CCC HER 16741; PastScape 875462	Field Boundary; Find Spot	Previous geophysical survey suggested a double alignment of pits. No pit alignments were found during excavation in 1989, but there was a single ditch which followed approximately the same line. The ditch had an average width of about one metre and contained some sherds of Romano-British pottery including a piece of an East Gaulish cup. Iron nails were also found in the ditch-fill at regular intervals of little over a metre; these presumably represent a timber fence in or alongside the ditch. The ditch has been interpreted by P Turnbull as a field boundary used in the agricultural exploitation of the land in the third century AD	310240,531260	Probable Roman
9	CCC HER 10917	Friars Walk Place name	A Roman road, known as Friars walk, suggests circumstantial evidence for a medieval friary in the vicinity	310700,531200	Roman; Medieval
10	CCC HER 13559	Ridge and Furrow	An area of medieval ridge and furrow surviving as an earthwork	310500,531200	Medieval
11	CCC HER 13554	Papcastle Dykes	A dyke, surviving as an earthwork	310500,531300	Unknown
12	CCC HER 13548	Unclassified Parch Marks	An area of unclassified parch marks visible as cropmarks	310100,531400	Unknown
13	Papcastle Tithe Map, First Ed OS	Former Field Boundary	North-west south-east orientated former field boundary heading from north of river north-westwards across proposed pipeline route. Only the southern half is shown on the First Edition Ordnance Survey map of 1866. Completely removed by 1925	310283,531199	Post Medieval
14	Papcastle Tithe Map, First Ed OS	Former Field Boundary	East-north-east west-south-west orientated formed field boundary heading east-north-eastwards from the river and Asset 14. Completely removed	310332,531189	Post Medieval
15	Papcastle Tithe Map, First Ed OS	Former Field Boundary	North-east south-west orientated former field boundary heading north-eastwards from Asset 15	310383,531232	Post Medieval

Asset No.	Reference	Site Name	Description	Grid Reference	Period
16	National Archives RAIL 122; Vision of Britain 2017; First Ed OS	Former line of the Cockermouth and Workington Railway	The Cockermouth and Workington Railway Company was incorporated under an Act of 21 st July 1845 and dissolved and joined the London and North Western Railway in 1866. The line was 8.5miles long, authorised in 1845 and completed about 1847. About ¾ of the traffic was in coal. Much of the route in the vicinity of the study area ran to the north of Low Road and the A66 now follows it westwards. It closed in the 1960s	311077,530577 to 299624,529574	Post Medieval
17	First Ed OS	Well	A well is marked to the east of the proposed pipeline route and west of Papcastle on the First, Second and Third Editions of the Ordnance Survey maps. This disappeared between 1957 and 1962. It was not marked on the Papcastle Tithe map of 1838	310658,531234	Post Medieval
18	Jackson <i>et al</i> 2015	Site of Square Building	Square building north of East House on south side of road, shown on First Edition Ordnance Survey mapping, and on mapping of 1960, but no longer in existence. Noted during previous archaeological work (Jackson <i>et al</i> 2015)	309642,531043	Post Medieval
19	Jackson <i>et al</i> 2015	Site of Rectangular Building	Rectangular building north-west of East House on north side of road, shown on First Edition Ordnance Survey mapping, and on mapping of 1960, but no longer in existence. Noted during previous archaeological work (Jackson <i>et al</i> 2015)	309508,531085	Post Medieval
20	Jackson <i>et al</i> 2015	Possible Earthwork	Possible earthwork located on Google Earth imagery. No such feature is marked on historic mapping. A walkover survey (Jackson <i>et al</i> 2015) found it to be a circular-shaped earthwork, possibly linked to the former railway or a related to quarrying/ mining activity	309425,531095	Unknown

Asset No.	Reference	Site Name	Description	Grid Reference	Period
21	Jackson <i>et al</i> 2015	Earthworks	A walkover survey (Jackson <i>et al</i> 2015) noted earthworks within the field, north of the former route of the Cockermouth to Workington Railway and the A66. A former field boundary is known to have existed at this location from the First Edition Ordnance Survey mapping, still shown on 1960 Ordnance Survey mapping, but no longer surviving	309395,531070	Unknown
22	Jackson <i>et al</i> 2015	Possible Enclosure	Possible enclosure site visible on Google Earth imagery and noted during a walkover survey (Jackson <i>et al</i> 2015) consisting of a built up area of ground. The site is closely associated with a possible quarry/mining site which is sunk into the possible enclosure and also former field boundaries which surround the possible enclosure	309395,531076	Unknown
23	Jackson <i>et al</i> 2015	Site of Square Building	Square building north-east of Brigham on north side of road, shown on First Edition Ordnance Survey mapping, and on 1900 Ordnance Survey map but gone by 1925. Noted during previous archaeological work (Jackson <i>et al</i> 2015)	309282,530979	Post Medieval
24	NHL 1145202	Grade II listed milestone	Milestone by Eller Ridge Cottage, thought to date to the early 19 th century, for the Cockermouth to Workington Turnpike. The Turnpike was established in 1753 (Jackson <i>et al</i> 2015)	309096,530934	Post Medieval
25	CCC HER 11776	Bread & Beer House	'Bread & Beer House' shown on First Edition Ordnance Survey mapping to the north-east of Brigham and still shown as a 'Bread & Beer House' in 1925. The 1960 Ordnance Survey map annotates the building with 'Elleridge Cottage', suggesting it had been converted to a dwelling by this date	309090,530928	Post Medieval
26	NHL 1138198	Grade II listed wall and Gate Piers at Entrance to Old Vicarage	Wall and gate piers at entrance to Old Vicarage, at start of trackway (Asset 27). The Old Vicarage was constructed after the construction of the railway c. 1847 (Jackson <i>et al</i> 2015)	308855,530860	Post Medieval

Asset No.	Reference	Site Name	Description	Grid Reference	Period
27	Jackson <i>et al</i> 2015	Track to Vicarage	Trackway to former vicarage, noted during previous work (Jackson <i>et al</i> 2015), east of St Bridget's Church, shown on First Edition Ordnance Survey mapping, and still in existence. This vicarage was a replacement vicarage for the one to the west of the church after the construction of the railway line which opened in 1847 (Joy 1983, 152-3). The wall and gate piers at the entrance are listed grade II (Asset 26)	308851,530873	Post Medieval
28	CCC HER 11770	Site of Brigham Quarries	The site of 'Brigham Quarries' shown on First Edition Ordnance Survey mapping, and shown with a 'Colliery Rescue Station' in 1925, but the whole area 'disused' by 1967, and largely built over within the pipeline corridor. Only the quarry is marked on the 1980 map	308618,530727	Post Medieval
29	Jackson <i>et al</i> 2015	Site of Rectangular Building	Rectangular building first shown on Second Edition Ordnance Survey map and on 1967 map but not shown on modern mapping. Noted during previous archaeological work (Jackson <i>et al</i> 2015)	308392,530599	Post Medieval
30	CCC HER 11497	Site of Kirk Cross Quarry	Site of a quarry. On the 1980 map, the site appears to be filled with water	308350,530700	Post Medieval

APPENDIX 3: FIGURES

Wardell Armstrong
Archaeology
2017

PROJECT: Land at Papcastle Wastewater Treatment Works, Cumbria

CLIENT: United Utilities

SCALE: 1:40,000 at A4


DRAWN BY: AB


CHECKED BY: AB

DATE: February 2017

REPORT No: CL11960

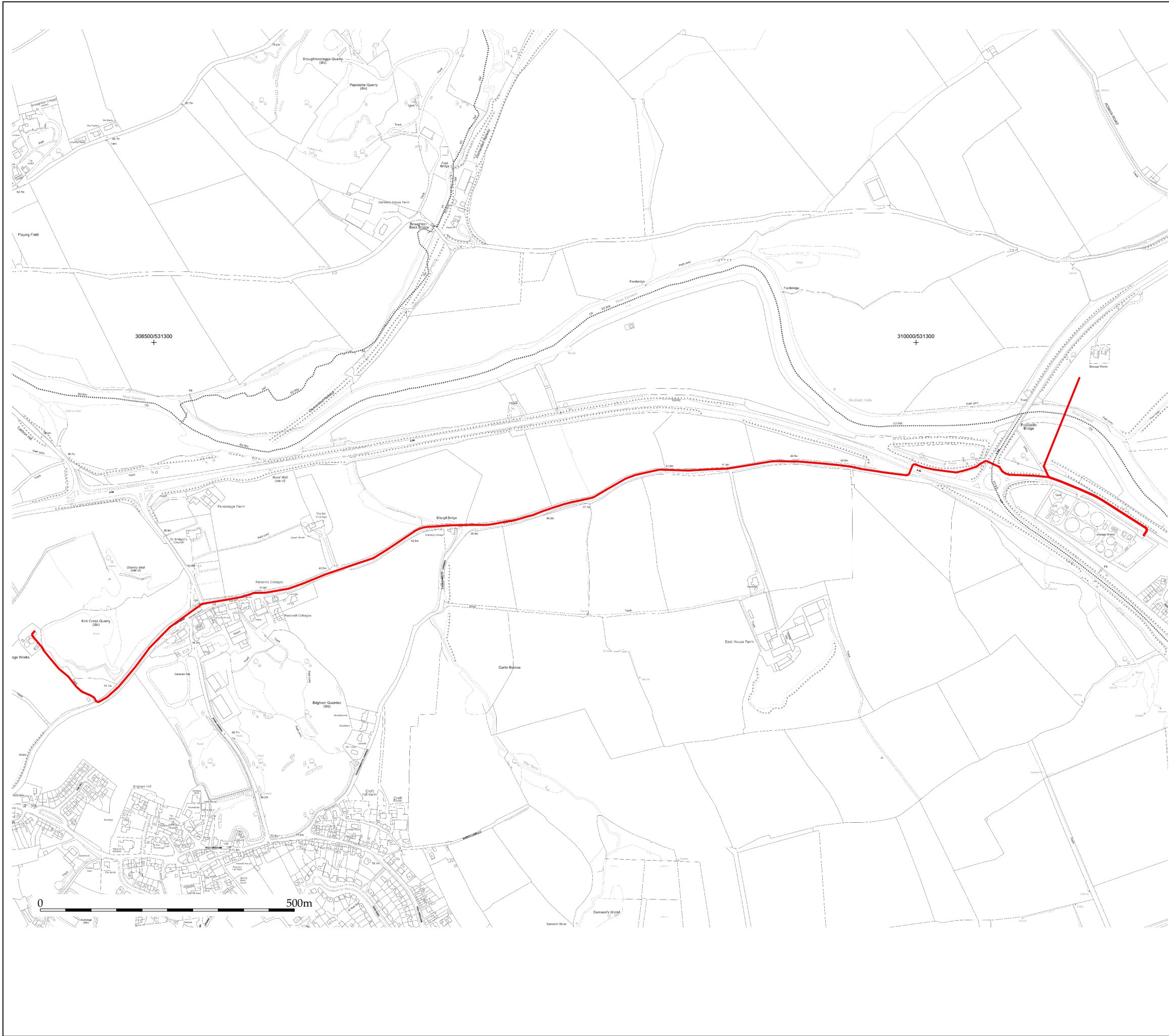
KEY:

 Route of pipeline



Reproduced by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright. All rights reserved. Licence number 100058076

Figure 1: Site location.



Wardell Armstrong
Archaeology
2017

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria

CLIENT:
United Utilities

SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

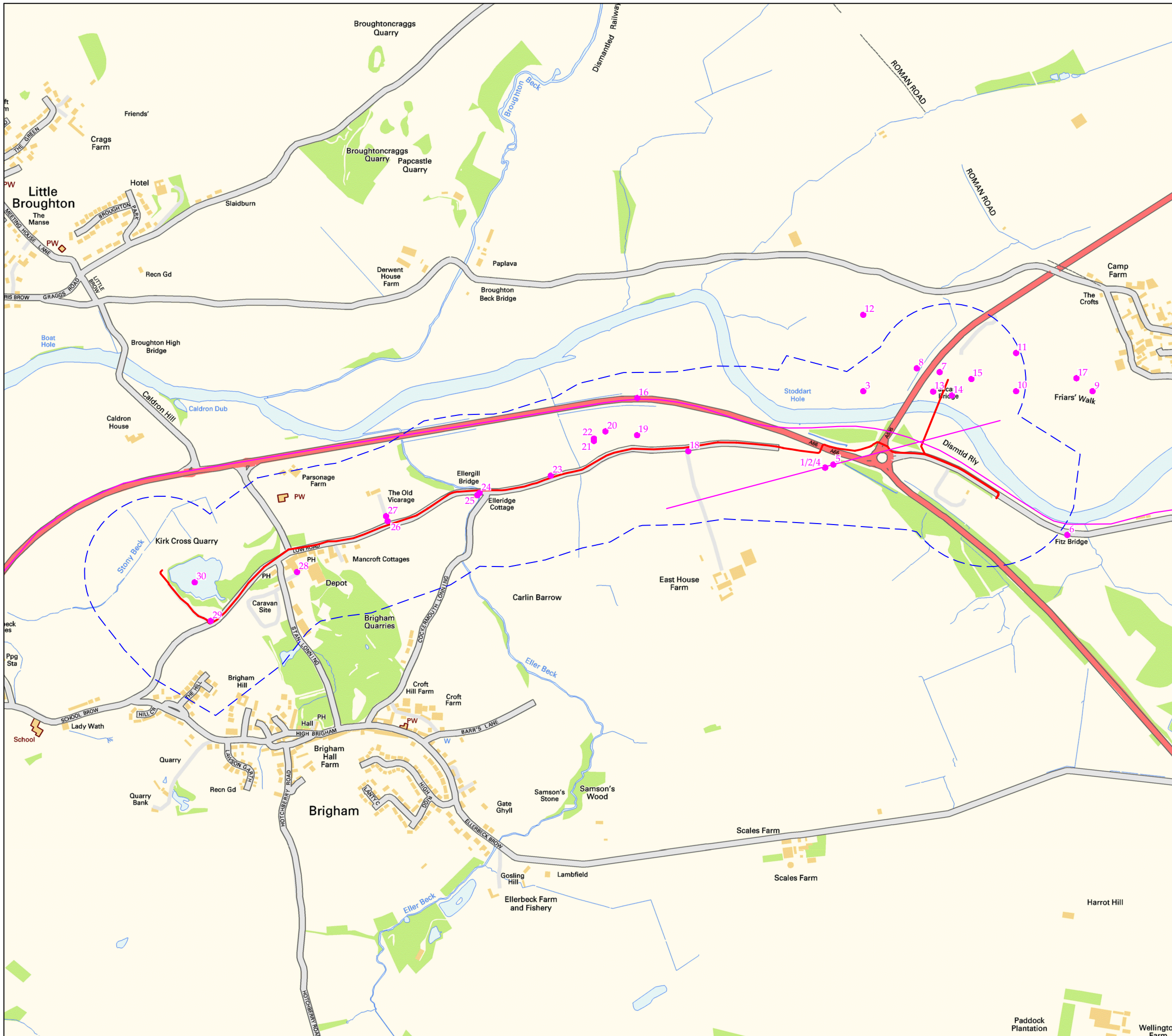
DATE: February 2017

KEY:
Route of pipeline

Reproduced by permission of Ordnance Survey on behalf of
The Controller of Her Majesty's Stationery Office.
© Crown copyright. All rights reserved.
Licence number 100058076.

REPORT No:
CL11960

Figure 2: Detailed site location.



Wardell Armstrong
Archaeology
2017

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria




CLIENT:
United Utilities

SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017

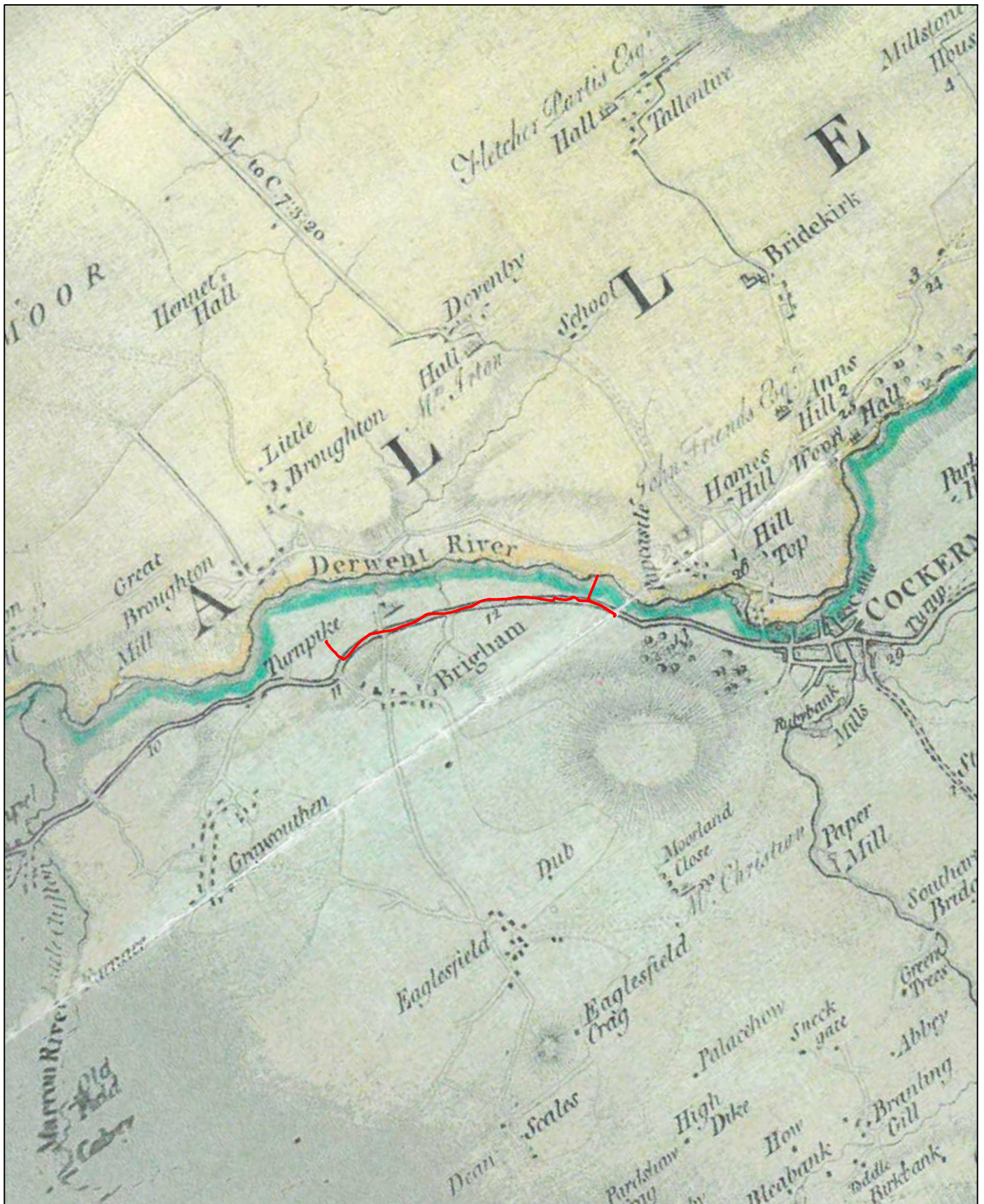
- KEY:
-  Route of pipeline
 -  200m study area
 -  Heritage assets



Reproduced by permission of Ordnance Survey on behalf of
The Controller of Her Majesty's Stationery Office.
© Crown copyright. All rights reserved.
Licence number 100058076.

REPORT No:
CL11960

Figure 3: Location of heritage assets within a 200m study area of the pipeline route.






	<p>PROJECT: Land at Papcastle Wastewater Treatment Works, Cumbria</p> <p>CLIENT: United Utilities</p> <p>SCALE: Not to scale</p> <p>DRAWN BY: AB</p> <p>CHECKED BY: AB</p> <p>DATE: February 2017</p> <p>REPORT No: CL11960</p>	<p>KEY:</p> <p> Route of pipeline</p>	
---	---	---	---

Figure 4: Hodskinson and Donald's Plan of Cumberland, 1774.

PROJECT:

Land at Papcastle Wastewater
Treatment Works, Cumbria

CLIENT:

United Utilities

SCALE: 1:12,500 at A4

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017

KEY:

 Route of pipeline



REPORT No:

CL11960

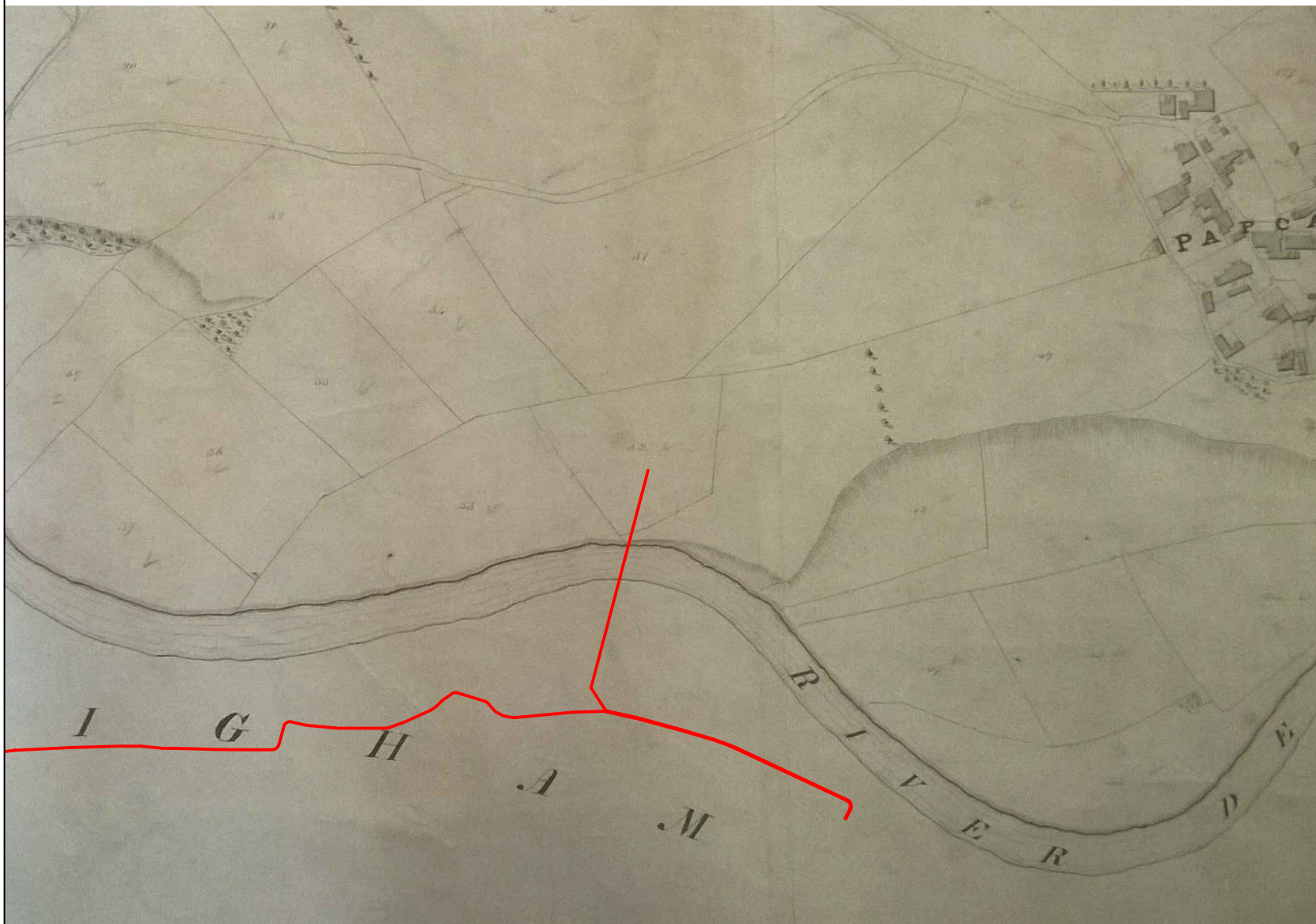


Figure 5: Papcastle Tithe Award Plan, 1838.

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria


CLIENT:
United Utilities

SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017

KEY:
 Route of pipeline



REPORT No:
CL11960

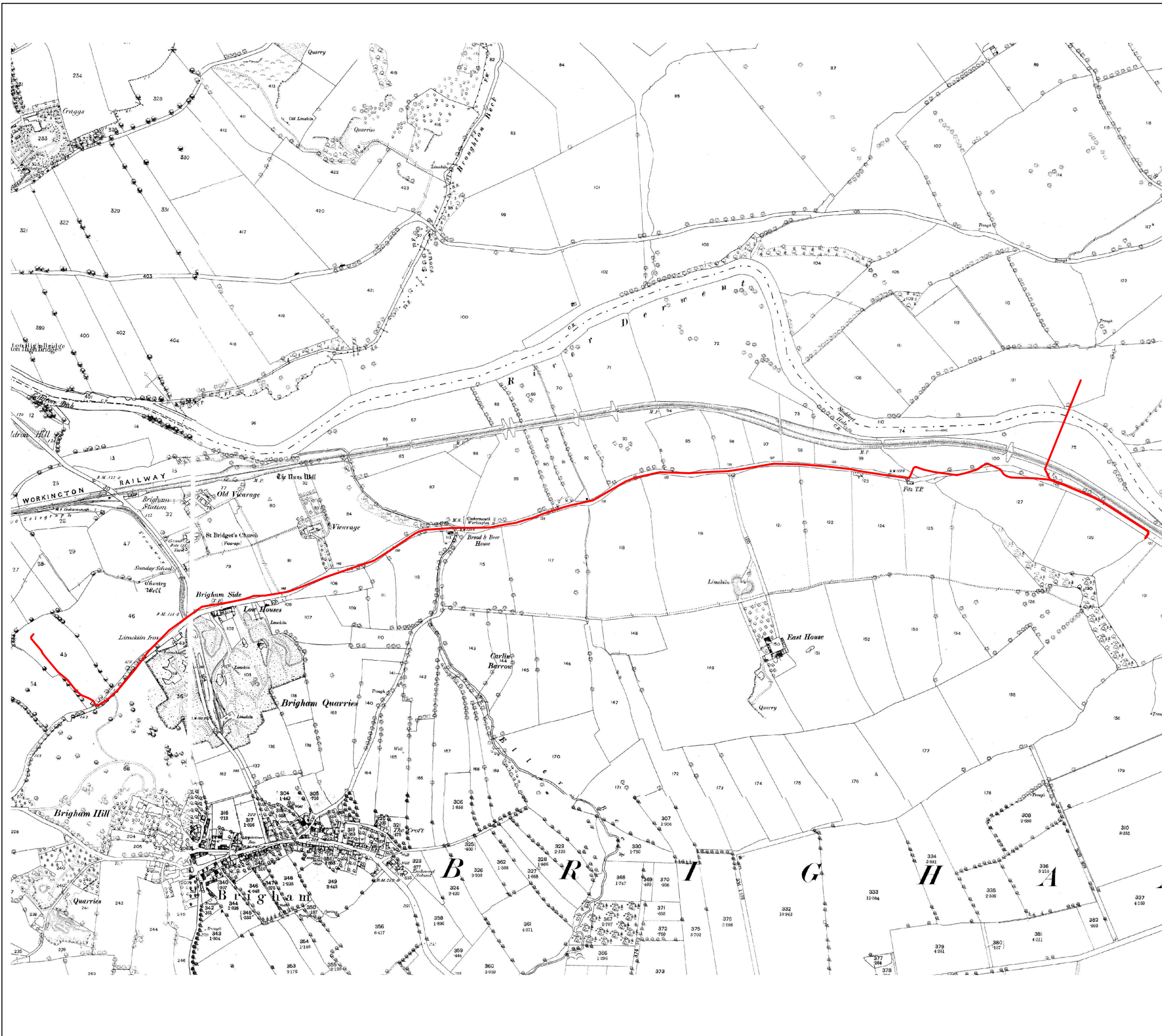


Figure 6: First Edition Ordnance Survey Map, 1866.

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria

CLIENT:
United Utilities

SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017


KEY:
 Route of pipeline



Figure 7: Second Edition Ordnance Survey Map, 1900.

REPORT No:
CL11960

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria


CLIENT:
United Utilities

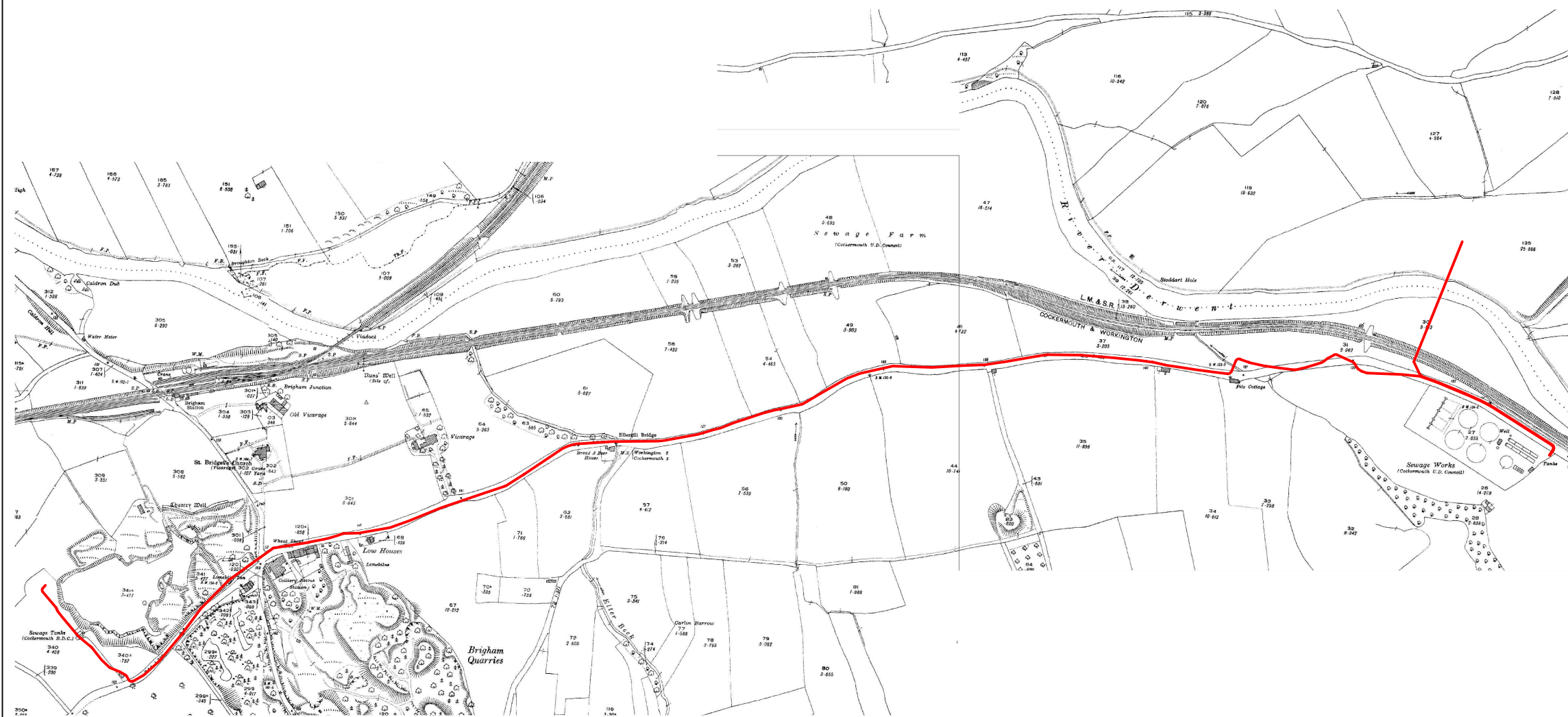
SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017

KEY:
 Route of pipeline



REPORT No:
CL11960

Figure 8: Third Edition Ordnance Survey Map, 1925.

PROJECT:
Land at Papcastle Wastewater
Treatment Works, Cumbria


CLIENT:
United Utilities

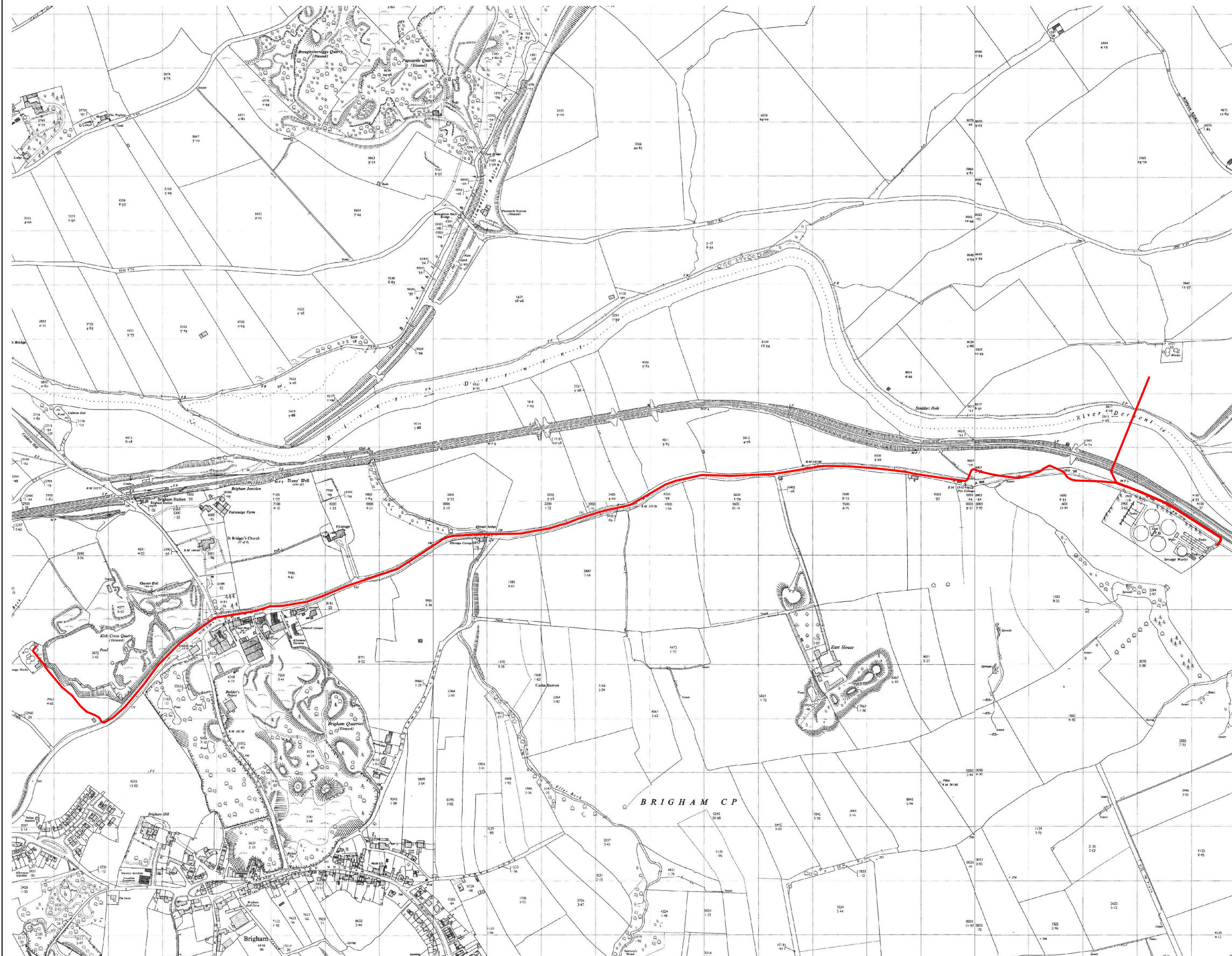
SCALE: 1:7,500 at A3

DRAWN BY: AB

CHECKED BY: AB

DATE: February 2017

KEY:
 Route of pipeline



REPORT No:
CL11960

Figure 9: Ordnance Survey Map, 1960.

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)845 111 7777

CARDIFF
22 Windsor Place
Cardiff
CF10 3BY
Tel: +44 (0)29 2072 9191

EDINBURGH
Suite 2/3, Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GREATER MANCHESTER
2 The Avenue
Leigh
Greater Manchester
WN7 1ES
Tel: +44 (0)1942 260101

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)20 7242 3243

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

PENRYN
Tremough Innovation Centre
Tremough Campus
Penryn
Cornwall
TR10 9TA
Tel: +44 (0)1872 560738

SHEFFIELD
Unit 5
Newton Business Centre
Newton Chambers Road
Thorncliffe Park
Chapelton
Sheffield
S35 2PH
Tel: +44 (0)114 245 6244

TRURO
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EH
Tel: +44 (0)1872 560738

WEST BROMWICH
Thynne Court
Thynne Street
West Bromwich
West Midlands
B70 6PH
Tel: +44 (0)121 580 0909

International offices:

ALMATY
29/6 Satpaev Avenue
Rakhat Palace Hotel
Office Tower, 7th Floor
Almaty
050040
Kazakhstan
Tel : +7-727-3341310

MOSCOW
Suite 2, Block 10,
Letnikovskaya St.
Moscow, Russia
115114
Tel: +7(495) 980 07 67

Wardell Armstrong Archaeology:

CUMBRIA
Cocklakes Yard
Carlisle
Cumbria
CA4 0BQ
Tel: +44 (0)1228 564820