



Mersey Valley Sludge, Radcliffe, Greater Manchester

Rapid Desk-Based Research and Watching Brief



Oxford Archaeology North

August 2009

United Utilities

Issue No: 2009-10/949

OAN Job No: L9801

NGR: SD 7910 0725 to SD 8010
0769

Document Title: MERSEY VALLEY SLUDGE, RADCLIFFE, GREATER MANCHESTER

Document Type: Rapid Desk-Based Research and Watching Brief

Client Name: United Utilities

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OA Job Number: L9801

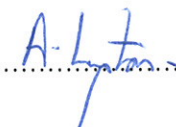
National Grid Reference: SD 7910 0725 - 8010 0769

Prepared by: Alastair Vannan
Position: Supervisor
Date: August 2009

Checked by: Alison Plummer
Position: Senior Project Manager
Date: August 2009

Approved by: Alan Lupton
Position: Operations Manager
Date: August 2009

Signed.....

Signed.....

Oxford Archaeology North

Mill 3
Moor Lane Mills, Moor Lane
Lancaster
LA1 1GF
t: (0044) 01524 541000
f: (0044) 01524 848606

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

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

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Osney Mead
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OX2 0EA
t: (0044) 01865 263800
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CONTENTS

SUMMARY	3
ACKNOWLEDGEMENTS	4
1. INTRODUCTION	5
1.1 Circumstances of Project.....	5
2. METHODOLOGY	6
2.1 Project Design.....	6
2.2 Rapid Desk-Based Research.....	6
2.3 Watching Brief.....	6
2.4 Archive	7
3. BACKGROUND	8
3.1 Location, Topography and Geology	8
3.2 Historical and Archaeological Background.....	8
3.3 Map Regression Analysis	14
3.4 Desk-Based Assessment.....	16
4. GAZETTEER OF SITES	18
5. WATCHING BRIEF RESULTS.....	29
5.1 Introduction	29
5.2 Results	29
6. DISCUSSION.....	33
7. BIBLIOGRAPHY	34
7.1 Primary and Cartographic Sources	34
7.2 Bury Archives Service	34
7.3 Manchester Central Library Local Studies Unit.....	34
7.4 Secondary Sources	35
7.5 Aerial Photographs.....	37

8. ILLUSTRATIONS	38
8.1 List of Figures	38
8.2 List of Plates	38
APPENDIX 1: PROJECT DESIGN.....	39

SUMMARY

United Utilities has proposed the construction of a new pipeline at Radcliffe, Bury (SD 7910 0725 to 8010 0769). As the scheme affects areas of archaeological potential dating from the prehistoric and historic periods, the Assistant County Archaeologist at Greater Manchester Archaeological Unit Sites and Monuments Record (GMAUSMR) recommended that rapid desk-based research and permanent presence watching brief should be undertaken for previously undisturbed sections of the pipeline, and for areas where remains of archaeological interest are known to exist.

The rapid desk-based research was undertaken by OA North in February 2007. A total of 31 sites were identified within the study area through inspection of the GMAUSMR and other primary sources. Watching briefs associated with ground preparation were undertaken in June, July, September and October 2007.

The only sites of archaeological interest observed during the watching briefs comprised water management features, such as culverts, in the environs of the East Lancashire Paper Mill (Site **14**), stone-sett road surfacing, at Church Street East and Mill Town Street, a roughly surfaced modern trackway to the south of Radcliffe Tower (Site **3**), and make-up deposits of soil, rubble, and fuel waste, which occurred regularly within the pipe trenches.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to the County Archaeologist and the staff at the Greater Manchester Archaeological Unit Sites and Monuments Record (GMAUSMR).

The desk-based research was undertaken by Alastair Vannan and the watching brief was undertaken by Sean McPhillips, Ged Callaghan and Steve Clarke. The report was produced by Alastair Vannan, with the drawings by Mark Tidmarsh. The project was managed by Alison Plummer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 United Utilities has proposed the construction of a new pipeline at Radcliffe, Bury (SD 7910 0725 to 8010 0769). Following the acceptance of a Project Design (*Appendix 1*) devised to meet the verbal brief compiled by the Greater Manchester Assistant County Archaeologist, Oxford Archaeology North (OA North) were commissioned by United Utilities to undertake the recommended work. Although the proposed route of the pipeline runs in an arc that is around 5km in length, an area approximately 1.6km in length, at the north-eastern end of the pipeline, was assessed to be potentially archaeologically sensitive.
- 1.1.2 This report sets out the results of the rapid desk-based research and watching brief in the form of a short document outlining the findings.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (*Appendix 1*) was submitted by OA North in response to a verbal brief issued by the County Archaeologist at Greater Manchester Archaeological Unit Sites and Monuments Record. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 RAPID DESK-BASED RESEARCH

2.2.1 The desk-based research was compiled from a combination of cartographic, photographic, secondary and primary archive sources. Much of the historical and archaeological background was derived from the East Lancashire Paper Mill desk-based assessment (OA North 2004), which was subsequently amended. A study area comprising 0.5km either side of the proposed sewer route was examined and all known archaeological sites identified have been included in the site gazetteer in order to assess the impact of the proposed construction. Information relating to the study area was obtained from:

- the Greater Manchester Sites and Monuments Record (SMR);
- Lancashire County Record Office (Preston);
- Greater Manchester County Record Office (Manchester);
- Bury Archive Service;
- Various libraries including Manchester Central, Bury, Lancaster, Radcliffe, and Oxford Archaeology North's offices.

2.2.2 A gazetteer of sites of archaeological interest that lie within the study area is presented in *Section 4*, and their relative positions are marked on Figures 2a and 2b. The gazetteer entries have been compiled principally from data within the Greater Manchester SMR database.

2.3 WATCHING BRIEF

2.3.1 A programme of field observation accurately recorded the location, extent, and character of any surviving archaeological features and/or deposits within all topsoil stripping activities associated with the development works. This work comprised observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all features of archaeological interest and horizons, and any artefacts, identified during observation.

2.4 ARCHIVE

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

3. BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The study area (SD 7910 0725 to 8010 0769) is situated in the town of Radcliffe, which is located some 4km to the south of Bury, and 10km north-north-west of Manchester (Fig 1; Plate 1). Radcliffe lies within the Manchester Pennine fringe, a transitional zone between the open moorlands of the Dark Peak and the Millstone Grit uplands of the Southern Pennines and the densely populated urban conurbation of Manchester (Countryside Commission 1998, 121). The area owes much of its landscape character to the pronounced landform with deeply incised steep valley sides and localised woodlands (*op cit*, 122).
- 3.1.2 The study area is situated towards the eastern edge of modern-day Radcliffe, and extends to the south of the historic core of the town, which is represented by Radcliffe Tower and the church of St Mary and St Bartholomew.
- 3.1.3 The underlying drift geology of the area comprises sands and gravels overlying Carboniferous Coal Measures (British Geological Survey of England and Wales). The solid geology consists of weak sandstones and mudstones (Clinton and Higgs 1997).

3.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.2.1 **Introduction:** a summary historical and archaeological background of Radcliffe has been compiled in order to place the study area into a wider context. The name 'Radcliffe' probably means red cliff and reflects the nature of the local geology by referring to an outcrop of red sandstone along the River Irwell (Tindall 1981).
- 3.2.2 **Prehistory:** Palaeolithic and Mesolithic activity in the area is recorded mainly from the uplands above the Irwell valley (Nevell and Redhead 1999). Upland areas in the region tended to be occupied in the summer months by hunter-gatherers, who moved to more sheltered lowland areas in the winter. This pattern is reflected by evidence for camps that may have been used on a seasonal basis. One such camp has been found on the E'es in Radcliffe, where artefacts of Palaeolithic and Mesolithic date have been recovered.
- 3.2.3 The E'es is a level plain of mud flats overlying sand and gravels situated north of the river Irwell and to the west of the confluence between the rivers Roch and Irwell. The commercial extraction of aggregates from the area in 1945 revealed wooden structures and flint artefacts. Eight circles of posts in a double row were found overlain by organic material, such as brushwood, hazelnuts and pinecones, and sealed by clay. Unfortunately, all but one of the circles were removed by machine before they were subject to archaeological recording, and the artefacts have since been largely lost.

- 3.2.4 Archaeological excavations at the site began in 1949, when further evidence for wooden structures was obtained. A large and significant assemblage of flint implements and a cast-flanged bronze axe were recovered (Spencer 1951, 197 *et seq*), as were stone axes datable to the Bronze Age and Neolithic (Tyson 1985). Excavation work took place periodically until 1961, and finds dating to the Mesolithic, Neolithic, Bronze Age and Roman periods were all recovered (*ibid*). Timbers found during the 1950 excavation were interpreted as a possible Bronze Age platform and causeway of stakes, wattling and brushwood (*ibid*). In addition, excavations behind the cemetery in Radcliffe in 1951 uncovered an unconfirmed disk barrow, although there were no associated inhumations (Sunderland 1995). The continuity of occupation on the site through these early periods that is suggested by the artefact assemblage is rarely found in the North West.
- 3.2.5 Although there is no evidence of Iron Age activity within the study area, a recently excavated site in Atherton, *c* 7km to the south-west of Radcliffe, suggests that the wider region was settled at this time. This site consisted of a roundhouse and probable granary structure that are, as yet, undated but likely to date to the Iron Age or Romano-British periods (OA North forthcoming).
- 3.2.6 **Roman:** the main Roman road between the forts at Manchester and Ribchester crossed through Radcliffe. The line of the road to the south of Radcliffe is thought to be represented in the modern landscape by Bury New Road (Margary 1957, 102). This was a turnpike road dating from 1755 when an Act of Parliament was passed to allow the improvement of the Manchester to Bury road. Margary argued that the Roman Road crossed the Irwell in Radcliffe at a point some 150 yards to the west of the ruined Radcliffe Tower (*ibid*), which places it approximately in the area of the East Lancashire Paper Mill. This is supported by Sunderland in his history of Radcliffe: ‘*The route (of the Roman road) was by way of (approximately) Higher Lane in Whitefield, by Dales Lane, plunging down to and crossing the Irwell and the E’s through what is now the East Lancashire Paper Mill, up Croft Lane, crossing Cross Lane and to cross the later-built Manchester-Bolton-Bury canal*’ (Sunderland 1995, 11).
- 3.2.7 An alternative route of the Roman road, however, has been postulated by both Barton (1973) and Farrer and Brownbill (1908), who claim that it was on the line of the present day Blackburn Street, and crossed the river Irwell at what is now Radcliffe Bridge.
- 3.2.8 The remains of the Roman road in the area have been excavated by the Radcliffe Archaeological and Historical Society (RAHS) and Bury Archaeology Group (BAG). At Starling, to the north of Radcliffe, the road was found to be approximately 7m wide plus drainage ditches, and consisted of ‘*pebbles laid on split flagstones*’ (Sunderland 1995, 11).
- 3.2.9 Additionally, Taylor (1904, 138-39) argued that ‘*the Romans had a camp or small station*’ on the line of the road at Radcliffe. The recovery of several sherds of Roman pottery from the E’s adds weight to this postulation (Spencer 1951, 197), although firm evidence is lacking.

- 3.2.10 **Medieval:** Radcliffe is listed in the Domesday Book as ‘*Radeclive*’, a manor held by Edward the Confessor. It was part of Salford Hundred, and was one of only four places from the Hundred to be mentioned in the Domesday Book. The main landholder at this time was Roger de Poitou (Farrer and Brownbill, 1908). Radcliffe remained part of the crown estates until it was given to Ranulf, Earl of Chester, during the reign of Stephen (1135-1154), when it became part of the Mersey Fee. According to Barton (1973, 225-27), the de Radcliffe family has been associated with the town since the mid-12th century.
- 3.2.11 During this period, Radcliffe was probably a small hamlet. The church of St Mary and St Bartholomew (SMR 9450.1.0 – GM10590) is listed as one of the earliest buildings in Radcliffe by Farrer and Brownbill (1908, 63): ‘*The oldest details of the building are the piers supporting the chancel arch, which are of 13th century date, but it is possible that the four angles of the nave may belong to an older church dating from the 12th century.*’
- 3.2.12 The original date of the Radcliffe Tower (SMR 354.1.0 – GM520), which lies to the west of the church and is a Grade 1 Listed Building, is uncertain. It is mentioned in 1358 through Richard Radcliffe of Radcliffe Tower (SMR), and was rebuilt in 1403 when James de Radcliffe received the King’s permission to rebuild the manor house (Barton 1973, 226). The fortification of the manor house by James de Radcliffe included the construction of a timber and plaster great hall, a sandstone tower and a sandstone enclosure wall (Tindall 1981). It is unclear whether the surviving tower, that was newly built by de Radcliffe as one of two proposed towers for which licence was granted, was associated structurally with the tower of Richard Radcliffe. The great hall was depicted as a two-story gabled building in an engraving of 1781 and is believed to have been *c* 13m long and 8.5m wide (*ibid*). The hall had been used as a farm building prior to its demolition in around 1830. Limited archaeological excavation of the site in 1979–80 demonstrated the hall and tower to be contained within a ditched enclosure (Tyson 1980). An enclosure ditch built prior to 1400 was *c* 7m wide and 1.5m deep. This was subsequently backfilled during the construction work of the early 15th century and replaced by a parallel rubble wall 3m beyond the earlier ditch that had a 1.44m wide foundation and featured an outer ditch *c* 7m wide and 1m deep (Tyson 1985).
- 3.2.13 Crop marks at the eastern end of the study area (SMR No 2890.1.0) appear to represent buildings, including several crofts, ponds, and a track that may date to the medieval period and be the remains of a medieval hamlet. A hollow way that is likely to preserve the line of a medieval road is also visible and appears to be a south-westerly continuation of Roach Street (SMR No 2923.1). To the north of this earthwork, depressions are visible which may represent house platforms. There is a crossing over the River Roch from Roach Street via the 17th century Blackford Bridge, however this is thought to represent the site of an earlier river crossing (SMR No 2993.1). Just to the north of Blackford Bridge lies Barlow Folds which may also have been the site of a medieval settlement (SMR No 3579.1).
- 3.2.14 In 1561 Radcliffe was purchased by Richard Assheton, Lord of Middleton. It was of sufficient significance to be depicted upon the earliest map of the area, surveyed by Christopher Saxton and published in 1577. Radcliffe remained in

the ownership of the Assheton's until 1765, when the estate was divided between the two daughters of Sir Ralph Assheton. One of the daughters, Eleanor, married Sir Thomas Egerton of Heaton, Lord Grey de Wilton. The town then became part of the Lord of Wilton's estates (Farrer and Brownbill 1908).

- 3.2.15 **Post-medieval:** the region emerged as a centre of the woollen industry during the later Middle Ages, but many firms converted to cotton manufacture during the later 18th century. In 1773, Bury was '*endowed with a new staple trade*' in the form of a calico printing works that was established by Robert Peel (Williams and Farnie 1992, 42-43). Radcliffe similarly developed as an industrial centre; during the early 19th century Baines noted the parish of Radcliffe to comprise 589 families, of which 403 were engaged in '*trade, manufactures or handicraft*' (1825, 688). Another contemporary description of Radcliffe, compiled in 1833 (MCL 942.72Ra10), claimed that the area was a '*highly fit station for bleaching works and cotton mills, and extensive manufactories were erected in the last century which still continue to flourish with redoubled activity employing nearly all the population*'. This was due partly to its proximity to Bury and to Manchester, and the transport link provided by the Manchester to Bolton Canal, which was extended to Bury in 1797 (McNeil and Nevell 2000).
- 3.2.16 A slightly later description of Radcliffe (Butterworth 1841, 115-16) highlighted Radcliffe's association with the cotton industry, with reference to cotton bleaching, calico printing, weaving and spinning. However, Radcliffe did not attain its peak capacity in cotton spinning until 1914, although it grew faster in spindleage between 1884 and 1917 than any other cotton-spinning town except for Farnworth (Williams and Farnie 1992, 42-43). Dumers Lane Mill, an early 20th century weaving mill is situated in the far north-west part of the study area (SMR No 3864.1).
- 3.2.17 The paper-making industry was not introduced to Radcliffe until 1860, when the East Lancashire Paper Mill was established. Other paper mills were erected subsequently; Wild's Paper Mill was established in 1863, and in 1908 the Radcliffe Paper Mill Co was established.
- 3.2.18 **The East Lancashire Paper Mill:** the paper mill was built on the site of a former calico printing works and a barracks, as shown on the tithe map of 1841. The earliest references to the calico printing works date to 1825, and are provided in commercial trades directories by Baines (1868; 3.1.14 above) and Pigot and Dean (1825, 450). These sources indicate the works to have been owned by the firm of Horrox and Sons. The Radcliffe works do not appear in earlier trades directories, although that published by Dean and Co in 1804 lists John Horrox, calico printer at Harrison's Court, Manchester.
- 3.2.19 A sketch of Radcliffe in 1830 (MCL 942.72Ra10) shows the calico printing works, and the accompanying notes refer to it as '*Messers Hutchinsons, late Horroxes*', and state that it was powered by a steam engine. This indicates the ownership of the works to have changed hands between 1825 and 1830. It appears that the calico printing works ceased production during the late 1850s, as it is not listed in a trades directory of 1858 or subsequently.

3.2.20 The East Lancashire Paper Mill was founded in 1860, and was built to the north of the calico printing works upon a green field site owned by Lord Wilton. James Hutchinson, presumably the same person who had operated the calico printing works, occupied the paper mill. The layout of the mill complex, including the former calico works, is depicted on an estate plan of 1860 (Fig 5). During the initial years, the East Lancashire Paper Mill concentrated upon the production of newsprint and lower grade paper (ELPM 1960).

3.2.21 A valuation list for Radcliffe in 1864 documents all the property belonging to the East Lancashire Paper Mill, and cites its location in ‘*Spring View*’.

Description of property	No. of storeys	Description of property	No. of storeys
Filters and pipes	-	Rag Engine House	1
Settling reservoirs	-	Bleach House no. 1	1
Guage House	1	Bleach House no. 2	1
Rag Warehouse	2	Bleach House no. 3	1
Gangway	1	Bleach and Engine House	1
Store room	2	Devil Room	3
Gate room	1	Economiser House	1
Waiting room	1	Economiser Boiler House	1
Offices and committee rooms	2	Mechanics shop	2
Making up room	2	Smithy	1
Machine House	1	New Stable	2
Beating Engine House	2	Engine Power Chimney	-

3.2.22 A number of houses, cottages and a ‘*Beer House*’ are also listed for Spring View. Three of these properties are listed as having cellars, although there is no mention of cellars for the buildings comprising the mill complex.

3.2.23 An adequate water supply was essential to the process of making good paper. This is explained by the East Lancashire Paper Mill Co Ltd in their 1960 publication: ‘*the first management wisely secured water rights over a very*

large area. Under succeeding administrations the water storage capacity of the mill was extended, and in 1904 the construction of a big reservoir with a capacity of 25 million gallons completed a total storage capacity of 50 million gallons.'

- 3.2.24 In 1897 Charles Seddon became the chairman of the company, and remained so until 1939. At the time of Seddon's appointment, the paper mill was powered by a total of 31 steam engines - the last of these was disposed of in 1929 (ELPM 1962). Seddon enacted a number of improvements to the mill, including the updating of the six paper machines and 11 steam boilers in 1937. In 1948, a 4,500Kw water turbine was installed, and in 1956 a new boiler plant was erected. (*ibid*). This comprised four John Thompson 'betatype' water tube boilers. Other modifications enacted during the second half of the 20th century included the erection of a new machine house, offices, laboratory, waste store and new equipment, which resulted in a comprehensive remodelling of the mill complex. Seddon also changed the output of the mill from newsprint and cheaper papers to quality papers, which probably contributed to the success and longevity of the mill.
- 3.2.25 During both the First and the Second World Wars part of the mill was partially turned over to armaments. In the Second World War the mill took on the paper production of nine mills in the area which had to shut down at this time due to lack of raw material. The East Lancashire Paper Mill Co Ltd changed their raw material from esparto grass and wood pulp to straw, which could be home grown. This led to the founding of The Straw Pulp Manufacturing Company Ltd immediately after the war by the East Lancashire Paper Mill Co Ltd, and The Wallpaper Manufacturers' Ltd. This company was established at the Mount Sion Works, situated two miles downstream from the East Lancashire Paper Mill.
- 3.2.26 The prosperity of the mill led to their building recreational facilities for their workers in Radcliffe, including tennis courts and a bowling green, both of which appear on the 1929 Ordnance Survey map. By 1937, a cricket field and a pavilion had been erected on the premises, both of which appear on the 1937 Ordnance Survey map.
- 3.2.27 The recent history of the mill is well documented by the *Bury Times* with increased stories of problems and job cuts through the 1980s and 1990s. Nevertheless, the mill continued to expand during the 1990s, and was described as '*prosperous*' (Hudson 1994, 42). In 1994, Wilton Mill was demolished to allow for the expansion of the paper mill; Wilton Mill had been used as a paper store and despatch depot since 1966. The paper mill finally closed in 2001, and is currently empty.
- 3.2.28 At the time of the mill's closure, a photographic survey of the recreational facilities and some of the reservoirs to the north of the complex was undertaken. This archive is currently lodged with the Greater Manchester Archaeological Unit. No other archaeological recording of the mill complex has been undertaken, although a photographic record of the paper-making machinery in operation appears within the publications produced by the East

Lancashire Paper Mill Co Ltd in 1960 and 1962. This does not, however, provide any details of the actual buildings.

3.3 MAP REGRESSION ANALYSIS

3.3.1 Map regression analysis has been particularly informative in providing information relating to changes enacted within the study area. Although Hennet's map of 1830 showed the route of Church Street East and also depicted Hutchinson's and Bealey's goits as overland waterways there was little detail relating to the structures shown. The earliest map available that shows the area in some detail is a Tithe map by W Bell surveyed in 1841 (Fig 3), which depicted a barracks and the calico printing works. The Tithe map also depicted buildings associated with the rectory lying immediately to the west of the present day Rectory Lane. A cluster of probable farm buildings called 'Tabitha Fold' was depicted within the angle formed by the present day Rectory Lane and Church Street East. The line of Croft Lane, which is suggested to preserve the line of a Roman road, was not shown extending any further south of Church Street East than on the current mapping. The annotation 'Old Tower' referred to the site of Radcliffe Tower, which was shown on this map as a single-celled structure that was representative of the stone tower that survives to the present day. No indication of the hall or enclosure that had been associated with the tower was depicted. The church of St Mary and St Bartholomew was shown as 'St Mary's Church' and was situated within a small polygonal enclosure that did not extend as far south as the proposed pipeline. The area of Radcliffe E'ses and Close Park was shown as a sub-divided field system with some of the northern portion labelled as 'bog'..

3.3.2 The detail of the Tithe map is reproduced to a greater degree of accuracy on the Ordnance Survey map of 1850, which shows the barracks and the calico printing works (complete with a gasometer) with large reservoirs to the east and to the north (Fig 4). Only the three westernmost buildings, associated with the rectory, were depicted on this map, in comparison to the cluster of at least six shown on the earlier Tithe map. The position and shape of these buildings also appears to have altered considerably. The buildings of Tabitha Fold were shown very similarly to those depicted on the earlier Tithe map, as was Radcliffe Tower and the church of St Mary and St Bartholomew, although a well was shown to the south-west of the tower. Hutchinson's and Bealy's Goits (water channels) were also depicted on the 1850 mapping; both running on a roughly north/south alignment, to the north of the printing works, with Bealy's Goit then becoming subterranean before emerging to the south-east of Radcliffe tower. The area of Radcliffe E'ses and Close Park is depicted as an arrangement of sub-divided fields that is nearly identical to those shown on the Tithe map. An annotated map of the study area is provided by an estate plan of 1860, which shows the relative positions of the paper mill, the printing works and another unspecified works; the positions of these structures relative to the current layout of the site is depicted in Figure 5. The map names the owners of the land, and it is interesting to note that part of the site was owned by Thomas Crompton, a notable pioneer in the paper industry. The map does not,

however, provide much detail of the paper mill buildings, although it does depict the route of several goits across the site.

3.3.3 The Ordnance Survey map of 1893 showed that the Lancashire and Yorkshire railway had been established by this time and that the first stages of development in the environs of Withins Reservoir had begun with the construction of two small reservoirs. The rectory was shown with a similar building arrangement to that depicted on the 1850 map, with Rectory lane extending to the north-north-west of a sub-ovoid enclosure of land. The buildings of Tabitha Fold had, by 1893, been replaced by two rows of terraced housing, and the basic arrangement of Rectory Lane and Church Street East that has been retained into the present day was evident. This map is the first cartographic source to provide comprehensive details of the buildings occupying the site of the East Lancashire Paper Mill. The area of the East Lancashire Paper Mill was shown to comprise the paper mill and the printing works, whilst the unspecified works depicted on the 1860 estate plan (Fig 5) were marked as a bleach works. These all appear to be integrated production units, with a large bank of reservoirs situated to the north, and several goits crossing the site. The boundaries of the mill site conform to those on the 1860 estate plan, implying little expansion, although it seems that more reservoirs have been added. A glass-topped structure is depicted straddling part of Church Street East, and the line of the proposed pipeline, although this appears to have been a covered way between two elements of the mill complex, rather than an enclosed structure. Radcliffe Tower was depicted with more detail than that on the earlier maps, but no features were shown beyond the confines of the fence or wall that closely enclosed the tower. A cistern was shown in place of the earlier well. Bealey's Goit was once more depicted as emerging from a culvert in the area to the east of Radcliffe Tower close to the point where the pipeline crosses the line of the culvert. The fields of Radcliffe E's and the current Close Park were once more shown as subdivided units, with some additional field boundaries being depicted but no structures were shown, except for two small rectangular areas to the east of the tower.

3.3.4 The Ordnance Survey map published in 1910 (Fig 6) depicted substantial changes in the locale of Withins Reservoir with the construction of Pioneer Mills and an access road that continued the eastward line of Milltown Street, along which the proposed pipeline runs. The land to the north and south of the rectory was shown to have become occupied by terraced housing and Wilton Cotton Mill respectively. The map shows the paper mills, but the printing works and bleach works are no longer named, implying that they had ceased production. The map also showed that the paper mill had expanded with the erection of some new buildings on the western side of the complex. The most significant extension, however, appears to be to the south of the main building, which was shown to encroach upon the northern bank of the river Irwell. The depiction of Radcliffe Tower was similar to that from 1893 and a single rectangular structure was shown to the east, where two had been previously shown.

3.3.5 The Ordnance Survey map of 1932 (Fig 7) showed the addition of numerous structures in the study area to the west of the East Lancashire Paper Mills,

however, the line of the roads that will be followed by the pipeline had not altered from those depicted in 1893. The map indicates some minor additions to the East Lancashire Paper Mills site, the most interesting of which is a tramway aligned east/west along the southern part of the mill complex. It also shows a rectangular building immediately to the west of the filter beds to have been erected. This is shown to have been fitted with a chimney, suggesting it to be associated with a boiler house. The map also shows a small part of the print works site to have been redeveloped with the erection of a small detached building. Although, by 1932, the area around Radcliffe Tower, St Mary and St Bartholomew's Church, and the fields around Close Park had seen gradual development, including the formal establishment of the recreational area of Close Park; this had all occurred to the north of the proposed pipeline and the route of the pipeline remained undisturbed.

3.4 DESK-BASED ASSESSMENT

- 3.4.1 In total, 33 sites were identified as being of archaeological interest within a 1km wide corridor surrounding the 1.6km length of pipeline that was targeted for assessment. Except for Bealy's Goit and Tabitha Fold, all of the sites are held on the Greater Manchester SMR and details are presented in *Section 4* and their locations are shown on Figures 2a and 2b. As the pipeline utilises a narrow easement, the sites that are most likely to be affected by the works lie mainly within the immediate vicinity of the pipeline, as shown on Figures 2a and 2b. There are, however, some areas of interest that do not have closely defined boundaries.
- 3.4.2 At the extreme western part of the study area, the pipeline runs close to Withins Reservoir (site **19**), where Neolithic and Bronze Age remains were found. The pipeline runs to the east of buildings associated with the rectory (Site **17**), as depicted on the Tithe map of 1841 (Fig 3) and the OS map of 1850 (Fig 4), and just to the east of the enclosed land holdings, within which the rectory was situated, that were depicted on the 1850 and 1893 maps. The location of the rectory was to the west of the current junction of Rectory Lane and Church Lane East. The pipeline then runs just to the north and west of the cluster of buildings shown as Tabitha Fold. The medieval settlement of Cock Clod (Site **22**) lay to the north of the pipeline in the western part of the study area. A postulated Roman road (Site **10**), following the line of the present day Croft Lane and extending southwards through the area now occupied by the East Lancashire Paper Mill, will be cut perpendicularly by the pipeline. As the pipeline then turns south from Church Street East, to follow the lane and track around the western and southern edges of Radcliffe Tower (Site **13**), there is the potential to encounter below ground remains relating to the timber hall and enclosure associated with the tower. A smithing hearth of unknown date was also found in this area (Site **20**). The southern extent of the graveyard associated with the Church of St Mary and St Bartholomew (Site **12**), which the pipeline passes to the south of, is not known. The pipeline then runs eastward and crosses the line of the historic Beasley's Goit, close to the point where the goit becomes culverted as it runs northwards. The pipeline crosses previously undisturbed land at Close Park, which lies just to the north of sites and find-spots ranging from the Mesolithic to the Bronze Age that were

discovered as a result of gravel extraction in the 1940s and 1950s (Sites **01–09**). The spatial extent of these sites is unknown.

4. GAZETTEER OF SITES

Site Name Mesolithic lake settlement (site of)
Site number 01
NGR SD 7980 0720
SMR no 77.1.0 – GM167
Site Type Site and associated finds
Period Mesolithic-Bronze Age
Source photograph: undated, 9.2
Spencer 1951: 196-202; Spencer, 1969; Hallam, 1965
Description Possible Mesolithic lake settlement and flint working site discovered by gravel extraction workers. The site comprised seven posthole circles, most likely structures, approximately 30 feet in diameter and constructed in double rows. Maglemosian implements and flint flakes were recovered from the gravel and vegetable debris, but samples of hide or leather and red raddle have been lost (Spencer 1951 and 1969; Hallam 1965). Later finds included a Bronze Age flanged axe; a hollowed-out tree trunk and several brass objects.
Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Finds (near Mesolithic lake settlement)
Site number 02
NGR SD 7970 0720
SMR no 77.1.1 – GM168
Site Type Find spot
Period Roman
Source Spencer 1951: 196-202
Description Various finds dating to the Roman period were discovered including brass hooks, a brass spur, a rough red pottery vessel, and a hollowed out tree, all since lost. Other finds included two unstratified spindle whorls, Roman tile, and Roman pottery from the topsoil dumps (Spencer 1951).
Assessment The find spot lies outside of the site, and will not be affected by the development.

Site Name Mesolithic lake settlement, site of the 1949 excavations
Site number 03
NGR SD 7993 0713
SMR no 77.2.0 – GM169
Site Type Site and associated finds
Period Mesolithic-Bronze Age
Source Spencer 1951: 196-202; Spencer 1969; Hallam 1965
Description Fourteen posts were found during the excavation, being approximately 21-26 inches apart and measuring 4-5 inches in diameter. They ranged from circular, triangular and semicircular in section. A second row of posts ran parallel to the first. The posts were interwoven with branches, with a brushwood layer between and over the posts. Fragments of red

raddle, baked red clay, hazel nuts, pine and fir cones and flints were found in this layer, along with three fragments of hide or leather.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1950 excavations

Site number 04

NGR SD 7995 0730

SMR no 77.3.0 – GM171

Site Type Site and associated finds

Period Mesolithic-Bronze Age

Source Hallam 1969

Description Two layers of horizontal timbering were found approximately 9-12 feet apart, with a gravel layer in between. Alder catkins, hazel nuts and flint flakes were found in association. Two spindle whorls, thought to be Neolithic, were found. Other finds included several teeth and bones from a small type of ox, and flint and vegetable detritus from the low water table level gravel. The flints were thought to date to the Mesolithic, while the timbers may form a Bronze Age platform and causeway.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1960 excavations

Site number 05

NGR SD 7967 0682

SMR no 77.4.0 – GM172

Site Type Site and associated finds

Period Mesolithic-Neolithic

Source Hallam 1969

Description A 30 foot trench was excavated showing vertical stakes and branches associated with a clay band. Horizontal oak timbers on this horizon were roughly hewn, appearing as square-cut, some bearing notches or slots, while birch stakes were driven into the gravels, some lay on top.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1961 excavations, Site 1

Site number 06

NGR SD 7964 0684

SMR no 77.5.0 – GM173

Site Type Site and associated finds

Period Mesolithic-Bronze Age

Source Hallam 1969

Description More horizontal timbers, stake line, brushwood and branches were exposed. A number of small stakes were found, 12-15 inches in length with a diameter of 3 inches. Several willow trees had been left in situ,

and we were preserved. A wooden object, described as part of a plough, was recovered.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1961 excavations, Site 2

Site number 07

NGR SD 7964 0685

SMR no 77.6.0 – GM174

Site Type Site and associated finds

Period Mesolithic-Bronze Age

Source Hallam 1969

Description A 12 stake line ran east-west, being approximately 22 inches apart, and measured *c* five inches in diameter. Several branches formed a low wattled-wall. Two main areas were identified, the first being: 14 feet square, the southern half of which comprised un-cobbled and cobbled areas. The second area was 10 feet square, and comprised a platform constructed from interwoven branches and brushwood.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1961 excavations, Site 2

Site number 08

NGR SD 7964 0685

SMR no 77.7.0 – GM175

Site Type Site and associated finds

Period Mesolithic-Prehistoric

Source Hallam 1969

Description As the second area above. A wooden comb found along with the hazel nuts and stakes has been ascribed a Late Roman/Dark Age date (Hallam 1969: 43).

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Mesolithic lake settlement, site of the 1996 summary

Site number 09

NGR SD 7980 0720

SMR no 77.8.0 – GM176

Site Type Site and associated finds

Period Prehistoric-Eighteenth century

Source Aerial Photograph, (undated) F5 10/11 1995

Description Information from recent aerial photographs and Bury Archaeological group show that the site has been reclaimed gravel deposition and landscaping. The aerial photographs indicate that there may be archaeology remaining on the eastern bank of the Irwell around the site of the 1949-1961 excavations, indicating that the E's remains one of the most important sites in the North West for archaeological potential.

Assessment The settlement lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Manchester to Ribchester Roman Road
Site number 10 (Not shown on Fig 2)
NGR SJ 8350 9970
SMR no 14.1.0 – GM19
Site Type Monument
Period Roman
Source Margary 1957: 102-103; Arrowsmith 1993: 3, 7, 13; OS 1850; Wharmby 1993
Description This forms part of the Roman Road from Manchester to Ribchester (Margary 1957). Present as a linear on the 1848 map (OS 1850). Excavations by Prestwich Archaeological Group found the line of the eighteenth century road, but no trace of the Roman Road, which may lie immediately to the west (Wharmby 1993).
Assessment The route of the road is uncertain, and may be affected by the development.

Site Name Manchester to Ribchester Roman Road, excavations at Starling
Site number 11
NGR SJ 7790 0960
SMR no 14.1.4 – GM23
Site Type Monument
Period Roman
Source Tyson 1980: 23-8
Description The threatened section of the Manchester to Ribchester Roman military road was excavated in 1966 – 1967. The excavations revealed the foundations, ditches, berm and surface metalling (Tyson 1980).
Assessment This part of the road is outside the site and will not be affected by the development.

Site Name Church of St. Mary and St. Bartholomew
Site number 12
NGR SD 7969 0758
SMR no 9450.1.0 – GM10590
Site Type Listed building
Period Medieval
Source DOE 1985: 4; Pevsner undated; Farrer and Brownbill 1908
Description First built in the fourteenth century, and rebuilt in the fifteenth, seventeenth and nineteenth centuries. The chancel was rebuilt 1817, although the tower probably dates to the fifteenth century. The vestry was restored in 1903, while seats at west end of nave date to the early to mid-fifteenth century. Stained glass windows in south aisle date to 1906, and the alabaster slab with effigies of James de Radcliffe and his wife date to the early sixteenth century (DOE 1985; Pevsner undated; Farrer and Brownbill 1908). The chantry chapel also dates to the

fifteenth century, while the “Sun Chapel” in south transept dates to the late nineteenth (TLACS 1989).

Assessment The church lies to the north of the pipeline route, however, the original boundaries of the churchyard are unknown and this area could be affected by the works.

Site Name Radcliffe Tower and site of Hall

Site number 13

NGR SD 7957 0750

SMR no 354.1.0 – GM520

Site Type Monument

Period Medieval

Source Walker and Tindall 1985: 102-103; Tindall 1985: 39-53; DOE 1985: 21; Harrison 1910: 73; France 1940: 104-109; English Heritage 1996

Description Manor of Radcliffe dates to the eleventh Domesday Survey, when it was held by King Edward I as part of royal manor of Salford (Walker and Tindall 1985). After the Norman conquest, Baron de Mersey gave the manor to Nicholas Fitz-Gilbert de Talbois, who adopted the place name as his family name. Although the site has been excavated no precise date for the original manor house can be established, as much evidence has been destroyed in the later construction. It was mentioned in 1358 in connection with Richard Radcliffe of Radcliffe Tower, and re-built in 1403. By 1781 the tower had been converted to farm outbuildings. All sides have doors, while some of the windows were bricked up and blocked. The site includes a stone built tower house dating to the medieval period, and the buried remains of a contemporary timber hall to the west of the monument. The present tower height is 8.5m but evidence suggests that it originally stood to three storeys, while the Timber Hall used as a farm building until c 1830. Excavations between 1979 and 1980 showed that the hall and tower were contained within a ditched enclosure on the north side which was later reinforced by a rubble wall to form a courtyard (English Heritage 1996).

Assessment The tower lies to the north and east of the pipeline route, however, the below ground remains of the hall and enclosure could be affected by the works.

Site Name East Lancashire Paper Mill

Site number 14

NGR SD 7915 0735

SMR no 6381.1.0 – GM7436

Site Type Building

Period Post-medieval

Source OS 1850; OS 1893; OS 1929; OS 1937

Description The site was originally occupied by a barracks and print works on the OS First Edition (1850), before being re-built as a paper mill on the Second and Third Edition maps (1891 and 1929). It was most likely part of the nineteenth century expansion of the paper industry in Bury area, and by 1908, comprised six paper-making machines by Bentley

and Jackson and Walmsleys of Bury. It formerly had a 2500 horsepower, horizontal, compound steam-engine, constructed by Musgrove of Bolton, driving a 800 kilovolt generator, used as a standby.

Assessment The pipeline runs through a northern part of the building footprint and it will be affected by the works.

Site Name Pioneer Mills

Site number 15

NGR SD 7920 0713

SMR no 3890.1.0 – GM4749

Site Type Building

Period Post-medieval

Source Aerial Photograph: (undated), SF 3187 36-39; OS 1910; OS 1937; Arrowsmith 1991: 13; Williams 1986

Description Marked on the Third Edition (1910) as a cotton mill. The two original spinning mill buildings survive intact, both are brick-built with a steel and concrete internal structure. By 1904 there were 1500 looms.

Assessment The mill lies outside of the pipeline route, and will not be affected by the works.

Site Name Wilton Mill (site of)

Site number 16

NGR SD 7905 0725

SMR no 3894.1.0 – GM4753

Site Type Monument

Period Post-medieval

Source Aerial Photograph: (undated), SF 3193 1-4; Photograph: 1809, 10 and 11; OS 1910; OS 1937; Ashmore 1982: 121; Williams 1986; Photograph: 1989, Bury MBC (Batch 1: Slide 15. Batch 6 : Slide 18-20).

Description Marked as a cotton mill on OS maps 1910 and 1937. Large cotton-spinning mill built in 1907, originally driven by Galloway triple expansion steam engine. It was taken over by Lancashire Cotton Corporation in 1929. Originally, it was a brick built, four-storied building, constructed in the eighteenth century when it was a bleach and print works, and were largely replaced by early twentieth century structures. The earliest buildings are thought to date to 1785. The mill was demolished in the 1990s.

Assessment The site of the mill lies outside of the pipeline route, and will not be affected by the works.

Site Name Rectory
Site number 17
NGR SD 7905 0725
SMR no GM7712.1.0
Site Type Building (site of)
Period Medieval
Source Tithe map 1841
Description Site of former rectory, built over by Wilton Mill.
Assessment The building lies outside of the pipeline route, and is unlikely to be affected by the works.

Site Name Radcliffe Station
Site number 18
NGR SD 7885 0745
SMR no GM675
Site Type Building
Period Post-medieval
Source 1850 OS
Description Radcliffe railway station.
Assessment The station lies outside of the pipeline route, and will not be affected by the works.

Site Name Withins reservoir
Site number 19
NGR SD 7900 0700
SMR no GM347
Site Type Archaeological site
Period Prehistoric
Source Water rights owned by the East Lancashire Paper Mill
Description Neolithic and Bronze Age site at Withins reservoir near Radcliffe cemetery, partially excavated in 1951. Defined by a large bank.
Assessment The site lies to the south of the pipeline route, however, its northern extent is unknown and could be affected by the works.

Site Name Smithing Hearth
Site number 20
NGR SD 7957 0750
SMR no 354.2.0
Site Type Hearth
Period Unknown
Source Excavated by Bury Archaeological Group
Description Smithing hearth
Assessment The hearth lies outside of the pipeline route, and will not be affected by the works.

Site Name Tower Works
Site number 21
NGR SD 7970 0765
SMR no 3909.1
Site Type Works (site of)
Period Post-medieval
Source 1909 OS map
Description Early twentieth century bleach and dye works, mainly demolished.
Assessment The works lie outside of the pipeline route, and will not be affected by the works.

Site Name Cock Clod
Site number 22
NGR SD 7901 0745
SMR no 7711.1
Site Type Settlement (site of)
Period Medieval
Source Tithe map 1841
Description Shown as a settlement on the tithe award.
Assessment The settlement lies to the north of the pipeline route, however, its southern extent is unknown and might be affected by the works.

Site Name Croft
Site number 23
NGR SD 7929 0762
SMR no 7710.1
Site Type Building (site of)
Period Medieval
Source Tithe map 1841
Description Croft shown on the tithe map, built over by 1910.
Assessment The croft lay to the north of the pipeline route and will not be affected by the works.

Site Name Cross mill
Site number 24
NGR SD 7942 0781
SMR no 3895.1.0
Site Type Building (site of)
Period Post-medieval
Source 1910 OS map
Description A weaving mill, although little is left of the original complex. The site is currently used by a fencing manufacturer.
Assessment The building lies outside the pipeline route, and will not be affected by the works.

Site Name Radcliffe village cross
Site number 25
NGR SD 7942 0783
SMR no 93.1.0
Site Type Monument (site of)
Period Medieval
Source HER
Description Site of former village cross.
Assessment The cross no longer stands, and will not be affected by the development.

Site Name Bealey's Mill
Site number 26
NGR SD 7982 0784
SMR no 7705.1.0
Site Type Building
Period Post-medieval
Source 1841 Tithe map
Description Shown on the tithe map as a mill, later became a bleach works.
Assessment The building lies outside the pipeline route, and will not be affected by the works.

Site Name Dumers Mill
Site number 27
NGR SD 8026 0816
SMR no 3864.1.0
Site Type Building
Period Post-medieval
Source Aerial Photograph: (undated), SF 3187 10-15; OS 1930; Williams 1986
Description Marked on the map as a weaving mill (1930). Situated next to the River Irwell, the site was originally an unremarkable single storey weaving mill. There have been substantial additions and alterations to the surviving original early twentieth century buildings since the site was converted to its present use as a confectionery manufacturer.
Assessment The site of the mill lies outside of the pipeline route, and will not be affected by the works.

Site Name Barlow Fold/Blackford Bridge Settlement
Site number 28
NGR SD 8060 0800
SMR no 3579.1.0
Site Type Place
Period Medieval and Post-medieval
Source Yates, 1786; OS 1850
Description Barlow Fold is named by Yates who shows a scatter of buildings on the western side of Manchester Road, and to the north of the Roch at Blackford Bridge (1786). There is little development from this on the

OS 1851 map. There is a possible early crossing point by Blackford Bridge and the land adjacent to it may be of archaeological potential. A modern factory now covers site.

Assessment The settlement lies outside the pipeline route, and will not be affected by the works.

Site Name Cropmarks at Blackford Bridge

Site number 29

NGR SD 8045 0763

SMR no 2890.1.0

Site Type Monument

Period Medieval

Source Aerial Photograph: C 123-4; McNeil 1990; 1785, Bury; OS 1850 map

Description Cropmarks indicating backfilled ponds, a possible building, a track and a number of crofts which may date back to the medieval period. A causeway ran to a tenement called 'Broadrod', however, this was later covered by sludge lagoons from Bury Sewage Works.

Assessment The cropmarks lie outside the pipeline route, and will not be affected by the works.

Site Name Blackford Old Bridge

Site number 30

NGR SD 8067 0763

SMR no 2923.1.0

Site Type Monument

Period Medieval and Post-medieval

Source McNeil 1990; Monograph: Holme, E, 1782; Bibliographic reference: 1860; Serial: 20; OS 1850

Description Ruined twin span seventeenth century bridge, although an earlier date for the crossing must be assumed. Two abutments, the central splayed pier and part of the span built from large ashlar blocks survive. An associated hollow way runs south-west away from the bridge, and is likely to be the line of an old medieval road. Highfield Lane is shown as hollow way on OS First Edition (1850).

Assessment The bridge lies outside the pipeline route, and will not be affected by the works.

Site Name Pond at Blackford Bridge

Site number 31

NGR SD 8062 0771

SMR no 2890.2.0

Site Type Monument

Period Undated

Source McNeil 1990

Description Large lozenge-shaped, backfilled pond, possibly an ornamental or boating pond. Only visible as an earthwork.

Assessment The pond lies outside the pipeline route, and will not be affected by the works.

5. WATCHING BRIEF RESULTS

5.1 INTRODUCTION

5.1.1 A programme of archaeologically controlled monitoring in the form of a watching brief was conducted during June, July, September, and October 2007. The results have been divided by area into four groupings, consisting of the environs of Rectory Lane, Church Street East (west of Croft Lane), Church Street East (east of Croft Lane), and Radcliffe Tower, and are presented from west to east.

5.2 RESULTS

5.2.1 **Rectory Lane:** the southern extent of Rectory Lane is limited by the River Irwell and a footbridge over the river continues the line of the lane, which then continues as an unnamed roadway to the west of the former site of Pioneer Mills (Site 15). The watching brief observed the excavation of the pipe trench from the environs of the southern end of the footbridge as far as Milltown Street. The trench was 2m wide and up to 2.10m deep. At the end of the trench that was closest to the river, topsoil and subsoil layers were present, to a depth of 0.30m, below which was a natural deposit of sand. To the west of Pioneer Mills, the stratigraphic sequence of deposits was variable. In places, layers of crushed brick, approximately 0.10m in depth, were observed close to the surface and overlying clayey-silt, which was probably an alluvial deposit derived from the River Irwell. Elsewhere, layers of sandy-silt and sand were observed, which were also likely to have been naturally deposited. Close to the junction with Milltown Street, a surface comprising stone setts was observed, 0.30m below the ground surface. The proximity of the stone setts to Mill Street, and the absence of such a surface further to the north, suggests that this surface may have represented the eastern extension of Mill Street. The setts appeared to have been bedded on a 0.40m thick layer of fuel waste and the presence of such waste material, being used as a foundation layer for the construction of stone sett-based road surfaces, was observed frequently along the overall length of the pipeline.

5.2.2 The area to the west of Rectory Lane, between the bridge over the River Irwell and Brook Street, had been the site of the Wilton Cotton Mill buildings (Site 16) from 1907 until demolition associated with recent development works. The examination of spoil heaps associated with the excavation of construction works trial pits in the area revealed that a layer of fuel waste and demolition debris had occupied part of the former mill site. This appeared to have overlain a deposit of clean soil, which might suggest the presence of a levelling deposit associated with the construction of Wilton Mill.

5.2.3 **Church Street East (west of Croft Lane):** prior to the excavation of the United Utilities pipe trench, stone setts comprising the road surface of Church Street East were removed. The setts were removed by machine by contractors associated with remediation works at East Lancashire Paper Mill that extended to the north and south of Church Street East. The setts were located at a depth of 0.10m beneath the modern tarmac road surface and appeared to have

formed the fabric of an earlier road surface. The stone setts measured approximately 0.26m by 0.13m by 0.18m and appeared to have been bedded on a layer of fuel waste. During these initial works, a wall, approximately 3.80m high, as exposed, was revealed to the south of Church Street East and east of Cock Clod Street, that might have represented one of the northern walls of the East Lancashire Paper Mill (Site 14). The stone wall utilised squared blocks that measured up to 0.30m by 0.40m. Two culverts were revealed at the base of the wall that were aligned north to south. The vaulted culverts were approximately 1.10m high and 1.10m wide and were visible as stone arches in the southern face of the stone wall. Both openings had been sealed with red bricks and further modifications to the stone wall using red bricks, some of which were seen to be frogged, were also evident. A stump of red-brick wall, approximately 0.60m high, was seen protruding from the southern face of the stone wall and a gap of uncertain function between the two culverts had been bricked-up.

5.2.4 The title map of 1841 and the Ordnance Survey Map of 1850 showed barrack buildings to have been located in this area, prior to the construction of the East Lancashire Paper Mill (Site 14) in 1860, and it is possible that the stone wall had originally formed the northern wall of one of the barrack buildings and that the red brick modifications represented the re-use of the wall as part of the later industrial site. Opposite the section of walling, to the north of Church Street East and the pipe trench, the remains of a brick chimney were revealed. No structures were depicted in this area prior to the Ordnance Survey map of 1910 and this chimney was presumably associated with the East Lancashire Paper Mill. Single chimneys were labelled in this area on the Ordnance Survey maps of 1910, 1932, and 1937.

5.2.5 The pipe trench at Church Street East followed the line of the modern road and was excavated to a maximum depth of 2.10m and was 2m wide. Several layers of material, including fuel waste, clayey sands, and rubble, appeared to represent depositions intended to build up the ground level in this area, however, these deposits were often in a mixed state and had been disturbed by modern services. At the western end of Church Street East, between Rectory Lane and Cock Clod Street, the stone setts that lay beneath the modern road surface were removed to reveal a concrete surface. This may have been intended to protect service pipes, which were also encountered in this area, or to prevent subsidence of the road due to the heavy traffic that would have accessed the industrial site of the East Lancashire Paper Mill. Immediately west of the junction with Brown Mill Brow, a vaulted brick culvert, approximately 1.30m wide and 0.50m deep, and running north-west to south-east, was revealed. Approximately 15m to the east of this, a second brick culvert was observed at the northern edge of the pipe trench, running from south-west to north-east. The only other feature that was encountered on the section of Church Street East that lay to the west of Croft Lane was a modern concrete weighbridge. This was situated just to the west of Cock Clod Lane and to the north of the boundary wall of the East Lancashire Paper Mill (Site 14).

- 5.2.6 **Church Street East (east of Croft Lane):** a series of test pits measuring 0.5m wide, 2m long, and 2m deep, that had been excavated along Church Street East, immediately to the east of Croft Lane, revealed the modern road surface overlying a surface of stone setts measuring approximately 0.26m by 0.13m by 0.18m, which were bedded on a 0.30m thick layer of fuel waste. The test pits lay to the north of the former Calico Printing Works, and it is likely that the fuel waste underlying the stone setts derived from either the printing works, or from the East Lancashire Paper Mill (Site 14), and was deliberately laid as a levelling deposit. As the first documentary references to the Calico Printing Works appeared in trade directories of 1825 (Baines 1825, 688; Pigot and Dean 1825, 450), it is unlikely that the stone sett road surface predates the nineteenth century.
- 5.2.7 At the northern edge of Church Street east, adjacent to the boundary of the cricket ground, the modern road was seen to overlie numerous layers of sand, clay, gravel, fuel ash, and rubble, which appeared to represent made ground. These deposits were exposed by the excavation of the pipe trench, which varied from 2m to 3m wide and 1.8m to 3.1m deep. A culvert was observed within the pipe trench in this area, which was orientated north-west to south-east. The culvert was stone-lined and measured 0.50m wide and 0.50 deep. The projected southwards course of this culvert suggested that it may have drained into the River Irwell via a goit that was depicted on the tithe map of 1841 and the Ordnance Survey map of 1850, and lay to the south of the Calico Printing Works. Lying 2m to the south-west of the culvert was a timber-framed sluice gate with a wooden shutter and steel mechanism.
- 5.2.8 Two stretches of brick wall were revealed at the southern side of Church Lane East, close to the junction with Croft Lane. These walls are likely to be associated either with a building that was depicted on the Ordnance Survey map of 1910, or a subsequent larger building that was shown on the Ordnance Survey map of 1932. A stretch of sandstone walling, truncated by several service pipes, ran from east to west along Church Street East, across the junction of Croft Street, and the eastern extension of this wall continued as a brick wall. The walling did not appear to correspond to any of the structures depicted on the historic mapping and the function of this feature is unclear. The location of the walling, across the path of a roadway (Croft Lane) suggested to date to as early as the Romano-British period (Site 10), suggests that the stone and brickwork was associated with a sub-surface feature, such as a culvert, however, it was not possible to demonstrate this conclusively. A stone-lined culvert was observed running from north-west to south-east across the junction of Croft Lane and Church Street East. Although Croft Lane purportedly represents the line of a Romano-British period road (Site 10), there was no sign of any fabric relating to a road of this period in the area. However, the high degree of evident disturbance from services and culverts is likely to have destroyed any traces of earlier structures in this area, up to a depth of approximately 2m below the modern road surface.
- 5.2.9 A trench measuring 1.5m by 5m was excavated along the footpath to the south-east of the Croft Lane and Church Street East junction, near the lodge. The trench was excavated to a depth of 3m and comprised overburden and

naturally lain gravels (Plate 8). No features or deposits of archaeological interest were observed.

- 5.2.10 Situated at the junction of Croft Lane and Church Street East, a concrete foundation was removed along the pipeline route, exposing a cluster of worn cobbles. Initially, it was thought that the cobbles formed a surface, and may have related to the putative Roman road (Site 10) that ran through the area. Further investigation revealed that the cobbles were not *in situ*, and had most likely been re-laid. It is possible that the stones may have originally formed the Roman road, before there were disturbed. To the south-west of this trench, a 5m² pit was excavated, revealing a brick wall running east/west across the pit. Quantities of fuel waste was identified to the north of the trench, but no further archaeology was observed.
- 5.2.11 **Radcliffe Tower:** this area comprises of the stretch of pipe trench that ran between the eastern end of Church Street East and Bealy's Goit. The pipe trench was 0.6m wide and had a maximum depth of 3m. To the west of Radcliffe Tower, a natural deposit of grey clay was overlain by a 1m to 1.20m thick layer of silty-clay, within which fragments of brick were found. This was overlain by layers of stony-sandy-clay and fuel waste, which were overlain by a layer of soil and rubble, which was subsequently sealed by topsoil.
- 5.2.12 To the south of Radcliffe Tower, naturally deposited coarse sand, encountered at a maximum depth of 2.40m, was overlain by a layer of sand and clay between 0.20m and 0.30m thick, which might represent a buried soil horizon. This was overlain by made-up ground up to 2.20m thick comprising deposits of sandy clay with a rubble component, sandy silt, rubble, and humic soil. The surface of a trackway had been constructed over these dumps of material and consisted of deposits of crushed brick, grit, and stone chippings. A field drain was observed within the natural sandy clay and, as no cut was evident through the numerous layers overlying this natural geology, it is likely that the drain had been installed when the lowest layer of soil was exposed as a ground surface. The drain is likely to have emptied in Bealey's Goit, to the east.
- 5.2.13 **Close Park:** at the western end of the park, approximately 70m to the east of Radcliffe Tower, a trench measuring 15m by 5m was excavated along the line of the small brook, Bealey's Goit. No features or deposits of archaeological interest were observed.

6. DISCUSSION

6.1 SYNTHESIS

- 6.1.1 Ten sites were identified during the desk-based research with the potential to be affected by the excavation of the pipe trench. These comprised a Neolithic and Bronze Age findspot (Site **19**), Pioneer Mills (Site **15**), Wilton Mill (Site **16**), Cock Clod Medieval Settlement (Site **22**), East Lancashire Paper Paper Mill (Site **14**), a Roman road (Site **10**), Radcliffe Tower (Site **13**), features associated with a smithing hearth (Site **20**), the churchyard associated with the Church of St Mary and St Bartholomew (Site **12**), and the extensive prehistoric settlement site dating from the Mesolithic to the Bronze Age at Radcliffe E's (Sites **01-09**).
- 6.1.2 As the pipe trench followed the lines of roads in the western part of the study area, no features associated with the three mills fronting these roads were encountered. Demolition work associated with remediation works in the locale of the East Lancashire Paper Mill at times coincided with the line of the pipe trench and features associated with the East Lancashire Paper Mill, and potentially the barracks that preceded the construction of this mill, and Wilton Mill were observed close to the line of the pipe trench as a result of these works.
- 6.1.3 No evidence of features associated with the medieval settlement of Cock Clod (Site **22**) or the postulated Roman road (Site **10**) were observed. The high degree of sub-surface disturbance, caused by the construction of water management features and the installation of services in the area, is likely to have destroyed any such features or made their identification extremely difficult. The only features of archaeological interest that were observed in the western part of the sandy area were the stone-sett road surfaces present at Church Street East and at the eastern end of Mill Town Street. Several stone and brick-lined culverts, and the back-filled reservoir that formerly occupied part of the cricket ground on Church Street East, but which had been in-filled by the time of the Hutchinson estate map of 1860 (Fig 5) were also observed.
- 6.1.4 Within the eastern part of the study area, the line of the pipe trench diverted away from the established roads. No features associated with Radcliffe Tower were observed and the only signs of human disturbance in this area were related to the rough trackway to the south of the tower and several make-up layers of soil and rubble, with a maximum thickness of 2.20m, that were present between Church Street East and Bealey's Goit, and which underlay the trackway. It is possible that the line of the putative Roman road was identified in a trench excavated at the junction of Croft Lane and Church Street East, although it had been heavily disturbed, the worn cobbles observed may have dated to the Romano-British period.
- 6.1.5 Excavations at Close Park revealed no features of archaeological interest, the area comprising overburden, and naturally lain, alluvial gravels.

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7.5 AERIAL PHOTOGRAPHS

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8. ILLUSTRATIONS

8.1 LIST OF FIGURES

Figure 1: Site location

Figure 2a: Plan of proposed route (North)

Figure 2b: Plan of proposed route (South)

Figure 3: Extract from the Radcliffe tithe map of 1841

Figure 4: Extract from Ordnance Survey, 1850

Figure 5: Proposed route superimposed upon the plan belonging to Messers Hutchinson in the Parish of Radcliffe, 1860

Figure 6: Extract from Ordnance Survey, 1909

Figure 7: Extract from Ordnance Survey, 1932

8.2 LIST OF PLATES

Plate 1: Aerial view of the East Lancashire Paper Mill, showing the course of the River Irwell and Radcliffe E's (courtesy of GSMR F5-11, 27/03/1996)

Plate 2: Section through the modern concrete footpath; former cobbled surface; overburden make-up; and the alluvial gravels that comprise the area around the Croft Lane and Church Street East junction.

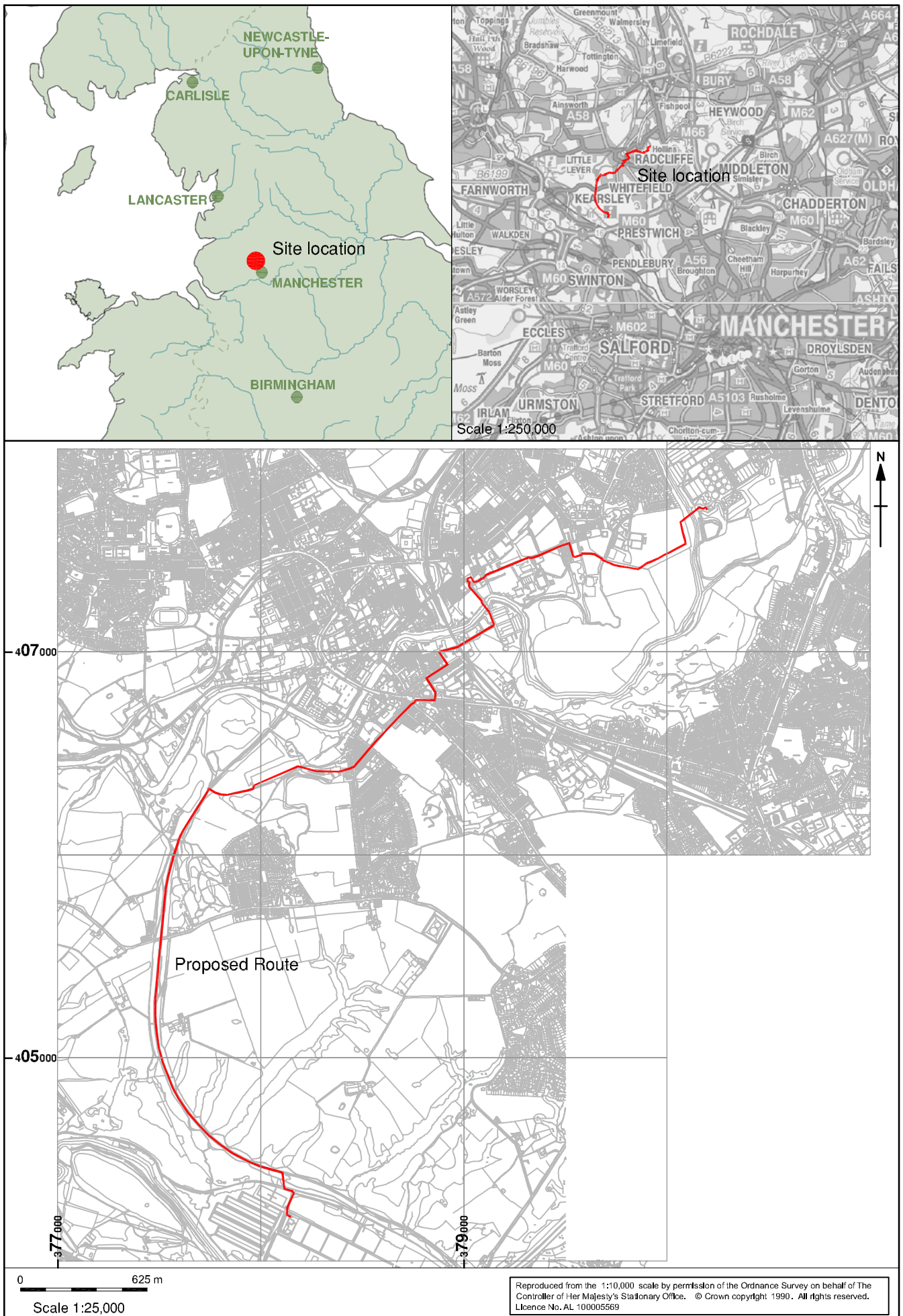


Figure 1: Site Location

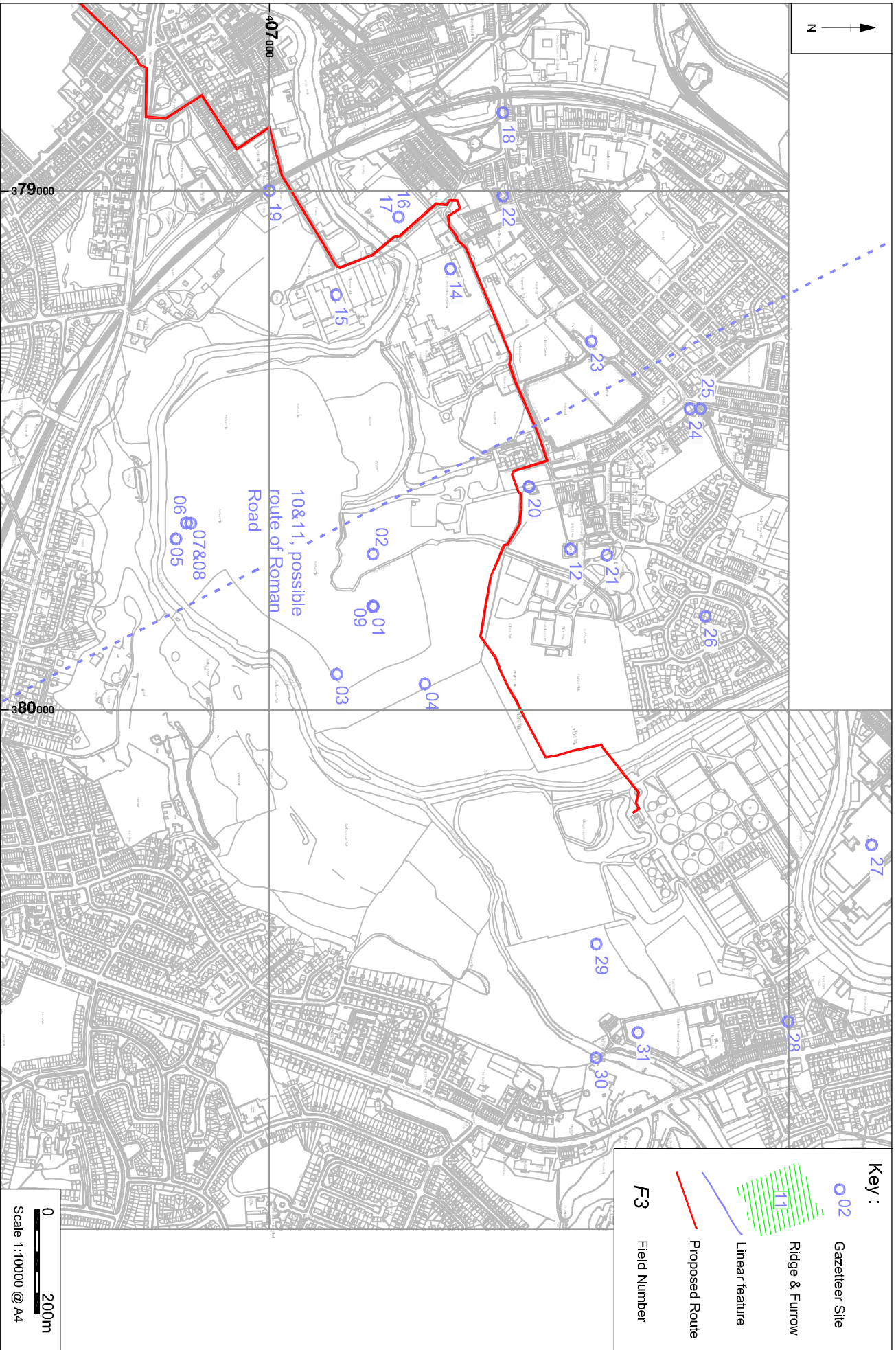


Figure 2a: Plan of Proposed Route (North)

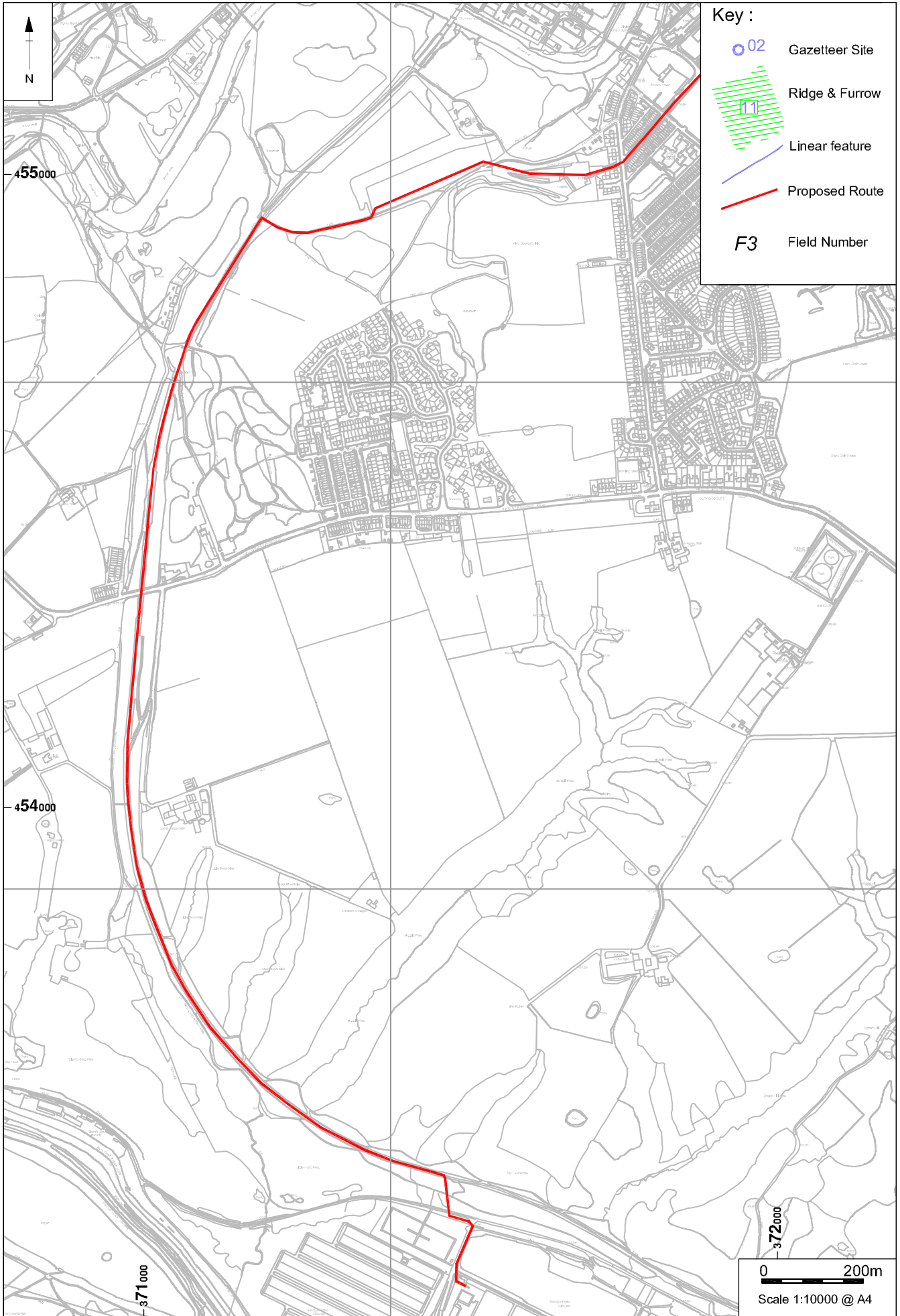
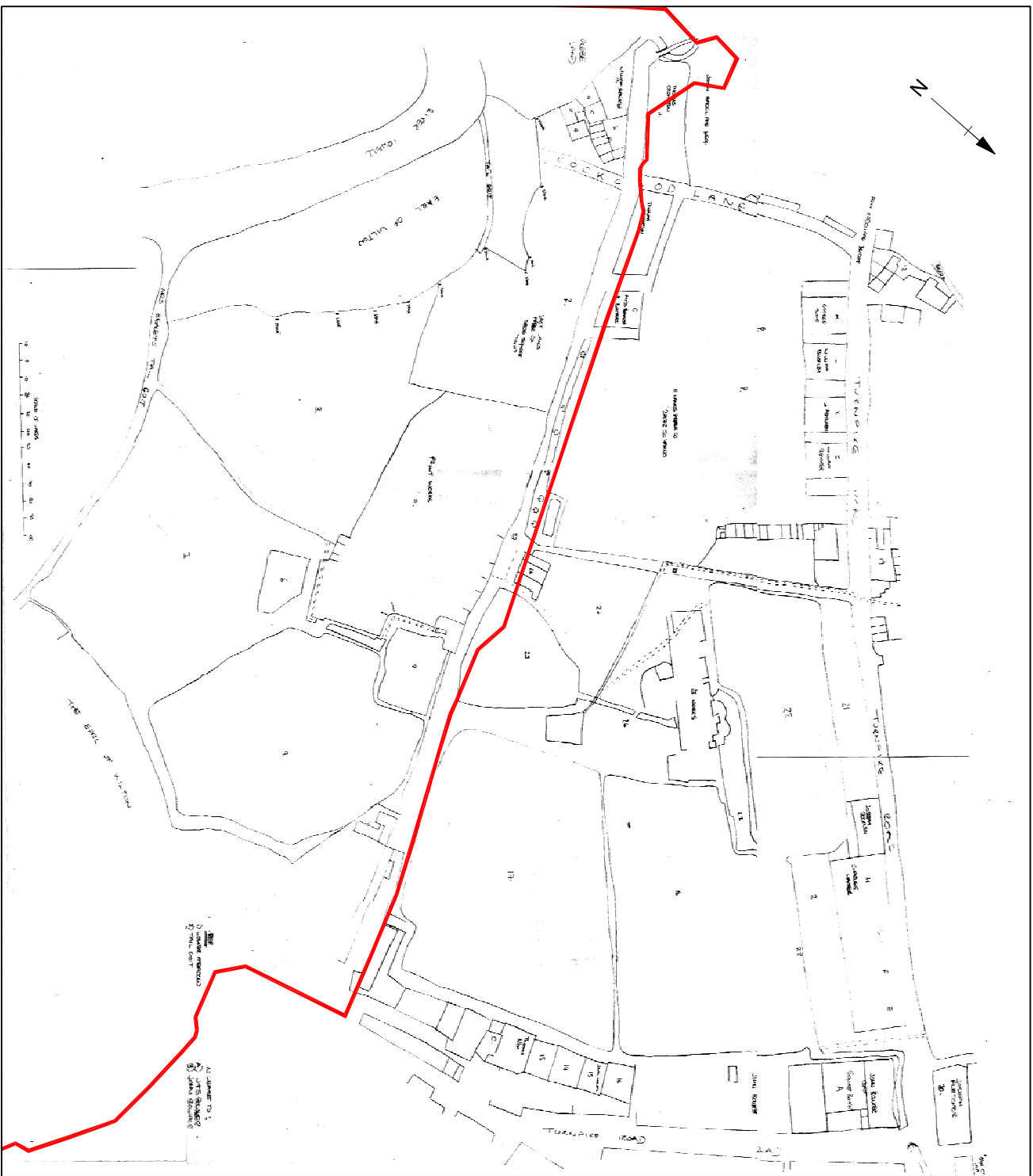
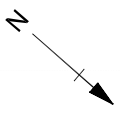


Figure 2b: Plan of Proposed Route (South)




 Proposed Route

Figure 3: Extract from the Tithe map, 1841, showing Radcliffe section of proposed route

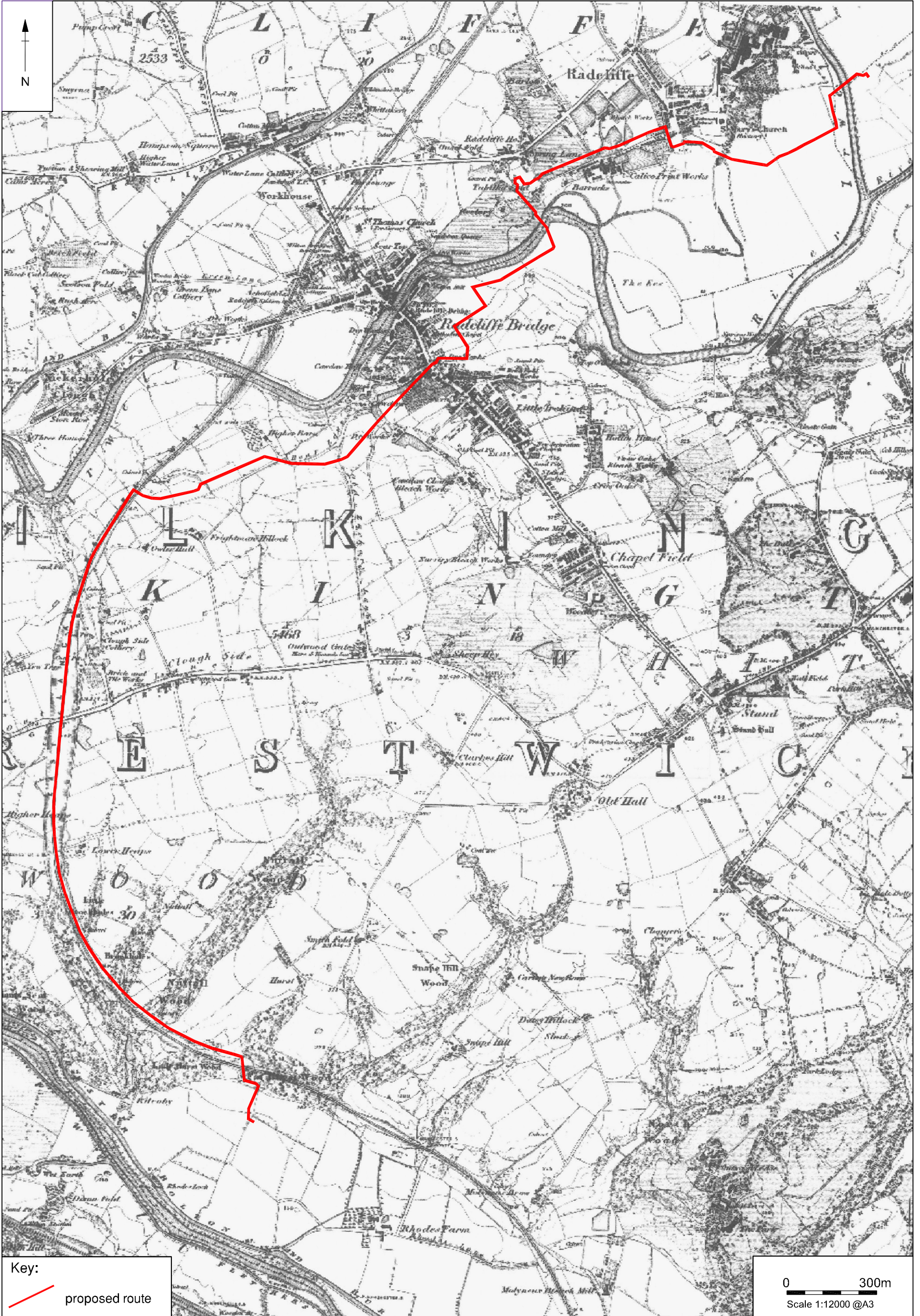


Figure 4: Extract from Ordnance Survey First Edition map, 6":1 mile, 1850

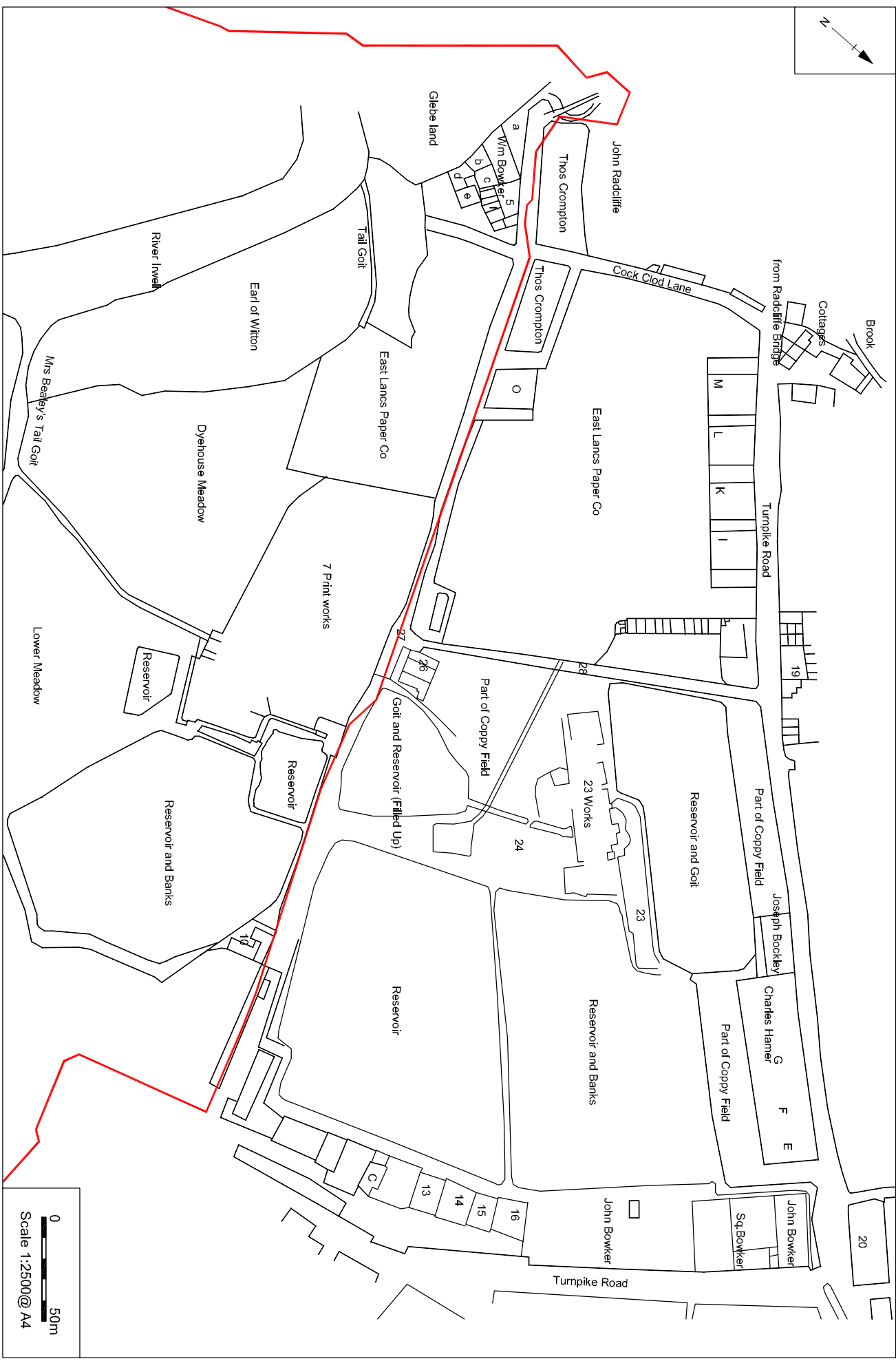


Figure 5: Proposed route superimposed upon the Estate Plan belonging to Messrs Hutchinson in the Parish of Radcliffe, 1860

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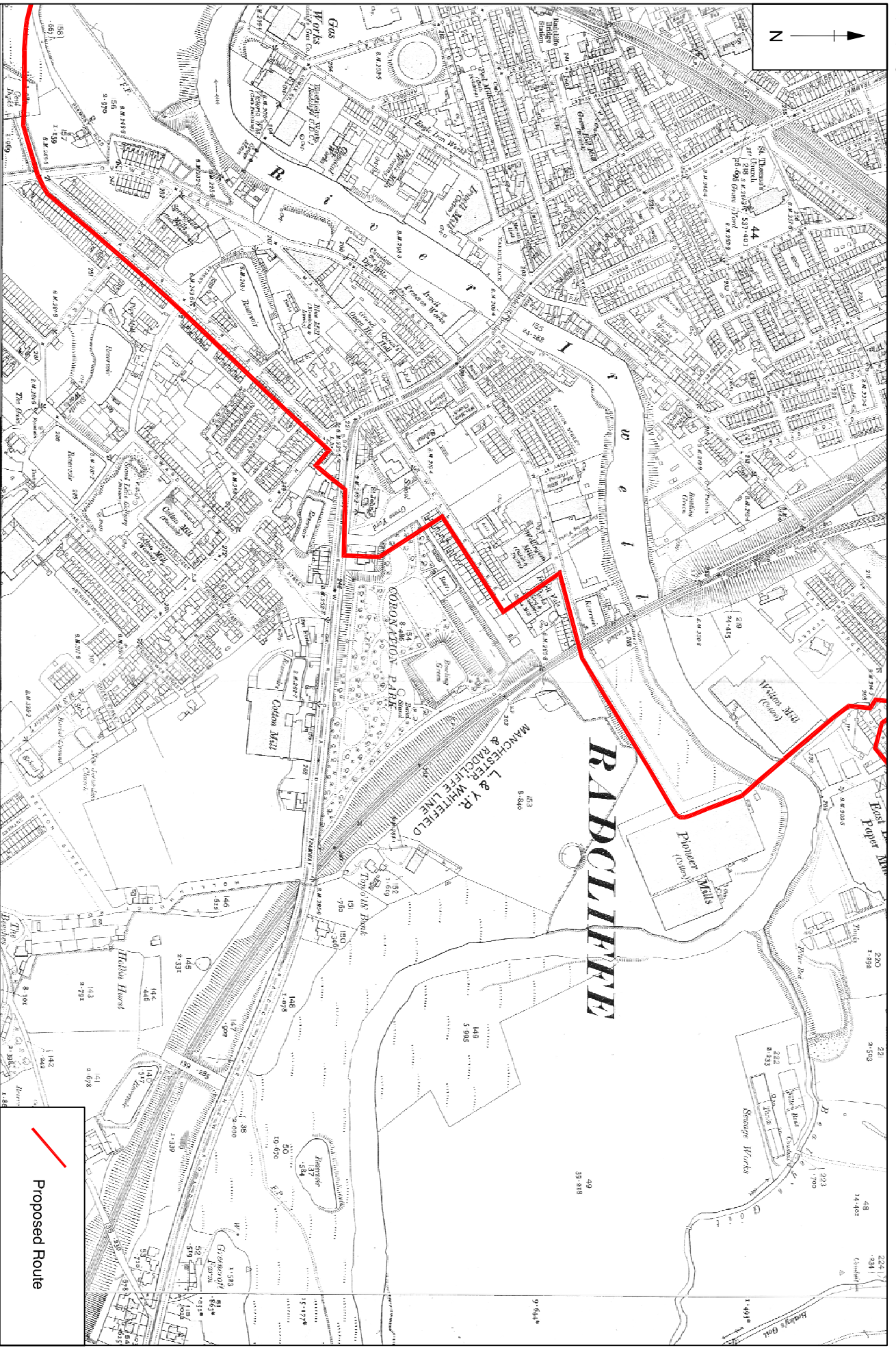


Figure 6: Extract from the Ordnance Survey second edition 25" to 1 mile map, 1909, showing Radcliffe section of proposed route

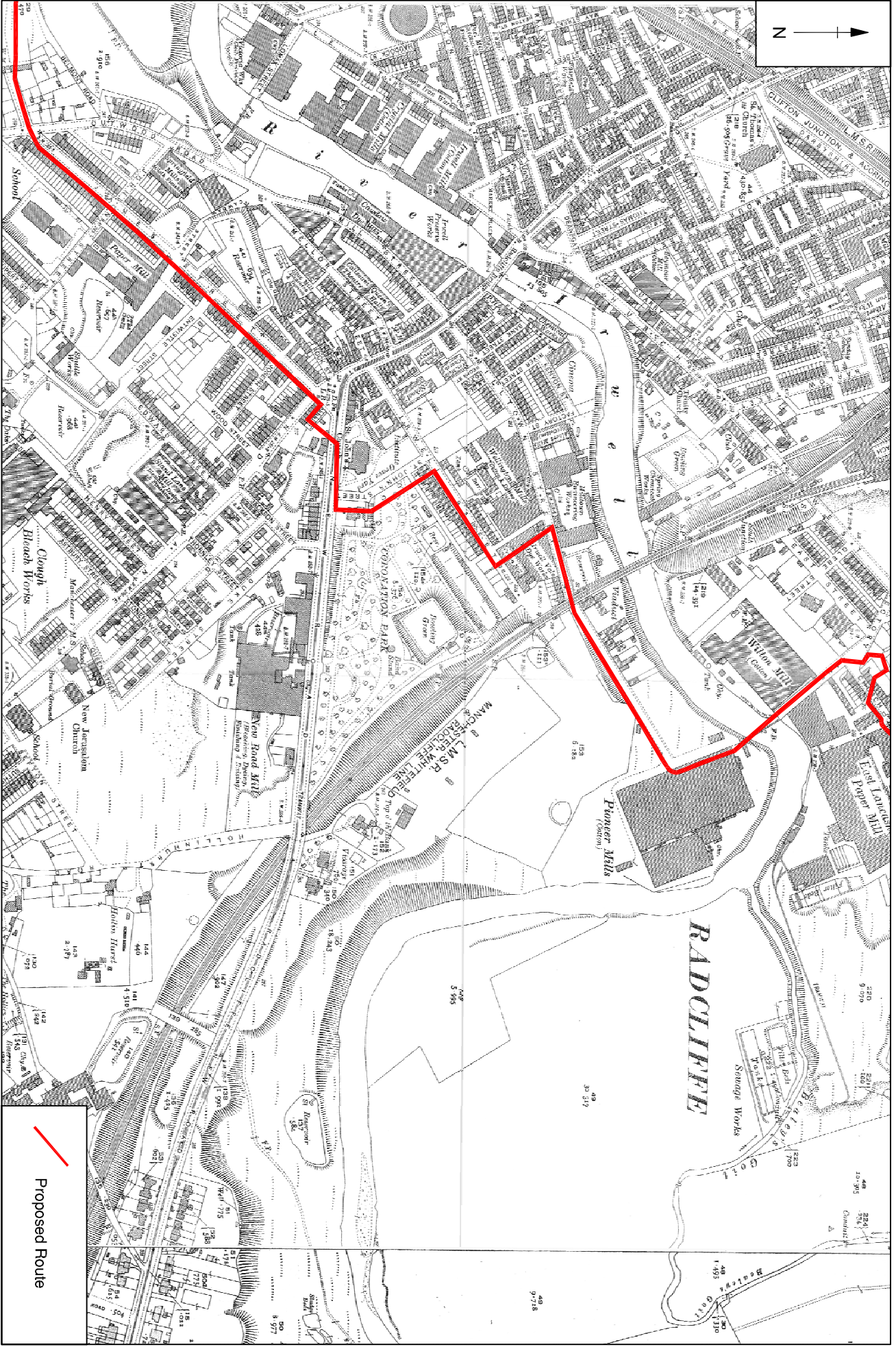


Figure 7: Extract from the Ordnance Survey third edition 25" to 1 mile map, 1932, showing Radcliffe section of proposed route



Plate 1: Aerial view of the East Lancashire Paper Mill, showing the course of the River Irwell and Radcliffe E's (courtesy of GSMR F5-11, 27/03/1996)



Plate 2: Section through the modern concrete footpath; former cobbled surface; overburden make-up; and the alluvial gravels that comprise the area around the Croft Lane and Church Street East junction.

APPENDIX 1: PROJECT DESIGN

**MERSEY VALLEY
SLUDGE PIPELINE, (BURY
WASTEWATER
TREATMENT WORKS TO
BOLTON WASTEWATER
TREATMENT WORKS),
GREATER MANCHESTER**

**Archaeological Watching Brief
Project Design**

Oxford Archaeology North

Revised January 2007

United Utilities

OA North Tender No. t2851

NGR SD 7910 0725 to 8010 0769

1. INTRODUCTION

- 1.1 United Utilities (hereafter the client) have proposed the construction of a new sludge pipeline from Bury Wastewater Treatment Works Bolton Wastewater Treatment Works, Greater Manchester (SD 7910 0725 to 8010 0769). As the scheme affects areas of archaeological potential the Planning Archaeologist at Greater Manchester Archaeological Unit Sites and Monuments Record (GMAUSMR) has recommended that a formal watching brief should be undertaken.
- 1.2 The following background to the site is taken from the GMAUSMR brief for the archaeological watching brief issued in July 2006. The pipeline route passes through an area of historic bleach works, which later became the East Lancashire Paper Mill site, for which there could be below ground remains of industrial archaeological importance. Also in this area is the line of the Roman road from Preston to Manchester which is thought to run down the line of Croft Lane, although recent evaluation by OA North has failed to find evidence for it. Moving further east, the pipeline will run to the west of and then just south of the Scheduled area for Radcliffe Tower. This is a late medieval stone tower dating to 1403 but there were an extensive range of buildings and ditches associated with this monument for which there are now only below-ground remains. The pipeline runs south-east to the corner of the graveyard (belonging to a medieval Grade 1 listed church) to cross an old goit supplying water to industrial premises by the river further west, and then it goes across Close Park to cross the River Irwell. In the 1950s archaeological excavations ahead of gravel extraction at Radcliffe Ee'es encountered a series of timber post circles which have been interpreted as possible late Mesolithic lakeside settlement. However, there were also many finds from Neolithic and Bronze Age periods. This area lay south of the pipeline (around SD797069) and has subsequently been covered by deep landfill deposits, but the full extent of the site is unknown. It is possible that areas with no or only shallow landfill around Close Park may contain further evidence for prehistoric remains.
- 1.3 OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.
- 1.4 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) registered organisation, registration number 17, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

- 2.1 The following programme has been designed to evaluate the archaeological resource of the proposed development area. The required stages to achieve this are as follows:
- 2.2 **Rapid Desk-Based Assessment:** in order to provide a brief historical background to the site a brief appraisal of the data held by the Sites and Monuments Record Office (SMR) will be undertaken, along with an historic map regression exercise;

- 2.3 **Permanent Presence Watching Brief:** this will be undertaken during the stripping of the easement and within pipe trench excavations where there is no easement;
- 2.4 **Report and Archive:** production of a report following the collation of data during Sections 2.2 and 2.3 above.

3 METHOD STATEMENT

3.1 WATCHING BRIEF

- 3.1.1 **Rapid Desk-Based Assessment:** an examination will be undertaken of SMR data made available to the project in order to place the findings of the watching brief into a local and regional context. The Bury Local Studies Library will be consulted as a source for historic mapping.
- 3.1.2 **Fieldwork:** the section of interest for which the watching brief is required runs from (SD 7910 0725 to 8010 0769). Throughout this section a programme of field observation will record accurately the location, extent, and character of any surviving archaeological features and/or deposits within all easement stripping activities associated with the development works, and within the excavation for the pipe trench where no easement exists. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.
- 3.1.3 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (ie selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 3.1.4 If significant archaeological deposits or features are identified that might be affected by machine tracking or the pipe trench cutting then the area will be sealed off to protect it and there will be a site meeting between the interested parties (including the Assistant County Archaeologist) and UU Project Manager) to discuss use of the contingency fund to allow a rescue excavation and recording exercise to take place.
- 3.1.5 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered. This would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing.
- 3.1.6 **Written Record:** during this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed. All information identified in the course of the site works will be recorded

stratigraphically utilising OA North pro-forma. Areas of excavation will be assigned trench numbers and context numbers will be applied to archaeological features.

- 3.1.7 **Site Drawings:** a large-scale plan (provided by the client) will be produced of the area of the groundworks showing the location and extent of the ground disturbance, appropriately labelled to correspond with the written record. Archaeological features will be recorded accurately (either on plan (1:20) and/or section (1:10), and as grid co-ordinates where appropriate).
- 3.1.8 The site drawings will be manipulated in an industry standard CAD package (AutoCAD release 2004) for the production of final drawings.
- 3.1.9 A photographic record will be undertaken simultaneously. This will utilise a 35mm camera for the production of both colour slides and monochrome contact prints. A photographic scale will appear in all images captured. The photographic index will describe and locate each area/feature photographed.
- 3.1.10 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. The GMAUSMR and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Department of Constitutional Affairs license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations, and if appropriate, in compliance with the 'Disused Burial Grounds (Amendment) Act, 1981.
- 3.1.11 **Treatment of finds:** no sampling of finds will take place during fieldwork. All finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines (Stockport Museums Service).
- 3.1.12 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.
- 3.1.13 **Treasure:** any gold and silver artefacts recovered during the course of the excavations will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 3.1.14 **Environmental Samples:** samples will also be collected for technological, pedological and chronological analysis as appropriate. If necessary, access to conservation advice and facilities can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeozoological specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.

3.2 REPORT AND ARCHIVE

- 3.2.1 **Interim Statement:** in the event that further work is recommended an interim statement will be issued. In this instance or in the event that the client specifically requests an interim statement it should be noted that all illustrations will be copies of field drawings and not finished CAD drawings.
- 3.2.2 **Final Report:** two copies of the final report will be submitted to the client and further copies to the GMAUSMR and Bury Planning Authority. Both paper and digital copies will be provided on CD-ROM in pdf format. The report will present the following information:
- (i) **Summary:** a summary statement of the findings;
 - (ii) **Introduction:** the background to the project including location details;
 - (iii) **Methodology:** an outline of the methodology of all elements of the programme of work;
 - (iv) **Historical Background:** a brief historical background to the site;
 - (v) **Results:** an account of archaeological features identified during the course of the watching brief;
 - (vi) **Discussion:** a description of the significance of the study area in its local and regional context;
 - (vii) **Recommendations:** the identification of areas where further development will impact upon the archaeological resource in addition to the impacts of the current development;
 - (viii) **Illustrations:** maps, plans, sections and copies of the site photographic archive;
 - (ix) **Appendices:** list of archive contents, a copy of the brief and this project design;
- 3.2.3 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained.
- 3.2.4 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- 3.2.5 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive, including a copy of the report, will be provided in the English Heritage Centre for Archaeology format. In this instance the archive will be submitted to the Bury Archives Service.
- 3.2.6 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.

4 PROJECT MONITORING

- 4.1 Monitoring of this project will be undertaken through the auspices of the GMAUSMR Planning Archaeologist, who will be informed of the start and end dates of the work.

5 WORK TIMETABLE

- 5.1 The rapid desk-based assessment is expected to take in the region of one day to complete.
- 5.2 The duration of the watching brief will be dependent upon the progress of the contractor.
- 5.3 The client report will be completed within eight weeks following completion of the fieldwork.

6 STAFFING

- 6.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 6.2 Present timetabling constraints preclude detailing at this stage exactly who will be undertaking the rapid desk-based assessment and watching brief, but both of these elements of the project are likely to be supervised by an OA North project supervisor experienced in these types of project. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes.

7 INSURANCE

- 7.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.