



Barnacre 15" Water Main St Michael's on Wyre Lancashire

Archaeological Watching Brief



Oxford Archaeology North

October 2004

**Alfred McAlpine Utility
Services**

Issue No:2004 - 05/213

OA North Job No:L9277

NGR: SD 49280 42382 to SD
41059 36012

Document Title: Barnacre 15" Water Main, St Michael's on Wyre, Lancashire

Document Type: Archaeological Watching Brief

Client Name: Alfred McAlpine Utility Services

Issue Number: 2004 – 05/213

OA Job Number: L9277

National Grid Reference: SD 49280 42382 to SD 41059 36012

Prepared by: Andy Bates David Tonks
Position: Supervisor Assistant Supervisor
Date: October 2004

Checked by: Alison Plummer Signed.....
Position: Senior Project Manager
Date: October 2004

Approved by: Alan Lupton Signed.....
Position: Operations Manager
Date: October 2004

Document File Location X:\alison/projects/9277Barnacre2/L9277Rep.doc

Oxford Archaeology North

Storey Institute
Meeting House Lane
Lancaster
LA1 1TF
t: (0044) 01524 848666
f: (0044) 01524 848606

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

© Oxford Archaeological Unit Ltd (2004)

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

Oxford Archaeological Unit Limited is a Registered Charity No: 285627

Disclaimer:

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

CONTENTS

ACKNOWLEDGEMENTS	2
SUMMARY	3
1. INTRODUCTION	4
1.1 Circumstances of the Project	4
1.2 Site Location.....	4
1.3 Geology	4
1.4 Historical and Archaeological Background	4
2. METHODOLOGY	8
2.1 Watching Brief.....	8
2.2 Archive	8
3. WATCHING BRIEF RESULTS.....	9
3.1 Introduction	9
3.2 Results	9
4. DISCUSSION.....	10
4.1 Conclusions	10
5. BIBLIOGRAPHY	11
5.1 Cartographic Sources	11
5.2 Primary Sources.....	11
5.3 Secondary Sources.....	11
APPENDIX 1: PROJECT BRIEF	13
APPENDIX 2: PROJECT DESIGN.....	14
APPENDIX 3: TRENCH DESCRIPTIONS.....	15
ILLUSTRATIONS	23

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank Alfred McAlpine Utility Services for commissioning the work and to Mike Reid and colleagues of McAlpines for their assistance on site. Further thanks are due to Gerard Singleton and colleagues of Singleton Landworks Limited for their assistance and good humour during the permanent presence watching brief.

The watching brief was undertaken by Andy Bates, Dave Hodgson, Christina Robinson and David Tonks, with the report being written by Andy Bates and David Tonks. The drawings were produced by Mark Tidmarsh and the report was edited by Alison Plummer and Emily Mercer. The project was managed by Alison Plummer.

SUMMARY

A watching brief was undertaken by Oxford Archaeology North between August 2003 and May 2004 during the excavation of 46 launch and retrieve pits associated with the replacement and modernisation of a 15" Victorian water main. A watching brief was also maintained during an easement topsoil strip and the exposure and removal of a 320m section of the existing pipe.

The route of the replacement pipe followed that of the original main which traversed an area considered to have archaeological potential. Archaeological monitoring of the works was therefore required and, accordingly, the watching brief was commissioned by Alfred McAlpine Utility Services.

The pits were excavated along the line of the original water pipe which was routinely exposed and removed as part of the works. In consequence, the excavated material largely comprised backfill from when the main was originally laid and no archaeological remains, other than features associated with the Victorian pipe itself, were encountered.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Following a planning application by United Utilities, to undertake the relining of the Barnacre 15" Water Main, St Michael's on Wyre, Lancashire (SD 49280 42382 to SD 41059 36012), Lancashire County Council Archaeological services issued an archaeological brief (*Appendix 1*) requesting an archaeological watching brief on all launch and retrieve pits associated with the works. A supplementary, permanent presence watching brief was also required during the topsoil strip, excavation and removal of a 320m stretch of the existing Victorian pipe. Oxford Archaeology North, following the submission and approval of a Project Design (*Appendix 2*) was contracted to carry out the work and this report details the results of the watching brief, which was undertaken between August 2003 and May 2004.

1.2 SITE LOCATION

- 1.2.1 The pipeline largely traverses farmland between the village of St Michael's on Wyre and Weeton Service Reservoir to the west of the M6 and north of the M55. The topology is generally that of a gently rolling coastal plain, cut by networks of drainage channels forming angular fields (Countryside Commission 1998, 86), with improved pasture forming the majority of the land along the route (*ibid*). Typically the landscape is fairly low lying, being generally between 5m and 20m OD, and mostly towards the lower end of that range (Ordnance Survey 1998). In places there are small pockets of woodland, and isolated areas of moss, with small field ponds being particularly common (*ibid*).

1.3 GEOLOGY

- 1.3.1 Although Permo-Triassic red mudstones, siltstones and sandstones ('New Red Sandstone') constitute much of the floor of the Lancashire lowlands, the solid rock geology rarely emerges from beneath its thick covering of glacial and post-glacial deposits, which is dominated by clay soils (Countryside Commission 1998, 87). Prior to widespread reclamation of land during the last two centuries, the area was predominantly marshland formed by rising sea levels after the last glaciation. Retreating ice-sheets created many badly drained hollows which soon became filled with post-glacial peat, giving rise to the mosses and meres which dominated the area until only recently (*op cit*, 88).

1.4 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.4.1 **Prehistoric:** the prehistory of Lancashire is largely non-monumental in character, and is predominantly represented by finds of lithics and metalwork, made either by chance or during systematic surveys (Middleton *et al* 1995, 17).

Scatters of lithic material recovered from ploughsoil constitute the commonest evidence for settlement in the period. Palaeolithic finds from Lancashire are limited, but the Mesolithic is better represented, with large numbers of upland sites, and an increasing body of lowland sites, particularly adjacent to wet mire, alluvial, and coastal deposits (Cowell 1996, 30). For the Neolithic, the distribution of lithics suggests that settlement was concentrated in the lowlands, mainly around the coasts and in the river valleys; in particular, the early farming communities seem to have sought out areas of gravel within a landscape predominantly covered with boulder clay (Middleton 1996, 40).

- 1.4.2 A great increase in the variety and geographical spread of finds in the Bronze Age probably indicates a more extensive use of the landscape (*op cit*, 54). Finds of metalwork are concentrated in the lowlands, particularly in the wetlands, although this may reflect depositional practices, rather than the location of settlements (*op cit*, 45); conversely, finds of axe hammers and other perforated stone implements, which are relatively common in north Lancashire, tend to be found in 'dry land' locations, evenly spread across the landscape; an axe and hammer, a stone axe maul head, an iron spear head, and an iron sword were recovered from Sandhole Wood, near Claughton Hall, some 6km east of the subject site (Mawson 1937, 216). In addition, there is a considerable body of evidence for Bronze Age burial monuments, dating to the period 2500-1600BC; many lie in upland areas, although they were formerly much more common in the lowlands, farming activity having removed a large number (Middleton 1996, 49). The Sandhole Wood axe hammer appears to have been associated with a cremation, which formed the primary burial within a burial mound (SMR 119). However, despite the wider distribution of finds, it has been argued that, on clay soils away from the coast, the landscape continued to support thick, mixed woodland (*op cit*, 54).
- 1.4.3 Artefactual evidence declined sharply after c1400BC, and the development of blanket peats in the uplands and raised mires in the lowlands suggests that this may have been indicative of a genuine abandonment of some parts of the landscape (*op cit*, 55). Evidence for the Iron Age in lowland Lancashire is notoriously scarce, indeed very little is known about the nature of material culture and settlement in northern England generally (Cunliffe 1991, 101). In part this is regarded as being a product of poor site visibility, with Iron Age pottery being relatively fragile, the boulder clay soils which cover much of the region not favouring aerial photographic or geophysical prospection, and the predominance of pastoral farming meaning that finds have less chance of being turned up by ploughing (Middleton *et al* 1995, 19). The contrast of limited artefactual evidence with substantial evidence for prolonged clearance in pollen diagrams suggests that the number of known archaeological sites of the period grossly under-represents actual settlement activity, and suggests many sites remain to be detected.
- 1.4.4 **Roman:** a Roman presence in the region is clearly attested by the forts of Kirkham and Ribchester, c12 km and c19km to the south-west and south-east of the subject site respectively; by the extensive first to third century site at Walton-le-Dale, some 18km to the south, which appeared to be involved in part with the manufacture and distribution of goods (Gibbons *et al*

forthcoming); and by the fort at Lancaster, 17km to the north (Shotter 1997). Sections of a Roman Road leading from Walton-le-Dale to Lancaster have been identified on the ground, predominantly through topographic study and the examination of aerial photographs, and its probable course leads some 3km to the east of the subject site (Margary 1957, 108). A second road, suggested to be of Roman origin, has also been identified 1km to the west of the study site (SD 459 441), following a north-east/south-west aligned route (OA North 2004).

- 1.4.5 In contrast to the sites referred to above, the rural non-military archaeology of the Roman period remains elusive over much of northern Lancashire (Middleton *et al* 1995, 19), and few farms or rural settlements have been discovered. As for the Iron Age, the small number of such sites identified probably represents a small fraction of the total. Romano-British activity in the area is demonstrated by the discovery of a Roman coin hoard in Myerscough Park (SD 5008 3997), c3km south-east of the subject site; the find was made in the seventeenth century, but has since been lost. The presence of a non-military Romano-British site has been postulated some 2km to the south-west of Poplar Grove Farm, at SD 441 427, where a small assemblage of Roman pottery and glass has been discovered (OA North 2004).
- 1.4.6 **Early Medieval:** evidence for early medieval activity is limited throughout northern Lancashire; few artefacts of the period have been recovered, and there is almost no archaeological evidence for settlement. However, logic suggests that the rural settlements of the Roman period either continued or declined gradually, and by the end of the period, considerable densities of Scandinavian place names imply that a large number of settlements were in existence, either newly founded, or renamed (Newman 1996a, 103). The subject site lies within one such cluster of names, which follows the low land flanking the Wyre, and includes Catteral and Garstang; indeed, it has been suggested that Garstang itself represented the meeting place for the Scandinavian community in the Fylde (Kenyon 1991, 134-5). Similarly, Nateby suggests Scandinavian origins (Cameron 1988, 85-6), whilst Humblescough Farm, may also have Scandinavian origins; *Scough* meaning a woodland, and *Hume* possibly the name of the owner.
- 1.4.7 Settlement can also be inferred from the presence in the vicinity of a Scandinavian burial and hoard. The burial was found at Sandholme Wood near Claughton Hall, some 6km east of the subject site, within a Bronze Age tumulus. Several weapons were found, as well as a pair of 'tortoise' brooches of tenth century date, and a third brooch, a converted Carolingian baldric mount (*op cit*, 124).
- 1.4.8 **Medieval:** the majority of the larger settlements in the vicinity have recorded origins of at least medieval date. At the time of the Norman conquest the majority of the lands in of the area were held as part of the Lordships of Earl Tostig (Farrer and Brownbill 1912), before being split into smaller territories. Before the conquest the parish of Garstang comprised of three manors, Garstang, Catterall and Claughton (*op cit*, 7, 291), while Weeton and Greenhalgh with Thistleton were separate, smaller territories (*op cit*, 7, 176 and 179). There are references to all of these settlements, as well as several

others, as early as the twelfth to fourteenth centuries (*op cit*) demonstrating that the majority of the modern settlement pattern was established by at least this time. There is little archaeological evidence for the medieval period in rural Lancashire, however, and detailed study has yet to begin (Newman 1996b). The majority of the land around Garstang became part of William de Lancaster's estate in the thirteenth century, who granted a large part of it to Cockersands abbey in 1246 (Farrer and Brownbill 1912). A market charter was granted for Garstang in 1310, which may have been what created the separation between Garstang and Garstang Churchtown (*ibid*). The fourteenth century was not generally a particularly prosperous time, however; the great Scottish raid of 1322 undoubtedly would have made great use of the main road through Garstang, and the area was ravaged by the plague in around 1359 (Tetlow 2001).

1.4.9 The following centuries saw a gradual recovery, and in 1490 Greenhalgh Castle and deer park were created. The Earl of Derby fortified an existing property after having threats made against his life following the end of the War of the Roses (Collinson 1993, 20). The position of the deer park is not precisely known, although maps of 1610 (Speed) and 1693 (Morden) show an enclosed area around the east side of the castle and up to the River Wyre. Other sites of possibly late medieval date within the study area include several wayside crosses around Garstang used as marker points and during funeral processions (Taylor 1902). The Dissolution of the Monasteries in 1536-1540 essentially marks the beginning of the end of the medieval period, most of the land within the survey area reverted to the crown, and the market at Garstang closed for almost 50 years (Tetlow 2001).

1.4.10 **Post-Medieval:** the majority of sites identified in the area are post-medieval in date, representing the massive expansion in production and construction that signals the industrial revolution. Several of the sites are farms of late seventeenth to eighteenth century date, a time of increased building and prosperity across the country (Platt 1994), when middle class yeoman farmers began to become a powerful social and economic force (Marshall 1991). The major land-owning estates such as the Brockholes of Claughton Hall were well established by this point, and Greenhalgh castle was in ruins following the civil war (Collinson 1993). Large areas of land were being enclosed for the first time, parts of Claughton in 1730 for example (AE1/2), while mosses to the west were drained and reclaimed for agriculture (Middleton *et al* 1995). The process of industrialisation was evident, even in such a rural area, with the construction of the Lancaster Canal in 1797 and railways in the mid-nineteenth century vastly improving communication and trade and allowing further exploitation of the available resources. Large scale economic factors were an important aspect of this rapid development, which in part led to the attempted sale of the entire Garstang estate in 1867 and again in 1919 (*ibid*; DDX131/1).

2. METHODOLOGY

2.1 WATCHING BRIEF

- 2.1.1 **Launch and Retrieve Pits:** site visits were made once a week to scan the sections of each launch and retrieve pit excavated that week, as detailed in the Project Design (*Appendix 2*). For the most part, no archaeological supervision was undertaken during the excavation of the pits themselves. The previous pipe trench had, naturally, disturbed most of the excavated area, the old pipe being visible in the centre of each pit, but sections either side of the pipe were examined for archaeological features, and the spoil heap scanned for finds.
- 2.1.2 A supplementary watching brief was also maintained during the topsoil strip and removal of 320m the existing pipe between Pits 27 and 28 (Fig 2). Owing to land drainage and consequent shrinkage, the pre-existing pipe was too close to the surface and needed to be removed and replaced. The stripping was effected by a mechanical excavator using a 1.9m toothless ditching bucket, whilst the trench was excavated and the pipe removed using a toothed bucket.
- 2.1.3 **Recording:** comprised a full description and preliminary classification of the features and materials revealed on OA North *pro forma* sheets. A plan was produced showing the location of all the trenches and features located by the watching brief, with representative sections of any archaeological features being drawn at a scale of 1:10 (Fig 2). A photographic record, using monochrome and colour slide formats, was maintained.

2.2 ARCHIVE

- 2.2.1 A full archive of the work has been produced to a professional standard in accordance with current English Heritage guidelines (1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The paper archive will be deposited with the County Record Office. In addition, a copy of the report will be forwarded to the County Sites and Monuments Record (SMR) and a summary sent to the National Monuments Record (NMR).

3. WATCHING BRIEF RESULTS

3.1 INTRODUCTION

- 3.1.1 There were 46 pits observed in total, and a further 320m continuous stretch of pipe trench excavation between Pits 27 and 28. A detailed description of the observations and stratigraphies encountered is made in *Appendix 3*

3.2 RESULTS

- 3.2.1 Occasional features associated with the original laying of the Victorian pipe were observed, as with the valve housings in Pit 2 and Pit 42 (Plate 3), with some Victorian wood planking fragments surviving in Pit 8. Otherwise, the results from the pits were largely negative, with no truly significant archaeology being observed in section, and no significant finds being made.
- 3.2.2 Surface finds of nineteenth to twentieth century glazed pot were made during the topsoil strip of the permanent presence watching brief. These were not retained. The trench excavation revealed no significant archaeological deposits other than the Victorian pipe itself (Plate 1) and an associated sluice valve (Plate 2), both of which were removed.

4. DISCUSSION

4.1 CONCLUSIONS

- 4.1.1 The paucity of archaeological features within the pits and pipe trench excavation is largely the result of the presence of the pre-existing pipe, the construction cut for which would have removed any archaeology present within it.
- 4.1.2 Where extensions to this cut were made, no new archaeological features were noted and this might be explained in part by the topography and geology of the local area. Prior to widespread reclamation of land during the last two centuries, the area was predominantly moss land. It was, therefore, unsuitable for agriculture on any great scale and, consequently, unlikely to have been extensively occupied, although, prehistoric ritual deposition is not uncommon in such landscapes.

5. BIBLIOGRAPHY

5.1 CARTOGRAPHIC SOURCES

Speed's Map of Lancashire (1610)

Morden's Map of Lancashire (1693)

Ordnance Survey, 1998 *Landranger 102: Preston & Blackpool* 1:25000

5.2 PRIMARY SOURCES

Lancashire County Record Office (LRO), Preston

DDX131/1 Sale particulars of the Garstang Estate, 1919

5.3 SECONDARY SOURCES

Cameron, K, 1988 *English Place-Names*, London

Collinson, E, 1993 *Greenhalgh Castle Garstang and the Earls of Derby*, Garstang

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

Cowell, R, 1996 The Upper Palaeolithic and Mesolithic, in *The Archaeology of Lancashire* (ed R Newman), 19-34, Lancaster

Cunliffe, B, 1991 *Iron Age Communities in Britain*, 3rd edn, London

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

Farrer, W, and Brownbill, J (eds), 1912 *The Victoria History of the County of Lancaster*, 7, London

Gibbons, P, Howard-Davis, CLE, Garner, DJ, Miller, I, and Hair, NJ, forthcoming *Excavations at Walton-le-Dale*

Kenyon, D, 1991 *The origins of Lancashire*, Manchester

Margary, ID, 1957 *Roman Roads in Britain*, 2, London

Marshall, JD, 1991 *Rural Society Before the Victorians*, in Westall, OM ed, *Windermere in the Nineteenth Century*, Lancaster

Mawson, TH, 1937 *Amounderness: Report to the Fylde Regional Committee*, London

Middleton, R, 1996 The Neolithic and Bronze Age, in *The Archaeology of Lancashire* (ed R Newman), 35-59, Lancaster

Middleton, R, Wells, CE, and Huckerby, E, 1995 *The Wetlands of North Lancashire*, Lancaster Imprints **4**, Lancaster

Newman, R, 1996a *Medieval Rural Settlement*, in Newman, R ed, *The Archaeology of Lancashire*, Lancaster

Newman, RM, 1996b *The Dark Ages*, in Newman, R ed, *The Archaeology of Lancashire*, Lancaster

OA North 2004 *Barnacre 24" Water Main, St Michael's, Lancashire: Archaeological Watching Brief and Topographic Survey*, unpub clt rep

Platt, C, 1994 *The Great Rebuildings of Tudor and Stuart England*, London

Shotter, D, 1997 *Romans and Britons in North West England*, CNWRS:Lancaster

Taylor, H, 1902 The Ancient Crosses of Lancashire, *Trans Cheshire Lancashire Antiq Soc*, **20**, 145-213

Tetlow, D, 2001 *Peeps into Garstang's Past*, Garstang

APPENDIX 1: PROJECT BRIEF

Barnacre WMR

Brief for Archaeological Recording

1 Introduction

1.1 A scheme is being designed for works to reline an existing water main running from Franklaw Water Treatment Works to the Whitprick Hill Service Reservoir. As part of this process Alfred McAlpine Utility Services will need to excavate a series of holes and trenches along the line of the pipe, to enable the sliplining to progress. The land crossed is generally under pasture, although there is some arable cultivation.

1.2 Examination of the Lancashire Sites and Monuments Record has shown that the pipeline passes through a landscape with a significant archaeological potential, but that no known sites or groups of sites are directly threatened. The Lancashire County Council Archaeology Service (LCAS) does not, therefore, consider that an evaluation of the pipe route is appropriate, but that the ground disturbance required for the works should be undertaken under archaeological supervision.

2 Existing Archaeological Information

2.1 A summary of the archaeological information for the area is provided in the publication 'The Wetlands of North Lancashire' (Middleton et al 1995, Lancaster University Archaeological Unit) and it is not intended to repeat this information here, but a summary of known archaeological sites close to the route of the pipe is attached.

3 Archaeological Implications

3.1 Omitted

4 The Brief

4.1 An appropriate record of any archaeological deposits revealed by the groundworks undertaken as part of the Barnacre WMR scheme should be made.

4.2 This will involve the undertaking of all groundworks under strict archaeological supervision, and adequate time being allowed for archaeological recording to be undertaken as and when necessary.

4.3 Archaeological work on site shall be undertaken by the most appropriate methods that comply with the Code of Conduct, Standards, and Guidance of the Institute of Field Archaeologists (IFA); the British Archaeologists and Developers Liaison Group Code of Practice; and appropriate policy statements from the Association of County

Barnacre WMR
Brief for Archaeological Recording

Archaeological Officers and English Heritage. Where an apparent conflict occurs between these sources, the IFA Standards and Guidance shall be utilised, or clarification sought from the County Archaeological Curator. Procedures set out in the English Heritage document Management of Archaeological Projects, 2nd edition, shall also be followed where appropriate.

- 4.4 A full and complete project design shall be created to the standards above. It must be approved by the County Archaeological Curator and the client prior to any archaeological works commencing on site.
- 4.5 The director of the project shall be a full member of the Institute of Field Archaeologists, with excavation as a registered Area of Competence.
- 4.6 The archaeological work shall be monitored by the County Archaeological Curator and shall include a minimum of one site visit. This visit shall be charged at the standard rate set out in the General Conditions (below). The archaeological contractor shall contact the County Archaeological Curator at least fourteen days in advance of fieldwork commencing, in order to arrange this monitoring.
- 4.7 Costings shall be submitted under a separate cover to the project design. Costings for fieldwork shall include the monitoring charge (above) as a separate item.
- 4.8 This brief allows some flexibility in approach, but deviations from the agreed project design shall be discussed and agreed in advance with the County Archaeological Curator.
- 4.9 This brief shall not be altered without the express consent of the County Archaeological Curator.

5 Requirements:

- 5.1 An approved and appropriately qualified archaeologist shall be on site during all ground disturbances. It would normally be expected that this person should be a member of the Institute of Field Archaeologists.
- 5.2 All archaeological deposits revealed on site shall be as recorded as fully as practicable by means of measured drawings, photographs and other such methods as appropriate. All necessary health and safety considerations should be taken into account whilst undertaking this work.
- 5.3 The results of this recording shall include a large-scale plan showing the area of stripping, and a series of dimensioned sketch sections, with a minimum of one section per 500m linear length of pipe. Where significant archaeological deposits are encountered appropriate measured sections, plans and photographs should be included. These should be compiled or created by the Archaeological Contractor but may include survey data from the Developer or other appropriate sources.

Barnacre WMR
Brief for Archaeological Recording

- 5.4 A report to the appropriate professional standard shall be produced, describing the work undertaken, the results achieved and conclusions drawn from those results. Appropriate photographs, plans, sections and other drawings should be included in the report.
- 5.5 This report is to be used as mitigation of the impact of the pipeline on the archaeological resource, rather than for the formulation of further phases of archaeological work.
- 5.6 Before development commences an agreement shall be made between the Archaeological Contractor and the Developers concerning the allowance of sufficient time for recording during the course of development, and an agreed method of working by the Developer to enable the scheme of archaeological recording to be satisfactorily undertaken. This should include an agreement allowing short delays to working to allow for archaeological recording, the use of additional archaeological staff and a contingency plan allowing for the discovery and appropriate recording of particularly important remains.
- 5.7 It is not expected that any emergency archaeological excavation will be necessary and should particularly important archaeological remains be encountered, then damage to them should be restricted as far as is possible. The County Archaeology Service should be notified as soon as is practicable after such remains are encountered and a scheme of mitigation agreed between the Archaeological Contractor, Developer and County Archaeology Service.
- 5.8 It should be clearly understood that the preferred option is, wherever possible, the preservation *in situ* of important archaeological deposits. Only where this proves impracticable a reserve option of archaeological excavation and hence preservation by record may be considered.
- 5.9 Prior to fieldwork commencing an agreement between the Archaeological Contractors and the developers shall be made, concerning the deposition of the project archive, and the provision of an appropriate synopsis for the County Sites and Monuments Record and the National Archaeological Record. Whilst the site owners have property rights over finds, objects shall normally be deposited, either on loan or by donation, in a Museums and Galleries Commission approved archaeological museum. The archaeological contractors are urged to discuss any requirements the Museum and/or County Record Office may have prior to compiling a project design and any tender.
- 5.10 This brief shall not be altered without the express consent of the LCAS. It allows some flexibility in approach, but deviations from the agreed project design shall be discussed and agreed in advance with LCAS. A copy of the brief on computer disc can be supplied upon request.

6 General Conditions for Archaeological Contractors

- 6.1 The document entitled "General Conditions for Appropriate Archaeological Contractors in Lancashire" is in use as a model of expected practices and procedures. A copy of that document is attached as Appendix One. In this brief and in that document "County Archaeological Curator" shall mean the Lancashire Sites and Monuments Record Officer

© March 2003, Lancashire County Council

Barnacre WMR
Brief for Archaeological Recording

of the Lancaster University Heritage Planning Consultancy, by whom the role of County Archaeological Curator is currently undertaken.

7 Further Information

- 7.1 Further queries regarding this brief or the general conditions can be addressed to the LCAS, Tel. 01772 261551, Fax 01772 264201.

Barnacre WMR
Brief for Archaeological Recording

Appendix 1
Lancashire County Council
General Conditions for Archaeological Contractors

Organisations and individuals wishing to be included on the County Council's list of Archaeological Contractors are requested to fulfil the general conditions below that provide a model for best practice and professional conduct in archaeological work. The County Council will require the fulfilment of these conditions in its own contracts. Other clients are advised that it is their responsibility to satisfy themselves that their contractors meet all relevant standards.

1. Professional Standards

- 1.1 Contractors shall work to the standards of professional conduct outlined in the Institute of Field Archaeologists Code of Conduct, the IFA Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology, and the British Archaeologists and Developers Liaison Group Code of Practice.
- 1.2 Contractors should be either IFA Registered Organisations or individual corporate members of the IFA. In addition Project Directors should be recognised in an appropriate Area of Competence by the IFA.
- 1.3 Contractors with a significant backlog of unpublished projects will not usually be included on the list.
- 1.4 Where students or trainees are employed on a project, their employment shall be in accordance with IFA guidelines.
- 1.5 In the case of dispute over matters of professional conduct or practice, arbitration will normally be sought through the IFA or the British Archaeologists and Clients Liaison Group.

2. Finance

- 2.1 Contractors shall make available at the request of the County Council a recent set of audited accounts.

3. Insurance

- 3.1 Contractors shall hold a current certificate of Public Liability and (where relevant) Employers Liability insurance, and shall produce it at the request of the County Council.

4. Health and Safety

- 4.1 Contractors shall comply with the requirements of all relevant Health and Safety legislation.

Barnacre WMR
Brief for Archaeological Recording

- 4.2 Site procedures shall be in accordance with the guidance set out in the Health and Safety Manual of the Standing Conference of Archaeological Unit Managers.

5. Project Design

- 5.1 Individual projects shall be designed in accordance with a brief provided by the County Archaeology Service. Before commencement of a project, Contractors shall submit a written project design for agreement with the County Council

6. Sub-Contracting

- 6.1 The names of proposed Sub-Contractors shall be included in the Project Design. All such Sub-Contractors shall be required to fulfil the General Conditions for Contractors.

7. Form of Contract

- 7.1 Before commencement of a project, the Contractor shall enter into a written agreement with the Client. It is recommended that such agreements should be in conformity with the IFA Model Contract for Archaeological Services or such other form as approved by the County Council.

8. Project Monitoring

- 8.1 The County Council may make arrangements for the monitoring of archaeological progress throughout the project.
- 8.2 Contractors shall provide the County Council with an outline programme of work. Any modification to this programme, due to unforeseen or other circumstances, shall be agreed with the Council. It is recommended that Project Designs include a contingency factor to allow for such circumstances.

9. Publication

- 9.1 Publication shall be in a form and to a timetable to be agreed on completion of the site archive and narrative. A copy of the site narrative and publication synopsis shall be lodged with the County Sites and Monuments Record.
- 9.2 Whilst acknowledging the need for confidentiality in some instances, a summary of the archaeological information resulting from a project should normally enter the public domain within six months of the completion of fieldwork.

Barnacre WMR
Brief for Archaeological Recording

10. Archive

- 10.1 Before commencement of the project, arrangements should be made with the appropriate museum curator and the Lancashire County Record Office to ensure that these organisations can receive and curate the archive produced. Archive deposition shall take place according to a timetable to be agreed on completion of the site archive and narrative.
- 10.2 The site archive, including finds and environmental material, shall be conserved and stored according to the UKIC *Guidelines for the preparation of excavation archives for long-term storage* (1990) and the Museums and Galleries Commission *Standards in the Museum Care of Archaeological Collections* (1992), "Standards for the preparation and transfer of archaeological archives".
- 10.3 The archive shall be deposited as soon as is practicable in a Registered Museum fulfilling the HBMC/MGC Eligibility Criteria for the Grant Aided Storage of Excavation Archives. This will normally be the Lancashire County Museums Service (artefact and environmental collections and their documentation), or the County Record Office (site documentation).
- 10.4 Any material not to be archived, such as unstable material or items to be retained by the landowner, shall be fully analysed and reported upon.
- 10.5 A copy of the reproducible elements of the site archive should be deposited in the National Archaeological Record.

11. Acknowledgement

- 11.1 Lancashire County Council shall be acknowledged in all publicity - including media releases, site displays, exhibitions and publications - arising from the project, and any such publicity should be agreed in advance with the County Council.

All enquiries regarding these conditions should be addressed to:

The County Planning Officer
Lancashire County Council
Planning Department
PO Box 160
East Cliff County Offices
PRESTON
Lancashire
PR1 3EX

Tel. 01772 261550 or 261551
Fax 01772 264201

APPENDIX 2: PROJECT DESIGN

Oxford
Archaeology
North

May 2003

BARNACRE 15" WATER MAIN RELINING

ARCHAEOLOGICAL WATCHING BRIEF PROJECT DESIGN

Proposals

The following project design is offered in response to a request by Alfred McAlpine Utility Services for an archaeological watching brief in advance of the relining of existing water mains in the vicinity of St Michaels, Preston, Lancashire.

1. INTRODUCTION

- 1.1 In order to improve the quality of drinking water supply, Alfred McAlpine Utility Services (hereafter the client), on behalf of United Utilities Ltd, propose to undertake the relining of the Barnacre 15" Water Main, St Michaels, Lancashire. The Lancashire Sites and Monuments Record (SMR) has indicated that a significant number of archaeological sites lie within the vicinity of the pipeline. These include an isolated worked flint find spot, several areas of ridge and furrow, a number of earthwork enclosures, moated sites and several watercourses.
- 1.2 Lancashire County Council's Archaeology Service (LCAS) has issued a brief for a programme of archaeological works to be undertaken. This project design is written in response to that document.
- 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. In recent years, OA North has undertaken similar types of work throughout the North west. Of most relevance OA North have recently undertaken projects of a similar nature at Nateby, the Lune Valley, and Franklaw all on behalf of United Utilities.
- 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 provide for accurate recording of any archaeological deposits that are disturbed by any ground disturbance associated with the relining of the existing watermain. The main objectives are to evaluate the archaeological deposits affected by the proposed relining.
- 2.2 A written report will assess the significance of the data generated by the watching brief within a local and regional context.

3 METHOD STATEMENT

3.1 WATCHING BRIEF

- 3.1.1 **Methodology:** a programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits within the excavations in the course of the proposed pipeline refurbishment. 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.

- 3.1.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the Client. A photographic record will be undertaken simultaneously.
- 3.1.3 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.
- 3.1.4 A watching brief will be conducted of all topsoil stripping and all below ground works. 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).
- 3.1.5 It is assumed that OAN 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, but this would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing. Also, should evidence of burials be identified, the 1857 Burial Act would apply and a Home Office Licence would be sought. This would involve all work ceasing until the proper authorities were happy for burials to be removed. In normal circumstances, field recording will also include a continual process of analysis, evaluation, and interpretation of the data, in order to establish the necessity for any further more detailed recording that may prove essential.
- 3.1.6 Full regard will, of course, be given to all constraints (services etc.), as well as to all Health and Safety regulations. OAN provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Unit Managers.
- 3.1.7 **Contingency plan:** in the event of significant archaeological features being encountered discussions would take place with the County Archaeologist or his representative, as to the extent of further works to be carried out. All further works would be subject to a variation to this project design. In the event of preserved wood/timber being encountered it is envisaged that a programme of both radiocarbon dating and dendrochronology would be

necessary. In the event of organic deposits being present on site a programme of palaeoenvironmental sampling would be required. It is likely that the presence of significant archaeological remains would require the opening up of large areas.

3.2 ARCHIVE/REPORT

- 3.2.1 **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). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. OAN conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Lancashire SMR (the index to the archive and a copy of the report). OAN practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OAN recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.
- 3.2.2 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further two copies submitted to the Lancashire SMR within twelve weeks of completion of fieldwork. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.
- 3.2.3 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans. This report will be in the same basic format as this project design; a copy of the report can be provided on 3.5" disk (IBM compatible format), if required.

- 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.

4 PROJECT MONITORING

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

5 WORK TIMETABLE

- 5.1 OA North could commence the watching brief within two weeks of receipt of written notification from the client.
- 5.2 The watching brief along the watermain will be maintained by an archaeological supervisor. The duration of the archaeological presence for the watching brief is as yet unknown, being dictated by the schedule of works.
- 5.5 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 topographic survey and watching brief elements of the project.

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.

APPENDIX 3: TRENCH DESCRIPTIONS

INTRODUCTION

Below is given detailed accounts of the observations made based on site visits made to launch and retrieve pits already opened by McAlpines without archaeological supervision. Most of the excavated area of the launch and retrieve pits trenches was disturbed by the previous pipe trench, visible down the centre of each pit. In addition, to the pits, there is a description of the permanent presence watching brief maintained on land near Stanley Farm, off Pinfold Lane (Fig 2)

Pit No:	1
Alignment:	NE/SW
Dimensions:	2.4m x 2.0m x 2.0m
Description	0.3m mid brown medium sand topsoil directly over 1.7m stiff, mid-brown clay containing 15% small rounded stones.
Pit No:	2
Alignment:	NE/SW
Dimensions	2.3m x 2.7m x 2.0m (max dimensions)
Description	L-shaped pit in which remains a brick-built manhole in the southernmost section. The bricks were not frogged, of dimensions 0.22m x 0.11m x 0.07m, and were built-up in a semi-circle with the bricks laid end on. Otherwise, the stratigraphy comprised dark grey brown coarse sand topsoil with 20% flecks rounded stone above stiff, mid-brown clay. The bricks were built-up within the clay which is probably natural redeposited as fill into the construction cut for the manhole.
Pit No:	3
Alignment:	NW/SE
Dimensions	2.2m x 0.95m x 1.5m
Description	0.25m dark black-brown organic-rich sandy-clayey-silt above stiff, mid-brown clay.
Pit No:	4
Alignment:	NE/SW
Dimensions:	2.2m x 0.95m x 1.4m
Description	Four layers of stratigraphy comprising 0.3m mid-brown silty sand containing 70% small sub-angular gravel. This lay directly above 0.5m stiff mid-brown clay, a 0.35m layer of firm dark- grey brown coarse sand and a 0.25m layer of firm, mid-brown clay.
Pit No:	5
Alignment:	NE/SW
Dimensions:	2.5m x 2.3m x 2.0m
Description:	0.4m loose, dark brown fine sand topsoil above c 0.3m compact, light greyish-brown coarse sand directly above stiff mid-brown clay natural.
Pit No:	6
Alignment:	NE/SW

Dimensions: 2.0m x 3.75m x 1.7m
Description: 0.5m dark greyish-brown, fairly compact clayey-sand topsoil with 3% rounded stones directly above mid-orange, fairly soft clayey-sand natural with no inclusions.

Pit No: 7
Alignment: NE/SW
Dimensions: 1.9m x 0.5m x 1.1m
Description: 0.5m dark greyish brown, fairly compact clayey-sand topsoil with 3% rounded stones directly above mid brown/tan fairly compact sandy-clay subsoil with no inclusions.

Pit No: 8
Alignment: NE/SW
Dimensions: 2.9m x 2.1m x 2.25m
Description: 0.5m dark greyish-brown, fairly compact clayey-sand topsoil with 3% rounded stones above mid brown/tan fairly compact sandy-clay subsoil with no inclusions. Natural comprised mid-light greyish-blue clay with no inclusions. There were fragments of wood within the fill which is thought to be the remains of planking used to level the original pipe when it was being laid.

Pit No: 9
Alignment: NE/SW
Dimensions: 2.05m x 1.0m x 0.70m
Description: 0.35m dark greyish-brown, fairly compact clayey-sand topsoil with 3% rounded stones directly above mid brown/tan fairly compact sandy-clay subsoil with no inclusions.

Pit No: 10
Alignment: NE/SW
Dimensions: 14.0m x 2.0m x 2.20m
Description: Beneath 0.74m of a dark orange brown fine sand silty-clay soil horizon a mid-grey clay natural was revealed. At a depth of 1.50m, this changes to a blueish grey clay natural, evidently deposited in anaerobic conditions, hence its colour as none of the available iron had oxidised. This sediment continued to at least the maximum depth of the trench. No archaeologically significant deposits were noted in this trench.

Pit No: 11
Alignment: NE/SW
Length: 3.25m
Width: 2.0m
Depth: 2.20
Description: Removal of 0.74m of a dark orange-brown fine sand silty-clay soil horizon revealed a mid-grey clay natural. At a depth of 1.50m, this changes to a blueish grey clay natural, evidently deposited in anaerobic conditions, hence its colour as none of the available iron had oxidised. This sediment continued to at least the maximum depth of the trench. No archaeologically significant deposits were noted in this trench.

Pit No: 12
Alignment: NE/SW
Dimensions: 2.4m x 1.6m x 1.9m
Description: 0.45m dark grey fine sand silt clay topsoil directly above 0.45m mid-orange, then mid bluish-grey clays.

Pit No: 13
Alignment: NE/SW
Dimensions: 7.0m x 2.0m x 2.0m
Description: 0.45m dark grey fine sand silt-clay topsoil directly above 0.45m mid-orange, then mid bluish-grey clays.

Pit No: 14
Alignment: NE/SW
Dimensions: 4.0m x 1.5m x 1.6m
Description: 0.35m 0.45m dark grey fine sand silt-clay topsoil directly above 0.30m mid-orange clay natural directly above peat to a max depth of 1.6m.

Pit No: 15
Alignment: NE/SW
Dimensions: 4.0m x 2.0m x 1.6m
Description: Section profile very poorly defined and the trench very waterlogged. 0.10m black asphalt directly above 0.7m mid-grey brown sandy- clay topsoil with darker material concentrated towards the base directly overlying mid-grey, homogenous damp clay natural with no visible inclusions.

Pit No: 16
Alignment: NE/SW
Dimensions: 6.0m x 2.0m x 1.4m
Description: 0.3m mid grey sandy-clay topsoil directly above 0.3m dark grey, moist sandy- clay subsoil above mid-grey, homogenous clay natural.

Pit No: 17
Alignment: NE/SW
Dimensions: 5.0m x 2.0m x 1.4m
Description: 0.25m mid to dark grey sandy-clay topsoil directly above firm, mid-brown homogenous clay natural.

Pit No: 18
Alignment: NE/SW
Dimensions: 4.0m x 2.0m x 1.3m
Description: 0.3m mid to dark grey brown sandy clay topsoil directly above pinkish orange, very stiff homogenous clay natural.

Pit No: 19

Alignment: NE/SW
Dimensions: 4.6m x 2.0m x 1.0m
Description: 0.5m mid-grey compact sandy-clay topsoil with occasional pebble directly above 0.5m very firm reddish-brown clay natural. One field drain observed in section.

Pit No: 20
Alignment: NE/SW
Dimensions: 2.0m x 1.0m x 1.4m
Description: 0.3m dark grey sandy-clay topsoil directly above light pinkish grey clay natural with some sand. The trench was waterlogged by the Victorian pipe emptying clean water into it which subsequently drained into a the adjacent stream.

Pit No: 21
Alignment: NE/SW
Dimensions: 3.0m x 2.0m x 2.5m
Description: 0.6m mid-brown, soft rooty sandy clay topsoil directly overlying 0.60m light brown sandy-clay subsoil above 0.3 to 0.4m layer of white sand. This lay directly above brown clay natural with very few inclusions.

Pit No: 22
Alignment: NE/SW
Dimensions: 6.0m x 2.0m x 1.7m
Description: 0.4m dark grey organic-rich sandy-clay topsoil directly overlying 0.8m pinkish white-grey mottled clay natural with no inclusions above light-brown sand to 1.7m.

Pit No: 23
Alignment: NE/SW
Dimensions: 5.0m x 2.0m x 1.4m
Description: 0.4m organic-rich dark grey sandy-clay topsoil above 0.1m band of mid grey-brown pebbly subsoil above grey orange brown mottled homogenous clay natural.

Pit No: 24
Alignment: NE/SW
Dimensions: 4.0m x 2.0m x 1.7m
Description: 0.5m dark grey to black organic-rich sandy-clay topsoil with some peat directly overlying 0.2m mid to light brownny-buff sand and clay (50:50) subsoil above greyish pink mottled homogenous clay natural becoming increasingly brown with depth. One field drain observed in section.

Pit No: 25
Alignment: NE/SW
Dimensions: 4.0m x 2.0m x 1.25m
Description: 0.5m very dark organic-rich sandy clay topsoil with some peat above 0.3m band of light pinkish brown, firm homogenous clay natural above 0.5m dark reddish firm clay natural.

Pit No:	26
Alignment:	NE/SW
Dimensions:	8.0m x 2.0m x 1.8m
Description:	Unstable, shored sides obscuring sections. 0.4m very dark, organic-rich peaty sandy-clay topsoil directly overlying mottled white and red very sandy clay with <1% small rounded pebbles becoming increasingly homogenous, less sandy and pinkish brown with depth.

Pit No:	27
Alignment:	NE/SW
Dimensions:	3.0m x 2.0m x 2.0m
Description:	Observed from a distance as the trench was fenced-off. c0.4m dark grey sandy-clay with many angular grey stones (possibly imported, re-deposited material) above mid to dark grey-brown homogenous clay natural.

Pit No:	28
Alignment:	NE/SW
Dimensions:	3.0m x 2.0m x 1.75m
Description:	c 0.4m dark grey sandy clay topsoil directly above pale brown-grey clay natural with some lenses of whitish grey sandy-gravel.

Pit No:	29
Alignment:	NE/SW
Dimensions:	5.0m x 2.0m x 1.75m
Description:	c 0.4m dark grey sandy clay topsoil directly above pale brown-grey clay natural.

Pit No:	30
Alignment:	NE/SW
Dimensions:	3.0m x 2.0m x 1.75m
Description:	0.4m dark grey sandy clay topsoil directly overlying pale brownish-grey clay natural with the occasional cobble. Very waterlogged.

Pit No:	31
Alignment:	NE/SW
Dimensions:	4.0m x 2.0m x 2.0m
Description:	0.4m dark grey sandy-clay topsoil directly above mid-brown mottled pink/red homogenous clay natural.

Pit No:	32
Alignment:	NE/SW
Dimensions:	5.0m x 2.0m x 2.0m
Description:	0.5m dark grey sandy-clay topsoil above mid-brown, mixed sandy-clay with some bricks. This is probably all backfill from the cut of the original Victorian pipe trench.

Pit No:	33
----------------	-----------

Alignment: NE/SW
Dimensions: 5.0m x 2.0m x 2.5m
Description: 0.3m dark grey sandy-clay topsoil directly above homogenous mid-brown clay. This trench was very waterlogged and was being pumped out as it was inspected.

Pit No: 34
Alignment: NE/SW
Dimensions: 4.0m x 2.0m x c3.0m
Description: 0.3m dark grey sandy-clay topsoil directly above homogenous mid-brown clay.

Pit No: 35
Alignment: NE/SW
Dimensions: c10.0m x 3.0m x 2.5m
Description: 0.3m mid-brown grey sandy-clay topsoil directly above red-brown clay natural with some sand.

Pit No: 36
Alignment: NE/SW
Dimensions: 3.0 x 2.0 x 2.0m
Description: 0.4m mid brown-grey sandy-clay topsoil on light reddish brown homogenous and loose sand with no inclusions. Very unstable sides.

Pit No: 37
Alignment: NE/SW
Dimensions: 6.0m x 2.0m x 2.25m
Description: 0.4 to 0.5m dark brown-grey sandy-clay topsoil directly above totally homogenous, soft, loose light orangey-brown sand with no inclusions.

Pit No: 38
Alignment: NE/SW
Dimensions: 6.0m x 2.0m x 1.0m
Description: 0.4 to 0.5m dark brown-grey sandy-clay topsoil directly above totally homogenous, soft, loose light orangey-brown sand with no inclusions.

Pit No: 39
Alignment: NE/SW
Dimensions: Unknown
Description: Wholly flooded. Unable to inspect.

Pit No: 40
Alignment: NE/SW
Dimensions: Unknown

Description: Wholly flooded. Unable to inspect.

Pit No: 41

Alignment: NE/SW

Dimensions: 4.0m x 1.0m x 1.0m

Description: Shored upon arrival. 0.2 to 0.3m dark brown-grey sandy-clay topsoil above very damp mod to light pinkish brown sandy-clay natural.

Pit No: 42

Alignment: NE/SW

Dimensions: 2.0m x 2.0m x 1.0m

Description: c 0.3m imported gravelly overburden (in front of field gate) on light pinkish brown homogenous clay natural. There is the brick housing for a valve in the north and east facing sections. Around nine courses of brick embedded in the clay, not seemingly bonded by mortar. Otherwise, no archaeological deposits.

Pit No: 43

Alignment: NE/SW

Dimensions: 14m x 12m x 1.5m

Description: c0.4m mid grey-brown sandy-clay topsoil directly above light orangey-brown clay natural with some sand and occasional cobble

Pit No: 44

Alignment: NE/SW

Dimensions: 3.0m x 2.0m x 1.75m

Description: Small valve pit on south side of Roseacre Lane. 0.3m mid grey-brown sandy-clay topsoil, although half was cut through the tarmac surface of the road. The natural comprised dark reddish brown clay with few inclusions.

Pit No: 45

Alignment: NE/SW

Dimensions: 14m x 3.5m x 1.75m

Description: 0.3m mid grey-brown sandy-clay topsoil immediately above mid orangey-brown, marbled red, sand. Sides very unstable and the base of the trench was covered by water.

Pit No: 46

Alignment: NE/SW

Dimensions: 10.0m x 3.0m x 1.5m

Description: 0.40m mid grey-brown sandy-clay topsoil directly overlying mid to light orangey-brown sandy-clay natural.

Permanent Presence Watching Brief.

Topsoil Strip:

Alignment: NE/SW

-
- Dimensions:** 320.0m x 12.0m x 0.3m
- Description:** 0.30m of dark grey-brown, organic-rich sandy-clay topsoil was removed to reveal bands of changing grey to brownish-red homogenous clay natural. Some patches of peaty subsoils are evident within the natural which may be tree throws, but their occurrence tends to coincide with the occurrence of field drains later seen in section. The natural shows striation marks as made by the use of a subsoiler or chisel plough. The subsoils became increasingly peaty towards the south-western end of the trench, where the pipe lay closer to the surface. Sherds of nineteenth to twentieth century glazed pot were observed during the topsoil strip, though not retained. There were no discernible archaeological features.
-

Permanent Presence Watching Brief.

Pipe Trench Excavation:

- Alignment:** NE/SW
- Dimensions:** 320m x 0.9m x 1.1m
- Description:** Victorian backfill was removed to a depth corresponding to the top of the existing pipe, revealing a stratigraphy in section comprising light grey, homogenous clay becoming reddish with depth. The pipe was removed entirely by mechanical excavator, then the trench deepened to a regular depth of 1.1m entirely through mid grey, homogenous clay with virtually no inclusions. The removed pipe sections (Plate 1) were observed to be 146 inches long, with an external diameter of 17 inches and an internal diameter of 15 inches. A sluice valve was also removed (Plate 2). Many modern field drains were observed in section, and repaired by the contractors, but there were no archaeological horizons or features observed.

ILLUSTRATIONS

LIST OF FIGURES

Figure 1: Site Location Map

Figure 2a: Launch and Retrieve Location Plan, South Section

Figure 2b: Launch and Retrieve Location Plan, North Section

LIST OF PLATES

Plate 1: Section of Victorian Pipe

Plate 2: Victorian Sluice Valve

Plate 3: Valve Casing, Pit **42**



based upon the Ordnance Survey 1:250,000
with the permission of the controller of HMSO
© Crown Copyright



Figure 1: Location Map

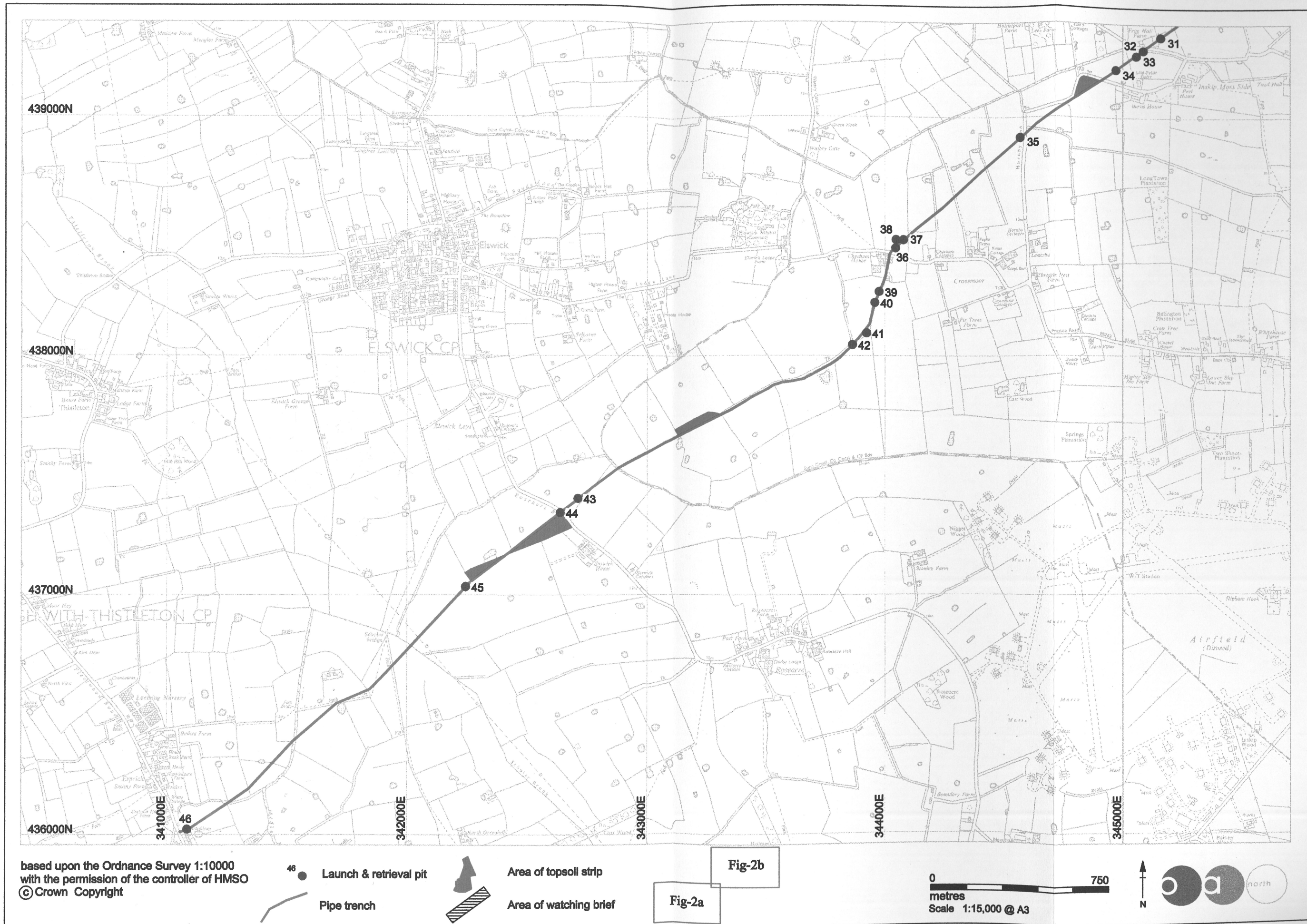
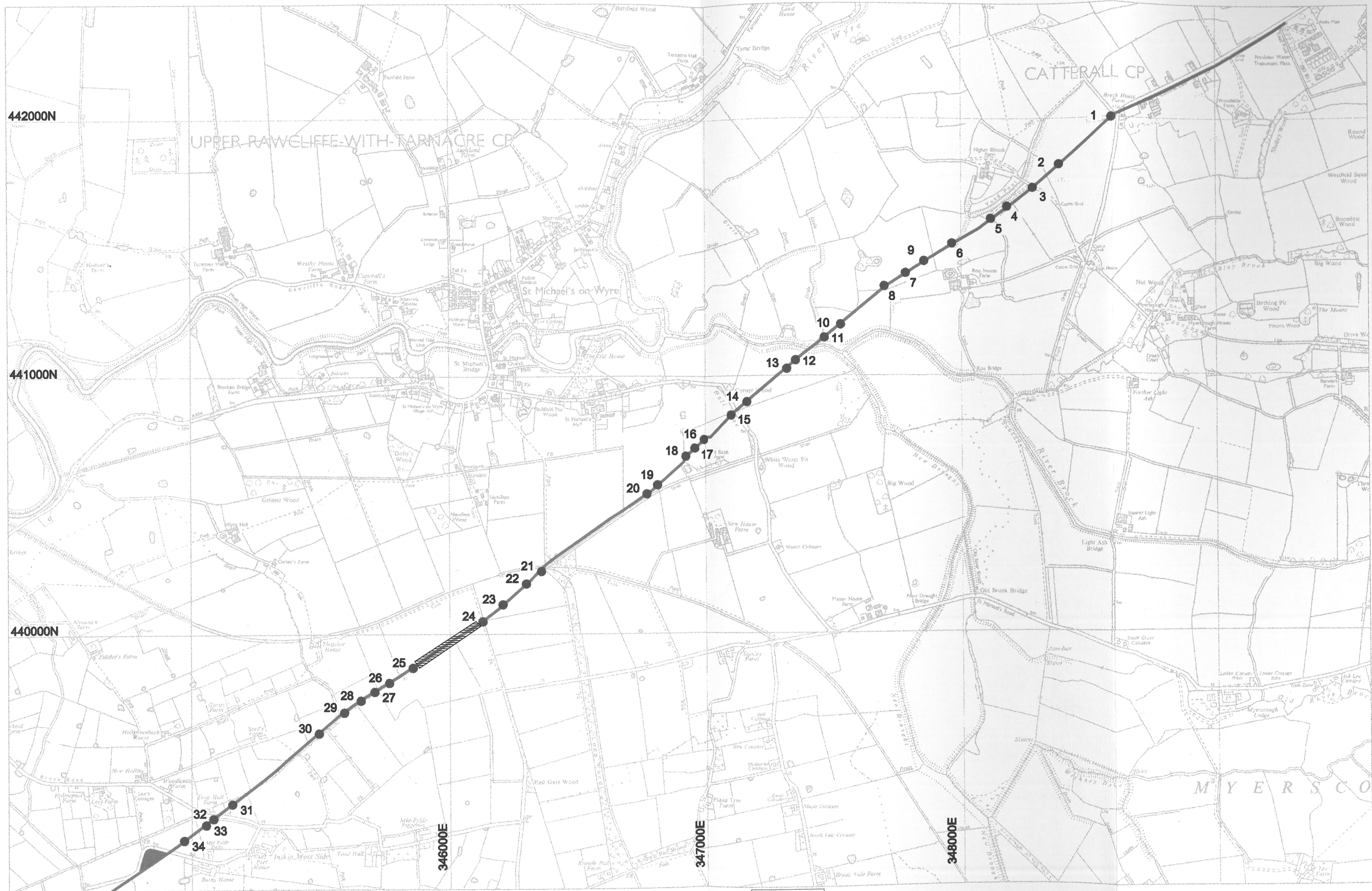
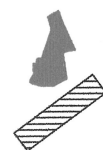


Figure 2a: Launch and retrieval pit location plan, south section



based upon the Ordnance Survey 1:10000
with the permission of the controller of HMSO
© Crown Copyright

46 ● Launch & retrieval pit
— Pipe trench



Area of topsoil strip
Area of watching brief

Fig-2b

Fig-2a

0 750
metres
Scale 1:15,000 @ A3



Figure 2b: Launch and retrieval pit location plan, north section



Plate 1: Section of Victorian pipe



Plate 2: Victorian sluice valve



Plate 3: Valve casing, Pit 42