



# **Clayton Brook Pipeline Walton Summit Lancashire**

## **Archaeological Watching Brief**



**Oxford Archaeology North**

July 2004

**United Utilities**

Issue No: 2004-2005/208

OA North Job No:L9284

NGR: SD 5826 2456

**Document Title:** CLAYTON BROOK PIPELINE, WALTON SUMMIT,  
LANCASHIRE

**Document Type:** Archaeological Watching Brief

**Client Name:** United Utilities

**Issue Number:** 2004-05/208

**OA Job Number:** L9284

**National Grid Reference:** SD 5286 2496

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Document File Location alison/projects/9284Clayton/report  
9284ClaytonWBRep.doc

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## SUMMARY

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A watching brief was undertaken by Oxford Archaeology North between November 2003 and January 2004 at Clayton Brook, near Walton Summit, Lancashire (centred on NGR SD 5826 2456). The work was commissioned by United Utilities following the proposed excavation of a new pipeline trench.

The proposed development area lies within the public areas of a housing development which was built in the late twentieth century directly over an eighteenth century canal basin. The canal basin is associated with known monuments and features, in particular a warehouse and an inclined plane and tram plateway, which was the first steam-operated railway incline to have been built in Britain. The pipeline was, therefore, being laid through an area of known archaeological significance with a high probability that archaeological horizons might be encountered. However, much of the canal basin and tram plateway have been subsumed by urbanisation. A recent topographic survey suggested that the ground level had altered significantly since the canal's closure, having been raised by some eight metres in places, owing to the redeposition of material excavated during the construction of the nearby M61 in 1968/9. The watching brief was carried out to establish whether any archaeology had survived beneath this modern overburden.

During the watching brief the groundworks demonstrated that the depth of the overburden in the area of the warehouse was greater than the impact depth of the pipe-trench and, therefore, any surviving archaeology would not be disturbed by the works. It remains unknown how much of the canal basin and warehouse survive beneath the modern overburden. However, in the area of the inclined plane and tram plateway, a sandstone surface comprising sandstone blocks, thought to be bedding sleepers for the tramway, were encountered between 1.35m and 0.4m below the current ground surface. This is clear evidence for the survival of much of the feature and suggests that it remains, probably mostly intact, beneath a much lesser depth of modern overburden.

The watching brief demonstrated the survival and existence of significant archaeology at Clayton Brook and enhanced our understanding of the site as a whole. In addition, it was considered that the works had only minor impact on the archaeological resource, much of which is thought to remain undisturbed and *in situ*.

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## ACKNOWLEDGEMENTS

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Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project, and to Mr Seamus Murphy and colleagues of Westshield Limited for their assistance on site.

The watching brief was undertaken by David Tonks who also wrote the report and the project was managed by Alison Plummer. The report was edited by Alison Plummer and Alan Lupton.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Following an archaeological desk-based assessment and visual identification survey (OA North 2003) effected by Oxford Archaeology North (OA North) at Clayton Brook, Lancashire (centred on NGR SD 5826 2456), a watching brief was commissioned by United Utilities and undertaken by OA North during the construction of a new pipeline.
- 1.1.2 The aim of the watching brief was to determine the extent of survival of the archaeological resource within the study area, specifically focusing on the later history of the site with particular reference to the survival of any canal-related features previously identified during the assessment and survey.
- 1.1.3 The watching brief was carried out between November 2003 and January 2004 on land between Carr Barn Brow and Clayton Brook Road (Fig 1) across common land on the Clayton Brook housing development. This tract of excavation traversed the location of the canal warehouse, the canal basin and the tram plateway (*Section 1.2*). The project design was formulated to comply with a verbal brief issued by the Lancashire County Archaeology Service (LCAS) and the project was funded entirely by United Utilities. The results are presented in this report.

### 1.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.2.1 *Summary of the Lancaster Canal:* the rapid expansion of Lancashire's textile industry during the 1780's led to increased demands for Lancaster and Preston to be linked to the canal network. During this period, coal for Lancaster and its hinterland, including Kendal, came by sea via the Douglas Navigation and thence to the river Ribble (Hadfield and Biddle 1970, 182). Approximately 10,000 tons of coal were shipped down the Douglas Navigation annually, although between 1781 and 1791 and escalation in the demand for coal resulted in a doubling of tonnage carried (Clarke 1994, 146).
- 1.2.2 Plans for the Lancaster Canal had been drawn up as early as 1760, but the necessary Act of Parliament (32 Geo III) was not obtained until 1792. The Act allowed for a navigation to be constructed between Kendal and Westhoughton, near Wigan, and involved major engineering solutions to be devised for the crossings of the rivers Lune and Ribble.
- 1.2.3 John Rennie was appointed engineer, and construction commenced immediately. In January 1794, William Cartwright was appointed assistant resident engineer, in addition to being an optician in Preston (Hayes 2000, 50). By 1799, the 'North End' from Tewitfield to Preston had been completed and included Rennie's spectacular viaduct across the river Lune, which cost £48,321. Progress was also made on the 'South End' of the canal, and by February 1798 the canal had been opened between Bark Hill, near Wigan, to Chorley (Hadfield and Biddle 1970, 188).

- 1.2.4 In July 1799, Cartwright reported that the 'South End' had been completed as far as Johnson's Hillock, and requested that a decision be made concerning the crossing of the river Ribble in order to connect the North End and South End of the canal. Rennie had proposed a viaduct similar to that which crossed the Lune; the canal was to descend 222ft from Clayton Green through 32 locks, to an embankment across the valley floor at Walton and onto a viaduct across the river. Rennie had estimated £95,000 would be required for the Ribble viaduct (exclusive of the 32 locks) and it had been hoped that the revenue from the completed section of the South End would provide additional capital to finance the link. However, the estimated revenues had not been achieved due to the poor nature of the turnpike link between Johnson's Hillock and Preston, which resulted in a continued use of the Douglas Navigation. Cartwright suggested extending the canal from Johnson's Hillock to Walton Summit, and constructing a temporary tram plateway until sufficient funds were available to build a canal link. John Rennie and William Jessop were asked to advise on Cartwright's scheme, and whilst they concluded that a canal link would be preferable, a tram plateway would be an acceptable, and considerably cheaper, temporary alternative. The canal company was in favour and another Act of Parliament (40 Geo III) was passed in 1800 to enable a further £200,000 to be raised to finance the work (Hadfield and Biddle 1970, 190-211).
- 1.2.5 Work on the route from Johnson's Hillock to Walton Summit continued, and included the trans-shipment basin at Walton Summit, and a five mile long tram plateway between the basin and the southern terminus of the North End in Preston. The plateway incorporated three inclined planes (at Avenham, Penwortham and Walton Summit), which were powered by steam engines; these were the first steam-operated railway inclines to have been built in Britain (Hughes 1990, 339). The plateway was opened in 1803 and operated until 1879. By 1895, the lines had been lifted and the canal basin at Walton Summit abandoned.
- 1.2.6 The eastern edge of the study area was dramatically altered by the construction of the M61 motorway in 1968/9, and the area around Walton Summit was further redeveloped during the 1970's as part of the Central Lancashire New Town, although much of the basin complex was left as open ground or roadways; it was not known how much, if any, of the canal basin, warehouse and plateway complex survive beneath the present ground surface.
- 1.2.7 **Archaeological Background:** the canal complex at Walton Summit has never been subject to archaeological excavation, although a survey of the plateway and associated canal features undertaken immediately prior to the construction of the M61 motorway (which truncates the line of the canal to the east of the study area) highlighted the survival of the main features (Gibbs 1970). The survey included a written and photographic record of the surviving structures.
- 1.2.8 The plateway was also investigated by John Hallam on behalf of the Central Lancashire Development Corporation during the 1970's (Hallam 1980). As part of this investigation, the use of a metal detector revealed buried rails between the plateway hedgerows beyond Gough Lane. Hallam (1980, 50) concluded that '*there is more scope for fieldwork and excavation concerning*



*the tramway in this area when opportunity permits*'. Hallam also noted that the Walton Summit basin had been '*filled in*' when the M61 motorway was built, suggesting a potential for elements of the complex to survive below the modern ground surface.

### 1.3 LOCATION AND TOPOGRAPHY

- 1.3.1 The study area forms part of the settlement of Clayton Brook, which is situated around 2km south-east of Bamber Bridge, Lancashire (centred on NGR SD 5826 2456). Clayton Brook lies at a height of some 90.0m above Ordnance Datum, and is situated towards the edge of a raised plateau which rises steeply from the Lancashire Plain. To the east are the Lancashire valleys, which are dominated by the key towns of Blackburn, Accrington and Burnley (Countryside Commission 1998, 102).
- 1.3.2 The area has been absorbed by the modern expansion of the Central Lancashire New Town, and urban development dominates this part of a previously heavily-wooded landscape. The remaining undeveloped land cover, and particularly that to the north and south-east, is a mix of pasture with areas of acid and neutral grassland and areas of semi-natural woodland or scrub (*ibid*, 103).
- 1.3.3 The solid geology of the region comprises mostly Permo-Triassic sedimentary rocks with the Keuper Marls of the Lostock Hall area to the west being disrupted by the Great Haigh Fault, which runs north-west/south-east through Cuerden. The overlying drift geology is essentially post-glacial boulder clay deposits. The soils, as mapped by the Ordnance Soil Survey of England and Wales (1983), are predominantly of the Salop series which are typically stagnogley soils, although areas along the river valleys comprise alluvial gley soils of the Enborne series.
- 1.3.4 In broad terms, the topography of the study area reflects the topography of the former inclined plain, rising from the west to the site of the canal basin summit. Here, at the south-eastern extent of the study area, a raised terrace reaches a height of 100.14m OD. The land falls gradually to the west to a short terrace in the approximate centre of the area, which lies at a height of c95m. Further to the west, the land falls uniformly to a height of 76.80m at the western edge of the study area.

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## 2. METHODOLOGY

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### 2.1 WATCHING BRIEF

- 2.1.1 The work undertaken followed the method statement detailed in the project design (*Appendix 1*) and complied with current legislation and accepted best practice, including the Code of Conduct and the relevant professional standards of the Institute of Field Archaeologists (IFA). There was close liaison between OA North staff and the site contractors
- 2.1.2 The programme of field observation recorded accurately the location, extent, and character of any surviving archaeological features. This work comprised observation during the groundworks, the examination of any horizons exposed, and the accurate recording of all archaeological features, horizons and any artefacts found during the excavations. The pipe trench was excavated by a mechanical excavator using a toothed bucket.
- 2.1.3 The recording comprised a full description and preliminary classification of features or structures revealed on OA North *pro-forma* sheets, and their location in plan. In addition, a photographic record in colour slide, monochrome and colour digital formats was compiled.

### 2.2 ARCHIVE

- 2.2.1 A full archive of the work undertaken has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Lancashire County Record Office in Preston, and a copy of the report will be forwarded to the Lancashire Sites and Monuments Record.

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### 3. WATCHING BRIEF RESULTS

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#### 3.1 INTRODUCTION

- 3.1.1 Two phases of works were observed during which nine manholes and five trenches were opened. The opening of Trenches 1 and 2 was observed between November and December 2003. They were located between Manholes 1 and 2 and 2 and 3 respectively (Fig 2). The opening of Trenches 3, 4 and 5 was observed between 8th and 23rd January 2004. They were located between Manholes 5 and 8 (Fig 2). The whole pipe-trench was excavated from south-east to north-west, and is described as such in this section. Trenches 3, 4 and 5 lay along a moderately steep slope inclined downwards from south-east to north-west (Plate 7) along the line of the inclined plane and tram plateway.
- 3.1.2 The opening of the pipe-trench between Manholes 3 and 5 was not observed. The overburden of clay redeposited from the M61 construction had evidently fully covered any archaeology that may exist to a depth lower than that of the proposed excavations. Additionally, the excavation of Manhole 8 and the subsequent trench to Manhole 9 was not observed as this followed the line of an existing pipe located at 2.1m below current ground surface. The intention was to excavate up to 2m below that, but that would demonstrably have been below any archaeological horizon and excavated entirely through natural ground.
- 3.1.3 **Trench 1:** being approximately 30m in length, Trench 1 was 0.6m wide, 1.35m deep and situated northeast of the location of the canal warehouse. The stratigraphy varied, but largely comprised 0.5m to 0.6m imported mid-brown sandy clay directly above a layer of 0.25m to 0.3m of rubble consisting of brick fragments with modern plastic inclusions within a matrix of sandy clay (Plate 1). This layer lay directly above very firm, mid-brown grey homogenous clay with the occasional rounded boulder not more than 0.4m in diameter. The layer comprised entirely redeposited clay from the construction of the M61. There were no finds and no horizons of archaeological significance present.
- 3.1.4 **Trench 2:** being approximately 40m in length, Trench 2 was 0.60m wide and 1.35m deep and located to the north of the site of the canal warehouse (Fig 2). The stratigraphy was identical to that observed in Trench 1 (*Section 3.1.3*) and there were no finds and no horizons of archaeological significance.
- 3.1.5 **Trench 3:** being approximately 80m in length, Trench 3 was 0.60m wide, 1.25m deep and was located directly over and parallel to the projected line of the tram plateway (Fig 2), and along the line of an existing public pathway. Only the final 40m of excavation before Manhole 6 were observed. The stratigraphy comprised 0.10m tarmac above 0.20m of buff stone chipping hardcore. This lay above very firm, mid-brown grey homogenous redeposited clay which included one large boulder.

- 3.1.6 At a point level with number 44 Woodfield and c 25m south-east of Manhole 6, two sandstone blocks were encountered at 1.35m below ground surface, seemingly placed one on top of the other and lying transversely across the trench (Plate 2). They were beneath the redeposited clay layer and embedded in a very dark grey to black organic-rich sand silt matrix with lenses of sandy clay. Further excavations to this depth revealed a surface comprising one course of sandstone blocks laid transversely across the trench (Plate 3). The sandstones were not present in the north-eastern quartile of the trench and appeared to taper off towards the south-west. Several of the sandstones were necessarily removed and were seen to be only roughly hewn. They were not of any uniform size as one measured c 0.4m x 0.3m x 0.15m whilst another measured 0.65m x 0.3m x 0.15m.
- 3.1.7 **Manhole 6:** measuring 1.9m x 1.9m x 1.3m, several sandstone blocks were removed from its base. The sandstones now occurred only 0.90m from ground surface, an apparent 'rise' of 0.45m since they were first encountered. Most of these blocks had been worked and were roughly of the same dimensions, being around 0.60m x 0.32m x 0.20m. Each was indented on one side and had two or three pin-holes within the central indentation (Plate 4), some with the pins still *in situ*.
- 3.1.8 The stratigraphy within Manhole 6 comprised 0.1m tarmac above 0.2m of stone chippings directly above 0.6m redeposited brown clay. Beneath the clay, at 0.90m from ground surface, was the sandstone surface embedded in the 0.3m black sandy silt layer, which remained in evidence for the entire length of the remaining trench. The black layer was above very firm, mid pinkish brown homogenous clay natural to an average trench depth of 1.25m.
- 3.1.9 **Trench 4:** the stratigraphy within Trench 4 to the north-west remained the same, but with a diminishing layer of the redeposited clay, which disappeared entirely at a point around 20m north-west of and downhill from Manhole 6. At this juncture, few sandstone blocks were actually within the trench but could be seen in section at around 0.40m below ground surface (Plate 5). They were sealed only by the tarmac and hardcore of the modern public footpath.
- 3.1.10 By 35m north-west of Manhole 6, no sandstone blocks were apparent, only the 0.3m thick, black sandy silt deposit in which they had seemingly been placed. Again, this was encountered at 0.40m below ground surface and stayed roughly at that depth for the rest the pipe-trench, below the modern hardcore and tarmac path surface.
- 3.1.11 **Manhole 7:** measuring 2.0m x 2.0m x 1.4m, the stratigraphy comprised 0.1m tarmac and 0.3m stone chipping sub-base above 0.3m soft, black sand silt clay. This lay directly above light, pinkish brown, mottled grey clay natural.
- 3.1.12 **Trench 5:** changing direction towards the north to join up with an existing pipe, Trench 5 was 5m in length, an average of 0.7m in width and descended to at least 2.1m in depth, at which the existing pipe was located. In the south-facing section, the black sand silt clay layer was seen to rapidly drop away (Plate 6) and it disappeared beyond the base of the section around 3.0m north of Manhole 7.

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## 4. CONCLUSIONS

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### 4.1 DISCUSSION

- 4.1.1 **Trenches 1 and 2:** the mid-brown grey clay layer appeared entirely natural, but was actually redeposited material, removed during the construction of the M61 in 1968/9 and replaced on this area of Clayton Brook. The layer was entirely barren of finds and there was nothing to indicate that it was redeposited other than the recent topographic survey undertaken by United Utilities. This demonstrated that the current ground level around this area is around 8m higher than it was in 1848. It was later demonstrably redeposited, as it overlay the archaeological horizons encountered in trenches 3 to 5.
- 4.1.2 The layer of rubble, comprising brick fragments in a sandy clay matrix, was evident in section along the entire length of both trenches. Whilst not archaeologically significant, it is interesting in that it is probably builders rubble from when the surrounding housing estate was built. This was then covered with a layer of mid brown sandy clay to landscape the area, resulting in the modern topography of the area and the stratigraphy observed (*Section 3.1.3*). The depth of these modern deposits precluded the possibility of encountering archaeological remains within these trenches, which were a maximum of 1.35m deep, and no indication of the presence of the warehouse was found.
- 4.1.3 **Trenches 3, 4 and 5:** the presence of a sandstone surface beneath the clay layer unequivocally demonstrated the layer to be redeposited material and not natural ground. The two sandstone blocks first encountered (Plate 2), were not coursed as first assumed. One had been disturbed by the mechanical excavator and placed on top of the other. As more of the trench was opened, it became apparent that the blocks formed a surface, one course deep (Plate 3), and that at least some of the blocks were the tramway bedding sleepers (Plate 4). The blocks were embedded within a very dark grey to black very sandy deposit, which is probably the material from which the inclined plane was levelled for the sleepers
- 4.1.4 At the point from which the blocks were first observed, just north-east of 44 Woodfield, the blocks, and the black layer with which they were associated, were encountered at around 1.35m below current ground surface, yet by Manhole 6, the blocks were no longer evident and the black layer was encountered at 0.4m below the path. This equates to an apparent 'rise' relative to the pathway of 0.95m, demonstrating that the inclined plane had a lower gradient than the current slope which was constructed from the M61 clay overburden.
- 4.1.5 The persistent absence of sleepers and blocks in the north-eastern side of the trench, and their presence only within the south-western section implies that the excavations just skirted the north-eastern edge of the inclined plane. When Trench 5 was opened, it was observed in the north-eastern section that the black layer dropped away rapidly (Plate 6), further supporting this inference

and demonstrating that only the very north-easternmost part of the inclined plane was disturbed by the works.

- 4.1.6 The absence of sleepers from the point c30m north-west of Manhole 6, but the continued presence of the black layer, implies either that they were removed when the present pathway was constructed or, more likely, that the pathway and the trench did not absolutely respect the actual line of the tram plateway, which was probably aligned slightly more to the south-east.
- 4.1.7 Whilst the sandstone blocks are interpreted as sleepers, no rails were encountered. The presence of rails was implied by a metal detector survey effected in the 1970s (OA North 2003, Hallam, 1980, 50) further to the south-east, between the two border hedgerows.

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APPENDIX 1: PROJECT DESIGN

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**Oxford  
Archaeology  
North**

**July 2003**

**BRINDLE TO CLAYTON BROOK PIPELINE**

**ARCHAEOLOGICAL WATCHING BRIEF**

**PROJECT DESIGN**

*Proposals*

*The following project design is offered in response to a request by United Utilities for an archaeological watching brief in advance of construction of a new pipeline and pumping station running from Brindle Wastewater Treatment Works to a point near Clayton Brook Road, Clayton Brook, Preston, Lancashire*



## 1. INTRODUCTION

- 1.1 United Utilities (hereafter the client) proposes the construction of a new pipeline and pumping station running from Brindle Wastewater Treatment Works (SD 60102418) to a point by Clayton Brook Road, Clayton Brook (SD57982469), Preston, Lancashire. The Lancashire County Archaeology Service (LCAS) issued a brief for a desk-based assessment of the site to be undertaken. Following the results of the desk-based assessment (OA North April 2003) the Sites and Monuments Record officer (SMR) has issued a verbal brief for an archaeological watching brief to be maintained during ground disturbance within the study area.
- 1.2 The proposed development crosses the site of the former canal basin and warehouse at Walton Summit, which was linked to the north end of the Lancaster canal in Preston by a tram plateway. The plateway was completed in 1803, and formed a crucial link of the main arterial route for cargoes of coal travelling from Wigan to Preston, Lancaster and Kendal, and return cargoes of limestone and agricultural produce. Whilst the plateway was only intended to be a temporary measure until sufficient funds were available to construct a canal basin between Walton Summit and Preston, it was never actually replaced, and remained in use until 1879.
- 1.3 Since its closure, much of the tram plateway and canal basin complex has been subsumed by urbanisation, specifically the construction of the M61 and M65 motorways, and the expansion of Clayton Brook as part of the Central Lancashire New Town redevelopment. It is not known, however, how much of the canal basin, warehouse, and plateway survive beneath the modern ground surface.
- 1.4 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 in many parts of Lancashire.
- 1.5 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 groundworks associated with the pipeline and to determine the importance, extent, function or state of preservation of archaeological sites potentially affected by the scheme corridor;

- 2.2 ***Permanent Presence Watching Brief:*** this will be undertaken during ground disturbance within the study area.
- 2.3 ***Report and Archive:*** a report will be produced for the client within eight weeks of completion of the fieldwork. A site archive will be produced to English Heritage guidelines (MAP 2) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

### **3 METHOD STATEMENT**

#### **3.1 WATCHING BRIEF**

- 3.1.1 A programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits within the pipetrench. 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 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.
- 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, 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 **Contingency plan:** in the event of significant archaeological features being encountered during the watching brief, discussions will take place with the Planning 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 environmental/organic deposits being present on site, it would be necessary to discuss and agree a programme of palaeoenvironmental sampling and or dating with the Planning Archaeologist.
- 3.1.7 **Health and Safety:** OA North 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 Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.
- 3.1.8 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

### 3.3 ARCHIVE/REPORT

- 3.3.1 **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. OA North 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). OA North 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, OA North 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.

- 3.3.2 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further paper copy submitted to the Lancashire SMR within eight weeks of completion of fieldwork. The SMR will also be provided with a copy on CD. 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. The report will also include a complete bibliography of sources from which data has been derived.
- 3.3.3 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
- 3.3.4 **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. The duration of the watching brief will be dependent upon the progress of the contractor.
- 5.2 The client report will be completed within eight weeks following completion of the fieldwork, although a shorter deadline can be negotiated if necessary.

#### 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 fieldwork.

#### 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.

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## ILLUSTRATIONS

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Figure 2: Trench and Manhole Location Plan with Principal Site Locations

### LIST OF PLATES

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Plate 2: Sandstone Blocks as First Encountered

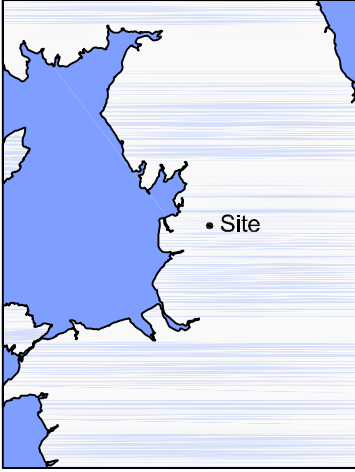
Plate 3: Sandstone Sleepers *in situ*

Plate 4: Sandstone Sleeper

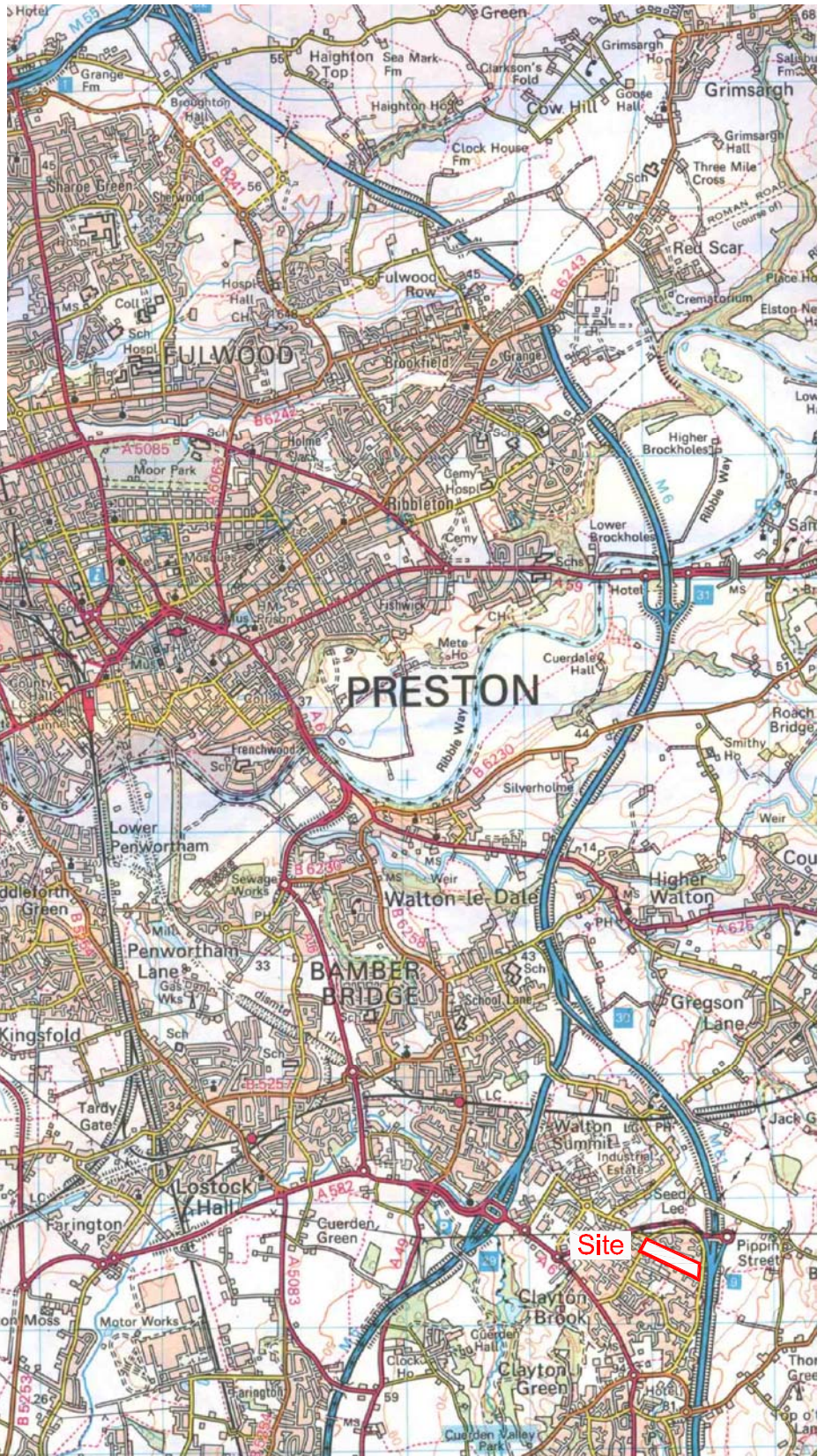
Plate 5: Sandstone Sleepers in North-east Facing Section, Trench 4

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Plate 7: Gradient of Current Ground Surface, Trenches 3-5 Facing South-east



• Site



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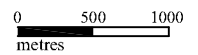
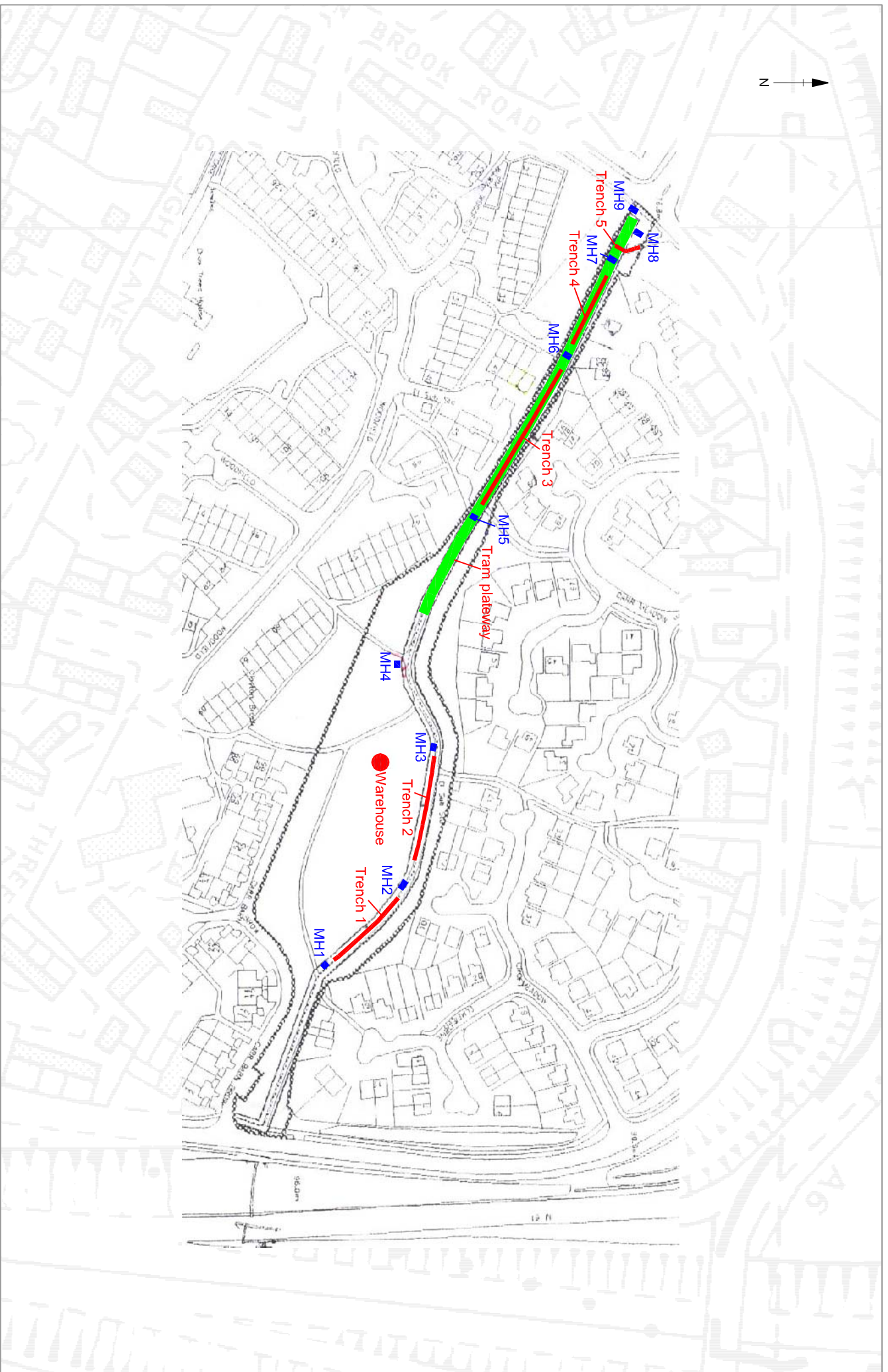


Figure 1: Location map



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MH = Manhole  
█ = Pipe trench  
█ = Tram Plateway

Scale 1:2500



Figure 2 : Trench and manhole location plan with principal site locations



Plate 1 : North-east-Facing Section, Trench 1



Plate 2: Sandstone Blocks as First Encountered





Plate 3: Sandstone Sleepers *in situ*



Plate 4: Sandstone Sleeper

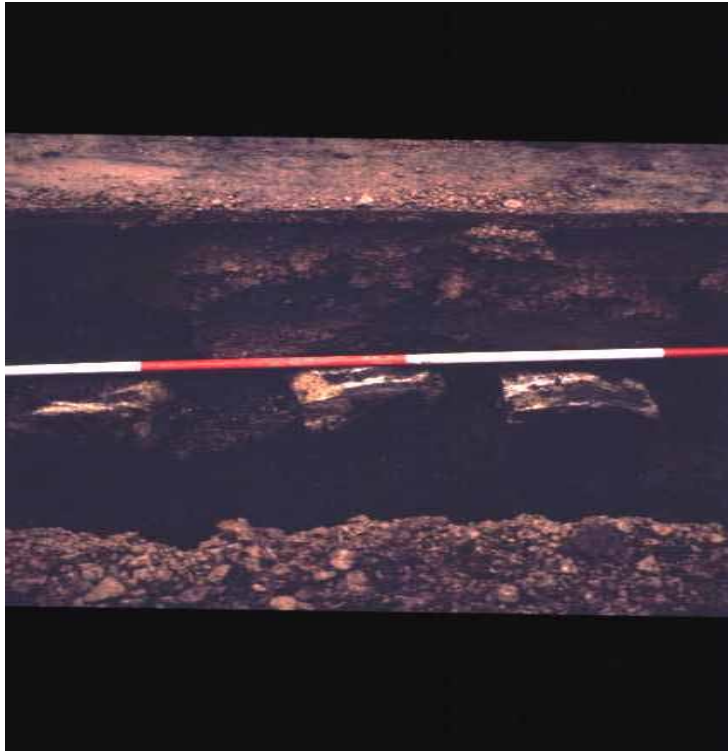


Plate 5: Sandstone Sleepers in North-east-Facing Section, Trench 4



Plate 6: South-west-Facing Section, Trench 5



Plate 7: Gradient of Current Ground Surface, Trenches 3-5 Facing South-east