

HM YOUNG OFFENDERS INSTITUTION LANCASTER FARMS, LANCASTER, LANCASHIRE



Archaeological Watching Brief



Oxford Archaeology North

January 2010

The Ministry of Justice and ISG Totty

Issue No: 2009-10/ 933

OA North Job No: L10131

NGR: SD 49756 62172 - SD 48486 63034

Document Title: HM YOUNG OFFENDERS INSTITUTION LANCASTER FARMS,
LANCASTER, LANCASHIRE

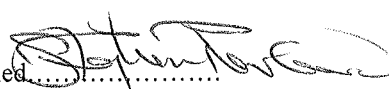
Document Type: Archaeological Watching Brief

Client Name: Ministry of Justice and ISG Totty

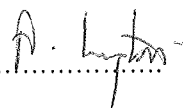
Issue Number: 2009-10/ 933
OA North Job Number: L10131
National Grid Reference: SD 49756 62172 - SD 48486 63034

Prepared by:	Ailsa Westgarth	Jeremy Bradley
Position:	Project Supervisor	Project Officer
Date:	April 2009	May 2009

Checked by:	Stephen Rowland
Position:	Project Manager
Date:	January 2010

Signed.....

Approved by:	Alan Lupton
Position:	Operations Manager
Date:	January 2010

Signed.....

Oxford Archaeology North

Mill 3
Moor Lane Mill
Lancaster
LA1 1gF
t: (0044) 01524 541000

© Oxford Archaeological Unit Ltd (2010)

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

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

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SUMMARY

In 2009, the Ministry of Justice (MoJ) implemented the renewal of a 1.9km-long stretch of sewer pipeline between HM Young Offenders Institution Lancaster Farms (NGR SD 49756 62172) and Langdale Road, Lancaster (SD 48486 63034). From Lancaster Farms the pipeline ran north-westward through open farmland, crossed Newton Beck and passed through a culvert under the Lancaster Canal, before joining the existing sewer network close to Langdale Road, north of the residential area of Newton. Construction works took place within a 12m-wide easement, within which there was a 5m-wide temporary haul road and spoil storage areas, as well as the trench for the pipe itself, which was 0.6m wide, and with an average depth of 1.8m.

Since the pipe ran through an undeveloped area considered to have potential for the preservation of archaeological remains, Lancashire County Archaeology Service (LCAS) indicated to the MoJ that a programme of specialist monitoring during ground disturbance would be an appropriate means of identifying archaeological remains, and mitigating any damage from the development. Subsequently, Jacobs, on behalf of the MoJ, prepared a written specification for an archaeological watching brief and, following submission of costs, Oxford Archaeology North (OA North) was appointed by ISG Totty (the principal groundworks contractor).

The archaeological watching brief, undertaken between March and May 2009, primarily comprised the monitoring of all topsoil stripping. However, in those areas where stripping revealed, and stopped at (or before), a subsoil horizon rather than the natural boulder clay, it was possible to confirm the presence or absence of archaeological remains only by monitoring the cutting of the upper reaches of the pipe trench. A single post-medieval field boundary and an area of colluvium were the only significant features observed within the easement. Although the scheme is likely to have had only a limited impact upon the cultural heritage resource, one cannot discount the possibility that archaeological remains lie preserved *in situ* beneath the shallow zone of disturbance associated with the majority of the easement.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Scott Heyes and Kenny Foreman of ISG Totty, and Ron Matthews of the Ministry of Justice, for commissioning the project and for their support throughout. OA North is also grateful to Peter Iles and Doug Moir of Lancashire County Archaeology Service for their advice and liaison during the project

The watching brief was undertaken by Paul Clark, John Griffiths, Ailsa Westgarth, and Jeremy Bradley. The report was compiled by Ailsa Westgarth and Jeremy Bradley, illustrated by Alix Sperr, and edited by Dr Richard Gregory and Stephen Rowland. Stephen Rowland managed the project.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In 2009, the Ministry of Justice (MoJ) implemented the renewal of a 1.9km-long stretch of sewer pipeline between HM Young Offenders Institution (HMYOI) Lancaster Farms (NGR SD 49756 62172: Fig 1), and Langdale Road, Lancaster (SD 48486 63034). From Lancaster Farms the pipeline ran north-westward through open farmland, crossed Newton Beck and passed through a culvert under the Lancaster Canal, before joining the existing sewer network close to Langdale Road, north of the residential area of Newton. Construction works took place within a 12m-wide easement, within which there was a 5m-wide temporary haul road and spoil storage areas, as well as the trench for the pipe itself, which was 0.6m wide, and with an average depth of 1.8m.
- 1.1.2 Since the pipe was to run through an undeveloped area considered to have potential for the preservation of archaeological remains, Lancashire County Archaeology Service (LCAS) indicated to the MoJ that a programme of specialist monitoring during ground disturbance would be an appropriate means of identifying archaeological remains, and mitigating any damage from the development. Subsequently, Jacobs, on behalf of the MoJ, prepared a written specification for an archaeological watching brief (2009; *Appendix 1*). Following submission of costs, Oxford Archaeology North (OA North) was appointed to undertake such works, on behalf of the MoJ, by ISG Totty (the principal groundworks contractor). The monitoring of the scheme took place between March and May 2009.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 HMYOI Lancaster Farms is located to the north-east of Lancaster, and lies within a landscape of arable and pastoral farmland. The drift geology is composed of superficial deposits of glacial till, whilst alluvial deposits associated with the Newton Beck are found to the north-west of Lancaster Farms. The solid geology of the area comprises Pendle grit, overlying Upper Bowland shale and lower coal measures (www.bgs.ac.uk).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 **Introduction:** the following brief summary is principally based on secondary sources (mainly the Jacobs (2009) watching brief specification) and is intended only to give a general overview of the area to allow greater understanding of the context of the site and the results of the watching brief.
- 1.3.2 **Prehistoric and Roman:** prehistoric activity within the wider area is represented by the discovery between 1863 and 1872 of Bronze Age burial urns, an incense cup, and a bronze dagger (Jacobs 2009). These artefacts were found on Lancaster Moor and, although the exact location of the Bronze Age

burial site remains uncertain, it is likely to have fallen within or around what are now Williamson Park or Highfield Recreation Ground (*ibid*).

- 1.3.3 For much of the Roman period Lancaster was the site of a fort and an associated extramural settlement (*vicus*), but the present development lies some way beyond the known limits of settlement. The line of Margary's Roman Road 705 from Hornby to Preston (Margary 1973) may be visible as a cropmark at Green Bank Farm, to the east of the proposed pipeline, whilst probable, but undated, sub-rectangular Romano-British enclosures have been identified close to Cottam's Farm, Bulk (LCC 2006). More secure evidence for Roman activity within the wider area includes: a Roman cinerary urn, which was discovered in the Lancaster cemetery in 1894; a coin of Domitian (AD 81-96) found at Highfield, on Quernmore Road; and a Romano-British quernstone found within the vicinity of the proposed pipeline (Jacobs 2009).
- 1.3.4 **Medieval:** although the only firm evidence for medieval activity within the area consists of a medieval gritstone mortar found in the garden of No 156 Ambleside Road in 1955, the township of Newton, where the pipe route terminates, is mentioned in Domesday (LCC 2006). Moreover, the proposed pipeline passes through an area of open fields (Jacobs 2009) which have been designated as 'ancient enclosure' by the Lancashire County Council's Historic Landscape Characterisation programme. It is, therefore, possible that these fields represent evidence of medieval land use, or occupation (*ibid*).
- 1.3.5 **Post-medieval:** although a number of Listed Buildings, and two Grade II-Registered Parks and Gardens, are found in the vicinity of the pipeline, only one post-medieval site lies directly within its route. This is the Grade II listed Newton Beck Culvert, which carries the Newton Beck under the Lancaster Canal. The culvert dates from *c* 1797, is constructed of sandstone, and was designed by John Rennie for the Lancaster Canal company (Jacobs 2009).

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 The Archaeological Watching Brief Specification, devised by Jacobs (2009), and approved by LCAS, was adhered to in full. The work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA), and generally accepted best practice.

2.2 WATCHING BRIEF

- 2.2.1 Intrusive groundworks, comprising topsoil stripping and pipe trench excavation, were enacted by mechanical excavators of varying sizes fitted with buckets appropriate to the ground conditions and their work requirements. The topsoil strip was enacted in two phases: the first, which was monitored throughout, created the 5m-wide haul road and soil dumping area, whilst stripping within the working area was undertaken in a second phase. The second phase stripping was not watched in those areas where the topsoil was being removed only to the level of the ploughed subsoil (a disturbed horizon within which archaeological remains could not be identified), rather than to the natural boulder clay, or where there had been recent disturbance, such as that associated with the construction of the YOI. Monitoring of the upper reaches (ie, down to the surface of the natural geology) of the pipe trench excavation took place in those areas where the underlying boulder clay had not been revealed by the topsoil strip. The programme of field observation comprised the systematic examination, characterisation, and recording of any subsoil horizons exposed during the groundworks associated with the replacement of the damaged pipeline (Plate 1-3). Removed spoil was systematically searched for artefacts and other dating evidence.
- 2.2.2 Where potential archaeological remains were identified, and where health and safety considerations of the deep, narrow trench permitted, these were investigated manually. Following investigation, they were recorded by means of OA North's standard context recording system, with *pro-forma* watching brief records, and supporting registers and indices. A full, indexed, photographic record in digital, colour slide and monochrome formats was maintained. Section drawings and plans were made of the exposed stratigraphy at appropriate scales, where necessary, and were located using plans provided by the main contractor.

2.3 ARCHIVE

- 2.3.1 A full archive of the raw data generated during the fieldwork has been compiled in accordance with IFA and EH (1991) guidelines (*Appendix 3*) and, together with a copy of this report, will be deposited with the County Record Office, Preston. A copy of this report, together with an index to the archive, will be submitted in digital format to Lancashire Historic Environment Record (HER), also in Preston.

3. RESULTS

3.1 INTRODUCTION

- 3.1.1 For the purposes of the project, each field through which the pipeline traversed was assigned a unique number, starting with Field 1 at the Newton Beck end of the pipeline, and ending with Field 9 by HMYOI Lancaster Farms (Fig 1). The results of the watching brief are summarised below, with specific observations referenced by field number; full context descriptions are presented within *Appendix 2*.

3.2 RESULTS

- 3.2.1 Across the route of the pipeline, topsoil **102** varied between 0.2 and 0.45m in thickness and, upon removal, revealed a range of underlying strata. At the eastern end of the pipeline, in Fields 1-4 and halfway through Field 5, subsoil **103** was present. This deposit varied between 0.25 and 0.65m deep, becoming deeper to the east; it is possible that the undulations within this layer reflect periods of flooding from the nearby Newton Beck. Within the remaining, western, part of the pipeline, removal of the topsoil revealed only the natural geology (deposits **104-106**). In general, this was seen to be a single layer of light yellowish-grey clay sand, but within the north/south-aligned spur of the trench through Field 6, a succession of clay-rich deposits (layer **109** at the top, through layers **107** and **110**, to **108** at the base) may represent colluvium.
- 3.2.2 The only identified archaeological remains comprised a single north/south-aligned ditch (**101**), which was found in Field 3 (Fig 1; Plate 4). It measured 0.86m wide and had a 0.24m-deep, bowl-shaped, profile. It was filled with a dark grey/brown sandy clay, **100**, which was very similar to the subsoil, but produced no dating evidence. No other archaeological features were identified, and the area around the YOI was found, perhaps not unexpectedly, to be particularly heavily disturbed.

4. CONCLUSION

4.1 DISCUSSION

- 4.1.1 Despite the potential for archaeological remains to be found along the route of the pipeline, no archaeological features, or deposits, were observed other than ditch **101** in Field 3, close to the western end of the pipeline. Given the absence of dating evidence, this ditch is interpreted as a post-medieval field boundary. However, the position of this field boundary is not plotted on the 1847 First Edition Ordnance Survey map, suggesting that it pre-dates the mid-nineteenth century. An area of colluvium was also noted within Field 6. This should be taken into consideration during any future ground works within this area, since colluvial deposits might mask potential archaeological features. Moreover, it is also possible that the rather limited archaeological findings could relate to the fieldwork methodology employed. For much of the watching brief, the topsoil strip very rarely exposed the natural geology, and it was thus not possible to define the presence or absence of archaeological features across the majority of the working easement. Those groundworks that did reveal the natural geology generally comprised the excavation of the pipe trench itself, meaning that any features present would be revealed in section, rather than plan. In effect, this created a bias towards linear features running across the route of the pipe trench, whereas discrete features, such as pits or postholes, would be significantly more difficult to identify.

4.2 IMPACT ASSESSMENT

- 4.2.1 Assuming that the most significant damage to any archaeological deposits was effected by the pipe trench itself, with archaeological horizons, in theory, surviving *in situ* beneath the shallow zone of disturbance across the rest of the easement, it can be postulated that the present scheme of groundworks has had little impact upon the archaeological resource.

5. BIBLIOGRAPHY

5.1 CARTOGRAPHIC SOURCES

Ordnance Survey, 1847 First Edition 6" to one mile map of Lancashire

5.2 SECONDARY SOURCES

British Geological Society, GeoIndex Maps www.bgs.ac.uk/geoindex/index.htm

English Heritage, 1991 *Management of Archaeological Projects*, second edition, London

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APPENDIX 1: SPECIFICATION

**HM Young Offenders Institution
Lancaster Farms**

Archaeological Watching Brief

Specification

February 2009

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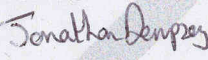
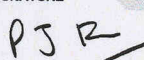
Document control sheet

Client: Ministry of Justice

Project: HM Young Offenders Institution Lancaster Farms

Job No: J24106ZZ

Title: Archaeological Watching Brief: Specification

	Originated by	Checked by	Reviewed by	Approved by
ORIGINAL	NAME Rob McNaught	NAME Jonathan Dempsey	NAME Pete Fasham	NAME Steve Powell
DATE 17/02/2009	SIGNATURE 	SIGNATURE 	SIGNATURE 	SIGNATURE
Document status: Draft for consultation				

REVISION 1	NAME	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document status				

REVISION	NAME	NAME	NAME	NAME
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Figure 1 Scheme Location

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1 Introduction

1.1 Background to the Works

- 1.1.1** An archaeological watching brief is required during works to replace a pumped sewage main between HM Young Offenders Institution (HMYOI) Lancaster Farms and Langdale Road, Lancaster (Between NGR 349756,462172 and 348486,463034). This work has been requested by Peter Iles, Specialist Advisor (Archaeology) for the Lancashire County Council Environment Directorate.
- 1.1.2** Replacement of the sewer will require the excavation of a 0.6m wide trench to an average depth of 1.8m to allow removal of the existing sewer and insertion of its replacement, as well as the removal of topsoil to form a 5m wide temporary haul road and other works within a working corridor c.12m wide (Figure 1).
- 1.1.3** there are three key roles relevant to this specification, as set out below:

The Watching Brief Archaeologist

Means Oxford Archaeology North, the archaeological contractor appointed by the Main Works Contractor to carry out the watching brief

The Curator

Means Peter Iles, Specialist Advisor (Archaeology) for the Lancashire County Council Environment Directorate or his representative on this project

The Ministry of Justice's Archaeological Advisor

Means a named individual appointed by the Ministry of Justice (MoJ) to fulfil this role.

- 1.1.4** Except where modified by the terms of this Specification, all work shall be planned, managed and carried out in accordance with the requirements and standards set by the following standards and guidance documents:

- Management of Archaeological Projects (2nd edition) (MAP2) (English Heritage, 1991)
- Standard and Guidance for an Archaeological Watching Brief (IfA 1994, revised 2008)
- Standard and Guidance for the collection, documentation, conservation and research of archaeological materials (IfA 2001, revised 2008)
- Centre for Archaeology Guidelines for Environmental Archaeology (English Heritage, 2002)

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2 Background

2.1 Scheme Description

- 2.1.1** The proposed pipeline replaces an existing damaged pipe and requires the excavation of approximately 1.9km of trenching 0.6m wide and an average of 1.8m deep. The construction process will also require the construction of a 5m wide temporary haul road and soil storage areas, within a working corridor approximately 12m wide. The sewer runs in a north-westerly direction through open farmland from the HMYOI, crossing Newton Beck and passing under the Lancaster Canal through a culvert, before joining the existing sewer network close to Langdale Road north of the residential area of Newton.

2.2 Geological Background

- 2.2.1** The geological map for the area indicates that the drift deposits for the site largely comprise Glacial Till which is grey or reddish brown, stony clayey silt deposits. The HMYOI site itself is partially located on Lacustrine Siltstone and Sandstone deposits. There are some alluvial deposits to the north-west of the site and it is thought that they are associated with Newton Beck.
- 2.2.2** The solid geological map for the area indicates that the site is underlain by the Pendle Grit Formation comprising unsorted, stony, sandy, clayey silt to sand. Below these deposits lie the Upper Bowland Shale Formation and Lower Coal Measures. The site lies in the geological area of the Williamson Park Anticline.

2.3 General Archaeological Background

- 2.3.1** The following paragraphs relate to the wider area surrounding the proposed pipeline and are taken from an Environmental Constraints Assessment report carried out by Jacobs on behalf of MoJ in 2008 (Jacobs 2008).
- 2.3.2** Bronze Age burials, urns, an incense cup and a bronze dagger were found on Lancaster Moor between 1863 and 1872 during clearance works for Williamson Park. Lancaster Moor is now only a small area of ground immediately to the west of the mental hospital, but at one time stretched much further to the west, taking in Williamson Park and the land to the north and south of the park. The site of this Bronze Age urnfield is not definitely known, but the HER suggests that it is most likely to have been in or around Williamson Park and Highfield Recreation Ground. No other prehistoric remains have been identified in the study area defined in the Environmental Constraints Assessment (Jacobs 2008).
- 2.3.3** The line of Roman Road 705 from Hornby to Preston within the study area is conjectural, however, it is visible as a cropmark to the east of the study area at Green Bank Farm. There is also some evidence of settlement in the vicinity. A Roman cinerary urn was dug up in the Lancaster cemetery in 1894, a coin of Domitian (81-96 AD) was found at Highfield, on Quernmore Road and a Romano-British quernstone is also known from the vicinity.
- 2.3.4** There are no known sites from the early medieval period within the study area. The only known medieval site is a medieval gritstone mortar found in the garden of 156 Ambleside Road in 1955.

- 2.3.5** Post-Medieval Listed Buildings and associated Registered Parks and Gardens are clustered in the southern half of the study area. In the northern part of the study area, there are only two Listed Buildings (both Grade II) which are a bridge and a culvert, crossing the Lancaster Canal. In the south of the study area, the Grade II* Listed County Lunatic Asylum was built on Quernmore Road in 1816 and in 1882, the Grade II mental hospital was built on an adjacent site.
- 2.3.6** Most of the remaining Listed Buildings are associated with the two Grade II Registered Parks and Gardens. Lancaster Cemetery was established in 1855, with chapels and lodges designed by Edward Paley. It closed to new burials in the late 20th century. The Ashton Memorial Gardens and Williamson Park comprise a late 19th century public park with 20th century development. Work began in earnest on Williamson Park in the 1870s, while Ashton Memorial Gardens were established in 1909 in memory of those killed in the Crimean war. Prior to this development, the area had been heavily quarried for sandstone.
- 2.3.7** Sites of unknown nature and date include Dolphinlee cropmark enclosure and the cropmarks described in the HER as showing banks and walls.

2.4 Archaeological Background of the Proposed Works Area

- 2.4.1** Only one site of archaeological or cultural heritage value is known within the area affected by the proposed works. The Newton Beck Culvert (Jacobs 2008, Site 10; a Grade II listed building), is a sandstone structure carrying the Newton Beck under the Lancaster Canal. The culvert dates from c.1797 and was designed by John Rennie (engineer) for the Lancaster Canal company. It is constructed in coursed sandstone and comprises a circular tube of masonry approximately 1m in diameter and 40m long with a portal at either end. Above the arch ring each end is treated in approximate imitation of the more important bridges and aqueducts, with shallow pilasters carrying a flat coping which extends over curved abutments. Between these the stream bed is paved with stone setts.
- 2.4.2** The proposed sewer also passes mostly through an area of open fields designated as being 'ancient enclosure' in the county's Historic Landscape Characterisation programme. Although no specific features are associated with this designation, it is possible that evidence of early land use or occupation could be identified during the site operations.

3 Site Operations

3.1 Aims and Objectives

3.1.1 The general aim of the Site Operations is to ensure that any remains that have not been identified by previous investigations are identified during the course of construction, and to mitigate the impact of construction activities on any such remains by making a record of them. More specific aims and objectives are as follows:

- to identify and record archaeological remains and to identify those archaeological remains which cannot be adequately recorded within the resources available and undertake consultation in respect of such remains with all interested parties to determine and implement the appropriate nature and scope of mitigation works required
- to determine (so far as possible) the stratigraphic sequence and dating of the deposits or features identified
- to disseminate the results through deposition of an ordered archive at the local museum, the deposition of a detailed report with the Historic Environment Record, and publication at a level of detail appropriate to the significance of the results.

3.2 Methodology for the Watching Brief

3.2.1 Except where modified by the terms of this specification, all work will be planned, managed and carried out in accordance with the requirements and standards set by English Heritage in their publication Management of Archaeological Projects (2nd edition) (MAP2; 1991) and by the Institute for Archaeologists in their Standard and Guidance for an Archaeological Watching Brief (1994, revised 2008).

3.2.2 The fieldwork will be monitored as necessary and practicable by the Curator and to facilitate this, the Watching Brief Archaeologist should notify the Curator of the intended start of works at least one week in advance. A copy of the Watching Brief Archaeologist's health and safety risk assessment for the works should accompany this notification.

3.2.3 Operations subject to the watching brief will include:

- all topsoil stripping and
- all stripping of any other overburden if the stripping operation, in the judgement of the Watching Brief Archaeologist, may expose archaeological remains.

3.2.4 All such operations will remain subject to the oversight of the Watching Brief Archaeologist and no further construction operations may commence until they have issued in writing a clearance to proceed with construction in any specific area defined by a reference to either chainage or plans. The Watching Brief Archaeologist may issue such clearance in any of the following circumstances:

- They are satisfied that no remains of archaeological interest are present in the specified area

- They are satisfied that all remains of archaeological interest in the specified area have been identified, investigated and recorded in accordance with the requirements set out below
- They are satisfied that although there remains a possibility that unidentified archaeological remains are present in the specified area, no further ground disturbance will take place that would result in the exposure or disturbance of those remains.

3.2.5 Stripping of topsoil will be undertaken by the main Earthwork Contractor's (or their sub-contractor's) plant operating under continuous observation of the Watching Brief Archaeologist. All stripping will be carried out by a back acting 360° excavator using a toothless ditching bucket.

3.2.6 The archaeological watching brief in any given location may cease under any of the circumstances set out at 3.2.4 above. In many areas, this will be immediately after removal of topsoil, but in other areas it may be necessary to remove other overburden before the watching brief can be satisfactorily completed.

3.2.7 During the archaeological watching brief, the Watching Brief Archaeologist will endeavour to identify archaeological features or artefacts by visual inspection. Where potential archaeological remains are identified during the watching brief, the Watching Brief Archaeologist will mark out the area of the remains in such a manner that they are clearly visible and no plant will enter the marked out areas until cleared to do so by the archaeologist. The Watching Brief Archaeologist will investigate and record the remains according to the methodology set out below.

3.3 Investigation and Recording of Archaeological Remains discovered during the Watching Brief

3.3.1 Following the identification and marking-out of an area of archaeological interest, further construction activity will be suspended within the area, or below the depth, defined by the Watching Brief Archaeologist pending the completion of archaeological investigation and recording. Where archaeological remains are identified which are of low density or complexity, and where they can reasonably do so without compromising ongoing monitoring work, the Watching Brief Archaeologist using the staff they have on site will investigate and record the remains according to the methodology set out below.

3.3.2 The Watching Brief Archaeologist will undertake archaeological excavation by hand of any archaeological remains identified in accordance with the following strategy:

- 1) discrete negative features (less than 1m diameter): at least 50% by area in addition to all stratigraphic relationships
- 2) discrete negative features (more than 1m diameter): at least 50% by area in addition to all stratigraphic relationships
- 3) discrete negative features containing good assemblages: 100%
- 4) non-structural linear negative features: at least 20% by area in addition to all stratigraphic relationships and termini
- 5) structural negative features: 100%, unless otherwise agreed with the MoJ Archaeological Advisor and the Curator

- 6) other features: 25%, unless otherwise agreed with the MoJ Archaeological Advisor and the Curator
- 7) 100% of all inhumations and cremations
- 8) Where waterlogged timbers are encountered, these shall be recorded and sampled in accordance with the guidance provided by Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation, and Curation of Structural Wood (Coles 1990).

- 3.3.3** The strategy will be implemented in a way that ensures the investigation of all stratigraphic relationships between features/deposits. All archaeological excavation will extend to the full depth of deposits or extent of impact. Any significant archaeological features which extend beyond the defined watching brief area may need to be investigated beyond these limits, while remaining within the footprint of the scheme. Such extensions will be undertaken, where necessary, on the instruction of the MoJ Archaeological Advisor, who will make such decisions in consultation with the Curator.
- 3.3.4** All excavated features and deposits will be fully recorded by detailed written context records giving details of location, composition, shape, dimensions, relationships, finds, samples, cross-references to other elements of the record and other relevant contexts, etc.
- 3.3.5** All excavated features and, where possible, all deposits will be recorded on at least one hand-drawn plan, normally at 1:20 scale, and at least one section drawing, normally at 1:10 scale. During or immediately after the completion of hand excavation, the overall site plan will be updated to show all features identified and all excavated sections. All hand-drawn plans and sections will show at least two reference points which will be tied-in by instrument survey and whose coordinates will be marked on the drawing. All hand-drawn plans and sections will show spot-heights related to the Ordnance Survey Datum and accurate to two decimal places.
- 3.3.6** All excavated features and deposits will be recorded photographically using, as a minimum, both colour slide and black and white negative film. Additional illustrative photographs will be taken as appropriate using colour slide and/or print film and colour digital photography.
- 3.3.7** Appropriate palaeoenvironmental samples shall be taken to meet the aims and objectives of the watching brief. Deposits will be sampled for retrieval and assessment of the preservation conditions and potential for analysis of all biological remains. In advance of the start of on site works the Watching Brief Archaeologist's Palaeoenvironmental Specialist will submit and agree a strategy for the recovery and sampling of environmental remains with the Curator and the MoJ Archaeological Advisor. This strategy should be prepared in line with *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation* (English Heritage/Centre for Archaeology Guidelines 2002). The sampling strategy will include a reasoned justification for selection of deposits for sampling.
- 3.3.8** Adequate resources will be provided during fieldwork to ensure that all records are checked and internally consistent.

3.4 Contingency Arrangements

- 3.4.1** It is recognised that the watching brief may lead to the unexpected identification of archaeological remains too substantial, complex or important to be adequately recorded within the resources available for the watching brief, or using the methods specified for the watching brief, without compromising the ongoing monitoring work. In the event that remains are identified which the Watching Brief Archaeologist believes fall into this category, the Watching Brief Archaeologist will notify the Curator and the MoJ Archaeological Advisor within one working day, with an estimate of the time and resources required to complete the investigation.
- 3.4.2** After receipt of such notification, the MoJ Archaeological Advisor will initiate a meeting with the Curator to determine the need for, nature and scope of any further investigation and recording works or an alternative design solution to avoid or reduce the impact. If this meeting cannot be arranged to take place within two working days of the initial notification by telephone, then the remains will be recorded according to the methodology set out below, or otherwise as instructed by the MoJ Archaeological Advisor. Additional archaeological staff and other resources will be required to arrive on site as soon as possible and in any case within 2 days of receipt of an instruction to proceed with the works.

3.5 Monitoring

- 3.5.1** During the site operations, monitoring may include visits to the site by the Curator and/or the MoJ Archaeological Advisor, who will be given full access full access to the site and to any archaeological records or other information obtained through the works.
- 3.5.2** The Watching Brief Archaeologist shall supply brief weekly reports summarising progress and results to the MoJ Archaeological Advisor by no later than midday on the Monday following each week's work. As a minimum, the weekly reports shall include the following:
- 1) a table setting out all staff and other resources used on the project during the relevant period;
 - 2) staff time shall be broken down by staff grade/role and task on project;
 - 3) a short free text summary of archaeological tasks undertaken and archaeological results; and
 - 4) a statement of progress towards completion of the works.
- 3.5.3** If requested by the MoJ Archaeological Advisor, weekly reports may also include copies of plans (sketch or measured) or of digital photographs. Weekly reports should preferably be submitted by e-mail and shall be submitted by noon on Monday of each week. The MoJ Archaeological Advisor will provide copies to the Curator as required.
- 3.5.4** Following completion of the fieldwork, all documentation produced shall be reviewed and the completed archive may be inspected by the MoJ Archaeological Advisor at any time. The Watching Brief Archaeologist shall take into account any comments made by the MoJ Archaeological Advisor and remedy any faults identified.

4 Post Fieldwork Methodology – Archive

- 4.1.1** At least one week prior to the start of fieldwork, the Watching Brief Archaeologist will liaise in writing with Lancaster City Museum (copying all correspondence to the Curator) in order to:
- inform them of the intended work, including its nature, location, start date and intended duration;
 - obtain the agreement in principle of the relevant museum to accept the archive for long-term storage and curation;
 - identify any policies of the museum in respect of selection /retention of archive materials;
 - identify any requirements of the museum in respect of the format, presentation and packaging of the archive records and materials; and
 - determine a policy for the selection, retention and disposal of excavated material by consultation with the museum prior to excavation.
- 4.1.2** Archive consolidation will be completed immediately after the conclusion of fieldwork to ensure that the site record has been checked, cross-referenced and indexed as necessary, and that all retained finds have been cleaned, conserved, marked and packaged as appropriate.
- 4.1.3** Immediately after completion of fieldwork, soil samples will be appropriately processed in accordance with the sampling strategy agreed prior to the start of fieldwork or otherwise agreed during fieldwork, and appropriate records will be kept.
- 4.1.4** The Site Archive will be prepared in accordance with the standards set out in Appendix 3 of MAP2.
- 4.1.5** The Site Archive will contain all the data collected during the investigation, including records and excavated materials. It will be quantified, ordered, indexed and internally consistent.
- 4.1.6** Archive consolidation will be undertaken immediately following the conclusion of fieldwork.
- 4.1.7** The site record will be checked, cross-referenced and indexed as necessary.
- 4.1.8** All retained finds will be cleaned, conserved, marked and packaged in accordance with the requirements of the recipient museum.
- 4.1.9** All retained finds will be assessed and recorded using pro-forma recording sheets, by suitably qualified and experienced staff. Initial artefact dating will be integrated with the site matrix.
- 4.1.10** The archive will be assembled in accordance with the guidelines set out in English Heritage's Management of Archaeological Projects 2 (MAP2; paragraphs 4.9, 6.8 and 6.10 and Appendix 3). In addition to the site records, artefacts, ecofacts and other sample residues, the archive will contain:

- site matrices where appropriate;
- a summary report synthesising the context records;
- a summary of the artefact record; and
- a summary of any other records or materials recovered.

4.1.11 The integrity of the primary field records will be preserved and the Watching Brief Archaeologist will create security copies in digital, fiche or microfilm format of all primary field records.

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5 Post-Fieldwork Assessment

5.1 Introduction

- 5.1.1** Following completion of the Watching Brief, a post-fieldwork assessment will be required in line with the principles set out in Chapter 6 of MAP2. The products of the post-fieldwork assessment will be an assessment report (Appendix 4 of MAP2) and an updated project design (Appendix 5 of MAP2) setting out the scope of works recommended by The Watching Brief Archaeologist.

5.2 Reporting

- 5.2.1** The post-fieldwork assessment report on the works will be required within four months of the completion of the Site Operations. In preparing the report, the authors will take account of the results of previous archaeological work by reference to published reports and unpublished material available from the Historic Environment Record or elsewhere.
- 5.2.2** The report will clearly acknowledge the role of the MoJ, and will show their logo. All reports will be prepared in line with the principles set out in Appendix 4 of MAP2, and will include as a minimum:
- 1) a non-technical summary
 - 2) site code/project number
 - 3) details of the commissioning body
 - 3) dates when the fieldwork took place and the names of the fieldworkers
 - 4) a description of the background to and circumstances of the work
 - 5) a brief description of the previously known archaeology of the site
 - 6) an account of the methods and results of the works, describing both structural data and associated finds and/or environmental data recovered. This section will also describe the depth of topsoil present in different parts of the site, the presence or absence of subsoils and their thickness, a description of the nature and form of the underlying natural, and a description of the nature, depth and inter-relationships of any field drains encountered
 - 7) a brief interpretation of the results of the fieldwork
 - 8) interpretation, including phasing of the site sequence and spot-dating of ceramics. Descriptive material should be clearly separated from interpretative statements
 - 9) a specialist assessment of the artefacts recovered with a view to their potential for further study. Allowance should be made for preliminary conservation and stabilisation of all objects and an assessment of long-term conservation and storage needs
 - 10) a specialist assessment of environmental samples taken, with a view to their potential for subsequent study. The preservation state, density and significance of material retrieved must be assessed, following methods presented in Environmental Archaeology: a Guide to the theory and practice of methods from sampling and recovery to post-excavation (English Heritage Centre for Archaeology Guidelines 2002)

- 11) an assessment of potential of all data for further analysis and reporting.
- 12) details of archive location and destination (with accession number, where known), together with a catalogue of what is contained in that archive
- 13) an assessment of the archaeological significance of the deposits identified, in relation to other sites in the region
- 14) a conclusion with recommendations for further post-excavation work, if required
- 15) general and detailed plans at appropriate scales, showing the location of each site or group of sites accurately positioned on an up-to-date Ordnance Survey base
- 16) plans and sections of each site and at appropriate scales, with keys and north points
- 17) detailed plans and sections of individual features where necessary, all scales used on any drawings should be standard scales such as would appear on a normal scale ruler
- 18) complete matrix for each site
- 19) a copy of the Specification and/or project design and
- 20) references and bibliography of all sources used.

5.2.3 The post-fieldwork assessment will be prepared in line with the principles set out in Appendix 4 of MAP2, and will include as a minimum:

- an assessment of each category of data ("statement of potential" in MAP2) and
- a statement of the storage and curation requirements for each category of data.

5.2.4 Where there are to be no additional phases of fieldwork or the conclusion of the UPD is that further analysis is not required, it is possible that the post fieldwork assessment report along with a summary note in a local journal may be adequate to disseminate the results of the works. This will be agreed in consultation with the Curator.

5.2.5 As part of the post-fieldwork assessment process, an updated project design (UPD) will be produced. The UPD will set out the further analytical and reporting works, if any, required to achieve the potential identified during the post-fieldwork assessment. The UPD will define the objectives of the post-fieldwork analysis stage and the strategies and resources required to achieve them. It will also identify the chapter headings and approximate figure and word requirements for the report. The publication medium (e.g. journal, monograph etc.) will be identified at this stage, along with the publisher's requirements with regard to timetabling, formatting and costs.

5.2.6 The UPD will be presented in the same format as the original project design but with an additional section: a 'summary' or 'statement of Potential', that details those aspects selected for further analysis. The UPD may be submitted as a stand-alone document or as a separate chapter within the post-fieldwork assessment report.

5.3 Monitoring

- 5.3.1** The Watching Brief Archaeologist will allow for monitoring by the Curator and the MoJ Archaeological Advisor during the post-fieldwork assessment stage. The Watching Brief Archaeologist will arrange at least one meeting with the Curator and the MoJ Archaeological Advisor at the beginning of the post-fieldwork assessment stage to discuss the aims, resources and timetable for the assessment. Subsequent meetings on a monthly basis will be planned to review progress and any other matters arising from the ongoing assessment.

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6 Post-Fieldwork Analysis and Reporting

6.1 Post-Fieldwork Analysis

- 6.1.1** Where the conclusion of the Post Fieldwork Assessment is that detailed analysis is required, it will proceed in line with the principles set out in Chapter 7 of MAP2.
- 6.1.2** The Post Fieldwork Analysis will only begin following approval of the UPD by the MOJ Archaeological Advisor and the Curator and the products will be a Post Fieldwork Analysis report (Appendix 7 of MAP2), a research archive (Appendix 6 of MAP2) and a report for publication. Under some circumstances, the publication report and the Post Fieldwork Analysis Report may be the same, depending on the results of the post-excavation assessment process.

6.2 Reporting

- 6.2.1** The post-fieldwork analysis report will be required within 12 months of the completion of the post-fieldwork assessment.
- 6.2.2** The Post Fieldwork Analysis will consist of detailed work on the stratigraphy, artefacts and environmental data, and will lead to the production of a fully synthetic and integrated report text. The Post Fieldwork Analysis Report will be prepared in line with the principles set out in the Institute for Archaeologist's Standard and Guidance for an Archaeological Watching Brief (1994) and Appendix 4 of MAP2.
- 6.2.3** Where publication of a report in an academic journal or as a monograph has been recommended in the Post Fieldwork Analysis Report or UPD and this recommendation has been agreed with the MOJ Archaeological Advisor and the Curator, a report ready for submission to the agreed publication vehicle (journal or monograph) shall be prepared within 12 months of the receipt of the instruction to proceed from the MOJ Archaeological Advisor.

6.3 Monitoring

- 6.3.1** The Watching Brief Archaeologist will allow for monitoring by the Curator and the MoJ Archaeological Advisor during the Post Fieldwork Analysis stage. The Watching Brief Archaeologist will arrange a meeting at the beginning of the post-fieldwork assessment stage to discuss the aims, resources and timetable for the assessment. Subsequent meetings on a monthly basis will be planned to review progress and any other matters arising from the ongoing analysis.

6.4 OASIS

- 6.4.1** The Lancashire Historic Environment Record (HER) supports the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.
- 6.4.2** The Watching Brief Archaeologist will complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>. If the Watching Brief Archaeologist is unfamiliar with OASIS, they are advised to contact the HER prior to completing

the form. Once a report has become a public document by submission to or incorporation into the HER, the HER will validate the OASIS form thus placing the information into the public domain on the OASIS website. This will be undertaken as part of the post-excavation works.

6.5 Copyright

- 6.5.1** Copyright in any reports or other documentation produced by the Watching Brief Archaeologist as part of this contract will remain with the Watching Brief Archaeologist.
- 6.5.2** The Watching Brief Archaeologist will provide a licence to reproduce reports or other documentation produced them as part of this contract to the MoJ.

7 Archive Deposition

- 7.1.1** Immediately upon completion of the reviewed post-fieldwork analysis report or acceptance by the chosen journal of the publication text, the report and any data or other documentation produced during the post-fieldwork assessment and analyses will be integrated into the site archive. This additional material forms the research archive as defined in Chapter 7 and Appendix 6 of MAP2.
- 7.1.2** The Watching Brief Archaeologist will store the archive in suitable conditions in a secure location until final deposition of the archive with the Lancaster City Museum.

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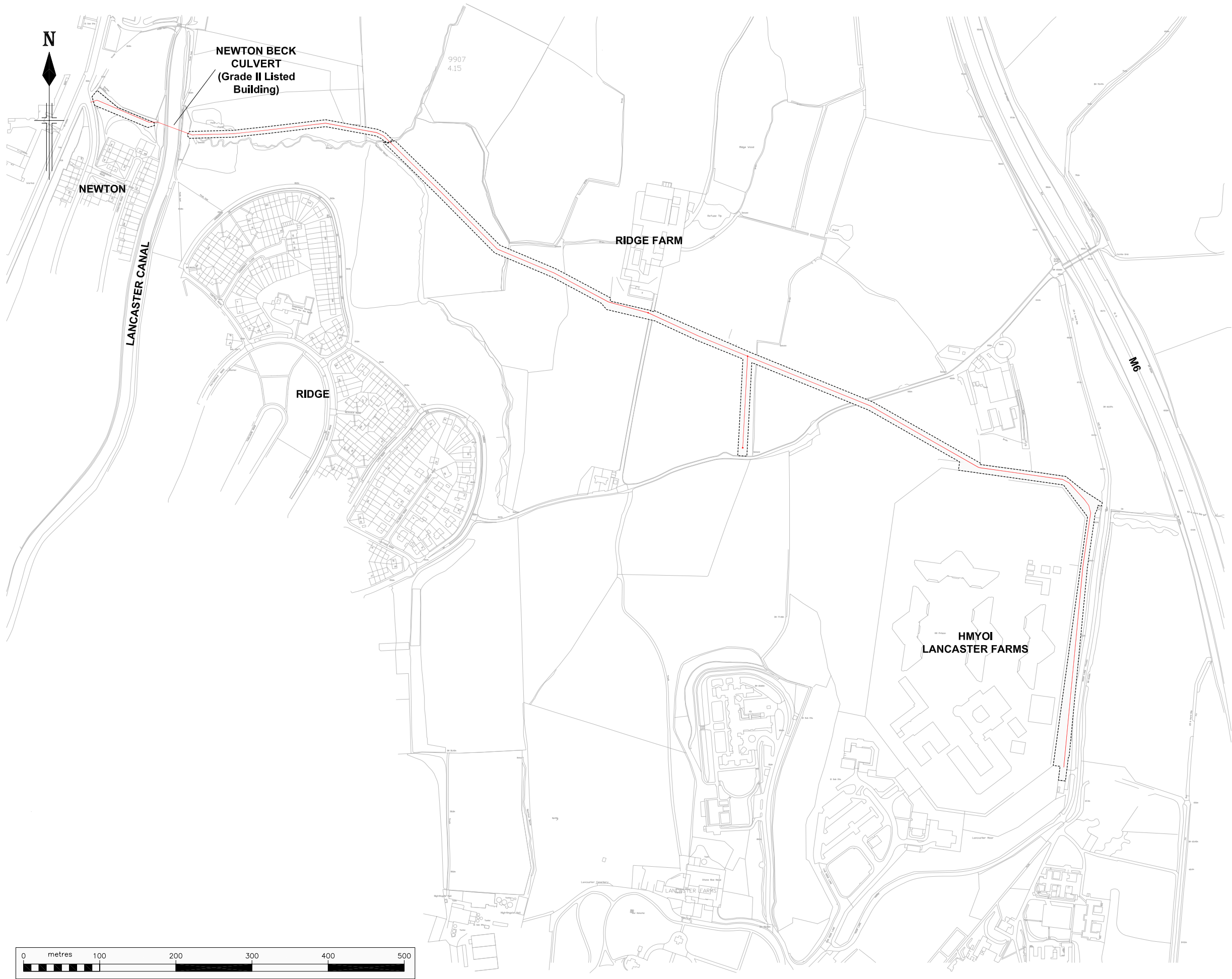
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Figures

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Figure 1



Key

- Working Corridor
- Line of Sewer

0	17/02/2009	Original	RBM	JD	PF
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
<div><p>1 City Walk, Leeds, LS11 9DX Tel: +44(0)113 242 6771 Fax: +44(0)113 389 1389 www.jacobslife.com</p></div>					
<div><p>Ministry of JUSTICE</p></div>					
Project MHYOI Lancaster Farms					
Drawing title Archaeological Watching Brief Scheme Location					
Drawing status DRAFT FOR CONSULTATION					
Scale 1:5,000 @ A3			DO NOT SCALE		
Jacobs No. J24106ZZ					
Client no.					
Drawing number Figure 1					Rev 0
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.					

APPENDIX 2: CONTEXT INDEX

Context	Field	Interpretation	Description
100	3	Ditch fill	Fill of ditch 101 . Dark brown, friable, sandy clay, containing less than 1% stone
101	3	Ditch	Ditch measuring 0.86m wide by 0.24m deep, with a concave base and shallow U-shaped profile
102	All	Topsoil	Dark grey/brown sandy clay plough soil, varying between 0.2 and 0.45m deep. Deposit contained approximately 2% sub-angular stones, varying in size from 5-100mm across
103	1-5	Subsoil	Mid-orange/brown silty sand subsoil, which measured between 0.25 and 0.65m deep. The subsoil was evident in Fields 1-4 and halfway through Field 5. No subsoil was evident in Fields 6 - 9
104	1, 2, 4, 6-8	Natural geology	Light yellowish-grey clayey sand
105	3	Natural geology	Mixed mid-red/brown sandy clay
106	5	Natural geology	Mid-red/brown sandy clay with patches of pale orange/brown clayey sand, observed at the end of Field 5
107	6	Natural geology	Brown sandy clay, 0.2-3m deep
108	6	Natural geology	Mixed grey clay and orange clay, possibly representing colluvium
109	6	Natural geology	Light yellowish clayey sand, c 0.5-0.8m deep
110	6	Natural geology	Light grey clay, possibly representing colluvium

APPENDIX 3: ARCHIVE INDEX

Record group	Contents	Comments	Box/File Number
	Introduction Written Scheme of Investigation		1
A	Report Final Report		1
B	Primary Fieldwork Records Watching Brief Records Context Records & Indices		1
C	Primary Drawings Annotated Plans Drawing Indices Plans/Sections		1
D	Finds Box and Bag Lists	N/A	
E	Environmental Records	N/A	
F	Photographic Record Photographic Indices Monochrome Colour Slides Digital		1
G	Electronic Media		1

ILLUSTRATIONS

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Figure 1: Site Location and Route Plan

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Plate 2: View of the easement along the eastern side of the YOI. View looking north

Plate 3: A typical section of the pipe trench in Field 4. View looking west

Plate 4: Ditch **101** as revealed in section

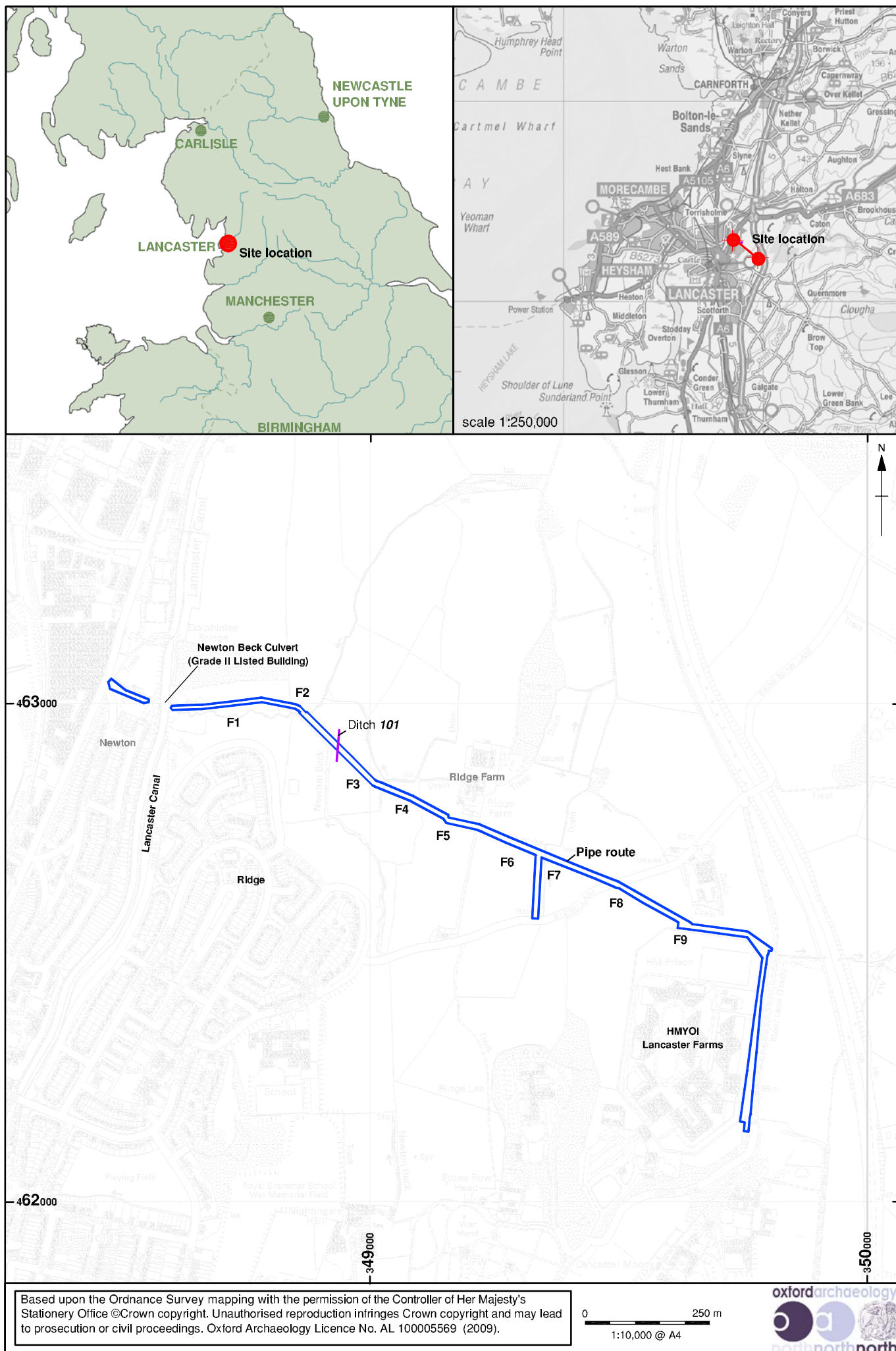


Figure 1: Site location



Plate 1: Field 7. View looking down-slope to the north-west



Plate 2: View of the easement along the eastern-side of the YOI. View looking north



Plate 3: A typical section of the pipe trench in Field 4. View looking west



Plate 4: Ditch *101* as revealed in section