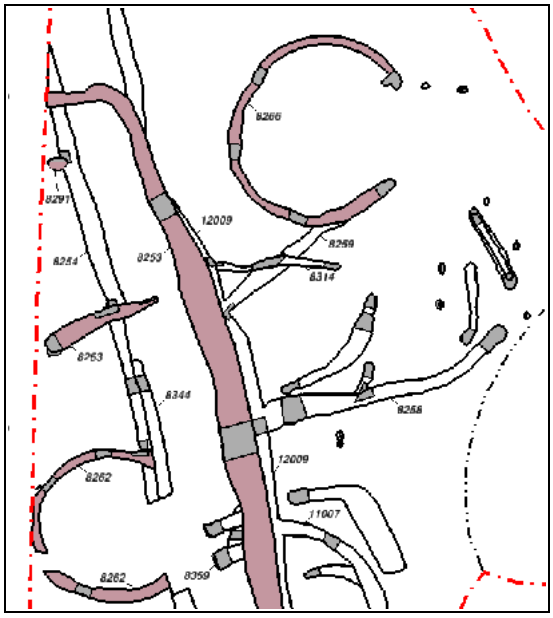

Asselby to Aberford Pipeline

North Yorkshire

Archaeological Excavation, Evaluation and Watching Brief - Post-excavation Assessment

Oxford Archaeology North

December 2010

Issue No: 2010-11/1086
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Laing O'Rourke

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CONTENTS

LIST OF TABLES

SUMMARY

Reinforcement of the National Transmission System for natural gas required the installation of a pipeline from Asselby (NGR 469959 427294, *ie* SE 699 272) to Pannal (NGR 425260 450602, *ie* SE 252 506) in North Yorkshire. In its design stage, the pipeline was treated as a single entity; consequently, all early archaeological investigations reference the 'Asselby to Pannal pipeline'. The construction stage contract was subsequently let in two halves, however, with the division occurring at the 35km mark, near Aberford in West Yorkshire. Laing O'Rourke was awarded the contract for the construction of the eastern half of the pipeline, which came to be known as the 'Asselby to Aberford pipeline', while Murphy Pipelines Ltd constructed the western half, the 'Aberford to Pannal pipeline'. The results of the archaeological works undertaken along the line of the Asselby to Aberford pipeline form the focus of this report.

Installation of the Asselby to Aberford pipeline was preceded by below-ground archaeological investigation, which in turn drew on the results of desk-based research and field survey. The investigation, by Oxford Archaeology North (OA North), was organised in a carefully managed sequence. The first stage, the Phase 1 Evaluation trenching, in the summer of 2007, allowed refinement of the areas to be targeted, and was succeeded by the Phase 2 Evaluation trenching and the open-area excavations of identified sites during the periods of October–November 2007 and February–June 2008, and a Watching Brief over the course of September 2007–June 2008.

The results of the Phase 2 Evaluation, area excavations and Watching Brief are presented here. The eight area excavations were undertaken where the Phase 1 Evaluation had suggested significant concentrations of archaeological remains, while watching briefs were recommended on the basis of both the desk-based studies and the results of evaluation and excavation. The Phase 2 Evaluation comprised 12 trenches spread throughout the length of the pipeline, although the majority lay at the western end, towards Aberford. Assessment of the results from these below-ground investigations has suggested that there would be a beneficial return from post-excavation analysis of all the area excavations, together with two of the locations investigated by the Evaluation. These are presented in the main body of the report, while the remainder of the below-ground investigations appears in two annexes, covering the Phase 2 Evaluation and the Watching Brief.

The results reveal that the Asselby to Aberford pipeline traverses a landscape with extensive, extant, archaeological remains dating from the late Iron Age through to the early post-Roman period. Stratigraphic and artefactual evidence has been recovered for field systems, and enclosures for habitation and its associated activities, including food preparation, and even metalworking at one site. Earlier, although enigmatic, prehistoric remains were also encountered, along with features revealing the medieval and post-medieval organisation of the agricultural landscape.

ACKNOWLEDGEMENTS

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The Excavation was undertaken by Jeremy Bradley, Marc Storey, Caroline Bulcock, Andrew Frudd, Christina Robinson, Dave Bonner, Ged Callaghan, Liz Collinson, Martyn Cooper, Paul Dunn, Pascal Eloy, Vicky Fackrell, Fiona Gordon, John Griffiths, Sam Grimmer, Vicky Jameson, Nate Jepson, Gemma Jones, Dave Maron, Sam Oates, Rebekah Pressler, Jennifer Salter, Rachel Stebbings, Steve Tamberello, Julian Thorley, Beccy Wegiel and Matthew Weightman. The Evaluation staff were Jeremy Bradley, Andrew Frudd, Vickie Jamieson, Gemma Jones, Jennifer Salter and Matthew Weightman. The Watching Brief was undertaken by Dave Bonner, Liz Collinson, Fiona Gordon, Sam Grimmer, Antony Haskins, Christina Robinson, Rachel Stebbings, Julian Thorley, Beccy Wegiel and Matthew Weightman.

The palaeoenvironmental samples from all the archaeological work were processed and assessed by Sandra Bonsall, Denise Druce, Rachel Fosberry and Elizabeth Huckerby. The flint was examined by Caroline Bulcock, the prehistoric pottery by Chris Cumberpatch, the Romano-British pottery by Ruth Leary, the medieval and post-medieval pottery by Jane Young, the human bone by John Griffiths, the animal bone by Andy Bates, and the remainder of the finds by Chris Howard-Davis, Finds Manager for OA North. This report was written by Christina Robinson, illustrated by Anne Stewardson, and edited by Nick Johnson and Fraser Brown, who managed the project.

Contributors to assessment:

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Flint	Caroline Bulcock
Prehistoric Pottery	Chris Cumberpatch
Romano-British Pottery	Ruth Leary
Medieval/Post Medieval Pottery	Jane Young
Other Finds	Chris Howard-Davis
Human Bone	John Griffiths
Animal Bone	Andy Bates
Palaeoenvironmental Material	Elizabeth Huckerby; Denise Druce

1 INTRODUCTION

1.1 Structure of this Report

1.1.1 This assessment report has been organised to reflect a division between those aspects of the project where additional work has been recommended, and the remainder where the assessment marks a conclusion to investigation and reporting. The main body of the report, therefore, details the results from the most significant excavation sites and the finds assemblages, and provides recommendations for post-excavation analysis. Work on the majority of the Phase 2 Evaluation trenches and Watching Brief sites is complete at this stage, and the results are reported in two appendicies (*Appendix 1* and *Appendix 2* respectively).

1.2 Circumstances of the Project

1.2.1 Forecasted increases in natural gas imports entering the UK via Easington, on the north-east coast of England, led National Grid to conclude that reinforcement of its National Transmission System would be required. National Grid was granted permission by the Department of Trade and Industry to construct a new 1220mm (48") diameter pipeline for the transportation of natural gas between existing Above Ground Installations (AGIs) at Asselby in the East Riding of Yorkshire (NGR 469959 427294; SE 69959 27294) and near Pannal in North Yorkshire (NGR 425260 450602; SE 25260 50602). During the design stage of the project, the pipeline was treated as a single entity, the 'Asselby to Pannal pipeline'. Thereafter, to ensure that the 62km-long pipeline could be built in one construction season, it was divided into two discrete pipeline projects, with the split occurring at the 35km mark, on high ground overlooking the Cock Beck to the east of Aberford. Laing O'Rourke was awarded the contract to construct the eastern half of the pipeline, which came to be known as the 'Asselby to Aberford pipeline'; the pipeline's western half (the 'Aberford to Pannal pipeline') was built by Murphy Pipelines Ltd (see OA North 2010).

1.2.2 This report presents the results of the archaeological Excavation, Evaluation and Watching Brief undertaken along the line of the Asselby to Aberford pipeline (Fig 1), over the period 2007–8 by Oxford Archaeology North (OA North). The work was commissioned by the National Grid and Laing O'Rourke (LOR) to mitigate any adverse effect construction of the pipeline might have on the cultural heritage along the route.

1.2.3 Previous work on the cultural heritage of the route has included desk-based assessment (NAL 2006a), geophysical survey (Bartlett 2006, 2007a; 2007b), field reconnaissance survey (NAL 2006b; 2007a), a review of local sources (NAL 2007b), fieldwalking survey (NAL 2007c; 2007d), topographic survey (NAL 2007e), palaeoenvironmental assessment (Headland Archaeology 2007), the production of a document synthesising the results of these surveys and providing recommendations for mitigation (NAL 2006–7), and Phase 1 of archaeological evaluation trenching (OA North 2007a).

1.3 Site Location, Topography and Geology

1.3.1 The Asselby to Aberford Pipeline route follows a generally south-east/north-west alignment, commencing near Asselby AGI and ending at Aberford. It passes near the towns and villages of Drax, Camblesforth, Carlton, Burn, Gateforth, Hambleton, Little Fenton, Sherburn in Elmet, Barkston Ash, Saxton and Aberford (Fig 1).

1.3.2 The Asselby to Aberford Pipeline of the route occupies two landscape zones. From the AGI at Asselby to Sherburn in Elmet, it lies on the floodplain of the River Ouse. This area is low-lying (*c* 10m above sea level) and almost flat. The level landscape of large regular fields, deep drainage dykes and isolated farms is characteristic of reclaimed wetland. To the west, the pipeline passes through mildly undulating landscape, *c* 70m above sea level, and predominantly under arable agriculture.

1.3.3 Details of the topography, geology, pedology, hydrology and landuse of the route can be found in Section 3 of the *Archaeological Desk-based Assessment* (NAL 2006a). The solid geology along the whole pipeline route ranges from Permian and Triassic sandstones, bands of Permian mudstones, and Permian Magnesian Limestone, to Namurian Millstone Grit and Lower Westphalian productive coal measures. The pipeline crosses five forms of drift geology and fourteen soil associations (*ibid*).

1.4 Previous Work

1.4.1 The programme of archaeological works undertaken in conjunction with the construction of the pipeline progressed incrementally in discrete phases, and is outlined below. The scope of the initial phases encompassed the entire route from Asselby to Pannal, and this is reflected in the outline. For the purposes of clarity and brevity, work previously published elsewhere has not been reproduced in this document. However, reference has been made to earlier survey and mitigation operations, to help place the results of the below-ground archaeological investigations within their broader landscape and research context. The *Recommendations Document* (NAL 2006–7) provides the research framework for this study.

1.4.2 ***Desk-Based Assessment:*** an *Archaeological Desk-Based Assessment* (ADBA) was carried out by Network Archaeology during 2006 (NAL 2006a). Information was collated for a 1km-wide study corridor centred upon the pipeline. Searches of national and county databases identified 477 sites of archaeological importance. The ADBA identified direct impact upon two statutorily protected sites, both of which are Scheduled Monuments (part of the Aberford Dyke complex; SM 31519 and SM 31520), and uncertain impacts upon two Listed milestones/mileposts. General recommendations were made for a range of field surveys, including field reconnaissance along the entire route, fieldwalking of all arable land, and the appropriate use and deployment of geophysical survey. Specific recommendations were also made: to liaise with English Heritage over the Scheduled Monuments and the Listed features; and to consider widening the field survey corridor across two regionally important sites.

1.4.3 ***Geophysical Survey:*** a geophysical survey was carried out by Bartlett-Clark Consultancy, on behalf of Network Archaeology, in October 2006. A 30m-wide sample strip of ground

was surveyed along all accessible areas of the pipeline route, which was supplemented by surveys of seven potential re-routes (Bartlett 2006). Initially, some areas were omitted, because of access restrictions and the presence of growing crops, but most of these were subsequently surveyed (in 2007) and have been reported on in two separate *Addenda* (Bartlett 2007a; 2007b). In the central and western part of the pipeline route, the soils were particularly conducive to geophysical survey. The responsiveness of the clay and silt soils at the eastern end of the pipeline may not have been as complete; however, a number of positive findings were obtained. The Magnesian Limestone geology in the centre of the route gives rise to strongly magnetic soils, which responded well to magnetometer survey. Numerous archaeological features and other ground disturbances were detected, both there, and on the millstone grit at the north-western end of the route. Features detected by the survey included a number of enclosures, some of which may indicate settlement sites; others may form parts of field systems. Various scatters of small magnetic anomalies, which may not be of anthropogenic origin, were also identified, along with examples of ridge and furrow and former field boundaries.

1.4.4 ***Field Reconnaissance Survey:*** the Field Reconnaissance Survey undertaken in 2006 investigated 272 fields crossed by the pipeline (NAL 2006b). A further 37 fields were excluded, because of access restrictions. Most (32) of these fields were surveyed in 2007, however, and have been reported on in a separate *Addendum* (NAL 2007a). Thirty-nine of the 165 sites recorded had been documented in the ADBA; these included the Aberford Dykes Scheduled Monuments (SM 31519 and SM 31520). The field survey clarified the extent to which these Scheduled Monuments survived as upstanding earthworks (identified as FSU:66, FSU:68, FSU:69, and FSU:71 in the report). Field observations on three sites classified as locally important in the ADBA led to them being upgraded to regionally important (*ie* Category C), because of their rarity and their good state of preservation. These three sites (FSU:107, FSU:108, FSU:109), which would all be directly affected by the pipeline, lie in a single field, south of the village of Gateforth, North Yorkshire. Potential impact from the pipeline was also identified at a further site (FSU:156), a stone scatter that possibly represented the bank of the South Dyke (of the Aberford Dykes) in the parish of Saxton with Scarthingwell (NAL 2007a). The survey identified 156 sites of local importance. Of these, 50 were sufficiently distant from the pipeline that they were unlikely to suffer any impact. Of the remaining 106, the potential impacts on all but 13 were judged to be minor.

1.4.5 ***Review of Local Sources:*** a review of local sources (NAL 2007b) was carried out to supplement the ADBA, drawing on additional data sources not available when this was prepared. This identified a further 71 sites of archaeological importance. Potential direct impact on four additional sites of local importance was identified, along with an uncertain impact on 16 others. This study also reviewed the sources of evidence relating to the Aberford Dykes, supplying a preliminary archaeological background to help inform a proposed programme of investigation.

1.4.6 ***Fieldwalking Survey:*** just less than 50% of the pipeline was systematically fieldwalked in October 2006 (NAL 2007c). The other half was permanent pasture, set-aside, arable with standing crops or unploughed stubble, and/or fields for which access was not available. Most (47) of the outstanding 62 arable fields were surveyed in 2007 and reported on in a

separate *Addendum* (NAL 2007d). Several minor concentrations of medieval or early modern artefacts were identified, but these were considered to be the result of agricultural manuring or plough spread and, therefore, of little archaeological significance. Some 25 pieces of struck flint were recovered, indicating a low level of human activity in the area in the prehistoric period. A possible sherd of Anglo-Saxon pottery was identified and recommended for thin-section analysis. Several pieces of post-medieval kiln furniture were found that may be related to the manufacture of clay tobacco pipes. Further analysis of the kiln furniture, along with clay pipe fragments, has been recommended. Otherwise, no significant concentrations of material were found, and no artefacts of intrinsic archaeological importance were identified.

1.4.7 ***Topographical Survey:*** the field reconnaissance survey report recommended the topographic survey of six earthwork sites; these are also listed in the *Recommendations Document* (*Section 1.4.10*; NAL 2006–7). Two of these comprised the Aberford Dykes Scheduled Monuments (*Section 1.4.9*). Other sites investigated included two mounds and two areas of ridge and furrow (NAL 2007e), which were, respectively, recommended for monitoring by watching brief during pipeline construction, and investigation by trench evaluation.

1.4.8 ***Palaeoenvironmental Assessment:*** a desk-based assessment of the palaeoenvironmental potential was also commissioned (Headland Archaeology 2007). The deposit model developed by this assessment, which outlined four broad geomorphological zones along the route of the pipeline, was used to select areas of archaeological potential coinciding with areas of colluvium and/or palaeoenvironmental deposits (*eg* palaeochannels).

1.4.9 ***Aberford Dykes Document:*** this document (NAL 2007f) was issued in support of an application for Scheduled Monument Consent, required to construct the pipeline through the Aberford Dykes earthworks. It placed the monuments in their archaeological and historical contexts, explored the relevant research priorities and outlined a strategy for further investigation. Area excavation, rather than evaluation, was recommended for the monuments themselves, although trenching was planned for the adjacent areas.

1.4.10 ***Recommendations Document:*** a document setting out the recommendations for archaeological investigations along the route of the pipeline was commissioned by Entrepose Industrial Services in November 2006. Version 2 of this document was submitted to the various statutory consultees, by Network Archaeology, in January 2007, and a subsequent version in April 2007 (NAL 2006–7). Its specific objectives were to assess the need for further evaluation and mitigation prior to, and during, construction. The *Recommendations Document* includes a working deposit model, the result of an analysis of all the available archaeological, geotechnical and topographical data for the route. The deposit model was used to predict the likely location, character, and extent of archaeological remains along the pipeline route, as well as the likely impact of the pipeline construction process upon them, and informed the general strategy of the programme of archaeological work, starting with the choice of additional areas for evaluation.

1.4.11 ***Phase 1 Archaeological Evaluation Trenching:*** this phase of evaluation targeted geophysical anomalies, cropmarks, and a number of documented sites highlighted in the surveys and assessments outlined above. In total, 87 trenches were excavated along the

route of the pipeline, 38 of which lay within the Asselby to Aberford pipeline. The report (OA North 2007a) recommended further work in the Asselby to Aberford pipeline, including eight open-area excavations, and 11 watching brief areas.

2 METHODOLOGY

2.1 WRITTEN SCHEME OF INVESTIGATION

2.1.1 Following a request from Laing O'Rourke, Written Schemes of Investigation (WSI), outlining methodologies designed to mitigate the impact on archaeological remains arising from the construction of the pipeline were produced for different elements of the below-ground archaeological works. Some were specific to a particular location, while others dealt with global investigations, such as the area excavations (OA North 2007b), and Watching Brief (OA North 2008a). The Phase 2 Evaluation was covered under the terms of the WSI for the area excavations and the Phase 1 Evaluation (OA North 2007a). All works undertaken complied with the terms of the relevant WSI.

2.1.2 The overall aim of the mitigating works was to provide an appropriate, specialist response to known or newly discovered archaeological remains during the course of the construction of the pipeline, in order to assist the client in the planning and construction of the pipeline. Specific objectives were as follows:

- to gather sufficient information to establish the extent, condition, character and date, as far as circumstances permit, of any archaeological features and deposits within the areas of investigation;
- to locate, sample excavate and record any archaeological remains revealed;
- to locate, recover, identify, and conserve, as appropriate, any archaeological artefacts revealed;
- to locate, recover, assess and analyse, as appropriate, any palaeoenvironmental, palaeoeconomic and organic remains revealed;
- to recommend measures for preservation *in situ* of archaeological, palaeoenvironmental, palaeoeconomic and organic remains, where revealed, wherever feasible and desirable;
- to test the results of previous, non-intrusive surveys (including the results of geophysical survey, plotting of aerial photographs, fieldwalking, field reconnaissance, desk-based assessment and palaeoenvironmental assessment);
- to compile an appropriate report/publication; and
- to produce a paper and digital archive, for deposition in the appropriate repositories.

2.2 METHODOLOGY

2.2.1 The prerequisite for any below-ground archaeological work, including the Watching Brief, was a topsoil strip, under archaeological supervision. During the Watching Brief the strip was monitored in all plots of high and medium archaeological potential, and in some plots of low archaeological potential (*Appendix 2*).

2.2.2 The excavation of the pipe trench itself was not monitored, as there was no archaeological benefit. The methodology used to cut the pipe trench did not leave clean sections, and permission for an archaeologist to enter the cutting to clean the sections was not forthcoming from the Main Works Contractor, on Health and Safety grounds.

2.2.3 The normal working methodology for the topsoil strip involved the removal of topsoil, using back-acting, tracked excavators fitted with smooth-faced ditching buckets, to subsoil depth, but not necessarily to a level where archaeology would survive. Where an archaeological horizon was not encountered, however, an apparent absence of archaeological features cannot be interpreted as evidence of actual absence. The main strip, during the Watching Brief, occupied approximately one third of the easement. Bulldozers were then used across the remaining width to push the topsoil into a continuous bund up to 3m in height and occupying approximately 10m of one side of the working width. In total, the area stripped in this manner comprised around 33m of the 43m-wide easement, as that under the bund was not stripped.

2.2.4 Where mitigation by archaeological excavation was required, the detailed strategy for this was determined in consultation with WYAAS/NYHET (as appropriate). Examination of features concentrated on recovering the plan and any structural sequences. A sampling policy was instigated, with the phasing of the site the principal objective. All discrete features (postholes, pits) were sampled by hand excavation, except where their common, or repetitious, character suggested that they were unlikely to yield significant new information. At least 10% of all linear features (ditches *etc*) were excavated within the bounds of an open-area excavation, with each section typically 1m in length. The same amounts were excavated of the more important features revealed during the Watching Brief, although a smaller percentage (at least one slot) was excavated through linear features of lesser value revealed by the Watching Brief, such as post-medieval field boundaries. A tenth of the total area of bulk horizontal deposits was normally excavated by hand, after which the remainder was removed by machine.

2.2.5 All artefacts were retained for processing and analysis. Samples for environmental analysis and scientific dating were taken where suitable material was encountered.

2.2.6 Recording took place according to the normal principles of stratigraphic excavation. The stratigraphy was always recorded, even when no archaeological deposits were identified.

2.2.7 Context sheets approved by the county archaeological curators were used for written field records; these were in a format acceptable to the *Institute for Archaeologists*. A unique alpha-numeric project code was applied to all records. All archaeological features were accurately located on a site plan and recorded by photographs, scale drawings and written descriptions sufficient to permit the preparation of a detailed archive and report on the material. The trench location, as excavated, was accurately surveyed, tied into the WGS84 GPS co-ordinates datum and located on an up-to-date 1:1250 OS map base.

2.3 ARCHIVE

2.3.1 A full archive, produced to professional standards, will be prepared, in accordance with

current English Heritage guidelines (English Heritage 1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (Walker 1990) upon completion of the project. 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. The archive for the archaeological work undertaken at the site will be deposited with the nearest museums (West Yorkshire: Leeds Museum; North Yorkshire: York Museum) which meet Museums and Galleries Commission's criteria for the long-term storage of archaeological material (MGC 1992). This archive can be provided in the format recommended by English Heritage's Centre for Archaeology, both as a printed document and on computer disks as ASCII files (as appropriate). Except for items subject to the Treasure Act and to landowner consent, all artefacts found during the course of the project will be donated to the receiving museum.

2.3.2 A synthesis (in the form of the index to the archive and a copy of the publication report) will be deposited with the appropriate Historic Environment Record. A copy of the index to the archive will also be available for deposition in the National Monument Record in Swindon.

3 SUMMARY OF RESULTS

3.1 INTRODUCTION

3.1.1 The following section provides details of the results of all those sites and excavations where further analysis has been recommended. This includes all the area excavations, together with two sites, 19-5 and 20-4, where the outcomes of the fieldwork and post-excavation assessments of the Evaluation and the Watching Brief have shown a level of significance warranting analysis. The sites are described in order, from east to west (Fig 1).

3.2 SITE 1

3.2.1 The open-area excavation, Site 1, was located in Plot 1-4 in the parish of Newland, centred on NGR 468752 425694 (SE 68752 25694; Fig 1), and measured 95 x 35m. Prior to excavation, the desk-based assessment (NSMR MNY 10092; NAL 2006a) had identified ridge and furrow across the area, and the geophysical survey (Bartlett 2006) had indicated significant potential. The first stage of the below-ground evaluations (OA North 2007a, Trenches 2 and 3) confirmed the results of the geophysical survey, and revealed three ditches, from which Iron Age pottery was recovered.

3.2.2 The area excavation exposed one corner of a square or rectangular enclosure, consisting of a large ditch (***1506***; Fig 2) with a distinct V-shaped recut (***1512***), and several internal features. Three smaller ditches, one of which was parallel to the western edge of the enclosure, and a small number of pits and postholes outside the enclosure, were also apparent. A series of furrows truncated the enclosure and its associated features. In total, 54 pottery sherds were recovered (*Sections 4.5 and 4.6.3*). These, along with a copper-alloy decorative object (*Section 4.9*) and a fragment of beehive quern stone (*Section 4.4.3*), have allowed the enclosure and the associated features to be provisionally dated to the Iron Age/Romano-British period.

3.2.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 1 appears in Table 1. Broadly, the stratigraphic units consisted of 0.25–0.4m of topsoil over 0.05–0.1m of relict ploughsoil, beneath which was alluvium. Only two main periods of activity were observed on this site: Iron Age/Romano-British and medieval/post-medieval. The earlier period has been sub-divided into two phases.

Contexts by Context Type	
Deposits	146
Cuts	59
Groups	10
Total	215
Contexts by Feature Type	
Pits	6
Ditches	46
Furrows	15
Natural features/deposits	1
Layers	1
Finds	Iron Age and Romano-British pottery, bone, stone objects, iron objects and daub
Environmental Samples	6 (bulk)
Graphic Archive	
Digital photographs	65 images (272MB)
Number of colour slide films and approximate number of images	5/170
Number of black-and-white films and approximate number of images	5/170
Number of plans	2
Number of sections	40

Table 1: Quantification of the archive for Site 1

3.2.4 ***Iron Age/Romano-British Period:*** the earliest feature in the stratigraphic sequence was a ditch (***1447***; Fig 2), which had been cut by another shallow ditch (***1449***), both aligned approximately north/south. This in turn was cut by the eastern element of the enclosure ditch (***1506***), which enclosed a shallow, curvilinear ditch, ***1455***. Ditch ***1449*** contained pottery of Iron Age/Romano-British date (*Sections 4.5 and 4.6.3*).

3.2.5 Only 21m of enclosure ditch ***1506*** were visible, as it had been recut by ***1512,*** which also contained Iron Age and Romano-British pottery (*Sections 4.5 and 4.6.3*). The recut extended 30m south-east to north-west before turning through 90º towards the south-west and continuing for a further 13m. Parallel with the western side of the enclosure, and 2.8m west of it, was another ditch (***1507***) and its recut (***1513***). Neither of these contained any artefacts, but their alignment indicated that they were contemporary with the enclosure ditch.

3.2.6 The second phase of early activity comprised two ditches (***1508*** and ***1509***), aligned north-east/south-west, largely to the west of the enclosure. Ditch ***1509*** truncated ditches ***1513*** and ***1512***. No artefacts were recovered from this phase.

3.2.7 Several pits (***1308***, ***1310***, ***1325***, ***1327***, ***1329*** and ***1335***), which contained no datable material, have been assigned to this period on the grounds that they are typical features of the Iron Age. The pits were dispersed, with a small cluster towards the north-east corner of the site. A curvilinear ditch (***1360***), with both termini present, has also been allocated to this period; its relationship with ditch ***1509*** is unclear.

3.2.8 ***Medieval/Post-medieval Period:*** a series of five shallow furrows, aligned east/west, and 7m apart, extended across the whole length of the excavated area. These represent the ridge and furrow identified in the desk-based assessment (NSMR MNY 10092; NAL 2006a). One furrow contained a residual sherd of Iron Age pottery (*Section 4.5*).

3.2.9 ***Archaeological Potential:*** the site is fairly simple in its stratigraphy, although some analysis to clarify relationships will be beneficial to maximise an understanding of the site, and to place it within its landscape, together with scientific dating of the site. An understanding of the significance of the finds and palaeoenvironmental information, will help to provide a full picture of the activity represented.

3.3 SITE 2

3.3.1 This area of open excavation was located in the parish of Little Fenton, in Plot 16-9, centred on NGR 452242 434709 (SE 52242 34709), and covered an area 120 x 35m (Fig 1). Prior to the excavation, the desk-based assessment (MON 1318591; NAL 2006a) had identified ridge and furrow over the area, and the geophysical survey (Bartlett 2006) had also indicated significant features. Trenches 11 and 12, in the Phase 1 Evaluation (OA North 2007a), were positioned to test the geophysical anomalies. The features revealed were not a good match for the interpretations provided by the geophysical survey, but both trenches were relatively rich in archaeological finds and features, and 118 pottery sherds were collected from the fills of 13 features (*Section 4.6.4*). The results of the Evaluation indicated an Iron Age presence in the vicinity and suggested concentrated domestic activity in the late Romano-British period.

3.3.2 The excavation revealed a large number of ditches and discrete features. Despite the lack of structural evidence their layout implies a 'ladder' settlement, which seems to have been realigned more than once. More than 500 sherds of mostly Romano-British pottery (*Section 4.6.4-6*) and over 1000 fragments of animal bone, including a cow and a sheep burial (*Section 4.16.10*), were recovered. A neo-natal burial (*Section 4.15*) in one of the ditches (***2341***) at the far western end of the excavation led to an extension of the area examined of 14 x 9m, but no further human remains were uncovered. Despite a lack of clear structural evidence, the character and density of the features and finds from this site suggest fairly extensive and long-lived Romano-British settlement that may have had its roots in the Iron Age.

3.3.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 2 appears in Table 2. The overburden was topsoil, over a relict ploughsoil, which overlay alluvium. Concentrated activity was only identified for the Romano-British period, although a few stray medieval/post-medieval finds were recovered.

Contexts by Context Type	
Deposits	293
Cuts	192
Groups	45
Total	530
Contexts by Feature Type	
Pits	32
Ditches	42
Postholes	12
Natural features/deposits	4
Layers	23
Burials	1
Stakeholes	2
Foundation trench	1
Drains	3
Finds	Iron Age, Romano-British, medieval and post-medieval pottery, Romano-British building material, bone, stone objects, flint, copper-alloy object, iron nail, shale, iron slag and post-medieval clay pipe
Environmental Samples	54 (bulk)
Graphic Archive	
Digital photographs	271 images (771MB)
Number of colour slide films and approximate number of images	19/646
Number of black-and-white films and approximate number of images	19/646
Number of plans	108
Number of sections	125

Table 2: Quantification of the archive for Site 2

3.3.4 ***Iron Age/Romano-British Period:*** there are at least two major phases of the settlement (Fig 3), which was certainly inhabited in the Romano-British period, and many features have been dated by artefacts, principally pottery (*Section 4.6.4-6*), to the later third to fourth century AD. Disentangling the settlement phases is, however, problematic, due to the homogeneous composition of the deposits filling the features, which often make it impossible to reconstruct the inter-relationships reliably. Only a rudimentary attempt at phasing has been made at this assessment stage.

3.3.5 Over most of the site, the linear features of, probably, the settlement's earliest phase shared the same general north-west/south-east or south-west/north-east alignments (unshaded in Figure 3). Major north-west/south-east ditches ***2547***, ***2341=2340*** and ***12005*** defined a boundary or trackway that formed the principal axis of the ladder settlement, appended to which were fields and enclosures formed by, slightly less substantial, south-west/north-east ditches (***2348***, ***2347***, ***12039***, ***2343***, ***2309=2322*** and ***2334***). In the upper portion of the single fill of ditch ***2341***, a neo-natal burial (***2498***; *Section 4.15*) was discovered, probably marking the final abandonment of the ditch. Similarly, a sheep/goat burial was placed at the terminus of ditch ***2547***. In the eastern third of the site, a later ditch (*Section 3.3.6*), which formed the south-western side of an enclosure, was created along the line of axial ditch (***2341=2340***), removing all trace of it. During Phase 1, within this part of the site, a large open expanse seems to have existed to the north of the principal axis. Similarly, at the western extreme of the site, a large north/south ditch (***2767=2815***) truncated ditch ***2341=2340***, apparently forming a second phase of settlement (*Section 3.3.6*). However, as ditch ***2341=2340*** did not continue beyond ditch ***2767=2815*** to the west, it may safely be assumed that an earlier precursor to ***2767=2815*** had been established during Phase 1. This precursor would have been coterminous with the western extent of the ladder settlement and probably formed a major axis in, what is likely to be, an extensive system of land allotment, that has yet to be revealed and surveyed (see also ditch ***1173***, Trench 10b, Phase 1 Evaluation (OA North 2007a)).

3.3.6 In the north-eastern part of the site, the features constituting a second major phase of settlement shared the same general alignment as the Phase 1 features (*Section 3.3.5*). However, in the western half of the site, the alignment changed, the ditches there being either orientated north/south or east/west (Fig 3). Two large, conjoined enclosures, formed by ditches ***2767=2815***, ***2321*** and ***12008***, were superimposed over the earlier ladder system, although occasionally they retained some of its principal elements (*Section 3.3.5*). The larger of these occupied the entire western two-thirds of the site, continuing beyond it to the south-west and north. Ditches sub-divided this enclosure (***2355***, ***2370***, ***2540 2793 2362 2346***, ***2345*** and ***2344***), the latter three extending to the south, presumably externally. The second, smaller enclosure occupied the north-eastern part of the site, that had been vacant during Phase 1 (*Section 3.3.5*). This sub-rectangular enclosure, bounded by ditch ***12008***, was sub-divided into a series of smaller cells by south-west/north-east aligned ditches ***2339***, ***2338*** and ***2337***. The ditch that formed the southern side of the enclosure extended beyond the site to the east, suggesting the continuation of activity in this direction, although evidence for this was not revealed by the Watching Brief during pipeline construction (*Appendix 2*).

3.3.7 Many small discrete features (scoops, pits, postholes *etc*) were distributed widely across the site (Fig 3), some of which having relationships with ditches, allowing them to be assigned to one or other of the principal phases of settlement. Occasionally, features can be dated by the artefacts or, potentially, by the organic material they contained. Others, being devoid of material, cannot be closely dated, although it is assumed that they belong to this broad phase of Iron Age/Romano-British activity.

3.3.8 ***Medieval/Post-medieval Period:*** despite the apparent ridge and furrow noted by the desk-based assessment, no features *per se* have been assigned to this period, but a few stray finds were identified within the upper fills of Romano-British features ***12008*** and ***2347***.

3.3.9 ***Archaeological Potential:*** the site has complex stratigraphy, which represents elements of a significant settlement, including both human and animal bones. As such, it has considerable potential for further analysis, to clarify relationships between individual features and to improve the understanding of the stratigraphical and chronological development of the site. The size of the finds assemblage and the quality of the palaeoenvironmental material indicate that a picture of activity in the settlement can be gained.

3.4 SITE 17-3

3.4.1 The open-area excavation, Site 17-3, lay in the parish of Sherburn in Elmet, in Plot 17-3, centred on NGR 450702 434927 (SE 50702 34927; Fig 1), and measured 60 x 30m (Fig 4). Before excavation, the geophysical survey (Bartlett 2006) had revealed an anomaly interpreted as a circular feature, which was targeted by Trench 14 of the Phase 1 Evaluation (OA North 2007a). That trench revealed six linear features, at least one of which appeared to equate with the anomaly.

3.4.2 The purpose of the open-area excavation was to investigate the form and extent of the concentration of features found by the Evaluation. Initially, an area 40 x 30m was stripped of topsoil; this was extended by a further 20m to the south, within the pipeline easement, once the density of archaeological features became apparent. Large numbers of ditches were exposed, which seem to indicate two principal Iron Age/Romano-British phases, comprising boundary features/trackways, enclosures and the remains of two houses. Small quantities of Iron Age/Romano-British pottery (*Sections 4.5 and 4.6.7*), flint (*Section 4.3*) and animal bone (*Section 4.16*) were recovered which, together with a rotary quern stone fragment (*Section 4.4.2*) and the general character of the features, confirm an Iron Age/Romano-British date for activity at the site. A single sherd apparently of Anglo-Scandanavian pottery (*Section 4.7.4*) was also recovered from ditch ***12009*** and, although this may be intrusive, it does possibly demonstrate some later activity at the site, as do the few medieval/post-medieval pottery sherds (*Section 4.7*) retrieved from the tops of features.

3.4.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 17-3 appears in Table 3. The excavation area was covered by topsoil over a relict ploughsoil, which overlay alluvium. Only one chronological period was apparent, the Iron Age/Romano-British: this has been sub-divided into two major phases.

Contexts by Context Type	
Deposits	150
Cuts	104
Groups	35
Total	289
Contexts by Feature Type	
Pits	1
Ditches	32
Postholes	9
Layers	6
Roundhouses	2
Enclosures	2
Finds	Iron Age, Romano-British and medieval pottery, bone, flint, iron objects and stone objects
Environmental Samples	29 (bulk)
Graphic Archive	
Digital photographs	18 images (51MB)
Number of colour slide films and approximate number of images	7/238
Number of black-and-white films and approximate number of images	7/238
Number of plans	63
Number of sections	62

Table 3: Quantification of the archive for Site 17-3

3.4.4 ***Iron Age/Romano-British Period:*** the first phase of activity comprises a south-east/north-west-aligned trackway, defined by parallel ditches (***8254***, ***8344***, ***8271***, ***8421***, part of ***12009*** and ***8255***), that formed the primary axis for what was probably a ladder settlement. It is apparent from the inter-relationships between different elements of the trackway that it was maintained for a prolonged duration, with ditches being periodically recut and re-established in slightly different locations. Other, generally, south-west/north-east-aligned, less extensive ditches (***8259***, ***8258***, ***11007***, ***8269*** and ***8268***) extended from the trackway, forming folds or enclosures along it.

3.4.5 The second principal phase of activity at the site comprises the superimposition of a large, probably rectangular, enclosure, defined by ditch ***8253***, onto the Phase 1 trackway, so that the eastern side of the enclosure corresponded to the eastern side of the trackway, following it on the same south-east/north-west alignment. In the north and south, ditch

8253 returned to the west and the enclosure continued beyond the site boundary in this direction, truncated by the track of the York and North Midland Railway of 1840 (MON 137335; NAL 2006a). Within the enclosure, overlying trackway ditch ***8254***, was a roundhouse with a diameter of 10m, evidenced by ring gully ***8262***. The gully had been partially removed by an area of modern disturbance, but appears to have had an entrance within the eastern part of its circuit. Lying outside of the enclosure to the north-east was a second ring gully (***8266***), with a diameter of 12m, indicating the position of a second roundhouse, also with an eastern entrance.

3.4.6 A scatter of discrete features and short lengths of ditches were identified over the whole of the site. Some of these (*ie* ***8291***, ***8263*** and ***8314***) truncated the ditches of the trackway or the enclosure and, as such, probably belong to the second phase of activity. Others had no such relationship and could feasibly belong to either of the settlement phases.

3.4.7 ***Archaeological Potential:*** the site is complex and has at least two clear phases, which would benefit from analysis, to clarify relationships and characterise function. It would also be beneficial to subject key features to scientific dating, to allow the various phases of the site to be placed in a regional context. The site will allow comparison with other similar sites in Yorkshire.

3.5 METAL-DETECTOR SURVEY PLOTS 18-3 TO 18-9

3.5.1 A metal-detector survey was undertaken within the pipeline easement where this passed through Plots 18-3 to 18-9 inclusive (Fig 1). These lay in the parish of Barkston Ash, between NGR 448885 435160 and 447871 435950 (SE 48885 35160 and SE 47871 35950). The survey was required because of the supposed close proximity of this part of the pipeline route to the medieval battlefield of Towton (NAL 2007g).

3.5.2 ***Methodology:*** the 35m wide pipeline easement was sub-divided into four transects of equal width, indicated by survey-located pennants. Each transect was then walked by a metal detectorist, who swept the topsoil for finds as they progressed. Any signal was investigated by hand, using a trowel. Any finds that resulted were issued with a unique identiying number and placed in marked bags. The finds were then located in three dimensions by instrument survey and collected.

3.5.3 ***Results:*** the finds recovered during the metal-detector survey (discussed within *Sections 4.3 and 4.9-4.12*), included worked flint, copper-alloy, silver, iron and lead objects and industrial waste. However, there was scant evidence for military activity within the assemblage recovered, only a single possible dagger chape (*Section 4.9.3*) having any potentially martial connotations.

3.5.4 ***Archaeological Potential:*** the potential of the finds to contribute to any further programme of analysis has been considered within the relevant finds reports (*Sections 4.3 and 4.9-4.12*). In summary, it must be concluded that the metal-detector survey can contribute little to the debate on the exact location of the Battle of Towton, other than by means of negative evidence.

3.6 SITE 18-5

3.6.1 The open-area excavation, Site 18-5, in the parish of Barkston Ash, in Plot 18-5, was centred on NGR 448608 435392 (SE 48608 35392; Fig 1), and measured 72 x 35m. Prior to excavation, the desk-based assessment identified cropmarks forming an enclosure (NSMR MNY 10814; NAL 2006a), and the geophysical survey (Bartlett 2006) found anomalies which were confirmed by the Phase 1 Evaluation (OA North 2007a, Trenches 19a–19c). These trenches revealed three ditches containing artefacts which suggested relatively concentrated Romano-British activity.

3.6.2 The area excavation exposed the majority of a 'clothes-line' enclosure, measuring *c* 40m square, along with a possible internal structure (***7540***) represented by a number of pits and postholes. Several furrows were also exposed. Almost 500 fragments of animal bone, (*Section 4.16*), some of which showed signs of burning, and 16 sherds of pottery (*Section 4.6.7*) were recovered from the fills of the ditch and some of the postholes. Initial assessment of these has suggested probable Romano-British domestic activity.

3.6.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 18-5 appears in Table 4. The overburden across the site consisted of 0.3m of topsoil and 0.03m of relict ploughsoil, which overlay Magnesian Limestone. Iron Age/Romano-British and medieval/post-medieval activity has been identified on this site.

Contexts by Context Type	
Deposits	51
Cuts	32
Groups	7
Total	90
Contexts by Feature Type	
Postholes	18
Ditches	3
Furrows	9
Finds	Romano-British and post-medieval pottery, bone, lead, chert, copper-alloy object and shell
Environmental Samples	29 (bulk)
Graphic Archive	
Digital photographs	28 images (80MB)
Number of colour slide films and approximate number of images	3/102
Number of black-and-white films and approximate number of images	3/102
Number of plans	15
Number of sections	27

Table 4: Quantification of the archive for Site 18-5

3.6.4 ***Iron Age/Romano-British Period:*** a single large boundary ditch (***7507***), aligned north-east/south-west, was the earliest feature identified. This was cut by ditch ***7596***, which formed the south and east side of a square enclosure. The western corner was formed by ditch ***7511***. Ditch ***7596*** was the only feature to contain datable artefacts: six sherds of Romano-British pottery (*Section 4.6.7*). Within the enclosure, 18 postholes indicated a possible structure (***7540***).

3.6.5 ***Medieval/Post-medieval Period:*** the only medieval artefact from this site was a lead button, recovered from the subsoil (*Section 4.11.1*). However, nine, parallel, potentially medieval furrows were exposed. These were aligned north-east/south-west, and were 8m apart. One produced two pieces of post-medieval pottery (*Section 4.7*) and a copper-alloy object (*Section 4.9, Table 16*). The upper fill of the enclosure ditch (***7596***) also contained seven sherds of post-medieval pottery.

3.6.6 ***Archaeological Potential:*** the stratigraphy at this site is relatively simple, but will nevertheless bear a little further analysis to clarify key relationships. Scientific dating would be useful to establish the relative contemporaneity or otherwise.

3.7 SITE 18-10

3.7.1 The open-area excavation, Site 18-10, in the parish of Barkston Ash, in Plots 18-9 and 18-10, was centred on NGR 447878 435951 (SE 47878 35951; Fig 1)), and measured 72 x 35m. Before the excavation, cropmarks were identified in the area by the desk-based assessment (NSMR MNY 10770; NAL 2006a), and the geophysical survey (Bartlett 2006) indicated a number of unknown features. The geophysical anomalies were targeted by Trenches 22 and 23 of the Phase 1 Evaluation (OA North 2007a) and were revealed as substantial ditches and two pits.

3.7.2 The area excavation exposed three sides of a single enclosure ditch (Fig 6; ***7779***) with a number of large, apparently associated, external pits (***7832***). Of the 51 pottery sherds recovered, 44 have been provisionally dated to the Romano-British period and provide the most likely date for the enclosure and its associated features.

3.7.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 18-10 appears in Table 5. The overburden consisted of topsoil, over relict ploughsoil, which in turn overlay Magnesian Limestone. Two periods of activity were apparent at this site: Iron Age/Romano-British and medieval/post-medieval.

Contexts by Context Type	
Deposits	61
Cuts	24
Groups	3
Total	88
Contexts by Feature Type	
Pits	13
Ditches	2
Natural features/deposits	4
Layers	3
Finds	Iron Age and Romano-British pottery, iron nail and an iron button
Environmental Samples	6 (bulk)
Graphic Archive	
Digital photographs	21 images (31MB)
Number of colour slide films and approximate number of images	2/68
Number of black-and-white films and approximate number of images	2/68
Number of plans	19
Number of sections	19

Table 5: Quantification of the archive for Site 18-10

3.7.4 ***Iron Age/Romano-British Period:*** a single large ditch (***7779***) was revealed, creating three sides of an enclosure. Disuse and abandonment of the enclosure occurred in the Iron Age/Romano-British period, indicated by three sherds of pottery from the fills of the ditch, and 41 sherds found within a discrete deposit (***7795***) in the upper fills of the ditch (*Section 4.6.7*). The enclosure had no internal features, but outside its western corner were 13 circular pits (***7832***), of different sizes, that are likely to have been associated with it. A single iron nail, possibly of Romano-British date, was found within the subsoil (***7751***, *Section 4.10.1*).

3.7.5 ***Medieval/Post-medieval Period:*** a hedge and shallow ditch (***7835***), probably post-medieval in date and forming a field boundary, were removed at the start of the excavation. These cut the enclosure ditch (***7779***), and one of the pits forming the group ***7832***. A single iron button, from the subsoil, was the only post-medieval find (*Section 4.10.1*).

3.7.6 ***Archaeological Potential:*** the stratigraphy of this site is simple, but some further analysis, combining information from the finds and environmental assemblages, would be beneficial, as would scientific dating, to establish the position of the site within the local chronological sequence.

3.8 SITE 18-11A

3.8.1 The open-area excavation, Site 18-11A, in the parish of Barkston Ash, in Plot 18-11, was centred on NGR 447225 436256 (SE 47225 36256; Fig 1), and measured 66 x 35m. The desk-based assessment had identified a substantial 'clothes-line' enclosure from cropmarks (NSMR MNY 10770; NAL 2006a), which was also apparent from the geophysical survey (Bartlett 2006). Trenches 29 and 30, of the Phase 1 Evaluation, were located over the cropmarks and geophysical anomalies and confirmed their archaeological significance (OA North 2007a).

3.8.2 The area excavation at this site was designed to investigate the enclosure and its interior further, and provide information to date it. Although there were few internal features, more of the enclosure was revealed and the excavated segments showed a substantial ditch that had apparently been repeatedly maintained. Very few finds were recovered from this site, but a Romano-British date seems most likely.

3.8.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 18-11A appears in Table 6. The overburden consisted of 0.2–0.3m of topsoil and 0.05–0.2m of relict ploughsoil, beneath which lay Magnesian Limestone. No closely datable artefacts were recovered, and the site has been placed within the Iron Age/Romano-British period on the basis of the typology of the enclosure itself.

Contexts by Context Type	
Deposits	56
Cuts	26
Groups	7
Total	89
Contexts by Feature Type	
Pits	2
Ditches	7
Layers	3
Natural features/deposits	1
Finds	Pottery, copper-alloy object, flint and bone
Environmental Samples	7 (bulk)
Graphic Archive	
Digital photographs	43 images (125MB)
Number of colour slide films and approximate number of images	6/204
Number of black-and-white films and approximate number of images	6/204
Number of plans	14
Number of sections	19

Table 6: Quantification of the archive for Site 18-11A

3.8.4 ***Iron Age/Romano-British Period:*** in the south-west corner of the excavated area, a complex series of intercutting ditches (***8135***, ***8188***, ***8196***, ***8195***, ***8194***, ***8143*** and ***8146***; Fig 7) was identified (Plate 1), which appeared to have been remodelled on several occasions. This possibly created a gap in a boundary ditch identified from cropmarks in the desk-based assessment (NSMR MNY 10770; NAL 2006a). One of the ditches (***8188***) contained the only artefacts recovered by the excavation: a single sherd of undatable pottery; one piece of flint (*Section 4.3.2*); and a copper-alloy object (*Section 4.9*). An enclosure, formed on its west and south sides by a large ditch (***8187***), which had been recut (***8190***; Plate 2), clearly cut this early activity. Inside the enclosure, a small pit (***8116***) was exposed, which contained a large quantity of animal bone (*Section 4.16*), suggesting its use as a rubbish pit.

3.8.5 ***Archaeological Potential:*** the majority of the site's stratigraphy is fairly straightforward, with the exception of the features in the south-west corner, which will warrant futher analysis. The results from the excavation are, however, regionally important, and need to be placed in their landscape context. Given the few finds recovered from the complex

features, there will be considerable reliance on the environmental samples for radiocarbon dates to provide a chronological sequence for the site.

3.9 SITE 18-11B

3.9.1 The open-area excavation, Site 18-11B, in the parish of Barkston Ash, in Plot 18-11, was centred on NGR 447150 436291 (SE 47150 36291; Fig 1), and measured 46 x 35m. The desk-based assessment had identified an area of ridge and furrow (NSMR MNY 10789; NAL 2006a) and a circular cropmark, with a discrete central circular feature (NSMR MNY 10770; NAL 2006a). The Phase 1 Evaluation targeted the cropmark, (OA North 2007a, Trench 31) and revealed two shallow ditches.

3.9.2 To attempt to date and verify the character of the cropmark, the whole area occupied by it was stripped and recorded. The feature (Fig 8; ***8017***) revealed was sub-circular in plan, consisting of an inner and outer ditch. Both ditches were incomplete and very shallow, and no datable finds were recovered. The features revealed by Trench 31 (OA North 2007a) were shown to be two of a series of furrows that ran across the site.

3.9.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 18-11B appears in Table 7. The overburden removed by the excavation consisted of 0.2m–0.3m of topsoil and 0.05m of relict ploughsoil, over Magnesian Limestone. The undatable nature of the site's features means that it has not been assigned to a period at this stage; however, medieval/post-medieval activity was apparent.

Contexts by Context Type	
Deposits	10
Cuts	7
Groups	2
Total	19
Contexts by Feature Type	
Ditches	2
Furrows	6
Layers	3
Finds	none
Environmental Samples	2 (bulk)
Graphic Archive	
Digital photographs	20 images (57MB)
Number of colour slide films and approximate number of images	2/68
Number of black-and-white films and approximate number of images	2/68
Number of plans	4
Number of sections	5

Table 7: Quantification of the archive for Site 18-11B

3.9.4 The dominant feature, ***8017***, with its sub-circular, concentric, but exiguous ditches, is potentially prehistoric in date. It had an external diameter of 18.8m and an internal diameter of 11.5m.

3.9.5 ***Medieval/Post-medieval Period:*** a series of six shallow, parallel furrows was exposed, aligned north/south, at intervals of roughly 3.5m; these furrows truncated feature ***8017*** and confirm the ridge and furrow identified by the desk-based assessment (NSMR MNY 10789; NAL 2006a). Although the furrows may have a medieval origin, the close interval between them suggests that a post-medieval date is more likely.

3.9.6 ***Archaeological Potential:*** the simplicity of the remains at this site leaves little potential for further analysis, although scientific dating may place it with a local and regional chronological context.

3.10 SITE 19-5

3.10.1 The area known as Site 19-5, in the parish of Saxton with Scarthingwell, in Plot 19-5, was centred on NGR 445940 436723 (SE 45940 36723; Fig 1), and covered 9050m² (Fig 9). Before intrusive investigation, the desk-based assessment had identified a series of cropmarks (WSMR 1094; NAL 2006a) indicating enclosures, trackways, field boundaries and pits, together with an area of ridge and furrow (NSMR MNY 10789; NAL 2006a). The methodology adopted at this site involved two elements of intrusive works, *ie* two trenches (AA11 and AA12) from the Phase 2 Evaluation (*Sections A1.6.3 and A1.6.4*), and area excavation during construction (see *Section A2.5.8*). Both elements have contributed to the results presented here.

3.10.2 The trenches and excavation confirmed the archaeological significance of the cropmarks and extended the area of known archaeological remains. One square enclosure was revealed, and the corner of another with outlying ditches. The only artefacts found were two fragments of bone, precluding close dating of the features.

3.10.3 ***Results:*** a listing of the archive of material and data collected at Site 19-5 appears in Table 8. The overburden removed by the excavation consisted of 0.3m of topsoil over relict ploughsoil, over Magnesian Limestone. In the absence of any dating evidence, no period has been assigned to the features revealed by the excavation. The enclosures and outlying ditches are, however, typical of the Iron Age.

Contexts by Context Type	
Deposits	38
Cuts	25
Groups	6
Total	69
Contexts by Feature Type	
Pits	1
Ditches	6
Layers	6
Natural features/deposits	1
Finds	Animal bone
Environmental Samples	3 (bulk)
Graphic Archive	
Number of plans	19
Number of sections	22

Table 8: Quantification of the archive for Site 19-5

3.10.4 A four-sided enclosure was exposed in the north-east corner of the area investigated, covering an area of 783m², and consisting of three large ditches (***10223***, ***10224*** and ***12027***). It appeared likely that ditches ***10223*** and ***10224*** formed the same feature, while ***12027*** was a later recut. No internal features were observed. To the south-west of this enclosure, the north-east corner of another, larger, rectilinear enclosure was revealed. The sides of this were formed by ditches ***12040*** and ***12026***, which truncated several earlier ditches (***5646***, ***5648***, ***5620***, ***5641***, ***5647*** and ***12041***), and later, an entrance was inserted in this north-eastern corner of the enclosure. Three outlying ditches (***10183***, ***10256*** and ***10255***), to the north-west of both these enclosures, may represent field boundaries or stock management features associated with them.

3.10.5 ***Archaeological Potential:*** the stratigraphic sequence is relatively straightforward, apart from the complex of ditches at the north-east corner of the largest enclosure. The results of the excavation are significant at a regional level, and should be placed in its chronological and landscape context. Scientific dating will be key to this.

3.11 SITE 20-2

3.11.1 The open-area excavation, Site 20-2, in the parish of Saxton with Scarthingwell, in Plot 20-2, was centred on NGR 445003 437458 (SE 45003 37458; Fig 1), and covered an area 100 x 26m. Before the excavation, cropmarks, interpreted as trackways and enclosures by the desk-based assessment (NSMR MNY 10645; NAL 2006a), had also appeared in the results from the geophysical survey (Bartlett 2006), and were verified by Trenches 39, 40 and 41, of the Phase 1 Evaluation (OA North 2007a), with a high density of features and artefacts.

3.11.2 The area was excavated to provide a more complete plan of the archaeological features and investigate their date and character. The excavated area was dominated by a possible trackway that consisted of intermittent areas of metalling ***7087*** (Fig 10; Plate 3) and a pair of parallel ditches (***7003*** and ***7004***). An isolated linear ditch (***7007***), and an elongated U-shaped enclosure (***7006=7019***), which post-dated the trackway, were also uncovered. The majority of the large quantity of pottery sherds recovered (*Section 4.6.8*), along with a shale gaming counter (*Section 4.4.5*) from ditch ***7004***, are Romano-British in date.

3.11.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 20-2 appears in Table 9. The overburden removed by the excavation consisted of 0.2–0.4m of topsoil and 0.17m of relict ploughsoil, which overlay Magnesian Limestone. Two periods of activity were apparent, *ie* Iron Age/Romano-British and post-medieval. The Iron Age/Romano-British period was divided into two phases.

Contexts by Context Type	
Deposits	53
Cuts	30
Groups	6
Total	89
Contexts by Feature Type	
Pits	1
Ditches	5
Natural features/deposits	4
Layers	7
Road surface	3
Finds	Iron Age/Romano-British and post-medieval pottery, bone, shale, flint and post-medieval building material
Environmental Samples	29 (bulk)
Graphic Archive	
Digital photographs	39 images (59MB)
Number of colour slide films and approximate number of images	6/204
Number of black-and-white films and approximate number of images	6/204
Number of plans	17
Number of sections	21

Table 9: Quantification of the archive for Site 20-2

3.11.4 ***Iron Age/Romano-British Period:*** the first phase is represented by the east/west trackway, with its two large parallel ditches (***7003*** and ***7004***; Fig 10), approximately 4.5m apart, and an intermittent metalled surface. A single piece of flint (*Section 4.3.2*) was found on one of the sections of metalling ***7087***, with a further piece of flint and a shale gaming counter (*Section 4.4.5*) found in ditch ***7004***. Both of the ditches (***7003*** and ***7004***) contained Iron Age/Romano-British pottery (*Sections 4.5and 4.6.8*). A single shallow ditch (***7007***), towards the eastern end of the excavation, which did not contain any datable artefacts but respected the position of the trackway, also belongs to this phase.

3.11.5 The second phase consists of a shallow U-shaped enclosure, formed by ditches ***7006*** and ***7019***, which cut the northern ditch (***7003***) of the trackway. The enclosure, which measured 23.7 x 4m, was aligned east/west and contained Romano-British pottery (*Section 4.6.8*).

3.11.6 ***Post-medieval Period:*** a single intrusive piece of post-medieval building material was recovered from the terminus of ditch ***7019*** (*Section 4.14*).

3.11.7 ***Archaeological Potential:*** the stratigraphy of this site is relatively simple and warrants only limited further analysis, in conjunction with the finds and environmental samples. This would provide a firmer chronological sequence.

3.12 SITE 20-4

3.12.1 Site 20-4 straddled the division of the pipeline between the Asselby to Aberford Pipeline and the continuation to Pannal (Fig 1). The archaeological features would appear to be elements of a coherent landscape and thus have been treated as a single entity, despite their technical separation between the two pipelines. The majority of the site lay in the Aberford to Pannal pipeline, but the information relating to both pipelines is included here in a single narrative. For clarity, however, the same information is repeated in the reports for each element (see OA North 2010, *section 3.2* and figs 2 and 3). The eastern section of Site 20-4, on the Asselby to Aberford Pipeline, in the parish of Saxton with Scarthingwell, was centred on NGR 444665 437544 (SE 44665 37544). This site was not treated as an open-area excavation. Prior to intrusive works, the desk-based assessment had identified a series of cropmarks indicating enclosures and field boundaries (WSMR 1094; NAL 2006a) that were also recorded by the geophysical survey (Bartlett 2006). Prehistoric pottery was recovered during the fieldwalking survey (NAL 2007d). Three phases of intrusive works contributed to the final results: five trenches were excavated during the Phase 2 Evaluation, one (AA6) on the Asselby to Aberford pipeline (OA North 2010), and four (AP15–AP18) on the Aberford to Pannal continuation; a watching brief was maintained across the entire site; and additionally, at the double-ditched enclosure defining the western limit of the site, a set–piece excavation was undertaken.

3.12.2 The cropmarks (WSMR 1094; NAL 2006a) were confirmed by Trenches AA6 and AP15–AP18 (OA North 2010) and the Watching Brief, which also uncovered features not identified by cropmarks. Elements of two enclosures were exposed, at opposing ends of Plot 20-4 (Fig 11), with several field boundaries between them. The enclosure at the eastern end was D-shaped, while the western example (in the Aberford–Pannal section) appeared to be double-ditched. Twelve sherds of pottery, dated to the Iron Age/Romano-British period (*Sections 4.5 and 4.6.9*), were recovered from a ditch (***8665***) and a pit (***8652***).

3.12.3 ***Results:*** a listing of the archive of material and data collected from the excavation of Site 20-4 appears in Table 10. The stratigraphy of the site generally consisted of 0.3m of topsoil over relict ploughsoil, which overlay Magnesian Limestone. A single period of activity was observed in the eastern half of this site, *ie* Iron Age/Romano-British.

Contexts by Contect Type	
Deposits	106
Cuts	59
Groups	15
Total	180
Contexts by Feature Type	
Pits	2
Ditches	13
Layers	15
Natural features/deposits	5
Postholes	1
Furrows	1
Finds	Iron Age and Romano-British pottery, flint, and an iron nail
Environmental Samples	25 (bulk)
Graphic Archive	
Digital photographs	47 images (*c* 65MB)
Number of plans	55
Number of sections	51

Table 10: Quantification of the archive for Site 20-4

3.12.4 ***Iron Age/Romano-British Period:*** both the eastern and western enclosures (*Section 3.12.2*) yielded Iron Age/Romano-British finds. The D-shaped enclosure at the eastern end of Plot 20-4 comprised three ditches (Fig 11; ***10251***, ***10257*** and ***12068***), with ditches ***10251*** and ***10257*** respectively recut by ***10259*** and ***12042***. The eastern side (***10259***) also truncated the southern recut (***12042***), and there was an entrance on the west between ditches ***10257*** and ***12068***. The only find to come from this enclosure was a sherd of Iron Age pottery from ditch ***12068*** (*Section 4.5*).

3.12.5 Several boundary ditches were associated with both the enclosures. Two field boundaries (***10258*** and ***8545***) respectively lay to the south and west of the D-shaped enclosure, while west of it was a single field boundary (***12069***), with recuts (***8560*** and ***8554***) at its southern end.

3.12.6 ***Archaeological Potential:*** this site was not stratigraphically complex, but a more precise chronology may be achieved when analysing the stratigraphy in conjunction with the finds and environmental samples. The site is regionally significant, and should be set in its

landscape context.

4 ASSESSMENT

4.1 SUMMARY OF STRATIGRAPHY

4.1.1 In total, ten archaeological sites (Table 11) were investigated and recorded by open-area excavations during the course of pipeline construction. Of these, eight were identified by the Phase 1 Evaluation (OA North 2007a) and two by the Watching Brief (*Appendix 2*). The results of the excavations are reported in detail within *Section 3*, although the number of contexts, listed in Table 11, provides an approximate index to relative archaeological complexity (more comprehensive quantifications for each site are given in Tables 1-10, *Section 3*). These sites are primarily characteristic of an agricultural landscape of probable Iron Age/Romano-British date, comprising enclosures and systems of land allotment, associated with the evidence for settlement and other activity. The stratigraphy almost entirely comprises cut features (ditches, pits, structural ring gullies *etc*), the only positive features being the fragmentary remnants of metalling layers for trackways. Many of the ditches, being of massive construction, were well preserved, despite truncation. These sites are of regional significance, both individually and collectively, as components of a greater landscape (see site-specific statements of potential within *Section 3* and the over-arching consideration set out in *Section 5*).

Site	Date of Features	Number of Contexts
Site 1	Iron Age/Romano-British; medieval/post-medieval	215
Site 2	Iron Age/Romano-British	530
Site 17-3	Iron Age/Romano-British	289
Site 18-5	Iron Age/Romano-British; medieval/post-medieval	90
Site 18-10	Iron Age/Romano-British; medieval/post-medieval	88
Site 18-11A	Iron Age/Romano-British	89
Site 18-11B	Not closely dated; medieval/post-medieval	19
Site 19-5	Iron Age/Romano-British?	69
Site 20-2	Iron Age/Romano-British	89
Site 20-4	Iron Age/Romano-British	180

Table 11: Summary of stratigraphy

4.1.2 No stratigraphic evidence for activity dating to the earlier prehistoric period has been identified by the Assessment, although a sparse background scatter of struck lithics (*Section 4.3*) demonstrates that the landscape was, to some degree, inhabited at this time. The stratigraphic evidence from the medieval and post-medieval periods is restricted to agricultural features (ridge and furrow, field drains and field boundaries), accompanied by the occasional intrusive find in the top of earlier features, or residual finds within the ploughsoil (*Section 4.2–14*). Whilst this evidence is not without some significance, the vast majority of the archaeological features identified by the Assessment seemingly date to the

Iron Age/Romano-British period, and this will form the focus of any future programme of Analysis (*Sections 5* and *6*).

4.2 ARTEFACTS

4.2.1 In total, 1183 artefacts were recovered from the pipeline sites, the majority being Romano-British pottery. Other material consisted of flint, worked stone, pottery, clay tobacco pipes, metalwork, glass, and ceramic building material (Table 12). In addition, a single human skeleton was recovered, and an assemblage of animal bone, weighing 6kg, and representing 4076 individual specimens. Although the artefactual assemblage has a broad date range, from the prehistoric to the late post-medieval periods, the vast majority were recovered from Romano-British deposits.

Type	*Total*
Flint	15
Worked stone	10
Prehistoric pottery	78
Romano-British pottery	860
Post-Roman pottery	28
Clay tobacco pipe	9
Copper alloy	20
Iron	65
Lead	5
Industrial residues	6
Glass	2
Ceramic building material	85
Total	***1183***

Table 12: Artefact totals by type

4.3 FLINT

4.3.1 ***Quantification:*** in total, 15 pieces of worked flint and chert were recovered over the course of the archaeological works. Thirteen were collected from five of the excavated sites (Sites 2, 17-3, 18-5, 18-11A, and 20-2; *Section 3*), one during the Watching Brief (*Appendix 2*), and one during the Metal-detector Survey (*Section 3.5*). The assemblage comprised one flake, one blade, four flake or blade fragments, two possible core fragments, two end scrapers, one side and end scraper, one side scraper, one multiple-platform core, one pick and one narrow blade microlith.

4.3.2 ***Assessment:*** ten of the lithic artefacts were effectively or completely unstratified, being recovered from the topsoil, subsoil, a modern plough furrow, or entirely unstratified deposits; as such, they contribute little to the understanding of the sites from which they were recovered, other than to indicate a background of prehistoric activity. This includes

the Mesolithic pick (*unstratified*/17000), one of the end scrapers (*unstratified*/16020), multi-platform core ***8250***/12018 and side and end scraper ***8250***/12018 (Site 17-3). Two finds (side scraper ***8319***/12016 and microlith ***8333***/12021) were also recovered from Site 17-3 (the lower fill of a ditch, and a layer respectively); in addition, one (blade ***8100***/12004) was recovered from the single fill of a ditch at Site 18-11A, and two (end scraper ***7051***/7017 and possible core fragment ***7085***/7016) from different ditch segments at Site 20-2. These artefacts, almost certainly residual, are of little significance for the dating and interpretation of the deposits from which they came.

4.3.3 Few of the lithic artefacts are closely datable, and eight of the 15 pieces comprise unmodified flakes, fragments, and a flake core. Blade ***8100***/12004 is entirely unmodified and could date to any time between the early Mesolithic period and the end of the Neolithic. Microlith ***8333***/12021 can be dated to the late Mesolithic period, with directly comparable forms excavated from well-stratified contexts of this date both locally (Young 1987, 400) and in the south of Britain (Jacobi *et al* 1981, 33). The four scrapers could be of any date in the same general time frame, although for any particular type, some dates are more likely than others. Side scrapers, such as ***8319***/12016 for example, can potentially be dated to any time between the Mesolithic period and the Late Bronze Age, but are notably common in the earlier Neolithic, and uncommon in Mesolithic contexts (Butler 2005, 105; 125). End scrapers, on the other hand, were produced in Britain throughout later prehistory, from the Mesolithic period to the Bronze Age, and are the type most commonly found (Young 1987, 54), as well as being the most varied in size and form (Butler 2005, 50). A large, invasively retouched side and end scraper from layer ***8250*** retains cortex on the dorsal face, which facilitates handling, and is of a type and form that can be slightly more accurately dated, to a range between the earlier Neolithic period and the Early Bronze Age; it is most likely to be of later Neolithic date (Butler 2005, 125).

4.3.4 The majority of the artefacts have been produced from adequate but fairly poor-quality stone, evidenced by flaws, pitting and other structural imperfections. A wide variety of raw materials is represented, including at least three distinct flints and three cherts. This suggests that maximum use was being made of local, secondary, or derived, sources of stone such as the various diamicts, along with beach and river pebbles (Young 1987, 86; Roberts *et al* 2001, 6). The deep reddish-brown flint from which microlith ***8333***/12021 was produced is of a much finer quality than most of the other artefacts, but is also likely to be from a derived source, as flint with this distinctive colouration can be found in the boulder clays that mantle the coastal margins of north-east Yorkshire (Waddington 2004, 3).

4.3.5 ***Potential***: the flint and chert assemblage from the excavations is relatively small, largely unstratified, and generally undiagnostic of any specific prehistoric period. It therefore offers little potential for any further interpretative work, although a brief summary should be included in any publication.

4.4 Worked Stone

4.4.1 ***Quantification:*** in all, ten fragments of worked stone were recovered from the Asselby to Aberford Pipeline route (Table 13). All were stratified. The assemblage comprised a narrow range of object-types, which have been grouped by function.

Site	Context	OR	Category
Site 1	***1490*** (group ***1512***)	2003	Burnt cobbles
Site 1	***1496*** (group ***1512***)	2002	Flat millstone
Site 2	***2361*** (group ***2321***)	1217	Whetstone
Site 2	***2433*** (group ***12008***)	1119	Small sandstone ball
Site 2	***2453*** (group ***2547***)	1118	Flat fragment sandstone
Site 2	***2707*** (group ***2540***)	1120	Lignite bangle fragment
Site 2	***2732*** (fill of ***2731***)	1117	Flat fragment sandstone
Site 2	***2792*** (group ***12007***)	1121	Whetstone
Site 17-3	***8478*** (group ***8359***)	13003	Beehive quern
Site 20-2	***7073*** (fill of ***7074***)	7019	Small stone/shale disc – gaming counter?

Table 13: Worked stone by site and context

4.4.2 ***Assessment:*** the millstone was recovered from Site 1, and the upper stone of a beehive quern from Site 17-3 (*Section 3.4*). The beehive quern is a common native type, with its origins lying in the Iron Age. The type has a long date range: in the North it came into use probably in the second century BC, and continued in use until at least the fourth century AD (Buckley and Major 1998). In the northern counties of Northumberland, Durham, and Yorkshire, such querns are widespread finds on sites from the second to fourth centuries AD (*ibid*). There are slight variations in form, which allow beehive querns to be grouped into three broadly defined types, although these are of little use for close dating. The geological source of the coarse, greyish sandstone from which the quern from Site 17-3 is made is yet to be established.

4.4.3 Although incomplete, the flat millstone from Site 1 (*Section 3.2*) is a typically Romano-British form, with a large central hopper, divided in two by a reinforcing rib, into which the spindle was set. These are thought to have emerged in the late first century AD, and to have been relatively common throughout the second century, declining rapidly from then on (Buckley and Major 1998).

4.4.4 Two whetstones were recovered, both from Site 2 (*Section 3.3*). They utilise a fine stone (source not determined as yet), are well-worn, and have clearly been used for sharpening blades.

4.4.5 A lignite bangle fragment of delicate form and small diameter was also recovered from Site 2 (fill ***2707*** of ditch ***2706***, in group ***2540***). A long-lived form, these are a common Romano-British type (Lawson 1976), a date supported by the ceramic evidence from the site. A shale disc from Site 20-2 (*Section 3.11*) has been interpreted as being a gaming counter. Several small fragments of micaceous siltstone from Site 2 are thin and even enough to be small fragments of stone roof tile. Lozenge-shaped stone tiles were found in great quantity at the villa site of Dalton Parlours, near Wetherby (*pers obs*), in West Yorkshire. None of the other fragments of worked stone are of particular interest.

4.4.6 The burnt and cracked river-worn cobbles from Site 1, deposit ***1490*** (group ***1512***), are not in any way worked. They appear, however, to have been exposed to considerable heat, perhaps implying their use in heating water.

4.4.7 ***Potential:*** the potential of this assemblage is largely confined to the beehive quern and the whetstones. The millstone should be placed in its regional context, thus enhancing its contribution to the interpretation of the site from which it was recovered, and an understanding of the regional trade networks that brought it to the site. Similarly, identification of the geological origins of the whetstones will enhance an understanding of regional, and perhaps even international, trade patterns.

4.5 PREHISTORIC POTTERY

4.5.1 ***Quantification:*** in total, 78 sherds of hand-made pottery were assessed, from Sites 1, 2, 17-3, 18-5, 18-10, 20-2 (*Section 3*) and the Phase 1 (OA North 2007a) and Phase 2 (*Appendix 2*) evaluations, representing an estimated 72 vessels. In general terms, the fabric groups reflect the characteristics seen more widely in later prehistoric and Roman-period hand-made pottery assemblages, with well-defined and distinctive inclusions in moderate to common or dense proportions within fine clay bodies.

4.5.2 ***Methodology:*** the classification adopted for the purpose of this assessment was based on that devised by Didsbury (2006). In the present case, the basic distinction between sherds tempered with calcareous inclusions (types H1 and H4), those with quartz, quartzite and rock fragments (type H2), and those with mixed inclusions (H3) has been enhanced by identifying the principal constituents of the temper (calcite, quartz, rock fragments, *etc*). The notes in the catalogue prepared for the archive give basic details of the character of the fabrics.

4.5.3 ***Assessment:*** the number of diagnostic sherds in the assemblage was very low, with datable forms (as identified by Rigby 2004) particularly scarce. One sherd (*unstratified*/16032) may date to around the time of the Roman Conquest (R Leary *pers comm*) but others were of forms with a broad date range.

4.5.4 ***Potential:*** the small size of the assemblage and the limited number of diagnostic sherds has restricted the potential of this group of material to contribute to the research aims of the project. Reviewed alongside other classes of ceramic vessel, however, it has some potential to contribute to the dating of sites and features from which it derives. It also can add to any overall discussion of pottery use, and the extent to which this reflects changes in the relationships between users of hand-made 'native'-type pottery and the users of more conventionally Romanized wheel-thrown types, over time. In addition, it will contribute to any discussion of perceived variations through time in sources of supply.

4.6 ROMANO-BRITISH POTTERY

4.6.1 ***Quantification:*** in total, 860 sherds of Romano-British pottery were recovered from the Asselby to Aberford Pipeline during the excavations (Sites 1, 2, 17-3, 18-5, 18-11A, 20-2 and 20-4; *Section 3*) and the Watching Brief (*Section A2.7.8-10*). No diagnostic Romano-British pottery was recovered from the Phase 2 Evaluation (*Appendix 1*), although there were 108 sherds recovered from the eastern Phase 1 Evaluation trenches (OA North 2007a).

4.6.2 ***Methodology:*** the pottery was examined in context groups and a basic archive catalogue prepared in accordance with the *Guidelines* of the Study Group for Romano-British Pottery (Darling 2004). The fabrics were recorded in broad groups and their source suggested where appropriate. Reference was made to the National Fabric Collection where appropriate (Tomber and Dore 1998), and details of fabric variations were recorded where appropriate. Forms were described and details of decoration noted. The pottery has been assessed in terms of the fabrics and forms present, evidence for chronology, trade and status, and its potential for further study. Where possible, spot dates were provided for individual vessels and, by association, for the contexts in which they occurred.

4.6.3 ***Assessment:*** 17 sherds of Romano-British pottery were recovered from Site 1 (*Section 3.2*), including part of the rim of a Dales ware jar of the third to mid-fourth century (Tyers 1996, 190), five abraded grey ware (GRB) G3 sherds of similar date, and a GRB4 rim from a Holme-on-Spalding large jar, a type often with a lug handle, dating to the late third to mid-fourth century. A GRB4 basal sherd resembles products of the Holme-on-Spalding kilns in fabric, and can thus be attributed the same date range. A scrap of shell-tempered ware from this site may be Iron Age or Roman in date.

4.6.4 The Phase 1 Evaluation (OA North 2007a) at what became Site 2 (*Section 3.3*) produced 101 sherds of predominantly late-Roman pottery from Trench 12, and a further seven from Trench 11. Of these, some 35% by weight were Dales ware, while 40% were East Yorkshire calcite-gritted ware, in forms dating to the fourth century, including classic Huntcliff jars dating around AD 360 or later (Tyers 1996, 78). Around 15% of the sherds were Crambeck grey ware, rare in this area before the fourth century (Evans 1989, 72).

4.6.5 A few features at Site 2 contained earlier wares, including a samian base sherd, and three vessels of mid-second- to mid-third-century type, probably from the South Yorkshire kilns. A single Dales ware jar could fall within the later part of that date range, but could equally be later, as another Dales ware jar was associated with a Huntcliff vessel, demonstrating that small amounts of Dales ware were still in use in the area in the mid-fourth century. Sherds of a late hand-made fabric (Monaghan 1997, fabric B18), of Crambeck Parchment ware, and of late developed bead and flange bowls were also present, suggesting that some activity coninues into the late fourth-early fifth century.

4.6.6 The assemblage is characteristic of the pottery of the area in the mid- to late fourth century, with a small number of earlier types. Comparison with other sites in Yorkshire (Evans 2001) shows that Site 2 falls within the rural settlement group, although at this late date, the difference between the rural and urban sites is less pronounced (*ibid*). The assemblage was dominated by jars, as is usual in the late Roman North (*ibid*). Very few dishes and beakers were present, but 17% of the group was made up of deep bowls. This type seems to increase numerically over time in line with the wide-mouthed jars, tureen-like vessels, which perhaps were used to serve casserole-type food. The increase in wide-mouthed jars has been noted elsewhere in the region (Leary 2007a, 253) and the rise in bowls over dishes was also noted in late groups at West Moor Park, Armthorpe (Leary 2007b).

4.6.7 With the exception of Site 20-2 (*Section 3.11*), where a significant assemblage occurred (*Section 4.6.8*), smaller quantities of Romano-British pottery were recovered from the other area excavations. At Site 17-3 (*Section 3.4*), a rim sherd from a Huntcliff jar dates to

after *c* AD 360; 16 sherds of Romano-British pottery were recovered at Site 18-5 (*Section 3.6*). A ring-necked flagon (fabric FLB2) from the site is of late first- to mid-second-century date, and was found with a shell-tempered sherd in a fabric similar to early shell-tempered wares known in the Midlands (Tyers 1996, 192). Greywares from this site are likely to date broadly to the second century or later (GRB 1), but two rim sherds (GRB G2) probably date to the third, or first half of the fourth, century. A hand-made jar in a calcite-gritted fabric from Site 18-10 (*Section 3.7*) is of late Iron Age or early Roman date, and a single, small, indeterminate shell-tempered scrap was found at Site 18-11A (*Section 3.8*), but was not datable.

4.6.8 Site 20-2 (*Section 3.11*) produced 126 Romano-British sherds, of which 96 derived from a single GRB G2 Dales-type jar, which had been repaired with a lead cleat. The GRB G2 fabric can be given a date range in the third to mid-fourth century, although an earlier start date is possible (Halkon and Millett 1999, type J02). A Black Burnished (BB) ware 1 sherd from this site gives a *terminus post quem* for activity of *c* AD 120, but its thin wall compares best with jars of the third century and later, a sherd of which was also found. Two late BB1 jar sherds with obtuse lattice (Gillam 1970, nos 9 and 10) were also recovered. A cupped-rim jar in South Yorkshire greyware is a vessel form most common in the middle years of the third century (Leary *et al* 2008, 32). A GRB1 grooved flat rim bowl of the late second to mid-third century was identified, as was a GRB G3 jar base, similar to the West Yorkshire ware identified by Sumpter (1990), generally of third- to fourth-century date. Twelve sherds of Romano-British pottery were found in features at Site 20-4 (*Section 3.12*), none of which were closely diagnostic.

4.6.9 Eight Romano-British pottery sherds were found during the Watching Brief in Plot 16-10, of which five were from a Southern Spanish Dressel 20 olive oil amphora, imported from the mid-first to the third century. The remaining three were from the base of a jar in GRB G2, probably a Dales ware type or possibly an everted-rim jar. Both types have been found in association with pottery of the third and fourth century (Leary 2007a) and are probably broadly contemporaneous, although it is possible that production started earlier (Halkon and Millett 1999, type J02). The amphora sherds superficially indicate far-flung trading contact, but such vessels were often modified and reused (Van der Werff 2003).

4.6.10 ***Potential:*** much of the pottery is sparsely scattered through the sites, although that from Site 2 (*Section 3.3*), including the Phase 1 Evaluation Trenches 11 and 12 (OA North 2007a), and from Site 20-2 (*Section 3.11*) warrants analysis. This would permit comparison with other Romano-British rural settlements in the area, allowing the sites to be viewed within their regional context. The smaller assemblages from the other sites and trenches along the pipeline can play some part within any stratigraphic discussion.

4.6.11 The Dales-type jar in gritty GRB G2 from Site 20-2 is of regional significance and merits further fabric characterisation, since this fabric group has not previously been identified in this region in this form. Fabric analysis would contribute to an understanding of the trade in these Dales ware types. This group is particularly useful because it was associated with the dated BB1 jars.

4.7 Post-Roman Pottery

4.7.1 ***Quantification:*** 28 sherds of pottery, including two from the Phase 1 Evaluation (Trenches 9 and 12; OA North 2007a) (for comparative purposes), were assessed. The assemblage represents a maximum of 20 vessels in six identifiable ware-types.

4.7.2 ***Methodology:*** recording of the assemblage was in accordance with the guidelines laid out in Slowikowski *et al* (2001). The assemblage was quantified by three measures: number of sherds; weight; and vessel count, within each context. The ceramic data were entered on an *Access* database using fabric code names.

4.7.3 ***Assessment:*** the pottery is in a slightly abraded to abraded condition, with sherd sizes mostly below 20g. Only three vessels are represented by more than a single sherd. It ranges in date from the Anglo-Scandinavian to the early modern period (see Tables 14 and 15) and was recovered from eight separate find spots (Phase 1 Evaluation, Trenches 9 and 12 (OA North 2007a); and Sites 1, 2, 17-3, 18-5, 18-10, 18-11a and 20-2; *Section3*). The range of form types present is narrow: most vessels are various types of bowls, jugs and jars.

Ceramic period	Total sherds	Total vessels
Anglo-Scandinavian (late ninth–late eleventh century)	2	1
Medieval (twelfth–fifteenth century)	10	10
Post-medieval (late fifteenth–eighteenth century)	10	4
Early modern (eighteenth–twentieth century)	2	2
Unknown	4	3
Totals	28	20

Table 14: Pottery by ceramic period with total quantities by sherd and vessel count

Codename	Full name	Earliest date	Latest date	Total sherds	Total vessels
BERTH	Brown-glazed earthenware	1550	1800	2	2
BL	Black-glazed wares	1550	1750	8	2
MEDLOC	Medieval local fabrics	1150	1450	3	3
MISC	Unidentified types	400	1900	5	4
NGR	Northern Gritty ware	1170	1450	7	7
SLIP	Unidentified slipware	1650	1750	1	1
TORKT	Torksey-type ware	850	1100	2	1

Table 15: Pottery types with total quantities by sherd and vessel count

4.7.4 The single Anglo-Scandinavian vessel is a medium-sized jar of undiagnostic type, and was recovered from Site 17-3 (*Section 3.4*). The medieval assemblage, which derives from Site 1 (*Section 3.2*), Site 2 (*Section 3.3*) and Site 20-2 (*Section 3.11*), consists of ten vessels (Table 14), seven of them in Northern Gritty ware (Table 15), with forms including jars, jugs and two possible bowls (Vince and Young 2007). The remainder are probably from a

fairly local source.

4.7.5 The post-medieval material consists of four vessels, two in brown-glazed earthenware, and two in black-glazed earthenware (Table 14). The two mid-seventeenth- to eighteenth-century black-glazed earthenware cups, which derive from Sites 18-10 (*Section 3.7*) and 18-11A (*Section 3.8*), are remarkably similar and if they do not come from the same vessel must have been made by the same potter.

4.7.6 ***Potential:*** this is a small, diverse group of pottery from 16 different findspots. With the exception of the Torksey-type sherds, all of the pottery recovered is typical of the area in which it was found and none of the vessels are of note. There is thus little potential for further analysis. The early modern pottery could potentially be discarded, otherwise the assemblage should be retained. The remaining material can contribute to stratigraphic discussion.

4.8 Clay Tobacco Pipes

4.8.1 ***Quantification and Evaluation:*** two fragments of clay tobacco pipe were recovered from the upper fill of a ditch on Site 2. They comprise small and undiagnostic fragments of narrow-bore stem and, although they cannot be dated with any precision, it is likely that all are of later eighteenth-century or nineteenth-century date.

4.8.2 ***Potential:*** there is no potential for further analysis.

4.9 Copper Alloy

4.9.1 ***Quantification:*** in all, 20 fragments of copper alloy were recovered during the project, and of these, 15 were recovered by metal-detector from Section 18 (Plots 18-3 to 18-9; *Section 3.5*) and can therefore be regarded as unstratified. The remaining material came from four contexts, and the relict ploughsoils (Table 16).

Site	Context	OR	Quantity	Category
Site 1	***1489*** (group ***1512***)	2001	1	Spiral ferrule
Site 2	***2501*** (posthole ***2502***)	1115	1	Object
Site 18-5	***7501*** (furrow)	8012	1	Fragment
Site 18-5	***7503*** (subsoil)	8017	1	Button
Site 18-11A	***8100*** (group ***8188***)	12005	1	Fragment

Table 16: Stratified copper-alloy artefacts by site and context

4.9.2 ***Assessment:*** the stratified material was in fair to poor condition, and most of the surviving fragments were rather small. It has not been examined by x-radiography, but one object (spiral ***1489****/2001*) from Site 1 (*Section 3.2*) has been investigated while being conserved. One of five unstratified coins from the metal-detector survey is likely to be of Romano-British date; the others date to the post-medieval period and include a 1931 sixpence. A fragmentary enamelled object from Site 2 (*Section 3.3*) is also probably of Romano-British or medieval date, although it has not been definitively identified at this stage.

4.9.3 The other unstratified material collected by metal-detecting is in similar condition; it includes a number of obviously modern objects, but also part of a medieval buckle plate (or decorative chape).

4.9.4 ***Potential:*** these objects have some demonstrable potential to contribute to the dating of the contexts from which they derive, or, at a less precise level, of the sites on which they were found. It is, however, too small and disparate a group to add significantly to any discussion of activity on any of the sites. The conservation of spiral ***1489****/2001* has already added to an understanding of this enigmatic class of object, revealing resin between its turns.

4.10 IRON

4.10.1 ***Quantification:*** in all, 47 fragments of ironwork were recovered from the Asselby to Aberford Pipeline. Of these, 39 were recovered by metal-detector from Section 18 (Plots 18-3 to 18-9; *Section 3.5*) and can therefore be regarded as unstratified, as are four other finds from the relict ploughsoil at Site 18-10. Stratified material was recovered from five contexts at Site 1 (*Section 3.2*), Site 2 (*Section 3.3*), Site 17-3 (*Section 3.4*) and Phase 2 Evaluation Trench AA9 (*Appendix 1*, *Section A1.4.4*) (Table 17). During the Phase 1 Evaluation (OA North 2007a), seven fragments of ironwork were recovered from Trench 12, the precursor to Site 2.

Site	Context	OR	Quantity	Category
Site 1	***1489*** (group ***1512***)	12001	1	Object
Site 2	***2657*** (field drain)	1116	1	Nail
Site 2	***2705*** (fill of ditch ***2704***)	19005	1	Hob nail
Site 17-3	Ditch ***8253***	12014	1	Staple
AA9	***5615*** (furrow)	14007	1	Object

Table 17: Iron artefacts by site and context

4.10.2 ***Assessment:*** the stratified material was characterised by its poor condition, and the small size of most of the surviving fragments. It has not been examined by x-radiography, as it was not thought that this would be a particular aid to identification.

4.10.3 The unstratified material collected by metal-detecting is, for the most part, in similar condition, although it includes a number of obviously modern objects, including a large hook and attached chain which is clearly from agricultural machinery, and several fragments of cast-iron pipe.

4.10.4 ***Potential:*** the poor condition and fragmentary nature of the ironwork means that there is no potential for further analysis. However, the x-raying of a small group of artefacts should confirm their identification.

4.11 LEAD

4.11.1 ***Quantification:*** only four fragments of lead were recovered from the Asselby to Aberford Pipeline, and of these, only one (a button from the subsoil on Site 18-5; *Section 3.6*) was

stratified, while the remaining three (shot and a strip) were identified by metal-detector from Section 18 (Plots 18-3 to 18-9; *Section 3.5*), and can therefore be regarded as unstratified.

4.11.2 ***Assessment:*** the material was in good condition, and all of the fragments were relatively small. With one exception, all were shot or sheet metal, the only identifiable object being a rather poorly made button.

4.11.3 ***Potential :*** there is no potential for further analysis.

4.12 Industrial Residues

4.12.1 ***Quantification and Assessment:*** a small amount of industrial residues, six fragments, was recovered, all from Site 2 (*Section 3.3*), and a further six fragments were found by metal-detector in Section 18 (Plots 18-3 to 18-9; *Section 3.5*). It is likely that most of the material derives from ironworking. The assemblage is, however, small, although its distribution was concentrated at Site 2 and may suggest some industrial activity at this locale (see also *Section 4.17.8*).

4.12.2 ***Potential:*** there is no potential for further analysis.

4.13 Glass

4.13.1 ***Quantification and Assessment:*** two fragments of glass were recovered, both from Site 2 (*Section 3.3*). Both were stratified and are small body fragments, of post-medieval/modern date.

4.13.2 ***Potential:*** there is no potential for further analysis.

4.14 Ceramic Building Material

4.14.1 ***Quantification:*** in total, 85 fragments of ceramic building material (CBM) and other related materials, such as daub, were recovered from stratified contexts on the Asselby to Aberford Pipeline (Table 18).

4.14.2 Although the assemblage was recovered from stratified deposits, its size, degree of abrasion, and fragmentary nature suggests that it has been considerably disturbed since original deposition. All but four of the fragments derived from Site 2 (*Section 3.3*), where one context alone produced 14 fragments.

4.14.3 ***Assessment:*** most of the group is very worn, and in fragments often little larger than a few centimetres in maximum dimension. As a result, very little of the CBM can be further identified. There are, however, three fragments from Site 2 which probably represent *tegulae* and are most likely to be of Romano-British date, reflecting and reinforcing the conclusions drawn from other classes of find from the site. The fragments are, however, too small to reveal any other features of interest, such as signatures, stamps, or tally-marks. No other tile types were identified, either on Site 2, or anywhere else among the

assemblage, although it can be stated confidently that two fragments from Site 2 are recent in date.

4.14.4 The daub is similarly very fragmentary, and there is little evidence for the preservation of impressions of the wattle or lath framework on to which it might have been plastered. Few, if any, of the fragments carry impressions of grain, or other organic material, which might contribute to the palaeoecological understanding of the site.

4.14.5 ***Potential:*** the poor preservation of the assemblage means that it has no potential for further analysis, and cannot contribute to the further understanding of the sites from which it was recovered.

Site	Context	OR	Quantity	Comment
Site 1	***1337*** (group ***1509***)	2018	2	daub
Site 1	***1490*** (group ***1512***)	2017	1	daub
Site 2	***2315*** (group ***12005***)	1322	3	fragment
Site 2	***2318*** (group ***2321***)	1319	1	fragment
Site 2	***2327*** (group ***2348***)	1324	2	fragment
Site 2	***2353*** (pit ***2354***)	1315	1	daub
Site 2	***2358*** (group ***12005***)	1312	1	fragment
Site 2	***2359*** (group ***12008***)	1313	6	fragment
Site 2	***2360*** (group ***12005***)	1214	3	fragment
Site 2	***2410*** (group ***2338***)	1318	1	daub
Site 2	***2417*** (group ***12008***)	1317	6	tile
Site 2	***2417*** (group ***12008***)	1321	4	daub
Site 2	***2515*** (group ***2509***)	1107	3	daub
Site 2	***2543*** (pit ***2457***)	1184	4	fragment
Site 2	***2549*** (group ***12008***)	1215	1	fragment
Site 2	***2549*** (group ***12008***)	1323	1	daub
Site 2	***2560*** (group ***12008***)	1320	6	fragment
Site 2	**2565** (group ***12006***)	1316	1	*tegula*
Site 2	***2613*** (group ***12008***)	1216	1	fragment
Site 2	***2652*** (gully ***2653***)	16024	1	fragment
Site 2	***2695*** (group ***2321***)	1110	2	daub
Site 2	***2699*** (group ***12039***)	1109	1	daub
Site 2	***2705*** (fill of ***2704***)	1108	2	fragment
Site 2	***2707*** (group ***2540***)	1105	2	daub
Site 2	***2712*** (fill of ***2711***)	1111	6	daub
Site 2	***2713*** (group ***2321***)	1106	3	daub
Site 2	***2715*** (group ***2321***)	1114	3	fragment
Site 2	***2743*** (group ***2348***)	1113	14	daub
Site 2	***2748*** (group ***2347***)	1112	1	daub
Site 2	***2768*** (group ***12005***)	1124	1	*tegula*
Site 20-2	***7032*** (group ***7019***)	7011	1	fragment

Table 18: Ceramic building material by site and context

4.15 HUMAN BONE

4.15.1 ***Introduction:*** a single inhumation was discovered on the Asselby to Aberford Pipeline, a neonatal ditch burial of Roman date at Site 2 (*Section 3.3*). This inhumation underwent macroscopic osteological analysis.

4.15.2 ***Methodology:*** examination of the skeleton was conducted in accordance with nationally accepted guidelines (Mays *et al* 2004). This involved assessing the completeness and condition of the skeleton with particular reference to certain landmarks that may be used to establish biological parameters and explore health status.

4.15.3 ***Assessment:*** a neonatal skeleton (***2498***) was found within the single fill of ditch ***2400*** (part of group *2341*; Fig 3). The pottery from Site 2 suggests a Roman date for the site, probably during the second to fourth centuries AD. The burial of infants within ditches, postholes and pits has direct parallels with work previously conducted in this area (Brown *et al* 2007, 312) and is a well-recognised practice of this period.

4.15.4 ***Preservation and Completeness:*** the survival of the neonatal skeleton (Table 19) suggests that it was not subject to the same taphonomic processes as the inhumations on the Aberford to Pannal section of the pipeline (OA North 2010), where preservation was poor. Infant's and children's bones are smaller and less dense than adult bones and therefore survive less well when subject to the same processes of deterioration. The better preservation of this skeleton may be because it was buried in the fill of a ditch cut into alluvial clay rather than limestone.

Site	Skeleton	Preservation	Completeness	Age (years)	Sex	Time Period
Site 2	***2498***	Fair	60-70%	0-1	unknown	Roman

Table 19: Completeness, preservation, and antiquity of inhumation

4.15.5 The neonatal skeleton was aged 0–1 years, based on epiphyseal fusion. No teeth or mandible survived to corroborate this. No attempt was made to sex the neonatal skeleton, in accordance with accepted practice.

4.15.6 ***Potential:*** this burial cannot be used to comment on the wider settlement and environment. It can, however, be tied into recent work on burials of the same date conducted in this area, *ie* similar inhumations from the A1(M) road scheme (Boston 2007).

4.16 ANIMAL BONE

4.16.1 ***Introduction:*** a very small collection of animal bone was recovered from two trenches in the Phase 2 Evaluation (Table 20), weighing *c* 0.5kg. A single cattle bone from this assemblage was dated stratigraphically to the Iron Age, while the remainder derived from features that could not be closely dated. A second small collection of animal bone, weighing *c* 6kg, was recovered from Iron Age and Romano-British contexts at seven area excavations along the pipeline route (Table 21), from species including horse, cattle,

sheep/goat, pig and dog. A small assemblage of animal bone was also recovered from Trenches 11 and 12 (subsequently Site 2) in the Phase 1 Evaluation (OA North 2007a). The material was rapidly scanned to assess its condition and potential for further analysis.

Species	**Trench AA8**	**Trench AA9**	**Total**
Horse		2	**2**
Cattle	7	9	**16**
Pig	1	1	**2**
Sheep/Goat		4	**4**
Cattle/Red Deer		1	**1**
Sheep/Goat/Roe Deer		2	**2**
Medium Mammal		3	**3**
Large Mammal	9	8	**17**
Unidentified Mammal	12	18	**30**
Total identified to a species level	**8**	**16**	**24**
Total	**29**	**48**	**77**

Table 20: Phase 2 Evaluation: Number of Individual Specimens (NISP) by species

Species	**Site 1**	**Site 2**	**Site 17-3**	**Site 18-5**	**Site 18-10**	**Site 18-11 A**	**Site 19-5**	**Site 20-2**	**Total**
Horse	4	72	2		1		9		**88**
Cattle	26	221	8	27		9	22	5	**317**
Pig		83	1	2			6		**92**
Sheep/Goat	12	65	5	21	2			11	**115**
Sheep		8			2			0	**10**
Goat		3						12	**15**
Deer		3							**3**
Dog		14		2					**16**
Rabbit								4	**4**
Red Deer		1							**1**
Cattle/Horse		1					1		**2**
Cattle/Red Deer		51			1	7	2	1	**62**
Sheep/Goat/Roe Deer	1	17			14		1		**33**
Red/Fallow Deer		1							**1**
Medium Mammal	21	195	28	51	40	3	17	6	**361**
Large Mammal	90	756	38	48	15	61	67	12	**1087**
Small Mammal		1						2	**3**
Unidentified Mammal	48	1230	39	374	105			70	**1866**
Identified to a species level	**42**	**470**	**16**	**52**	**5**	**9**		**32**	**661**
Total	**202**	**2722**	**121**	**525**	**180**	**80**	**135**	**123**	**4076**

Table 21: Area Excavations: Number of Individual Specimens (NISP) by species; the cow and sheep/goat skeletons from Site 2 are counted as one NISP each

4.16.2 All of the material was grouped into the general phasing of the site. As such, the rabbit bones from Site 20-2 (*Section 3.11*), which is a Romano-British site, are highly likely to be of a later period.

4.16.3 ***Methodology:*** the material was identified using the reference collection held by OA North. All parts of the skeleton were identified where possible, including long bone shafts, skull fragments, all teeth and fairly complete vertebrae. Sheep/goat distinctions were attempted using reference material and Boessneck (1969), Kratochvil (1969), and Prummel and Frisch (1986).

4.16.4 For each species or species group, the following were recorded: the number of individual specimens (NISP); total number of fragments; preservation category; the number of measurable bones; the number of butchered bones; the number of mandibles or mandibular loose teeth from which the wear pattern could be described; and the number of bones from which the epiphyseal fusion state could be identified. NISP and the total number of fragments differ in that a NISP count joins archaeological breaks of the same bone and counts the bones as one NISP; the total number of fragments counts the number of bone fragments regardless of archaeological breaks. Tooth wear and fusion data are used to assess the age of death of the principal stock animals (cattle, sheep/goat and pig). Biometrical data are used to assess the size, and in some instances, the sex ratio of the principal stock animals. The preservation categories, listed below, provide a useful indicator of the general condition of the assemblage:

very poor: very fragmented bone with a highly eroded surface;

poor: bone with an eroded surface and with less than half the anatomical part present;

moderate: bone with approximately half the anatomical part present and with some erosion to the surface;

good: bone with an uneroded surface and with half or more than half of the anatomical part present;

very good: a complete, or near complete, bone with little or no erosion.

4.16.5 ***Quantification and Preservation:*** the total number of animal bones recovered from the Evaluation trenches was small (Table 20) and generally, the material identified to a species level was in poor condition. Typically, in such a small collection of bone, tooth wear, fusion, butchery and biometric information is small to non-existent.

4.16.6 The material identified to a species level from the Area Excavations was in a poor to good condition (Table 21). However, 110 of these fragments are associated with burials of a cow and a sheep/goat. The majority was fragmented, with 50% or less of the original bone present, and varying degrees of surface erosion.

4.16.7 The total number of Iron Age and Romano-British bones identifiable to a species level from each site was very small, although Site 2 (*Section 3.3*) produced slightly larger quantities (Table 22). Table 23 details the quantity of potential tooth wear, fusion, butchery and biometric data from the individual sites.

Preservation category	Very Poor	Poor	Moderate	Good	Very Good	**Total**
All bone	-	37	53	45	-	**135**

Table 22: NISP by preservation category (excluding loose teeth)

		Site 1	**Site 2**	**Site 17-3**	**Site 18-5**	**Site 18-10A**	**Site 18-11A**	**Site 19-5**	**Site 20-2**
Tooth wear	Cattle	1	15		1				
	Sheep/Goat		7		1				
	Pig		6						
Fusion	Cattle	2	50	1			4	8	
	Sheep/Goat	3	22	8					
	Pig		1						
Butchered	All Bone	1	14		1			1	
Measurable	All Bone	11	106	1	6	3	2	7	19

Table 23: Area Excavations: tooth wear, fusion, butchery and biometric data

4.16.8 ***Potential:*** the animal bone from Phase 2 Evaluation Trenches AA8 and AA9 has little potential for further analysis. However, these trenches were located *c* 250m to the north-west of Site 2 (*Section 3.3*), and this information has value if it were linked to the assemblage from this site.

4.16.9 Very small quantities of animal bone were recovered from the individual sites subject to the area excavation, which limits the scope of analysis. Site 2 produced the largest quantity, but the potential tooth wear and epiphyseal fusion data, which are used to produce age of death profiles of herds or flocks, are too few to be statistically valid. Similarly, butchery and biometric data are too small to give statistically valid conclusions about animal processing and animal sizes in the area during the Iron Age and Romano-British periods.

4.16.10 Full recording of the material would allow the animal bone data from the sites to be accessible for regional studies. There would be value if the two immature articulated animal burials, a Romano-British cow skeleton from the basal fill of pit ***2453*** (*Site 2*), and an undated sheep/goat, most likely sheep, from the only fill, ***2453***, of the adjacent terminal of ditch ***2547***, were to be fully recorded, with an assessment of their age at death, completeness, and depositional characteristics made. Full recording of the remainder of the material should allow the animal bone data from the sites to be accessible for regional studies.

4.17 Charcoal and Plant Remains

4.17.1 ***Introduction:*** 12 bulk samples were taken during the Phase 2 Evaluation trenching of the Asselby to Aberford pipeline (*Section A1.10.4-5*); a further 151 samples came from the area excavations (*Section 3*); and a single sample was retrieved during the Watching Brief (*Appendix 2*). All were assessed for their waterlogged plant remains (WPR), charred plant remains (CPR) and charcoal potential. The samples came mainly from ditches, and pits, from a fairly diverse range of soil types and landscapes, which may be reflected in the results. The plant and charcoal remains can provide information on activities and economic

practices at the sampling site, as well as an insight into the local agricultural environment and woodland resources, and how these may have changed over time. Many of the features from which samples have been assessed have been provisionally dated to the Iron Age/Romano-British period.

4.17.2 In accordance with the advice of the English Heritage Regional Scientific Advisor, an on-site programme of systematic sampling of all securely stratified contexts was implemented to eliminate the biases inherent in a strategy based on judgement alone, and to ensure that significant contexts were more reliably identified. Where dating by artefacts was insecure and/or where dating was likely to be a significant issue for the interpretation of the site, samples were also taken to allow the use of scientific methods, such as radiocarbon (C14) dating.

4.17.3 ***Methodology:*** in accordance with accepted professional guidelines (English Heritage 2002), bulk, 40-litre samples were taken, or the entire contents of contexts, the volumes of which were less than this. Ten litres of each sample (or the whole context if less than this volume) were processed initially, and assessed using hand flotation. The flots were collected on a 250µm mesh, air-dried and examined under a binocular microscope. The contents of each flot, such as cereal grains, cereal chaff, weed seeds and molluscs, were quantified, as was material such as coal, clinker, bone, mortar, and ceramic building material (CBM). The presence of modern contaminants, such as roots, insect eggs and modern seeds, was noted and a catalogue prepared. The remains were quantified on a scale of 1–4 where 1 is rare (one to five items), 2 is frequent (less than 50 items), 3 is common (51–100 items) and 4 is abundant (greater than 100 items).

4.17.4 Following the initial assessment, the remaining volume of all those samples was processed where the potential for CPR/WPR, charcoal analysis, mollusc analysis and radiocarbon dating had been identified. The remainder of those samples in which finds had been identified was also processed at this stage.

4.17.5 Any charcoal fragments within the bulk samples were quantified and provisionally identified where possible. In particular, the presence of any short-lived wood species, such as *Alnus glutinosa* (alder), *Corylus avellana* (hazel) or *Betula nana* (birch) (diffuse porous wood), was noted, as was the presence of other charred material, such as Poaceae (grass family) stems or tuber fragments, for the purpose of providing suitable material for dating.

4.17.6 ***Assessment:*** 78 samples contained some charred plant material, and 52 of these contained rare to abundant cereal grains and/or cheff. The remaining 26 contained charred weed seeds, stem fragments or tuber/rhizome fragments, but no evidence of cereals.. A number of samples contained charred tubers, rhizomes and stem fragments. Those samples with frequent to abundant remains of at least one category (*ie* cereals, cereal chaff or weed seeds) included ditch and pit fills (***1493*** (ditch ***1512***), ***2476*** (ditch ***2322***), ***2549*** (ditch ***12008***), ***2699*** (ditch ***12039***), ***2705*** (ditch ***2704***), ***2713*** (pit ***2714***), ***2723*** (pit ***2722***), ***2725*** and ***2755*** (both pit ***2724***), the first of these being from Site 1 and the remainder from Site 2 (*Sections 3.2 and 3.3*)), and a posthole fill, ***7572*** (group ***7540***), from Site 18-5 (*Section 3.6*). Cereals represented were: *Triticum* sp (wheat), *Hordeum* (barley) (including a possible naked variety in ***7572***, the fill of a posthole in group ***7540*** (Site 18-5) and *Avena* sp (oat), with varying amounts of cereal chaff, and the seeds of weeds typically found on

cultivated or waste ground. The preliminary results suggest that many of these assemblages are likely to represent crop-processing waste. A fill, ***2755***, of ditch ***2756*** (Site 2) contained frequent Fabaceae (pea family) seeds, including *Pisum sativum*, which may represent an early example of the cultivated garden pea.

4.17.7 One fill (***1495***) from ditch ***1512***, Site 1 (*Section 3.2*), contained abundant WPR, including the seeds from woody species such as *Betula* (birch), *Sambucus* (elder), and *Rubus* (brambles), which may have been growing adjacent to the ditches. In addition, ***7795***, the uppermost fill of ditch ***7779*** (Site 18-10; *Section 3.7*), did not appear to contain any charred cereal/cereal waste, but, instead, a number of different charred weed seeds, including *Galium* sp (bedstraw), *Fumaria* sp (fumitory), and *Prunella* (selfheals). It is likely that these two assemblages represent material other than crop-processing waste.

4.17.8 Sixteen of the samples contained abundant well-preserved charcoal remains, sufficient for further analysis. Many of these came from ditch and posthole fills and appeared to be quite varied in content. They are likely to represent domestic wood fuel, which was thrown into the ditches as waste. Several of the posthole fills (*eg* ***7515*** and ***7517*** from the group ***7540*** at Site 18-5; *Section 3.6*), however, were dominated by *Quercus* (oak) charcoal, which may have derived from material used in the construction of buildings. The fill of pit ***2724***, from Site 2 (*Section 3.3*), also contained hammerscale/slag fragments, so that any surviving charcoal remains from it may indicate spent metalworking fuel. Fifty-one samples contained material suitable for providing radiocarbon dates, such as bone fragments, charred plant material, and/or charcoal from short-lived wood taxa. Four samples contained abundant mollusc shells, which may provide useful information about local environmental conditions.

4.17.9 Seven of the samples from the Phase 2 Evaluation contained some CPR, including cereals and weed seeds, but none contained enough to warrant further analysis. Seven of the samples contained WPR, but these were likely to be modern contaminants. Two samples contained abundant charcoal fragments: one from fill ***5569*** of ditch ***5570*** in Trench AA6 (*Appendix 1, Section A1.7.4*), with a mixed assemblage of *Fraxinus excelsior* (ash) and *Alnus/Corylus* (alder/hazel); and the other from fill ***5614*** of ditch ***5613*** in Trench AA9 (*Appendix 1, Section A1.4.4*), dominated by *Quercus* (oak) charcoal. The diversity between the two assemblages may reflect different sets of activities. Alternatively, they may indicate either spatial or chronological variations in the nature of the material gathered from local woodland. These same two samples contained material suitable for radiocarbon dating.

4.17.10 The single sample retained during the Watching Brief, from pit fill ***10157*** in Plot 9-3 (*Appendix 2*, *Section A2.3.15*), contained a few waterlogged weed seeds, which are likely to be modern, and no charred plant remains. It did, however, contain frequent fragments of diffuse porous wood charcoal, which would provide material for radiocarbon dating, if necessary.

4.17.11 ***Potential:*** 11 of the samples taken from the area excavations contained frequent to abundant CPR, which would provide information on local agrarian regimes and ground conditions. One contained abundant WPR, which may enhance an understanding of local environmental conditions. A further 16 samples contained well-preserved charcoal

assemblages, which may provide information on the specific selection of particular species, and/or the nature and availability of material from the local woodland. Material suitable for dating was present in just over a third of the samples.

4.17.12 Although the excavations revealed only a limited number of different types of feature, the scale of the sampling regime allowed for the recovery of material from ditch/field systems over a significantly large geographical area and from several different types of soil. The palaeoenvironmental evidence, together with any dating evidence, should provide very important data on the nature of these landscapes and how they evolved and were utilised over time.

4.17.13 All 11 samples containing frequent to abundant charred plant remains (CPR) would warrant further analysis, as does the sample containing abundant waterlogged plant remains (WPR). In addition, samples containing rare to frequent CPR would be worthy of some reassessment to augment this data. The 16 samples containing abundant charcoal remains should be able to provide further information on species. These recommendations are in addition to those made following the Phase 1 Evaluation (OA North 2007a).

4.17.14 The survival of WPR and CPR in samples from the Phase 2 Evaluation trenches is extremely limited, although, two samples contained well-preserved charcoal assemblages. These may provide information on the species selected for specific purposes, and/or the nature and availability of material from the local woodland. They could also provide material suitable for dating. If these can be shown to fill a spatial or chronological gap, then they would warrant further study. The poor preservation of the assemblages of CPR/WPR in the other samples collected during the Phase 2 Evaluation, and also during the Watching Brief, means that they will not warrant further examination, although the sample from the Watching Brief does contain material suitable for radiocarbon dating.

4.18 CONSERVATION

4.18.1 Most of the assemblage is well-preserved and in good condition. X-ray is recommended for the ironwork in order to confirm identifications.

4.19 STORAGE

4.19.1 Once the post-excavation analysis is complete, the whole project archive, which will include records, plans, both black and white and colour photographs, artefacts, ecofacts and sieved residues, will be prepared following the guidelines set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC 1984, Conservation Guidelines 3) and *Guidelines for the preparation of excavation archive for long-term storage* (Walker 1990).

4.20 PACKAGING

4.20.1 The finds assemblage is currently well-packed, and will require no specialist packaging. Box lists are prepared and will be updated from the database when the identification and analysis of objects is complete.

5 STATEMENT OF POTENTIAL

5.1 INTRODUCTION

5.1.1 Assessment of the individual sites along the length of the pipeline has made it clear that many of them will not only sustain further analysis to the benefit of the local archaeological record, but that three of them will individually add to the body of knowledge at a regional level: Sites 2 (*Section 3.3*); 17-3 (*Section 3.4*); and 20-4 (*Section 3.12*). A redeeming feature of large-scale linear investigations such as this is their potential to produce a relatively non-judgemental transect through the local landscape, its parameters defined by criteria other than prospecting for sites of enhanced archaeological potential. This probably produces a more representative landscape sample on which to draw conclusions regarding a wide number of questions, from the survival and visibility of ancient activity within the modern landscape, to a realistic assessment of the nature and density of settlement at any specific period in the past. Thus, while of little archaeological value if considered alone, the cumulative value of the minor sites investigated during the project can contribute significantly to one or more of the research themes detailed below, much enhancing their value, contributing especially to an understanding of the history of the development of the landscape.

5.1.2 It has also become obvious that if these sites are considered together, and within their local and regional context, an improved level of understanding of the development and evolution of the landscape of the Magnesian Limestone ridge is possible, thus dramatically increasing the scope for valid comparison between this and other geomorphologically discrete regions, such as the Yorkshire Wolds to the east, the upland Pennines to the west, and the Tees Valley to the north. Such potential builds upon the results of the earlier A1/M1 upgrade (Roberts *et al* 2001) and the A1(M) development (Brown *et al* 2007).

5.2 POTENTIAL OF THE MATERIAL ASSEMBLAGE

5.2.1 It is apparent, from the quantifications (see especially Tables 11 and 21), that artefacts and ecofacts were not recovered in any great quantity from the Asselby-Aberford tranche of this pipeline, despite the investigation of a number of well-defined archaeological sites. This is not particularly unusual for the area, especially as most of the sites identified were markedly rural in nature, a similar situation being apparent in the close vicinity from the investigation of archaeological sites during a recent upgrade of the A1, between Darrington and Dishforth (Brown *et al* 2007). Although the finds show a wide date-range, from the Mesolithic period until the present day, it is noticeable that the main focus of activity appears to lie in the later Iron Age and/or Romano-British periods, again reflecting the situation encountered in other investigations in the area (*ibid*; Roberts *et al* 2001), and presumably an indication of historical trends in local land-use.

5.2.2 It is clear that the pottery bears the greatest potential to add to the interpretation and understanding of the sites examined, contributing especially to the dating of specific archaeological features. Additional scientific dating evidence will be provided by

radiocarbon assay of charred wood from targeted soil samples, of which several are available. Pottery of all dates comprises 81.6% of the total finds assemblage (excluding ecofacts) by fragment count, and at this stage it appears clear that most of it can be attributed to late Iron Age and Romano-British activity (8% and 89% respectively of the total amount of pottery by fragment count). Other classes of find appear in considerably smaller amounts (Table 12).

5.2.3 Despite the presence, at several of the sites investigated, of small groups of prehistoric flintwork, suggesting possible activity from the Late Mesolithic period to the Bronze Age, none of the prehistoric pottery can be placed earlier than the late Iron Age, and it is, indeed, possible that much of the hand-made pottery is actually of Romano-British date. This is hardly surprising, and although Neolithic and Bronze Age pottery is, albeit sparsely, attested elsewhere in the vicinity (Brown *et al* 2007; Vyner 2001), it seems to be concentrated upon funerary and monumental sites, for instance at Ferrybridge (*ibid*; Roberts 2005), rather than the dispersed rural settlement seen on this pipeline. It must be noted that the potential of the Iron Age material to contribute to dating is much reduced by the lack of fragments diagnostic of chronologically sensitive features such as vessel form, and thus many of them can only be assigned a very broad date range, and might well reflect the longevity of local native pottery-making traditions, surviving well into the Romano-British period. As a result, the analysis proposed for this group will concentrate on its potential to illustrate local and regional sources of supply.

5.2.4 The Romano-British pottery is concentrated on Sites 2, and 20-2, but all the groups examined seem to have a composition and date range typical of the area (Leary 2007a). While the pottery will make an important contribution to the dating of many of the sites investigated, only that from Site 2 seems to have the potential to add significantly to the interpretation of other aspects of life, contributing not only to dating, but also to the definition of zones of activity, sources of supply, and some examination of the day-to-day consumption habits of the inhabitants, evidence of which will also derive from analysis of the animal bone from the site (Site 2 produced *c* 66% of the animal bone recovered from the Asselby to Aberford Pipeline). In addition, palaeoecological analysis has suggested the presence of crop-processing waste in the form of grain and chaff in several pits on the site, again providing information on crops and patterns of consumption. A single well-preserved human neonate burial was also recovered from Site 2, and analysis will contribute to knowledge of the health and lifestyle of its inhabitants.

5.2.5 The metalwork is not likely to make any large contribution to the understanding of Roman and later activity at any of the sites, although a currently unidentifiable, but probably Roman, enamelled copper-alloy object from Site 2 will add to this discussion. Ironwork from Site 2 is also probably of Romano-British origin, but is so fragmentary that analysis is not feasible. Similarly, some small fragments of Romano-British ceramic roof tile and possible fragments of stone roof tile add to knowledge of the appearance of buildings on Site 2, and the degree to which its inhabitants had adopted a Romanised lifestyle.

5.2.6 Only a very small amount of pre-Conquest pottery was recovered during the project (Torksey-type ware; two sherds representing a single vessel). A rare find in the area, this is of intrinsic interest, adding to any overview of the pre-Conquest settlement and trading

patterns of York's rural hinterland. Similarly, only ten sherds of medieval pottery were recognised amongst the pottery assemblage. They fit comfortably within the known patterns of local and regional procurement (see for instance Vince and Young 2007). Although further analysis does not seem warranted on such a small and unexceptional assemblage, the group will add to the dating of individual sites. The very small amount of post-medieval and modern pottery will serve the same purpose. There are few other post-Roman finds, and all can be shown to be of late eighteenth-century or later date, and can be presumed to have reached their final place of deposition as a result of agricultural practice.

5.2.7 The relatively small quantities of artefacts recovered during the project have of necessity restricted the range of viable analysis. This assessment has, nonetheless, established their potential to add detail to the understanding and interpretation of the sites, allowing them to be set within their contemporary local and regional contexts, and reveal occasional glimpses of the lifestyle and aspirations of the people who lived and worked in them. The proposed analyses of animal bone and charred plant remains will provide additional evidence of the nature and appearance of the surrounding landscape, and illustrate elements of contemporary agricultural regimes, in terms of the food plants grown, and the animals raised for consumption, hunted from the wild, and kept for traction and transport.

5.3 Early Prehistory

5.3.1 A background of earlier prehistoric activity was identified at Sites 2, 17-3 and 20-2, on the basis of flint finds. Some features were also revealed, which it was not possible to date, but which possess typological characteristics of this period, *eg* the double ring feature at Site 18-11B (*Section 3.9*). Populations during this period were probably peripatetic, so that the markers of their presence are widespread and sparsely distributed, except where concentrated at enduring sites of long-term significance, such as henge monuments.

5.4 Later Prehistory: The Iron Age

5.4.1 The pottery finds at Sites 1 and 18-10 belong to a broad date range covering the pre-Roman Iron Age through to the Roman period. Together with the less numerous finds from Sites 17-3, 18-5 and 20-2, and the nature of the features from which they were recovered, it is reasonable to suggest that these results coincide with the interpretive model already developed for this region (Haselgrove *et al* 2001), *ie* there was extensive, more permanent settlement and organisation of the landscape at this time, implying a considerable density of population. The economy was agrarian, and more wide-ranging and persistent trading networks developed. The division between the Iron Age and the Romano-British period is substantially artificial in cultural terms, with many settlement sites persisting unchanged throughout this timespan (Haselgrove *et al* 2001, 28). Sites 2 and 17-3 are strong candidates for such continuity, with features suggestive of the earlier period, and artefacts which are Romano-British.

5.5 The Romano-British Period

5.5.1 Although Roman strategic and settlement centres lie nearby, the character of all the sites excavated is entirely rural. In common with other known sites, the artefact assemblages do

not compare with the rich suites recovered from Roman military and trading sites (*eg* Wilson 2002).

5.5.2 It is of particular interest that Romano-British activity dated to the later third and fourth centuries often exactly overlies apparently abandoned Iron Age settlement, both in the wider region and at the sites excavated on the pipeline route. It is unclear whether sites were abandoned and reoccupied, or continued in occupation with an ostensibly unchanged cultural assemblage. Few Romano-British settlements have been investigated in this region (Ottaway 2003, 143) so even limited study will contribute to this debate.

5.6 MEDIEVAL AND POST-MEDIEVAL PERIODS

5.6.1 The evidence recovered from the excavations for activity during these periods was minimal and exiguous. While the plough furrows, and some of the field boundaries and trackways, almost certainly date from this period, there was no evidence available to confirm this. No concentrations of pottery were apparent. The isolated pottery finds are consistent with the use of domestic waste to fertilise the fields, a common practice. These characteristics accord entirely with the rural nature of the modern landscape through which the pipeline passes.

5.7 CONCLUSIONS

5.7.1 The project has examined a rich palimpsest landscape, which owes its genesis to the end of the last Ice Age, *c* 10,000 BC, but has since then undergone a slow process of modification by both natural and man-made agents in order to become the landscape seen today. Inevitably, the evidence of such change has been localised and is inconsistent in its survival, and data gathered by this project do not represent the full series of chronological periods from the end of the last glaciation to the present day. Nonetheless, the material has the potential to elucidate many facets of the past use of the region, especially in the Iron Age/Romano-British period. Archaeologists have a strong tendency to forget that the remains, which they investigate and record, were created by rational, thinking human beings who made a successful life within this evolving landscape. Their needs and aspirations must have governed the manner in which they interacted with and modified the world around them, and are thus revealed to some degree by a structured analysis of that landscape.

5.7.2 Such knowledge can make a significant contribution towards strengthening a sense of place and possession among a mixed and changing, and often disaffected, modern population. It can also help those who influence the growth and development of that landscape today to understand the importance of their ancestors' contribution to the past, and their own to the future (English Heritage 2000).

6 UPDATED RESEARCH AIMS

6.1 AIMS AND OBJECTIVES OF THE PROGRAMME OF ANALYSIS

6.1.1 This section follows the guidance of English Heritage regarding the formulation of updated research aims (English Heritage 1991, 2–3). The original aims for the project remain valid, but can be updated with new aims and objectives derived from the statement of potential set out in *Section 5*, as follows.

6.1.2 ***Updated research aim 1:*** What is the evidence for Iron Age peoples living and farming in this area? Can continuity into the Romano-British period be discerned?

Objective 1: What is the evidence for Iron Age settlements in this area? Were the settlements enclosed or unenclosed? What is the nature of the houses?

Objective 2: What is the evidence for Iron Age field systems and trackways in these areas? Were the systems contemporaneous or sequential?

Objective 3: How do settlements relate to the wider landscape?

Objective 4: What does analysis of the artefactual data contribute towards the understanding of the nature, chronology and trading links of this period?

Objective 5: What further information on farming practices and management of the landscape can be determined from the environmental analyses?

Objective 6: What is the evidence for continuity within the settlements and landscape into the Romano-British period?

6.1.3 ***Updated research aim 2:*** What can be learnt about Iron Age society from the burials found in this region, is it significant that the only burial is that of an infant?

Objective 1: What is the date of the burial found?

Objective 2: What does study of this skeleton and the associated artefacts and ecofacts tell us about Iron Age people?

Objective 3: Are the burial and settlement of similar or differing dates?

Objective 4: What was the origin of the person buried?

6.1.4 ***Updated research aim 3:*** What is the nature of the Romano-British activity seen on these sites? Is there any evidence for transition from the Iron Age or into the early medieval period?

Objective 1: What is the character of the field systems which overlie those of the Iron Age?

Objective 2: What is the material culture of the people living in this area in the third and fourth centuries AD?

Objective 3: Is there evidence for continuity into this period from the Iron Age?

Objective 4: Did the people have access to the Romanised culture in the vicinity? What is the evidence for trading links?

Objective 5: What is the date of each of the Iron Age/Romano-British burials and field systems?

Objective 6: Is there any evidence, dating, artefactual, ecofactual or stratigraphic, for a transition to the early medieval period?

6.1.5 ***Updated research aim 4:*** What is the evidence for settlement and farming in the medieval period in this area?

Objective 1: What is the evidence for land division and field systems in this area? Can environmental analysis add to data on the management of the landscape in this period?

Objective 2: Are there any property boundaries apparent and what is the implication of their presence?

Objective 3: What is the date of the settlement and agricultural evidence found? Is the occupation continuous or intermittent? Is there any continuity from the preceding period or into the post-medieval period?

Objective 4: To what extent were the medieval land divisions a continuation of earlier boundaries?

6.1.6 ***Updated research aim 5:*** What is the evidence for activity in the post-medieval period?

Objective 1: What is the nature of the evidence found for post-medieval land management?

Objective 2: Is it possible to date the post-medieval activity, from the stratigraphic and artefactual evidence or from cartographic and documentary investigation?

6.1.7 ***Updated research aim 6:*** How has the topography and geomorphology of the area affected our understanding of the past landscape?

Objective 1: How does site visibility affect the understanding of landscape features through time?

Objective 2: What effect has the geomorphology of the area had upon settlement and agriculture through time, and what have been the resulting activities?

Objective 3: How has the topography of the area affected trade through time?

Objective 4: Can study of mapping and documentary evidence assist with the analysis of the landscape through time?

Objective 5: Is there any persistence in landscape features in this area? How much continuity is apparent from the Iron Age to modern times?

Objective 6: Has the solid and drift geology affected the survival of environmental evidence on these sites?

7 METHOD STATEMENT

7.1 PROGRAMME STRUCTURE

7.1.1 The following methodology is necessary to fulfil the revised research aims outlined in *Section 6*. The post-excavation programme will be divided into the following stages:

- full cataloguing of any data representatively sampled
- further investigation
- analysis
- synthesis
- preparation of draft text and illustrative material
- issuing of final report
- archive deposition.

7.2 MANAGEMENT

7.2.1 Management and monitoring of the project will include advice and co-ordination, problem solving, and meetings with project staff and all interested external parties. The aim will be to ensure continued achievement of the research objectives, and intelligent adaptation of strategy in order to meet these. A full review of the project will be carried out every six months during its lifetime.

7.3 TASKS

7.3.1 The tasks necessary to complete the archaeological work are listed below and, together with the updated research aims (*Section 6)*, these constitute an Updated Project Design for Analysis. To summarise, these consist of a final phase of stratigraphic analysis, in combination with the results now available from the finds and palaeoenvironmental assessments, and any other results that derive from the further analysis of these assemblages; preparation of comprehensive digital catalogues of the finds and palaeoenvironmental remains; and preparation of a final report. In the course of these tasks, the interpretation of the chronological development of the sites will be completed (augmented by the results of a programme of scientific dating), and the digital archive will be updated and enhanced. The paper and digital archive will be prepared for deposition at the nominated receiving museums, in accordance with standard practices and protocols (see *Sections 4.19 and 7.24*), and in negotiation with the museums' curatorial staff, to meet their deposition policies.

7.3.2 As stated in the *Outline Proposal for Post-excavation Assessment* (OA North 2008b), NYHET will be invited to review the proposed Updated Project Design for Analysis and comment on a) the ability of the available data to fulfil the stated aims and objectives of

the project and, therefore, the analysis to be undertaken; b) the likely form of any publication or any other means of dissemination. In the interim, following discussions with NG's Archaeological Advisor, OA North proposes that the appropriate dissemination of the results of the archaeological analysis should, as a minimum, include the production of a full archaeological publication (see *Section 7.23*).

7.4 Processing and Transport of Artefact Assesmblages

7.4.1 The finds will be marked, where appropriate, to allow complete integration into the site database. At an early stage in the analytical programme, where required, arrangements will be made to transport all relevant assemblages to the designated external specialists, if they are not already in possession, to facilitate analysis and reporting of the material. Conversely, on the completion of this work, material will need to be received from the specialists, sorted and checked against database records.

7.5 Digital Data in the Analysis Phase

7.5.1 During fieldwork and Assessment, databases were compiled containing the stratigraphic, finds and palaeoenvironmental information from the project; they also include indices to the digital photographs and primary graphical sources. These databases will be audited and augmented throughout the Analysis. Ultimately, the information in the databases, in addition to the digital photographs and scans of the textual and graphic archive, will be included in the permanent site archive deposited with the receiving museums (*Section 7.24*), and some or all of the data may be presented in a digital format to accompany the final publication.

7.5.2 The survey and graphical data has been digitised, cross-referenced with the stratigraphic databases and incorporated into a GIS (Geographical Information System). The GIS will be updated throughout Analysis and it may be desirable to incorporate mapping data from previous phases of work (*Section 7*). Digital mapping data may be provided as an accompanyment to the final publication. On the completion of Analysis, metadata will be compiled on the digital mapping data and will be provided to the relevant HERs along with databases and GIS shapesfiles as Event data.

7.6 Stratigraphic Analysis

7.6.1 The stratigraphic data recovered from certain of the excavations (as indicated in *Section 3* above) will need to be analysed in greater detail in order to refine the provisional phasing and resolve problems highlighted by the assessment. A broad stratigraphic framework has been produced for the assessment, but it is clear from this work that there are some areas where further detailed worked is required. This broad stratigraphic framework will therefore be reviewed and refined, and it will also be essential to compile detailed sub-phasing, which will require careful analysis of the primary records, all contexts, and site plans and sections.

7.6.2 All contexts need to be attributed to these phases and sub-phases once established, and the site database will then require updating and amending. In the course of this analysis, the

site matrices will require redrawing to conform to the amended periods and sub-phasing, and to include those contexts which could not be resolved at the assessment stage.

7.6.3 A detailed analytical document of the stratigraphic information for all sites, accompanied by phase drawings, sections and other relevant line illustrations, as required, will be drafted. This will provide detailed information on the periods and sub-phases for all the sites. The draft text and phase drawings will form the basis both of the summary information to be supplied to specialists and of the stratigraphic section of the final report, as well as the publication.

7.6.4 The sites will be considered together and in relation to other known archaeological sites in the study area, and to their wider landscape and regional context. This will involve an element of library-based research and cartographic regression analysis.

7.7 Flint

7.7.1 A small number of the objects identified may require illustration; a report will be compiled for incorporation in the publication.

7.8 Worked Stone

7.8.1 Specialist analysis will be required to gain a better understanding of the geological provenance and wider regional context of the quern and millstone, as well as the whetstones. A small number of the objects identified may require illustration; a report will be compiled for incorporation in the publication.

7.9 Prehistoric Pottery

7.9.1 The principal task will be to integrate the analyisis of the prehistoric pottery with the stratigraphy to help stratigraphic phasing. This will also enable an examination of the associations between wares of the native tradition, and those of Romano-British type, to establish the chronology, although the effects of residuality will have to be taken into consideration. The following work will be required to produce a final report:

- a review of the fabric groups identified during the assessment phase with a view to linking them with those proposed by Rigby (2004) and, if possible, Didsbury and Vince (in prep);
- enhancement of statistical data to bring the presentation into line with that of the Roman and Romano-British wares;
- close integration of the report on the hand-made wares with that on the wheel-thrown Roman and Romano-British wares, with the twin aims of identifying the date ranges for diagnostic hand-made sherds and vessels using the Roman and Romano-British pottery data, and of commenting on the implications of the data for the further understanding of Romanisation and acculturation during the period of Roman occupation;
- discussion of the relationships between the hand-made pottery and the details of the

contexts of deposition (including associated human burials, artefacts, animal bone, organic food waste and environmental data), in the light of the possibility that there was structured or non-random deposition in pits, ditches and other cut features

7.10 Romano-British Pottery

7.10.1 The principal task will be to integrate the preliminary analysis of the Romano-British pottery with the stratigraphic data, in order to refine an understanding of, and add dating to, the stratigraphic succession. As part of this task, the data gained from analysis of the hand-made wares (*Section 7.9*) will be fully integrated with that of the Roman and Romano-British wares in order to refine the dating of both, and increase an understanding of the manner in which both ware types were used in tandem, and how this might reflect changing socio-economic strategies and focus.

7.10.2 Changes in the range and distribution of vessel types and fabrics through time will be considered, in order to build a picture of changes in activity on the sites, and at a greater scale, in sources of supply. Some comparison will be made with other sites in the region, in order to provide a better understanding of the changes. Specific vessels of intrinsic interest, for example the Dales ware-type vessel in GRB G2, from Site 20-2, will be considered in a wider, regional context, as this appears to indicate the use of a previously unknown fabric group in the manufacture of Dales ware types in the region. To this end, it will be subject to further fabric characterisation.

7.10.3 The analyses will be drawn together in a brief illustrated synthesis for publication, primarily addressing those of the stated research themes relevant to the pottery from Sites 2 and 20-2, but touching on pottery evidence from other sites examined during the project, as appropriate.

7.11 Post-Roman Pottery

7.11.1 An archive catalogue of this assemblage should be prepared, and its presence or absence noted in any stratigraphic discussion. Following discussions with the receiving museums, some of the material may be discarded.

7.12 Clay Tobacco Pipes

7.12.1 An archive catalogue of the pipes should be prepared, and note made of its presence or absence within any stratigraphic discussion. Following discussions with the receiving museums, some or all of the material may be discarded.

7.13 Metalwork

7.13.1 It is recommended that the coins be x-rayed, to confirm their identification. In addition, object ***2501***/*1115* might be identifiable from x-ray. It is suggested that the copper alloy, iron and lead finds be fully described, recorded photographically and drawn, where appropriate, to provide an archive catalogue. A brief summary report should be prepared for publication.

7.14 Industrial Residues

7.14.1 An archive catalogue of this assemblage should be prepared, and its presence or absence noted in any stratigraphic discussion. Following discussions with the receiving museums, some or all of the material may be discarded.

7.15 Glass

7.15.1 An archive catalogue of the vessel glass should be prepared, and a note made of its presence or absence within any stratigraphic discussion. Following discussions with the receiving museums, some or all of the material may be discarded.

7.16 Ceramic Building Material (CBM)

7.16.1 An archive catalogue of the CBM should be prepared, and note made of its presence or absence within any stratigraphic discussion. Following discussions with the receiving museums, some or all of the material may be discarded.

7.17 Human Bone

7.17.1 Full macroscopic osteological analysis of neonatal skeleton ***2498*** will contribute to the wider record of burials excavated and analysed under modern conditions, especially those discovered recently on the A1(M) excavations (Boston 2007). As such, a wider-ranging discussion of this inhumation in the context of others recovered from the pipeline route and from other recent archaeological work in the vicinity will be included within the publication. A full record will be recorded within the project archive.

7.18 Animal Bone

7.18.1 A short report will be compiled for inclusion in the publication. This report will concentrate on a basic quantification of the material, with some further discussion of the cow and sheep/goat burials, and of bone deposits from specific features where processing activities may be identified.

7.19 Charcoal and Charred Plant Remains

7.19.1 Material will be selected and isolated for radiocarbon dating purposes (*Section 7.20*). Those assemblages deemed worthy of further analysis (*Section 4.17.11-14)* will be characterised and considered in detail with regard to the information they can provide concerning their stratigraphic context and the wider interpretation of the archaeological sites where they occur, as well as the environment and economy of the period they date to. The results will be incorporated within the stratigraphic narrative and a report prepared for the publication.

7.20 Radiocarbon Dating

7.20.1 Following reconsideration of the stratigraphy and the material suitable for dating (*Section 4.17.8*), samples will be selected for radiocarbon assay. Certificates will be prepared for these samples and submitted along with them to an appropriate laboratory. The results will be incorporated within the stratigraphic narrative and an over-arching summary report prepared for the publication.

7.21 Integration of Datasets and Synthesis

7.21.1 The information gathered from analysis of the finds will be reviewed and integrated into the stratigraphic narrative. This will allow re-interpretation of the site using a thematic approach. The GIS will allow detailed interrogation of the data and the testing of hypotheses and phasing.

7.22 Illustrations

7.22.1 During each part of the analytical programme, a selection will be made of appropriate material for illustration. This will include general plans and sections, phase plans, photographs, and artefacts. Illustrations will be produced by experienced illustrators, using standard conventions.

7.23 Production of Text and Publication

7.23.1 Following the completion of the analysis of the stratigraphical and artefactual evidence, a comprehensive final report will be produced for publication as a monograph (*Lancaster Imprints* Series). This will target both an academic and informed audience and will be written in an accessible style. It is possible that the publication will be accompanied by digital media, such as a website or CD containing digital plans, catalogues and specialist reports. All media will integrate the results of work undertaken on the Asselby to Aberford section of the pipeline with those from the Aberford to Pannal section (OA North 2010) and, probably, the excavation of the Aberford Dykes (NAL 2010). Prior to publication, the draft text will be submitted for internal revision and peer review, and will be passed to all specialists after editing, for their comments.

7.24 Archive Deposition

7.24.1 OA North undertakes to liaise throughout the project with the receiving museums (probably The Yorkshire Museum, York, and the Leeds Museum, for North and West Yorkshire respectively) to meet their deposition policies (see also *Section 4.19*). On completion of the analysis, a discard policy will be implemented. On submission of the completed text for publication, the archive will be updated as necessary and the receiving museums will be contacted to obtain the latest information on their deposition arrangements. Material in files and boxes will be checked, and indices and box lists will be compiled and appended.

7.24.2 The digital archive will be checked and indexed, and hard copies made of the data if required by the recipient museums. The digital data will be accompanied by metadata, which will explain origin and accuracy.

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APPENDIX 1: PHASE 2 EVALUATION

A1.1 INTRODUCTION

A1.1.1 The length of the Asselby to Aberford Pipeline, and the varied terrain through which it runs, precludes the drawing of all-encompassing conclusions about the results of the Evaluation. It is helpful to break the route down into a number of smaller packages to enable relevant and meaningful discussion at a more local scale (Table 24; Fig 12). All these packages are within the county of North Yorkshire.

Package	Landscape Unit	Plot	Trenches
AA	Pleistocene alluvium	5-11	AA1
BB	Pleistocene alluvium	10-9	AA2–AA4
CC	Pleistocene alluvium	16-10	AA8–AA10
DD	High-relief calcareous	18-5	AA7
EE	High-relief calcareous	19-5	AA11–AA12
FF	High-relief calcareous	20-4	AA5–AA6

Table 24: Concordance of packages

A1.1.2 The starting point for deciding the extent of the packages was the two geotopographical landscape units identified in the palaeoenvironmental assessment for this section of the scheme (Headland Archaeology 2007). The guiding principle was that the nature of the geology and topography would be likely to affect the character and visibility of the archaeological remains. The resulting packages vary widely in terms of their size and the number of trenches they contain. Table 24 is a concordance between the trenches, pipeline plots, landscape units and packages, while Table 25 presents a summary of the results of the Evaluation. All of the trenches exposed features of an archaeological nature.

Trench	Trench Area	Figure numbers	Results
AA1	30 x 2m	13; 14	Ditches; not closely datable. Field drains and natural feature.
AA2	50 x 2m	15; 16	Ridge and furrow.
AA3	30 x 2m	15; 17	Ditches; not closely datable.
AA4	30 x 2m	15; 18	Ditches; not closely datable.
AA5	30 x 2m	28; 29	Ditch; not closely datable.
AA6	30 x 2m	28; 30	Ditches; not closely datable.
AA7	20 x 4m	23; 24	Ditches; not closely datable.
AA8	30 x 2m	19; 20	Ditch; not closely datable. Field drains.
AA9	30 x 2m	19; 21	Possible Iron Age/early medieval ditch. Curvilinear feature; not closely datable. Field drains.
AA10	30 x 2m	19; 22	Ditches; not closely datable. Natural feature and field drain.
AA11	10 x 10m	25; 26	Ditches; and pit not closely datable. Natural feature.
AA12	16 x 10m	25; 27	Ditches and pit; not closely datable.

Table 25: Summary of results

A1.1.3 The results presented below are arranged by package, with a description and summary of the location and terrain of each package, followed by detailed descriptions of the trenches, and recommendations for further work. The route is discussed from south-east to north-west.

A1.2 Package AA

A1.2.1 Package AA (Fig 12; North Yorkshire; Carlton Parish; Plot 5-11) occupied a flat low-lying floodplain at approximately 5m aOD, in an area of Pleistocene alluvium, south-east of the Burn Airfield, east of Common Lane and north-west of Quosquo Hall. A single trench was excavated (Fig 13).

A1.2.2 This single trench, AA1 (Fig 14), was not positioned over any geophysical or cropmark anomalies, but was designed to assess what appeared to be two undated ditches (***5512*** and ***5516***). The trench was aligned east-west and excavated at the request of the National Grid archaeologist.

A1.2.3 ***Trench AA1:*** the broad stratigraphy of this trench consisted of 0.35m of topsoil, over 0.05–0.15m of relict ploughsoil, sealing natural deposits of alluvium. Four probable nineteenth-century ceramic land drains (***5504***, ***5505***, ***5506*** and ***5511***; not illustrated) were located, two (***5504*** and ***5506***) of which cut into the upper fills of two ditches (***5512*** and ***5516***). Both ditches were orientated north-east/south-west and cut into the alluvium. Ditch ***5512*** was 2.20m wide and 0.44m deep, while ditch ***5516*** was 1.04m wide and 0.56m deep. A small feature (***5507***) was identified between land drains ***5506*** and ***5511***, which appeared to be natural in origin.

A1.2.4 ***Further works:*** no further works were recommended.

A1.3 Package BB

A1.3.1 Package BB (Fig 12; North Yorkshire; Gateforth Parish; Plot 10-9) occupied a large flat field, south of Gateforth and south-east of Pale Lane, at approximately 7m aOD, in an area of Pleistocene alluvium.

A1.3.2 The three trenches (Fig 15) within this package were positioned to verify ridge and furrow, and ponds, identified by the desk-based assessment (NAL 2006a), and anomalies revealed by the geophysical survey (DBA BI; DBA JP; NAL 2006a; Bartlett 2006).

A1.3.3 ***Trench AA2:*** the broad stratigraphy of this trench consisted of 0.25m of topsoil, over 0.2m of relict ploughsoil, sealing natural deposits of alluvium. All of the 17 linear features exposed in this trench were parallel furrows (***5520***–***5536***; Fig 16), aligned north-east/south-west, which confirmed the results of the geophysical survey and the desk-based assessment (NAL 2006a); all cut into the alluvium. The average width of the furrows was 1.20m and their depth 0.09m.

A1.3.4 ***Trench AA3:*** the broad stratigraphy of this trench consisted of 0.2–0.35m of topsoil, over 0.12–0.2m of relict ploughsoil, sealing natural deposits of alluvium. The trench contained two probably nineteenth-century ceramic drains (***5540*** and ***5541***; Fig 17), aligned north-east/south-west. Three ditches (***5542***, ***5544*** and ***5546***) were also exposed, aligned north-

east/south-west. Ditch ***5542*** was 0.5m wide and 0.25m deep. Ditch ***5544***, 0.62m wide and 0.26m deep, cut ditch ***5546***, 0.76m wide and 0.37m deep; both verified cropmarks. All of these features cut into the alluvium.

A1.3.5 ***Trench AA4:*** the broad stratigraphy of this trench consisted of 0.3m of topsoil, over 0.28m of relict ploughsoil, sealing natural deposits of alluvium. Two ditches (***5551*** and ***5553***; Fig 18) were exposed, both extending east-north-east/west-south-west and cutting into the alluvium. Ditch ***5551*** measured 2.10m wide and 0.65m deep, and contained one sherd of eighteenth-century pottery. Ditch ***5553*** was 2.91m wide and 0.74m deep.

A1.3.6 ***Further works:*** in view of the good survival and preservation of the ridge and furrow, a watching brief was recommended (*Appendix 2*).

A1.4 Package CC

A1.4.1 Package CC (Fig 12; North Yorkshire, Little Fenton Parish; Plot 16-10) lay south-east of Little Fenton and directly south of Manor Farm and Grange Farm, in an area of Pleistocene alluvium. The trenches were at 8m aOD.

A1.4.2 Three trenches were excavated (Fig 19), all aligned east-west, and positioned to assess a small amount of medieval pottery found in the walk-over survey (NAL 2007d), and ridge and furrow identified by the desk-based assessment (MON 1318591; NAL 2006a). The trenches all revealed features of an archaeological nature.

A1.4.3 ***Trench AA8:*** the broad stratigraphy in this trench consisted of 0.25m of topsoil, over 0.1m of relict ploughsoil, sealing natural deposits of alluvium. Two probable nineteenth-century ceramic land drains (***5592*** and ***5593***; Fig 20) were revealed, along with a ditch (***5588***), which extended north-west/south-east, and measured 1.12m wide and 0.44m deep.

A1.4.4 ***Trench AA9:*** the general stratigraphy consisted of 0.3m topsoil, over 0.1m of relict ploughsoil, sealing natural deposits of alluvium. The trench identified one furrow (5615; Fig 21), confirming the results of the desk-based assessment (MON 131859; NAL 2006a). Also within this trench was a north/south-aligned ditch (5591), 3.04m wide and excavated to a depth of 1m. This was not fully excavated in view of health and safety constraints, but two fills were identified. One contained a sherd of pottery, of a questionable Iron Age or medieval date. To the west of furrow 5615, a curvilinear ditch (5613) of unknown date measured 0.32m wide, 0.16m deep, and was exposed over a length of 5.76m.

A1.4.5 ***Trench AA10:*** the broad stratigraphy of this trench consisted of 0.35m topsoil, over 0.15m of relict ploughsoil, sealing natural deposits of alluvium. One land drain was visible, truncating the top of ditch ***5597*** (Fig 22). Ditch ***5597*** was aligned north/south, with a width of 0.86m and a depth of 0.28m. Another ditch (***5596***), 0.93m wide and 0.45m deep, was aligned north-east/south-west, and cut into the alluvium. A natural feature (***5599***) was identified in the centre of the trench.

A1.4.6 ***Further works:*** a watching brief was recommended (*Appendix 2*) to improve archaeological understanding of the features, ascertain their limit, and attempt to recover datable evidence.

A1.5 Package DD

A1.5.1 Package DD (Fig 12; North Yorkshire; Barkston Ash Parish; Plot 18-5), lay south-west of Barkston Ash and north-west of Sherburn in Elmet, on the landscape unit of high-relief calcareous (Magnesian Limestone). A single trench was excavated, at 22m aOD.

A1.5.2 The trench (AA7; Fig 23) was located over geophysical and cropmark anomalies (MON 1402732; NSMR MNY10814; NAL 2006a), which formed part of a wider series, defining enclosures, trackways and field boundaries.

A1.5.3 ***Trench AA7:*** the general stratigraphy consisted of 0.3m of topsoil, over 0.02m of relict ploughsoil, sealing natural deposits of Magnesian Limestone. Two ditches (***5575*** and ***5580***; Fig 24) were revealed, and verified the results of the geophysical survey and desk-based assessment (MON 1402732; NSMR MNY10814; NAL 2006a). They were aligned north-west/south-east, and cut into the Magnesian Limestone, seemingly forming a trackway. Ditch ***5575*** measured 1.69m wide and 0.66m deep, and contained two fills. Ditch ***5580*** had a single fill, and was 1.71m wide and 0.54m deep. Neither ditch contained any datable evidence.

A1.6 Package EE

A1.6.1 Package EE (Fig 12; North Yorkshire; Saxton with Scarthingwell Parish; Plot 19-5) lay west of Saxton, north-east of Lotherton Hall, and directly south of the B1217. The trenches were sited on high-relief calcareous geology (Magnesian Limestone), between 39m and 40m aOD.

A1.6.2 The two trenches within this package (Fig 25) targeted cropmarks identified by the desk-based assessment (WSMR 1094; NAL 2006a). These cropmarks appeared to form an enclosure with associated ditches. With the aim of full mitigation, large trenches were excavated.

A1.6.3 Trench AA11: the general stratigraphy consisted of 0.2m of topsoil, over 0.1m of relict ploughsoil, sealing natural deposits of Magnesian Limestone. Two parallel ditches (5625 and 5629; Fig 26) were revealed, aligned north-west/south-east across the trench. Ditch 5629 appeared to form the eastern side of the enclosure defined by the cropmarks (ibid), and was 1.75m wide and 0.9m deep. Ditch 5629 truncated a small natural feature (5631).To the east of it was ditch 5625, which may have formed a trackway along the side of the enclosure; it measured 1.41m wide and 0.77m deep. Beside it was a small oval pit (5633), 1.67m long, 0.76m wide and 0.15m deep.

A1.6.4 ***Trench AA12****:* the broad stratigraphy consisted of 0.24m topsoil, over 0.06m of relict ploughsoil, sealing natural deposits of Magnesian Limestone. The trench targeted the north-east corner of the same enclosure as that identified in AA11 (*Section A1.6.3*), defined by cropmarks, and revealed one pit (***5648***), and ***six***, undated, intercutting ditches (***12040***, ***12041***, ***5620***, ***5645***, ***12026***, ***5641***; Fig 27), which represented different phases of remodelling of the enclosure. Ditches ***12040*** and ***12041*** extended north-east/south-west and formed the northern side of the enclosure, with ditch ***12040*** being a recut of ditch ***12041***. Ditch ***12040*** was exposed over a length of 7.71m, and was 1.11m wide and 0.6m deep. Ditch ***12041*** was exposed for 7.98m, and was 1.26m wide and 0.66m deep. The

remaining four ditches (***5645***, ***12026***, ***5641*** and ***5620***) formed the eastern side of the enclosure and were all aligned north-west/south-east. The physical relationship between these ditches and ditches ***12040*** and ***12041*** could not be determined because of the homogeneous nature of their fills, but they are likely to be associated and broadly contemporary. The stratigraphic relationship between ditches ***5645***, ***12026***, ***5641*** and ***5620*** was not always clear, but there were several phases of recuts, suggesting successive redefinition of the same boundary. These ditches were 0.86–5.44m long, 0.69–1.08m wide and 0.3–0.5m deep. Within the complex of ditches, a small pit (***5648***) was identified, 0.47m long and 0.36m wide. Further east was another ditch (***5620***), measuring 1.99m long, 0.76m wide and 0.35m deep.

A1.6.5 ***Further work*:** given the good preservation and lack of datable evidence, a watching brief (*Appendix 2*) was recommended to recover more information about the extent and character of these features, and locate datable material.

A1.7 PACKAGE FF

A1.7.1 Package FF (Fig 12; North Yorkshire; Saxton with Scarthingwell Parish; Plot 20-4) lay east of Aberford and north of Lotherton Hall, on high-relief calcareous geology (Magnesian Limestone). The trenches were at 53m aOD.

A1.7.2 The two trenches (Fig 28) targeted cropmarks identified by the desk-based assessment (WSMR 1094; NAL 2006a) that probably represented ancient field boundaries and enclosures. Both trenches identified ditches corresponding to the cropmarks.

A1.7.3 ***Trench AA5:*** the general stratigraphy in this trench consisted of 0.26m of topsoil, over 0.15m of relict ploughsoil, sealing natural deposits of Magnesian Limestone. The single ditch (***5566***; Fig 29) identified matched a cropmark, and contained two fills. It was 0.67m wide and 0.46m deep, and aligned north-west/south-east.

A1.7.4 ***Trench AA6:*** the general stratigraphy in this trench consisted of 0.3m of topsoil, over 0–0.2m of relict ploughsoil, sealing natural deposits of Magnesian Limestone. Two ditches (***5565*** and **5563**; Fig 30) were revealed. Ditch ***5565*** had probably been recut by ***5570***, which itself corresponded to the cropmark targeted by the excavation (*Section 3.12)*. Ditch ***5565*** measured 0.34m wide and 0.5m deep, while ditch ***5570*** was 0.83m wide and 0.5m deep; both were aligned east/west. Ditch ***5563*** was aligned north-east/south-west, and was 1.39m wide and 0.53m deep.

A1.7.5 ***Further work:*** given the good preservation and lack of datable evidence, a watching brief (*Appendix 2*) was recommended to recover more information about the extent and character of these features, and locate datable material.

A1.8 DISCUSSION

A1.8.1 The results of the Evaluation have been considered by landscape unit, using the definitions provided by the *Palaeoenvironmental Assessment* (Headland Archaeology 2007), paying particular attention to the archaeological sites discovered and the efficacy of the prospecting methods employed. The effectiveness of the geophysical survey has been assessed, and cropmark data, at identifying archaeological sites, with particular regard to

the geology, as have the other non-intrusive methodologies.

A1.8.2 ***Pleistocene Alluvium:*** seven trenches (Trench AA1, Package AA; Trenches AA2–AA4, Package BB, and Trenches AA8–AA10, Package CC) were situated on the Pleistocene alluvium landscape unit (Fig 12). Trenches AA1, AA4, AA8–AA10 either produced no archaeological remains, or remains that were different in character from those predicted by the geophysical survey. Trenches AA2 and AA3 both revealed features corresponding to geophysical anomalies.

A1.8.3 The Pleistocene alluvium, in common with the Holocene alluvium, does not promote the development of cropmarks. Although capable of correctly identifying large linear features on the Pleistocene alluvium, the geophysical survey appears to have been less effective than on the Magnesian Limestone. The possibility that insubstantial or discrete features were not detected still remains. Despite this, given the lack of cropmarks, it is almost certain that more sites were detected than would have been the case had geophysical survey not been employed. Features were, however, detected in Trenches AA2 and AA3.

A1.8.4 ***Holocene Alluvium:*** no Evaluation trenches were excavated on Holocene alluvium.

A1.8.5 ***High-Relief Calcareous Landscape:*** five trenches (Trench AA7, Package DD; Trenches AA11 and AA12, Package EE; Trenches AA5 and AA6, Package FF; Fig 12) were located on the high-relief calcareous landscape unit (Magnesian Limestone). The archaeology discovered in the majority of these trenches corresponded extremely well to that predicted by the geophysical survey and the cropmark information plotted from aerial photographs.

A1.8.6 The trenches predominantly revealed evidence of field systems and enclosures, and almost all that targeted this type of feature produced positive results. The soils and hydrology deriving from the underlying solid geology, Magnesian Limestone, facilitated excellent results from the geophysical survey. The cropmark evidence was generally confirmed by the survey, and it is unlikely that further significant linear features were present that were not identified. However, there remains a possibility that discrete features were not detected, and this may have biased the results.

A1.8.7 ***Assessment of the Other Non-Intrusive Methodologies:*** the effectiveness of non-intrusive methodologies was considered only in regard to the Evaluation, and is not intended to be a critique of the overall value of this work in respect of the project as a whole. The desk-based assessment (NAL 2006a), and the cropmark evidence in particular, on present evidence, have provided a successful and reliable foundation for determining the location of the trial trenches. The field reconnaissance survey (NAL 2006b; 2007a), fieldwalking (NAL 2007c; 2007d) and palaeoenvironmental assessment (Headland Archaeology 2007) have, so far, proved to be of more limited use.

A1.8.8 Generally, the desk-based assessment and the field reconnaissance survey have been useful in helping to discern a viable route for the pipeline and, as far as possible, the route has avoided archaeological sites of known importance. The Evaluation trenches did not reveal any sites that should have been identified by the preceding studies, so there is no reason to doubt the efficacy of these.

A1.8.9 On the other hand, the fieldwalking survey has been of little help in identifying

archaeological sites. This survey was only useful in respect of Trenches AA8–AA10, which were located at a site of ridge and furrow, already identified by the desk-based assessment (MON 1318591; NAL 2006a), and where a small amount of medieval pottery was found during the fieldwalking survey (NAL 2007c).

A1.8.10 Although the palaeoenvironmental assessment provided important contextual information, and advised of the presence of colluvial or alluvial deposits which could have post-dated and obscured some archaeological stratigraphy, in practice such deposits were very rarely encountered in the Evaluation trenches.

A1.9 Conclusions

A1.9.1 The results from the Evaluation trenches suggest that the early phase non-intrusive works seem to have been largely successful in identifying sites of archaeological potential and characterising the likely nature of the archaeology along the route. Where present, the evidence provided by geophysical survey and cropmark plotting from aerial photographs appears to have been a good indicator of the likely presence of archaeological sites and features. The fieldwalking survey seems to have been less reliable, but may yet prove its worth.

A1.9.2 In general, the Evaluation substantiated the validity of the research questions posed by the *Recommendations Document* (NAL 2006–7). For all periods, the archaeology was in keeping with the pre-existing models developed for the region (*ibid*).

A1.9.3 ***Early prehistoric period:*** the Evaluation identified no evidence of surviving organic remains from the Palaeolithic period to the early Iron Age. There were no features identified that certainly date to this period, but some of those that have not yet been closely dated could prove to be of great antiquity. The curvilinear ditch in Trench AA9 (*Section A1.4.4*) is a possible candidate for a prehistoric monument. If this proves to be the case, then it may be of great significance for many of the research objectives for this period.

A1.9.4 The results of the Evaluation are typical of what might be expected regionally. Palaeolithic evidence is absent; Mesolithic evidence in the form of flint tools might have been expected, but its absence is unsurprising. No evidence of Neolithic or Bronze Age habitation was evident within any of the trenches, but in view of the small number of trenches this is also not surprising.

A1.9.5 ***Later prehistoric period:*** the evidence for activity in the later first millennium BC is slightly better than for earlier periods but, at the moment, only Trench AA9 possesses a possible Iron Age feature (*Section A1.4.4*). A ditch (***5591***) was identified that contained pottery which dates to between the Iron Age and Roman periods.

A1.9.6 Despite the dearth of good dating evidence, it remains possible that some of the other trackways, enclosures and boundary features sampled in Trenches AA5–AA7, AA11 and AA12 will also date to the mid-late Iron Age. Previous investigations of the many cropmark features revealed on the Magnesian Limestone have demonstrated that they often originate at this time, and remain in use into much later periods (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007). The palaeoenvironmental assemblages retrieved from these features by the Evaluation were not particularly informative, and they are of limited

use while they remain undated. However, there is some potential for dating several of the features, from their samples, by means of radiocarbon assay.

A1.9.7 The evidence from earlier studies (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007) suggests that the landscape was settled on a relatively permanent basis from at least the middle of the Iron Age onwards. The enclosed settlements of this time are much more visible archaeologically than those of earlier periods, and are more commonly encountered. Funerary monuments generally cease to be as important as previously, with the dead usually buried within settlements, although there are exceptions, such as the chariot burial at Ferry Fryston (Boyle *et al* 2007). Finds are rare, but they point to wide trading networks and contact with distant areas. The economy was agrarian, and both arable agriculture and animal husbandry were important. Sub-division of the landscape with visible boundaries began at this time, a practice which intensified in later periods. The evidence from the Evaluation, although scant, is consistent with these earlier studies.

A1.9.8 The close dating of Iron Age settlement and agricultural features is of crucial importance in reconstructing the development of the landscape and the history of those who lived in it. Any artefactual or palaeoenvironmental material retrieved from dated contexts has the potential to be very informative.

A1.9.9 ***Romano-British period:*** apart from the pottery sherd described in *Section A1.9.5,* there was no artefactual evidence of this period in the Phase 2 Evaluation. There is, however, a possibility that the palaeoenvironmental study may provide datable material for this period.

A1.9.10 The Romano-British features in this landscape are comparable with those of the Iron Age, and are largely associated with agriculture. Predominantly, it is evidence for what were probably 'native' societies that has been detected, and previous studies (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007) have repeatedly established continuity between Iron Age settlements, and their associated field systems, and those of Romano-British date. The extension of Roman administrative control over this landscape, the Roman military, and a Romanised infrastructure and economy, is evident from the forts and urban centres, in the area, linked by roads.

A1.9.11 The results of the Evaluation have only limited potential for addressing the research objectives of the *Recommendations Document* (NAL 2006–7) for the prehistoric and Roman periods. They do, however, contribute in a very general way to our understanding of the landscape at this time, if only through negative evidence.

A1.9.12 ***Medieval period:*** no concrete evidence has been identified for the post-Roman and medieval periods. However, Trench AA2 (*Section A1.3.3*) did confirm the ridge and furrow identified by the geophysical survey (Bartlett 2006) and the desk-based assessment (NAL 2006a), which may have had an origin in the medieval period. Packages BB and CC targeted areas where medieval activity had been identified by the desk-based assessment (NAL 2006a) and may yet produce some datable palaeoenvironmental remains.

A1.9.13 The lack of evidence for medieval activity is probably a combination of the widespread landscape reorganisation taking place after the Romano-British period and the methodology influencing the location of the archaeological trenches. Previous projects in the study area (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007) have found evidence

that some boundaries established in the Iron Age or Romano-British period remained in use during the medieval period, whereas others fell into disuse to be replaced by new regimes of land allotment. Many of the medieval enclosures are likely to have continued in use into modern times, and survive as extant hedgerows today. These were not targeted by the Evaluation, which instead focused on cropmark and geophysical evidence of relict enclosures belonging to earlier periods.

A1.9.14 Many of today's settlements have medieval roots and, as the pipeline deliberately avoided settlement centres, it is unsurprising that medieval finds were few in number. No concentrations of medieval pottery were detected during the fieldwalking survey (NAL 2007c; 2007d). Those few finds that were recovered from the topsoil can be explained by the practice of fertilising the fields with domestic waste, and do not necessarily indicate settlement in the immediate vicinity.

A1.9.15 The results of the Evaluation have only limited potential for addressing the research objectives of the *Recommendations Document* (NAL 2006–7) for the medieval period. They do, however, contribute in a very general way to our understanding of the landscape at this time, if only through negative evidence.

A1.9.16 ***Post-medieval and modern periods:*** the evidence for the post-medieval and modern periods from the Evaluation is similarly scanty. Trenches AA1, AA3 AA8 and AA9 contained land drains, and post-medieval pottery was recovered from Trench AA4.

A1.9.17 As with the medieval period, the lack of evidence for post-medieval and modern activity can largely be explained by the sampling strategy employed and the fact that the pipeline runs through farmland. The areas of ridge and furrow along the pipeline route are evidence of the widespread changes in farming practices from the medieval period, and some of the modern boundaries are contiguous with post-medieval enclosures. The land drains indicated agricultural improvement, which was probably contemporary with the enclosure of the medieval commons by Acts of Parliament in the eighteenth and nineteenth centuries (Whyte 2003).

A1.9.18 The evidence from the pipeline for this period is of only limited relevance to the research objectives presented in the *Recommendations Document* (NAL 2006–7). It does, however, demonstrate that, although there have been other significant changes in the targeted areas, the patterns of rural settlement and land-use have not fundamentally changed since the medieval period.

A1.10 Recommendations for Further Work

A1.10.1 ***Fieldwork:*** Table 26 collates the fieldwork strategies employed following the Evaluation.

Trench	Plot	Package	Recommendations for further work
AA1	5-11	AA	No work recommended
AA2	10-9	BB	Watching brief on immediate surroundings
AA3	10-9	BB	No work recommended
AA4	10-9	BB	No work recommended

AA5	20-4	FF	Careful watching brief on immediate surroundings
AA6	20-4	FF	No work recommended
AA7	18-5	DD	Watching brief on immediate surroundings
AA8	16-10	CC	Watching brief on immediate surroundings
AA9	16-10	CC	No work recommended
AA10	16-10	CC	No work recommended
AA11	19-5	EE	Careful watching brief on immediate surroundings
AA12	19-5	EE	No work recommended

Table 26: Summary of the recommendations for further fieldwork

A1.10.2 ***Stratigraphy:*** no further stratigraphic analysis is required. The results of the Evaluation should be integrated with those of any excavation at sites along the pipeline and included in the final report.

A1.10.3 ***Finds:*** no further analysis is recommended for the material recovered by the Evaluation, and they do not require conservation. The artefacts have been considered alongside others recovered by the archaeological works along the pipeline route (*Section 4.2-14*).

A1.10.4 ***Palaeoenvironmental material:*** one of the samples (from Trench AA6 (*Section A1.7.4*)) may be useful in filling a chronological or spatial gap in the interpretation of the archaeology of the whole pipeline route. Otherwise, no further analysis is recommended for the palaeoenvironmental assemblages.

A1.10.5 ***Radiocarbon dating:*** two of the twelve palaeoenvironmental samples taken during the course of the Evaluation have the potential to provide a radiocarbon date. These derived from Trenches AA6 (Plot 20-4, Package FF) and AA9 (Plot 16-10, Package CC).

APPENDIX 2: WATCHING BRIEF

A2.1 INTRODUCTION

A2.1.1 The length of the Asselby to Aberford Pipeline, and the varied terrain it traversed, preclude all-encompassing conclusions about the results of the Watching Brief. It is helpful to break the route down into a number of smaller packages to enable relevant and meaningful discussion at a more local scale; all are within the county of North Yorkshire (Table 27; Fig 31).

Package	Landscape Unit	Plots
A1	Holocene alluvium	2-3 and 3-1
	Pleistocene alluvium	3-4 to 3-8, 3-10, 3-14, 3-15, 4-1, 4-3, 4-5 and 4-8
A2	Pleistocene alluvium	5-1, 5-2, 5-4, 5-6, 5-10, 6-1 to 6-6, 7-3, 9-1, 9-3 and 9-4
A3	Pleistocene alluvium	10-8, 10-9, 11-1, 11-4, 12-3 and 12-6
A4	Pleistocene alluvium	15-5, 16-10 and 17-4
	High-relief calcareous	18-7, 19-1, 19-5, 20-2 and 20-4

Table 27: Concordance of packages

A2.1.2 The starting point for deciding the extent of these packages was the concentration of archaeology revealed by the Watching Brief; some areas lacked any archaeological features and are, therefore, not addressed here. Some plots contained archaeological remains identified by previous works (evaluation trenches or excavations), but were not stripped to an archaeological horizon during the Watching Brief and, consequently, there are no further results to report.

A2.1.3 Table 28 summarises the results of the Watching Brief, which mainly consist of ditches forming field boundaries and drainage ditches.

Package	Plot	Results
A1	2-3	Ditch, not closely dated
	2-4	No archaeology
	3-1	Ditch, not closely dated
	3-2	No archaeology
	3-3	No archaeology
	3-4	Ditch, not closely dated
	3-5	Ditches, not closely dated
	3-6	Ditches, not closely dated
	3-7	Ditch, likely to be a field boundary, not closely dated
	3-8	Ditch, likely to be a field boundary, not closely dated
	3-9	No archaeology
	3-10	Series of postholes and ditch, not closely dated, and modern service trench
	3-11	No archaeology

Package	Plot	Results
	3-12	No archaeology
	3-13	No archaeology
	3-14	Ditches, not closely dated
	3-15	Ditches, not closely dated, and a post-medieval field boundary
	3-16	No archaeology
	3-17	No archaeology
	4-1	Ditches and gully, not closely dated
	4-2	No archaeology
	4-3	Ditches, not closely dated
	4-4	No archaeology
	4-5	Ditch, not closely dated, and natural feature
	4-6	No archaeology
	4-7	No archaeology
	4-8	Ditch and furrow, not closely dated
A2	5-1	Ditch, post-medieval drainage ditch
	5-2	Ditches, post-medieval drainage ditches and field boundaries
	5-3	No archaeology
	5-4	Ditch, modern
	5-5	No archaeology
	5-6	Ditch, not closely dated
	5-7	No archaeology
	5-8	No archaeology
	5-9	No archaeology
	5-10	Ditch, not closely dated
	6-1	Ditch, not closely dated
	6-2	Ditches, not closely dated
	6-3	Ditches, not closely dated
	6-4	Ditch, not closely dated
	6-5	Furrow, not closely dated
	6-6	Furrows at 6–11m intervals, not closely dated
	6-7	No archaeology
	6-8	No archaeology
	6-9	No archaeology
	6-10	No archaeology
	7-1	No archaeology
	7-2	No archaeology
	7-3	No archaeology
	8-1	No archaeology
	9-1	Gully, not closely dated
	9-2	No archaeology
	9-3	Pit, not closely dated
	9-4	Ditch, not closely dated
A3	10-8	Ridge and furrow, not closely dated
	10-9	Ridge and furrow, not closely dated
	11-1	Ditches, all modern, and ridge and furrow, not closely dated
	11-2	No archaeology
	11-3	No archaeology
	11-4	Curvilinear ditch, not closely dated
	12-1	No archaeology
	12-2	No archaeology
	12-3	Ditches, all modern, drainage and field boundaries
	12-4	No archaeology
	12-5	No archaeology
	12-6	Gully, modern
A4	15-5	Layer of peat, not closely dated
	15-6	No archaeology

Package	Plot	Results
	15-7	No archaeology
	15-8	No archaeology
	15-9	No archaeology
	16-1	No archaeology
	16-2	No archaeology
	16-3	No archaeology
	16-4	No archaeology
	16-5	No archaeology
	16-7	No archaeology
	16-8	No archaeology
	16-9	No archaeology
	16-10	Pit, not closely dated
	17-1	No archaeology
	17-2	No archaeology
	17-3	No archaeology
	17-4	Ditch, not closely dated
	17-5	No archaeology
	17-6	No archaeology
	17-7	No archaeology
	17-8	No archaeology
	18-1	No archaeology
	18-2	No archaeology
	18-3	No archaeology
	18-4	No archaeology
	18-5	No archaeology
	18-6	No archaeology
	18-7	Ridge and furrow, containing post-medieval pot
	18-8	No archaeology
	18-9	No archaeology
	18-10	No archaeology
	18-11	No archaeology
	19-1	Ditches and gullies, not closely dated
	19-2	No archaeology
	19-3	No archaeology
	19-4	No archaeology
	19-5	D-shaped enclosure, not closely dated, but likely to be prehistoric
	20-1	No archaeology
	20-2	Ditch and pit, not closely dated
	20-3	No archaeology
	20-4	Oval-shaped enclosure, not closely dated, but likely to be prehistoric

Table 28: Summary of results of watching brief

A2.1.4 The results presented below are arranged by package, with a description and summary of the location and terrain of each package, and the overall results, followed by a detailed description of each plot with the archaeological remains identified. The route is discussed from south-east to north-west. Along the entire route, the soil and geological profile generally consisted of 0.3m of topsoil, over relict ploughsoil, sealing Holocene or Pleistocene alluvium or Magnesian Limestone. Digital survey plans of the archaeological features discovered in the course of the Watching Brief will be deposited as Event data with the North Yorkshire Historic Environment Record office.

A2.2 PACKAGE A1

A2.2.1 Package A1 (Fig 31; North Yorkshire; Newland Parish; Plot 2-3; Drax Parish; Plots 2-4 to 3-4; Cambleforth Parish; Plots 3-5 to 3-10; Carlton Parish; Plots 3-12 to 4-8) covered a distance of roughly 5.2km, and varied from *c* 2.5m to *c* 10.5m aOD. The package was located on Holocene alluvium from Plot 2-3 to 3-1 and Pleistocene alluvium from Plot 3-1 to 4-8.

A2.2.2 Fourteen of the plots contained archaeological features. Plots 2-3, 3-1, 3-4, 3-5, 3-6, 3-7, 3-8, 3-14, 3-15, 4-1, 4-3, 4-5 and 4-8 all contained ditches, and Plot 3-10 contained a series of postholes, a ditch, and a modern service trench. The majority of these features are likely to relate to the medieval and post-medieval agricultural activity identified by the desk-based assessment, such as ridge and furrow (DBA: DL; DBA: DK; DBA: DJ; DBA: DB; DBA: DF; NAL 2006a), lanes and field boundaries (NSMR MNY 10036; NAL 2006a), trackways (DBA: EJ; NAL 2006a), and strip farming (DBA: EH; NAL 2006a). Plots 3-4 and 4-1 were the only areas to confirm cropmarks.

A2.2.3 ***Plot 2-3:*** at the time of the fieldwalking survey (NAL 2007d) this plot lay under an arable crop. The terminus of a ditch, aligned roughly east/west, was exposed over a length of 4.7m. It was 1.03m wide, and was excavated to a depth of 0.95m: no datable evidence was recovered. It may be associated with the strip farming identified by the desk-based assessment (DBA: EH; NAL 2006a).

A2.2.4 ***Plot 3-1:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). A single ditch was detected, aligned north/south, and measuring roughly 10 x 0.93m and 0.22m deep. It does not appear to align with the trackway identified in the desk-based assessment (DBA: EJ; NAL 2006a).

A2.2.5 ***Plot 3-4:*** at the time of the fieldwalking survey (NAL 2007d) this plot was under an arable crop. A ditch, 10.4 x 0.72m, and 0.32m deep, aligned north-east/south-west, was exposed towards the centre of the plot. This confirmed a cropmark, possibly a former boundary (NAL 2006a). The ridge and furrow identified in the desk-based assessment (DBA: DL; NAL 2006a) was not confirmed in this plot.

A2.2.6 ***Plot 3-5:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under an arable crop. Two parallel 'ditches' were revealed on the west side of the plot, both aligned north/south, 8.6m apart, and exposed for a length of 10m. One measured 1m wide and 0.28m deep, and contained two fills, while the other measured 1.2m wide and 0.14m deep, and contained a single fill. These features may confirm the ridge and furrow identified by the desk-based assessment (DBA: DL; NAL 2006a).

A2.2.7 ***Plot 3-6:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). Two intersecting ditches were exposed in the western end, both extending for a distance of 30m. One measured 0.93m wide and 0.31m deep; the other was 1.9m wide and 0.48m deep.

A2.2.8 ***Plot 3-7:*** at the time of the fieldwalking survey (NAL 2007d) this plot lay under an arable crop. A single ditch, aligned north/south, was revealed for a distance of 10m towards the

western end of the plot. It measured 2.35m wide and 0.6m deep and contained three fills.

A2.2.9 ***Plot 3-8:*** this plot was under an arable crop at the time of the fieldwalking survey (NAL 2007d). Ridge and furrow, identified in the desk-based assessment (DBA: DK; NAL 2006a), was not confirmed, but a single ditch was detected, 2m wide and 0.43m deep, aligned east/west, and exposed over a distance of 20m.

A2.2.10 ***Plot 3-10:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under an arable crop. Two sets of postholes, one ditch, and a modern service trench were revealed during construction. One set of postholes, at the eastern end of the plot, formed a square enclosure up against the modern field boundary. The postholes varied both in shape and size, from 0.34–0.89m long, 0.26–0.5m wide and 0.06–0.16m deep; the structure covered an area of roughly 9m². The other set suggested a roughly L-shaped structure, located centrally within the plot. It consisted of eight postholes and one gully; a further two outlying postholes were also associated with this structure. These postholes also varied in shape and size (0.24–0.49m long, 0.18–0.4m wide and 0.09–0.23m deep), while the gully measured 2.7m long on its east/west-aligned section, before turning through 90° to extend south for a further 1.1m. Roughly 10m to the east of the L-shaped structure, a ditch (***10071***), aligned north/south, was identified for a length of 14m, and measured 1.59m wide and 0.35m deep; its east side was cut by a modern service trench.

A2.2.11 ***Plot 3-14:*** this plot was under an arable crop at the time of the fieldwalking survey (NAL 2007d). Five ditches were exposed at regular intervals across it, all aligned north-east/south-west. They may represent cultivation boundaries contemporary with the ridge and furrow identified by the desk-based assessment (DBA: DJ; NAL 2006a), which was not otherwise confirmed in the field. The ditches had an average length of 10m, widths varying from 1–3m and an average depth of 0.37m.

A2.2.12 ***Plot 3-15:*** this plot, at the time of the fieldwalking survey (NAL 2007d), was under an arable crop. Two ditches were revealed, one cutting the other. The later ditch was aligned north-west/south-east with a right-angled turn at the western end, towards the south, and measured 148 x 1.02m and 0.51m deep; the earlier was aligned north-east/south-west, and measured 10 x 1.45m wide and 0.68m deep.

A2.2.13 ***Plot 4-1:*** at the time of the fieldwalking survey (NAL 2007d), this plot was under an arable crop. Three features were located: a ditch, with a recut, near the centre of the plot; another ditch; and a gully, at the western end of the plot. The recut ditch measured 10m long, with an overall width of 2.4m, and a depth of 0.75m. The gully and the second ditch were aligned north/south and were detected for a length of 10m; the gully measured 0.69m wide and 0.34m deep, while the ditch was 1.56m wide and 0.53m deep. All of these features appeared to coincide with cropmarks identified by the desk-based assessment (NSMR MNY 10036; NAL 2006a), but there was no sign of the ridge and furrow (DBA: DB; NAL 2006a), which had also been identified.

A2.2.14 ***Plot 4-3:*** this plot was under an arable crop at the time of the fieldwalking survey (NAL 2007d). At its western end there was an H-shaped arrangement of two ditches, and a gully, with a pit cut by the gully. The two ditches were aligned north-west/south-east, and were 3.7m apart, measuring on average 0.93m wide and 0.3m deep, while the gully was 0.5m wide and 0.16m deep. The pit was roughly circular in shape, and measured 0.96m in

diameter, and 0.03m deep.

A2.2.15 ***Plot 4-5:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under an arable crop. A single ditch was exposed at its centre, aligned north-west/south-east, and measuring 10 x 1.36m and 0.49m deep. This ditch cut through a natural feature.

A2.2.16 ***Plot 4-8:*** an arable crop was noted in this plot at the time of the fieldwalking survey (NAL 2007d). At the eastern limit of the plot, the ditch of a former modern field boundary and a furrow were revealed; the furrow confirms the ridge and furrow identified in the desk-based assessment (DBA: DF; NAL 2006a). The modern field boundary was aligned north-east/south-west and measured 12 x 1.57m and 0.63m deep, while the furrow measured 16 x 1.44m and 0.18m deep.

A2.3 Package A2

A2.3.1 Package A2 (Fig 31; North Yorkshire; Carlton Parish; Plots 5-1 to 6-1; Burn Parish; Plots 6-2 to 9-4) covered roughly 6km, and varied in altitude from *c* 4m to *c* 12m aOD. The package was located on Pleistocene alluvium.

A2.3.2 Archaeological features were apparent in 13 of these plots. Plots 5-1, 5-2, 5-4, 5-10, 6-1 to 6-4, 9-1, and 9-4 all contained features resembling ditches; Plots 6-5 and 6-6 revealed furrows; Plot 9-3 had a pit; and in Plot 5-6, a natural feature was exposed. The desk-based assessment had identified ridge and furrow in a number of the plots (5-1, 5-2, 5-4, 5-6, 5-10, 6-5, 6-6 and 9-4) (MON 1308955; DBA: DA; DBA: CY; DBA: CX; DBA: AU; NAL 2006a), but this was confirmed only in Plots 6-5 and 6-6. The desk-based assessment had also identified cropmarks in Plots 5-1, 5-2, 5-4, 5-6 and 5-10 (MON 1308955; MON 1309046; DBA: DA; DBA: CY; NAL 2006a). Features on the ground confirmed those in Plots 5-4 and 5-10.

A2.3.3 ***Plot 5-1:*** at the time of the fieldwalking survey (NAL 2007d), this plot was under an arable crop. A single ditch was exposed at its eastern edge, and appeared likely to be a modern drainage ditch. It was not, therefore, excavated. It was aligned north-west/south-east and measured 28m long, and 1m wide. The ridge and furrow and field boundaries, identified by the desk-based assessment (MON 1308955; NAL 2006a), were not confirmed in this plot.

A2.3.4 ***Plot 5-2:*** at the time of the fieldwalking survey (NAL 2007d), this plot lay under an arable crop. Four ditches were uncovered, all *c* 1m wide, aligned north-east/south-west, and extending across the whole width of the easement. They appeared to represent modern field boundaries, so were not excavated, and seemed to mark fields *c* 146m, 20m and *c* 56m wide. The ridge and furrow identified by the desk-based assessment (MON 1308955; NAL 2006a) was not confirmed, although the features which were revealed may suggest an alternative interpretation.

A2.3.5 ***Plot 5-4:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under an arable crop. The same ridge and furrow and field boundaries (MON 1308955; NAL 2006a) had been identified, as in the two plots to the east, along with cropmarks delineating an enclosure (MON 1309046; NAL 2006a). The enclosure was not confirmed on the ground, although the field boundaries were, in the form of ditches. One ditch confirmed the north/south-aligned cropmark, while two parallel ditches coincided with the

north-west/south-east cropmark. A further two ditches were also observed on this alignment. All of the ditches extended across the width of the easement and were *c* 1m wide. They were not excavated as they were interpreted as modern field boundaries.

A2.3.6 ***Plot 5-6:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). The ridge and furrow (DBA: DA; NAL 2006a) identified by the desk-based assessment was not confirmed, and no features of an archaeological nature were observed in this plot. The single linear feature exposed was natural in origin.

A2.3.7 ***Plot 5-10:*** this plot was under an arable crop during the fieldwalking survey (NAL 2007d). Ridge and furrow identified by the desk-based assessment (DBA: CY; NAL 2006a) was not established on the ground, but a cropmark recorded by the assessment coincided with a single ditch exposed in the centre of the plot, aligned north/south and measuring 23m long, 1.18m wide and 0.24m deep.

A2.3.8 ***Plot 6-1:*** during the fieldwalking survey (NAL 2007d), this plot was under an arable crop. A single ditch was uncovered near the centre, aligned east/west and measuring 10m long, 1.48m wide and 0.22m deep.

A2.3.9 ***Plot 6-2:*** at the time of the fieldwalking survey (NAL 2007d), this plot was under an arable crop. A ditch and gully were exposed, with the gully cutting the ditch; both features were aligned north/south and were exposed for a length of 10m. The gully measured 0.96m wide and 0.22m deep, while the ditch measured 2.52m wide and 0.54m deep. Three sherds of pottery, dated to the seventeenth or eighteenth century, were recovered from the gully (*Section A2.7.14*).

A2.3.10 ***Plot 6-3:*** this plot was not covered by the fieldwalking survey (NAL 2007d) as it was not part of the original route of the pipeline. Two parallel ditches were observed, aligned north-east/south-west, 4.8m apart, and exposed over a length of 10m. One measured 0.75m wide and 0.3m deep, while the other was 0.6m wide and 0.28m deep. These closely comparable dimensions and alignments suggest that they were contemporary.

A2.3.11 ***Plot 6-4:*** this plot was not covered by the fieldwalking survey (NAL 2007d) as it was not part of the original route. A slightly curvilinear ditch was exposed on the western edge of the plot, aligned north-west/south-east, and measuring 8 x 1m and 0.17m deep.

A2.3.12 ***Plot 6-5:*** this plot was not covered by the fieldwalking survey (NAL 2007d) as it was not part of the original route. An area of ridge and furrow (DBA: CX; NAL 2006a) had been identified by the desk-based assessment, and was confirmed by a single furrow, aligned north-west/south-east, and measuring 18 x 2.1m and 0.38m deep. It had one fill, which contained two sherds of relatively modern pottery.

A2.3.13 ***Plot 6-6:*** this plot was not covered by the fieldwalking survey (NAL 2007d) as it was not a part of the original route. The same area of ridge and furrow (DBA: CX; NAL 2006a) as in Plot 6-5 (*Section A2.3.12*) was also confirmed in this plot, by a group of furrows, aligned north-west/south-east, at 6–11m intervals.

A2.3.14 ***Plot 9-1:*** at the time of the fieldwalking survey (NAL 2007d), this plot lay under an arable crop. A single gully was revealed, aligned north/south, and measuring 10 x 0.46m and

0.09m deep. The gully contained a single fill, and no artefacts.

A2.3.15 ***Plot 9-3:*** when the fieldwalking survey (NAL 2007d), was undertaken, this plot was under pasture. A single circular pit was exposed, with two fills. The pit measured *c* 0.56m in diameter and 0.16m deep.

A2.3.16 ***Plot 9-4:*** an arable crop was present in this plot at the time of the fieldwalking survey (NAL 2007d). Ridge and furrow (DBA: AU; NAL 2006a) had been identified by the desk-based assessment, but was not confirmed on the ground. A single ditch was exposed, aligned north/south, and measuring 10 x 1.25m and 0.4m deep. It contained a single fill.

A2.4 PACKAGE A3

A2.4.1 Package A3 (Fig 31; North Yorkshire; Gateforth Parish; Plots 10-8 to 12-1; Hambleton Parish; Plots 12-2 to 12-6), was situated on Pleistocene alluvium, covered roughly 4.4km, and varied in altitude from *c* 7m to *c* 10m aOD.

A2.4.2 This package stretched from Plot 10-8 to 12-6: six of the plots (10-8, 10-9, 11-1, 11-4, 12-3 and 12-6) were found to contain archaeological remains. Plots 10-8, 10-9 and 11-1 all contained furrows and ditches, the furrows having been identified previously by the desk-based assessment (DBA: JP; NAL 2006a) and geophysical survey (Bartlett 2006). They were also confirmed by the Phase 2 Evaluation in Trench AA2 (*Appendix 1*, *Section A1.3.3*). Plots 11-4, 12-3 and 12-6 revealed ditches; of these, only some of the ditches within Plot 12-3 had been identified by the geophysical survey (Bartlett 2006).

A2.4.3 ***Plot 10-8:*** this plot lay under pasture at the time of the fieldwalking survey (NAL 2007d). A series of furrows was exposed at its western end, aligned north-east/south-west, and continuing into Plot 10-9. The furrows confirmed the geophysical anomalies (Bartlett 2006), measured approximately 2m wide, and lay about 7m apart.

A2.4.4 ***Plot 10-9:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under pasture. The same series of furrows as in Plot 10-8 continued into this plot, and all the way across it, on the same alignment, with the same dimensions. These furrows had been identified by the desk-based assessment (DBA: JP; NAL 2006a), and the geophysical survey (Bartlett 2006), and confirmed by Trench AA2 of the Phase 2 Evaluation (*Appendix 1*, *Section A1.3.3*). They were truncated by a drainage ditch, aligned east/west across the whole width of the easement.

A2.4.5 ***Plot 11-1:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). Another series of furrows was exposed, and is likely to be associated with those seen in Plots 10-8 and 10-9 (*Sections A2.4.3* and *A2.4.4*), given their alignment and dimensions. The furrows lay at the eastern end of the plot and were truncated by a field boundary, represented by a ditch, aligned east-north-east/west-south-west. No furrows were observed on the other side of this ditch. The ditch extended across the width of the easement and was approximately 1m wide. In view of its modern characteristics, it was not excavated. Two further ditches were exposed further to the west. Both were *c* 1m wide, aligned north-east/south-west, and extended across the full width of the easement. They were not excavated. A field boundary, identified by the desk-based assessment from a cropmark (DBA: JR; NAL 2006a), was not confirmed during the Watching Brief.

A2.4.6 ***Plot 11-4:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under an arable crop. A single curvilinear ditch was detected at its western end, which measured 3.4m wide and had an implied diameter of 26m.

A2.4.7 ***Plot 12-3:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). Several ditches were revealed, all apparently modern. None was therefore excavated.

A2.4.8 ***Plot 12-6:*** at the time of the fieldwalking survey (NAL 2007d), this plot lay under an arable crop. A single ditch was identified, parallel to a modern trackway, and probably a drainage ditch associated with it. The ditch was aligned north-east/south-west and measured 0.5m wide. It extended across the full width of the easement, and was not excavated, given its modern characteristics.

A2.5 PACKAGE A4

A2.5.1 Package A4 (Fig 31; North Yorkshire; Hambleton Parish; Plot 15-5; Monk Fryston Parish; Plot 15-6; Carwood Parish; Plot 15-7; Biggin Parish; Plot 16-1; Little Fenton Parish; Plots 16-3 to 17-1; Sherburn in Elmet Parish; Plots 15-8, 15-9, 16-2 and 17-2 to 17-6; Barkston Ash Parish; Plots 17-7 to 18-10; Saxton with Scarthingwell Parish; Plots 18-11 to 20-4) covered approximately 12.7km at an altitude varying from *c* 6m to *c* 54m aOD. This package was sited on Pleistocene alluvium from Plot 17-4 to 17-8 and on high-relief calcareous geology (Magnesian Limestone) from Plot 17-8 to 20-4.

A2.5.2 Eight of the plots (15-5, 17-4, 18-7, 19-1, 19-5, 20-2 and 20-4) contained archaeological remains. Plots 19-5 and 20-4 contained ditches forming enclosures identified by the desk-based assessment (WSMR 1094; NAL 2006a), while Plots 17-4, 19-1 and 20-2 contained ditches. Plot 20-2 also contained a pit. Ridge and furrow was detected in Plot 18-7 and confirmed that identified by the desk-based assessment (NSMR MNY 10789; NAL 2006a), while Plot 15-5 contained a layer of organic peat-like soil, and Plot 16-10 contained a single pit.

A2.5.3 ***Plot 15-5:*** at the time of the fieldwalking survey (NAL 2007d), this plot lay under an arable crop. A layer of peat-like material was exposed towards its centre, occupying an area of 53.9 x 10m.

A2.5.4 ***Plot 16-10:*** this plot had an arable crop at the time of the fieldwalking survey (NAL 2007d). At its eastern end, close to the track, a small pit was revealed, which was 0.66m in diameter and 0.23m deep. It may be associated with Site 2 (*Section 3.3*), as it contained eight sherds of Roman pottery (*Section A2.7.8*).

A2.5.5 ***Plot 17-4:*** when the fieldwalking survey (NAL 2007d) was undertaken, this plot lay under pasture. A single ditch was revealed, aligned east/west and measuring 75 x 1.24m and 0.5m deep.

A2.5.6 ***Plot 18-7:*** an arable crop was present in this plot at the time of the fieldwalking survey (NAL 2007d). Ridge and furrow had been identified by the desk-based assessment (NSMR MNY 10789; NAL 2006a), and was confirmed on the ground. The furrows were aligned north-east/south-west and extended across the whole width of the easement. They were 2m

wide and approximately 8m apart.

A2.5.7 ***Plot 19-1:*** this plot lay under an arable crop at the time of the fieldwalking survey (NAL 2007d). Four ditches were revealed, which may represent the enclosures identified by the desk-based assessment (DBA: CQ; NAL 2006a). All the ditches were aligned north/south. Two of the four were only 0.65m apart, and measured, on average, 10 x 0.9m and 0.29m deep. These two lay between the other two, which measured, on average, 10 x 1.38m and 0.13m deep.

A2.5.8 ***Plot 19-5:*** at the time of the fieldwalking survey (NAL 2007d), this plot lay under an arable crop. The complex of features revealed are discussed in the main body of the report (*Section 3.10*).

A2.5.9 ***Plot 20-2:*** this plot was under an arable crop at the time of the fieldwalking survey (NAL 2007d). A single pit was observed, which may represent the cropmarks (NSMR MNY 10645; NAL 2006a) identified by the desk-based assessment. The pit was roughly circular and measured 0.78 x 0.72m and 0.28m deep. A ditch identified in Trench 37 of the Phase 1 Evaluation (OA North 2007a) was seen to continue across the full width of the easement.

A2.5.10 ***Plot 20-4:*** at the time of the fieldwalking survey (NAL 2007d) this plot lay under an arable crop. The complex of features revealed are discussed in the main body of the report (*Section 3.12*).

A2.6 DISCUSSION

A2.6.1 The results of the Watching Brief have been considered by landscape unit, using the definitions provided by the *Palaeoenvironmental Assessment* (Headland Archaeology 2007), paying particular attention to the archaeological sites discovered and the efficacy of the prospecting methods employed. The effectiveness of the geophysical survey (Bartlett 2006; 2007a; 2007b) and cropmark data (NAL 2006a) at identifying archaeological sites has been assessed, with particular regard to the geology. The other non-intrusive methodologies are also considered.

A2.6.2 ***Holocene Alluvium:*** one package (A1) was located on this landscape unit. The geology is not conducive to cropmark formation and none was known along the route of the pipeline. By contrast, the Phase 1 Evaluation (OA North 2007a) has demonstrated that geophysical survey can be a relatively efficient method of identifying features within this landscape. However, in Package A1, none of the features revealed during the watching brief corresponded to geophysical anomalies. Some of the pipeline route within this unit was not stripped to an archaeological horizon and therefore some archaeological remains may have gone unobserved.

A2.6.3 Package A1 was located on the Holocene alluvium landscape unit from Plot 2-3 to 3-1. Although Plots 2-3 and 3-1 produced archaeological remains, these did not relate to any geophysical or cropmark anomalies.

A2.6.4 ***Pleistocene Alluvium:*** Packages A1–A4 were partially or wholly located on Pleistocene alluvium. Like the Holocene alluvium, the Pleistocene alluvium does not promote the development of cropmarks, and, although capable of correctly identifying large linear

features on this geology, geophysical survey may be less effective than on the Holocene alluvium. Some of the pipeline route was not stripped to an archaeological horizon and therefore some archaeological remains may have gone unobserved.

A2.6.5 Package A1 was located on the Pleistocene alluvium landscape unit from Plot 3-1 to 4-8. Thirteen of these (3-1, 3-4 to 3-8, 3-10, 3-14, 3-15, 4-1, 4-3, 4-5, and 4-8) contained archaeological remains. Cropmarks had been recorded in two of them (3-4 and 4-1): these were confirmed.

A2.6.6 Fourteen of the plots in Package A2 (5-1, 5-2, 5-4, 5-6, 5-10, 6-1 to 6-6, 9-1, 9-3 and 9-4) contained archaeological remains. Plot 6-1 was the only one with geophysical survey results, but these were not confirmed on the ground. Cropmarks were recorded in four of the plots (5-2, 5-4, 5-6 and 5-10), and confirmed in Plots 5-4 and 5-10. Archaeological features recorded in the other plots did not match the cropmarks.

A2.6.7 Six of the plots in Package A3 (10-8, 10-9, 11-1, 11-4, 12-3 and 12-6) contained archaeological remains. Cropmarks had not been recorded in any of these, but three of them (10-9, 11-1 and 12-3) had geophysical anomalies. Plot 10-9 confirmed the ridge and furrow detected by the geophysical survey, while in Plot 12-3, the four ditches identified by the geophysical survey were also confirmed.

A2.6.8 Package A4 was located on the Pleistocene alluvium landscape unit from Plot 15-5 to 17-8. The geophysical anomalies detected in this package were not confirmed by the archaeological remains found in Plots 15-5, 16-10 and 17-4.

A2.6.9 ***High-Relief Calcareous:*** part of one package (A4) was located on the high-relief calcareous landscape unit (Magnesian Limestone) in this section of the pipeline. This type of geology generally forms cropmarks significantly better than the alluviums and also responds better to geophysical survey. Some of the pipeline route on this landscape unit was not stripped to an archaeological horizon and therefore some archaeological remains may have gone unobserved.

A2.6.10 Package A4 was located on the high-relief calcareous (Magnesian Limestone) landscape unit from Plot 17-8 to 20-4. Five of the plots (18-7, 19-1, 19-5, 20-2 and 20-4) contained archaeological remains. Plots 19-5 and 20-4 had extensive cropmarks, which were mostly confirmed, while Plot 19-1 was the only one to contain and confirm geophysical anomalies.

A2.6.11 ***Assessment of the Other Non-Intrusive Methodologies:*** the effectiveness of non-intrusive methodologies is considered only in regard to the Watching Brief, and it is not intended as a critique of the overall value of this work in relation to the project as a whole. Some of the areas were not stripped to an archaeological horizon and therefore some archaeological remains may have gone unobserved.

A2.6.12 The results and predictions of the desk-based assessment (NAL 2006a) were generally borne out in the field. The fieldwalking survey (NAL 2007c; 2007d) was, however, a poor predictor of the archaeological sites that have been uncovered during the Watching Brief.

A2.6.13 ***Assessment of the Intrusive Methodologies****:* two phases of evaluation had been

undertaken and several sites of excavation had been examined prior to the Watching Brief. These, along with the non-intrusive works, were used to grade the expected density of archaeological features, per plot, along the route of the pipeline, on a high-medium-low scale, in advance of the Watching Brief.

A2.6.14 The two phases of evaluation found some features, the interpretation of which was confirmed by the Watching Brief. With the single possible exception of the pit found in Plot 16-10, Package A4 (*Section A2.5.4*), no further features were encountered in the vicinity of any of the excavated sites during the Watching Brief, suggesting that the limits of the site had already been defined. It may be, however, that the areas surrounding the sites were not stripped to an archaeological horizon.

A2.7 Conclusions

A2.7.1 The grades allocated to each plot, to predict the density of archaeological remains, were largely borne out during the Watching Brief. The majority of the areas graded low produced little or no archaeological remains, while the areas graded medium and high generally exposed more archaeological features.

A2.7.2 The majority of the features encountered were ditches; these were mostly located in areas with known cropmarks (NAL 2006a). For the most part, specific cropmarks were not confirmed, however. Instead, they acted as a predictor of an environment in which the remains of boundaries, such as these ditches, might be found by intrusive work.

A2.7.3 In general, the Watching Brief substantiated the validity of the research questions posed by the *Recommendations Document* (NAL 2006–7). For all periods, the archaeology was in keeping with the pre-existing models developed for the region (*ibid*).

A2.7.4 ***Early prehistoric period:*** the Watching Brief identified no certain evidence of surviving remains from the Palaeolithic period to early the Iron Age. However, some of those that have not yet been closely dated could prove to be of great antiquity. Plot 11-4 confirmed the presence of a curvilinear ditch (*Section A2.4.6*), which is a possible candidate for a prehistoric monument. If this proves to be the case, then it may be of great significance for the research objectives for this period.

A2.7.5 The results of the Watching Brief are typical of what may be expected regionally. Palaeolithic evidence is absent, and while Mesolithic evidence in the form of flint tools might have been expected, its absence is unsurprising. Given the narrow strip cut through the landscape by the pipeline, it is unsurprising that evidence of Neolithic or Bronze Age habitation was not apparent in any of the plots.

A2.7.6 ***Later prehistoric period:*** the Watching Brief did not identify any features which certainly date to this period, but some of those that have not been closely dated could prove to be of such antiquity. Despite the dearth of good dating evidence, it is possible that some of the other trackways, enclosures and boundary features sampled in Plots 5-4, 11-1, 19-1 and 20-2 will also date to the mid-late Iron Age, as they may be additional elements of known and dated sites of this period (NAL 2006a). Previous investigations of the many cropmark features revealed on the Magnesian Limestone have demonstrated that they often originated at this time, and remained in use into much later periods (Roberts *et al* 2001;

Roberts 2005; Brown *et al* 2007).

A2.7.7 The evidence from earlier studies (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007) suggests that the landscape was settled on a more permanent basis from at least the middle of the Iron Age onwards. The enclosed settlements of this time are much more visible archaeologically than those of earlier periods, and are more commonly encountered. Funerary monuments generally cease to be as important as previously, with the dead usually buried within settlements, although there are exceptions, such as the chariot burial at Ferry Fryston (Boyle *et al* 2007). Finds are rare, but they point to wide trading networks and contact with distant areas. The economy was agrarian, and both arable agriculture and animal husbandry were important. Sub-division of the landscape with visible boundaries began at this time, a practice which intensified in later periods. The evidence from the Watching Brief, although scant, is consistent with these earlier studies.

A2.7.8 ***Romano-British period:*** the Watching Brief has provided some artefactual evidence for this period, and some of the features that have not been closely dated could also belong to this period. A small pit from Plot 16-10 in Package A4 may be associated with the Romano-British settlement discovered by area excavation at Site 2 (*Section 3.3*).

A2.7.9 The Romano-British features in this landscape are comparable with those of the Iron Age, and are largely those associated with agriculture. Predominantly, it is evidence for what were probably 'native' societies that has been detected, and previous studies (Roberts *et al* 2001; Roberts 2005; Brown *et al* 2007) have repeatedly established continuity between the Iron Age settlements, and their associated field systems, and those of Romano-British date. The extension of Roman administrative control over this landscape, the Roman military, and a Romanised infrastructure and economy is evident from the forts and urban centres in the area, linked by roads.

A2.7.10 The results of the Watching Brief have only limited potential for addressing the research objectives of the *Recommendations Document* (NAL 2006–7) for the prehistoric and Roman periods. They do, however, contribute in a very general way to our understanding of the landscape at this time, if only through negative evidence.

A2.7.11 ***Medieval period:*** no artefactual evidence for this period was recovered during the Watching Brief. However, significant areas of possibly medieval ridge and furrow were detected during the Watching Brief in Plots 6-5, 6-6, 10-8, 10-9 and 18-7.

A2.7.12 Many of today's settlements have medieval roots and, as the pipeline deliberately avoids settlement centres, it is perhaps unsurprising that medieval finds were few in number. No concentrations of medieval pottery were detected during the fieldwalking survey (NAL 2007c; 2007d). Those few finds that were recovered from the topsoil can be explained by the practice of fertilising the fields with domestic waste, and do not necessarily indicate settlement in the immediate vicinity.

A2.7.13 The results of the Watching Brief have only limited potential for addressing the research objectives of the *Recommendations Document* (NAL 2006–7) for this period. They do, however, contribute in a very general way to our understanding of the landscape at this time, if only through negative evidence.

A2.7.14 ***Post-medieval and modern periods:*** the evidence from the Watching Brief for the post-medieval and modern periods is scanty. In Plot 6-2, a gully contained three pottery sherds that are thought to be seventeenth–eighteenth century in date. A single furrow in Plot 6-5 produced two small sherds of relatively modern pot.

A2.7.15 As with the medieval period, the lack of evidence for post-medieval and modern activity can largely be explained by the sampling strategy employed and the fact that the pipeline runs through farmland. The areas of ridge and furrow, and drainage ditches, along the pipeline route are evidence of the widespread changes in farming practices from the medieval period, and some of the modern boundaries are contiguous with post-medieval enclosures.

A2.7.16 The evidence from the pipeline is of only limited relevance to the research objectives presented in the *Recommendations Document* (NAL 2006–7). It does, however, demonstrate that, although significant changes have doubtless taken place in the targeted areas, the patterns of rural settlement and land-use have not fundamentally changed since the medieval period.

A2.8 Recommendations for Further Work

A2.8.1 ***Stratigraphy:*** no further stratigraphic analysis, with the exception of Plots 19-5 and 20-4, which have been discussed in detail in the main body of the assessment report (*Sections 3.10* and *3.12*).

A2.8.2 ***Finds:*** no further analysis is recommended for the finds recovered during the Watching Brief and they do not require conservation. The artefacts have been reported alongside others retrieved from the pipeline (*Sections 4.2-4.14*).

A2.8.3 ***Radiocarbon dating:*** only one palaeoenvironmental sample contained material suitable for radiocarbon dating, from a pit in Plot 9-3 (Package A2).

ILLUSTRATIONS

List of Figures

LIST OF PLATES

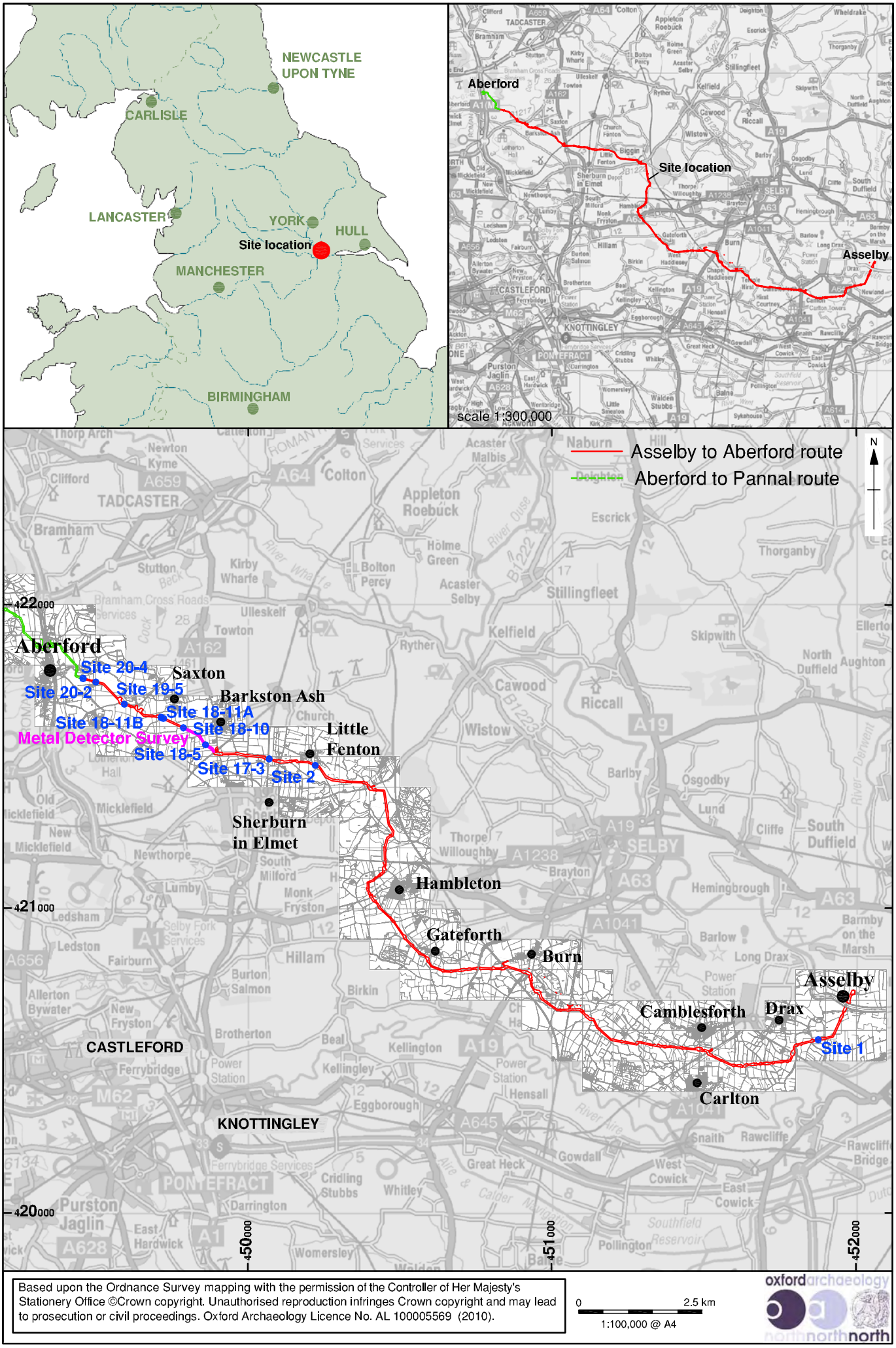

Figure 1: Site location

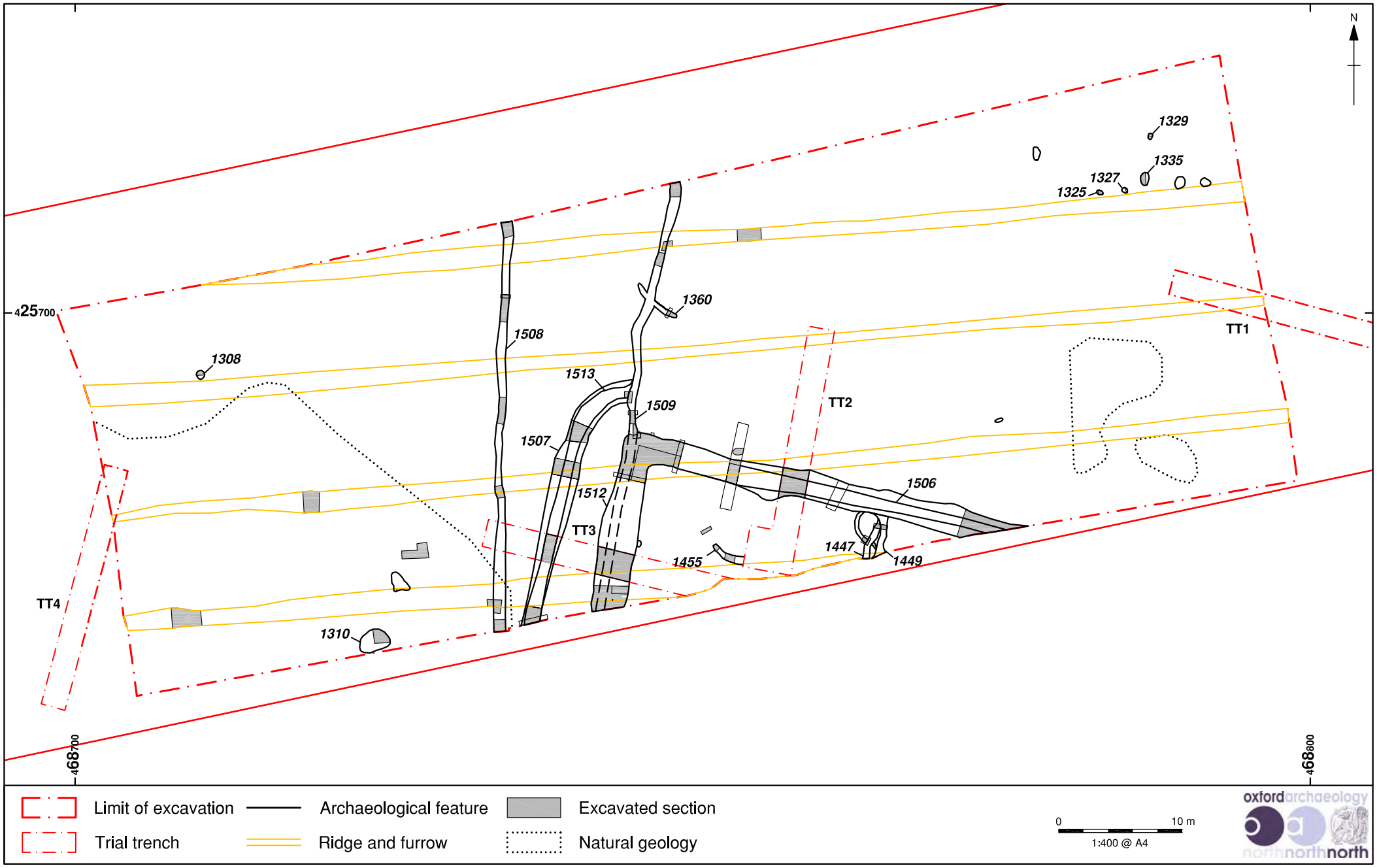

Figure 2: Site 1

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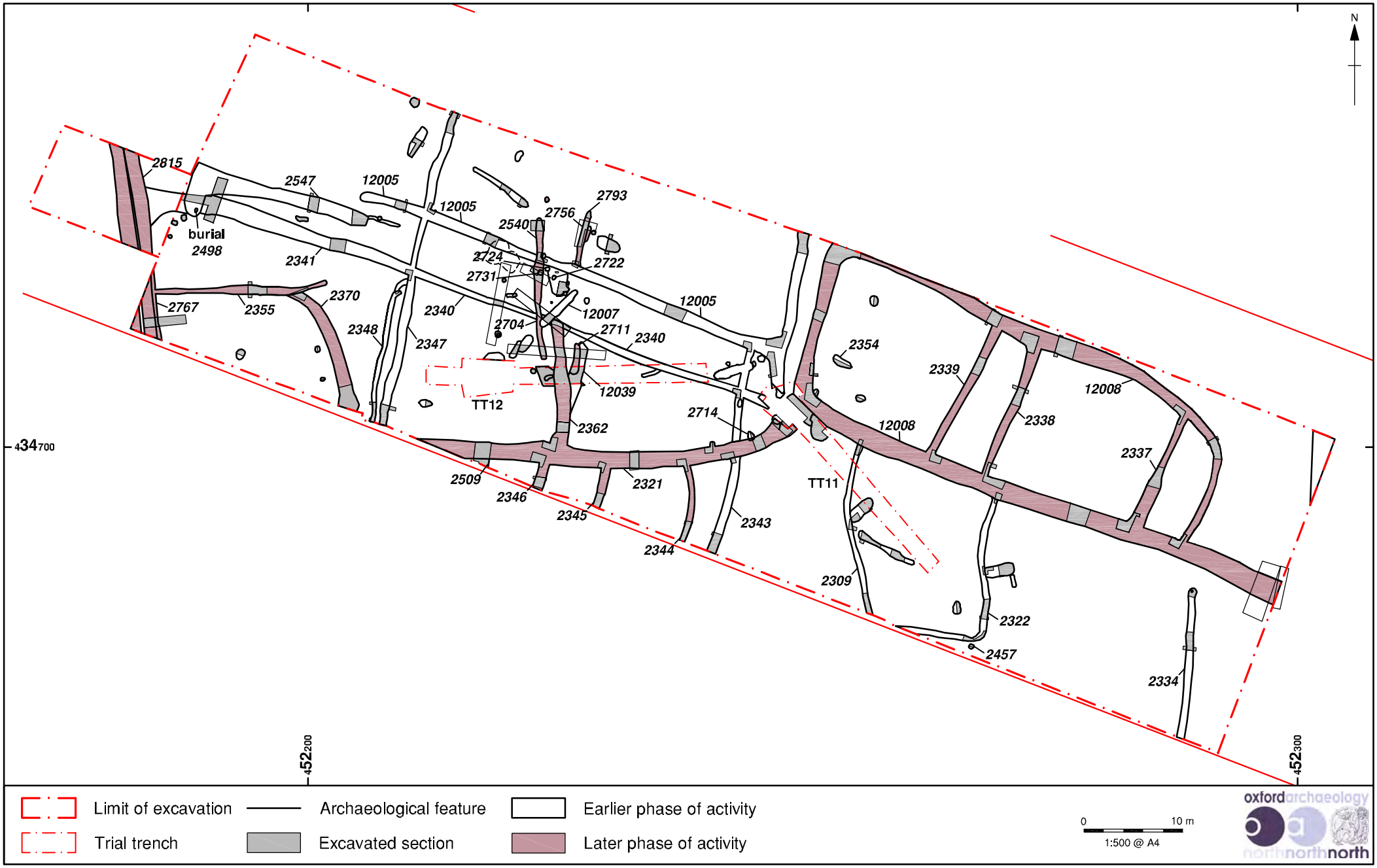

Figure 3: Site 2

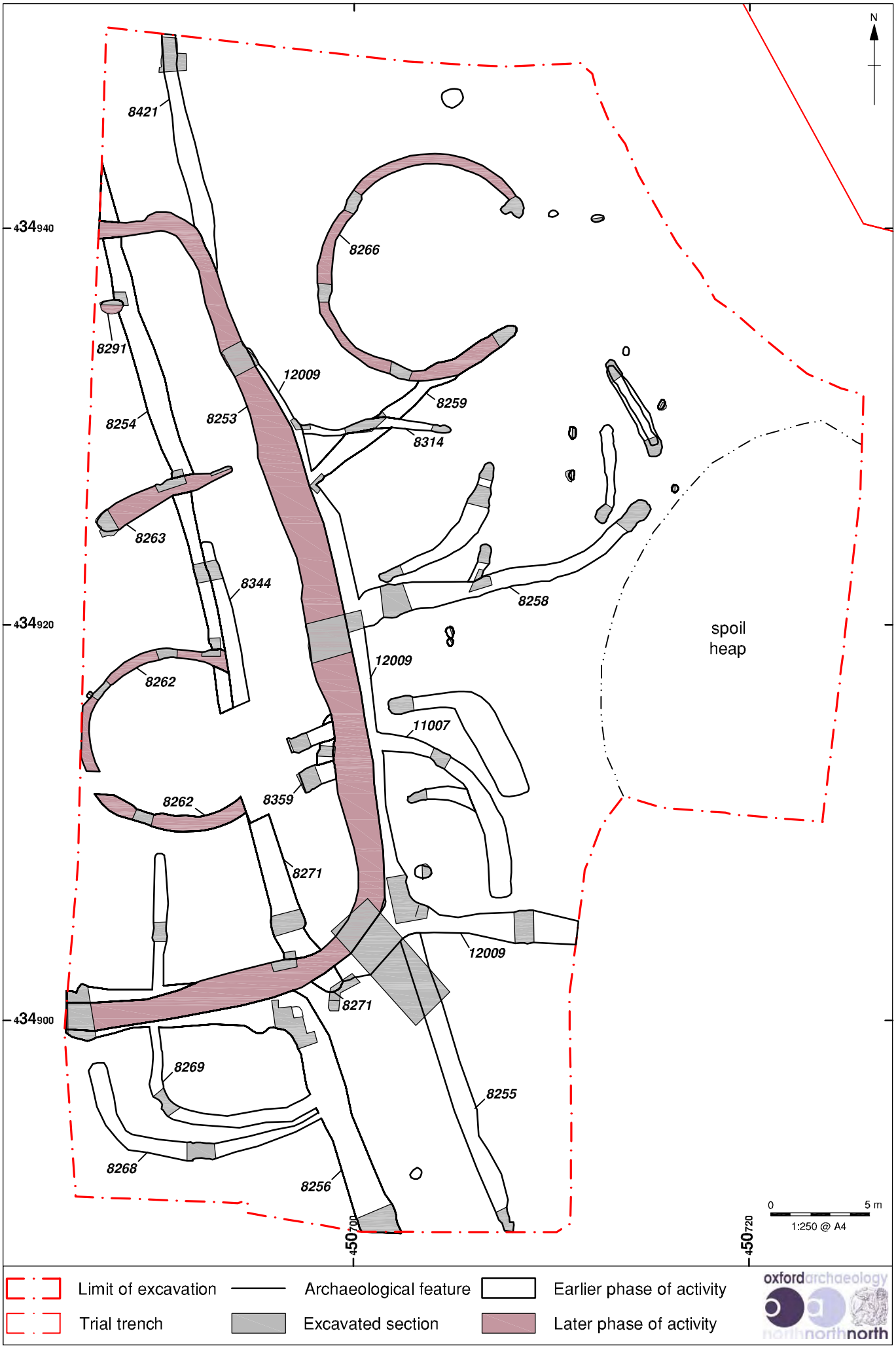

Figure 4: Site 17-3

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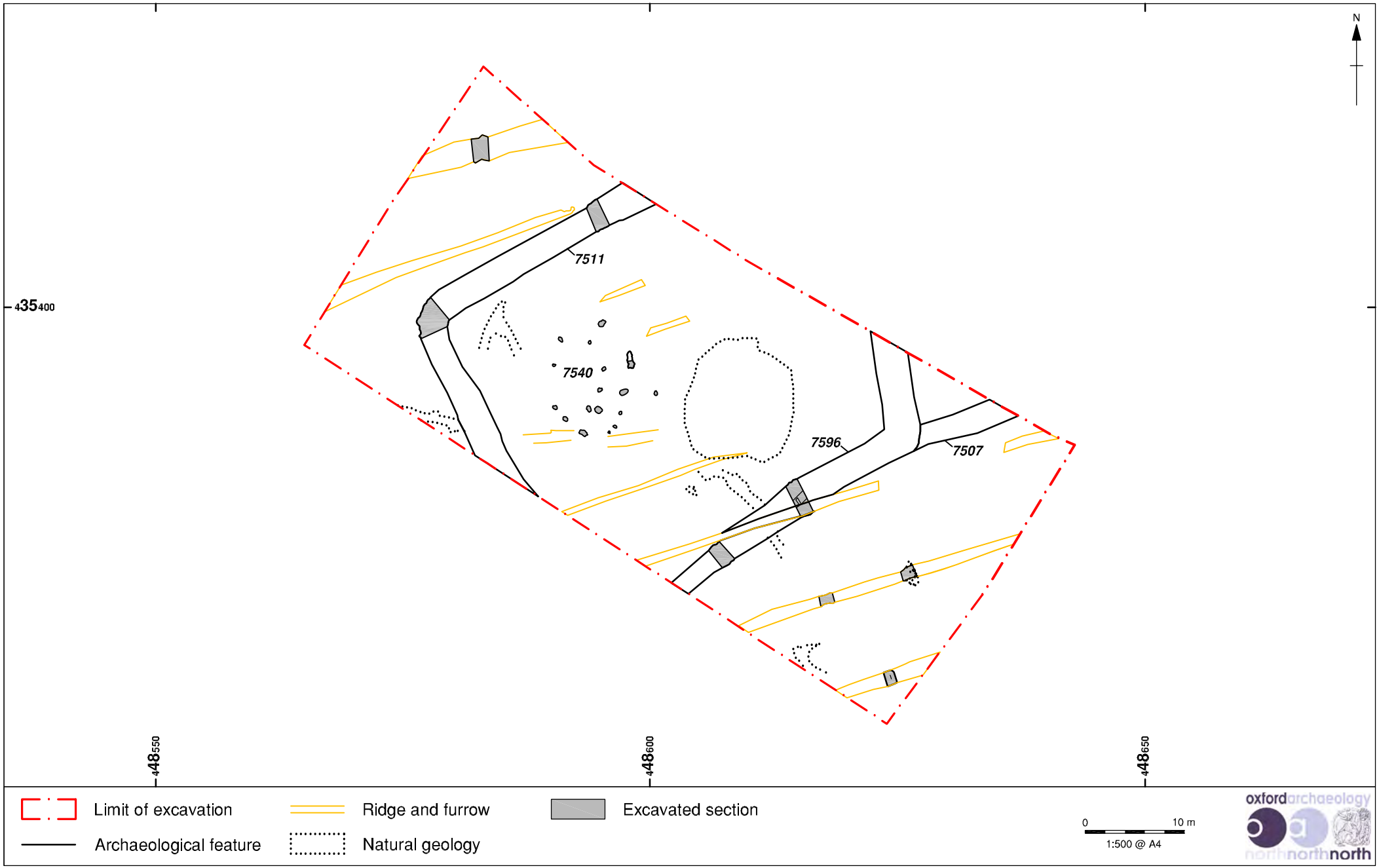

Figure 5: Site 18-5

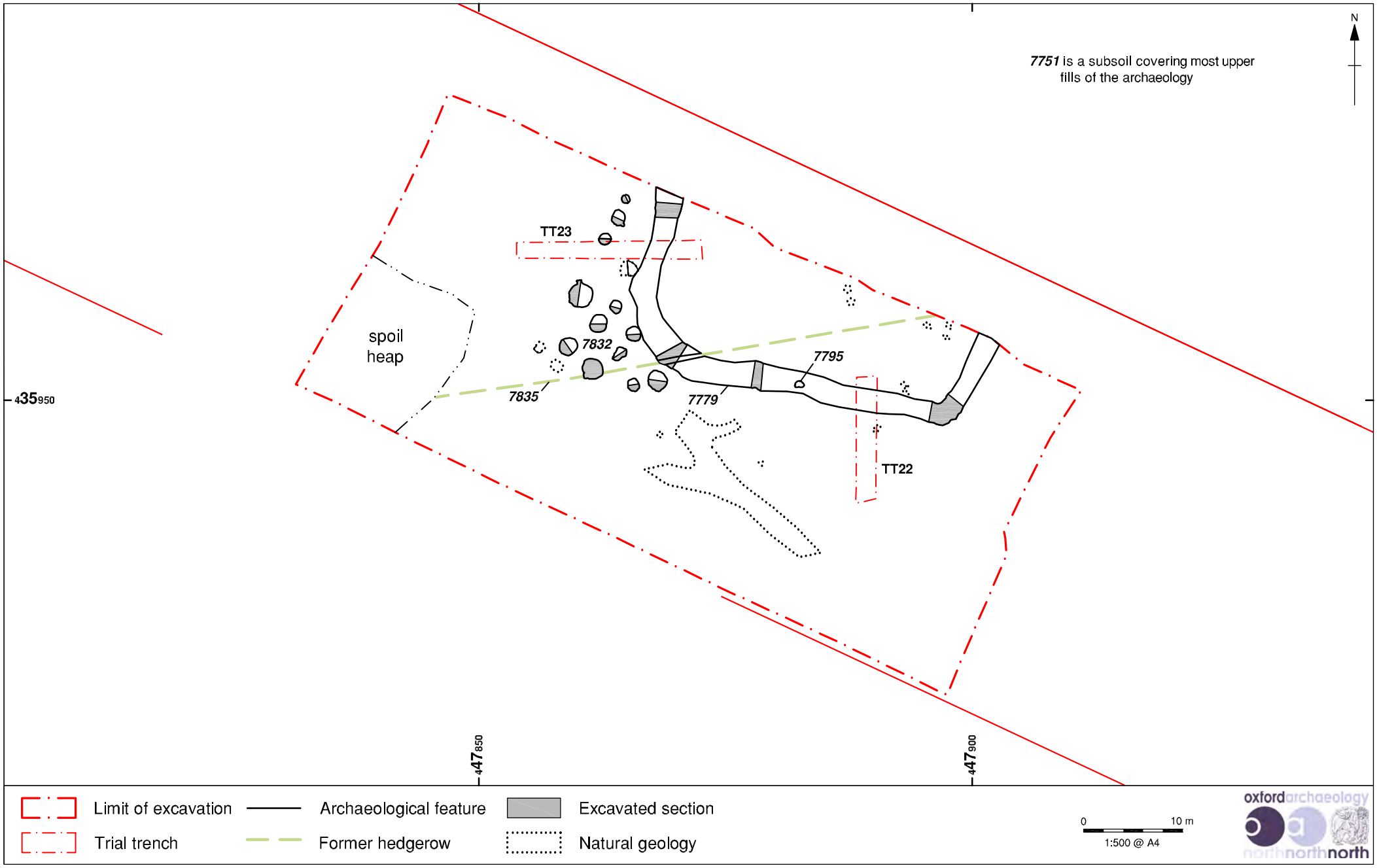

Figure 6: Site 18-10

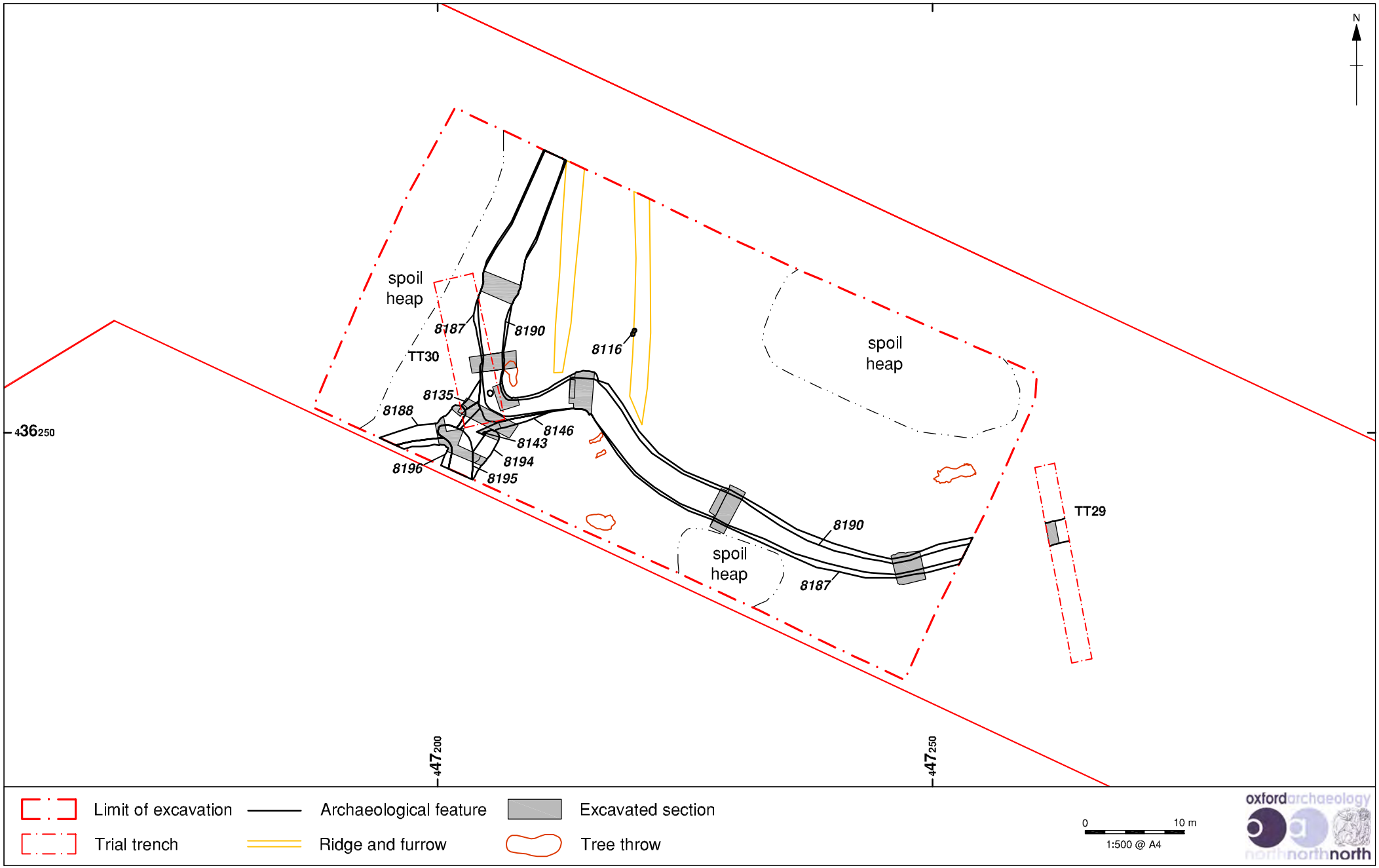

Figure 7: Site 18-11A

NJ*L10068*AMS*240610

Figure 8: Site 18-11B

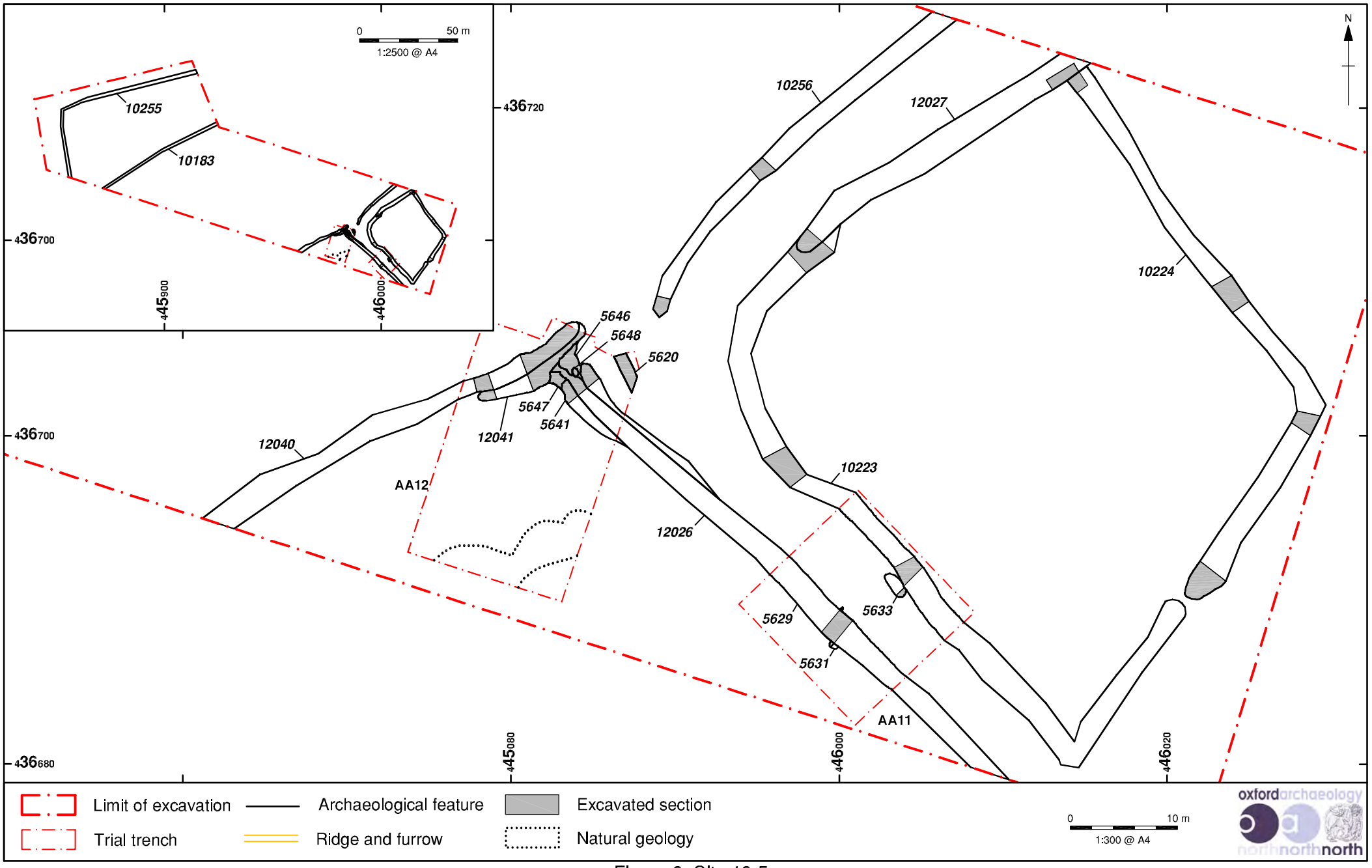

Figure 9: Site 19-5

NJ*L10068*AMS*240610

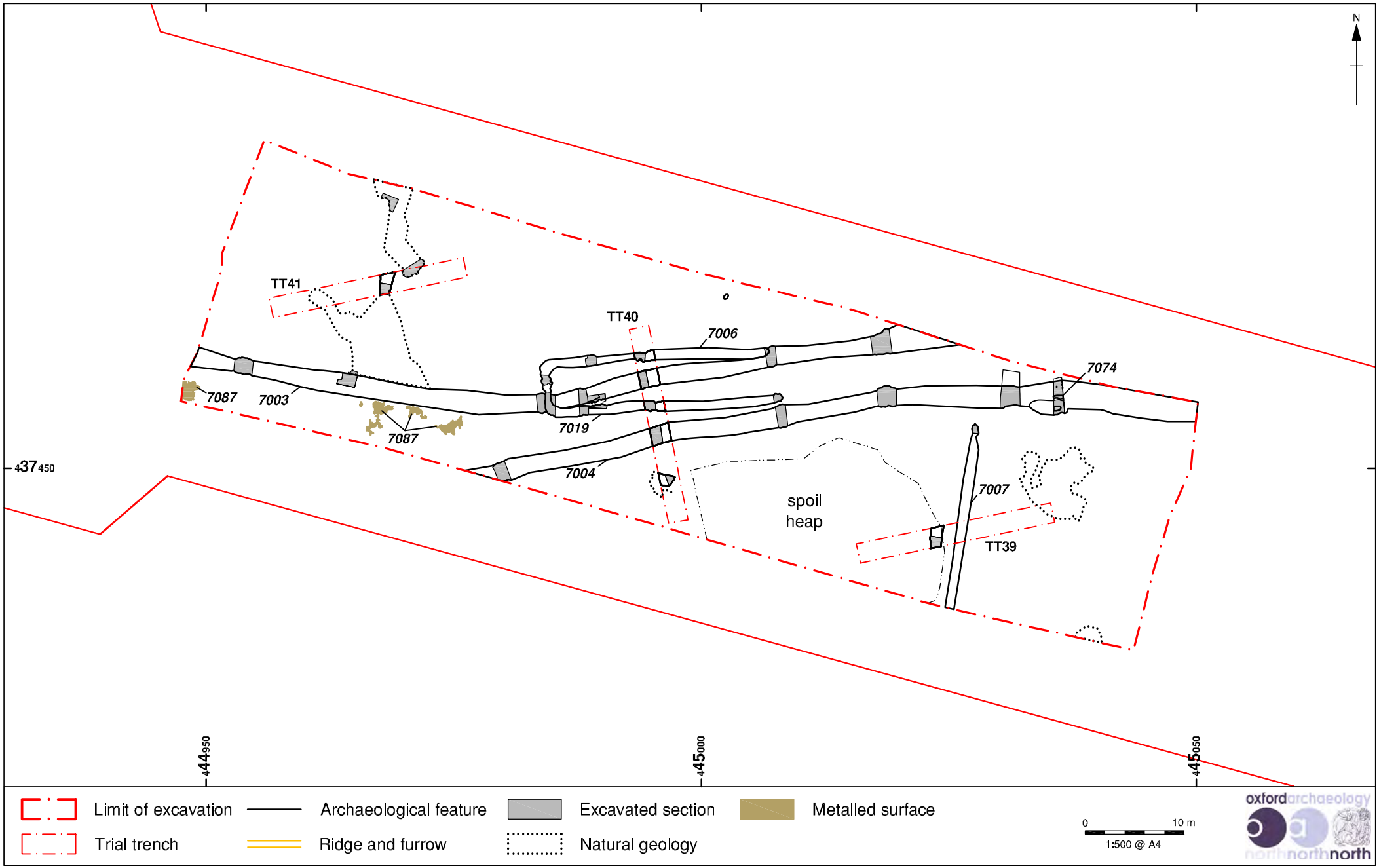

Figure 10: Site 20-2

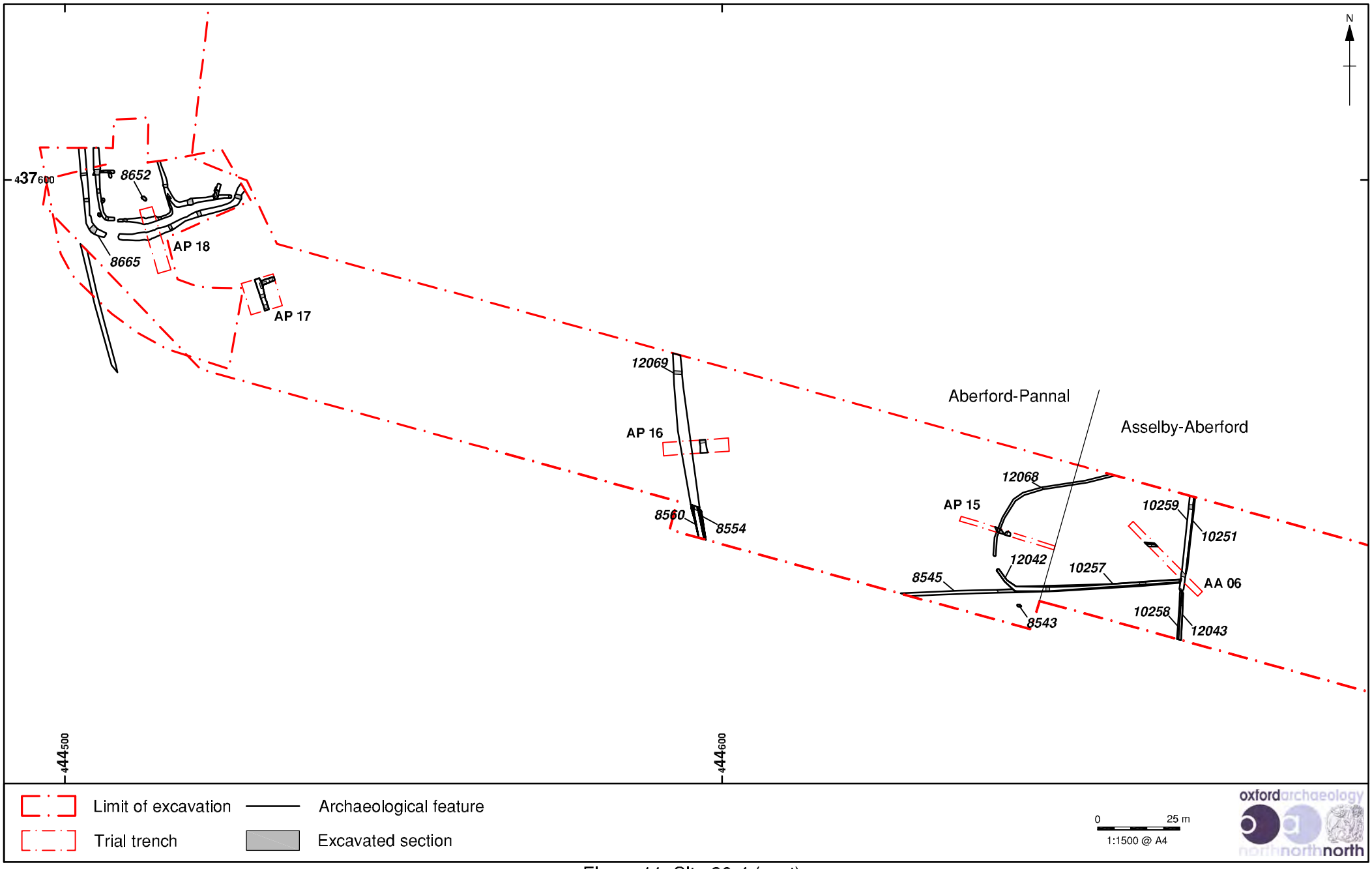

Figure 11: Site 20-4 (east)

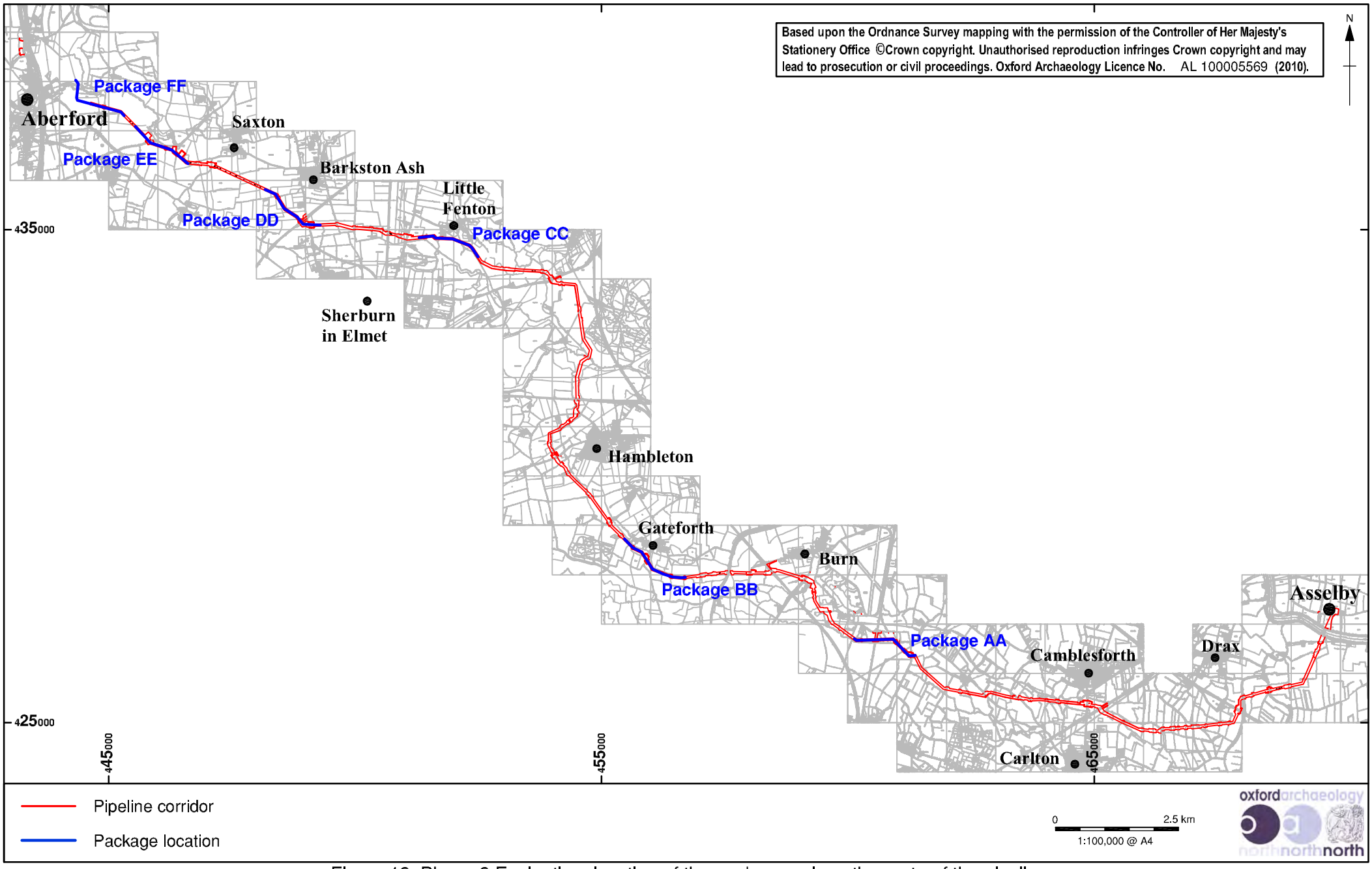

Figure 12: Phase 2 Evaluation: location of the packages along the route of the pipeline

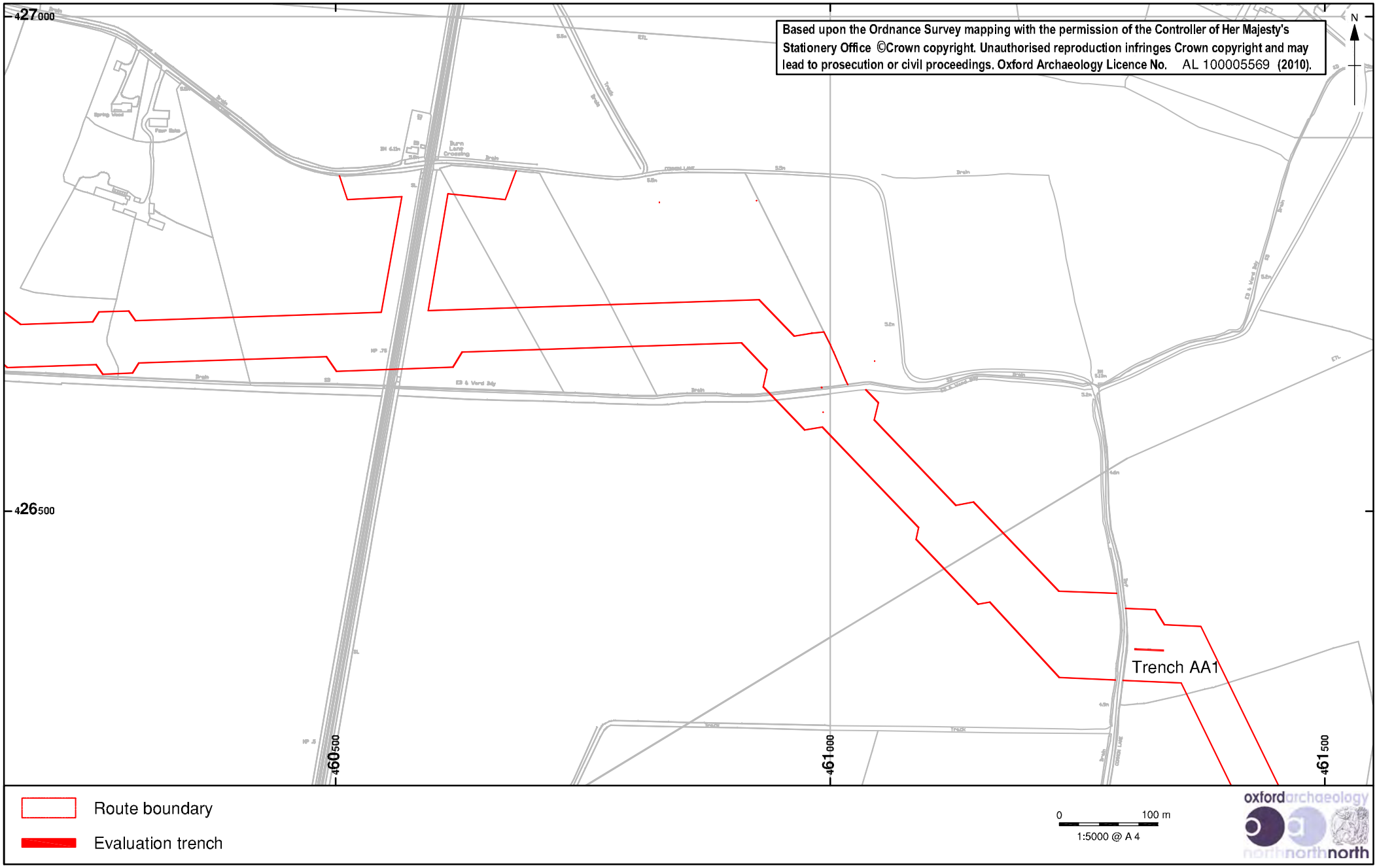

Figure 13: Package AA

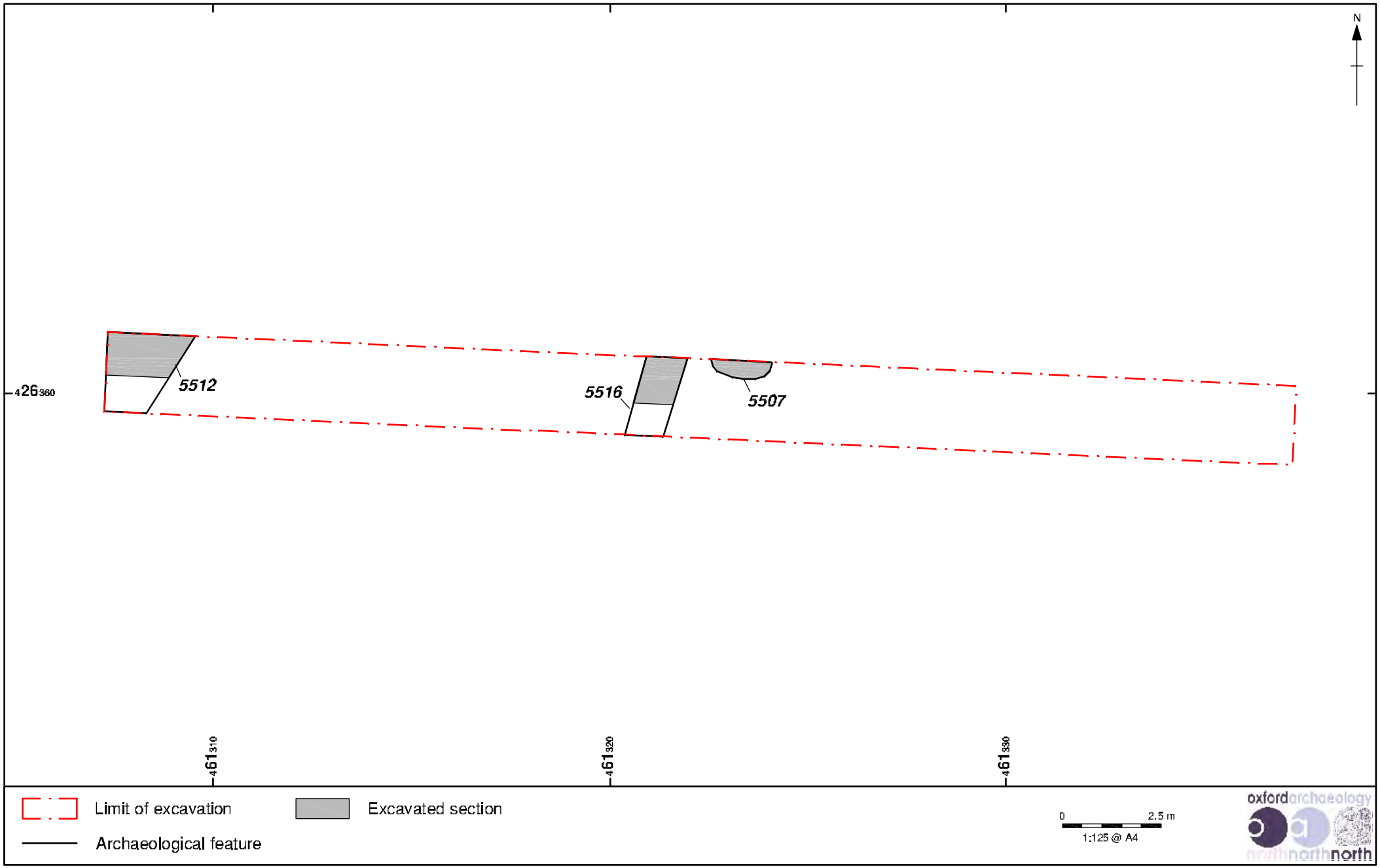

Figure 14: Trench AA1

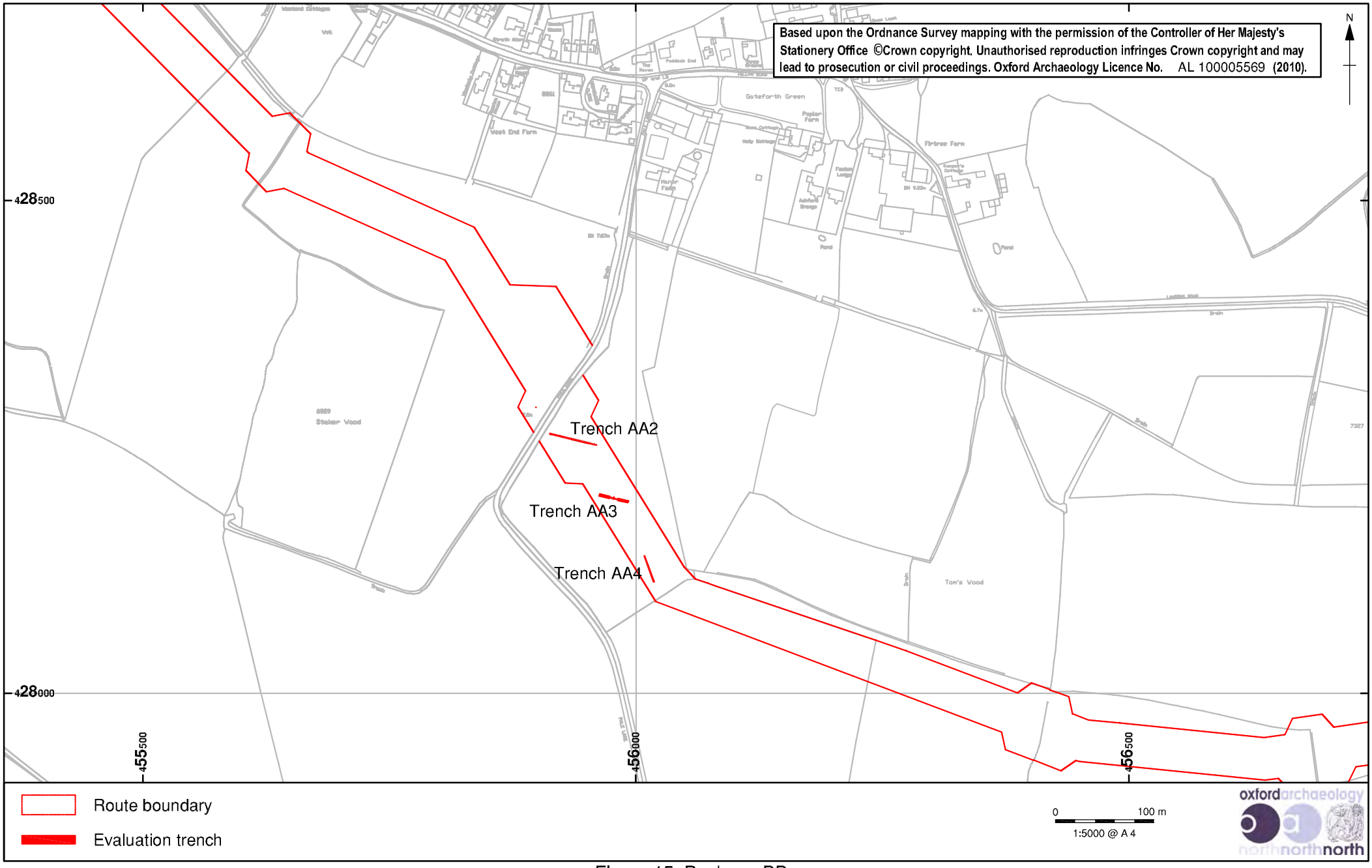

Figure 15: Package BB

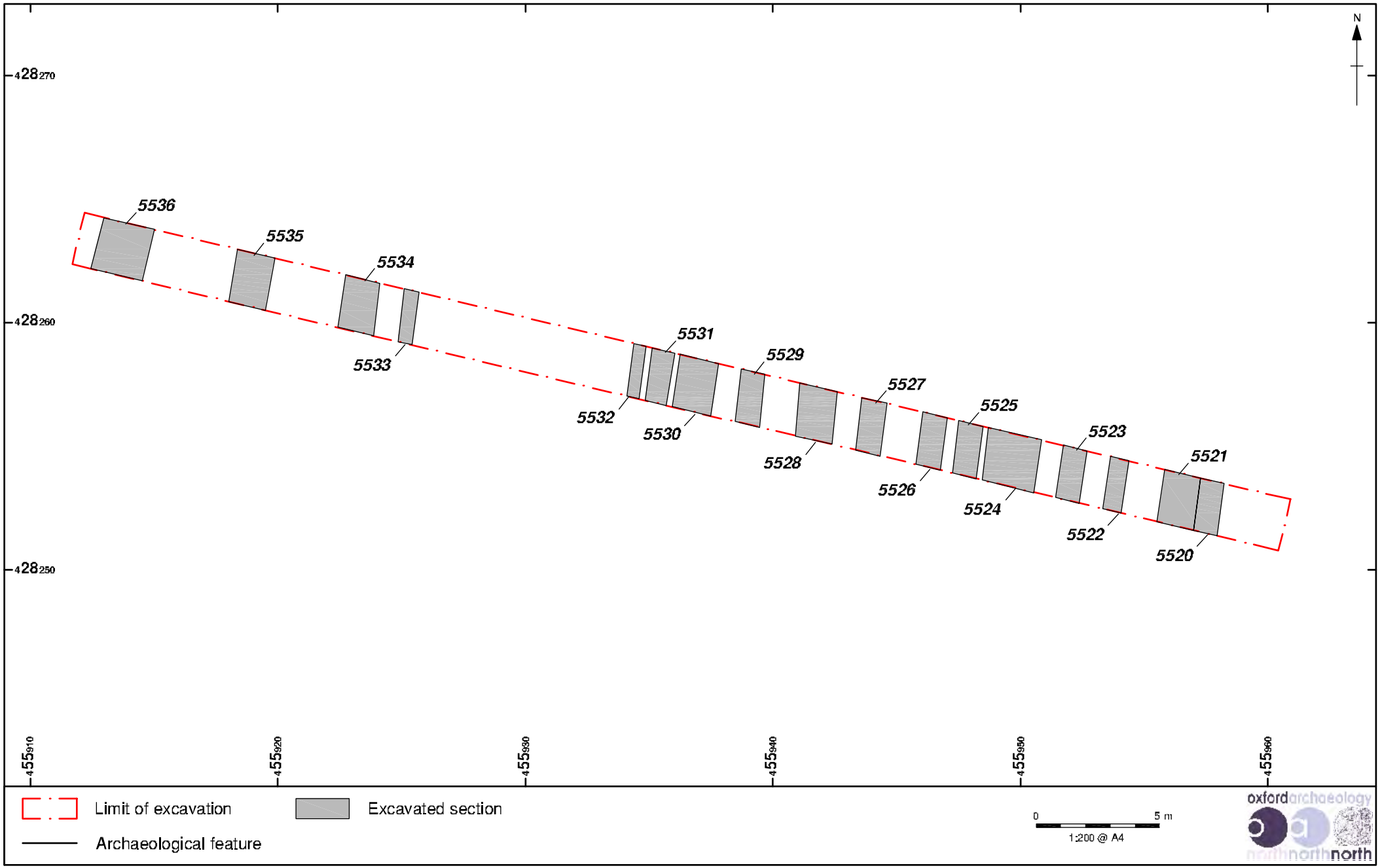

Figure 16: Trench AA2

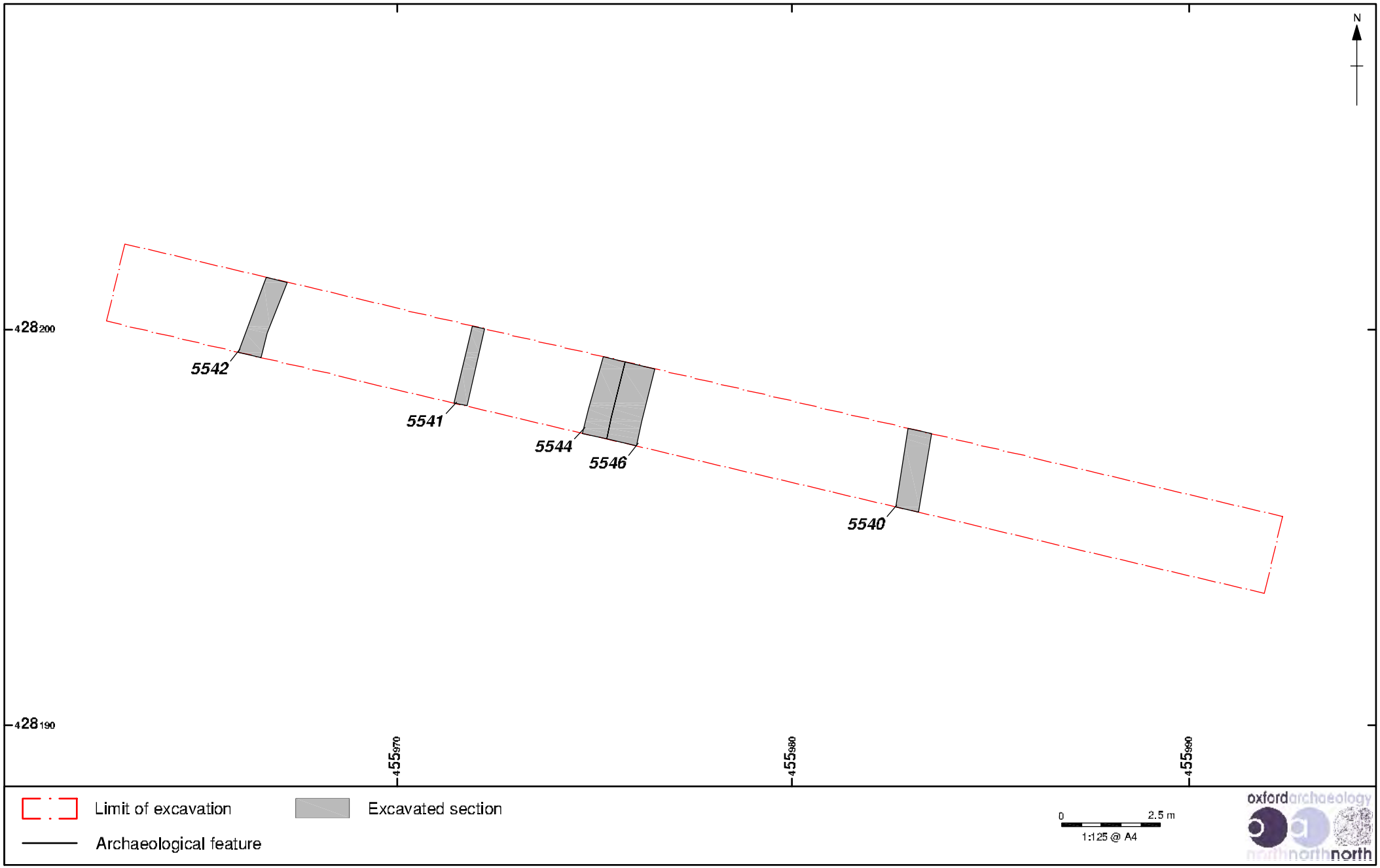

Figure 17: Trench AA3

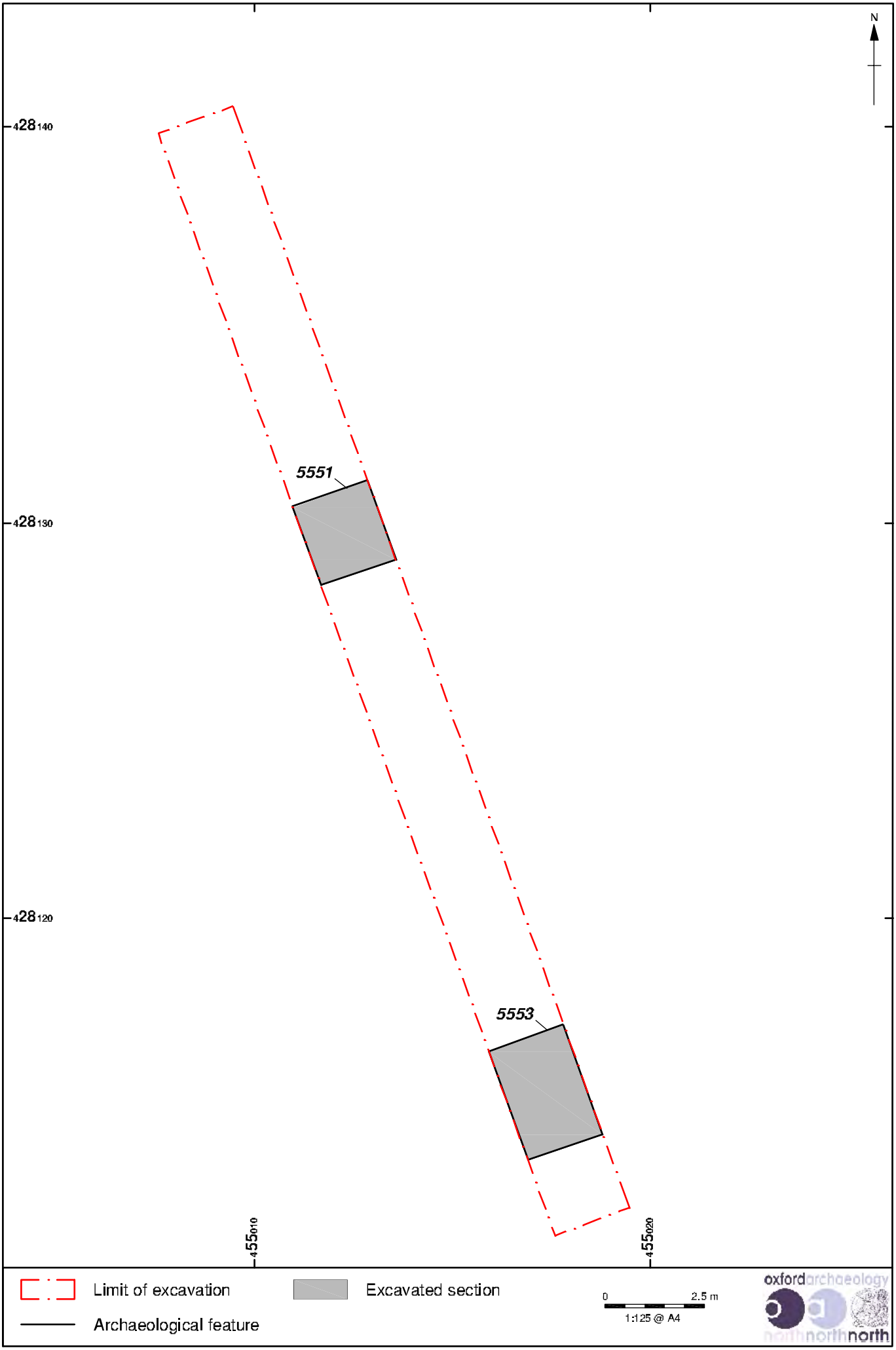

Figure 18: Trench AA4

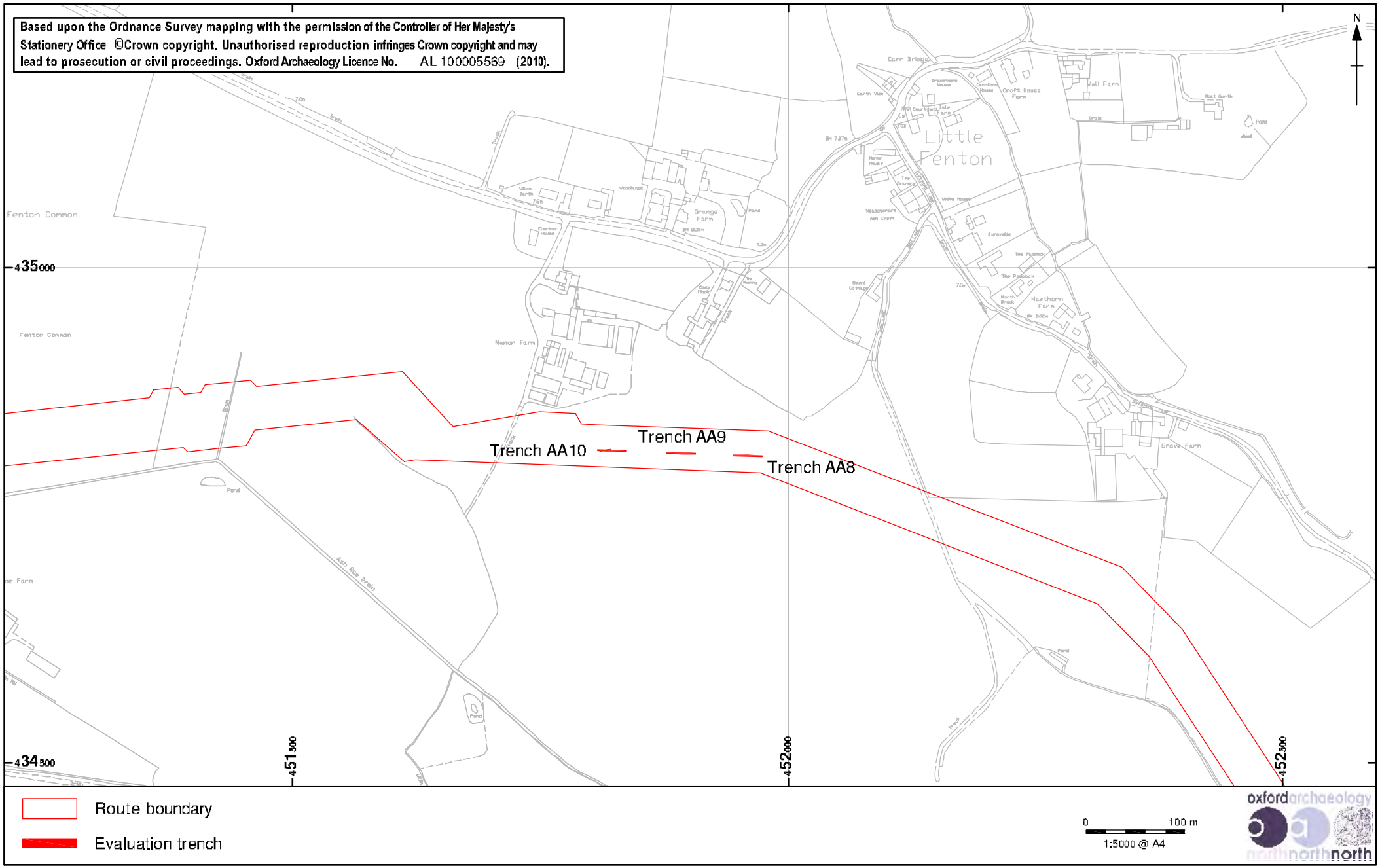

Figure 19: Package CC

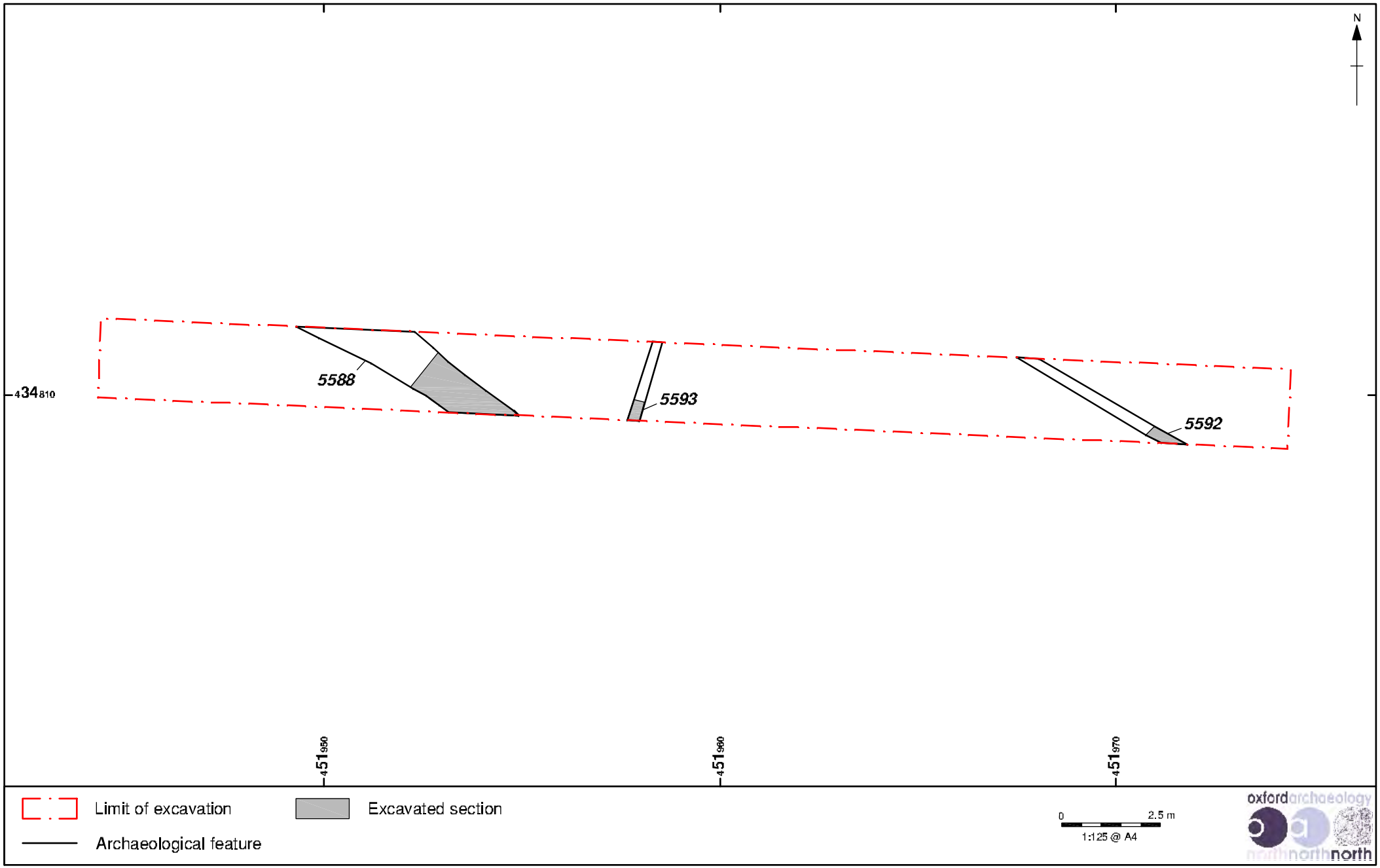

Figure 20: Trench AA8

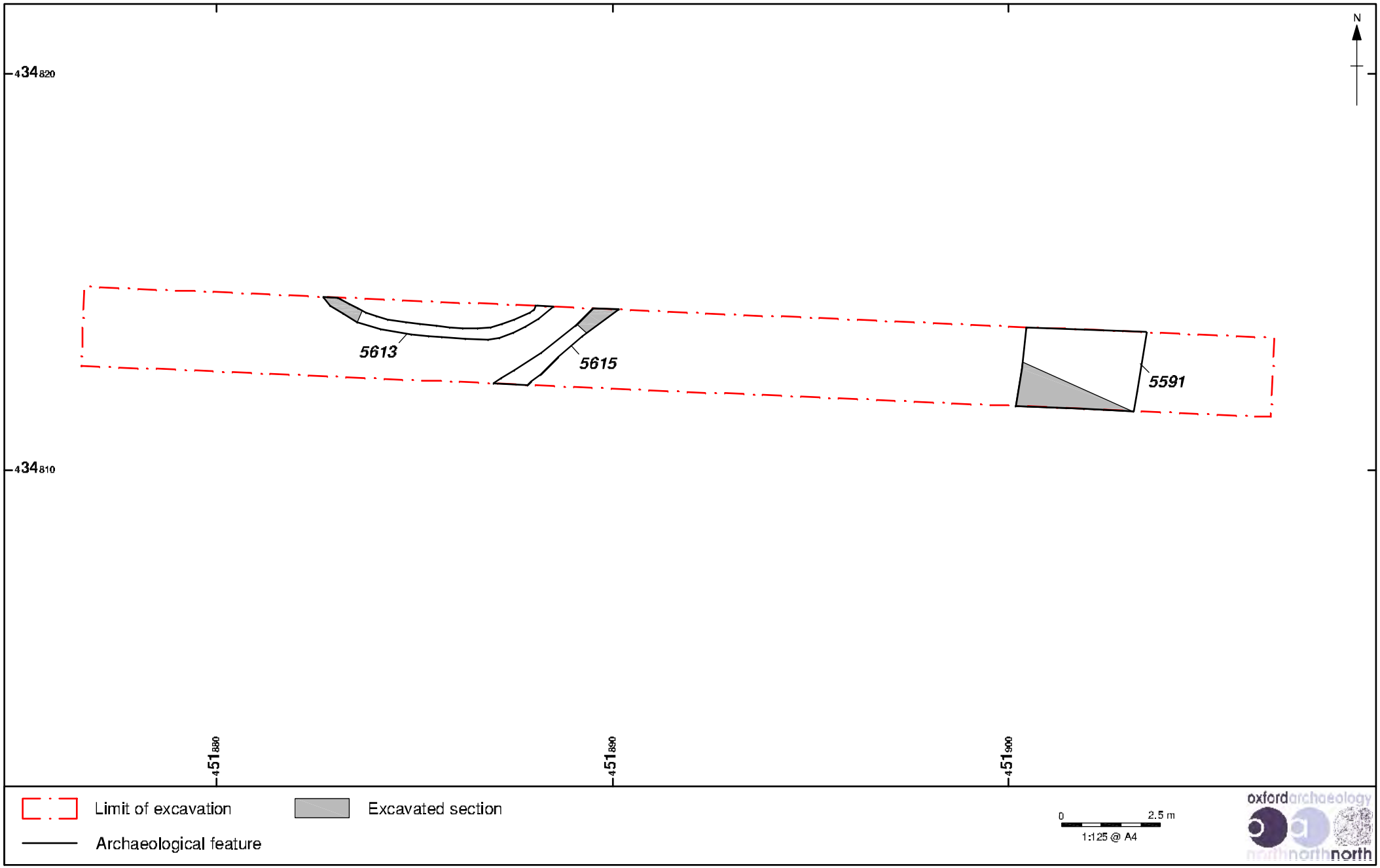

Figure 21: Trench AA9

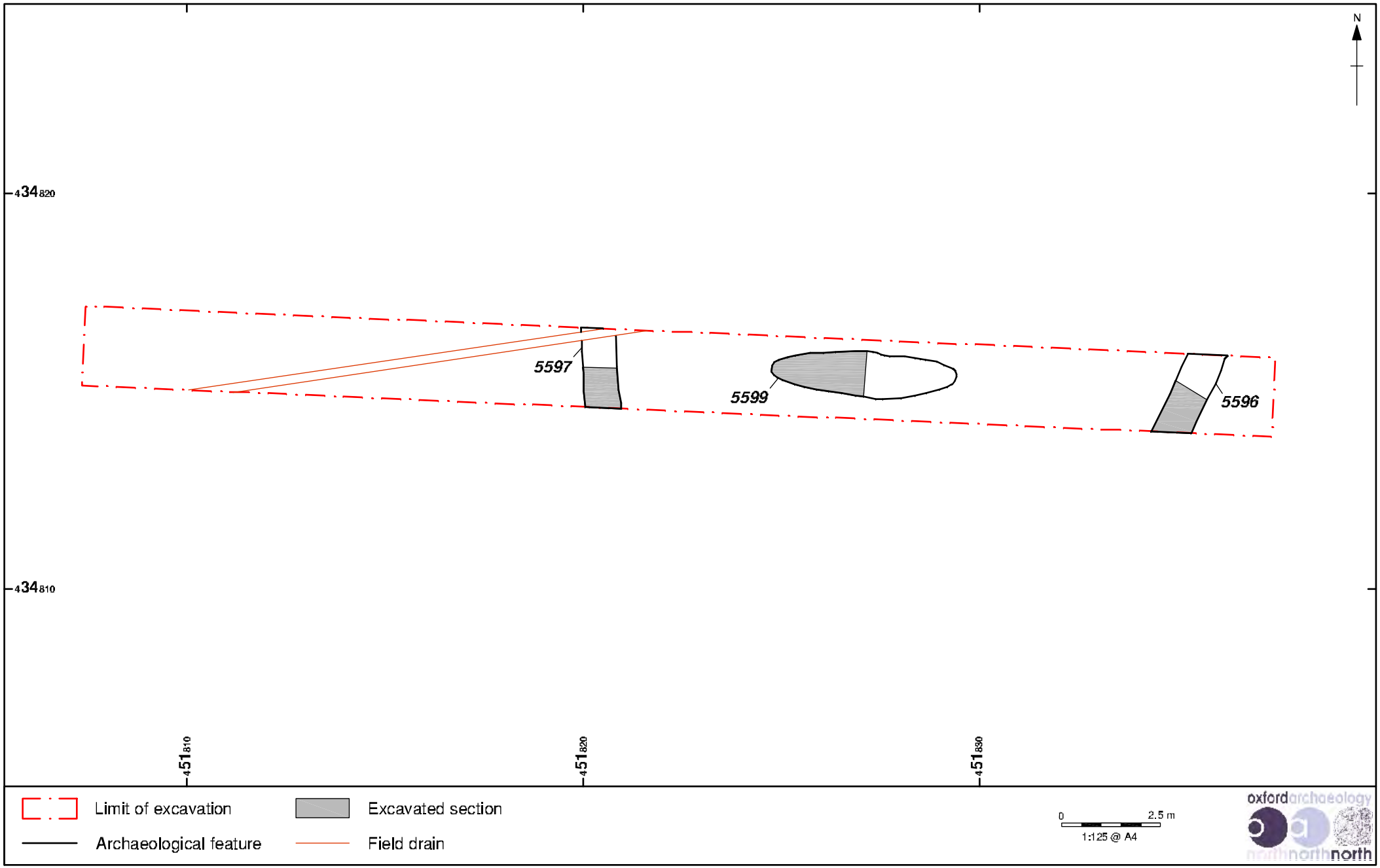

Figure 22: Trench AA10

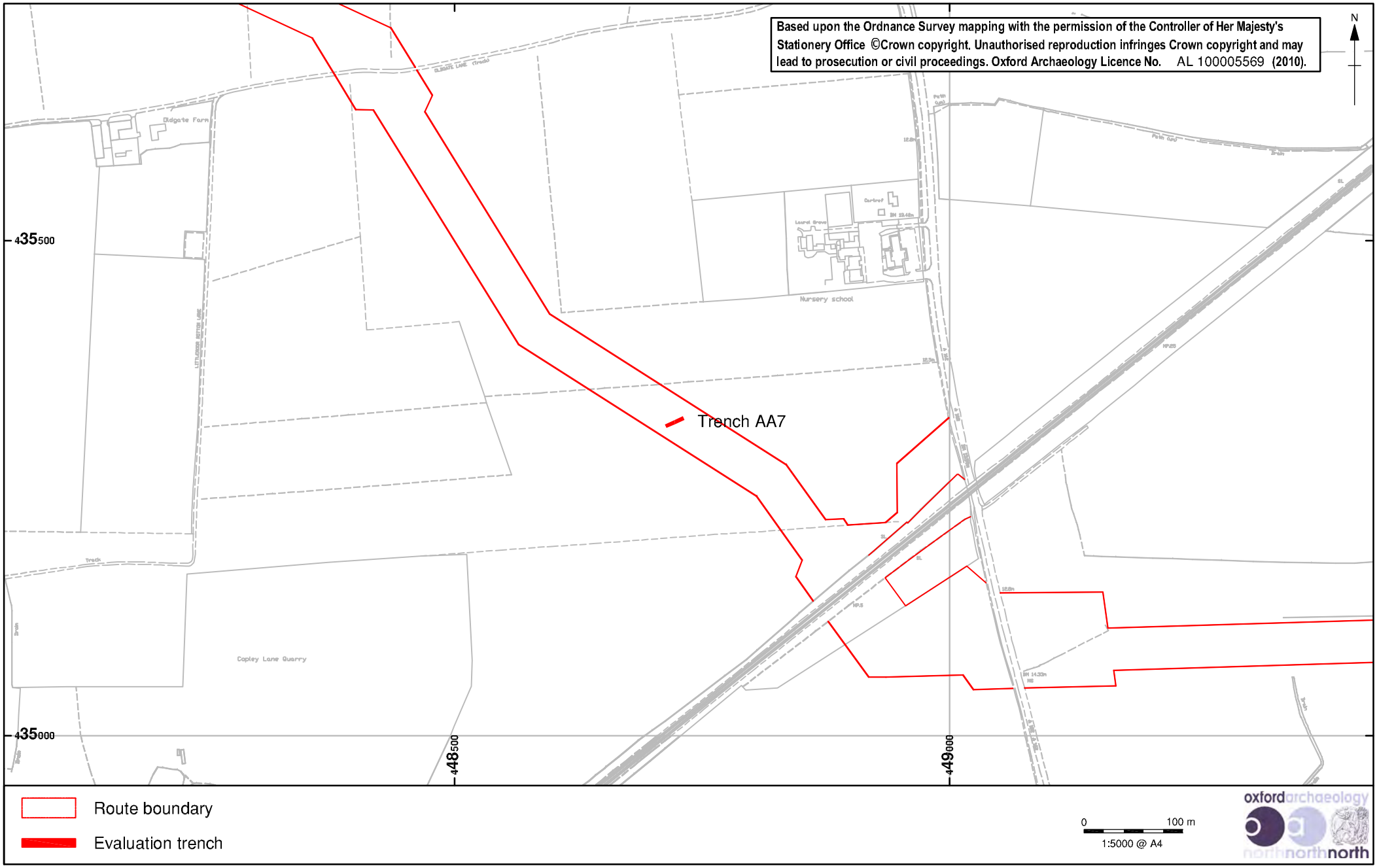

Figure 23: Package DD

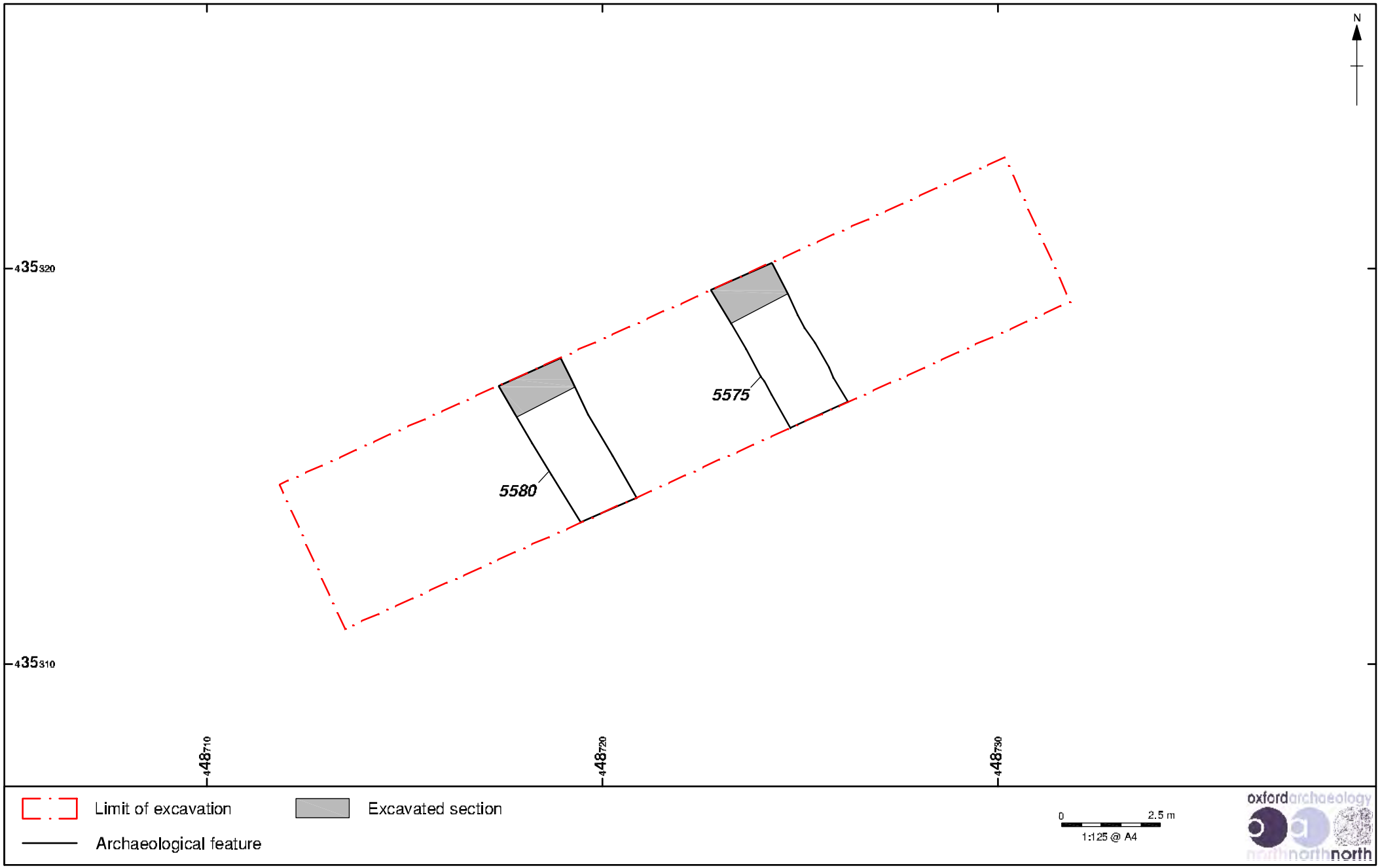

Figure 24: Trench AA7

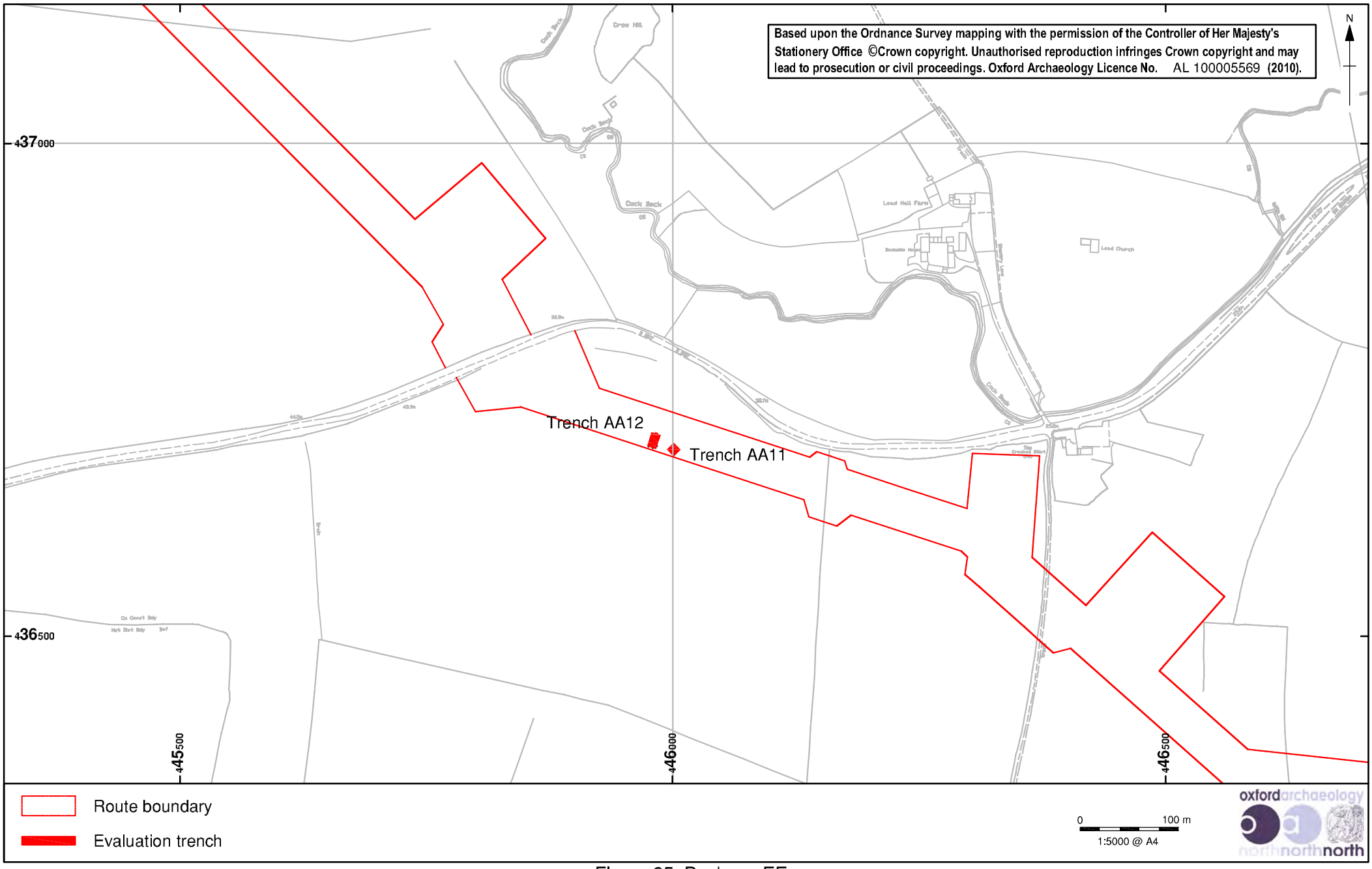

Figure 25: Package EE

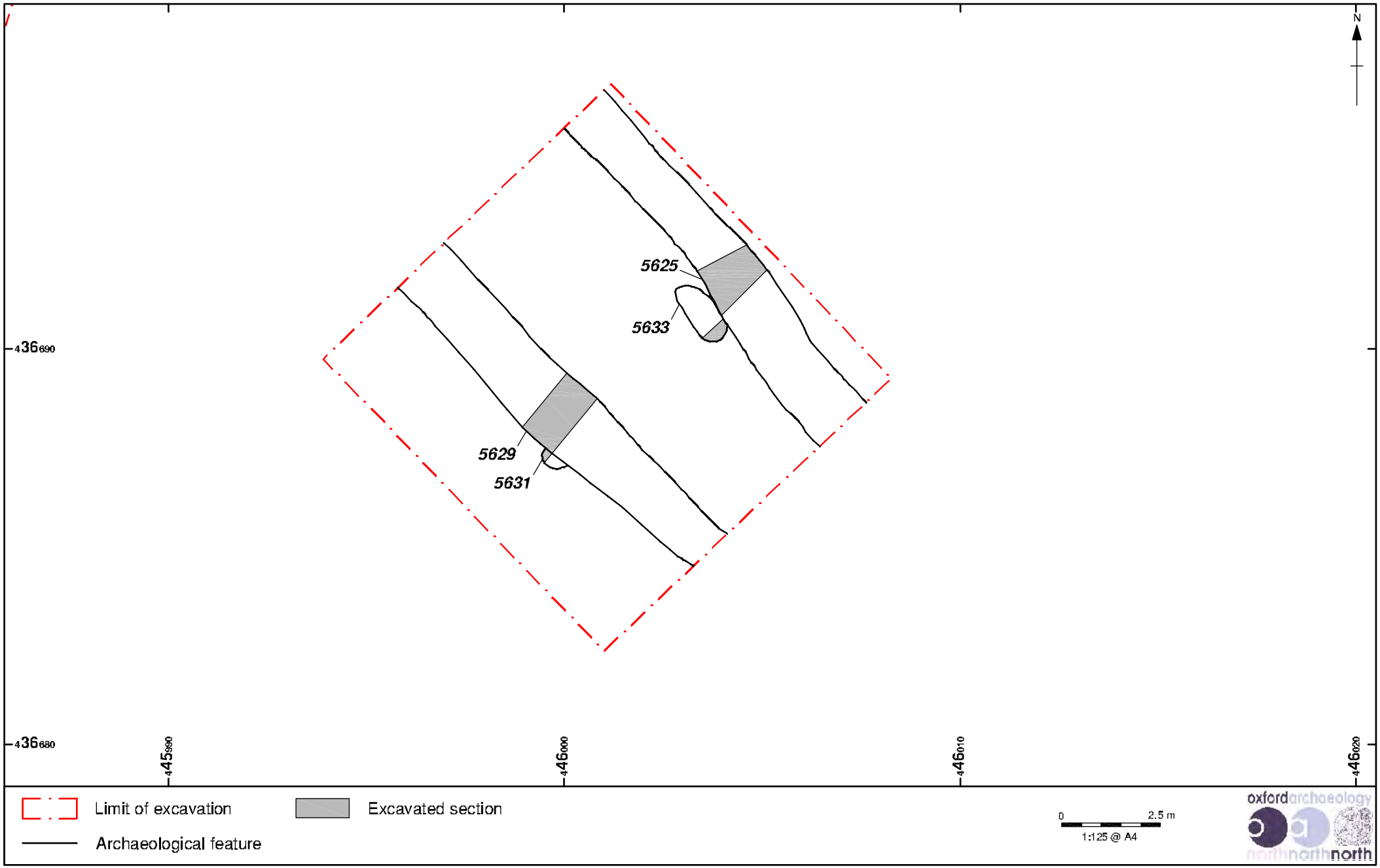

Figure 26: Trench AA11

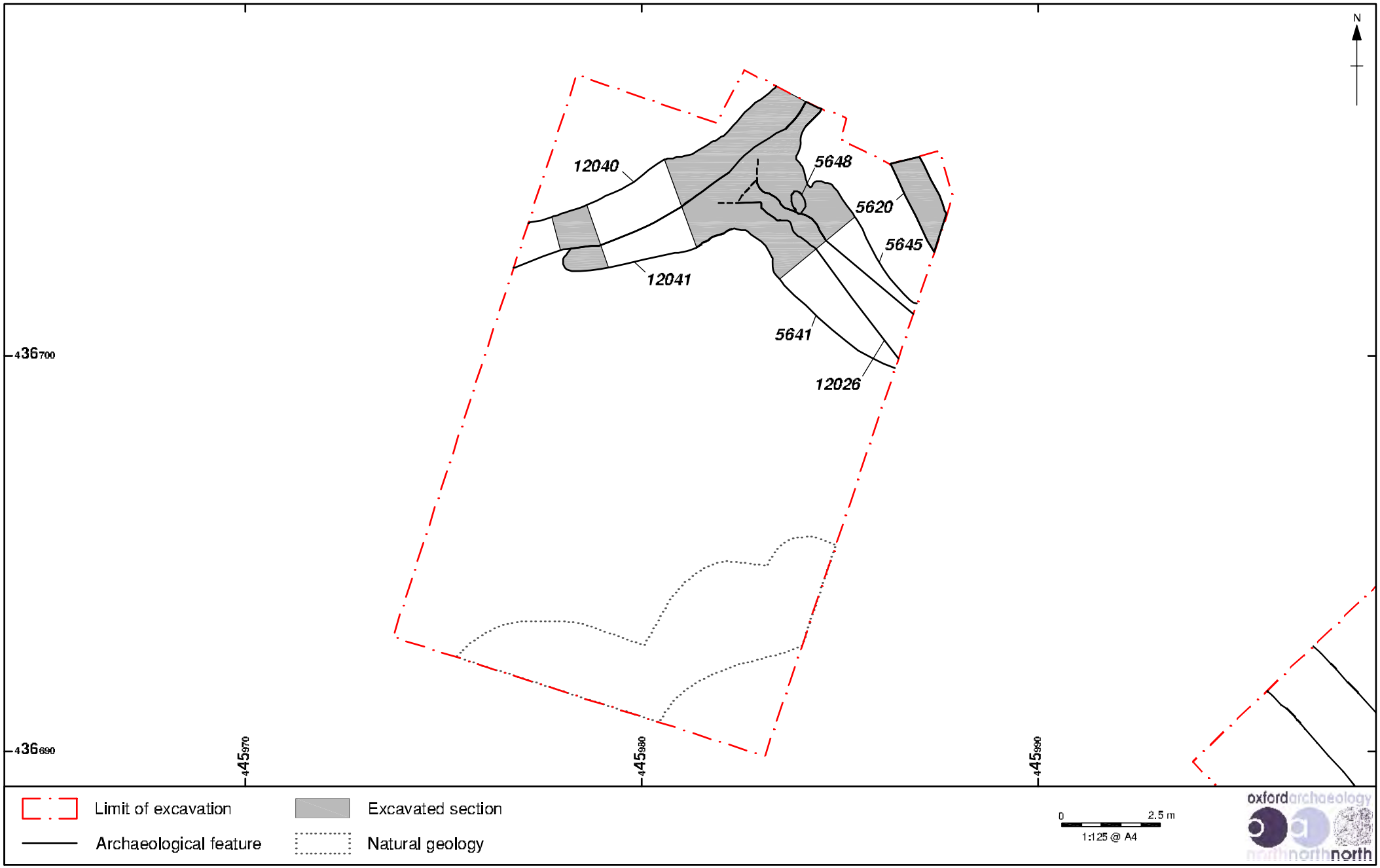

Figure 27: Trench AA12

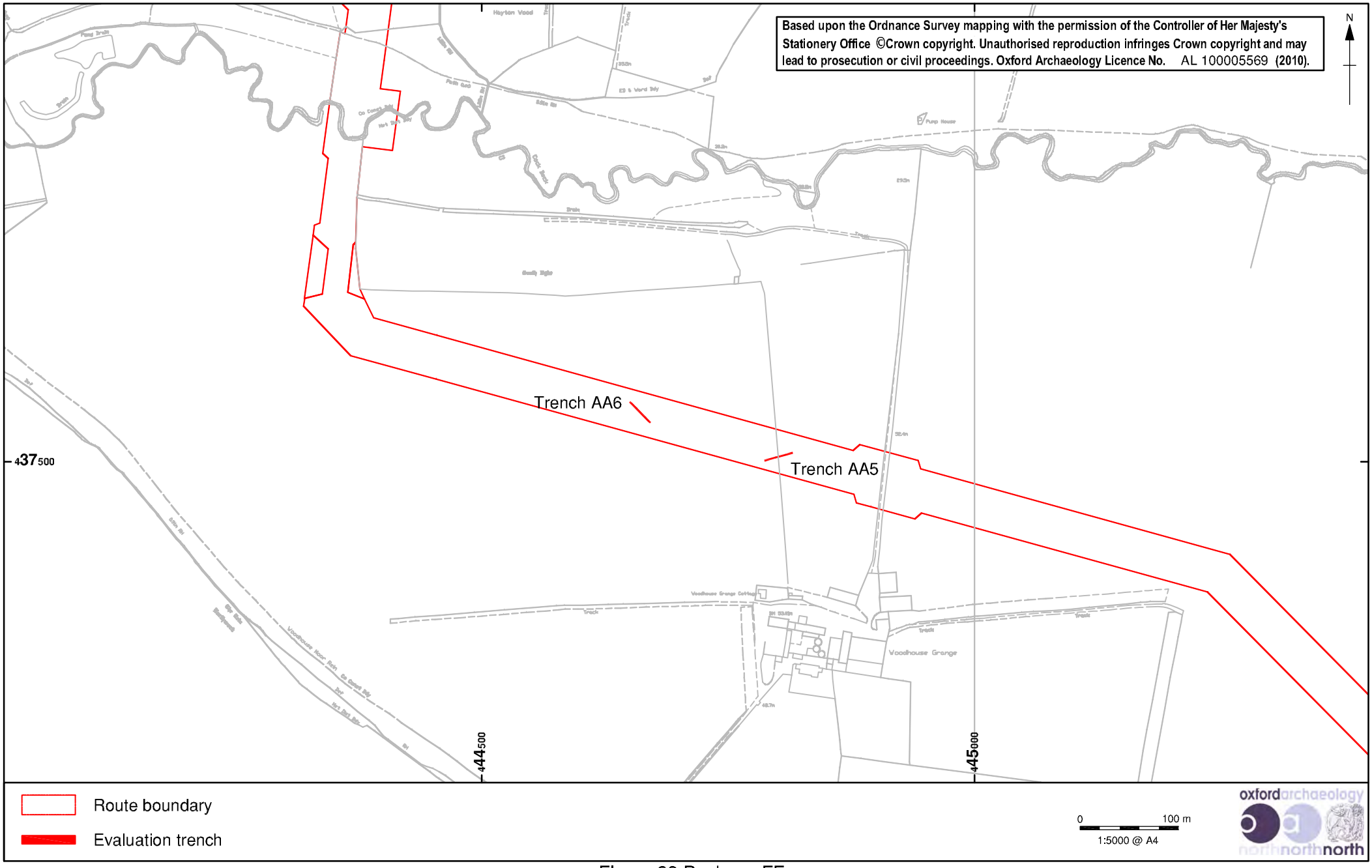

Figure 28:Package FF

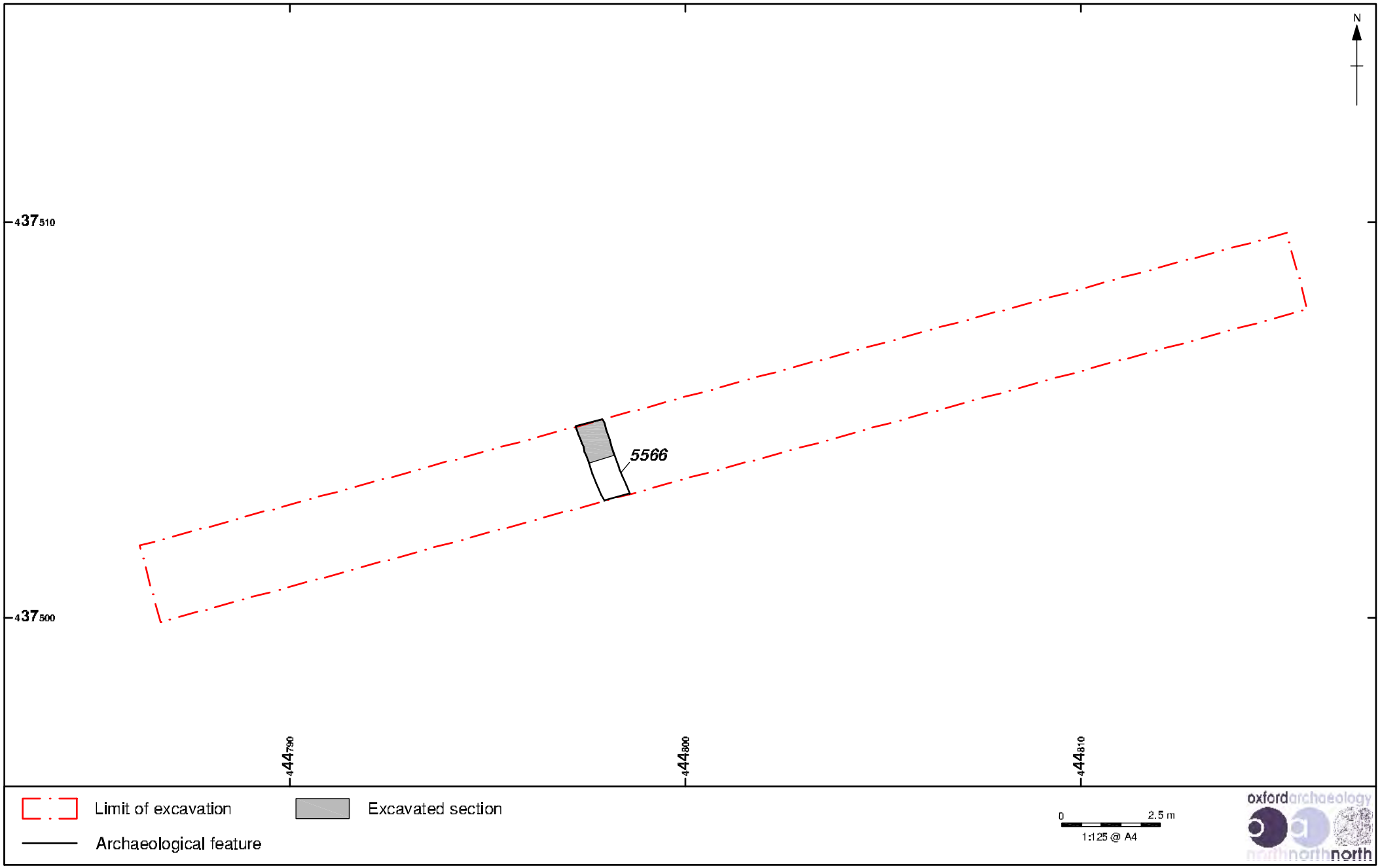

Figure 29: Trench AA5

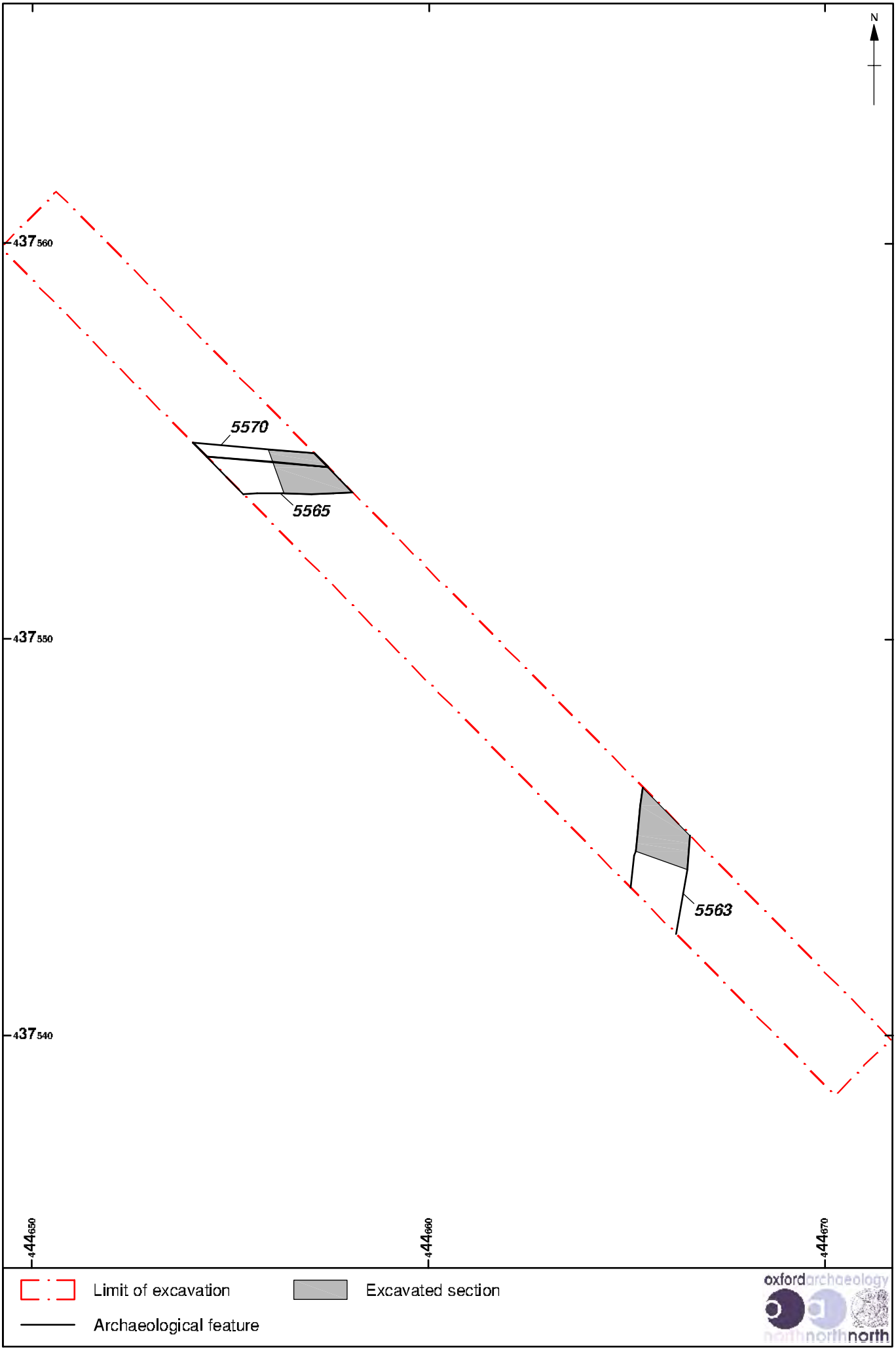

Figure 30: Trench AA6

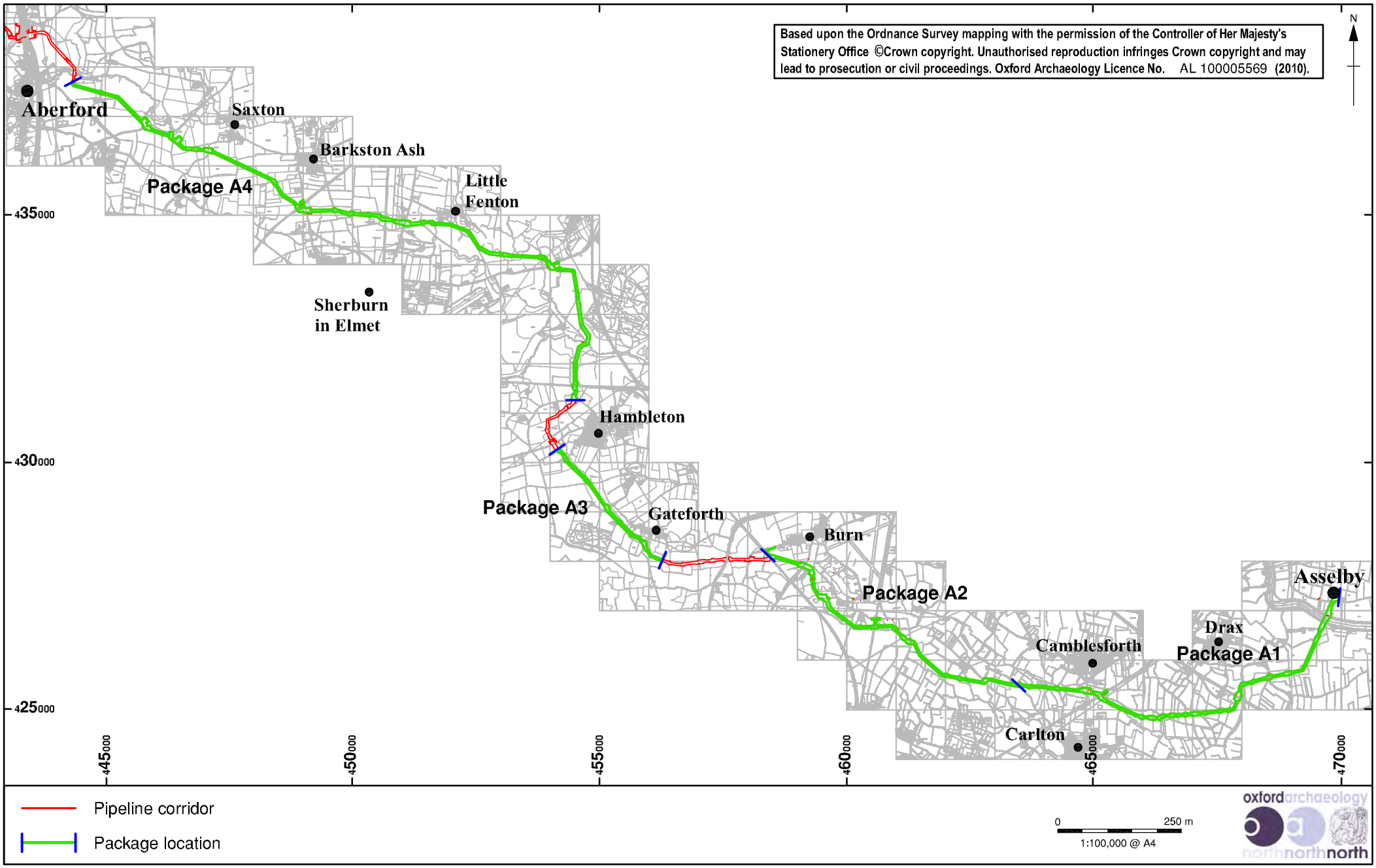

Figure 31: Watching Brief: Location of the packages along the route of the pipeline

Plate 1: Site 18-11A: series of intercutting ditches forming a possible entrance for an enclosure

Plate 2: Example of ditch (***8187***) and recut (***8190***) at Site 18-11A

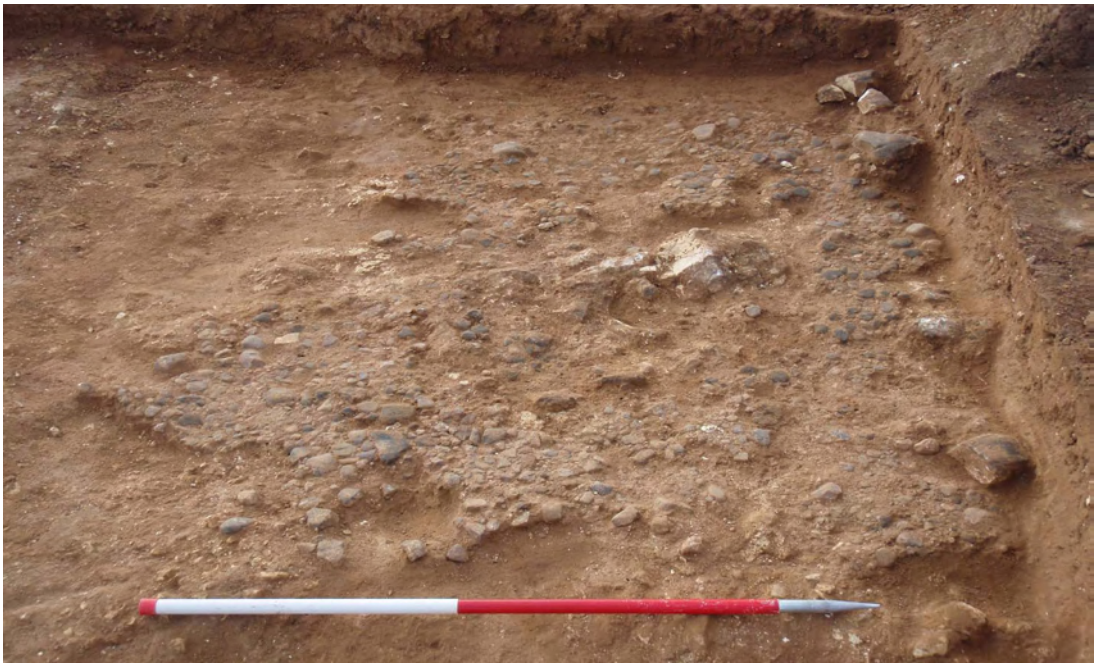

Plate 3: Area of metalling at Site 20-2

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