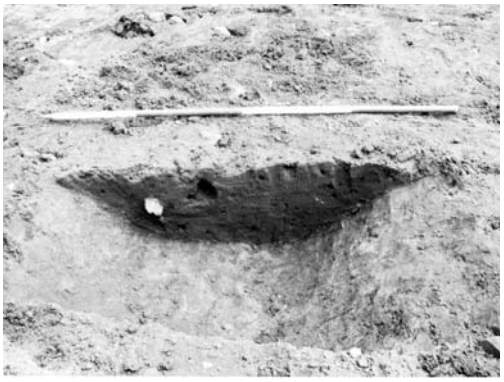

THORNTON HOUGH WwTW TO BROMBOROUGH WwTW Merseyside

Archaeological Evaluation and Watching Brief

Oxford Archaeology North

April 2005

United Utilities

Issue No: 2004-05/295
OA North Job No: L9326
NGR: SJ 3308 3806 – SJ 3368 3813

CONTENTS

SUMMARY

Following the findings of a desk-top assessment and walkover survey (OA North 2004) along the proposed pipeline route between Thornton Hough (SJ 3308 3806) and Little Heys near Bromborough (SJ 3368 3813), United Utilities commissioned Oxford Archaeology North to conduct a programme of archaeological investigation during May and June 2004. The programme comprised the evaluation of four sites which lay within the pipeline route (Sites **55**, **56**, **57** and **58**), followed by a permanent presence watching brief during ground works.

The programme of evaluation concentrated on areas that yielded stray finds during the walkover survey, most of which represented multi-period activity. The individual evaluation sites spanned a range of periods from possible prehistoric activity in the vicinity of Site **55** (SJ 3311 3809) to Roman activity at Site **58** (SJ 3317 3812). A series of ditches within the Thornton Common field, close to Site **56**, are thought to represent a field system or boundaries that may have medieval origins, and Sites **56** (SJ 3314 3811) and **57** (SJ 3315 3811) are likely to be remnants of post-medieval land-use. None of the sites produced significant dating evidence.

The features encountered during the watching brief further emphasised the evaluation findings in the form of several sub-surface relict remains of field boundaries and ditches located to the east of Thornton Hough village, and south of Thornton Common Road. Material evidence gathered from topsoil and subsoil deposits hinted of activity in the area, dating from the Prehistoric period through to the Roman, and later medieval occupation.

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank United Utilities for commissioning the work. Thanks are also due to Steve Nadin of Montgomery Watson and Ian Tyler of AE Yates for their assistance. Further thanks are due to Sarah-Jane Farr of the Merseyside Archaeological Service for her advice during her site visit

The evaluations were undertaken by Sean McPhillips, assisted by Lisa Keys. The watching brief was undertaken by Hannah Gajos and Andrew Lane. The report was compiled by Sean McPhillips, who also assessed the finds. The palaeoenvironmental results were compiled by Elizabeth Huckerby, and the drawings were completed by Emma Carter. The project was managed by Alison Plummer, and the report was edited by Stephen Rowland.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 Following proposals by United Utilities Ltd to construct a 4.3km long waste water transfer pipeline between Thornton Hough and Bromborough in the Wirral, Merseyside Archaeological Service (MAS) recommended a programme of archaeological assessment and evaluation. The route passes through a rural area of some archaeological interest (Fig 1) and it was considered possible that sites with archaeological potential might be affected.

1.1.2 Oxford Archaeology North (OA North) were commissioned to undertake a desk-based assessment and walkover survey to establish the likely density of sites of archaeological interest within the development area (OA North 2004). Following the conclusions of the assessment, which identified a total of 58 archaeological sites, United Utilities made an amendment to the pipeline route in order to avoid passing through the south-east corner of a field known as 'Drakelows' (Site **42**), which was thought to have contained prehistoric burial mounds. This amendment resulted in the easement heading north parallel to the track along the east edge of the field (Fig 2), close to Site **55**, where there was potential for the presence of prehistoric archaeology.

1.1.3 Subsequent to these changes, MAS issued a verbal brief for an evaluation of four sites by trial trenching and a targeted watching brief of topsoil stripping, in response to which OA North produced a project design (*Appendix 1*). These four sites were located during the walkover survey to the north-west of Thornton Hough and comprised: Site **55** (Thornton Farm Surface Find - SJ 331166 380954), a findspot of a flint core; Site **56** (Strawberry Farm Surface Find - SJ 331458 381115), a large concentration of post-medieval pottery; Site **57** (Strawberry Farm Surface Find - SJ 331586 381181), a single piece of flint and several clay pipe stems; Site **58** (Strawberry Farm Surface Find - SJ 331716 381237), a single piece of Samian ware and a large quantity of Post-medieval pottery. The latter three sites were located over a distance of 300m within Thornton Common. The work was undertaken in May and June 2004 and this report sets out the results of the evaluation and watching brief.

2. BACKGROUND

2.1 GEOLOGY AND TOPOGRAPHY

2.1.1 The solid geology of the area tends to consist of Triassic sandstone ridges overlain by layers of boulder clay (Cowell and Innes 1994, 3-5). The topography is generally low-lying and dominated by glacial tills (*op cit*, 5), with typical stagnogley soils of the Clifton Association covering most of the area apart from isolated patches of typical brown earth of the Eardiston Association (Soil Survey of England and Wales 1987). A further influence consists of layers of Flandrian deposits, which cover some areas of the boulder clay, mostly comprising peat and marine alluvium (Cowell and Innes 1994, 6-8). The influence of sea-level change and associated flooding and burial of former land surfaces has had a notable impact on the area (*op cit*, 8). Evidence of such alluvial deposits was identified during construction of a new sewer close to Poulton Bridge in 1959 (McMillan 1959).

2.1.2 The resulting topography is typically low-lying and gently rolling, with numerous sandstone outcrops. It is largely used for mixed agriculture, with fields divided by hedges and with ponds and copses a common feature. The landscape also shows the remnants of a number of former parks and gardens, which tend to have a more formalising impact (Countryside Commission 1998, 137-139.

2.2 HISTORY AND ARCHAEOLOGY

2.2.1 ***Introduction***: the historical and archaeological background derives from the desk-based assessment report compiled in 2004 (OA North 2004). The large study area inevitably means that the background is generalised in places, but specific references are made to the immediate area where possible.

2.2.2 ***Prehistory***: although evidence for immediate post-glacial settlement in the Merseyside area is relatively scarce (Cowell and Innes 1994, 34) it is clear that by the late Mesolithic, activity around the Mersey estuary had become quite widespread (Cowell and Philpott 2000, 167). Evidence tends to be limited to occasional finds, however, although recent excavations have identified features which may be associated with Mesolithic activity (*op cit*, 13). During this period there was also a dramatic rise in sea levels and associated wetland conditions, and it is likely that hunter-gatherers inhabiting the area would have had to adapt to this (Cowell and Innes 1994, 35). It is also possible that this greater range of ecological situations available to human exploitation could actually have encouraged human habitation in the area. There is a notable concentration of sites dating to this period at the north-western tip of the Wirral Peninsula (*op cit*, 36), although artefacts of probable Neolithic date have been discovered near to the study area (Chitty 1980).

2.2.3 Pollen analysis suggests cereal cultivation probably began during the early Neolithic period, around the mid-fourth millennium BC, but is likely to have

been practised in conjunction with a hunter-gatherer economy for some time (Cowell and Innes 1994, 39). Settlement evidence is very sparse, and this trend continues into the Bronze Age, although some burial remains have been found (*op cit*, 43-44). Isolated finds continue to be the main source of information into the Iron Age, although these tend to consist of occasional metal objects, many of which were discovered in the nineteenth century (*op cit*, 44-5).

2.2.4 ***Roman***: evidence for Roman settlement in the Wirral is concentrated in only a few places, principally the north-western end at Meols, although coins are found across the peninsula (*op cit*, 45). The nature of settlement in this rural area is not understood in detail, and is '*mainly known along the sand stone ridges*' (*ibid*). A road connecting Chester and Meols is thought to have existed but it is likely that much of the contact with the Romanised world was non-military in nature (Cowell and Philpott, 2000, 176). The native inhabitants may have formed part of a group that was either loyal to the Romans, or willing to do business with them (*ibid*).

2.2.5 ***Early Medieval:*** '*In the immediate post-Roman period there is little evidence to aid an understanding of the landscape and settlement pattern*' (Cowell and Innes 1994, 45). This statement, regarding north Wirral, demonstrates the difficulties of interpreting the general area at this time. Some settlements, notably Meols and Chester, continued to be used, but elsewhere there is little or no evidence. By the tenth and eleventh centuries a large Viking population had established itself in the Wirral (Dodgson 2000). Place-name evidence suggests the Viking enclave might have been concentrated at the north-western end and spread down the west coast of the peninsular (Harding 2000). Within the study area are a number of Old English settlement names: Thornton and Poulton for example (Cavill 2000, 132-3; 140; 142), and at Bromborough there are the remains of a Saxon cross and church (Bromborough Society 1983). Raby, meaning farmstead on the boundary, may mark the edge of the Viking settlement (*ibid*; Harding 2000), and Bromborough, to the east, is considered to be the most likely of several candidates for the site of the battle of Brunanburh fought in AD 937. This struggle, described in a heroic poem in the Anglo-Saxon Chronicle, saw an invading confederacy of Vikings led by Olaf Guthfrithson, King of Dublin, Strathclyde Welsh, under Owein Map Dyfnwal and Constantine III's Scots defeated by Aethelstan and Eadmund's unified English armies of Wessex and Mercia in one of the most important battles of the formative English nation (Dodgson 2000, Stenton 1947). The study area potentially, therefore, straddles the divide between the Viking enclave, the English and the native Britons, with Clatter Brook perhaps forming the boundary itself.

2.2.6 ***Medieval:*** not all of settlements in the environs of the study area are listed in the Domesday Book (Hume 1863), but it is likely that most are at least medieval in origin. Some were held by sub-Norse lords, others were waste and the landscape was probably dominated by small-scale agriculture (Chitty 1980). The majority of the study area is within the Parish of Neston and Township of Thornton, which became the manor of Roger de Thornton in the reign of Edward II, before passing to Richard de Hough (Mortimer 1847). It

remained with this family for twelve generations before becoming part of the Mostyn estates (*ibid*). Thornton Grange probably belonged to the convent of St Werburgh, which also held Raby (*ibid*). Poulton, by contrast, was held soon after the Norman Conquest by the Lancelyn family, who were based at a castle at Poulton Hall (*ibid*), now no more than earthworks. Aside from Poulton Hall, there is little archaeological evidence for medieval activity within the study area. It is clear that the sea level was still relatively higher at this time, too, as high tide is said to have reached a point near Poulton (Mortimer 1847, 190).

2.2.7 ***Post-medieval***: the study area probably changed very little during the late medieval and early post-medieval period. In 1801 most of the adjoining settlements had small populations, typically less than 200 (Mortimer 1847). Within 40 years this had increased considerably, although the impact of the Industrial Revolution was not particularly obvious in such a rural area. Many of the important local buildings, Poulton Hall and the mill at Raby for example, continued to be used as they had been before, and many of the settlements were too small to warrant a mention in the directories of the day (Pigot and Co 1834). It was not until the end of the nineteenth century that significant changes took place. During this time a number of large houses were built as country retreats for the wealthy merchants and traders of the neighbouring industrial cities (Mortimer 1847, 410). In Thornton Hough it was Joseph Hirst, a woollen manufacturer from Yorkshire, who first altered the village. He not only built himself a large house, Thornton House, but also a church, a terrace of houses and a school (Pevsner and Hubbard 1917, 357-9).

2.2.8 It was, however, Lord Leverhume, the famous soap producer, who was to have the greatest impact on the area. Burnley's claim that '*Before Lever came and transformed the place, Thornton Hough was just another Wirral hamlet, with a handful of decaying and insanitary dwellings*' (1987, 222) is not strictly true. As already mentioned, Joseph Hirst had already made benevolent alterations to the village, and a number of large private homes already existed in the area. Lord Leverhume took the idea a step further. He not only built a second church, another school, a smithy and houses, but he also rearranged the entire village and built new roads (Pevsner and Hubbard 1971, 357-9; Brack 1980). This act of benevolence changed the landscape around Thornton Hough forever.

3. METHODOLOGY

3.1 PROJECT DESIGN

3.1.1 The project design (*Appendix 1*) was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practise.

3.2 EVALUATION

3.2.1 Following on from the results of the rapid identification walkover survey (OA North 2004), four sites within the pipeline easement were recommended for archaeological evaluation. The programme of trial trenching sought to examine 5% of each site, with the locations of the trenches agreed by OA North and MAS. Single 50m long trial trenches were placed east/west (parallel with the axis of the pipeline) across each of Sites **56**, **57**, and **58**, located in the field known as Thornton Common. Two trenches, totalling 75m in length and aligned roughly north/south, parallel with the pipeline route were excavated within the area of Site **55** (Fig 2).

3.2.2 A mechanical excavator was used to remove the topsoil down to the surface of the natural subsoil, or to the top of significant archaeological deposits. The trenches were then cleaned by hand, and manual excavation was carried out where appropriate. A complete record of all features and horizons was made, comprising a full description and preliminary classification of features or structures revealed on OA North *pro-forma* sheets, and their accurate location in plan. Plans of each site were produced, showing the excavated areas (Fig 3). A photographic record in colour slide and monochrome formats was also compiled.

3.3 WATCHING BRIEF

3.3.1 A 15m wide corridor was stripped of topsoil along the 4.3km length of the proposed route. The topsoil strip was carried out using a mechanical excavator fitted with a 1.6m wide toothless bucket. Permanent observation of the work was undertaken, as well as examination of any soil horizons exposed, and the accurate recording of all archaeological features, horizons and any artefacts found during the excavations.

3.4 PALAEOENVIRONMENTAL

3.4.1 Two environmental samples, 5-10 litres in volume, were taken from the fills of ditches ***100*** and ***102*** during the evaluation of Site **56**. During the watching brief, two further samples, 40 litres in volume, were taken from the fills of the feeder ditch ***219***. Ten litres of each sample were processed and assessed for charred and waterlogged plant and remains.

3.4.2 The samples were hand floated and the flots were collected on 250 micron mesh and air-dried. The flots were scanned with a Meiji EMT stereo dissecting microscope and plant material was recorded and provisionally identified. The data are shown in Table 2. Botanical nomenclature follows Stace (1991). Plant remains were recorded on a scale of abundance of 1-4, where 1 is rare (less than 5 items) and 4 is abundant (more than 100 items). The abundancy scores for charcoal are based on fragments greater than 2mm. The components of the matrix were also noted.

3.5 ARCHIVE

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

4. EVALUATION RESULTS

4.1 INTRODUCTION

4.1.1 Summary results of the evaluation trenches from Sites **55**, **56, 57** and **58** are presented below. Sites **56**, **57** and **58** were contained within one field (Field **4**) within the pipeline easement. The trench locations are shown graphically in Figure 2.

4.2 SITE 55

4.2.1 On the basis of the flint core (Site **55**) found during the walkover survey and the presence of prehistoric burial mounds (Site **42**) within the adjacent field identified during the desk-based assessment, two trenches were excavated with the aim of testing for the presence of any archaeological evidence, particularly of prehistoric activity. The topography of the field sloped gently to the south away from the field boundary bordering Thornton Hough road, and gradually levelled to a plateau in the vicinity of a north/south track, which transected the field in the east. The easement was positioned along the east edge of the field running north/south, within which the two trenches, totalling 75m long and 1.6m wide were excavated. Trench 1 (Plate 1) measured 33m in length and was positioned parallel to the track, close to the east return of the fenced easement. Trench 2 (Plate 2) measured 42m long and was positioned 49.5m south-east of Trench 1. Both trenches were excavated to a maximum depth of 0.80m.

4.2.2 ***Trench 1***: the trench was sterile of significant archaeology, except for a patch of organic material containing fragments of tree-bark and roots interpreted as a tree-bowl. The roughly circular bowl lay within a 0.30m by 0.20m spread of mottled natural sand, which varied in colour from light to mid-brown. This natural composite of clay and sand was seen throughout the trench. The clay contained infrequent small rounded pebbles, measuring between 0.02m to 0.04m, and lenses of iron-pan- rich sand reflecting the effects of water solution upon the surrounding landscape.

4.2.3 Cutting the natural clay were three land drains, which crossed the trench along north-west to south-east alignments. Two of the features contained ceramic pipes, a third drain was disused and filled by iron-pan-rich sand.

4.2.4 Sealing the drains was an undulating topsoil deposit made up of a pale brown humified clay, which contained moderate-sized rounded and angular quartz pebbles and slate fragments. The deposit varied in thickness from 0.5m to 0.8m and yielded pottery dating to the late nineteenth and twentieth centuries.

4.2.5 ***Trench 2***: no features of archaeological significance were encountered in the trench, except for a redundant land drain observed in the mid-section of the trench, which cut the natural clay.

4.2.6 At the base of the northern end of the trench, the natural clay was of a patchy pale red-yellow colour with numerous lenses of iron-pan veins and manganese strips, gradually becoming a uniform red colour to the south, with less iron-stone component. A cluster of circular and amorphous dark patches resembling post-holes in plan, were observed within the clay near the land drain. Upon investigation the features were found to have extremely irregular sides and uneven bases, filled by a dark brown-black sticky sand. The features were probably a result of both natural manganese seepage caused by proximity to the land drain and effects of water dilution within the surrounding environment.

4.3 SITE 56

4.3.1 The trench was positioned in order to investigate the area around a large concentration of post-medieval pottery located during the rapid identification walkover survey. The trench (Plate 3) was located in the south-west area of the easement, which transected the south area of the field running east/west, parallel to the hedge field boundary. The trench was excavated to a maximum depth of 0.5m.

4.3.2 The archaeology within the trench was characterised by two parallel ditches (***100*** and ***102***) set 14.6m apart, crossing the north end of the trench along a north/south alignment (Fig 3). Both ditches were observed cutting red-yellow clay natural, seen throughout the trench. The dimensions of the features were very similar in that both had identical depths of 0.25m although the widths differed slightly. The west ditch (***100***, Plate 4), measured 0.73m across, whereas the eastern ditch, ***102*** (Plate 5) had a width of 1m. Sections through the ditches illustrated U-shaped profiles, with a gradual break of slope at the top and concave bases (Fig 4). The fills of both ditches appeared to be exactly the same in composition, hinting that the ditches were back-filled simultaneously. The composition of the fills (***101*** and ***103***) was an homogenous, loosely-compacted medium grey-brown clay-silt containing few small pebbles, occasional charcoal flecks, and sand lenses. No finds were recovered from the fills. The function of the ditches is unclear, although they may be relict boundary features, or used at some time for drainage.

4.3.3 The ditches were sealed by a 0.25m thick deposit of light brown sandy-clay topsoil, which yielded no finds. This was surprising considering the nearby large concentration of post-medieval pottery identified during the walkover survey (OA North 2004).

4.4 SITE 57

4.4.1 The trench was excavated in order to investigate the possible presence of prehistoric archaeology. During the rapid identification walkover survey the site was recorded as a stray finds-spot, yielding a piece of worked flint and post-medieval tobacco clay-pipe stems. The field gently sloped to the east toward Clatterbridge crossroads. The trench was located 118m east of Site **56** (Plate 6), and was excavated to a maximum depth of 0.40m.

4.4.2 The topsoil varied in thickness from 0.10m to 0.30m, throughout the trench, reflecting recent use of the field for the cultivation of maize. The plough soil produced clay tobacco pipe-stems and three sherds of late nineteenth century pottery. The small assemblage recovered does not reflect the site status as an 'abundant finds spot', as suggested by the walkover survey (OA North 2004). The paucity of finds may be the result of a lack of night-soiling in the area, or could reflect a more general poverty of artefactual evidence in the area.

4.4.3 The trench produced no archaeological evidence. Natural light red-brown clay was encountered at a relatively shallow depth of 0.30m at the west end of the trench, to 0.40m in the east. The clay was interspersed with veins of manganese, which formed large patches across the trench. These patches became more apparent further east with a gradual change to sand and gravel, which eventually changed to a sandstone outcrop at the east limit of the trench.

4.5 SITE 58

4.5.1 Site **58** was recorded as a stray Roman and post-medieval find-spot during the walkover survey (OA North 2004). The trench was located 87m east of Site **57** within a hollow in the field, and positioned straddling the find-spot. The trench (Plate 7) was excavated to a maximum depth of 0.44m down to natural clay.

4.5.2 The topsoil had a maximum thickness of 0.20m and was relatively thinner throughout the trench compared to the soils within the trenches of Sites **56** and **57**. The topsoil had frequent gravel lenses, particularly at the east limit of the trench, and yielded a total of four sherds of pottery dating to the late eighteenth and nineteenth century.

4.5.3 The trench was devoid of archaeological features except for the presence of four inter-spaced disused land drains, which crossed the trench on north-east/south-west alignment. The drains were set 9m apart and cut the natural sandy clay. The drains all had a width of 0.30m and were excavated to a depth of 0.16m, being filled by light brown sandy clay, resembling redeposited topsoil. Dating of the drains was difficult to determine due to the lack of artefacts or ecofacts within the fills.

5. WATCHING BRIEF RESULTS

5.1 INTRODUCTION

5.1.1 A 15m wide corridor was stripped of topsoil along the 4.3km length of the proposed route. The corridor crossed ten fields, stripping in six of which was directly observed by OA North representatives (Fig 8). The results of the observations are described in Table 1, below. The following fields were not stripped under supervision by OA North: field **5** (east of Willows Farm), field **6** (north of Mere Brook House), and field **10** (the junction with Thornton Common Road and Poulton Hill Road).

5.1.2 Archaeological evidence was found in Fields **1**, **3**, and **4**, the details of which are described and discussed below (*Section 5.2.4 – 5.2.9*). Despite a general paucity of recognisable features, finds of pottery and other materials were collected from most fields, a general description of which are included in *Section 7*. A detailed description appears in *Appendix 3*.

5.2 RESULTS

5.2.1 ***Field 1***: the easement transected the field along a north-east/south-west alignment. Two field boundaries (***202*** and ***209***) were encountered in the south-west and central areas of the field. Boundary ***202*** (Plate 8) was aligned north-east/south-west and extended for a distance of 23m, gradually dissipating in the north-east. The feature survived as a 0.98m wide and 0.16m deep, shallow U-shaped ditch filled by irregular-shaped cobbles (Figure 5), no evidence of the bank survived. Boundary ***209*** was located 209m east of Raby Road, and survived as a curvi-linear ditch extending on a north-west/south-east alignment for a distance of 46m. The feature was similar in dimensions and profile to boundary ***202***, having a width of 0.80m and surviving to a of depth of 0.15m. A similar alignment of tree-lined boundaries appear on the 1782 OS Map (OA North 2004).

5.2.2 Evidence of the field having been used for agriculture was evident from a row of fifteen furrows on an east/west alignment bordered by a 63m long shallow ditch (***211***). The furrows were evenly spaced at a distance of 1m and cut the natural subsoil (***204***) to a depth of 0.12m. The ditch had a width of 1.89m and a depth of 0.12m.

5.2.3 The other notable feature in the field was a possible feeder ditch (***219***) that may have serviced a pond (Site **47**), which lay directly to the north of ditch ***219***. Ditch ***219*** (Plate 9) survived for a distance of 9.25m along a north/south alignment, with a width of 3.84m and maximum surviving depth of 0.79m. The edges and base of the ditch were concave with a 30° to 45° break of slope. Running within the base were two U-shaped gullies, which possibly represent the remains of two robbed-out drains. The back-fills of the ditch comprised a mixture of silted sands at the base (***218*** and ***216***), sealed by a spread of sandy-

Field	Topsoil	Subsoil	Archaeological Features
1	0.30m thick turf and dark brown clay-silt with occasional charcoal flecks and small stones.	Mid-orange-brown friable silty-sand.	North-east/south-west field boundary ditch ***202***, drainage ditch ***207***, original north-west/south-east field boundary ***209***, a row of 15 furrows bordered by ditch ***211*** aligned east/west and spread over a distance of 63m, a possible feeder ditch ***219*** associated with pond (Site **47**), and a land drain cutting the south edge of ***219***. No dating evidence was recovered from the features, however 76 sherds of post-medieval pottery and other materials were collected across the easement.
2	Maximum 0.5m thick turf and dark brown clay-silt.	Light reddish-brown clay with patches of pale brown sand.	No archaeological features observed. A collection of 56 fragments of post-medieval artefacts was collected across the easement from topsoil and subsoil.
3	Maximum 0.3m thick dark grey-brown sandy-silt.	Dark orange-brown sandy-silt- clay subsoil, moderately compact with patches of light yellow-brown clay-silt.	Ditch terminal ***229***, boundary ditches? ***236*** and ***240***, gullies ***242*** and ***250***, drainage ditches ***246*** and ***247***, field drain ***231***. The whole of the easement strip was marked with plough scars and frequent land drains evenly spaced and running north/south. No dating evidence was recovered from the features although 46 fragments of post-medieval pottery and other materials were collected across the easement topsoil and subsoil.
4	Maximum 0.3m thick turf and mid- to dark grey-brown silty-sand with frequent silt lenses, topsoil varied in thickness reflecting the undulating topography.	Light reddish-brown sandy-clay with infrequent small stones comprising quartz and unworked flint. Patches of dark red-brown sandy-clay and manganese observed throughout the easement. The patches were probably caused by the result of water solution.	Drainage ditch ***252***, and at least five unrecorded land drains spaced 9m apart at the east end of the field. Six sherds of post-medieval pottery and a clay pipe were retained from across the easement.
5	Not observed	Not observed	None
6	Not observed	Not observed	None
7	Maximum 0.05m thick, moderately friable dark brown-black sandy-silt.	Dark brown-black sandy-silt.	Fragments from a ceramic field drain were retained from the topsoil.
8	Maximum 0.04m thick, mid brown silty-sand	Compact mid grey-brown silty-sand	No archaeological features. An iron farm implement was retained from the topsoil.
9	Maximum 0.10m medium grey-brown silty-sand	Maximum thickness 0.20m of mid reddish-brown clay-sand, sealing natural dark red-brown boulder clay	Boundary ditch ***260***, gully ***258***, and field drain ***261***. A single sherd of nineteenth century pottery was retained from the topsoil.
10	Not observed	Not observed	None

Table 1: Summary of watching brief results by field

clay (***215***) containing charcoal. The south edge of the ditch was cut by an east/west aligned twentieth century field drain.

5.2.4 ***Field 3***: the easement transected the southern edge of the field, parallel to the field boundaries, on a north-west/south-east alignment. In total, eight linear features were observed cutting the subsoil across the easement strip. The features comprised: three ditches with an unknown function but possibly associated with abandoned field boundaries (***229***, ***236*** and ***240***); two furrows relating to agriculture (***246*** and ***247***), two gullies (***242*** and ***250***); and a field drain (***231***). All the features are probably post-medieval in date, although the field boundaries may be relicts of an earlier, possibly medieval, field system.

5.2.5 Ditch ***229*** was aligned north-west/south-east and survived for a distance of 2.03m across the northern area of the easement, close to the existing field boundary located to the west. The ditch had a curved terminal along the south edge, which was cut by an east/west aligned field drain (***231***). The ditch had a U-shaped profile with sharp edges and a concave base, with dimensions of 1.49m in width, and a maximum depth of 0.94m. The ditch, at some stage, had been re-cut to create a slightly narrower feature (Fig 5, Plate 10) measuring 1.2m in width. The fills of the original ditch comprised a 0.25m thick dark brown sandy-silt at the base (***224***), sealed by a mixture of different coloured silty-sands representing the upper fills (***221***, ***222***, and ***223***). The fill of the widened ditch comprised a similar composite of material including a 0.21m thick deposit of mid-grey sand at the base (***226***), sealed by a 0.58m thick deposit of clay-sand (***225***). Unfortunately no dating evidence was recovered from the back-fills.

5.2.6 Ditch ***236*** was located 28m east of ditch ***229***, and survived for a distance of 9.6m, running across the easement on a similar alignment. The feature had a width of 1.95m with stepped edges and a flat base, surviving to a depth of 0.59m. The ditch (Fig 6) was filled with a light grey silt-sand (***235***) sealed by a thin layer of silty-clay (***233***) and overlain by a 0.17m thick deposit of sandy-clay (***232***). The sandy-clay formed the interface layer below the topsoil. No finds were recovered from the fills, however, the extent and alignment of the ditch suggested an abandoned field boundary.

5.2.7 Ditch ***240*** (Fig 6) was located to the east of ditch ***236***, at a distance of 14m, and with almost identical dimensions. The only notable difference was the depth of 0.74m. The feature was filled with a 0.28m thick deposit of silty-clay (***239***) at the base, sealed by dark brown clay-silt (***238***), which in turn was overlain by a mid-brown clay-silt (***237***). Fill ***237*** yielded several sherds of post-medieval pottery and shot-gun cartridges. This possibly indicates a recent back-filling episode or may be the results of ploughing mixing material into earlier deposits.

5.2.8 Two drainage ditches (***246*** and ***247***) and two gullies (***242*** and ***250***) were observed running across the easement along similar alignments. The drainage ditches ran north/south for a distance of 9.5m, having widths of 1.2m, and surviving to a depth of 0.4m. The fills showed evidence of waterlogging, demonstrated by saturated silts at the base of each feature, and eroded edges

(Figs 6 and 7). The gullies were visible for a distance of 12m curving north-east/south-west (gully ***242***) and north/south for 9m (gully ***250***) across the easement. The gullies had similar depths of 0.15m (See Fig 7 illustrating the section through gully ***250***) and the fills also showed the effects of recent waterlogging. No finds were recovered from any of the drainage features.

5.2.9 Further evidence of twentieth and twenty-first century agriculture within the surrounding landscape was represented by a row of at least eight visible evenly spaced (0.40m) furrows running north/south across the easement, and 14 furrows running east/west. The furrows had an average width and depth of 0.10m and represent the scars of modern ploughing.

5.2.10 ***Field 4***: the easement transected the southern edge of the field north of Strawberry Farm, along a south-west/north-east alignment. A drainage ditch (***252***) was encountered cutting natural clay, close to the hedged field boundary between Fields **3** and **4**. Drainage ditch ***252*** (Plate 11) ran along a north-east/south-west alignment with a maximum width of 1.3m and depth of 0.23m. The feature was back-filled (Fig 7) by a light grey-brown sandy-clay (***253***) yielding pottery fragments dating to the late eighteenth and nineteenth century.

5.2.11 ***Field 9:*** the easement transected Field 9 north of Raby Mere, running south-east from Poulton Hall Road. The route ran between two modern ponds, eventually joining a man-hole bordering Dibbinsdale Brook, along a north-west/south-east alignment. Two of the three features recorded in the field possibly have medieval origins. Gully ***258*** was located approximately 20m north-east of a pond lying to the south-west of the easement, and comprised a shallow (0.22m) linear feature of indeterminate length, running on an approximate north-east/south-west alignment across the easement. The feature had a maximum width of 0.85m with regular sloped sides and a concave base. The feature may be the vestigal remains of a former ditch.

5.2.12 Ditch ***260*** was located within 1m to the east of gully ***258***, and comprised a shallow broad U-shaped ditch of width 3.85m, surviving to a depth of 0.29m. The ditch lay along a similar alignment to gully ***258*** and was back-filled by a layer of rounded and angular cobbles. The character of the fill was very similar to the back-fill of the ditched field boundaries within Field **1**. This would imply that ***258*** and ***260*** were associated, in that gully ***258*** serviced the possible abandoned boundary ditch ***260***. Feature ***261*** comprised a twentieth century ceramic land drain lying on a north-east/south-west alignment, surviving to a depth of 0.30m, and was observed cutting the south edge of boundary ditch ***260***.

6. PALEOENVIRONMENTAL RESULTS

6.1 INTRODUCTION

6.1.1 The four samples submitted for palaeoenvironmental assessment comprised Sample **1**: fill ***101*** from drainage ditch ***100***; Sample **2**: fill ***103*** from drainage ditch ***102***; Sample **3**: upper fill ***215*** of pond-feeder ditch ***219***; and Sample **4**: primary fill ***218*** of pond-feeder ditch ***219***. Samples **1** and **2** were taken during the evaluation of Site **56** and Samples **3** and **4** during the watching brief in Field **1**.

6.2 RESULTS

6.2.1 The results of the assessment for charred plant remains from these samples are shown in Table 2. All four samples contained some charred plant material in small quantities, but none produced evidence for cereals or crop processing waste. Charred weed seeds were scarce in Sample **1** (fill ***101*** from drainage ditch ***100*** - one dock (*Polygonum)* seed was recorded), and Sample **4** (primary fill ***218*** of pond-feeder ditch ***219***). However, in Sample **2** (fill ***103*** from drainage ditch ***102***) they were more common and included several charred blackberry (*Rubus fruticosus*) seeds and one bedstraw (*Galium*) seed.

6.2.2 Charcoal was recorded as present in all samples but the amounts were low. *Alnus/Betula/Corylus*-type (alder/birch/hazel) charcoal was recorded in the fill of ditch ***100*** and some roundwood charcoal was also noted. Preservation was variable and the charcoal was often engrained with silt.

6.2.3 Abundant waterlogged seeds were recorded in context ***218***, the primary fill of ditch ***219***. *Juncus* (rushes) and *Sagittaria* /*Alisma* (arrowhead/water plantain) seeds were recorded in this sample. The three taxa are all found today in ponds, ditches, canals, slow moving rivers and wet ground, indicating, as might be expected, locally damp conditions when ditch ***219*** was initially in use.

6.2.4 The flots contained a range of other materials including industrial waste materials, coal and fungal sclerotia (indicative of burning) in all samples along with some insect fragments in primary fill ***218*** and fill ***103***. Modern contamination, mainly from roots but also dicotyledonous leaves and some uncharred seeds, was recorded in the samples.

6.2.5 There is no potential for the further analysis of charred or waterlogged plant remains from the four samples taken during the evaluation of Site ***56*** and the watching brief. The small data set from this assessment provides very limited data about the economy of the site and the surrounding environmental conditions. The absence of any charred cereal grains or crop processing suggest that there was no crop processing being undertaken adjacent to the features when the fills were accumulating.

6.2.6 The record of charred blackberry seeds, along with charcoal from roundwood and short-lived trees such as alder, birch, or hazel, would suggest that fuel was being selected from waste ground or scrubby woodland.

6.2.7 Primary ditch fill ***218*** contained some evidence about the local environment. High numbers of seeds from taxa found growing today in ponds, ditches, canals, slow moving rivers or on wet ground (rushes) suggest that the ditch and its environs were wet when the ditch was first cut.

6.2.8 *Radiocarbon*: there is some potential for radiocarbon dating in three of the samples, comprising: Sample **1**, the fill of ditch ***100***, Sample **2**, the fill of ditch ***102*** and Sample **3**, the upper fill ***215*** of the feeder ditch ***219***).

S	C	F	Vol. (L)	Flot description	Plant remains	Botanical analysis potential	Dating potential
1	***101***	Fill of ditch ***100***	5-10	70ml, Charcoal (2) including roundwood and ring porous taxa. Preservation was poor and the charcoal was engrained with silt. Plus coal and sand. Modern contamination including roots, seeds	Weed (1), *Polygonum* sp and Poaceae stems	None	Low
2	***103***	Fill of ditch ***102***	5-10	30ml, Charcoal (2). Sand and modern contamination including roots and insects.	Weeds (2) including *Rubus* (blackberry) and *Galium molugo* (hedge bedstraw).	None	Good
3	***215***	Upper Fill of feeder ditch ***219***	10	25ml. Charcoal (2) including ring porous species, roundwood and twigs. Plus Industrial waste, coal and fungal sclerotia. Modern contamination including roots, seeds and amorphous organic uncharred remains.	Weeds (2), including *Rumex* (sorrel), *Carex* (sedge) and legumes. Poaceae stems	None	Good
4	***218***	Primary Fill of feeder ditch ***219***	10	20ml. Charcoal (1), industrial waste, coal, insect fragments and fungal sclerotia. Modern contamination including seeds.	Waterlogged seeds (4), including *Juncus* (rushes) and *Sagittaria/Alisma* (arrowhead/water-plantain)	None	None

Table 2. Summary of results for assessment of charred and waterlogged plant remains. Key: S = Sample, C = Context, F = Feature, Vol. = volume in litres. Plant remains are recorded on a scale of 1-4 where 1 is rare (1-5 items) and 4 is abundant (greater than 100 items)

7. FINDS

7.1 INTRODUCTION

7.1.1 In total, 211 artefacts were recovered from the evaluation and watching brief, the majority of which was fragments of pottery. The remainder comprised clay tobacco pipe, glass, flint, ceramic building material, iron, and animal bone. A small number of finds (six) were recovered from the evaluation. However, the bulk of the finds were retrieved from across the pipeline easement during the watching brief, in particular from the fields in the west area of the pipeline route. The type of finds found during the work programme are summarised in Table 3, below.

	Animal bone	**Clay tobacco pipe**	**Glass**	**Iron**	**Flint**	**Pottery**	**Ceramic building material**	**Total**
Field 1	0	3	10	0	1	62	0	76
Field 2	1	1	1	1	0	50	2	56
Field 3	0	0	5	1	0	39	1	46
Field 4	0	0	0	0	0	6	0	6
Field 7	0	0	0	0	0	0	3	3
Field 8	0	0	0	1	0	0	5	6
Field 9	0	0	1	0	0	11	0	12
Site 56	0	0	0	0	0	0	0	0
Site 57	0	1	0	0	0	1		2
Site 58	0	1	0	0	0	3	0	4
Total	1	6	17	3	1	172	11	**211**

Table 3: Number of finds by material from across the pipeline route

7.1.2 The artefacts covered a range of periods from prehistoric through to the twentieth century, with the pottery providing the most reliable dating evidence. Details of the pottery are set out below, followed by a brief record of the other categories of finds. Catalogues of the artefacts have been included in *Appendix 3* in context number order. All finds were treated in accordance with standard OA North practise.

7.1.3 ***Pottery***: the finds assemblage was dominated by a large collection of pottery. In total, 166 sherds were retrieved, of which two were Roman, two medieval, and the remainder post-medieval in date. Analysis of the pottery was based solely on visual inspection of individual sherds, and has been described using the terminology developed by Orton *et al* (1993). In general terms, the material was mostly in poor condition, and most fragments were clearly

abraded and rolled from the effects of ploughing. The date ranges suggested for these fabrics are approximate. The numbers of fragments of different fabric types are summarised in Table 4, below.

Pottery type	**Date range**	**Quantity**
Oxidised	Roman	2
Sandy ware	Medieval	1
Orange/brown glazed	Late Medieval/early post-medieval	1
Blackwares	Seventeenth-nineteenth century	8
Dark glazed red wares	Late seventeenth - twentieth century	27
Trail slipped ware	Late seventeenth - nineteenth century	4
Brown and green-glazed grey-bodied stoneware	Late seventeenth - twentieth century	9
Creamware	Eighteenth-early nineteenth century	4
Black and blue transfer printed ware	Eighteenth - twentieth century	33
White salt-glazed stoneware	Eighteenth - early nineteenth century	5
Refined stoneware	Nineteenth-twentieth century	1
Industrial slipware	Nineteenth - twentieth century	2
Porcelain and Pearlware	Nineteenth century	5
White-glazed white earthenware	Nineteenth - twentieth century	69

Table 4: Types of pottery with approximate date ranges and quantity of fragments

7.1.4 ***Roman ceramics:*** two worn undiagnostic body sherds in a coarse sandy oxidised fabric, were recovered from topsoil layers within Fields **1** and **3**. Both sherds had a soft orange-red fabric with numerous small inclusions. The source of the pottery is unknown, although it was likely to have been produced locally. In appearance, the pottery resembles material produced by the regionally important Cheshire Plain Ware and Wilderspool industries during the second century AD (Hartley and Webster 1973). However, the lack of other material classes of this period from the evaluation precludes determination of an accurate date.

7.1.5 ***Medieval ceramics:*** one of the two fragments of medieval pottery derived from the topsoil layer in Field **2** comprised a very worn body sherd in a hard red oxidised sandy fabric, bearing faint evidence of a lead splash glaze. The poor condition of the sherd prevents allocation of a precise date with confidence, although pottery of similar fabric and bearing splash-glaze decoration has been found on a recent excavation in the Chester area, that derived from the Brereton Park kiln (OA North 2002). The material produced from the kiln had been ascribed to the thirteenth and fourteenth century (Edwards 2000). The later medieval period was represented by a base from a shallow dish recovered from the topsoil in Field **1**. The sherd had a hard cream sandy fabric decorated internally with an orange/brown glaze and is similar to the type of pottery produced in Flintshire at the Ewloe kilns, dated approximately to around the fourteenth through to the sixteenth century (Harrison and Davey 1977). However, given that the distance between Thornton Hough and Ewloe is 12 miles, there is also the possibility that the pottery was produced locally.

7.1.6 ***Post-medieval ceramics:*** the 151 sherds of post-medieval pottery retrieved from across the pipeline route were mostly unstratified, with just 19 (12%) fragments deriving from subsoil layer ***268*** in Field **2** and ditch fill ***237*** in Field **3**. The assemblage comprised table and kitchen wares of later seventeenth to twentieth century date.

7.1.7 The material included a number of black glazed redware sherds, the earliest of which, a small cup derived from a lower ditch fill ***237***, dates possibly to the late seventeenth century. The sherd was amongst a small group containing a grey-bodied brown stoneware (which can be broadly dated to the later seventeenth or early eighteenth century), and a single sherd of white glazed earthenware that was unlikely to be earlier than the end of the eighteenth century.

7.1.8 Amongst the diagnostic eighteenth century material from the unstratified deposits were fragments of a Staffordshire-style slipware press-moulded plate, Creamware plate and gravy boat fragments, and white salt-glazed stoneware jar fragments. The occurrence of Staffordshire slipware within the assemblage indicates trading with the Midlands. Whilst slipware was produced at a number of centres, the Staffordshire products dominated the market during the late seventeenth to early eighteenth century.

7.1.9 The remainder of the group comprised dark-glazed earthenwares, in a variety of forms but predominantly of storage jars. Some were probably produced at the nearby potteries at Buckley, which flourished throughout the eighteenth and nineteenth centuries. Other later products comprised black and blue transfer-printed wares, undecorated glazed white earthenware kitchen and tablewares, an English porcelain cup, industrial slipware mugs, and white and brown stoneware jars. One particular black transfer sherd yielded from the topsoil, derived from a bowl that bore a 'CHELSEA' mark along the base. The mark included the distinguishing detail 'P B & S' which indicates a Staffordshire pottery pattern that was used from 1878-1891 (Godden 1991).

7.1.10 ***Clay Tobacco Pipe:*** in total, six worn stems were collected from topsoil deposits from across the easement. The fragments were all largely undiagnostic and a precise date was difficult to ascribe, although it is likely they date to the nineteenth century. One stem offered a clue to its origin bearing a 'DUBLIN' stamp. Pipe-making in Dublin was predominant around the late nineteenth century (Oswald 1975) and such pipes are commonly found in north-west England.

7.1.11 ***Glass:*** in total, 17 small fragments of vessel and window glass were recovered from the topsoil across Fields **1** and **3**, and from the back-fill of ditch ***240***. The fragments were in reasonable condition with no visible evidence of surface decay. The two vessel fragments that were retrieved from ditch fill ***238***, derived from a green bottle that probably dates to between the late eighteenth and nineteenth century. The size of the fragments from the rest of the assemblage were too small to attribute a type of vessel and prescribe a date with confidence.

7.1.12 ***Flint:*** a single piece of worked flint was recovered from topsoil ***203*** in Field **1**. The fragment derived from a waste flake and showed evidence of deliberate manufacture. The paucity of natural flint in the topsoil would suggest that the flint originated from elsewhere, possibly to the east or west of the pipeline easement.

7.1.13 ***Ceramic Building Material:*** in total, 11 fragments were collected from across the easement from mostly unstratified contexts. A small undiagnostic fragment of unglazed coarse orange roof tile recovered from the topsoil (***267***) in Field **8** has a speculative medieval origin, although the absence of any other ceramic material from the field hinders an accurate assessment. Of the stratified material, a large fragment of ridge tile recovered from ditch fill ***238*** has a probable date range of the eighteenth or nineteenth century. Other ceramic material comprised small fragments of bricks which were too small to ascribe a date, and pieces of twentieth century land drain.

7.1.14 ***Iron:*** three heavily corroded objects were recovered from the topsoil deposits from Fields **2**, **3** and **8**. Two of the fragments were difficult to identify due to the density of the corrosion products; however, a fragment of a nineteenth century plough blade was identified from Field **8**.

7.1.15 ***Animal Bone:*** a single fragment of a butchered distal cattle femur was recovered from the topsoil in Field **2**.

7.2 CONCLUSION

7.2.1 In conclusion, the finds assemblage is of limited archaeological significance, aside from the presence of possible prehistoric flint and stray Roman and medieval pottery fragments, the material adds little to the reinterpretation of the landscape. In all probability, the finds represent the use of night-soil and midden material for fertiliser. The late date of the material could either reflect the fact that much of the land was unsuitable for cultivation until later post-medieval drainage schemes, or, may reflect a general paucity of artefacts in the North West. There is little potential for further research within the material classes, and the finds are only of interest as a small post-medieval assemblage from the Wirral. However, since the majority of the finds were from unstratified deposits, their value is limited. The presence of Roman oxidised and medieval sandy ware fabrics may be of interest for future works on the distribution of pottery types.

8. CONCLUSIONS

8.1 INTRODUCTION

8.1.1 The programme of work across the study area demonstrated at least four phases of activity comprising prehistoric, Roman, medieval and post-medieval. The phases are based largely on the evidence recorded during the evaluations, watching brief, and finds data collected across the easement. Many of the later features such as the remains of field boundaries can be tied into the recorded features from cartographic evidence, particularly the Ordnance Survey maps.

8.1.2 ***Prehistoric:*** despite the suspected presence of Bronze Age barrows (Site **42**) within the same field, no evidence of prehistoric remains was encountered during the evaluation of Site **55**. During the watching brief, a stray find comprising a single piece of worked flint was collected from the topsoil in Field **1**. The flint flake could possibly date to the Bronze Age, although no other material dating to this period was observed in the vicinity.

8.1.3 ***Roman***: no evidence of the Roman road which is presumed to connect Chester and Meols was encountered during the evaluation or watching brief. The stray finds collected from Fields **1** and **9**, comprising two similar soft oxidised pottery sherds, suggest a possible Roman presence during the 2nd century AD. The presence of this pottery is suggestive of local trade with, amongst others, the Wilderspool industry.

8.1.4 ***Medieval***: no definite evidence of medieval activity was encountered except for two stray finds of pottery collected from the topsoil. However, evidence of ridge and furrow and boundary ditches was recorded at the west and east limit of the pipeline easement, which may represent the remains of medieval field systems. Similarly, several features which seemed to have an unknown function in the modern landscape may have medieval origins, such as ditch ***202*** in Field **1** and ditch ***242*** in Field **3**.

8.1.5 ***Post-medieval***: many of the encountered features were remnants of old field systems and can be tied into historic maps. Features ***207***, ***219***, ***231***, ***236***, ***240***, ***246*** and ***247*** are present on the Thornton Hough Tithe Map of 1847 (Fig 9). Some of these features were also present on the Ordnance Survey Map of 1872, though with some vagaries in accuracy such as ditches ***236***, ***246***, ***247*** and ***100*** in Site **56**. Ditch ***219*** represented a drainage feature from a pond that was previously used to extract marl in the nineteenth century (Site **41**). The pond was illustrated on the 1898 Ordnance Survey Map. The assessment of environmental samples from this feature indicated the high potential for radiocarbon dating this feature, although this unlikely to prove desirable, but also in the reconstruction of the local ecological situation.

8.2 CONCLUSION

8.2.1 The material evidence recovered from the work programme hints at continuous multi-period agricultural activity in the vicinity of Thornton Hough. Although little archaeological evidence for settlement was recorded, the evaluation has demonstrated that the land-use of the study area changed very little during the late medieval and early post-medieval periods.

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ILLUSTRATIONS

LIST OF FIGURES

LIST OF PLATES

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

0 500
metres

Figure 1: Location map

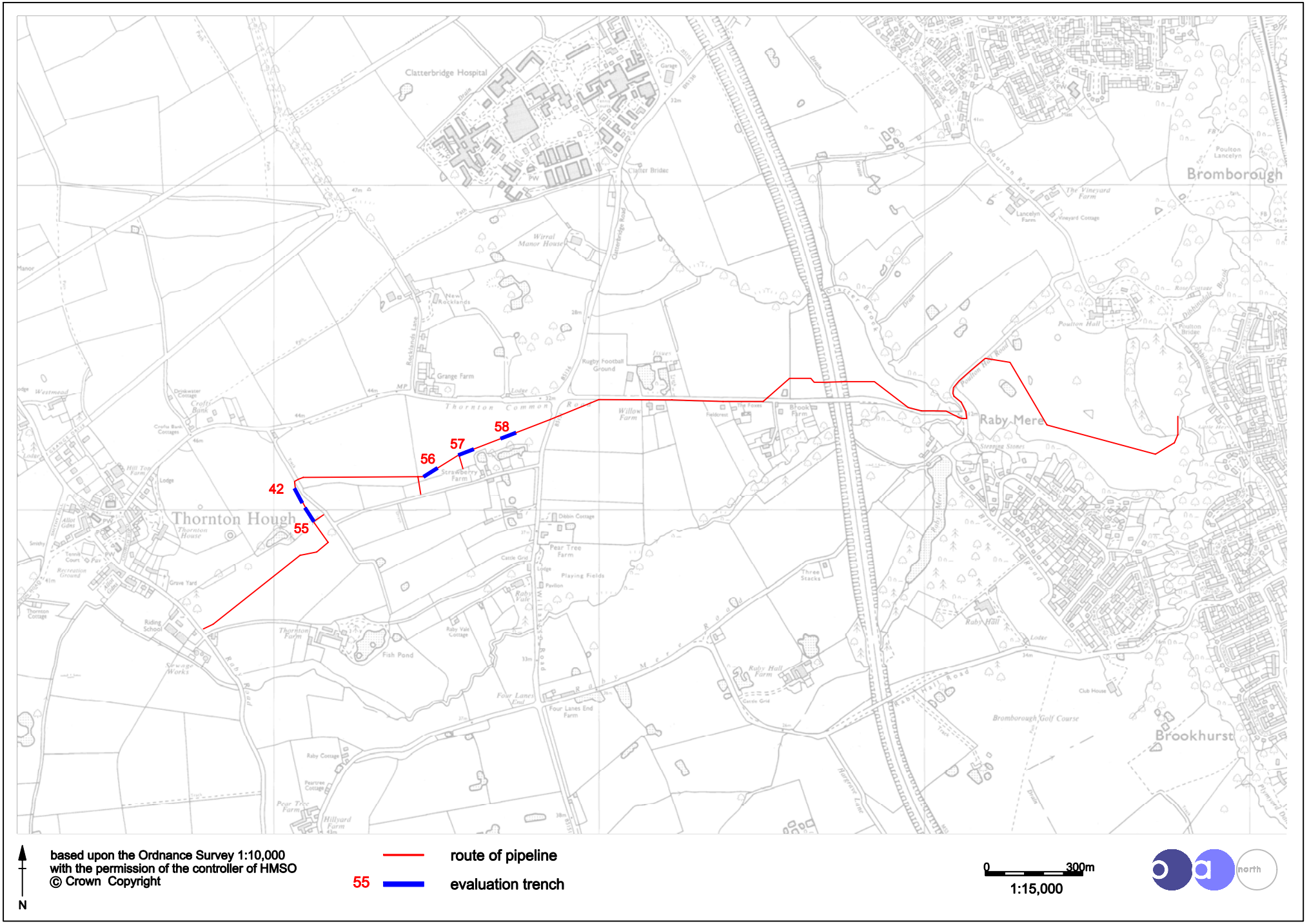


Figure 2: Evaluation trench location plan

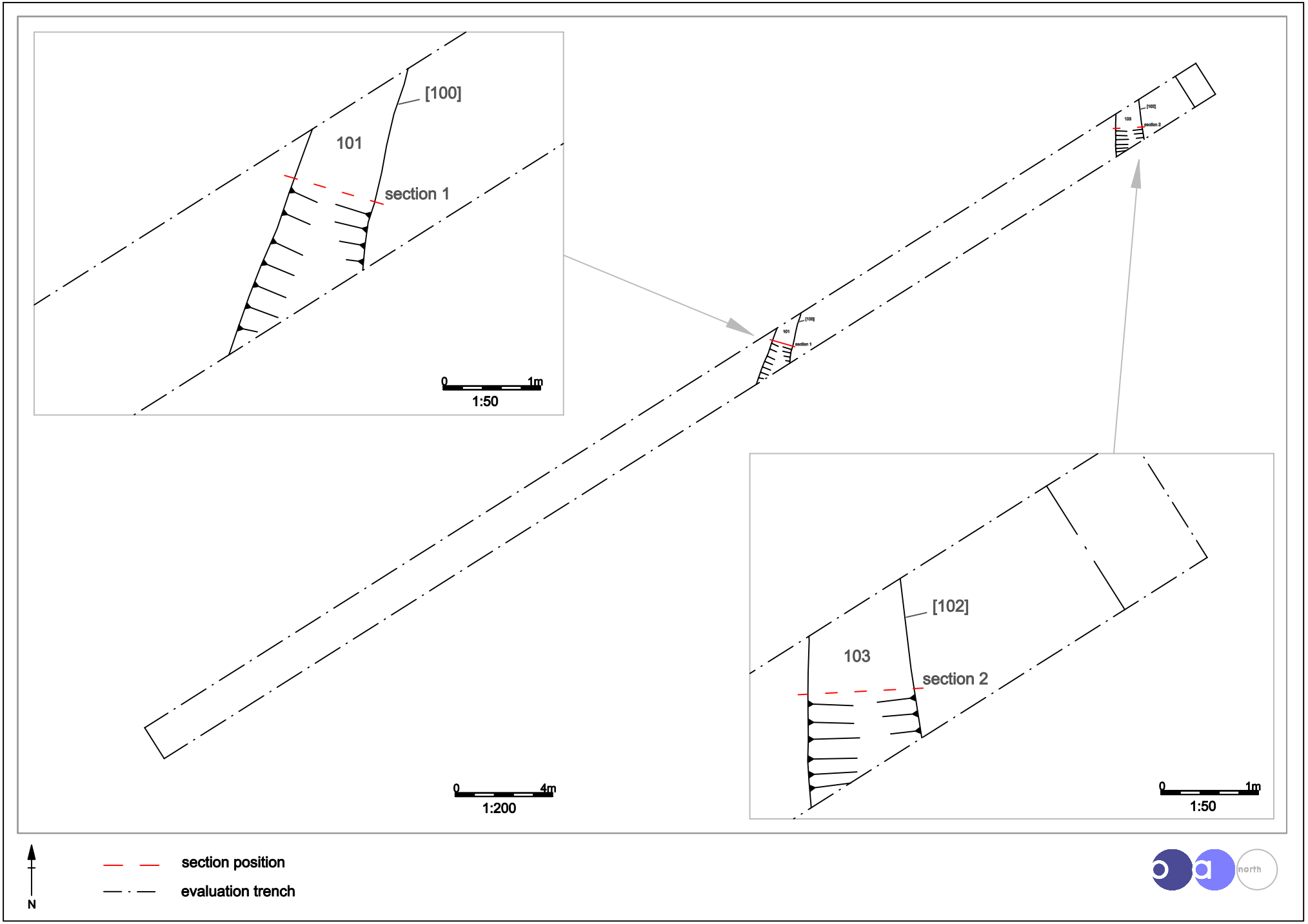


Figure 3: Site **56** trench plan

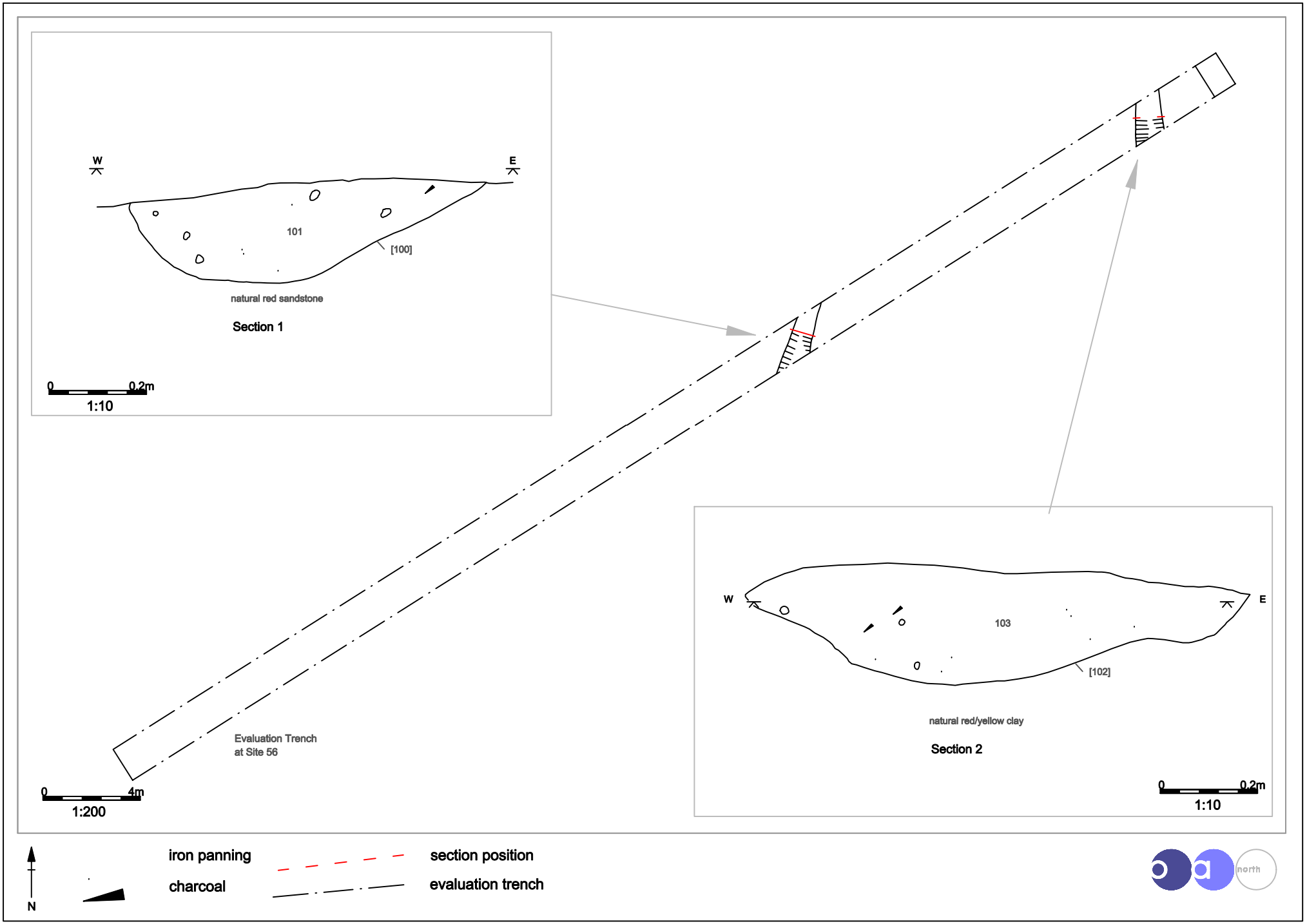
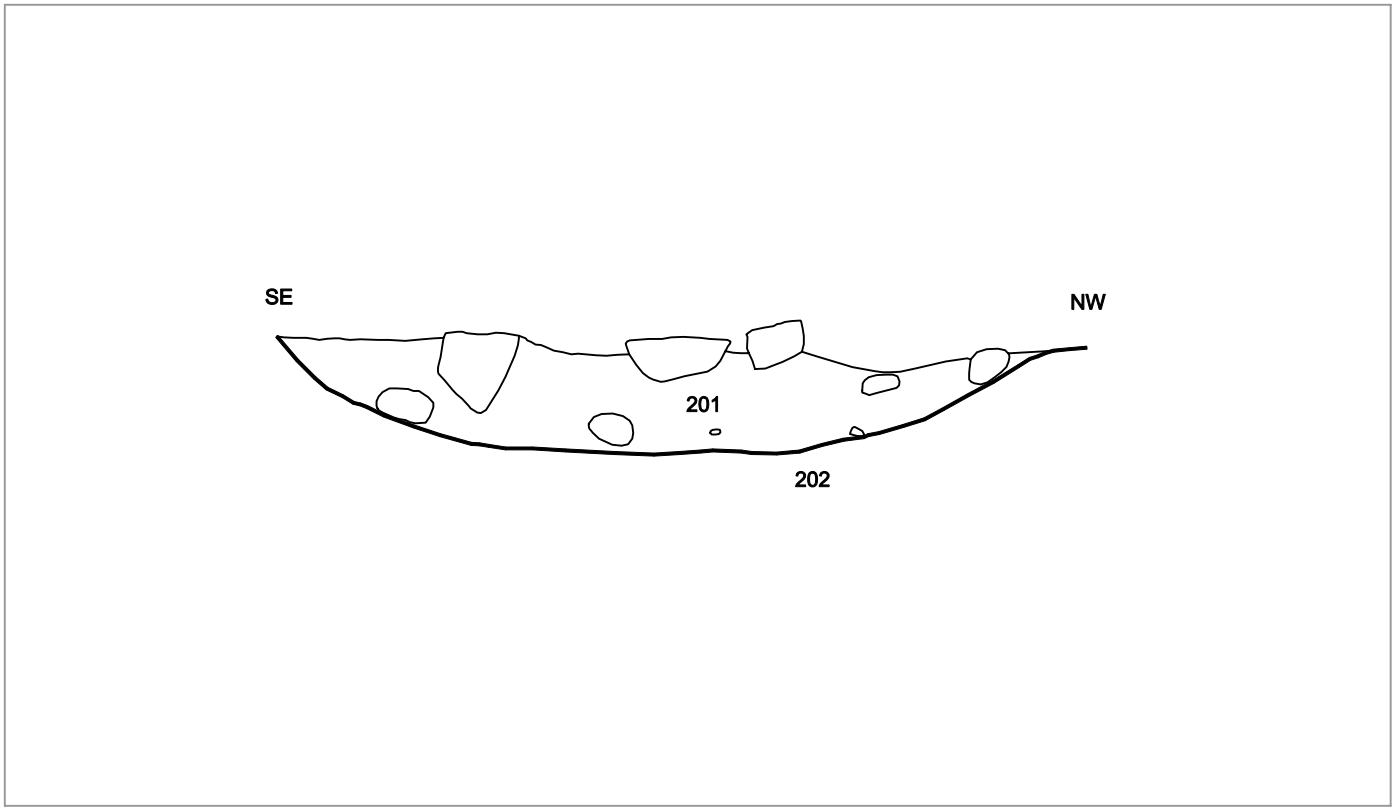


Figure 4: Sections through ditches ***100*** and ***102***



ditch 202

ditch 229

Scale 1:10 at A4

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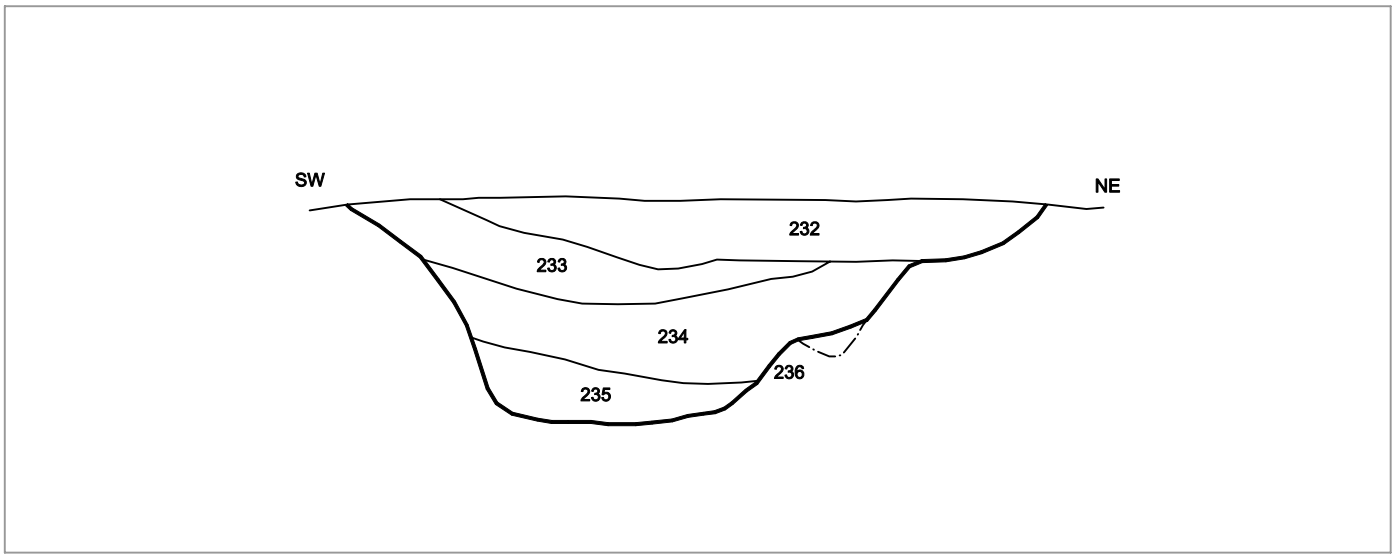
Figure 5: North-facing section through field bundary ditch ***202*** and south-facing section through ditch ***229***



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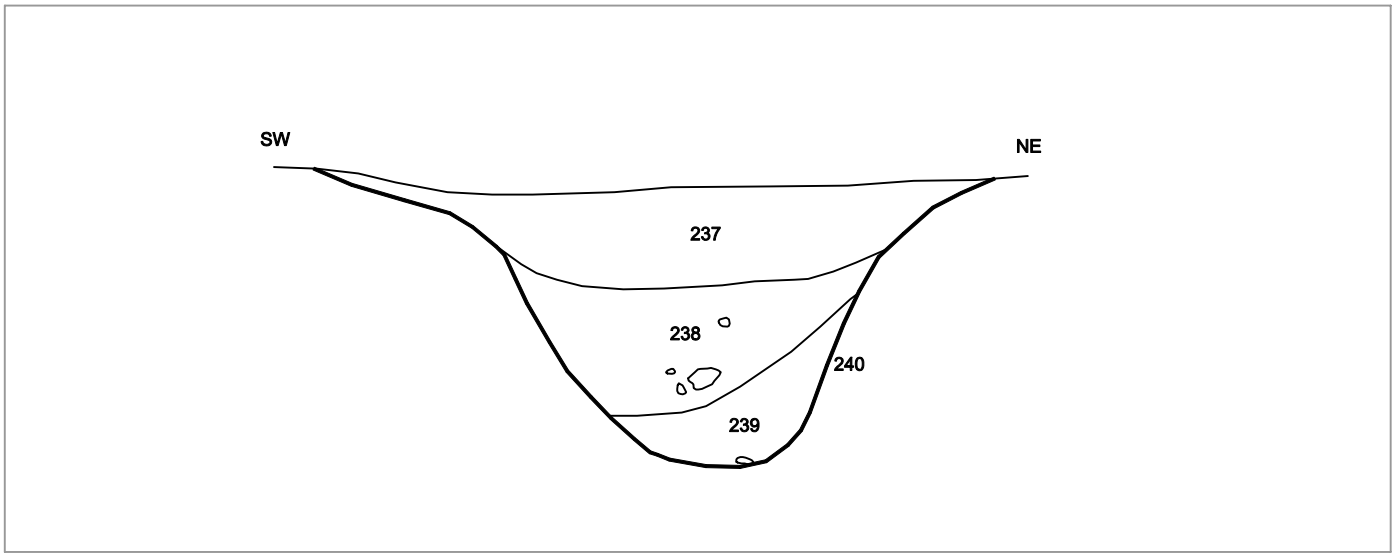

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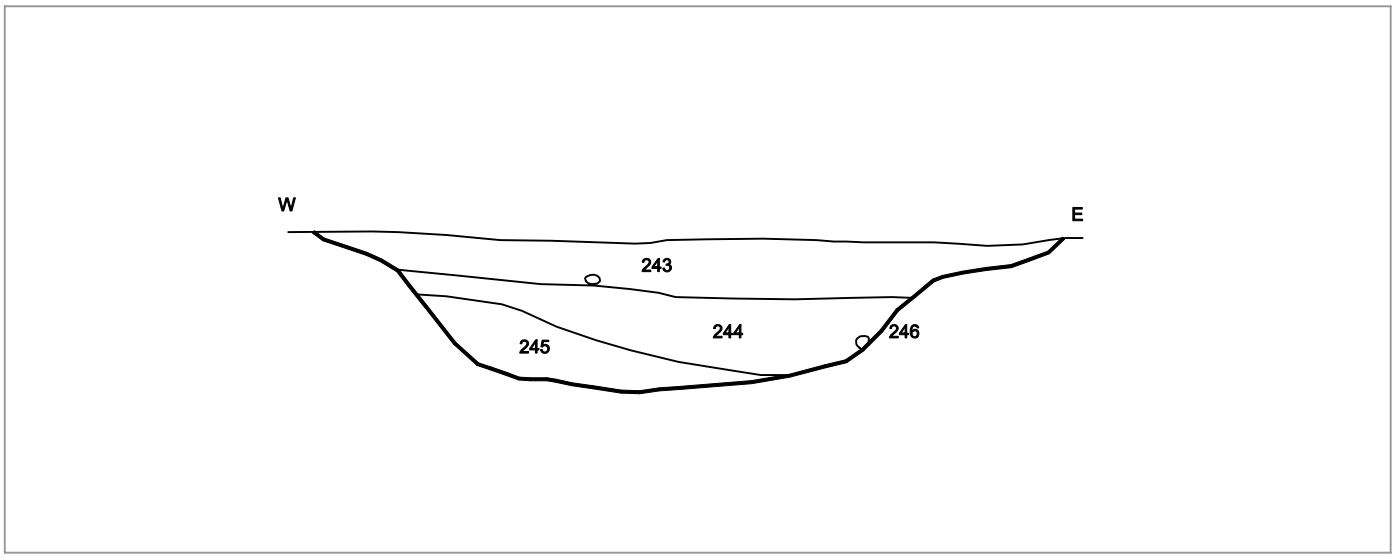

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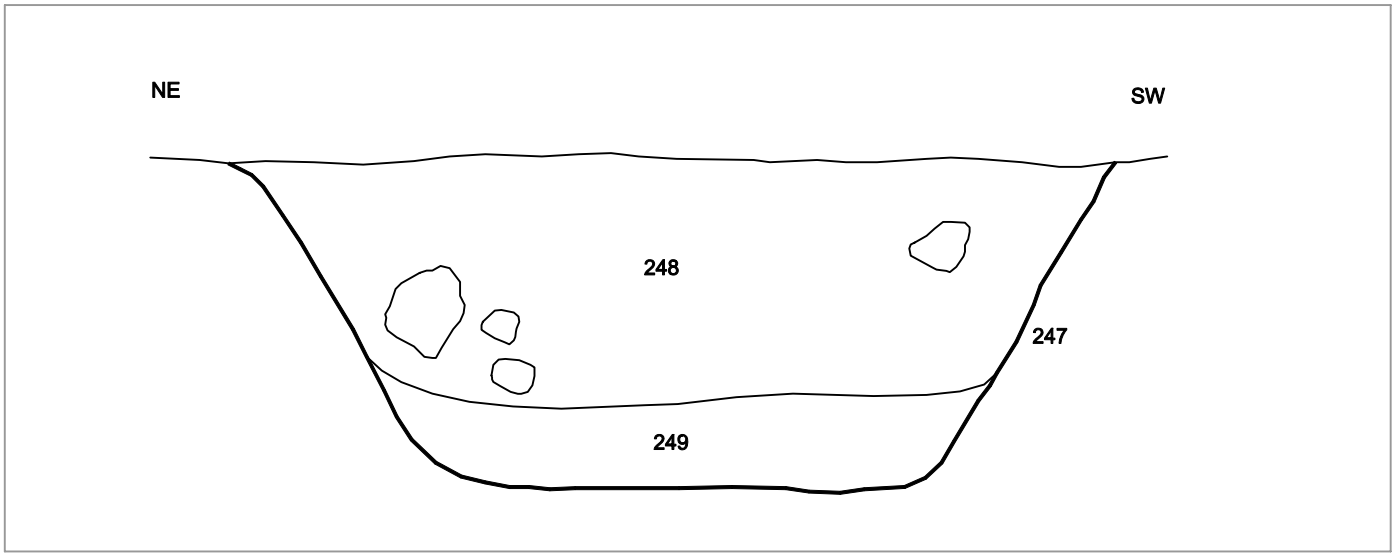
Figure 6: South-facing sections through ditches ***236***, ***240*** and ***246*** within Field 3



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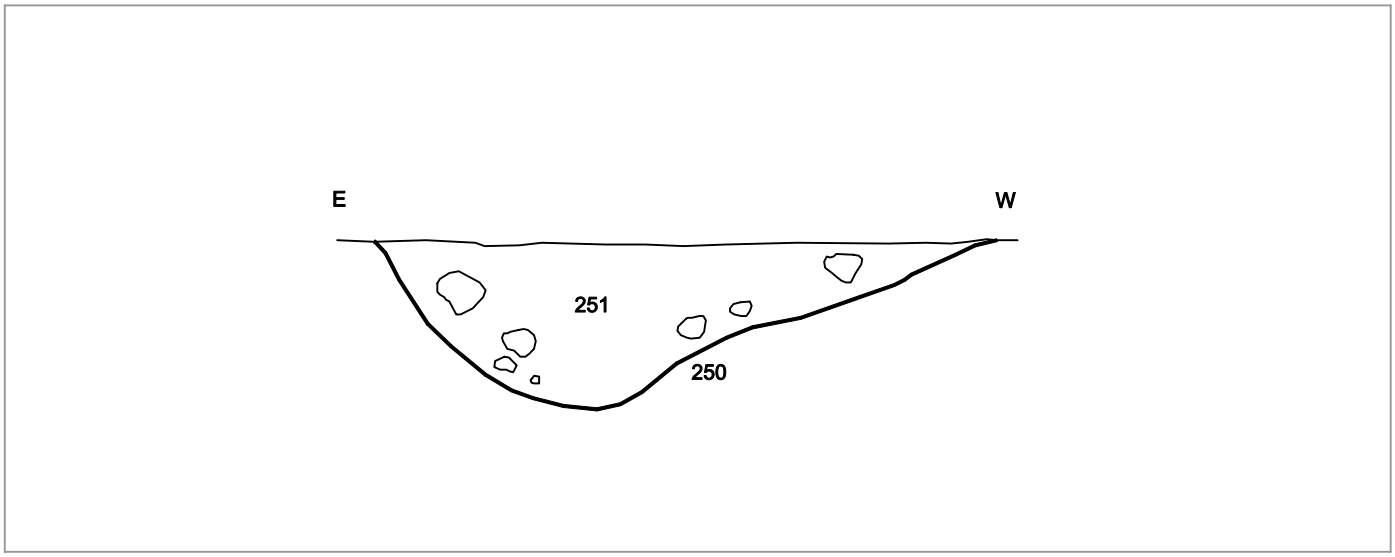

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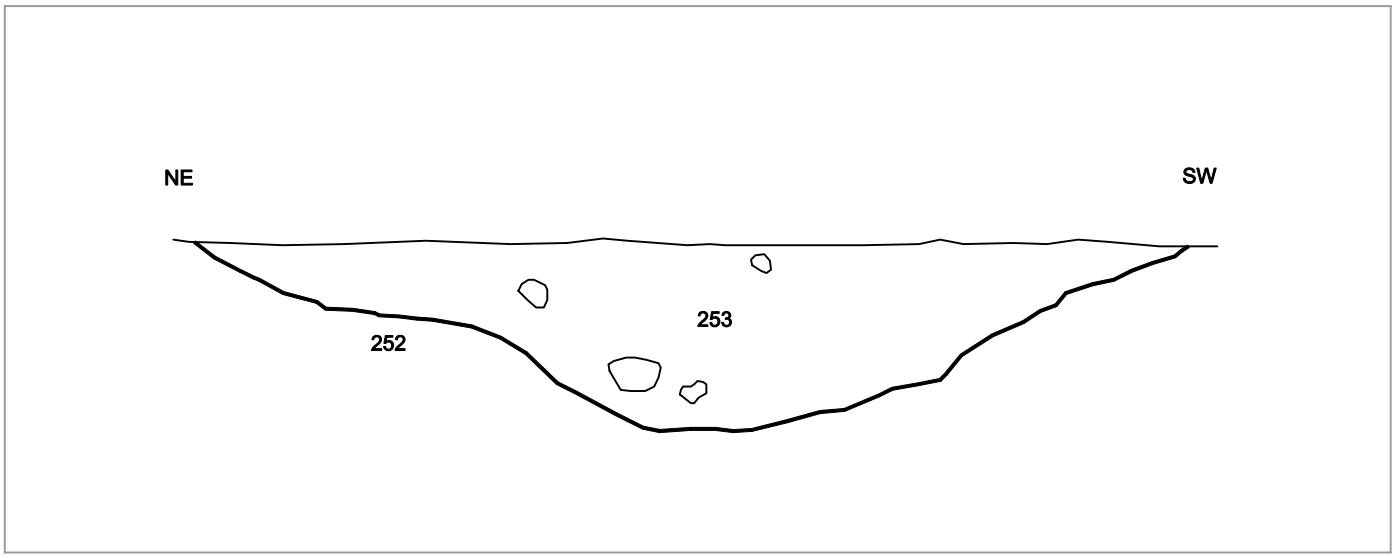

ditch 252

Scale 1:10 at A4

0 0.25m

Figure 7: Sections through ditches ***247***, ***250*** and ***252*** in Field 3

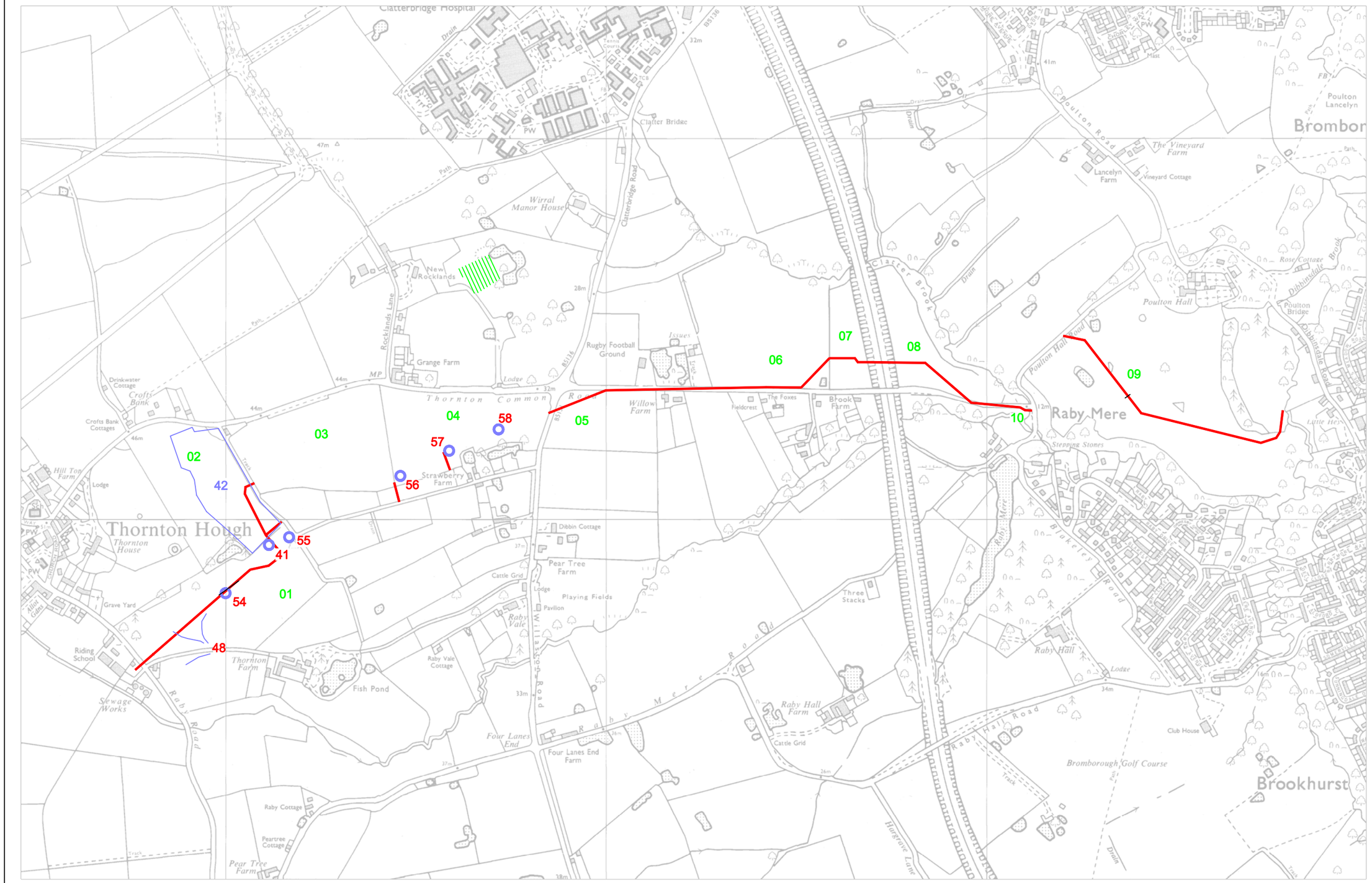

Figure 8: Plan of field numbers along the pipeline route

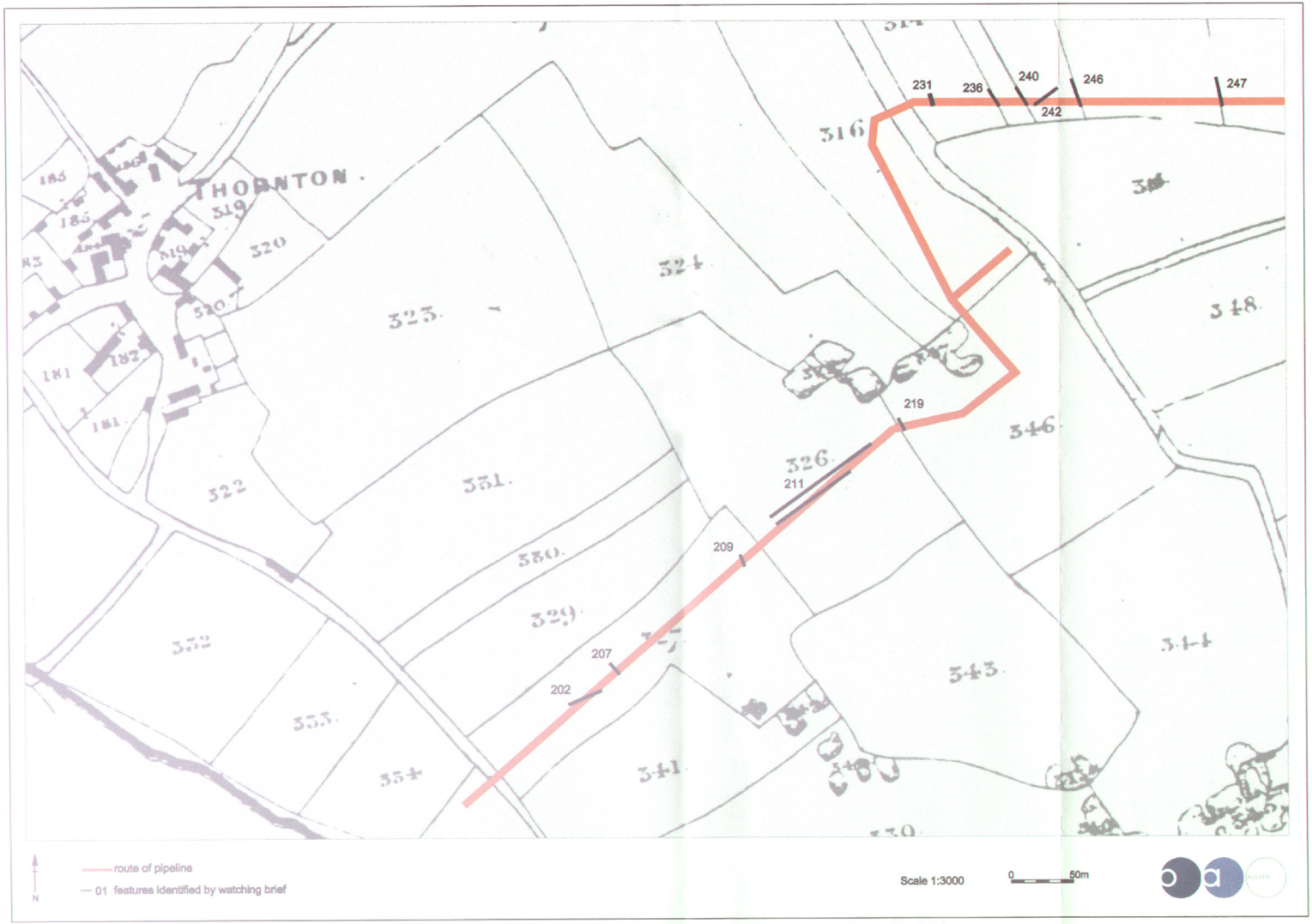

Figure 9: Part of the 1847 Thronton Hough tithe map, showing archaeological features found during the watching brief

Plate 1: Site **55**, Trench **1** looking south

Plate 2: Site **55**, Trench **2** looking south

Plate 3: Site **56**, view of trench looking west

Plate 4: Site **56**, ditch ***100***, looking north

Plate 5: Site **56**, ditch ***102*** looking south-west

Plate 6: Site **57**, trench looking east

Plate 7: Site **58**, view of trench looking south-east

Plate 8: Remains of field boundary ***202*** in Field **1**, looking south-east

Plate 9: Ditch ***219*** in Field **1**, looking north-west

Plate 10: South-east facing section through ditch ***229***

APPENDIX 1: PROJECT DESIGN

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 United Utilities Ltd (hereafter the 'client') has requested that Oxford Archaeology North (OA North) submit proposals for a programme of evaluation trenching and permanent presence watching brief along the route of the Thornton Hough WwTW to Bromborough WwTW, prior to the pipeline being laid.

1.1.2 This investigation forms the second stage of assessment, from which there may be a requirement for further mitigation works, for instance further open-area excavation. Any such further work will require a separate project design and costing. The first stage comprised a desk-based assessment and walkover survey (OA North 2004).

1.2 OXFORD ARCHAEOLOGY NORTH

1.2.1 OA North has extensive experience of evaluation and excavation of sites of all periods having undertaken a great number of small and large-scale projects during the past 23 years. These have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

1.2.2 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an **Institute of Field Archaeologists (IFA) registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

2.1 The following programme has been designed to provide an accurate archaeological assessment of the designated area within its broader context. The required stages to achieve these ends are as follows:

2.2 ***Evaluation:*** to implement a programme of trial trenching examining 5% of the area north of Site 55 (south-east corner of the field known as Drakelows/Site 42), as suggested by the results of the desk-based assessment and site visit.

2.3 *Watching brief:* to undertake a permanent presence watching brief during topsoil stripping activities along the route of the pipeline. This should pay particular attention to Sites 15; 16; 29; 31; 38; 41; 48; 54 and 55.

2.4 ***Report and Archive:*** an interim report may be issued should there be any further mitigation work necessary. The final report will be produced for the client within eight weeks of completion. A site archive will be produced to English Heritage guidelines (MAP 2) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

3 METHOD STATEMENT

3.1 EVALUATION

3.1.1 The programme of evaluation will require trenching to establish the presence or absence of any previously unsuspected archaeological deposits and, if established, will then test their

date, nature, depth and quality of preservation. In this way, it will adequately sample the threatened available area

3.1.2 The evaluation is required to evaluate a minimum of 5% of the area to the north of Site 55. This will take the form of one linear trench 75m x 1.6m or the equivalent, dependent upon the topographical conditions.

3.1.3 The topsoil will be removed by machine (fitted with a toothless ditching bucket, approximately 1.6m in width) under archaeological supervision to the surface of the first significant archaeological deposit. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest must be investigated and recorded unless otherwise agreed by the County Archaeology Service. The trenches will not be excavated deeper than 1.20m to accommodate health and safety constraints; any requirements to excavate below this depth will involve recosting.

3.1.4 All trenches will be excavated in a stratigraphical manner, whether by machine or by hand. Any investigation of intact archaeological deposits will be exclusively manual. A minimum sample of 50% of archaeological features must be examined by excavation. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no less than a 25% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in situ*.

3.1.5 ***Environmental Sampling:*** environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Subject to the results of the evaluation an assessment of any environmental samples will be undertaken by the in-house palaeoecological specialist, who will examine the potential for further analysis. The assessment would examine the potential for macrofossil, arthropod, palynological and general biological analysis. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect if good waterlogged deposits are identified, and will be subject to the agreement of the County Archaeologist of Merseyside, and the Client.

3.1.6 Samples will also be collected for technological, pedological and chronological analysis as appropriate. If necessary, access to conservation advice and facilities can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeozoological specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.

3.2 WATCHING BRIEF

3.2.1 A programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits within the course of the topsoil stripping activities within the easement of the proposed pipeline. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.

3.2.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan

and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the Client. A photographic record will be undertaken simultaneously.

3.2.3 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.

3.2.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (ie. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

3.2.5 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered, but this would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing.

3.3 FIELD RECORDING

3.3.1 ***Human Remains****:* any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. Merseyside Archaeological Service and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations, and if appropriate, in compliance with the 'Disused Burial Grounds (Amendment) Act, 1981.

3.3.2 ***Recording:*** all information identified in the course of the site works will be recorded stratigraphically, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.

3.3.3 Results of the field investigation will be recorded using a paper system, adapted from that used by Centre for Archaeology of English Heritage. The archive will include both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20, and 1:10). Levels will be tied into the Ordnance Datum. All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

3.3.4 ***Treatment of finds:*** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.

3.3.5 ***Treasure:*** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

3.3.6 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.

3.3.7 ***Contingency plan:*** in the event of significant archaeological features being encountered during the evaluation, discussions will take place with the Archaeological Officer, as to the extent of further works to be carried out, and in agreement with the Client. All further works would be subject to a variation to this project design. In addition, a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the costing and would be in agreement with the client.

3.4 ARCHIVE/REPORT

3.4.1 ***Archive:*** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the SMR (the index to the archive and a copy of the report). Arrangements for deposition of the full site archive will be made with Liverpool Museum, National Museums & Galleries on Merseyside. The National Museums Liverpool (NML)*'Guidelines on the Deposition of Archaeological Archives'* will be consulted.

3.4.2 ***Report:*** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further copy submitted to the Merseyside SMR within eight weeks of completion of the study. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above. The report will also include a complete bibliography of sources from which data has been derived.

3.4.3 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans.

3.4.4 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained.

3.4.5 ***Confidentiality:*** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4 OTHER MATTERS

4.1 ***Project Monitoring:*** whilst the work is undertaken for the client, the Archaeological Officer will be kept fully informed of the work. Any proposed changes to the project design will be agreed with the Archaeological Officer and the client.

4.2 ***Access:*** OA North will consult with the client regarding access to the site.

4.3 ***Health and safety:*** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1991). OA North will liaise with the Client to ensure all health and safety regulations are met. OA North site staff will receive a safety induction from the contractor. A risk assessment will be completed in advance of any on-site works.

4.4 ***Reinstatement:*** the topsoil removed will be stored alongside the evaluation trenches but not used as a backfill. The areas excavated will be backfilled with the spoil for practical and health and safety reasons but no reinstatement of the area will be undertaken. This will be carried out by the Client prior to/during development.

4.5 ***Public Access:*** the site will be protected from public access by fencing (erected by the Client).

5 WORK TIMETABLE

5.1 ***Evaluation:*** it is anticipated that the evaluation will take approximately three days to complete.

5.2 ***Watching Brief***: the duration of the watching brief will be dictated by the progress of the contractor.

5.3 The client report will be completed within approximately eight weeks following completion of fieldwork.

6 STAFFING

6.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OA North Senior Project Manager) to whom all correspondence should be addressed.

6.2 The excavation will be directed by an OA North supervisor. All OA North's project officers and supervisors are experienced field archaeologists who regularly undertaken supervision of numerous small- and large-scale evaluation and excavation projects.

6.3 The supervisor will be assisted by an archaeological assistant.

6.4 The processing and analysis of any palaeoenvironmental samples will be carried out under the auspices of **Elizabeth Huckerby BA, MSc** (OA North project officer), who has extensive experience of the palaeoecology of the North West, having been one of the principal palaeoenvironmentalists in the English Heritage-funded North West Wetlands Survey.

6.5 Assessment of any finds from the excavation will be undertaken by **Sean McPhillips BA**. Sean has worked as a finds supervisor for English Heritage and MOLAS on a number of occasions and has extensive knowledge concerning finds.

7 INSURANCE

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

APPENDIX 2: CONTEXT LIST

Context	Field	Category	Dimensions(m)	Description
100	**4**	Cut	>1.6 x 0.72 x 0.2	Ditch-drainage
101	**4**	Fill	>1.6 x 0.72 x 0.2	Medium grey-brown clay-silt with small pebble inclusion
102	**4**	Cut	>1.6 x 1.0 x 0.2	Ditch-drainage
103	**4**	Fill	>1.6 x 1.0 x 0.2	Medium grey-brown clay-silt with small pebble inclusion
104	**4**	Deposit		Topsoil (Site **57**)
105	**4**	Deposit		Topsoil (Site **58**)
201	**1**	Fill	>2.3 x 0.98 x 0.16	Medium grey-brown clay-silt with small to large cobble and pebble inclusions
202	**1**	Cut	>2.3 x 0.98 x 0.16	Field boundary ditch
203	**1**	Deposit		Topsoil
204	**1**	Deposit		Subsoil
205	**1**	Deposit		Natural
206	**1**	Fill	>1.7 x 1.43 x 0.25	Fill of ***207***
207	**1**	Cut	>1.7 x 1.43 x 0.25	Ditch-drainage
208	**1**	Fill	4.6 x 0.80 x 0.15	Fill of ***209***
209	**1**	Cut	4.6 x 0.80 x 0.15	Possible original field boundary ditch
210	**1**	Fill	6.3 x 1.89 x 0.12	Fill of ***211***
211	**1**	Cut	6.3 x 1.89 x 0.12	Plough furrow
212	**1**	Fill	4.3 x 1.45 x 0.09	Fill of ***213***
213	**1**	Cut	4.3 x 1.45 x 0.09	Plough furrow
214	**1**	Fill	>0.7 x 0.68 x 0.23	Upper fill of ***219***
215	**1**	Fill	2.90 x >0.7 x 0.69	Upper fill of ***219***
216	**1**	Fill	>0.7 x 0.91 x 0.20	Interface between ***215*** and ***218*** (west)
217	**1**	Fill	>0.7 x 1.10 x 0.32	Interface between ***215*** and ***218*** (east)
218	**1**	Fill	2.42 x >0.7 x 0.40	Primary fill of ***219***

Context	Field	Category	Dimensions(m)	Description
219	**1**	Cut	9.25 x 3.84 x 0.79	Ditch (possibly feeding pond Site **47**)
220	**3**	Fill	0.85 x >0.5 x 0.06	Upper fill of ditch ***229***
221	**3**	Fill	2.05 x 0.79 x 0.19	Primary fill of ditch ***229***
222	**3**	Fill	>0.5 x 0.45 x 0.30	Upper fill of ditch ***229***
223	**3**	Fill	1.70 x 0.22 x 0.33	Upper fill of ditch ***229***
224	**3**	Fill	>0.5 x 0.60 x 0.25	Interface between ***221*** and ***226***
225	**3**	Fill	>1.70 x 0.27 x 0.58	Upper fill of ditch ***229***
226	**3**	Fill	0.50 x 0.35 x 0.21	Interface between ***224*** and ***228***
227	**3**	Fill	2.03 x 0.74 x 0.05	Primary fill of ditch ***229***
228	**3**	Fill	>0.50 x 0.23 x 0.06	Primary fill of ditch ***229***, below fill ***226***
229	**3**	Cut	2.03 x 1.49 x 0.94	Ditch (terminal of)
230	**3**	Fill	13 x 0.23 x 0.10	Fill of ***231***
231	**3**	Cut	13 x 0.23 x 0.10	Field drain
232	**3**	Cut	1.60 x 0.70 x 0.17	Upper fill of ditch ***236***
233	**3**	Fill	>0.70 x 1.27 x 0.16	Interface between ***232*** and ***234***
234	**3**	Fill	>0.70 x 1.32 x 0.26	Interface between ***233*** and ***235***
235	**3**	Fill	0.76 x 0.70 x 0.17	Primary fill of ***236***
236	**3**	Cut	9.60 x 1.95 x 0.59	Possible boundary ditch
237	**3**	Fill	1.78 x >0.70 x 0.27	Upper fill of ***240***
238	**3**	Fill	>0.70 x 1.02 x 0.33	Interface between ***237*** and ***239***
239	**3**	Fill	>0.70 x 0.65 x 0.28	Primary fill of ***240***
240	**3**	Cut	9.50 x 1.78 x 0.74	Ditch-?furrow
241	**3**	Fill	12 x 0.68 x 0.15	Fill of ***242***
242	**3**	Cut	12 x 0.68 x 0.15	Gully
243	**3**	Fill	9.5 x 1.98 x 0. 15	Upper fill of ***246***
244	**3**	Fill	>0.70 x 1.35 x 0.20	Interface between ***243*** and ***245***
245	**3**	Fill	>0.70 x 0.95 x 0.16	Primary fill of ***246***

Context	Field	Category	Dimensions(m)	Description
246	**3**	Cut	9.50 x 1.98 x 0.40	Ditch-?furrow
247	**3**	Cut	9.50 x 1.2 x 0.43	Ditch-?furrow
248	**3**	Fill	9.50 x 1.2 x 0.33	Upper fill of ***247***
249	**3**	Fill	9.50 x 0.8 x 0.10	Primary fill of ***247***
250	**3**	Cut	9.50 x 0.90 x 0.34	Gully
251	**3**	Fill	9.50 x 0.90 x 0.34	Fill of ***250***
252	**3**	Cut	9.50 x 1.30 x 0.23	Ditch-drainage
253	**3**	Fill	9.50 x 1.30 x 0.23	Fill of ***252***
254	**9**	Deposit		Topsoil
255	**9**	Deposit		Subsoil
256	**9**	Fill	>0.40 x 3.85 x 0.29	Fill of ***260***
257	**9**	Fill	>0.40 x 0.85 x 0.22	Fill of ***258***
258	**9**	Cut	>0.40 x 0.85 x 0.22	Gully
259	**9**	Deposit		Natural clay
260	**9**	Cut	>0.40 x 3.85 x 0.29	Boundary ditch
261	**9**	Cut	>0.40 x 0.18 x 0.30	Land drain
262	**9**	Fill	>0.40 x 0.18 x 0.30	Fill of ***261***
263	**3**	Deposit		Topsoil
264	**3**	Deposit		Subsoil
265	**7**	Deposit		Subsoil
266	**2**	Deposit		Topsoil
267	**8**	Deposit		Topsoil
268	**2**	Deposit		Topsoil

APPENDIX 3: FINDS SUMMARY

Field	Context	Object number	Qty	Material	Description	Date
4	***104***	1000	1	Ceramic	Dark glazed red earthenware	17th-19th century
4	***104***	1001	1	Ceramic	Clay pipe stem	19th century
4	***105***	1002	1	Ceramic	Clay pipe stem stamped DUBLIN	19th century
4	***105***	1003	3	Ceramic	Glazed white earthenware small jelly mould, dark glazed red earthenware, transfer print ware	17th-19th century
1	***203***	1004	1	Flint	Worked Flake	?Prehistoric
1	***203***	1005	3	Ceramic	Clay pipe stems	19th century
1	***203***	1006	1	Copper alloy	Knife blade	20th century
1	***203***	1007	10	Glass	Clear; window (5), vessel (5), Green bottle	19th/20th century
1	***203***	1008	62	Ceramic	Roman oxidised body (1), late medieval green glazed base (1), Staffs trail slipped ware (2), dark glazed red earthenwares (13), blackwares (3),lead glazed red earthenware (1), stoneware jar (2), blue and black transfer plates and saucers (12), creamware plate (4), English porcelain (2), glazed white earthenware plates and cups (21)	Roman-20th century
3	***237***	1009	1	Plastic	Shotgun cartridge	21st century
3	***237***	1010	3	Ceramic	Blackware, brown stoneware, glazed white earthenware	18th-20th century
3	***238***	1011	10	Ceramic	Creamware plate, English porcelain, dark glazed red earthenware, blue transfer printed feather edged plate, glazed white earthenware (6)	18th-20th century
3	***238***	1012	2	Glass	Green wine bottle	18th/19th century
3	***238***	1013	1	Ceramic Building Material	Ridge tile	19th century
9	***254***	1028	1	Glass	Brown bottle base	19th century
9	***254***	1029	2	Industrial Residue	Iron slag	19th century?

Field	Context	Object number	Qty	Material	Description	Date
9	***254***	1030	2	Ceramic	Roman oxidised dish sherd, ?Medieval sandy body sherd	Roman-Medieval
2	***266***	1014	31	Ceramic	Dark glazed red earthenwares (5), glazed white earthenwares (13), blue transfer printed plates (8), English porcelain, industrial slipware, pearlware, brown glazed earthenware, refined stoneware	19th century
3	***263***	1015	36	Ceramic	Dark glazed red earthenware, 6 blue and black transfer printed plates (one bearing makers mark 'Chelsea' on base) green and brown stoneware, glazed white earthenware (16)	18th-20th century
3	***263***	1016	3	Glass	Clear window, vessel, green bottle	19th/20th century
3	***264***	1017	1	Iron	Bind fitting	20th century
7	***265***	1018	3	Ceramic Building material	Drain pipe	20th century
2	***266***	1019	1	Iron	Fitting	20th century
2	***266***	1020	1	Animal Bone	Butchered cow offcut	
2	***266***	1021	3	Ceramic	Glazed white earthenware	20th century
8	***267***	1022	5	Ceramic Building material	Brick frags (2), drain pipe, unidentifiable lump, and ?medieval roof tile	Medieval-20th century
8	***267***	1023	1	Iron	Plough share	?18th-20th century
2	***268***	1024	1	Ceramic	Clay pipe stem	19th century
2	***268***	1025	2	Glass	Green bottle base, wine bottle base (possible 17thc)	17th-18th century
2	***268***	1026	2	Ceramic Building material	Drain pipe, brick fragment	20th century
2	***268***	1027	16	Ceramic	Glazed white earthenware (6), blue transfer printed cup, plate and dish sherds (9), dark glazed red earthenware	18th-20th century

Field	Context	Object number	Qty	Material	Description	Date
9	***254***	1031	9	Ceramic	Trail slipware, blackware (2), dark glazed red earthenware (2), brown stoneware, blue transfer plates, white stonewares bearing stamps- HARTLEY and a barely legible mark with the letters PORPOI visible around the body(3),	19th/20th century