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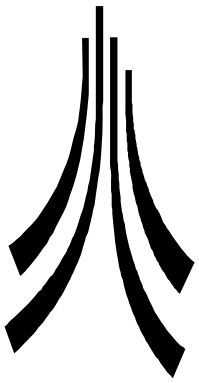

July 1997

OXCLIFFE ROAD PUMPING MAIN

Lancashire

Archaeological Watching Brief Report

Commissioned by:

North West Water Ltd

Oxcliffe Road Pumping Main
Heysham
Lancashire

Archaeological Watching Brief

Checked by Project Manager. ..... Date
Passed for submission to client. ..... Date

Storey Institute
Meeting House Lane
Lancaster
LA1 1TH

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ACKNOWLEDGEMENTS

The project is grateful to Graham Landsley of Strata Surveys, who conducted the test pit excavations. Thanks are also due to the landowners and tenants who permitted access to their land.

The field investigation was undertaken by Chris Wild, and the report was prepared by Chris Wild, and edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

EXECUTIVE SUMMARY

A watching brief of test pit excavations was carried out by Lancaster University Archaeological Unit (LUAU) ahead of the construction of the Oxcliffe Road Pumping Main sewer by North West Water Ltd (SD 4279 6209 to SD 4601 6107) and was intended to assess the nature and extent of the archaeological and palaeoecological resource that will be affected by the proposed development. This work followed on from an assessment undertaken by LUAU (1997) which recommended a limited watching brief during test pitting and the examination of Aldcliffe Bank if it was to be affected by construction works.

This assessment (LUAU 1997) identified a broad, but scattered archaeological resource from the general environs of the study corridor, which included scattered Bronze Age finds (four axe-hammers), Roman activity associated with the fort and port at Lancaster, at the southern end of the pipeline, and also early medieval activity centred on the putative early monastery at Heysham Head. Prior to the post-medieval period the area of Heysham Moss was only sporadically exploited, but was then drained and brought into agricultural use. The field survey identified eleven sites, all of which relate to the post-medieval agricultural landscape, and included narrow ridge and furrow, field boundaries and some small earthworks.

The present watching brief did not discover any significant archaeological material; however, the test pits were located by geotechnical requirements and consequently none of the areas of archaeological potential identified during the assessment (LUAU 1997) was examined.

The test pits did not identify layers of peat or waterlogged deposits, although small lenses of peat were recorded in two of the test pits (test pits 202 and 209a). This peat, however, was of insufficient quality or quantity for palaeoenvironmental analysis.

By virtue of the limited archaeological potential of the corridor identified by the earlier assessment and the present watching brief, it is not recommended that further evaluation be undertaken. However, it may be advantageous to undertake a watching brief during the topsoil strip for the pipeline.

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 An archaeological assessment was undertaken by Lancaster University Archaeological Unit (LUAU) ahead of the construction of a sewer pipeline from Oxcliffe Road Pumping Station, Heysham, to Brookholme Valve Chamber, near Willow Lane, Lancaster. The work was commissioned by North West Water Ltd and was undertaken between 22nd and 27th January 1997. Following this assessment it was recommended by the County Archaeologist that a watching brief be undertaken during the test pit phase of the project. This work was undertaken between 26th and 28th February 1997 in accordance with a verbal brief by the Lancashire County Archaeologist.

1.1.2 This report sets out the results of the work in the form of a short report which outlines the findings, followed by a statement of the archaeological potential of the area, a bibliography and recommendations for any future work,

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

1.2.1 The route of the pipeline within the test pit study area ran from Oxcliffe Road Pumping Station, Heysham, to the River Lune at Oxcliffe. Three main landscape zones were traversed on this 2.5 km route: Heysham Moss, the alluvial plain to the east of the Moss, and Oxcliffe Hill. The route crosses an area of low relief; the maximum height is *c*10m OD and the area is mostly below 5m OD. The whole area is underlain by carboniferous sandstones, siltstones, and claystones. These outcrop on the surface in only limited areas, such as the millstone grit and claystones exposed at Douglas Park (SD 416 610), and the coarse sandstone exposed at Heysham Head, to the west of the study area (Crofts 1992b).

1.2.2 ***Heysham Moss:*** The moss is underlain by a complex series of marine clays and silts whose history remains unknown, although they reach a maximum depth of *c*8m and contain intercalated peats representing falls in sea-level. The upper silts may represent a period of high sea level (Lytham VI which has been dated to *c*4400 - 3600 cal BC (Langridge 1969; Tooley 1969, 1978)). The subsequent fall in sea-level led to the development of peats on exposed, saturated surfaces. At Heysham, basal brushwood peats are overlain by *Phragmites* peats, *Eriophorum/Calluna* peats, and *S imbricatum* peats. The latter suggest that the moss developed into a full raised mire with wet surfaces and a restricted, acid-loving flora.

1.2.3 ***Alluvial Plain:*** The boulder clays border the mossland on its eastern side and lie between the moss and the River Lune, rising to a maximum height of 25m OD at Windmill Hill, south of the study area. Whilst detailed studies are lacking, it is thought that the clay was deposited during the latter stages of the Devensian glaciation. It is predominantly red-brown in colour and made up of material derived from Permo-Triassic deposits. A sandy clay matrix holds stones and boulders of limestone and sandstone, along with erratics from the Lake District. It is laid down mainly as north-south-oriented drumlins, such as those at Heaton and Snatchem's, reflecting the path of the retreating ice.

1.2.4 ***Oxcliffe Hill:*** At the south-eastern end of the watching brief study area is a low clay ridge, Oxcliffe Hill, which has been eroded back by the River Lune, leaving a river cliff. There have clearly been considerable changes to the local topography arising from riverine erosion in this area; Yates' Map (1786), for example, shows Green Ayre, to the north of the line of the sewer, and now it is an island within the river. Boreholes, undertaken ahead of the construction of the nearby Morecambe Bypass, have revealed a complex sequence of silts and clays at SD 4620 6280 which represented an old river meander.

1.3 HISTORICAL BACKGROUND

1.3.1 The earliest evidence for activity in the area of the pipeline are a few scattered finds of Bronze Age date. Four axe-hammers (LSMR 484, 485, 486, 492) have been found within the River Lune and from Lancaster, although the exact location of the finds is unknown. These finds form a part of a wider pattern of deposition of bronze and stone objects during the early Bronze Age throughout lowland Lancashire (Middleton *et al* 1995, 205). They possibly reflect the beginnings of the, probably continuous, activity and settlement on Heysham Head, but can act as no more than a general guide to the nature of the prehistoric activity in the affected area. Other survey programmes around Heysham and in lowland Lancashire do not suggest that the peats, clays, and silts of the affected corridor would have necessarily been suitable for prehistoric settlement (Middleton *et al* 1995).

1.3.2 ***Romano-British Period:*** Lancaster was a focus for military activity and civilian settlement in the Romano-British period. A fort and associated civilian settlement indicate that it was one of the most important centres in the Roman North West from the first to the fourth century AD. However, activity away from the main centre is scattered, despite the undoubted importance of the River Lune for trade and coastal traffic. There is only very limited evidence of Roman activity on the west side of the Lune, in the area of the watching brief study corridor, although an isolated coin has been found at Heysham (LSMR 1219).

1.3.3 ***Early Medieval Period:*** In the early medieval period Heysham Head was one of the key locations in the North West as an early ecclesiastical centre. The ruined St Patrick's chapel (LSMR 0420) dates from the late seventh or early eight century and the chapel may have been enlarged at the time and there are several associated burials, including rock-cut graves (LSMR 4204, 12418) (Bu'Lock 1967; Potter and Andrews 1994). The finds from Heysham Head imply the presence of an early monastery (Bu'Lock 1967; Newman 1997), which would have been located on the end of a narrow headland bounded on one side by the sea and on the other by Heysham Moss and the saltmarshes of the Lune estuary. Its positioning is likely to have been deliberate in that it was isolated from the secular world, although still accessible by sea. As such it would have formed one of a group of such sites around the Irish Sea (eg Workington, Ardwall Isle).

1.3.4 There is, however, no evidence of contemporary settlement within the hinterland of Heysham Head and it is likely that settlement of this period was scattered with isolated farms in the drier, more favourable areas of the landscape.

1.3.5 ***Medieval and Post-Medieval periods:*** In the medieval period, the pattern of dispersed settlement continued; villages developed to the north of the area at Poulton, Bare and Torrisholme, and to the west at Heysham. Since the mid-nineteenth century these were agglomerated into Morecambe, a name that was formally adopted in 1906.

1.3.6 Examination of Yates' map (1786) and the First Series Ordnance Survey map (1844) suggests that the landscape has seen a number of changes in the post-medieval period. Notable is the drainage of Heysham Moss and the reduction of the peat area by domestic cutting for fuel. By the time the second series Ordnance Survey maps were produced, in 1896, the modern field pattern was established. Some field boundaries have been removed in recent years leaving banks within larger fields as the only traces. Drainage of relatively recent date has also led to a distinctive pattern of narrow ridges in some fields along the route and has been found elsewhere in the area (Middleton and Lambert 1993). Only a small remnant of intact peats (*c*12ha in extent) now survive, which are to the south of the original moss area adjacent to Heysham village. Here, peats reach a maximum depth of 3.25m (Middleton *et al* 1995, 121) and support a remnant raised moss flora.

1.3.7 Perhaps the most significant landscape features of the past hundred years have been the construction of flood defences and the Lancaster to Glasson Railway across Aldcliffe Marsh. The flood defence is represented by a single bank separating the reclaimed marsh from the River Lune. The date of the original bank is unknown, but the marsh had been reclaimed by 1786 and the award for the drainage of Poulton and Torrisholme Mosses (LRO DDX 70/28) mentions embankments along the west bank of the river in 1788. The Lancaster - Glasson Railway was constructed in 1883 across Aldcliffe Marsh (LSMR 4685) by the Little North Western Railway from its station at Lancaster Green Ayre. It was closed to passengers in 1930 and freight in 1964 and the track was lifted in 1967.

2. METHODOLOGY

2.1 FIELD EVALUATION

2.1.1 Eight test pits were excavated in locations set out by Strata Surveys on behalf of North West Water Ltd. The original quota of eleven pits could not be fulfilled due to the dampness of the ground in certain areas. One pit was relocated and two further pits were replaced by boreholes.

2.1.2 Test pits were all excavated by a JCB using a 0.3m toothed bucket, to a depth of between 3.3m and 4.0m. All test pits were 1.0m in length, except test pit 211, which was 1.6m long. The excavation was monitored throughout by LUAU staff, and relevant samples were taken.

2.1.3 The recording methods employed by LUAU accord with those recommended by English Heritage's Central Archaeology Service (CAS). Recording was in the form of *pro forma* Trench Sheets for each trench, which recorded the orientation, length, and depth of machining, and described the nature of the topsoil, subsoil (where applicable), and geological deposits. Where potential features were observed they were manually sampled, with a full textual, drawn, and photographic record being maintained. Any finds recovered were bagged and recorded by either the trench number or, where appropriate, by the context number from where they were recovered.

2.2 HEALTH AND SAFETY

2.2.1 Both Lancaster University and LUAU maintain Safety Policies, the latter based on the SCAUM (Standing Conference of Unit Managers) Health and Safety Manual (1991). In keeping with current Health and Safety at Work Regulations, prior to commencing on-site work, a risk assessment for each activity was compiled.

2.3 ARCHIVE

2.3.1 A full archive of the project has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Lancashire Record Office with a copy to the Lancashire Sites and Monuments Record. A copy may also be deposited with the National Monuments Record.

3. WATCHING BRIEF RESULTS

3.1 TEST PIT 202

3.11 Test pit 202 was located within Heysham Moss. Excavation of the pit revealed topsoil to a depth of 0.20m which overlay bluish grey, plastic, alluvial clay. This layer of clay continued to the bottom of the test pit at a depth of 4.0m.

3.1.2 Occasional very small lenses of peat, up to 0.1m in diameter, were observed below *c*2m, but it was not possible to determine a distinct peat horizon for this part of Heysham Moss.

3.2 TEST PIT 203

3.2.1 Test pit 203 was also located within Heysham Moss, on its south-eastern edge. The excavation revealed similar results to test pit 202, with 0.2m topsoil overlying bluish grey plastic natural clay, to the bottom of the pit at a depth of *c*4.0m. No peat lenses were observed in this test pit.

3.3 TEST PIT 204

3.3.1 Test pit 204 was located *c*150m east of the edge of Heysham Moss as depicted on modern OS mapping. Excavation revealed a 0.25m depth of topsoil overlying *c*2.5m natural grey clay with brown streaks running through it. This overlay clean plastic bluish grey clay to the bottom of the pit at a depth of 3.90m. The brown streaks in the clay are presumably a result of mineral leaching within the upper levels of the natural clay.

3.4 TEST PIT 205

3.4.1 Test pit 205 was located just to the north-west of the small hill at North Farm. Excavation of the test pit revealed 0.2m of topsoil overlying *c*1m of natural grey clay with brown streaks running through it. This overlay clean plastic bluish grey clay, as in previous test pits, to the bottom of excavation, at a depth of 4.0m.

3.5 TEST PIT 209A

3.5.1 Test pit 209A was a relocated pit, because a borehole had been sunk in the original test pit location. Excavation revealed a very similar stratigraphy to the previous test pits, with 0.3m topsoil overlying *c*1m of natural grey clay with brown streaks running through it. This overlay clean plastic bluish grey clay, as in previous test pits, to the bottom of excavation, at a depth of 4.0m. Occasional very small lenses of peat, up to 0.1m in thickness, were observed between a depth of 2m and 3m, as in test pit 202.

3.6 TEST PIT 208

3.6.1 Test pit 208 was excavated 2m to the east of its intended location, because of localised flooding in the area. It was located immediately to the west of a recently removed hawthorn field boundary. Excavation revealed 0.25m topsoil overlying *c*2.5m natural grey clay with brown streaks running through it. This overlay clean plastic bluish grey clay to the bottom of the pit at a depth of 3.90m.

3.7 TEST PIT 210

3.7.1 Test pit 210 was located on the lower western slopes of Oxcliffe Hill at a height of approximately 6m AOD. Excavation revealed 0.2m of topsoil which overlay 0.3m of mid-brown silty clay subsoil. This in turn overlay 0.3m of grey plastic natural alluvial clay. Underlying this layer, at a depth of between 1.0m and 1.2m below ground level, was a thin layer of dark organic silty clay soil, 0.1m to 0.2m thick. This overlay 0.2m of pale brown creamy, alluvial clay, which was underlain by mid-brown boulder clay containing large amounts of sub-rounded cobbles, up to 0.25m diameter, and small pockets, up to 0.05m diameter, of red, green, and yellow sand. This was observed to the limit of excavation at a depth of 3.3m.

3.7.2 A modern ceramic field drain was observed in the south-east corner of the trench at a depth of 0.95m. Only a small section was revealed, but it appeared to be aligned in a north-east/south-west direction, draining the higher part of the field.

3.8 TEST PIT 211

3.8.1 Test pit 211 was located on the top of the southern end of Oxcliffe Hill at a height of approximately 11m AOD. Excavation revealed 0.2m of topsoil which overlay 0.2m of mid-brown silty clay subsoil. Beneath this was a 0.5m reddish brown, natural clay containing small sub-rounded cobbles, up to 0.10m in diameter. This overlay a mid-brown boulder clay, which was observed to the bottom of excavation, which had to be halted at 3.7m because of the difficulty of digging through large cobbles within the boulder clay.

3.8.2 As in test pit 210 a field drain was observed in the upper levels of the pit, at a depth of *c*0.60m. The drain was of similar modern ceramic construction and was aligned north-east/south-west, down the natural slope of the hill.

4. CONCLUSION

4.1 The archaeological monitoring of the trial pits, located on the proposed route of the pumping main, provided an opportunity to test the archaeological and palaeoenvironmental potential of part of this area. However, it should be borne in mind that the location, size, depth and methods of excavation were determined by geotechnical requirements, not by their value for archaeological evaluation or palaeoecological investigation. Consequently only certain areas have been subject to limited observation, and those areas of higher potential outlined in the assessment report (LUAU 1997), have not been investigated.

4.2 No archaeological features or artefacts were observed during the watching brief; however, experience has shown that the excavation of pits of this size, particularly where the land is permanent pasture and has not been subject to ploughing, rarely produce archaeological deposits when not specifically targeted for such purposes.

4.3 The test pits located to the west of Oxcliffe Hill contained alluvial clays which relate to previous courses of the River Lune, whilst those on Oxcliffe Hill (test pits 210 and 211), revealed glacial boulder clays.

4.4 There were no peat horizons observed on Heysham Moss, although small lenses were observed within two of the test pits (test pits 202 and 209a); this peat, however, was of insufficient quality or quantity for palaeoenvironmental analysis.

5. ARCHAEOLOGICAL RECOMMENDATIONS

5.1.1 The watching brief has demonstrated that there is little surviving peat within the area of Heysham Moss and consequently there is little to be gained from further palaeobotanic work within the study area. However, study of the Strata Surveys borehole data, may potentially yield relevant palaeoenvironmental results.

5.1.2 It has now been established that the Aldcliffe Bank, on the north-eastern side of the River Lune, will not be affected by the present pipeline development. Therefore the recommendation of the assessment (LUAU 1997) for further archaeological investigation of the bank need no longer apply.

5.1.3 By virtue of the limited archaeological potential of the corridor identified by the earlier assessment and the present watching brief, it is not recommended that further evaluation be undertaken. However, it may be advantageous to undertake a watching brief during the topsoil strip for the pipeline.

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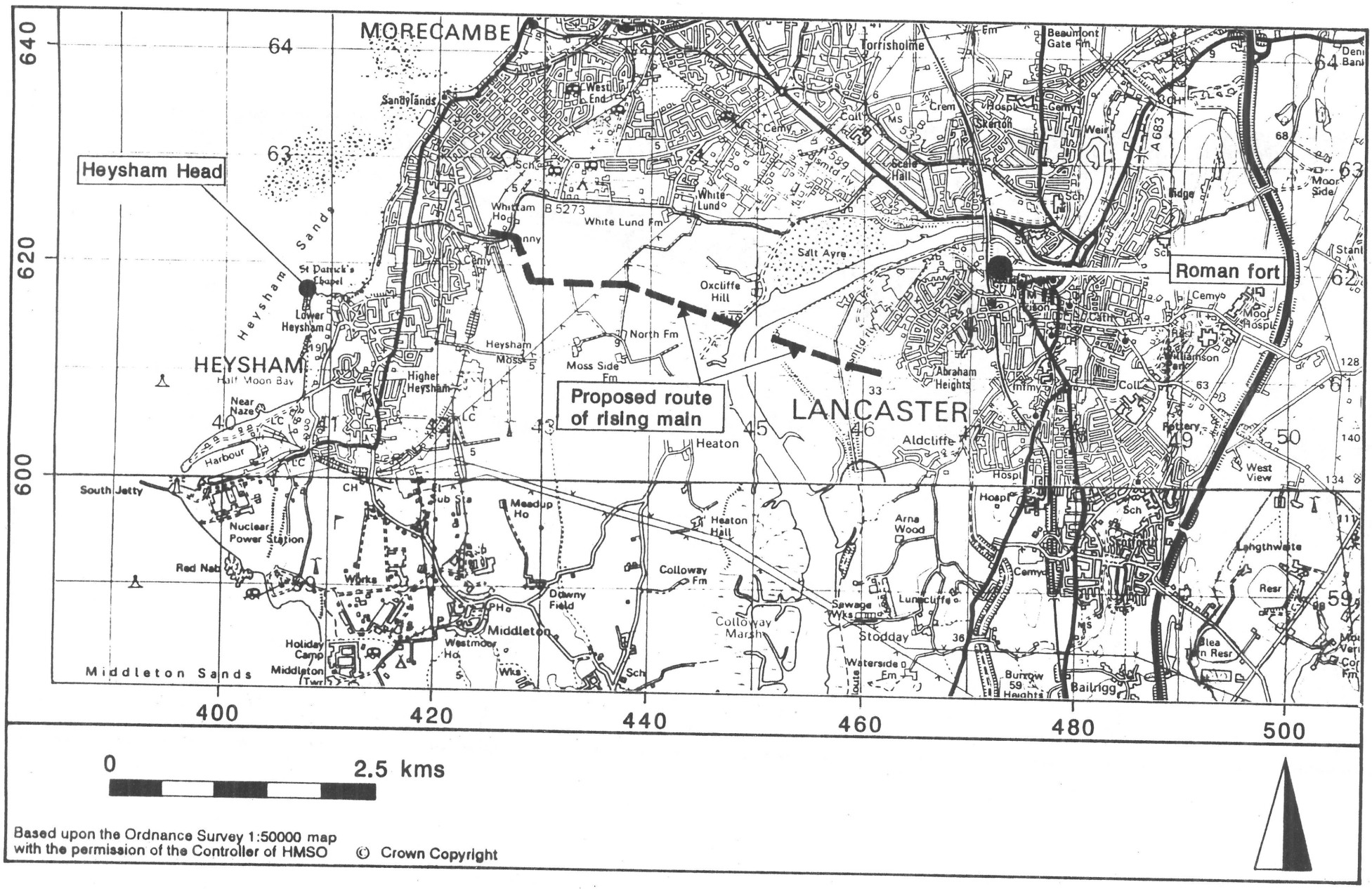
ILLUSTRATIONS



Based upon the Ordnance Survey 1:50000 map with the permission of the Controller of HMSO

Fig.1 Oxcliffe Road Pumping Main Location Plan

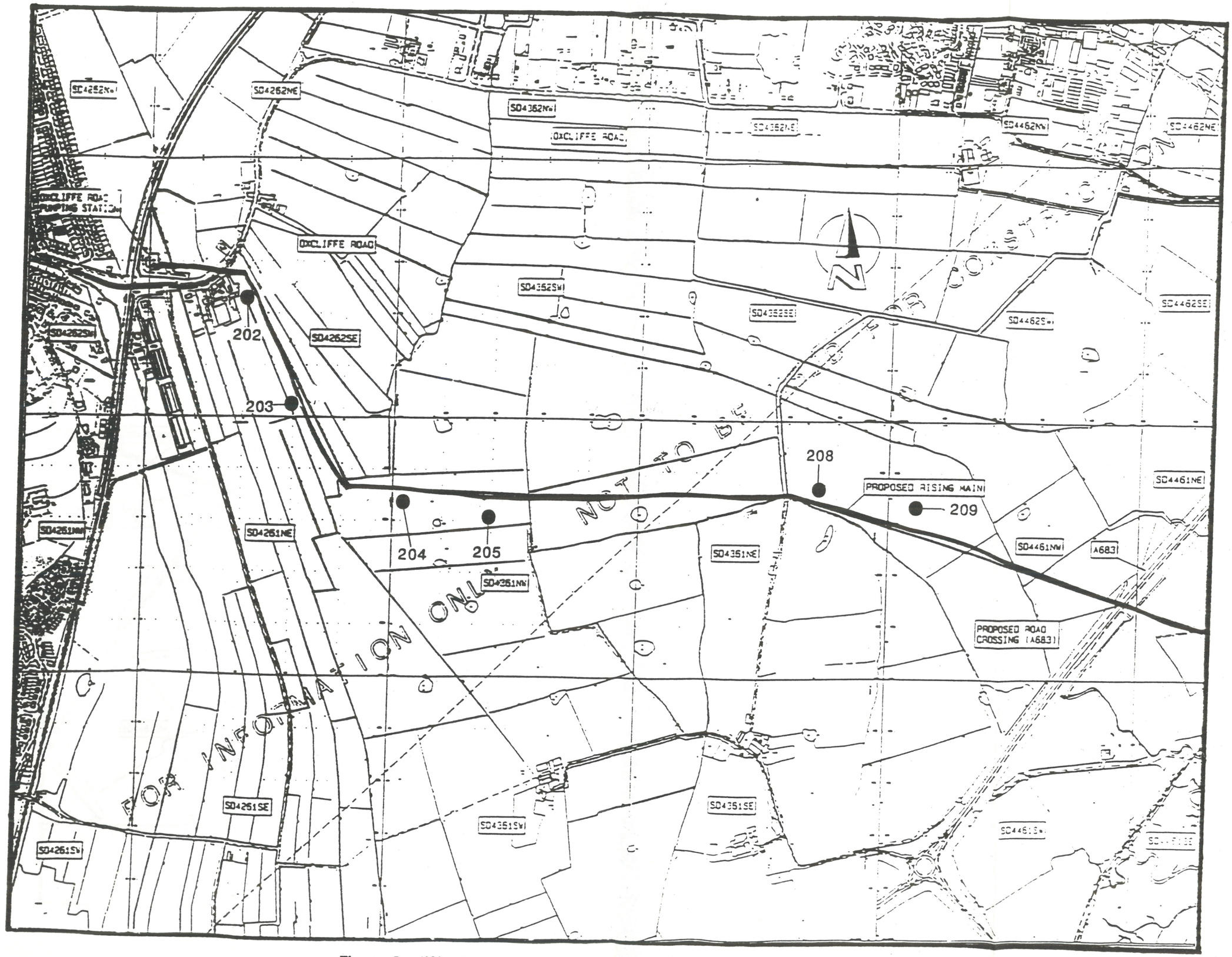


Fig 2 Oxcliffe Study Corridor, Western Section–Test Pit Locations

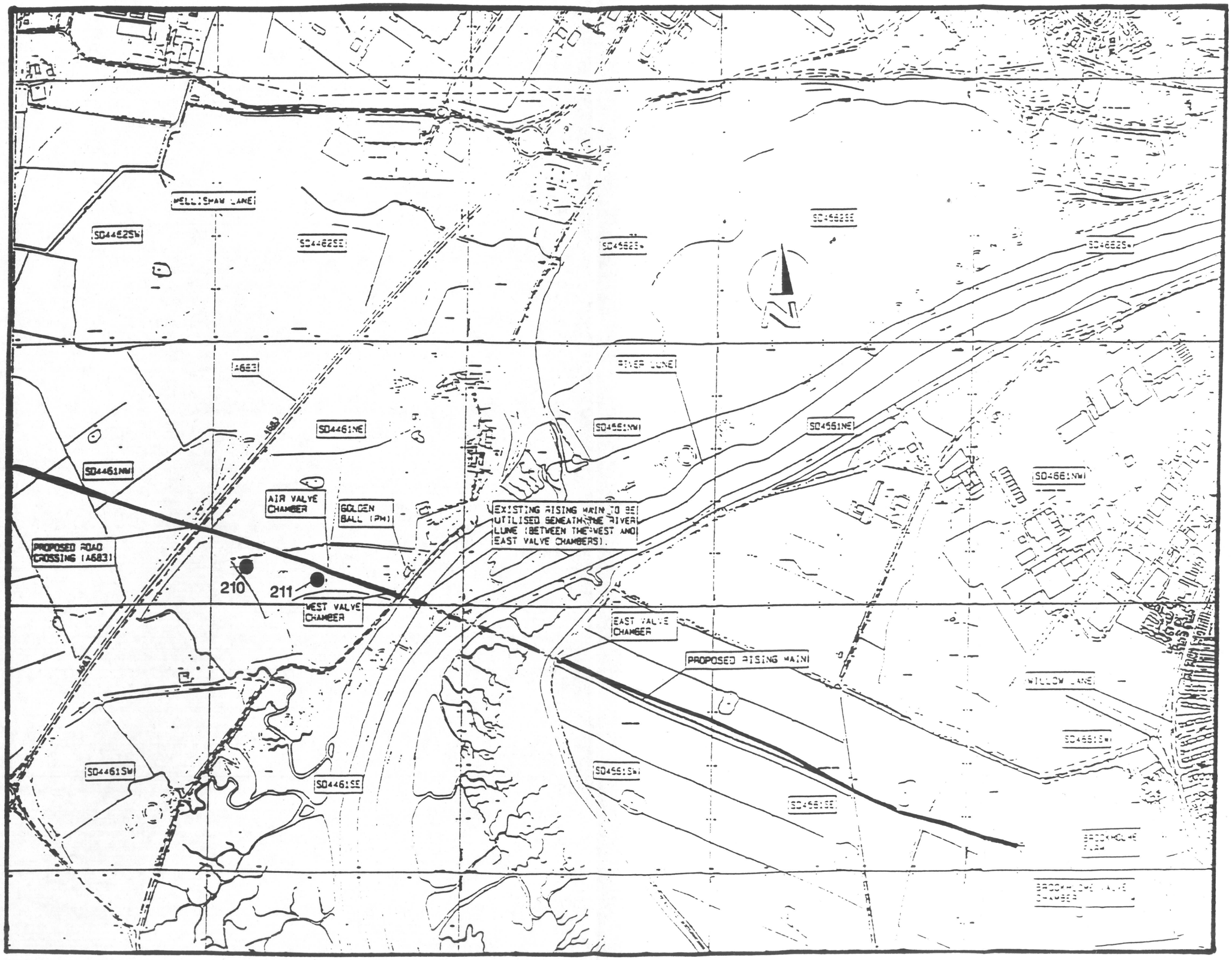


Fig 3 Oxcliffe Study Corridor, Eastern Section–Test Pit Locations