BARROW PORTS REGENERATION PROJECT, CUMBRIA

Archaeological Evaluation Report

Oxford Archaeology North

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CONTENTS

SUMMARY

Oxford Archaeology North was commissioned by Capita Symonds and Cumbria County Council to undertake the archaeological evaluation of four areas of a proposed scheme to redevelop the area around the docks of Barrow-in-Furness. The four areas evaluated were the Marina Park site (SD 2170 6870), the Marina Village site (SD 2060 6860), the Innovation Park site (SD 2000 6780) and the Ramsden Dock Access Road site (SD 1970 6750).

The evaluation, conducted in accordance with a brief from Cumbria County Council's Archaeology Service (*Appendix 1*), was undertaken in February and March 2005 and comprised the excavation of 87 trenches, with Trenches 1-28 at the Marina Village site, Trenches 29-42 at the Marina Park site, Trenches 43-56 at the Ramsden Dock Access Road site and Trenches 57-87 at the Innovation Park site. The majority of the trenches showed only limited amounts of mainly nineteenth or twentieth century activity. In addition to the evaluation, a limited watching brief, on five geotechnical test pits, was undertaken.

The Marina Village site revealed two distinct zones, the area of Trenches 1-24 had a thick deposit of indurated slag which overley a number of post-medieval structures and also widespread demolition debris deposits. This area was the Furness Railway Works, which appears on the First Edition Ordnance Survey map (1873), and although some of the structures revealed lie outside the buildings shown on this map, most of them are on the same alignment as the railway works. All the structural remains located within this area probably relate to the railway works complex.

The Marina Park site again revealed two distinct zones of activity across the site. The north-western part of the site revealed both foundations for former structures and widespread dumping of rubble and other demolition debris. It is likely that the structures revealed could all be part of the original Kellner and Partington Paper Pulp Works complex, which has since been demolished. The south-eastern part of the site, comprising Trenches 36-42, revealed evidence of large-scale dumping of probable foundry waste, in a number of discrete layers, suggesting a fairly long-term usage of this part of the site as a dumping ground.

The Ramsden Dock Access Road site revealed a fairly uniform stratigraphy throughout, of mainly sloping deposits of sand. Whilst these could possibly be natural, it is more likely that the whole area has been built up over time by the dumping of sand deposits dredged from the surrounding channels.

The Innovation Park site revealed two distinct stratigraphies across the site, with the trenches on the raised ground to the north-east of the site (Trenches 71-78) differing from the remainder of the site. The raised area proved to be man-made, from layers of demolition debris and building rubble. The other trenches at this site (Trenches 57-70 and 79-87) revealed multiple layers of sand, which could potentially represent a build-up of natural sands, but again it is more likely that these sands are dumped dredging deposits. The test pits confirmed the stratigraphic sequence seen in the evaluation trenches, with the exception of Test Pit A1/66, which revealed the remains of a demolished building.

ACKNOWLEDGEMENTS

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The evaluation was undertaken by Paul Clark, Martin Sowerby, Steve Clarke and Dave Hodgson, with the report written by Paul Clark. The figures were created by Emma Carter, and the report was edited by Stephen Rowland, Alan Lupton and Jamie Quartermaine, who also undertook the project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Following a proposed scheme to redevelop the area of the docks of Barrow-in-Furness, Cumbria, an archaeological desk-based assessment was undertaken by Oxford Archaeology North (OA North 2003). Following this work, OA North was commissioned by Capita Symonds and Cumbria County Council to undertake the archaeological evaluation of four of the areas of the proposed scheme, in accordance with a brief (*Appendix 1*) from Cumbria County Council's Archaeology Service (CCCAS). The four areas were designated as the Marina Park site (SD 2170 6870), the Marina Village site (SD 2060 6860), the Innovation Park site (SD 2000 6780) and the Ramsden Dock Access Road site (SD 1970 6750).

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 Barrow-in-Furness lies at the south-western tip of the Furness Peninsular in South Cumbria, although it is historically in that part of Lancashire known as 'across the sands', or North Lonsdale. It is bounded by Morecambe Bay to the south and Duddon Sands to the north, with the Furness Fells to the east and Irish Sea to the west (Fig 1). The Barrow Ports are located to the south of the centre of Barrow, with the areas of Ramsden Dock Access Road and Innovation Park located on Barrow Island.

1.2.2 The topography of the sites is typically flat and low-lying, at little more than 10m above sea level at most. The more general area is a mix of stretches of coastline and undulating fields rising up to fells to the north-east (Countryside Commission 1998, 25).

1.2.3 The solid geology is made up almost entirely of Triassic red sandstone, with areas of red, grey and green mudstones and siltstones to the south-west (British Geological Survey 1982). As the study area is entirely urban the nature of the overlying drift geology is not clear. It is likely to consist of glacially derived deposits, overlain by typical brown earths as in neighbouring areas (Ordnance Survey 1983).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

1.3.1 ***Prehistory***: evidence for post-glacial activity is not common in this part of North West England. Nevertheless, recent work has established that groups of hunter-gatherers were active in the region, some of the most compelling evidence having come from the Furness Peninsular itself (Young 2002). Cave sites excavated near Ulverston and Grange-over-Sands have revealed remains dating to around 10,000 years ago (*op cit* 20), and it is possible that the remains of deer discovered during the construction of the Barrow Docks in layers of peat at great depth could also date to this period (Kendall 1900). There is considerably more evidence of sites in the vicinity of Barrow dating to the Mesolithic period, many artefacts having been discovered on Walney

Island, just off the south-west coast. These consist almost entirely of surface finds (Cherry and Cherry 2002). Needless to say by the beginning of the Neolithic the area around Barrow was well visited, although recent excavations suggest a degree of continuity from the Mesolithic (Jones 2001; OA North 2002).

1.3.2 During the later Neolithic and Bronze Age more extensive settlements began to be established across the Furness Peninsular and numerous stray finds have been discovered, including stone and bronze axes, along with bronze swords, spearheads and other weapons (Barnes 1978, 9). Large enclosures such as those at Skelmore Heads and Stainton may have their origins at this time (Powell *et al* 1963; Barnes 1978), although they appear to have remained in use until the coming of the Romans. Numerous burial mounds, many of which were explored during the eighteenth and nineteenth centuries (West 1774), also date to this period, as well as the stone circle at Birkrigg (Gelderd and Dobson 1912). During the Iron Age further settlements were constructed, such as that at Stone Walls near Urswick, where there is evidence that open cast mining was carried out (Bowden 2000), and there may even have been some form of habitation at Back (or Black) Castle, now the site of Barrow public park (Barnes 1978, 9).

1.3.3 ***Roman***: although there are no confirmed structural remains dating to the Roman period, it is not clear to what extent there was a Roman presence within the area. Shotter (1995) has argued that the relatively large number of Roman coins found in South Cumbria, particularly in the Furness Peninsular, suggests a large degree of interaction between the Romans and the local population and the possibility that a fort may yet be discovered. West's claims of the discovery of a section of Roman road near Ulverston, and that there was a fortification at Dalton (1774, viii-xi; 1813, 9-12), have yet to be substantiated.

1.3.4 ***Early Medieval***: like many parts of North West England evidence for activity during the early medieval period is largely confined to two sources: place-names and the remains of a cross fragment. The name Barrow-in-Furness is a relatively modern one, the village originally being called Barrowhead. Barrow appears to have referred to Old Barrow Island and is thought to consist of an early Celtic word 'barr' meaning top or summit with the Norse 'ai' meaning island added to the end making 'barrai' (Ekwall 1922), and it is still pronounced 'Barrah' by locals to this day. Furness too is possibly named after Fouldney Island (sometimes mistakenly called Piel Island) 'fu' or 'fud' being Old Norse for small island, and 'ness' meaning headland or peninsular (*ibid*). Finds from the area include the pommel, grip, guard and 400mm of the blade of a Viking sword which was recovered in 1909 while digging a grave in the churchyard at Rampside, near Roa Island (Parsons 2002).

1.3.5 At the time of the Norman Conquest Furness formed part of the Manor of Hougun, thought to be based at High Haume near Dalton, under the control of Earl Tostig (*op cit*, 19).

1.3.6 ***Medieval***: the history of Furness soon became synonymous with that of its abbey, which was founded in 1127 after a gift of land by Stephen (later King Stephen) in 1124 (*op cit*, 24). The abbey came to dominate almost everything in the area and both Barrow and Salthouse were granges connected to it;

however, Barrow was not mentioned by name until after the Dissolution (Leach 1981, 24). Salt House, as the name might suggest, was established as a grange in 1247 with a saltworks, and was granted several indulgences, including exemption from tithes (Kendall 1948, 24). Both Barrow and Salthouse are likely to have changed little in the following centuries and, although the Great Raid by Robert the Bruce of 1322 entered Furness and caused much devastation, it is not clear how severe this was (Barnes 1978, 32). One of the obligations held by the villagers was to maintain the sea defences (Kendall 1948), which was observed until the dissolution of the monasteries. During the sixteenth and seventeenth century there were several inundations of the coastline, which destroyed property in the village of Salthouse among others (Phillips and Rollinson 1971, 3).

1.3.8 ***Post-Medieval***: until the end of the eighteenth century Barrow consisted of only five farm houses with outbuildings (Plates 1-3), and originally consisted of eight homesteads founded by the abbey (Kendall 1909, 185). Salthouse too originally consisted of only four houses, the people living there were no doubt engaged at the salt works (Kendall 1948). Barrow was a farming village, not a fishing village, the latter would appear to be a Victorian myth (Trescatheric 2000, 2); its produce including oats, barley, wheat, beans and dairy cattle, (*op cit*, 1) which remained the same into the nineteenth century (Rollinson and Harrison 1986). The houses were probably similar to two pulled down in Salt Houses in 1800 and 1802, which were recorded as being made of cobbles and clay, with cobbled floors and thatched roofs and included a buttery (Kendall 1948, 36-7).

1.3.8 At first the events of the industrial revolution had little effect on Barrow, but the huge iron ore reserves of the Furness peninsular were soon to become a dominating factor in the town's development. The ore had been exploited on a small scale since at least medieval times (Fell 1908), and was shipped from a number of places across Furness (Marshall 1958). Transport links by land across the Furness Peninsular were very bad, consisting of little more than cart tracks, and the way across the sands of Morecambe Bay southwards was extremely dangerous (Marshall 1958, 82-3).

1.3.9 The deep-water port at Barrow was controlled by a custom house built at Piel and connected with Furness Abbey, but, despite this, Ulverston remained the dominant port (*op cit*, 84) in the area. By the middle of the eighteenth century the Backbarrow Iron Company began transporting small quantities of ore from Barrow and as a result a small number of new houses were built (Kendall 1909, 185). As demand for iron increased the Newland Company bought land to found an ore-dumping ground in 1776, to allow the larger scale transport of material (Marshall 1958, 88). The Newland Company bought more land in 1780 and, in 1782 built a jetty, followed by a larger one in 1790 so that boats could be loaded at low tide (*ibid*). In response to this threat a canal was built in Ulverston to allow large loads to be transported directly into the town (*ibid*), but it was too late as Barrow's rise to dominance was underway.

1.3.10 Ore shipments increased steadily over the next few years; with a second jetty being built in 1833 by John Rawlinson, a third in 1839 by the Ulverston Mining Company, and a fourth in 1842 by Schneider and Partners (*op cit*, 91; Plates 1 and 2). Barrow increased little in size during this time and is described

as a 'hamlet' in 1829 (Parson and White 1829, 710) and gets almost no mention in guides of the period (such as Evans 1842 and Jopling 1843). It was the coming of the railway in 1846 that transformed Barrow, allowing huge amounts of iron ore to be transported from the mine to the harbour (Banks 1984). Two principal figures stand out in the history of Barrow at this crucial point: HW Schneider and James Ramsden. It was Schneider who encouraged the exploitation of iron in the area, albeit after several abortive attempts (Banks 1984), which led to increased prosperity in the area and ultimately to the development of smelting furnaces in the town. Ramsden increased the ability to transport the iron ore by massively improving the rail network in the area (Kellett 1990), which in turn lead to the enlargement of the docks. In 1867 the Devonshire dock was opened (Barnes 1978, 91) after an Act was passed in 1863 allowing this expansion. In 1867 Barrow had grown so large that it received its Charter of Incorporation as a Borough (Trescatheric 1987, 5). It continued to grow from this point on, the docks growing alongside the development of the town. Many new houses were built at this time (Trescatheric 1985), including large blocks of flats built in the Scottish style (*op cit*, 27), the grid-pattern layout of the town having been established by James Ramsden in 1856 (Z537).

1.3.11 Barrow's prosperity continued to rest on its maritime links and ability to provide a safe harbour for ships. Shipbuilding itself did not begin in earnest in the town until the end of the 1840s (Latham 1991, 20) when there was already beginning to be an increase in demand, and it became a significant industry in the following decades. By 1872 the Graving Dock was opened, and in 1873 the Buccleuch Dock was complete (Barnes 1978, 91). Ramsden Dock was finished in 1879, and Cavendish Dock opened shortly afterwards (*ibid*). By this point, however, Barrow's iron industry was in serious decline; not only was the supply of ore at the mines running out, but there was also less demand for the materials and the hinterland could not support such a large harbour (Stark 1972, 2). As a result the Cavendish Dock was never properly used and is perhaps symbolic of the excessive aspirations for Barrow which in the event were not fulfiled (*ibid*). As a result of the collapse of the iron and steel industry Barrow reverted to an economy based entirely on shipbuilding (*ibid*). The Barrow Iron Shipbuilding Company had been established in 1886, and this was bought by Vickers of Sheffield after the death of James Ramsden in 1896 (Trescatheric and The Dock Museum 2000, 22). In turn, Vickers went on to produce armaments during the First World War, although the following decades were far from economically stable (*op cit*, 42). Shipbuilding has remained the dominant industry ever since.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 Following a request from David Mainwaring of Capita Symonds, a project design (*Appendix 2*) was prepared in accordance with the CCCAS brief (*Appendix 1*). Variations to the project design, made necessary by the nature of the ground at the Marina Village site, were discussed on site with the CCCAS Assistant Archaeologist (Jeremy Parsons), and further work complied with his instructions. An archaeological watching brief was also deemed necessary during the course of the excavation of geotechnical test pits in areas considered to be of significant archaeological potential. All work undertaken was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 VISUAL INSPECTION

2.2.1 A basic level of reconnaissance was required to record the existence, location and extent of any surface features or sites. The reconnaissance was undertaken in a systematic fashion, walking on approximately 30m wide transects, within the extent of the defined study area. The survey also recorded areas of significant disturbance, hazards or constraints, which would have an impact upon the siting of the evaluation trenches.

2.3 EVALUATION TRENCHING

2.3.1 The trenches were excavated by a combination of mechanised and manual techniques; the topsoil was removed under archaeological supervision by mechanical excavator, fitted with a 1.7m wide toothless bucket, and archaeological deposits identified were first manually cleaned, with any features identified manually excavated. The machine excavation did not intrude into any potential archaeological stratigraphy and all machine excavation was undertaken under careful archaeological supervision. Following mechanical excavation, the floor of the trench was cleaned manually and manual excavation techniques were used to evaluate any sensitive deposits, to enable an assessment of the nature, date, survival and depth of deposits and features. Where trenches were required to be excavated to a depth of greater than 1.2m, a wider area was excavated to allow the trench to be stepped down, to ensure it remained stable. In these instances a sondage smaller than the extent of the trench was excavated to examine the deeper deposits.

2.3.2 The trenches were excavated in a stratigraphical manner, whether by machine or by hand. The trenches were located by use of GPS equipment, which is accurate to +/- 0.25m. Archaeological features within the trenches were planned by manual techniques.

2.3.3 All information identified in the course of the site works was recorded stratigraphically, with sufficient pictorial record (plans, sections and both

black and white and colour photographs) to identify and illustrate individual features. Primary records were available for inspection at all times. Results of the field investigation were recorded using a paper system, adapted from that used by Centre for Archaeology of English Heritage. The archive includes both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20, and 1:10). 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.

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the project design (*Appendix 2*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in Cumbria County Record Office (Barrow) on completion of the project. Copies of the report will be deposited with the Sites and Monument Record in Kendal.

3. EVALUATION RESULTS

3.1 INTRODUCTION

3.1.1 The evaluation comprised the excavation of 87 trenches across the four areas, with Trenches 1-28 at the Marina Village site (Fig 2), Trenches 29-42 at the Marina Park site (Fig 3), Trenches 43-56 at the Ramsden Dock Access Road site and Trenches 57-87 at the Innovation Park site (Fig 4). The majority of these trenches showed little or no archaeological activity and it is not proposed to discuss every trench individually. A summary description of each trench has, however, been appended to this report (*Appendix 3*).

3.2 MARINA VILLAGE

3.2.1 The trenches within the bunded area at this site (Trenches 1-24 – Fig 2) all revealed evidence of a widespread deposit of indurated slag, ranging from 0.28m-1.2m thick, but mostly *c*0.8m thick, immediately beneath the topsoil. This appeared to have been laid down in the past twenty years as a levelling deposit (K Lynn pers comm). The slag made excavation across this area very difficult, as the machine had great difficulty digging through it (Plate 1); within many of the trenches. It was only possible to excavate a very limited sondage through the slag. At Trenches 6, 21, 22 and 23 one end of the trench was widened out to allow for the stepping out of deep sondages (Plate 2); this was required in an to attempt to expose the archaeology present in plan. Trench 24 was excavated to full depth (2m) along the length of the trench, although no archaeological remains were revealed. Trenches 25-28 were to the south of the southern bund and were outside the area levelled with the slag. These contained very deep deposits of sandy material, with only a very occasional content of industrial waste or of building debris. Archaeological features were identified within a total of eight trenches: Trenches 4, 6, 7, 11 and 21-24.

3.2.2 ***Trench 4:*** the trench, aligned north-west/south-east, was initially excavated by machine through mid-red silty-clay topsoil ***400*** down to redeposited slag layer ***401*** which was at a depth of 0.2m. Sondages measuring 1.6m by 0.6m were excavated against the south-east- and north-west-facing sections to a maximum depth of 1.4m. These revealed similar stratigraphy, with a 1.2m thickness of hardcore layer, ***401,*** overlying demolition layer ***402***, a 0.1m deep layer of dark brown/black loose hardcore containing bricks, which, in turn, had been deposited on top of a concrete surface, ***403***.

3.2.3 ***Trench 6:*** the trench measured 20m by 1.6m and was aligned east/west. Beneath ***601***, the loose mid-greyish-orange silty-clay topsoil, redeposited slag layer ***602*** was encountered at a depth of 0.15m. A small sondage, measuring 1.2m by 0.6m was cut to a total depth of 2.1m against the east-facing section of the trench. This demonstrated that slag layer ***602*** was 0.95m thick, and had been deposited on top of ***603***, a 0.6m thick demolition layer of loose dark brown/black material containing a very high proportion of brick and rubble. Beneath demolition layer ***603*** was ***604***, a very loose greyish-yellow sand with

no inclusions. An English-bonded brick wall, ***605***, was observed in the west-facing section of the sondage, and was five courses high and aligned north/south. This formed a corner with a north-east/south-west aligned single-course section of brick wall.

3.2.4 The discovery of these features precipitated the expansion of the sondage to 5.9m by 4.5m by 2.25m deep (Fig 5). This revealed a brick floor, almost immediately beneath slag layer ***602***, resting on a two-course brick plinth, immediately above, and aligned with, wall ***605*** (Plate 3). The bricks of this floor were bonded with light grey mortar, and measured 0.23m by 0.09m by 0.1m and had no frogs. Set into the brick floor, which was sealed by a thin, rectangular layer of concrete measuring 0.77m north/south, were two vertical iron pipes. The pipes were separated by a groove in the concrete, *c*0.15m wide, suggesting the presence of a thin dividing wall. Beneath the bricks of wall ***605*** were three courses of sandstone blocks (also ***605***) that were bonded with white lime mortar. Expansion of the sondage made it possible to identify the thickness of wall ***605*** (0.58m), which was exposed for a length of 3.4m, but also the presence of a construction cut, which was backfilled with light-yellowish-brown sand. The construction cut had been dug into a layer of dark-greyish-brown fine sand with a moderate ash and stone content, which was probably a make-up desposit.

3.2.5 ***Trench 7:*** the trench was aligned east/west and measured 20m by 1.6m. The 0.3m thick, mid-greyish-orange silty-clay topsoil, ***701***, was removed to reveal slag layer ***702***. A sondage, 1.15m deep in total, was dug against the west-facing section revealing a concrete surface, ***703***, at the base beneath the 0.85m thick layer of slag ***702***.

3.2.6 ***Trench 11:*** excavation of a 1.6m by 0.6m sondage against the west-facing section of the east/west aligned trench revealed a concrete surface, ***1102***, at a depth of 0.58m. Above this, slag layer ***1101*** was only 0.28m thick and was covered by a 0.3m depth of mid-reddish-brown silty-clay topsoil ***1100***.

3.2.7 ***Trench 21:*** the trench was aligned north/south, with a 4.4m by 3.2m sondage excavated to a depth of 2.18m at the north end. The stratigraphy that was revealed comprised topsoil, ***2101***, overlying a 0.3m thick layer of fairly loose mid-brown silty-clay, which was on top of a 0.9m thick layer of slag, ***2102.*** This was overlying demolition layer ***2104***, which consisted of a 0.3m thick layer of rubble with possible evidence for burning or oil contamination. Beneath this was a further, 0.28 thick, demolition layer, ***2103***, which was made up of brick, sandstone and general building waste, and beneath that was demolition layer ***2105***, which contained bricks and rubble and was excavated to a depth of 0.4m. At the base of a slot cut through demolition layers ***2103*** and ***2105***, a north-east/south-west aligned cast iron pipe was discovered.

3.2.8 ***Trench 22:*** the trench was aligned north/south, with a 4m by 3m sondage machine-excavated at the northern end. Beneath a 0.3m thick deposit of soft, light brown silty-sand topsoil, ***2201***, a 1.05m thick layer of slag, ***2202,*** was recorded. Beneath this was a black sandy-silt layer containing large amounts of demolition debris, ***2203***, which in turn lay on top of ***2204***, a 0.19m thick layer of loose light-brown sandy-silt containing frequent small angular stones. Beneath this was a layer of bricks and large lumps of concrete within a matrix of clinker, ***2205***, which was up to 0.5m thick. Removal of layers ***2204*** and

2205 revealed a probable culvert made of bricks measuring 230mm by 110mm by 75mm (Plate 4, Fig 6). The excavated part of the culvert comprised two parallel walls, ***2206*** and ***2207***, aligned roughly east-north-east/west-south-west, about 1m apart, between which layers ***2204*** and ***2205*** had been deposited. The northern wall, ***2206***, was only partially exposed in the trench, but was revealed to survive to a height of seven courses. The southern wall, ***2207***, also survived to this height and was 0.45m wide with a length of 3.3m exposed in the trench. These walls were both bonded to a slightly convex surface, ***2208***, which was made of 12 rows of bricks laid on their sides. This surface appeared to be hollow and may represent the roof of a culvert.

3.2.9 ***Trench 23***: the trench was aligned north/south and measured 8m by 1.6m and had a sondage (4.5m by 2.5m) excavated at the southern end. The mid-brown sandy-silt topsoil, ***2301***, was 0.2m thick and lay above a 1.1m thick deposit of slag, ***2302***. Beneath the slag was a narrow, 0.1m thick, band of soft black sandy-silt with brick flecks. Removal of this layer revealed, for a length of 4m, a 0.6m wide brick wall, ***2307***, which had a height of eight courses, and a slightly stepped out sandstone foundation (Plate 5). Abutting, and running adjacent to, wall ***2307***, was a linear structure, ***2308***, which comprised limestone blocks, measuring on average 0.80m x 0.40m x 0.23m, with a groove carved in them to carry a narrow iron pipe. A 0.2m thick layer of light yellow and brown silty-sand with angular stones, ***2304***, was deposited against, and level with, the surviving top of wall ***2307***. Sandstone rubble layer ***2305*** was up to 0.5m thick and had been deposited against wall ***2307***, presumably as a backfill within the construction cut, while beneath this, the bottom of light-yellow sand layer ***2306*** extended below the vertical limit of the excavation. The lack of inclusions in this deposit may indicate that this could be the natural subsoil into which the foundations had been cut, or alternatively, redeposited dredged material within which the foundations were bedded. The deposit was similar to yellow sand layer ***2309*** and mid-brown sand layer ***2310***, which had been deposited against structure ***2308***; these again lacked inclusions and could represent either redeposited natural subsoil or dredged material.

3.2.10 ***Trench 24***: the trench was aligned east/west and was 20m long by 1.6m wide; a sondage, 0.8m wide by 2m deep, was cut along the entire length of the trench. This revealed: topsoil, ***2401***, overlying a redeposited slag layer, ***2402***, that was 0.9-1.1m thick. Below this was a 0.1m thick layer of redeposited grey-orange sand, ***2403***, and below that was demolition layer, ***2404***, which was a 0.4m thick layer of brownish-black soil with a very high content of brick and concrete. Below this was layer of broken concrete, ***2405***, at the base of the sondage. Within the base of the sondage were two cast iron pipes, about 50mm in diameter, running parallel in a north/south direction and 1.5m apart.

3.3 MARINA PARK

3.3.1 Of the 14 trenches excavated in this area, six, Trenches 29, 30, 33 and 35-37 revealed archaeological features, all of post-medieval date. The stratigraphy within the remainder often indicated the presence of made-ground, with layers of redeposited soil and of demolition debris.

3.3.2 ***Trench 29***: the trench was excavated to a depth of about 1.25m, with a small sondage, 2m by 0.6m, excavated to a depth of 2.2m against the west-facing section. The first 0.35m of stratigraphy comprised layer ***2901***, a fairly loose packed rubble/gravel surface. Beneath this, at the western end of the trench, was a thick concrete surface, ***2902***, which had been laid on top of pale-orange sandy-clay layer ***2904***. In the west-facing section, layer ***2901*** overlay demolition dump ***2903***, a brown silty-sand mixed with building rubble, which was *c*0.9m thick. Beneath this was a deposit of pale-blue sandy-silt with a hard packed layer of gravel, ***2905***, which was possibly of natural origin or, more likely, redeposited dredged material.

3.3.3 ***Trench 30***: removal of topsoil ***3001*** revealed the remains of two parallel buildings, aligned broadly north/south. They were of similar construction, with external brick walls and a concrete floor. The western building was approximately 5.4m across, with the concrete surface 0.15m thick and bounded to the west and east by brick walls ***3004*** and ***3005***, which survived to a single and double course respectively. Wall ***3007*** was 0.9m long by 0.09m wide and ran across the concrete surface from wall ***3004*** before terminating in a shallow depression (0.12m by 0.08m) within the concrete, which may originally have held a wooden post. The eastern building was at least 5m wide, with the 0.35m thick concrete surface (***3008***) continuing beyond the extent of the trench to the east and was bounded to the west by the 0.22m wide wall ***3006***, which survived as a single course. The floor of the western building contained the impression of a probable internal wall or doorpost. The features were bedded onto an orange-brown very sandy-clay ***3002***.

3.3.4 ***Trench 33***: the trench was excavated to a depth of 1.2m and the stratigraphy comprised a friable dark-brownish-black silty-sand layer, ***3301***, 0.4m thick with inclusions of brick and tile, which overlay a demolition layer, ***3302***, comprising a 0.8m thickness of stones, brick and tile mixed with industrial waste such as coal, iron slag and clinker. At the base of the trench, at the southern end, was an east/west aligned large concrete pipe.

3.3.5 ***Trench 35***: beneath a 0.2m–0.3m deep hard-packed gravel surface, ***3501,*** was a 0.3m deep dump layer, ***3502***, consisting of a loose, very mixed, silty-sandy-clay with inclusions of demolition debris (brick, rubber floor matting and other refuse). Below layer ***3502*** was a layer of mixed slag, clinker and coal dust, ***3503***, which was at least 1m deep, and extended down to the base of the trench. Layer ***3503*** appeared to have been deposited over ***3504***, a small rectangular structure, measuring 2.7m, in a north-west/south-east orientation by 1.7m in a north-east/south-west orientation (Plate 6). It was constructed of brick, two courses wide, and survived to a maximum observable depth of 1.3m.

3.3.6 ***Trench 36***: the trench was aligned east/west and at the top was a 0.4m deep layer of pinkish-grey gravel, ***3601,*** laid on top of a thin gravel layer, ***3603***. Beneath this, at the east of the trench, was an area of reused bricks unevenly laid in a single course, ***3604***; it covered an area 1.6m by 1.6m and extended beyond the limits of excavation. These bricks were laid on top of a 0.8m thick layer of fine blackish ash with a high slag content, ***3602***.

3.3.7 ***Trench 37***: removal of 0.1m-0.2m thick pinkish-grey hard standing, ***3701,*** revealed a large number of concrete and brick structures (Fig 7, Plate 7),

nearly all of which appeared to be aligned broadly north/south. Several of these structures related to drainage, and included a disturbed concrete manhole surround, ***3706***, which measured 1.3m square by 0.18m thick with a 0.5m square central opening; and drain, ***3707***, which was 0.65m wide. There were several concrete and composite brick and concrete structures that are likely to have been plinths and wall footings. These included: plinth ***3702***, a concrete block (0.3m by 0.6m by 0.1m thick) located at the north-west corner of the trench; concrete wall base ***3705***, which was 0.35m wide and ran north/south beyond the limits of excavation; footing ***3710***, which was a brick surface covered with concrete measuring 0.6m wide and extending for 0.5m from the north section; plinth ***3713,*** a north-east/south-west aligned concrete block, (0.5m square by 0.9m thick); and plinth ***3714*** measured 0.5m by 0.4m and was aligned north/south. There was only one possible surface, ***3708***, which adjoined drain ***3707*** and measured 1.5m east/west and 0.4m north/south before running beyond the northern section.

3.3.8 There were also a number of brick walls, including wall ***3703***, which extended for 1.3m north/south, abutting plinth ***3702*** but then extended beyond the northern section of the trench, where it turned 90° to the west extending into the eastern section. Wall ***3704*** was 0.35m wide and ran north/south for 0.45m before passing beyond the northern limit of excavation; wall ***3709*** ran north/south for 0.25m from an area of concrete covered bricks 1.1m by 0.4m, analogous to plinth ***3710***. Wall ***3711*** extended north/south for 1.3m from the southern section before turning 90° to the east for a further 0.9m; wall ***3712*** was covered with a 0.07m thickness of concrete and ran north/south from the southern section for 0.65m before turning 90° to the west for 1.2m.

3.4 RAMSDEN DOCK ACCESS ROAD

3.4.1 The 14 trenches in this area revealed broadly similar stratigraphy, with multiple dumps of sand, generally sloping downward towards the south or west, and dumps of demolition debris and building rubble. Two of the trenches (Trenches 44 and 53) revealed upstanding structures, whilst a third (Trench 55) revealed a large concrete beam, although this appeared to represent dumped, rather than structural, material.

3.4.2 ***Trench 44***: the removal of 0.1m deep blackish-brown friable topsoil, ***4402*** revealed a concrete surface, ***4401***, which measured 2.40m by 2.50m by 0.12m. Surface ***4401*** did not appear to be associated with any other structures, although it was in the vicinity of a number of large bollards and may have been associated with these. A sondage at the edge of the concrete surface indicated that it had been laid on a 0.2m thick layer of rubble, soil and hardcore, ***4403***, beneath which was layer ***4404***, a *c*0.2m thick deposit of sloping foundry waste. Layer ***4404*** was deposited over ***4405***, a deposit of orange-red sand containing thin bands of grey sand; the deposit was over 2m deep, and, like many of the deeper sandy deposits recorded within trenches in the Ramsden Dock Access Road area, is sloping, and could represent redeposited material from dredging.

3.4.3 ***Trench 53***: beneath a 0.2m deep friable, blackish-brown sandy-silt topsoil, ***5301***, were two brick structures, ***5303*** and ***5304***. Structure ***5303*** was located

towards the south-eastern end of the trench and comprised a brick surface, measuring 1.2m x 0.7m, edged by a brick wall, which had two sections forming a right angle corner and survived to a height of 0.2m. The wall section, ***5303***, extending north/south, was 0.19m wide, while that orientated east/west was 0.36m wide. Structure ***5304*** lay towards the north-western end and was a brick-built drain, aligned broadly north-east/south-west, and contained an iron grate (Plate 8). The culvert was 0.6m wide, although it became 1m wide in the area of the grate, presumably to allow access into the drain. The drainage culvert was exposed for a length of 1m and was capped with large (0.6m by 0.3m) irregularly-dressed sub-rectangular sandstone blocks. Both the culvert and the manhole were built onto a concrete base, which lay at a depth of 0.85m from the surface. These structures had been built into orange-brown silty-sand ***5302***, which was at least 1.5m deep and slightly dipping. Again, rather than natural subsoil, this silty-sand could be redeposited dredged material.

3.5 INNOVATION PARK

3.5.1 Trenches 57-70 and 79-87 showed a broadly similar stratigraphy to those in the Ramsden Dock Access Road area, with multiple layers of redeposited sand present. Trenches 71-78 all revealed broadly similar stratigraphy, although with layers of demolition rubble present in all of the trenches. Three of the Trenches (66, 67 and 86) revealed the remains of upstanding structures.

3.5.2 ***Trench 66***: beneath blackish-brown friable silty-clay topsoil, ***6601***, the remains of three brick structures were revealed (Fig 8, Plate 9). Wall ***6605*** ran north-west/south-east at the southern end of the trench, was a single brick wide and survived to a height (*c*1.25m) of ten courses of machine-made brick laid on a brick and limestone foundation plinth. Deposit ***6606***, a 1m deep blackish-brown silty-clay mixed with brick and concrete rubble, glass and pipes had been deposited against the southern side of wall ***6605***. Beneath deposit ***6606,*** to the south of wall ***6605*** and on the same alignment, were two rectangular brick structures, ***6607*** and ***6608***; these were of similar construction, being a single row of bricks, one course high and set on a concrete base. A cast iron pipe ran between these two structures. The deposits in the centre and at the northern end of the trench appeared to be dumps of secondary material. Light brown fine silty-sand layer ***6603*** lay just beneath topsoil ***6601*** and sloped sharply to the north where it contained a 2.2m long by 0.13m thick concrete slab, ***6604***, which sloped at about 30° and was possibly laid as a revetment. Overlying slab ***6604*** at the northern end of the trench was deposit ***6602***, a large dump of demolition debris comprising bricks, concrete and drain pipes.

3.5.3 ***Trench 67***: the removal of a medium brown silty-clay topsoil, ***6701,*** revealed two concrete surfaces, ***6704*** and ***6705***, both running across the trench. ***6704*** was 3.8m wide and 0.28m thick and was laid on top of a brick base, which was 0.34m thick. The brick base was itself laid on top of the lower concrete surface, ***6705***. This surface was located at the eastern end of the trench and its full extent was not revealed. It is likely that this structure related to a large concrete building still standing to the north of the trench, which local knowledge suggests was an oil storage tank. The concrete surfaces were constructed on top of layer ***6703***, a light-brown silty-sand with small deposits

of reddish-brown clay, which in turn lay above ***6702***, a layer of contaminated reddish-brown redeposited clay.

3.5.4 ***Trench 86***: the removal of a 0.15m-0.2m thick compacted gravel layer, ***8601***, revealed a 0.2m deep preparation layer, ***8602***, which comprised compacted demolition debris. Below this was layer ***8603***, a pale grey loose sand with no notable inclusions, 0.5m thick, possibly originating as a deposit of dredged estuary sand. Removal of ***8603*** revealed ***8604***, a 0.3m thick layer of fairly loose mid-orange sand with a high content of small- to medium-sized stones. Layers ***8603*** and ***8604*** were cut by two broadly parallel walls, ***8605***, both aligned north-east/south-west. The walls were 0.2m wide and survived to a depth of eight courses, extending beyond the limit of excavation. The lack of pointing would suggest that these were foundations, while two iron girders, roughly 0.8m apart and bonded to the top of the walls at an oblique (east/west) angle, may have supported a floor (Plate 10). The entire space between the walls was backfilled with a loose, black dump of demolition material, ***8606***, that could have derived from the destruction of the building represented by walls ***8605***.

3.6 FINDS

3.6.1 The evaluation, across all four sites, produced large amounts of demolition debris, including ceramic building material, concrete, structural metalwork and various roofing materials. This material was all disposed of on site as none of it provided tight dating evidence and it was, in any case, generally from non-specific dump deposits. A large number of modern artefacts were also encountered on site, predominantly within the topsoil, but also in recent dump deposits. These were also discarded as they were considered to have no archaeological significance. The complete lack of datable ceramic material from the evaluation is somewhat surprising, but perhaps highlights the entirely industrial nature of the site, with no reason for any domestic waste to be present.

4. WATCHING BRIEF RESULTS

4.1 INTRODUCTION

4.1.1 During the course of the evaluation, it was agreed with CCCAS that an archaeological watching brief be maintained during the excavation of geotechnical test pits within the areas of highest archaeological potential. This resulted in the observation of five test pits, all on the Innovation Park site.

4.2 TEST PIT A1/51

4.2.1 This test pit was located to the east of Trench 70 and revealed a similar stratigraphy to that seen in the evaluation trench. It comprised industrial waste overlying a layer of sand, itself overlying clayey silt.

4.3 TEST PIT A1/55

4.3.1 This test pit was located to the west of Trench 68 and revealed industrial waste overlying a substantial deposit of sand. As such, the stratigraphy was broadly similar to that seen in the evaluation trench.

4.4 TEST PIT A1/65

4.4.1 This test pit was located to the north of Trench 86, and revealed broadly similar stratigraphy to that seen in the evaluation trench. This test pit revealed a series of sand deposits.

4.5 TEST PIT A1/66

4.5.1 This test pit was located to the south-west of Trench 76, but revealed a different series of deposits to that seen in the evaluation trench. This test pit revealed a series of sand and clay deposits, which may represent the natural geology, as well as the edge of a brick structure, the remains of which could be traced to foundation level in the surrounding area.

4.6 TEST PIT A1/72

4.6.1 This test pit was located to the north of Trench 78 and revealed namely topsoil overlying rubble deposits.

5. DISCUSSION

5.1 MARINA VILLAGE

5.1.1 The Marina Village site revealed two distinct zones, with the land inside the bund having a thick deposit of indurated slag overlying a number of post-medieval structures and also widespread demolition debris deposits. The thick slag deposit was established over the site within the last twenty years and came from the Ormsgill slag heaps, which were themselves a waste product of the Barrow Iron Works. The Marina Village area is known (Ordnance Survey First Edition map (1851) to have been the site of the Furness Railway Works (OA North 2003), and it is likely that many of the demolition deposits derive from the levelling of the buildings on the site. The OS map indicates the presence of two very large buildings, an engine shed to the south, and a similarly-sized structure, possibly a warehouse, to the north, along with five or more smaller buildings (Fig 2).

5.1.2 Superimposition of the trench locations on the First Edition OS map (1851) (Fig 2), enables an interpretation of the structures recorded in the trenches. The majority of Trench 22 lies within the south-east corner of the large engine shed. The east wall of the engine shed, to which the recorded culvert and walls lie perpendicular, would have lain very close to the western extent of the expanded sondage. The culvert is likely to represent a fairly major drainage feature and, were it to continue on a similar alignment, would pass under, or perhaps between, the railway tracks indicated on the OS map. As such, it is likely that clinker layer ***2205*** represents the original backfill, with sand layer ***2204*** possibly deposited on top.

5.1.3 Trench 6 can be seen to be located across the east wall of the large warehouse-like building, with the expanded sondage area straddling the wall. It is possible that wall ***605***, encountered within the sondage, represents the foundations of this feature while the observed drainage features could represent a toilet block added to the outside of the structure. If these are the remains of toilets, the position of the drainage pipes would indicate that they were accessed from outside. While identification as a toilet facility is most likely, the possibility that the structure has some function relating to the adjoining entrance, which was serviced by a length of railway track, cannot be discounted.

5.1.4 Trench 23 straddles the north wall of the same warehouse-like building. Wall ***2307*** and linear feature ***2308,*** recorded within the sondage of this trench, follow the same alignment as the north wall of the warehouse, but, assuming that there is no inaccuracy with the correlation between the trench detail and the 1st edition OS map (1851), wall ***2307*** is several metres south of the probable position of the warehouse wall. The purpose of the small iron pipe, placed within the channel in the limestone blocks of ***2308***, can not be determined on the available evidence, but must have been of some importance to have been so carefully engineered. Unless there are significant errors within the OS first edition map wall ***2307*** is unlikely to be the main wall of the warehouse-like building; however, it was well-made and broad, suggesting that it was a substantial feature. In addition, the fact that wall ***2307*** is of the

same height as ***2308*** (which, considering the position of the pipe, seems unlikely to have been levelled), may suggest that this wall was never actually any taller, and carried a raised floor.

5.1.5 Trenches 4, 7, 11, 21 and 24 were all located outside of the major buildings, but in the cases of 7, 11 and 21 were positioned across areas of railway track. The very limited nature of the archaeology that could be conducted in these trenches meant that it was not possible to identify whether the railway tracks had been placed within cuttings. Only the sondage within Trench 7 can be argued to have straddled an area of track. The lack of demolition deposits within this trench would indicate that there was no particular need to fill in the track base, and the tracks could, in some instances, have been laid onto concrete surfaces, such as ***703***. A similar situation was seen in the case of concrete surface ***1102,*** identified within Trench 11, and to a lesser extent in Trench 4, where concrete surface ***403*** was sealed by a very shallow demolition layer ***402***. The deeper demolition layers within Trenches 21 and 24 may relate to their proximity to the levelled engine shed, and it is possible that the broken concrete recorded within the base of Trench 24 may represent the remains of a surface, similar to concrete surfaces ***403*** and ***703***. The iron pipes recorded within Trench 24 run perpendicular to the axis of the engine shed, which they were likely to have serviced, but were also parallel to a rather enigmatic line on the First Edition OS map, possibly a track line. The metal pipe observed in Trench 21 ran between and parallel to sections of railway track as well as with the engine shed, and it is possible that this pipe met those observed in Trench 24 to form a complex, but shallow subterranean drainage network.

5.1.6 Trenches 25-28, located to the south of the bund, revealed a different stratigraphy, with layers of redeposited sand and industrial waste, but no structural remains. The First Edition OS map indicates that Trenches 27 and 28 were located on stretches of railway track, but also that they fall within an area that was more low-lying than the railway works. The general lack of demolition debris would suggest that there were few buildings in the area, while it is probable that the extremely deep, soft deposits encountered within these trenches could relate to dredging of the nearby inlet.

5.2 MARINA PARK

5.2.1 A comparison of the maps showing this area dating from 1851 (OS 1st edition), 1867, 1883 (Kellet 1990) and 1891 (OS First Edition 25" to 1 mile – Fig 9) indicates the scale of remodelling within this area, with large areas of new, made ground developing as the timber pond was developed into the Cavendish Dock. The trenches in this area revealed two distinct zones of activity across the site. Evaluation within the north-western part of the area revealed both standing remains and widespread dumping of rubble and other demolition debris. It seems likely that the structures revealed could all be part of the original Kellner and Partington Paper Pulp Works complex (Site 77, OA North 2003), which was built at some point between 1883 and 1891, was extended in 1905 and has since been demolished. An examination of the 1891 OS First Edition indicates that only Trenches 29, 37 and 42 lie within the area occupied by the original Paper Pulp Works.

5.2.2 Within Trench 29, concrete surface ***2902*** and preparation layer ***2904*** seem to relate to the construction of an area of hard-standing that lay between the Works buildings and a railway embankment that ran to the north of the complex, while demolition dump ***2903*** could derive from the destruction of the Works building. Trench 37 lies within the area of a large Paper Pulp Work building, and it is highly likely that the features recorded within it relate to this structure. While none of the excavated remains seemed particularly substantial, the position of the trench would suggest that these were internal features rather than elements of the external load-bearing structure. It is also possible that several phases of activity are represented, as not all of the plinths and walls follow the same alignment. Such phases are likely to relate to the reorganisation of the internal space as the 1905 plan of the Kelner Partington Paper Pulp Works (BTBR/1/Box 1/2) clearly indicates the retention of the original external structure of the building in which Trench 37 lies.

5.2.3 The 1891 OS map would suggest that Trench 42 occupied an area covered by a concrete surface similar to that observed within Trench 29. The absence of any evidence for such a feature may be due to the fact that not all external areas of the Paper Pulp Works were surfaced or, perhaps more likely, that there has been considerable later deposition on top of the concrete surface, and hence the concrete floor is now below the maximum 2m depth of the present archaeological investigation. The trench lies between two sections of former railway embankment, and it is possible that the levelling of these features increased the depth of deposits in this area.

5.2.4 The 1891 OS map indicates that the area into which Trench 30 was dug was undeveloped marshland at that time, so the buildings identified within the trench must be of later date. A plan of the paper pulp works dating to 1905 (BTBR/1/Box 1/2; Fig 12) shows the presence of the terminating section of a railway track in that part of the site examined by Trench 30, but no structures that would match the excavated remains. The trench was too narrow to ascertain the nature of these structures, but it is possible that they represent a series of small storage buildings built at some date after 1905. There was no excavated evidence for any services that might indicate any form of domestic function.

5.2.5 The results of the evaluation within the south-eastern part of the site, comprising Trenches 33-36 and 38-41, show evidence of large-scale dumping of probable foundry waste, in a number of discrete layers, suggesting a fairly long-term usage of this part of the site as a dumping ground. The 1891 OS map indicates that, beyond the area of the Paper Pulp Works, the ground was rather marshy, and it possible that the later dumping layers may have been in partly intended to consolidate the land. Later sources, such as the 1905 plan (BTBR/1/Box 1/2; Fig 12), show that these trenches occupy an area of sidings referred to as the 'Timber Stacking Ground'.

5.3 RAMSDEN DOCK ACCESS ROAD

5.3.1 This site revealed fairly uniform stratigraphy throughout, with the trenches revealing a number of sloping deposits of sand. Whilst these could possibly be natural, it seems far more likely that the whole area has been built up over

time by the dumping of sand deposits dredged from the surrounding channels. One of the structures within Trench 53 was clearly a drain, whilst the other was of unknown function. The 1851 1st edition OS map and the 1867 plan of the docks (Fig 10) show almost no development in this area (although the latter clearly demarcates the area on the south of the island as a site for shipbuilding yards), but the 1883 plan of the docks (Fig 11) indicates that a dockyard had been very close to the area investigated by Trench 53. Plotting the location of the trenches over the 1891 OS map (Fig 13) indicates that Trench 53 straddles a large rectangular building aligned roughly north-west/south-east and was likely to relate to the nearby harbour. More recent maps indicate the presence of a number of walls in the vicinity of Trench 53, but it is most likely that structure ***5303*** relates to the dockyard building shown on the 1891 OS map, as they share a very similar alignment. Drain ***5304*** is on a slightly different alignment to structure ***5303***, although this does not necessarily mean that they were unrelated. It is likely that when drain ***5304*** was built it would have been surrounded by some sort of hard surface, in order to increase run-off and reduce silting; however, no trace of this survives. It is possible that this may have comprised flags or cobbles, which have since been robbed out. The current OS map indicates that the western end of the trench lies close to a large structure, possibly a walled terrace, behind which lie the well-ordered streets of the late nineteenth century planned terraces and the harbour office. It is possible perhaps, that ***5304*** relates to the drainage of this terrace structure, in which case, a hard surface around the drain may not have been necessary; however, it is more likely that it relates to later nineteenth-century activity in the harbour yard, if not directly to the building straddled by Trench 53.

5.3.2 Trench 44 was located at the north-western end of an area that had once been occupied by the Barrow Steam Navigation Company. The 1883 dockyard plan indicates the presence of several railway tracks servicing jetty areas, as does the 1891 OS map, which also depicts a tramway running close by. The Barrow Steam Navigation Company is likely to have made use of both of theses transport facilities, and it is possible that concrete surface ***4401*** relates to this industry.

5.4 INNOVATION PARK

5.4.1 As with much of Barrow Island, it is not until the 1883 dockyard plan that there is much evidence for activity in the area of the proposed Innovation Park. Trenches within Innovation Park revealed two distinct patterns of stratigraphy across the site, with the trenches on the raised ground to the north-east of the site (Trenches 71-78) differing to the remainder of the site. The raised area, although identified in the desk-based assessment as an area of 'potential pre-industrial archaeology' (OA North 2003, 14), in fact proved to be man-made, from layers of demolition debris and building rubble. The other trenches at this site (Trenches 57-70 and 79-87) revealed a similar stratigraphy to that seen on the Ramsden Dock Access Road site. This comprised multiple layers of sand, and, as with the Ramsden Dock Access Road site, could potentially represent a build-up of natural sands, although again it seems more likely that these sands are deliberately dumped dredging deposits. The 1891

OS map shows that much of the evaluated area had been marshy, and the dumping of dredged deposits may relate partly to an attempt to consolidate the ground in this area. The test pits merely confirmed the evidence from the evaluation trenches, with the exception of Test Pit A1/66, which revealed the remains of a demolished building.

5.4.2 The surviving structures revealed in this area remain somewhat difficult to interpret, with the exception of the concrete structures, ***6704*** and ***6705***, revealed within Trench 67. These appear to be part of a larger concrete structure, still visible as above-ground remains to the north of the trench, which, according to local knowledge, are the remains of an oil storage tank.

5.4.3 The structures within Trench 66, ***6604***, ***6607*** and ***6608***, appear to relate to each other, but their original function is not obvious. The 1883 dockyard plan indicates that this area was at that time the site of a prospective cattle market and includes a large area demarcated as 'Canadian cattle'. This might imply that the area was for the dealing of imported meat as well as livestock. Indeed, it is possible that the area could have been used not just for the trading of beasts, but also for slaughter, butchery, processing and packaging of animal products. It is possible that the features observed within Trench 66 are the remains of smaller, ancillary buildings pertaining to the meat trade. However, the 1891 OS map (Fig 13) yields no evidence of the cattle market. It is possible that the cattle market was either a short-lived affair, with temporary structures, or, that the plan never came to fruition. There is certainly no evidence of structures on the 1891 OS map, which depicts the area of Trench 66 as being undeveloped marshland.

5.4.4 In Trench 86 are two roughly parallel walls, ***8605***, with iron girders on top of them that may have supported a floor. Again, while it is possible that these structures could relate to meat processing, the 1891 OS map indicates that the area evaluated by Trench 87 was undeveloped marshland, and any structures must, therefore, be later.

5.4.5 ***Finds:*** the overall lack of finds from any of the evaluation trenches is not particularly problematic as the phases of activity can be quite closely dated from historical sources, but also, because of the secondary nature of the deposits, potential finds are likely to be either residual or intrusive. The lack of finds is likely to relate to the industrial (rather than domestic) nature of activity on the site, along with the rapidity with which deposits, such as demolition debris, industrial waste and dredged material, developed.

6. IMPACT AND RECOMMENDATIONS

6.1 IMPACT

6.1.1 The evaluation appeared to reveal widespread remains of the Furness Railway Works in the Marina Village area, albeit at such depth that it proved difficult to fully evaluate. These remains are presently sealed beneath topsoil and a highly compacted layer of slag, averaging between 0.8m and 1.1m thick, although it ranged in depth between 0.4m and 1.5m deep. Any development within the Marina Village site, that impacted to a depth of greater than 1m, would affect the surviving remains of the Furness Railway Works.

6.1.2 It seems likely that redevelopment work within the north-western part of the Marina Park site could impact upon the remains of buildings that were originally part of the Kellner and Partington Paper Pulp Works complex. However, given that this area is the proposed location for a park, the level of impact may not be particularly significant.

6.1.3 The development on the Ramsden Dock Access Road and Innovation Park sites will predominantly impact upon probable redeposited estuarine sands, which have little archaeological significance. Some of the structures encountered will also probably be affected by the proposed works, although these remain of uncertain function; they may potentially be associated with steam shipping and meat trading or processing.

6.2 RECOMMENDATIONS

6.2.1 No features were encountered that would merit further investigation by formal examination. Instead, it is recommended that further archaeological work should be in the form of a targeted watching brief. Because of the thickness of redeposited material covering the archaeological horizons, the nature of any further archaeological work will be dependent upon the depth of groundworks ahead of any future development. Such a watching brief would follow after the mechanical removal of the overburden, particularly at the Marina Village site where there is a thick deposit of indurated slag. It would entail detailed recording of any structures revealed following the removal of the overburden and, consequently, may entail some limited stoppage time to the development programme.

6.2.2 ***Marina Village Site:*** it is recommended that all groundworks penetrating deeper than 0.8m be subject to a watching brief, as they could potentially damage archaeological remains relating to the Furness Railway Works. Such an investigation should be concentrated in the areas around the engine sheds and where structures have been identified by the evaluation (Trenches 4, 6, 7, 11, and 21-4).

6.2.3 ***Marina Park Site:*** the proposal to turn this area into a park means that there is likely to be little threat to archaeological deposits. It is recommended that a watching brief be implemented only if groundworks exceeding 0.5m in depth are undertaken at the north-west of the site, in the area of the former Kellner and Partington Paper Pulp Works.

6.2.4 ***Ramsden Dock Access Road and Innovation Park Site:*** because of the amount of redeposited material, reclaimed land and large-scale landscaping in these areas, it is recommended that a watching brief be undertaken only in those areas at the north and west of the site, where there is a chance of encountering features relating to the dockyard, to steam shipping and to the railways and tram lines that serviced these industries. As in the case of the Marina Village Site, the necessity for the watching brief will be dependant upon the specific location and depth of groundworks, and it is recommended that the results of the evaluation trenches presented in this report be used as a guide to the depth of redeposited material within such areas.

7. BIBLIOGRAPHY

7.1 PRIMARY SOURCES

British Geological Survey, 1982 *Lake District*, Sheet 54º N 04º W, 1 : 250000

BTBR/1/Box1/2, 1905, Furness Railway, Barrow-in-Furness, Additional Land and sidings Required by the Kellner-Partington Paper Pulp Co, CRO (Barrow)

Ordnance Survey, 1851, 1st edn, 6": 1 Mile, Lancashire Sheet 21

Ordnance Survey, 1891, 1st edn, 25": 1 Mile, Lancashire Sheets 21 –22

Ordnance Survey, 1983 *Soils of Northern England*, 1 : 250000

Z537, 1856 *Plan of Freehold Building Land at the Port of Barrow North Lancashire*, CRO(B)

7.2 SECONDARY SOURCES

Banks, AG, 1984 *HW Schneider of Barrow and Bowness*, Kendal

Barnes, F, 1978 *Barrow and District*, 3rd edn, Barrow-in-Furness

Bowden, M ed, 2000 *Furness Iron*, Swindon

Cherry, PJ and Cherry, J, 2002 Coastline and Upland in Cumbrian Prehistory – A Retrospective, *Trans Cumberland Westmorland Antiq Arch Soc*, 3rd ser, **2**, 1-20

Countryside Commission, 1998 *Countryside Character Volume 2: North West*, Cheltenham

Ekwall, E, 1922 *The Place-Names of Lancashire*, Manchester

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edn, London

Evans, F, 1842 *Furness and Furness Abbey*, Ulverston

Fell, A, 1908 *The Early Iron Industry of Furness and District*, London (1968 facsimile)

Gelderd, C and Dobson, J, 1912 Report on the Excavations Carried out at the "Druid's Circle" on Birkrigg in the Parish of Urswick, September 1911, *Trans Cumberland Westmorland Antiq Arch Soc*, n ser, **12**, 262-276

Institute of Field Archaeologists (IFA), 1992 *Guidelines for data collection and compilation*

Jones, E, 2001 *Results of an Archaeological Evaluation at Roose Quarry, Barrow-in-Furness, Cumbria*, Headland Archaeology **RQB01**, unpubl rep

Jopling, CM, 1843 *Sketch of Furness and Cartmel*, Ulverston

Kellett, J, 1990 *James Ramsden, Barrow's Man of* Vision, Ulverston

Kendall, WB, 1900 Submerged Peat Mosses, Forest Remains, and Post-Glacial Deposits in Barrow Harbour, *Furness Lore*: *Trans Barrow Nat Field Club* **3**, 54-62

Kendall, WB, 1909 The Village of Barrow in the Parish of Dalton-in-Furness, *Barrow Nat Field Club, Annual Rep Proc 1903-4* **17**, 181-91

Kendall, WB, 1948 The History of the Hamlet of Salthouse, *Proc Barrow Nat Field Club*, n ser, **6**, 21-43

Latham, T, 1991 *The Ashburner Schooners*, Manchester

Leach, A, 1981 *Our Barrow, Part **4**, Barrow Island*, Ulverston

Marshall, JD, 1958 *Furness and the Industrial Revolution*, Barrow-in-Furness

OA North, 2002 *Holbeck Park Avenue, Barrow-in-Furness, Cumbria: Archaeological Evaluation*, unpubl rep

OA North 2003 *Barrow Harbour, Barrow in Furness, Cumbria, Desk Based Assessment*, unpubl rep

Parson, W and White, W, 1829 *History, Directory and Gazetteer of Cumberland and Westmorland With Furness and Cartmel*, Beckermet (1976 facsimile)

Parsons, A, 2002 *The Anglo-Scandinavian weaponry of Cumbria, an illustrated corpus and contextual discussion*, BA Hons Dissertation

Phillips, AW and Rollinson, W, 1971 *Coastal Change on Walney Island*, Ellesmere Port

Powell, TGE, Fell, CI, Corcoran, XWP and Barnes, F, 1963 Excavations at Skelmore Heads Near Ulverston, 1957 and 1959, *Trans Cumberland Westmorland Antiq Arch Soc*, n ser, **63**, 1-30

Rollinson, W and Harrison, B, 1986 *The Diary of William Fisher of Barrow, 1811 to 1849*, Centre North-West Regional Studies, occ pap **15**, Lancaster

Shotter, DCA, 1995 Romans in South Cumbria, *Trans Cumberland Westmorland Antiq Arch Soc*, n ser, **95**, 73-8

Stark, D, 1972 *The Origins of a Single Industry Town – Barrow-in-Furness 1890-1910*, unpubl dissertation

Trescatheric, B, 1985 *How Barrow was Built*, Barrow-in-Furness

Trescatheric, B, 1987 *Barrow Town Hall 1887-1987*, Kendal

Trescatheric, B and The Dock Museum 2000 *The Barrow Story*, Barrow-in-Furness

West, T, 1774 *The Antiquities of Furness*, Beckermet (1977 facsimile)

Young, R, 2002 *The Palaeolithic and Mesolithic Periods in Northern England: An Overview*, in Brooks, C, Daniels, R and Harding, A eds, *Past Present and Future, The Archaeology of Northern England*, Architect Arch Soc Durham Northumberland, res rep **5**, Durham

APPENDIX 3: TRENCH LIST

Trench Number	1
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil (***100***), overlying highly compacted slag (***101***), itself overlying sand (***102***) containing modern brick. No archaeological remains were observed.

Trench Number	2
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil (***200***), overlying highly compacted slag (***201***). This layer sealed a sand deposit (***202***), which overlay a large stone (***203***), which overlay further sand deposits (***204*** and ***205***). No archaeological remains were observed.

Trench Number	3
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.1m
Description	This trench revealed topsoil (***300***), overlying highly compacted slag (***301***), itself overlying a dark brown deposit containing sandstone fragments (***302***). This layer in turn sealed multiple bands of sand (***303***). No archaeological remains were observed.

Trench Number	4
Location	Marina Village
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.4m
Description	This trench revealed topsoil (***400***), overlying highly compacted slag (***401***). This layer sealed a deposit of hardcore and rubble (***402***), itself overlying a concrete surface (***403***).

Trench Number	5
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	This trench revealed topsoil (***500***), overlying highly compacted slag (***501***), itself overlying a dark brown deposit (***502***), which sealed a rubble-rich deposit (***503***). No archaeological remains were observed.

Trench Number	6
Location	Marina Village
Alignment	East/west

Dimensions	20m x 1.7m initially, followed by an excavation of 5.9m x 4.5m at the western end of the original trench
Maximum Depth	2.1m
Description	This trench revealed topsoil (***601***), overlying highly compacted slag (***602***). This sealed a deposit containing a high proportion of rubble (***603***), which overlay a deposit of clean sand (***604***). A wall (***605***) was revealed in the original trench, which led to the excavation of a larger area. This revealed what appeared to be a toilet block, built on the edge of a fairly substantial sandstone structure.

Trench Number	7
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.15m
Description	This trench revealed topsoil (***701***), overlying highly compacted slag (***702***), itself overlying a pale grey concrete surface (***703***).

Trench Number	8
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.95m
Description	This trench revealed topsoil (***801***), overlying highly compacted slag (***802***). This layer overlay a loose black deposit (***803***), which overlay a layer of sand (***804***). No archaeological remains were observed.

Trench Number	9
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.45m
Description	This trench revealed topsoil (***900***), overlying highly compacted slag (***901***). The slag overlay a deposit of black sand (***902***), overlying a rubble deposit (***903***). No archaeological remains were observed.

Trench Number	10
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	0.35m
Description	This trench revealed topsoil (***1000***), overlying highly compacted slag (***1001***). This slag was too compacted to excavate through. No archaeological remains were observed.

Trench Number	11
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	0.58m
Description	This trench revealed topsoil (***1100***), overlying highly compacted slag (***1101***). A concrete surface (***1102***) was revealed beneath the slag.

Trench Number	12
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	This trench revealed topsoil (***1200***), overlying highly compacted slag (***1201***). This layer overlay a deposit of dark brown sand (***1202***), containing slag and concrete fragments. No archaeological remains were observed.

Trench Number	13
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.06m
Description	This trench revealed topsoil (***1300***), overlying highly compacted slag (***1301***). This layer (***1302***) overlay a deposit of building rubble, containing modern debris. No archaeological remains were observed.

Trench Number	14
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.65m
Description	This trench revealed topsoil (***1400***), overlying highly compacted slag (***1401***), itself overlying a deposit of sand (***1402***). No archaeological remains were observed.

Trench Number	15
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.15m
Description	This trench revealed topsoil (***1500***), overlying highly compacted slag (***1501***). This layer overlay a deposit of sand (***1502***). No archaeological remains were observed.

Trench Number	16
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	This trench revealed topsoil (***1601***), overlying highly compacted slag (***1602***), itself overlying a deposit of industrial waste (***1603***). No archaeological remains were observed.

Trench Number	17
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.9m
Description	This trench revealed topsoil (***1700***), overlying highly compacted slag (***1701***). This layer overlay a deposit of sand (***1702***) containing sandstone rubble. No archaeological remains were observed.

Trench Number	18
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.8m
Description	This trench revealed topsoil (***1801***), overlying highly compacted slag (***1802***). This layer overlay a dark rubble-rich layer (***1803***). No archaeological remains were observed.

Trench Number	19
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	0.3m
Description	This trench revealed topsoil (***1901***), overlying highly compacted slag (***1902***). The slag was too compact to allow further excavation. No archaeological remains were observed.

Trench Number	20
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil (***2000***), overlying highly compacted slag (***2001***). The slag in turn overlay a deposit of demolition debris, ***2002***, including reinforced concrete slabs. No archaeological remains were observed.

Trench Number	21
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m, initially, with an area measuring 4.4m east/west by 3.2m north/south excavated to greater depth at the northern end of the trench, to characterise the deposits encountered.
Maximum Depth	2.18m
Description	This trench revealed topsoil (***2101***), overlying highly compacted slag (***2102***). The slag overlay a deposit of demolition debris (***2103)***, which overlay a further dump of demolition debris, ***2104***, containing a high proportion of rubble. This layer sealed a further dump of demolition debris (***2105***). At the base of the trench a cast iron pipe was exposed.

Trench Number	22
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m, initially, with an area measuring 8.5m east/west by 5.4m north/south excavated to greater depth to characterise the deposits encountered.
Maximum Depth	2.27m
Description	This trench revealed topsoil (***2201***), overlying highly compacted slag (***2202***). The slag in turn overlay a deposit of demolition debris, ***2203***, overlying a silt deposit, ***2204.*** Underneath this deposit, two parallel walls, ***2206*** and ***2207***, were revealed, infilled with demolition debris (***2205***). Removal of this material revealed a curving floor, ***2208***, between the walls, perhaps representing the top of a culvert.

Trench Number	23
Location	Marina Village
Alignment	North/south and east/west
Dimensions	8m x 1.7m, initially (north/south), with an extension to the east (4.5m x 2.5m) at the southern end of the trench.
Maximum Depth	2.1m
Description	This trench revealed topsoil (***2301***), overlying highly compacted slag (***2302***). The slag overlay a silt deposit (***2303)***, which overlay a deposit of sand, ***2304***. Removal of this sand revealed a brick wall, ***2307***, and a structure (***2308***), built of limestone blocks carrying an iron pipe, running parallel to it. Layer ***2304*** overlay a deposit of sandstone rubble***, 2305***, to the north of these structures and a layer of sand, ***2309***, to the south. Layer ***2305*** overlay a deposit of sand, ***2306***, which was still overlying the wall ***2307***. Layer ***2309*** overlay a further layer of sand, ***2310***, which structure ***2308*** appeared to have been built on top of.

Trench Number	24
Location	Marina Village
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2m
Description	This trench revealed topsoil (***2401***), overlying highly compacted slag (***2402***). The slag overlay a thin band of sand, ***2403***, itself overlying a dump of demolition debris (***2404***). Beneath this layer, along the base of the trench, a deposit of crushed concrete, ***2405***, was revealed. Two cast iron pipes running across the trench were revealed at the base of the trench.

Trench Number	25
Location	Marina Village
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	This trench revealed topsoil and black industrial waste (***2501***), overlying a highly mixed deposit of sand and gravels, ***2502***, containing occasional building rubble. No archaeological remains were observed.

Trench Number	26
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.7m
Description	This trench revealed a mixed topsoil, ***2601***, containing a high proportion of industrial waste, overlying a highly mixed deposit of sand and gravels, ***2602***, containing occasional building rubble. An electrical cable, covered by ceramic warning tiles, was observed running across the trench. No archaeological remains were observed.

Trench Number	27
Location	Marina Village
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.8m
Description	This trench revealed a mixed topsoil, ***2701***, containing a high proportion of industrial waste, overlying a highly mixed deposit of sand and gravels, ***2702***, containing occasional building rubble. An electrical cable, covered

by ceramic warning tiles, was observed at the northern end of the trench. No archaeological remains were observed.

Trench Number 28
Location Marina Village
Alignment North-west/south-east
Dimensions 20m x 1.7m
Maximum Depth 2.4m
Description This trench revealed a mixed topsoil, ***2801***, containing a high proportion of industrial waste, overlying a layer of sand (***2802***). This in turn overlay a further layer of sand, ***2803***, containing a high proportion of sandstone rubble and occasional lenses of clay. No archaeological remains were observed.

Trench Number 29
Location Marina Park
Alignment East/west
Dimensions 20m x 1.7m
Maximum Depth 2.2m
Description This trench was initially excavated through a highly compact layer of hardstanding, ***2901***, which overlay a concrete surface, ***2902***. To the east of the concrete surface, a dump of demolition debris, ***2903***, containing a high proportion of building rubble was observed, overlying a deposit of sand (***2904***). This overlay a deposit of gravel and bluish sand, ***2905***.

Trench Number 30
Location Marina Park
Alignment North-east/south-west
Dimensions 20m x 1.7m
Maximum Depth 1.45
Description This trench revealed topsoil, ***3001***, overlying two structures, made of walls ***3004***, ***3005*** and ***3006***, and a layer of sand, ***3002***. The structures comprised concrete floors edged by brick walls. To the west of these structures, layer ***3002*** overlay a deposit of clay (***3003***).

Trench Number 31
Location Marina Park
Alignment North-west/south-east
Dimensions 20m x 1.7m
Maximum Depth 1.15m
Description This trench was initially excavated through topsoil, ***3101***, which overlay a sequence of dump deposits, ***3102-3108***, containing modern debris and rubble. No archaeological remains were observed.

Trench Number 32
Location Marina Park
Alignment North/south
Dimensions 20m x 1.7m
Maximum Depth 1.7m
Description This trench revealed topsoil***, 3201***, overlying a deposit of clay (***3202***). This in turn overlay a dump of demolition debris, ***3203***, which sealed a clay deposit (***3204***). No archaeological remains were observed.

Trench Number	33
Location	Marina Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench was initially excavated through the topsoil, ***3301***, which overlay a substantial dump of demolition rubble, ***3302***. At the southern end of the trench a large concrete pipe was exposed.

Trench Number	34
Location	Marina Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	3m
Description	This trench was excavated through a layer of hardstanding, ***3401***, which revealed a dump of predominantly industrial waste (***3402***). This overlay a deposit of orange silty-sand, ***3403***. No archaeological remains were observed within this trench.

Trench Number	35
Location	Marina Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench was initially excavated through a layer of hardstanding, ***3501***, which overlay a deposit (***3502***) comprising demolition debris, including a high proportion of rubber floor matting. This in turn overlay a layer of predominantly industrial waste, ***3503***, which overlay a rectangular brick structure, ***3504***.

Trench Number	36
Location	Marina Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench was initially excavated through a layer of hardstanding, ***3601***. At the eastern end of the trench this overlay a thin band of grey gravel, sealing a small, poorly laid brick surface, ***3603***. This overlay a mixed deposit of slag and ash (***3602***).

Trench Number	37
Location	Marina Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	0.35m
Description	This trench was initially excavated through a layer of hardstanding, ***3701***, immediately beneath which was a number of brick and concrete structures, ***3702-3714***.

Trench Number	38
Location	Marina Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.6m

Description	This trench exposed topsoil, ***3801***, overlying a deposit of slag and coke (***3802***). This overlay a deposit of sandy clay (***3803***). No archaeological features were revealed.

Trench Number	39
Location	Marina Park
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	2.1m
Description	This trench revealed topsoil, ***3901***, overlaying a deposit of ash, slag and furnace waste, ***3902***, to the base of the trench. No archaeological features were observed.

Trench Number	40
Location	Marina Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench was initially excavated through topsoil, ***4001***, which overlay an ash and clinker deposit (***4002***). This in turn overlay a sandy-clay deposit, ***4003***. No archaeological features were observed.

Trench Number	41
Location	Marina Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	This trench exposed topsoil, ***4101***, overlying a deposit of slag and ash (***4102***). This sealed a deposit of sandy-clay, which contained a lens of sandy-silt (***4103***). No archaeological features were revealed.

Trench Number	42
Location	Marina Park
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	This trench was excavated through hardstanding, ***4201***, which overlay a dump of industrial waste, ***4202***, containing slag and clinker. This in turn overlay a deposit of silty sand, ***4203***. No archaeological features were revealed.

Trench Number	43
Location	Ramsden Dock Access Road
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench was initially excavated through a layer of hardcore, ***4301***, which overlay a layer of clean yellow sand (***4304***). This in turn overlay a layer of slag, ***4303***, itself sealing a layer of concreted slag, ***4302***. No archaeological features were observed.

Trench Number	44
Location	Ramsden Dock Access Road
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	This trench exposed topsoil, ***4402***, overlying a concrete surface, ***4401***. This surface was set on a layer of rubble and hardcore, ***4403***, which sealed a deposit of slag (***4404***). This in turn overlay a deposit of orange sand (***4405***), which contained a number of bands of lighter sand.

Trench Number	45
Location	Ramsden Dock Access Road
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.4m
Description	The removal of the topsoil, ***4501***, within this trench revealed a deposit of slag and ash (***4502***). This layer sealed a deposit of compacted clay (***4503***). No archaeological features were observed.

Trench Number	46
Location	Ramsden Dock Access Road
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.4m
Description	This trench exposed topsoil, ***4601***, overlying a deposit of sand, ***4602***. This deposit overlay a layer of slag (***4603***). No archaeological features were observed within this trench.

Trench Number	47
Location	Ramsden Dock Access Road
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.4m
Description	The removal of the topsoil, ***4701***, within this trench revealed a deposit of sand (***4702***). This layer sealed further deposits of sand (***4703*** and ***4704***). No archaeological features were observed.

Trench Number	48
Location	Ramsden Dock Access Road
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil, ***4801***, overlying a deposit of ash and clinker, ***4802***. This in turn sealed a sloping deposit of silt (***4803***), which overlay a sand deposit (***4804***). No archaeological features were observed within this trench.

Trench Number	49
Location	Ramsden Dock Access Road
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.9m
Description	The topsoil, ***4901***, in this trench overlay a deposit of sand, ***4902***, which itself sealed a further layer of sand, ***4903***. This sand overlay a deposit of clay (***4904***). No archaeological features were observed.

Trench Number	50
Location	Ramsden Dock Access Road
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench revealed topsoil, ***5001***, sealing a layer of silty-clay, ***5002***. Beneath this a layer of sand, ***5003***, was exposed, overlying a deposit of clay, ***5004***. No archaeological features were observed within this trench.

Trench Number	51
Location	Ramsden Dock Access Road
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The removal of the topsoil, ***5101***, within this trench revealed a deposit of sand (***5102***). This layer sealed a deposit of clay (***5103***). No archaeological features were observed.

Trench Number	52
Location	Ramsden Dock Access Road
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench exposed topsoil, ***5201***, overlying a deposit of clay, ***5202***. This deposit overlay a layer of sand (***5203***). No archaeological features were observed within this trench.

Trench Number	53
Location	Ramsden Dock Access Road
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The removal of the topsoil, ***5301***, within this trench revealed two brick structures, ***5303*** and ***5304***. These structures were cut into a deposit of sand, ***5302***.

Trench Number	54
Location	Ramsden Dock Access Road
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.9m
Description	This trench revealed topsoil, ***5401***, overlying bands of sands, ***5402***, all slumping downwards towards the south. No archaeological features were observed within this trench.

Trench Number	55
Location	Ramsden Dock Access Road
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	The topsoil, ***5501***, in this trench overlay a deposit of hardcore, ***5504***, which itself overlay a concrete beam, 55***03***. This beam overlay a deposit of sand (***5502***).

Trench Number	56
Location	Ramsden Dock Access Road
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil, ***5601***, sealing a layer of silty-clay, ***5602***, containing a high proportion of slag. Beneath this a layer of slag, ***5603***, was exposed, overlying a deposit of sand, ***5604***. No archaeological features were observed within this trench.

Trench Number	57
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	The topsoil, ***5701***, in this trench overlay a deposit of sand, ***5702***, which appeared to represent a number of discrete deposits, although this remained uncertain. No archaeological features were observed.

Trench Number	58
Location	Innovation Park
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench revealed topsoil, ***5801***, sealing a layer of sand, ***5802***. Beneath this a further layer of sand, ***5803***, was exposed. No archaeological features were observed within this trench.

Trench Number	59
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	The removal of the topsoil, ***5901***, within this trench revealed a deposit of sands (***5902***). No archaeological features were observed.

Trench Number	60
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench exposed topsoil, ***6001***, overlying a deposit of clay, ***6002***. This deposit overlay a layer of clinker and slag (***6003***), itself sealing deposits of sand (***6004***). No archaeological features were observed within this trench.

Trench Number	61
Location	Innovation Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The removal of the topsoil, ***6101***, within this trench revealed a deposit of sand, ***6102***. No archaeological features were observed within this trench.

Trench Number	62
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.2m
Description	This trench revealed topsoil, ***6201***, overlying bands of sands, ***6202***, all sloping downwards towards the south-west. No archaeological features were observed within this trench.

Trench Number	63
Location	Innovation Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	The topsoil, ***6301***, in this trench overlay a deposit of clinker and ash, ***6303***, which itself overlay sloping deposits of clinker and ash, ***6302***. This layer contained a band of red clay, ***6304***. No archaeological remains were observed within this trench.

Trench Number	64
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.9m
Description	This trench revealed topsoil, ***6401***, sealing bands of silty-sand, ***6402***, to the base of the trench. No archaeological features were observed within this trench.

Trench Number	65
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The topsoil, ***6501***, in this trench overlay a deposit of slag, ***6502***, which itself overlay a sand layer (***6503***). A number of bands of clay, ***6504***, sloping downwards to the south were revealed beneath this layer. No archaeological features were observed.

Trench Number	66
Location	Innovation Park
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.4m
Description	This trench revealed topsoil, ***6601***, sealing a layer of demolition debris, ***6602***. This layer overlay a concrete slab, ***6604***, which overlay a fine sand deposit, ***6603***. This layer overlay a brick wall, ***6605***, which was overlain to the south by another dump deposit, ***6606***. Removal of this deposit revealed two brick structures, ***6607*** and ***6608***.

Trench Number	67
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.2m

Description	The removal of the topsoil, ***6701***, within this trench revealed a deposit of sand (***6703***). This in turn overlay two concrete surfaces, ***6704*** and ***6705***, and a deposit of clay, ***6702***.

Trench Number	68
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.8m
Description	This trench was initially excavated through a layer of hardstanding, ***6801***, overlying preparation layer ***6802***. The preparation layer overlay a layer of sand, ***6803***. No archaeological features were observed within this trench.

Trench Number	69
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	The removal of the topsoil, ***6901***, within this trench revealed a deposit of sand, ***6902***. This in turn overlay a more clayey sand deposit (***6903***). No archaeological features were observed within this trench.

Trench Number	70
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil, ***7001***, overlying a deposit of sand, ***7002***. This in turn overlay a more clayey sand deposit, ***7003***, to the base of the trench. No archaeological features were observed within this trench.

Trench Number	71
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	The topsoil, ***7101***, in this trench overlay a deposit of building rubble, ***7102***, which itself overlay mixed sand deposits, ***7103***. This overlay a clay deposit, ***7104***. No archaeological remains were observed within this trench.

Trench Number	72
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	This trench revealed topsoil, ***7201***, sealing bands of building materials, ***7202***. These dumps overlay a silt layer, ***7202***. No archaeological features were observed within this trench.

Trench Number	73
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m

Maximum Depth	1.2m
Description	This trench exposed the topsoil, ***7301***, overlying a deposit of sand, ***7302***. This in turn overlay a deposit of dumped demolition debris, ***7303***, overlying a clay deposit, ***7304***, containing a high proportion of ash and clinker. No archaeological features were observed within this trench.

Trench Number	74
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The topsoil, ***7401***, in this trench overlay a deposit of clay, ***7402***, containing demolition debris, which itself overlay further deposits of clay, ***7403***, also containing demolition debris. No archaeological remains were observed within this trench.

Trench Number	75
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil, ***7501***, sealing a layer of clay, ***7502***. The clay overlay a further clay deposit, ***7502***, containing demolition debris. No archaeological features were observed within this trench.

Trench Number	76
Location	Innovation Park
Alignment	North-west/south-east
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	The topsoil, ***7601***, in this trench overlay a deposit of clay, ***7602***, which itself overlay a further clay layer (***7603***). A further band of clay, ***7604***, was exposed beneath this layer. No archaeological features were observed.

Trench Number	77
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	This trench revealed topsoil, ***7701***, sealing a layer of silt, ***7702***. This layer overlay a clay deposit, ***7703***, which overlay a sand deposit, ***7704***, containing inclusions of demolition debris. No archaeological features were observed within this trench.

Trench Number	78
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	2.0m
Description	The removal of the topsoil, ***7801***, within this trench revealed a deposit of sand (***7802***). This in turn overlay a mixed deposit, ***7803***, of sand and demolition debris. No archaeological remains were observed.

Trench Number	79
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.5m
Description	This trench was initially excavated through a layer of hardstanding, ***7901***, overlying a levelling deposit of silt, ***7902***. The levelling deposit overlay a layer of clay, ***7903***, which overlay a deposit of sand, ***7904***. Beneath this layer a deposit of silt, ***7905***, was observed. No archaeological features were observed within this trench.

Trench Number	80
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	2.1m
Description	The removal of the topsoil, ***8001***, within this trench revealed a deposit of clay, ***8002***. This in turn overlay a deposit of sand (***8003***). Beneath this layer a further deposit of sand, ***8004***, was observed. No archaeological features were observed within this trench.

Trench Number	81
Location	Innovation Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.7m
Description	This trench revealed topsoil, ***8101***, overlying deposits of sand, ***8102***. No archaeological features were observed within this trench.

Trench Number	82
Location	Innovation Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	The topsoil, ***8201***, in this trench overlay a deposit of building rubble, ***8202***, which itself overlay sand deposits, ***8203***. No archaeological remains were observed within this trench.

Trench Number	83
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.6m
Description	This trench revealed topsoil, ***8301***, sealing a dump of demolition debris, ***8303***. This dump overlay a layer of sand, ***8302***. No archaeological features were observed within this trench.

Trench Number	84
Location	Innovation Park
Alignment	North/south
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	The removal of the topsoil, ***8401***, within this trench revealed a deposit of demolition debris, ***8402***. This in turn overlay a deposit of sandy-clay (***8403***). No archaeological features were observed within this trench.

Trench Number	85
Location	Innovation Park
Alignment	East/west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench revealed topsoil, ***8501***, overlying deposits of building rubble, ***8502***. These deposits overlay a layer of sand, ***8503***. No archaeological features were observed within this trench.

Trench Number	86
Location	Innovation Park
Alignment	East/west
Dimensions	19m x 1.7m (the eastern end of the trench remained unexcavated due to an electricity cable)
Maximum Depth	1.2m
Description	The uppermost layer, ***8601***, in this trench comprised hardstanding, and overlay a deposit of mixed building rubble, ***8602***. Beneath this layer, a pair of walls, ***8605***, were revealed, infilled with loose rubble, ***8606***. The walls were cut into a deposit of sand, ***8603***, which itself overlay a more compacted sand (***8604***).

Trench Number	87
Location	Innovation Park
Alignment	North-east/south-west
Dimensions	20m x 1.7m
Maximum Depth	1.2m
Description	This trench was initially excavated through a layer of hardstanding, ***8701***. This layer sealed the fill, ***8702***, of a modern cut, ***8703***, which was present at the north-eastern end of the trench. This cut truncated a series of sand deposits, ***8704***. The middle portion of this trench remained unexcavated due to a positive reading from the CAT Scanner. No archaeological features were observed within this trench.

APPENDIX 4: CONTEXT LIST

Context Number	**Trench Number**	**Description**
100	1	Topsoil
101	1	Compacted slag
102	1	Red sand
200	2	Topsoil
201	2	Compacted slag
202	2	Coarse sand
203	2	Large stone
204	2	Brown sand
205	2	Light yellow sand
300	3	Topsoil
301	3	Compacted slag
302	3	Dark brown deposit containing sandstone fragments
303	3	Multiple layers of sand
400	4	Topsoil
401	4	Compacted slag
402	4	Hard core and rubble
403	4	Concrete
500	5	Topsoil
501	5	Compacted slag
502	5	Dark brown sandy-silt
503	5	Rubble deposit
601	6	Topsoil
602	6	Compacted slag
603	6	Dark brown deposit containing a high proportion of rubble
604	6	Loose yellow sand

605	6	Brick wall
701	7	Topsoil
702	7	Compacted slag
703	7	Concrete
801	8	Topsoil
802	8	Compacted slag
803	8	Loose black deposit
804	8	Grey sand
900	9	Topsoil
901	9	Compacted slag
902	9	Dark black sand
903	9	Mid-brown rubble layer
1000	10	Topsoil
1001	10	Compacted slag
1100	11	Topsoil
1101	11	Compacted slag
1102	11	Concrete
1200	12	Topsoil
1201	12	Compacted slag
1202	12	Dark brown sand
1300	13	Topsoil
1301	13	Compacted slag
1302	13	Rubble layer
1400	14	Topsoil
1401	14	Compacted slag
1402	14	Dark-grey coarse sand
1500	15	Topsoil
1501	15	Compacted slag
1502	15	Dark grey sand

1601	16	Topsoil
1602	16	Compacted slag
1603	16	Black industrial waste layer
1700	17	Topsoil
1701	17	Compacted slag
1702	17	Dark brown sand, containing sandstone rubble
1801	18	Topsoil
1802	18	Compacted slag
1803	18	Black silt layer, with a high proportion of rubble
1901	19	Topsoil
1902	19	Compacted slag
2000	20	Topsoil
2001	20	Compacted slag
2002	20	Rubble deposit
2101	21	Topsoil
2102	21	Compacted slag
2103	21	Rubble and demolition debris deposit
2104	21	Dark layer of demolition debris
2105	21	Demolition debris
2201	22	Topsoil
2202	22	Compacted slag
2203	22	Black sandy-silt
2204	22	Loose light brown sandy-silt
2205	22	Clinker-rich rubble deposit
2206	22	Brick wall
2207	22	Brick wall
2208	22	Curved brick floor, possibly the roof of a culvert
2301	23	Topsoil
2302	23	Compacted slag

2303	23	Soft black sandy-silt
2304	23	Silty-sand
2305	23	Sandstone Rubble
2306	23	Light-yellow sand
2307	23	Brick wall
2308	23	Limestone blocks, containing an iron pipe
2309	23	Loose yellow sand
2310	23	Mid-brown sand
2401	24	Topsoil
2402	24	Compacted slag
2403	24	Orange sand
2404	24	Layer of demolition debris
2405	24	Deposit of crushed concrete
2501	25	Loose deposit of slag and industrial waste
2502	25	Redeposited sand, containing small amounts of rubble
2601	26	Topsoil
2602	26	Redeposited sand, containing small amounts of rubble
2701	27	Loose deposit of slag and industrial waste
2702	27	Redeposited sand, containing small amounts of rubble
2801	28	Loose deposit of coal and clinker
2802	28	Mid-yellow silty-sand
2803	28	Red silty sand
2901	29	Hardstanding
2902	29	Concrete floor
2903	29	Demolition debris
2904	29	Light-orange sandy-clay
2905	29	Gravel and bluish sand
3001	30	Topsoil
3002	30	Orange sandy-clay

3003	30	Orange sandy-clay
3004	30	Brick wall
3005	30	Brick wall
3006	30	Brick wall
3007	30	Impression of partition wall within concrete floor
3101	31	Topsoil
3102	31	Brown sandy-clay
3103	31	Light grey silty-clay
3104	31	Grey silty-sand
3105	31	Orange silty-clay
3106	31	Brownish-grey silty-sand
3107	31	Orange clayey-sand
3108	31	Loose silty-sand
3201	32	Topsoil
3202	32	Reddish-brown sandy-clay
3203	32	Demolition debris
3204	32	Brown sandy-clay
3301	33	Topsoil
3302	33	Demolition debris
3401	34	Hardstanding
3402	34	Mixed dump, including clinker, coal and slag
3403	34	Silty-sand
3501	35	Hardstanding
3502	35	Dump deposit, with a high proportion of rubber flooring
3503	35	Mixed dump, including clinker, coal and slag
3504	35	Rectangular brick structure
3601	36	Hardstanding
3602	36	Mixed dump, including clinker, coal and slag
3603	36	Grey gravel

3604	36	Roughly-laid brick surface
3701	37	Hardstanding
3702	37	Concrete block
3703	37	Brick wall
3704	37	Brick wall
3705	37	Concrete structure
3706	37	Concrete block
3707	37	Concrete waste drain
3708	37	Concrete surface
3709	37	Concrete-covered brick surface
3710	37	Concrete-covered brick surface
3711	37	Brick wall
3712	37	Brick wall
3713	37	Concrete block
3714	37	Concrete block
3801	38	Topsoil
3802	38	Bands of brown silt, coke and slag
3803	38	Light-brown sandy-clay
3901	39	Topsoil
3902	39	Deposit of ash, slag and probable furnace waste
4001	40	Topsoil
4002	40	Ash and Clinker
4003	40	Brown sandy-clay
4101	41	Topsoil
4102	41	Ash Deposit
4103	41	Light-brown sandy-clay
4104	41	Mid-brown sandy-silt
4201	42	Hardstanding
4202	42	Industrial waste

4203	42	Orange-brown silty-sand
4301	43	Hardstanding
4302	43	Compacted slag
4303	43	Slag
4304	43	Sand
4401	44	Concrete surface
4402	44	Topsoil
4403	44	Hardcore and rubble layer
4404	44	Slag
4405	44	Sand
4501	45	Topsoil
4502	45	Slag
4503	45	Reddish-brown clay
4601	46	Topsoil
4602	46	Silty-sand
4603	46	Slag and industrial debris
4701	47	Topsoil
4702	47	Sand
4703	47	Bands of Orange-brown sand
4704	47	Greyish-brown silty-sand
4801	48	Topsoil
4802	48	Layer of ash and clinker
4803	48	Brown sandy-silt
4804	48	Yellowish-brown, silty-sand
4901	49	Topsoil
4902	49	Orange silty-sand
4903	49	Orange-brown silty-sand
4904	49	Reddish-brown silty-clay
5001	50	Topsoil

5002	50	Blackish-brown silty-clay
5003	50	Orange-brown silty-sand
5004	50	Orange-brown silty-clay
5101	51	Topsoil
5102	51	Red silty-sand
5103	51	Sandy-clay
5201	52	Topsoil
5202	52	Silty-clay
5203	52	Silty-sand
5301	53	Topsoil
5302	53	Silty-sand
5303	53	Brick surface
5304	53	Drain
5401	54	Topsoil
5402	54	Bands of sand and clay
5501	55	Topsoil
5502	55	Silty-sand, containing rubble
5503	55	Concrete beam
5504	55	Hardcore
5601	56	Topsoil
5602	56	Slag
5603	56	Blackish-brown silty-clay
5604	56	Silty-sand
5701	57	Topsoil
5702	57	Sand
5801	58	Topsoil
5802	58	Gravely-sand
5803	58	Silty-sand
5901	59	Topsoil

5902	59	Silty-sand
6001	60	Topsoil
6002	60	Silty-clay, containing ash and clinker
6003	60	Clinker-rich slag layer
6004	60	Silty-sand
6101	61	Topsoil
6102	61	Sand
6201	62	Topsoil
6202	62	Sand
6301	63	Topsoil
6302	63	Clinker and ash deposit
6303	63	Sand
6304	63	Band of silty-clay
6401	64	Slag
6402	64	Silty-sand
6501	65	Topsoil
6502	65	Slag
6503	65	Sand
6504	65	Band of clay
6601	66	Topsoil
6602	66	Building debris
6603	66	Silty-sand
6604	66	Concrete slab
6605	66	Brick wall
6606	66	Silty-clay, containing rubble
6607	66	Single-coursed brick structure
6608	66	Single-coursed brick structure
6701	67	Topsoil
6702	67	Brown clay

6703	67	Silty-sand
6704	67	Concrete surface
6705	67	Concrete surface
6801	68	Hardstanding
6802	68	Make-up layer for ***6801***
6803	68	Silty-sand
6901	69	Topsoil
6902	69	Silty-sand
6903	69	Clayey-sand
7001	70	Topsoil
7002	70	Silty-sand
7003	70	Clayey-sand
7101	71	Topsoil
7102	71	Building rubble
7103	71	Mixed sand deposits
7104	71	Sandy-clay
7201	72	Topsoil
7202	72	Rubble dump
7203	72	Clayey-silt
7301	73	Topsoil
7302	73	Sandy-clay
7303	73	Silty-clay
7304	73	Silty-clay
7401	74	Topsoil
7402	74	Sandy-clay
7403	74	Silty-clay
7501	75	Topsoil
7502	75	Sandy-clay
7503	75	Silty-clay

7601	76	Topsoil
7602	76	Silty-clay
7603	76	Clay
7604	76	Sandy-clay
7701	77	Topsoil
7702	77	Clayey-silt
7703	77	Sandy-clay
7704	77	Demolition debris
7801	78	Topsoil
7802	78	Clayey-sand
7803	78	Dump deposit
7901	79	Hardstanding
7902	79	Clayey-silt
7903	79	Sandy-clay
7904	79	Orange sand
7905	79	Grey clayey-silt
8001	80	Hardstanding
8002	80	Sandy-clay
8003	80	Silty-sand
8004	80	Silty-sand
8101	81	Topsoil
8102	81	Sand
8201	82	Topsoil
8202	82	Silty-clay
8203	82	Silty-sand
8301	83	Topsoil
8302	83	Silty-sand
8303	83	Silty-clay
8401	84	Topsoil

8402	84	Demolition debris
8403	84	Sandy-clay
8501	85	Topsoil
8502	85	Demolition debris
8503	85	Silty-sand
8601	86	Hardstanding
8602	86	Rubble
8603	86	Grey sand
8604	86	Orange sand
8605	86	Wall
8606	86	Demolition debris
8701	87	Hardstanding
8702	87	Fill of cut ***8703***
8703	87	Modern cut
8704	87	Deposits of sand

ILLUSTRATIONS

FIGURES

PLATES

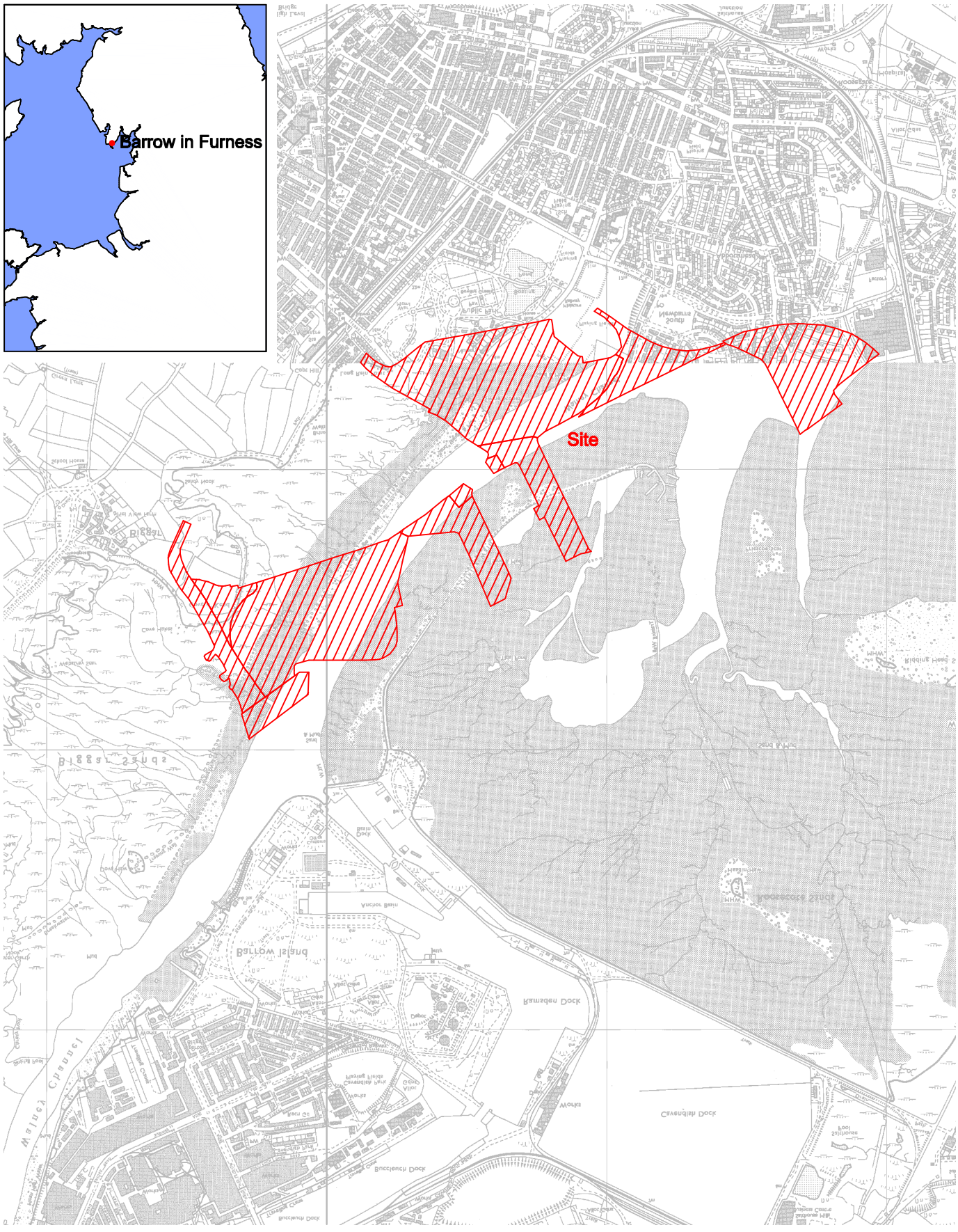

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Figure 1: Location Map

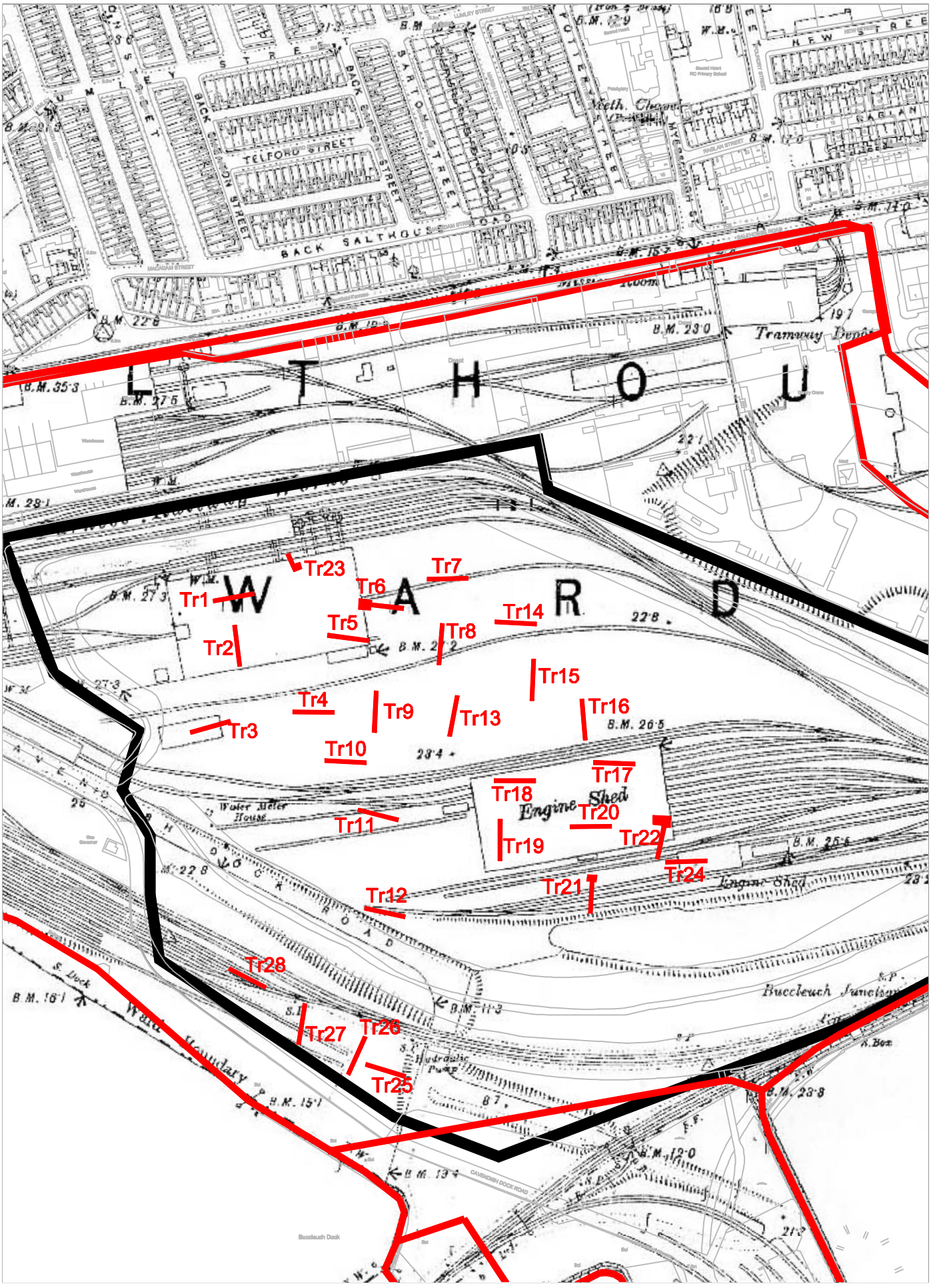

Figure 2: Marina Village Trench Location Plan

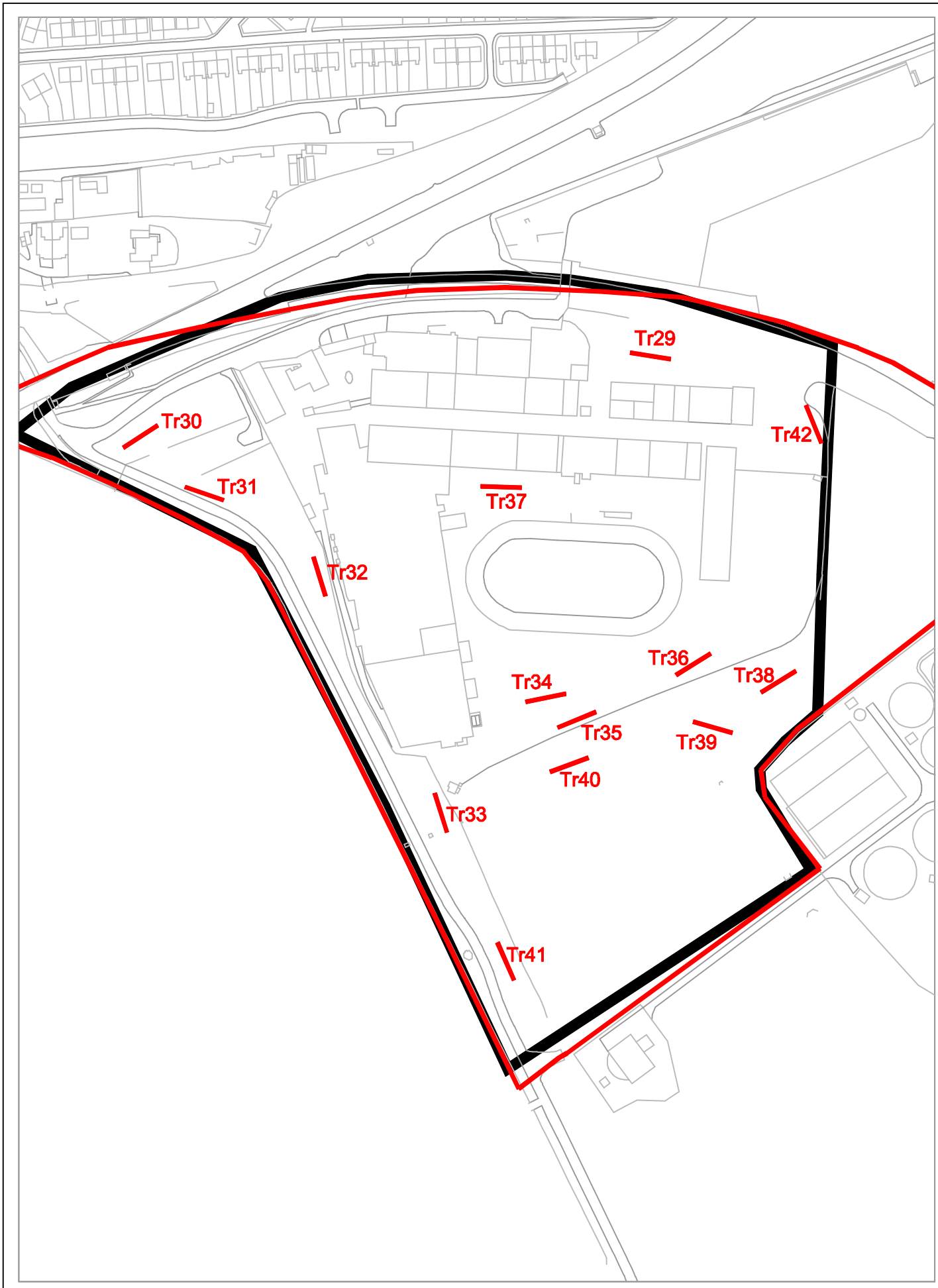

Figure 3: Marina Park Trench Location Plan

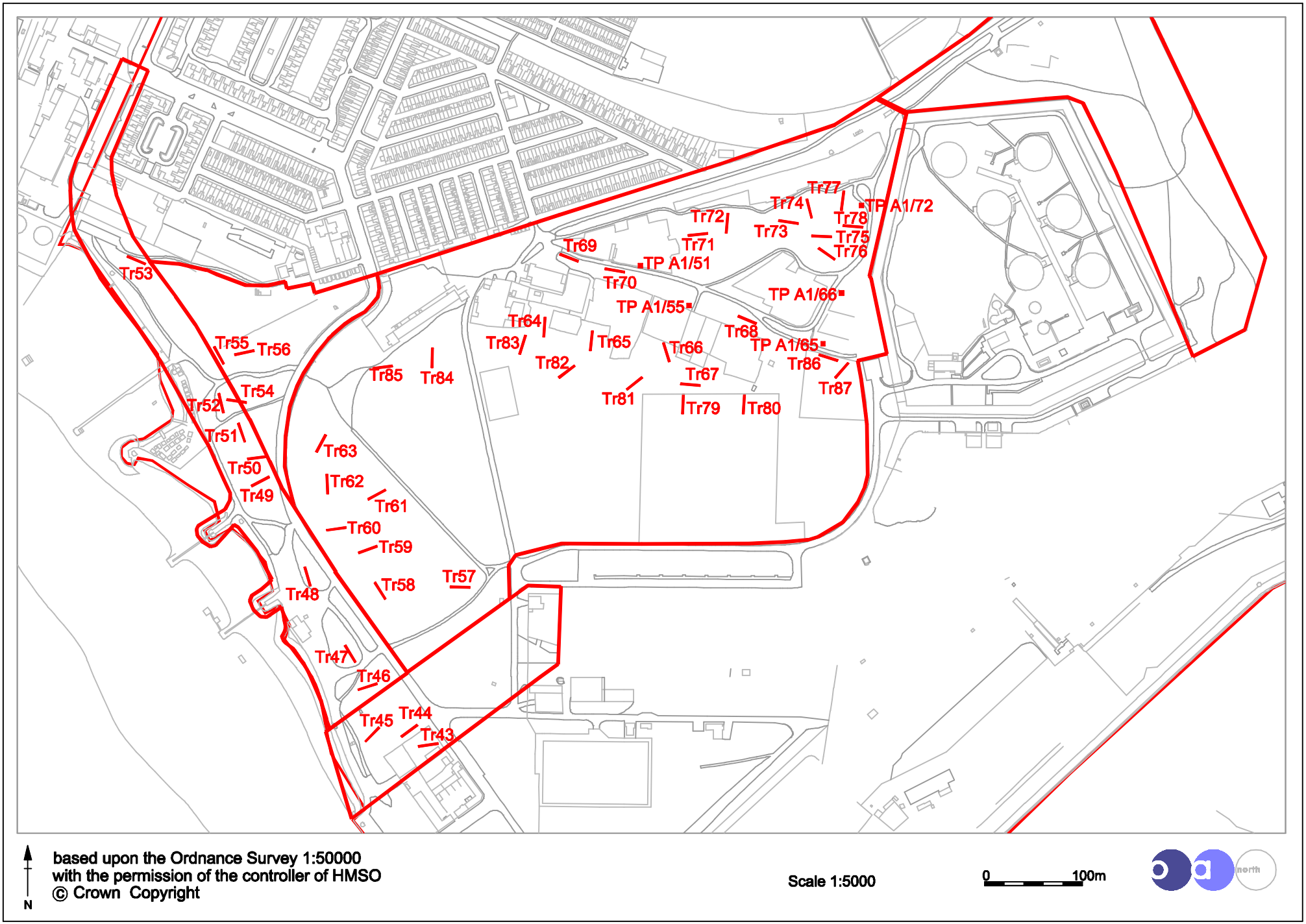

Figure 4: Ramsden Dock Access Road and Innovation Park Tranch Location Plan

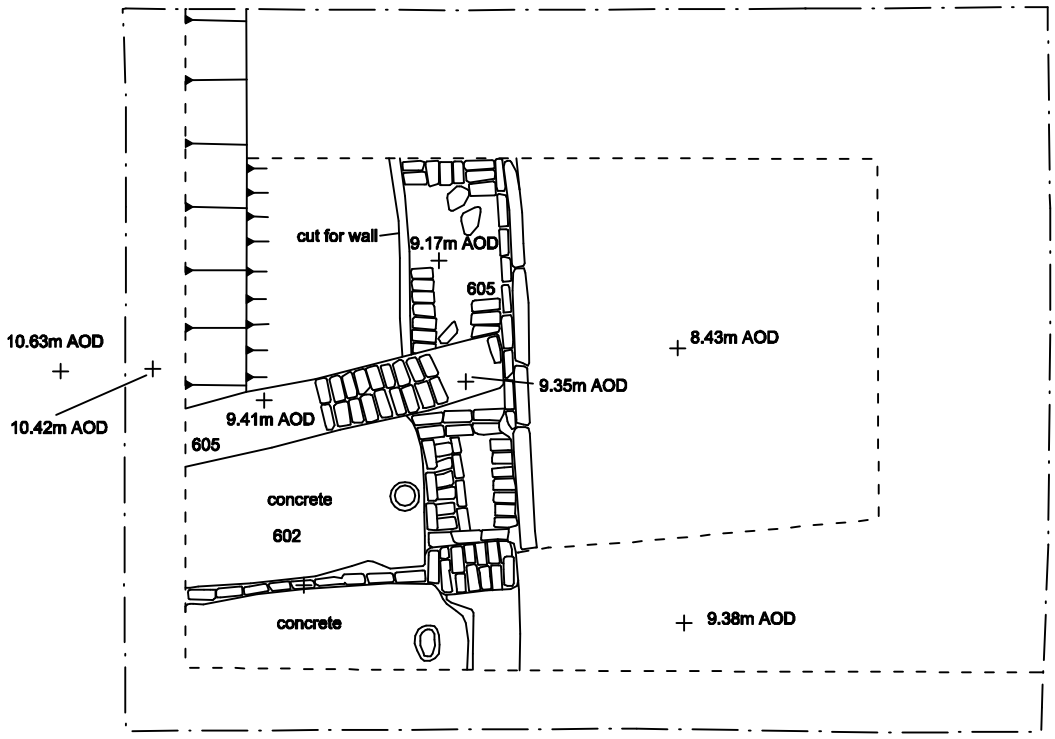

Figure 5: Plan of Trench 6

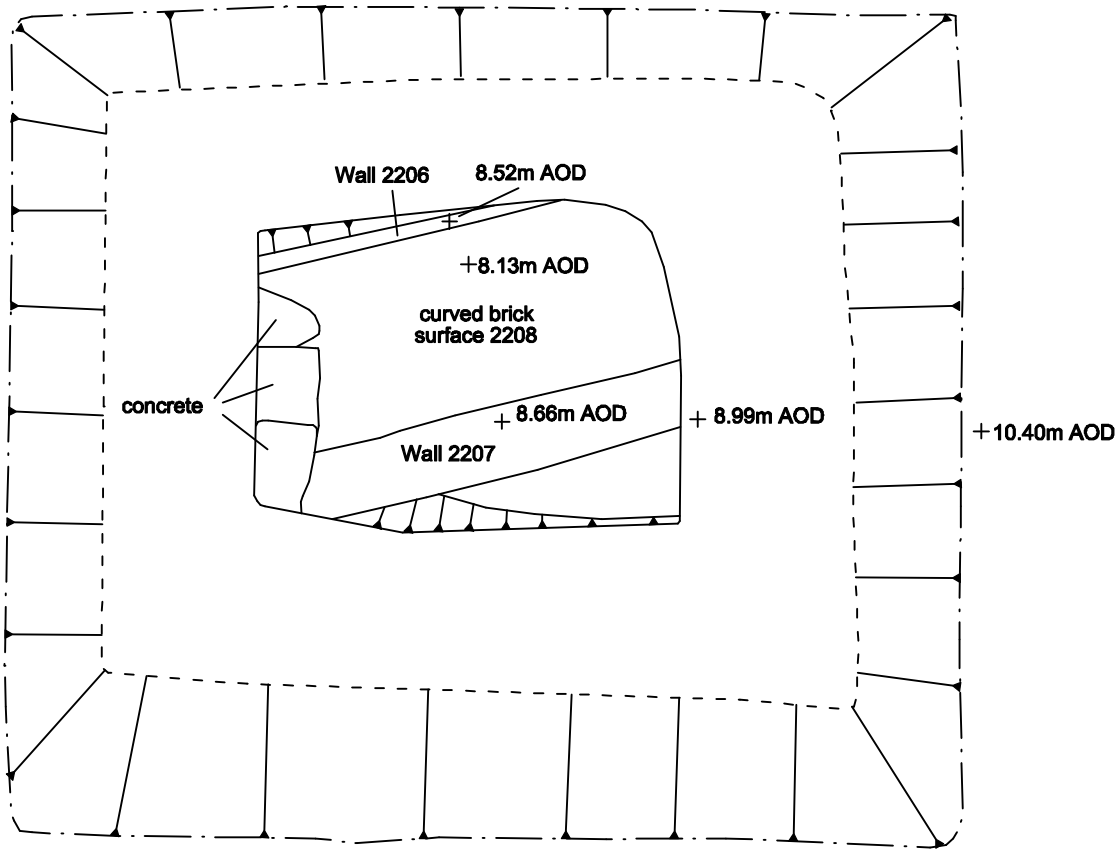

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Figure 6: Plan of Trench 22

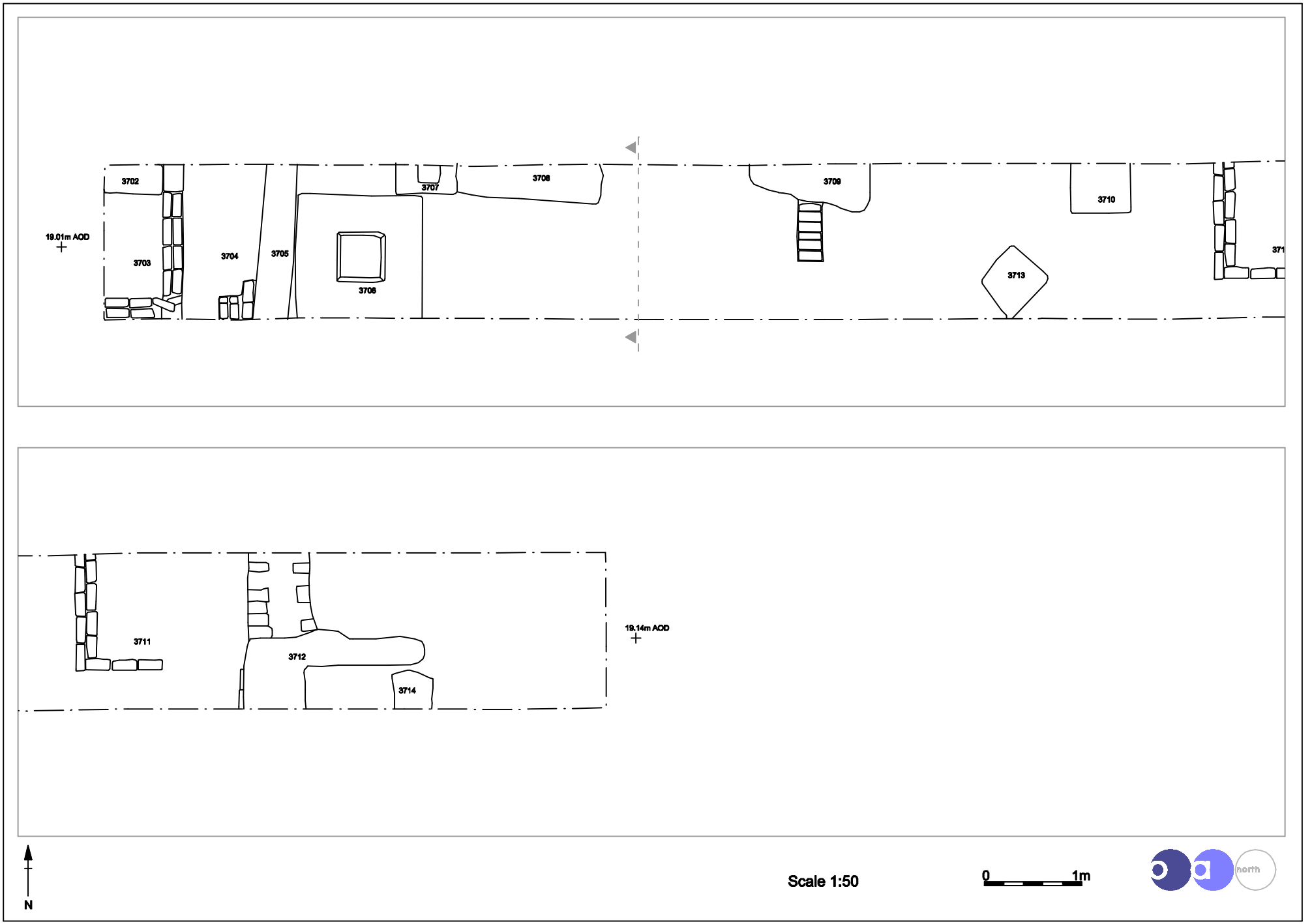

Figure 7: Plan of Trench 37

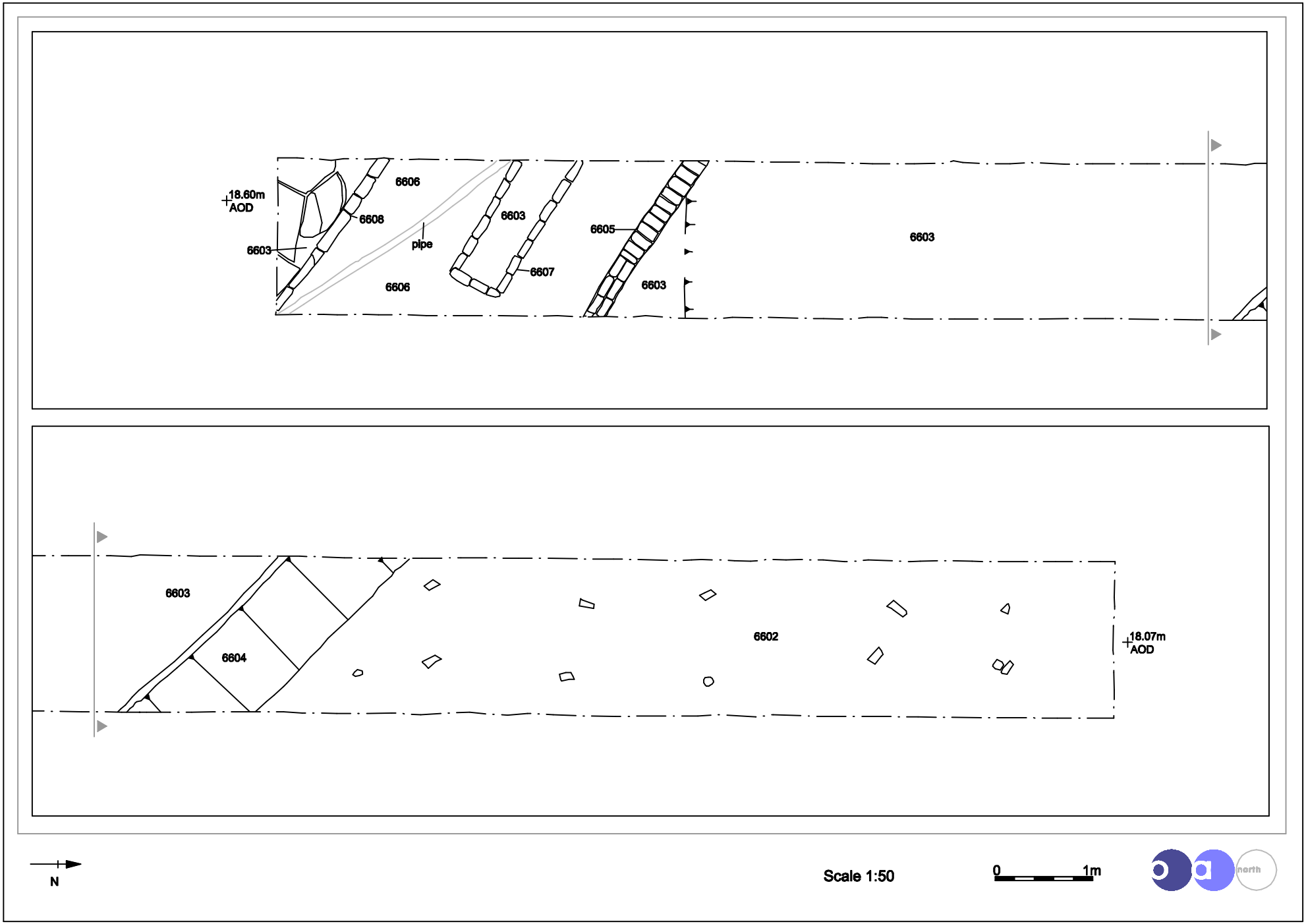

Figure 8: Plan of Trench 66

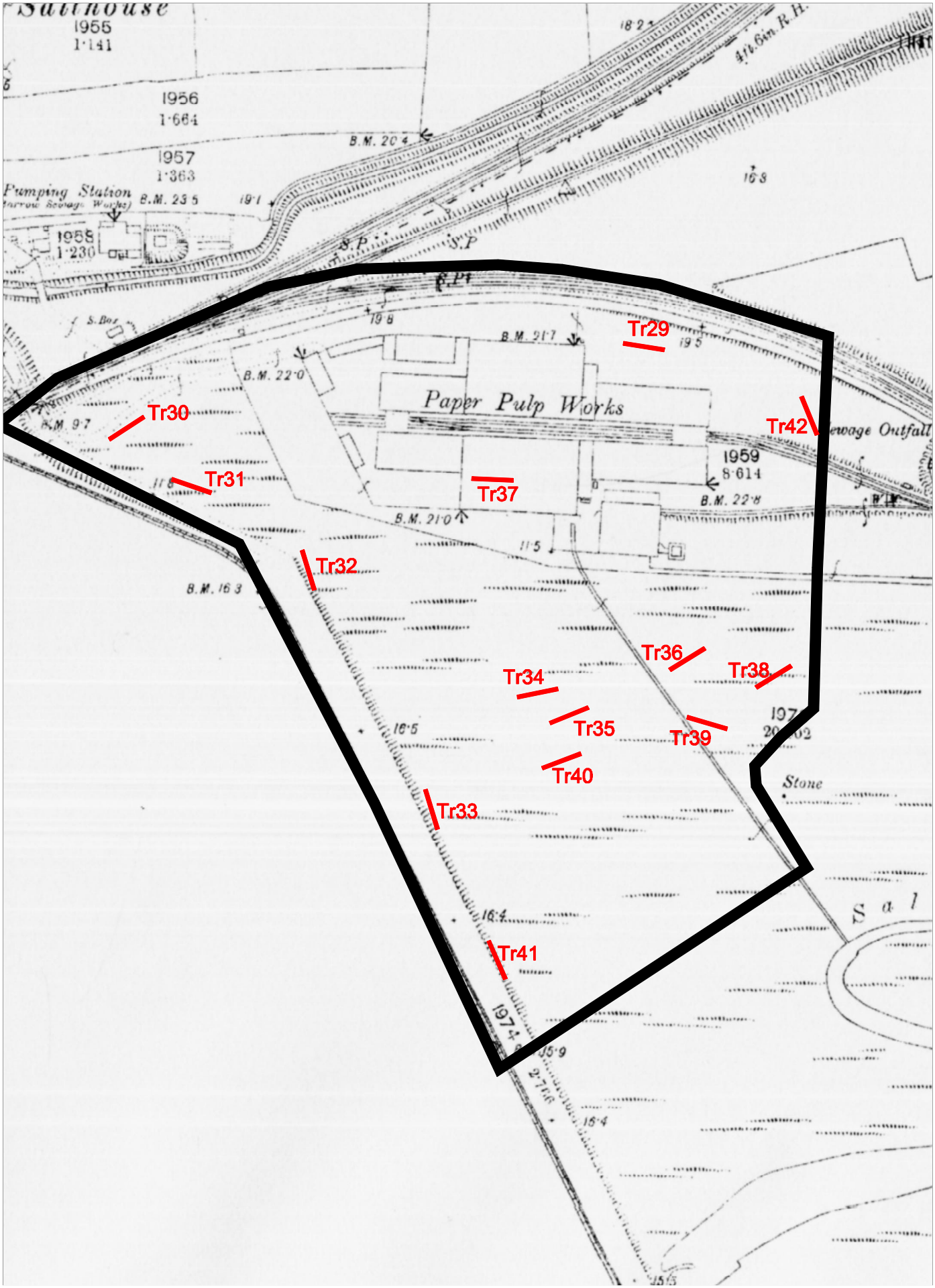

Figure 9: Marina Park Trenches superimposed onto the 1891 OS 1st edition Map

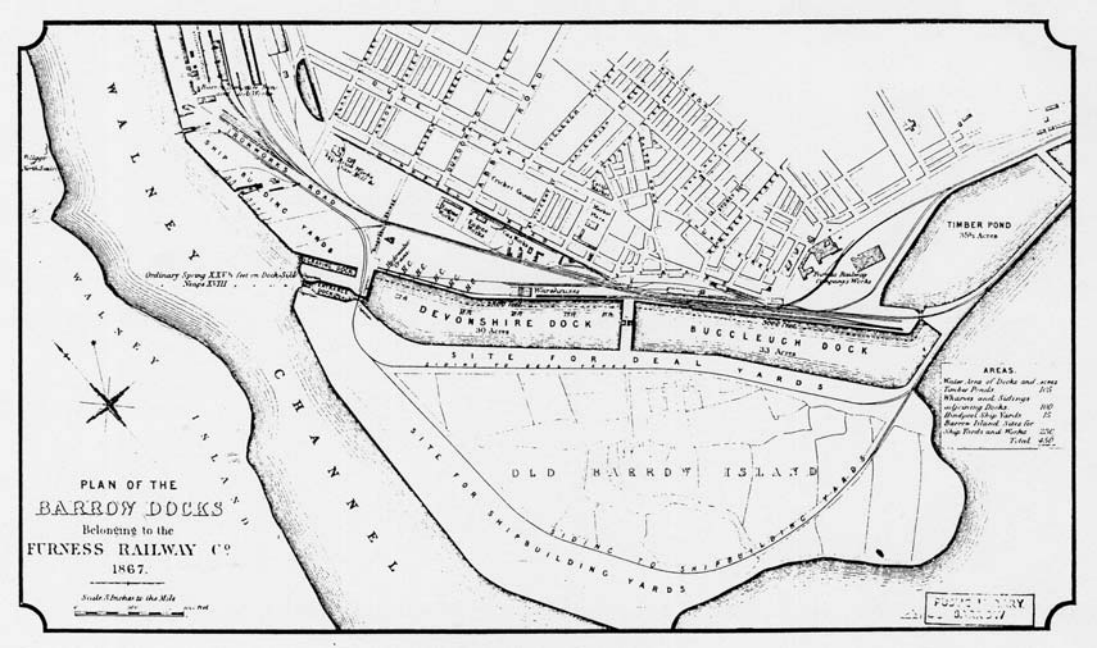

Fig 10: Plan of the docks in 1867 (from Kellet 1990)

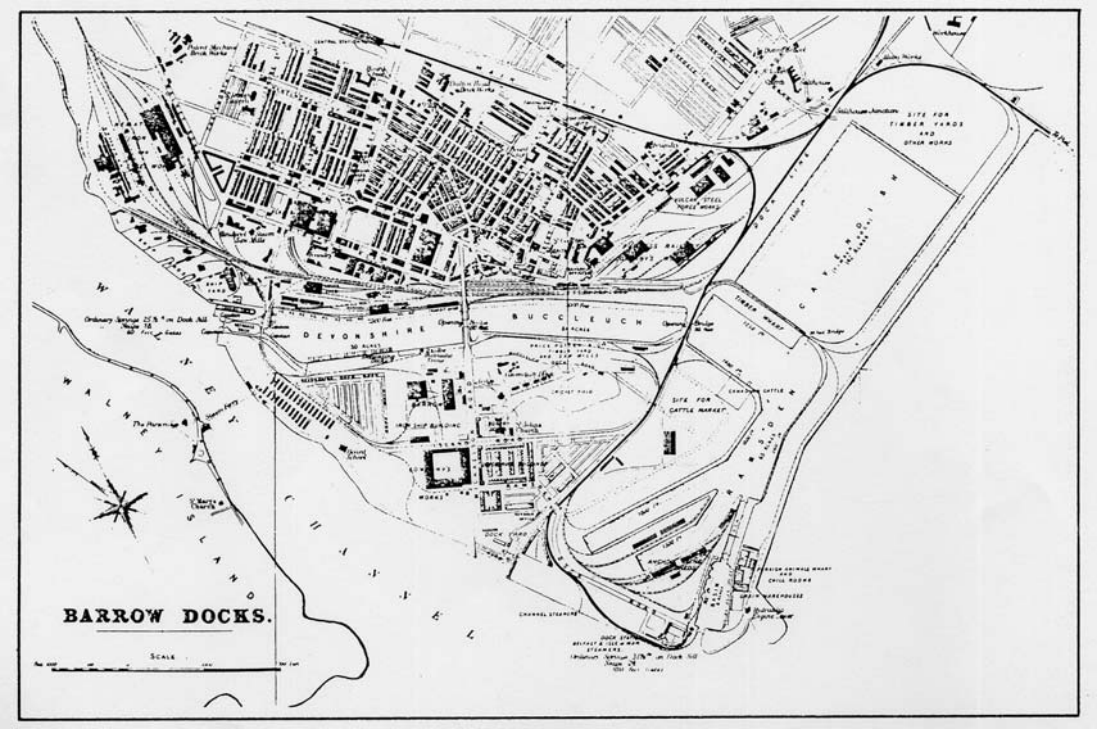

Fig 11: Plan of the docks in 1883 (from Kellet 1990)

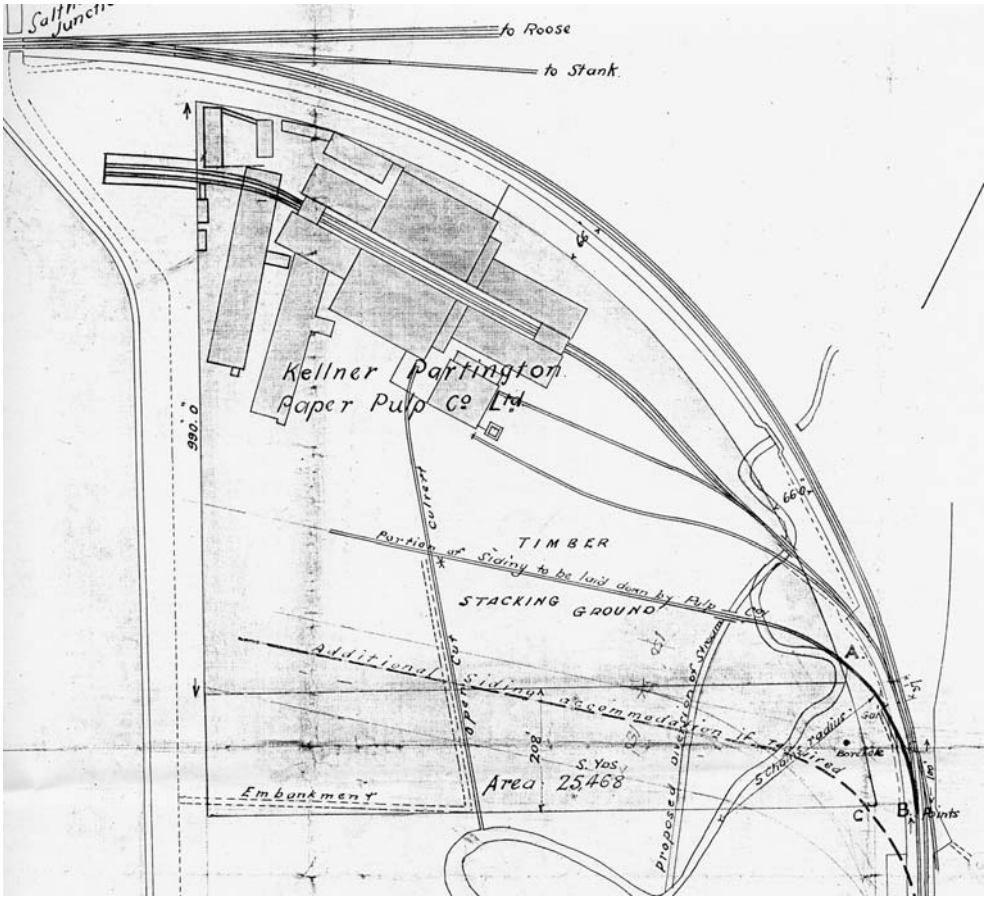

Fig 12: Plan of the Kelner and Partington Paper Pulp Works 1905 (BTBR/1/Box 1/2)

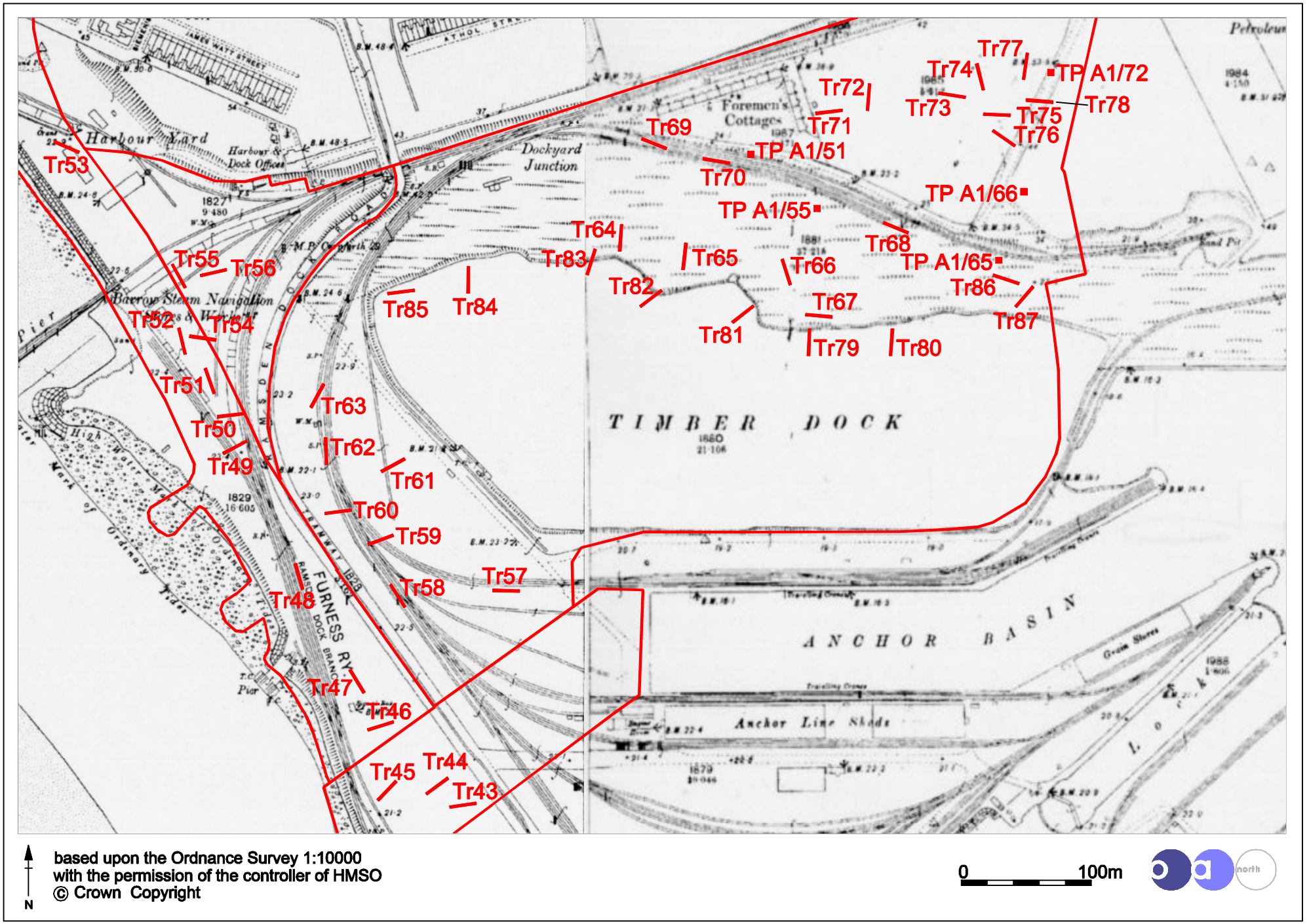

Figure 13: Ramsden Dock Access Road and Innovation Park Trenches superimposed onto the 1891 OS 1st edition Map

Plate 1: Working shot of machine breaking out slag in Trench 6

Plate 2: Working shot of machine stepping down Trench 22

Plate 3: View of probable toilet block in Trench 6

Plate 4: View of probable culvert in Trench 22

Plate 5: View of wall and iron pipe in Trench 23

Plate 6: View of brick structure ***3504***, within Trench 35

Plate 7: View of concrete and brick structures within Trench 37

Plate 8: Close-up of drain ***5304***, within Trench 53

Plate 9: View of brick structures within Trench 66

Plate 10: View of walls ***8605***, within Trench 86