

**NEATH PORT TALBOT DISTRIBUTOR ROAD  
STAGE 1C**

**NGR: 276215 189700**

**ARCHAEOLOGICAL WATCHING BRIEF**

**April 2005**

**Report No. 417**

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## SUMMARY

Between June 2004 and January 2005 Foundations Archaeology was commissioned to undertake a programme of archaeological monitoring and recording on the construction of Port Talbot Peripheral Distribution Road Stage 1C; centred on NGR: 276215 189700 (Figures 1-2).

The archaeological works comprised the monitoring of the topsoil strip for the North Dock Link Road (Figure 3) and topsoil and pipeline excavations in Link C-D and Roundabout D (Figures 4-5). In Link B-C and Roundabout B building foundations demolitions and minor cable works were observed, while seven test pits and a new pipe trench were observed in Link A-B (Figure 6). Links A-B and B-C were subsequently excluded from the watching brief. Spoil tips were scanned for unstratified finds along the route.

No archaeological features were identified during the course of the watching brief. Undisturbed alluvial deposits were identified only during the excavation of the 1050 pipe in Area 2 and during the excavation of test-pits in Area 4. In Area 2 the top of the alluvial deposits survived at approximately 2.2m in the vicinity of the North Dock Road, but was otherwise present at an average depth of 3.8m. In several areas along the route of the 1050 pipe trench the alluvial layers were not exposed due to deeper post-medieval/modern disturbance.

In Area 4 the alluvial deposits were exposed in three test-pits at a minimum height of 1.7m in TP4 and a maximum depth of 2.6m in Test-pit 5. It may also have been exposed in a test-pit in Area 1 [118] at 2.20m from the modern ground surface. A number of modern features, relating to earlier buildings and industrial infrastructure were also identified during the course of the works in all areas.

Artefactual evidence was restricted to modern finds of chinaware, metal and glass, which were not retained.

## **GLOSSARY OF ARCHAEOLOGICAL TERMS AND ABBREVIATIONS**

### *Archaeology*

For the purpose of this project archaeology is taken to mean the study of past human societies through their material remains from prehistoric times to the modern era. No rigid upper date limit has been set, but AD 1900 is used as a general cut-off point.

### *Medieval*

The period between the Norman Conquest (AD 1066) and *c.* AD 1500.

### *Natural*

In archaeological terms this refers to the undisturbed natural geology of a site.

### *Neolithic*

Prehistoric period traditionally dated between 4000 and 2800 BC

### *NGR*

National Grid Reference from the Ordnance Survey Grid.

### *OD*

Ordnance datum; used to express a given height above sea-level.

### *OS*

Ordnance Survey

### *Romano-British*

Term used to describe the synthesis of indigenous late Iron Age cultures with the invasive Roman culture. Traditionally dated between AD 43 and *c.* AD 410

## 1 INTRODUCTION

- 1.1 Between June 2004 and January 2005, Foundations Archaeology undertook a programme of archaeological monitoring and recording on ground works for a new road scheme (NGR: 276215 189700). The work was commissioned by Babbie Group (now Jacobs Babbie) on behalf of Neath Port Talbot County Borough Council.
- 1.2 The study area is located in the northwestern corner of Port Talbot Industrial Estate adjacent to and southeast of the town of Aberavon and the Afan River and north of the docks (Figures 1-2). The works were undertaken in accordance with a specification prepared by Babbie Group (2004), the *Standard and Guidance for Archaeological Watching Briefs* issued by the Institute of Field Archaeologists (1994, revised 2001) and Archaeological Guidance Paper 4: *Archaeological Watching Briefs: (guidelines)* issued by English Heritage (London Region).
- 1.3 This document presents the findings of the archaeological monitoring and recording.

## 2 PROJECT BACKGROUND

- 2.1 The study area lies within Port Talbot Industrial Estate covering 1100m of new road, two bridge crossings, two roundabouts, and two roundabout upgrades (Figure 2). Landuse comprises a mixture of abandoned and active industries.
- 2.2 The site is generally flat at approximately 7.0m above Ordnance Datum. At the time of the project it consisted predominantly of open derelict ground with areas of hard standing and both active and derelict industrial units. The site is bounded to the northwest by the River Afan, to the northeast by the London-Swansea Railway Line and to the south and east by the Docks and Dock Road.
- 2.3 The solid geology of the general area consists of Llynfi Beds of Upper Coal Measures. These are overlaid by Estuarine Alluvium, although Alluvial Fan Deposits and Glacial Sand and Gravel are also present between the Estuarine Alluvium and the Coal Measures. The entire site is covered by deep deposits of Made Ground, which are generally contaminated with arsenic, copper, nickel and zinc, with localized pockets of petrol, diesel and mineral oil.
- 2.4 The study area was the subject of an Archaeological Desk-based Assessment (Babbie 2004). The assessment has identified no known archaeological or historic sites that would be directly affected by the pipeline, although a total of 40 archaeological sites are recorded on the County Sites and Monuments Record within 0.5km of the study area. A total of 18 of these date from the medieval period and include gravestones, inscribed stones, a church, a chapel site, a monastic grange and a castle site. The remaining 22 sites are of post-medieval or

- modern date and consist of dwellings, farms, chapels, bridges and a railway station.
- 2.5 The site originally formed part of the estuary of the River Afan, which flowed southwards to the sea. The study area was probably not reclaimed from the sea until the post-medieval period, suggesting a very low potential for earlier occupation sites. The River Afan was diverted to its present course in the 1830's.
- 2.6 During the late 19<sup>th</sup> century the site lay to the south of the town of Aberavon on substantially undeveloped land, although there was some industry to the west alongside the river. The Mansel Tin Plate Works were located on the eastern side of the river between the two proposed crossings. The southern part of the study area is shown to have substantially crossed an area of open water and marshland, known as 'The Float'. Further marshy ground is shown on the edges of the land to the north. Embankments were present along the southern boundary of the site and the New Wharf had been constructed on an embankment out into this open water and linked to the London-Swansea Railway Line. The railway ran to the north of the site (on its present line), while a branch crossed near the proposed embankment and ran along the eastern bank of the river before turning east to the New Wharf.
- 2.7 At the start of the 20<sup>th</sup> century there was little change in the northern and middle sections of the study area, although an iron foundry had been constructed to the west, alongside the railway. The tin plate works had been substantially enlarged and was known as the Margam and Mansel Tin Plate Works. In the southern area more land had been reclaimed from 'The Float' to accommodate the Port Talbot Railway Line and an expanded New Wharf. A narrow channel on the line of the present dock feeder connected the River Afan with 'The Float'
- 2.8 By the 1920's the Port Talbot Steelworks had been constructed on the site of the former tin plate works, occupying the greater part of the northern and middle sections of the study area. The steelworks comprised a number of large buildings with associated railway sidings and lines. In the southern section additional land had been reclaimed from 'The Float' and the area was now almost entirely dry and occupied by an extensive area of railway sidings. By 1949 the Steelworks had been expanded and more land reclaimed from 'The Float' to allow the construction of more extensive railway sidings.
- 2.9 By 1952 the reclaimed land had reached the former New Wharf embankment. Demolition of the steelworks began during the 1960's. By 1965 several of the buildings in the middle and northern areas of the study area had been removed, along with a number of railway lines. The southern area remained occupied by railway sidings at this time. By 1974 many of the steelworks buildings had been removed, including the sidings in the southern area and the area had been substantially redeveloped to form the present Port Talbot Industrial Estate. Further development has taken place within the area since the 1970's, including

new roads to serve the estate and a road bridge to carry Dock Road across the River Afan. At the time of the project many of the industrial units were no longer used and the adjacent docks were also substantially disused.

- 2.10 The reclamation of the estuary is believed to have occurred in the post-medieval period, although there was considered a low potential for unknown medieval sites in the northern area. The main potential of the study area, however, was for buried sea-going vessels and early foreshore infrastructure.

### **3 AIMS**

- 3.1 The aims of the archaeological monitoring were to gather high quality data from the direct observation of archaeological deposits in order to provide sufficient information to establish the nature, extent, preservation and potential of any surviving archaeological remains.
- 3.2 These aims were to be achieved by the pursuit of the following specific objectives as stated in the Written Scheme of Investigation (Babtie Group 2004).
- i) to define, identify and record any archaeological deposits on site, and date these where possible.
  - ii) to attempt to characterise the nature of the archaeological sequence and recover as much information as possible about the spatial patterning of features present on the site.
  - iii) where possible to recover a well dated stratigraphic sequence and recover coherent artefact, ecofact and environmental samples.

### **4 METHODOLOGY**

- 4.1 The topsoil strip for the road, the excavations for the new 1050 pipe line and the excavations for the new bridge over the dock feeder were monitored throughout areas Link C-D, the North Dock Link Road, and Roundabout C. In Link B-C and Roundabout B the removal of modern building foundations to reduce the ground to formation level was monitored, along with a new cable trench. In Link A-B seven test pits and a new pipe trench were monitored.
- 4.2 Topsoil strips and ground excavations were carried out using a mechanical excavator under appropriate archaeological supervision, as required by NPTCBC and Babtie Group. The 1050 pipe-line and excavations for the new bridge over the dock feeder were dug in five metre long sections and were supported using a box whilst the section remained open. Spoil tips were scanned for unstratified finds across the entire study area.

- 4.3 Chainage was not available at the commencement of the project and all measurements are therefore related to existing landscape or infrastructure features and was not provided for the entire scheme. Where chainage subsequently became available, this is referenced in the text as supplementary location detail.

## **5 RESULTS**

- 5.1 For the purpose of this report the results have been divided into areas (Area 1, Area 2 etc.) as illustrated on Figure 2. All appropriate groundworks in Area 1 (North Dock Link Road) and Area 2 (Link C-D, incorporating the 1050 pipeline and its drainage strip, Roundabouts C and D and excavations for the new bridge over the dock feeder) were undertaken under archaeological supervision. Initial groundworks, involving the reduction of modern buildings and the breaking of concrete slabs as well as the excavation of a new cable trench, were observed in Area 3 (Link B-C and Roundabout B), but the area was thereafter excluded from the watching brief. In Area 4 (Link A-C) minor groundworks, particularly involving the excavation of a new pipe trench and seven test-pits were observed, although the area was subsequently excluded from the watching brief. No works were monitored in Area 6 (Roundabout A), which was excluded from the watching brief.
- 5.2 Significant depths of made ground were encountered throughout the project and comprised layers of loose to compact silty gravelly to sand gravel, with areas of dense clay and silty clay with frequent cobbles and boulders, as well as varying inclusions comprising slag, ash brick, concrete, clinker and timber. Over the greater part of the pipeline these layers were mixed, but in places different layers and tip-lines were clearly defined. No attempt has been made within this document to provide a detailed description of the made ground; instead detailed descriptions are given at varying points within the monitored areas.
- 5.3 Alluvial layers were identified at a minimum depth of 2.2m from the modern ground surface, but were generally present at an average depth of 3-4m. As a result these were only exposed during the excavation of the 1050 pipe trench. The earliest stratigraphic alluvially deposited layer consisted of cobbles in a sandy matrix. These were frequently sealed immediately beneath made ground, but on rare occasions were overlain by alluvially deposited silty sand layers.
- 5.4 **AREA 1**
- 5.5 Area 1 comprised the North Dock Link Road, which was to connect the existing North Dock Road to Roundabout C. Area 1 began at the southwest side of Roundabout C and turned west for approximately 300m to link with the existing roadway. An access road for Fairwood Fabrications forked off to the northwest approximately 60m southwest from Roundabout C for 110m. Both roads were



- approximately 15m wide with an easement of up to 30m wide. Area 1 is divided into Area 1A, the access road, and Area 1B, North Dock Link Road (Figure 3).
- 5.6 The groundworks in Area 1A comprised a topsoil strip 0.10-0.20m in depth by 10m wide onto a black silty clay with gravel inclusions and occasional rubble (102). No archaeological features or deposits were present within this area.
- 5.7 Area 1B was stripped of the vegetative and rubble overburden (101) onto a black ashy loose slag fill with crushed slag inclusions (104) for a length of approximately 210m and a width of approximately 30m. Layer (104) was present throughout the stripped area, although it contained occasional patches of yellow brown loose sand (105).
- 5.8 A pipeline trench, Trench A, was excavated within Area 1B (Figure 3). It measured 130m in length, 1.5m to 2m in width and 2m to 2.5m deep. For the first 72m at the east end of the trench the stratigraphy consisted of 1.30m to 1.65m of mixed sands (107), some with gravel inclusions, overlaid by black loose ashy layer with crushed slag inclusions (104) up to 0.50m thick.
- 5.9 At 72m from the eastern end of the pipeline the sand layers (107) were replaced by alternating layers of industrial slag with brick inclusions in a loose grey black ashy coal-like matrix (108) up to 1.80m thick, beneath layer (104) up to 0.70m thick.
- 5.10 At 78m from the eastern end of the pipeline the stratigraphy consisted of a grey sandy silt with large pieces of sandstone (109), up to 0.95m thick overlaid by a black loose ashy fill (110) averaging 0.05m thick. This fill was in turn overlaid by a gravelly grey clay (111) up to 0.15m thick, which was itself overlaid by 0.10m of loose brown sand (112). Layer (112) was sealed by fill (104) up to 1.10m thick.
- 5.11 At 85m from the eastern end of the pipeline the stratigraphy comprised black loose shale (113) up to 0.30m thick, overlaid by bands of mixed sand (114) averaging 1.45m thick. Layer (114) was sealed by (104) up to 0.55m thick.
- 5.12 At 112m from the eastern end of the pipeline to the western end (at 130m), the stratigraphy consisted entirely of a homogenous black loose ashy fill with occasional thin seams of sand (115).
- 5.13 The corner of a building foundation [116] was exposed at the southern edge of the topsoil strip (Figure 3). The foundation was oriented northeast-southwest and consisted of grey concrete with reinforcing steel (117). The exposed portion measured 3.5m x 3.5m and was immediately overlain by a vegetation layer.
- 5.14 A test pit was excavated in the eastern part of Area 1B (Figure 3). It measured 2m by 2m by 2.5m deep, with the water table being reached at this depth. The

stratigraphy in this test pit comprised grey brown clay gravels (119), at least 0.40m thick beneath a light yellow gray sand (120) measuring 2.10m thick.

- 5.15 A northwest-southeast aligned linear feature [121] was exposed in the eastern part of Area 1B. It measured at least 24.5m long by 3.50m wide by between 0.75m and 1.15m deep and contained a light grey silty cobble fill (122) from which modern finds were recovered.

5.16 **AREA 2**

- 5.17 Area 2 comprised Roundabouts C and D, the area between them (Link C-D) and the 1050 pipeline (Figures 4-5).

- 5.18 The area of the roundabouts and Link C-D were topsoil stripped to an average depth of 0.15m from the modern ground surface. Link C-D was stripped to a width of between 33m and 40m wide.

- 5.19 On either side of the dock feeder, the topsoil was stripped onto a loose mid grey sandy gravel (204). At the western end and in the central part of Link C-D the topsoil was stripped onto a grey black sand and ash layer with patches of sand and gravel (203) containing quantities of modern debris including timber, slag, brick and concrete. At the eastern end of the area the topsoil and vegetative cover (201) was stripped onto a grey brown silt sand (202) containing quantities of modern debris including timber, slag, brick and concrete.

- 5.20 A number of areas of deeper excavation were undertaken for the 1050 pipeline, the installation of piles for a new bridge over the dock feeder and a partial diversion of the dock feeder itself (Figure 4). A number of features were identified within these areas and detailed stratigraphic descriptions are given of these areas as appropriate. All descriptions of these areas should assume the previous removal of the topsoil.

- 5.21 Two areas each measuring 28.5m long by 10m wide by 1.5m deep were excavated for piling associated with the construction of a new bridge immediately to the east and west of the dock feeder. The stratigraphy was similar on both sides of the dock feeder, although in the eastern section nine railway sleepers [205] were exposed. These were present at a depth of 0.70m on a northeast-southwest alignment, parallel with the Dock Feeder. The sleepers were set within a black-grey gritty clay matrix (206) up to 0.20m thick, which cut into a red brown sandy gravel and silty clay and cobble fill (207). Layer (207) was otherwise overlain by the loose mid grey sandy gravel (204), which also sealed the railway sleepers.

- 5.22 A new storm drain was cut into the riverbank approximately 20m from the dock road junction. An area of 7m by 7m by 3m deep was excavated for the outlet and revealed a single deposit of black ashy material containing significant concentrations of slag and cinder. The pipe trench measured up to 2.4m deep. At

- the western end the stratigraphic sequence comprised a layer of light grey brown silty clay (208), up to 0.65m thick, beneath a layer of yellow sand and gravel (209) up to 0.50m thick. This layer was overlain by a dark brown sand containing concentrations of slag and brick rubble (210), up to 0.85m thick. This deposit was overlain by a hardcore layer (211) up to 0.15m thick. At the eastern end the stratigraphic sequence comprised a black ashy layer containing significant quantities of slag, brick rubble and other industrial waste (212) up to 1.1 m thick, beneath a layer of loose black sandy fill (214) up to 1m thick. Layer (214) was overlain by hardcore layer (211) up to 0.30m thick.
- 5.23 The 1050 pipeline commenced on the riverbank at a point 155.3m southwest of the existing bridge over the River Afan. An area measuring 7.8m long by 6.8m wide by 5m deep was excavated for the pipe outwash and the construction of a coffer dam. Stratigraphy in this area consisted of alluvial clays, sands and gravels (231) at least 2.8m thick, beneath a dark grey brown clay sand with gravel and modern rubble inclusions (215) up to 2.2m thick.
- 5.24 Stratigraphy within the 1050 pipe-line varied along its length. Six metres to the south of the coffer dam the stratigraphy consisted of alluvial sand and cobbles (231) beneath a layer of clean light brown sand (216) up to 1.6m thick, beneath a layer of black ashy soil (203) with modern debris including slag, metal, brick rubble and concrete, up to 2.25m thick.
- 5.25 At 13m from the coffer dam the alluvial sand and cobble layer (231) was present beneath a layer of dark grey silt (230) up to 0.40m thick, beneath a layer of sand and cobbles (229) up to 1m thick. This layer was in turn sealed beneath a layer of red brown silty clay with modern debris and slag (228), up to 0.8m thick, below a black ashy soil layer (203) with modern debris and slag, up to 2m thick.
- 5.26 At 26m from the coffer dam the sands and cobbles (231) were overlain by the dark grey silt layer (230), beneath the layer of red brown silty clay with modern debris and slag (228), now up to 3m thick, below black ashy soil layer (203) with modern debris and slag, up to 1m thick.
- 5.27 The pipe thereafter turned 100 degrees eastwards. From this point a drainage easement, measuring between 10m and 12m wide by 1.5m deep was stripped over the greater part of the pipeline route in order to allow the placement of drainage pipes to reduce the water table sufficiently for the installation of the 1050 pipe to a depth of up to 5m (Figure 4). The strip was excavated in two blocks. Block A ran from approximately 93m to the west of the Dock Feeder and terminated approximately 10m to the west of the North Dock Road. Block B began approximately 30m to the east of the North Dock Road and terminated 4m to the west of the boundary fence to Fairwoods Fabrications.
- 5.28 At the western end of Block A, the stratigraphy was identical to that at 26m from the outwash. At 30m from the western end of Block A the alluvial sands and

- cobbles (231) were sealed beneath dark grey silt (230), up to 0.80m thick. This layer was sealed beneath red brown silty clay (217) up to 2.4m thick beneath black ashy soil layer (203) with modern debris and slag, up to 1.1m thick.
- 5.29 At 45m from the western end of Block A the alluvial sands and cobbles (231) were sealed beneath dark grey silt (230), up to 0.45m thick. This layer was sealed beneath dark grey moist silts (218) up to 1.7m thick, which replaced (217) at this point. The dark grey silt was sealed by (203).
- 5.30 From 45m to the dock feeder diversion the stratigraphy was essentially unchanged, although the sand component in alluvial layer (231) became increasingly yellow, rather than an anaerobic grey.
- 5.31 The dock feeder diversion measured 5m in width by 3.90m deep and revealed an identical stratigraphic sequence. To the east of the original line of the dock feeder, however, the stratigraphy consisted of alluvial sands and cobbles (231) beneath black clay sands (219) up to 2.6m thick, beneath light brown sands (220) up to 1m thick. Layer (220) was sealed beneath layer (204), identified during the piling excavation for the new bridge (Figure 4).
- 5.32 At 25m east of the dock feeder the natural sands and cobbles (231) were sealed beneath black clay sand (219) up to 2.8m thick, beneath light brown sands (220) up to 1m thick. Layer (220) was sealed beneath black ashy layer (203).
- 5.33 Between 35m and 40m (Chainage 50) the alluvial sands and cobbles (231) were present at nearly 1m higher than further west and were overlain by black clay sand (219) with horizontal bands of pea gravel. Layer (219) disappeared at 40m and was replaced with an orange sandy fill (221) with frequent slag and brick rubble up to 1m thick. Fill (221) was overlain by a layer of loose black crushed shale (222) up to 1.05m thick. This fill was in turn overlain by a light brown sand (223), beneath a black ashy layer (203).
- 5.34 Block A finished at approximately 50m east of the dock feeder (Ch 60). The stratigraphic sequence in this area consisted of alluvial sands and cobbles (231) beneath 2.5m of black ashy fill (203) containing large blocks of slag. The pipe trench dog-legged at the North Dock Road so as to cross an existing foul mains sewer at an angle of 90° and thereafter returned to its original east-west alignment. Block B of the drainage easement started at 30m east of the North Dock Road (Ch 100).
- 5.35 At 40m east of the North Dock Road (Ch 100) the stratigraphy comprised at least 1.2m of alluvial sand and cobbles (231) at a depth of 3.4m from the modern ground surface. These were sealed beneath a layer of blue grey sandy clay (224) with modern pottery and glass measuring 0.30m thick. This layer was overlain by yellow brown sand (225) up to 1m thick, beneath a black ashy fill (226) containing modern debris in the form of brick rubble, timber and concrete

- fragments up to 0.60m thick. Layer (226) was sealed beneath layer (203) up to 1.5m thick. A concentration of brick building rubble [213], probably representing a badly disturbed foundation, was present between 0m-30m from the western end of Block B (Ch100-130). This material ran in a northeast-southwest direction before turning to form a corner running northwest-southeast (Figure 4). It was sealed immediately beneath the topsoil (201).
- 5.36 At 53.5m from the western end of Block B (Ch 153.5) the stratigraphic sequence consisted of alluvial sands and cobbles (231) beneath dark grey/black sand silt (219) up to 0.50m thick, beneath a black ashy layer with substantial concentrations of slag and cinders (226) up to 2.2m thick. Layer (226) was sealed beneath a layer of industrial waste (232) up to 0.45m thick, overlaid in turn by a layer of black ashy material and industrial waste (203) up to 0.25m thick. A floor surface [215] was present at this point, which comprised a 10.20m long by 0.15m deep layer of concrete (Figure 5). It was overlain by black ashy topsoil and vegetation (201), up to 0.35m thick.
- 5.37 At 64.3m from the western end of Block B (Ch 164.3) the stratigraphic sequence consisted of alluvial sands and cobbles (231) beneath dark grey/black sand silt (219) up to 0.50m thick. This layer was overlain by a mid brown sand (220) up to 0.40m thick. A concentration of brick rubble, metal scrap, broken metal and ceramic pipe and old curbstones in a black ashy matrix (233) 1.6m thick was present above (220), for a length of 14.3m.
- 5.38 At 85m from the western end of Block B (Ch 185) the stratigraphic sequence consisted of alluvial sands and cobbles (231) beneath dark grey/black sand silt (219) up to 0.50m thick. This layer was overlain by a mid brown sand (220) up to 0.40m thick, beneath a black ashy layer containing concentrations of slag (226) up to 0.40m thick. Layer (226) was overlain by a black ashy layer (203) up to 1.5m thick.
- 5.39 At 100m from the western end of Block B (Ch 200) the stratigraphic sequence consisted of alluvial sands and cobbles (231) beneath a blue grey clay (224) up to 1.80m thick, which replaced dark grey/black sand (219) at 98m (Ch 198). This layer was overlain by a light brown clay (234) up to 1.10m thick. Layer (234) was overlain by a black ashy layer (203) up to 1.5m thick.
- 5.40 Between 123m and 150m from the western end of Block B (Ch 223-250) the stratigraphy changed to comprise a number of different layers tipping steeply from east to west and comprising various layers of sands and clay silts with much modern rubble and slag (235-245), which were present for the full depth of the pipe trench.
- 5.41 Between 150m and 178.4m from the western end of Block B (Ch 250-278.4) the stratigraphic sequence comprised blue grey clay (224) up to 1.8m thick, beneath

A concentration of crushed slag (246) was present, beneath 0.5m of black ashy silt (247). This layer was overlain by black ashy layer (203) up to 1.7m thick.

5.42 At 180m from the western end of Block B (Ch 280) the alluvial sands and cobbles (231) were exposed beneath a blue grey clay (224) up to 1.50m thick. This layer was sealed beneath a reddish brown clay layer (248) containing significant concentrations of slag up to 1m thick. This layer was overlain by a black ashy layer (203) up to 1.6m thick.

5.43 At 200m from the western end of Block B (Ch 300) the alluvial sands and cobbles (231) were exposed beneath a blue grey clay (224) up to 1.20m thick. This layer was sealed beneath a reddish brown clay layer (248) containing significant concentrations of slag and bricks up to 1.20m thick. This layer was overlain by a black ashy layer (203) up to 1.6m thick.

5.44 The deeper stratigraphic sequence remained unchanged from this point to the eastern end of Block B (Ch 300-330), although black ashy layer (203) was replaced throughout with grey brown silt sand (202).

5.45 From the northwestern boundary fence for Fairwood Fabrications to Roundabout C (Ch 340-400) the stratigraphic sequence comprised blue grey clay (224) up to 2.15m thick, beneath a light brown sand (220) up to 1.1m thick. Layer (220) was overlain by a grey brown silt sand (202) up to 1.65m thick. This was overlain by a crushed shale deposit (249) up to 0.40m thick comprising a leveling layer for the Fairwood Fabrications car park. The alluvial sands and cobbles (231) were not exposed within this section.

5.46 **AREA 3**

5.47 Area 3 comprised the area between Roundabouts B and C (Link B-C). Ground reduction within this area was restricted to the reduction of existing buildings and breaking of concrete floor slabs. A new electricity cable trench was monitored to the north of Roundabout B (Figure 6). The stratigraphic sequence within the cable trench consisted of 2m of black grey silt (303) with brick rubble, slag, ceramic pipe fragments and asphalt. Further works on Link B-C were subsequently excluded from the scope of the watching brief.

5.48 **AREA 4**

5.49 Area 4 comprised the area between Roundabouts A and B (Link A-B). Seven test-pits were observed within this area, along with a pipe trench. The locations of the test-pits which revealed alluvial deposits are located on Figure 6.

5.50 Test-pit 1 measured 2.2m long by 1.2m wide by 2.9m deep. A thick layer of mid-dark grey sandy silt (404) was present below a layer of crushed stone (403) 0.48m

- thick. The crushed stone was overlain by a bricks (402) up to 0.6m thick, beneath 0.2m of black ashy made ground (401).
- 5.51 Test-pit 2 measured 2.4m long by 1.1m wide by 2.8m deep. Alluvial cobbles in a light brown sand matrix (405) were exposed at 1.8m from the modern ground surface. The cobbles were sealed beneath 0.4m of concrete base to a storage tank (406), below 1.6m of black ashy made ground (401).
- 5.52 Test-pit 3 measured 2.1m long by 1.2m wide by 2m deep. It was excavated through a brick wall foundation (407) at least 2m in height.
- 5.53 Test-pit 4 measured 2.5m long by 1.1m wide by 3m deep. Alluvial gravels (405) were exposed below a dark grey sandy silt (404) up to 0.3m thick, beneath grey sandy gravels (408) up to 1m thick, below 0.4m of concrete (409).
- 5.54 Test-pit 5 measured 1.8m long by 1.1m wide by 2.8m deep. Alluvial gravels (405) were exposed at a depth of 2.6m from the modern ground surface. The gravels were overlain by a loose black ashy fill (410) up to 1.4m thick, beneath four layers of compacted clay and gravel surfaces 411-414) up to 1m thick, beneath black ashy made ground (401) up to 0.6m thick.
- 5.55 Test-pit 6 measured 3m long by 1m wide by 3.1m deep. A thick layer of concrete and brick (415) was present beneath black ashy made ground (401) up to 1m thick.
- 5.56 Test-Pit 7 measured 3m long by 1.3m wide by 3m deep. A sandy gravel layer (416) was present for a depth of at least 1.7m, beneath a grey sandy clay (417) up to 0.4m thick, beneath a layer of black ashy made ground (401) up to 1.1m thick.
- 5.57 A 1.3m deep pipe trench was monitored to the south of the MPLS Engineering building. This revealed a red brown silty clay (420) which was present for the full depth except where the pipe trench followed the existing road, where it was overlain by brown sandy gravels (419) up to 0.34m thick, beneath the road hardcore (418) up to 0.2m thick.

## 6 CONCLUSIONS

- 6.1 No archaeological features were identified during the course of the watching brief. Undisturbed alluvial deposits were identified only during the excavation of the 1050 pipe in Area 2 and during the excavation of test-pits in Area 4. In Area 2 the top of the alluvial deposits survived at approximately 2.2m in the vicinity of the North Dock Road, but was otherwise present at an average depth of 3.8m. In several areas along the route of the 1050 pipe trench the alluvial layers were not exposed due to deeper post-medieval/modern disturbance. In Area 4 the alluvial deposits were exposed in three test-pits at a minimum height of 1.7m in Test-Pit 4

and a maximum depth of 2.6m in Test-pit 5. It is possible that the clay gravels exposed at 2.20m from the modern ground surface in the test-pit in Area 1 may also have been an alluvial deposit.

- 6.2 A number of modern features, relating to earlier buildings and industrial infrastructure were also identified during the course of the works. Artefactual evidence was restricted to modern finds of chinaware, metal and glass, which were not retained.

## **7 BIBLIOGRAPHY**

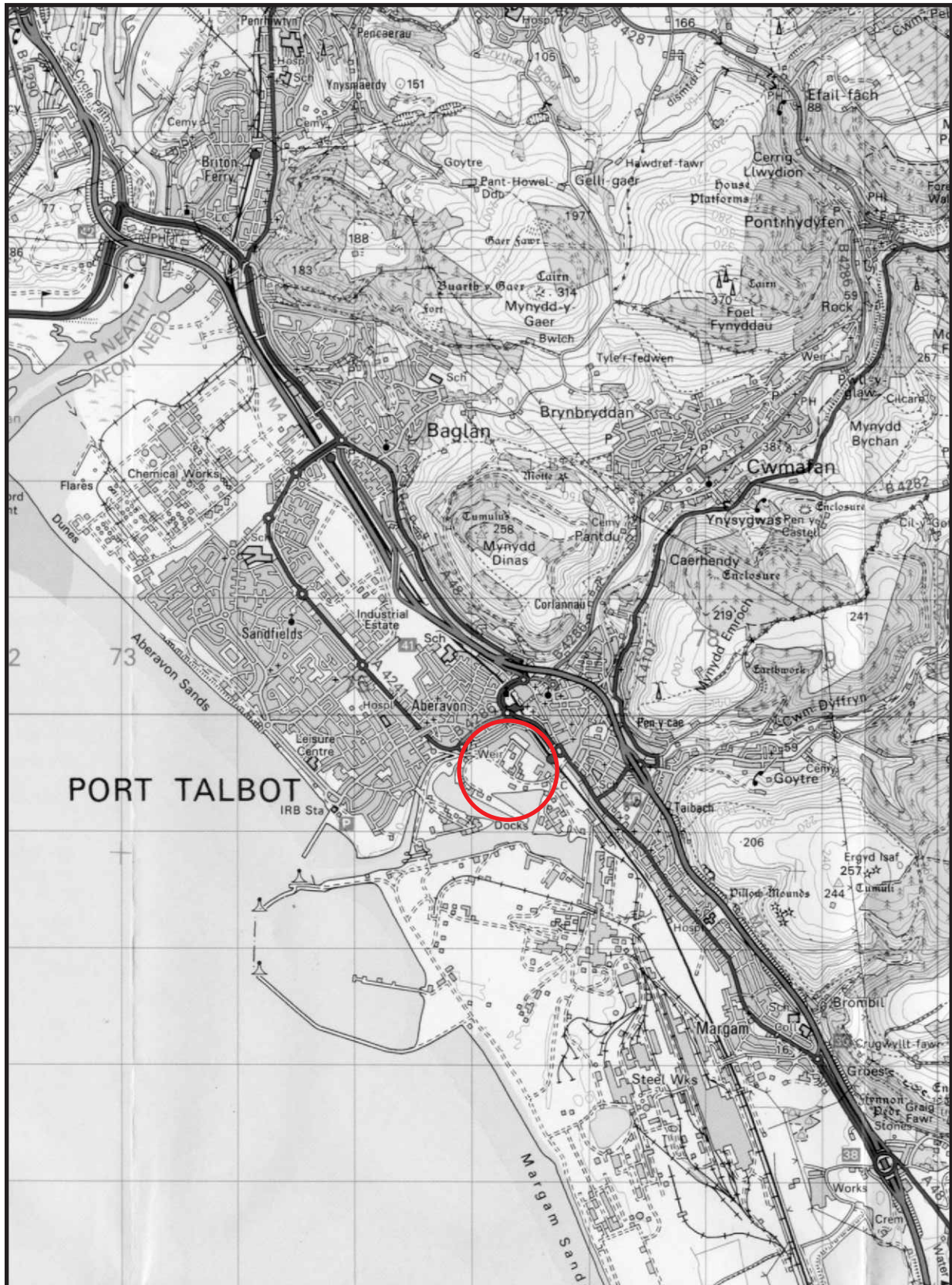
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## **8 ACKNOWLEDGEMENTS**

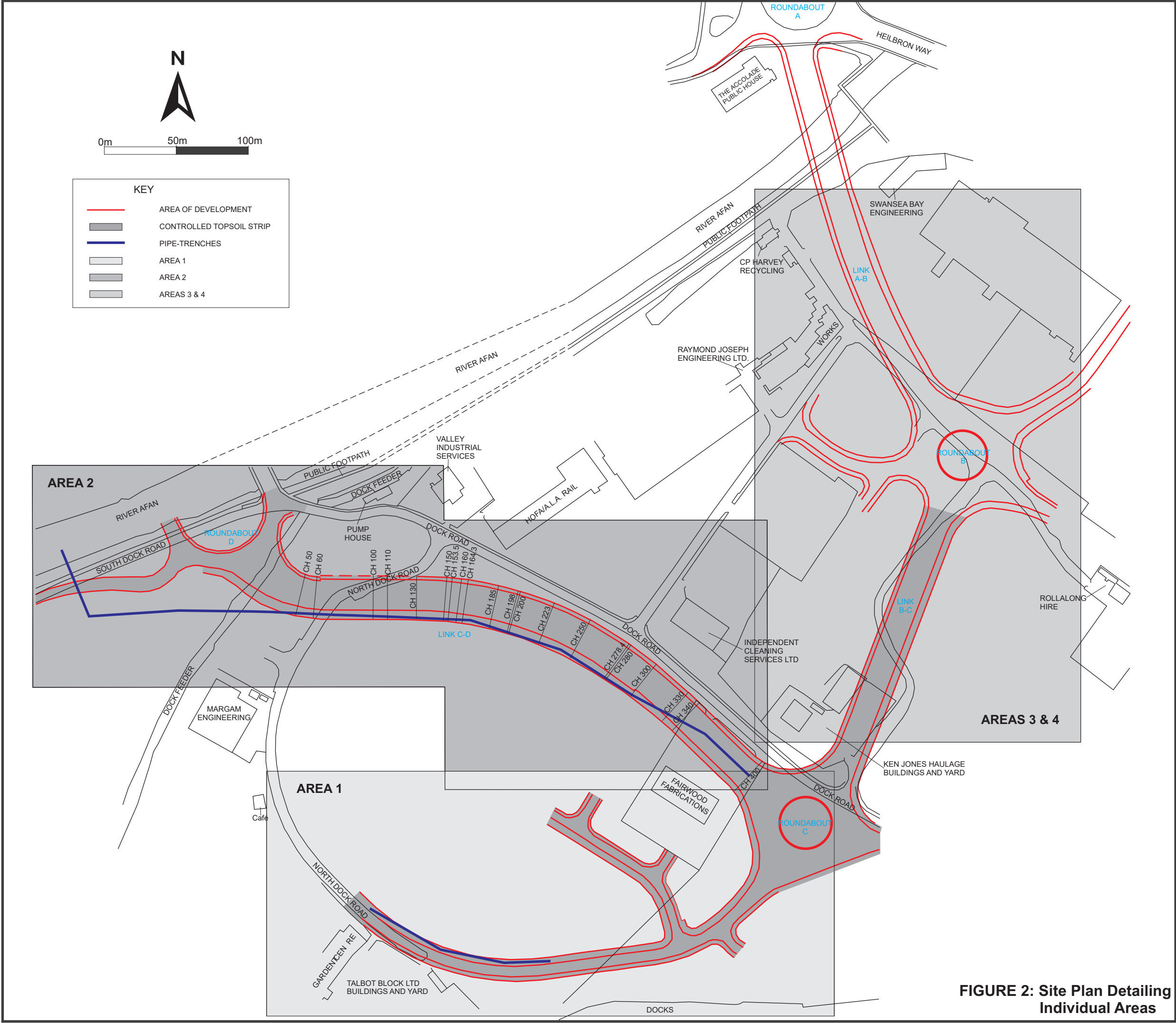
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FIGURE 1: Site Location



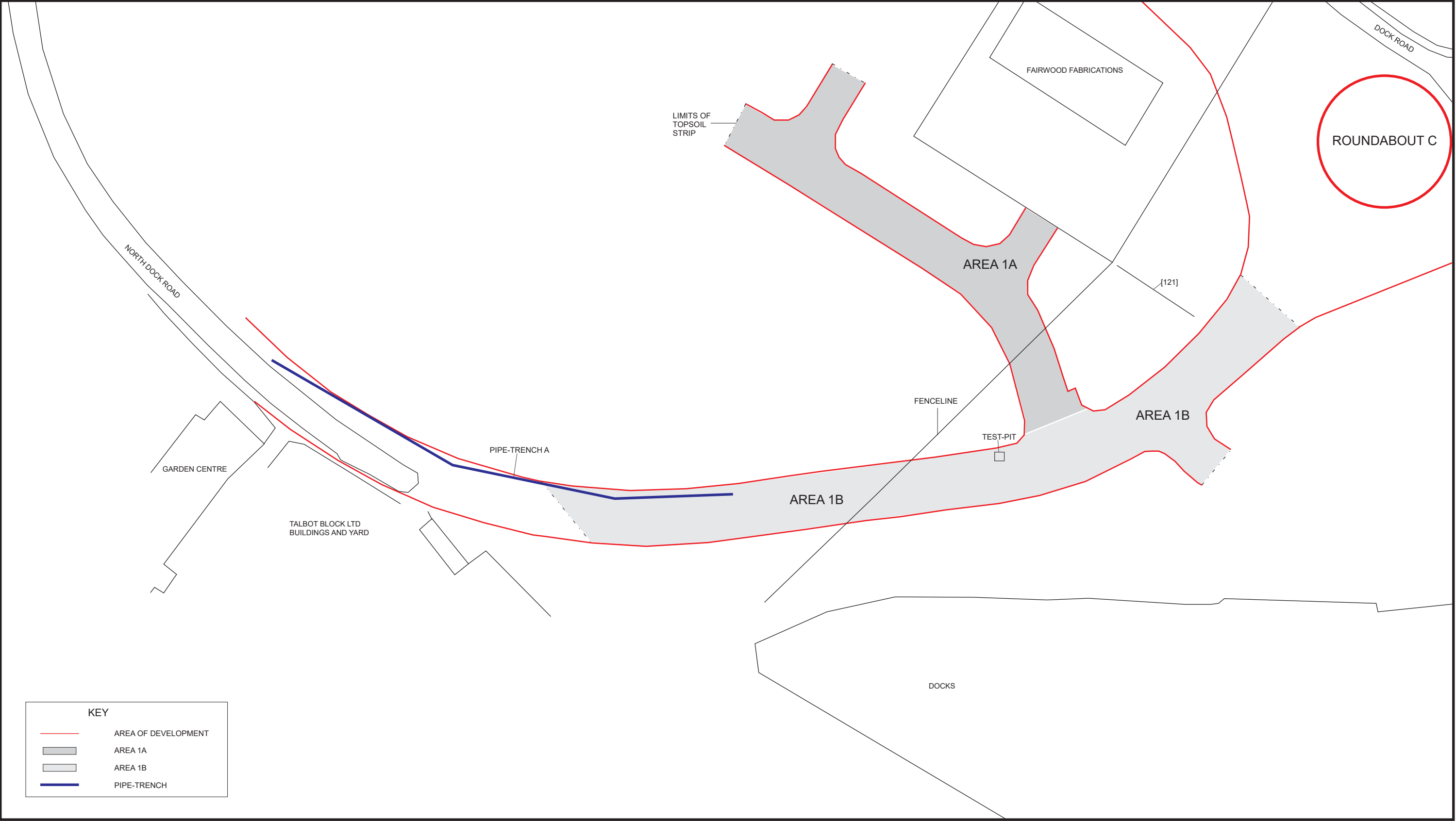
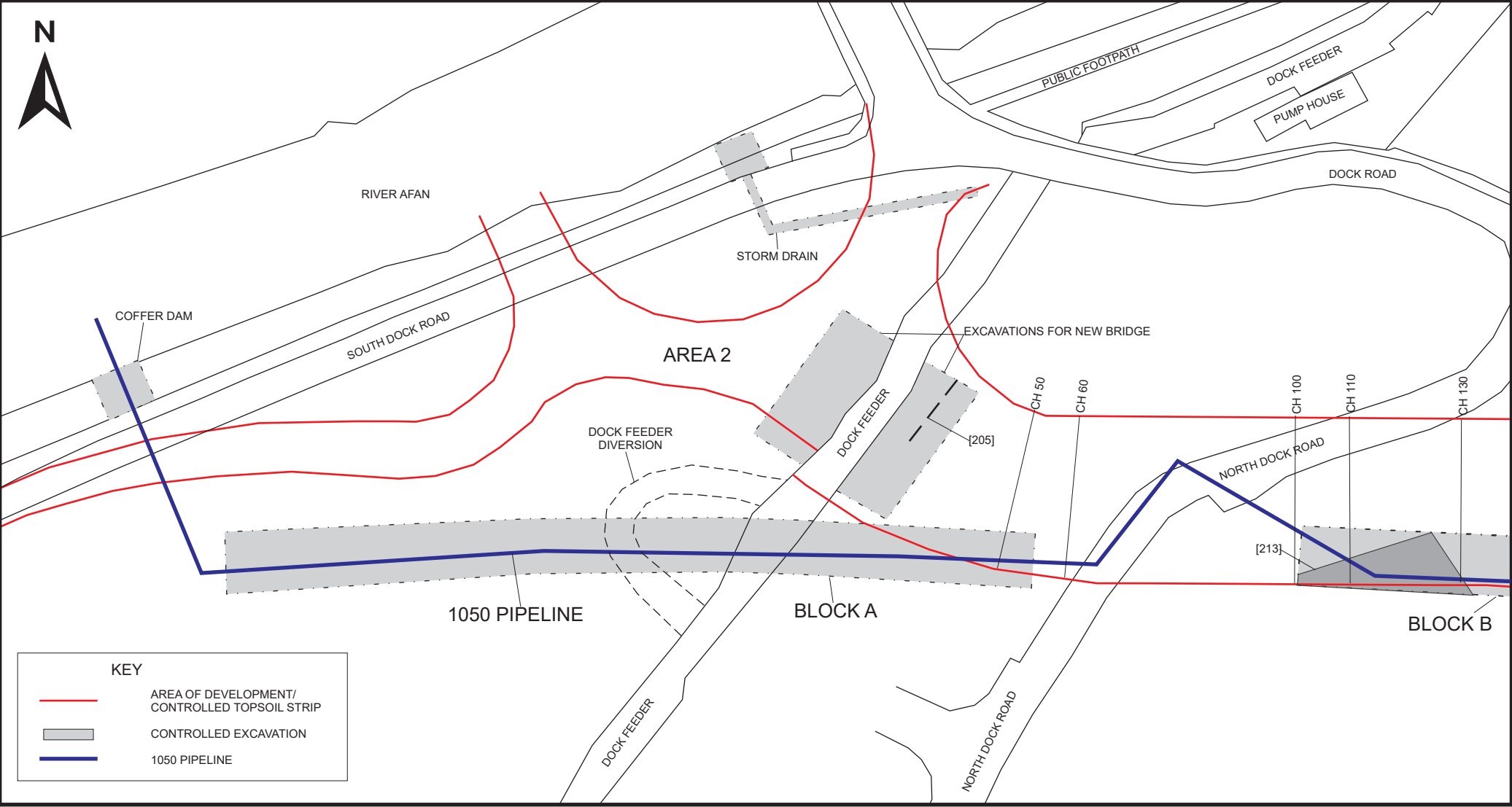
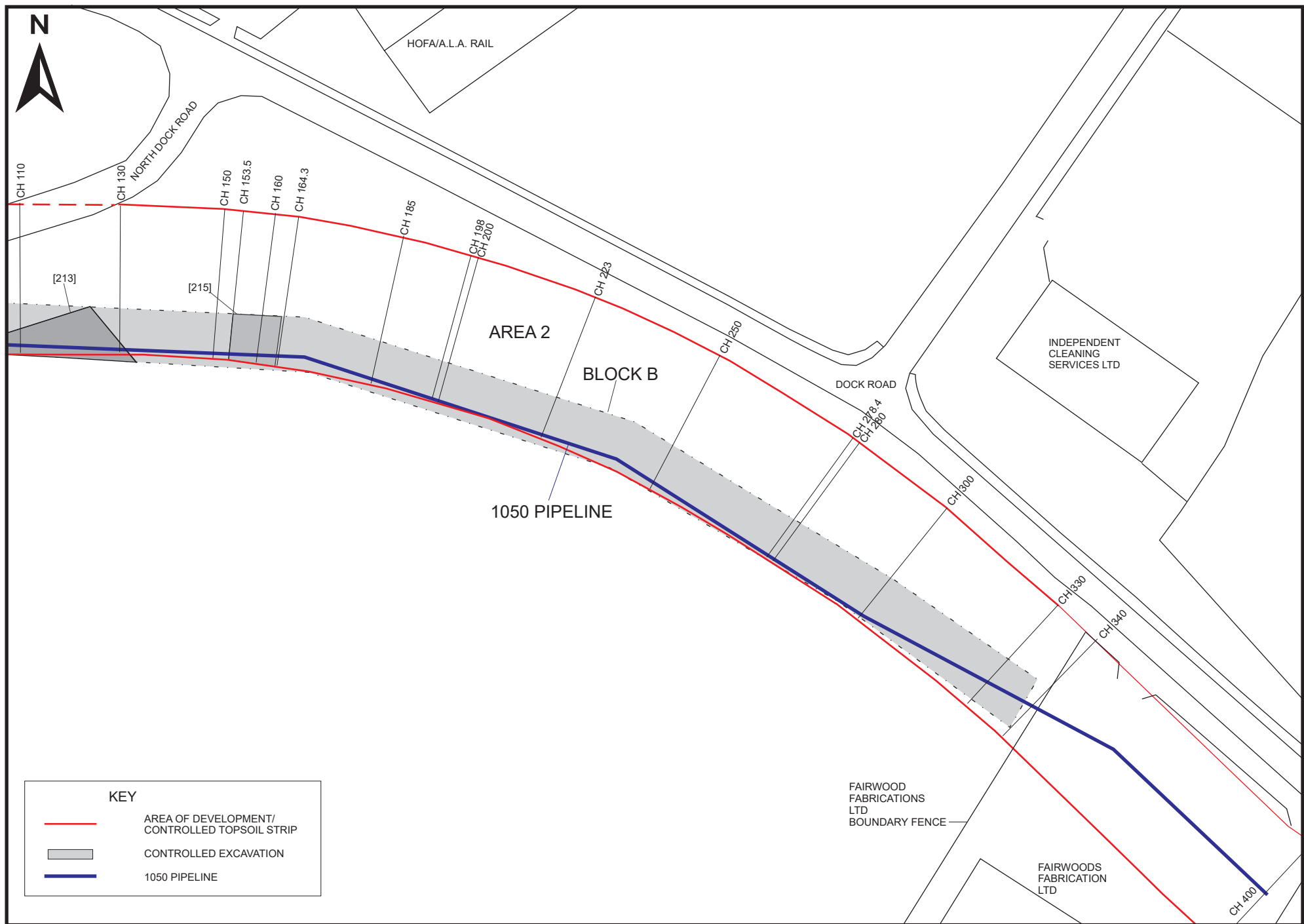


FIGURE 3: Area 1 Plan





**FIGURE 4: Area 2 and 1050 Pipeline, Western Half**



0m 50m 100m

**FIGURE 5: Area 2 and 1050 Pipeline, Eastern Half**



**FIGURE 6: Areas 3 and 4**