



**OPERATIONAL
ENVIRONMENTAL
MANAGEMENT PLAN**

MAYFIELD NO.4 BERTH (DA 293-08-00)

7 AUGUST 2024

**LEVEL 4, 251 WHARF ROAD
NEWCASTLE NSW 2300 AUSTRALIA**
+61 2 4908 8200
info@portofnewcastle.com.au
portofnewcastle.com.au

DOCUMENT CONTROL

Version	Date	Author	Reviewer	Approved
01	09/01/2015	J Spiteri	J Spiteri	15/12/2015, Department of Planning
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03	04/11/2021	R Condon B Kelly	J Anderson <i>Jennifer Anderson</i>	04/11/2021, Department of Planning, Industry and Environment (DPIE)
04	02/05/2024	S Ambrose C Smith	A Marix-Evans	Internal Use Only
05	07/08/2024	G Rigg S Ambrose	A Marix-Evans	

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GLOSSARY OF TERMS

List of Abbreviations	
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CEO	Chief Executive Officer
CIMP	Cap Integrity Management Plan
CSMP	Contaminated Site Management Plan
DA	Development Application
DAFF	Department of Agriculture, Fisheries and Forestry
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EM	Environment Manager
EMP	Environmental Management Plan
EPL	Environment Protection Licence
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EMMO	Executive Manager Marine & Operations
HCCDC	Hunter and Central Coast Development Corporation (formerly HDC)
HDC	Hunter Development Corporation (now HCCDC)
HVAS	High Volume Air Sampler
HVR	Heavy Vehicle Route
LEP	Local Environment Plan
LGA	Local Government Area
MM	Maintenance Manager
MMP	Materials Management Plan
MPT	Multi-Purpose Terminal
MTOFSA	<i>Maritime Transport and Offshore Facilities Security Act 2003</i>
NATA	National Association of Testing Authorities
NPC	Newcastle Port Corporation
NSW	New South Wales
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
PANSW	Port Authority NSW
POEO Act	<i>Protection of the Environment Operations Act 1997</i>

List of Abbreviations	
PON	Port of Newcastle
PPE	Personal Protective Equipment
PSOL	Port Safety Operating Licence
RAP	Remediation Action Plan
Ro-Ro	Roll-on Roll-off
SEPP	State Environmental Planning Policy
SSD	State Significant Development
TEU	Twenty foot (container) Equivalent Units
TPA	Tonnes per Annum
TSP	Total Suspended Particulate
VRA	Voluntary Remediation Agreement
VTIC	Vessel Traffic Information Centre
WHS	Work Health and Safety

I. INTRODUCTION

I.1. Scope of the OEMP

The following Operational Environmental Management Plan (OEMP) has been prepared for the operation and maintenance of the Mayfield No.4 Berth and hardstand area, operated by Port of Newcastle (PON).

This OEMP has been prepared in accordance with Condition 4.4 of the Consent Conditions of Development Application (DA) DA-293-08-00 (Appendix A) and subsequent modifications to MOD 9 dated 29 August 2013.

The OEMP has also been prepared in accordance with relevant legislative and policy requirements, and defines the environmental management and maintenance responsibilities and reporting channels for all personnel, including employees and contractors involved in the operation and maintenance of the Mayfield No.4 Berth and hardstand area. All personnel are responsible for ensuring that their activities are conducted in accordance with legislative requirements and the requirements of this OEMP.

This document has been prepared as a dynamic document that will be regularly reviewed and updated as required or as directed by the Secretary of DPHI.

I.2. Objectives of the OEMP

The objectives of this OEMP are to:

- Ensure that environmental management is undertaken in accordance with relevant legislative and policy requirements;
- Prevent, reduce and effectively manage potential impacts to the environment resulting from operation and maintenance of the Mayfield No.4 Berth and hardstand area; and
- Promote environmental awareness amongst employees and contractors to ensure that operation and maintenance of the Mayfield No.4 Berth and hardstand area is conducted with due diligence to the environment.

The objectives of this OEMP as described in Condition 4.4 are outlined in Table 1. The relevant sections of this OEMP where specific requirements are addressed have also been referenced. In addition, other environmental issues requiring management at the site have also been addressed and included in Section 7.

Table 1: Operational Environmental Plan Requirements

Consent Conditions	Reference in OEMP
Describe the proposed operations	Section 1.3
Identify all the relevant statutory requirements that apply to the operation of the development	Section 3
Set standards and performance measures for each of the relevant environmental issues	Section 2.2 and Section 7
Describe what actions and measures will be implemented to mitigate the potential impacts of the development, and to ensure that the development meets these standards and performance measures	Sections 4 through to 7
Describe what measures and procedures will be implemented to: Register and respond to complaints;	Section 4.5

Consent Conditions	Reference in OEMP
Ensure the operational health and safety of the workers; and Respond to potential emergencies, such as plant failure	Section 10 Section 8
Describe the role, responsibility, authority, and accountability of all the key personnel involved in the operation of the development	Section 2.1
Develop a Contaminated Site Management Plan (see Condition 5.20) setting out procedures relating to ensuring the integrity of the cap. The CSMP can be found here .	Section 7.5
Incorporate the detailed Environmental Monitoring Program (see Condition 8.1). Include the following: <ul style="list-style-type: none"> Stormwater Management Plan (Condition 5.30); Capping Maintenance Plan (Condition 5.20) and; Heavy Vehicle Route Plan (Condition 5.46) 	Section 4.1 Section 7.2 Section 7.4 Section 7.6.1

1.3. Mayfield Site ‘Closure Area’ – Environmental Responsibilities

The Mayfield No.4 Berth (which incorporates the berth and adjacent hardstand) is located within the Mayfield Site Closure Area and constitutes approximately 1% of this area. Figure 1 shows the Mayfield Site boundary and the location of the Mayfield 4 berth. The berth and hardstand have been fully remediated in compliance with the Voluntary Remediation Agreement (VRA) requirements. In this OEMP, PON describe its environmental management plan to comply with the Environment Protection Licence (EPL) 13181 issued specifically for the operations of Mayfield No.4 Berth and hardstand.

The remainder of the Closure Area (150 ha) has been remediated and is now managed under the Mayfield Concept Approval.

1.4. Mayfield No.4 Berth Description

Mayfield No.4 Berth is a three-hectare multi-product berth and hardstand that was constructed as part of the refurbishment of former BHP Wharf 5 and is located within an area known as the Closure Area in Mayfield, NSW (Figure F1). Mayfield is approximately 7km northwest of the Newcastle CBD.

The site is located in an existing industrial port area and surrounding land use is predominantly comprised of industrial development with the Mayfield East residential area located approximately 1.4km to the southwest across Industrial Drive. The main road access to the site is from Selwyn Street via Industrial Drive and shipping access is via the shipping channel in the South Arm of the Hunter River which the site abuts to the north and east (Figure F1).

The site is accessed by a sealed bitumen internal roadway (Quayside Close) crossing land that has recently been remediated (approximately 500 metres long) from the eastern end of Selwyn Street Mayfield.

The site overlooks Kooragang Island and other surrounding land users, which is largely characterised by industrial activities and associated infrastructure such as large storage buildings, railway yards and tracks, coal loading gantry cranes, stockpiles and other items. In this regard, the landscape is predominantly industrial in nature, highly visually modified and intensively disturbed.

Table 2: Site Identification

Site Address	Mayfield 4 Berth, Quayside Close, Mayfield
DP	Lot 44 DP 1191982 & Lot 42 DP 1191982
Coordinates (GDA 94 Lat/Lng)	-32.89443287553684, 151.76696507722917
Site Area (m²)	31720m ²
Site Owner	PON
LGA	Newcastle
Consent Authority	Department of Planning, Housing and Infrastructure.
Site Zoning	4(B) Ports and Industry

1.4.1. SITE BACKGROUND

The ‘Mayfield Site’ as shown in Figure F1, also referred to as the BHP Closure Area, operated as a copper smelter from approximately 1870, and then as the BHP Steelworks from 1915 with operations ceasing in 1999. Following the demolition of the Steelworks site facilities in the early 2000’s, extensive land remediation works were undertaken across the entire ‘Mayfield Site’ area. Remediation works generally included:

- Construction of sub-terranean barrier wall
- Contamination management
- Earthworks and re-contouring of the site
- Construction of stormwater infrastructure
- Construction of low permeability capping across the site

Contaminated materials were encountered during the site remediation earthworks. These materials were managed in accordance with the CSMP Materials Management Plan (MMP) – refer to Appendix D. The MMP provides specific controls and procedures regarding the classification, segregation, movement and fate of materials. Requirements for the on-site fate of contaminated materials include specifications in relation to depth of placement and location. The location of Level 2 and Level 3 materials across the entire ‘Mayfield Site’ is shown indicatively on Figure F6.

Capping of the ‘Mayfield Site’ was completed using various low permeability materials to prevent the ingress of surface water. Figure F7 shows the extents and types of capping material used in each area.

In 2009, the Mayfield 4 wharf structure and hardstand area was constructed, providing a facility for vessels to berth and load/unload various cargo types. This facility included a 266 metre berth and 20,000m² of cargo handling hardstand. The concrete and asphalt materials used for the wharf and hardstand area construction provide a permanent low permeability capping barrier.

In 2023, an additional 11,000m² of heavy duty asphalt pavement hardstand was constructed to the south of the existing hardstand area to provide increased cargo handling and storage capabilities. The extension also provides a permanent low permeability capping barrier.

1.4.2. MAYFIELD NO.4 BERTH STRUCTURE

The berth structure was constructed across three stages. The initial berth construction phase included the water side infrastructure, an over water front apron concrete slab suspended on piles, a concrete slab

on ground structure, and concrete infill of a previous services tunnel. Total berth area was approximately 266m long by 39m deep. Refer to Appendix F for WAE construction drawings for this pavement.

The second construction phase included a hardstand area approximately 266m long x 32m deep, immediately to the south of the initial berth structure. This hardstand pavement was constructed from a heavy-duty asphaltic concrete rated for the berth operations expected at M4. Refer to Appendix G for WAE construction drawings for this pavement.

The final construction phase included a further extension of the hardstand area by approximately 266m long x 44m deep, immediately to the south of the previous hardstand area. This hardstand pavement was constructed from a heavy-duty asphaltic concrete rated for the berth operations expected at M4. Refer to Appendix H for WAE construction drawings for this pavement.

The current M4 berth is shown in Figure F2 and can be described as consisting of:

- Wharf front constructed with reinforced concrete pile caps, edge beams, diaphragms and a 750mm thick apron slab approximately 266 metres long and 13.65 metres wide. The new wharf is fitted with new fenders, bollards, capstans, kerbs and ladders as wharf furniture. The following new services are provided:
 - Fire hose reels and hydrants;
 - Potable water;
 - Three-phase power;
 - Single-phase power;
 - Wharf flood lighting; and
 - Wharf edge lighting
- A 400mm thick reinforced concrete slab immediately behind the wharf front on ground measuring approximately 262 metres by 23 metres. Along the south edge of the concrete slab runs an old service duct which has been capped with a 750 mm thick reinforced concrete slab. This area is predominately used for the transfer of the potential cargoes.

An adjacent hardstand area of approximately 20,000 square metres immediately south of the concrete slab which is used for cargo handling and temporary storage.

1.4.3. MAYFIELD 4 REMNANT CONTAMINATION

Contaminated materials were encountered during the site remediation earthworks at the M4 berth site. These materials were managed in accordance with the Materials Management Plan (MMP) section of the CSMP. The MMP provides specific controls and procedures regarding the classification, segregation, movement and fate of materials. Requirements for the on-site fate of contaminated materials include specifications in relation to depth of placement and location. The location of Level 2 material remaining in-situ at Mayfield 4 berth site is shown in Appendix I.

Note that the Level 2 material is located beneath the concrete wharf deck. Under berth normal operations, there will be no impact on the Level 2 material. However, the location of the Level 2 material shall be considered for any future construction works that may disturb the existing concrete sections above the Level 2 material.

1.4.4. MAYFIELD 4 BERTH CAPPING

The Mayfield 4 berth area comprises a combination of concrete deck sections and asphalt hardstand areas. These berth areas have been designed to handle the heavy loads resulting from the use of cargo handling equipment such as harbour cranes and reach stackers, whilst they perform loading and unloading operations of cargo and containers. The concrete and asphalt areas provide a permanent, low

permeability capping layer that prevents ingress of surface water. Stormwater management systems have also been constructed such that they prevent pooling of surface water in the berth area.

Refer to the Mayfield 4 Construction WAE Drawings in Appendices F, G and H for details of the berth area capping.

1.4.5. GENERAL BERTH AND HARDSTAND ARRANGEMENTS

Figure F2 details the Site Layout and provides context for the following section.

The Mayfield No.4 Berth is a secured site and requires security approval or access card prior to gaining access. At any given time, activities on the berth and hardstand may include:

- trucks carrying cargo into and out of the site;
- handling of cargo from or into a ship using land or ship-based cranes, or discharging conveying equipment;
- transfer of cargo via forklifts to temporary ground storage;
- assembling cargo for shipment or road transport;
- ship bunkering from road tanker;
- employee vehicles entering or leaving the site; and
- Department of Agriculture, Fisheries and Forestry (DAFF) biosecurity inspections.

As of April 2024, the M4 site is operational and guarded by security 24 hours per day.

Operational buildings on the site are limited facilities for stevedoring operations and PON staff, including:

- 2 x offices;
- 1 x first aid room; 1 x meal room; and
- 1 x amenities block.

The buildings are located on the eastern end of the hardstand. There is also a guardhouse building upon arrival at the site entrance. All carparking is external to the M4 berth area.

1.4.6. POTENTIAL CARGO

The following potential cargoes have been identified by PON for Mayfield No. 4 Berth:

- Project cargoes: eg wind turbines, transformers, mining equipment and materials, other heavy plant;
- Break bulk (inert materials only) eg aluminium, steel products;
- General freight in containers;
- Bulk cargoes which are transferred directly from ship to transport and/or loaded to ship with no uncontained ground storage ie sand; and
- Ammonium nitrate in containers/bulker bags.

Of the potential cargoes identified, ammonium nitrate is the only one classified as a Hazardous Material. Transport of ammonium nitrate has been considered as part of the Mayfield Berth Risk Assessment prepared for the Newcastle Port Corporation (NPC) (Lloyd's Register, 2012). Procedures are in place for handling and transport of ammonium nitrate.

The Mayfield No.4 Berth will neither receive nor dispatch as cargo any material classified as a 'Class 7 dangerous good' (radioactive material) in accordance with condition 7.2 of DA 293_08_00.

The Mayfield No.4 Berth will neither receive nor dispatch as cargo any material classified as a 'Class I dangerous good' (explosives) unless prior approval of the Director-General is sought in accordance with condition 7.2 of DA 293-08-00.

1.4.7. ESTIMATED CARGO, VOLUMES, SHIPPING, HANDLING AND STORAGE

Table 3 shows estimated cargo volumes, cargo types as per Section 1.4.6, and shipping, handling and storage requirements for M4 for the following three (3) years. Additional cargoes may be handled at M4 dependent on market and PON priority drivers.

Table 3: Estimated cargo volumes, number of ships, and handling and storage requirements

Cargo Type	Units	Year 1 – 2022		Year 2 – 2023		Year 3 – 2024		Ship Type	Handling Requirements	Storage Requirements
		Vol.	Ships	Vol.	Ships	Vol.	Ships			
Breakbulk	t ¹	418,000	16	418,000	16	418,000	16	Up to Panamax	Mobile cranes, ship cranes	Short term open hardstand
Project Cargoes	t	297,000	27	506,000	46	242,000	22	Up to Panamax	Roll on/roll off (Ro-Ro) ramps, mobile cranes, ship cranes	Direct to truck or adjacent storage
Ammonium Nitrate	t	30,240	21	48,960	68	86,400	25	Handymax to Panamax	Mobile cranes, ship cranes	Short term open hardstand
General Freight in Containers	TEU ²	100,000	3	300,000	8	300,000	120	Up to Panamax	Mobile cranes / mobile conveyors	Nil. Direct to truck/ship
Bulk Cargoes	t	418,000	16	418,000	16	418,000	8	Up to Panamax	Mobile cranes / mobile conveyors	Short term open hardstand
Total	-	953,240	92	1,380,960	163	1,154,400	191	-	-	-

1: Revenue tonnes; this is more indicative than tonnes.

2: TEU = twenty foot (container) equivalent units

3: TPA = tonnes per annum

Panamax = Based on the maximum vessel dimensions that would fit through the locks of the Panama Canal. Maximum length 294.1 m, width 32.3 m, draft 12 m.

Handymax = Usually referred to a dry bulk vessel with deadweight of between 35,000 to 58,000 tonnes, usually 150 to 200 m in length, usually have up to 5 cargo holds and up to 4 cranes.

The estimated scenario will result in approximately 1-2 ships per fortnight in the berth in Year 1 through to 3-4 per week in Year 3. PON trade volume reports will be used to confirm tonnages.

Cargo handling on the berth and hardstand between ship and truck, ship and storage or storage and truck may be undertaken using the following equipment (numbers in brackets indicate potential quantities of equipment at peak times):

- mobile cranes (2);
- bulk discharger/loader (1);
- forklifts (6);
- trucks (8); and
- front end loader or bobcats for cleaning the inside the ship (2).

Truck movements into and out of the site will be steady throughout normal business hours at around 5 to 10 truck movements per hour, peaking at up to 15 to 20 truck movements per hour in line with normal traffic peak hours. However, when ships are being unloaded or loaded directly onto road transport their will potentially be up to 35-40 truck movements per hour.

At Year 10, peak vehicle movements on a day when a ship is at the berth, including personnel vehicles, may total 800 vehicle movements per day.

There is no current intention to service this specific berth with rail. However, if this becomes a possibility, it will be the subject of a separate application to the Department of Planning and Environment (DPHI).

1.4.8. PERSONNEL

The site may operate at up to three shifts per day including up to 30 stevedore employees per shift. At shift changeover there may be 60 stevedoring employees on site.

At any given time the site will also potentially accommodate truck drivers, specialist contractors in maintenance or equipment operation, ship's crew, DAFF biosecurity inspectors and PON employees, which may total an additional 5 to 20 personnel.

1.4.9. KEY ISSUES

The Mayfield No.4 Berth and hardstand area is located adjacent to the south arm of the Hunter River and comprises a concrete slab over the berth area and impervious bitumen over the hardstand area. Lighting poles are located across the site and are of different luminosity levels depending on the area and nominated lighting standards. Drainage of the site has been constructed for appropriate water and stormwater management.

Key potential issues associated with the operation and maintenance of the Mayfield No.4 Berth and hardstand area include:

- Stormwater runoff;
- Noise nuisance to residents, land users and sensitive native fauna;
- Traffic management and loading / unloading operations;
- Waste management;
- Damage to the existing contamination capping layer at the site;
- Security; and
- Air Quality.

2. ENVIRONMENTAL MANAGEMENT RESPONSIBILITIES

Roles and responsibilities for personnel relevant to this OEMP are detailed below.

2.1. Organisational Structure

The organisation of environmental management responsibilities is shown in Figure 3 and is detailed below.

2.1.1. PORT OF NEWCASTLE

PON is the proponent for this part of the development within the Closure Area. PON is a private entity whose primary function is to provide safe, effective and sustainable port operations at Newcastle and to deliver port development that enhances the economic growth of the Hunter Region and NSW. The Chief Executive Officer (CEO) of PON assumes ultimate responsibility for Mayfield No. 4 Berth.

The OEMP will be stored as part of PON Environmental Management System and will be publicly available at [Policies & Compliance - Port of Newcastle](#).

2.1.2. EXECUTIVE MANAGER – MARINE & OPERATIONS

The Executive Manager Marine Operations (EMMO) of PON is responsible for the operation of the Mayfield No. 4 Berth Site. The Executive Manager Infrastructure Services (EMIS) is responsible for the maintenance of the site. The EMMO and EMIS are therefore responsible for the environmental performance of the Mayfield No.4 Berth and hardstand site as well as directing staff and contractors. The approved stevedoring company will assume exclusive control over defined parts of the Mayfield No. 4 Berth in accordance with a Stevedore Licence Deed (see Section 2.1.3), which will transfer responsibility for elements of this OEMP. The transfer of this responsibility will exclude environmental monitoring and reporting.

The EMMO and EMIS shall delegate accountability and responsibilities to the Senior Manager Terminals and Logistics, Maintenance Manager (MM), the Work Health and Safety (WHS) Manager and Environment Manager (EM) for managing PON's activities at Mayfield No.4 Berth. The delegation of accountabilities and responsibilities will be as follows:

- The Senior Manager Terminals and Logistics manages personnel (Wharf Officers) to coordinate the berthing and departure of all vessels, vessel samplings and inspections of Stevedores importing / exporting at the berth;
- The Maintenance Manager is responsible for maintaining the Mayfield No.4 Berth site. This includes preventative maintenance, any site-specific project works and breakdowns;
- The Environment Manager (EM) is responsible for all environmental matters associated with the Mayfield No.4 Berth and hardstand area. The Environment Manager reports to the appointed Environment Officer under the DA (Condition 9.1 of DA 293-08-00, currently the PON Senior Manager PEP) on the effectiveness of implemented environmental and management controls and any environmental incidents that may have occurred on site. The EM implements and oversees monitoring at the site so that the operations meet the requirements of EPL 13181 and OEMP. The Environment Manager is responsible for ensuring environmental documentation is maintained (ie policies, procedures, work instructions, risk assessments) and are current with all PON employees having access to them.
- The WHS Manager is responsible for ensuring WHS documentation is maintained (ie policies and procedures) and are current with all PON employees having access to them. Work instructions and risk assessments are the responsibility of the work owner(s).

2.1.3. STEVEDORE LICENCE DEED

Any Stevedoring company operating on the Mayfield No. 4 Berth site will be required to enter into a Stevedore Licence Deed with PON. The licence will detail environmental accountabilities and responsibilities for the Mayfield No. 4 Berth site. Specifically, Stevedores are responsible and accountable for ensuring that all loading and unloading of cargo activities at the Mayfield No. 4 Berth site complies with relevant legislation, EPL requirements and this OEMP.

2.1.4. PORT USERS

Port Users comprise of any person, contractor or service provider engaged by the Stevedore, a vessel agent and / or PON. Port Users must complete PON's Level 1 Site Access Induction. The induction communicates the safety and environmental requirements for the Mayfield No. 4 Berth site and the inductee's responsibilities. All visitors to the site must be escorted by an inducted person at all times. Inductees are responsible for complying with PON's site safety and environmental requirements.

2.2. Environmental Policy Objectives

Environmental objectives for key environmental management issues associated with the operation of the berth have been derived in accordance with the PON's Safety and Environmental Policies and are also provided for each key issue in Section 7. All personnel, including PON employees, Stevedores and Port Users have a responsibility to ensure that the Mayfield No. 4 Berth and hardstand is operated and maintained in accordance with these objectives shown in Table 4.

Table 4: Environmental Policy Objectives

Management item	Objectives
Soil and Water	<ul style="list-style-type: none"> Minimise the impacts of erosion and sediment discharge on the local environment during operation of activities Minimise surface water runoff and sediment discharge from the site Ensure that site drainage does not cause an increase in downstream turbidity Ensure there are no adverse effects on the water quality of the downstream system
Stormwater	<ul style="list-style-type: none"> Minimise uncontrolled surface water runoff and discharge from the site Ensure that site drainage system efficiently manages potential onsite contaminants (such as fuels, wash-off and lubricants) and site drainage is reused where possible Ensure there are no adverse effects on the water quality of the surrounding and downstream water system
Capping Maintenance	<ul style="list-style-type: none"> Ensure the integrity of the capping layer is preserved.
Contaminated Site	<ul style="list-style-type: none"> Ensure the site is managed and monitored in a way that reduces the risk of contamination
Traffic	<ul style="list-style-type: none"> Minimise impact to residents, landholders and third parties in the vicinity of the development
Noise and Vibration	<ul style="list-style-type: none"> Minimise the impact and potential nuisance of noise emissions from operation and maintenance activities, machinery and vehicles on the local community
Air Quality	<ul style="list-style-type: none"> Control sources of dust and other emissions to air that may affect nearby residents and other landholders, pedestrians, vehicular traffic or other sensitive receiving environment

Management item	Objectives
	<ul style="list-style-type: none"> Minimise incidence of offensive odour, vapours or emissions
Waste	<ul style="list-style-type: none"> Ensure responsible disposal of all waste generated on site, and recycle where possible Minimise environmental impacts related to waste management
Security	<ul style="list-style-type: none"> Prevention of vandalism and unlawful access Prevention of security risks to vessels, adjacent residents and industry/landholders
Landscape and Lighting	<ul style="list-style-type: none"> Prevention of lighting impacts on nearby receivers Prevention of visual disturbance and degradation of amenity.
Biosecurity	<ul style="list-style-type: none"> Minimise the risk of introducing non-native species

3. STATUTORY REQUIREMENTS

3.1. Legislative and Policy Requirements

Legislation which may apply to the operation and maintenance of Mayfield No. 4 Berth and hardstand is listed in Table 5.

Table 5: Legislation Relevant to the Operation and Maintenance of Mayfield No.4 Berth and Hardstand

Relevant Legislation
<i>Biosecurity Act 2015</i>
<i>Contaminated Land Management Act 1997 (CLM Act)</i>
<i>Environmental Planning and Assessment Act 1979; and the Environmental Planning and Assessment Regulation 2000</i>
<i>Environment Protection and Biodiversity Conservation Act 1999</i>
<i>Heritage Act 1977</i>
<i>Maritime Transport and Offshore Facilities Security Act 2003</i>
<i>Ports and Maritime Administration Act 1995</i>
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>
<i>Roads Act 1993</i>
<i>Waste Avoidance and Resource Recovery Act 2001</i>
<i>Work Health and Safety Act 2011 (WHS Act) and the Work Health and Safety Regulation 2017 (WHS Regulation)</i>
<i>State Environmental Planning Policy 55 – Remediation of Land (SEPP 55)</i>
<i>State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)</i>
<i>State Environmental Planning Policy (Transport and Infrastructure) 2021 (the T & I SEPP)</i>

The site is located within the Newcastle Local Government Area (LGA) and is subject to the provisions of the T & I SEPP. Under the Ports (T& I) SEPP the site is zoned SPI – Special Activities with the main objectives of the zone being to maximise the use of waterfront areas to accommodate port facilities,

freight and bulk storage premises that benefit from being located close to port facilities, to enable efficient movement and operation of commercial shipping and to provide for the efficient handling and distribution of freight from Port areas.

3.1.1. DEVELOPMENT CONSENT CONDITIONS

The Mayfield No. 4 Berth and hardstand is part of the overarching consent for:

Stage 1, being the remediation of the Closure Area, including the demolition and removal of structures and the development of a Multi-Purpose Terminal comprising a container terminal and a general cargo handling facility and associated road, rail and wharf infrastructure and dredging of the South Arm of the Hunter River.

As part of the development conditions of consent, preparation of an OEMP is also required.

This OEMP has been prepared in accordance with the relevant requirements identified in Condition 4.4 of DA 293-08-00 and subsequent modifications to 29 August 2013.

3.2. Licensing Requirements

Mayfield No. 4 Berth will operate under an EPL for *shipping in bulk* activities issued by NSW Environment Protection Authority (EPA) under section 55 of the POEO Act. The EPL I3181 was transferred to PON on 27 February 2014 (refer to Appendix B).

4. REPORTING AND MONITORING

4.1. Environmental Monitoring Program

Environmental monitoring requirements for the operation of the berth are included in the relevant environmental management plans in Section 7 of this OEMP. The Environment Officer nominated under Condition 9.1 of DA 293-08-00 is responsible for undertaking the monitoring required. If necessary, specialist consultants shall be engaged to assist with the establishment of monitoring systems and to train relevant personnel with sampling protocols, reading of instruments, and analysis and recording of results. Monitoring equipment will be maintained and calibrated according to the manufacturer’s specifications.

The environmental monitoring plan presented in this section summarises all the monitoring and reporting commitments associated with the various plans held under this OEMP.

The commitments made in this section should be taken as minimum frequencies as monitoring may need to be more frequent if circumstances dictate. The Property Inspector who undertakes the weekly site inspections completes a site inspection record to prove that the inspection has taken place and to show conformance. Inspections also include a general visual inspection including matter such as sediment build up, litter, traffic conditions, capping exposure, and any retained water on site.

The following plans have primarily been prepared to comply with EPL 13181 in accordance with EPA requirements, which is detailed in Section 7 and attached in Appendix B. Refer to Section 1.3 for an explanation of full monitoring under the Conditions of Consent Clause 8 of DA 293-08-00.

4.1.1. NOISE

OPERATIONAL NOISE MONITORING

Operator attended noise monitoring is conducted on an annual basis.

The following noise limits apply the locations shown in Table 6.

Table 6: Noise Limits for Mayfield No. 4 Berth and Hardstand

Location	Day	Evening	Night
	<i>7:00 am to 6:00 pm Mon to Sat 8:00 am to 6:00 pm Sun and public holidays</i>	<i>6:00 pm to 10:00 pm on any day</i>	<i>10:00 pm to 7:00 am Mon to Sat 10:00 pm to 8:00 am Sun and public holidays</i>
	<u>Laeq (15 minute)</u>	<u>Laeq (15 minute)</u>	<u>Laeq (15 minute)</u>
1. 52 Arthur Street	49	38	38
2. Mayfield East Public School	47	37	37
3. 21 Crebert Street	49	39	39
4. Newcastle TAFE	44	38	38

The noise monitoring is to be conducted at the locations in the day, evening and night periods. Noise measurements are to be conducted as follows:

- Measure ambient noise levels at receivers 1 to 5 over a minimum of 15 minutes using a calibrated integrating sound level meter.
- Noise measurements are to be conducted at each location for a 15 minute period in the day and night periods.

- The $LA_{eq(15 \text{ minute})}$ noise descriptors are to be recorded for each measurement location.
- The noise limits apply during all assessment periods under winds up to 3 metres per second (measured at 10 metres above ground level) and Pasquil stability classes from A to F.
- Where noise measurements do not exceed the noise criteria detailed in Condition 5.11 compliance is demonstrated and the results are to be recorded.
- Where measured ambient noise levels exceed the noise criteria but the noise from the site is judged to be inaudible compliance is deemed to be achieved and the results are to be recorded.
- Where measured ambient noise levels exceed the noise criteria and the exceedance is deemed to be emanating from the subject site the results are to be recorded. This outcome will trigger the need for nearfield noise measurement.

NEARFIELD NOISE MEASUREMENTS

Nearfield noise measurements are to be conducted when:

1. Measured ambient noise levels exceed the nominated noise criteria; and
2. The operator has determined that the exceedance may be as a result of industrial noise from the direction of the subject site.

Nearfield noise measurements are to be conducted during the period of assessment (ie that period of the day when further noise investigations are deemed to be necessary), on the boundary of the subject site to determine the noise emissions from the site. These noise levels will be used to determine the noise contribution at residences and hence compliance with noise criteria. Nearfield measurements will be conducted for 15 minutes at the site boundary. The noise levels will be used to determine the effective site sound power level. The noise contribution at receivers will be calculated at residences to determine compliance with site specific noise criteria. Result of measurements, observations and compliance calculations will be recorded.

REPORTING

A report of ambient noise measurements is to be prepared. The report is to include the following details:

- Date of noise measurements;
- Location of noise measurements;
- Weather conditions;
- Instrumentation and calibration checks; and
- Noise criteria.

EXCEEDANCE RESPONSE AND CONTINGENCY MEASURES

In the event that PON receive an exceedance in its annual noise monitoring, the following actions should be undertaken:

- Notify NSW DPHI and associated agencies of the result and our plan of action within 24 hours;
- Conduct relevant additional noise monitoring to identify the offending noise source;
- Restrict the coincidence of noisy plant working simultaneously; and
- Implement engineered solutions as appropriate.

4.1.2. AIR QUALITY

A PM10 High Volume Air Sampler (HVAS) and Total Suspended Particulate (TSP) sampler are installed at Mayfield 4 allowing continuous monitoring throughout the operation of the berth as specified in EPL 13181 in Appendix B. Details for the monitoring are as follows:

- Monitoring methodology and frequency – Monitoring shall be undertaken in accordance with NSW EPA (2007) *Approved Methods for Sampling and Analysis of Air Pollutants in NSW AS 3580.9.3:2015 Total suspended particulate matter (TSP) – High volume sample gravimetric method* and *AS 3580.9.6-1990 Particulate matter – PM10-high volume sampler with size selective inlet* as specified in the EPL. The monitoring shall be on a six-day cycle in accordance with typical NSW EPA requirements.
- Location of monitors – The location of the monitors was assessed and placed to ensure compliance with *AS3580.1.1:2007 Methods for sampling and analysis of ambient air - Part 1.1: Guide to siting air monitoring equipment*
- Maintenance of monitor – The unit will be operated and calibrated in accordance with *AS 3580.9.6-1990 PM10-high volume sampler with size selective inlet* and analysis will be undertaken in accordance with *AS 3580.9.3-2003* by a National Association of Testing Authorities (NATA) accredited laboratory.
- Procedure for recording results – results from the NATA accredited laboratory shall be reported as per approved frequency (Table 7) in a combined report with the sites stormwater monitoring and kept on PON's electronic record system as indicated in Section 9 and annually within the Annual Environmental Management Report (AEMR) supplied to the Director General as per Condition 8.4 of DA 293-08-00, and to the EPA as set out in Section 4.1.4.

Meteorological data is obtained from PON's Mayfield 4 Meteorological station to assist in interpreting air quality results that is sited, operated and maintained in accordance with EPA (2007) *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* and administered by EPA.

EXCEEDANCE RESPONSE AND CONTINGENCY MEASURES

In the event that an exceedance of assessment criteria has been identified through a monitoring network, PON or the relevant port users responsible for that monitoring network, as a minimum, must identify:

- The indicators of exceedance i.e the criteria exceeded, and include the pollutant type, date, time, duration, location and concentration;
- The activities operating that could have or are known to have contributed the exceedance;
- Weather conditions during event;
- A summary of any reviews;
- Details of potential or actual threats to environmental or human health as a result of exceedance; and
- Recommendations for mitigating the source of the exceedance which may involve a short-term response and/or long-term management plan

This information will be required to be supplied to PON.

This reporting is to be in addition to and does not replace any statutory reporting requirements contained within port user approval and/or licence conditions.

CORRECTIVE ACTION

PON and other users will be required to carry out corrective actions, as required when non-compliance with assessment criteria has been identified as the result of their operations. The corrective actions should be taken as a tailored response considering the severity and implications of the specific event. As a general guide, corrective actions may include but not limited to the following:

- Review the indicators of the non-compliance against activities at the site and weather conditions, to confirm that the site contributed to the non-compliance;
- Review operating procedures for opportunities to reduce the risk of the non-compliance recurring;

- Depending on the source of the non-compliance, it may be appropriate to augment existing measures;
- Investigate the appropriateness of upgrading plant and equipment; and
- Consider discontinuing the contributing activity until it may be done acceptably.

4.1.3. STORMWATER

Monitoring of the stormwater onsite will be undertaken in accordance with the EPL and plan [EPA License Area, Mayfield No. 4 within Lot 4 DP.117746](#) indicated in Appendix B. All details for the monitoring are as follows:

- Monitoring methodology and frequency – the sampling procedure will be in accordance with *AS/NZS 5667.1-1998 Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling samples* and *AS/NZS 5667.10-1998 Water Quality – Sampling guidance on sampling waste waters*. The monitoring shall be undertaken monthly during a discharge by a grab sample in accordance with the sites EPL requirements as administered by the EPA.
- Locations of monitoring – the locations of the stormwater monitoring was assessed by the EPA and PON representatives and will be undertaken in accordance with EPL and Plan [EPA License Area, Mayfield No. 4 within Lot 4 DP.117746](#) as indicated in Appendix B.
- Maintenance of stormwater pits – routine maintenance shall be undertaken by PON’s Asset Management section as described in Section 4.2.
- Sampling and analysis methods – sampling will be undertaken by consultants engaged by PON in accordance with *AS/NZS 5667.1-1998* and *AS/NZS 5667.10-1998*. Consultants will use a NATA accredited laboratory to undertake the analysis. Samples will be collected in appropriate containers, transported in eskies and chain of custody documentation shall be maintained.
- Procedure for recording results – results from the NATA accredited laboratory shall be reported monthly in a combined report with the site’s air quality monitoring and kept on PON’s electronic record system as indicated in Section 9 and the Annual Environmental Management Report (AEMR) supplied to the Director General as per Condition 8.4 of DA 293-08-00, and to the EPA as set out in Section 4.1.4.

In the event PON experience an incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to DPHI outlining the basic facts. In its stormwater assessment, the following action and contingency measures should be undertaken:

- Notify DPHI and EPA within 24 hours of receiving the laboratory report;
- Conduct an investigation (including additional sampling if required) to identify the offending source; and
- Implement solutions as appropriate.

A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventative measures. The report shall be submitted to the Director-General no later than 14 days after the incident or potential incident.

The stormwater monitoring will include those analytes identified in Table 7 below.

Table 7: Analytes for Stormwater

Pollutant	Unit of Measure	Frequency	Sampling Method
Total Suspended Solids	mg/L	Special frequency 1*	Grab Sample

pH	pH units	Special frequency I	Grab Sample
Nitrogen (Total)	µg/L	Special frequency I	Grab Sample
Oil and Grease	mg/L	Special frequency I	Grab Sample
Phosphate	µg/L	Special frequency I	Grab Sample

* *Special Frequency I means the collection of samples during the first discharge event following a loose bulk cargo operation. Only one discharge event is required to be sampled each month.*

Table 8 comments on PON’s action or comment in relation to the environmental safeguards noted in Table 10.2 of the original *Environmental Impact Statement (EIS) (2000)* as required under the development consent Condition 5.30.

Table 8 Environmental Safeguards (ex EIS Table 10.2)

Environmental Safeguards	PON Action/Comment
Prepare and implement an Environmental and Monitoring Management Plan which ensures that potential contaminants are appropriately contained and treated.	The current OEMP for the Mayfield No.4 berth and hardstand will ensure that potential contaminants are appropriately contained and treated.
Install detention/sediment control ponds in the Eastern and Western drains. The ponds would treat water to the appropriate EPA requirement and would be designed to meet minimum recognised standards for wet weather containment based on the document Australian Rainfall and Runoff. The ponds would be cleaned of silt as required to ensure their capacity is not reduced by more than 10% of volume.	Originally Regional Land Management Corporation (RLMC), now Hunter and Central Coast Development Corporation (HCCDC), under the consent conditions have installed detention/sediment control ponds in the Eastern and Western drains in accordance with the document Australian Rainfall and Runoff. PON are responsible for the maintenance and upkeep of the drains.
Inform relevant personnel of appropriate contingency measures for spill containment, clean up and disposal procedures in the event that there are leaks of oil or grease from equipment or spills of waste materials. Store waste materials in dedicated receptacles which should be emptied on a regular basis. Maintain vehicles and equipment to minimise oil and fluid drips.	PON currently requires all employees, Stevedores and Port users accessing the Mayfield No.4 Berth and hardstand area to undertake appropriate inductions for activities in site. PON’s Level I induction program provides general environmental awareness and ensures that all inductees understand their obligation and legislative requirement to exercise due diligence for environmental matters.
Provide a concrete bund around the fuel depot to contain any potential spillage while vehicles are refuelling. Spilled fuel and oil would be directed to a waste collection tank.	There is no refuelling tank on site. Refuelling of vehicles is not encouraged on site. Where there is a need a temporary bund must be provided.
Store fumigation chemicals for the Bulk Handling Terminal in a hazardous materials storehouse	Fumigation chemicals will not be stored on the Mayfield No.4 berth and hardstand site. If fumigation is necessary, a DAFF-accredited service provider will be engaged to ensure that all fumigation is conducted in accordance with approved guidelines.

Table identifies how the provisions of City of Newcastle *Technical Manual – stormwater and Water Efficiency for Development* (formally *Development DCP No.50 – Stormwater Management for Development Sites*) have been addressed, as required under development consent condition 5.30.

Table 9: Stormwater Design Criteria

Design Criteria (from Newcastle City Council Technical Manual)	PON Comment
Interim controls for residential estate developments	This section is not relevant to this development.
Erosion and sediment control strategy	Erosion and Sediment Control Plans and Soil along with Water Management Plans were part of the approved construction environmental management plan (CEMP) for the project and audits were carried out during construction to ensure that the requirements of these plans were addressed.
Stormwater collection	<ul style="list-style-type: none"> I. All surface levels have been designed and constructed to be free draining; II. Drainage pits have been installed so that nuisance water does not collect at low points; and III. Pits are connected to the stormwater management system for the site being a baffled system with a series of filters.
Flooding and runoff regimes	All runoff from low intensity common rainfall is captured and directed to the stormwater management system. There is no scour or natural creek systems affected by this rainfall.
Pollutants	All water from this site is treated in the stormwater management system constructed within the wharf prior to being discharged into the harbour. Water monitoring points have been provided (including in EPL) to check that any pollutants in the discharge to the harbour are below the allowable concentrations.
Overflow disposal	There are no neighbouring properties that are affected by overflows.
Existing drainage systems	There are no existing drainage systems on site affected by the development.
Efficient use of mains water	Mains water is efficiently used on site.
Comprehensive water cycle management plans	There is no water cycle management plan for the development as there is no landscaping or other facilities present that recycled water can be used in an efficient manner.
Installation and maintenance requirements	<p>As noted previously the sediment and erosion controls were audited during construction to ensure that they were being maintained.</p> <p>The stormwater management system is routinely maintained as described in Section 4.2.</p>

4.1.4. REPORTING

PON will provide the detailed results from the Environmental Monitoring Program in an Annual Environmental Management Report (AEMR) to the Secretary General in accordance with Section 8.4 of the consent conditions.

The report will:

- a. Identify all the standards, performance measures and statutory requirements with which the development is required to comply;
- b. Review the environmental performance of the development to determine whether it is complying with these standards, performance measures and statutory requirements;
- c. Identify all the occasions during the previous year where these standards, performance measures and statutory requirements have not been in compliance;
- d. Include a summary of any complaints made about the development and indicate what actions were taken (or are being taken) to address these complaints;
- e. Include the detailed reporting from the Environmental Monitoring Program (As per Consent Condition 8.1), and identify any trends in the monitoring over the life of the project; and
- f. Where non-compliance is occurring, describe what actions will be taken to ensure compliance, who will be responsible for carrying out these actions and when these actions will be implemented.

After reviewing the Annual Environmental Management Report, the Secretary General may require the Applicant to address certain matters identified in the report.

PON will also complete and supply to the EPA an Annual Return in the approved form in accordance with section 6 of EPL 13181 that will comprise:

- a. a statement of Compliance; and
- b. a Monitoring and Complaints Summary

The Annual return for the reporting period will be supplied to the EPA through the approved e-Connect system by the due date of no later than 60 days after the end of each reporting period.

4.1.5. OTHER REPORTING

At five-yearly intervals PON will provide a report to the Secretary General outlining the need for the Mayfield No.4 berth to remain operational in accordance with Condition 1.1B of DA 293-08-00.

4.2. Maintenance

The following maintenance activities, in relation to environmental matters, will be undertaken by contractors at the site:

Table 10: Maintenance Frequency and Responsibility

Task	Frequency	Undertaken by
Inspection of stormwater management system and pits	Monthly (drains) 3 monthly (pits)	Asset Maintenance
Cleaning of stormwater system	Monthly (drains) 3 monthly (pits)	Asset Maintenance
Checking of integrity of fencing	Daily	Operations
Maintenance of fencing	Ad hoc	Operations
Inspection of lighting (and adjusting as necessary)	6 Monthly	Asset Maintenance
Clearing of rubbish and waste during loading and loading activities	During operations	Stevedore
General cleanliness of berth	Daily	Terminal Operations team
Immediate cleaning of any spills or materials	Ad hoc/ Immediately	Stevedore

4.3. Incident Management

An incident/ accident is an unplanned or uncontrolled sequence of events resulting in injury, illness, property damage, environmental impact or has the potential to do so. All accidents/ incidents should be reported immediately to the Port Authority NSW (PANSW) Vessel Traffic Information Centre (VTIC) on (02) 4929 3890 as soon as practicable and an incident form completed and forwarded to the relevant PON representative. All incidents are to be recorded in the PON incident management system database.

Incident reporting requirements are communicated to all PON employees, Stevedores and Port Users through PON's Level I Induction.

Consistent with Condition 7.10 of DA 293-08-00, within 24 hours of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, a report will be supplied to the Department outlining the basic facts. A further detailed report will be prepared and submitted following investigations of the causes and identification of necessary additional preventative measures. The report will be submitted to the Secretary-General no later than 14 days after the incident or potential incident. PON maintains an events and incidents management system database. Events relating to Mayfield 4 berth shall be made available, at any time, for inspection by the Secretary-General. PON will comply with any reasonable requirement of the Secretary-General in response to a registered event.

4.4. Non-Conformance and Corrective Actions

As soon as it is recognised that any required environmental control is not in place, environmental management practices are not being adhered to, or environmental impacts exceed nominated criteria, the Environmental Officer will inspect the Mayfield site and / or activities to review the extent of the possible non-conformance. Activities in the affected area will cease or be modified until the non-conformance has been corrected. The EMMO is responsible for ensuring appropriate rectification measures, including work procedures, have been effectively implemented. Approval from the EMMO is required before work can re-commence.

Non-conformances reported are to be recorded in the incident management database and will include details of the non-conformance, any immediate actions undertaken and the corrective actions implemented to prevent a recurrence.

The incident report would be reviewed by the relevant division manager. A register of non-conformances must be maintained for all active and resolved non-conformances.

4.5. COMPLAINTS HANDLING

PON maintain a public website with access to information on how to lodge a complaint:

<https://www.portofnewcastle.com.au/contact-us/>

Any complaints received will be entered into the incident management database with relevant division managers being notified.

The following detail should be included in the event report:

- Date, time and nature of the complaint or inquiry;
- Type of communication (telephone, letter, meeting etc);
- Name, address, contact number;
- Nature of complaint; and
- Response details.

5. AUDITING AND REVIEW

5.1. Environmental

Condition 9.4 of DA 293-08-00 requires that:

Within 12 months of commissioning the Multi-Purpose Terminal and every three years thereafter, unless the Director-General directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit.

A suitably qualified environmental specialist shall conduct an audit of the Conditions of Consent and associated OEMP initially following twelve months of its implementation, followed by regular audits every three (3) years thereafter. Audits shall involve a review of all environmental documents, records, and reports to ensure compliance with the requirements of the Conditions of Consent and OEMP. If any deficiency is detected appropriate corrective actions will be initiated by PON.

The OEMP was reviewed after the first twelve months of the site operation to ensure that it adequately addresses the identified issues and the activities being undertaken during the operation of the upgrade. Follow up reviews can also take place following each audit or changes in site operation

Key environmental and procedural issues to be covered by the audit shall include, but may not be limited to those requirements in Condition 9.4 as well as:

- Environmental management measures (Section 7);
- Adherence to reporting procedures (Section 4.1.4 and Section 4.1.5);
- Incidents and non-conformances (Section 4.3, Section 4.4 and Section 8);
- Complaint management (Section 4.5);
- Licences and legislative requirements (Section 3);
- Environmental education and training (Section 6);
- Environmental monitoring outcomes (Section 4); and
- Changes in organisational structure and responsibilities (Section 2).

The audits and reviews will be documented and provided to the Secretary-General of DPHI within two months of commissioning the audit (or as otherwise agreed with DPHI).

5.2. Hazards

Condition 7.11 of the development consent requires that:

Twelve months after the receipt of the first dangerous goods cargo... the applicant shall carry out a comprehensive Hazard Audit of the development and submit a report to the Director General.

PON conducted the Hazard Audit at twelve months after the receipt of the first dangerous goods cargo by a duly qualified independent auditor approved in advance by the Secretary General. The completed audit was submitted to the Secretary General within one month of its completion. Audits are conducted at 3yearly intervals or as determined by the Secretary General. Audits will be in accordance with the NSW Department of Planning (2011) *Hazardous Industry Planning Advisory Paper No 5 – Hazard Audit Guidelines*.

6. ENVIRONMENTAL TRAINING

All PON employees, Stevedores and Port Users shall be informed of their responsibilities under the OEMP.

PON currently requires all employees, Stevedores and Port Users accessing the Mayfield No. 4 Berth and hardstand area to undertake appropriate inductions for activities on site. PON's Level I induction program provides general environmental awareness and ensures that all inductees understand their obligation and legislative requirement to exercise due diligence for environmental matters.

PON is committed to providing appropriate training to all PON employees to enable them to perform their tasks without risks to health, safety and the environment. All operating and maintenance personnel are required to be suitably qualified, trained and experienced to accepted industry competency levels.

Records of all induction and training details and attendees are maintained within the PON induction system.

7. OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

The following sections set out the environmental management activities and management measures, which shall be undertaken or complied with during operation and maintenance of the Mayfield No. 4 Berth and hardstand. PON shall ensure that the personnel responsible for implementing the OEMP, such as the nominated EO and nominated Stevedores are aware of their roles and responsibilities.

Environmental management issues have been presented separately, with each aspect addressed in respect of environmental objectives, key environmental issues, and environmental management measures to achieve the objectives. An activity-specific OEMP compliance checklist is provided in Appendix C, which may be completed during operation and maintenance activities to document compliance with environmental management measures detailed in the following sections.

7.1. Soil and Water

Management of soil and water along Mayfield No. 4 Berth and hardstand is necessary to protect the berth's operation activities as well as the integrity of the South Arm of the Hunter River, and to minimise erosion which may destabilise site activities. Environmental management measures (Table 11) would comply with industry best practice.

Table 11: Soil and Water Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> Minimise the impacts of erosion and sediment discharge on the local environment during operation of activities Minimise surface water runoff and sediment discharge from the site Ensure that site drainage does not cause an increase in downstream turbidity Ensure there are no adverse effects on the water quality of the downstream system
Key Environmental Issues
<ul style="list-style-type: none"> Sedimentation as a result of cargo movements and heavy vehicles Pollution and hydrocarbon contamination of the Hunter River
Environmental Action and Management Measures
<ul style="list-style-type: none"> Use of sediment control structures such as a series of solid pollution filters and baffles within the stormwater management system. Installation of emergency shut off valves at the three outlets on the wharf to prevent any spills from entering the Hunter River. Any fuels, chemicals and liquids to be stored within the hardstand area will be appropriately bunded to prevent spills or contaminants entering the stormwater system. All fuels, chemicals and liquids to be securely stored at the site Fuels and chemicals to be stored in bunded areas designed to contain 120% of volume stored Containers to be stored on hardstand area to ensure potential contamination and soils are managed within the stormwater drainage and treatment system (as described in Section 7.2) Records of inspections and maintenance on stormwater management systems to be kept and provided at any time upon request Compliance with relevant EPA requirements with respect to stormwater discharges

7.1.1. WATER SUPPLY

All water supplied to the berth is sourced from Hunter Water mains via a private line from Selwyn Street.

Potable water is supplied to the amenities block located at the southern end of the site.

The fire water ring main is located beneath the berth. The main delivers water to the fire hydrants. Five dual outlet fire hydrants including pits are located across the site and run parallel to the potable water main (**Figure F4**).

Ships potable water is supplied via a standpipe with water being drawn from the ring main located under the berth.

7.2. Stormwater

The stormwater drainage system used for the site is shown in Figure F5. The power drain manages the wharf area drainage system located between the wharf front and cement apron, and running along the length of the berth.

The power drain which receives water runoff and potential contaminant water from the berth area as the area slopes towards the power drain as shown on Figure F5. Within this drainage system there are three treatment chambers incorporating the stormwater management filter systems which remove hydrocarbons and suspended solids from stormwater, preventing spills and minimising non-point source pollution entering downstream waterways. When there is sufficient water within this system, the stormwater is discharged into the river.

Each of the three treatment chambers has been fitted with an emergency shut off valve. In the event that there is a spill of material on the wharf the valves can be closed and all material can be contained within the power drain

The hardstand area at the rear of the berth drains into a series of drainage pits. The captured water is directed via the underground stormwater pipework to two humeceptors which remove hydrocarbons and suspended solids from stormwater prior to discharging to the river.

Stormwater management measures are presented in Table 12.

Table 12: Stormwater Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Minimise uncontrolled surface water runoff and discharge from the site • Ensure that site drainage system efficiently manages potential onsite contaminants (such as fuels, wash-off and lubricants) and site drainage is reused where possible • Ensure there are no adverse effects on the water quality of the surrounding and downstream water system
Key Environmental Issues
<ul style="list-style-type: none"> • Further contamination of stormwater with fuels, lubricants, wash-off from cargoes, other liquids and herbicides/pesticides as well as accidental spillages • The potential of uncontrolled runoff to increase pollution and turbidity and overall water quality of the Hunter River
Environmental Action and Management Measures
<p>In addition to general measures listed in Section 7.1, specific control measures to stormwater include the following:</p> <ul style="list-style-type: none"> • Direction of all stormwater to constructed stormwater drains/swales; • Stormwater Culvert system (as outlined in Section 7.2) with biofiltration swale used in stormwater diversion from hardstand area to outlet drains; • Re-use of stormwater onsite (where possible); and • Regular monitoring as specified in Section 4.1.3

7.3. Groundwater

The Mayfield No.4 Berth and hardstand has been remediated in accordance with the voluntary remediation agreement (VRA). There is no longer a requirement to monitor groundwater for the Mayfield No. 4 Berth and hardstand area.

7.4. Capping Maintenance

As detailed in Section 1.4.4, the M4 berth area comprises a combination of concrete deck sections and asphalt hardstand areas, which provide a permanent, low permeability capping layer. Due to the heavy duty and hard-wearing performance of these materials, capping maintenance requirements are minimal.

An annual visual inspection of the cap integrity is performed by PON Maintenance personnel to identify any cap damage that may impact the permeability of the M4 berth surfaces.

As part of the remediation activities undertaken onsite, a final capping layer has been applied in order to contain contaminants in the subsoils. Specific control measures have been outlined for the maintenance of the integrity of the capping layer. These control measures are adopted for the Mayfield No. 4 Berth and are outlined in Table 13.

Table 13: Capping Maintenance Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Ensure the integrity of the capping layer is preserved
Key Environmental Issues
<ul style="list-style-type: none"> • A breach in the capping layer which may increase the permeability of the cap, potentially allowing infiltration of surface water
Environmental Action and Management Measures
<ul style="list-style-type: none"> • No excavation work will be allowed on site without an excavation permit and/ or excavation notification form being completed. The excavation permitting process will prompt PON to consider whether cap integrity could be compromised by the proposed work. Works should be planned to minimise excavation needs near or through the cap; • Any excavation permit will reference the M4 berth WAE drawings which identify the nature and thickness of the capping layer and the location of known remnant Level 2 materials • Where capping material is removed intentionally or otherwise, the material and integrity of the cap must be reinstated in accordance with the capping design detailed in the M4 berth WAE drawings; • Where there is the potential for a breach of cap integrity excavated materials shall be managed in accordance with the Materials Management Plan – refer to Appendix D; • Where actual breach of cap integrity occurs, the event will be logged on the Incident Register and formal notification procedures implemented under this OEMP (refer Sections 4.3 and 4.4) and rectification measures undertaken. Rectification measures shall include reinstatement of the cap in accordance with the capping design detailed in the M4 berth WAE drawings; and • General visual monitoring would be conducted as specified in Section 4.1 of this OEMP.

7.5. Contaminated Site Management

The objectives of contaminated site management include ensuring the efficacy of remediation works across the site is maintained over time. The primary elements responsible for site contamination management are the surface capping layers and stormwater systems. The on-going inspection and maintenance of these systems are covered elsewhere in this document.

The site contamination management measures are found in the CSMP for the Mayfield remediated area, including Mayfield No. 4 Berth and hardstand. The measures have been summarised in Table 14.

Table 14: Contaminated Site Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> Ensure the site is managed and monitored in a way that reduces the risk of contamination
Key Environmental Issues
<ul style="list-style-type: none"> Contamination of runoff or sediment resulting in downstream impacts in the surrounding land uses and Hunter River
Environmental Action and Management Measures
<p>All remediation works and structures must be maintained in a proper and efficient condition and manner so that they continue to properly perform those functions for which they were delivered or installed, including compliance with:</p> <ul style="list-style-type: none"> Maintenance protocols included in the relevant approved Remediation Action Plan (RAP) for the Mayfield site and which outlines design requirements in respect of remediation works; Any Site Auditor requirements; All applicable legal requirements; and All onsite workers are inducted and trained appropriately as discussed in Section 6 of this OEMP.

7.6. Traffic

7.6.1. HEAVY VEHICLE ROUTES

The Heavy Vehicle Route (HVR) is outlined in the *Heavy Vehicle Route Plan for Mayfield No. 4 Berth* (HVR Plan) attached in Appendix E. All heavy vehicles will access the site via the following route:

- 1 Pacific Highway
- 2 Industrial Drive
- 3 Selwyn Street
- 4 Internal lead-in road – Quayside Close

All drivers of heavy vehicles will be inducted into the overall OEMP and the HVR Plan and be made familiar with the approved heavy vehicle route.

Industrial Drive provides regional road linkages to the west via the New England Highway, to the north via the Pacific Highway and south via the F3 Freeway. The majority of cargo transport to the port is via these regional road linkages.

Due to the uncertainty with the cargo sources and delivery location precise heavy vehicle routes are not able to be determined. However general principles including prohibiting heavy vehicles going to and from the port from using local residential streets have been included in the HVR Plan. Approved B-double routes in the locality are shown in this Plan.

7.6.2. STEVEDORES

All Stevedores operating from PON owned wharves are required to enter into licence agreements with PON. The licence covers the use of the wharf and the conditions under which the wharf can be operated.

As part of the conditions of the stevedoring licence to use the wharf PON will impose a condition specifying that all truck drivers engaged and/ or arranged by the stevedoring company are to be notified that all heavy vehicles accessing the site are prohibited from using the residential streets of Mayfield and Mayfield East and are to follow the routes identified in the HVR Plan and outlined above in **Section 7.6.1**.

Management measures for the air quality of Mayfield Berth No. 4 are outlined in Table 15.

Table 15: Stevedore Environmental Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> Minimise impact to residents, landholders and third parties in the vicinity of the development
Key Environmental Issues
<ul style="list-style-type: none"> Temporary disruptions to residents, landholders and other third parties
Environmental Action and Management Measures
<ul style="list-style-type: none"> Implementation of the Heavy Vehicle Route Plan for Mayfield No. 4 Berth Access would be via Selwyn Street only and controlled via the gate located at the Mayfield No. 4 Berth and hardstand Public access to the site shall not be permitted Roads and parking areas will be regularly maintained A restricted speed limit will apply to the site Appropriate signage will be implemented around the site and along the access route Where local deliveries of cargo are required the heavy vehicles will be confined to the major roads All heavy vehicles are prohibited from passing through residential areas and in particular, no travel is allowed through Mayfield or Mayfield East General monitoring would be conducted as specified in Section 4.1. Operation of the Complaint Register.

7.7. Noise

Noise impacts associated with the operation and maintenance are likely to be similar to the existing industrial environment. The operation may have the potential to impact on the amenity of residents and landowners in surrounding areas. Activities that may result in localised impacts to the amenity of the surrounding area should be assessed on a site-specific basis, and management measures implemented in accordance with this OEMP.

Management measures for noise at Mayfield Berth No. 4 are outlined in Table 16.

Table 16: Noise Environmental Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> Minimise the impact and potential nuisance of noise emissions from operation and maintenance activities, machinery and vehicles on the local community
Key Environmental Issues
<ul style="list-style-type: none"> Disturbance to amenity of residents and other land users in the vicinity
Environmental Action and Management Measures

- Limiting daytime and night-time noise to development consent criteria through regular monitoring
- Ensure regular maintenance of machinery and vehicles
- Ensure machinery and vehicles are fitted with high efficiency mufflers (if required)
- Avoid the coincidence of simultaneous workings of high noise level machinery/operations near sensitive receivers where possible
- Loading and unloading operations to be conducted away from noise sensitive receivers where possible
- Use of noise mitigation technologies and techniques where necessary (eg silencers, noise barriers or other noise treatment of high noise generating equipment)
- Minimise the operation of site machinery and vehicles during the night period where practicable and feasible
- Noise Compliance Monitoring to be conducted as described in Section 4.1.1.
- Noise complaints shall be considered incidents and shall be managed in accordance with the non-conformance and corrective action procedures detailed in Section 4.4.

7.8. Vibration

Due to the considerable distance between the key components of the operational activities and the surrounding residents, vibration is not expected to be a significant environmental issue. As such there are no vibration management measures or monitoring proposed for the Mayfield No. 4 Berth and hardstand.

7.9. Air Quality

PON maintain both an air quality monitoring station to measure PM10 and TSP for accurately monitoring the operational aspects of the site where the level of particulate matter being sampled is representative of emissions from the premises taking into account prevailing wind direction and the location of residential properties or other sensitive receivers.

Air emissions from the operation and maintenance of the site are expected to be manageable. Emissions that may have an adverse impact on surrounding air quality include vehicle and machinery exhaust. Given that the site is completely sealed, no air quality issues are anticipated for the site.

Management measures for the air quality of Mayfield Berth No. 4 are outlined in Table I7.

Table I7: Air Quality Environmental Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Control sources of dust and other emissions to air that may affect nearby residents and other landholders, pedestrians, vehicular traffic or other sensitive receiving environment • Minimise incidence of offensive odour, vapours or emissions
Key Environmental Issues
<ul style="list-style-type: none"> • Disturbance to amenity of residents and other land users in the vicinity as a result of pollution and dust generation from heavy vehicles and cargo movements
Environmental Action and Management Measures
<ul style="list-style-type: none"> • All loading/unloading and vehicle movements to take place on fully sealed surfaces • Vehicles to comply with Australian design standards and regularly serviced to minimise exhaust emissions • Immediate clean-up of any spills • Adjusted work practices (as required) based on wind conditions and dust monitoring results – see Section 7.11 for meteorological monitoring requirements • Operation of complaints register • Monitoring measures to be conducted as described in Section 4.1.2.

7.10. Waste

All wastes generated during operation and maintenance of the site shall be dealt with in an environmentally sensitive manner and in accordance with the POEO Act and the *Waste Avoidance and Resource Recovery Act 2001*. Waste management should consider the reduction, reuse and recycling of wastes prior to disposal. Where activities are likely to generate waste, appropriate procedures shall be implemented to ensure responsible disposal of waste is undertaken or, where possible, appropriate recycling of waste. Likely and expected waste streams for the site include putrescible and non-putrescible general solid waste.

There is also a possibility that some vessels berthing at Mayfield No. 4 Berth and hardstand may require garbage (including general waste) to be collected. In these instances the vessel will contact the vessel agent who will arrange for a DAFF licensed waste contractor to collect the garbage to ensure disposal is conducted in accordance with DAFF requirements.

Vessels are required to submit a Quarantine Pre-Arrival Report for Vessels (*Pratique*) no more than 96 hours and no less than 12 hours prior to arrival (ie before dropping anchor) at the Port of Newcastle. This form is submitted to DAFF through the vessel agent. DAFF conduct risk assessments on the completed forms and issue an approval form with clear instructions regarding quarantine matters including management of vessel waste during the time at berth to the vessel via the vessel agent. DAFF risk assess every vessel where the Port of Newcastle is the first port of call and in line with the risk assessment conduct a *Pratique* inspection covering waste and ballast water management. Random inspections are conducted by the DAFF on all other vessels. The inspection includes checking if the vessels waste is secured in animal- and leak-proof containers or within a sealed room, and also the garbage record books.

Waste management measures for Mayfield Berth No. 4 are outlined in Table 18.

Table 18: Waste Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Ensure responsible disposal of all waste generated on site, and recycle where possible • Minimise environmental impacts related to waste management
Key Environmental Issues
<ul style="list-style-type: none"> • Handling and transportation of waste
Environmental Action and Management Measures
<ul style="list-style-type: none"> • All skips and containers would be labelled with their content, would be well maintained to ensure they do not leak and would be emptied on a regular basis to ensure they do not overflow • All domestic and industrial waste to be disposed of into proper industrial bins for collection and disposal at a licensed offsite facility • No open or ground rubbish is permitted • Appropriate receptacles will be provided for the depositing of litter and other waste materials and their contents will be sent for reuse, recycling or disposal on a regular basis. • A 3 metre skip bin has been provided for general waste, paper and cardboard – the bin is located adjacent to the Stevedore amenities and are emptied fortnightly. • Waste should be classified according to EPA’s <i>Waste Classification Guidelines</i> and sorted into waste streams where possible • All waste contractors and receiving waste facilities shall be appropriately licensed (and/or DAFF approved) • Appropriate signage, awareness and encouragement of staff and contractors to minimise waste generation and promote use of recycling practices • Routine visual inspections (refer to Section 4.1)

7.11. Meteorological Monitoring

In accordance with the requirements of EPL 13181 PON maintain an automated weather station onsite. Meteorological conditions are to be monitored during loose bulk cargo operations.

L5.1 Loose bulk cargo operations must cease for a period of at least 15 minutes:

- (a) if the average wind speed exceeds 7 metres per second for a 5 minute period, or
- (b) if a wind gust exceeds 12 metres per second

After loose bulk cargo operations have ceased, they must not recommence until the above wind speed limits are not exceeded in the preceding 15-minute time period.

L5.2 The wind speed and direction limits specified in Condition L5.1 do not apply when the following loose cargoes are loaded or unloaded from the premises:

- (a) Cottonseed pellets;
- (b) Ferro-alloys;
- (c) Magnetite;
- (d) Mineral sands;
- (e) Nut coal;
- (f) Urea granules;
- (g) Wet silica sands; and
- (h) Whole soya beans

7.12. Security

In response to the risk of terrorism, the Federal Government introduced the *Maritime Transport and Offshore Facilities Security Act 2003 (MTOFSA) and Regulations* to safeguard against unlawful interference with maritime transport including ports, port facilities, ships and offshore vessels. The Port of Newcastle is a security regulated Port. The Mayfield No.4 Berth and hardstand area is located within the Security Regulated Port Boundary.

The Mayfield No. 4 Berth and hardstand is a secure site, fenced at the perimeter with locked entry/ exit gates. When there are no vessels berthed at Mayfield No. 4 Berth and hardstand, the site will be patrolled by PON Wharf Officers. When a vessel is berthed, a security guard will be posted at the entry / exit gate to manage site access in accordance with PON's Level 1 Access Induction.

The MTOFSA places responsibilities on every person within the Port to report any security incidents including suspicious activities. Suspicious activities or occurrences could include:

- holes in fences;
- unauthorised people or vehicles;
- unknown objects;
- theft or break-ins; and
- people taking photographs or notes.

All suspicious activities regardless of the severity MUST be reported to the Police and then PANSW's VTIC advised on phone number 02 4929 3890 of the action taken.

All inductees are advised of their obligations under MTOFSA as part of PON Level 1 induction.

Management measures for the security of Mayfield No. 4 Berth are addressed in Table 19.

Table 19: Security Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Prevention of vandalism and unlawful access • Prevention of security risks to vessels, adjacent residents and industry/ landholders
Key Environmental Issues
<ul style="list-style-type: none"> • Crime and other security risks
Environmental Action and Management Measures
<ul style="list-style-type: none"> • Perimeter fencing to be maintained • All areas are security controlled to prevent unlawful access • Security systems and patrols are in place to guard against unauthorised entry • No staff shall be housed on site • Visitors to be accompanied by an inducted person at all times • Site inductions to be undertaken by all PON employees, Stevedores and Port Users

7.13. Landscaping and Lighting

No landscaping is planned for Mayfield No. 4 Berth. The area is covered entirely by hardstand and wharf area that provides no opportunity for landscaping.

The final landform is in accordance with the Contaminated Site Management Plan considerations. The Contaminated Site Management Plan recognises that the wharf is covered by existing structures and sealed pavements which provide a low level of permeability.

The permeability of the final landform has been assessed and approved by the Site Auditor.

Landscaping will be considered as part of the future developments of the remaining Closure Area.

Lighting is required for 24/7 operation, as well as for safety and security reasons. Lighting provided on site includes wharf flood lighting, exterior lighting, bulkhead lighting, fender lighting and edge lighting. Lighting would be adjusted to suit operational uses including use of lighting during cargo loading activities, the limiting of flood lighting (where appropriate), and reducing light intensity when no ships are docked. Impacts from lighting would be similar to the existing surrounding environment which is industrial and largely used for port related activities.

The maximum height of lighting will be 30 m and lighting spill will be limited to the edge of the wharf and hardstand area to minimise disturbances to other river users.

Management measures for landscaping and lighting of Mayfield Berth No. 4 are outlined in Table 20.

Table 20: Landscape and Lighting Management Measures

Key Environmental Performance Objectives
<ul style="list-style-type: none"> • Prevention of lighting impacts on nearby receivers • Prevention of visual disturbance and degradation of amenity
Key Environmental Issues
<ul style="list-style-type: none"> • Lighting impacts on nearby receivers • Safety and security internal to the site

Environmental Action and Management Measures

- Large floodlights would not be used other than for emergency lighting
- Lighting will utilise the minimum level of illumination necessary for safety and security
- Security lighting would be mounted, screened and directed (where possible) to ensure lighting would not spill onto existing residences

7.14. Heritage

The operation of the Mayfield No. 4 Berth would not impact on heritage items due to the following:

- No listed items of heritage significance are located on the Mayfield No. 4 Berth site;
- The site is a hardstand area;
- The site has been previously capped isolating the subsurface material; and
- No excavation will be allowed on site without an excavation permit and / or excavation notification form being completed.

The Mayfield No. 4 Berth and hardstand will comply with heritage requirements.

7.15. Dangerous Goods

In accordance with conditions 7.1, 7.2, 7.3 and 7.4 of DA 290-00-08:

The Container Terminal and General Cargo Handling Facility shall neither receive as cargo nor dispatch as cargo any material classified as a "Class 7 dangerous good" (radioactive material) under the Australian Dangerous Goods Code.

Usage, storage, temporarily or otherwise, of any dangerous good of Class 1 (explosives) on the site is not permitted without the prior written approval of the Secretary-General.

All dangerous goods received as cargo at either the Container Terminal or the General Cargo Handling Facility shall be dispatched from the site within 72 hours of receiving those goods.

Stevedores handling dangerous goods shall maintain documentation that includes the following information in relation to dangerous goods:

- *the date and time of arrival of all dangerous goods to the site;*
- *the exact location of all quantities of dangerous goods on the site;*
- *details of all dangerous goods classes on the site, packaging specifications and UN number; and*
- *the date and time of dispatch of all dangerous goods from the site*

A Dangerous Goods Register has been implemented in the PON EMS in cooperation of several areas of the business, including WHS, Property, Planning, and Marine & Operations.

8. EMERGENCY RESPONSE AND CONTACT DETAILS

8.1. Communication

PON has prepared and submitted an Emergency Plan for the Mayfield No.4 Berth and hardstand operations to DPHI (WHS 3003 Mayfield Site Precinct Emergency Plan). All PON operations and maintenance employees are trained and competent to carry out their responsibilities under the Emergency Plan. Upon receipt of emergency advice, the applicable person based at the Mayfield No. 4 Berth and hardstand would initiate the Emergency Plan.

8.2. Emergency Procedures

Each emergency shall be actioned as deemed required (depending upon magnitude and situation) and handled in accordance with the procedures detailed in the Mayfield No. 4 Berth Emergency Plan.

In the event of an emergency, the following procedure shall apply:

1. **PHONE 000 (TRIPLE ZERO) AND DESCRIBE THE EMERGENCY AND LOCATION**
2. **PHONE THE PANSW VESSEL TRAFFIC INFORMATION CENTRE (VTIC) on (02) 4929 3890 and DESCRIBE THE EMERGENCY AND LOCATION.**

Upon identifying any emergency, it is essential the personnel are aware of their immediate actions. This is essential so the appropriate personnel / emergency services are notified and to confirm what immediate actions need to be put in place.

After contacting the emergency services, personnel working within the area need to be notified about the immediate danger. Depending upon the situation, this will usually be completed by sounding the emergency siren trying to notify individuals. All personnel shall then evacuate to the designated Emergency Evacuation Assembly Point.

The Emergency Evacuation Assembly Point is posted on notice boards and can generally be identified by a green and white sign. Personnel are to remain there until a company representative and / or emergency services give the "all clear" and direct personnel to return to the site.

Hazard and safety studies for the operation of the site have previously been undertaken for the Mayfield No.4 Berth and hardstand area. As per Condition 7.9 of the Conditions of Consent (**Appendix A**), Pre-operation Hazard studies have been prepared and were approved by the Department of Planning on 23 October 2009.

8.3. Notification of Significant Environmental Events to Authorities

The PON Duty Manager will task designated persons to **immediately** follow the protocol below as per the Protection of the Environment Operations Act 2011 Amendment.

The agencies must be contacted in the following order:

As per Section 8.2 in the case of an **emergency, fire and rescue (000)** should be contacted in the first instance, otherwise:

Table 21: Environmental Event Contacts

Contact	Phone Number
EPA Environment Line	131 555
The Ministry of Health via the Newcastle Public Health Unit	Ph: 02 4924 6477 Select Option 3 – General Enquiries (after 5pm calls divert to John Hunter Hospital - ask for the Public Health Officer on call) 1300 066 055 will also connect to the local Public Health Unit
SafeWork NSW	13 10 50
City of Newcastle	Water pollution incident reporting: 02 4974 2525 (during business hours) After hours phone the call centre: 4974 2000 (ask for the Compliance Duty Officer)
Fire and Rescue NSW	000

Section 150 of the POEO Act requires that the following information will need to be provided:

- time, date, location and likely duration of incident;
- location of place where pollution is occurring or likely to occur;
- type of incident (e.g. chemical spill, water pollution etc.);
- extent of incident (e.g. magnitude of spill, area covered etc.); and
- action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution.

8.3.1. FOLLOW UP ACTIONS

Debrief and Resumption of Normal Operation

All incidents and emergency response actions are reviewed, and appropriate debriefs performed, to ensure all staff are adequately informed. Resumption of normal operations is approved by the EMMO or delegated person as specified by the EMMO. The information will be relayed to staff via staff meetings and incorporated into toolbox talks (where applicable).

Review and Improvement of the Emergency Procedure

PANSW and PON conduct regular emergency response exercises as part of the incident control plan and Pollution Incident Response Management Plan (PIRMP under EPL 13181). A report detailing the findings from the exercise is prepared and maintained by both parties. Results from exercises are used to improve and update PANSW and PON's incident control mechanisms and / or emergency plans where required.

8.4. Emergency Contacts

Emergency response and other contacts for the berth are listed in Table 22.

Table 22: Emergency Response Contacts

Contacts 24 hr Contact Numbers Port Authority NSW (PANSW) – (02) 4985 8301 OR (FRECALL – 1 800 048 205) Port of Newcastle (PON) 02 4908 8281		
Emergency Contacts		
Service	Address	Contact Details
Fire		000
Ambulance		
Police		
Hospital	John Hunter Hospital Lookout Road, NEW LAMBTON NSW 2305	(02) 4921 3000
SafeWork NSW		13 10 50
Australian Maritime Safety Authority - Newcastle Office	8 Cowper Street, CARRINGTON NSW 2294	(02) 4961 3277 1800 627 484
Utilities and Government Contacts		
Utility/Agency	Contact Details	
Ausgrid Emergency Service	131 388	
Jemena Gas Faults and Emergency	131 909	
Hunter Water	1300 657 000	
Telstra	132200	
City of Newcastle	(02) 4974 2000	
EPA - Report Pollution Incident (24hrs) - Newcastle Office	131 555 (02) 4908 6800	

9. RECORDS MANAGEMENT

All PON records are maintained in accordance with a Records Management Program which incorporates a Records Management Policy, Records Management System, associated guidelines and conventions. All records, regardless of format or origin, are maintained in the PON Records Management System. PON uses Box for the management of all hard copy and electronic records.

All records are sentenced (classified) in accordance with the NSW State Records General Retention and Disposal Authorities and are retained for the appropriate minimum retention period. It is of note that general records pertaining to project management of construction works will be retained in a format which can be reproduced for a minimum of 7 years after completion of construction. Any records related to the identification and remediation of hazardous materials identified during construction will be retained for a minimum period of 75 years.

Individuals involved with the environmental management of the site are responsible and trained to ensure all electronic and hard copy correspondence is scanned (where necessary) and filed in the correct folder.

10. WORK HEALTH AND SAFETY

10.1. General

The PON Safety Policy commits PON to providing a safe and healthy workplace for all employees and contractors. The site shall be operated and maintained in a manner that will not adversely affect the health and safety of employees, Stevedores, contractors, Port Users, visitors or the environment. PON is committed to ensuring that relevant legislation in relation to health and safety is complied with, and that all employees, Stevedores, Port Users and contractors are trained in understanding their environmental, health and safety roles and responsibilities.

10.2. Personal Protective Equipment

All personnel accessing the site shall as a minimum be required to wear at all times the following personal protective equipment (PPE):

- Appropriate safety footwear;
- High visibility clothing;
- Long sleeve shirt and long pants;
- Eye protection;
- Hearing protection (if in the vicinity of power tools, equipment & machinery or any area indicated by signs);
- Hard hat; and
- Life jacket must be worn when within 2 metres of the water's edge.

As discussed in Section 6, all operating and maintenance personnel are required to be suitably qualified, trained and experienced to accepted industry competency levels. PON personnel shall be trained in the requirements and use of PPE to an appropriate level according to responsibilities.

While on site inductees must have access to their own approved First Aid kits. First Aid Kits must be in accordance with those prescribed in the Work Health and Safety Regulation 2017. If first aid is administered the VTIC must be notified on (02) 4929 3890. All accidents / incidents must be reported.

10.3. Hazard and Risk

PANSW maintain the role as the regulator of dangerous goods in the Port of Newcastle, as previously conferred by the *NSW Dangerous Goods (General) Regulation 1999, Part 11 – Special requirements relating to ports*.

A revised Final Hazard Analysis (FHA), commissioned by then-NPC in March 2014, details hazard identification, risk analysis and mitigation management. The revised 2014 FHA was approved by then-Department of Planning and Environment in June 2014.

The Mayfield No. 4 Berth and hardstand will be used for the handling of goods passing through the Port of Newcastle. PON will implement a process to ensure all storage and transfer systems at the site will be designed so that hazardous materials remain within the containment systems. Any dangerous goods handled at Mayfield 4 Berth will be handled in accordance with the revised Final Hazard Analysis, PANSW dangerous good regulations and AS3846-2005: *The handling and transport of dangerous cargoes in port areas*.

Transport of ammonium nitrate has been considered as part of the Mayfield Berth Risk Assessment prepared for NPC (2012) as the dangerous goods regulator for port areas. The assessment concluded that the individual risk levels outside the berth boundary are low given the low frequency and risk of ammonium nitrate explosion. Onsite precautions are outlined in the assessment and include ensuring that

the required safety equipment and management systems are in place before the berth is used for shipments of ammonium nitrate.

Additional information has been provided to Port Lessor in January 2021 following an incident at the Port of Beirut regarding ammonium nitrate. In brief, Ammonium Nitrate AN (DG Class 5.1) and explosives (DG Class 1) are only onsite at M4 for the time required to transfer the DG from a truck to the ship, or from the ship to a truck. Ammonium nitrate is provided in Bulkabags and is therefore not considered loose bulk cargo at M4. Other DGs (Other than DG Class 7) may be stored at Mayfield No. 4 Berth for up to 3 days (72 hours). A DG register is implemented at PON as part of the EMS.

PON is also required to perform a Hazard Audit every 3 years as a requirement of the M4 planning approval, *Consolidated Instrument of Approval for Development Application No. 293-08-00*. The audit involves assessment of hazard risk management compliance procedures essentially applied by PON across the Port.

The NSW Work Health and Safety Regulation 2017, Chapter 9 Major Hazard Facilities, Division 1 530 2(a) states that port operational areas under the control of a port authority are not considered major hazard facilities.

II. REFERENCES

Advitech 2014. Final Hazard Analysis Report, Mayfield No. 4 Berth Rev v05 - prepared for Newcastle Port Corporation

HDC, 2016. *Contaminated Site Management Plan, Port Lands, Former BHP Steelworks Mayfield, Newcastle*

Lloyd's Register, 2012. *Mayfield Berth Risk Assessment* prepared for Orica Australia and Newcastle Port Corporation

Sinclair Knight Merz (SKM), 2009. *Mayfield Wharf Refurbishment and Hardstand Construction, Construction Environmental Management Plan*

FIGURES

Figure F1: Site Location Overview & Site Location Detail



**MAYFIELD
PRECINCT**

This aerial map shows an industrial waterfront area. A blue dashed line outlines the 'MAYFIELD PRECINCT', which includes the 'MAYFIELD SITE' (outlined in black) and the 'CARRINGTON PRECINCT' (outlined in blue). To the east, the 'WALSH POINT PRECINCT' is outlined in purple. A yellow line follows the waterfront edge. The area is adjacent to a large body of water with several ships docked at a pier.

**WALSH POINT
PRECINCT**

**MAYFIELD
SITE**

**CARRINGTON
PRECINCT**



Kooragang Island

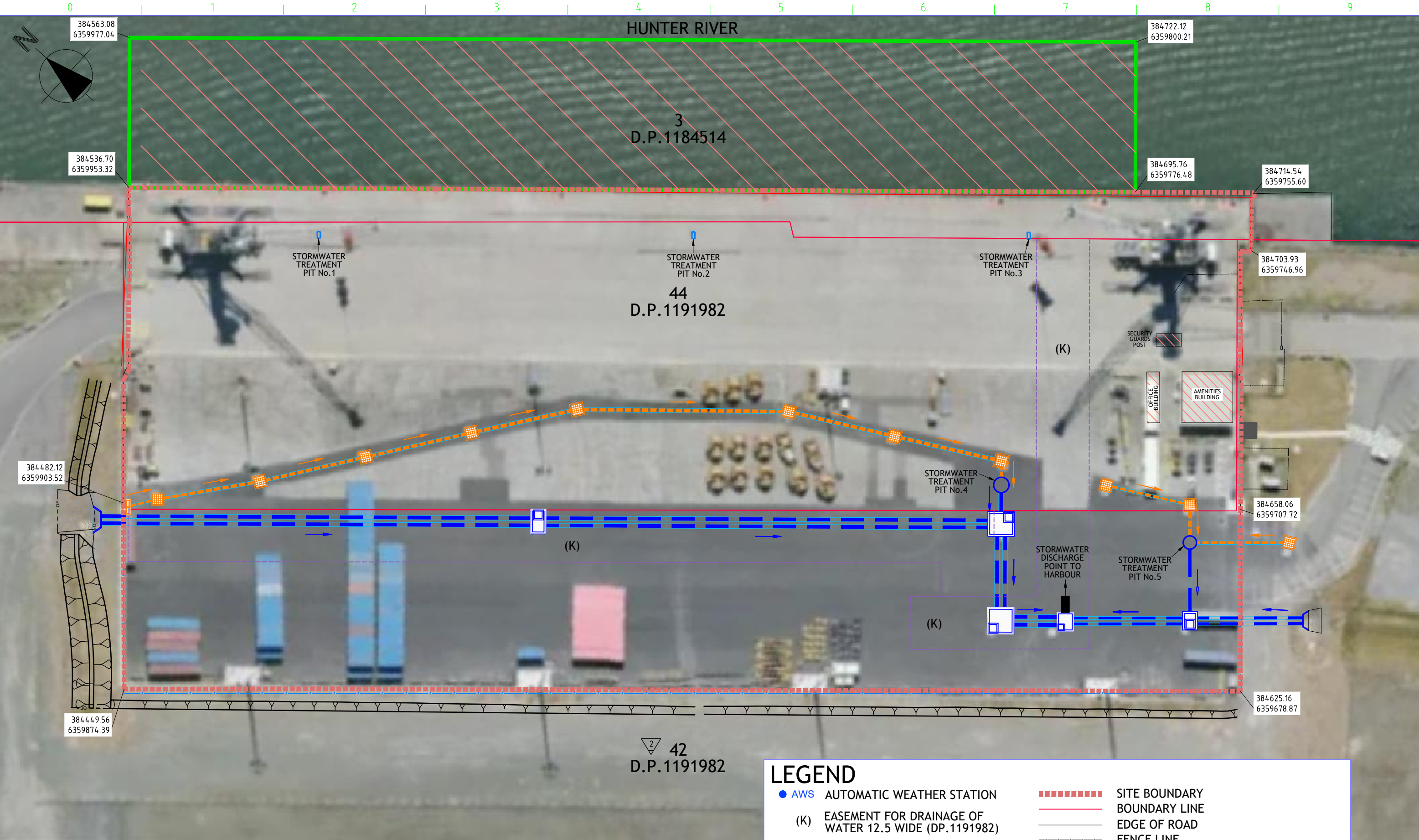
Walsh Point

Mayfield 4 Berth

Mayfield Site

15/10/2023

Figure F2: Site Layout 2024 Port of Newcastle Cadastral Plan



LEGEND

- AWS AUTOMATIC WEATHER STATION
- (K) EASEMENT FOR DRAINAGE OF WATER 12.5 WIDE (DP.1191982)
- SITE BOUNDARY
- BOUNDARY LINE
- EDGE OF ROAD
- FENCE LINE
- EASEMENT FOR DRAINAGE OF WATER 12.5 WIDE (DP.1191982)
- ▨ OVER WATER OPERATION AREA

REV	REVISION DETAILS	DATE
02	D.P. UPDATED. ECN 0441	07-06-24
01	CO-ORDINATES UPDATED. TSP AND PM10 REMOVED. DRAWING NUMBER RENUMBERED.	31-05-23
0	ISSUED FOR CONSTRUCTION	08-08-22

REFERENCE DRAWING TITLE	DRAWING No.

PORT of NEWCASTLE

NTS DRAWING No.
21-032-Dw-055

PORT OF NEWCASTLE
MAYFIELD M4 WHARF
EPA LICENSE AREA - MAYFIELD No.4 WITHIN LOT 44 D.P.1191982
ARRANGEMENT

DRAWN BY B.Y.	DATE DRAWN 17-06-22	CHECKED BY T.P.	APPROVED S.A.
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JOB No. 21-032	DRAWING No.	REV No.
PON-MF-13-EN-02009	02	02
DRG SCALE N.T.S.	SHEET SIZE A1	

3RD ANGLE PROJECTION

Figure F3: Mayfield No. 4 Berth Responsibility and Organisation Structure

Figure 3: Organisational Structure

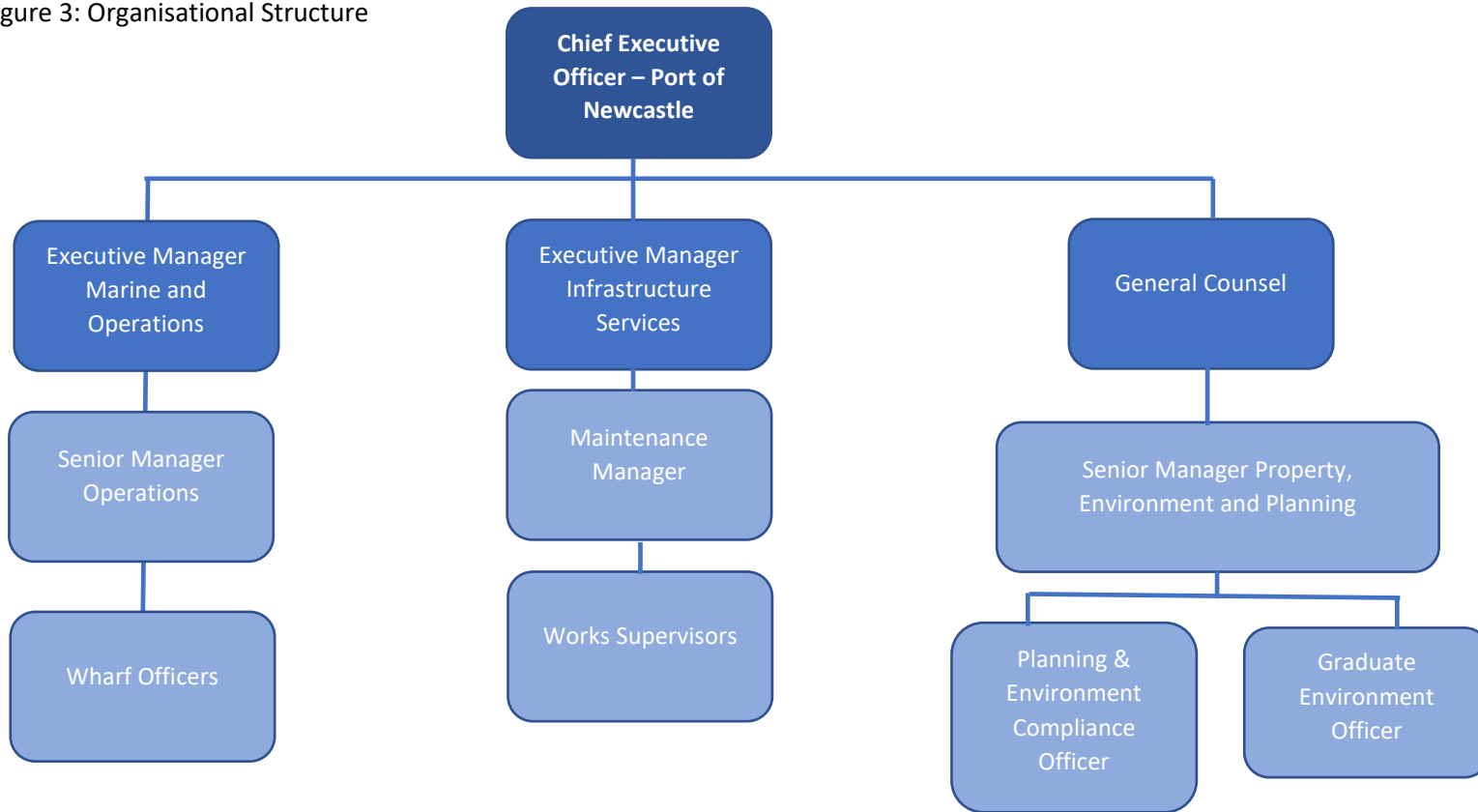
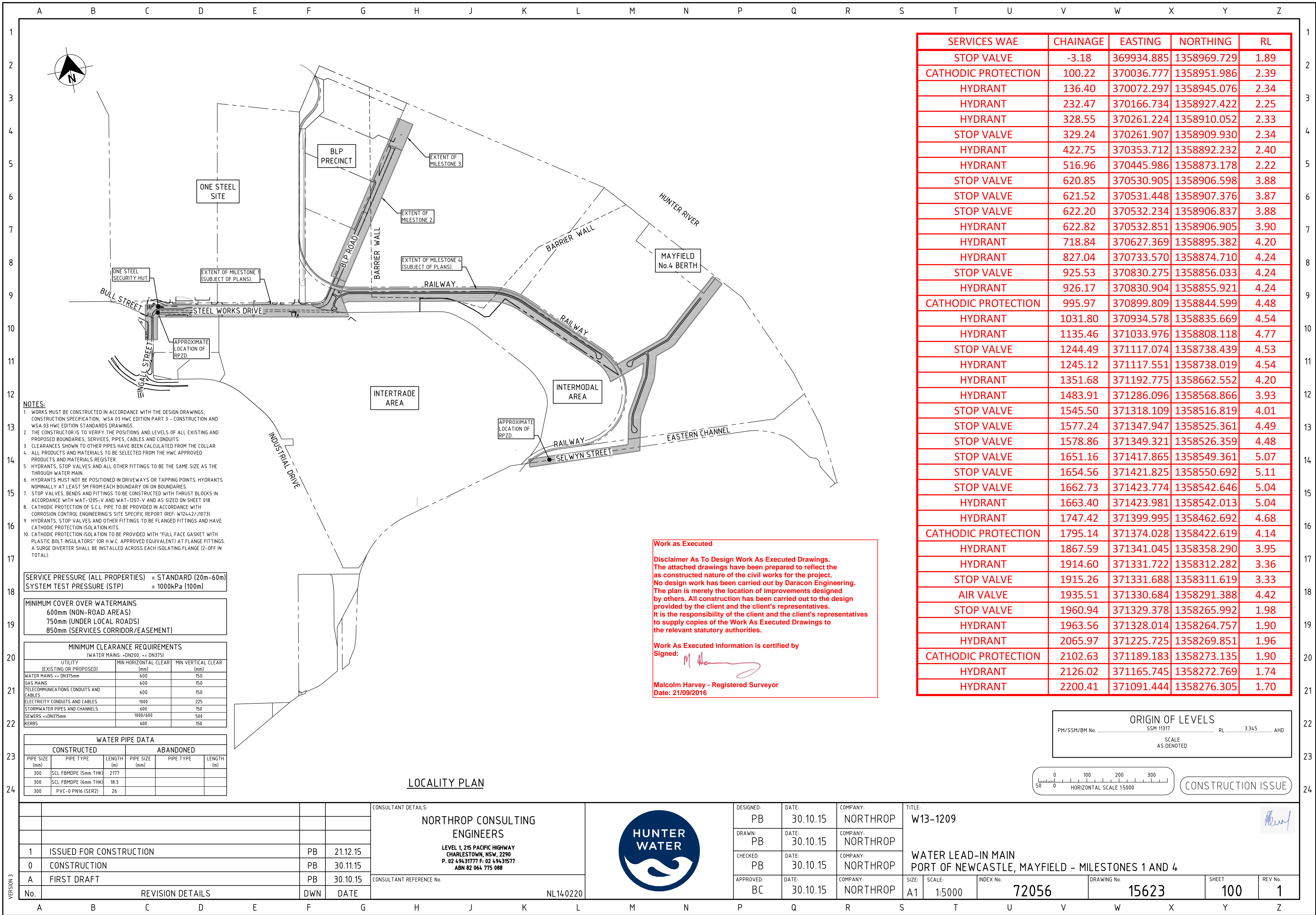


Figure F4: Water Supply System Arrangement (Plan View)



- NOTES:**
- WORKS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN DRAWINGS, CONSTRUCTION SPECIFICATION, WSA 03 HWC EDITION PART 3 - CONSTRUCTION AND WSA 03 HWC EDITION STANDARDS DRAWINGS.
 - THE CONSTRUCTOR IS TO VERIFY THE POSITIONS AND LEVELS OF ALL EXISTING AND PROPOSED BOUNDARIES, SERVICES, PIPES, CABLES AND CONDUITS.
 - CLEARANCES SHOWN TO OTHER PIPES HAVE BEEN CALCULATED FROM THE COLLAR. ALL PRODUCTS AND MATERIALS TO BE SELECTED FROM THE HWC APPROVED PRODUCTS AND MATERIALS REGISTER.
 - HYDRANTS, STOP VALVES AND ALL OTHER FITTINGS TO BE THE SAME SIZE AS THE THROUGH WATER MAIN.
 - HYDRANTS MUST NOT BE POSITIONED IN DRIVEWAYS OR TAPPING POINTS. HYDRANTS NOMINALLY AT LEAST 5M FROM EACH BOUNDARY OR ON BOUNDARIES.
 - STOP VALVES, BENDS AND FITTINGS TO BE CONSTRUCTED WITH THRUST BLOCKS IN ACCORDANCE WITH WAT-1205-V AND WAT-1207-V AND AS SIZED ON SHEET 018.
 - CATHODIC PROTECTION OF S.C.L. PIPE TO BE PROVIDED IN ACCORDANCE WITH CORROSION CONTROL ENGINEERING'S SITE SPECIFIC REPORT (REF: W12442/11073).
 - HYDRANTS, STOP VALVES AND OTHER FITTINGS TO BE FLANGED FITTINGS AND HAVE CATHODIC PROTECTION ISOLATION KITS.
 - CATHODIC PROTECTION ISOLATION TO BE PROVIDED WITH "FULL FACE GASKET WITH PLASTIC BOLT INSULATORS" (OR H.W.C. APPROVED EQUIVALENT) AT FLANGE FITTINGS. A SURGE DIVERTER SHALL BE INSTALLED ACROSS EACH ISOLATING FLANGE (2-OFF IN TOTAL).

SERVICE PRESSURE (ALL PROPERTIES) = STANDARD (20m-60m)
 SYSTEM TEST PRESSURE (STP) = 1000kPa (100m)

MINIMUM COVER OVER WATERMAINS
 600mm (NON-ROAD AREAS)
 750mm (UNDER LOCAL ROADS)
 850mm (SERVICES CORRIDOR/EASEMENT)

MINIMUM CLEARANCE REQUIREMENTS (WATER MAINS: -DN200, +- DN375)		
UTILITY (EXISTING OR PROPOSED)	MIN HORIZONTAL CLEAR (mm)	MIN VERTICAL CLEAR (mm)
WATER MAINS +- DN375mm	600	150
GAS MAINS	600	150
TELECOMMUNICATIONS CONDUITS AND CABLES	600	150
ELECTRICITY CONDUITS AND CABLES	1000	225
STORMWATER PIPES AND CHANNELS	600	150
SEWERS +-DN375mm	1000/600	500
KERBS	600	150

WATER PIPE DATA					
CONSTRUCTED			ABANDONED		
PIPE SIZE (mm)	PIPE TYPE	LENGTH (m)	PIPE SIZE (mm)	PIPE TYPE	LENGTH (m)
300	SCL FBMDPE (5mm THK)	2177			
300	SCL FBMDPE (6mm THK)	18.3			
300	PVC-O PN16 (SER2)	26			

LOCALITY PLAN

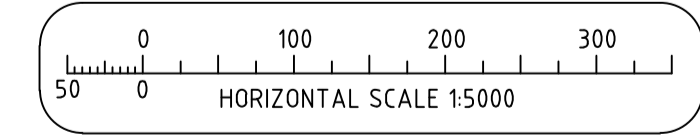
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Work As Executed information is certified by
 Signed: *M Harvey*
 Malcolm Harvey - Registered Surveyor
 Date: 21/09/2016

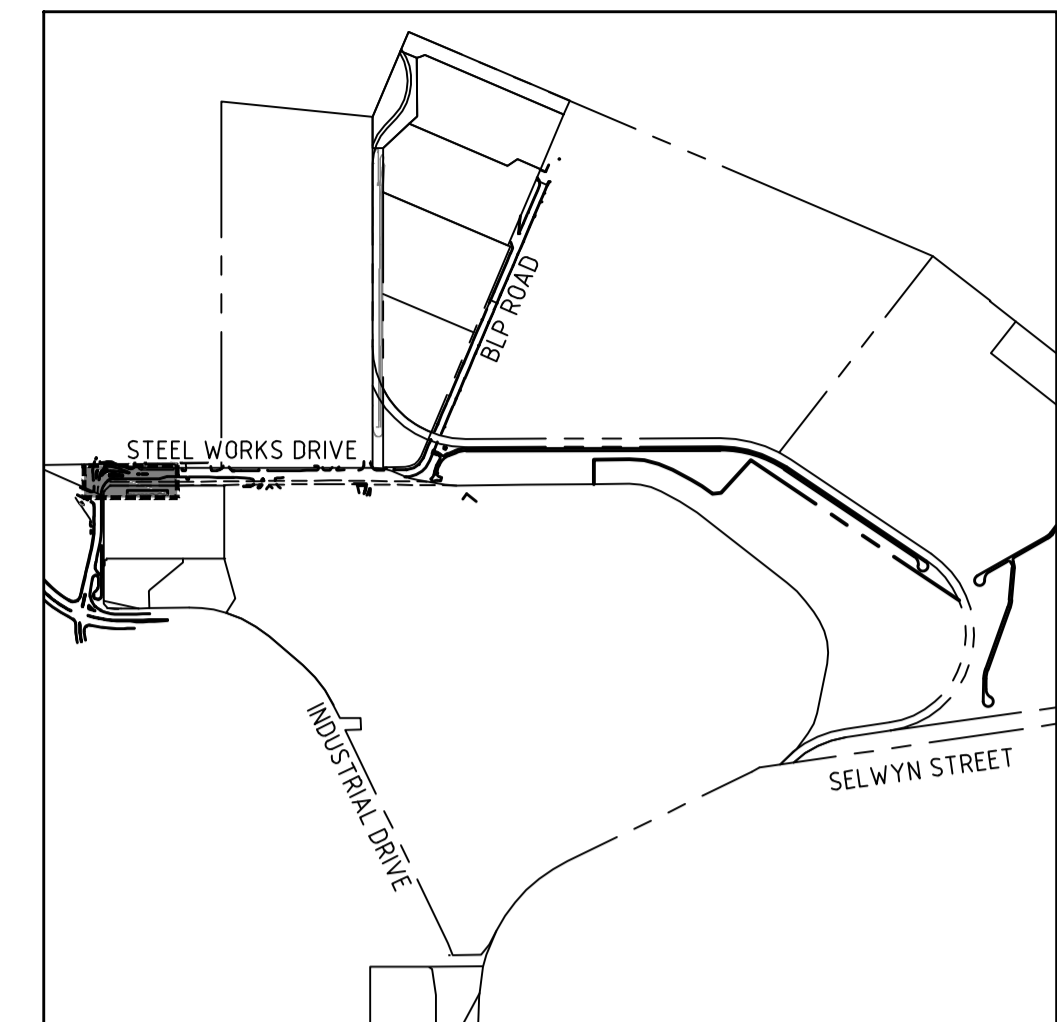
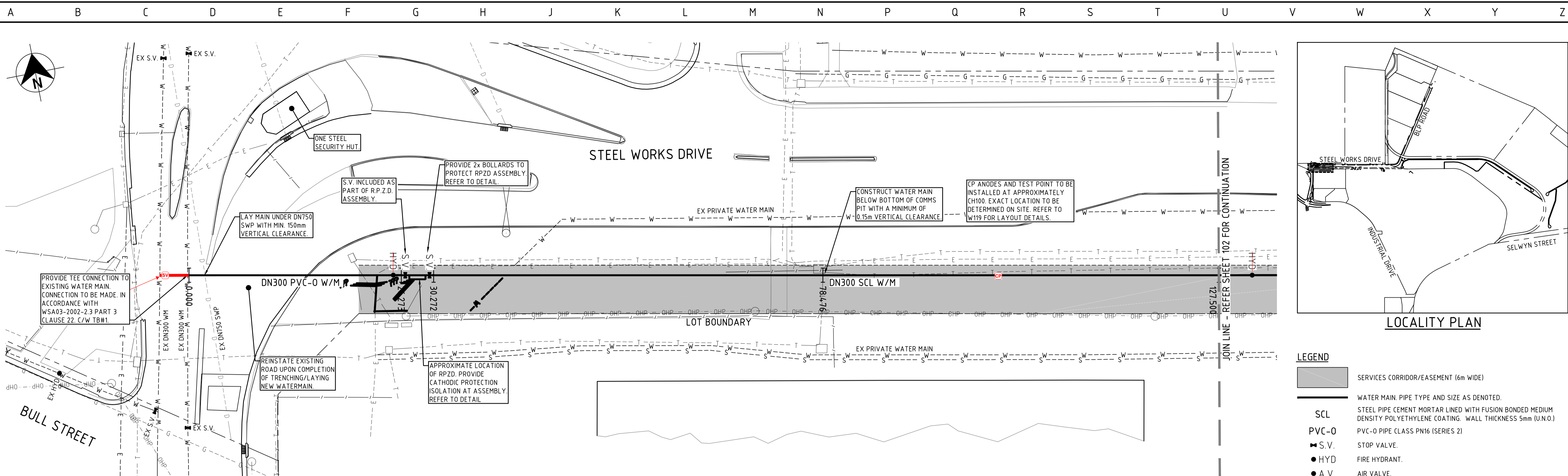
SERVICES WAE	CHAINAGE	EASTING	NORTHING	RL
STOP VALVE	-3.18	369934.885	1358969.729	1.89
CATHODIC PROTECTION	100.22	370036.777	1358951.986	2.39
HYDRANT	136.40	370072.297	1358945.076	2.34
HYDRANT	232.47	370166.734	1358927.422	2.25
HYDRANT	328.55	370261.224	1358910.052	2.33
STOP VALVE	329.24	370261.907	1358909.930	2.34
HYDRANT	422.75	370353.712	1358892.232	2.40
HYDRANT	516.96	370445.986	1358873.178	2.22
STOP VALVE	620.85	370530.905	1358906.598	3.88
STOP VALVE	621.52	370531.448	1358907.376	3.87
STOP VALVE	622.20	370532.234	1358906.837	3.88
HYDRANT	622.82	370532.851	1358906.905	3.90
HYDRANT	718.84	370627.369	1358895.382	4.20
HYDRANT	827.04	370733.570	1358874.710	4.24
STOP VALVE	925.53	370830.275	1358856.033	4.24
HYDRANT	926.17	370830.904	1358855.921	4.24
CATHODIC PROTECTION	995.97	370899.809	1358844.599	4.48
HYDRANT	1031.80	370934.578	1358835.669	4.54
HYDRANT	1135.46	371033.976	1358808.118	4.77
STOP VALVE	1244.49	371117.074	1358738.439	4.53
HYDRANT	1245.12	371117.551	1358738.019	4.54
HYDRANT	1351.68	371192.775	1358662.552	4.20
HYDRANT	1483.91	371286.096	1358568.866	3.93
STOP VALVE	1545.50	371318.109	1358516.819	4.01
STOP VALVE	1577.24	371347.947	1358525.361	4.49
STOP VALVE	1578.86	371349.321	1358526.359	4.48
STOP VALVE	1651.16	371417.865	1358549.361	5.07
STOP VALVE	1654.56	371421.825	1358550.692	5.11
STOP VALVE	1662.73	371423.774	1358542.646	5.04
HYDRANT	1663.40	371423.981	1358542.013	5.04
HYDRANT	1747.42	371399.995	1358462.692	4.68
CATHODIC PROTECTION	1795.14	371374.028	1358422.619	4.14
HYDRANT	1867.59	371341.045	1358358.290	3.95
HYDRANT	1914.60	371331.722	1358312.282	3.36
STOP VALVE	1915.26	371331.688	1358311.619	3.33
AIR VALVE	1935.51	371330.684	1358291.388	4.42
STOP VALVE	1960.94	371329.378	1358265.992	1.98
HYDRANT	1963.56	371328.014	1358264.757	1.90
HYDRANT	2065.97	371225.725	1358269.851	1.96
CATHODIC PROTECTION	2102.63	371189.183	1358273.135	1.90
HYDRANT	2126.02	371165.745	1358272.769	1.74
HYDRANT	2200.41	371091.444	1358276.305	1.70

ORIGIN OF LEVELS
 PM/SSM/BM No. SSM 11317 RL 3345 AHD
 SCALE AS DENOTED



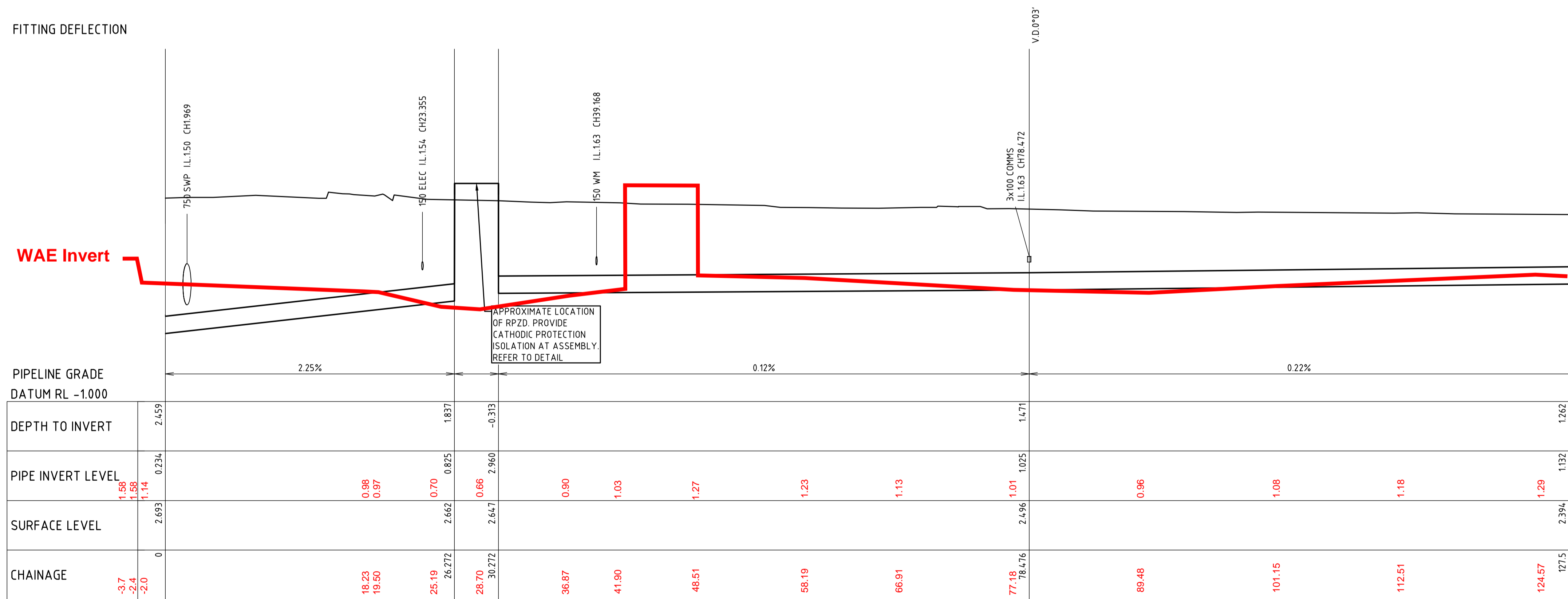
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LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088		CHECKED: PB 30.10.15		DATE: 30.10.15		COMPANY: NORTHROP							
CONSULTANT REFERENCE No. NL14.0220		APPROVED: BC 30.10.15		DATE: 30.10.15		COMPANY: NORTHROP		SIZE: A1	SCALE: 1:5000	INDEX No. 72056	DRAWING No. 15623	SHEET 100	REV No. 1
REVISION DETAILS		No.		DWN		DATE							



- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN, PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - SCL** PVC-O PIPE CLASS PN16 (SERIES 2)
 - PVC-O** STOP VALVE.
 - S.V. FIRE HYDRANT.
 - HYD AIR VALVE.
 - A.V. SCOUR VALVE/BRANCH.
 - S.C.V. PIPE CHAMMAGE.
 - 0.000


PLAN
SCALE 1:250 @ A1

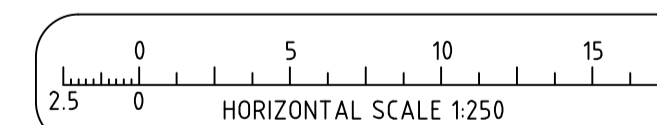


WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT

Work as Executed

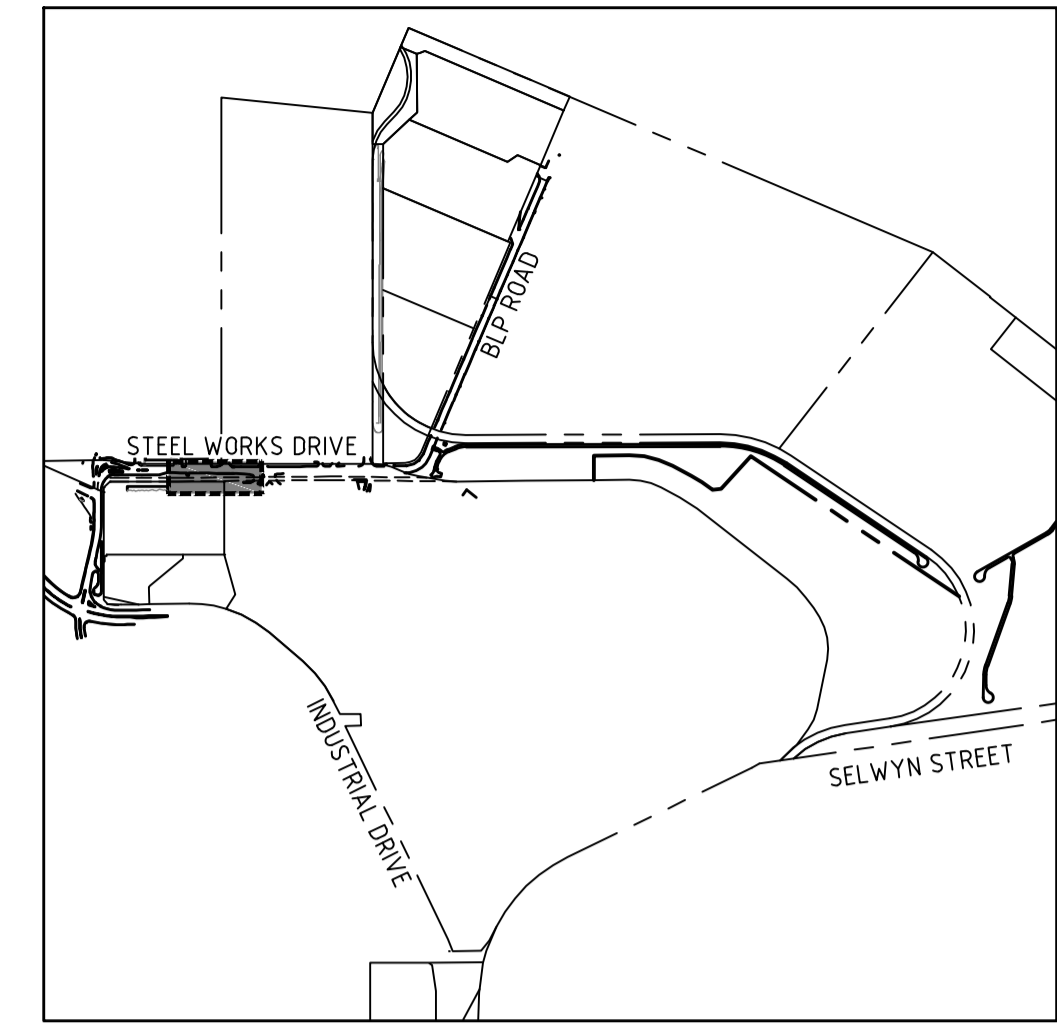
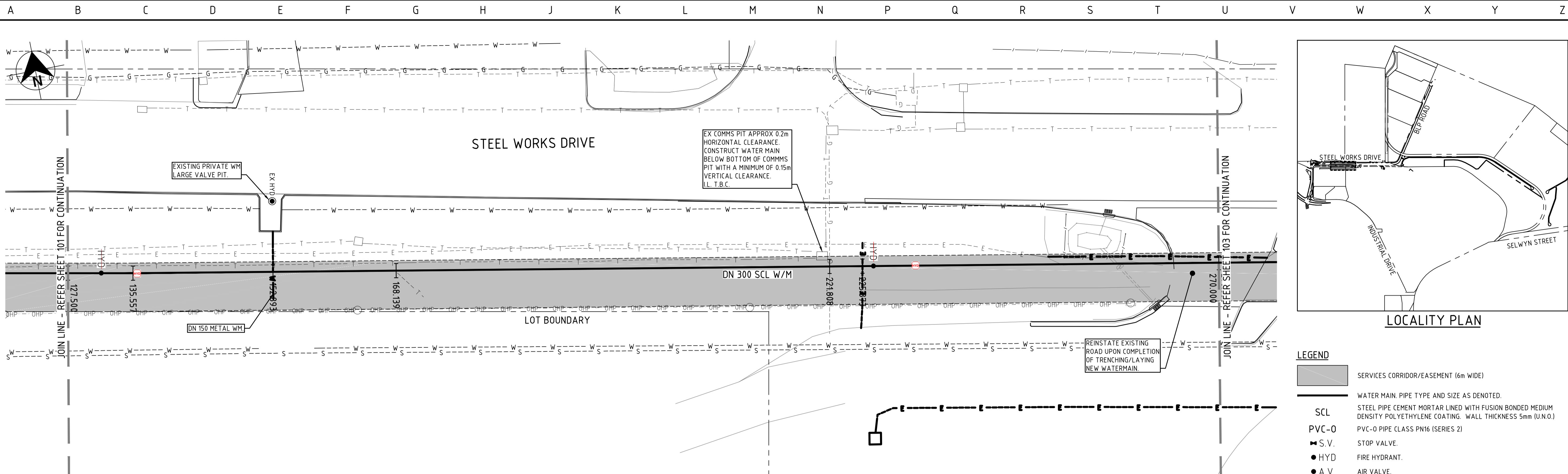
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Date: 21/09/2016

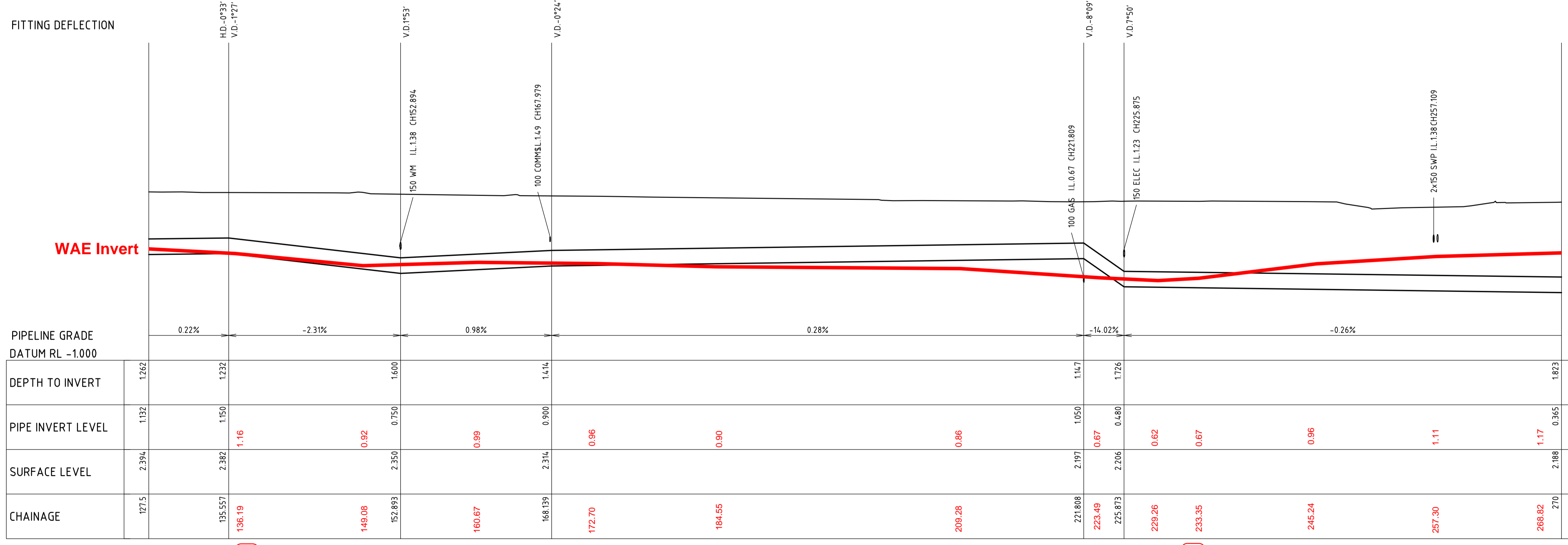


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CONSULTANT REFERENCE No. NL14.0220		DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4		
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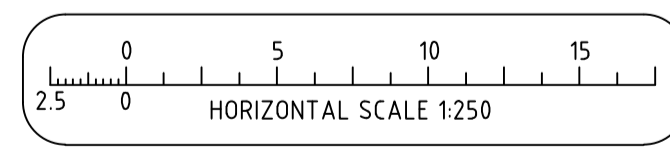
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 - WATER MAIN, PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - S.V. STOP VALVE.
 - HYD FIRE HYDRANT.
 - A.V. AIR VALVE.
 - SC.V. SCOUR VALVE/BRANCH.
 - 0.000 PIPE CHAMAGE.



Work as Executed

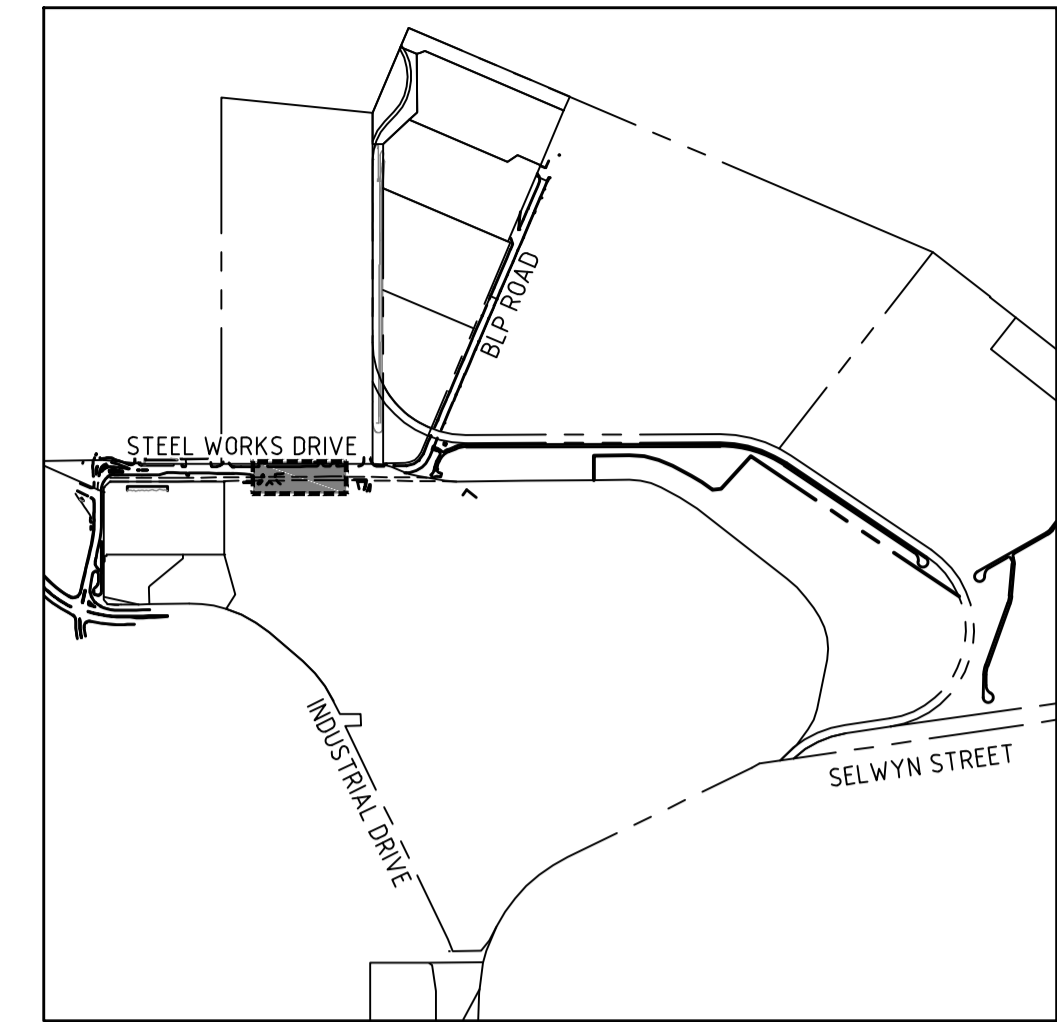
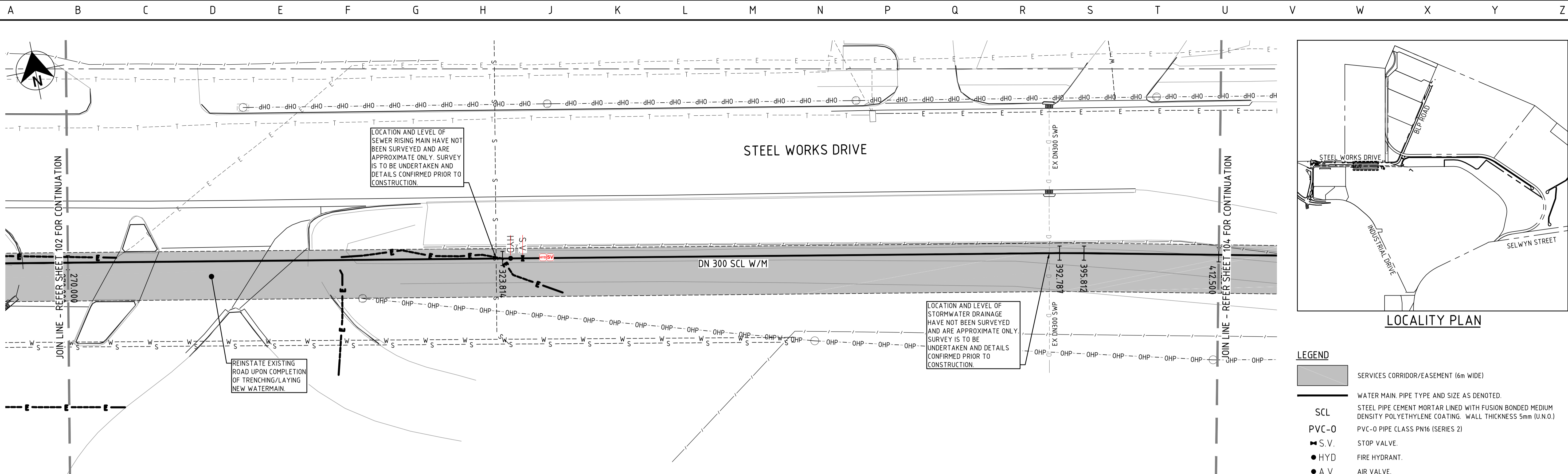
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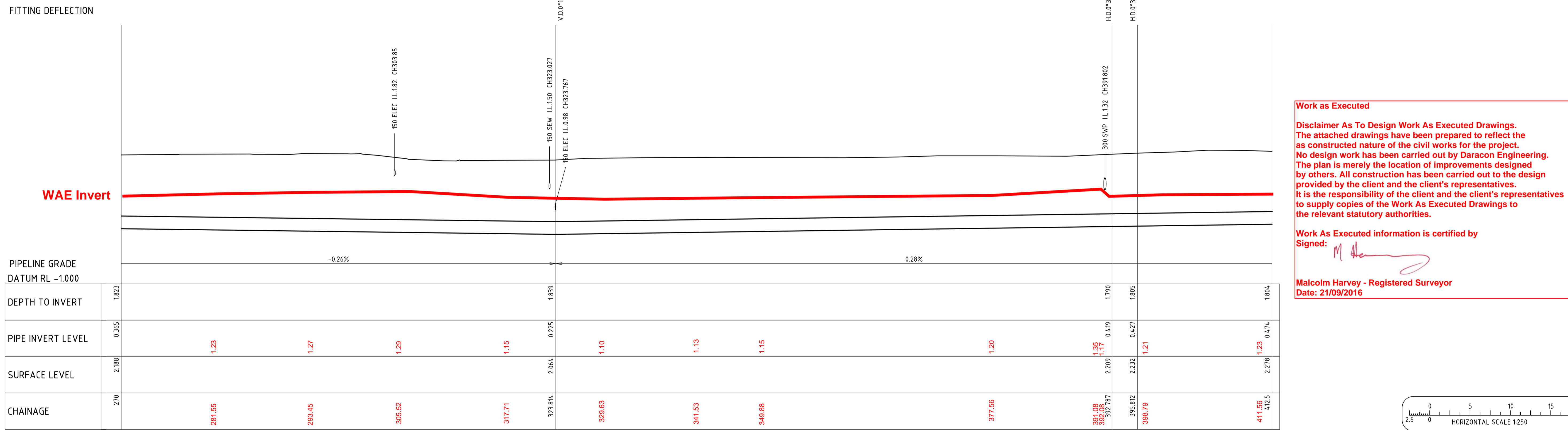


CONSTRUCTION ISSUE

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 - PVC-0
 - STOP VALVE.
 - S.V.
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 - HYD
 - AIR VALVE.
 - A.V.
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 - SC.V.
 - PIPE CHAMAGE.
 - 0.000

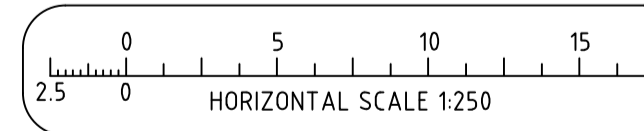


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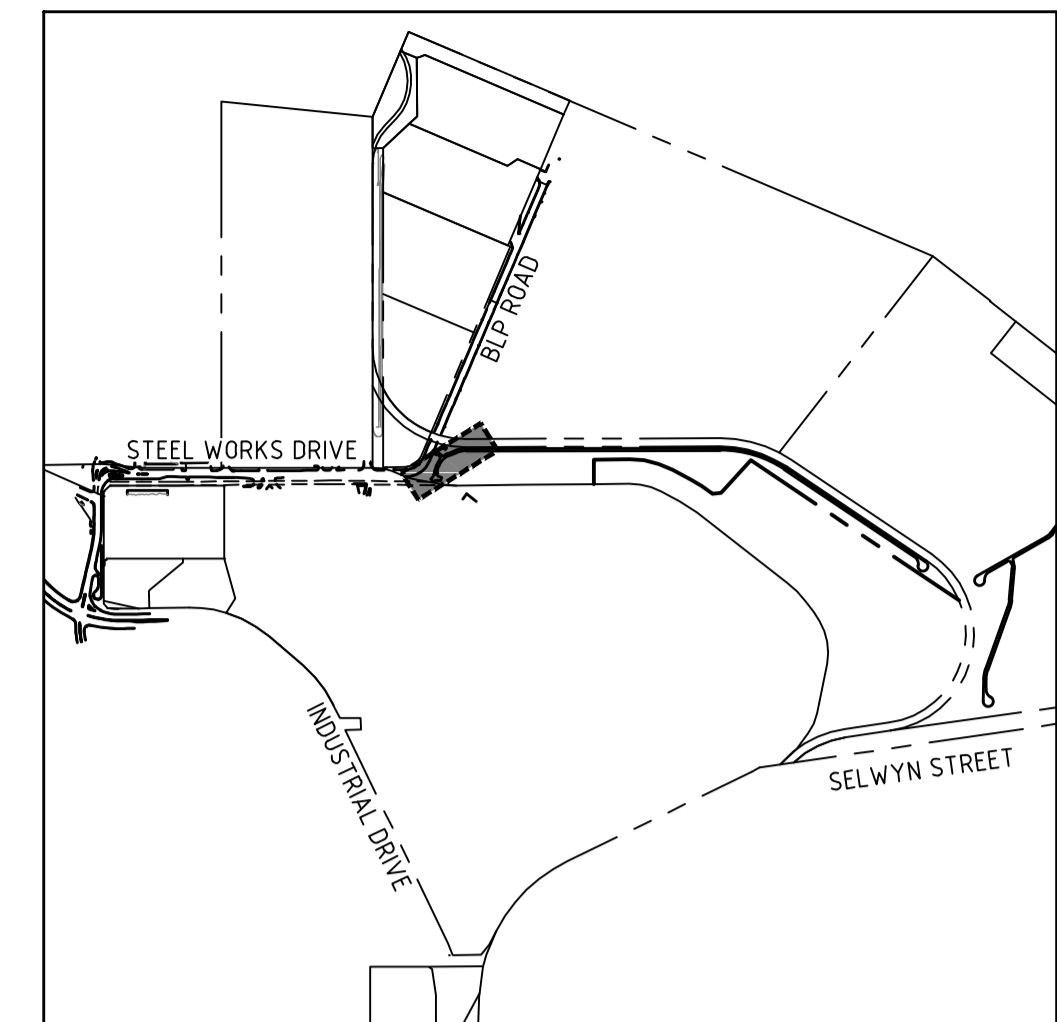
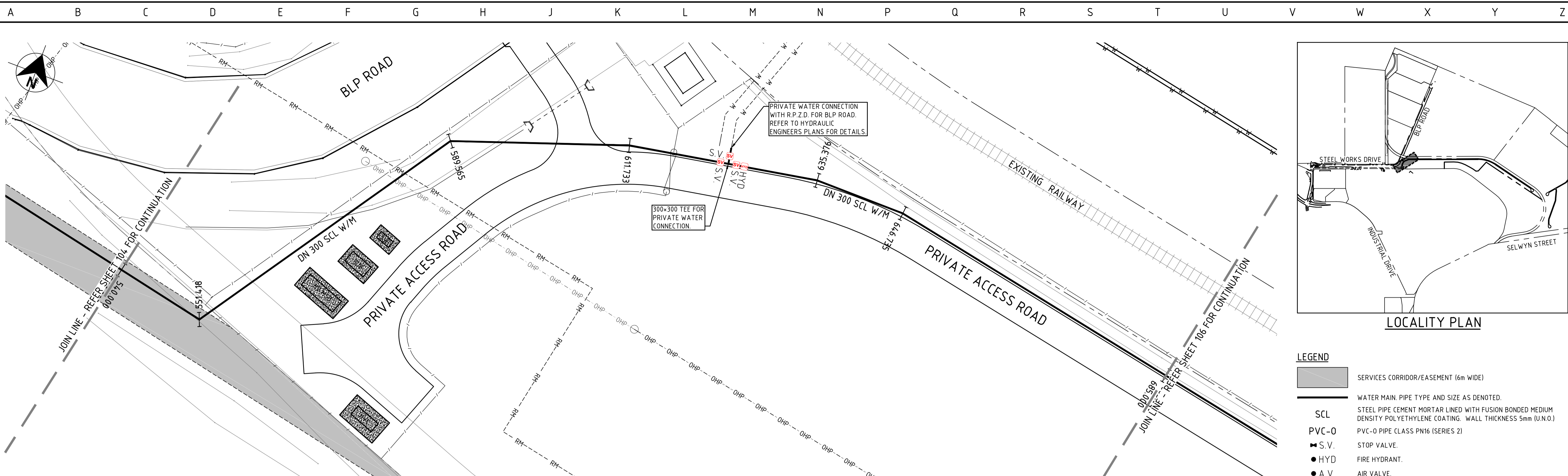
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Date: 21/09/2016



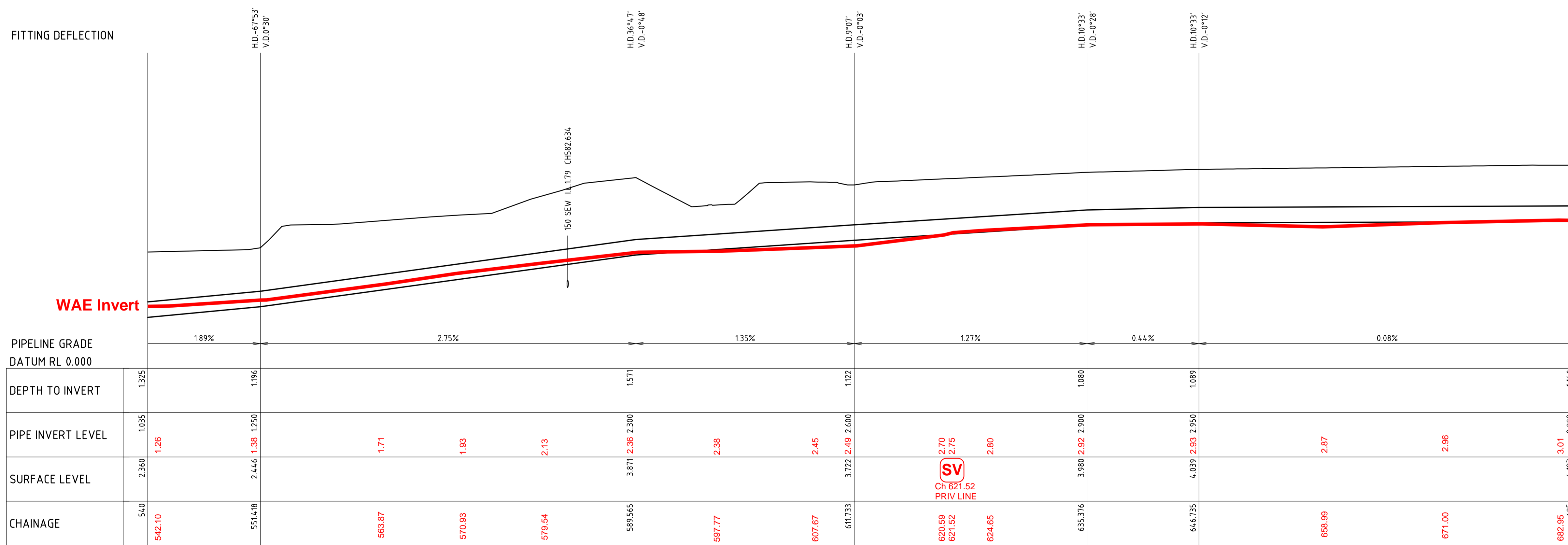
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Ch 328.55 Ch 329.24
1:250 HORIZ
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 - SCL** WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - PVC-0** STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - S.V.** PVC-0 PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE**
 - HYD** FIRE HYDRANT.
 - A.V.** AIR VALVE.
 - SC.V.** SCOUR VALVE/BRANCH.
 - 0.000** PIPE CHANAGE.

PLAN
SCALE 1:250 @ A1



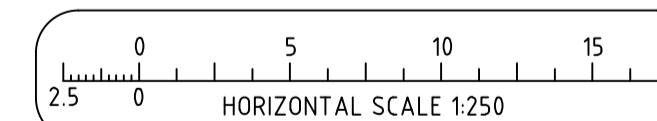
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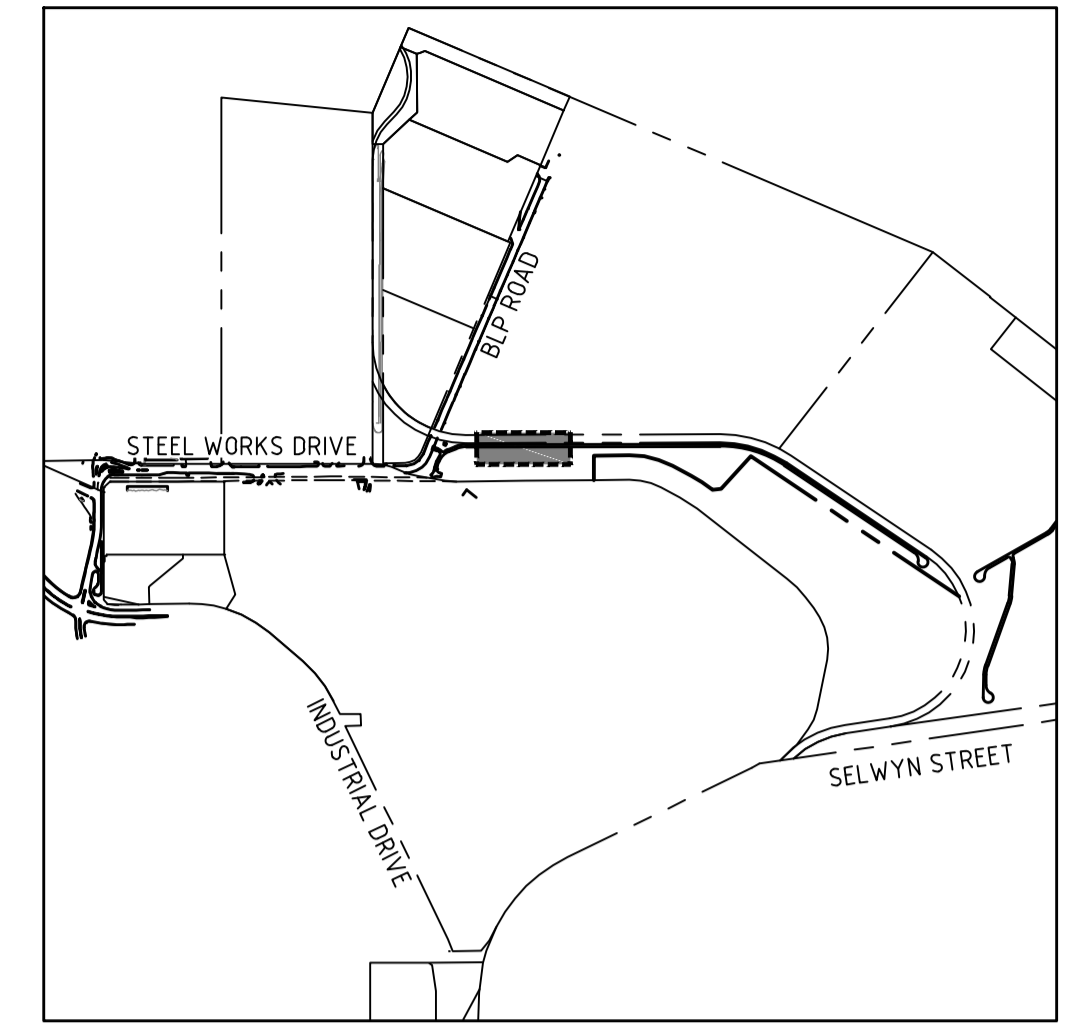
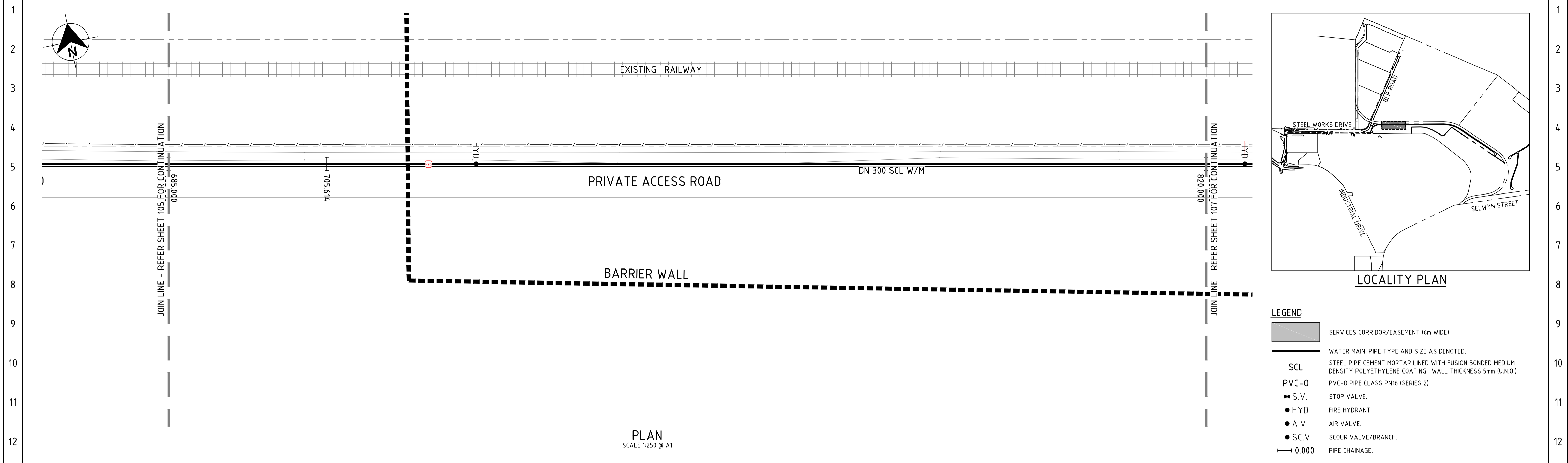
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Date: 21/09/2016



CONSTRUCTION ISSUE

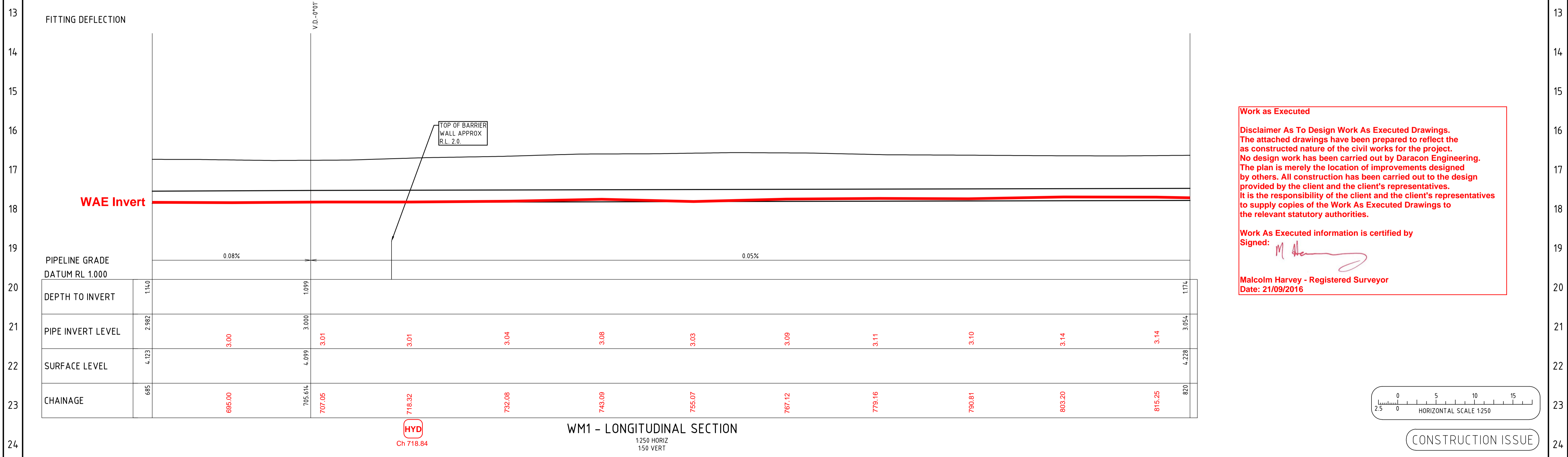
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1 ISSUED FOR CONSTRUCTION PB 21.12.15		CONSULTANT REFERENCE No. NL14.0220		DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP		WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4		APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP	
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A FIRST DRAFT PB 30.10.15				APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP					

A B C D E F G H J K L M N P Q R S T U V W X Y Z



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 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - S.V. STOP VALVE.
 - HYD FIRE HYDRANT.
 - A.V. AIR VALVE.
 - S.C.V. SCOUR VALVE/BRANCH.
 - 0.000 PIPE CHAMAGE.

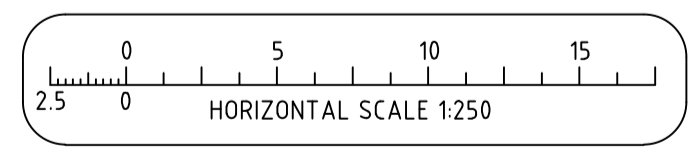
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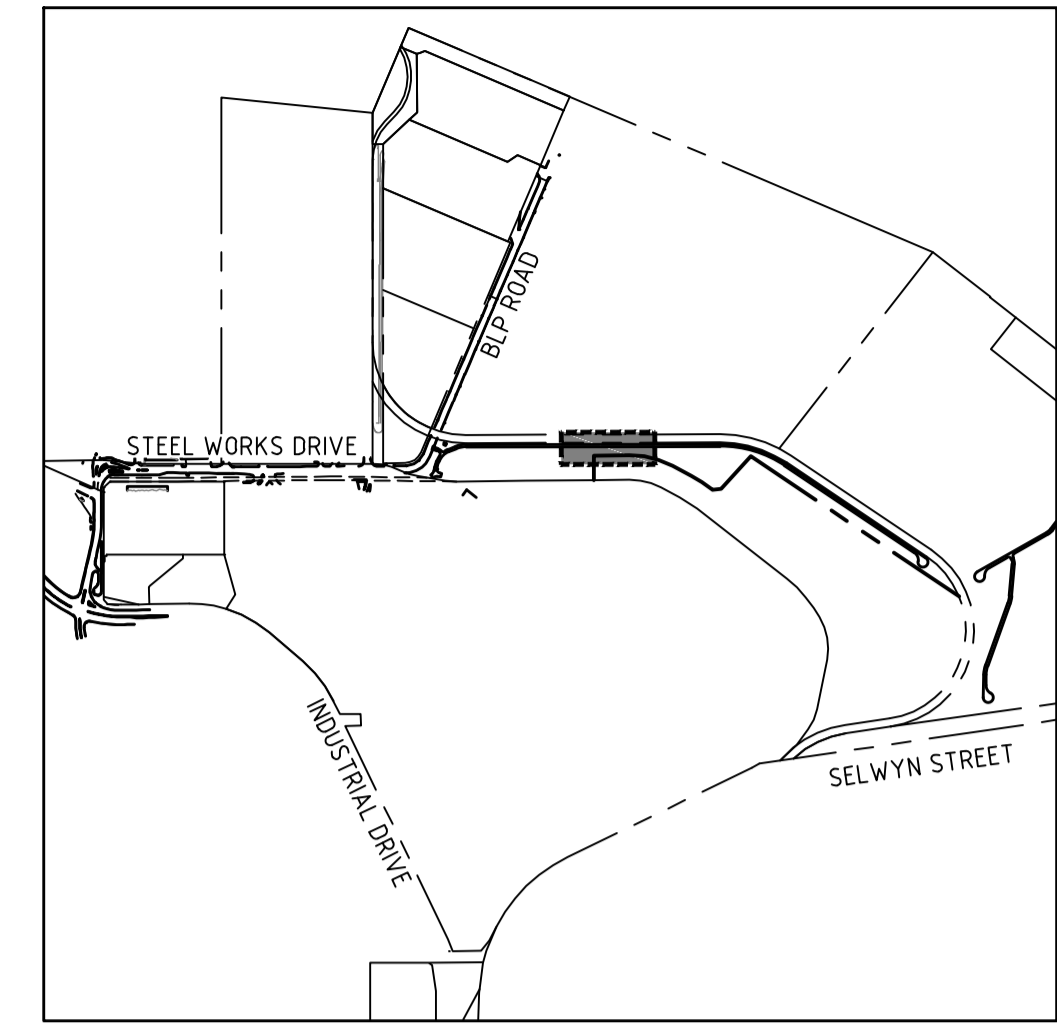
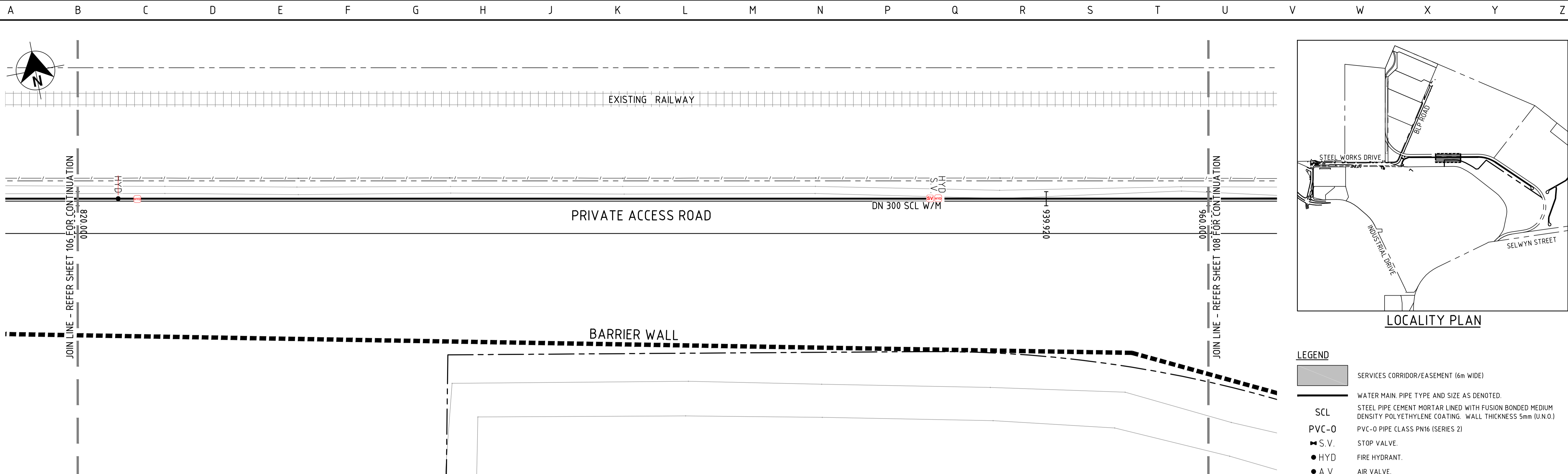
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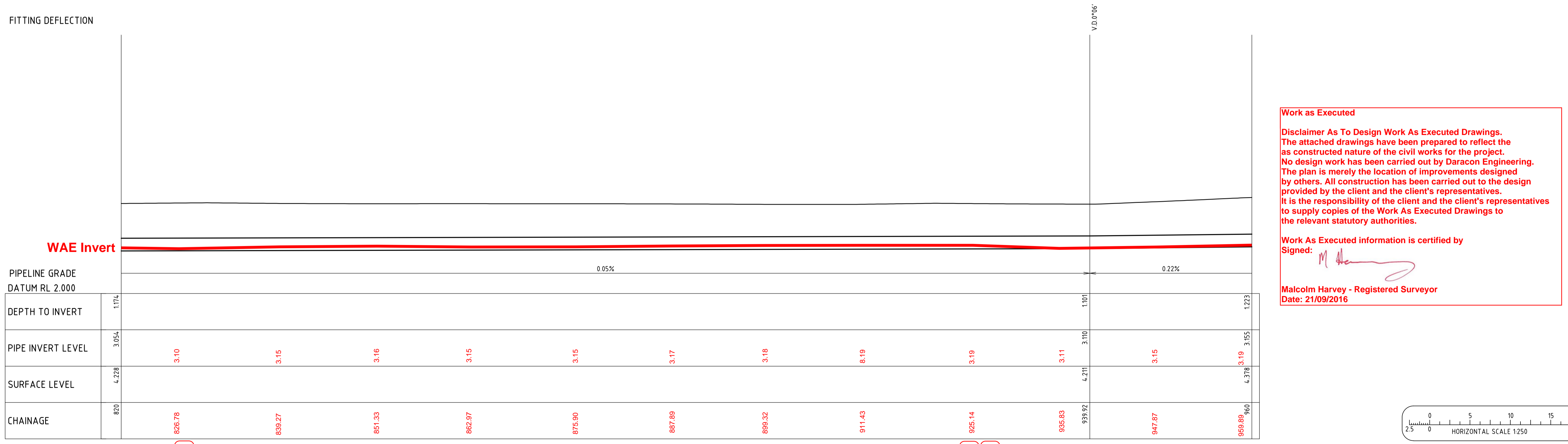
CONSTRUCTION ISSUE

CONSULTANT DETAILS: NORTHROP CONSULTING ENGINEERS LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088				DESIGNED: PB DATE: 30.10.15 COMPANY: NORTHROP	TITLE: W13-1209
REVISION DETAILS		CONSULTANT REFERENCE No. NL14.0220		DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
1	ISSUED FOR CONSTRUCTION	PB	21.12.15	CHECKED: PB DATE: 30.10.15 COMPANY: NORTHROP	SIZE: A1 SCALE: 1:250 INDEX No. 72056
0	CONSTRUCTION	PB	30.11.15	APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP	DRAWING No. 15623
A	FIRST DRAFT	PB	30.10.15		SHEET 106
No.		DWN	DATE		REV No. 1



- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-O PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE.
 - FIRE HYDRANT.
 - AIR VALVE.
 - SCOUR VALVE/BRANCH.
 - PIPE CHAMAGE.

PLAN
SCALE 1:250 @ A1

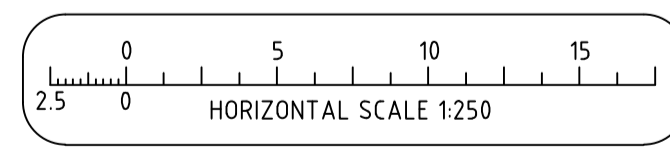


Work as Executed

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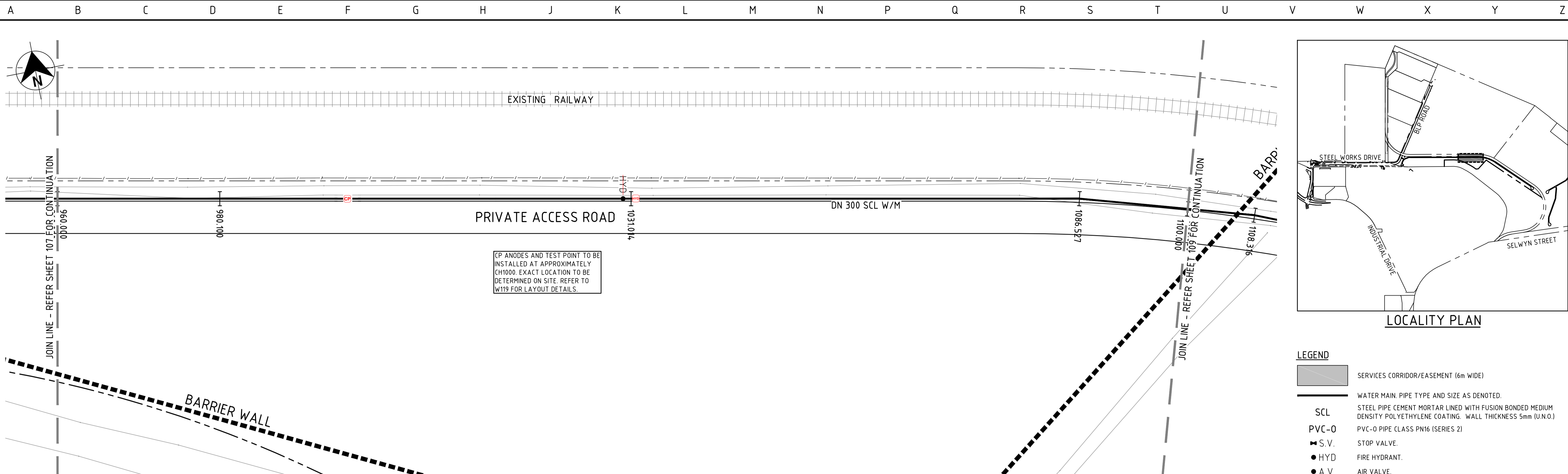
Work as Executed information is certified by
Signed:

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016

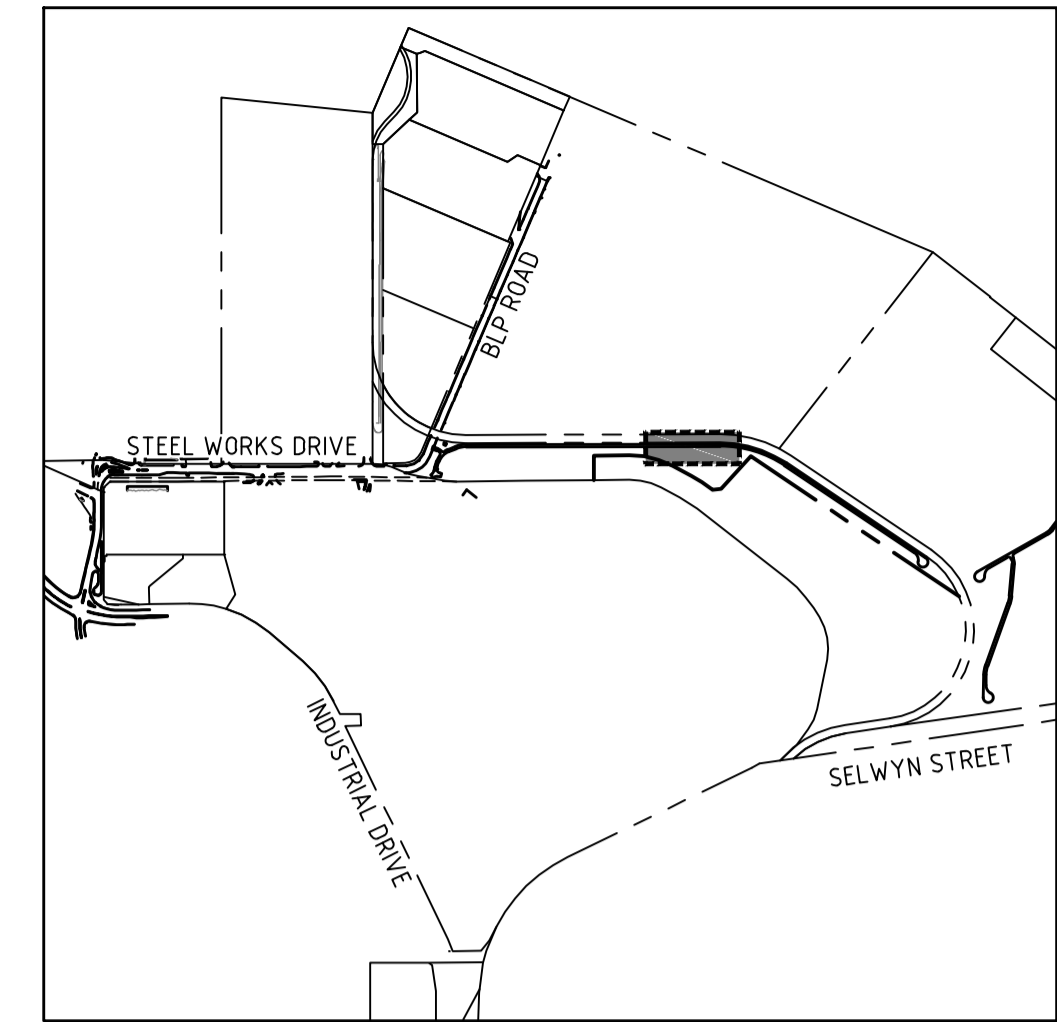


CONSTRUCTION ISSUE

CONSULTANT DETAILS: NORTHROP CONSULTING ENGINEERS LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088				DESIGNED: PB DATE: 30.10.15 COMPANY: NORTHROP	TITLE: W13-1209
CONSULTANT REFERENCE No. NL14.0220		DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4		
REVISION DETAILS		CHECKED: PB DATE: 30.10.15 COMPANY: NORTHROP	APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP	SIZE: A1 SCALE: 1:250	INDEX No. 72056 DRAWING No. 15623
No. 1 ISSUED FOR CONSTRUCTION PB 21.12.15	No. 0 CONSTRUCTION PB 30.11.15	No. A FIRST DRAFT PB 30.10.15	SHEET 107	REV No. 1	



CP ANODES AND TEST POINT TO BE INSTALLED AT APPROXIMATELY CH1000. EXACT LOCATION TO BE DETERMINED ON SITE. REFER TO W119 FOR LAYOUT DETAILS.

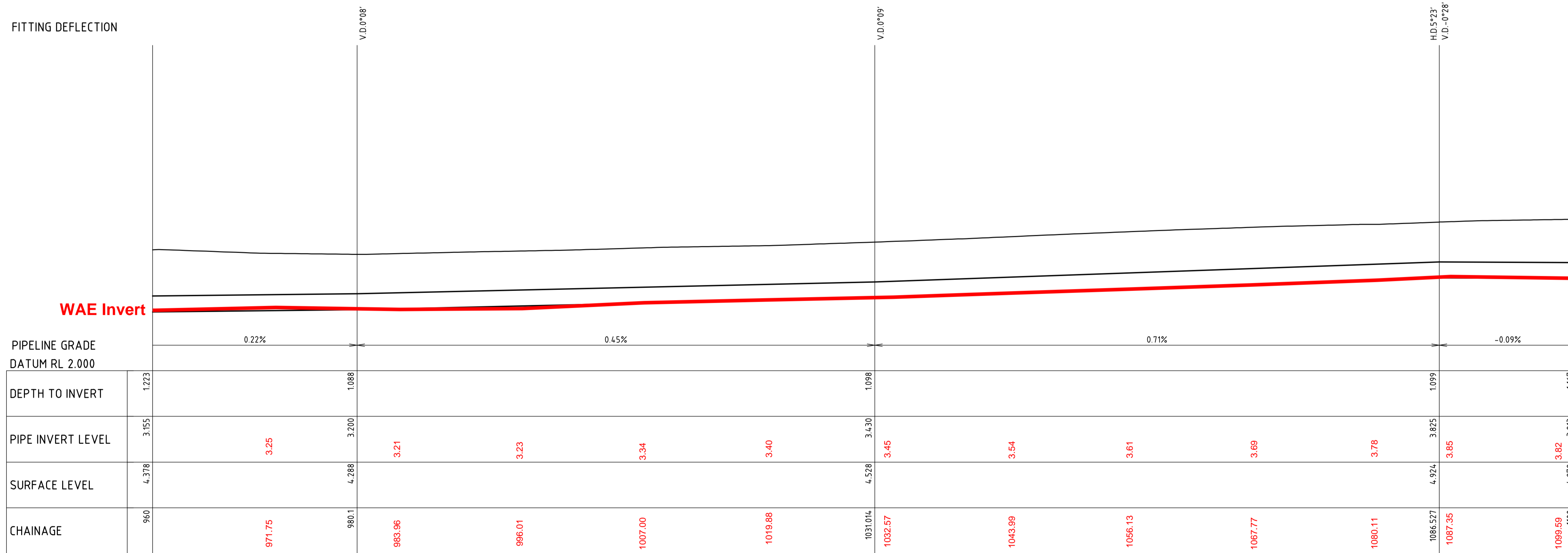


LOCALITY PLAN

LEGEND

- SERVICES CORRIDOR/EASEMENT (6m WIDE)
- WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
- STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
- PVC-O PIPE CLASS PN16 (SERIES 2)
- STOP VALVE.
- FIRE HYDRANT.
- AIR VALVE.
- SCOUR VALVE/BRANCH.
- PIPE CHANNAGE.

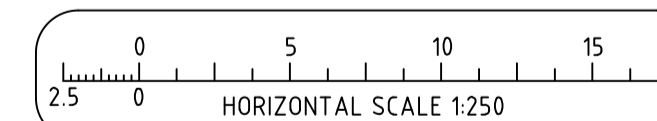
PLAN
SCALE 1:250 @ A1



Work as Executed

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Signed:
Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



CONSTRUCTION ISSUE

No.	REVISION DETAILS	DWN	DATE
1	ISSUED FOR CONSTRUCTION	PB	21.12.15
0	CONSTRUCTION	PB	30.11.15
A	FIRST DRAFT	PB	30.10.15

CONSULTANT DETAILS:

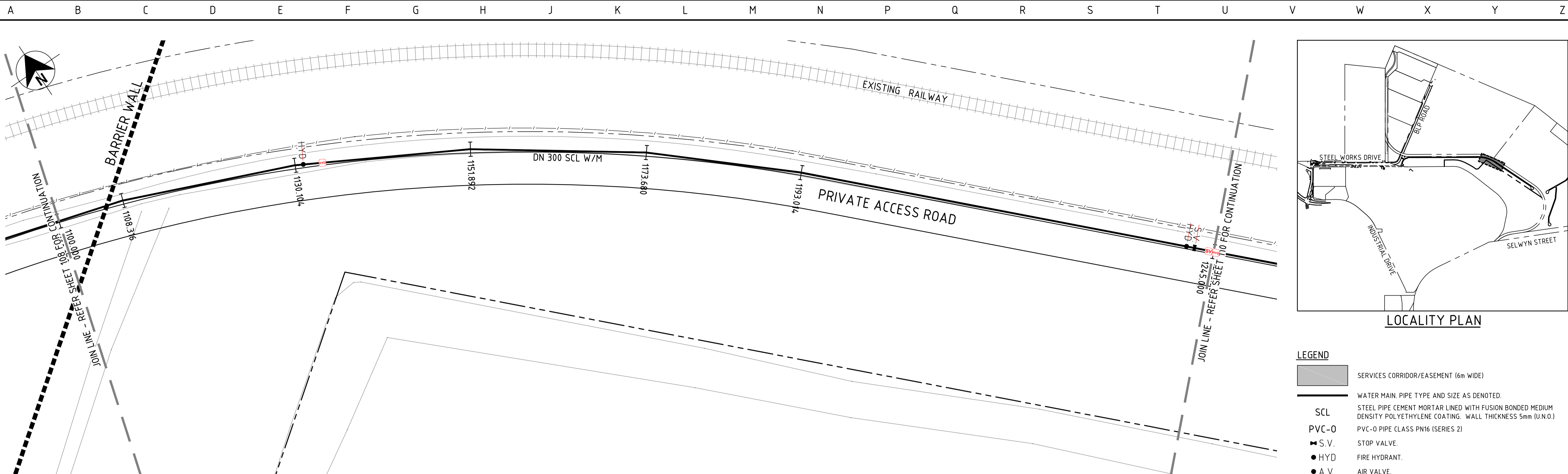
NORTHROP CONSULTING ENGINEERS

LEVEL 1, 215 PACIFIC HIGHWAY
CHARLESTOWN, NSW, 2290
P. 02 49431777 F. 02 49431577
ABN 82 064 775 088

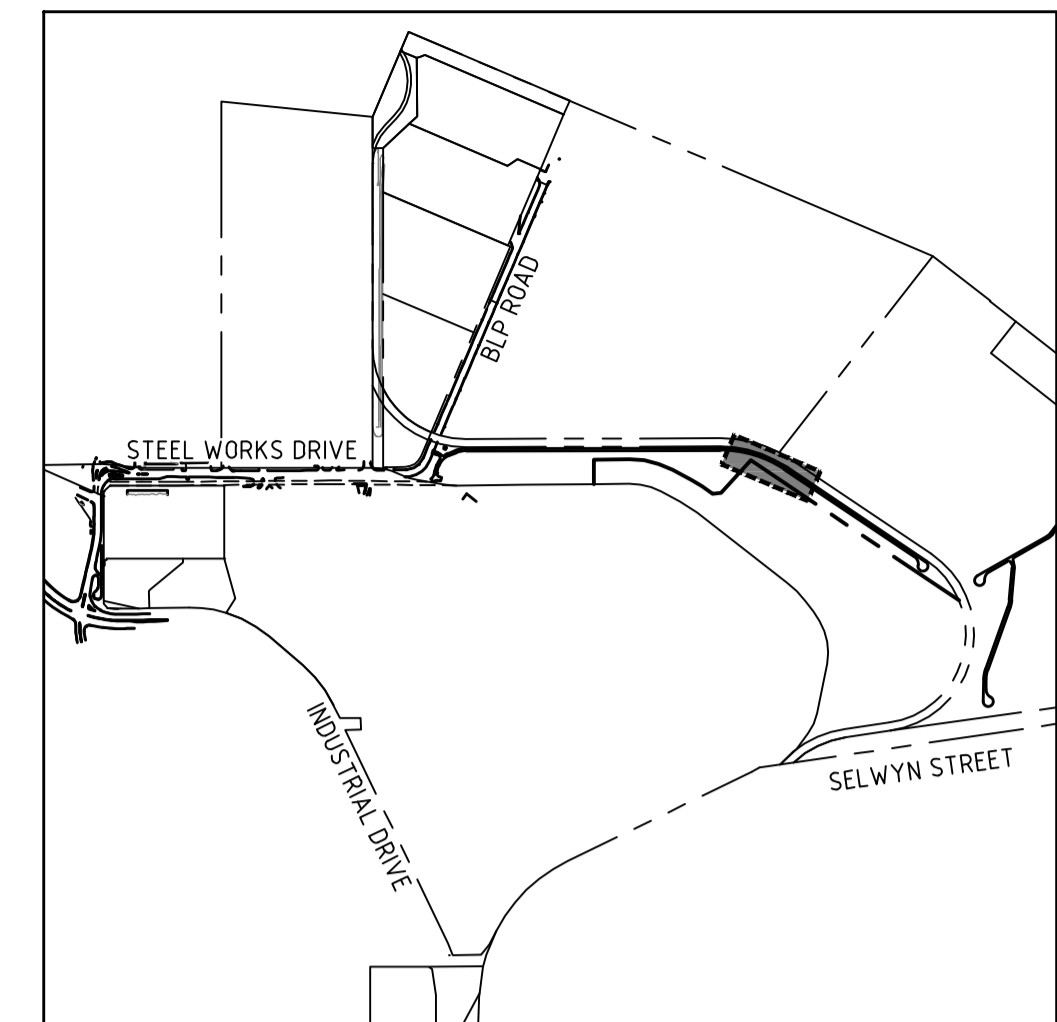
CONSULTANT REFERENCE No. NL14.0220



DESIGNED: PB	DATE: 30.10.15	COMPANY: NORTHROP	TITLE: W13-1209
DRAWN: PB	DATE: 30.10.15	COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
			SCALE: 1:250
			INDEX No. 72056
			DRAWING No. 15623
			SHEET 108
			REV No. 1



PLAN
SCALE 1:250 @ A1

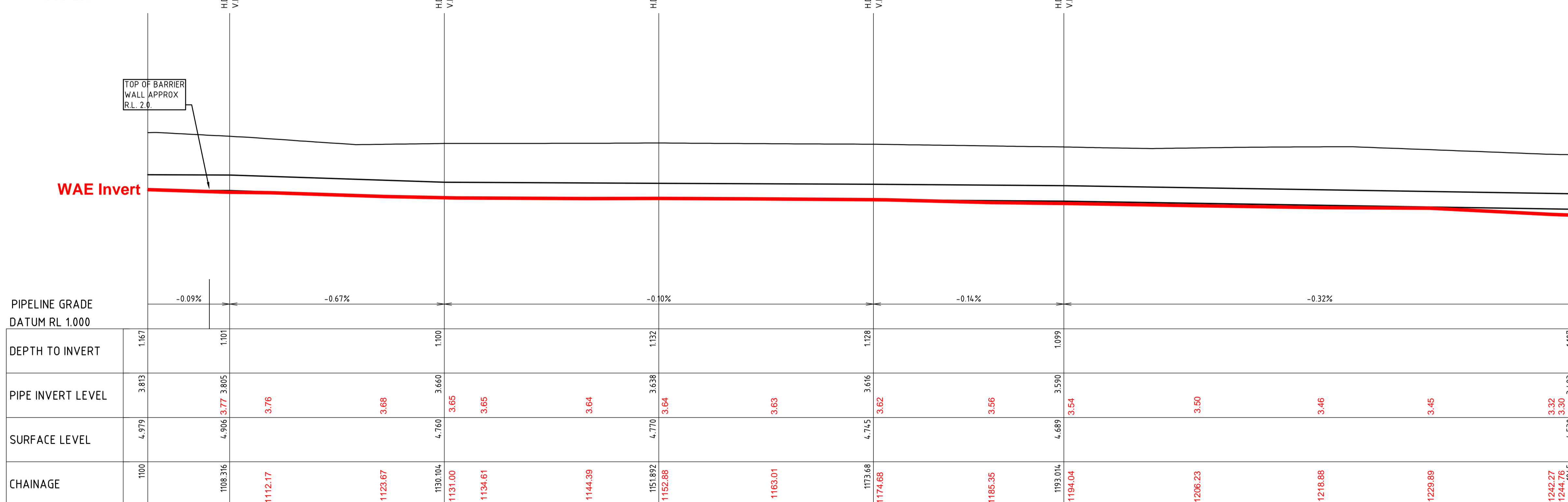


LOCALITY PLAN

LEGEND

- SERVICES CORRIDOR/EASEMENT (6m WIDE)
- WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
- STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
- PVC-0 PIPE CLASS PN16 (SERIES 2)
- STOP VALVE.
- FIRE HYDRANT.
- AIR VALVE.
- SCOUR VALVE/BRANCH.
- PIPE CHAMAGE.

FITTING DEFLECTION



WM1 - LONGITUDINAL SECTION

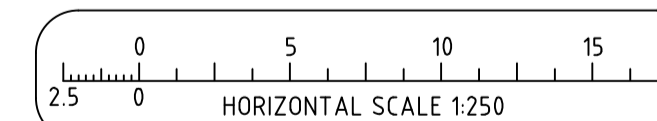
1:250 HORIZ
1:50 VERT

Work as Executed

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Work As Executed information is certified by Signed: *Malcolm Harvey*

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



CONSTRUCTION ISSUE

No.	REVISION DETAILS	DWN	DATE
1	ISSUED FOR CONSTRUCTION	PB	21.12.15
0	CONSTRUCTION	PB	30.11.15
A	FIRST DRAFT	PB	30.10.15

CONSULTANT DETAILS:

NORTHROP CONSULTING ENGINEERS

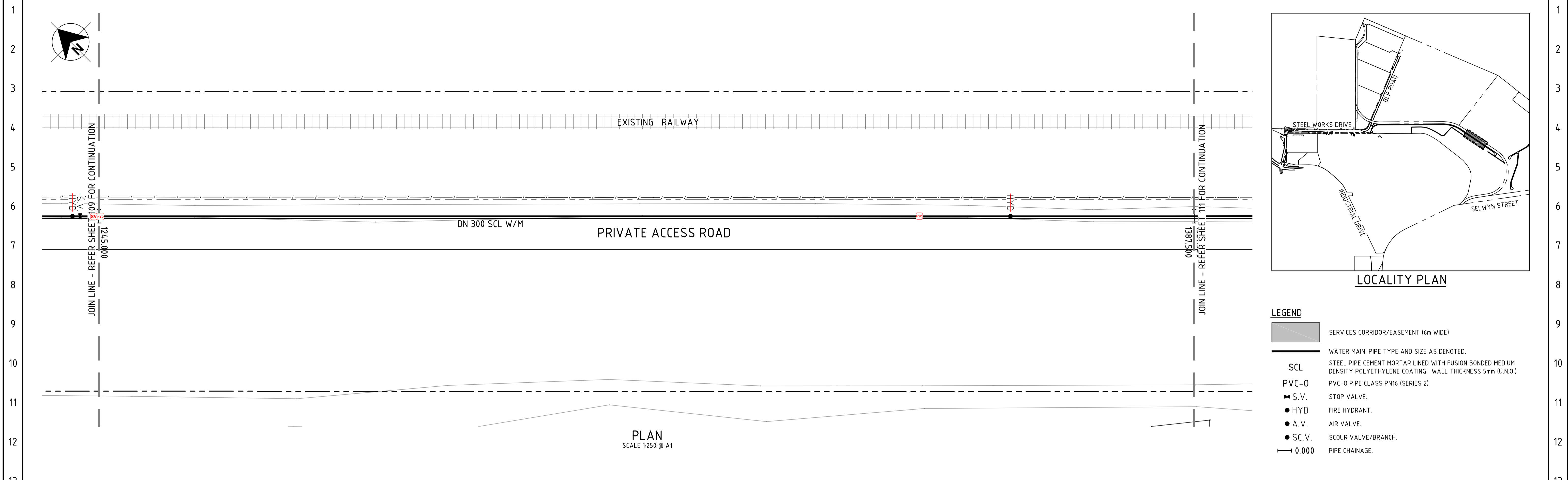
LEVEL 1, 215 PACIFIC HIGHWAY
CHARLESTOWN, NSW, 2290
P. 02 49431777 F. 02 49431577
ABN 82 064 775 088

CONSULTANT REFERENCE No. NL14.0220

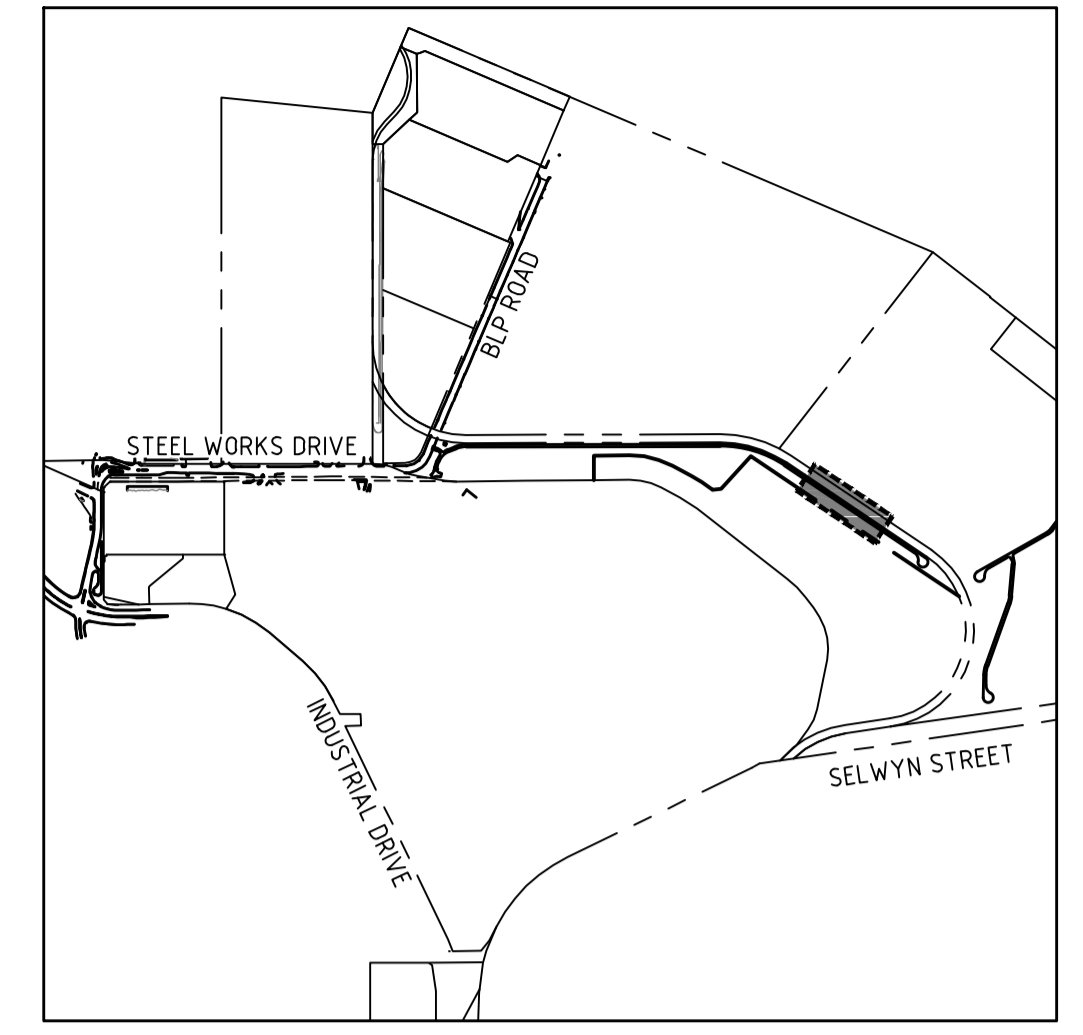


DESIGNED: PB	DATE: 30.10.15	COMPANY: NORTHROP	TITLE: W13-1209
DRAWN: PB	DATE: 30.10.15	COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
		SCALE: 1:250	INDEX No. 72056
		DRAWING No. 15623	SHEET 109
		REV No. 1	

A B C D E F G H J K L M N P Q R S T U V W X Y Z



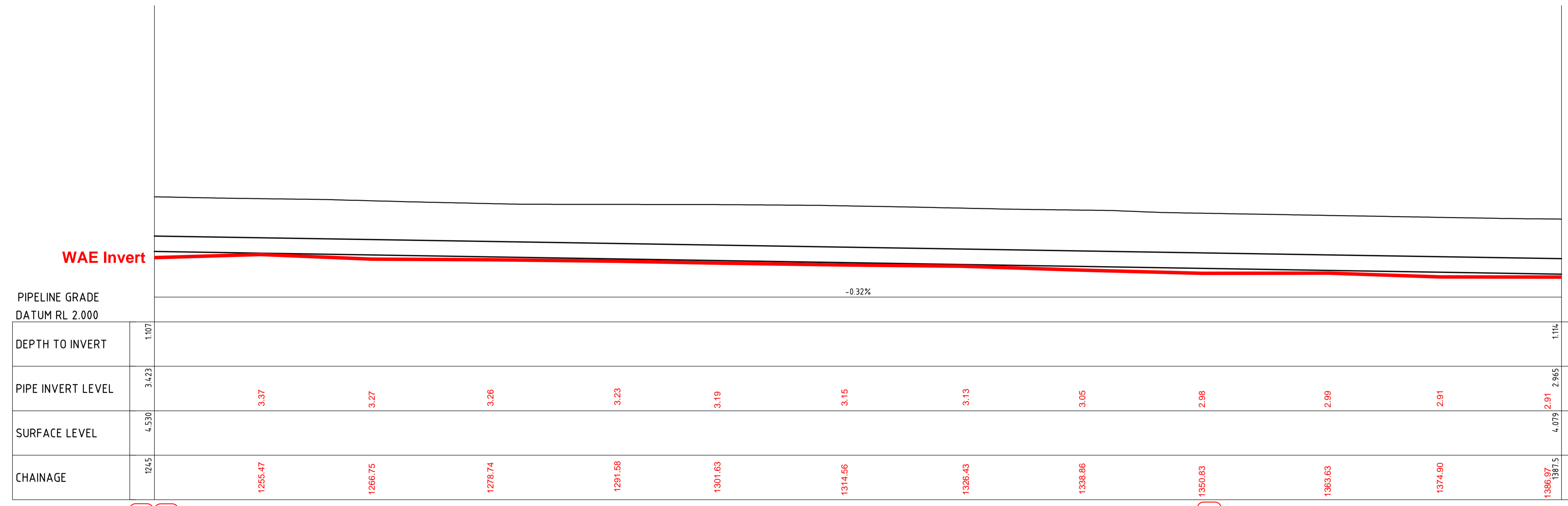
PLAN
SCALE 1:250 @ A1



LOCALITY PLAN

- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN. PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - SCL
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - S.V. STOP VALVE.
 - HYD FIRE HYDRANT.
 - A.V. AIR VALVE.
 - SC.V. SCOUR VALVE/BRANCH.
 - 0.000 PIPE CHAINAGE.

FITTING DEFLECTION

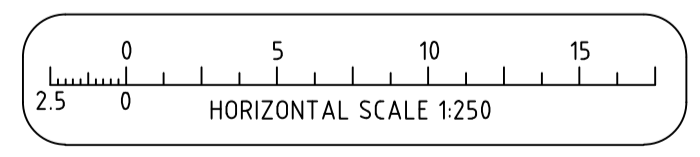


WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT

Work as Executed

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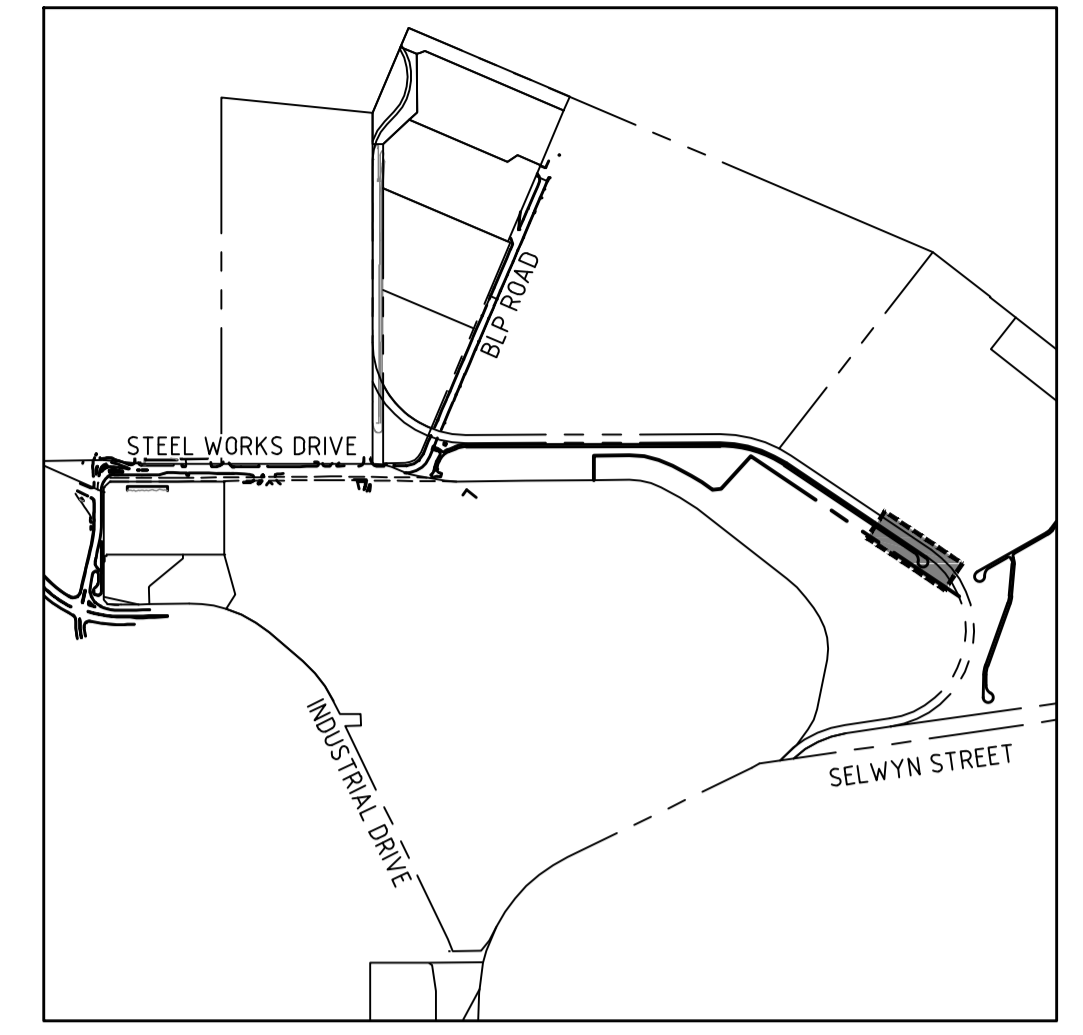
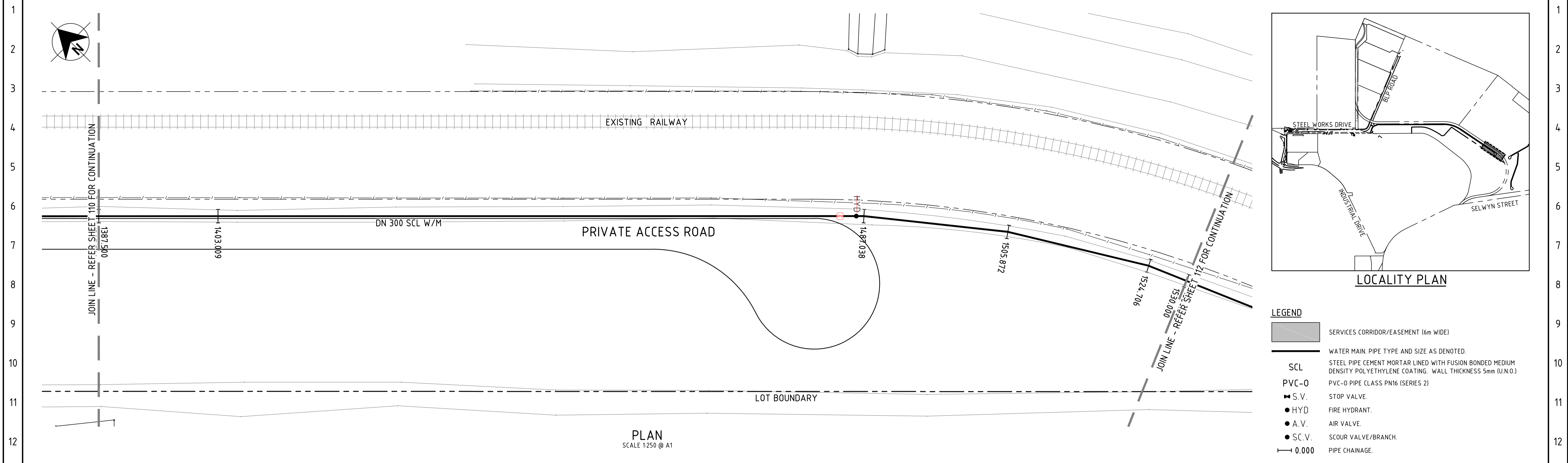
Work As Executed information is certified by
Signed:
Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



CONSTRUCTION ISSUE

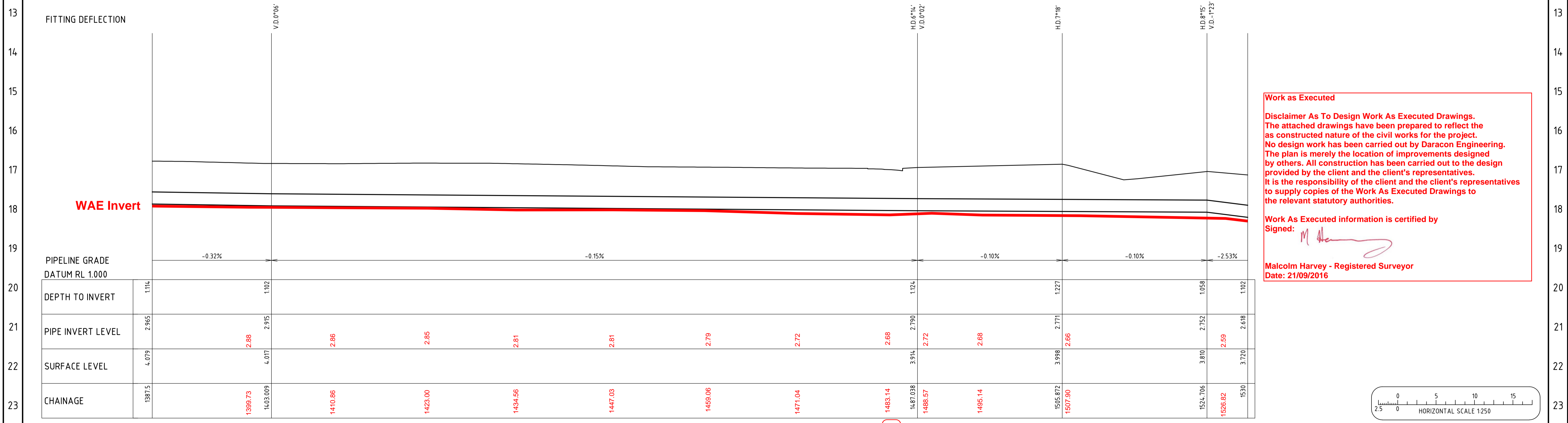
<p>1 ISSUED FOR CONSTRUCTION PB 21.12.15</p> <p>0 CONSTRUCTION PB 30.11.15</p> <p>A FIRST DRAFT PB 30.10.15</p>		<p>CONSULTANT DETAILS:</p> <p>NORTHROP CONSULTING ENGINEERS</p> <p>LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088</p>				<p>DESIGNED: PB 30.10.15 COMPANY: NORTHROP</p> <p>DRAWN: PB 30.10.15 COMPANY: NORTHROP</p> <p>CHECKED: PB 30.10.15 COMPANY: NORTHROP</p> <p>APPROVED: BC 30.10.15 COMPANY: NORTHROP</p>		<p>TITLE: W13-1209</p> <p>WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4</p>		<p>SIZE: A1 SCALE: 1:250 INDEX No. 72056 DRAWING No. 15623 SHEET 110 REV No. 1</p>	
<p>VERSION 3</p> <p>No. REVISION DETAILS DWN DATE</p>		<p>CONSULTANT REFERENCE No. NL14.0220</p>									

A B C D E F G H J K L M N P Q R S T U V W X Y Z



- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE.
 - FIRE HYDRANT.
 - AIR VALVE.
 - SCOUR VALVE/BRANCH.
 - PIPE CHANGE.

PLAN
SCALE 1:250 @ A1

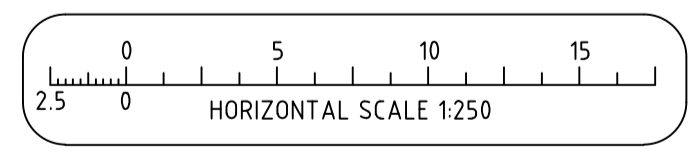


WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT

Work as Executed

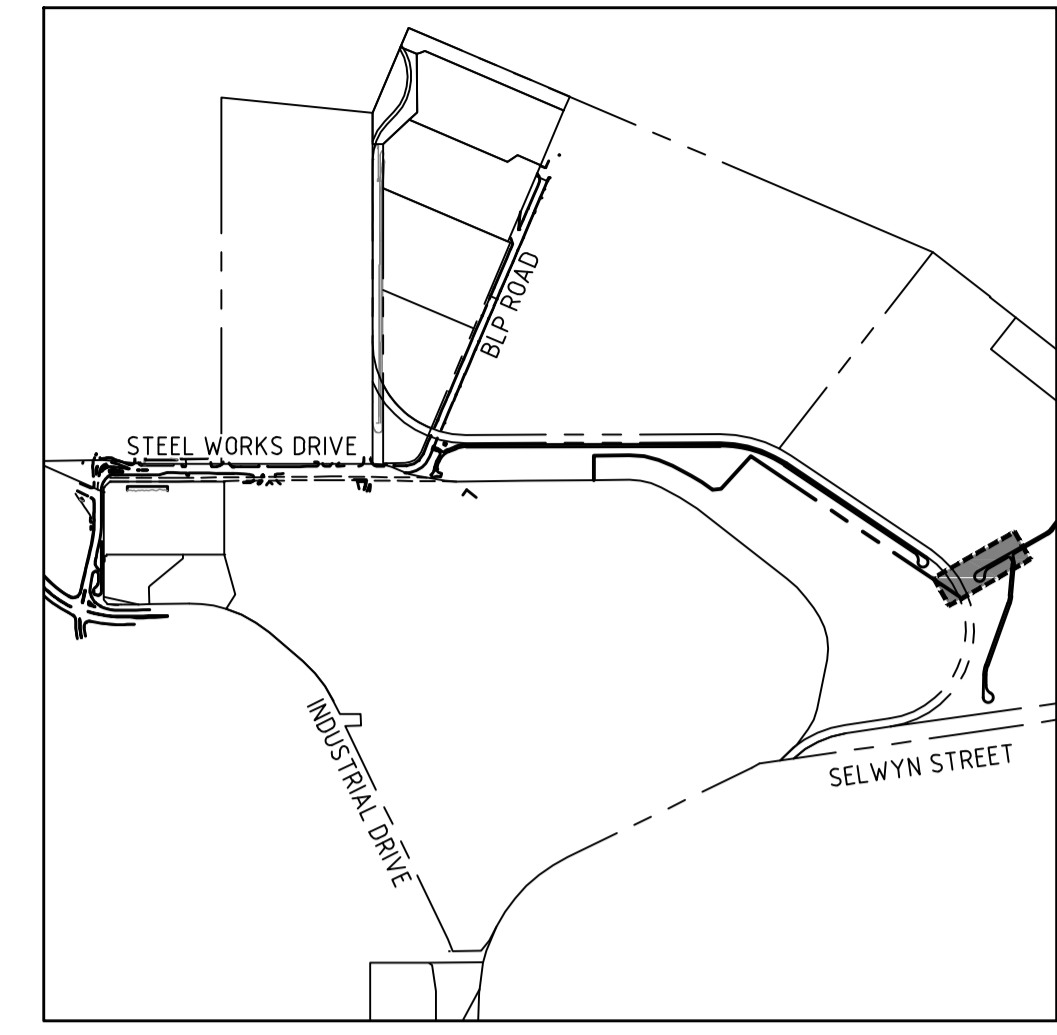
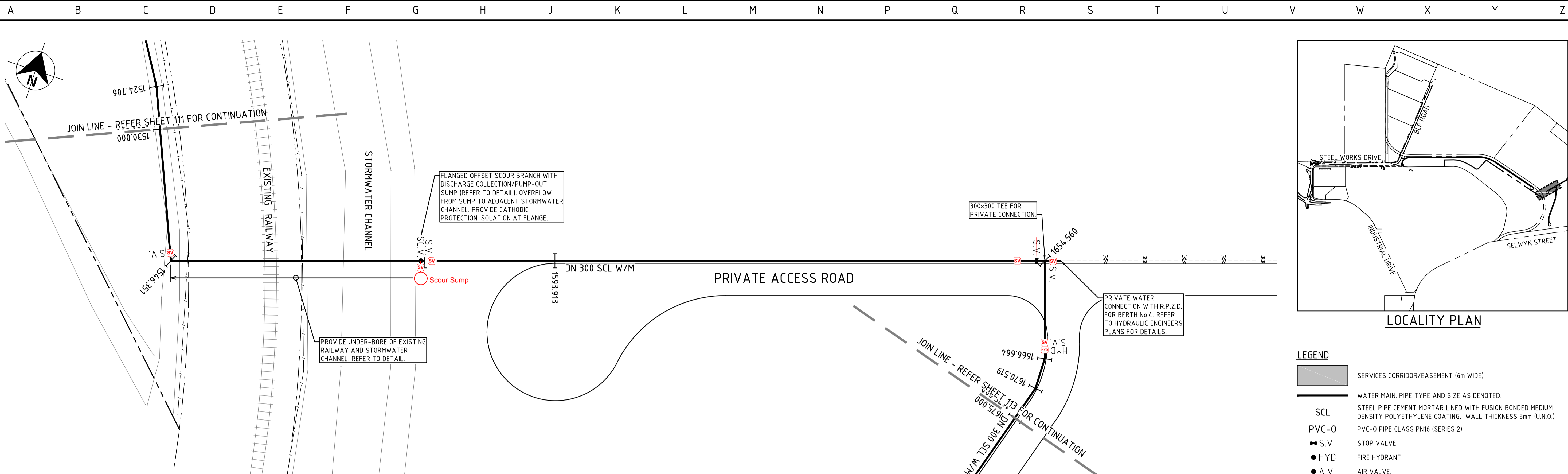
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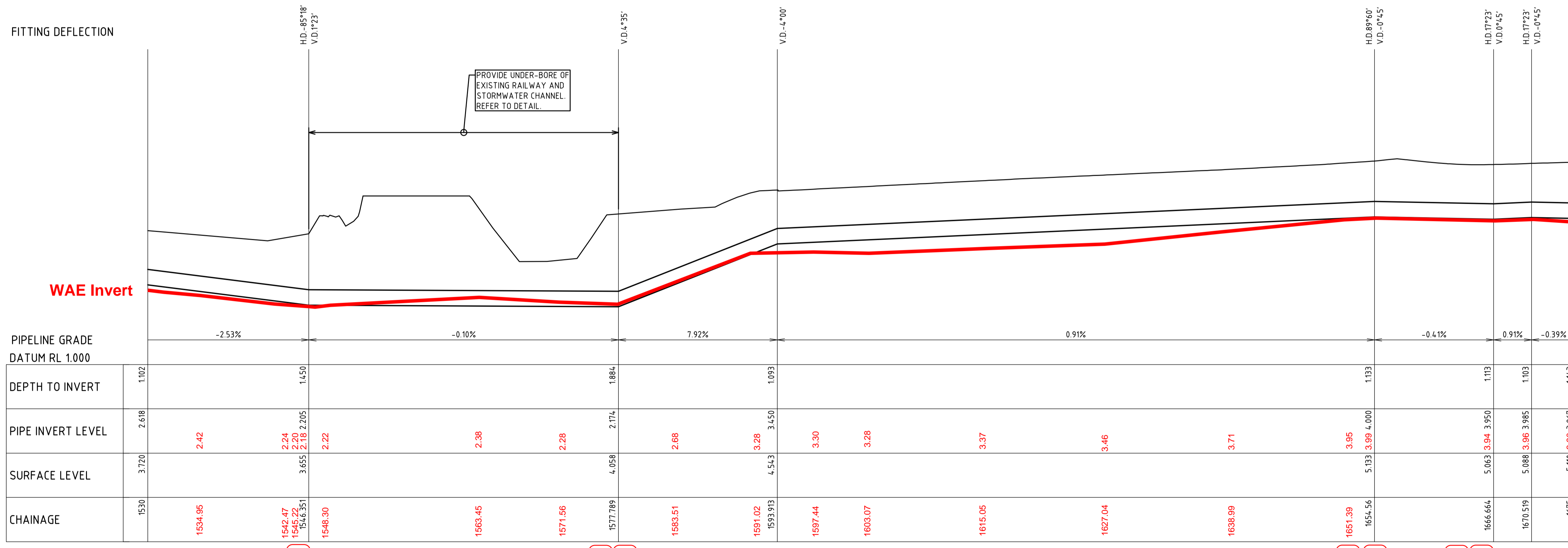


CONSTRUCTION ISSUE

CONSULTANT DETAILS: NORTHROP CONSULTING ENGINEERS LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088		DESIGNED: PB DATE: 30.10.15 COMPANY: NORTHROP DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP CHECKED: PB DATE: 30.10.15 COMPANY: NORTHROP APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP		TITLE: W13-1209 WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4	
CONSULTANT REFERENCE No. NL14.0220		SIZE: SCALE: INDEX No. DRAWING No. SHEET REV No. A1 1:250 72056 15623 111 1			



- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE.
 - S.V.
 - HYD
 - A.V.
 - SC.V.
 - 0.000
 - PIPE CHAMAGE.

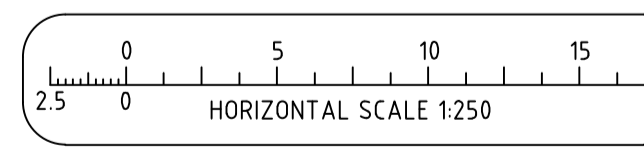


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A	FIRST DRAFT	PB	30.10.15

CONSULTANT DETAILS:

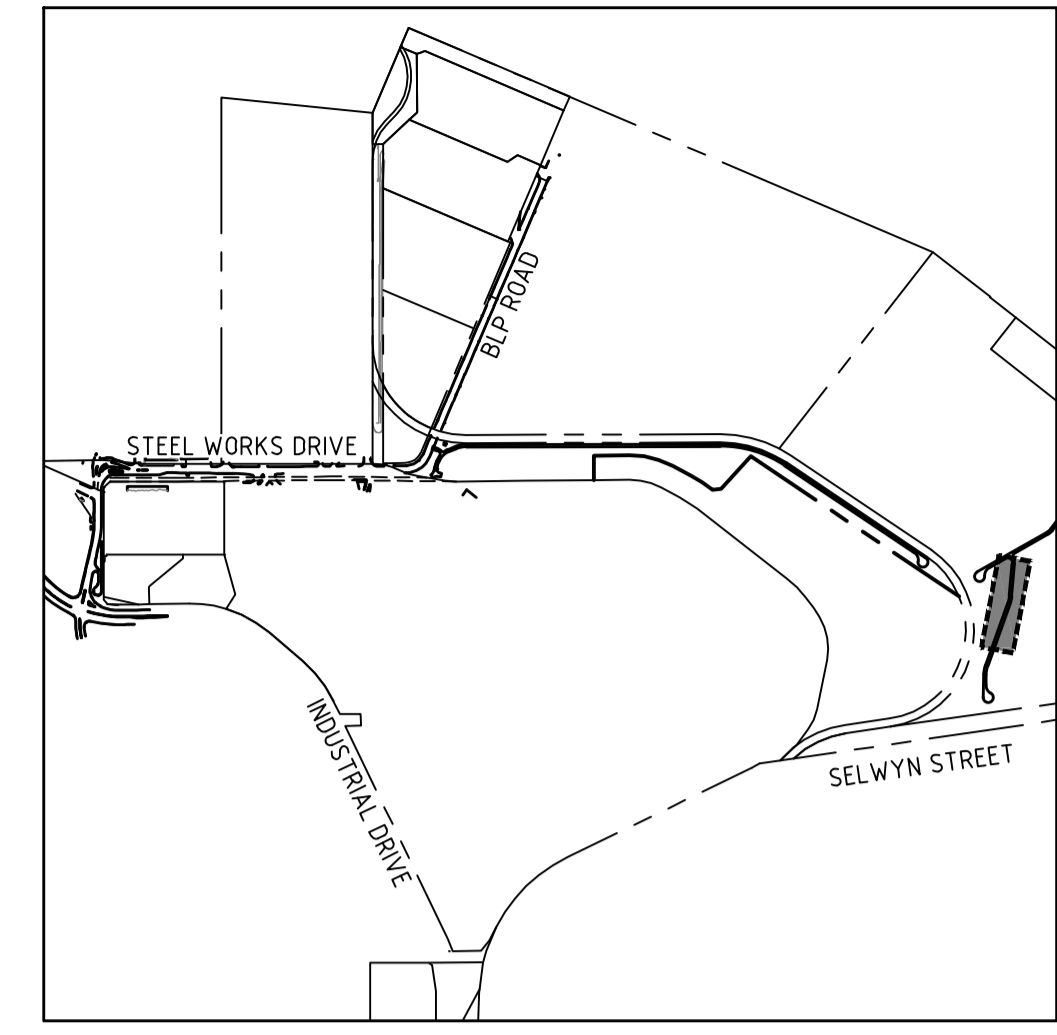
NORTHROP CONSULTING ENGINEERS

LEVEL 1, 215 PACIFIC HIGHWAY
CHARLESTOWN, NSW, 2290
P. 02 49431777 F. 02 49431577
ABN 82 064 775 088

CONSULTANT REFERENCE No. NL14.0220



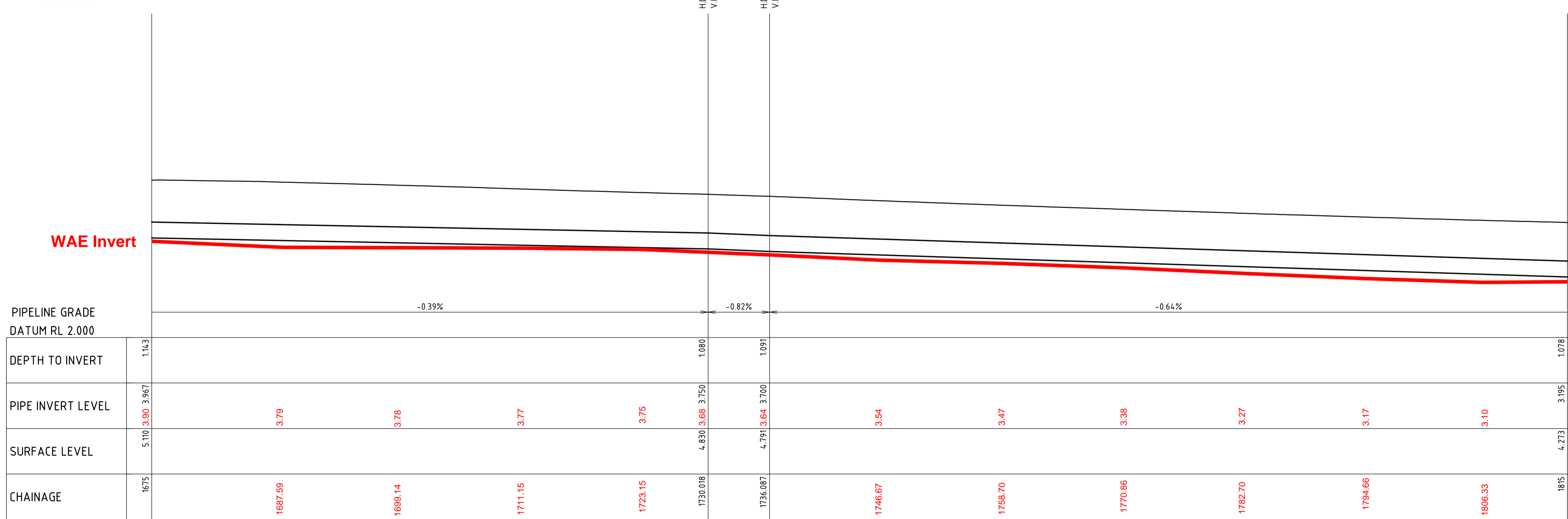
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DRAWN: PB	DATE: 30.10.15	COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
		SCALE: 1:250	INDEX No. 72056
		DRAWING No. 15623	SHEET 112
		REV No. 1	



- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN. PIPE TYPE AND SIZE AS DENOTED.
 - SCL STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - S.V. STOP VALVE.
 - HYD FIRE HYDRANT.
 - A.V. AIR VALVE.
 - SC.V. SCOUR VALVE/BRANCH.
 - 0.000 PIPE CHAMAGE.

PLAN
SCALE 1:250 @ A1

FITTING DEFLECTION



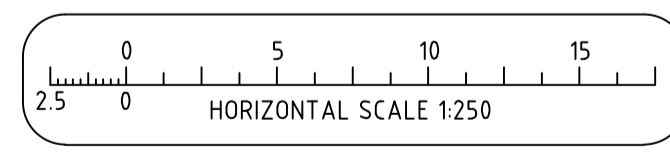
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	3.79		1687.69
	3.78		1699.14
	3.77		1711.15
	3.75		1723.15
1.080	3.750	4.830	1730.018
	3.700	4.791	1736.087
	3.54		1746.67
	3.47		1758.70
	3.38		1770.86
	3.27		1782.70
	3.17		1794.66
	3.10		1806.33
1.078	3.195	4.273	1815

WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT
Ch 1747.42
Ch 1795.14

Work as Executed

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Signed:
Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



CONSTRUCTION ISSUE

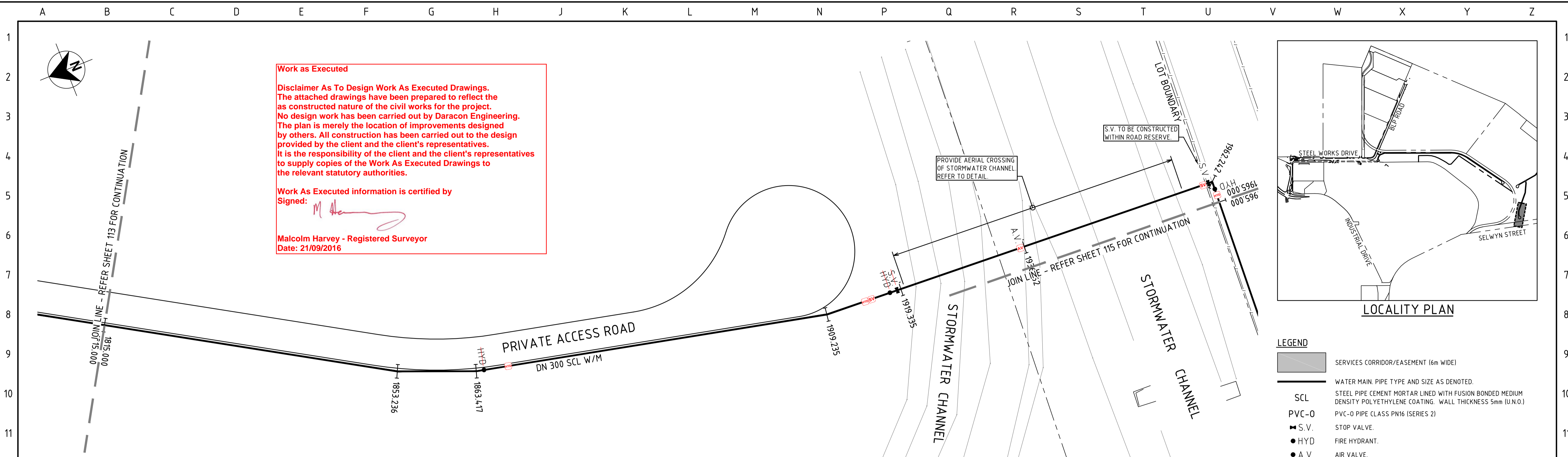
No.	REVISION DETAILS	DWN	DATE
1	ISSUED FOR CONSTRUCTION	PB	21.12.15
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CONSULTANT DETAILS:
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LEVEL 1, 215 PACIFIC HIGHWAY
CHARLESTOWN, NSW, 2290
P. 02 49431777 F. 02 49431577
ABN 82 064 775 088

CONSULTANT REFERENCE No.
NL14.0220



DESIGNED: PB	DATE: 30.10.15	COMPANY: NORTHROP	TITLE: W13-1209
DRAWN: PB	DATE: 30.10.15	COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
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			INDEX No. 72056
			DRAWING No. 15623
			SHEET 113
			REV No. 1

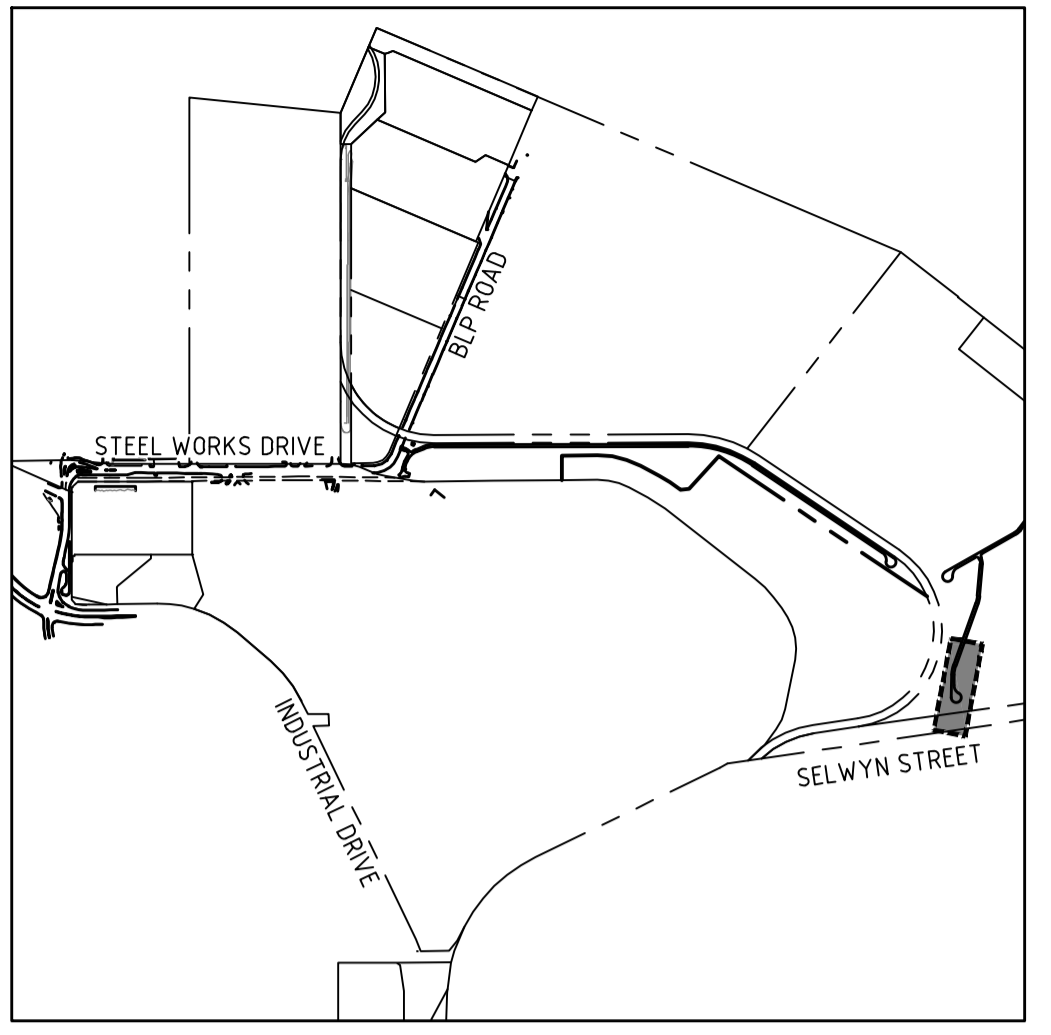


Work as Executed

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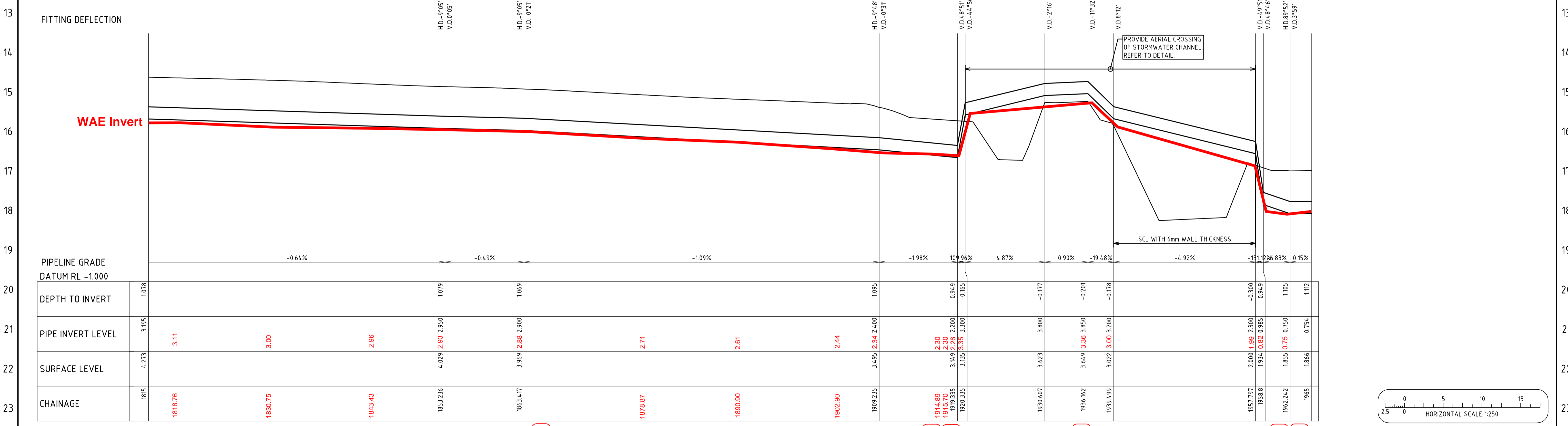
Work As Executed information is certified by Signed: *M Harvey*

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016

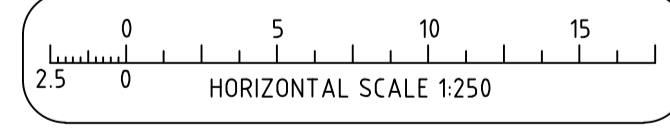


- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - PVC-0 PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE.
 - FIRE HYDRANT.
 - AIR VALVE.
 - SCOUR VALVE/BRANCH.
 - PIPE CHAMAGE.

PLAN
SCALE 1:250 @ A1

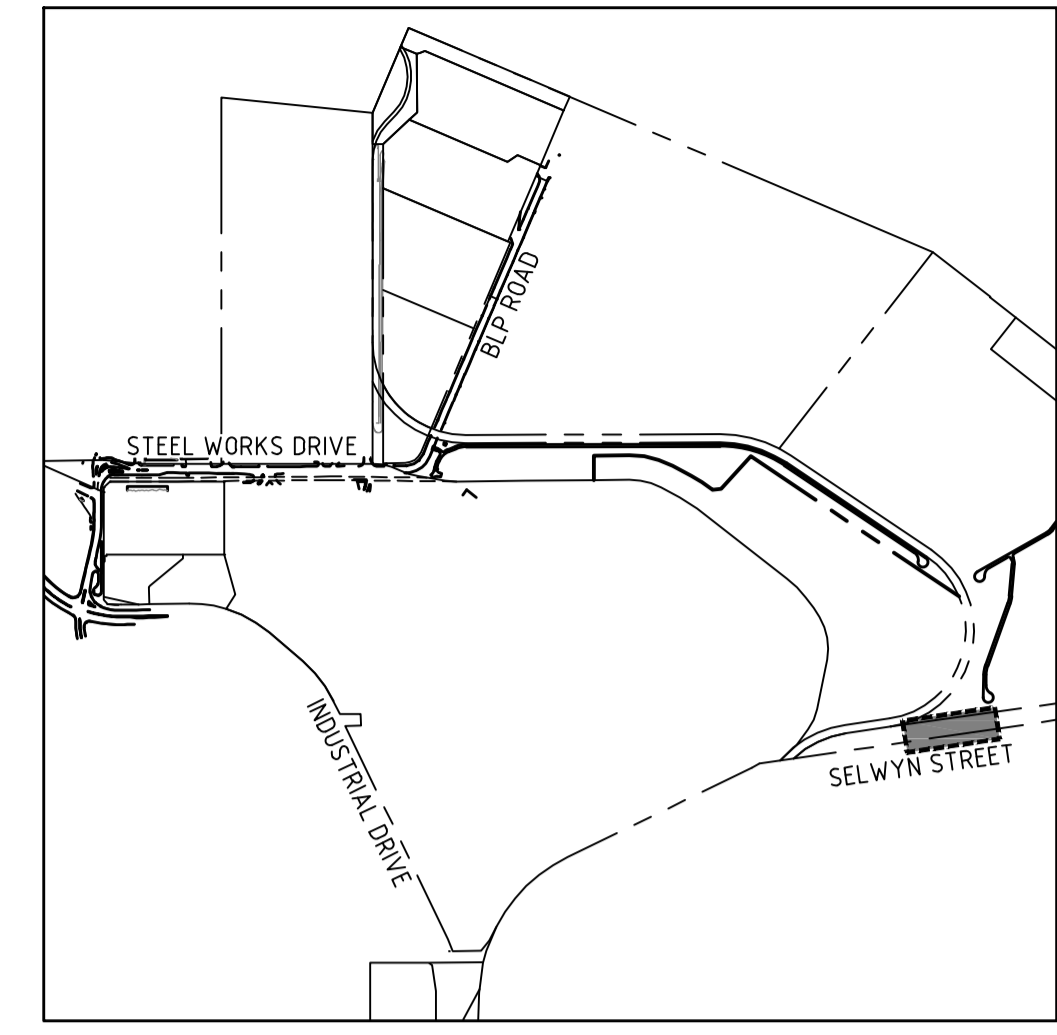
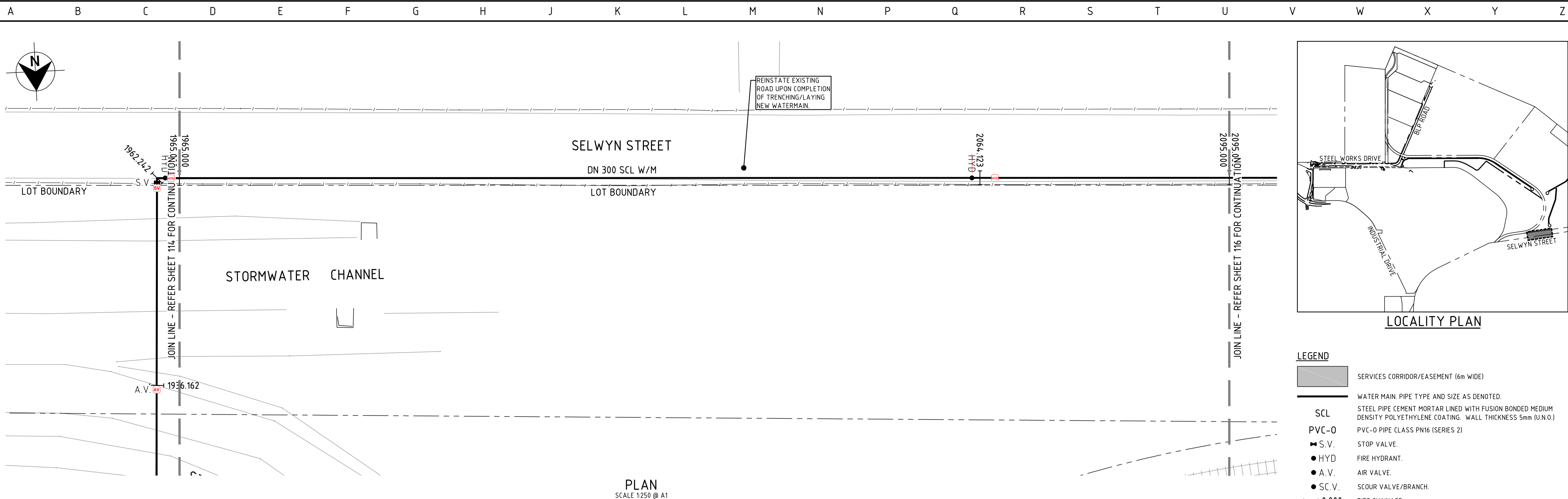


WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT



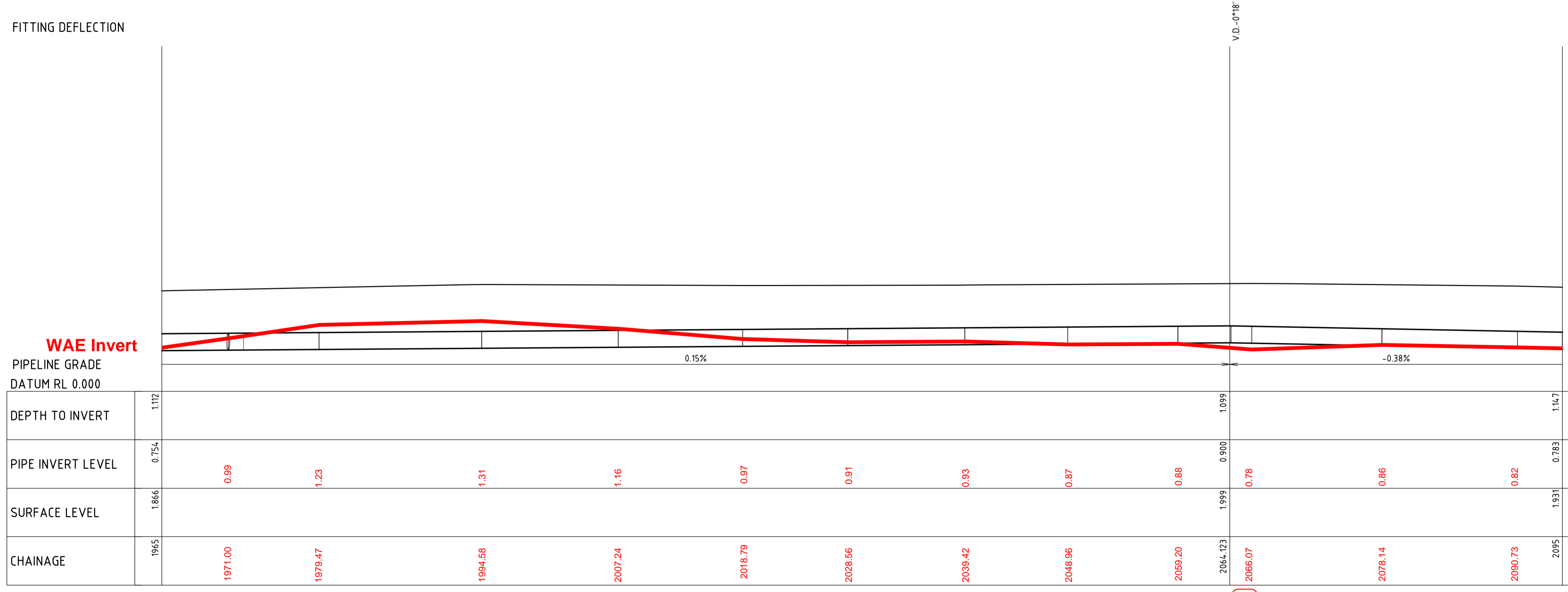
CONSTRUCTION ISSUE

<p>1 ISSUED FOR CONSTRUCTION PB 21.12.15</p> <p>0 CONSTRUCTION PB 30.11.15</p> <p>A FIRST DRAFT PB 30.10.15</p>		<p>CONSULTANT DETAILS:</p> <p>NORTHROP CONSULTING ENGINEERS</p> <p>LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088</p>		<p>DESIGNED: PB 30.10.15 COMPANY: NORTHROP</p> <p>DRAWN: PB 30.10.15 COMPANY: NORTHROP</p> <p>CHECKED: PB 30.10.15 COMPANY: NORTHROP</p> <p>APPROVED: BC 30.10.15 COMPANY: NORTHROP</p>		<p>DATE: 30.10.15</p> <p>DATE: 30.10.15</p> <p>DATE: 30.10.15</p> <p>DATE: 30.10.15</p>		<p>TITLE: W13-1209</p> <p>WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4</p>		<p>SIZE: A1 SCALE: 1:250 INDEX No. 72056</p>		<p>DRAWING No. 15623 SHEET 114 REV No. 1</p>	
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- LEGEND**
- SERVICES CORRIDOR/EASEMENT (6m WIDE)
 - WATER MAIN PIPE TYPE AND SIZE AS DENOTED.
 - STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
 - SCL
 - PVC-O PIPE CLASS PN16 (SERIES 2)
 - STOP VALVE.
 - FIRE HYDRANT.
 - AIR VALVE.
 - SCOUR VALVE/BRANCH.
 - PIPE CHANGEAGE.

PLAN
SCALE 1:250 @ A1



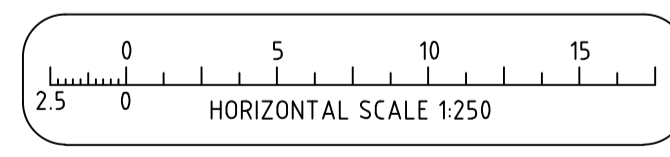
WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT

Work as Executed

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Work As Executed information is certified by
Signed:

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



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0	CONSTRUCTION	PB	30.11.15
A	FIRST DRAFT	PB	30.10.15

CONSULTANT DETAILS:

NORTHROP CONSULTING ENGINEERS

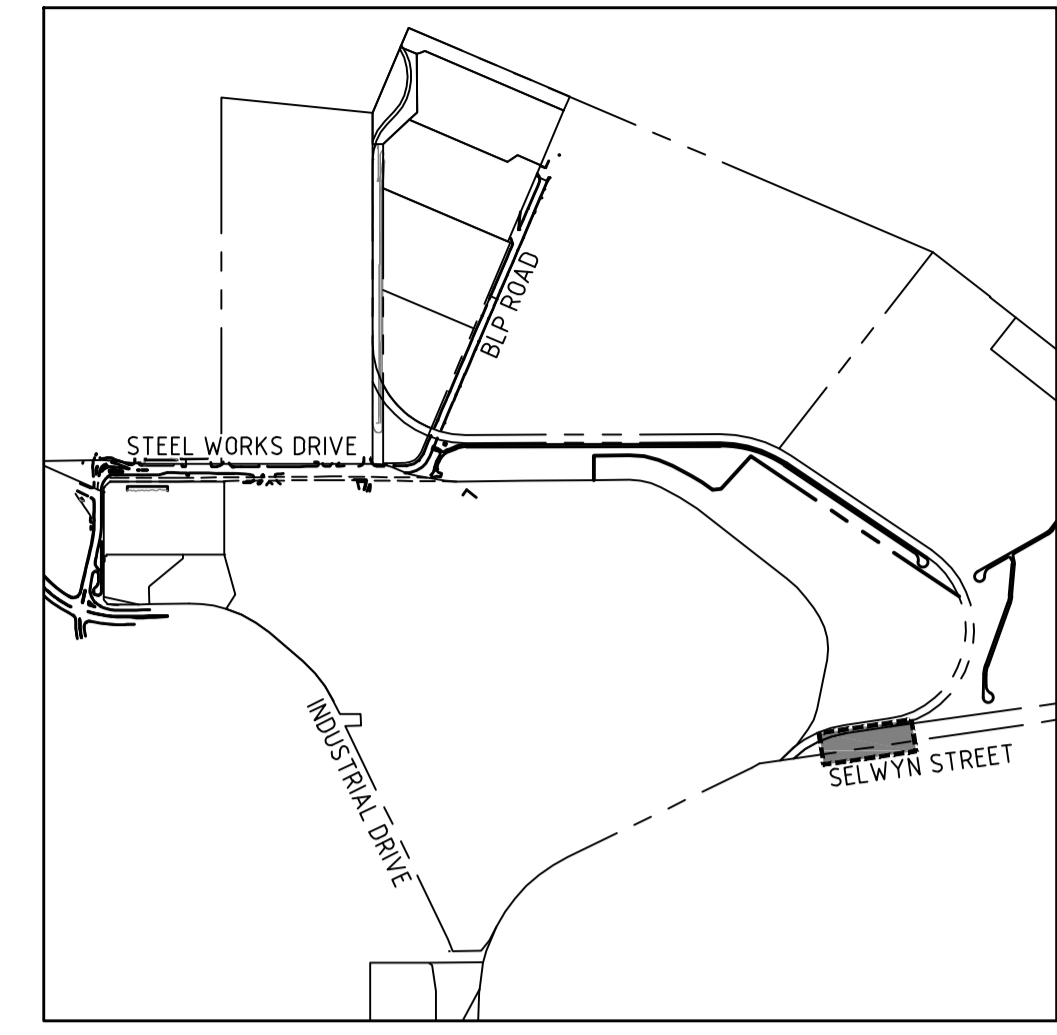
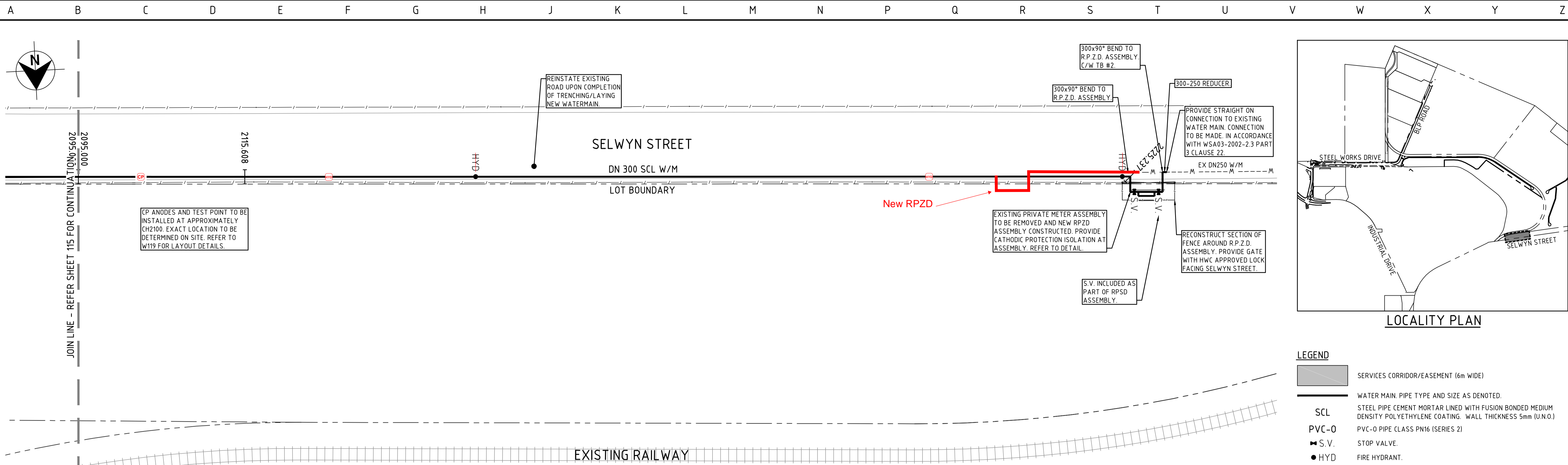
LEVEL 1, 215 PACIFIC HIGHWAY
CHARLESTOWN, NSW, 2290
P. 02 49431777 F. 02 49431577
ABN 82 064 775 088

CONSULTANT REFERENCE No. NL14.0220



DESIGNED: PB	DATE: 30.10.15	COMPANY: NORTHROP
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APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP

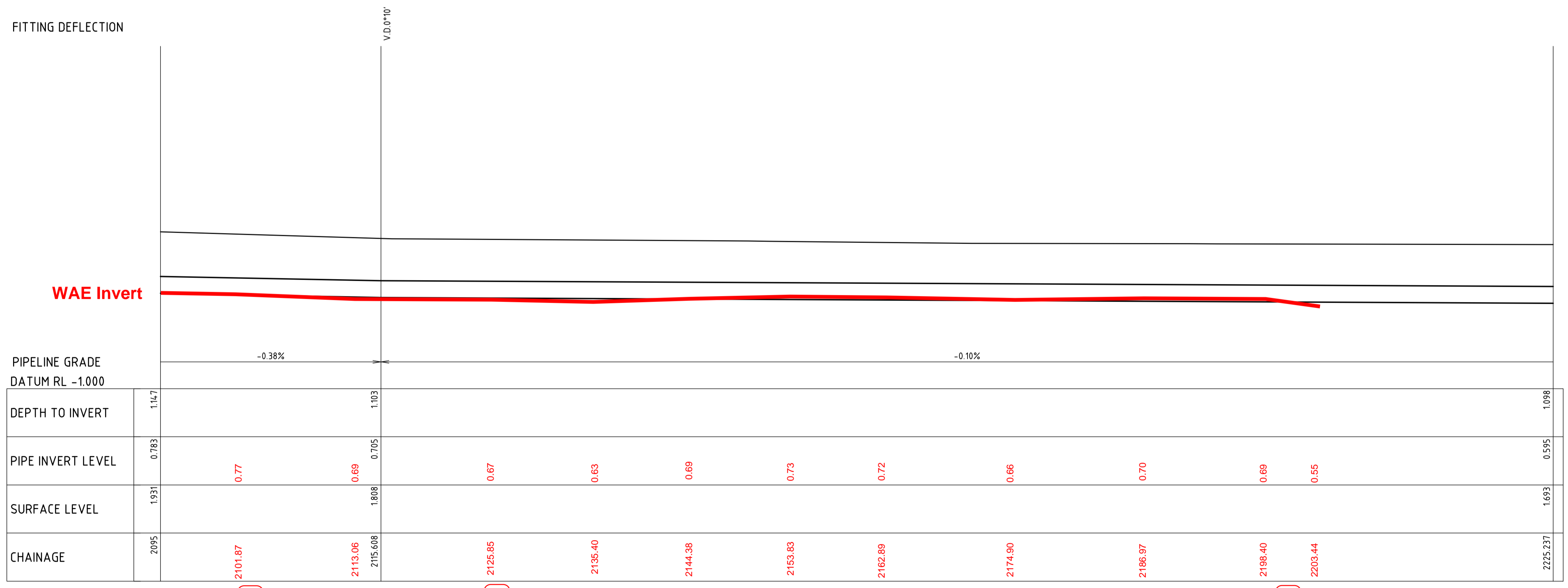
TITLE: W13-1209	SIZE: A1	SCALE: 1:250	INDEX No. 72056	DRAWING No. 15623	SHEET 115	REV No. 1
WATER LEAD-IN MAIN			PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4			



LEGEND

- SERVICES CORRIDOR/EASEMENT (6m WIDE)
- WATER MAIN. PIPE TYPE AND SIZE AS DENOTED.
- STEEL PIPE CEMENT MORTAR LINED WITH FUSION BONDED MEDIUM DENSITY POLYETHYLENE COATING. WALL THICKNESS 5mm (U.N.O.)
- PVC-0 PIPE CLASS PN16 (SERIES 2)
- STOP VALVE.
- FIRE HYDRANT.
- AIR VALVE.
- SCOUR VALVE/BRANCH.
- PIPE CHAMGAE.

PLAN
SCALE 1:250 @ A1



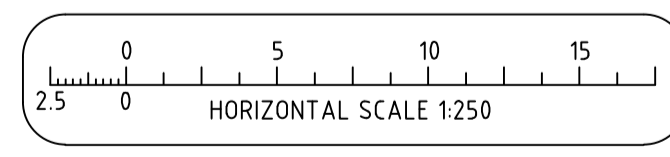
WM1 - LONGITUDINAL SECTION
1:250 HORIZ
1:50 VERT

Work as Executed

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Work As Executed information is certified by
Signed:

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016



CONSTRUCTION ISSUE

CONSULTANT DETAILS: NORTHROP CONSULTING ENGINEERS LEVEL 1, 215 PACIFIC HIGHWAY CHARLESTOWN, NSW, 2290 P. 02 49431777 F. 02 49431577 ABN 82 064 775 088		DESIGNED: PB DATE: 30.10.15 COMPANY: NORTHROP DRAWN: PB DATE: 30.10.15 COMPANY: NORTHROP CHECKED: PB DATE: 30.10.15 COMPANY: NORTHROP APPROVED: BC DATE: 30.10.15 COMPANY: NORTHROP		TITLE: W13-1209 WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4	
CONSULTANT REFERENCE No. NL14.0220		SIZE: A1 SCALE: 1:250 INDEX No. 72056 DRAWING No. 15623 SHEET 116 REV No. 1			

TYPICAL SERVICES ALLOCATION
SERVICES CORRIDOR/EASEMENT

TYPICAL SERVICES ALLOCATION
MAINTENANCE ROAD

TYPICAL SERVICES ALLOCATION
SELWYN STREET

SADDLE/ANCHOR BLOCK FIXING DETAIL

SADDLE/ANCHOR BLOCK NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTES OTHERWISE.
- BASE AREA ASSUMES A MINIMUM SOIL BEARING PRESSURE OF 100mPa.
- FOUNDATION MATERIAL IS TO BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER TO CONFIRM ASSUMED SOIL BEARING PRESSURE AND STABILITY.

Work as Executed

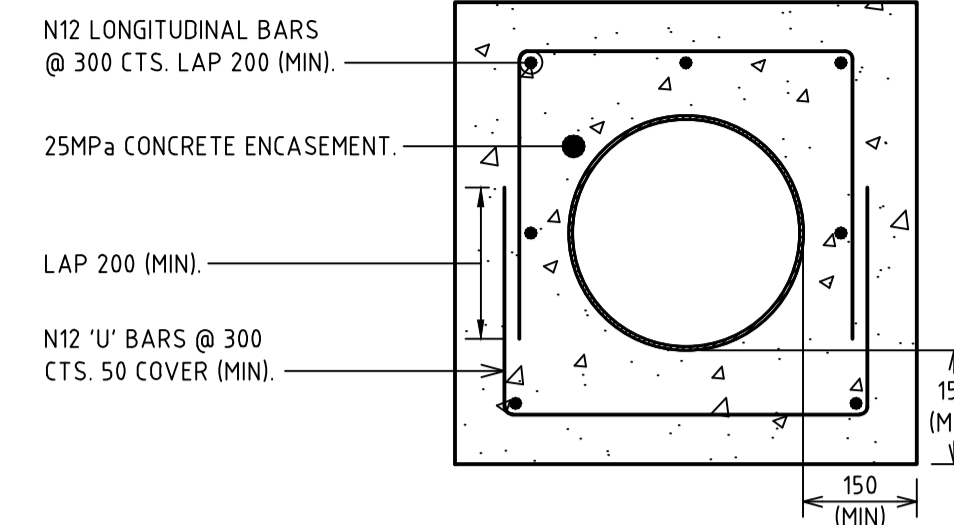
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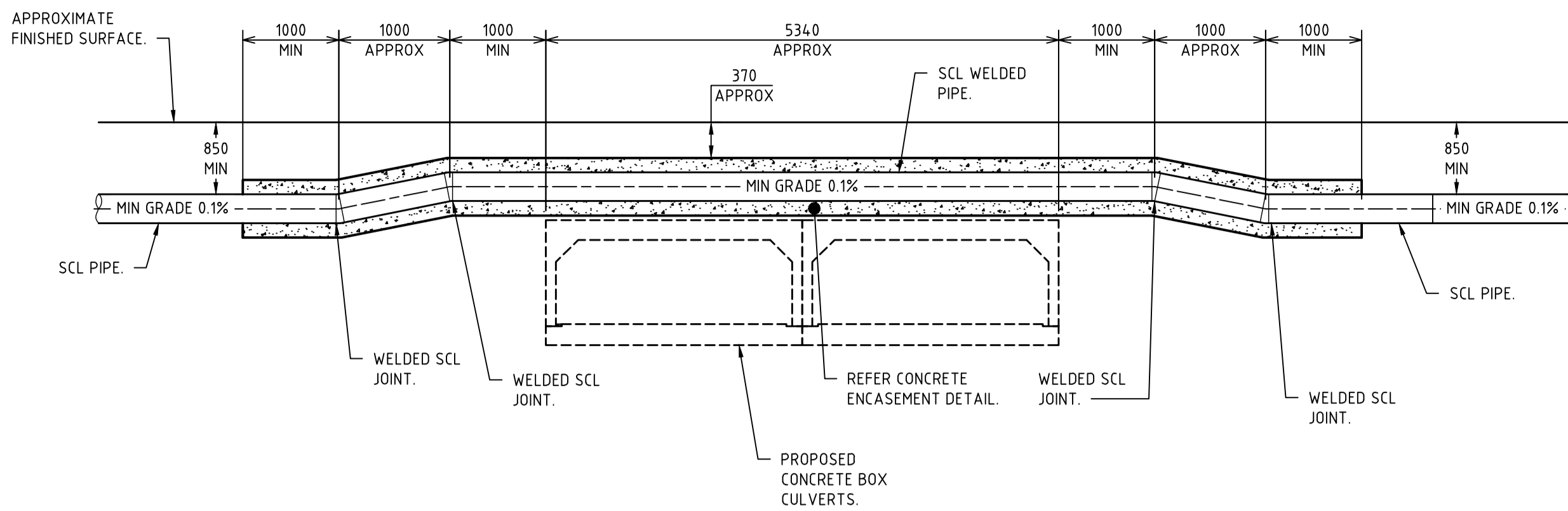
Signed: *Malcolm Harvey*

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016

CONCRETE ENCASEMENT DETAIL

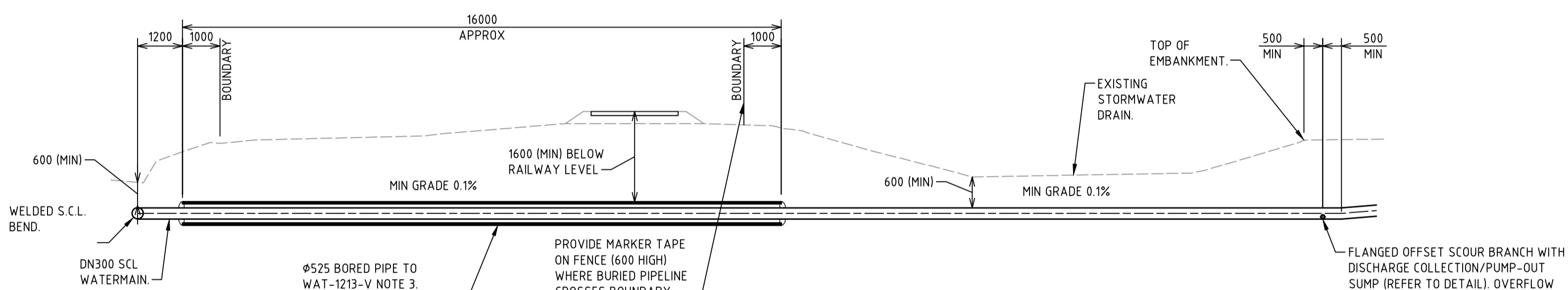


CULVERT CROSSING SECTION
CONCRETE ENCASED



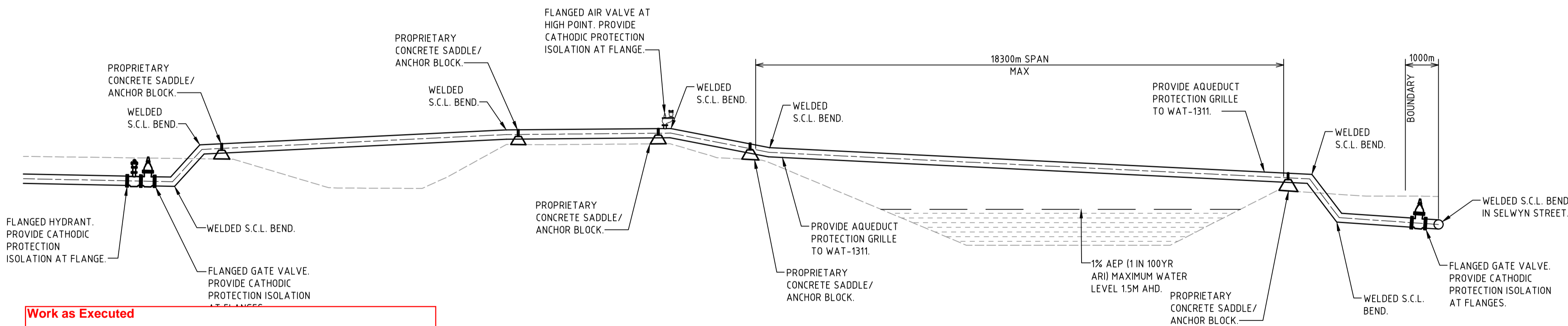
RAILWAY AND STORMWATER DRAIN CROSSING

SCALE 1:100



STORMWATER CHANNEL CROSSING

SCALE 1:100



CONSTRUCTION ISSUE

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DESIGNED: PB	DATE: 30.10.15	COMPANY: NORTHROP	TITLE: W13-1209
DRAWN: PB	DATE: 30.10.15	COMPANY: NORTHROP	WATER LEAD-IN MAIN PORT OF NEWCASTLE, MAYFIELD - MILESTONES 1 AND 4
CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
SCALE:		INDEX No. 72056	DRAWING No. 15623
SHEET 117		REV No. 1	

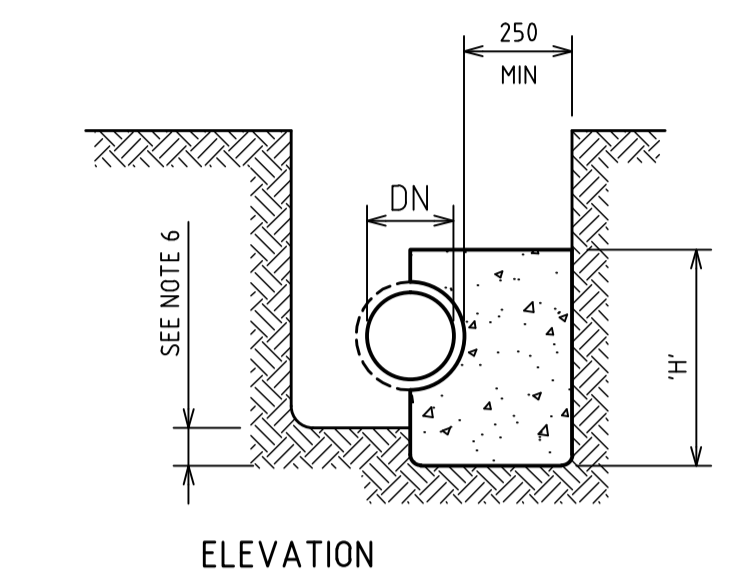
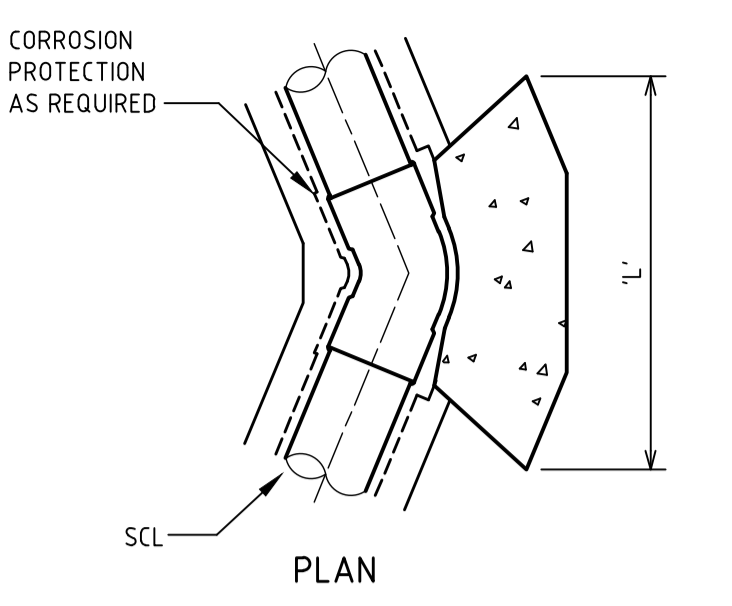
THRUST BLOCK NOTES:

1. CONCRETE THRUST BLOCKS ARE TO BE PROVIDED FOR ALL FITTINGS IN ACCORDANCE WITH THE TABLE BELOW.
2. THRUST BLOCK DIMENSIONS ARE BASED ON THE MINIMUM ALLOWABLE HORIZONTAL BEARING PRESSURES OF THE SOIL AS SHOWN. IF GROUND CONDITIONS ENCOUNTERED INDICATE THAT THESE BEARING PRESSURES MAY NOT BE ACHIEVED THRUST BLOCK DESIGN TO BE REVISED.
3. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. THE NOMINAL THRUST AREA 'N' TO BE ACHIEVED BY POURING CONCRETE THE FULL LENGTH OF THE FITTING AND EXTENDING FROM THE FLOOR OF THE TRENCH TO ABOVE THE FITTING (SEE ALSO NOTE 6).
6. FINISH THRUST BLOCKS APPROXIMATELY 100 ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°.
7. WHEN POURING CONCRETE AGAINST FITTINGS PLACE A MEMBRANE OF POLYETHYLENE, PVC OR FELT BETWEEN THE FITTING AND CONCRETE TO PREVENT DAMAGE TO THE FITTING. JOINTS TO BE CLEAR OF CONCRETE.
8. CONCRETE THRUST BLOCKS TO BE GRADE S25 USING CEMENT TYPE "SR" TO AS3972. CONCRETE TO BE MECHANICALLY VIBRATED.
9. CONCRETE THRUST BLOCKS ARE TO BE CURED FOR A MINIMUM OF 7 DAYS BEFORE BEING SUBJECTED TO ANY THRUST LOAD.
10. REFER TO WAT-1205-V FOR GENERAL FITTING THRUST BLOCK ARRANGEMENTS
11. REFER TO WAT-1207-V FOR GENERAL VALVE THRUST BLOCK ARRANGEMENTS.

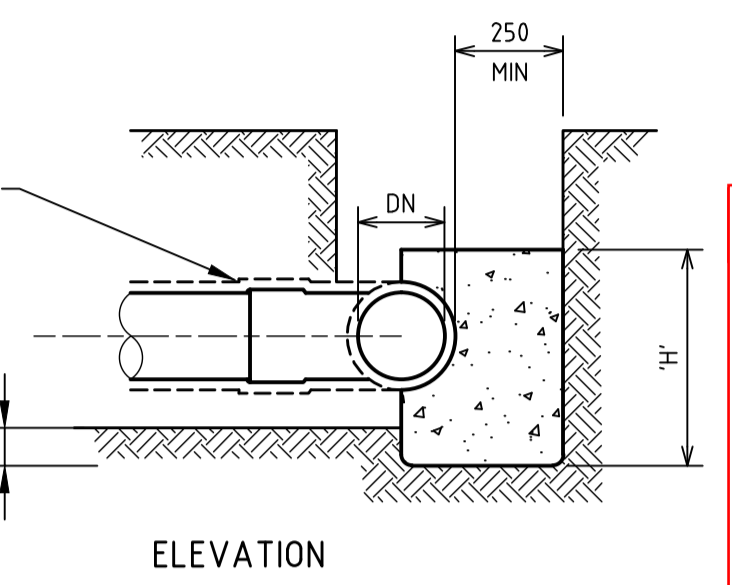
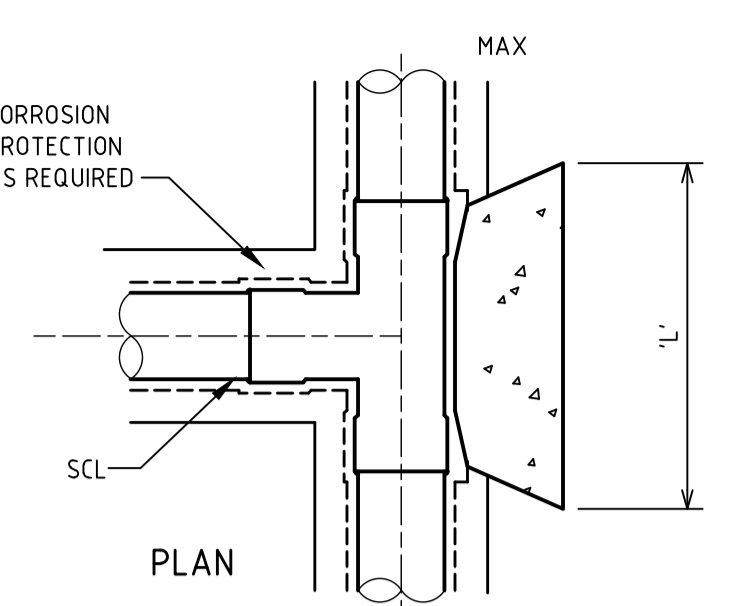
THRUST BLOCK DESIGN
 DESIGN AHBP - 50 mPa
 DESIGN STP - 1000 KPa

THRUST BLOCK DETAILS						
NUMBER (H)	NOM DIA (DN mm)	FITTING	TA (m ²) MIN	L (m) MIN	H (m) MIN	W (m) MIN
1	300	TEE	1.87	2.88	0.65	0.25
2	300	90° BEND	2.65	4.08	0.65	0.25

xN - DENOTES NOMINAL THRUST AREA, REFER NOTES 5 AND 6.
 xW - DENOTES NOMINAL TRENCH WIDTH.
 xSV - THRUST AREA TO BE ACHIEVED IN ACCORDANCE WITH STOP VALVE THRUST BLOCK DETAILS.



(TYPE: BEND)
THRUST BLOCK FOR BENDS
 (FOR HORIZONTAL THRUST)



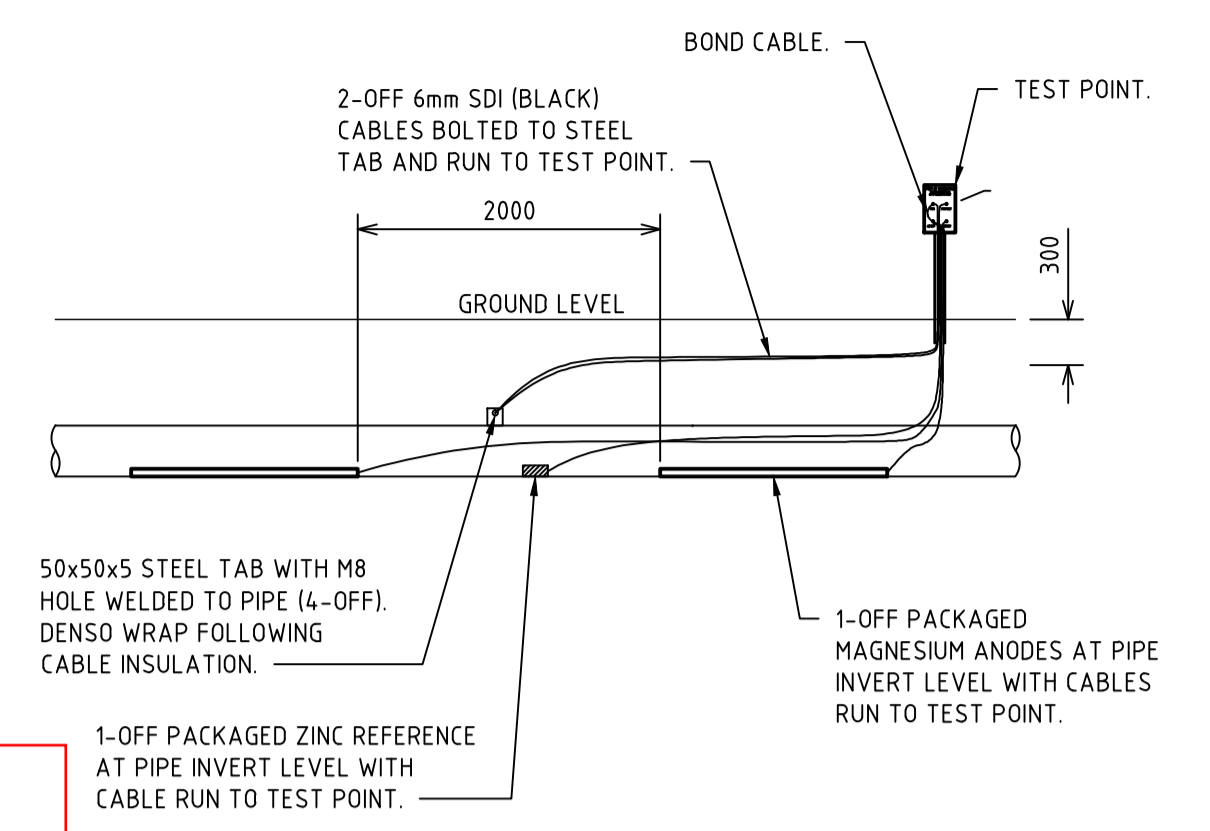
(TYPE: TEE)
THRUST BLOCK FOR TEES
 (FOR HORIZONTAL THRUST)

Work as Executed

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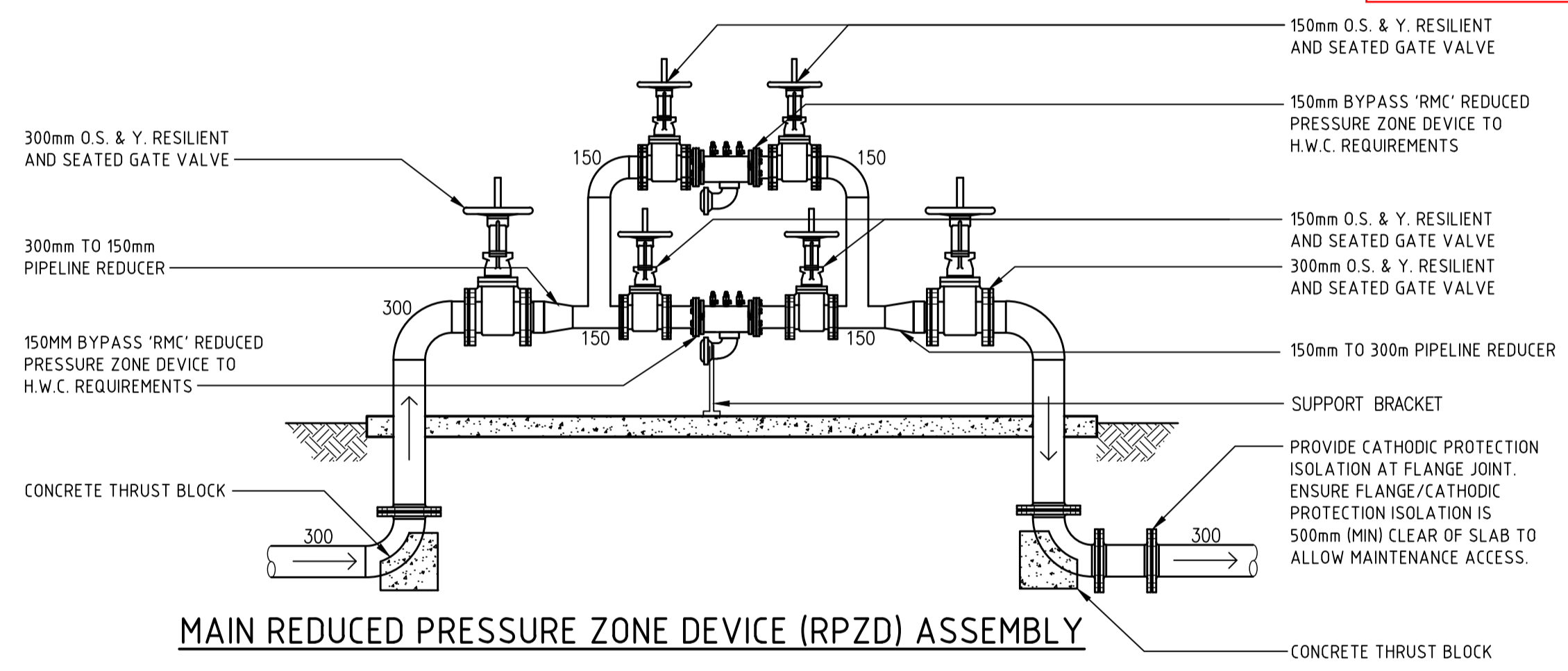
Work As Executed information is certified by Signed:

Malcolm Harvey
Malcolm Harvey - Registered Surveyor
 Date: 21/09/2016

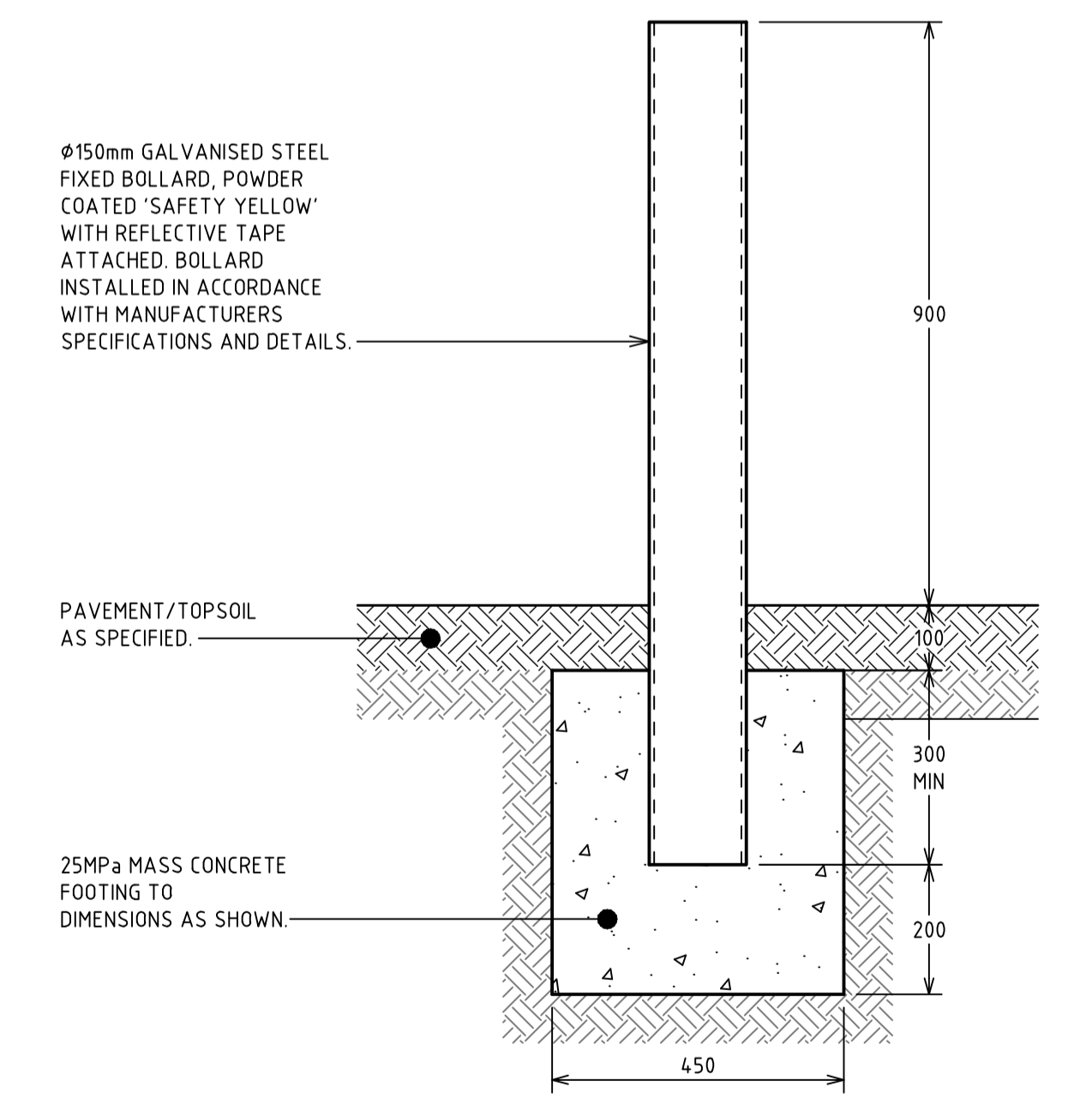


CP SYSTEM LAYOUT
 TYPICAL PROFILE

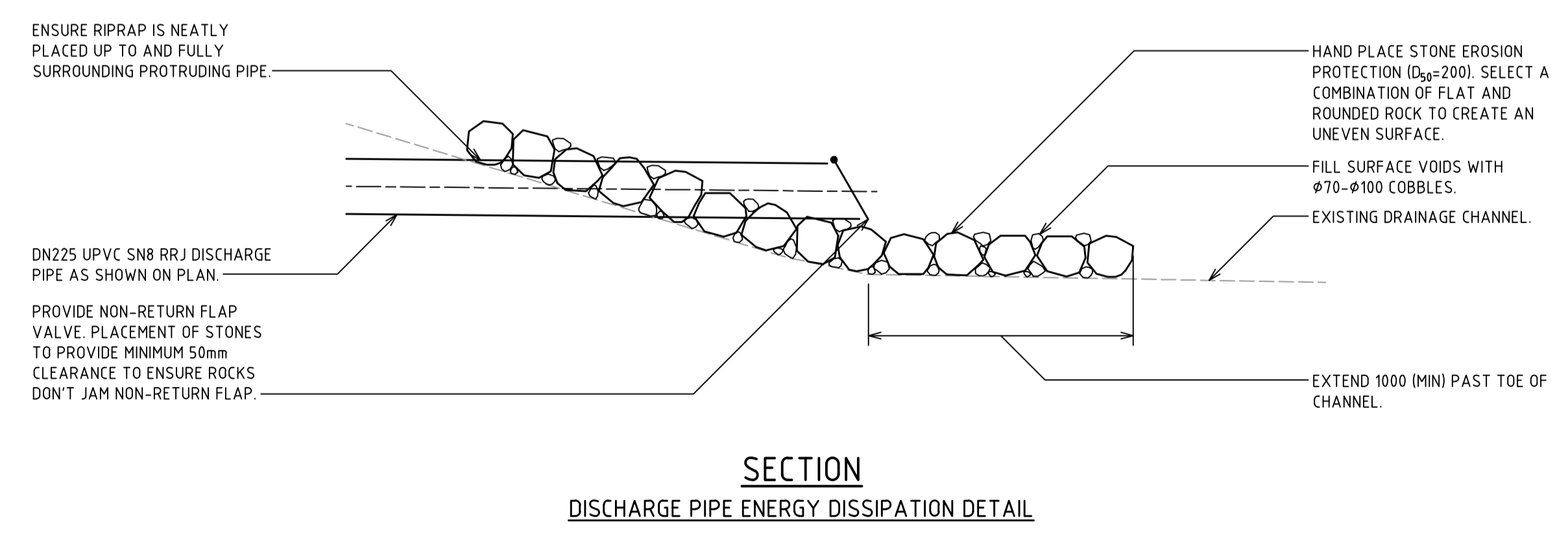
REFER TO CORROSION CONTROL ENGINEERING'S PORT OF NEWCASTLE, MAYFIELD - WATER LEAD-IN MAIN: CATHODIC PROTECTION SYSTEM DESIGN REPORT FOR ADDITIONAL MATERIAL AND CONSTRUCTION SPECIFICATIONS.



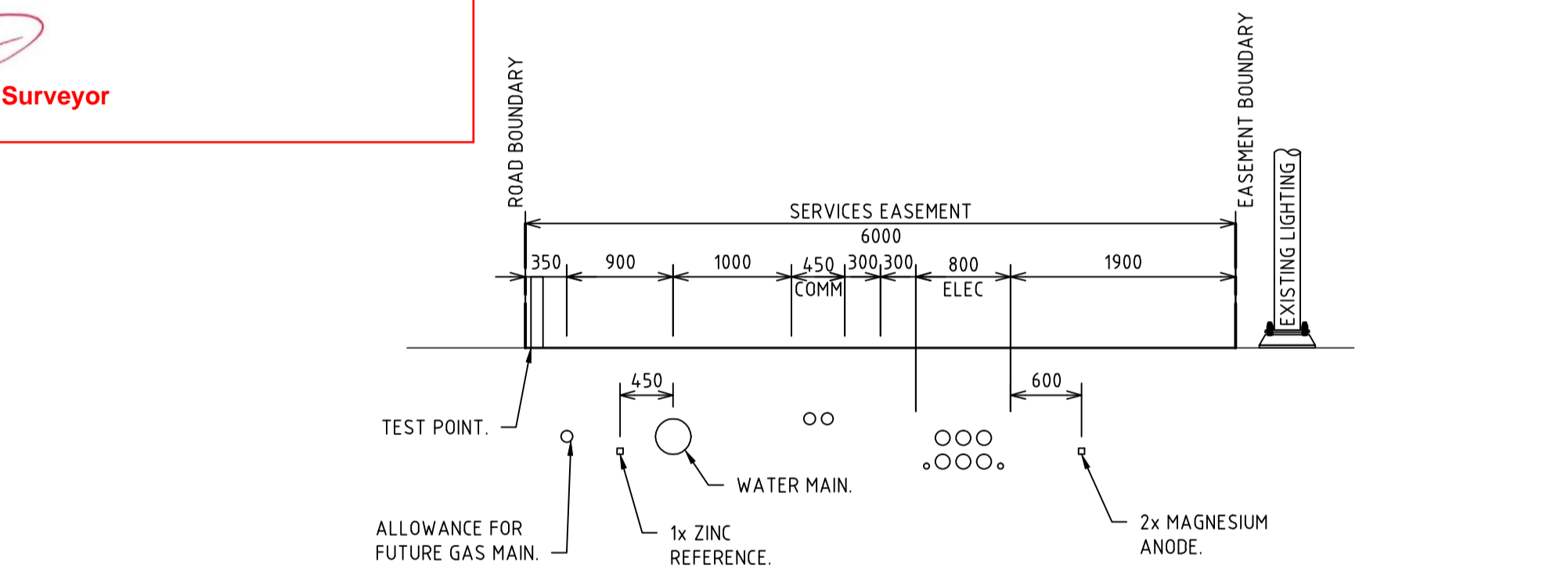
MAIN REDUCED PRESSURE ZONE DEVICE (RPZD) ASSEMBLY



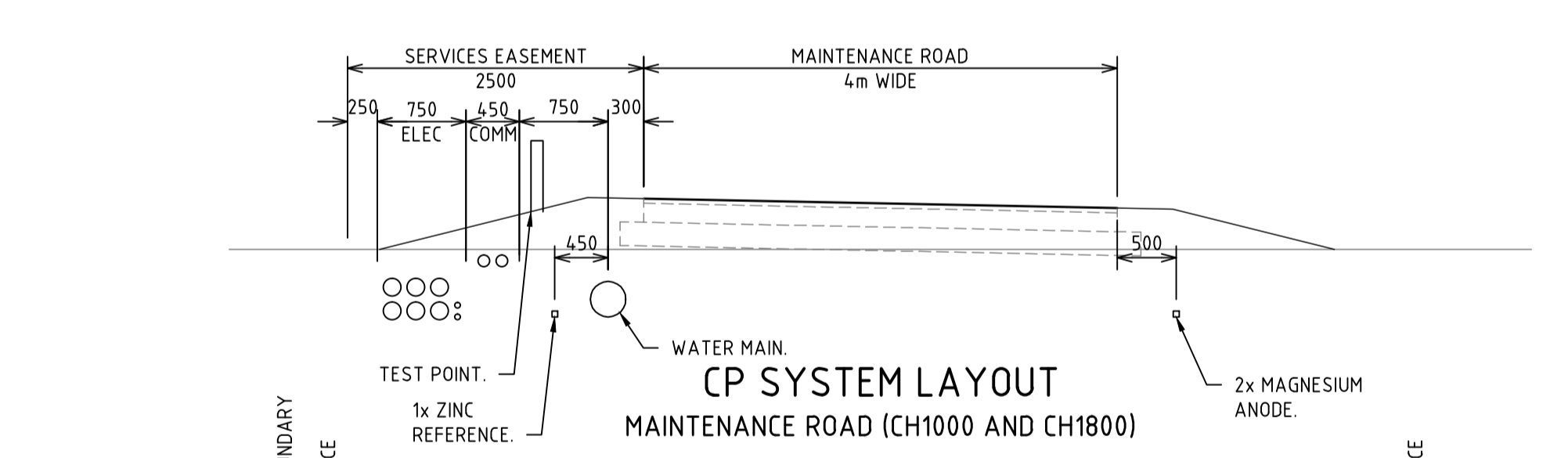
BOLLARD DETAIL



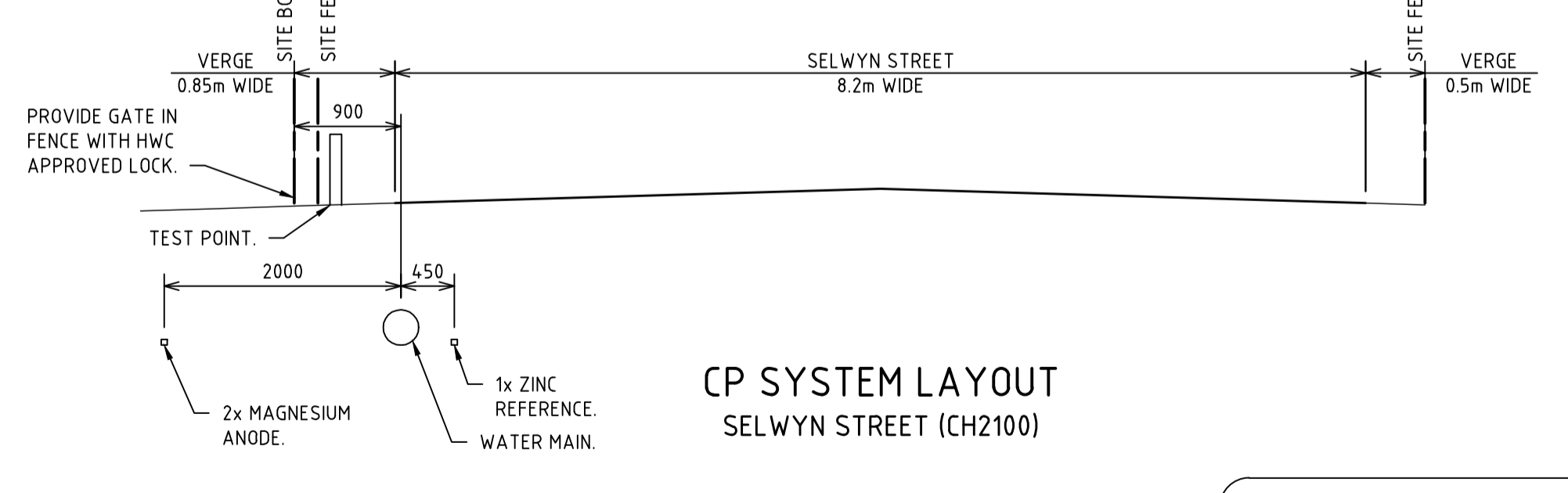
SECTION
DISCHARGE PIPE ENERGY DISSIPATION DETAIL



CP SYSTEM LAYOUT
 SERVICES CORRIDOR/EASEMENT (CH100)



CP SYSTEM LAYOUT
 MAINTENANCE ROAD (CH1000 AND CH1800)



CP SYSTEM LAYOUT
 SELWYN STREET (CH2100)

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CHECKED: PB	DATE: 30.10.15	COMPANY: NORTHROP	
APPROVED: BC	DATE: 30.10.15	COMPANY: NORTHROP	SIZE: A1
SCALE:		INDEX No. 72056	DRAWING No. 15623
SHEET 118		REV No. 1	

MAYFIELD SITE INFRASTRUCTURE

PORT OF NEWCASTLE

HYDRAULIC SERVICES



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Work As Executed information is certified by Signed:

M Harvey

Malcolm Harvey - Registered Surveyor
Date: 21/09/2016

NOTE: THE ENTIRE PLUMBING INSTALLATION IS TO COMPLY WITH THE FULL REQUIREMENTS OF THE LOCAL REGULATORY AUTHORITY, A.S.3500, THE NEW SOUTH WALES CODE OF PRACTICE FOR PLUMBING AND DRAINAGE AND THE BUILDING CODE OF AUSTRALIA.

NOTE:
THE PLUMBING CONTRACTOR MUST VISIT THE SITE DURING THE TENDERING PERIOD IN ORDER TO FAMILIARISE THEMSELVES WITH EXISTING SITE CONDITIONS AND MAKE THE NECESSARY ALLOWANCE FOR SUCH IN THE TENDER.

NOTE:
THE TENDERER MUST READ THIS DRAWING IN CONJUNCTION WITH THE PROJECT DRAWINGS FROM THE ARCHITECT.

NOTE:
THE NOMINAL SIZES OF PIPELINES NOTED ON THE DRAWING ARE BASED ON STANDARD COPPER PIPELINE INTERNAL BORES. IN THE EVENT OF AN ALTERNATIVE PIPELINE MATERIAL BEING ACCEPTED BY THE SUPERINTENDENT, IT IS THE PLUMBING CONTRACTORS RESPONSIBILITY TO ENSURE THAT AN EQUIVALENT INTERNAL PIPELINE BORE IS INSTALLED IN ACCORDANCE WITH TABLE 1.1 OF AS 3500.1.

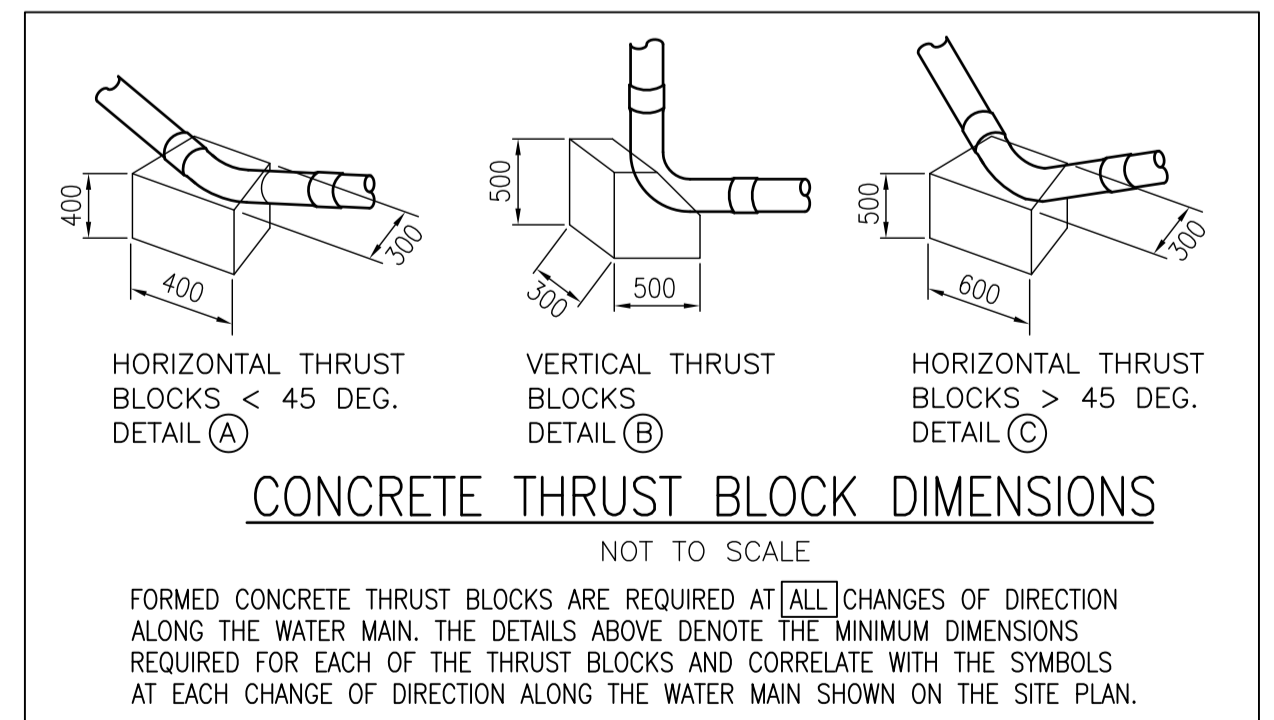
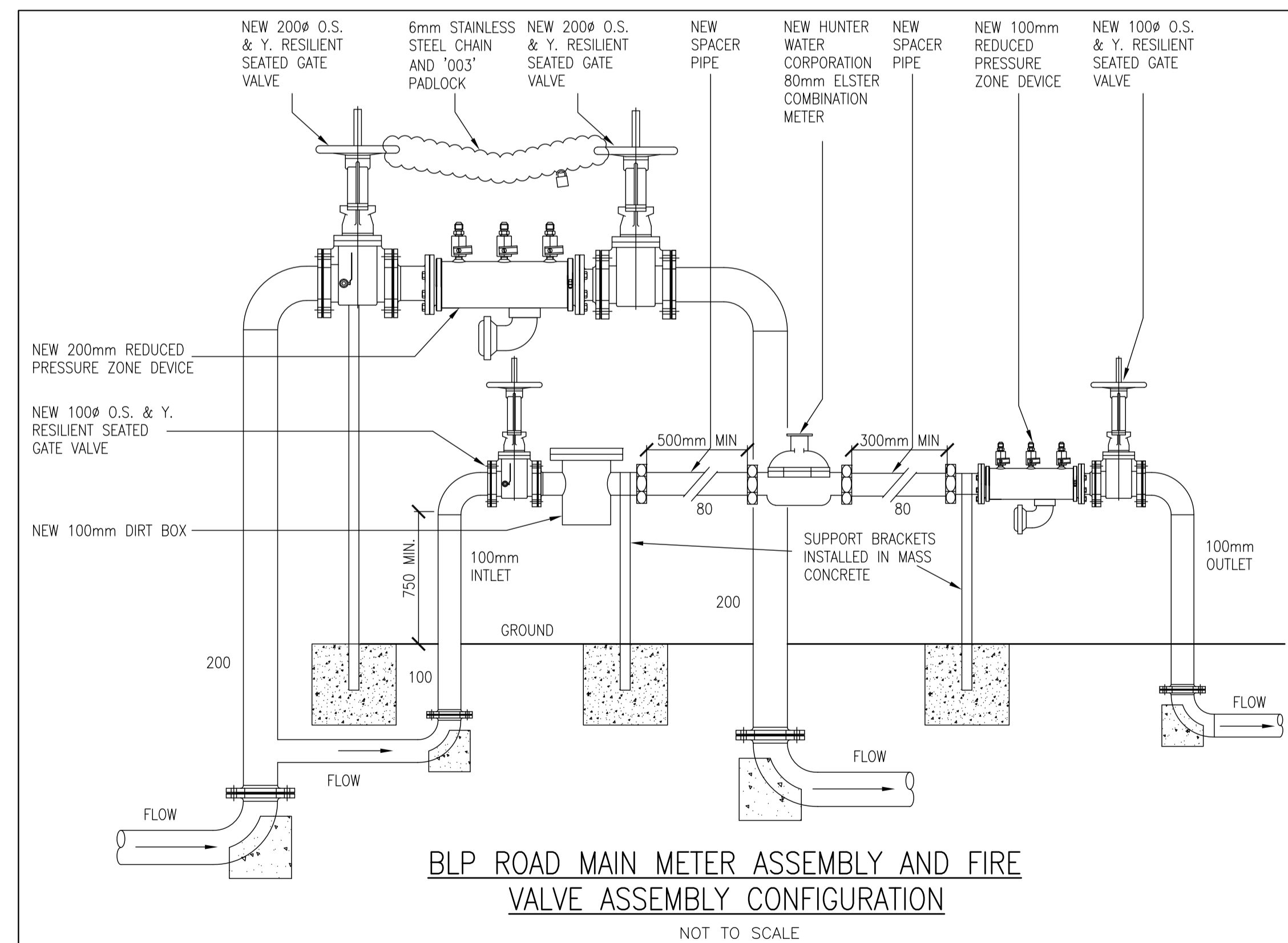
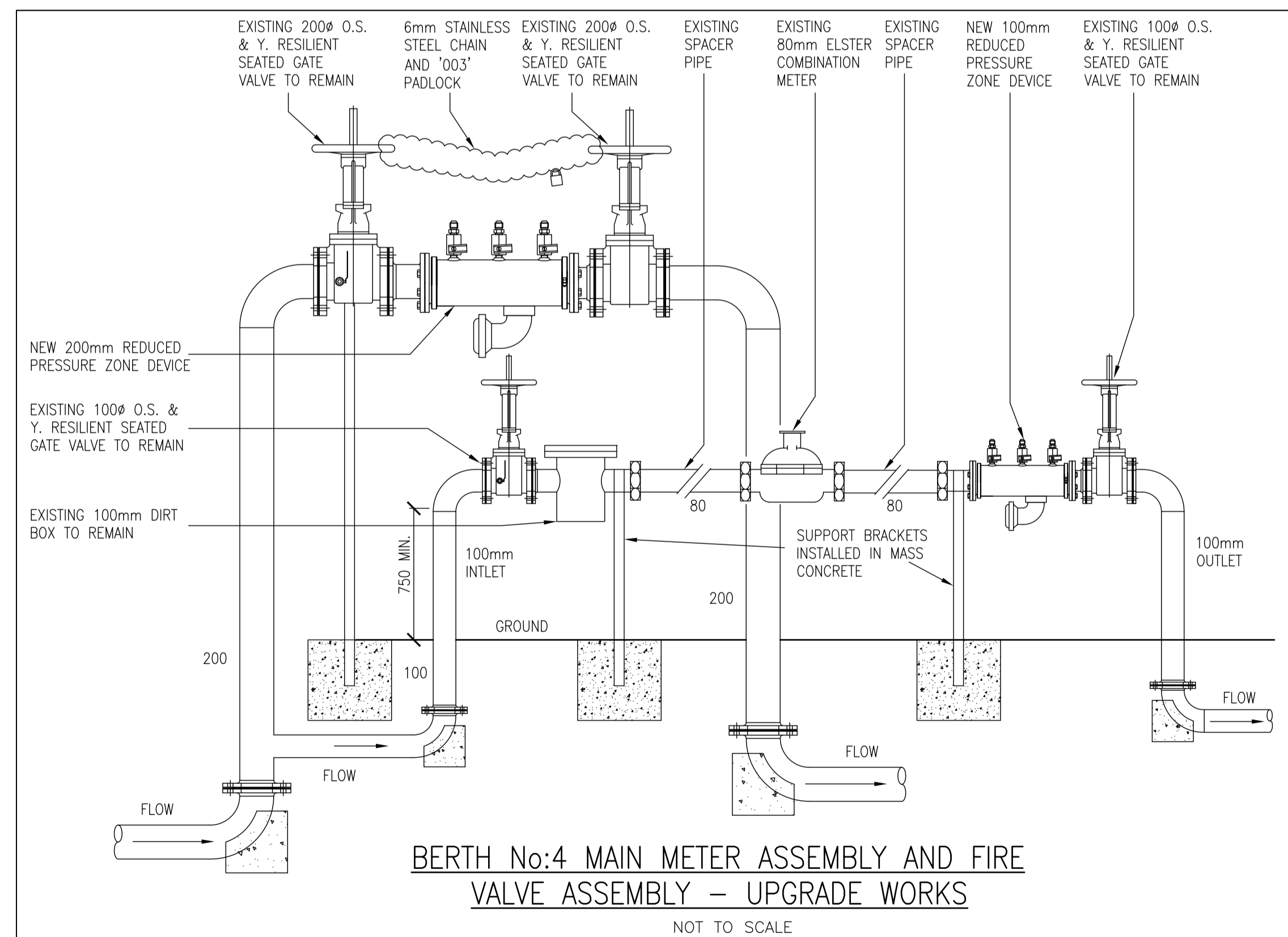
NOTES: COLD WATER

- COORDINATE THE INSTALLATION OF COLD WATER SUPPLY WITH OTHER SERVICES.
- PIPEWORK PASSING THROUGH CONCRETE SLABS OR PATHS SHALL BE INSTALLED WITH AN ANNULAR SPACE OF 6mm FOR THE FULL DEPTH OF SLAB PENETRATION.
- INGROUND PIPEWORK IS TO BE ENCASED IN CLEAN FILL SAND WITH DETECTABLE MARKER TAPE LAID OVER.
- CONTRACTORS ARE TO ALLOW FOR ALL BENDS, OFFSETS, RISERS AND DROPPERS TO ALL OF THE PIPEWORK NECESSARY TO ACHIEVE A FULLY FUNCTIONING, COORDINATED COMPLIANT INSTALLATION.
- ALL PIPELINES TO BE TESTED TO AS 3500 REQUIREMENTS.

NOTES: FIRE SERVICES

- USE 45° BENDS IN LIEU OF 90° BENDS IN MAIN PIPELINES.
- THRUST BLOCKS ARE TO BE INSTALLED BEHIND ALL BENDS AND TEES.
- PIPEWORK INSTALLED INGROUND IS TO BE ENCASED IN CLEAN FILL SAND. LAY DETECTABLE MARKER TAPE OVER.
- ALL FLANGES NUTS AND BOLTS INSTALLED INGROUND ARE TO BE WRAPPED WITH DENSO TAPE, PLASTIC WRAPPING AND SEALED WATERTIGHT.
- CONTRACTORS ARE TO ALLOW FOR ALL BENDS, OFFSETS, RISERS AND DROPPERS TO ALL OF THE PIPEWORK NECESSARY TO ACHIEVE A FULLY FUNCTIONING, COORDINATED COMPLIANT INSTALLATION.
- COORDINATE THE INSTALLATION OF FIRE HYDRANT SERVICE WITH OTHER SERVICES.
- INCLUDE ALL PIPING, FITTINGS, VALVES, CONTROL EQUIPMENT AND OTHER ANCILLARY ITEMS OF EQUIPMENT NECESSARY FOR A FULLY FUNCTIONING, COORDINATED COMPLIANT INSTALLATION.
- WHERE LOCATED IN AN ABOVE GROUND SITUATION, THE SERVICE SHALL BE CONSTRUCTED OF GALVANISED MILD STEEL PIPING. TYPE B COPPER OR BLUE BRUTE PN20 TO AS1432 SHALL BE USED INGROUND OR AS SPECIFIED.
- PIPEWORK PASSING THROUGH CONCRETE SLABS OR PATHS SHALL BE INSTALLED WITH AN ANNULAR SPACE OF 6mm FOR THE FULL DEPTH OF SLAB PENETRATION.
- PIPEWORK PASSING THROUGH FIRE RATED WALLS, FLOORS, CEILING VOIDS AND WHERE REQUIRED IS TO BE FIRE RATED TO AS4072 OR AS SPECIFIED.
- ALL PIPELINES TO BE TESTED TO AUSTRALIAN STANDARDS REQUIREMENTS.

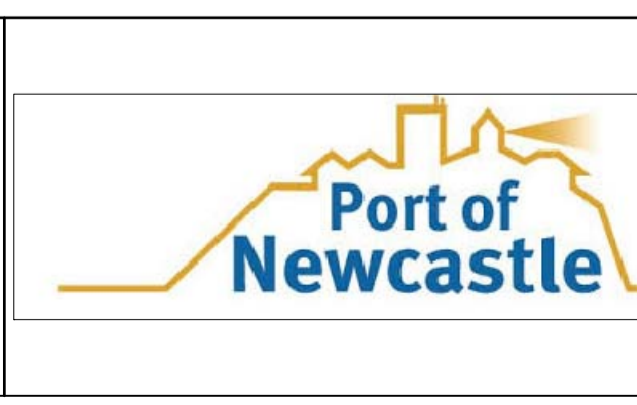
PIPELINES		SYMBOLS	
— EC —	COLD WATER — EXISTING	⊥	PIPEWORK DROPPER
— C —	COLD WATER — NEW	⊥	LINE CAP
— EF —	FIRE HYDRANT SUPPLY — EXISTING	⊥	ISOLATION VALVE
— F —	FIRE HYDRANT SUPPLY — NEW	⊥	MAIN METER ASSEMBLY
— X —	REDUNDANT PIPELINE	⊥	SLUICE VALVE
		⊥	THRUST BLOCK



GENERAL NOTES:

- THE DRAWING ISSUED IS DIAGRAMMATIC. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. REFER TO ARCHITECTURAL DRAWINGS WHERE APPROPRIATE FOR EXACT LOCATION OF FIXTURES, DUCTS AND THE LIKE. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS FORMING THE PROJECT DOCUMENTATION PACKAGE.
- CONFIRM ALL LEVELS AND DIMENSIONS AS ACCURATE ON SITE PRIOR TO INSTALLATION. REPORT ALL DISCREPANCIES TO THE SUPERINTENDENT IMMEDIATELY.
- THIS DRAWING HAS BEEN ISSUED IN CONFIDENCE AND REMAINS THE PROPERTY OF MCCALLUM PLUMBING & FIRE CONSULTANTS AUSTRALIA. DISTRIBUTION OR REPRODUCTION OF THE WHOLE OR PART OF THIS DRAWING WITHOUT THE EXPRESS PERMISSION OF MCCALLUM PLUMBING & FIRE CONSULTANTS AUSTRALIA IS A BREACH OF THE COMMONWEALTH COPYRIGHT ACT.

REV	DATE	AMENDMENT
3	18/12/15	FOR APPROVAL
2	14/12/15	FOR FINAL REVIEW
1	15/05/15	FOR APPROVAL



MCCALLUM PFCA
PLUMBING & FIRE CONSULTANTS AUSTRALIA

Ph: (02)49462633
Fax: (02)49462611

P.O. Box 96 Charlestown NSW 2290
Email: mccallum@hunterlink.net.au
5/35 Smith Street Charlestown
ACN 098 124 620 ABN 58 098 124 620

BASE PLAN:	NORTHROP CONSULTING ENGINEERS
CLIENT:	PORT OF NEWCASTLE
PROJECT:	MAYFIELD SITE INFRASTRUCTURE PORT OF NEWCASTLE TITLE, LEGEND, NOTES AND DETAIL SHEET

Drawn	L.NOLAN	FOR APPROVAL		Size	A1
Design	B.REYNOLDS	Scale	N.T.S.	Job No.	1666-311B
Approved	R.McCALLUM	DRG. No.	H-01	No. in Set	3
				Revision	3

APPROXIMATE LOCATION OF EXISTING DOMESTIC WATER METER AND FIRE HYDRANT BOOSTER ASSEMBLY SERVING THE 'STOLTHAVEN' SITE. SERVICES TO REMAIN IN THE CURRENT 'COMMUNITY TITLE' CONFIGURATION. (NO NEW WORKS)

NOTE: THE ENTIRE PLUMBING INSTALLATION IS TO COMPLY WITH THE FULL REQUIREMENTS OF THE LOCAL REGULATORY AUTHORITY, A.S.3500, THE NEW SOUTH WALES CODE OF PRACTICE FOR PLUMBING AND DRAINAGE AND THE BUILDING CODE OF AUSTRALIA.

MILESTONE 3: REFER TO INSET 4 ON H-03 FOR FURTHER DETAILS.

EXISTING DN250 FIRE MAIN AND DN125 COLD WATER SERVICE TO REMAIN IN THE 'COMMUNITY TITLE' CONFIGURATION.

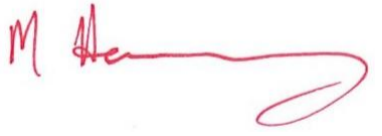
MILESTONE 2: CONNECTION TO HUNTER WATER CORPORATION 300mm WATER MAIN. REFER TO INSET 2 ON H-03 FOR FURTHER DETAILS.

EXISTING ABOVE GROUND FIRE AND COLD WATER SERVICES ARE TO BECOME REDUNDANT. THE PIPELINES AND BRACKETING SYSTEM ARE TO BE REMOVED FROM SITE ENTIRELY. CAP PIPELINES AT THE SOURCE PERMANENTLY AS INDICATED.

MILESTONE 4: REFER TO INSET 3 FOR FURTHER DETAILS ON H-03.

Work as Executed

Disclaimer As To Design Work As Executed Drawings.
The attached drawings have been prepared to reflect the as constructed nature of the civil works for the project. No design work has been carried out by Daracon Engineering. The plan is merely the location of improvements designed by others. All construction has been carried out to the design provided by the client and the client's representatives. It is the responsibility of the client and the client's representatives to supply copies of the Work As Executed Drawings to the relevant statutory authorities.

Work As Executed information is certified by
Signed: 

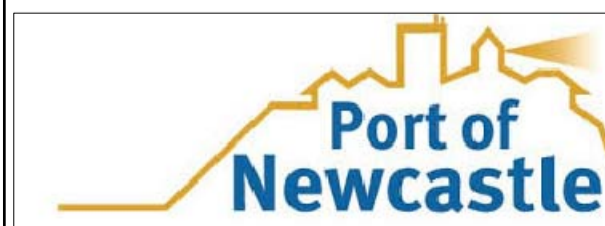
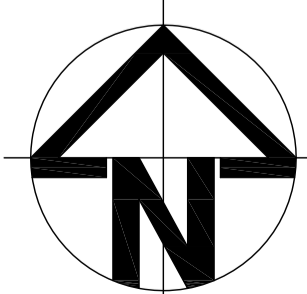
Malcolm Harvey - Registered Surveyor
Date: 21/09/2016

MILESTONE 4: REFER TO INSET 1 ON H-03 FOR FURTHER DETAILS.

1:2500 @A1
0M 125M 250M 375M

GENERAL NOTES:
1. THE DRAWING ISSUED IS DIAGRAMMATIC. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. REFER TO ARCHITECTURAL DRAWINGS WHERE APPROPRIATE FOR EXACT LOCATION OF FIXTURES, DUCTS AND THE LIKE. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS FORMING THE PROJECT DOCUMENTATION PACKAGE.
2. CONFIRM ALL LEVELS AND DIMENSIONS AS ACCURATE ON SITE PRIOR TO INSTALLATION. REPORT ALL DISCREPANCIES TO THE SUPERINTENDENT IMMEDIATELY.
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REV	DATE	AMENDMENT
3	18/12/15	FOR APPROVAL
2	14/12/15	FOR FINAL REVIEW
1	15/05/15	FOR APPROVAL



Ph: (02)49462633
Fax: (02)49462611

BASE PLAN: NORTHROP CONSULTING ENGINEERS

CLIENT: PORT OF NEWCASTLE

PROJECT: MAYFIELD SITE INFRASTRUCTURE
PORT OF NEWCASTLE
SITE PLAN - FIRE AND COLD WATER SERVICE

Drawn
L.NOLAN

Design
B.REYNOLDS

Approved
R.McCALLUM

FOR APPROVAL

Scale: 1:2000
Job No. 1666-311B

DRG. No. **H-02**

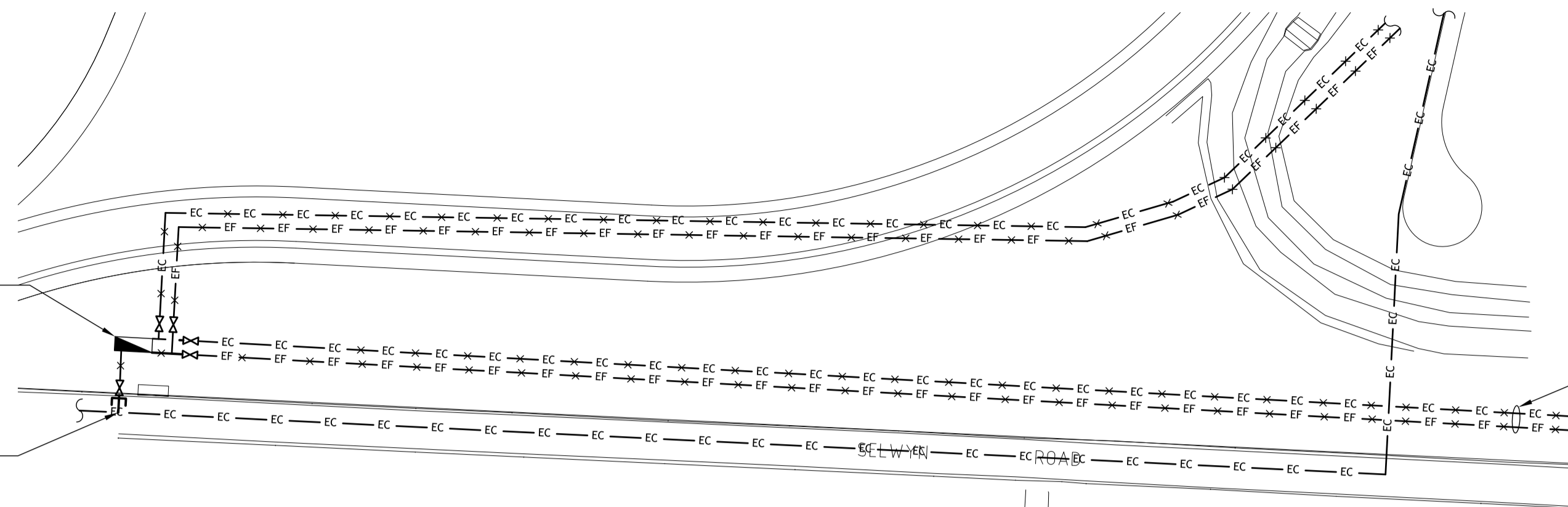
Size
A1

No. in Set
3

Revision
3

APPROXIMATE LOCATION OF EXISTING 200mm HYDRANT VALVE ASSEMBLY AND 80mm HUNTER WATER CORPORATION COMBINATION WATER METER ASSEMBLY CURRENTLY SERVICING THE MAYFIELD No:4 BERTH. RELOCATE BOTH ASSEMBLIES TO THE PRIVATE ACCESS ROAD LEADING TO THE No:4 BERTH. REFER TO INSET 3 FOR FURTHER DETAILS.

EXISTING CONNECTION TO THE HUNTER WATER CORPORATION 250mm CIL WATER MAIN IS TO BE CAPPED AT THE MAIN PERMANENTLY IN ACCORDANCE WITH AUTHORITY REQUIREMENTS. REDUNDANT PIPEWORK IS TO BE REMOVED FROM SITE.



EXISTING ABOVE GROUND DN225 AND DN100 WATER SERVICES ARE TO BECOME REDUNDANT. THE PIPELINES AND BRACKETING SYSTEM ARE TO BE REMOVED FROM SITE ENTIRELY.

NOTE: THE ENTIRE PLUMBING INSTALLATION IS TO COMPLY WITH THE FULL REQUIREMENTS OF THE LOCAL REGULATORY AUTHORITY, A.S.3500, THE NEW SOUTH WALES CODE OF PRACTICE FOR PLUMBING AND DRAINAGE AND THE BUILDING CODE OF AUSTRALIA.

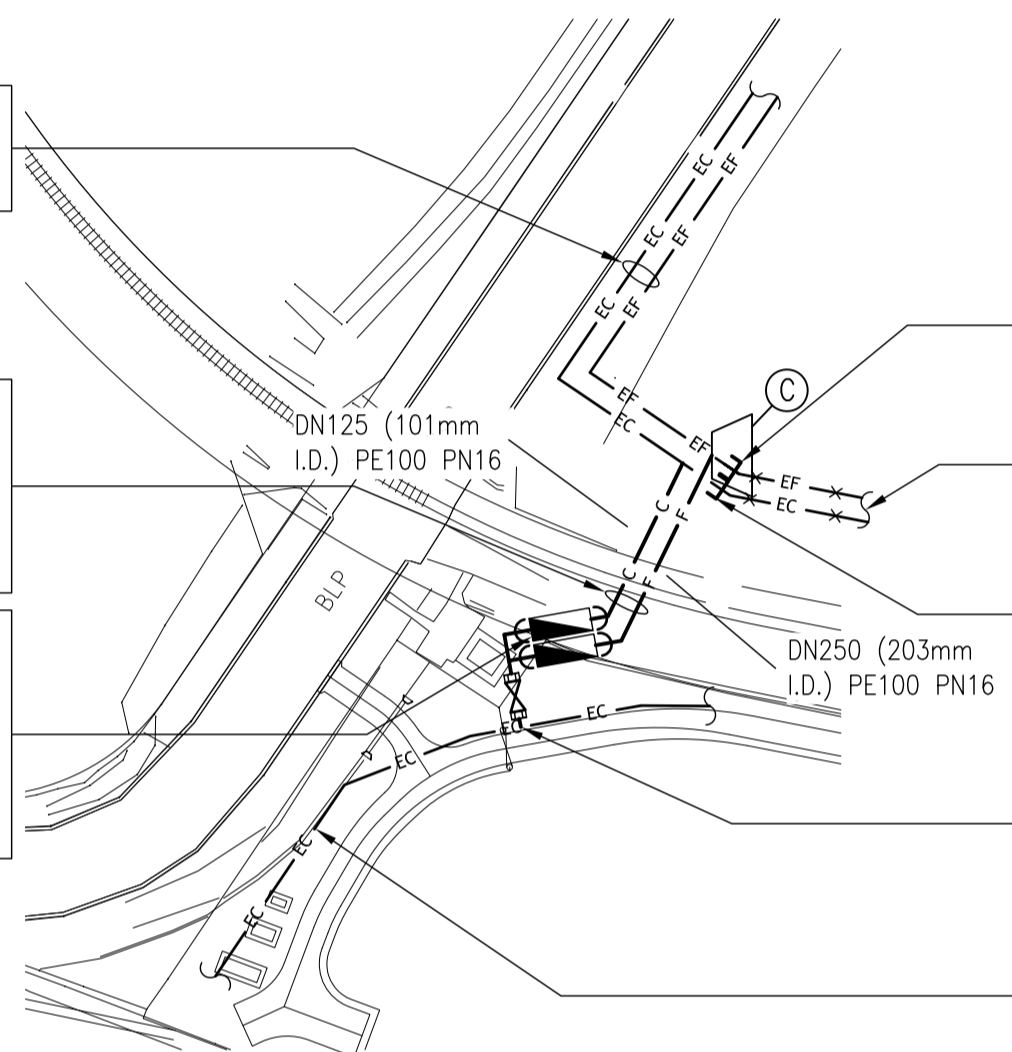
NOTE: THE PLUMBING CONTRACTOR IS TO MAKE ALLOWANCE IN THE TENDER AMOUNT TO LOCATE ALL EXISTING SERVICES IN THE AREA OF THE PROPOSED WORKS PRIOR TO CARRYING OUT ANY INGROUND WORKS ON THE SITE. THE LOCATION OF SERVICES ARE TO BE LOCATED BY A SUITABLY QUALIFIED CONTRACTOR BY MEANS OF THE USE OF ELECTRONIC DETECTION EQUIPMENT SUITABLE FOR THE TASK. ALL CARE MUST BE TAKEN BY THE PLUMBING CONTRACTOR TO ENSURE THAT EXISTING SERVICES ARE LOCATED AND ADEQUATELY PROTECTED DURING CONSTRUCTION. IF AN EXISTING SERVICE IS DAMAGED AND THE DAMAGE IS A RESULT OF THE PLUMBING CONTRACTORS OWN ACTIONS, THE PLUMBING CONTRACTOR IS TO REPAIR OR ARRANGE TO REPAIR THE SERVICE AND PAY ALL ASSOCIATED COSTS FOR THE REPAIR.

MILESTONE 4 – INSET 1

EXISTING DN250 FIRE SERVICE AND DN125 WATER SERVICE TO REMAIN IN THE 'COMMUNITY TITLE' CONFIGURATION.

NEW DN250 AND DN125 WATER SERVICES ARE TO BE BORED UNDER THE EXISTING RAILWAY IN ACCORDANCE WITH THE STRUCTURAL ENGINEERS REQUIREMENTS. REFER TO NORTHROP CONSULTING ENGINEERS 'RAILWAY CROSSING' DRAWING FOR FURTHER DETAILS.

SUPPLY AND INSTALL A 200mm FIRE SERVICE VALVE ASSEMBLY WITH AN 80mm HUNTER WATER CORPORATION ELISTER COMBINATION METER DIRECTLY UNDER. CONFIRM THE EXACT INSTALLATION LOCATION ON SITE WITH THE SUPERINTENDENT. THRUST BLOCKS NOT SHOWN FOR CLARITY. REFER TO DETAIL ON H-01.



EXISTING ABOVE GROUND FIRE AND COLD WATER SERVICES ARE TO BECOME REDUNDANT. THE PIPELINES AND BRACKETING SYSTEM ARE TO BE REMOVED FROM SITE ENTIRELY. CAP PIPELINES AT THE SOURCE PERMANENTLY AS INDICATED.

REFER TO SITE PLAN AND INSET 1 CONTINUATION.

APPROXIMATE LOCATION OF EXISTING DN250 FIRE HYDRANT AND DN125 COLD WATER SERVICES. LOCATE, EXCAVATE AND MAKE CONNECTION INGROUND VIA ELBOWS. CAP THE EXISTING PIPELINES UPSTREAM PERMANENTLY AS INDICATED. RESTORE ALL DISTURBED SURFACES UPON COMPLETION.

LOCATE, EXCAVATE AND MAKE CONNECTION TO THE EXISTING 200mm TEE AND VALVE INSTALLED UNDER A MAJOR WORKS CONTRACT. REFER TO NORTHROP DRAWING SET '72056' FOR DETAILS.

EXISTING 300mm HUNTER WATER CORPORATION WATER MAIN INSTALLED UNDER A MAJOR WORKS CONTRACT REFER TO NORTHROP ENGINEERS DRAWING SET '72056' FOR DETAILS.

MILESTONE 2 – INSET 2

Work as Executed
Disclaimer As To Design Work As Executed Drawings.
 The attached drawings have been prepared to reflect the as constructed nature of the civil works for the project. No design work has been carried out by Daracon Engineering. The plan is merely the location of improvements designed by others. All construction has been carried out to the design provided by the client and the client's representatives. It is the responsibility of the client and the client's representatives to supply copies of the Work As Executed Drawings to the relevant statutory authorities.

Work As Executed information is certified by
 Signed: *Malcolm Harvey*
 Malcolm Harvey - Registered Surveyor
 Date: 21/09/2016

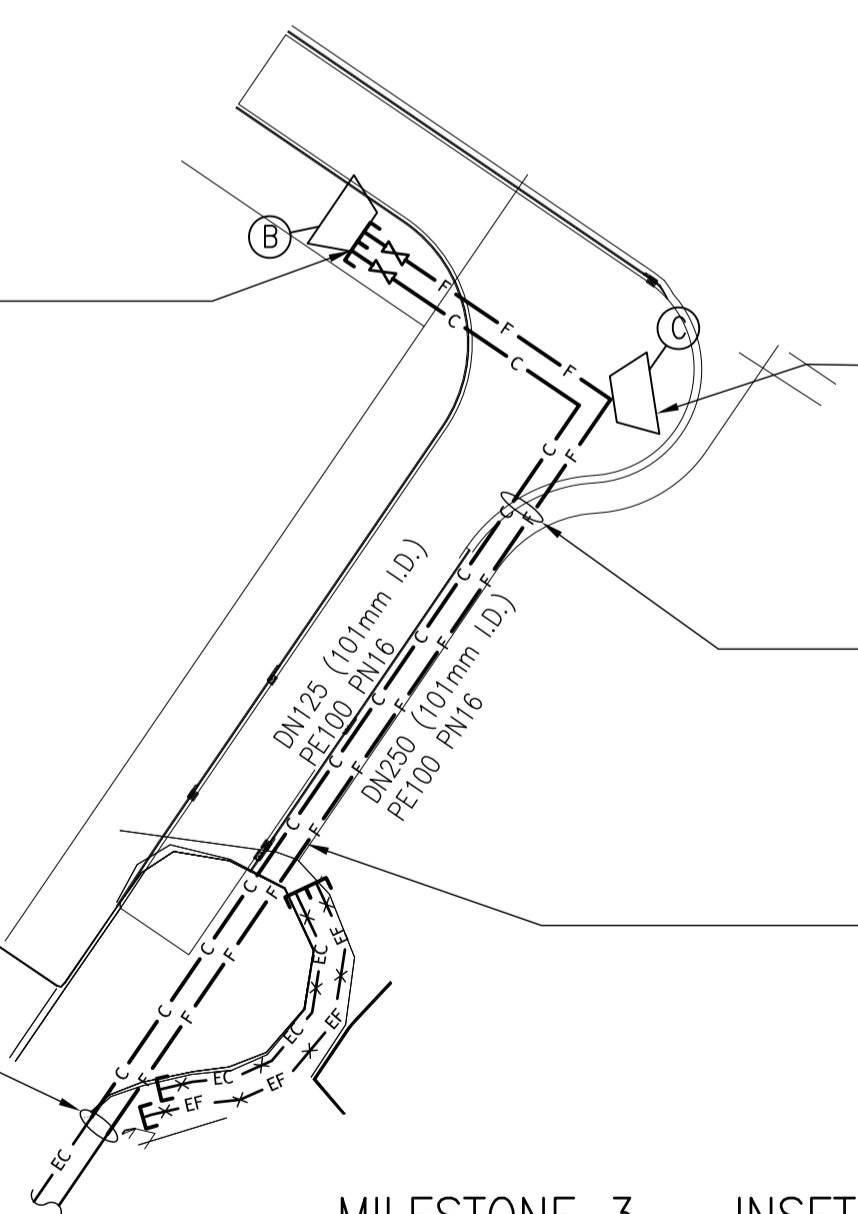
DOMESTIC WATER AND FIRE SERVICES TO BE CAPPED PERMANENTLY AT THE BOUNDARY. INSTALL A THRUST BLOCK AT THE TERMINATION POINT.

THRUST BLOCKS ON BENDS AND TEES. REFER TO DETAIL ON H-01. (TYPICAL)

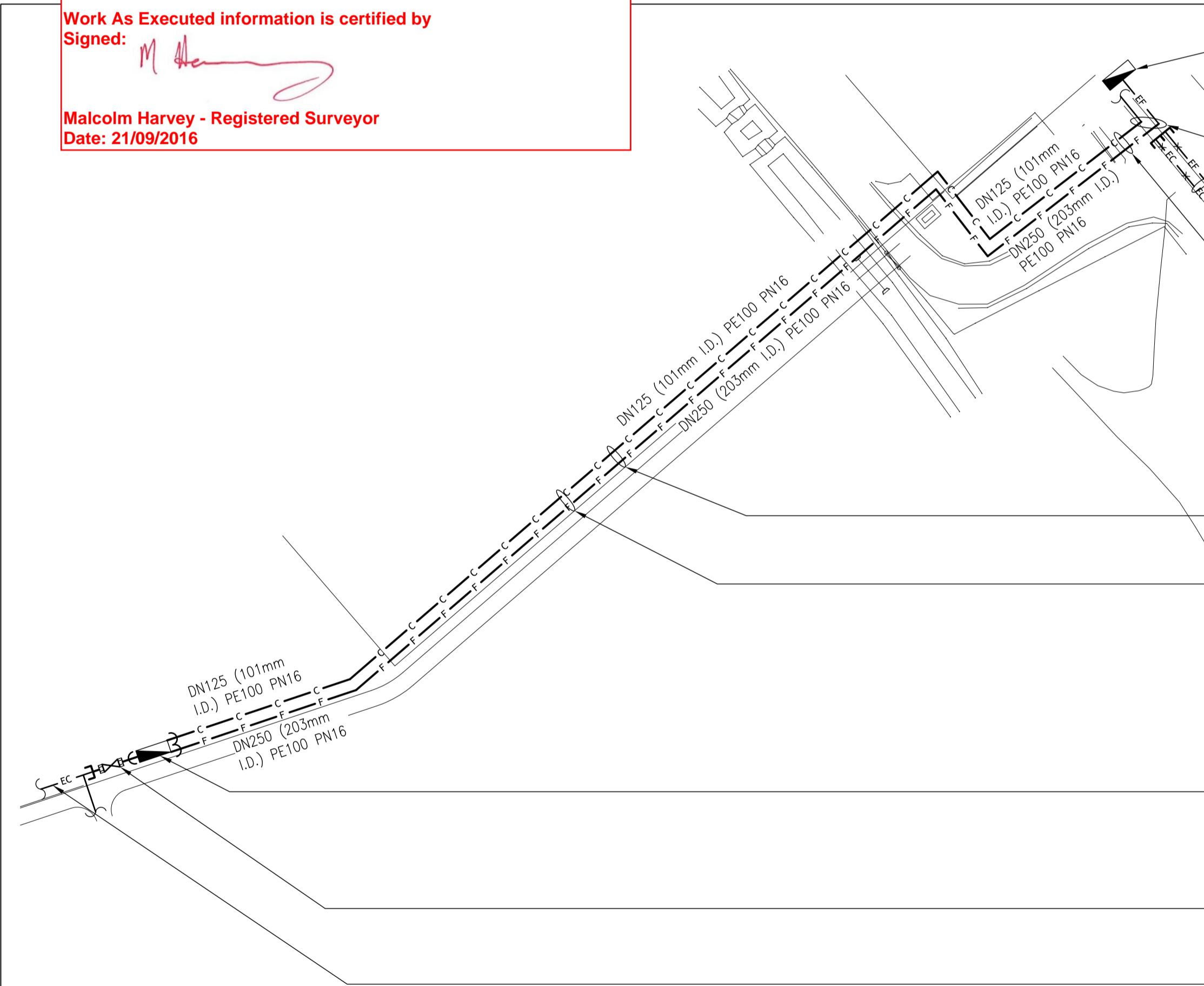
IN-GROUND FIRE HYDRANT AND COLD WATER PIPELINES ARE TO BE INSTALLED AT A DEPTH OF 600mm AND ENCASED IN CLEAN FILL SAND WITH DETECTABLE MARKER TAPE LAID OVER. (TYPICAL)

LOCATE, EXCAVATE AND MAKE CONNECTION TO THE DN250 FIRE SERVICE AND DN125 COLD WATER SERVICE CAPPED CONNECTION POINTS PROVIDED UNDER PREVIOUS STAGE WORKS AT THE END OF THE ROAD.

LOCATE, EXCAVATE AND MAKE CONNECTION TO THE DN250 FIRE SERVICE AND DN125 COLD WATER SERVICE INSTALLED UNDER THE PREVIOUS STAGE WORKS ON THE SOUTHERN END OF THE CUL-DE-SAC. CAP ALL DOWNSTREAM PIPEWORK AS INDICATED AND RESTORE DISTURBED SURFACES UPON COMPLETION.



MILESTONE 3 – INSET 4



EXISTING FIRE HYDRANT BOOSTER ASSEMBLY SERVICING BERTH No: 4 TO REMAIN IN SERVICE.

LOCATE, EXCAVATE AND MAKE CONNECTION VIA ELBOWS TO THE EXISTING 225mm HYDRANT SERVICE ON THE INLET SIDE OF THE BOOSTER ASSEMBLY AND 100mm WATER SUPPLY PIPELINE SERVICING SHIP FILL POINTS. CAP THE EXISTING WATER SUPPLIES PERMANENTLY UPSTREAM OF THE NEW CONNECTION AS INDICATED. REFER TO INSET 1 FOR PIPELINE CONTINUATION.

EXISTING ABOVE GROUND 225mm FIRE AND 100mm COLD WATER SERVICES ARE TO BECOME REDUNDANT AND REMOVED FROM SITE.

PIPELINES ARE TO BE INSTALLED CLEAR OF THE EXISTING GATE AND CONTROL BOX.

IN-GROUND FIRE HYDRANT AND COLD WATER PIPELINES ARE TO BE INSTALLED AT A DEPTH OF 600mm AND ENCASED IN CLEAN FILL SAND WITH DETECTABLE MARKER TAPE LAID OVER. (TYPICAL)

COORDINATE THE EXACT PIPELINE ROUTE ON SITE WITH THE SUPERINTENDENT.

INSTALL THE RELOCATED 80mm HUNTER WATER CORPORATION WATER METER ASSEMBLY AND 250mm VALVE ASSEMBLY ON THE PRIVATE ACCESS ROAD (REFER TO INSET 1 FOR ORIGINAL LOCATION OF BOTH ASSEMBLIES). REPLACE THE EXISTING 200mm AND 100mm DOUBLE CHECK VALVES WITH 200mm AND 100mm REDUCED PRESSURE ZONE DEVICES. CONFIRM THE EXACT INSTALLATION LOCATION ON SITE WITH THE SUPERINTENDENT. THRUST BLOCKS NOT SHOWN FOR CLARITY. REFER TO DETAIL ON H-01.

LOCATE, EXCAVATE AND MAKE CONNECTION TO THE EXISTING 200mm TEE AND VALVE INSTALLED UNDER A MAJOR WORKS CONTRACT. REFER TO NORTHROP DRAWING SET '72056' FOR DETAILS.

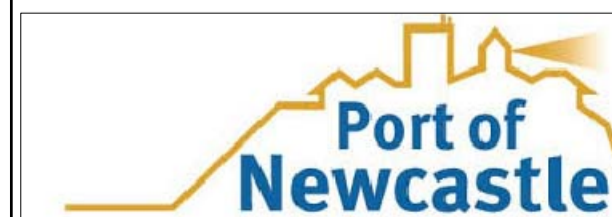
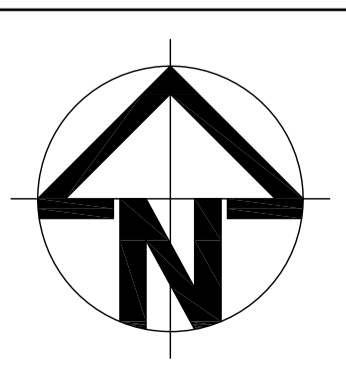
EXISTING 300mm HUNTER WATER CORPORATION WATER MAIN INSTALLED UNDER A MAJOR WORKS CONTRACT. REFER TO NORTHROP ENGINEERS DRAWING SET '72056' FOR DETAILS.

MILESTONE 4 – INSET 3



GENERAL NOTES:
 1. THE DRAWING ISSUED IS DIAGRAMMATIC. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. REFER TO ARCHITECTURAL DRAWINGS WHERE APPROPRIATE FOR EXACT LOCATION OF FIXTURES, DUCTS AND THE LIKE. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS FORMING THE PROJECT DOCUMENTATION PACKAGE.
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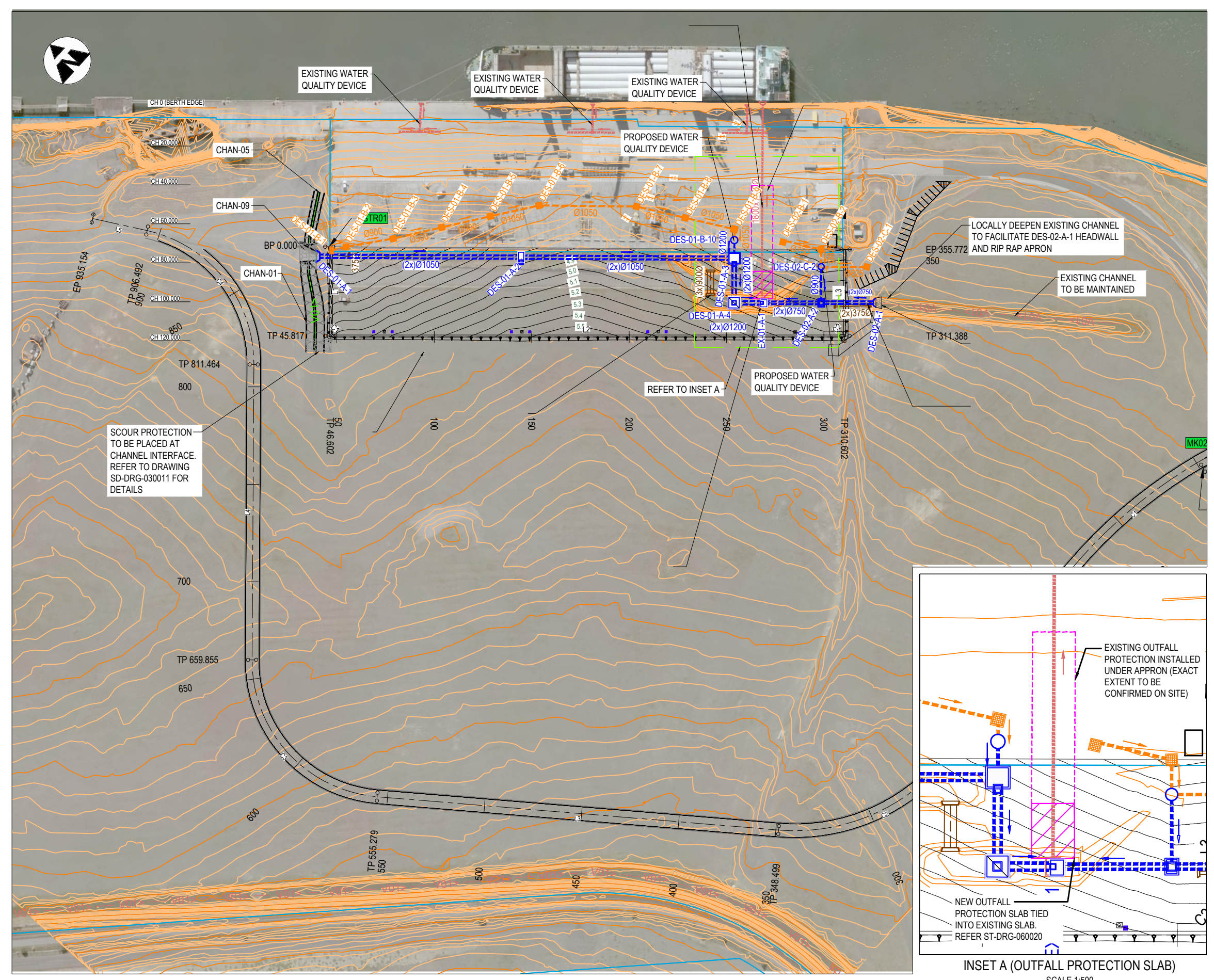
MCCALLUM PFCA
 PLUMBING & FIRE CONSULTANTS AUSTRALIA
 P.O. Box 96 Charlestown NSW 2290
 Email: mcallum@hunterlink.net.au
 5/35 Smith Street Charlestown
 A/N 098 124 620 A/N 58 098 124 620

Ph: (02)49462633
 Fax: (02)49462611

BASE PLAN:	NORTHROP CONSULTING ENGINEERS	Drawn	L.NOLAN
CLIENT:	PORT OF NEWCASTLE	Design	B.REYNOLDS
PROJECT:	MAYFIELD SITE INFRASTRUCTURE PORT OF NEWCASTLE INSET – FIRE AND COLD WATER SERVICES	Approved	R.McCALLUM

FOR APPROVAL		Size	A1
Scale	1:1000	Job No.	1666-311B
DRG. No.	H-03	No. in Set	3
Revision		Revision	3

Figure F5: Stormwater Management System

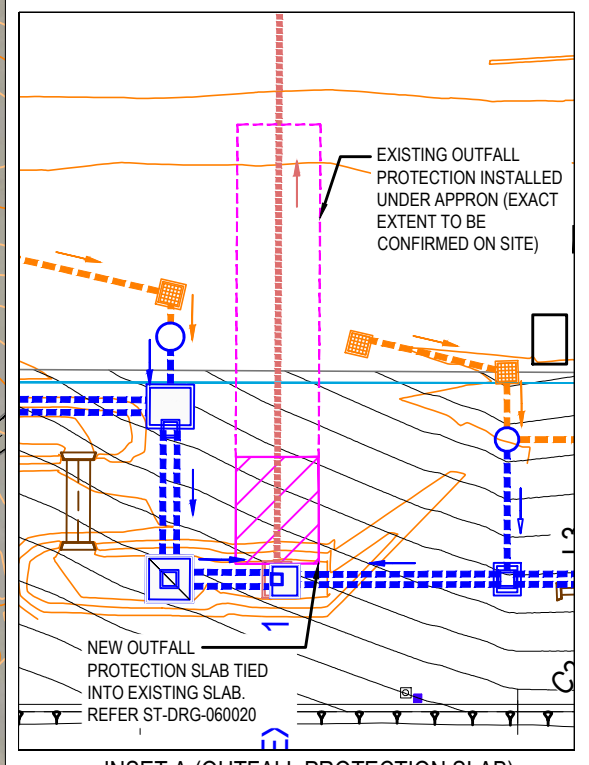


LEGEND

- PROPOSED TERMINAL BOUNDARY
- CADASTRAL BOUNDARY
- * LIGHT MAST
- * GENERAL POWER OUTLET (GPO)
- * EXISTING COOLON HT66 FLOODLIGHTS.

PROPOSED

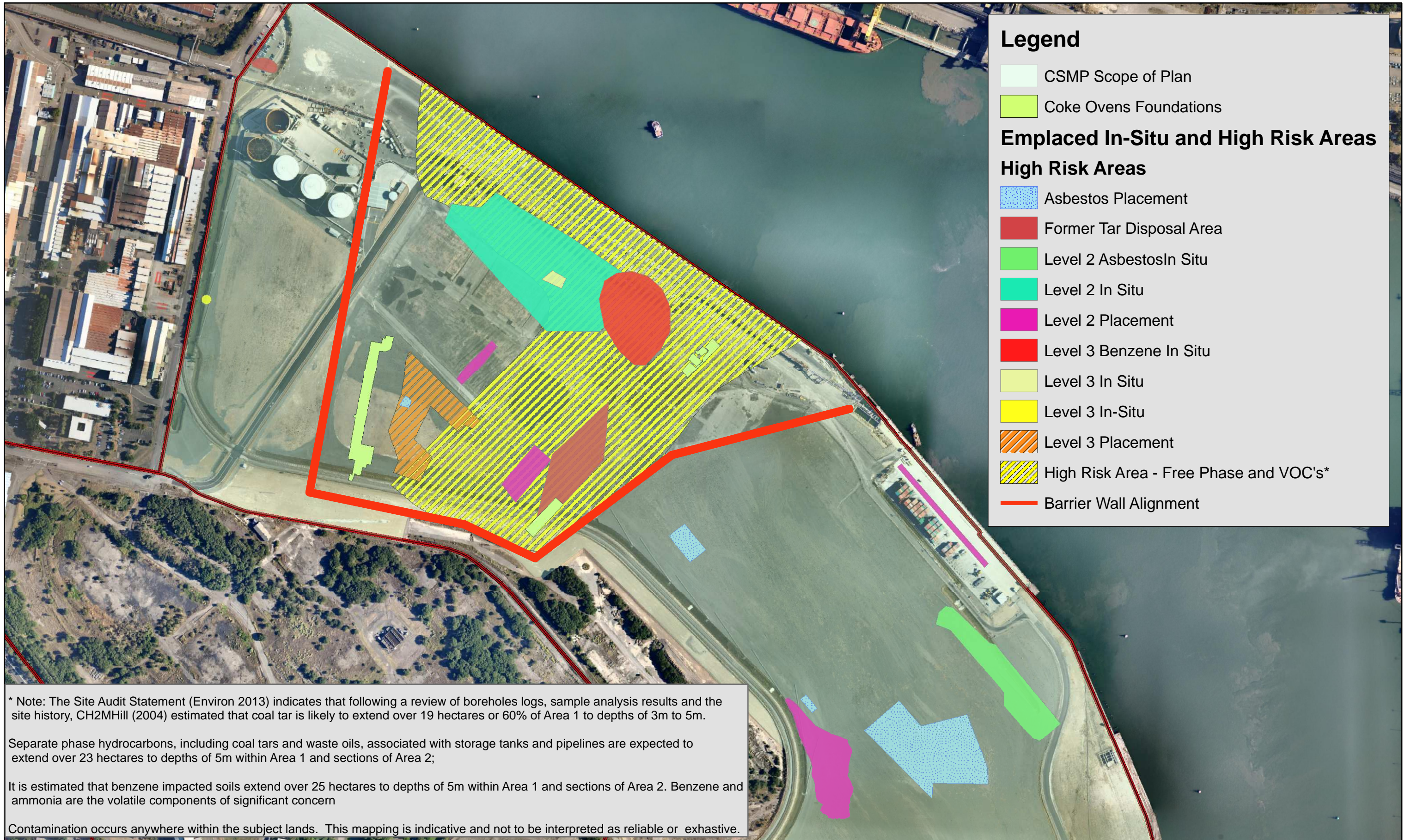
- (2x)Ø1050 EXTERNAL WATER
- DES-01-B-9 EXTERNAL WATER PIT TAG
- Ø375 TERMINAL RUNOFF FOR TREATMENT
- DES-01-B-9 TERMINAL RUNOFF FOR TREATMENT PIT TAG
- Ø375 EXISTING DRAINAGE
- DES-01-B-9 EXISTING DRAINAGE PIT TAG
- CATCH DRAIN
- V01> CHANNEL - TYPE 1 VEGETATED
- V01> CHANNEL - EXISTING
- BS1> CHANNEL - BIOSWALE
- EXTERNAL "CLEAN" WATER DRAINAGE PITS AND HEADWALLS
- TERMINAL RUNOFF DRAINAGE PITS AND HEADWALLS
- EXISTING DRAINAGE PITS AND HEADWALLS
- (3x)900Ø REDUNDANT CULVERT AND HEADWALL
- 5.0 DESIGN CONTOURS (0.1m INTERVAL)
- 5.0 EXISTING CONTOURS (0.1m INTERVAL)
- EXISTING OUTFALL PROTECTION SLAB
- NEW OUTFALL PROTECTION SLAB



- ### NOTES
- REFER TO NOTES ON DRAWING GN-DRG-000011.
 - LOCATION OF EXISTING DRAINAGE IS BASED ON DIGITALISED INFORMATION RECEIVED TO DATE. EXACT LOCATION AND INVERT LEVELS AT CONNECTION POINT TO BE CONFIRMED BY DETAILED SURVEY. CONDITION OF EXISTING RETAINED DRAINAGE TO BE ASSESSED BY CCTV SURVEY.
 - EXISTING DRAINAGE PITS AND PIPES THAT ARE REDUNDANT AND LEFT UNDISTURBED SHALL BE FILLED WITH STABILISED SAND, CONTROLLED LOW STRENGTH CEMENTITIOUS MATERIAL OR LEAN MIX CONCRETE.
 - THE CONDITION OF THE EXISTING BRICK ARCH CULVERT SHALL BE ASSESSED BY A QUALIFIED ENGINEER PRIOR TO CONSTRUCTION. PRIOR TO CONSTRUCTION THE CULVERT SHALL BE SURVEYED AND A DETAILED SKETCH PROVIDED TO THE DESIGNER TO VERIFY THE DESIGN.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">01</td> <td style="width: 10%;">21/07/23</td> <td style="width: 10%;">EO</td> <td style="width: 30%;">WORK AS EXECUTED</td> <td style="width: 10%;">PS</td> <td style="width: 10%;">J.W.</td> </tr> <tr> <td>02</td> <td>29/05/23</td> <td>E.O.</td> <td>AS BUILT (NEWPORT TECHNICAL SERVICES)</td> <td>P.S.</td> <td>J.B.</td> </tr> <tr> <td>00</td> <td>24/02/22</td> <td>M.H.</td> <td>ISSUED FOR CONSTRUCTION - (STAGE 1)</td> <td>J.B.</td> <td>S.H.</td> </tr> </table>		01	21/07/23	EO	WORK AS EXECUTED	PS	J.W.	02	29/05/23	E.O.	AS BUILT (NEWPORT TECHNICAL SERVICES)	P.S.	J.B.	00	24/02/22	M.H.	ISSUED FOR CONSTRUCTION - (STAGE 1)	J.B.	S.H.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">REFERENCE COORDINATION DRAWINGS</td> </tr> <tr> <td style="width: 15%;">DESCRIPTION</td> <td style="width: 15%;">DRAWING NO.</td> <td style="width: 10%;">REV</td> <td style="width: 10%;">CHK</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		REFERENCE COORDINATION DRAWINGS				DESCRIPTION	DRAWING NO.	REV	CHK					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">A1 ORIGINAL</td> </tr> <tr> <td colspan="2" style="text-align: center;">DO NOT SCALE THIS DRAWING</td> </tr> <tr> <td style="width: 50%;">SIGNED:</td> <td style="width: 50%;">APPROVED:</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td>DATE:</td> <td>REQ:</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		A1 ORIGINAL		DO NOT SCALE THIS DRAWING		SIGNED:	APPROVED:			DATE:	REQ:			<p>Level 3, 51-55 Bolton Street, Newcastle PO Box 1162, NSW 2300, Australia Tel: +61 2 4929 8300 Fax: +61 2 4929 8382 wsp.com</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">CLIENT:</td> <td colspan="2">PROJECT:</td> </tr> <tr> <td colspan="2" style="text-align: center;">PORT of NEWCASTLE</td> <td colspan="2" style="text-align: center;">MAYFIELD 4 MULTIPURPOSE CARGO HANDLING FACILITY - STAGE 1</td> </tr> <tr> <td colspan="2">TITLE:</td> <td colspan="2">DRAWING STATUS:</td> </tr> <tr> <td colspan="2" style="text-align: center;">STORMWATER DRAINAGE GENERAL ARRANGEMENT SHEET 1</td> <td colspan="2" style="text-align: center;">WAE</td> </tr> </table>		CLIENT:		PROJECT:		PORT of NEWCASTLE		MAYFIELD 4 MULTIPURPOSE CARGO HANDLING FACILITY - STAGE 1		TITLE:		DRAWING STATUS:		STORMWATER DRAINAGE GENERAL ARRANGEMENT SHEET 1		WAE	
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Figure F6: Mayfield Site Remnant Contamination



Legend

- CSMP Scope of Plan
- Coke Ovens Foundations

Emplaced In-Situ and High Risk Areas

High Risk Areas

- Asbestos Placement
- Former Tar Disposal Area
- Level 2 Asbestos In Situ
- Level 2 In Situ
- Level 2 Placement
- Level 3 Benzene In Situ
- Level 3 In Situ
- Level 3 In-Situ
- Level 3 Placement
- High Risk Area - Free Phase and VOC's*
- Barrier Wall Alignment

* Note: The Site Audit Statement (Environ 2013) indicates that following a review of boreholes logs, sample analysis results and the site history, CH2MHill (2004) estimated that coal tar is likely to extend over 19 hectares or 60% of Area 1 to depths of 3m to 5m.





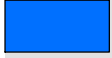
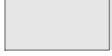
Separate phase hydrocarbons, including coal tars and waste oils, associated with storage tanks and pipelines are expected to extend over 23 hectares to depths of 5m within Area 1 and sections of Area 2;

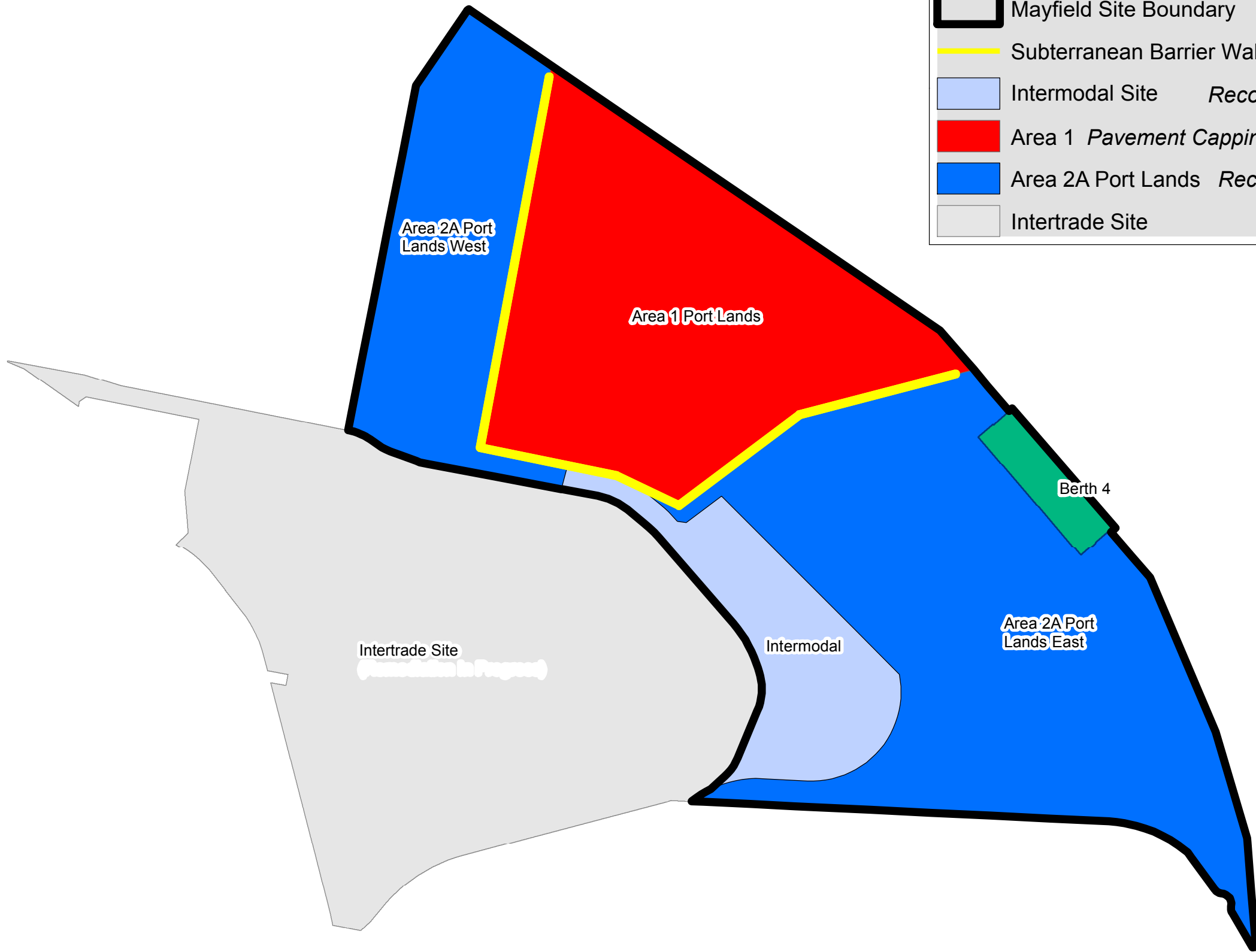
It is estimated that benzene impacted soils extend over 25 hectares to depths of 5m within Area 1 and sections of Area 2. Benzene and ammonia are the volatile components of significant concern

Contamination occurs anywhere within the subject lands. This mapping is indicative and not to be interpreted as reliable or exhaustive.

Figure F7: Mayfield Site Capping

Legend

-  Mayfield Site Boundary
-  Subterranean Barrier Wall
-  Intermodal Site *Recontouring and Capping Exceeding $K=1 \times 10^{-7} \text{ms}^{-1}$*
-  Area 1 *Pavement Capping $K=1 \times 10^{-9} \text{ms}^{-1}$ Plus Barrier Wall*
-  Area 2A Port Lands *Recontouring and Capping Exceeding $K=1 \times 10^{-7} \text{ms}^{-1}$*
-  Intertrade Site



**APPENDIX A – CONSOLIDATED INSTRUMENT OF
APPROVAL MOD 9**

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

INTEGRATED STATE SIGNIFICANT DEVELOPMENT DETERMINATION OF DEVELOPMENT APPLICATION PURSUANT TO SECTIONS 76A(9) & 80(4)

I, the Minister for Urban Affairs and Planning, pursuant to Sections 76A(9) & 80(4) of the Environmental Planning and Assessment Act, 1979 (“the Act”) and Clause 8 of State Environmental Planning Policy No.34 – Major Employment Generating Industrial Development determine the development application (“the application”) referred to in Schedule 1 by granting consent to the application subject to the conditions set out in Schedule 2.

The reasons for the imposition of the conditions are to:

- (i) minimise the adverse impact the development may cause through impacts on water quality, air quality, noise and visual disturbance, heritage conservation and soil and groundwater contamination; and,
- (ii) provide for environmental monitoring and reporting of the future performance of the development.

This consolidated instrument includes modifications approved:

1. under section 96(1) on 29 June 2001 – DA 293-08-00-M1;
2. under section 96(1) on 13 August 2001 – DA 293-08-00-M2;
3. under section 96(1A) on 15 February 2002 – DA 293-08-00-M3;
4. under section 96(1A) on 16 September 2003 – MOD-77-7-2003-i;
5. under section 96(1A) on 15 September 2005 – MOD-60-4-2005-i;
6. under section 96(1A) on 21 August 2007 – MOD-64-7-2007-i;
7. under section 96(2) on 21 November 2008 – MOD-56-7-2008;
8. under section 96(1A) on 30 March 2009 – MOD-06-02-2009 (amendments in red type); and
9. under section 75W on 29 August 2013 – DA 293-08-00 MOD 9 (amendments in blue type).

Andrew Refshauge MP
Minister for Urban Affairs and Planning,

Sydney, 6 April 2001

File No. S99/00601

Schedule 1

Application made by: Broken Hill Proprietary Company Limited
Selwyn Street, Mayfield NSW 2034

To: The Minister for Urban Affairs and Planning
(DA 293-08-00)

In respect of: Land described as the “Closure Area” being Lot 221 DP
1013964, Industrial Drive, Mayfield.

Note: the “Closure Area” is now known as Lot 33 DP1116571. Part of this area (Direct Port Industry Precinct) is owned by the Newcastle Port Corporation and the remainder, by the Hunter Development Corporation.

- For the following:** Stage 1, being the remediation of the Closure Area, including the demolition and removal of structures and the development of a Multi-Purpose Terminal comprising a container terminal and a general cargo handling facility and associated road, rail and wharf infrastructure and dredging of the South Arm of the Hunter River.
- Development Application:** Development Application (DA) No. 293-08-00, lodged with the Department of Urban Affairs and Planning on 5 September 2000, accompanied by the Environmental Impact Statement prepared by URS Corporation, dated August 2000.
- State Significant Development** In accordance with section 76A(7)(b)(iii) of the EP&A Act , by notice in the Gazette, the Minister for Urban Affairs and Planning has declared the proposal to be State Significant Development.
- Integrated Development:** The proposed development requires separate approvals from the Environment Protection Authority under the *Protection of the Environment Operations Act 1997*, The NSW Waterways Authority under the *River and Foreshores Improvement Act 1948* and the Roads and Traffic Authority under the *Roads Act 1993*. It is therefore classified as Integrated Development Under Section 91 of the EP&A Act.
- BCA Classification:** Class 5 – administration building, quarantine/customs building
Class 8 - workshop
Class 10(b) – wharf structures, pavements, truck/trailer marshalling area, car parking areas, access roads, fences, rail infrastructure, fuel depot,
- NOTE:**
- 1) To ascertain the date upon which the consent becomes effective, refer to section 83 of the Act.
 - 2) To ascertain the date upon which the consent is liable to lapse, refer to section 95 of the Act.
 - 3) Section 97 of the Act confers on Proponents who is dissatisfied with the determination of a consent authority a right of appeal to the Land and Environment Court exercisable within 12 months after receipt of notice.

SCHEDULE 2

CONDITIONS OF DEVELOPMENT CONSENT

DEFINITIONS

ANZECC	Australian and New Zealand Environment Conservation Council
Council	Newcastle City Council
DA	Development Application
DLWC	The Department of Land and Water Conservation
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environment Protection Authority
GTA	General Terms of Approval
$L_{AEQ15min}$	Average noise level, when measured over a 15 minute period.
MPT	Multi-Purpose Terminal
M	Metres
The Act	Environmental Planning and Assessment Act 1979
The Applicant	BHP Limited
The Department	The Department of Urban Affairs and Planning
The Director-General	The Director-General of the Department of Urban Affairs and Planning, or her delegate
The Regulation	Environmental Planning and Assessment Regulation 1994

1. STAGED DEVELOPMENT

- 1.1 Under Section 80(4) of the Act, this consent applies to Stage 1 of the development, as described in Schedule 1, only.
- 1.1A The approval for the General Cargo Handling Facility granted under **MOD-56-7-2008** shall operate for a maximum period of ten years from the date of this modification, or as otherwise agreed to by the Director-General.
- 1.1B At five yearly intervals following commencement of operation of the General Cargo Handling Facility, the applicant shall submit a report to the Director-General on the need or otherwise for the General Cargo Handling Facility to be retained on site and to remain operational. The report must include supporting justification.
- 1.2 Under Section 80(5) of the Act, the Applicant will require a further consent from the Minister for Stage 2 of the development.

Note: A consent granted in accordance with Condition 1.2 does not require a further development application under section 78A of the Act. However the Applicant shall submit further detailed information, as required by the Director-General and the Integrated Approval Bodies at that time. The Director-General shall consult with any relevant authorities and consider any submissions before Stage 2 of the development is determined.

2. GENERAL

Obligation to Minimise Harm to the Environment

- 2.1 ¹The Applicant must implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction, operation, and where relevant, the decommissioning of the development.

Terms of Approval

- 2.2 The Applicant shall carry out the development generally in accordance with the:
- (a) **Development application DA-293-08-00** submitted to the Department of Urban Affairs and Planning, accompanied and amended by:
 - (i) the letter from the Applicant to the Director-General, dated 28 September 2000, specifically excluding Stage 2 and all works;
 - (ii) Environmental Impact Statement, titled "Development of a Multi-Purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks" dated 11 August 2000, and prepared by URS Corporation Volumes 1 – 3;
 - (iii) Additional information supplied to the Environment Protection Authority by URS Corporation including:
 - Development of a Multi-Purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks Environmental Impact Summary Document;
 - "Response to EPA Request for Additional Information – Air Quality Issues, BHP Newcastle Steelworks Development", prepared for BHP Newcastle, 11 November 2000;
 - "Response to EPA Request for Additional Information – Noise Issues, BHP Newcastle Steelworks Development", prepared for BHP Newcastle, 14 November 2000.
 - (iv) The document titled *Proposed Multi-Purpose Terminal Consequence Analysis for URS*, prepared by Quest Consulting Engineers Pty Ltd and dated February 2001;
 - (b) **Modification application DA-293-08-00-M1**, approved on 29 June 2001, in relation to the timing of establishment of a Community Consultative Committee;
 - (c) **Modification application DA-293-08-00-M2**, approved on 13 August 2001, in relation to excision of heritage areas from the development area;
 - (d) **Modification application DA-293-08-00-M3**, approved on 15 February 2002, in relation to protection of fig trees and noise monitoring requirements;
 - (e) **Modification application MOD-77-7-2003-i**, approved on 16 September 2003, in relation to the burial of Blast Furnace No.1 slag stump, accompanied and amended by:
 - (i) the letter, titled *BHP Newcastle Development of a Multi-Purpose Terminal and Closure Area Remediation – Development Application DA 293-08-00. Your File S99/00601 – Condition 6.1 – Item 1, Remnants of No. 1 Blast Furnace*, prepared by BHP Billiton and dated 23 April 2003, relating to the modifications to the consent;
 - (ii) the letter, titled *BHP Steelworks Newcastle, Burial of Heritage Structure (No. 1 Blast Furnace Stump) – Development Consent Condition 6.1 DA 293-08-00. Your Ref S99/00601*, prepared by BHP Billiton Ltd and dated 8 June 2003, relating to the modifications to the consent;

¹ EPA GTA No.1.2

- (iii) the report, titled *BHP Steelworks Newcastle, Burial of Heritage Structure (No. 1 Blast Furnace Stump) – Development Consent Condition 6.1 DA 293-08-00. Your Ref S99/00601*, prepared by BHP Billiton Ltd and dated 2 July 2003, relating to the modifications to the consent;
- (f) **Modification application MOD-60-4-2005-i**, approved on 15 September 2005, in relation to land description, soil capping, hours of operation, groundwater management, stormwater, capping exemptions and transport infrastructure, accompanied by *Application to Vary Development Conditions for the Multi Purpose Terminal and Remediation of the Former BHP Site, Mayfield (2001)*, prepared by URS Australia Pty Ltd and dated 19 April 2005; and
- (g) **Modification application MOD-64-7-2007-i**, approved on 21 August 2007, in relation to alteration of the alignment of the railway lines and relocation of two major stormwater drainage lines on the site, accompanied and amended by:
 - (i) *Application to Vary Development Conditions for the Multi Purpose Terminal and Remediation of the Former BHP Site, Mayfield (2000)*, prepared by the Regional Land Management Corporation Pty Ltd and dated 10 July 2007;
 - (ii) the letter, titled *Remediation Civil Design Works – Main Works Site – Stormwater Analysis* prepared by Patterson Britton & Partners and dated 12 July 2007, relating to the modification to consent;
 - (iii) the report, titled *Preliminary Design Stormwater Strategy Issue No 2* prepared by Patterson Britton & Partners and dated August 2006, , relating to the modification to consent;
 - (iv) the plans, titled *Selwyn Street Drain (Drawing Nos 6073-500, 501 & 502 Issue 1)* prepared by Patterson Britton & Partners; and
- (h) **Modification application MOD-56-7-2008** in relation to the alterations to, and temporary relocation of, the general cargo handling facility, refurbishment of the existing wharf and a change in site access from Crebert Street to Selwyn Street, accompanied and amended by:
 - (i) Section 96 Modification Application, Multi-purpose Terminal and Remediation of former BHP Site, Mayfield, prepared by Connell Wagner Pty Ltd and dated 15 August 2008;
 - (ii) Plans titled *Mayfield Berth Refurbishment Plans* prepared by Patterson Britton & Partners Pty Ltd dated July 2008;
 - (iii) Plans titled *Selwyn Road Upgrade Plans* prepared by Worley Parsons Pty Ltd and dated August 2008; and
 - (iv) The report titled *Traffic Impact Statement, Proposed Interim Port Side Industrial Development, Selwyn Street, Mayfield, NSW* prepared by Better Transport Futures and dated October 2008; and
- (i) **Modification application MOD-06-02-2009** in relation to a minor change to the rail line layout, accompanied and amended by:
 - (i) Section 96 Modification Application, Multi-purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks, submitted by Hunter Development Corporation and dated 12 February 2009; and
 - (ii) *Application to Vary Development Conditions for the Multi Purpose Terminal and Remediation of the Former BHP Site, Mayfield (2000)*, prepared by Hunter Development Corporation dated January 2009; and
- (j) the conditions of this consent.

If there is any inconsistency between the above, these conditions shall prevail.

Restriction on Operations

- 2.3 The Container Terminal must not handle more than 350, 000 containers per annum.

Note: Any increase above 350,000 containers a year will require further assessment under the Act.

Structural Adequacy

- 2.4 Before any construction work starts, the Applicant must obtain a construction certificate for the proposed development from the Principal Certifying Authority.
- 2.5 Before commissioning the development, the Applicant must obtain an occupation certificate for the development from the Principal Certifying Authority.
- 2.6 The applicant shall engage an EPA Accredited Site Auditor to provide to Director-General and the Department of Environment and Climate Change prior to construction of the hardstand area:
- (a) a statement detailing whether the design of the hardstand area complies with the requirements of the relevant consent conditions; and
 - (b) provide a written confirmation that the hardstand area is suitable for its final intended use.

3. COMPLIANCE AND COMPLIANCE REPORTS

- 3.1 Throughout the life of the development, the Applicant must secure, renew, maintain, and comply with all the relevant statutory approvals applying to the development.
- 3.2 The Applicant must ensure that all contractors and sub-contractors are aware of, and comply with, the conditions of this consent and the approved environmental management plans required under the consent (Conditions 4.1 to 4.4.).
- 3.3 At least two weeks before:
- (a) Site preparation works commence (including demolition and or remediation);
 - (b) construction works commence; and
 - (c) Operations commence,

the Applicant must certify in writing to the Director-General that it has obtained all the necessary statutory approvals for, and complied with all the relevant conditions of this consent and/or any other statutory requirements related to each respective component of the development.

4. ENVIRONMENTAL MANAGEMENT PLANS

Contaminated Site Environmental Management Plan

- 4.1 ²Prior to commencing site remediation works the Applicant must prepare an environmental management plan. The management plan must include, but need not be limited to, providing information for employees, contractors, and subcontractors working on the closure area site remediation, Multi-Purpose Terminal, or any other activities on the site of:
- (a) procedures required to maintain the integrity of the capping system;

² EPA GTA No.6.10

- (b) procedures for ensuring that disturbance of any part of the during construction, or any other activities on the site, is rectified to maintain the integrity of the capping system and meet the requirements of Conditions 5.17 and 5.18 are met; and
- (c) legal responsibilities under the *Protection of the Environment Operations Act 1997*.

Site Preparation Environmental Management Plan

4.2 The Applicant must prepare and implement a Site Preparation Environmental Management Plan addressing all demolition and site remediation activities. The management plan must include, but need not be limited to:

- (a) A description of the proposed site preparation works;
- (b) An outline the proposed site preparation work program;
- (c) Identification of all the relevant statutory requirements and conditions of consent that apply to the site preparation phase of the development including legal responsibilities under the *Protection of the Environment Operations Act 1997*;
- (d) Standards and performance measures for each of the relevant environmental matters associated with the site preparation works;
- (e) A Description of what actions and measures will be implemented to mitigate the potential impacts of the site preparation works, and to ensure that these works will comply with the relevant standards and performance measures;
- (f) A detailed description of what measures and procedures will be implemented to:
 - Manage potential pollutants exposed to air, and surface and groundwater during demolition of structures;
 - Manage traffic;
 - Mitigate potential noise impacts;
 - Mitigate potential dust impacts;
 - Mitigate pollution of surface and groundwater;
 - Register and respond to complaints;
 - Ensure the occupational health and safety of workers;
 - Respond to any emergencies; and
 - Respond to the discovery of any archaeological relics or sites during site works.
- (g) An explanation as to how the environmental performance of the site preparation works will be monitored, and what actions will be taken if any non-compliance is detected;
- (h) A description of the role, responsibility, authority, accountability, and reporting of key personnel involved in the site preparation phase of the development;
- (i) The following plans:
 - Contaminated Site Management Plan (Condition 4.1);
 - Site Preparation and Construction Noise Management Plan (Condition 5.8);
 - Soil and Water Management Plan (Condition 5.27);
 - Heavy Vehicle Route Plan (Condition 5.46)
 - Archaeological Management Plan (Condition 6.3).

The plan must be submitted and approved by the Director-General prior to site preparation works commencing.

Construction Environmental Management Plan

- 4.3 The Applicant must prepare and implement a Construction Management Plan for the Multi-Purpose Terminal development. This plan must:
- (a) Describe the proposed construction works;
 - (b) Outline the proposed construction work program;
 - (c) Identify all the relevant statutory requirements and conditions of consent that apply to the construction phase of the development;
 - (d) Set standards and performance measures for each of the relevant environmental matters associated with the construction work;
 - (e) Describe what actions and measures will be implemented to mitigate the potential impacts of the construction works, and to ensure that these works will comply with the relevant standards and performance measures;
 - (f) Describe in detail what measures and procedures will be implemented to:
 - Manage construction traffic;
 - Mitigate any potential dust impacts;
 - Register and respond to complaints during the construction period;
 - Ensure the occupational health and safety of construction workers;
 - Respond to any emergencies; and
 - Respond to the discovery of any archaeological relics or sites during site works.
 - (g) Explain how the environmental performance of the construction works will be monitored, and what actions will be taken if any non-compliance is detected;
 - (h) Describe the role, responsibility, authority, accountability, and reporting of key personnel involved in the construction of the development;
 - (i) Include the following plans:
 - Soil and Water Management Plan (Condition 5.27)
 - Site Preparation and Construction Noise Management Plan (Condition 5.8);
 - Heavy Vehicle Route Plan (Condition 5.46)
 - Landscape Management Plan (Condition 5.47)
 - Contaminated Site Management Plan (Condition 4.1)
 - Archaeological Management Plan (Condition 6.3)

No construction work on the Multi-Purpose Terminal may occur before this plan has been approved by the Director-General.

Operation Environmental Management Plan

- 4.4 The Applicant must prepare and implement an Operation Environmental Management Plan (OEMP) for all future operations of the Multi-Purpose Terminal. This plan must:
- (a) Describe the proposed operations;
 - (b) Identify all the relevant statutory requirements that apply to the operation of the development;
 - (c) Set standards and performance measures for each of the relevant environmental issues;
 - (d) Describe what actions and measures will be implemented to mitigate the potential impacts of the development, and to ensure that the development meets these standards and performance measures;
 - (e) Describe what measures and procedures will be implemented to:
 - Register and respond to complaints;
 - Ensure the operational health and safety of the workers; and
 - Respond to potential emergencies, such as plant failure;

- (f) Describe the role, responsibility, authority, and accountability of all the key personnel involved in the operation of the development;
- (g) Incorporate the detailed Environmental Monitoring Program (see Condition 8.1); and
- (h) Include the following:
 - Stormwater Management Plan (condition 5.30);
 - Capping Maintenance Plan (Condition 5.20);
 - Contaminated Site Environmental Management Plan (Condition 4.1); and,
 - Heavy Vehicle Route Plan (Condition 5.46).

4.5 The Applicant must ensure that a copy of the OEMP is publicly available.

4.6 The Applicant must review and update the OEMP regularly, or as directed by Director-General.

4.7 The OEMP must be approved by the Director-General before operations at the MPT can commence.

5. ENVIRONMENTAL STANDARDS AND CONDITIONS

Hours of Site Preparation and Construction

5.1 ³All site preparation and construction activities in relation to the MPT must only be conducted between the hours specified below unless otherwise agreed by the Director-General in consultation with the appropriate regulatory authority:

- (a) Monday to Friday 7am to 6pm;
- (b) Saturday, 8am to 1pm if audible at residential receivers, otherwise 7am to 1pm; and
- (c) No construction work to take place on Sundays or Public Holidays.

5.1A. Notwithstanding condition 5.1 of this consent, activities associated with remediation of the site may be undertaken at any time, subject to compliance with the noise limits specified under condition 5.7.

Blasting

5.2 ⁴The applicant must notify the community with the postcodes 2304 and 2297 by way of a community service announcement in a widely distributed print media and local broadcast media of the proposed date and time of any blasting to be done on the site. The notification must provide a timely warning of the intended blast and provide a contact name and phone number that the public may use to obtain further details of the proposed blast.

5.3 ⁵Noise caused by blasting operations must not exceed an over-pressure level of 115dB (linear peak) for more than 5% of the total number of blasts when measured at any noise sensitive locations (such as residential premises, schools or hospitals).

³ EPA GTA No. 5.11

⁴ EPA GTA No. 5.1

⁵ EPA GTA No. 5.2

- 5.4 ⁶Noise caused by blasting operations must not exceed an over-pressure level 120dB (linear peak) at any time when measured at any noise sensitive locations (such as residential premises, schools or hospitals).
- 5.5 ⁷Ground vibration caused by blasting operations must not exceed a peak particle velocity of 5 millimetres for more than 5% of the total number of blasts carried out over any 12 month period, when measured at any point within one metre of any residential boundary or in or on any noise sensitive areas (such as residential premises, schools or hospitals).
- 5.6 ⁸Ground vibration caused by blasting operations on the site must not exceed a peak particle velocity of 10 millimetres per second (peak particle velocity) when measured at any point within one metre of the boundary of any premises not owned or leased by the applicant.

Noise – Site Preparation and Construction Phases

- 5.7 ⁹Noise emissions arising from demolition and site remediation of the closure area and construction of the MPT, and associated activities must not exceed the following noise levels:

Location	Noise Limits (dBA)
1. 52 Arthur Street	55
2. Mayfield East Public School	47
3. 21 Crebert Street	56
4. Newcastle TAFE	49
5. 1 Arthur Street	51

Note: The shaded area represents the applicable criteria to all construction related activity for the closure area.

The Noise limits apply during the day or night-time under winds up to 3 metres per second (measured at 10 metres above ground level) and Pasquill stability class from A to F.

- 5.8 ¹⁰To achieve the levels specified in Condition 5.7, the Applicant must develop and implement an appropriate Site Preparation and Construction Noise Management Plan. The plan must include, but need not be limited to:
- identification of all noise sources;
 - noise mitigation measures both in terms of engineering best practice and operational procedures;
 - proposed times for noise propagating site activities;
 - monitoring methods and programs;
 - contingency measures where monitoring indicates non compliance; and
 - complaints handling procedures.

The plan will form part of the Site Preparation EMP (Condition 4.2) and the Construction EMP (Condition 4.3) and be approved by the Director-General prior to works commencing.

⁶ EPA GTA No. 5.3

⁷ EPA GTA No. 5.4

⁸ EPA GTA No. 5.5

⁹ EPA GTA No. 5.7

¹⁰ EPA GTA No. 5.8

- 5.9 ¹¹In the event that the Applicant is unable to achieve the noise levels specified in Condition 5.7, the Director-General, in consultation with the EPA may agree to a request by the applicant to negotiate noise limits above the limits specified in Condition 5.7, provided the Director-General is satisfied that the applicant has demonstrated that all feasible and reasonable means to mitigate noise impacts have been considered. The application should include but need not be limited to:
- full details of the measures proposed to mitigate noise impacts associated with the construction related activity for the Closure Area, with particular reference to piling operations;
 - a quantitative analysis of the extent to which the mitigation measures will achieve the noise limits specified in Condition 5.7;
 - identify all residential properties and sensitive receivers likely to be affected when all feasible and reasonable on-site mitigation strategies have been taken into account; and
 - details of the outcome of a community consultation process to be implemented by the Applicant to identify alternative on-site or off-site mitigation strategies that may be acceptable to the community.
- 5.10 Piling operations must be conducted using best available technology. The appropriate regulatory authority may require acoustic shrouding of the hammer to limit impact noise if the appropriate regulatory authority receives justifiable complaints.

Noise – Operation Phase

- 5.11 The following noise limits apply to the operation of the Multi-Purpose Terminal at the locations shown are as follows:

Noise Limits dB(A)			
Location	Day	Evening	Night
	7:00 am to 6:00 pm Mondays to Saturdays 8:00 am to 6:00 pm Sundays and public holidays	6:00 pm to 10:00 pm on any day	10:00 pm to 7:00 am Mondays to Saturdays 10:00 pm to 8:00 am Sundays and public holidays
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
1. 52 Arthur Street	49	38	38
2. Mayfield East Public School	47	37	37
3. 21 Crebert Street	49	39	39
4. Newcastle TAFE	44	38	38
5. 1 Arthur Street	48	33	33

The noise limits apply during all assessment periods under winds up to 3 metres per second (measured at 10 metres above ground level) and Pasquill stability classes from A to F.

- 5.12 In the event that the Applicant is unable to achieve the noise levels specified in Condition 5.11, the Director-General, in consultation with the EPA may agree to a request by the applicant to negotiate noise limits up to 5 dB(A) above the limits specified in Condition 5.11, provided the Director-General is satisfied that the applicant has demonstrated that all feasible and reasonable means to mitigate

¹¹ EPA GTA No. 5.9

noise impacts have been considered. The application should include but need not be limited to:

- (a) full details of the measures proposed to mitigate noise impacts associated with the operation of the container terminal and the rail terminal;
- (b) a quantitative analysis of the extent to which the mitigation measures will achieve the noise limits specified in Condition 5.11;
- (c) identify all residential properties and sensitive receivers likely to be affected when all feasible and reasonable on-site mitigation strategies have been taken into account; and
- (d) details of the outcome of a community consultation process to be implemented by the Applicant to identify alternative on-site or off-site mitigation strategies that may be acceptable to the community.

Vibration

- 5.13 Prior to construction of the railway linking the MPT to the Morandoo sidings inroad, the Applicant shall prepare a vibration assessment report identifying the predicted impacts of rail related vibration as a result of the development. The assessment report shall be prepared in consultation with the Rail Infrastructure Corporation and be submitted for the approval of the Director-General. The Report shall include measurements of predicted vibration associated with the new rail line connecting the MPT and identify mitigation measures to be incorporated into the detailed design of the rail line.

Odour

- 5.14 ¹²No offensive odour, as defined under Section 129 of the *Protection of the Environment Operations Act 1997*, may be emitted from the premises.

Note: The Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant protection licence as a potentially offensive odour and the odour is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

Dust

- 5.15 ¹³Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises
- 5.16 ¹⁴All trafficable areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind blown or traffic generated dust.

Site Remediation – Site capping

- 5.17 The Closure Area as identified in Figure 1.3 of the EIS: *Layout of the Steelworks Site Showing the Closure Area and MPT*, other than the proposed hard stand paved areas, and pre-construction surfaces must:

¹² EPA GTA No. 2.1

¹³ EPA GTA No. 2.2

¹⁴ EPA GTA No. 2.3

- (a) have a seal bearing layer consisting of a properly designed and engineered layer of material. This layer must consist of a material at least 500mm thick and have a permeability less than $K = 10^{-7} \text{ms}^{-1}$; and
- (b) be constructed and maintained to permit free drainage and to avoid surface water ponding; or
- (c) an alternative seal bearing layer that meets the objectives of (a) and (b) above and demonstrates a high level of engineering reliability may be approved in writing by the EPA.

For the purposes of this condition the following areas are exempted for the requirements above:

- the areas delineated to be landscaped in areas M11 and M23 on Figure 1 'Plan of Closure Area M11 (Heritage Precinct)' dated 8 May 2001, and Figure 2 'Plan of Closure Area M23' dated 8 May 2001, submitted to the Department on 6 August 2001;
- the area marked as 'Fig Tree Preservation Area' in the plan titled 'Newcastle Steelworks Main Site Redevelopment - Figtree Canopy along Industrial Drive - General Arrangement', dated 24 October 2001, and submitted to the Department on 15 October 2001; and
- the western portion of area M17, which is an established landscaped area located behind the fig trees along Industrial Drive between Crebert Street and Selwyn Street. The area extends for approximately 80 metres to the east, to the proposed location of the railway line.

However, should any of the areas listed above be re-developed then this exemption no longer applies.

Note: "hard stand" is for the purpose of this condition, concrete or asphalt.

- 5.18 Unless otherwise approved by the EPA in accordance with condition 5.18A of this consent, the areas listed below and identified in Figure 1.3 of the EIS must be capped with hard stand or incorporate a seal bearing layer consisting of a material at least 500mm thick and have a permeability less than $K = 10^{-9} \text{ms}^{-1}$.

- (a) M18
- (b) M19
- (c) M20
- (d) M25
- (e) M12
- (f) M14
- (g) M15

Note: An alternative seal bearing layer including existing hard stand areas that meets the objectives of the above and demonstrates a high level of engineering reliability may be approved in writing by the EPA.

- 5.18A The Applicant may seek the approval of the EPA to alter the permeability requirements specified under condition 5.18 of this consent, following completion of installation of the barrier wall and associated capping works. In considering any application to vary permeability requirements, the EPA may require the Applicant to provide an independent assessment of whether the barrier wall and associated capping works have achieved the remediation outcomes for the site.

- 5.19 ¹⁵A qualified Geo-technical Engineer must be engaged to provide certification of the permeability of the seal bearing layer as detailed in Conditions 5.17 and 5.18 above. The certification must be retained by the Applicant for a minimum period of 5 years.
- 5.20 ¹⁶A capping maintenance plan must be developed for the closure area as identified by Figure 1.3 titled *Layout of Steelworks Site Showing the Closure Area and MPT* in the EIS. This plan must include, but need not be limited to the following:
- (a) procedures for ensuring the integrity of the cap is maintained during any construction or any other activities on the closure area;
 - (b) procedures for ensuring that disturbance of any part of the cap during construction or any other activities on the site, is rectified to maintain the integrity of the capping system and meet the requirements of Conditions 5.17 and 5.18.
- 5.21 ¹⁷All sub-surface pipes associated with stormwater collection and drainage systems installed on the premises must be flexible jointed pipes designed and installed in accordance with Australian Standard AS/NZS 2566.1:1998.

Remediation of Contamination - Soil

- 5.22 ¹⁸The EPA must be notified, in writing, of any free phase contamination and any other type of contamination not identified in the EIS that is encountered during any activities on the closure area. Notification must be submitted as soon as practicable after the material is identified.

Note: The EPA may require any free phase contamination or any other type of contamination not identified in the EIS that is encountered during any activities on the closure area to be contained or treated on site or removed off site for disposal or treatment.

- 5.23 ¹⁹Prior to commencing construction of the Multi-Purpose Terminal or remediation of the closure area as identified in Figure 1.3 of the EIS, any stockpiled soil from the area surrounding the decommissioned Coke Ovens 1, 2, and 3 located adjacent to the western side of Blast Furnace Road must be removed from this location and either:
- (a) Contained in areas proposed to be covered by hard stand pavement: or
 - (b) Managed by an alternative method approved in writing by the EPA.

Remediation of Contamination - Groundwater

- 5.24 ²⁰For the purposes of investigating the options for interception and treatment of contamination migrating in groundwater to the Hunter River, the Applicant must submit a report to the EPA's Regional Manager Hunter.
- 5.25 ²¹The report must include, but need not be limited to, a detailed investigation of funnel and gate technology, or of an alternative technology identified by the Applicant, to intercept and treat groundwater flowing in the direction of the hard

¹⁵ EPA GTA No. 6.3

¹⁶ EPA GTA No. 6.4

¹⁷ EPA GTA No. 6.5

¹⁸ EPA GTA No. 6.6

¹⁹ EPA GTA No. 6.7

²⁰ EPA GTA No. 6.8

²¹ EPA GTA No. 6.9

stand areas of the proposed Multi-Purpose Terminal and area M12 as identified by Figure 1.3 titled *Layout of Steelworks Site Showing the Closure Area and MPT* in the EIS;

The report must include, but need not be limited to:

- (a) design details of the funnel and gate technology;
- (b) options for the reactive media to be placed within the “gates” to treat the contaminants in the groundwater to be consistent with the relevant guidelines specified by the Australian and New Zealand Environment and Conservation Council (ANZECC) in the document titled *Australian Water Quality Guidelines for Fresh and Marine Waters (1992)*;
- (c) if an alternate technology is identified by the Applicant, the design details of the alternate technology and an assessment of the ability of the alternate technology to treat the contaminants in the groundwater to be consistent with the relevant guidelines specified by ANZECC in the document titled *Australian Water Quality Guidelines for Fresh and Marine Waters (1992)*;
- (d) justification for any alternate technology identified by the Applicant;
- (e) details of a monitoring program to evaluate the effectiveness of the funnel and gate system or any alternative technology identified by the Applicant to be consistent with the relevant guidelines specified by the ANZECC in the document titled *Australian Water Quality Guidelines for Fresh and Marine Waters (1992)*;
- (f) an estimate of costs to implement and maintain the funnel and gate system and any alternative technology identified by the Applicant; and
- (g) a timetable and detailed schedule of works to implement the funnel and gate system and any alternative technology identified by the Applicant.

The report must be submitted to the EPA prior to construction of any hard stand areas of the Multi-Purpose Terminal. “hard stand” is, for the purpose of this condition, concrete or asphalt.

Note: The EPA intends to require implementation of a system which the EPA determines as appropriate in order to ensure that the Applicant manages and treats groundwater contamination to be consistent with the relevant guidelines specified by the ANZECC in the document titled Australian Water Quality Guidelines for Fresh and Marine Waters (1992). The preferred system will be implemented either through the conditions of the Environment Protection Licence for the premises or through the provisions of the Contaminated Land Management Act 1997.

- 5.25A The Applicant shall construct groundwater management works, as a component of the site remediation activity, in accordance with EPA approval under the *Contaminated Land Management Act 1997*.

Stormwater and Sediment Control – Site Preparation and Construction Phase

- 5.26 ²²Except as may be expressly provided in a licence issued by the EPA, the Applicant must comply with Section 120 of the *Protection of the Environment Operations Act 1997* prohibiting the pollution of waters.
- 5.27 ²³A Soil and Water Management Plan (SWMP) must be prepared and implemented. The SWMP must describe the measures that will be implemented

²² EPA GTA No. 3.1

²³ EPA GTA No. 3.2, WWA GTA No. 3

to minimise soil erosion and the discharge of sediment and other pollutants to waters during site remediation of the closure area and construction of the MPT. The SWMP should be prepared in accordance with the relevant specifications and standards contained in the document titled *Managing Urban Stormwater: Soils and Construction* (Department of Housing 1998) and any other relevant agency requirements. The SWMP should include, but not necessarily be limited to, those measures outlined in Table 10.2 *Environmental Safeguards* in the EIS.

- 5.28 The proposed system for erosion and sediment control must be installed and stabilised before commencement of site works. This does not include the construction of the appropriate controls.
- 5.29 The stormwater drainage system for the site may only discharge to the Hunter River or the stormwater system via an appropriately engineered stormwater detention basin(s).

Prior to construction, the design capacity of the stormwater detention basin(s) must be approved in writing by the EPA.

- 5.29A The Eastern and Western drains are to be designed to satisfactorily accommodate stormwater runoff from the entire respective contributing catchments. The contributing catchment to the Eastern Drain shall include the catchment that drains to the existing open drain within Selwyn Street, such as to permit possible future upgrading/widening of Selwyn Street.
- 5.29B The Applicant is to fund and construct, in consultation with the Council, stormwater drainage pipe connections from the Eastern Drain to the boundary of Selwyn Street in sufficient number, location and size such to adequately service the existing Selwyn Street drain without the need to undertake construction activity within the constructed drain.
- 5.29C Upon achieving practical completion of all construction and landscaping works associated with the Eastern Drain, an easement to drain water shall be created over the Eastern Drain and associated structures. The terms of such an easement shall be established by the Proponent in consultation with the Council.

Stormwater and Sediment Control – Operation Phase

- 5.30 ²⁴A Stormwater Management Plan must be developed and implemented to mitigate the impacts of stormwater runoff from the site following the completion of the site remediation activities. The plan must identify contaminant likely to be present in stormwater from the closure area as identified in Figure 1.3 of the EIS and the measures proposed to prevent or control their discharge to waters such as the Hunter River. The measures should include, but not necessarily be limited to those outlined in Table 10.2 *Environmental Safeguards* in the EIS. The Plan must address the provisions of Newcastle City Council's *DCP No.50 – Stormwater Management for Development Sites*.

Waste – Closure Area

- 5.31 ²⁵The Applicant must not cause, permit, or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing, or disposal; or any waste generated at the premises to be disposed

²⁴ Incorporates EPA GTA No.3.5

²⁵ EPA GTA No.4.1

at the premises, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

This condition only applies to the storage, treatment, processing, reprocessing, or disposal; or any waste generated at the premises if it requires an environment protection licence under the *Protection of the Environment Operations Act 1997*.

- 5.32 Prior to the commencement of operations, the Applicant must demonstrate to the satisfaction of the Australian Quarantine Inspection Service and the Director-General that appropriate arrangements have been put in place for the disposal of quarantine wastes.
- 5.33 ²⁶Prior to any material being stored in the emplacement area as identified in Figure 6.4 titled *Proposed Final Landform and Surface water Drainage* of the EIS, the following must be conducted:
- (a) the Applicant must provide the EPA with details of how the environmental goals will be met through the relevant benchmark techniques specified in the EPA's document titled *Environmental Guidelines: Solid Waste Landfills*; and provide a comprehensive environmental management plan; and,
 - (b) the emplacement area must have a leachate barrier system that meets the requirements of the EPA's document titled *Environmental Guidelines: Solid Waste Landfills*.

Waste - Hazardous and Industrial

- 5.34 ²⁷Hazardous or industrial waste proposed to be removed from the Closure Area must be stored and disposed of in a manner to minimise its impact on the environment including appropriate segregation for storage and separate disposal by a waste transporter licensed by the EPA.

Dredging and Sediment Disposal

- 5.35 Prior to commencement of any dredging work, a Dredging Management Plan shall be prepared in consultation with the Newcastle Port Corporation and once completed provided to the Waterways Authority. The plan shall address, but is not limited to, the following issues:
- (i) installation and effective operation of an appropriately designed silt curtain to control turbidity around the dredge site;
 - (ii) details of the dredging footprint, weekly dredging rate, equipment and pipeline for the transfer of sediment (size and location);
 - (iii) Range of river and weather conditions necessitating the temporary cessation of dredging operations; and
 - (iv) Provide details on contingency plans to deal with potential adverse impacts resulting from dredging operations.
- 5.36 Following the conclusion of Stage 1 dredging works, a hydrographic survey is to be carried out and is to be submitted to the Waterways Authority.
- 5.37 Should the dredging works require the use of explosives in water, then a permit shall be obtained from NSW Fisheries prior to the commencement of dredging operations.

²⁶ EPA GTA No. 4.2

²⁷ EPA GTA No. 4.3

Lighting

- 5.38 The Applicant must ensure that any external lighting associated with the development is mounted, screened, and directed in such a manner so as not to create a nuisance to surrounding land uses. The lighting must be the minimum level of illumination necessary.

Traffic

- 5.39 The applicant is to fund and construct the following road works to the satisfaction of the Newcastle City Council and/or Roads and Traffic Authority prior to commencement of operations at the Multi-Purpose Terminal:

- (a) localised widening along Selwyn Street to meet minimum travel lane (Austroads) requirements;
- (b) line marking and signage to control parking along the Selwyn Street approach to the Multi-Purpose Terminal; and
- (c) intersection access from the eastern end of Selwyn Street into the Multi-Purposed Terminal.

Prior to the above road and traffic control works being undertaken, the applicant must obtain the approval of the Newcastle City Council and the concurrence of the Roads and Traffic Authority for these works under the *Roads Act 1993*.

- 5.40 ²⁸The design of all works is to be in accordance with Austroads and RTA Road Design Guide Standards and is subject to RTA review.
- 5.41 The Applicant shall consult with the local community on the proposed roadworks prior their construction.
- 5.42 ²⁹The applicant shall not commence physical work in the State Road reserve until:
- (a) all approvals or acceptances have been given by the RTA,
 - (b) all administration and management fees and the performance bond have been received by the RTA, and
 - (c) the applicant has entered a Deed of Agreement with the RTA.
- 5.43 ³⁰All provision for traffic is to be in accordance with the requirements of the RTA publication "Traffic Control at Work Sites" and Australian Standards AS 1742.3.
- 5.44 ³¹The Applicant is to prepare the following documentation to the satisfaction of the RTA in respect of the proposed road works:
- (a) Full Engineering Plans detailing the scope of the proposed works;
 - (b) Review of Environmental Factors (REF);
 - (c) Geotechnical Investigation Report and Pavement Design;
 - (d) Environmental Management Plan;
 - (e) Occupational Health and Safety Plan;
 - (f) Traffic Control Plan (TCP);
 - (g) Traffic Management Plan (TMP); and,
 - (h) Road Safety Audit.

²⁸ RTA GTA No.1

²⁹ RTA GTA No.2

³⁰ RTA GTA No.3

³¹ RTA GTA No.4

The Applicant shall consult with the RTA regarding the requirements of the above plans.

- 5.45 ³²Works are to be undertaken in accordance with the Roads and Traffic Authority's procedures and the undertaking of privately funded works within a State Road reserve by private developers as outlined in the RTA publication *Private Sector Development Work on the Road Network – Notes for Developers*.
- 5.46 Prior to site remediation works commencing, the Applicant submit to the Director-General for approval, a Heavy Vehicle Route Plan that identifies the shows the proposed routes for heavy vehicle movements to and from the site during all phases of the Stage 1 development. The plan shall be prepared in consultation with the Council and the RTA and demonstrate that proposed routes avoid the use of local streets in the Mayfield and Mayfield East localities. The plan shall also outline what measures will be undertaken to ensure that all drivers of heavy vehicles servicing the site are made aware of the approved routes.

Landscape Management Plan

- 5.47 The Applicant must prepare and implement a Landscape Management Plan for the development, in consultation with Council. This plan must:
- Be consistent with Newcastle City Council DCP No.33 – Landscape Design Principles and Guidelines;
 - Describe in detail the proposed future landform of the site;
 - Describe in detail how the site will be landscaped, including the location and species of all planting; and
 - Explain how this landscaping will be managed and maintained over time.
- 5.48 The Landscape Management Plan must have been approved by the Director-General before construction certificate/s may be issued.
- 5.49 After reviewing the Landscape Management Plan, the Director-General may require the Applicant to address certain matters identified in the plan. The Applicant must comply with any reasonable requirements of the Director-General.

Rail crossing on Selwyn Street

- 5.50 The applicant shall obtain the approval of the Australian Rail Track Corporation (ARTC) prior to the construction of a rail connection at Selwyn Street to the ARTC rail network at the location marked "A1-grade crossing 2 (unchanged) on *Figure 2: Proposed Revised Rail Line*, of the Section 96(1A) application prepared by Hunter Development Corporation dated January 2009.

6. CULTURAL HERITAGE

- 6.1 Prior to the demolition of any of the items listed in Figure 6.3 of the EIS: *Heritage Structures to be Removed*, and listed in the table below, the Applicant shall submit documentation, to the satisfaction of the Minister, confirming that the proposed Multi-Purpose Terminal is to proceed or that the item to be demolished represents a safety hazard. The required documentation shall be in the form of a copy of a contract(s) or agreement(s) between the Applicant and another party or parties, in respect of the construction and operation of the MPT, or a report from a suitably qualified person(s) on the safety or integrity of the heritage item and demonstrating that the item could not feasibly be repaired or stabilised.

³² RTA GTA No.5

No.	Item
1	Remnant of No.1 Blast Furnace
2	No. 1 Blower House
3	Open Hearth Building
4	No.1 Bloom Mill and Rail Mill
6	Steel Foundry
10	DC Substation
11	Wharves (in part)
14	No.3 Blast Furnace
15	AC Pump House
16	Power House
19	Open Hearth Change House
20	Mould Conditioning Building
21	BOS Plant
23	No.4 Blast Furnace

Notwithstanding the above, structures may be demolished, with the approval of the Minister, where required to enable soil or groundwater remediation to take place in accordance with EPA requirements under an Environment Protection Licence or the *Contaminated Land Management Act 1997*. The Applicant will need to demonstrate, by way of a report, that all feasible alternatives to demolition have been investigated.

- 6.2 The Applicant shall prepare and submit to the Director-General strategy for the interpretation of the industrial heritage of the Closure Area. The strategy must be prepared in consultation with the NSW Heritage Office and Newcastle City Council and approved by the Director-General prior to the demolition of any structures listed in the table in Condition 6.1. The strategy shall examine and put forward proposals for the following:
- (a) The establishment of a heritage precinct on the Western Portion of the Closure area, including:
 - re-use of Delprats Quarters as an Iron and Steel Interpretive Centre;
 - re-use of the ex-Tools Room as a State Industrial Archaeological Repository;
 - conservation of the remnants of the original botanic gardens established.
 - (b) an assessment of industrial artefacts able to be retained and made available for interpretation within the Closure Area, either in situ or, if in situ preservation is not possible, relocated.
 - (c) Funding, ownership and on-going management arrangements.
- 6.3 The Applicant shall prepare and submit an Archaeological Management Plan for the closure area prior to the commencement of site preparation works. The plan shall be prepared in consultation with the NSW Heritage Office and approved by the Director-General.
- 6.4 If, during the site preparation and/or construction phases of the development, an unexpected archaeological relic is uncovered, excavation shall cease and an excavation permit under the *Heritage Act 1977* shall be obtained from the NSW Heritage Office.

Note: a relic is defined under the Heritage Act as any deposit, object or material evidence:

- (a) *which relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and*
 - (b) *which are more than 50 years old.*
- 6.5 Prior to the commencement of any works associated with the burial of the remnants of the No.1 Blast Furnace, the Applicant shall submit details to the Director-General on the disposal location of excavated soil on-site and the interim management procedures for this material. Activities associated with this item shall not commence until the Director-General has approved these measures.
- 6.6 The final location of the remnants of the No.1 Blast Furnace shall be to the satisfaction of the Regional Land Management Corporation, with respect to the provision of sufficient clearance for future development or services.
- 6.7 Following the completion of works associated with the burial of the remnants of the No.1 Blast Furnace, the Applicant shall provide the Regional Land Management Corporation with detailed plans of the final position of the item, including its dimensions and depth.

7. HAZARDS

Restrictions to Operation

- 7.1 The Container Terminal and General Cargo Handling Facility shall neither receive as cargo nor dispatch as cargo any material classified as a "Class 7 dangerous good" (radioactive material) under the Australian Dangerous Goods Code.
- 7.2 The Applicant shall not use or store, temporarily or otherwise, any dangerous good of Class 1 (explosives) on the site without the prior written approval of the Director-General. In seeking the Director-General's approval, the Applicant shall provide the following information:
- (a) the name, dangerous goods Class (including subclass), and quantity of the explosive material to be used and/or stored on the site;
 - (b) the purpose for using and/ or storing the explosive material on the site, and the maximum duration of that use and/ or storage;
 - (c) the location of the use and/ or storage of the explosive material on the site, including consideration of the storage requirements of the material in accordance with relevant legislation and Australian Standards;
 - (d) the mode of transport and route for bringing the explosive material to the site, and if relevant, for removing the explosive material from the site;
 - (e) identification and assessment of the hazards associated with the use and/ or storage of the explosive material on the site and the risk impacts of the use and/ or storage on surrounding land uses.
- 7.3 All dangerous goods received as cargo at either the Container Terminal or the General Cargo Handling Facility shall be dispatched from the site within 72 hours of receiving those goods. In the event that the Newcastle Port Corporation, or any relevant body having a statutory role in the control and/ or handling of dangerous goods at the site, requires dangerous goods to be dispatched from the site in less than 72 hours, then the requirement of the Newcastle Port Corporation or relevant body shall prevail over this condition.
- 7.4 The Applicant shall initiate and maintain a Dangerous Goods Register with an aim to ensure that the maximum quantity of dangerous goods on the site, as specified in a Final Hazard Analysis approved by the Director-General, and the

in-transit time-limit for dangerous goods on the site are not exceeded. The Register shall include, but not necessarily be limited to:

- (a) the date and time of arrival of all dangerous goods to the site;
- (b) the exact location of all quantities of dangerous goods on the site;
- (c) details of all dangerous goods classes on the site, packaging specifications and UN number; and
- (d) the date and time of dispatch of all dangerous goods from the site.

The Register shall be made available for inspection by the Director-General at any time.

Demolition

- 7.5 At least one month prior to the commencement of any demolition activity, or within such period otherwise agreed by the Director-General, the Applicant shall prepare and submit for the approval of the Director-General a Demolition Safety Study, prepared in accordance with the relevant sections of the Department's publication *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.
- 7.6 All demolition works undertaken on the site shall be conducted in strict accordance with the provisions of *AS2601-1991 The Demolition of Structures*, as in force at 1 July 1993.
- 7.7 The Applicant shall meet the requirements of WorkCover NSW with respect to all demolition activities associated with the handling of asbestos or asbestos-containing materials.

Pre-Construction Hazards Studies

- 7.8 At least one month prior to the commencement of construction, or within such period otherwise agreed by the Director-General, the Applicant shall prepare and submit for the approval of the Director-General the studies set out under a) and b) below. Construction shall not commence until approval has been given by the Director-General and, with respect to the Fire Safety Study, approval has also been given by the Commissioner of the NSW Fire Brigades
 - (a) A Fire Safety Study. The Study shall cover all aspects detailed in the Department's *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Study Guidelines* and the NSW Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall also be submitted to the NSW Fire Brigades for approval; and
 - (b) A Final Hazard Analysis. The Analysis shall be prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis*. The Analysis shall include, but not necessarily be limited to:
 - i) maximum and likely average quantities of each class of dangerous good to be located on the site;
 - ii) a demonstration that the maximum quantities of dangerous goods to be located on the site at any time are consistent with the *Proposed Multi Purpose Terminal Consequence Analysis for URS*, prepared by Qest Consulting Engineers Pty Ltd (dated 28 February 2000), accepted Australian and international best practice, and any current guideline published by the Department or other body having a statutory role in the control and/ or handling of dangerous goods; and
 - iii) details of the location of dangerous goods storage on the site with specific reference to location relative to the site boundary, location

relative to other dangerous goods, provision of bunding and fire safety measures.

The Applicant shall not exceed the dangerous goods storage quantities, storage locations, frequency of receipt/ dispatch, or vary the dangerous goods handling procedures specified in any Final Hazard Analysis approved by the Director-General.

Pre-Operation Hazards Studies

- 7.9 No later than two months prior to the commencement of operation, or within such period otherwise agreed by the Director-General, the Applicant shall prepare and submit for the approval of the Director-General the studies set out under a) to c) below. Operation shall not commence until approval has been given by the Director-General.
- (a) A Transport of Hazardous Materials Study detailing arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the site. The Study shall be carried out in accordance with the Department's draft *Route Selection* guidelines. Suitable routes identified in the Study shall be used except where departures are necessary for local deliveries or emergencies;
 - (b) A comprehensive Emergency Plan and detailed emergency procedures. The Plan shall include detailed procedures for the safety of all people outside the development who may be at risk from the development. The Plan shall be prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 1 Industry Emergency planning Guidelines*; and
 - (c) A comprehensive Safety Management System, covering all operations on-site and associated transport activities involving hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to procedures. Records shall be kept on-site and shall be used except where departures are necessary for local deliveries or emergencies.

Incident Reporting

- 7.10 Within 24 hours of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Department outlining the basic facts. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventative measures. The report shall be submitted to the Director-General no later than 14 days after the incident or potential incident. The Applicant shall maintain a register of accidents, incidents and potential incidents. The register shall be made available, at any time, for inspection by the Director-General. The Applicant shall comply with any reasonable requirement of the Director-General in response to an incident report or register entry.

Hazard Audit

- 7.11 Twelve months after the receipt of the first dangerous goods cargo at either the Container Terminal or the General Cargo Handling Facility, or with such period otherwise agreed by the Director-General, the Applicant shall carry out a comprehensive Hazard Audit of the development, and submit a report to the Director-General on the Audit within one month of completion of the Audit. The Audit shall be carried out at the Applicant's expense by a duly qualified

independent person or team approved by the Director-General prior to the commencement of the Audit. Further Audits shall be carried out every three years, or as determined by the Director-General and a report of each Audit shall be submitted to the Director-General within one month of the Audit. Hazard Audits shall be carried out in accordance with the Department's *Hazardous Industry Planning Advisory paper No. 5 - Hazard Audit Guidelines*.

8. ENVIRONMENTAL MONITORING PROGRAM

- 8.1 The Applicant must prepare and implement a detailed Environmental Monitoring Program for the development in consultation with the EPA, and Newcastle City Council. The program must:
- (a) Identify what environmental issues will be monitored;
 - (b) Set standards and performance measures for these environmental issues;
 - (c) Describe in detail how these issues will be monitored, who will conduct the monitoring, how often the monitoring will be conducted, and how the results of this monitoring will be recorded and reported to the Director-General and other relevant authorities;
 - (d) Include the following:
 - Meteorological monitoring (condition 8.5)
 - Air quality monitoring (conditions 8.6-8.10)
 - Noise and vibration monitoring (Conditions 8.11-8.13);
 - Groundwater monitoring (condition 8.14-8.15); and,
 - Surface water monitoring (Condition 8.16);
- 8.2 The Environmental Monitoring Program must be submitted for the approval of the Director-General as part of the Environmental Management Plans required in Conditions 4.2, 4.3 and 4.4.
- 8.3 After reviewing the Environmental Monitoring Program, the Director-General may require the Applicant to address certain matters identified in the program. The Applicant must comply with any reasonable requirements of the Director-General.
- 8.4 The Applicant must include the detailed results from the Environmental Monitoring Program in the Annual Environmental Management Report to the Director-General.

Meteorological Monitoring

- 8.5 ³³Meteorological monitoring must be conducted for the site. The meteorological Station must be sited, operated and maintained in accordance with *The Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* as follows:

AM-1	Guide for the siting of sampling units;
AM-2	Guide for measurement of horizontal wind for air quality applications; and
AM-4	On-site meteorological monitoring program guidance for regulatory modelling applications.

Air Quality Monitoring – Site Preparation Phase

- 8.6 ³⁴The Applicant must conduct ambient air quality monitoring as follows:

³³ EPA GTA No. 2.7

³⁴ EPA GTA No. 2.4

- (a) Continuous real-time ambient air quality monitoring of TSP and PM₁₀ concentrations at the site boundary;
- (b) Ambient air quality monitoring for TSP, PM₁₀, heavy metals (Mn, Pb, As and Fe) 16 USEPA priority PAHs, benzo (a) pyrene, benzene, ethyl benzene, toluene, xylene and phenols at points that are representative of the nearest sensitive receptors.
- 8.7 ³⁵Sampling and analysis must be conducted in accordance with *The Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* as follows:
- | | |
|-------|--|
| AM-1 | Guide for the siting of sampling units |
| AM-11 | Lead – particulate collection by high volume sampler |
| AM-15 | Particulate matter – TSP high volume sampler method |
| AM-16 | Particulate matter – PM ₁₀ – high volume sampler with size select inlet |
| AM-21 | Volatile organic compounds; and |
- A method approved in writing by the EPA for 16 USEPA priority PAHs, benzo (a) pyrene, benzene, ethyl benzene, toluene, xylene and phenols and heavy metals (Mn, As and Fe).
- 8.8 ³⁶Prior to any cut and fill operations, commencing on the closure area, as identified in Figure 1.3 titled *Layout of Steelworks Site Showing the Closure Area and MPT* in the Environmental Impact Statement, the Applicant must design an ambient air monitoring sampling network to measure the parameters specified in Condition 8.6. Details of the air monitoring network, and the frequency of ambient air quality monitoring referred to in Condition 8.6, must be submitted to the EPA for approval in writing prior to implementation.

Air Quality Monitoring – Operation

- 8.9 During the operation of the MPT, the Applicant must conduct ambient air quality monitoring for TSP and PM₁₀.
- 8.10 Sampling and analysis must be conducted in accordance with *The Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* as follows:
- | | |
|-------|---|
| AM-1 | Guide for the siting of sampling units |
| AM-15 | Particulate matter – TSP high volume sampler method |
| AM-18 | Particulate matter – PM ₁₀ – high volume sampler with size select inlet. |

Noise and Vibration Monitoring – Site Preparation and Construction

- 8.11 ³⁷The Applicant must develop a program to effectively monitor noise emissions at the locations identified in Condition 5.7, and to determine compliance with the noise limits specified in those conditions. Details of the noise monitoring program must be submitted to DUAP and the EPA for approval before demolition or site remediation work commences on the site.

³⁵ EPA GTA No. 2.5

³⁶ EPA GTA No. 2.6

³⁷ EPA GTA No. 5.10

- 8.12 ³⁸Monitoring of noise and vibration caused by blasting operations must be conducted in accordance with the ANZECC document titled *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration*.

Noise Monitoring – MPT Construction and Operation

- 8.13 ³⁹The Applicant must develop a program to effectively monitor noise emissions at the locations identified in Conditions 5.7 and 5.11, and to determine compliance with the noise limits specified in those conditions. Details of the noise monitoring program must be submitted to DUAP and the appropriate regulatory authority for approval before demolition or site remediation work commences on the site.

Groundwater Monitoring

- 8.14 ⁴⁰A number of Groundwater bores from the existing network must be retained and maintained on the site. The Applicant must ensure that the following requirements are met in determining the number and location of bores to be retained:
- groundwater flow paths and changing groundwater gradients can be measured over the life of the project or until such time as agreed with the EPA;
 - groundwater contamination levels across the site can be measured; and
 - the level of contaminants in groundwater migrating off the site can be measured.
- 8.15 ⁴¹The Applicant must submit a list of proposed parameters to monitor groundwater contaminants to the EPA for approval prior to any cut and fill operations commencing on the site.

Note: In order to meet the above requirements the Applicant may need to establish new bores or re-establish existing bores across the site.

Surface Water Monitoring

- 8.16 ⁴²Stormwater from the discharge point of the stormwater detention basin(s) or from stormwater collected in the basin(s) where no discharge is occurring, must be monitored in accordance with the following table unless otherwise directed or approved by the EPA:

Pollutant	Unit of Measure	Frequency	Sampling Method
Total Suspended Solids	mg/L	Monthly	Grab Sample
pH	pH units	Monthly	Grab Sample
Iron	ug/L	Monthly	Grab Sample
Zinc	ug/L	Monthly	Grab Sample
Copper	ug/L	Monthly	Grab Sample
Lead	ug/L	Monthly	Grab Sample

³⁸ EPA GTA No. 5.6

³⁹ EPA GTA No. 5.10

⁴⁰ EPA GTA No. 6.11

⁴¹ EPA GTA No. 6.11

⁴² EPA GTA No.3.4

Manganese	ug/L	Monthly	Grab Sample
Cyanide	ug/L	Monthly	Grab Sample
Mercury	ug/L	Monthly	Grab Sample
Phenols	ug/L	Monthly	Grab Sample
Total PAH	ug/L	Monthly	Grab Sample
Arsenic	ug/L	Monthly	Grab Sample
C6-C36	ug/L	Monthly	Grab Sample
BTEX	ug/L	Monthly	Grab Sample

A note must be recorded in accordance with the above table where:

- (a) a sample is taken from the stormwater in the stormwater detention basin(s) but there is no discharge occurring;
- (b) the stormwater basin(s) are empty of stormwater.

9. ENVIRONMENTAL MANAGEMENT AND REPORTING

Environmental Officer

- 9.1 The Applicant shall employ a suitably qualified and experienced Environmental Officer(s) throughout the life of the project, whose appointment is acceptable to the Director-General. The Officer(s) will:
- (a) be responsible for the preparation of the environmental management plans (refer Conditions 4.1 – 4.4);
 - (b) be responsible for considering and advising on matters specified in the conditions of this consent and advising on compliance with such matters;
 - (c) be responsible for receiving and responding to complaints in accordance with Condition 9.9);
 - (d) facilitate an induction and training program for all persons involved with site preparation and construction activities; and
 - (e) advise the Site Manager to require reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts and failing the effectiveness of such steps, to stop work immediately if an adverse impact on the environment is likely to occur.

The Applicant shall notify the Director-General of the name and contact details of the Environmental Officer(s) upon appointment and any changes to that appointment.

Annual Environmental Management Report

- 9.2 Twelve months after commencement of operations at the MPT, and annually thereafter for the duration of the development, the Applicant must submit an Annual Environmental Management Report to the Director-General and EPA. This report must:
- (a) Identify all the standards, performance measures, and statutory requirements the development is required to comply with;
 - (b) Review the environmental performance of the development to determine whether it is complying with these standards, performance measures, and statutory requirements.
 - (c) Identify all the occasions during the previous year when these standards, performance measures, and statutory requirements have not been complied with;
 - (d) Include a summary of any complaints made about the development, and indicate what actions were taken (or are being taken) to address these complaints;

- (e) Include the detailed reporting from the Environmental Monitoring Program (see Condition 8.1), and identify any trends in the monitoring over the life of the project; and
 - (f) Where non-compliance is occurring, describe what actions will be taken to ensure compliance, who will be responsible for carrying out these actions, and when these actions will be implemented.
- 9.3 After reviewing the Annual Environmental Management Report, the Director-General may require the Applicant to address certain matters identified in the report. The Applicant must comply with any reasonable requirements of the Director-General.

Independent Environmental Audit

- 9.4 Within 12 months of commissioning the Multi-Purpose Terminal and every three years thereafter, unless the Director-General directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit. The Independent Environmental Audit must:
- (a) Be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;
 - (b) Be consistent with *ISO 14010 – Guidelines and General Principles for Environmental Auditing*, and *ISO 14011 – Procedures for Environmental Auditing*, or updated versions of these guidelines/manuals;
 - (c) Assess the environmental performance of the development, and its effects on the surrounding environment;
 - (d) Assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;
 - (e) Review the adequacy of the Applicant's Environmental Management Plan, and Environmental Monitoring Program; and, if necessary,
 - (f) Recommend measures or actions to improve the environmental performance of the plant, and/or the environmental management and monitoring systems.
- 9.5 Within 2 months of commissioning the audit, the Applicant must submit a copy of the audit report to the Director-General. After reviewing the report, the Director-General may require the Applicant to address certain matters identified in the report. The Applicant must comply with any reasonable requirements of the Director-General.

Community Consultative Committee

- 9.6 The Applicant shall establish a Community Consultative Committee (CCC) and ensure that the first meeting is held prior to the commencement of any construction work on site, or as otherwise agreed to by the Director-General. The members of the CCC shall include:
- An independent chairperson nominated by the Councils and approved by the Director-General;
 - At least four community representatives residing within two (2) kilometres of the site boundary;
 - Not more than two representatives appointed by the Applicant, one of which must be the Environmental Officer appointed under Condition 9.1; and
 - At least one representative from the Council.
- 9.7 The Applicant shall advertise for expressions of interest for membership with respect to the community representative positions. Advertising shall be in an appropriate local newspaper on at least one occasion. Based on the expressions

of interest received, the Applicant shall nominate appropriate representatives and submit details of the nominated representatives for the approval of the Director-General.

Meetings shall be held at regular intervals from the date of this consent as determined by the chairperson.

Representatives from relevant government agencies or other individuals may be invited to attend meetings as required by the Chairperson. The CCC shall act as the interface between the Applicant and its operation, and the broader community. A charter for the CCC is to be approved by the Director-General in consultation with the Council and shall provide for the provision of information and procedures for bringing to the Applicant's attention, issues associated with the environmental performance of the site remediation, and construction and operation of the MPT, and implementation of conditions of consent.

- 9.8 The Applicant shall, at its own expense:
- nominate two (2) representatives to attend all meetings of the Committee;
 - (a) provide to the Committee regular information on the progress of work and monitoring results;
 - (b) promptly provide to the Committee such other relevant information as the Chair of the Committee may reasonably request concerning the environmental performance of the development;
 - (c) provide access for site inspections by the Committee upon arrangement;
 - (d) provide meeting facilities for the Committee, and take minutes of Committee meetings. These minutes shall be available for public inspection at the Councils within 14 days of the meeting; and
 - (e) meet all reasonable administrative costs associated with operating the CCC up to a value of \$2000 per annum indexed according to the Consumer Price Index (CPI) at the time of payment.

Complaints Procedure

- 9.9. ⁴³Prior to the commencement of site remediation activities the Applicant shall arrange:
- (a) a toll free number for the purpose of receiving any complaints from members of the public in relation to activities conducted at the site, unless otherwise specified in an environment protection licence issued by the EPA; and
 - (b) a postal address where written complaints can be lodged.

The Applicant must notify the public of the telephone number and postal address via an advertisement in the appropriate local newspaper prior to commencement of site preparation works. The telephone number and postal address shall be displayed near the entrance to the site, in a position visible from the nearest public road.

10. DISPUTE RESOLUTION

- 10.1 If the Applicant, Newcastle City Council, and/or any NSW Government agency, other than the Department of Urban Affairs and Planning, cannot agree on any aspect of this consent, other than a General Term of Approval, the matter may be referred by any of these parties to the Director-General or, if necessary, the Minister, whose determination on the dispute shall be binding on all parties.

⁴³ EPA GTA Nos. 7.3 & 7.4



**APPENDIX B – ENVIRONMENT PROTECTION LICENCE (EPL)
13181**

Environment Protection Licence

Licence - 13181

Licence Details

Number:	13181
Anniversary Date:	28-January

Licensee

PORT OF NEWCASTLE OPERATIONS PTY LIMITED

PO BOX 790

NEWCASTLE NSW 2300

Premises

MAYFIELD NO. 4 BERTH

OFF SELWYN STREET

MAYFIELD NORTH NSW 2304

Scheduled Activity

Shipping in bulk

Fee Based Activity

Shipping in bulk

Scale

> 100000-500000 T of annual capacity to load and unload

Contact Us

NSW EPA

6 Parramatta Square

10 Darcy Street

PARRAMATTA NSW 2150

Phone: 131 555

Email: info@epa.nsw.gov.au

Locked Bag 5022

PARRAMATTA NSW 2124



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Licence - 13181

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).



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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

PORT OF NEWCASTLE OPERATIONS PTY LIMITED
PO BOX 790
NEWCASTLE NSW 2300

subject to the conditions which follow.

Environment Protection Licence

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1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Shipping in bulk	Shipping in bulk	> 100000 - 500000 T of annual capacity to load and unload

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
MAYFIELD NO. 4 BERTH
OFF SELWYN STREET
MAYFIELD NORTH
NSW 2304
<p>PREMISES AS MARKED AND SHOWN WITHIN THE RED DASHED LINE IDENTIFIED AS "SITE BOUNDARY" ON THE PLAN TITLED "PORT OF NEWCASTLE, MAYFIELD M4 WHARF EPA LICENCE AREA - MAYFIELD NO.4 WITHIN LOT 44 DP.1191982" ARRANGEMENT, DATED 17/06/2022 REVISION 01 DATED 02/06/2023 (EPA REF. DOC23/953996), HEREAFTER REFERRED TO IN THE LICENCE AS THE 'PREMISES PLAN'.</p> <p>THE PREMISES ALSO INCLUDES THE AREA MARKED AND SHOWN WITHIN THE GREEN LINE AS "OVER WATER OPERATION AREA" ON THE PREMISES PLAN WHENEVER THE SCHEDULED ACTIVITY OF 'SHIPPING IN BULK' IS CARRIED OUT AS AUTHORISED BY THIS LICENCE.</p>

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- the licence information form provided by the licensee to the EPA to assist the EPA in connection with the

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issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
4	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Point defined as "Stormwater Treatment Pit No.1" as shown in the premises plan, EPA Document No. DOC23/953996.
5	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Point defined as "Stormwater Treatment Pit No.2" as shown in the premises plan, EPA Document No. DOC23/953996.
6	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Point defined as "Stormwater Treatment Pit No.3" as shown in the premises plan, EPA Document No. DOC23/953996.
8	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Point defined as "Stormwater Discharge Point to Harbour" as shown in the premises plan, EPA Document No. DOC23/953996.

P1.2 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
7	Meteorological Station	Automatic weather station marked and shown as "AWS" on the Premises Plan.

P1.3 For the purposes of the above table(s), the 'Premises Plan' is defined in Condition A2.1.

3 Limit Conditions

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L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 The following concentration limit conditions only apply during for the first discharge event following a loose bulk cargo operation. At all other times condition L1.1 applies.

L2.2 For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.3 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.4 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.

L2.5 Water and/or Land Concentration Limits

POINT 4,5,6,8

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Nitrogen (total)	milligrams per litre				10
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the

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premises if those activities require an environment protection licence.

L4 Potentially offensive odour

L4.1 No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.

L4.2 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L5 Other limit conditions

Wind speed limits for loose bulk cargo operations

L5.1 Loose bulk cargo operations must cease for a period of at least 15 minutes:

- a) if the average wind speed exceeds 7 metres per second for a 5 minute period, or
- b) if a wind gust exceeds 12 metres per second.

After loose bulk cargo operations have ceased, they must not recommence until the above wind speed limits are not exceeded in the preceding 15-minute time period.

L5.2 The wind speed and direction limits specified in Condition L5.1 do not apply when the following loose cargoes are loaded or unloaded from the premises:

- a) Cottonseed pellets;
- b) Ferro-alloys;
- c) Magnetite;
- d) Mineral sands;
- e) Nut coal;
- f) Urea granules;
- g) Wet silica sands; and
- h) Whole soya beans.

Metals Concentrates

L5.3 The licensee must not receive, store, load or unload Copper, Lead, or Zinc concentrates at the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

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This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.3 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Waste management

O5.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.

O5.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5.3 All wastewater generated from the on-site treatment of sewage must be removed from the premises by a licensed waste transporter and taken to a facility that is able to lawfully receive it and reuse or dispose of it.

O5.4 The licensee must not dispose of sewage at the premises.

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O6 Other operating conditions

Wharf deck loading and unloading requirements

- O6.1 Loose bulk cargo to be unloaded onto or loaded from the wharf deck must be fully contained to prevent dust emissions and pollution of waters.
- O6.2 Loose bulk cargo must not be stockpiled on the wharf deck for a period exceeding 24 hours prior to the commencement of loose bulk cargo loading operations or for a period exceeding 24 hours after the completion of loose bulk cargo unloading operations.

Tracking of materials

- O6.3 The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
- Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
 - The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- in a legible form, or in a form that can readily be reduced to a legible form;
 - kept for at least 4 years after the monitoring or event to which they relate took place; and
 - produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- the date(s) on which the sample was taken;
 - the time(s) at which the sample was collected;
 - the point at which the sample was taken; and
 - the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency,

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specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

POINT 4,5,6,8

Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (total)	milligrams per litre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Phosphate	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

M2.3 For the purpose of the table(s) above, Special Frequency 1 means the collection of samples during the first discharge event following a loose bulk cargo operation. Only one discharge event is required to be sampled each calendar month.

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 7

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Wind Speed at 10 metres	AM-2 & AM-4	metres per second	15 minutes	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous

M5 Recording of pollution complaints

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- M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M5.2 The record must include details of the following:
- a) the date and time of the complaint;
 - b) the method by which the complaint was made;
 - c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the licensee, the reasons why no action was taken.
- M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

- M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Other monitoring and recording conditions

Requirement to record the transfer of the occupation of the berth

- M7.1 The licensee must record details of when (i.e. time and date) the occupation of berth is transferred to another person. The licensee must record details of the name and telephone contact of the person that the berth is transferred to.

Requirement to record shipping and cargo information

- M7.2 For the loading and discharge of cargo from ships carried out under the licence, the licensee must record the following information.
- a) The time and date that the ship was berthed.
 - b) The name of the ship.
 - c) A description of the cargo and tonnage loaded/discharged.
 - d) The owner and agent of the cargo.
 - e) An assessment of the capacity of the cargo to generate dust during loading/discharge activities.
 - f) Dust control measures for the loading/discharge of the cargo.

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6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.



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Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
- b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

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7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Contact number for incidents and responsible employees

- G2.1 The licensee must nominate to the EPA a representative of the licensee that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their mobile telephone number, must be current at all times. The nomination and contact details must be provided to the EPA at PO Box 488G, Newcastle NSW 2300 or by email to RegOps.MetroRegulation@epa.nsw.gov.au .

G3 Other general conditions

G3.1 Completed Programs

Program	Description	Completed Date
PRP 1 - Stormwater Management Systems Upgrade	The licensee must design , install and commission upgrades to the stormwater management system.	16-December-2011
PRP 2- Investigation of Copper Sources	The licensee must investigate and identify potential sources of copper, report and develop a copper management strategy	22-February-2013

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste
Wellhead	Has the same meaning as in Schedule 1 to the Protection of the Environment Operations (General) Regulation 2021.

Mr Mitchell Bennett

Environment Protection Authority

(By Delegation)

Date of this edition: 04-November-2009

Environment Protection Licence

Licence - 13181

End Notes

- 1 Licence varied by notice 1109287, issued on 01-Dec-2009, which came into effect on 01-Dec-2009.
- 2 Licence varied by notice 1111996, issued on 02-Mar-2010, which came into effect on 02-Mar-2010.
- 3 Licence varied by notice 1128690, issued on 08-Jul-2011, which came into effect on 08-Jul-2011.
- 4 Licence varied by notice 1501029 issued on 04-Nov-2011
- 5 Licence varied by notice 1504050 issued on 19-Mar-2012
- 6 Licence varied by notice 1507488 issued on 04-Mar-2013
- 7 Licence varied by notice 1515235 issued on 12-Jul-2013
- 8 Licence varied by notice 1516638 issued on 04-Sep-2013
- 9 Licence varied by notice 1519040 issued on 20-Dec-2013
- 10 Licence transferred through application 1520262 approved on 27-Feb-2014 , which came into effect on 28-Feb-2014
- 11 Licence varied by notice 1521970 issued on 10-Jun-2014
- 12 Licence varied by notice 1525248 issued on 03-Nov-2014
- 13 Licence varied by notice 1528564 issued on 18-Feb-2015
- 14 Licence fee period changed by notice 1531721 on 04-Nov-2015
- 15 Licence varied by notice 1545383 issued on 03-Nov-2016
- 16 Licence varied by notice 1591493 issued on 04-Aug-2020
- 17 Licence varied by notice 1633676 issued on 16-Nov-2023

APPENDIX C – OEMP COMPLIANCE CHECKLIST

Activity	Compliance with EMP <i>(indicate compliance with x / ✓)</i>									
	General	Soil and Water	Stormwater Management	Capping Management	Traffic and Access	Contamination	Noise	Air Quality	Waste and Materials Management	
Dust and Air quality										
Roadway inspection										
Waste Compliance check										
Other (specify details):										
Other (specify details):										
Other (specify details):										
Comments:										
Signature:										
Approved By:										

APPENDIX D – MATERIALS MANAGEMENT PLAN

Maunsell Australia Pty Ltd

3 Ramsay Street, Garbutt QLD 4814, PO Box 5423, Townsville QLD 4810, Australia
T +61 7 4729 5500 F +61 7 4729 5599 www.maunsell.com

ABN 20 093 846 925

Regional Land Management Corporation
PO Box 1187
NEWCASTLE NSW 2300

Attention: Mr Paul Delaney

27 June 2005

Dear Paul

Mayfield Site Solid Waste (Soils) Materials Management Plan

The Regional Land Management Corporation, Newcastle (RLMC), commissioned Maunsell Australia Pty Ltd (Maunsell) to develop a Decision Matrix to determine appropriate on site materials categorisation, reuse, storage, treatment and management of typical soils encountered during proposed ground engaging activities on the Mayfield Site. The following represents an addendum to the RAP and replaces sections 13.2, 13.3, 13.4 and 13.6 of the RAP document dated September 2004.

13.2 Material Classification and Reuse

The management of all material excavated during remedial activities on the site area is to be governed by a Decision Matrix. The objective of the Decision Matrix is to develop appropriate guidelines for the classification, movement and reuse of 'clean' and contaminated material on site. This is to be undertaken in a manner consistent with the proposed site usage and recognising the existing planning consent and General Terms of Agreement¹ (GTA's) resulting from the EIS². The approvals and conditions associated with on site soil management allow for landforming across the entire site with reuse of existing site soils.

The priority for remediation is to entirely cap Area 1 to prevent normal human physical contact with the most highly contaminated material on the site and also consequently reduce the risk to the environment associated with this area. There may be opportunities to responsibly consolidate contaminated soils under the cap in Area 1, allowing the enhancement of other areas of the site and reducing unnecessary restrictions being placed on future development in these areas.

The approach used to establish the on site reuse Decision Matrix follows a risk based corrective action format. Allowing that the appropriate containment of all contaminated soil on site is a fundamental component of the Remediation Action Plan, the Decision Matrix is driven by:

- The existing characterisation of site materials;
- The sensory properties of identified contaminants in soil;
- The real-time measurement of contaminant properties using appropriate instrumentation;

¹ Conditions of Development Application Consent (Ref: S99/00601), NSW Department of Urban Affairs and Planning, 18 April 2001.

² Environmental Impact Statement, "Development of a Multi-Purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks", URS Corporation, Volumes 1-3, 11 August 2000.

- The potential exposure pathways to workers during reuse and capping works;
- The potential exposure pathways to future users of the site;
- Notification obligations; and
- RLMC's desire to maintain the potential and value of the site for redevelopment by reducing the likelihood of encountering highly contaminated soils during subsequent development activities.

The following sections serve as a framework to guide the development of the specific field procedures. Specific field procedures governing the actual screening, testing, transportation, materials tracking, stockpiling, treatment and re-use methodologies will be developed concurrently with the detailed design of the remediation works to provide guidance for specific site remediation activities.

13.3 Material Assessment

The soil and contamination characteristics are initially used to impose a default field classification that will guide appropriate soil reuse and fate requirements for materials handling or indicate if treatment is necessary prior to on site reuse or other management options.

Site soils will be given a field categorisation using field screening techniques that utilise:

- Field sensory screening by a suitably qualified contamination professional;
- Real time measurement of vapours using vapour detection instruments; and
- Reference to existing grid based analytical data.

Field screening techniques will be largely based on the gathering of sensory information and experienced judgement and processing of this information to determine the fate of soils. Indicators of contamination in soil may potentially include the following:

- Unusual or distinctive colour (e.g. black, dark brown, green, blue);
- Staining or residues;
- Distinctive odour;
- Elevated levels of total organic vapours registered by vapour detection instrumentation;
- Flakes, fragments or pieces of foreign substances or debris such as asbestos, metal, paint brick or wood;
- Diesel, oil, tar or other hydrocarbon product present in pore spaces;
- Sheen on free water, if present;
- Relative proportions, quantity and size;
- Consistency (e.g. viscous, dry, powdery); and
- Particular characteristics (e.g. quality of odours, common characteristics of other material encountered on site).

In combination with grid-based analytical results, another essential tool to be used to categorise soils will be the use of appropriate vapour detection instrumentation. It is recognised that there can be limitations in using certain vapour screening instrumentation, and that field-measured vapour concentrations may not only be a function of the level of volatile constituents in soil, but may also depend on the contaminant type, atmospheric temperature, the soil's porosity, grain size and moisture content, among others.

The correlation between soil-vapour concentrations and associated soil contamination will be calibrated and refined as more site-specific analytical data is gathered and specific site screening

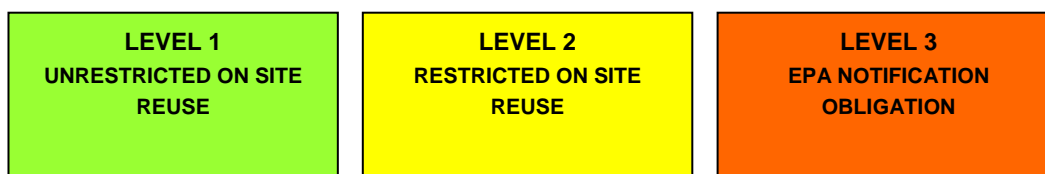
protocols are developed. Assessment of instrument response will be undertaken and include comparison of constituent concentrations and linear ranges of selected instruments. Types of instrumentation may include photo ionisation detection instrumentation (PID), sorbent tubes, 'mechanical nose' (Nasal Ranger) instruments and soil headspace vapour screening techniques (X-Ray Fluorescence). Pilot scale studies will be undertaken to determine the most appropriate correlation between contaminant concentrations and field measurements.

13.4 Material Categories

The field classification system assumes that all existing site soils will be capped, ensuring no human contact under normal circumstances.

The site auditor³ for the assessment of the EIS noted that 'because a capping strategy is proposed for the Closure Area, the setting of remediation criteria of PAH's becomes less important as capping will prevent exposure of workers to the contamination and provide an effective risk minimisation.' The auditor for the Mayfield RAP⁴ agrees that **soil criteria are not relevant** for areas to be capped where the main contaminants of concern are not volatile.

All soil material encountered during remediation earthworks activities will be categorised under three broad levels using the material assessment procedures.



The imposition of the above levels will determine the fate of soil on site, being either direct on site reuse, stockpile compound, exsitu treatment or undertaking EPA notification procedures.

A key component of the assessment and categorisation system is the appropriate reuse and tracking of site soils, in order to avoid, where possible, unnecessary site restrictions during and after site capping. This will require monitoring, and imposition of controls to guide earthworks and soil fate (assessment and appropriate treatment prior to reuse). All contaminated material encountered during the remediation works will be assessed and categorised. This can be achieved by imposing the common waste characteristics sets out under **Table 1**.

Table 1 – Contaminant Characteristics

Chemical Group	Distinguishing Characteristics	Preliminary Assessment Method	Default Site Category
PAH	Dark brown to black in colour Mild phenolic odour	analytical results visual assessment olfactory assessment instrumentation assessment	Level 1 for average <2000mg/kg
			Level 2 for average >2000mg/kg
Metals	Iron staining Light grey/green/black Granular appearance Possibly associated with ash, coke and clinker in soil	analytical results TCLP results visual assessment instrumentation assessment	Level 1
VOC's	Strong hydrocarbon smell	analytical results visual assessment olfactory assessment instrumentation assessment	Level 2

³ Dr Peter Nadebaum 1999.

⁴ Graeme Nyland 2004

Chemical Group	Distinguishing Characteristics	Preliminary Assessment Method	Default Site Category
Ammonia/cyanide	Ammoniacal odours	analytical results olfactory assessment instrumentation assessment	Level 2
Asbestos	Fibrous texture Grey/white/blue/greenish	analytical results visual assessment	Level 2
PCB	Dark brown to black in colour Mild phenolic odour	analytical results visual assessment olfactory assessment instrumentation assessment	Level 2
SPH	Immiscible liquid phase hydrocarbons existing in soil that can flow	analytical results visual assessment olfactory assessment instrumentation assessment	Level 3

Allowing that all site soils will eventually be capped, threshold levels for categorisation purposes are mostly relevant for contaminants that can be measured using the on site assessment approach (visual/olfactory observations and vapour measurement instrumentation). This 'real-time' data will be cross referenced and calibrated using existing analytical soil detail and during future insitu and (in the case of stockpiling) exsitu sampling events. While the primary soil assessment and categorisation system is essentially based on sensory characteristics associated with each level of soil (see **Table 1**), measurable threshold contamination concentrations are also required to be set that will allow appropriate categorisation that guide the placement of PAH contaminated site soils to depths where re-excavation during site redevelopment activity is less likely. The proposed threshold concentrations for categorisation of material for total PAH are:

- Level 1 PAH: <2000mg/kg (average after placement)
- Level 2 PAH: >2000mg/kg (average after placement)

The nominated threshold PAH concentrations will be used for soil categorisation purposes only. These threshold limits are not considered to be protective of human health or terrestrial organisms in soil, as other exposure standards will need to be set for the occupational workplace during and after remedial works. Therefore the arbitrary threshold concentrations are not a fine dividing line between satisfactory and unsatisfactory working conditions, but rather that they are best used to assess the material category level to determine fate, reuse and/or treatment of site soils.

Level 3 materials are those soils with free diesel, oil, tar or other hydrocarbon product freely flowing in pore spaces.

The above criteria may be varied in consultation with the NSW EPA as data on contaminant extent and distribution increases and hence becomes more statistically representative of actual conditions.

13.6 Material Management

Method of on Site Reuse

A key requirement controlling the excavation, movement and on site reuse of potentially contaminated soil is the definition of appropriate reuse options. For example, materials tracking and reuse will not allow the movement of higher value soils (Level 2 material) into areas containing only lower value soils (Level 1). Effectively this will restrict the movement of Level 2 material from the Area 1 boundary. Consolidation of equally classified material within dedicated geographic locations will be undertaken as a priority, with the emphasis on reducing landuse restrictions across the site as far as practicable.

Initially, soil movement opportunities will be governed by existing insitu analytical results and ultimately guided by the field classifications and quality control sampling broadly described under this section. The leachable levels of some contaminated materials will also be established. This and other contaminant specific analytical information will be used to ensure that the movement and reuse of contaminated material is governed by a desire to avoid placement resulting in an accentuation of contaminant distribution and heightened restriction to future development of the site.

Based on the above broad criteria, the following general material reuse options are nominated to control the movement and appropriate reuse locations on site.

Level 1

- general land forming in areas that will ultimately be capped.
- potential buffer material to be placed above Level 2 and Level 3 material and below final cap.
- isolation of soil by covering with a properly designed barrier at surface (such as buildings or other structures).

Level 2

- leaving contaminated material *in situ* provided there is no immediate danger to the environment or community, it will be covered with at least 1000mm of fill material, including a properly designed barrier at surface.
- relocate soil to an on-site location where it can be isolated by covering with at least 500mm of Level 1 material together with a properly designed barrier at surface.
- appropriate short-term stockpiling for further quantification, characterisation and categorisation.
- stabilisation and/or on site containment in an engineered emplacement facility if material cannot be reused on site within the Decision Matrix guidelines.
- In addition to above, any asbestos materials should be managed in accordance with the recommendation of an occupational hygienist.

Level 3

- EPA notification.
- leaving contaminated material *in situ* provided there is no immediate danger to the environment or community, it will be covered with at least 1000mm of fill material (including the final cap) and the area has appropriate controls in place.
- isolation of soil by covering with at least 500mm of Level 1 material together with a properly designed barrier at surface.
- appropriate short-term stockpiling for further characterisation and categorisation.
- ex-situ volatiles treatment using passive biological processes.
- treatment to remove, stabilise or permanently emplace the material so as to address risks to the environment or human health. This may include containment in an engineered emplacement facility if material cannot be reused on site within the Decision Matrix guidelines.

Chemical assessment of materials containing significant VOC's, ammonia, asbestos or any Level 3 material will be undertaken prior to reuse decisions being made.

Soil Management Options

Containment, Segregation, Materials Storage and Tracking

The basis of the approved remedial method for the site is a containment solution and is anticipated to be relied upon for the majority of remedial situations on site (subject to appropriate documentation and materials tracking). Where direct containment of contaminated material is not appropriate due to odours or other restrictions, the assessment system discussed in this section can also serve to segregate material with common characteristics to within an appropriately designed and constructed stockpiling compound.

The purpose of material segregation to within a stockpiling compound would be to provide an area with environmental controls where contaminated material could be further assessed for suitability for on site reuse, or to establish if further treatment may be required prior to reuse.

Under some circumstances it is envisaged that grossly contaminated soils may be stored at the stockpiling compound, and that further treatment and reuse on site may not be appropriate. In this instance, this material would be stored under appropriate controls until an understanding and estimate of the total volumes requiring management is established and appropriate management/treatment devised.

VOC Contamination Treatment

Where significant volatile organic compounds (VOCs) are encountered during excavations on site, the initial soil strategy may comprise investigation of the extent of proposed excavation locations, possible avoidance of the known volatile containing location or excavation of the contaminated material producing the volatiles. Management options may then include exsitu stockpiling and treatment (such as biopiles) or possible installation of vapour barriers and/or vapour extraction beneath future confining structures as appropriate.

Separate Phase Hydrocarbon Contamination Treatment

Soils that appear to be grossly contaminated by separate phase hydrocarbon mixtures (SPH), including waste oils, spilled fuels, and coal tars, that may be discovered during excavation activity are subject to notification obligations to the EPA.

The soil treatment strategy for soils containing SPH contamination may comprise separation of this material from less contaminated material, over excavation of contaminated material, to a maximum depth of 1 metre below the water table (guided by EPA instruction), and removal to the stockpile compound. Stockpiled material will then be further assessed to determine appropriate treatment and/or onsite reuse.

Further treatment may include on-site biopiles for contaminant reduction and possible reuse on the site, acknowledging that bioremediation would target reduction of VOCs and lower molecular weight (more mobile) PAHs to low concentrations. This strategy is directed at risk reduction and is not expected to remove all organic contamination, such as the more persistent PAHs, including benzo(a)pyrene.

Asbestos

Fill materials containing asbestos wastes may be left insitu or removed and emplaced at depth within purpose built excavations in Area 1. The final location of any asbestos discovered shall be thoroughly documented. Where asbestos waste is found in fill that also contains VOC's or SPH, appropriate treatment using additional precautions will be required. All asbestos is to be managed in accordance with the recommendations of an occupational hygienist.

Contaminant Confirmation and Quality Assurance

During the initial site works and imposition of this assessment and decision classification matrix, quality control soil sampling will be undertaken to gauge the effectiveness of the categorisation system. A suitable protocol and sampling frequency and grid-based density will be established to statistically evaluate the consistency of field operator's assessments and categorisation decisions with actual analytical data. Accordingly, appropriate sampling and analysis will be undertaken to confirm field observations and field assessments, ensuring that appropriate on site reuse is being undertaken and that no unnecessary restrictions or sterilisation of areas occurs for future development and site usage.

Upon movement and reuse of contaminated material on site, the final landform will be sampled at a suitable grid based density prior to being capped. This approach will ensure that there is an understanding of contaminant concentrations directly below the cap material to confirm appropriate material movements have been undertaken and to enable planning decisions for future site

developments above and below the cap. Together with materials tracking information, considerable information about the final location, type and level of contamination below the cap will be documented and recorded.

A quality assurance process will also be designed that includes documentation of procedures, identification of critical points within the data collection activities that require monitoring by quality control procedures, the level of quality achieved, problems encountered and corrective actions undertaken.

Documentation and Materials Tracking

A materials tracking system will be established that will monitor the movement of materials on the site. The system will initially identify the materials that are to be excavated through a grid reference system that will allow the extent of excavation and later placement of soil to be clearly defined and documented. The location and volume of material excavated and transported will be recorded and copies of records will be kept on site at all times. Excavated material will be nominated to a specific site location for placement, further characterisation, storage and/or treatment.

Detailed requirements for the materials tracking system will be developed during detailed documentation for the remediation works.

Conclusion

As previously stated, the above information represents an addendum to the Remediation Action Plan (dated September 2004) and replaces sections 13.2, 13.3, 13.4 and 13.6 of that document. The Decision Matrix outlines the manner of determining the appropriate classification, treatment and reuse of material on site during the remediation works on site. The material fate and transport decision matrices discussed here have set out appropriate guiding mechanisms to support the remedial solution. It is noted that specific protocols will be developed during detail design to guide the conceptual matrices for the site earthworks.

Yours faithfully
for MAUNSELL AUSTRALIA PTY LTD



Robert Gauthier
Environmental Sciences Group Manager
robert.gauthier@maunsell.com
Ref: 80200205:T519/05:RLG/MLP

APPENDIX E – HEAVY VEHICLE ROUTE PLAN



HEAVY VEHICLE ROUTE PLAN

for

Mayfield No.4 Berth

2.

1. Purpose of the Plan

The Heavy Vehicle Route Plan has been prepared to address Condition 5.46 of the Conditions of Consent issued by the NSW Department of Planning for the development of the Multi-Purpose Terminal, former BHP site (now known as the Mayfield site), Mayfield reference DA 293-08-00, current version Mod 56-7-2008.

Condition 5.46

“Prior to site remediation works commencing, the Applicant submit to the Director-General for approval, a Heavy Vehicle Route Plan that identifies the shows the proposed routes for heavy vehicle movements to and from the site during all phases of the Stage 1 development. The plan shall be prepared in consultation with the Council and the RTA and demonstrate that proposed routes avoid the use of local streets in the Mayfield and Mayfield East localities. The plan shall also outline what measure will be undertaken to ensure that all drivers of heavy vehicles servicing the site are made aware of the approved routes.”

The plan will identify the heavy vehicle routes that will service the site.

2. Description of the Facility

Mayfield Berth No. 4 is a single multi-product berth that was constructed as part of the refurbishment of former BHP Wharf 5 (Figure 1 - Site Layout Plan). The berth is generally isolated from other facilities as the remainder of the former BHP lands are still to be remediated and developed. Further up river is an operating berth that caters for heavy petroleum products such as pitch and downriver is the Port Waratah Coal Services Carrington Terminal.

The new berth is approximately 266 metres long. It is constructed with reinforced concrete pile caps, edge beams, diaphragms and a 750mm thick apron slab. The new wharf is fitted with new fenders, bollards, capstans, kerbs and ladders as wharf furniture. The following new services are provided:

- fire hose reels and hydrants;
- potable water;
- three-phase power;
- single-phase power;
- wharf flood lighting; and
- wharf edge lighting.

Immediately behind the apron is a 400mm thick reinforced concrete slab on ground measuring approximately 262 metres by 23 metres. Along the south edge of the concrete slab runs an old service duct which has been capped with a 750mm thick reinforced concrete slab.

Immediately south of the concrete slab is an adjacent hardstand area of approximately 9000 square metres.

The site is accessed temporarily by an internal driveway crossing land yet to be remediated (approximately 500m long) from the eastern end of Selwyn St, Mayfield. The long term access arrangements are subject to development of the port side lands and remediation of the remainder of the Mayfield site by Hunter Development Corporation. It is intended that the long term access will continue via Selwyn St with the road leading into the site yet to be located.

3. Potential Cargo

The following cargoes have been identified by NPC as possibilities for Mayfield No. 4 Berth:

- project cargoes: e.g. wind turbines, transformers, mining equipment and materials, other heavy plant;
- break bulk (inert materials only): aluminium, timber logs, cement;
- general freight in containers;
- bulk cargoes which are transferred directly from ship to transport with no uncontained ground storage; and
- ammonium nitrate.

Of the potential cargoes identified, ammonium nitrate is the only one classified as a Hazardous Material. Transport of ammonium nitrate is addressed separately in the Transport of Hazardous Materials Study.

4. Heavy Vehicle Routes

4.1 Locality

The major road which services the site is Industrial Drive. Access to the site is from Selwyn St through a signalised controlled intersection with Industrial Drive.

Industrial Drive is a classified RTA road which provides road linkages to the west via the New England Highway, to the north via the Pacific Highway and south via the F3 Freeway. Figure 1 identifies the proposed Heavy Vehicle Routes and links to the highways and the F3.

4.2 Consultation with Newcastle Council and the NSW RTA

A draft copy of this plan was sent to both the RTA and Newcastle Council for consultation.

In reply the RTA raised no objection to the recommendations to restrict heavy vehicles to main roads and prohibit them from local residential areas.

The Council has advised NPC that they have no objection to the content of the plan and that they consider the plan satisfactory.

4.3 Routes

The majority of cargo transport to the port is via the wider road linkages identified above but all road transport will travel via Industrial Drive and Selwyn St to site. Travel to regional areas will be from site to Industrial Drive and beyond using the major road network.

Where local deliveries of cargo are required the heavy vehicles will be confined to the major roads identified in Figure 1 and shown as Collector Roads. All heavy vehicles are prohibited from passing through residential areas and in particular, no travel is allowed through Mayfield or Mayfield East.

Due to the uncertainty with the cargo sources and delivery locations precise heavy vehicle routes are not able to be determined. General principles to be applied to heavy vehicles are:

- not to travel through Mayfield and Mayfield East;
- that cargo transport shall be via designated main roads; and
- not to traverse designated local roads.

Figure 1: Locality Plan, Heavy Vehicle and Rail Routes to Mayfield Site



4.4 Driver Training

All drivers and contractors accessing the site are required to undertake Newcastle Port Corporation Induction training. As part of this training access routes will be covered to ensure that all drivers are aware of the requirement to avoid residential areas and to use the major roads.

4.5 Stevedores

All stevedores operating from NPC owned wharves are required to enter into licence agreements with NPC. The licence covers the use of the wharf and the conditions under which the wharf can be operated. As part of the conditions of the licence to use the wharf NPC will impose the condition that all heavy vehicles accessing the site are prohibited from using the residential streets of Mayfield and Mayfield East and are to follow the routes identified in this plan.

5. Conclusion

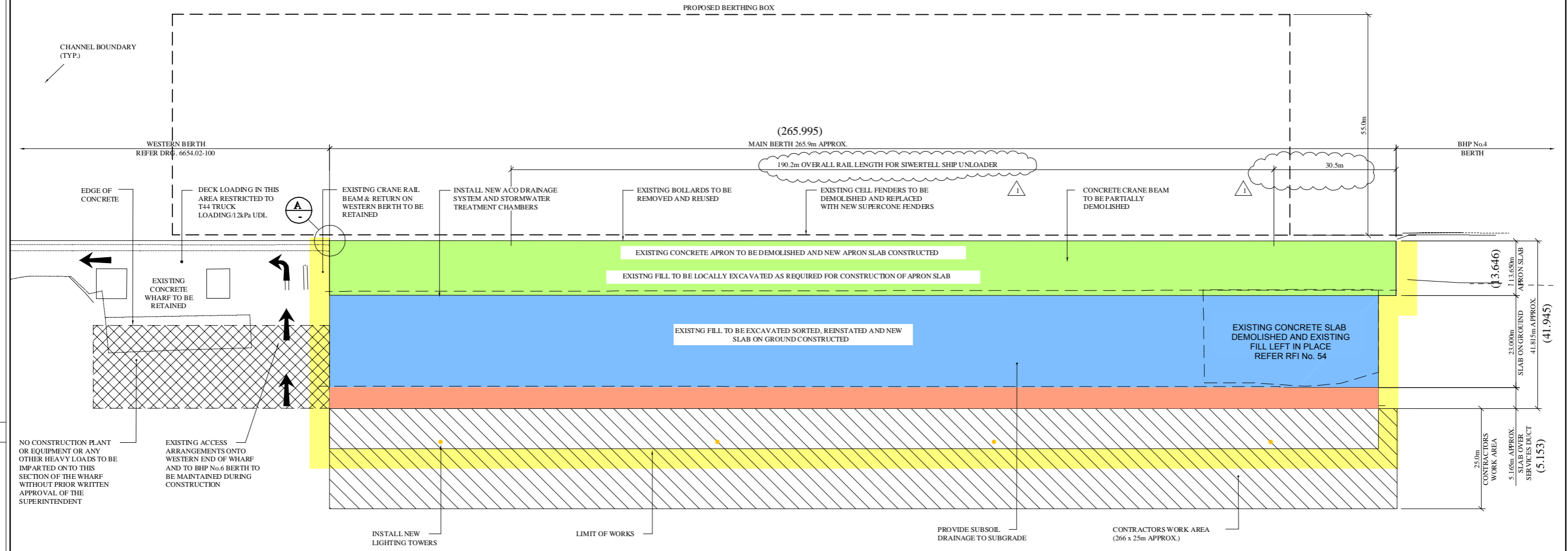
By ensuring heavy vehicles use the main roads through driver training and appropriate licence agreements with uses heavy vehicles will avoid local residential streets. Although it cannot be determined at this time where the cargo will be delivered from or to, appropriate guiding principles have been developed to minimise the impact on local residents and ensure that heavy vehicles are kept from the local residential areas of Mayfield and Mayfield East.

6. References

- Transport of Hazardous Materials, NPC, September 2009
- Travel Restrictions Vehicle Routes, Plan for Town: Newcastle, RTA, 6 August 2009
- Australian Road Rules

APPENDIX F – M4 BERTH CONSTRUCTION DRAWINGS

NEWCASTLE HARBOUR



RLMC MAYFIELD SITE

(FUTURE HARDSTAND AREA BY OTHERS)

GENERAL ARRANGEMENT PLAN
1:500

PROVIDE THE FOLLOWING
ADDITIONAL WHARF FURNITURE

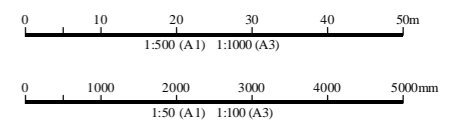
- CAPSTANS
- LADDERS
- KERBS

PROVIDE THE FOLLOWING SERVICES

- FIRE HYDRANTS
- POTABLE WATER
- 3-PHASE POWER & SINGLE PHASE POWER
- WHARF FLOOD LIGHTING
- WHARF EDGE LIGHTING

NOTES:

- FOR GENERAL NOTES REFER DRG. 6654.02-02.
- ALL LEVELS ARE IN METRES RELATIVE TO AUSTRALIAN HEIGHT DATUM (A.H.D.)



DETAIL A
1:50

DRG STATUS : WORK AS CONSTRUCTED

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
2	WORK AS EXECUTED		DP			08/12/09
1	MODIFIED TO SUIT SIWERTTELL SHIP UNLOADER	KM	SC	KM	R.J.WHITE	12.03.09
0	ISSUED FOR CONSTRUCTION	SJM	SAC	SJM	R.J.WHITE	21.11.08

INITIALS SHOWN IN THE ADJACENT ISSUE RECORDS INDICATE THE STAGES UNDERTAKEN IN THE DRAWING APPROVAL PROCESS. DRAWINGS ARE ONLY TO BE USED WHEN APPROVED BY PATTERSON BRITTON & PARTNERS AND THEN ONLY AS NOTED FOR DRG STATUS. THE ORIGINAL SIGNATURES CAN BE FOUND ON THE REVERSE SIDE OF THE ORIGINAL OF THE DRG REGISTER/TRANSMITTAL FORM No. 5.2.2. HELD BY PATTERSON BRITTON & PARTNERS

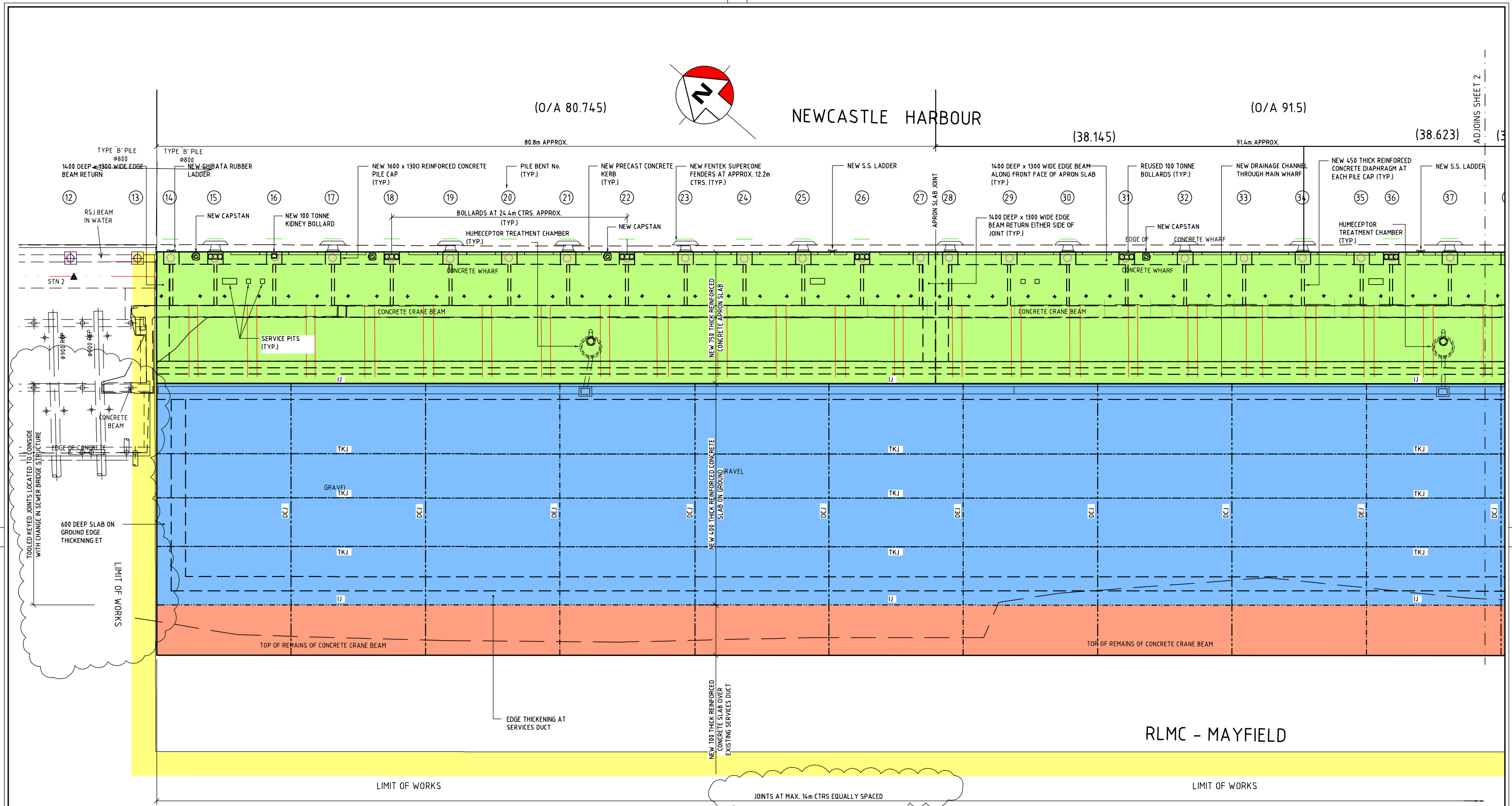
14 Telford Street
Newcastle East 2300

telephone (02) 4928 7777
facsimile (02) 4928 2111
mail @ newcastle.patbrit.com.au
A.C.N. 003 220 228

Patterson Britton & Partners Pty Ltd
consulting engineers

Client	NEWCASTLE PORT CORPORATION
Project	MAYFIELD BERTH REFURBISHMENT

Title	TSS GENERAL ARRANGEMENT PLAN
Drawing No.	6654.02-10
Issue	1
Cad File No.	6654.02-10
Xref(s)	



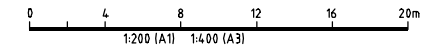
PLAN
1:200

- LEGEND:**
- TKJ - TIED KEY JOINT
 - DCJ - DOWELLED CONTRACTION JOINT
 - DEJ - DOWELLED EXPANSION JOINT
 - IJ - ISOLATION JOINT
 - ET - EDGE THICKENING

- NOTES:**
1. FOR GENERAL NOTES REFER DRG. 6654.02-02.

REFER TO PLAN 08156 REV E FOR ACTUAL SERVICE PIT LOCATIONS

TOTAL SURVEYING SOLUTIONS
 SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570
 Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au



DRG STATUS : WORK AS CONSTRUCTED

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
F	ISSUED FOR WORK AS EXECUTED		DP			08.12.09
E	RE-ISSUED FOR NSW MARITIME AUTHORITY REVIEW	SJM	SAC	KM	B.J.WHITE	08.07.08
D	ISSUED FOR NSW MARITIME AUTHORITY REVIEW	SJM	SD	KM	A.H.PATTERSON	23.04.08
C	ISSUED FOR INFORMATION	SAC	SJM			19.03.08
B	RE-ISSUED FOR REVIEW	SJM	SAC			09.11.07
A	ISSUED FOR REVIEW (prev. issued 6654.02.16)	SJM	SAC			02.10.07

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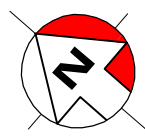
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Newcastle East 2300
Telephone (02) 4928 7777
facsimile (02) 4928 2111
mail@newcastle.patbrit.com.au
A.C.N. 003 220 228

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consulting engineers

Client	NEWCASTLE PORT CORPORATION
Project	MAYFIELD BERTH REFURBISHMENT

Title	WHARF REFURBISHMENT PLAN SHEET 1 OF 2
Drawing No.	
Issue	F
Cad File No.	6654.02-50
Xref (s)	

A1



(O/A 91.5)

(O/A 93.77)

NEWCASTLE HARBOUR

ADJOINS SHEET 1

(38.623)

(13.732)

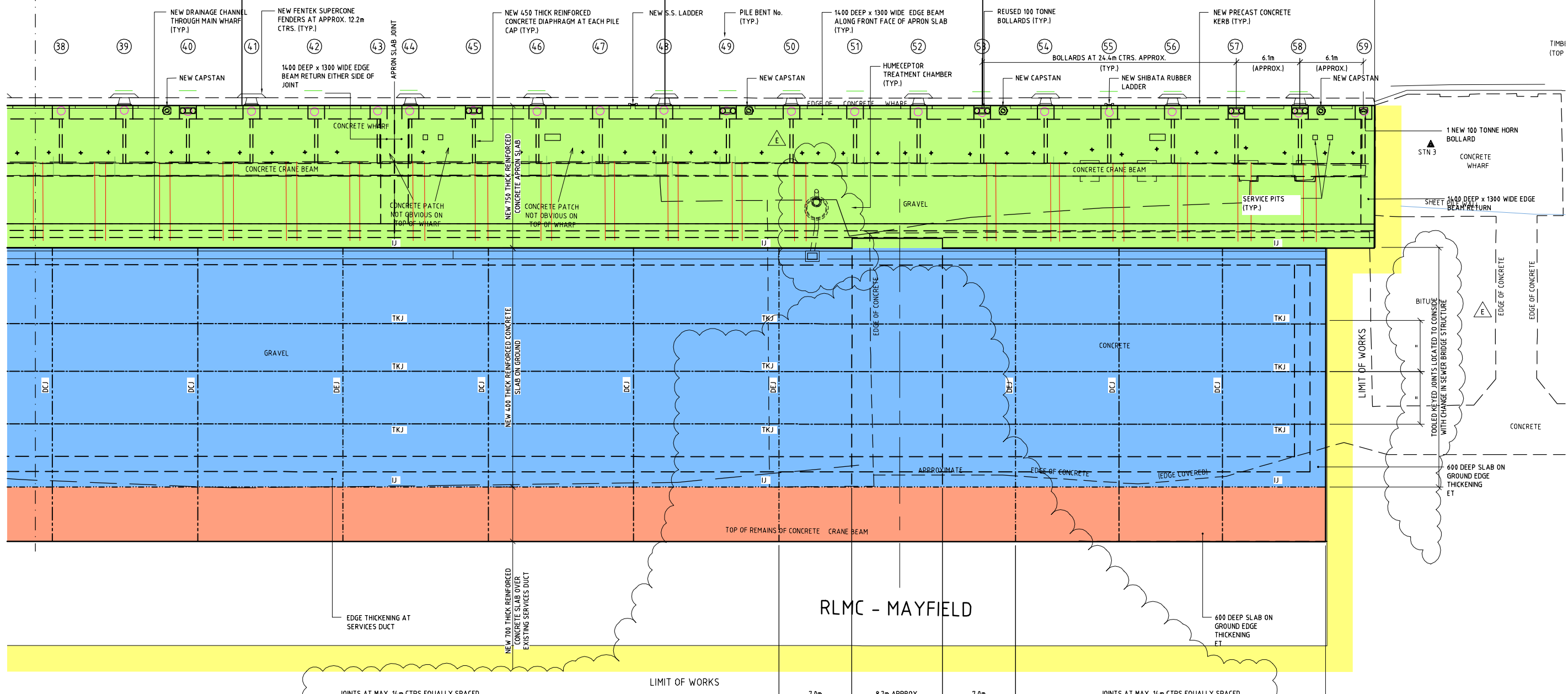
(25.93)

(30.483)

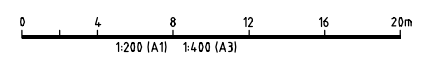
(37.355)

91.4m APPROX.

94.0m APPROX.



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REFER TO PLAN 08156 REV E FOR ACTUAL SERVICE PIT LOCATIONS

PLAN 1:200

LEGEND:

- TKJ - TIED KEY JOINT
- DCJ - DOWELLED CONTRACTION JOINT
- DEJ - DOWELLED EXPANSION JOINT
- IJ - ISOLATION JOINT
- ET - EDGE THICKENING

NOTES:

1. FOR GENERAL NOTES REFER DRG. 6654.02-02.

DRG STATUS : PRELIMINARY, NOT FOR CONSTRUCTION

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
F	ISSUED FOR WORK AS EXECUTED					08.12.09
E	RE-ISSUED FOR NSW MARITIME AUTHORITY REVIEW	SJM	SAC	KM	B.J.WHITE	08.07.08
D	ISSUED FOR NSW MARITIME AUTHORITY REVIEW	SJM	SD	KM	A.H.PATTERSON	23.04.08
C	ISSUED FOR INFORMATION	SJM	SAC			19.03.08
B	RE-ISSUED FOR REVIEW	SJM	SAC			09.11.07
A	ISSUED FOR REVIEW (prev. issued 6654.02.17)	SJM	SAC			02.10.07

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 A.C.N. 003 220 228

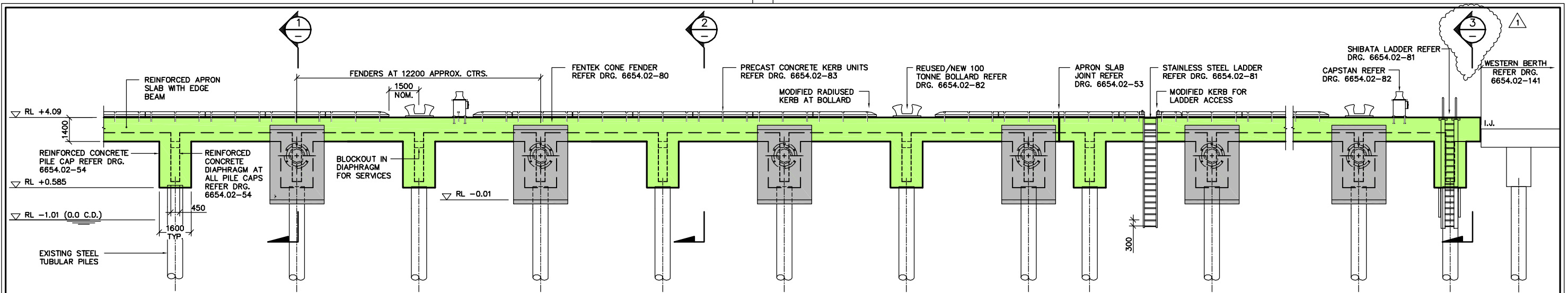
Patterson Britton & Partners Pty Ltd
 consulting engineers

Client
NEWCASTLE PORT CORPORATION
 Project
MAYFIELD BERTH REFURBISHMENT

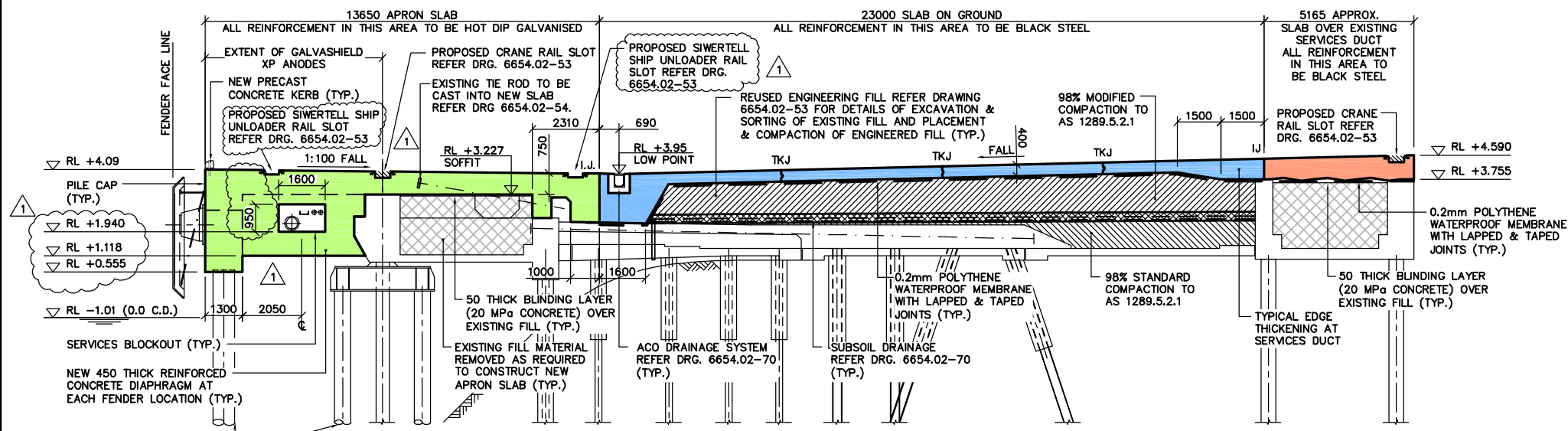
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6654.02-51
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F
 Cad File No.
 6654.02-50
 Xref (s)

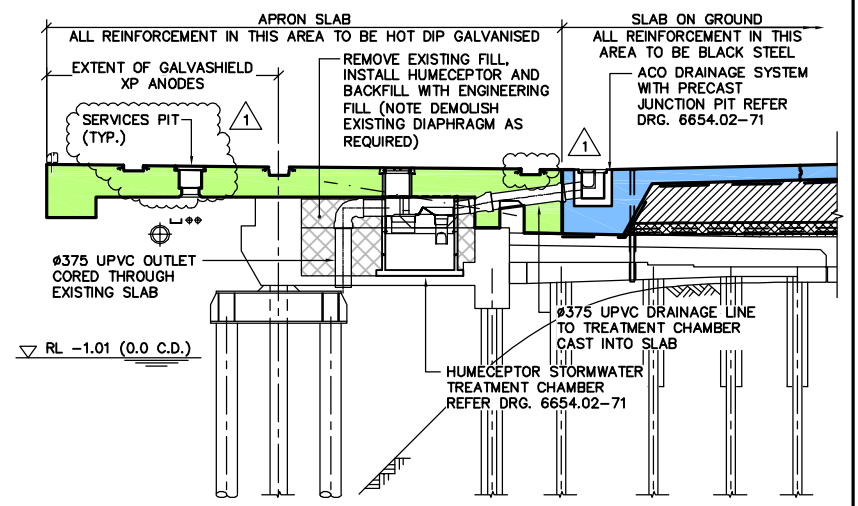
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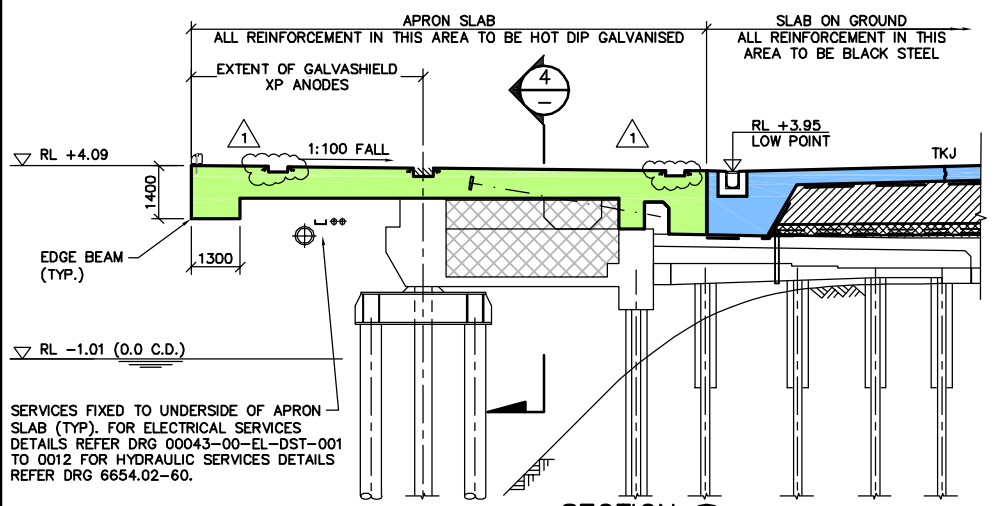
**PARTIAL ELEVATION
BERTH**
1:100



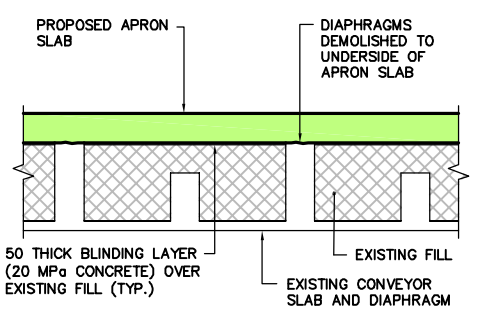
SECTION 1
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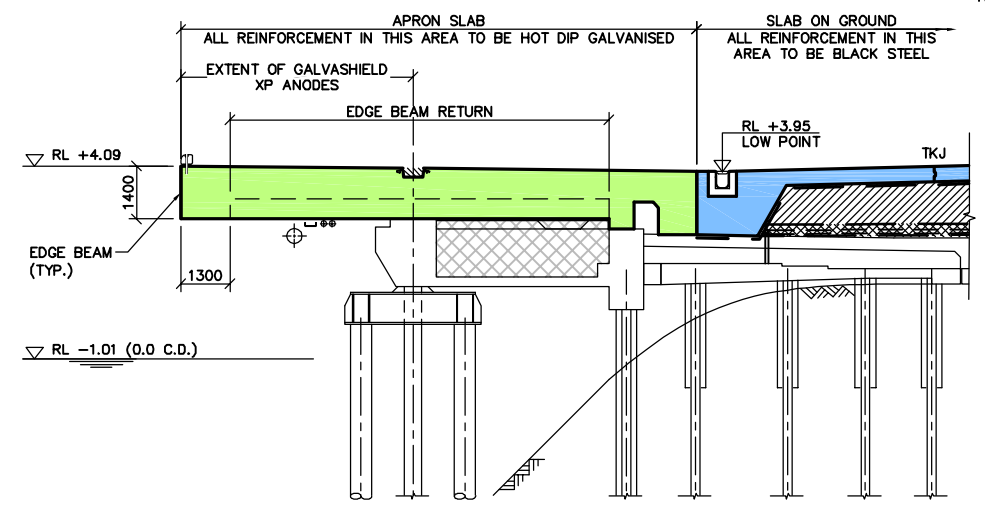
**TYPICAL SECTION THROUGH
TREATMENT CHAMBER**
1:100



SECTION 2
1:100



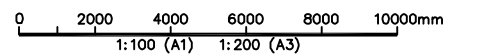
SECTION 4
1:100



SECTION 3
1:100

LEGEND:
TKJ - TIED KEY JOINT
DCJ - DOWELLED CONTRACTION JOINT
IJ - ISOLATION JOINT

NOTES:
1. FOR GENERAL NOTES REFER DRG. 6654.02-02.
2. ALL LEVELS ARE IN METRES RELATIVE TO AUSTRALIAN HEIGHT DATUM (A.H.D.)



DRG STATUS: FOR CONSTRUCTION

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
1	MODIFIED TO SUIT SIWERTELL SHIP UNLOADER	KM	SAC	KM	R.J.WHITE	12.03.09
0	ISSUED FOR CONSTRUCTION	SJM	SAC	SJM	R.J.WHITE	21.11.08

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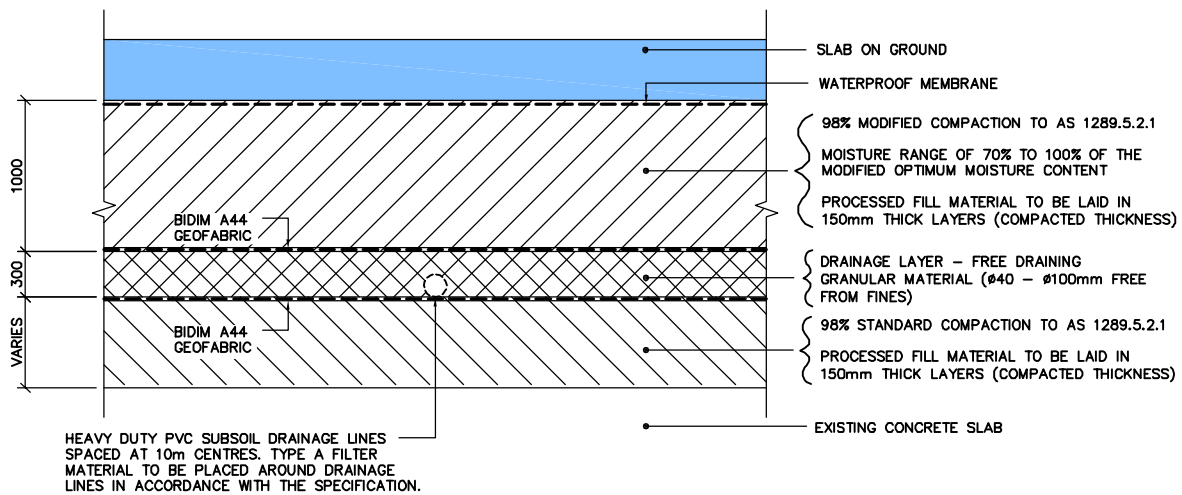
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Newcastle East 2300
Telephone (02) 4928 7777
Facsimile (02) 4928 2111
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Client
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Project
MAYFIELD BERTH REFURBISHMENT

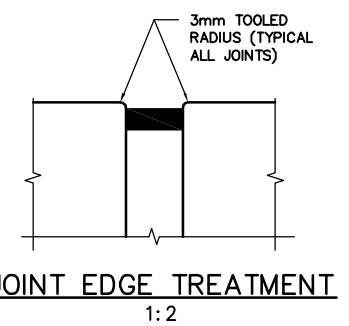
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**WHARF REFURBISHMENT
TYPICAL SECTIONS**

Drawing No.
6654.02-52
Issue
1
Cad File No.
6654.02-52
Xref.(s)

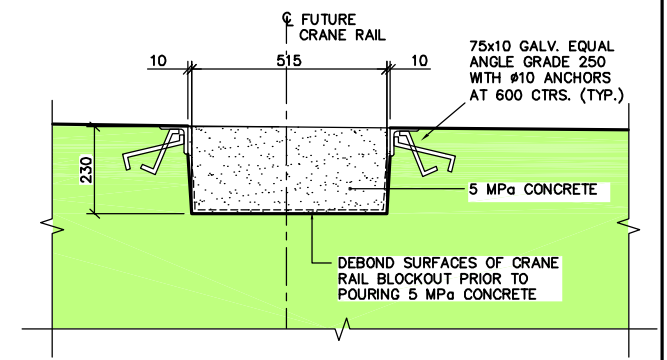


RE-USED FILL - TYPICAL SECTION UNDER SLAB ON GROUND
1:25

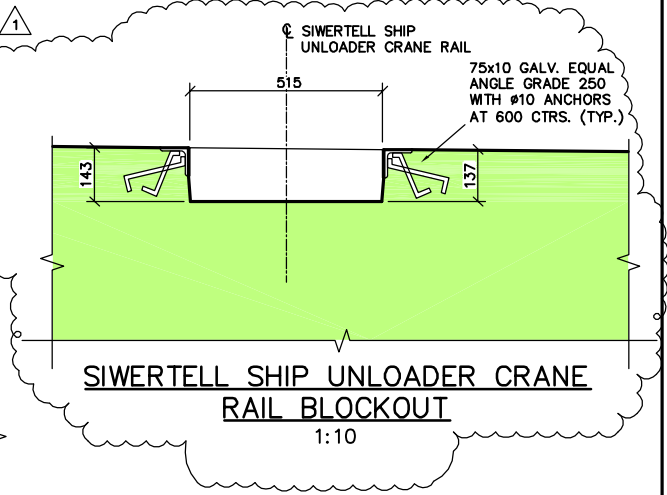
- NOTES:**
METHODOLOGY FOR RE-USE OF EXISTING FILL
- EXISTING FILL MATERIAL INCLUDES BUT IS NOT LIMITED TO:
- GRAVEL MIXED WITH BUILDING RUBBLE, ASH, SLAG, IRON ORE, COKE AND SCRAP STEEL REINFORCEMENT.
 - ASH
 - SAND
- EXCAVATE EXISTING FILL.
 - SORT TO REMOVE ALL DELETERIOUS MATERIAL.
 - PROCESS FILL TO PRODUCE A WELL GRADED FILL MATERIAL WITH MAX. PARTICLE SIZE OF 100mm.
 - SEPARATE HIGHER CBR MATERIALS SUCH AS SLAG FOR USE IN UPPER LAYERS OF FILLING.
 - CONSTRUCT PAVEMENT - PROCESSED FILL TO BE PLACED IN 150mm LAYERS (COMPACTED THICKNESS).
 - SUBGRADE DESIGN CBR IS 35% THIS IS TO BE TESTED BY A NATA REGISTERED LABORATORY AND CONFIRMED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE SLAB.



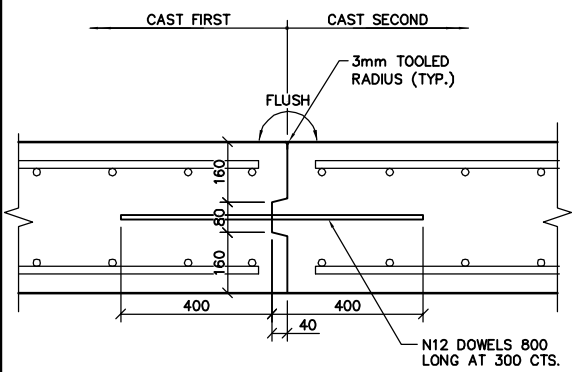
JOINT EDGE TREATMENT
1:2



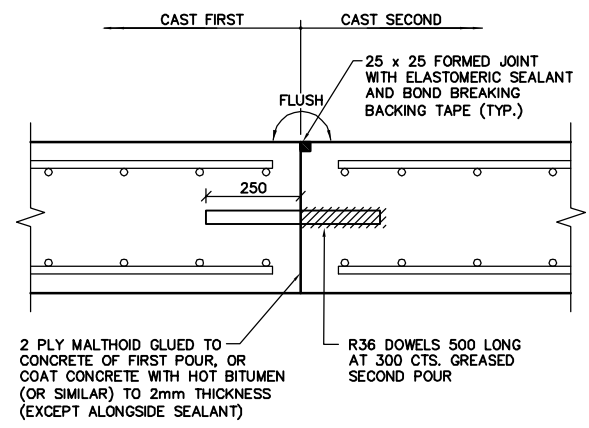
CRANE RAIL BLOCKOUT
1:10



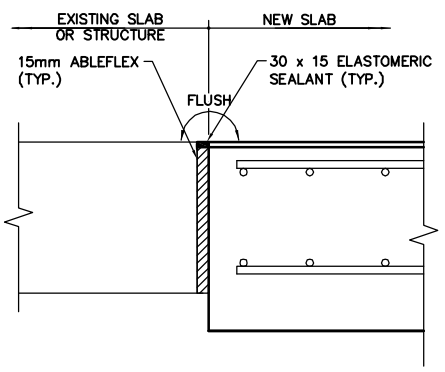
SIWERTELL SHIP UNLOADER CRANE RAIL BLOCKOUT
1:10



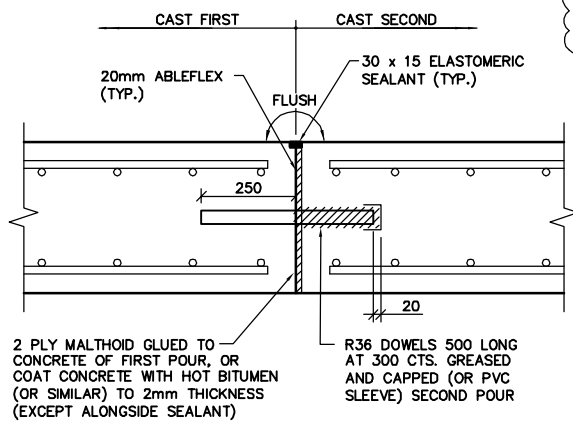
TIED KEY JOINT DETAIL (TKJ)
1:10



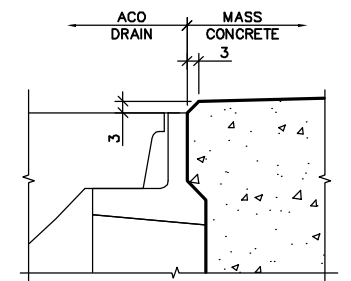
DOWELLED CONTRACTION JOINT DETAIL (DCJ)
1:10



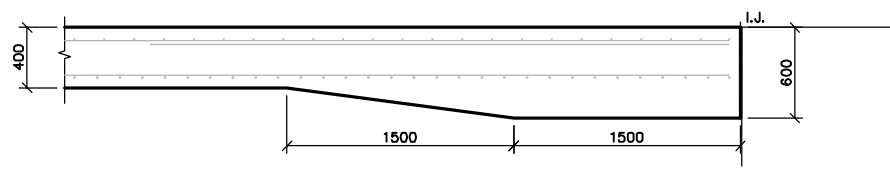
ISOLATION JOINT DETAIL (IJ)
1:10



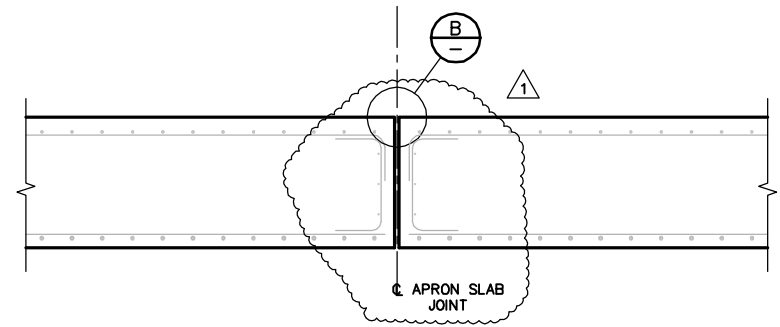
DOWELLED EXPANSION JOINT DETAIL (DEJ)
1:10



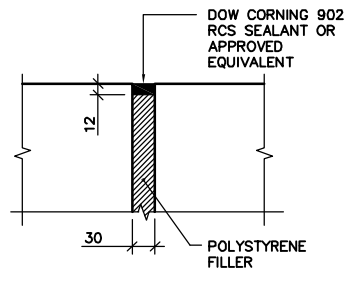
DETAIL A
1:1



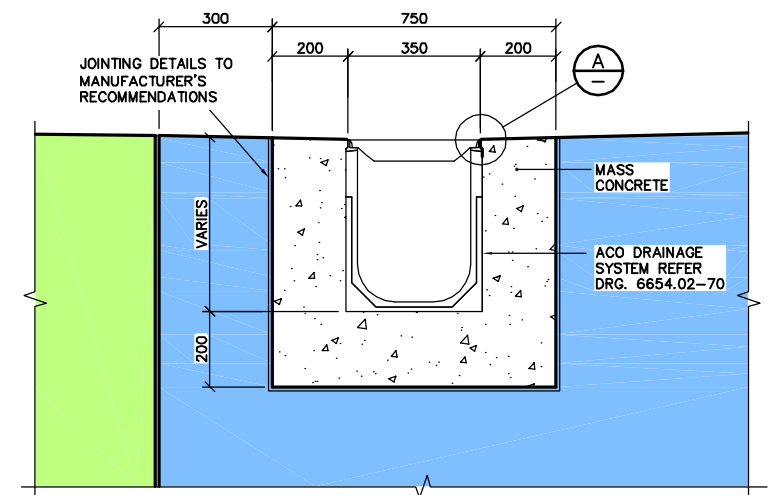
SLAB ON GROUND EDGE THICKENING DETAIL (ET)
1:25



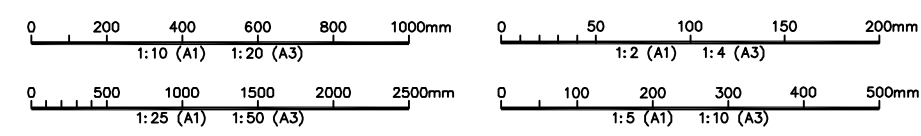
APRON SLAB JOINT DETAIL
1:25



DETAIL B
1:5



ACO DRAINAGE SYSTEM BLOCKOUT
1:10



- NOTES:**
- FOR GENERAL NOTES REFER DRG. 6654.02-02.
 - ALL LEVELS ARE IN METRES RELATIVE TO AUSTRALIAN HEIGHT DATUM (A.H.D.)

DRG STATUS: FOR CONSTRUCTION

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
1	MODIFIED TO SUIT SIWERTELL SHIP UNLOADER	KM	SAC	KM	R.J.WHITE	12.03.09
0	ISSUED FOR CONSTRUCTION	SJM	SAC	SJM	R.J.WHITE	21.11.08

INITIALS SHOWN IN THE ADJACENT ISSUE RECORDS INDICATE THE STAGES UNDERTAKEN IN THE DRAWING APPROVAL PROCESS. DRAWINGS ARE ONLY TO BE USED WHEN APPROVED BY PATTERSON BRITTON & PARTNERS AND THEN ONLY AS NOTED FOR DRG STATUS. THE ORIGINAL SIGNATURES CAN BE FOUND ON THE REVERSE SIDE OF THE ORIGINAL OF THE DRG REGISTER/TRANSMITTAL FORM No.5.2.2. HELD BY PATTERSON BRITTON & PARTNERS

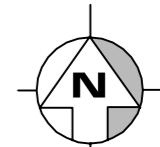
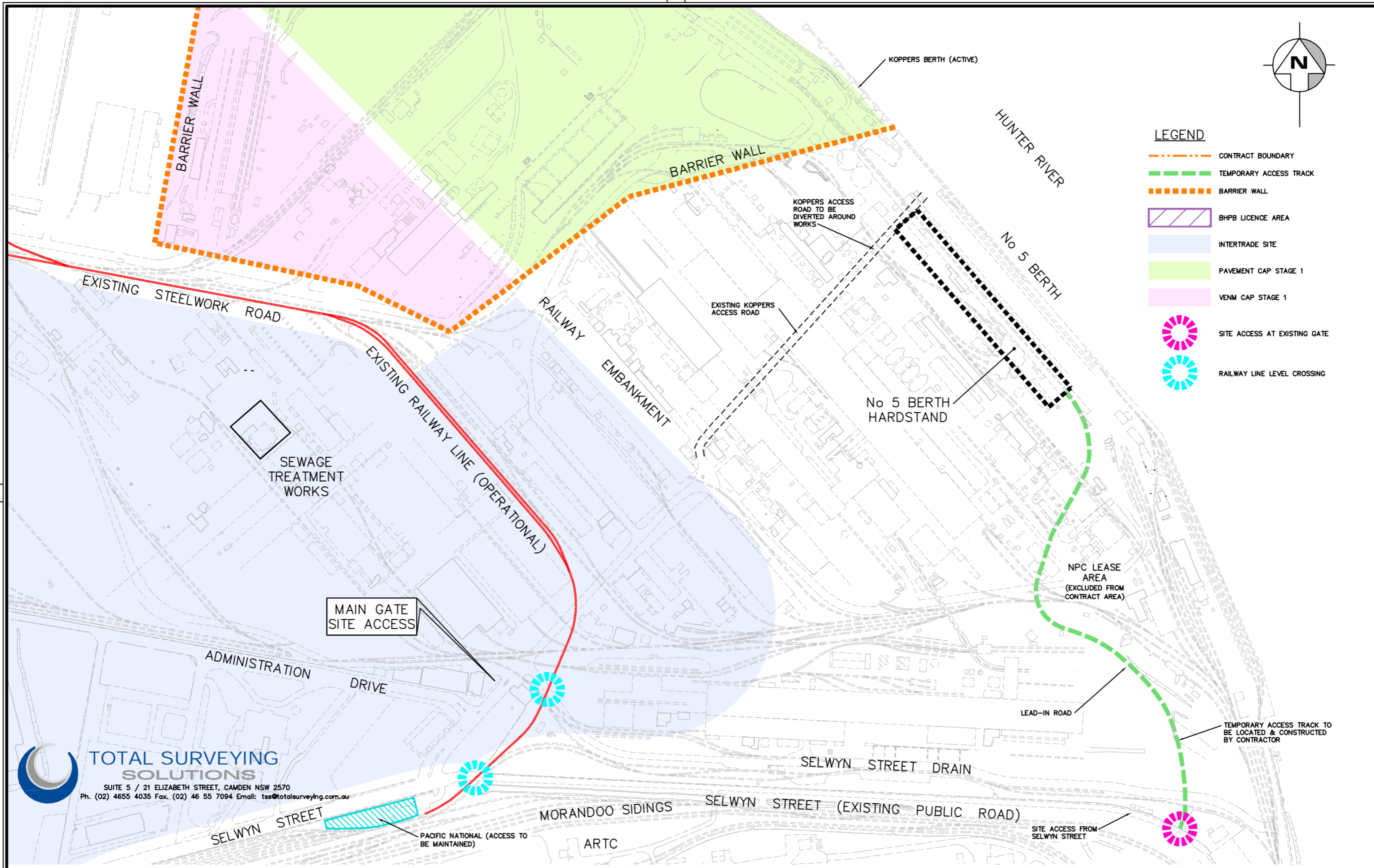
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Facsimile (02) 4928 2111
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Client
NEWCASTLE PORT CORPORATION
Project
MAYFIELD BERTH REFURBISHMENT

Title
WHARF REFURBISHMENT DETAILS

Drawing No.
6654.02-53
Issue
1
Cad File No.
6654.02-53
Xref.(s)

**APPENDIX G- M4 HARDSTAND I CONSTRUCTION
DRAWINGS WAE**



LEGEND

- CONTRACT BOUNDARY
- TEMPORARY ACCESS TRACK
- BARRIER WALL
- BHPB LICENCE AREA
- INTERTRADE SITE
- PAVEMENT CAP STAGE 1
- VENM CAP STAGE 1
- SITE ACCESS AT EXISTING GATE
- RAILWAY LINE LEVEL CROSSING

TOTAL SURVEYING SOLUTIONS
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 Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au

DRG STATUS : AS CONSTRUCTED

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
2	WORK AS CONSTRUCTED		DP	MH		11.01.10
0	ISSUED FOR CONSTRUCTION	SW	SW	JK	B PATTERSON	21.11.08
D	ISSUED FOR TENDER	SW	SW	JK		6.08.08
C	ISSUED FOR REVIEW	SW	SW	JK		24.07.08
B	PRELIMINARY ISSUE	SW	SW	JK		21.07.08
A	PRELIMINARY ISSUE	JK	SW	JK		14.05.08

INITIALS SHOWN IN THE ADJACENT ISSUE RECORDS INDICATE THE STAGES UNDERTAKEN IN THE DRAWING APPROVAL PROCESS. DRAWINGS ARE ONLY TO BE USED WHEN APPROVED BY WORLEY PARSONS AND THEN ONLY AS NOTED FOR DRG STATUS. THE ORIGINAL SIGNATURES CAN BE FOUND ON THE REVERSE SIDE OF THE ORIGINAL OF THE DRG REGISTER/TRANSMITTAL FORM No.S.2.2 HELD BY WORLEY PARSONS

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 resources & energy
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 Newcastle East 2300
 Telephone (02) 4928 7777
 Facsimile (02) 4926 2111
 Mail ● newcastle@wpar.com.au
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Client
 NEWCASTLE PORT CORPORATION

Project
 MAYFIELD No 5 BERTH HARDSTAND

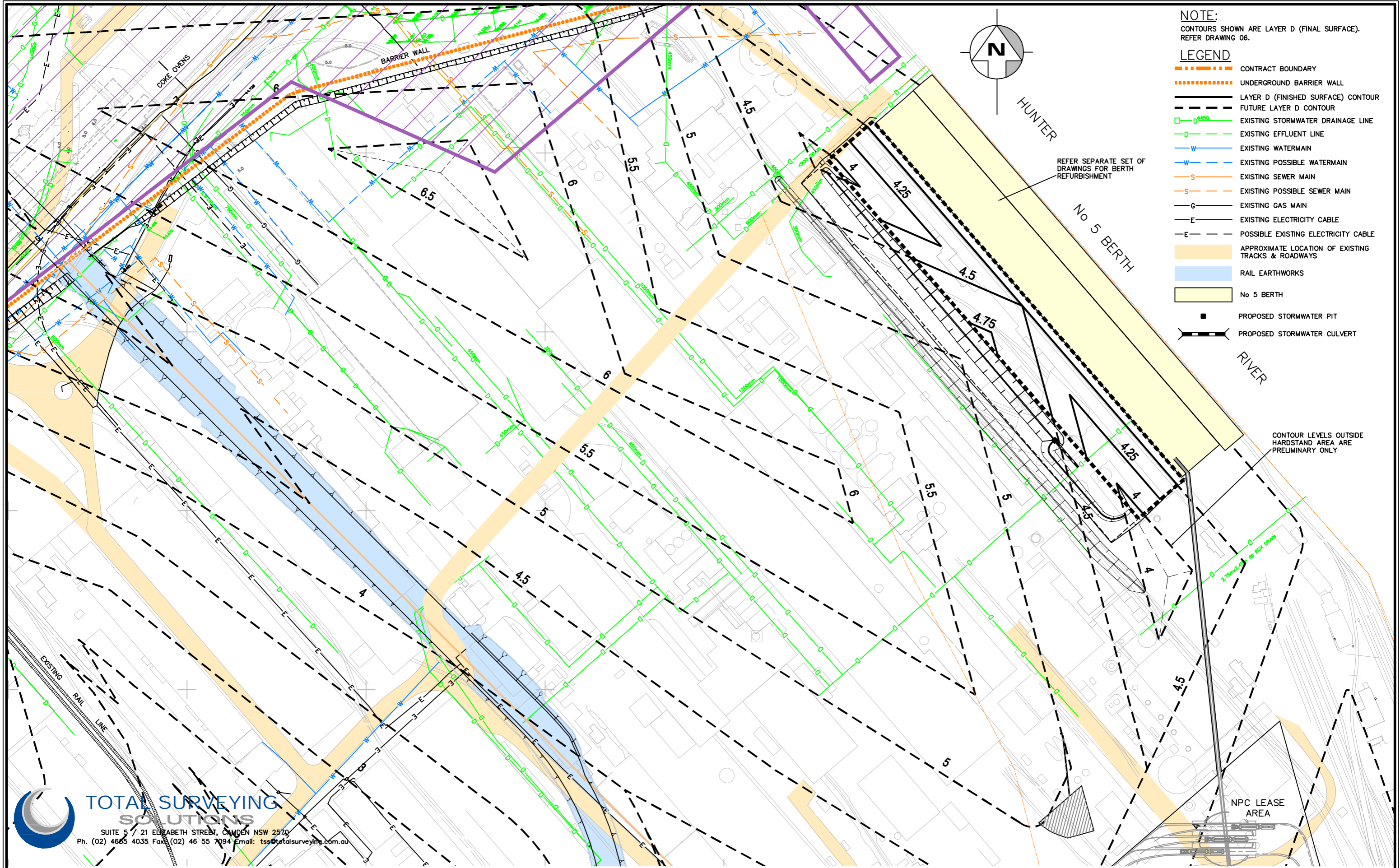
Title
 SITE ACCESS MANAGEMENT PLAN
 WAE FIND ATTACHED 7400-17-2

Drawing No.
 7400-04

Issue
 2

Cad File No.
 7400-04

Xref.(s)



NOTE:
CONTOURS SHOWN ARE LAYER D (FINAL SURFACE). REFER DRAWING 06.

- LEGEND**
- CONTRACT BOUNDARY
 - - - UNDERGROUND BARRIER WALL
 - LAYER D (FINISHED SURFACE) CONTOUR
 - - - FUTURE LAYER D CONTOUR
 - EXISTING STORMWATER DRAINAGE LINE
 - - - EXISTING EFFLUENT LINE
 - EXISTING WATERMAIN
 - - - EXISTING POSSIBLE WATERMAIN
 - EXISTING SEWER MAIN
 - - - EXISTING POSSIBLE SEWER MAIN
 - EXISTING GAS MAIN
 - - - EXISTING ELECTRICITY CABLE
 - - - POSSIBLE EXISTING ELECTRICITY CABLE
 - APPROXIMATE LOCATION OF EXISTING TRACKS & ROADWAYS
 - RAIL EARTHWORKS
 - No 5 BERTH
 - PROPOSED STORMWATER PIT
 - PROPOSED STORMWATER CULVERT

REFER SEPARATE SET OF DRAWINGS FOR BERTH REFURBISHMENT

CONTOUR LEVELS OUTSIDE HARDSTAND AREA ARE PRELIMINARY ONLY

TOTAL SURVEYING SOLUTIONS
 SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570
 Ph. (02) 4655 4035 Fax: (02) 46 55 7094 Email: tss@totalsurveying.com.au

DRG STATUS : AS CONSTRUCTED

Issue	Details of issue	Des'd	Drn	Chk'd	Approved	Date
2	ISSUED AS CONSTRUCTED	DP				22.01.10
0	ISSUED FOR CONSTRUCTION	SW	SW	JK	B PATTERSON	21.11.08
D	ISSUED FOR TENDER	SW	SW	JK		6.08.08
C	ISSUED FOR REVIEW	SW	SW	JK		24.07.08
B	PRELIMINARY ISSUE	SW	SW	JK		21.07.08
A	PRELIMINARY ISSUE	SW	SW	JK		14.05.08

INITIALS SHOWN IN THE ADJACENT ISSUE RECORDS INDICATE THE STAGES UNDERTAKEN IN THE DRAWING APPROVAL PROCESS. DRAWINGS ARE ONLY TO BE USED WHEN APPROVED BY WORLEY PARSONS AND THEN ONLY AS NOTED FOR DRG STATUS. THE ORIGINAL SIGNATURES CAN BE FOUND ON THE REVERSE SIDE OF THE ORIGINAL OF THE DRG REGISTER/TRANSMITTAL FORM No.5.2.2. HELD BY WORLEY PARSONS

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 A.C.N. 003 220 228

Zero Harm
 Leadership
 No incidents
 Safe Behaviour

Client
NEWCASTLE PORT CORPORATION

Project
MAYFIELD No 5 BERTH HARDSTAND

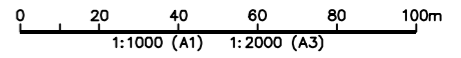
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GENERAL ARRANGEMENT PLAN

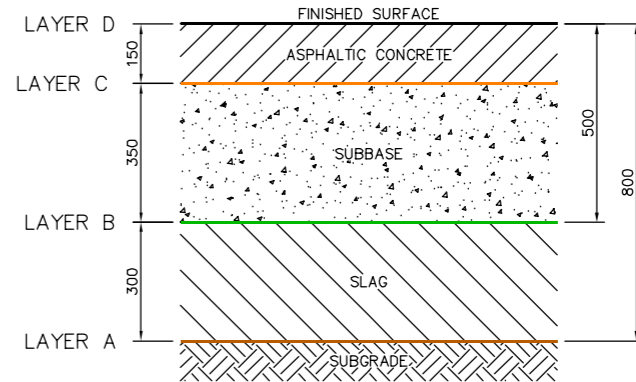
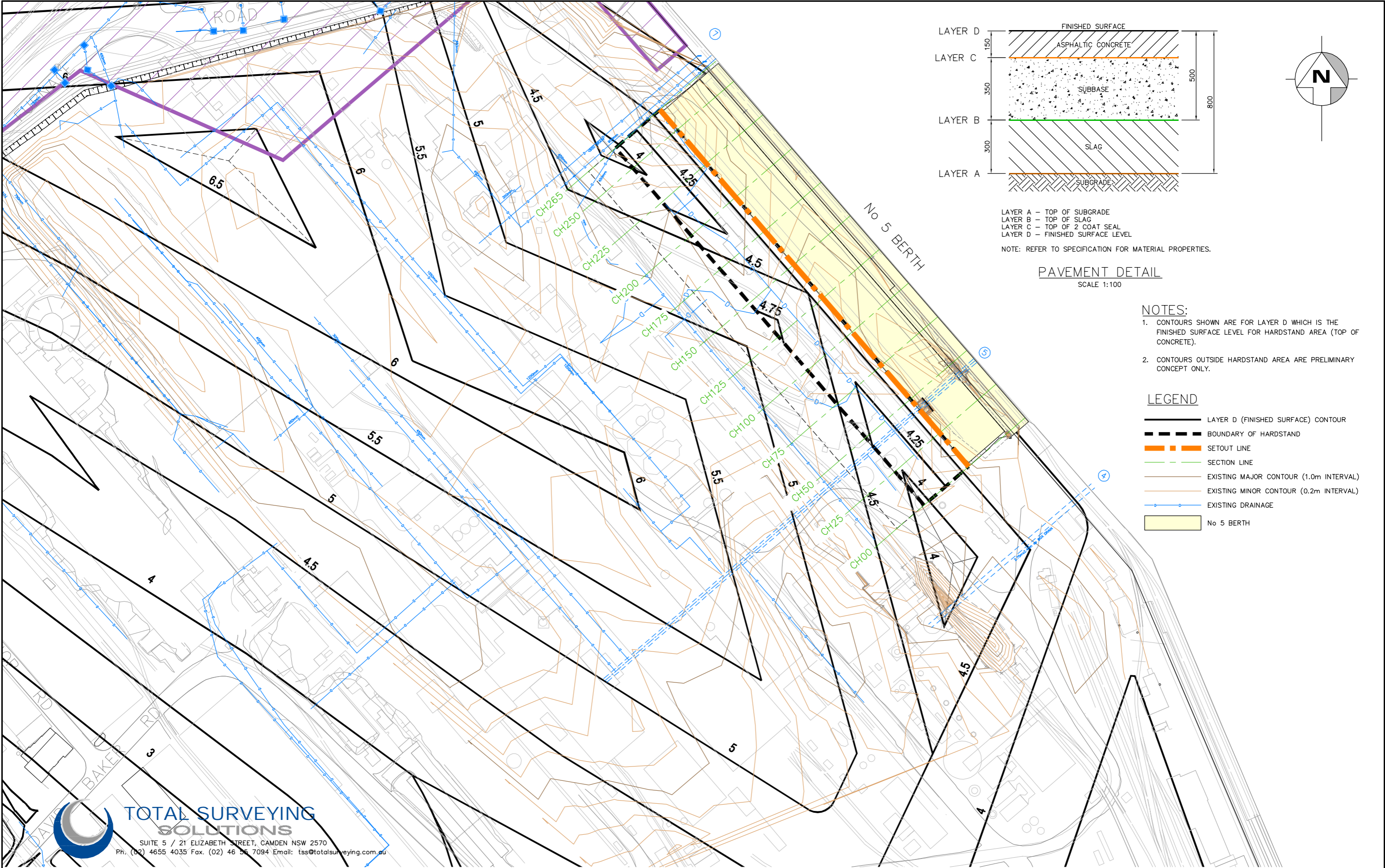
Drawing No.
7400-05

Issue
2

Cad File No.
 7400-05

Xref.(s)





LAYER A - TOP OF SUBGRADE
 LAYER B - TOP OF SLAG
 LAYER C - TOP OF 2 COAT SEAL
 LAYER D - FINISHED SURFACE LEVEL

NOTE: REFER TO SPECIFICATION FOR MATERIAL PROPERTIES.

PAVEMENT DETAIL
 SCALE 1:100

- NOTES:**
1. CONTOURS SHOWN ARE FOR LAYER D WHICH IS THE FINISHED SURFACE LEVEL FOR HARDSTAND AREA (TOP OF CONCRETE).
 2. CONTOURS OUTSIDE HARDSTAND AREA ARE PRELIMINARY CONCEPT ONLY.

- LEGEND**
- LAYER D (FINISHED SURFACE) CONTOUR
 - - - BOUNDARY OF HARDSTAND
 - SETOUT LINE
 - - - SECTION LINE
 - EXISTING MAJOR CONTOUR (1.0m INTERVAL)
 - EXISTING MINOR CONTOUR (0.2m INTERVAL)
 - EXISTING DRAINAGE
 - No 5 BERTH

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DRG STATUS : AS CONSTRUCTED

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
2	ISSUED AS CONSTRUCTED	DP				22.01.10
D	ISSUED FOR CONSTRUCTION	SW	SW	JK	B PATTERSON	21.11.08
D	ISSUED FOR TENDER	SW	SW	JK		6.08.08
C	ISSUED FOR REVIEW	SW	SW	JK		24.07.08
B	PRELIMINARY ISSUE	SW	SW	JK		21.07.08
A	PRELIMINARY ISSUE	SW	SW	JK		14.05.08

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Client
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Project
MAYFIELD No 5 BERTH HARDSTAND

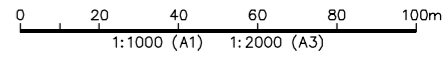
Title
BULK EARTHWORKS OVERALL PLAN

Drawing No.
7400-06

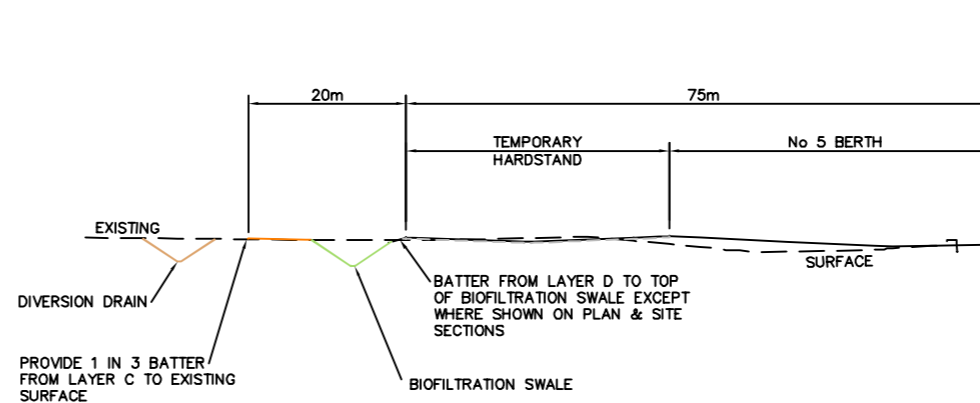
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Cad File No.
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Xref.(s)

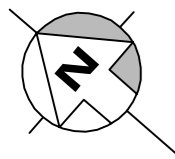


	No 5 BERTH		BERTH HARDSTAND		BIORETENTION SWALE		DIVERSION DRAIN	
HORIZONTAL VC LENGTH	[Diagram showing horizontal VC length across sections]							
GRADE	[Diagram showing 0% grade across sections]							
DATUM	-15							
STORMWATER CULVERT	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142
FINISHED SURFACE	4.053	4.177	4.554	4.154	4.241	2.932	4.873	
EXISTING SURFACE	3.619	3.684	4.311	4.310	4.312	4.355	4.489	
CHAINAGE	0.000	20.000	40.000	60.000	80.000	100.000	120.000	

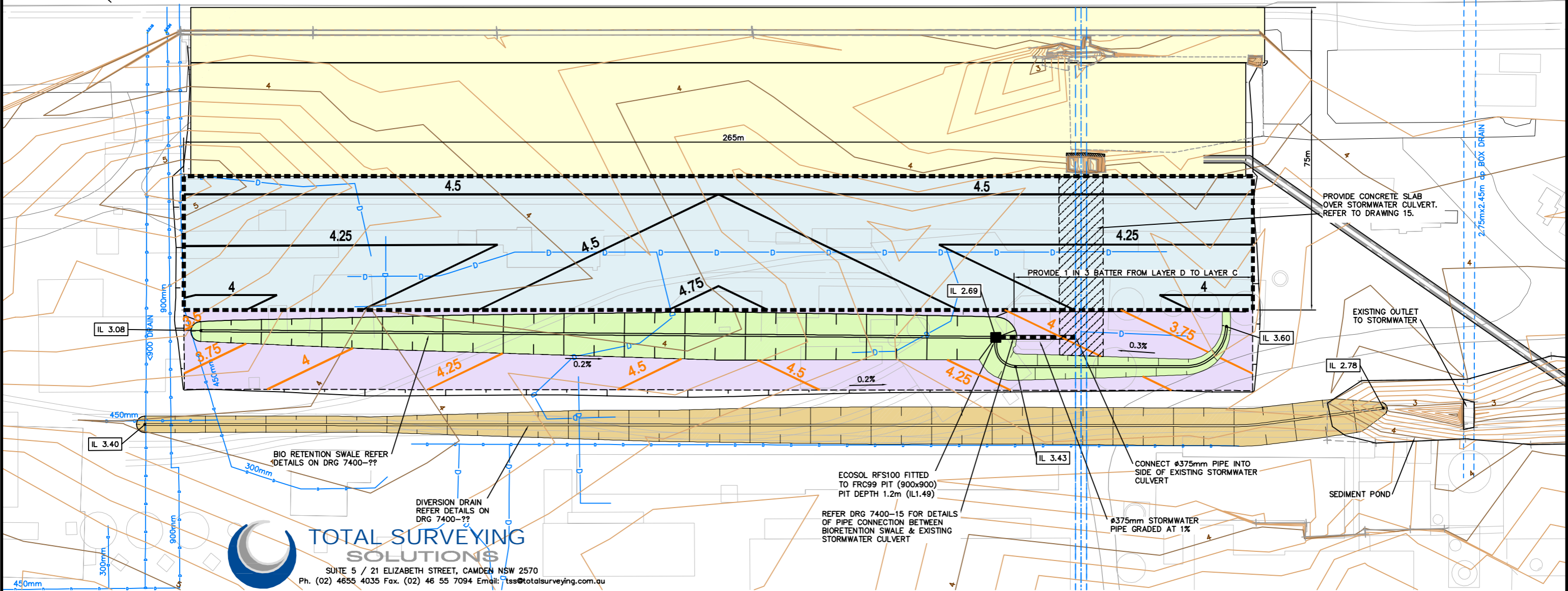


- LEGEND**
- EXTENT OF BERTH HARDSTAND
 - LAYER D CONTOUR
 - LAYER C CONTOUR
 - EXISTING MAJOR CONTOUR (1.0m INTERVAL)
 - EXISTING MINOR CONTOUR (0.2m INTERVAL)
 - EXISTING DRAINAGE
 - No 5 BERTH
 - AC PAVEMENT (LAYER D)
 - TWO COAT SEAL (LAYER C)
 - BIORETENTION SWALE
 - DIVERSION DRAIN

STORMWATER CULVERT LONGITUDINAL SECTION
 SCALE HORIZONTAL 1:500
 SCALE VERTICAL 1:500



No 5 BERTH



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DRG STATUS : AS CONSTRUCTED WITH ATTACHED PLAN 08156CrevE

Issue	Details of Issue	Des'd	Drn	Chk'd	Approved	Date
2	ISSUED AS CONSTRUCTED	DP				22.01.10
0	ISSUED FOR CONSTRUCTION	SW	SW	JK	B PATTERSON	21.11.08
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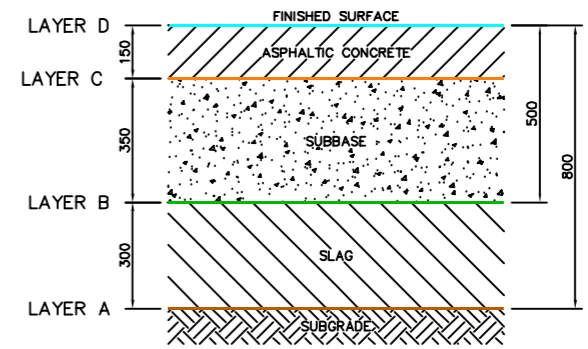
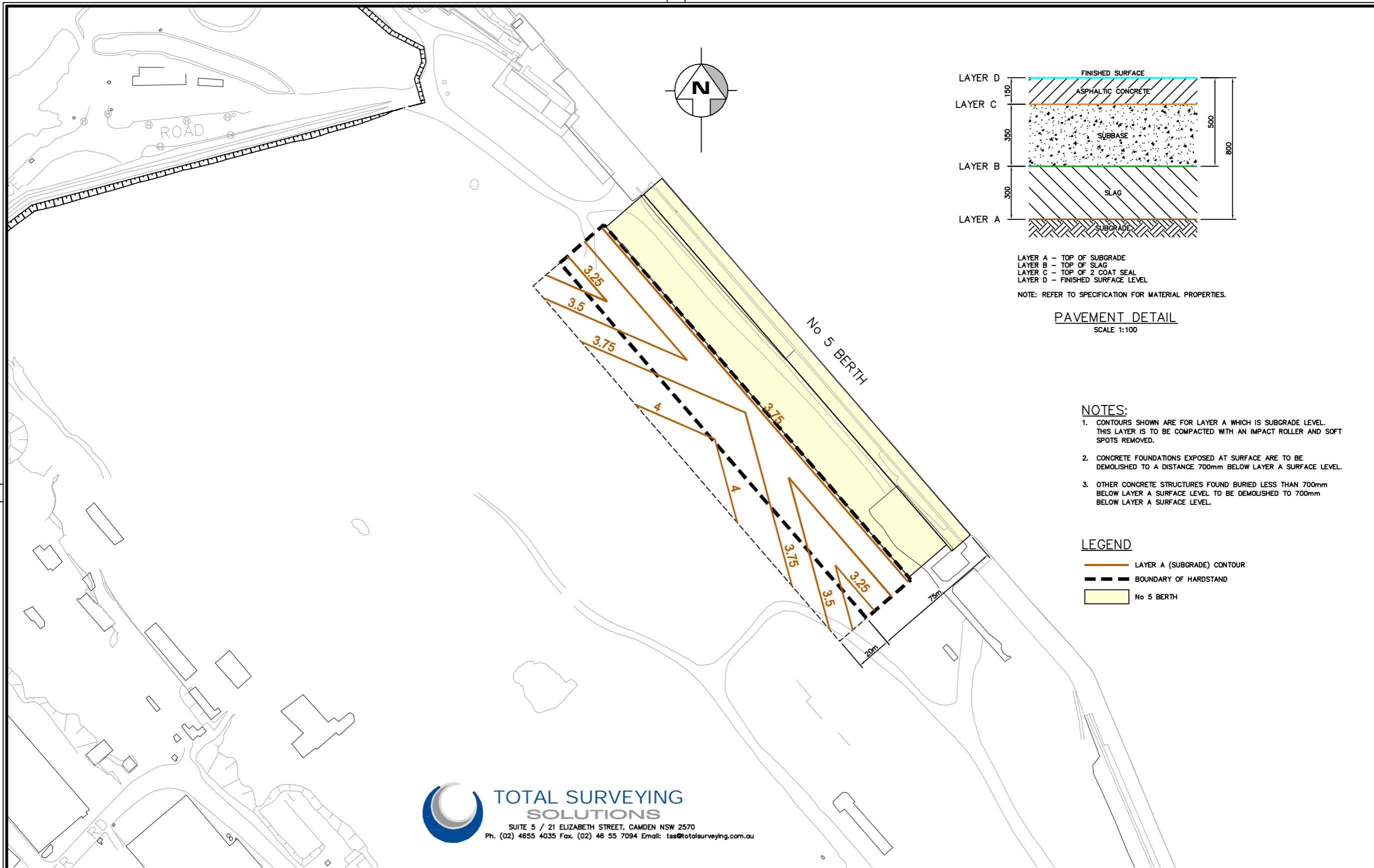
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Client
NEWCASTLE PORT CORPORATION
 Project
MAYFIELD No 5 BERTH HARDSTAND

Title
BULK EARTHWORKS HARDSTAND TREATMENT

Drawing No.
7400-09
 Issue
2
 Cad File No.
 7400-09
 Xref.(s)



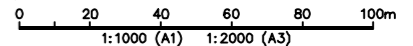
LAYER A - TOP OF SUBGRADE
 LAYER B - TOP OF SLAG
 LAYER C - TOP OF 2 COAT SEAL
 LAYER D - FINISHED SURFACE LEVEL
 NOTE: REFER TO SPECIFICATION FOR MATERIAL PROPERTIES.

PAVEMENT DETAIL
 SCALE 1:100

- NOTES:**
- CONTOURS SHOWN ARE FOR LAYER A WHICH IS SUBGRADE LEVEL. THIS LAYER IS TO BE COMPACTED WITH AN IMPACT ROLLER AND SOFT SPOTS REMOVED.
 - CONCRETE FOUNDATIONS EXPOSED AT SURFACE ARE TO BE DEMOLISHED TO A DISTANCE 700mm BELOW LAYER A SURFACE LEVEL.
 - OTHER CONCRETE STRUCTURES FOUND BURIED LESS THAN 700mm BELOW LAYER A SURFACE LEVEL TO BE DEMOLISHED TO 700mm BELOW LAYER A SURFACE LEVEL.

- LEGEND**
- LAYER A (SUBGRADE) CONTOUR
 - - - BOUNDARY OF HARDSTAND
 - No 5 BERTH

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2	ISSUED AS CONSTRUCTED		DP	MH		12.01.09
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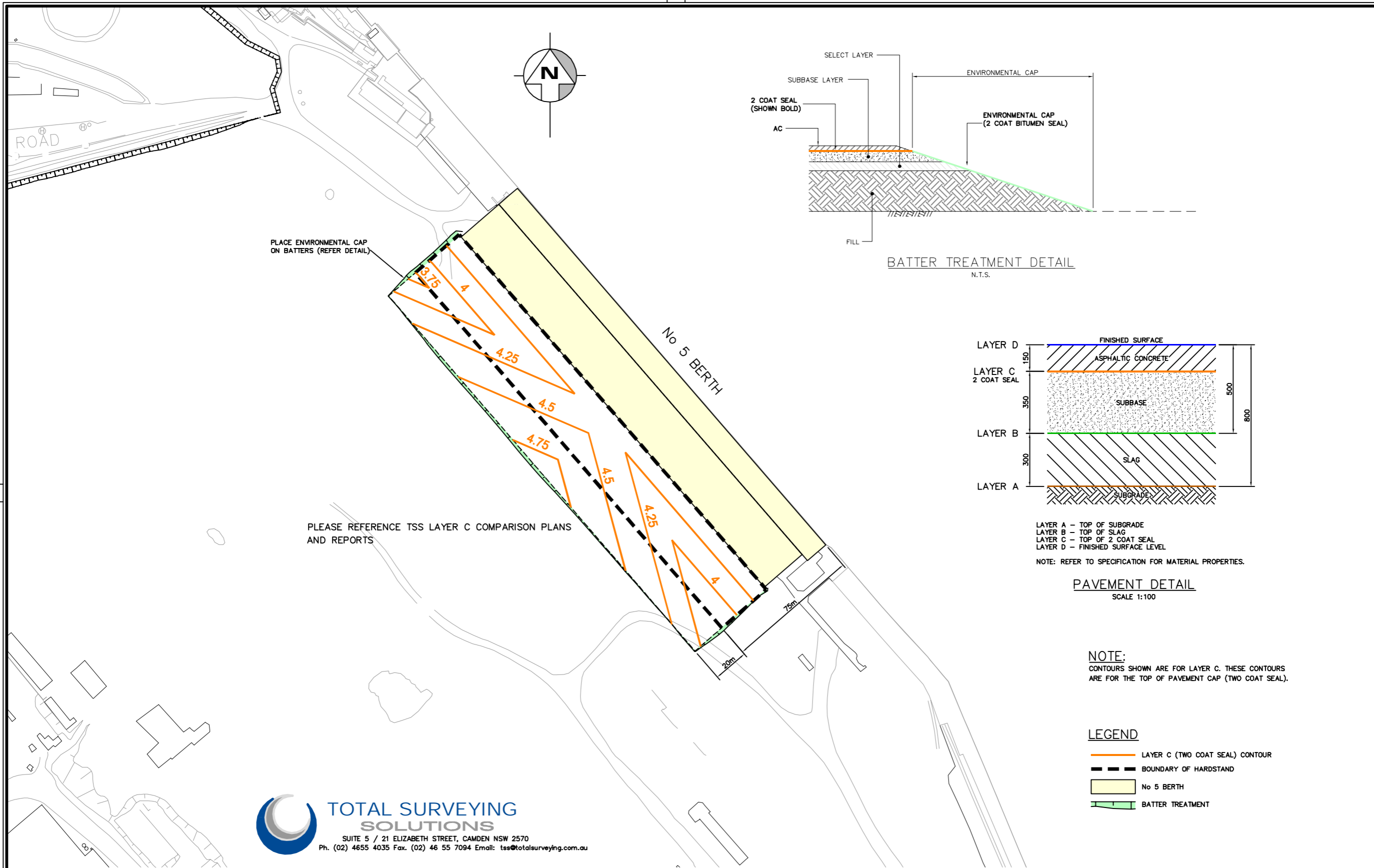
INITIALS SHOWN IN THE ADJACENT ISSUE RECORDS INDICATE THE STAGES UNDERTAKEN IN THE DRAWING APPROVAL PROCESS. DRAWINGS ARE ONLY TO BE USED WHEN APPROVED BY WORLEY PARSONS AND THEN ONLY AS NOTED FOR DRG STATUS. THE ORIGINAL SIGNATURES CAN BE FOUND ON THE REVERSE SIDE OF THE ORIGINAL OF THE DRG REGISTER/TRANSMITTAL FORM No.S.2.2. HELD BY WORLEY PARSONS

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Client	NEWCASTLE PORT CORPORATION
Project	MAYFIELD No 5 BERTH HARDSTAND

Title	BULK EARTHWORKS LAYER A
-------	--------------------------------

Drawing No.	7400-07
Issue	2
Cad File No.	7400-07
Xref(s)	



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 Safe behaviour

Client
NEWCASTLE PORT CORPORATION

Project
MAYFIELD No 5 BERTH HARDSTAND

Title
BULK EARTHWORKS LAYER C

Drawing No.
7400-08

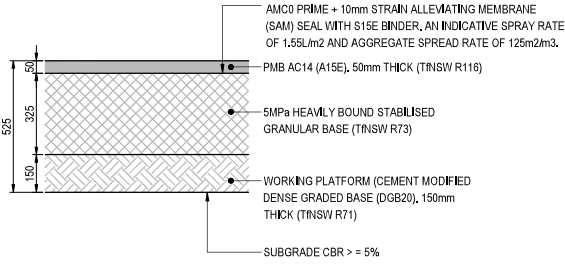
Issue
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Cad File No.
 7400-08

Xref.(s)

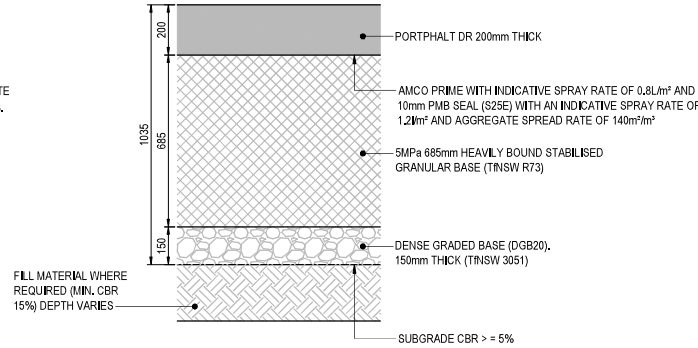
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**APPENDIX H - M4 HARDSTAND 2 CONSTRUCTION
DRAWINGS WAE**



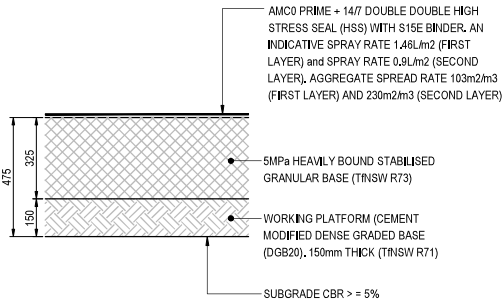
OVERSIZE VEHICLE ACCESS ROUTE (THIN ASPHALT SURFACING)

SCALE 1:10



CONTAINER HANDLING RATED PAVEMENT

SCALE 1:10



OVERSIZE VEHICLE ACCESS ROUTE (SPRAYED SEAL SURFACING)

SCALE 1:10



NOTES:

- FOR GENERAL NOTES, REFER TO GN-DRG-000011.

ASPHALT CONCRETE

- PORTPHALT ASPHALT MIX TYPE DR PROPRIETARY PRODUCT SUPPLIED BY FULTON HOGAN. SIMILAR APPROVED ALTERNATIVE PRODUCT MAY BE USED. MIX DESIGN TO BE UNDERTAKEN BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL.

BITUMEN SEALING

- BITUMEN SEALING TO BE IN ACCORDANCE WITH TNSW SPECIFICATION R106.
- ONLY INDICATIVE APPLICATION RATE AND AGGREGATE SPREAD RATE PROVIDED. CONTRACTOR TO DESIGN AND SUBMIT TO CONTRACT ADMINISTRATOR FOR APPROVAL PRIOR TO CONSTRUCTION.

HEAVILY BOUND STABILISED GRANULAR BASE

- HEAVILY BOUND STABILISED GRANULAR BASE MUST CONFORM TO R73 SPECIFICATION. THE MIX MUST ACHIEVE THE SPECIFIED UNCONFINED COMPRESSIVE STRENGTH (UCS), HEAVILY BOUND STABILISED GRANULAR BASE.
- CEMENT SLURRY MUST BE APPLIED BETWEEN TWO SUBSEQUENT LAYERS TO ACHIEVE BONDING. THE CONTRACTOR IS TO PREPARE CONSTRUCTION METHODOLOGY AND SUBMIT FOR APPROVAL BY CONTRACT ADMINISTRATOR.
- CEMENT SLURRY SHALL HAVE A WATER/CEMENT RATIO OF BETWEEN 0.6 AND 0.7, AND THE APPLICATION RATE SHALL BE APPROXIMATELY EQUIVALENT TO 2 kg/m2 OF CEMENT STABILISING AGENT.
- HEAVILY BOUND PAVEMENT MATERIAL SHALL BE PLACED ONTO THE SLURRY IMMEDIATELY AFTER IT HAS BEEN PLACED, BUT BEFORE THE SLURRY HAS SET.
- THE MAXIMUM TIME BETWEEN MIXING THE SLURRY AND COVERING THE SLURRY WITH HEAVILY BOUND MATERIAL SHALL BE THE LESSER OF THREE (3) HOURS, OR THE WORKING TIME DETERMINED FOR THE HEAVILY BOUND MATERIAL.

LEAN MIX CONCRETE SUBBASE

- LEAN MIX CONCRETE SUBBASE MUST CONFORM TO R82.

WORKING PLATFORM

- CEMENT MODIFIED PAVEMENT COURSE (TNSW R71) HAS A UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 28 DAYS NORMAL CURING OR 7 DAYS ACCELERATED CURING OF LESS THAN 1 MPA WITHOUT SOAKING, WHEN TESTED IN ACCORDANCE WITH TEST METHOD TNSW T116.
- CONTRACTOR TO NOMINATE TYPE OF STABILISING AGENT AND DOSAGE RATE TO ACHIEVE THE REQUIRED TARGET UCS REQUIREMENT IN TNSW R71.

SUBGRADE TREATMENT

- THE DESIGN SUBGRADE CBR WILL BE VALIDATED ON-SITE
- SOFT SUBGRADE AND SATURATED GROUND CONDITIONS ARE TO BE TREATED IN ACCORDANCE WITH TNSW R44.

SUBSOIL DRAINAGE

- TRENCH DRAINS IN ACCORDANCE WITH R33
- PROVIDE INTERFACE DRAINS IN ACCORDANCE WITH R33 WHERE NOTED ON THE DRAWINGS
- SUBSOIL DRAINAGE AND GEOTEXTILE TO COMPLY WITH R63 AND 3552

EARTHWORKS

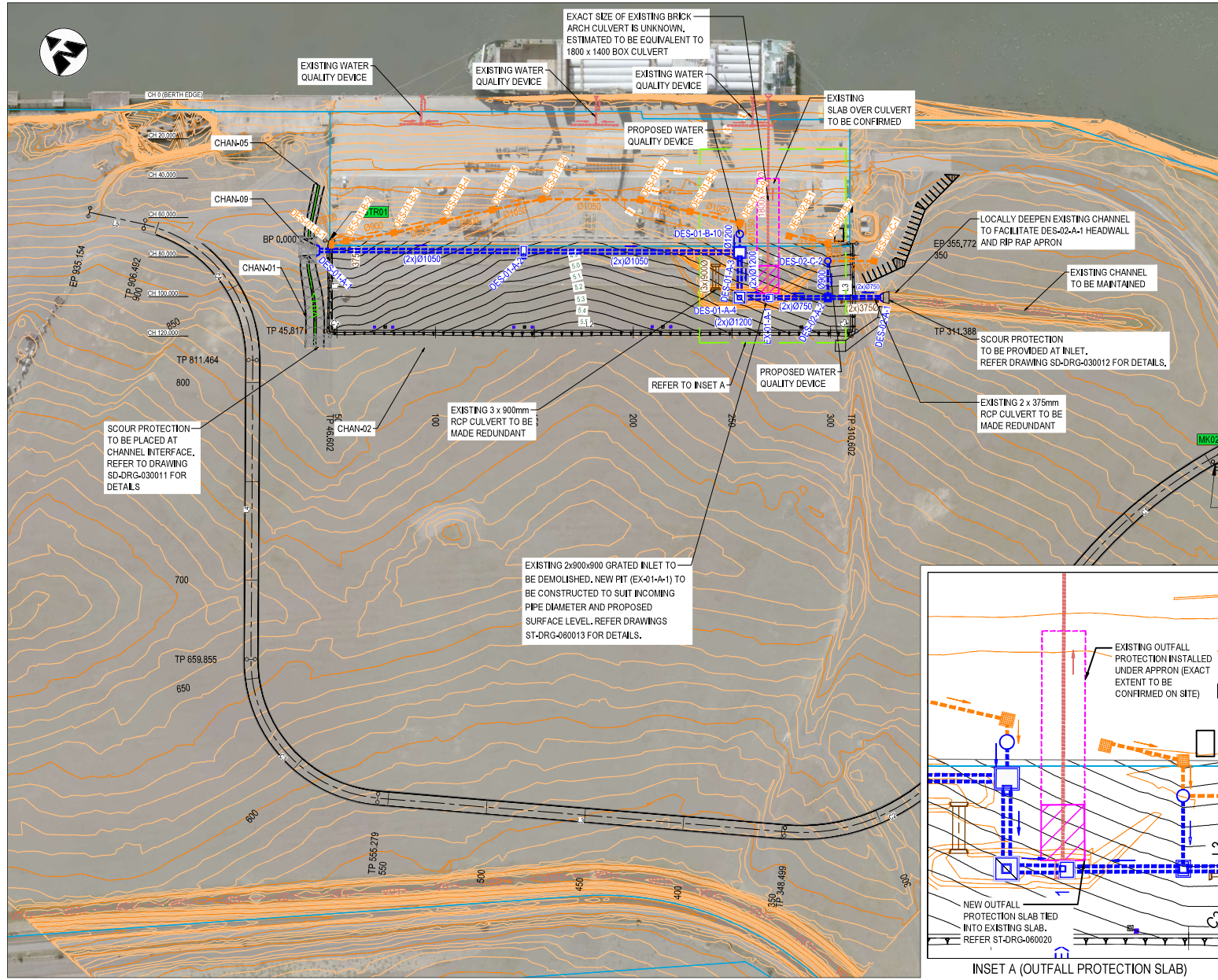
- EARTHWORKS FOUNDATION ARE TO BE CONSTRUCTED TO R44.
- PROOF ROLL LAYERS IN ACCORDANCE WITH R44.
- WHERE UNSUITABLE MATERIAL IS FOUND IT IS TO BE ADDRESSED IN ACCORDANCE WITH R44.
- CARRY OUT TESTING IN ACCORDANCE WITH R44 ANNEXURE R44L.

REFERENCES

- TNSW SPECIFICATION R33: TRENCH DRAINS
- TNSW SPECIFICATION R63: GEOTEXTILES
- TNSW SPECIFICATION R71: CONSTRUCTION OF UNBOUND AND MODIFIED PAVEMENT COURSE
- TNSW SPECIFICATION R73: CONSTRUCTION OF PLANT MIXED HEAVILY BOUND PAVEMENT COURSE
- TNSW SPECIFICATION R82: LEAN MIX CONCRETE SUBBASE
- TNSW SPECIFICATION R106: SPRAYED BITUMINOUS SURFACING (WITH CUTBACK BITUMEN)
- TNSW SPECIFICATION R107: SPRAYED BITUMINOUS SURFACING (WITH POLYMER MODIFIED BINDER)
- TNSW SPECIFICATION R116: HEAVY DUTY DENSE GRADED ASPHALT
- TNSW SPECIFICATION 3051: GRANULAR PAVEMENT BASE AND SUBBASE MATERIALS
- TNSW SPECIFICATION 3552: SUBSURFACE DRAINAGE PIPE

<p>11 12</p>		<p>REFERENCE COORDINATION DRAWINGS</p> <table border="1"> <tr> <th>DESCRIPTION</th> <th>DRAWN BY</th> <th>REV</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		DESCRIPTION	DRAWN BY	REV	DATE					<p>A1 ORIGINAL DO NOT SCALE THIS DRAWING</p> <p>APPROVED</p> <p>0 200 400mm</p> <p>SCALE 1:10</p>		<p>Level 3, 51-55 Dixon Street, Newcastle PO Box 1162, NSW 2300, Australia Tel +61 2 4929 8300 Fax +61 2 4929 8382 wsp.com</p>				<p>PROJECT: MAYFIELD 4 MULTIPURPOSE CARGO HANDLING FACILITY - STAGE 1</p> <p>TITLE: PAVEMENT DETAILS SHEET 1</p>		<p>OWNER REFERENCE: WAE</p> <table border="1"> <tr> <th>PREPARED BY</th> <th>PROJECT</th> <th>APPROVED</th> </tr> <tr> <td>JEFFREY LEE</td> <td>J LEE</td> <td>S HARRIS</td> </tr> <tr> <th>PROJECT NO.</th> <th>DESIGN</th> <th>DATE</th> </tr> <tr> <td>PS126329</td> <td>D.BLANCHE</td> <td>24/02/22</td> </tr> </table> <p>DRAWN BY: A.H.D. MGA ZONE 56</p> <p>DATE: 24/02/22</p> <p>PROJECT NO: PON-MPCHF-WSPA-M4-PV-DRG-020011</p> <p>REV: 01</p>		PREPARED BY	PROJECT	APPROVED	JEFFREY LEE	J LEE	S HARRIS	PROJECT NO.	DESIGN	DATE	PS126329	D.BLANCHE	24/02/22
DESCRIPTION	DRAWN BY	REV	DATE																														
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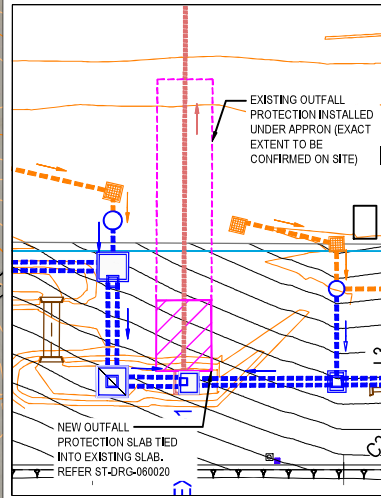


LEGEND

- PROPOSED TERMINAL BOUNDARY
- CADASTRAL BOUNDARY
- * LIGHT MAST
- * GENERAL POWER OUTLET (GPO)
- * EXISTING COOLON HT66 FLOODLIGHTS.

PROPOSED

- (2x)Ø1050 EXTERNAL WATER
- DES-01-B-Ø EXTERNAL WATER PIT TAG
- Ø375 TERMINAL RUNOFF FOR TREATMENT
- DES-01-B-Ø TERMINAL RUNOFF FOR TREATMENT PIT TAG
- Ø375 EXISTING DRAINAGE
- DES-01-B-Ø EXISTING DRAINAGE PIT TAG
- CATCH DRAIN
- V01> CHANNEL - TYPE 1 VEGETATED
- V01> CHANNEL - EXISTING
- BS1> CHANNEL - BIOSWALE
- EXTERNAL "CLEAN" WATER DRAINAGE PITS AND HEADWALLS
- TERMINAL RUNOFF DRAINAGE PITS AND HEADWALLS
- EXISTING DRAINAGE PITS AND HEADWALLS
- (3x)Ø900 REDUNDANT CULVERT AND HEADWALL
- 5.0 DESIGN CONTOURS (0.1m INTERVAL)
- 5.0 EXISTING CONTOURS (0.1m INTERVAL)
- EXISTING OUTFALL PROTECTION SLAB
- NEW OUTFALL PROTECTION SLAB



- ### NOTES
1. REFER TO NOTES ON DRAWING GN-DRG-000011.
 2. LOCATION OF EXISTING DRAINAGE IS BASED ON DIGITALISED INFORMATION RECEIVED TO DATE. EXACT LOCATION AND INVERT LEVELS AT CONNECTION POINT TO BE CONFIRMED BY DETAILED SURVEY. CONDITION OF EXISTING RETAINED DRAINAGE TO BE ASSESSED BY CCTV SURVEY.
 3. EXISTING DRAINAGE PITS AND PIPES THAT ARE REDUNDANT AND LEFT UNDISTURBED SHALL BE FILLED WITH STABILISED SAND, CONTROLLED LOW STRENGTH CEMENTITIOUS MATERIAL OR LEAN MIX CONCRETE.
 4. THE CONDITION OF THE EXISTING BRICK ARCH CULVERT SHALL BE ASSESSED BY A QUALIFIED ENGINEER PRIOR TO CONSTRUCTION. PRIOR TO CONSTRUCTION THE CULVERT SHALL BE SURVEYED AND A DETAILED SKETCH PROVIDED TO THE DESIGNER TO VERIFY THE DESIGN.
 - 5.

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APPENDIX I – M4 WHARF LEVEL 2 MATERIAL LOCATION



