APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Type of development:	SECTION 49 - STATE AGENCY DEVELOPMENT
Development Number:	040/V052/18
Applicant:	Department of Planning, Transport & Infrastructure
Nature of Development:	Various surface pavement, civil infrastructure and associated earthworks to upgrade an operational port and metal recycling depot
Subject Land:	Lot 3 Morialta Road and Lot 4 Ocean Steamers Road, Port Adelaide
Development Plan:	Port Adelaide Enfield Council Development Plan consolidated 2 February 2018
Zone / Policy Area:	Industry Zone
Contact Officer:	Janine Philbey
Phone Number:	7109 7062
Consultation Start Date:	3 October 2018
Consultation Close Date:	26 October 2018
During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders St, Adelaide, during normal business hours. Application documentation may also be viewed during normal business hours at the local Council office (if identified on the public notice).	

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered, faxed or emailed to the State Commission Assessment Panel (SCAP). A representation form is provided as part of this document.

Any representations received after the closing date will not be considered.

Postal Address:
The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Email Address: scapreps@sa.gov.au

Fax Number: (08) 8303 0753

Street Address:
Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Government of South Australia

Department of Planning, Transport and Infrastructure

DEVELOPMENT ACT 1993

SECTION 49 - STATE AGENCY DEVELOPMENT

NOTICE OF APPLICATION FOR CONSENT TO DEVELOPMENT

Notice is hereby given that an application has been made by **the Department of Planning, Transport & Infrastructure** for consent to undertake various surface pavement, civil infrastructure and associated earthworks to upgrade an operational port and metal recycling depot. **Development Number: 040/V052/18.**

The subject land is situated at Morialta Road and Ocean Steamers Road, Port Adelaide (Allotment 4, DP73873: CT 6156/197; and Allotment 3, DP73873: CT 6119/109). This land accommodates two existing operations (Flinders Ports and OneSteel).

The development site is located within the Industry Zone of the Port Adelaide Enfield Council Development Plan (Consolidated 6 February 2018).

The application may be examined during normal office hours at the office of the State Commission Assessment Panel (SCAP), Level 5, 50 Flinders Street, Adelaide, SA and at the Civic Centre of Port Adelaide Enfield Council, 163 St Vincent Street, Port Adelaide, SA. Application documentation may also be viewed on the SCAP website http://www.saplanningcommission.sa.gov.au/scap/public_notices.

Any person or body who desires to do so may make representations concerning the application by notice in writing delivered to the Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide SA 5001 **NOT LATER THAN Friday 26 October 2018.** Submissions may also be emailed to: scapreps@sa.gov.au

Each person or body making a representation should state the reason for the representation and whether that person or body wishes to be given the opportunity to appear before the SCAP to further explain the representation.

Submissions may be made available for public inspection.

Should you wish to discuss the application and the public notification procedure please contact **Janine Philbey** on **7109 7062** or Janine.Philbey@sa.gov.au

Alison Gill
SECRETARY
STATE COMMISSION ASSESSMENT PANEL

PN3245

www.sa.gov.au

PN3245
22x2 (63mm)
Adelaide Advertiser, Westside Weekly
3 October 2018
APPROVAL REQUIRED BY COB THURS 27.09

DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION

Applicant:	Department of Planning, Transport & Infrastructure
Development Number:	040/V052/18
Nature of Development:	Various surface pavement, civil infrastructure and associated earthworks to upgrade an operational port and metal recycling depot
Zone / Policy Area:	Industry Zone
Subject Land:	Lot 3 Morialta Road and Lot 4 Ocean Steamers Road, Port Adelaide
Contact Officer:	Janine Philbey
Phone Number:	7109 7062
Close Date:	Friday 26 October 2018

My Name: _____ My phone number: _____

Primary method(s) of contact: Email: _____

Postal Address: _____ Postcode: _____

_____

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are: *(please tick one)*

- ☐ owner of local property
- ☐ occupier of local property
- ☐ a representative of a company/other organisation affected by the proposal
- ☐ a private citizen

The address of the property affected is: _____

_____ Postcode _____

My interests are: *(please tick one)*

- ☐ I support the development
- ☐ I support the development with some concerns
- ☐ I oppose the development

The specific aspects of the application to which I make comment on are: _____

_____

_____

_____

_____

I: *(please tick one)*

- ☐ wish to be heard in support of my submission
- ☐ do not wish to be heard in support of my submission *(Please tick one)*

By: *(please tick one)*

- ☐ appearing personally
- ☐ being represented by the following person *(Please tick one)*

Signature: _____

Date: _____

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapadmin@sa.gov.au

ekistics

17 August 2018 REF No.: 00319-001

Department of Planning, Transport and Infrastructure

Level 5, 50 Flinders Street

ADELAIDE SA 5000

***Attention**: Laura Kerber*

Dear Laura,

RE: SECTION 49 APPLICATION: FLINDERS PORTS AND ONESTEEL SURFACE AND INFRASTRUCTURE UPGRADES AND ASSOCIATED EARTHWORKS

We refer to our meeting with you on 2nd August 2017 in relation to a proposed application by the Department of Planning Transport and Infrastructure (DPTI) for surface and infrastructure upgrades, together with associated earthworks over land occupied by Flinders Ports and OneSteel. The subject site incorporates Lot 3 Morialta Road and Lot 4 Ocean Steamers Road, in Port Adelaide.

We are pleased to submit the application on behalf of the DPTI, and enclose with this letter the completed application forms, together with a Planning Statement and supporting documentation:

- **Appendix 1**: Certificates of Title
- **Appendix 2**: Site plans and sectional drawings
- **Appendix 3**: Wallbridge Gilbert Aztec (WGA) Stormwater Management Plan;
- **Appendix 4**: Environmental Impact Statement; and
- **Appendix 5**: Sustainability Management Plan.

We would like to take this opportunity to thank you for the assistance and the advice you have provided concerning the development and we look forward to working with you on this project.

Should you require any additional information please do not hesitate to contact the undersigned on (08) 7231 0286.

Yours Sincerely,

Rob Gagetti
Associate

SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

FOR OFFICE USE

COUNCIL: Port Adelaide Enfield Council

APPLICANT: Andy Kitchen on behalf of: Department of Planning Transport and Infrastructure

ADDRESS: 77 Grenfell Road, Adelaide SA 5000

DEVELOPMENT No: _____

PREVIOUS DEVELOPMENT No: _____

DATE RECEIVED: / /

CROWN AGENCY: Department of Planning Transport and Infrastructure

CONTACT PERSON FOR FURTHER INFORMATION

Name: Andy Kitchin

Telephone: 0419 675 271 [work] _____ [Ah]

Fax: _____ [work] _____ [Ah]

Email: Andy.Kitchin@sa.gov.au

❒ Complying	Decision: _____
❒ Merit	Type: _____
❒ Public Notification	Finalised: / /
❒ Referrals	

NOTE TO APPLICANTS:

(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds $100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the *Development Regulations 2008.* Proposals over $4 million (excl. fit-out) will be subject to public notification and advertising fees.
(2) Three copies of the application should also be provided.

	Decision required	Fees	Receipt No	Date
Planning:	X			
Land Division:				
Additional:				
Minister's Approval				

EXISTING USE: Flinders Ports and OneSteel Recycling Depot

DESCRIPTION OF PROPOSED DEVELOPMENT: Surface upgrades (site paving), infrastructure works and associated earthworks over land occupied by Flinders Ports and OneSteel

LOCATION OF PROPOSED DEVELOPMENT: Lot 3 Morialta Road and Lot 4 Ocean Steamers Road, Port Adelaide

House No: _____ Lot No: ____ Street: _____ Town/Suburb: _____

Section No [full/part] _____ Hundred: _____ Volume: 6119 Folio: 109

Section No [full/part] _____ Hundred: _____ Volume: 6156 Folio: 197

LAND DIVISION:

Site Area [m^2] Approx. 6.3 hectares Reserve Area [m^2] _____ No of existing allotments _____

Number of additional allotments [excluding road and reserve]: _____ Lease: **YES** ❒ **NO** ❒

DEVELOPMENT COST [do not include any fit-out costs]**:** $ 16.5 Million

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the *Development Regulations 2008,* if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from the DPLG website (www.dac.sa.gov.au).

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the *Development Act 1993.*

SIGNATURE: _____ Dated: 17 / 08 / 2018

DEVELOPMENT REGULATIONS 1993
Form of Declaration
(Schedule 5 clause 2A)

To: State Planning Commission

From: Andy Kitchin (on behalf of DPTI)

Date of Application: 17 / 08 / 2018

Location of Proposed Development: Lot 3 Morialta Road and Lot 4 Ocean Steamers Road, Port Adelaide (Title F)

House No: …… Lot No: …. Street: ……Town/Suburb……. ….

Section No (full/part): ……Hundred: ……..

Volume: …… Folio: …….

Nature of Proposed Development:

Surface upgrades (site paving), infrastructure works and associated earthworks over land occupied by Flinders Ports and OneSteel

I Andy Kitchin **……..being the applicant/ a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the *Electricity Act 1996*. I make this declaration under clause 2A(1) of Schedule 5 of the *Development Regulations 1993*.**

Date: 17 / 08 / 2018

Signed: ……..

Note 1
This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the *Development Act 1993*), other than where the development is limited to –

a) an internal alteration of a building; or
b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2
The requirements of section 86 of the *Electricity Act 1996* do not apply in relation to:

a) a fence that is less than 2.0 m in height; or
b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3
Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4
The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5
Information brochures 'Powerline Clearance Declaration Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6
In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

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Appendix 1. Certificates of Title

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Registrar-General

Certificate of Title - Volume 6156 Folio 197

REAL PROPERTY ACT, 1886
South Australia

Parent Title(s)	CT 6126/847
Dealing(s) Creating Title	DDA 12308812
Title Issued	21/04/2015
Edition	6
Edition Issued	03/03/2016

Estate Type

FEE SIMPLE

Registered Proprietor

MINISTER FOR TRANSPORT AND INFRASTRUCTURE
OF ADELAIDE SA 5000

Description of Land

ALLOTMENT 4 DEPOSITED PLAN 73873
IN THE AREA NAMED PORT ADELAIDE
OUT OF HUNDREDS (ADELAIDE) AND HUNDRED OF PORT ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED NN TO THE MINISTER FOR TRANSPORT AND URBAN PLANNING (TG 10434592)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED S TO THE SOUTH AUSTRALIAN WATER CORPORATION (TG 10434594)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED U (TG 10532459)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED MM TO THE MINISTER FOR TRANSPORT AND URBAN PLANNING (TG 10434592)

TOGETHER WITH RIGHT(S) OF WAY WITH LIMITATIONS OVER ALLOTMENTS 6.7 AND 8 IN DP 73873 (TG 9209632)

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED G (TG 9209630)

Schedule of Dealings

Dealing Number	Description
10434595	LEASE TO FLINDERS PORTS PTY. LTD. (ACN: 097 377 172) COMMENCING ON 02/11/2011

	AND EXPIRING ON 02/11/2100 AT 02:00 AM
11987984	UNDERLEASE OF PORTION OF LAND IN LEASE 10434595 TO SOUTH AUSTRALIAN FORESTRY CORPORATION COMMENCING ON 01/06/2013 AND EXPIRING ON 31/12/2016 (AREA C IN FP 57994)
12142654L	CAVEAT BY WESTPAC BANKING CORPORATION OVER LEASE 10434595

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Notations on Plan

NIL

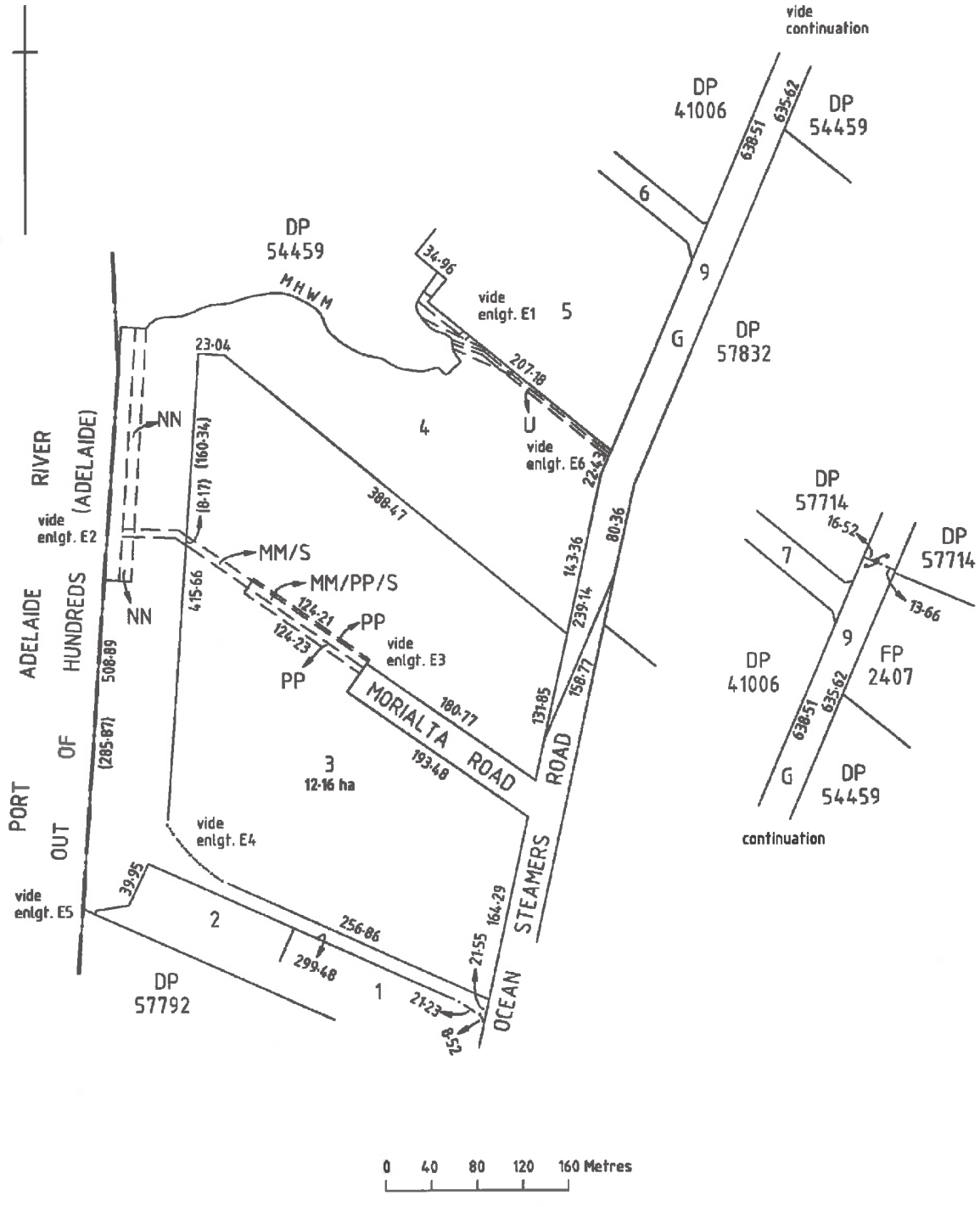
Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G395/1997
APPROVED FILED PLAN FOR LEASE PURPOSES FX57994

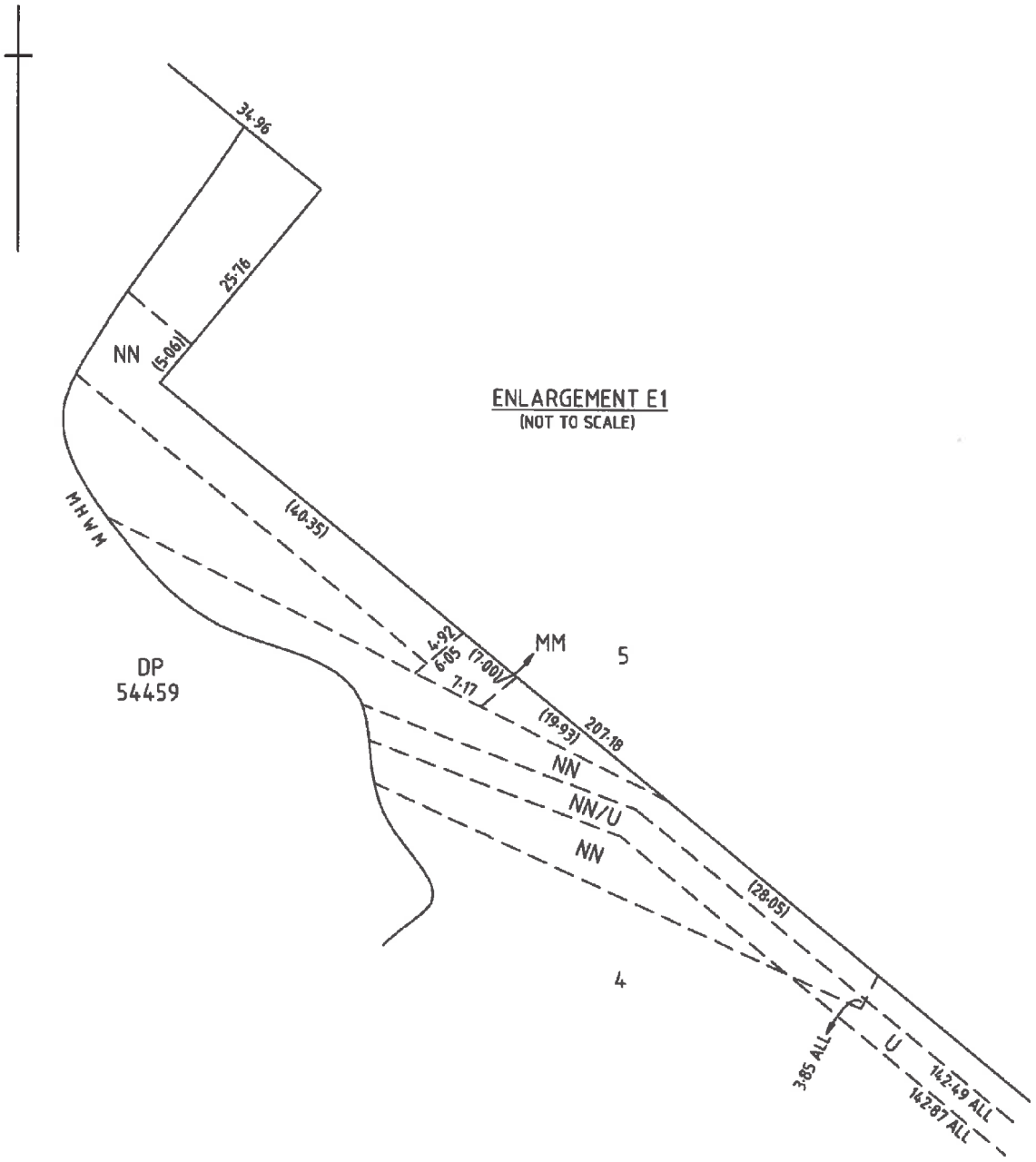
Administrative Interests

NIL

* Denotes the dealing has been re-lodged.



0 40 80 120 160 Metres



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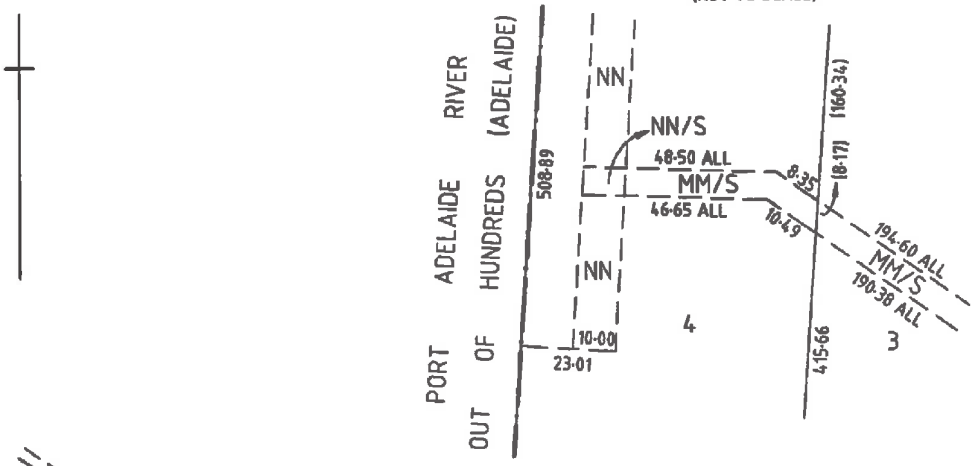
(NOT TO SCALE)



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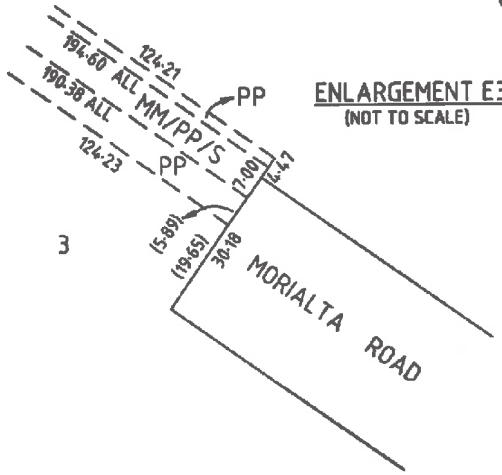

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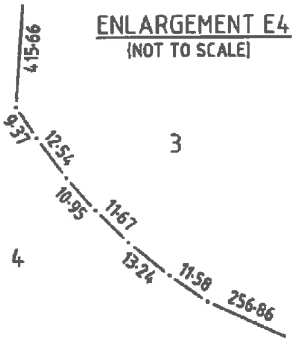

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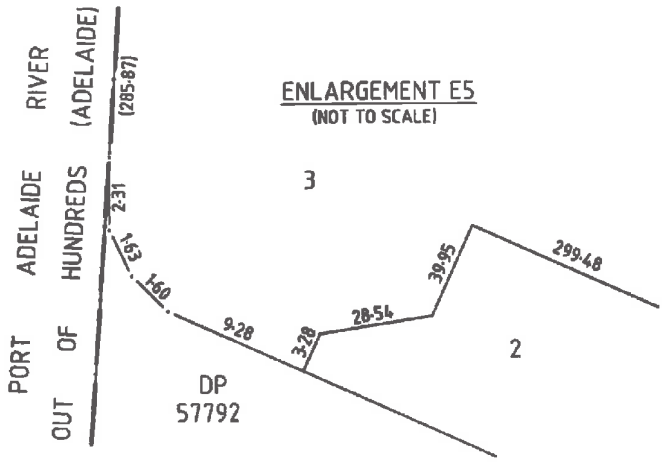

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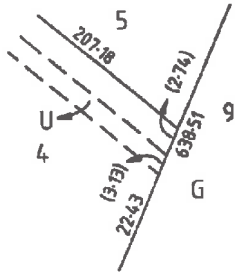


The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Registrar-General

Certificate of Title - Volume 6119 Folio 109

REAL PROPERTY ACT, 1886
South Australia

Parent Title(s)	CT 6028/241
Dealing(s) Creating Title	DDA 12002597
Title Issued	18/09/2013
Edition	6
Edition Issued	03/03/2016

Estate Type

FEE SIMPLE

Registered Proprietor

FLINDERS PORTS LAND DEVELOPMENT PTY. LTD. (ACN: 117 770 984)
OF 296 ST.VINCENT STREET PORT ADELAIDE SA 5015

Description of Land

ALLOTMENT 3 DEPOSITED PLAN 73873
IN THE AREA NAMED PORT ADELAIDE
OUT OF HUNDREDS (ADELAIDE) AND HUNDRED OF PORT ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED PP TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (TG 10434593)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED S TO THE SOUTH AUSTRALIAN WATER CORPORATION (TG 10434594)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED MM TO THE MINISTER FOR TRANSPORT AND URBAN PLANNING (TG 10434592)

TOGETHER WITH RIGHT(S) OF WAY WITH LIMITATIONS OVER ALLOTMENTS 6.7 AND 8 IN DP 73873 (TG 9209632)

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED G (TG 9209630)

Schedule of Dealings

Dealing Number	Description
10978404	ENCUMBRANCE TO MINISTER FOR TRANSPORT (SINGLE COPY ONLY)
12024330	LEASE TO ONESTEEL RECYCLING PTY. LTD. COMMENCING ON 9/3/2013 AND EXPIRING

ON 8/3/2018 OF PORTION (A AND B IN FP 50129 AND AREA E IN FP 54012)

12220973 LEASE TO SOUTH AUSTRALIAN FORESTRY CORPORATION COMMENCING ON 01/05/2014 AND EXPIRING ON 31/12/2016 OF PORTION (AREA F FP 58838)

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Notations on Plan

NIL

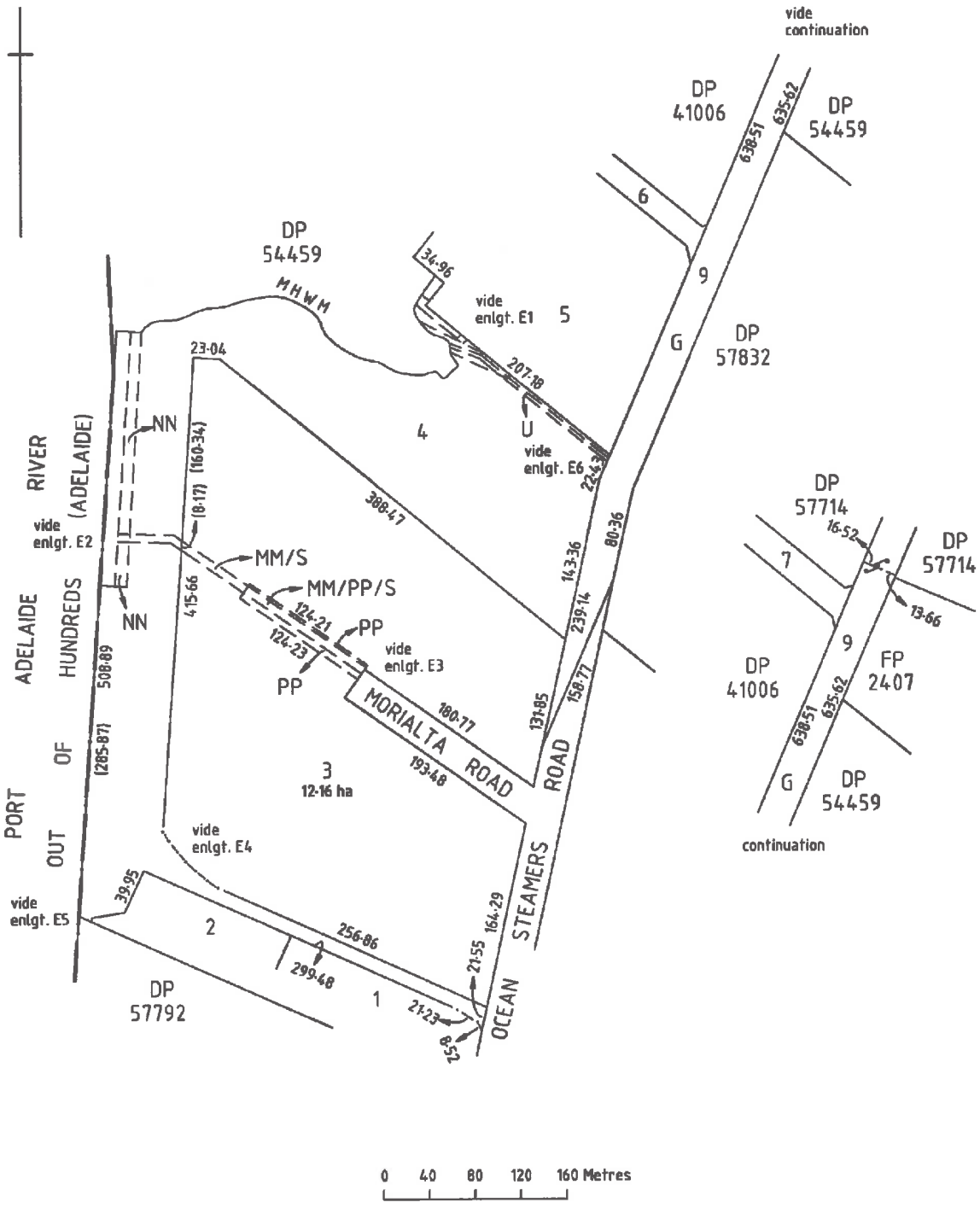
Registrar-General's Notes

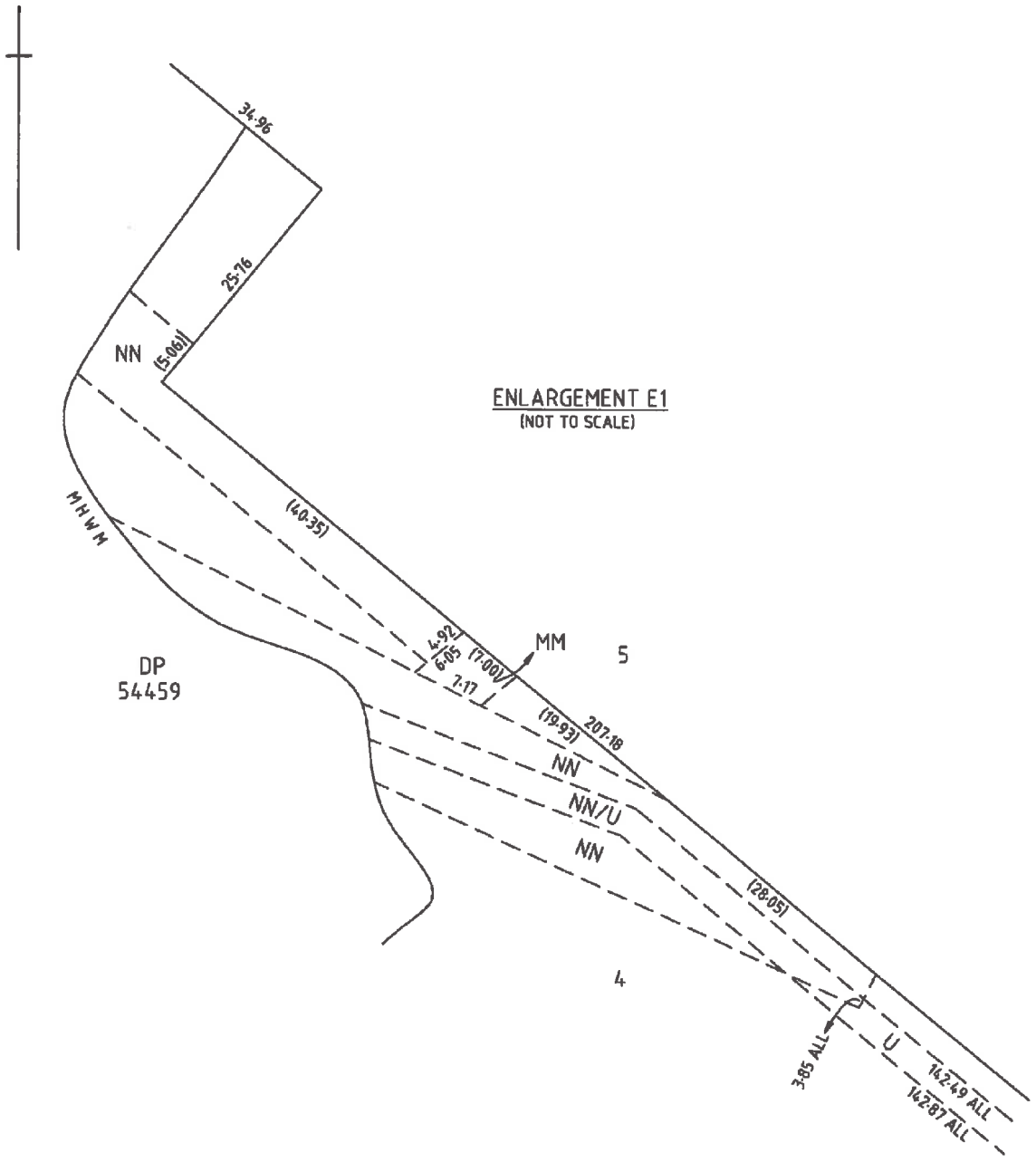
PLAN FOR LEASE PURPOSES VIDE G395/1997
APPROVED FILED PLAN FOR LEASE PURPOSES FX50129
APPROVED FILED PLAN FOR LEASE PURPOSES FX53884
APPROVED FILED PLAN FOR LEASE PURPOSES FX54012
APPROVED FILED PLAN FOR LEASE PURPOSES FX58838

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.





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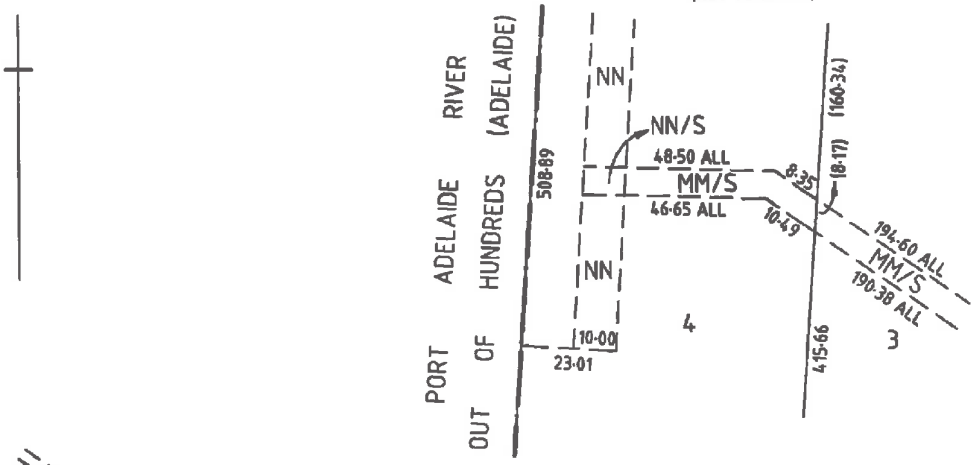

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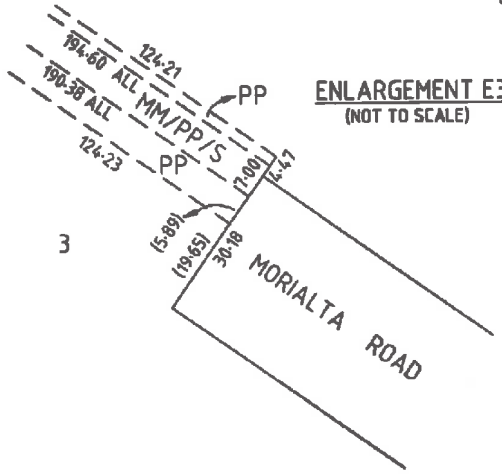

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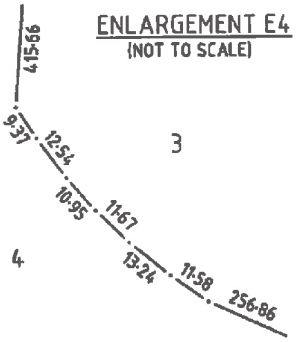

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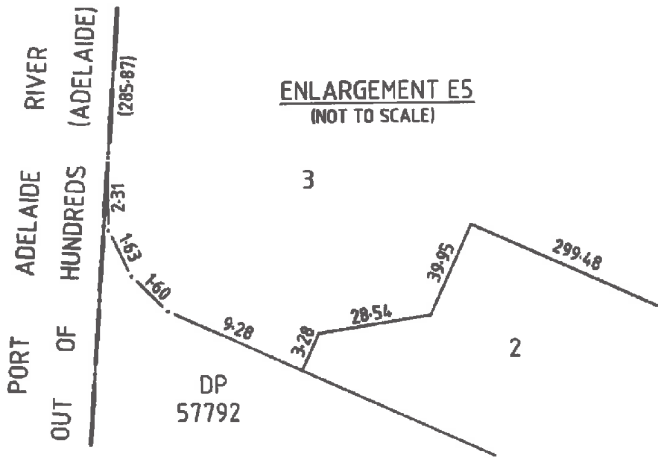

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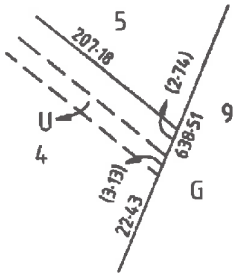

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FLINDERS PORTS AND ONESTEEL INFRASTRUCTURE WORKS

LOTS 3 AND 4, OCEAN STEAMERS ROAD, PORT ADELAIDE

Crown Development Planning Report

Prepared for:
Department of Planning Transport and Infrastructure

Date:
17 August 2018

ekistics

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Proprietary Information Statement

Document Control

Revision	Description	Author	Date
V1	Draft Planning Statement	R Gagetti	15 August 2018
V2	Client changes	R Gagetti	16 August 2018
V3	Stormwater Updates	R Gagetti	17 August 2018

Approved by: K. Barnes *Senior Associate* Date: 16 August 2018

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Contents

Appendices

Figures

1. Executive Summary

Category	Details
ADDRESS OF SITE	Lot 3 Morialta Road, Port Adelaide Lot 4 Ocean Steamers Road, Port Adelaide
CERTIFICATES OF TITLE	Lot 3: Certificate of Title Volume 6119 Folio 109 Lot 4: Certificate of Title Volume 6156 Folio 197
SITE AREA	Approximately 6.3 hectares
LOCAL GOVERNMENT	City of Port Adelaide Enfield Council
RELEVANT AUTHORITY	State Planning Commission (SPC)
PRE LODGEMENT MEETINGS	2nd August 2017
DEVELOPMENT PLAN	City of Port Adelaide Enfield Development Plan (consolidated 6th February 2018)
ZONING	Industry Zone
EXISTING USE	Lot 3: Metal recycling depot operated by One Steel Lot 4: Operational port managed by Flinders Ports Pty. Ltd
DESCRIPTION OF DEVELOPMENT	Surface upgrades (site paving), infrastructure works and associated earthworks over land occupied by Flinders Ports and OneSteel
NATURE OF DEVELOPMENT	Merit
PUBLIC NOTIFICATION	Crown development public notification process - Section 49(7)(d)
APPLICANT	Department of Planning Transport and Infrastructure (DPTI)
CONTACT PERSON	Robert Gagetti – Ekistics Planning and Design – (08) 7231 0286
OUR REFERENCE	00319-001

2. Introduction

This report has been prepared on behalf of the Department of Planning Transport and Infrastructure (DPTI) in relation to a development involving surface upgrades (site paving), infrastructure works and associated earthworks over land located at Lot 3 Morialta Road, and Lot 4 Ocean Steamers Road in Port Adelaide. The land accommodates two land uses including an operational port operated by Flinders Ports and a metal recycling depot operated by OneSteel.

This Planning Statement provides relevant information about the subject land and locality, describes the nature of the proposed development and planning process, and considers the merits of the development when assessed against the relevant provisions of the Port Adelaide Enfield Council Development Plan. This Statement has been prepared to assist delegates of the SPC in their assessment and determination of the development application.

For the purposes of this statement, the Port Adelaide Enfield Council Development Plan (Consolidated 06 February 2018) will be referred to as the 'Development Plan', the *Development Act, 1993* will be referred to as the 'Act' and the *Development Regulations, 2008* will be referred to as the 'Regulations'.

Our assessment has been informed by the following plans and documentation attached to this report:

- **Appendix 1**: Certificates of Title;
- **Appendix 2**: Site plans and sectional drawings;
- **Appendix 3**: Wallbridge Gilbert Aztec (WGA) Stormwater Management Plan;
- **Appendix 4**: Environmental Impact Assessment; and
- **Appendix 5**: Sustainability Management Plan.

3. Background

In November of 2001, Flinders Ports were granted a 99-year lease over waterfront port lands, previously operated by the South Australian Ports Corporation. As part of the lease arrangement, Flinders Ports and the Minister for Transport entered into a Port Operating Agreement (the 'Agreement') for the life of the lease.

In accordance Clause 19.2 of the South Australian Ports Business and Asset Sale Agreement, the Government is responsible for remediating the land to a standard capable of accommodating port related activities. These remediation activities include addressing existing environmental liabilities identified within previously performed site investigations, to the reasonable satisfaction of the Environment Protection Authority (EPA). The standard is referred to within the Agreement as the Objective Remediation Standard (ORS).

In accordance with the ORS, DPTI now propose to fulfil its obligations by completing surface and infrastructure works to accommodate the use of the site as a Port. Importantly, Clause 19.3(g) of the Agreement requires that the site be remediated to a standard which meets (rather than exceeds) the EPA's requirements, having regard to the continual use of the land as a Port. A high level summary of the proposed works, as described within the Environmental Impact Assessment (EIA) is summarised below:

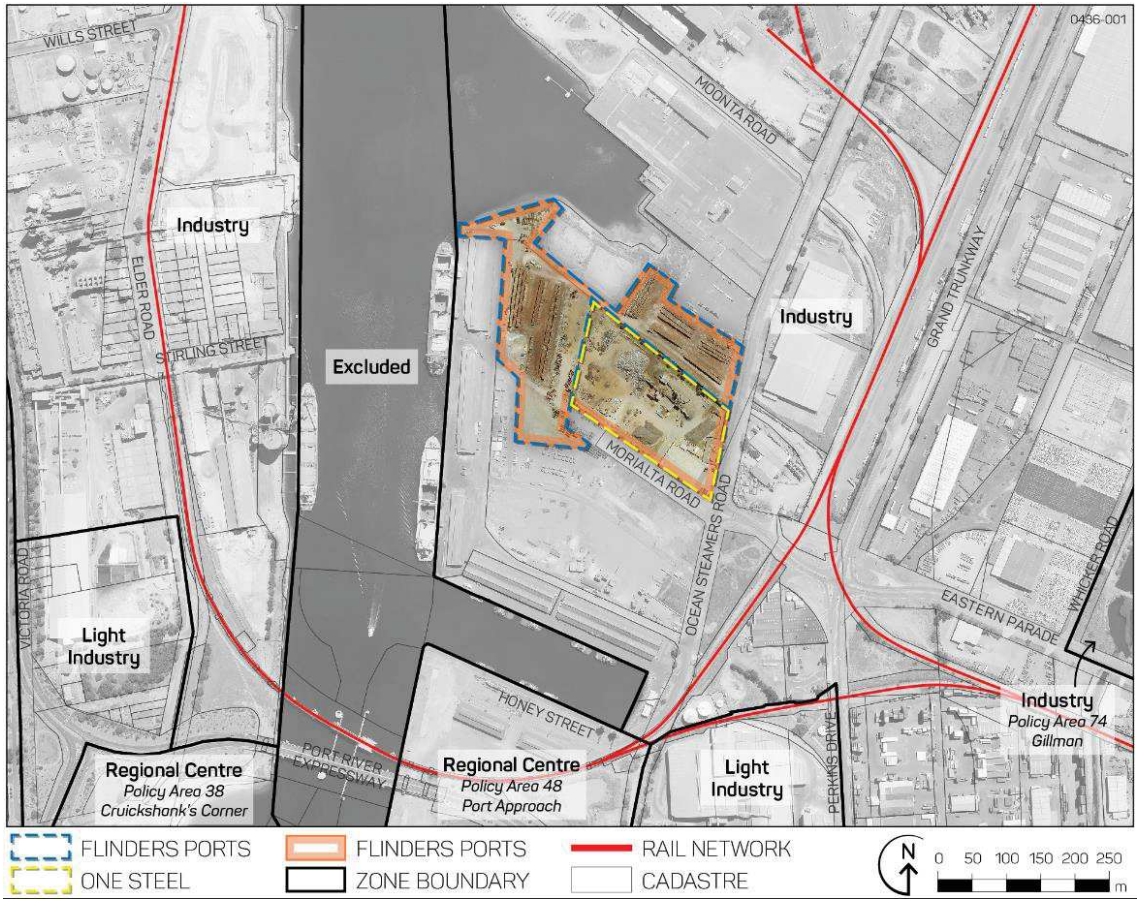
- *Levelling and cement stabilisation of the existing subgrade*
- *Installation of electrical infrastructure and stormwater drainage infrastructure including a stormwater treatment device at the outlet to Port River;*
- *Compaction of surface soils;*
- *Bitumen pavement treatment ranging from 175mm to 360mm in thickness.*

Portion of Lot 3, comprising an area of 32,351m^2 is to be occupied by OneSteel Recycling. Infrastructure and surface upgrades to the OneSteel site also forms part of this development application. Concrete pavement is proposed within the OneSteel site, in place of asphalt to suit operational requirements.

4. Site and Locality Description

The infrastructure upgrades will occur over two allotments occupied by Flinders Ports and OneSteel. The approximate location of the site is illustrated in Figure 4.1 below.

Figure 4.1 *Subject site*



The Site is referred to as 'Title F' (Inner Harbour East) and occupies portions of Lots 3 and 4 which are formally described as follows:

- Certificate of Title Volume 6119 Folio 109, Allotment 3, Deposited Plan 73873; and
- Certificate of Title Volume 6156 Folio 197, Allotment 4 in Deposited Plan 73873.

A copy of the Certificates of Title can be found in ***Appendix 1***.

Both allotments are subject to a number of easements and Rights of Way. However, because this application only seeks consent for surface and infrastructure upgrades, the development will not impact on existing infrastructure located within these easements, or the functionality of the Rights of Way traversing both allotments.

The site is irregular in shape, with frontages to Ocean Steamers Road to the east, the Port River to the north-west and Morialta Road to the south.

Flinders Ports is an operational port facility used for the storage and handling of commodities including (but not limited to) the following:

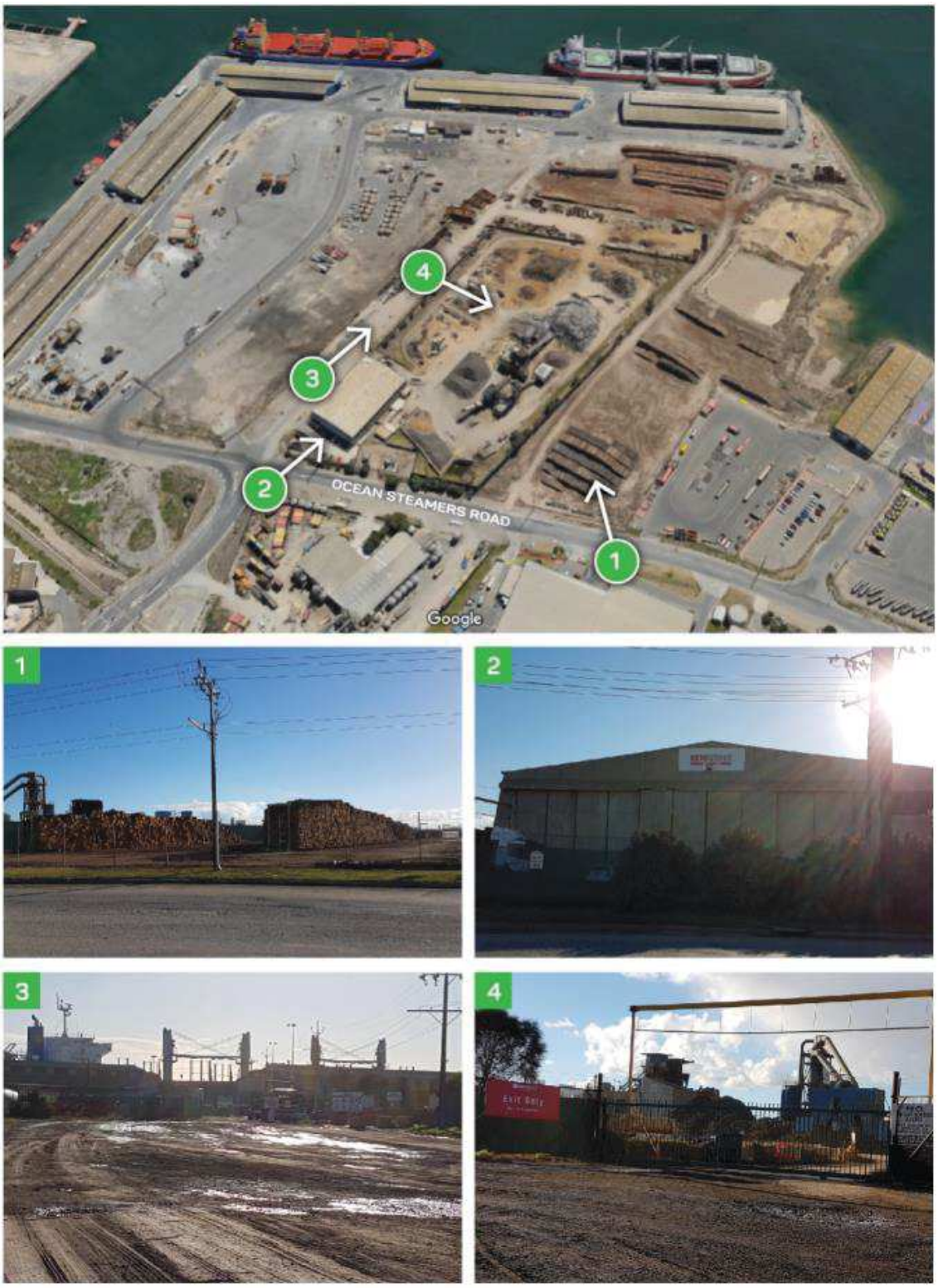
- Wind farm equipment: Blades, Nacelles, Nose Cones, Hubs, Tower Sections;
- Logs
- Accommodation huts
- Steel coil
- Mining drill pipe
- Steel Sheets
- Steel Pylons
- Rail Wagons
- Drilling Rigs
- Mining Equipment
- Steel pipe
- Steel H Frame
- Shipping Containers
- Other project cargo items
- Stevedore equipment: Hoppers, Front end loaders, Forklifts, lifting gear.

Flinders Ports have confirmed that land use activities will not alter upon completion of the infrastructure and surface upgrades. The fundamental objective of the subject work is to cap contaminated material. However, the nature, frequency and intensity of land use operations will not change. As previously discussed, the infrastructure upgrades are also intended to improve environmental conditions of the site, particularly in relation to water quality.

Portion of Lot 3 is also occupied by OneSteel and this site is used as a metal recycling depot. The proposed works will not alter the nature, frequency or intensity of existing land use activities occurring from the OneSteel site.

Images of the Flinders Ports and OneSteel site from several vantage points are displayed in Figure 4.2 over page.

Figure 4.2 *Images of the subject site*



To the west of the site is the Port River, which is identified as a 'Wetland of National Importance' within *Natural Resources Overlay Map PAdE/11*. The Port River also forms part of the Adelaide Dolphin Sanctuary and the EIA prepared for this application (***Appendix 4***) confirms that the river is an important habitat for aquatic fauna. The preservation of water quality is therefore of paramount importance for new developments which adjoin the river.

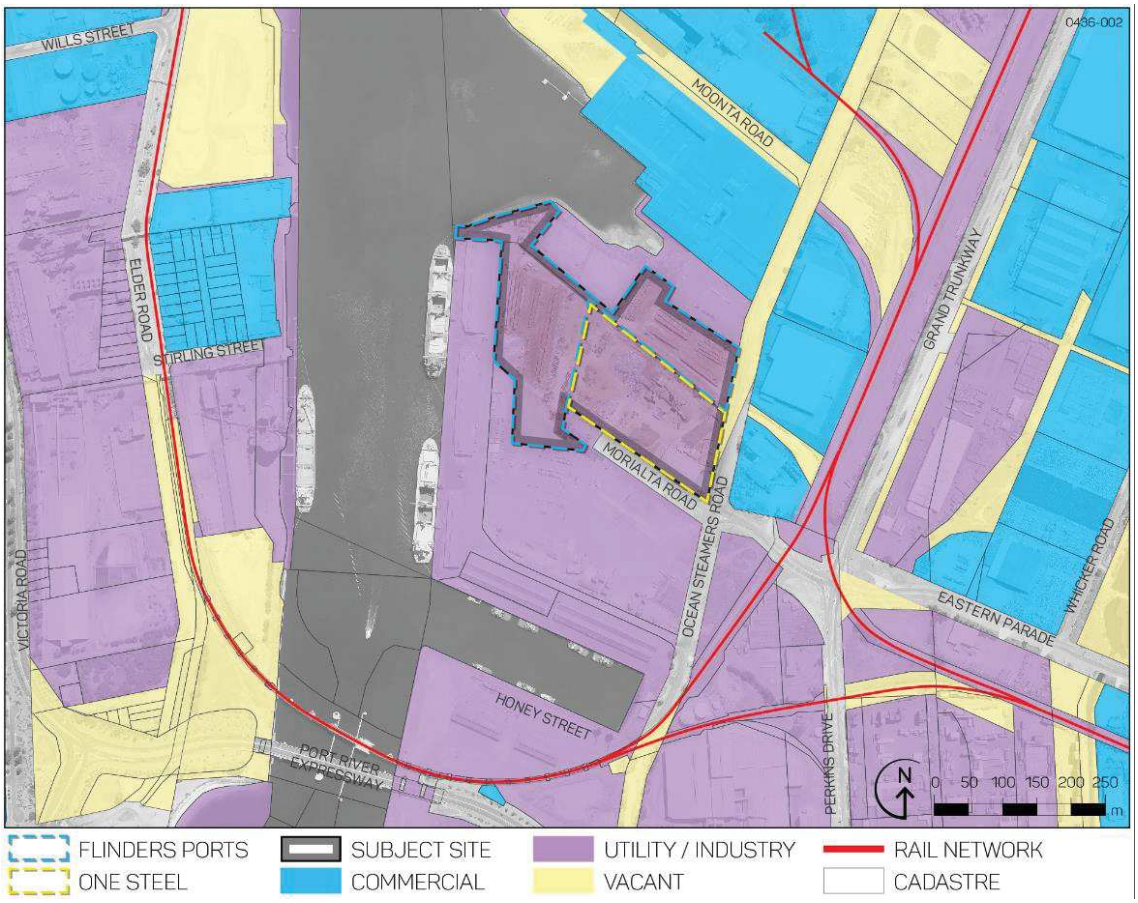
The broader locality primarily accommodates a variety of bulk handling, storage, industrial and port related land uses.

Land to the south of Honey Street and the Port River Express Way is located within the Regional Centre Zone and accommodates mix of commercial, office, retail and residential land uses.

A staged plan of division to create 268 allotments is proposed by Starfish developments directly to the south of the subject site, on land bounded by Ocean Steamers Road, Honey Street, the Port River and St. Vincent Street.

Figure 4.3 illustrates the land use composition for the broader locality.

Figure 4.3 *Land use mix*



5. Description of Proposal

A copy of the site plans and cross-sections are contained within ***Appendix 2***.

To satisfy the requirements of the ORS, the application involves sealing the site and upgrading existing drainage infrastructure over land comprising an area of approximately 4.76 hectares occupied by Flinders Ports and land comprising an approximate area of 1.48 hectares occupied by OneSteel. Specifically the works will include the following:

- Earthworks including:
  - Levelling and cement stabilisation of the existing sub-grade together with the following approximate volumes of excavation and fill:
    - Flinders Ports
      - Excavation: -14,950.15m^3;
      - Fill: 24,227.67m^3;
    - OneSteel
      - Excavation: -5,971.16m3
      - Fill: 4,640.54m3
  - Soil compaction to accommodate a 30 tonne axle load;
- The installation of electrical infrastructure and stormwater drainage infrastructure including a stormwater treatment device to accommodate and treat water discharging into the Port River; and
- The installation of five (5) pavement types across the site.

5.1 Stormwater

A Stormwater Management Plan for the proposed development has been prepared by Wallbridge Gilbert Aztec (WGA) and is attached to this report as ***Appendix 3.***

5.1.1 Flinders Ports Site

The fundamental intent of the drainage works proposed is to improve the functionality of the existing drainage system. Existing damaged drainage infrastructure will be replaced, and new drainage infrastructure will also be installed to accommodate surface regrading works.

A new hydrodynamic separator will also be installed to treat stormwater water discharging to the Port River.

5.1.2 OneSteel Site

The OneSteel site operates under a separate EPA license which requires the onsite management of contaminated water. The existing drainage system will be maintained to ensure continual compliance with the EPA licencing requirements.

Surface regrading works will direct water to a lined concrete swale which runs around the perimeter of the site. New inlet pits and underground drainage pipes sized for a 1 in 100 year ARI will also be installed to increase the capacity of the existing system.

The existing storage basin will be used to treat stormwater prior to being discharged to Ocean Steamers Road (as per the existing arrangement).

5.2 Siteworks

Appendix 2 includes a site works plan with corresponding cross-sections to illustrate the extent of cut and fill proposed for the development. The existing site is relatively flat and proposed siteworks will not substantially alter the existing grade of the land.

Earthworks will be limited to site levelling and minor regrading for drainage purposes. Accordingly retaining walls will not be required for the development.

Excavated material will be mixed with cement and reused as part of the new engineered pavement system proposed for the development and the application does not involve the removal of any fill from the site.

6. Procedural Matters

6.1 Relevant Authority

Pursuant to Section 49 Cl.(2)(a) of the Act, the SPC is the relevant authority if *"a State agency proposes to undertake development (other than in partnership or joint venture with a person or body that is not a State agency)".*

Although the subject works are to be performed in accordance with contractual obligations entered into with a private entity (i.e. Flinders Port Pty Ltd), the works are solely DPTI's responsibility and will not be performed in partnership or joint venture with Flinders Ports Pty Ltd.

For these reasons, the SPC is considered to the be the relevant authority.

6.2 Nature of Development

In our opinion the nature of development proposed is best described as follows:

> *Surface treatment and infrastructure works to the existing port operated by Flinders Ports Pty Ltd and OneSteel Recycling Depot, including siteworks (excavation and fill), the installation of drainage and electricity infrastructure and the sealing of approximately 6.3 hectares of land.*

In accordance with Schedule 2 cl. 5 of the Regulations: *Additional acts and activities constituting development*, the excavation or filling (or excavation and filling) of coastal land of a volume of material exceeding 9m^3 constitutes 'development'.

The term 'Coastal Land' is defined within Schedule 8 of the Regulations to include *"land situated in a zone or area defined within the Development Plan where the name of the zone or area includes the word 'Coast' or 'Coastal', or which indicates or suggests in some other way that zone or area is situated on the coast"*.

Port related activities are referred to within the 'Coastal Areas' section of the Development Plan. Accordingly, we are of the opinion that subject site is a coastal area.

Schedule 14 prescribes State agency development which is exempt from requiring approval. According to Schedule 14 cl.1(1)(a)(i) the following works do not require approval

> *"the reconstruction (including widening), alteration, repair or maintenance of any road, bridge, railway, wharf, jetty or boat ramp (including pump-out facilities associated with a boat ramp)"*

However, the above-mentioned clause is not applicable to this proposal due to the operation of Schedule 14, 1(2):

> *"Paragraphs (a)……. of subclause (1) do not apply to a proposed development if the site where the development is to be undertaken is subject to coastal processes, or in relation to which there is evidence to suggest that the site is likely to be affected by coastal processes within the foreseeable future, unless the Coast Protection Board has authorised the relevant development."*

The Sustainability Management Plan (SMP) *(**Attachment 4**)* prepared for development suggests that the subject site may be susceptible future inundation caused by 1 in 100 year ARI storm surge events and sea level rise. Further, whilst preliminary conversations have been held with the Coastal Protection Board (CPB) (who have confirmed their support for the proposed development) an authorisation for the subject works has not been granted.

Accordingly, the proposed works forming part of the application constitutes development which requires approval.

6.3 Assessment Pathway

The subject works are neither listed as 'complying' or 'non-complying' forms of development within the Industry Zone. Accordingly, the application is a **'consent'** form of development to be assessed on merit against the relevant provisions of the Development Plan.

6.4 Public Notification

The development will cost approximately $16.5 million. Pursuant to Section 49(7)(d) of the Act, the following public notification process is applicable to the development:

- *By public advertisement, invite interested persons to make written submissions to it on the proposal within a period of at least 15 business days; and*
- *allow a person who has made a written submission to it within that period and who, as part of that submission, has indicated an interest in appearing before it, a reasonable opportunity to appear personally or by representative before the Development Assessment Commission to be heard in support of his or her submission; and*

- *give due consideration in its assessment of the application to any submissions made by interested persons as referred to above*

6.5 Referrals

6.5.1 Coastal Protection Board

In accordance with Schedule 8, Cl. 1(a)(i) of the Regulations, the application requires referral to the Coast Protection Board as the development involves excavation or filling (or excavation and filling) of land exceeding a volume of 9 cubic metres within 100 metres landward of the coast measured from mean high water mark on the sea shore at spring tide.

6.5.2 Environment Protection Authority

Noting that the application does seek to change the nature or intensity of existing land use activities occurring from the subject site, we do not believe a referral to the EPA is required for this application as the development does not involve any of the activities prescribed within Schedules 21 or 22 of the Regulations.

6.5.3 City of Port Adelaide Enfield

Pursuant to Section 49(4a) of the Act, the application requires referral to the City of Port Adelaide Enfield (the "Council") for comment.

6.6 Interaction with Other Acts

In addition to the satisfying legislative development requirements under the Act, the development also invokes requirements under the *Adelaide Dolphin Sanctuary, 2005*, *Environment Protection Act, 1993* and *Natural Resources Management Act, 2004*.

The Environmental Impact Statement (EIS) prepared for the development (***Appendix 5***) identifies strategies proposed to address legislative responsibilities under these separate Acts.

With the exception of an approval required under Development Act, the EIS confirms that no other formal approval or permits will be required under any other Act.

7. Development Plan Assessment

The subject site is located within the **Industry Zone** of the City of Port Adelaide Enfield, as referenced within the City of Port Adelaide Enfield Development Plan (Consolidated 06 February 2018). The site is not located within a Policy Area or Precinct.

As previously discussed, the works constitute development as the application involves earthworks exceeding $9m^3$ in an area affected by coastal processes. However, upon completion of the works in question, the only notable change to the built environment will be the paved surface.

Relevant planning considerations applicable to the assessment of the application are limited to the following:

- Land use *(insofar as the development works accommodating a desired land use for the Zone);*

- Coastal impacts;
- Site contamination considerations; and
- Stormwater management.

7.1 Land Use

Zone Objective 1 identifies that the Light Industry Zone will primarily accommodate *"a wide range of industrial, warehouse, storage and transport land uses"*. These desired land use outcomes are also referred to within Zone PDC 1:

> *PDC 1: The following forms of development are envisaged in the zone:*
>
> *(a) Industry;*
>
> *(b) Transport distribution;*
>
> *(c) Warehouse*

Although the development does not seek to change the nature or intensity of land use activities occurring from the site, surface upgrades will facilitate the ongoing use of the land as a Port (Transport distribution) and as a metal recycling facility (Industry) in accordance with the desired land use outcomes contemplated for the Zone.

The Desired Character statement for the Zone also encourages new development which will *"improve areas where existing development is of a poor standard"*. Surface upgrades will also improve the standard of the site for use as a functional port where heavy vehicle movements frequently occur.

7.2 Coastal Considerations

Potential impacts of sea level rise on the proposed development have been assessed against the relevant Industry Zone and Coastal Areas provisions of the Development Plan, including (but not limited to) the following:

Industry Zone

> ***OBJ 2*** *To protect existing and future development in low-lying areas from the following during the 1-in-100 year average return interval extreme sea level event:*
>
> *(a) Inundation by stormwater;*
>
> *(b) Inundation by seawater.*
>
> ***OBJ 3*** *Development designed to take into account:*
>
> *(a) Anticipated sea level rise;*
>
> *(b) Land subsidence.*

General Section - Coast Areas

OBJ 5 *Development only undertaken on land which is not subject to or that can be protected from coastal hazards including inundation by stormwater tides or combined storm tides and stormwater, coastal erosion or sand drift, and probably sea level rise.*

OBJ 6 *Development that can accommodate anticipated changes in sea level due to natural subsidence and probable climate change during the first 100 years of the development.*

PDC 20 *Development and its site should be protected against the standard sea-flood risk level which is defined as the 1-in-100 year average return interval flood extreme sea level (tide, stormwater and associated wave effects combined), plus an allowance to accommodate land subsidence until the year 2100.*

PDC 21 *Development including associated roads and parking areas, other than minor structures unlikely to be adversely affected by flooding, should be protected from sea level rise by ensuring all of the following apply:*

(a) site levels are at least 0.3 metres above the standard sea-flood risk level

(b) building floor levels are at least 0.55 metres above the standard sea-flood risk level

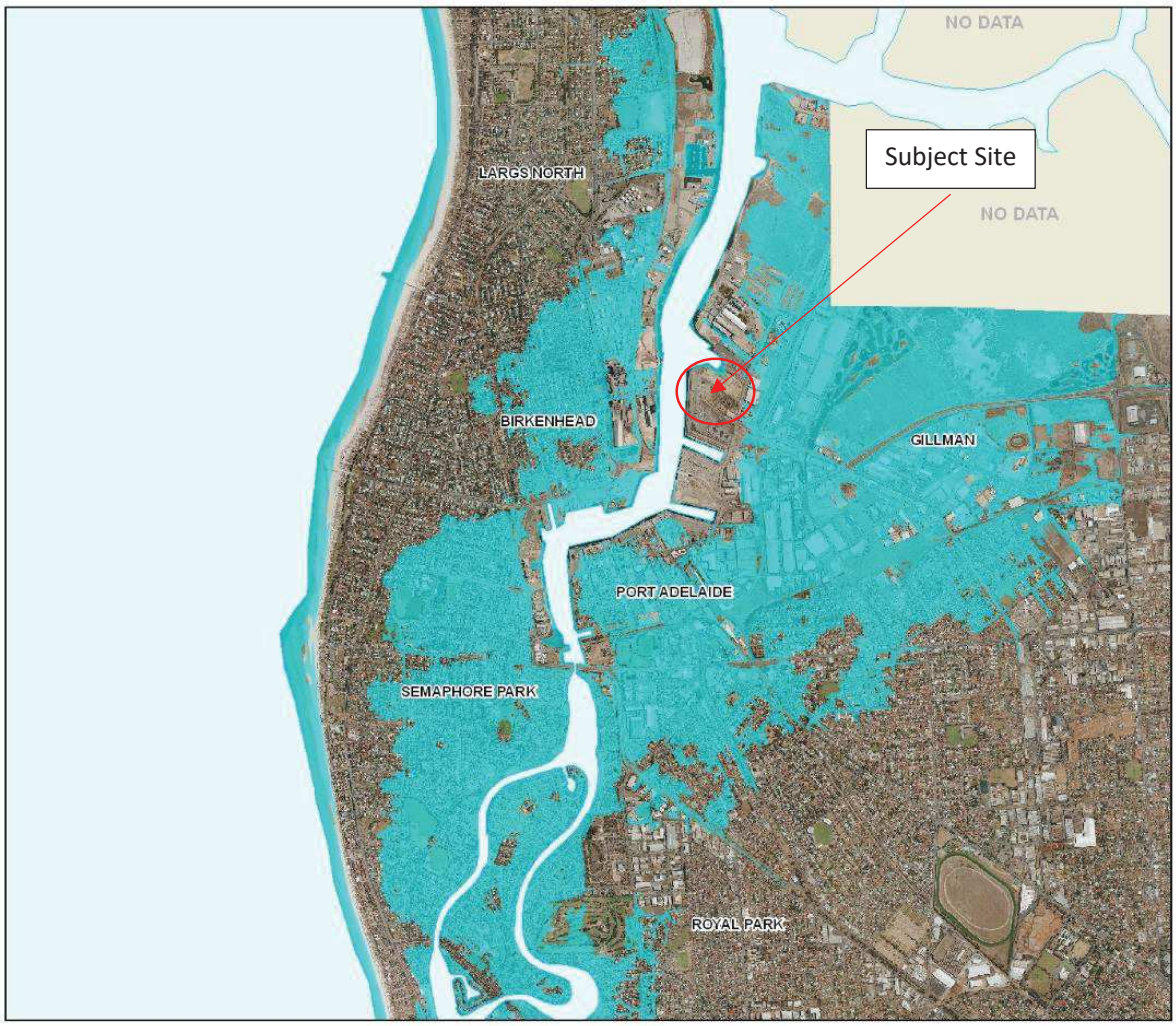
(c) there are practical measures available to protect the development against an additional sea level rise of 0.7 metres, plus an allowance to accommodate land subsidence until the year 2100 at the site.

The SMP prepared by DPTI (***Appendix 5)*** provides the following commentary on projected sea level rise (SLR):

> *The site currently sits at approximately 2.7 to 3.7 m AHD. Coast Protection Board projects sea level rise (SLR) to be 0.3 m (year 2050), 0.41 m (year 2070) and 1.0 m (year 2100). Considering the 100 ARI storm surge events, it is expected that by 2050 portions of the site may be vulnerable to inundation (including SLR, the 100 year ARI storm surge in 2050 is expected to be 2.73 m AHD in Port River). In the event that SLR does impact the site, it is considered that the sealing of the surface will limit the transport of potentially contaminated material to Port River. (underlined for emphasis)*

Figure 7.2 over page illustrates the 'medium sea level rise' scenario of 0.8 metres (2.4m AHD) projected for the year 2100. As illustrated, the impact of the projected sea level rise on the subject site is expected to be negligible and the design levels illustrated on the attached plans (Sketch 12 in ***Appendix 2***) comfortably sits above the projected sea levels in accordance with PDC 21.

Figure 7.1 *Medium Scenario Sea-Level Rise Map (0.8 metres)*



Source: OzCoasts Website (www.ozcoasts.gov.au)

Zone Objective 2 together with Coastal Area Objective 5 and PDC 20 also seek to protect new development from inundation which may result from extreme weather events.

According to the SMP prepared for the site, the 100 year ARI storm surge in 2050 is expected to reach a level of 2.73m AHD. Although the SMP suggests that the site may be vulnerable to flooding during these extreme weather events, the design levels proposed for the site confirm that the majority of the land will be elevated above this level. Further, because the development does not involve the construction of new buildings, the risk of property damage during extreme weather events is considered to be low.

7.3 Hazards: Site Contamination and Acid Sulphate Soils

An Environmental Impact Assessment (EIA) prepared by DPTI is attached as ***Appendix 4***. This report indicates that elevated concentrations of heavy metals have been found in soil and groundwater beneath the site.

> *"Soil and groundwater at the site has been identified to be impacted with elevated concentrations of heavy metals. Further, potential localised high alkalinity groundwater may be present in the northern portion of the site."*

Areas surrounding the Port River and Barker Inlets are also likely to contain Potential Acid Sulphate Soils (PASS) due to the low-lying environment, the EIA suggests that PASS may be present in the northern section of the site, adjacent the northern dock.

Accordingly, the application has been assessed against the following Hazards provisions of the Development Plan:

OBJ 7 *The environmental values and ecological health of receiving waterways and marine environments protected from the release of acid water resulting from the disturbance of acid sulphate soils.*

OBJ 8 *Protection of human health and the environment wherever site contamination has been identified or suspected to have occurred..*

OBJ 9 *Appropriate assessment and remediation of site contamination to ensure land is suitable for the proposed use and provides a safe and healthy living and working environment..*

OBJ 10 *Minimisation of harm to life, property and the environment through appropriate location of development and appropriate storage, containment and handling of hazardous materials..*

PDC 20 *Development and activities, including excavation and filling of land, that may lead to the disturbance of potential or actual acid sulphate should be avoided unless such disturbances are managed in a way that effectively avoids the potential for harm or damage to any of the following:*

(a) the marine and estuarine environment

(b) natural water bodies and wetlands

(c) agricultural or aquaculture activities

(d) buildings, structures and infrastructure

(e) public health.

PDC 21 *Development, including primary production, aquaculture activities and infrastructure, should not proceed unless it can be demonstrated that the risk of releasing acid water resulting from the disturbance of acid sulphate soils is minimal.*

PDC 22 *Development, including excavation and filling of land, that may lead to the disturbance of acid sulphate soils should be managed in a way that minimises the potential for harm to the marine, estuarine*

PDC 23 *Development, including land division, should not occur where site contamination has occurred unless the site has been assessed and remediated as necessary to ensure that it is suitable and safe for the proposed use.*

PDC 24 *Site contamination should be assessed to determine the potential impacts of past industrial activities and landfill practices on the proposed development potential of the land and should be conducted in accordance with National Environment Protection (Assessment of site contamination) Measure 1999 to the investigation and sampling of sites with potentially contaminated soil.*

Objective 9 together with PDC 23 and PDC 24 seek to ensure site contamination is identified and remediation measured put in place to accommodate intended land use activities, and prevent adverse impacts on the natural environment.

According to the EIA prepared by DPTI, the infrastructure works will improve existing environmental conditions. Sealing the site will inhibit the continual leaching of contaminants through the soil profile into the unconfined aquifer, thereby preventing further contamination of ground water in these areas.

The surface upgrades will also reduce the risk for site erosion and the transfer of contaminated soil (including acid sulphate soils) into the Port River. The infrastructure works will therefore improve the quality of the Port River, which forms part of the Adelaide Dolphin Sanctuary and is an important water body for local fauna. Accordingly, the development satisfies the following Coastal Areas provisions of the Development Plan:

OBJ 1 *The protection and enhancement of the natural coastal environment, including environmentally important features of coastal areas such as mangroves, wetlands, sand dunes, cliff-tops, native vegetation, wildlife habitat shore and estuarine areas.*

OBJ 8 *Management of development in coastal areas to sustain or enhance the remaining natural coastal environment.*

PDC 2 *The coast should be protected from development, including measures for flood, erosion and wave protection that would adversely affect the marine and onshore coastal environment, whether by pollution, erosion, damage or depletion of physical or biological resources, interference with natural coastal processes or any other means.*

PDC 5 *Development should be designed so that solid/fluid wastes and stormwater runoff is disposed of in a manner that will not cause pollution or other detrimental impacts on the marine and on-shore environment of coastal areas.*

PDC 7 *Development that proposes to include or create confined coastal waters, as well as water subject to the ebb and flow of the tide should be designed to ensure the quality of such waters is maintained at an acceptable level.*.

As previously discussed, earthworks comprising excavation and fill will be required to level the site and achieve the desired levels for drainage purposes. Importantly, we note that all excavated soil will be reused onsite and only clean soil will be brought onto the site.

The following management plans will be developed to protect human health and the environment throughout the construction process:

- A Contractors Environmental Management Plan (CEMP) which includes DPTI's standard environmental and sustainability clauses;
- Soil Erosion and Drainage Management Plan;
- Water Quality Monitoring Plan; and
- Acid Sulphate Soils Management Plan.

Further to the above discussion, the fundamental objective of the surface upgrade works is to protect the natural environment from adverse impacts associated with elevated concentration of heavy metals and Potential Acid Sulfate Soils. The proposed surface upgrades will address these environmental impacts in accordance with the provisions of the Development Plan.

7.4 Stormwater

A stormwater management plan has been prepared by WGA and is attached to this report as ***Appendix 3***.

The following provisions are considered most relevant to the assessment of stormwater management plan prepared for the proposed development:

General Section – Natural Resources

PDC 8 *Development should be sited and designed to:*

(a) capture and re-use stormwater, where practical

(b) minimise surface water runoff

(c) prevent soil erosion and water pollution

(d) protect and enhance natural water flows

(e) protect water quality by providing adequate separation distances from watercourses and other water bodies

(f) not contribute to an increase in salinity levels

(g) avoid the water logging of soil or the release of toxic elements

(h) maintain natural hydrological systems and not adversely affect:

(i) the quantity and quality of groundwater

(ii) the depth and directional flow of groundwater

(iii) the quality and function of natural springs.

PDC 11 *Development should have adequate provision to control any stormwater over-flow runoff from the site and should be sited and designed to improve the quality of stormwater and minimise pollutant transfer to receiving waters.*

PDC 12 *Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded.*

The western end of the Flinders Port site (Areas A, A2, C, D and E on the site plan attached to the WGA Report) is currently serviced by a below ground drainage network which discharges stormwater to the Port River via several outlets.

The eastern section of the site (Areas B and G on the site plan attached to the WGA Report) is currently without a formal drainage system. Surface water collected from this area discharges to Ocean Steamers Road. A summary of the existing stormwater network for the Flinders Port site is attached to the WGA Report as Appendix C.

The OneSteel site currently grades to a swale which runs around the perimeter of this site. Surface water collected from the site is discharged to Ocean Steamers Road.

The design philosophy for the Flinders Port drainage system is to retain as much of the existing pipe network as practically possible. New drainage pipes will replace existing (damaged) infrastructure and will also be installed in new locations to accommodate surface regrading works. The drainage system has been designed for a 1 in 5 year ARI.

In accordance with PDC 11, surface water collected from the Flinders Port site will continue to discharge to Port River (via the existing 675mm pipe) via a hydrodynamic separator, designed to improve water quality by removing total suspended soils from surface water collected. Water quality will also be substantially improved by the surface upgrade works proposed.

The WGA Report confirms that the site does not consist of any significant pervious areas. On this basis, WGA conclude that a stormwater detention facility will not be required as the post development peak discharge rate will not increase when compared pre-development peak discharge rate.

The OneSteel EPA licence includes specific requirements pertaining to the containment and treatment of contaminated stormwater. The existing drainage system will be maintained to ensure licencing obligations continue to be fulfilled. In addition, new sub-surface drainage pipes and inlet pits will be installed within the proposed concrete lined drainage swale., and this system will be sized for a 1 in 100 year event, thereby increasing the capacity and functionality of the existing drainage system.

In accordance with PDC 11, the existing treatment device will be used to treat water collected from the OneSteel site. The WGA report indicates that this system has been sized to accommodate a fully impervious

area and on this basis it is suggested that the existing treatment device will accommodate anticipated surface flows.

Further to the above discussion, the fundamental objective of the proposed drainage works is to improve the functionality of existing drainage systems used for the Flinders Ports and One Steel site. Investigations performed by WGA confirm that the capacity of both systems will accommodate post development flows. Finally, paving works and the installation of the hydrodynamic separator will significantly improve the quality of stormwater discharging to the receiving waters.

On this basis, the drainage system for the development has been designed to satisfy the relevant Natural Resources provisions of the Development Plan in relation to design capacity and the preservation of water quality.

8. Conclusion

The application seeks Development Plan Consent for surface upgrade works (site paving), infrastructure works and associated earthworks over land occupied by Flinders Ports and OneSteel.

This Planning Statement provides a detailed analysis of the proposed works, describes the site and locality, identifies the planning assessment process and considers the planning merits of the application, having regard to the relevant provisions of the Development Plan.

Approval is required for the proposed works as the development involves the earthworks exceeding $9m^3$ within a coastal area. Notwithstanding, and taking into consideration the nature of works proposed, relevant planning considerations are limited to matters relating to land use, coastal impacts, site contamination and stormwater management.

In our opinion, the proposed development is closely aligned with the relevant provisions of the Development Plan for the following reasons:

- The proposed infrastructure works will accommodate the continual use of the land as a port and metal recycling depot, which are envisaged uses for the Industry Zone.
- The earthworks proposed will be limited to site levelling and regrading for drainage purposes. Existing site levels will not be significantly altered, and the visual impact of these earthworks will be negligible.
- The finished level of the site will remain above the sea level projected for the year 2100 and generally above the anticipated sea levels during extreme weather events. Notwithstanding, the risks associated with potential flooding is considered to be low as the proposed development does not involve the construction of new buildings.
- The development will have a positive impact on the natural environment. Surface upgrades will:
  - » prevent contaminated soils (i.e. heavy metals and Potential Acid Sulfate Soils) from entering the unconfined aquifer; and

  - limit soil erosion and the likelihood of contaminated soils from entering the Port River (which forms part of the Port Adelaide Dolphin Sanctuary).

- New drainage infrastructure will be installed to replace non-functional and damaged drains, thereby improving the performance of existing drainage systems.
- The Flinders Port site will be equipped with a stormwater treatment device to significantly improve the quality of stormwater and receiving waters (i.e. the Port River).

Accordingly, for the reasons discussed within this Planning Statement we are of the opinion that the application proposes an appropriate form of development which warrants Development Plan Consent.

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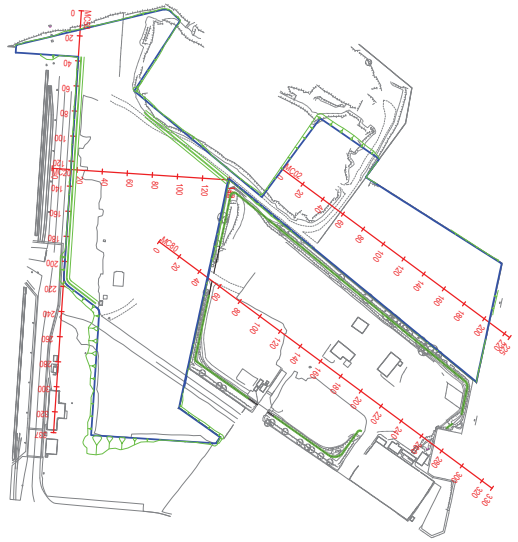
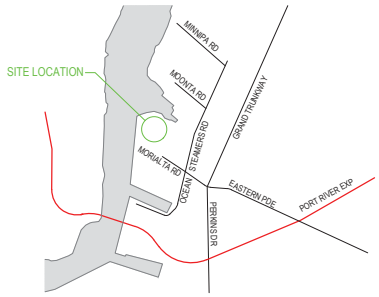
Appendix 2. Site plans and sectional drawings

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE





LOCALITY PLAN
NOT TO SCALE

DRAWING INDEX

GENERAL CONSTRUCTION

SHEET	LOCATION
11	

DRAINAGE

SHEET	LOCATION
12	

FINAL SURFACE CONTOURS

SHEET	LOCATION
13	

PAVEMENT TREATMENT

SHEET	LOCATION
14	

GEOMETRIC SETOUT

SHEET	LOCATION
15	

CROSS SECTIONS

SHEET	LOCATION
21	MC02; CH 0.0 - CH 100
22	MC02; CH 110 - CH 220
23	MC50; CH 0.0 - CH 60
24	MC50; CH 70 - CH 130
25	MC50; CH 140 - CH 200
26	MC50; CH 210 - CH 280
27	MC50; CH 290 - CH 336
28	MC80; CH 40 - CH 110
29	MC80; CH 120 - CH 190
30	MC80; CH 200 - CH 280

DRAINAGE LONGITUDINAL SECTIONS

SHEET	LOCATION
31	DB0B, DI10, DI20
32	DI40
41	EXISTING - LINE 1, LINE 2, LINE 3

LONGITUDINAL SECTIONS

SHEET	LOCATION

REFERENCE DOCUMENTS

- CROSS SECTION REPORT --
- GEOMETRIC REPORT --
- AS1742 MANUAL OF TRAFFIC CONTROL DEVICES
- DPTI MASTER SPECIFICATION
- S-4070 SHEETS 6 & 7 (KERB AND GUTTER)
- S-4080 SHEETS 1,2,&3 (JUNCTION BOX AND SIDE ENTRY PITS)
- S-4080 SHEET 6 (GRATED FIELD PIT)
- S-4055 SHEETS 19-24, 30, 37-42, 46, 48 & 49 (LIGHT POLES & FOOTINGS)
- S-4055 SHEETS 33-35 (LIGHTING PIT DETAILS)
- S-4055 SHEETS 43 & 54-58 (ELECTRICAL SWITCH BOARD)

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
SCALES:	

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

TITLE AND INDEX

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 1	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 0001.DWG

LEGEND

SYMBOL DESCRIPTION

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

ELECTRICAL
- STOBIE POLE - EXISTING
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (SAPN)
- PROPOSED NEW CONDUIT LAYOUT

GAS
- INSPECTION COVER
- JUNCTION BOX
- MARKER POST
- METER
- UNDERGROUND PIPE

SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

STORMWATER
- PIPE / CULVERT
- DRAINAGE TO BE ABANDONED
- PROPOSED STORMWATER PIPE
- MONITORING WELLS

NOTES:

1. THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION . THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
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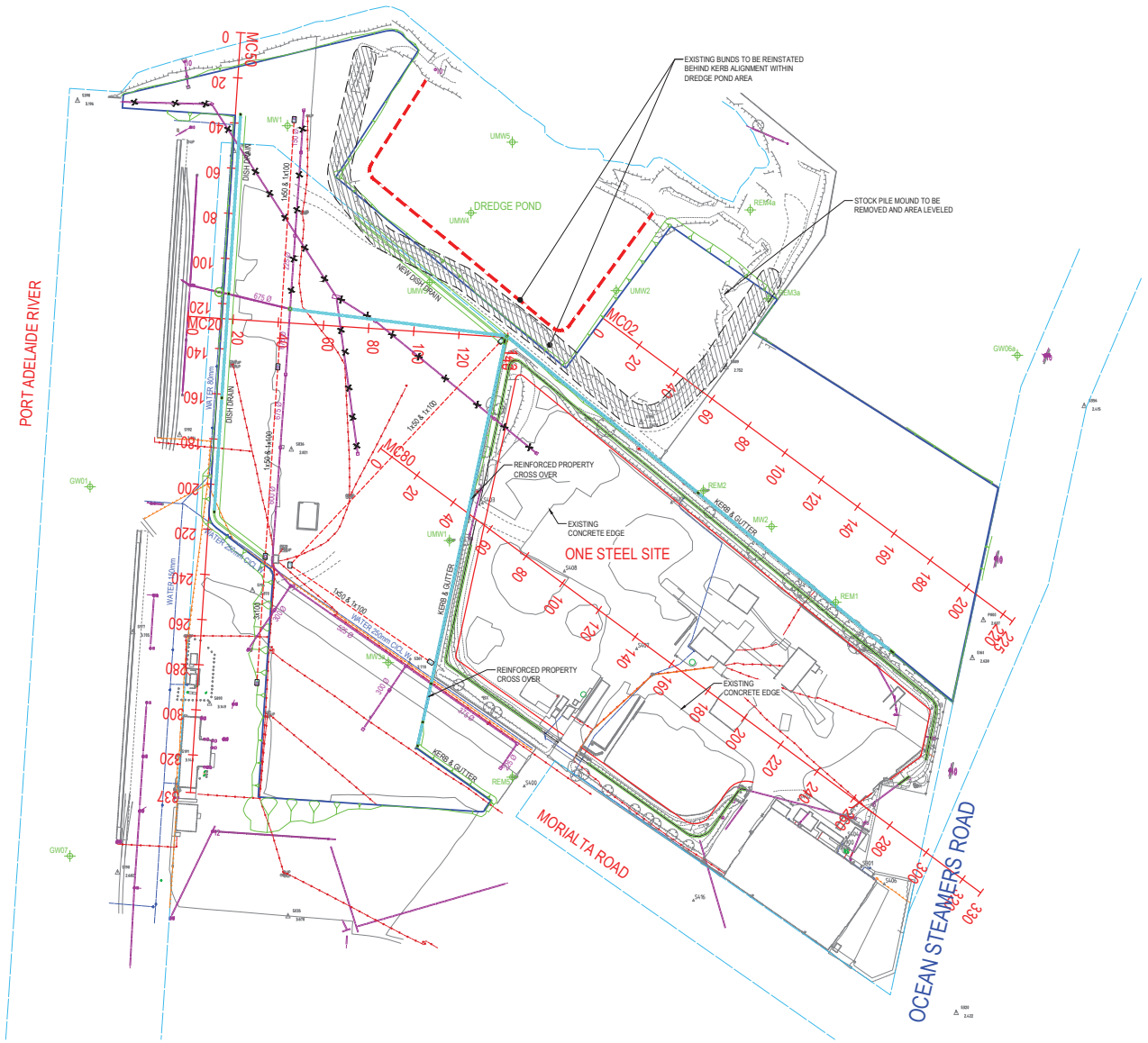
3. THIS DESIGN COMPLIES WITH THE OFFICE OF THE TECHNICAL REGULATOR OVERHEAD & UNDERGROUND ELECTRICAL CABLES CLEARANCE REQUIREMENTS. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGNER AND PROJECT MANAGER NOTIFIED.
4. ELECTRICAL DETAILS HAVE BEEN DESIGNED IN ACCORDANCE WITH AUSTRALIAN / NEW ZEALAND STANDARD 'AS/NZS 3000 ELECTRICAL INSTALLATIONS (WIRING RULES)'.
5. ALL SIGNAL CONDUIT TO BE 'CATEGORY A' UNDERGROUND PVC.
6. TELSTRA CONDUIT TO CONFORM TO AUSTRALIAN STANDARD 'AS 1477 PVC PIPES AND FITTINGS FOR PRESSURE APPLICATIONS' CLASS 12 WHITE.
7. FOR EARTHWORK AREAS CUT/FILL VOLUMES REFER TO SHT.1
8. IMPACT ROLLING NOT TO BE UNDERTAKEN ABOVE EXISTING SERVICES. CONTRACTOR TO ALLOW TO EXCAVATE THESE AREAS AND COMPACT IN LAYERS TO ACHIEVE REQUIRED COMPACTION.



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km

SCALES: 20 0 10 20 30 40

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

GENERAL CONSTRUCTION

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 11	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 10110.DWG

DRAIN DETAILS

ID	STRUCTURE	DESCRIPTION			DETAILS		
	INLET - OUTLET	RUNS	SIZE(mm)	TYPE	CLASS	LENGTH	GRADE%
DI10	D2 - D1	1	525	RCP	4	4.28	0.28
DI10	D3 - D2	1	450	RCP	4	79.45	0.49
DI20	D4 - D2	1	450	RCP	4	46.15	0.28
DI20	D5 - D4	1	450	RCP	4	50.5	0.33
DB0B	D7 - D6	1	450 x 300	RCBC	-	96.58	0.19
DB0B	D8 - D7	1	450	RCP	4	109.29	0.16
DB0B	D9 - D8	1	400 x 225	RCBC	-	110.36	0.16
DI40	D10 - D7	1	375	RCP	4	2.08	0.14
DI40	D11 - D10	1	375	RCP	4	155.22	0.2
DI40	D12 - D11	1	375	RCP	4	17.39	0.2
DI40	D13 - D12	1	375	RCP	4	10.79	0.31

DRAIN CONNECTION DETAILS

ID	DESCRIPTION	SET OUT LOCATION			DRAIN		CUSTOM JUNCTION BOXES/GRATED INLET PITS WILL BE REQUIRED, RATED TO CLASS F
		PPIT PT	ORIENTATION	LEVEL	SIZE (mm)	LEVEL	
D1	CLASS F HUMECEPTOR (STC-18) OR SPEL ECOCEPTOR 4000 OR EQUIVALENT	1	-	2.811	675 525	1.105 1.105	PORTION OF EXISTING PIPE
D2	600 x 600 GRATE, COMBIND 1200 x1200 JUNCTION BOX	2	-	2.773	525 450 450 675	1.117 1.117 1.117 1.117	RETAIN EXISTING 675 PIPE
D3	600 x 600 GRATED INLET PIT	3	-	2.613	375	1.510	
D4	600x600 GRATED INLET PIT	4	-	2.868	450	1.244	
D5	600x600 GRATED INLET PIT	5	-	2.896	450	1.415	
D6	EXISTING JB REPLACE WITH NEW 1200 x 1200 JB	6	-	2.950 2.950 2.710	675 675 450x300	1.204 1.204 1.170	EXISTING 675 RCP EXISTING 675 RCP EXISTING JB TO BE REPLACED WITH NEW JB
D7	600x600 GRATE, COMBIND 900 x900 JUNCTION BOX	7	-	2.685 2.685 2.685	450 375 450x300	1.354 1.354 1.357	
D8	600 x 600 GRATED INLET PIT	8	- -	2.648 2.648	450 450x225	1.528 1.528	
D9	2X600 x 600 GRATED INLET PIT	9	-	2.425	450x225	1.70	
D10	2x600x600 GRATED INLET PIT	10	-	2.669	375	1.357	
D11	600 x 600 COMBINED GRATED JUNCTION BOX EXISTING 375 PIPE EXISTING 375 PIPE	11	- - -	2.745	375 375 375 375	1.663 1.663 1.875 ? 1.875 ?	EXISTING 375 PIPE TO CONNECT TO NEW JB EXISTING 375 PIPE TO CONNECT TO NEW JB
D12	600 x 600 GRATED INLET PIT	12	-	2.646	375	1.697	
D13	600 x 600 GRATED INLET PIT	13	-	2.698	375	1.730	

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORMWATER PIPE OR CULVERT
	EXISTING DRAINAGE PIPE / CULVERT
	EXISTING DRAINAGE TO BE ABANDONED
	GRATED INLET PIT
	JUNCTION BOX
	SIDE DRAIN GRATED INLET PIT
D52	DRAINAGE STRUCTURE IDENTIFIER
	COMMUNICATIONS
	INSPECTION COVER
	ISOLATION PILLAR
	JUNCTION BOX
	MARKER POST
	PILLAR
	TELEPHONE BOX
	UNDERGROUND CABLE
	ELECTRICAL
	STOBIE POLE - EXISTING
	OVERHEAD CABLE (SAPN)
	UNDERGROUND CABLE (SAPN)
	SEWER
	INSPECTION COVER
	JUNCTION BOX
	UNDERGROUND PIPE
	VENT
	WATER
	FIRE PLUG MARKER POST
FPM	FIRE PLUG MARKER REFLECTOR
	IRRIGATION CONTROL BOX
	HYDRANT
	INSPECTION COVER
	JUNCTION BOX
	METER
	TAP
	UNDERGROUND PIPE
	ABOVE GROUND PIPE

NOTES:

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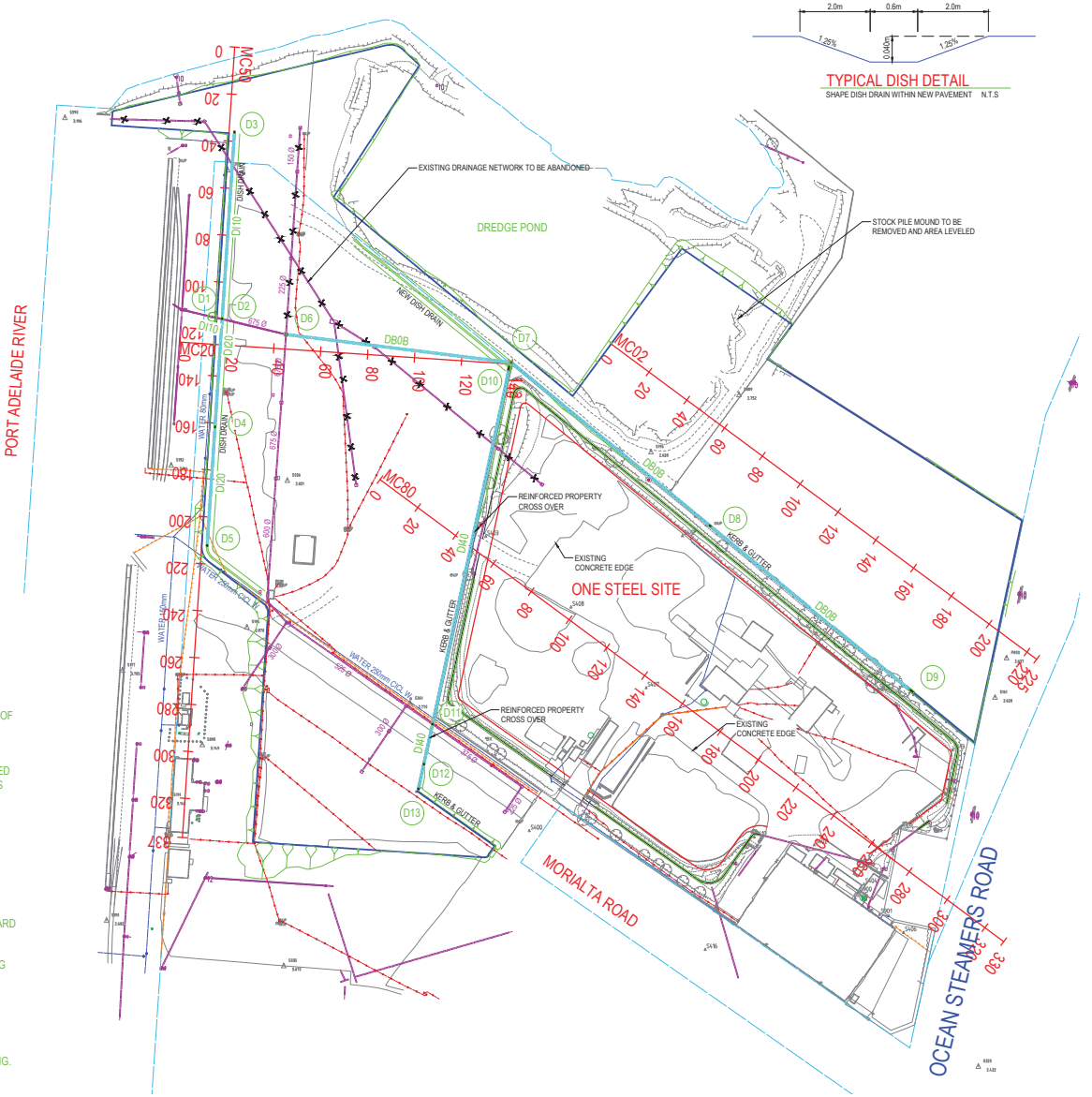
2. CUSTOM JUNCTION BOXES / GRATED INLET PITS / GRATES WILL BE REQUIRED FOR THIS PROJECT, RATED TO CLASS (F) AND 20/20 COVER ON CLASS 4 PIPES FOR CORROSION PROTECTION, FOR BOX CULVERTS EXPOSURE C FOR COVER PLUS CUSTOM DESIGN FOR 15T WHEEL LOADS.
3. FOR KERB & GUTTER, MEDIAN KERB, DISH DRAINS & PROPERTY CROSSOVER DETAILS REFER TO STANDARD DRAWING S-4070 SHEETS. 6 & 7.
4. PIPE LENGTHS REFER TO PLAN DISTANCES BETWEEN CENTRES OF THE STRUCTURES. THE GRADES HAVE BEEN CALCULATED USING THESE LENGTHS. ACTUAL GRADES AND LENGTHS WILL DIFFER.
5. THE REFERENCE POINT FOR THE SETTING OUT OF A DRAINAGE STRUCTURE IS SHOWN ON THE STANDARD DRAWING FOR EACH STRUCTURE.
6. DRAIN DETAILS IN THE DRAIN CONNECTION SCHEDULE ARE LISTED IN CLOCKWISE ORDER COMMENCING AT THE OUTLET.
7. FOR SET OUT STRING CO-ORDINATES REFER GEOMETRIC SETOUT REPORT 20110951.
8. RC PIPE CLASSES HAVE BEEN SELECTED FOR HIGHER THAN A160/M1600 TRAFFIC LOADS. ASSUMING INSTALLATION WILL EQUATE TO TYPE HS2 AS DEFINED IN AUSTRALIAN STANDARD AS 3725. PIPE CLASS SHOULD BE CONFIRMED FOLLOWING CONSIDERATION OF CONSTRUCTION VEHICLE LOADING.



TYPICAL DISH DETAIL
SHAPE DISH DRAIN WITHIN NEW PAVEMENT N.T.S

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

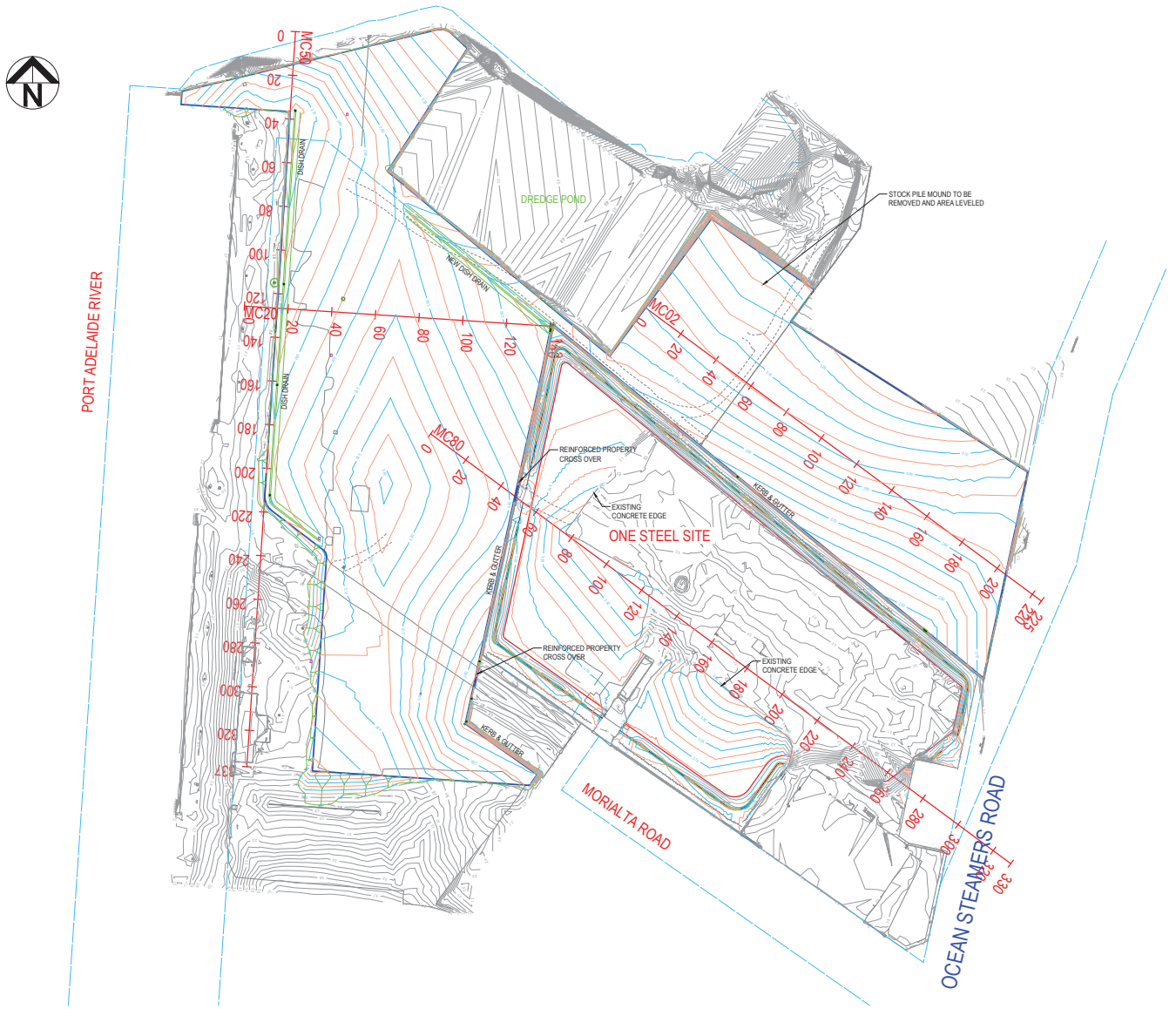
PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 20 0 10 20 30 40

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE

DRAINAGE

DESIGNED: PWP
DRAFTED: WGA
CHECKED:
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 12
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

CAD FILE NAME: XXXX SHEET 10012.DWG



LEGEND

SYMBOL	DESCRIPTION
	MINOR EXISTING CONTOUR
53.0	MAJOR EXISTING CONTOUR
	MINOR DESIGN CONTOUR
53.0	MAJOR DESIGN CONTOUR

NOTES:

1. DESIGN CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.
2. EXISTING CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	

SCALES: 20 0 10 20 30 40

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 13	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

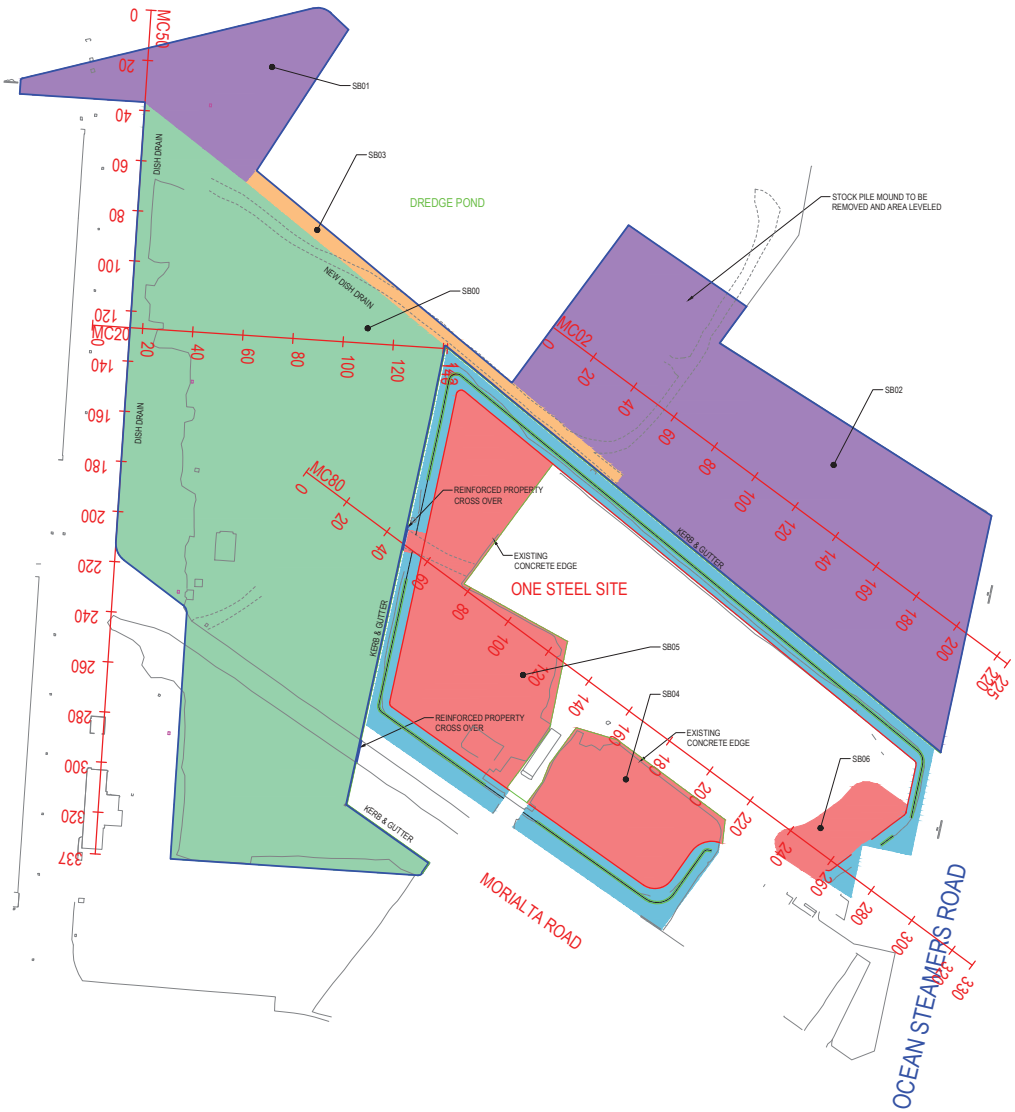
ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

FINAL SURFACE CONTOURS

CAD FILE NAME: XXXX SHEET 13 013.DWG



PAVEMENT TREATMENT LEGEND

- TYPE A - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 300mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE B - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 250mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE C - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 350mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE D - ONESTEEL CONCRETE PAVEMENT
  200 - 300 THICK CONCRETE SLAB
  150 SUBGRADE
- TYPE E - LINED SWALE
  CONCRETE LINED DRAINAGE SWALE

NOTES:

1. FOR PAVEMENT DETAILS REFER TO THE PAVEMENT SCHEDULES IN THE CONTRACT SPECIFICATION. THE PAVEMENT TREATMENT LEGEND PROVIDES A BRIEF DESCRIPTION OF THE PAVEMENT CONFIGURATION.
2. EDGE PLANE AS REQUIRED TO MATCH EXISTING PAVEMENT LEVELS.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	

SCALES: 20 0 10 20 30 40

ROAD No. 5427

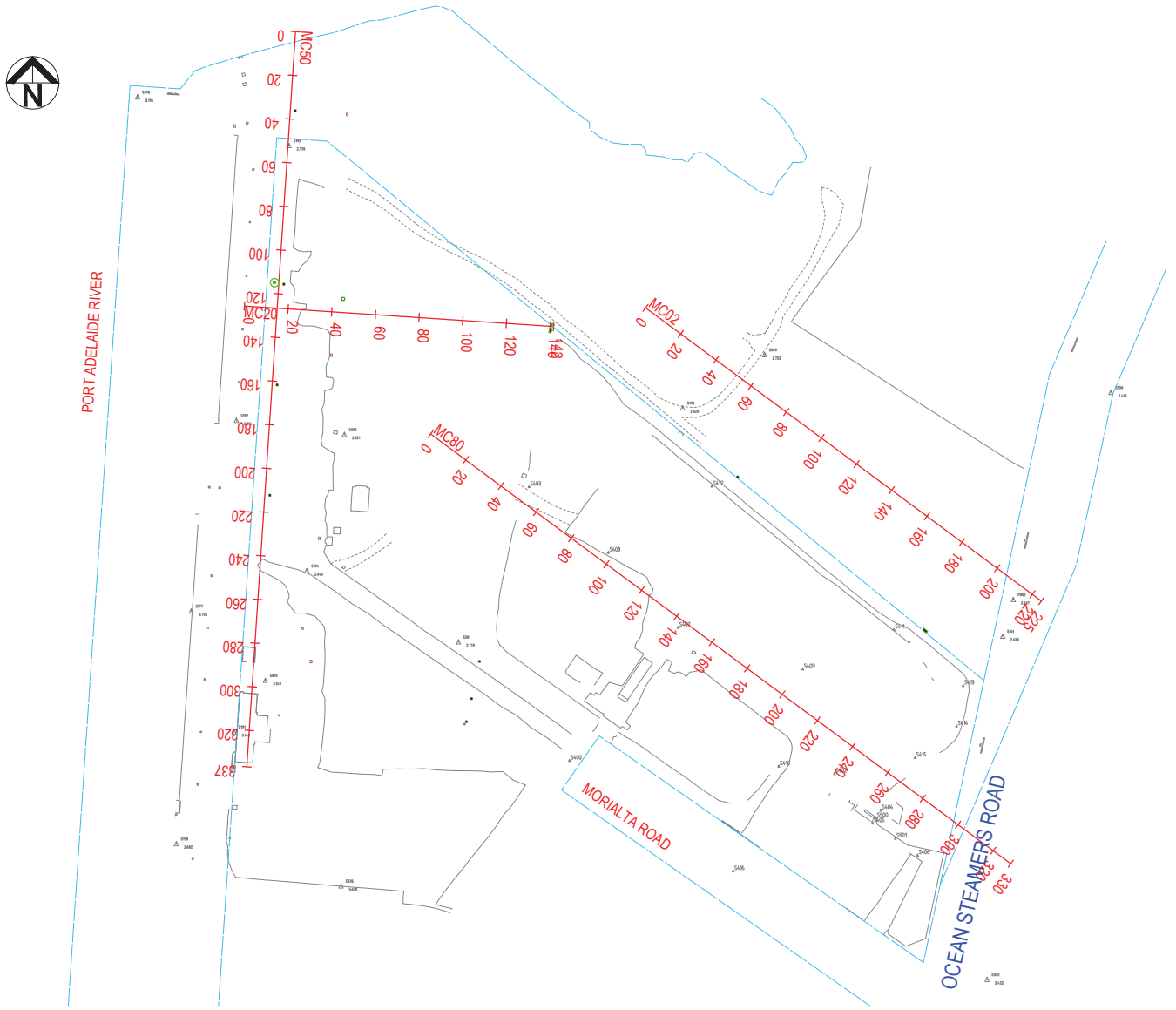
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

PAVEMENT TREATMENT

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 14	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 1014.DWG



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

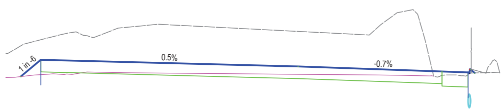
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

GEOMETRIC SETOUT

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 15	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

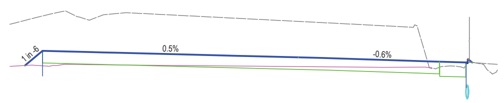
CAD FILE NAME: XXXX SHEET 10/15.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IAOJ				CEOJ
DESIGN LEVEL	2.629	3.290	3.026	2.791	2.766	2.916	2.915	2.768
LEVEL DIFF.	1.214	0.795	1.39	-0.079	-0.024	-0.172	-0.162	0
HORIZ. OFFSET	55.211	51.242	0.000	33.858	34.159	34.184	34.284	35.168

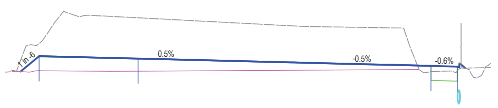
CH. 20.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IAOJ				CEOJ
DESIGN LEVEL	2.688	3.270	3.013	2.811	2.786	2.936	2.936	2.865
LEVEL DIFF.	1.796	1.39	1.431	-0.074	-0.015	-0.162	-0.149	0.002
HORIZ. OFFSET	54.402	50.904	0.000	33.359	33.660	33.685	33.785	34.567

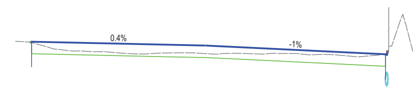
CH. 10.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	CE70	NL02	CE70	IAOJ				CEOJ
DESIGN LEVEL	2.635	3.250	3.152	3.000	2.860	2.831	2.806	2.956	2.956	2.771
LEVEL DIFF.	0.444	0.508	1.633	1.46	-0.233	-0.125	-0.068	-0.216	-0.208	0
HORIZ. OFFSET	54.261	50.566	30.826	0.000	27.524	32.860	33.160	33.185	33.286	34.391

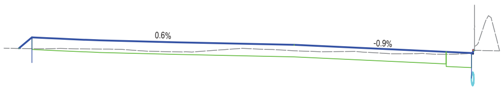
CH. 0.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70		NL02				CEOJ
DESIGN LEVEL	3.177	3.210	3.057	2.710	2.685	2.835	2.835
LEVEL DIFF.	0.011	-0.034	-0.321	0.008	0.042	-0.107	-0.104
HORIZ. OFFSET	34.794	34.592	0.000	35.855	36.156	36.181	36.281

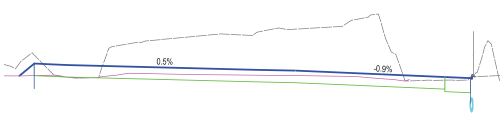
CH. 60.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IAOJ				CEOJ
DESIGN LEVEL	2.921	3.349	3.055	2.730	2.705	2.855	2.855	2.830
LEVEL DIFF.	0.012	0.448	0.236	0.008	0.076	-0.069	-0.052	0
HORIZ. OFFSET	54.828	52.255	0.000	35.356	35.657	35.682	35.782	35.934

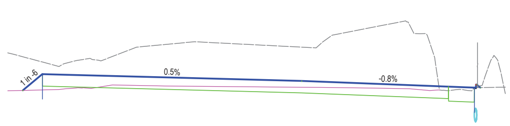
CH. 50.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IAOJ				CEOJ
DESIGN LEVEL	2.837	3.329	3.049	2.750	2.725	2.875	2.875	2.808
LEVEL DIFF.	0.497	0.345	1.651	0.048	-0.017	-0.073	-0.072	-0
HORIZ. OFFSET	54.873	51.917	0.000	34.857	35.157	35.182	35.282	35.689

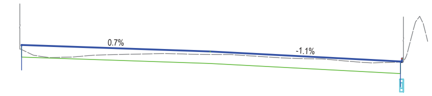
CH. 40.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IAOJ				CEOJ
DESIGN LEVEL	2.660	3.310	3.039	2.771	2.745	2.895	2.895	2.773
LEVEL DIFF.	1.344	0.484	1.349	-0.037	0.000	-0.143	-0.136	-0
HORIZ. OFFSET	55.480	51.580	0.000	34.358	34.658	34.683	34.783	35.620

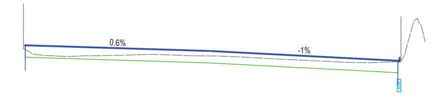
CH. 30.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CEOJ
DESIGN LEVEL	3.287	3.030	2.630	2.605	2.755	2.755
LEVEL DIFF.	-0.182	-0.117	-0.023	0.004	-0.146	-0.146
HORIZ. OFFSET	37.475	0.000	37.852	38.153	38.178	38.278

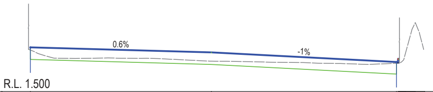
CH. 100.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CEOJ
DESIGN LEVEL	3.270	3.041	2.650	2.625	2.775	2.775
LEVEL DIFF.	-0.164	-0.197	-0.038	-0.011	-0.161	-0.16
HORIZ. OFFSET	36.754	0.000	37.353	37.653	37.678	37.779

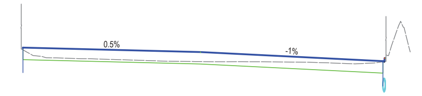
CH. 90.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	CE70	NL02				CEOJ
DESIGN LEVEL	3.250	3.050	2.670	2.645	2.795	2.795
LEVEL DIFF.	-0.109	-0.348	-0.051	-0.024	-0.174	-0.173
HORIZ. OFFSET	36.034	0.000	36.854	37.154	37.179	37.279

CH. 80.000



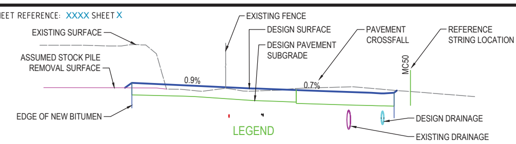
REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CEOJ
DESIGN LEVEL	3.230	3.056	2.690	2.665	2.815	2.815
LEVEL DIFF.	-0.086	-0.383	-0.025	0.009	-0.14	-0.137
HORIZ. OFFSET	35.313	0.000	36.355	36.655	36.680	36.780

CH. 70.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



LEGEND

UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

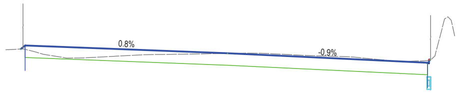
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX | FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX | SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 0.0 - CH 100
CROSS SECTIONS

DESIGNED: PWP | DRAFTED: WGA | CHECKED: | CHECKED: | ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: | DRAWING No.: XXXX | SHEET No.: 21 | AMEND No.: C
IN ACCORDANCE WITH DP013 | SHEET LATITUDE -XX.XXXXX | SHEET LONGITUDE XXX.XXXXX

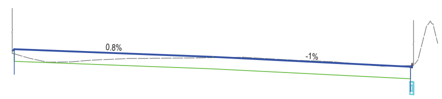
CAD FILE NAME: XXXX SHEET 0021.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.094	3.236	2.926	2.550	2.525	2.675	2.675
LEVEL DIFF.	0	-0.153	-0.007	0.082	0.109	-0.041	-0.04
HORIZ. OFFSET	41.213	40.357	0.000	39.849	40.150	40.175	40.275

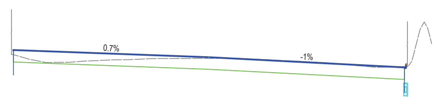
CH. 140.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.267	2.966	2.570	2.545	2.695	2.695
LEVEL DIFF.	-0.181	-0.033	0.047	0.074	-0.076	-0.075
HORIZ. OFFSET	39.637	0.000	39.350	39.650	39.675	39.775

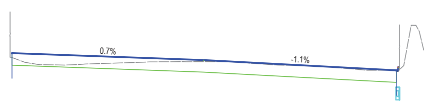
CH. 130.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.286	2.997	2.590	2.565	2.715	2.715
LEVEL DIFF.	-0.186	-0.044	0.029	0.055	-0.095	-0.094
HORIZ. OFFSET	38.916	0.000	38.851	39.151	39.176	39.276

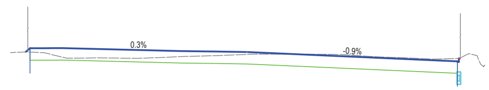
CH. 120.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.293	3.018	2.610	2.585	2.735	2.735
LEVEL DIFF.	-0.174	-0.066	0.006	0.031	-0.119	-0.119
HORIZ. OFFSET	38.195	0.000	38.352	38.652	38.677	38.777

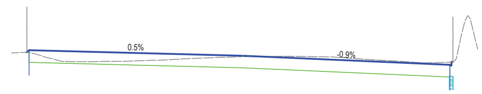
CH. 110.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.848	2.995	2.845	2.470	2.445	2.595	2.595	2.587
LEVEL DIFF.	0	-0.15	-0.095	0.114	0.141	-0.009	-0.009	-0
HORIZ. OFFSET	44.122	43.240	0.000	41.846	42.146	42.172	42.272	42.324

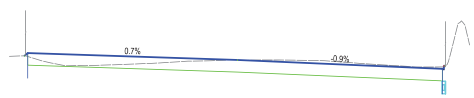
CH. 180.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.986	3.071	2.853	2.490	2.465	2.615	2.615	2.596
LEVEL DIFF.	0	-0.09	-0.037	0.103	0.13	-0.02	-0.02	-0
HORIZ. OFFSET	43.024	42.519	0.000	41.347	41.647	41.672	41.772	41.886

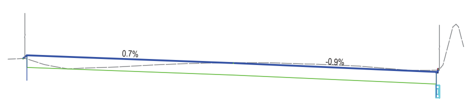
CH. 170.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.030	3.138	2.862	2.510	2.485	2.635	2.635
LEVEL DIFF.	0	-0.134	0.002	0.08	0.106	-0.043	-0.043
HORIZ. OFFSET	42.447	41.799	0.000	40.848	41.148	41.173	41.273

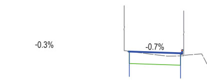
CH. 160.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.066	3.193	2.887	2.530	2.505	2.655	2.655
LEVEL DIFF.	-0	-0.142	0.013	0.069	0.094	-0.056	-0.056
HORIZ. OFFSET	41.842	41.078	0.000	40.348	40.649	40.674	40.774

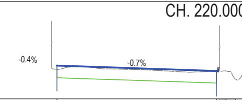
CH. 150.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS		IA70	CE70				CE0J
DESIGN LEVEL		2.763	2.759	2.690	2.665	2.815	2.815
LEVEL DIFF.		0.009	0.009	-0.105	-0.078	-0.228	-0.228
HORIZ. OFFSET	0.000	33.469	33.642	43.843	44.143	44.168	44.269

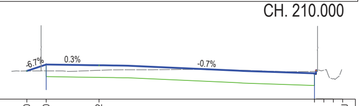
CH. 220.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS		CE70				CE0J
DESIGN LEVEL		2.815	2.605	2.581	2.731	2.731
LEVEL DIFF.		-0.144	-0.008	0.02	-0.13	-0.129
HORIZ. OFFSET	0.000	11.573	43.344	43.644	43.669	43.769

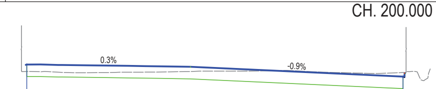
CH. 210.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	2.615	2.872	2.842	2.521	2.496	2.646	2.646
LEVEL DIFF.	-0	-0.256	-0.201	0.073	0.098	-0.052	-0.052
HORIZ. OFFSET	14.351	10.496	0.000	42.845	43.145	43.170	43.270

CH. 200.000



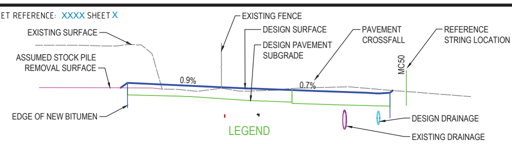
REF. STRING MC50 R.L. 1.000

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	2.928	2.838	2.450	2.425	2.575	2.575
LEVEL DIFF.	-0.277	-0.187	0.159	0.186	0.037	0.037
HORIZ. OFFSET	32.565	0.000	42.345	42.646	42.671	42.771

CH. 190.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

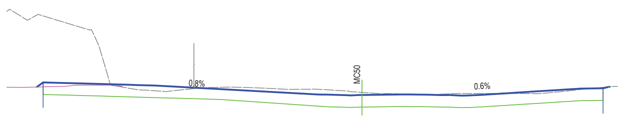
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 110 - CH 220
CROSS SECTIONS

DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 22
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

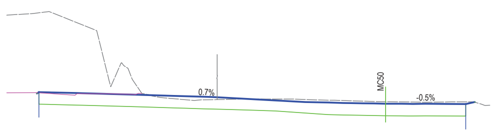
CAD FILE NAME: XXXX SHEET 0022.DWG



REF. STRING MC50 R.L. 1.000

DESIGN LABELS	IA70	CE70	NL5I		CE70	IA70
DESIGN LEVEL	3.025	3.204	2.686	2.702	2.971	3.027
LEVEL DIFF.	2.862	2.649	0.156	0.105	0.037	0
HORIZ. OFFSET	64.739	63.483	2.300	0.000	48.003	49.146

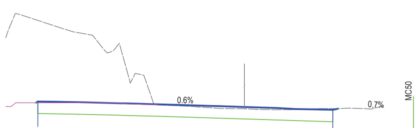
CH. 30.000



REF. STRING MC50 R.L. 1.000

DESIGN LABELS	IA70	CE70	NL5I		CE70	IA70
DESIGN LEVEL	3.219	3.277	2.826	2.816	2.802	2.882
LEVEL DIFF.	3.208	3.16	0.077	0.014	0.088	-0.005
HORIZ. OFFSET	69.503	69.096	2.300	0.000	15.984	17.795

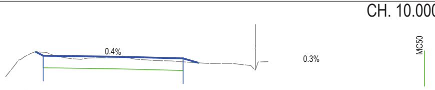
CH. 20.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	CE70	IA70	
DESIGN LEVEL	3.291	3.341	3.010	3.056	
LEVEL DIFF.	3.317	3.243	0.045	0	
HORIZ. OFFSET	75.063	74.709	16.035	14.948	0.000

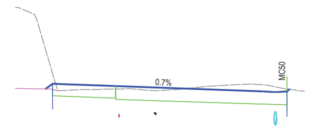
CH. 10.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	CE70	IA70	
DESIGN LEVEL	3.527	3.373	3.267	3.093	
LEVEL DIFF.	0.004	0.14	-0.136	-0.001	
HORIZ. OFFSET	77.381	75.911	48.055	45.002	0.000

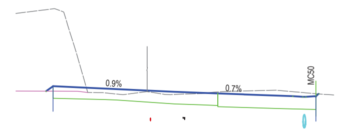
CH. 0.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.782	2.985	2.974	2.683	2.658	2.658	2.683	2.768
LEVEL DIFF.	1.585	0.404	-0.253	0.262	0.223	0.198	0.098	0.001
HORIZ. OFFSET	48.070	46.642	44.625	4.600	2.600	2.000	0.000	0.512

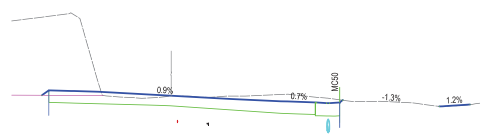
CH. 60.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.861	3.058	2.835	2.662	2.637	2.637	2.662	2.754
LEVEL DIFF.	3.246	3.083	-0.105	0.179	0.169	0.159	0.099	-0.003
HORIZ. OFFSET	53.640	52.256	28.160	4.600	2.600	2.000	0.000	0.554

CH. 50.000



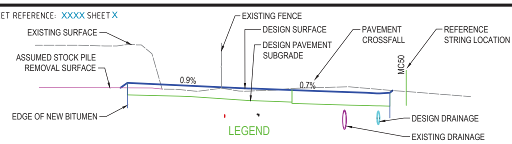
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20	IA20	IA20
DESIGN LEVEL	2.934	3.131	2.695	2.648	2.623	2.623	2.648	2.749	2.493	2.566
LEVEL DIFF.	3.11	2.948	0.27	0.204	0.2	0.185	0.106	-0.011	0	-0.012
HORIZ. OFFSET	59.254	57.869	11.695	4.600	2.600	2.000	0.000	0.609	19.822	25.901

CH. 40.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

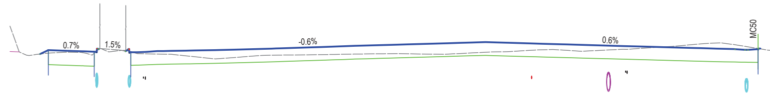
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20
2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 0.0 - CH 60
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 23	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

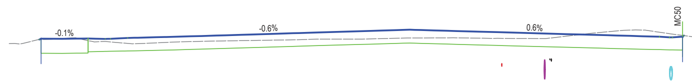
CAD FILE NAME: XXXX SHEET 0023.DWG



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
IA70	2.634	0	143.056
CE70	2.788	-0.12	141.418
IA0J	2.727	-0.057	132.273
	2.700	0.079	131.758
	2.850	-0.067	131.715
	2.850	-0.052	131.543
CE0J / IA0J	2.826	-0.003	131.307
	2.749	0.032	126.035
	2.835	-0.084	125.408
CE0J	2.835	-0.09	125.307
	2.685	0.059	125.282
	2.710	0.017	124.979
NL04	2.963	-0.332	80.304
NL50	3.110	-0.404	54.304
EV20	2.828	0.178	4.600
IE20	2.803	0.138	2.600
ID20	2.803	0.118	2.000
CE20	2.828	0.029	0.000
IA20	2.851	0	0.141

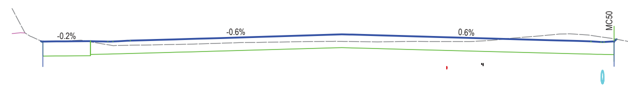
CH. 130.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
CE70 / IA70	2.694	0.004	127.981
	2.728	-0.03	127.625
EV3J	2.737	-0.086	118.296
IB30	2.721	-0.104	114.859
	2.724	-0.124	113.828
EH30	2.758	-0.216	110.391
NL50	3.087	-0.329	54.277
EV20	2.807	0.179	4.600
IE20	2.782	0.146	2.600
ID20	2.782	0.13	2.000
CE20	2.807	0.053	0.000
IA20	2.855	-0.003	0.287

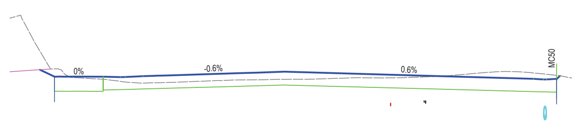
CH. 120.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
CE70 / IA70	2.765	-0.001	113.975
	2.779	-0.015	113.833
EV3J	2.794	-0.027	104.322
IB30	2.778	-0.126	100.886
	2.781	-0.163	99.855
EH30	2.815	-0.183	96.418
NL50	3.067	-0.282	54.251
EV20	2.786	0.235	4.600
IE20	2.761	0.203	2.600
ID20	2.761	0.185	2.000
CE20	2.786	0.103	0.000
IA20	2.872	0.001	0.516

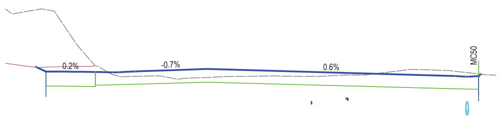
CH. 110.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
IA70	3.128	0.74	102.964
CE70	2.852	0.306	100.041
EV3J	2.851	-0.103	90.349
IB30	2.835	-0.17	86.912
	2.838	-0.201	85.881
EH30	2.873	-0.274	82.445
NL50	3.049	-0.303	54.225
EV20	2.766	0.233	4.600
IE20	2.741	0.219	2.600
ID20	2.741	0.207	2.000
CE20	2.766	0.138	0.000
IA20	2.877	0.012	0.669

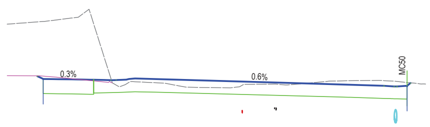
CH. 100.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
IA70	3.114	2.27	88.252
CE70	2.925	2.464	86.248
EV3J	2.908	0.248	76.376
IB30	2.893	-0.091	72.939
	2.895	-0.144	71.908
EH30	2.930	-0.196	68.472
NL50	3.030	-0.344	54.198
EV20	2.745	0.189	4.600
IE20	2.720	0.169	2.600
ID20	2.720	0.155	2.000
CE20	2.745	0.086	0.000
IA20	2.820	0	0.450

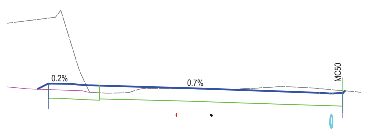
CH. 90.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
IA70	3.108	2.162	73.629
CE70	2.997	2.29	72.456
EV3J	2.966	2.22	62.402
IB30	2.950	0.056	58.966
	2.953	-0.198	57.935
NL50	3.018	-0.131	54.172
EV20	2.724	0.206	4.600
IE20	2.699	0.209	2.600
ID20	2.699	0.198	2.000
CE20	2.724	0.131	0.000
IA20	2.837	0.005	0.678

CH. 80.000



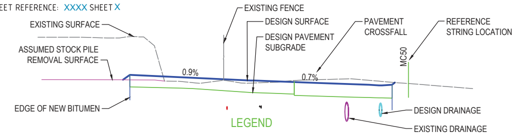
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
IA70	2.854	2.77	60.796
CE70	3.070	2.607	58.664
NL50	3.062	1.617	54.145
EV20	2.703	0.167	4.600
IE20	2.678	0.154	2.600
ID20	2.678	0.143	2.000
CE20	2.703	0.087	0.000
IA20	2.788	-0.006	0.506

CH. 70.000

No	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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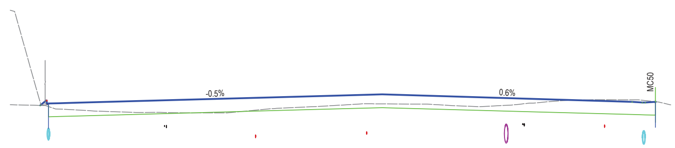
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 70 - CH 130
CROSS SECTIONS

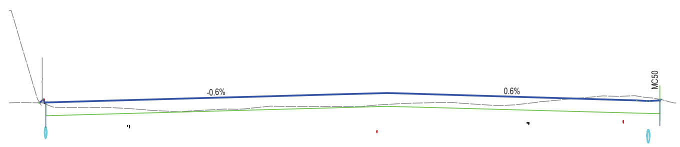
DESIGNED: PWP
DRAFTED: WGA
CHECKED:
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 24
AMEND No.: C
SHEET LATITUDE -XX.XXXXX
SHEET LONGITUDE XXX.XXXXX
CAD FILE NAME: XXXX SHEET 0024.DWG



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.751	2.950	2.950	2.800	2.825	3.047	3.189	2.890	2.865	2.865	2.890	2.901
LEVEL DIFF.	-0.004	-0.216	-0.223	-0.075	-0.121	-0.503	-0.379	0.081	0.089	0.076	0.028	-0.006
HORIZ. OFFSET	122.468	121.269	121.168	121.143	120.839	80.383	54.383	4.600	2.600	2.000	0.000	0.065

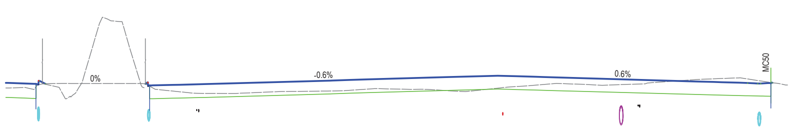
CH. 160.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.771	2.911	2.911	2.761	2.787	3.019	3.162	2.869	2.844	2.844	2.869	2.904
LEVEL DIFF.	-0	-0.163	-0.171	-0.023	-0.072	-0.438	-0.456	0.175	0.14	0.128	0.055	0
HORIZ. OFFSET	123.535	122.690	122.589	122.564	122.261	80.357	54.357	4.600	2.600	2.000	0.000	0.206

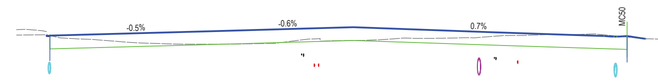
CH. 150.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS		IA0J		CE0J		IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.811	2.784	2.933	2.933	2.814	2.810	2.873	2.873	2.723	2.748	2.991	3.136	2.848	2.823	2.823	2.848	2.856
LEVEL DIFF.	-0.119	-0.011	-0.159	-0.149	0.002	0	-0.104	-0.116	0.032	-0.027	-0.388	-0.495	0.157	0.121	0.102	0.021	-0.001
HORIZ. OFFSET	146.236	145.734	145.692	145.524	144.347	124.427	124.049	123.948	123.923	123.620	80.330	54.330	4.600	2.600	2.000	0.000	0.333

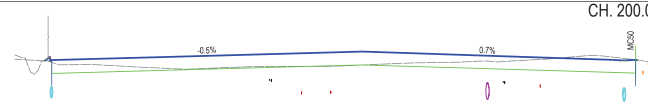
CH. 140.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS			CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.975	2.950	2.975	3.163	3.310	2.956	2.931	2.931	2.956	2.848
LEVEL DIFF.	0.026	0.041	0.003	-0.531	-0.529	0.051	0.037	0.026	0.002	0
HORIZ. OFFSET	115.466	115.163	114.859	80.489	54.489	4.600	2.600	2.000	0.000	3.625

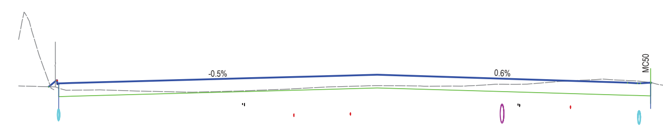
CH. 200.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.913	3.065	3.065	2.915	2.940	3.136	3.279	2.952	2.927	2.927	2.952	2.942
LEVEL DIFF.	-0.003	-0.183	-0.19	-0.042	-0.089	-0.483	-0.534	0.109	0.086	0.072	0.046	0
HORIZ. OFFSET	117.705	116.784	116.683	116.658	116.354	80.463	54.462	4.600	2.600	2.000	0.000	0.369

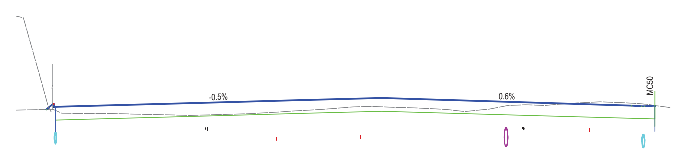
CH. 190.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.768	3.027	3.027	2.877	2.902	3.106	3.248	2.931	2.906	2.906	2.931	2.927
LEVEL DIFF.	0	-0.284	-0.291	-0.143	-0.191	-0.498	-0.437	0.083	0.088	0.076	0.037	-0.002
HORIZ. OFFSET	119.844	118.279	118.178	118.153	117.849	80.436	54.436	4.600	2.600	2.000	0.000	0.136

CH. 180.000



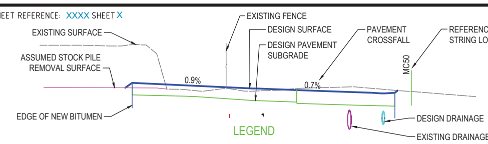
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.757	2.988	2.988	2.838	2.863	3.076	3.217	2.911	2.886	2.886	2.911	2.913
LEVEL DIFF.	0.002	-0.236	-0.242	-0.093	-0.145	-0.482	-0.353	0.097	0.095	0.085	0.033	-0.001
HORIZ. OFFSET	121.174	119.774	119.673	119.648	119.344	80.410	54.410	4.600	2.600	2.000	0.000	0.015

CH. 170.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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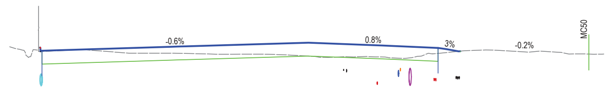
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 140 - CH 200
CROSS SECTIONS

DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 25
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

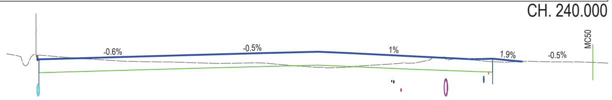
CAD FILE NAME: XXXX SHEET 0025.DWG



REF. STRING MC50 — R.L. 0.500

DESIGN LABELS				CEOJ	NL04	NL50	CE20	IA20	
DESIGN LEVEL	3.043	3.043	2.893	2.918	3.083	3.234	3.030	2.897	
LEVEL DIFF.	-0.154	-0.153	-0.003	-0.027	-0.266	-0.529	-0.216	0.004	-0.168
HORIZ. OFFSET	109.309	109.208	109.183	108.879	82.007	55.818	30.000	25.585	0.000

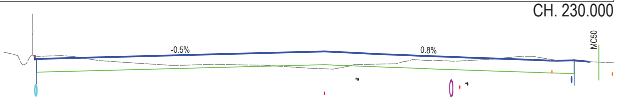
CH. 240.000



REF. STRING MC50 — R.L. 0.000

DESIGN LABELS				CEOJ	NL04	NL50	IE20	ID20	CE20	IA20	
DESIGN LEVEL	3.086	3.086	2.936	2.961	3.126	3.264	2.972	2.969	2.985	2.872	
LEVEL DIFF.	0.041	0.041	0.191	0.166	-0.292	-0.615	-0.02	-0.038	-0.118	0.003	-0.106
HORIZ. OFFSET	110.804	110.703	110.678	110.374	80.821	54.766	24.684	23.598	19.978	14.045	0.000

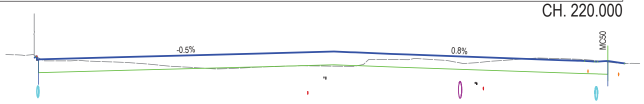
CH. 230.000



REF. STRING MC50 — R.L. 0.000

DESIGN LABELS				CEOJ	NL04	NL50	EV20	IE20	ID20	CE20		IA20
DESIGN LEVEL	3.111	3.111	2.961	2.986	3.152	3.285	2.952	2.918	2.915	2.931	2.873	
LEVEL DIFF.	0.006	0.001	0.15	0.11	-0.404	-0.694	0.139	0.052	0.024	-0.029	0	-0.079
HORIZ. OFFSET	112.299	112.198	112.173	111.869	80.542	54.542	13.217	9.597	8.511	4.891	1.807	0.000

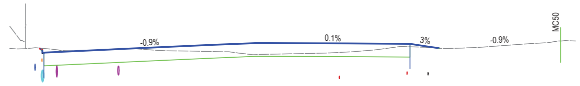
CH. 220.000



REF. STRING MC50 — R.L. 0.000

DESIGN LABELS	IAOJ				CEOJ	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	3.103	3.116	3.116	2.966	2.991	3.165	3.306	2.928	2.903	2.903	2.928	2.828
LEVEL DIFF.	0	-0.021	-0.031	0.116	0.06	-0.525	-0.587	0.053	0.041	0.028	-0.042	0
HORIZ. OFFSET	113.872	113.794	113.693	113.668	113.364	80.515	54.515	4.600	2.600	2.000	0.000	3.351

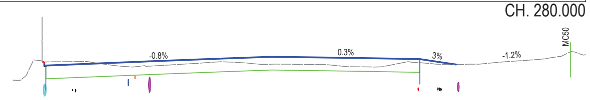
CH. 210.000



REF. STRING MC50 — R.L. 0.500

DESIGN LABELS	IAOJ				CEOJ	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.946	2.900	2.900	2.749	2.774	2.926	3.156	3.126	2.953	
LEVEL DIFF.	0.009	0.049	0.047	0.197	0.166	0.017	-0.46	-0.116	-0.002	0.061
HORIZ. OFFSET	103.698	103.329	103.228	103.203	102.899	86.842	60.653	30.000	24.223	0.000

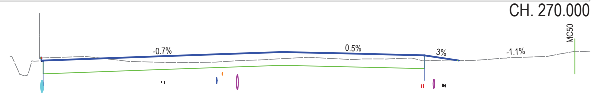
CH. 280.000



REF. STRING MC50 — R.L. 0.500

DESIGN LABELS	IAOJ				CEOJ	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.946	2.928	2.928	2.778	2.803	2.957	3.156	3.061	2.859	
LEVEL DIFF.	-0.001	0.017	0.018	0.168	0.145	-0.18	-0.298	-0.144	-0.008	0.218
HORIZ. OFFSET	104.931	104.824	104.723	104.698	104.394	85.633	59.444	30.000	23.263	0.000

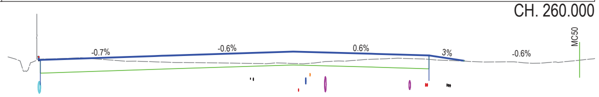
CH. 270.000



REF. STRING MC50 — R.L. 0.500

DESIGN LABELS	IAOJ				CEOJ	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.932	2.956	2.956	2.806	2.831	2.989	3.170	3.041	2.842	
LEVEL DIFF.	0	-0.023	-0.023	0.128	0.105	-0.215	-0.263	-0.218	0.001	0.097
HORIZ. OFFSET	106.469	106.319	106.218	106.193	105.889	84.424	58.235	30.000	23.384	0.000

CH. 260.000



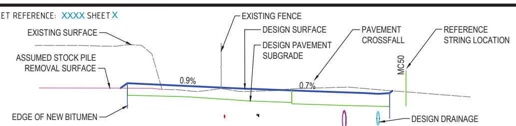
REF. STRING MC50 — R.L. 0.500

DESIGN LABELS				CEOJ	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.999	2.999	2.849	2.874	3.036	3.201	3.048	2.839	
LEVEL DIFF.	-0.099	-0.098	0.052	0.029	-0.25	-0.471	-0.156	-0.014	-0.111
HORIZ. OFFSET	107.814	107.713	107.688	107.384	83.216	57.026	30.000	23.030	0.000

CH. 250.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



LEGEND

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

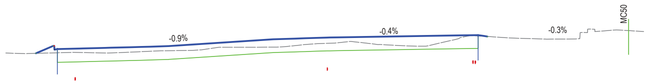
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 210 - CH 280
CROSS SECTIONS

DESIGNED: PWP | DRAFTED: WGA | CHECKED: | CHECKED: | ACCEPTED FOR USE: | TITLE: | DATE:
ACCEPTANCE FORM KNET No.: | DRAWING No.: XXXX | SHEET No.: 26 | AMEND No.: C
IN ACCORDANCE WITH DP013 | SHEET LATITUDE -XX.XXXXX | SHEET LONGITUDE XXX.XXXXX

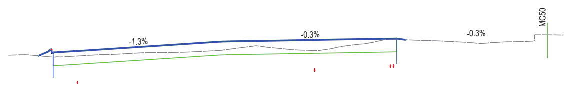
CAD FILE NAME: XXXX SHEET 0026.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J				CE0J	NL50	CE20	IA20	
DESIGN LEVEL	2.588	2.885	2.884	2.734	2.758	3.181	3.313	3.258	
LEVEL DIFF.	-0.001	-0.279	-0.278	-0.128	-0.149	-0.265	-0.034	0.002	0.15
HORIZ. OFFSET	118.117	114.648	114.457	114.409	113.835	65.488	30.000	28.160	0.000

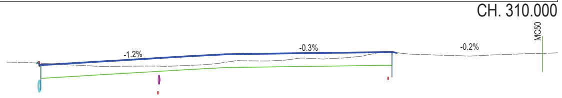
CH. 320.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL50	CE20	IA20	
DESIGN LEVEL	2.591	2.848	2.848	2.698	2.723	3.158	3.278	3.226	
LEVEL DIFF.	0	-0.303	-0.304	-0.155	-0.184	-0.329	-0.038	0.002	0.122
HORIZ. OFFSET	101.336	98.844	98.743	98.718	98.414	64.279	30.000	28.242	0.000

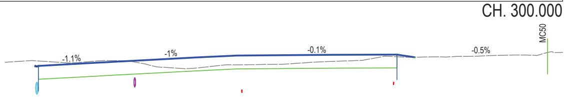
CH. 310.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J				CE0J	NL50	CE20	IA20	
DESIGN LEVEL	2.793	2.846	2.846	2.696	2.721	3.154	3.243	3.213	
LEVEL DIFF.	0.012	-0.045	-0.046	0.104	0.075	-0.317	-0.002	0.005	-0.072
HORIZ. OFFSET	100.661	100.339	100.238	100.213	99.909	63.070	30.000	28.995	0.000

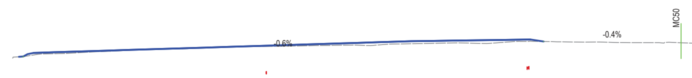
CH. 300.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS			CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.746	2.721	2.746	2.891	3.155	3.193	3.087	
LEVEL DIFF.	0.204	0.225	0.196	0.066	-0.366	-0.086	0.005	0.058
HORIZ. OFFSET	102.011	101.708	101.404	88.051	61.861	30.000	26.462	0.000

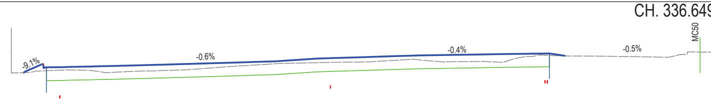
CH. 290.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA20	IA20	
DESIGN LEVEL	2.697	3.292	
LEVEL DIFF.	-0.007	0	-0.167
HORIZ. OFFSET	130.968	27.366	0.000

CH. 336.649



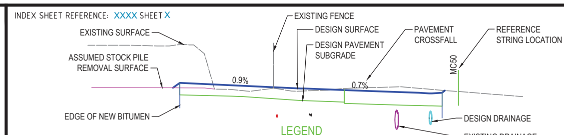
REF. STRING MC50 R.L. 0.500

DESIGN LABELS		IA20			CE0J	NL50	CE20	IA20	
DESIGN LEVEL	2.585	2.922	2.922	2.771	2.796	3.203	3.348	3.255	
LEVEL DIFF.	0	-0.267	-0.265	-0.115	-0.134	-0.195	-0.082	-0.004	0.021
HORIZ. OFFSET	134.675	130.966	130.775	130.727	130.153	66.696	30.000	26.899	0.000

CH. 330.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED — 100 MILLIMETRES ON ORIGINAL DRAWING — ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

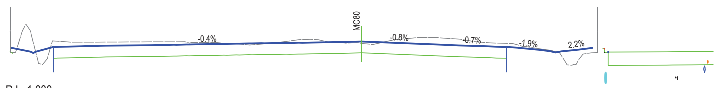
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX | FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX | SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 290 - CH 336
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 27	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

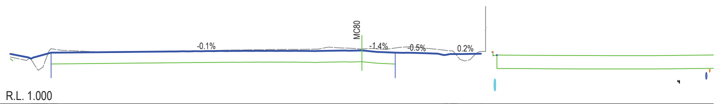
CAD FILE NAME: XXXX SHEET 0027.DWG



REF. STRING MC80 R.L. 1.000

DESIGN LABELS					WD90	NL8K	NL8L	WD90				
DESIGN LEVEL	3.000	2.849	2.799	2.849	3.040	3.256	3.136	3.040	2.876	2.821	2.865	3.000
LEVEL DIFF.	-0.182	0.754	0.414	-0.026	0.238	-0.075	0.276	0.143	0.036	0.039	-0.19	-0.192
HORIZ. OFFSET	69.675	65.870	65.369	64.869	61.364	0.000	15.000	28.878	37.405	38.623	39.841	45.932

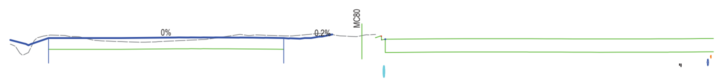
CH. 70.000



REF. STRING MC80 R.L. 1.000

DESIGN LABELS				WD90	NL8K	WD90				
DESIGN LEVEL	2.851	2.801	2.851	3.040	3.131	3.040	2.998	2.943	2.987	3.000
LEVEL DIFF.	-0.059	-0.025	-0.226	0.159	0.058	0.188	0.171	0.202	0.128	0.093
HORIZ. OFFSET	66.369	65.868	65.368	61.863	0.000	6.661	15.188	16.406	17.624	23.715

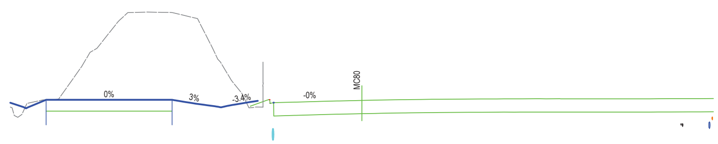
CH. 60.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90	WD90	
DESIGN LEVEL	2.801	2.751	2.801	3.040	3.040	
LEVEL DIFF.	-0.383	-0.283	-0.125	0.11	0.088	0.131
HORIZ. OFFSET	66.868	66.368	65.867	62.363	15.556	0.000

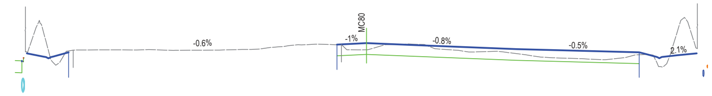
CH. 50.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90	WD90					
DESIGN LEVEL	2.751	2.701	2.751	3.040	3.040	2.784	2.740	2.796	3.000	
LEVEL DIFF.	-0.153	0.118	0.159	-0.001	3.488	2.12	1.767	1.303	-0.248	
HORIZ. OFFSET	67.367	66.867	66.366	62.862	37.773	29.245	28.027	26.809	20.718	0.000

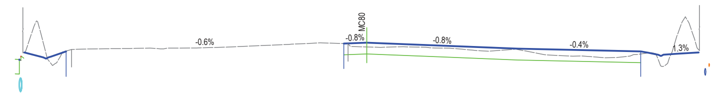
CH. 40.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.851	2.801	2.851	3.040	3.351	3.409	3.289	3.169	3.040	2.857	2.807	2.857	3.000
LEVEL DIFF.	0.052	0.631	0.307	-0.116	0.057	-0.007	-0.267	-0.123	-0.183	-0.096	-0.221	-0.335	-0.401	0.202
HORIZ. OFFSET	67.678	63.873	63.372	62.872	59.367	5.890	0.000	15.000	30.000	54.337	57.837	58.338	58.838	65.785

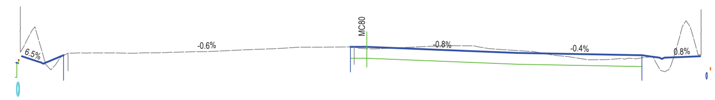
CH. 110.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.801	2.751	2.801	3.040	3.353	3.389	3.269	3.149	3.040	2.907	2.857	2.907	3.000
LEVEL DIFF.	-0.006	0.546	0.204	-0.115	0.019	0	-0.172	-0.096	-0.03	-0.102	-0.204	-0.395	-0.461	0.107
HORIZ. OFFSET	68.177	64.372	63.872	63.371	59.867	4.574	0.000	15.000	30.000	54.552	58.053	58.553	59.053	66.079

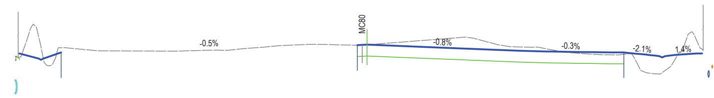
CH. 100.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.751	2.701	2.751	3.040	3.370	3.369	3.249	3.129	3.040	2.943	2.893	2.943	3.000
LEVEL DIFF.	0.256	0.575	0.284	-0.092	-0.005	-0	-0.071	0.165	0.093	-0.104	-0.435	-0.472	-0.554	0.053
HORIZ. OFFSET	68.676	64.871	64.371	63.870	60.366	3.257	0.000	15.000	30.000	54.768	58.269	58.769	59.269	66.373

CH. 90.000



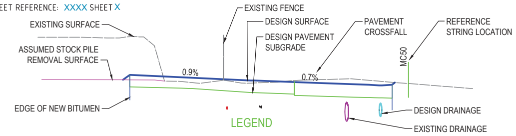
REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NL8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.799	2.749	2.799	3.040	3.328	3.349	3.229	3.109	3.040	2.887	2.846	2.894	3.000
LEVEL DIFF.	-0.147	0.889	0.497	-0.039	0.187	-0.001	-0.007	0.348	0.15	-0.069	-0.704	-0.598	-0.572	0.165
HORIZ. OFFSET	69.175	65.371	64.870	64.369	60.865	1.941	0.000	15.000	30.000	51.094	58.208	58.754	59.285	66.667

CH. 80.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

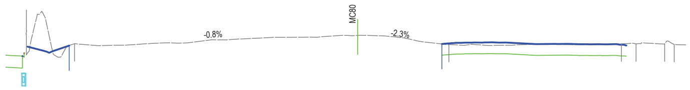
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 40 - CH 110
CROSS SECTIONS

DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 28
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

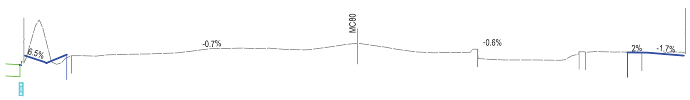
CAD FILE NAME: XXXX SHEET 0028.DWG



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J
DESIGN LEVEL	3.000	2.801	2.752	2.802	3.040		3.104
LEVEL DIFF.	-0.26	1.107	0.687	0.169	0.007	-0.042	0.001
HORIZ. OFFSET	65.681	61.876	61.375	60.875	57.370	0.000	16.782

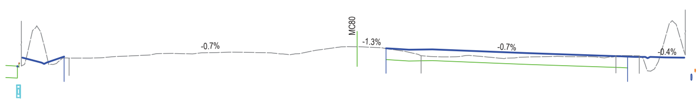
CH. 150.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			WD90 NJ8J		
DESIGN LEVEL	3.000	2.751	2.701	2.752	3.040		3.122	3.119	3.000
LEVEL DIFF.	-0.196	1.141	0.8	0.359	-0.12	0.024	0.001	-0.007	0.125
HORIZ. OFFSET	66.180	62.375	61.875	61.374	57.870	0.000	53.690	57.691	64.903

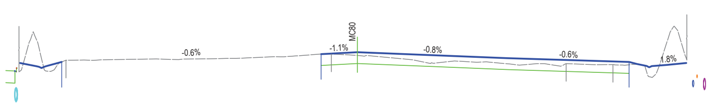
CH. 140.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J	WD90				
DESIGN LEVEL	3.000	2.799	2.749	2.798	3.040		3.372	3.040	3.028	2.977	3.027	3.000
LEVEL DIFF.	-0.314	1.095	0.76	0.298	-0.056	-0.013	-0.01	0.039	-0.306	-0.506	-0.568	0.217
HORIZ. OFFSET	66.679	62.874	62.374	61.873	58.369	0.000	5.755	53.905	57.406	57.906	58.406	65.197

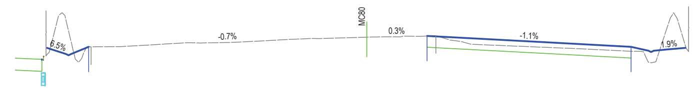
CH. 130.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90		NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.849	2.799	2.849	3.040	3.352	3.429	3.309	3.189	3.040	2.879	2.829	2.879	3.000
LEVEL DIFF.	-0.328	0.743	0.369	-0.09	0.003	0.006	-0.13	-0.313	-0.223	-0.111	-0.242	-0.372	-0.446	0.188
HORIZ. OFFSET	67.178	63.374	62.873	62.372	58.868	7.207	0.000	15.000	30.000	54.121	57.622	58.122	58.622	65.491

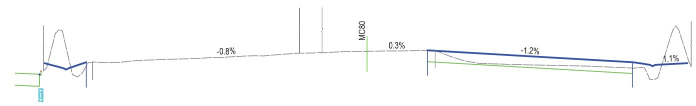
CH. 120.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J	WD90				
DESIGN LEVEL	3.000	2.752	2.702	2.752	3.040		3.475	3.040	2.882	2.832	2.882	3.000
LEVEL DIFF.	-0.268	1.344	0.972	0.499	0.001	-0.013	-0	-0.177	-0.46	-0.428	-0.46	0.086
HORIZ. OFFSET	63.684	59.879	59.378	58.878	55.373	0.000	12.000	52.611	56.112	56.612	57.112	63.434

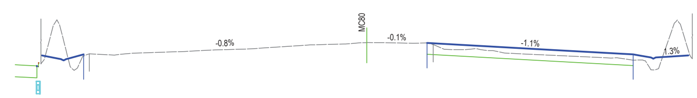
CH. 190.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J	WD90				
DESIGN LEVEL	3.000	2.798	2.748	2.798	3.040		3.512	3.040	2.932	2.882	2.932	3.000
LEVEL DIFF.	-0.266	1.273	0.879	0.392	-0.158	0	-0	-0.233	-0.58	-0.53	-0.563	0.261
HORIZ. OFFSET	64.183	60.378	59.878	59.377	55.873	0.000	12.000	52.827	56.328	56.828	57.328	63.727

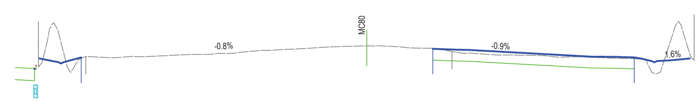
CH. 180.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J	WD90				
DESIGN LEVEL	3.000	2.848	2.798	2.848	3.040		3.496	3.040	2.918	2.868	2.918	3.000
LEVEL DIFF.	-0.287	1.148	0.802	0.35	-0.066	0.009	0.001	-0.232	-0.491	-0.449	-0.488	0.201
HORIZ. OFFSET	64.682	60.878	60.377	59.876	56.372	0.000	12.000	53.043	56.543	57.044	57.544	64.021

CH. 170.000



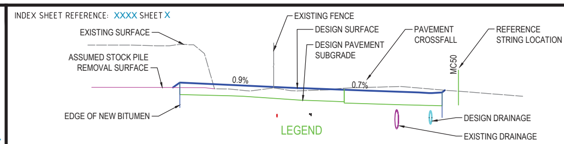
REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90			NJ8J	WD90				
DESIGN LEVEL	3.000	2.851	2.802	2.852	3.040		3.390	3.040	2.895	2.846	2.896	3.000
LEVEL DIFF.	-0.287	1.169	0.826	0.383	-0.04	-0.011	0.007	-0.048	-0.449	-0.434	-0.494	0.18
HORIZ. OFFSET	65.181	61.377	60.876	60.376	56.871	0.000	13.142	53.258	56.759	57.259	57.759	64.315

CH. 160.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

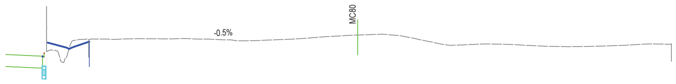
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 120 - CH 190
CROSS SECTIONS

DESIGNED: PWP
DRAFTED: WGA
CHECKED:
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 29
AMEND No.: C
SHEET LATITUDE -XX.XXXXX
SHEET LONGITUDE XXX.XXXXX

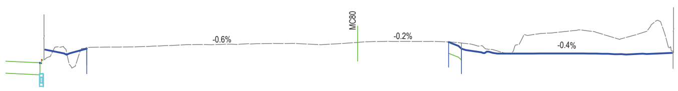
CAD FILE NAME: XXXX SHEET 0029.DWG



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.798	2.748	2.798	3.040	
LEVEL DIFF.	-0.34	-0.368	0.028	0.241	0.091	-0.011
HORIZ. OFFSET	61.687	57.882	57.382	56.881	53.377	0.000

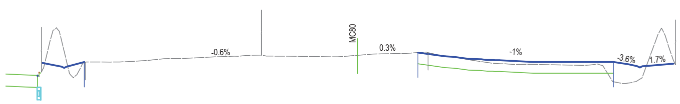
CH. 230.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90		NJ8J	WD90	
DESIGN LEVEL	3.000	2.848	2.798	2.848	3.040		3.304	3.040	2.872
LEVEL DIFF.	-0.373	0.228	0.075	-0.414	0.046	-0.052	0.003	0.225	0.076
HORIZ. OFFSET	62.186	58.381	57.881	57.380	53.876	0.000	18.097	20.675	62.552

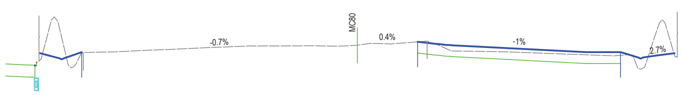
CH. 220.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90		NJ8J	WD90				
DESIGN LEVEL	3.000	2.852	2.802	2.852	3.040		3.415	3.038	2.866	2.820	2.868	2.972
LEVEL DIFF.	-0.269	1.031	0.666	0.193	-0.032	-0.068	0	-0.792	-0.577	-0.464	-0.419	0.125
HORIZ. OFFSET	62.685	58.881	58.380	57.879	54.375	0.000	12.000	50.912	55.678	56.178	56.679	62.846

CH. 210.000



REF. STRING MC80 R.L. 0.500

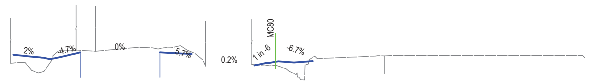
DESIGN LABELS					WD90		NJ8J	WD90				
DESIGN LEVEL	3.000	2.802	2.752	2.802	3.040		3.453	3.040	2.832	2.782	2.832	3.000
LEVEL DIFF.	-0.276	1.269	0.889	0.409	-0.053	-0.087	0	-0.127	-0.448	-0.41	-0.419	-0.078
HORIZ. OFFSET	63.185	59.380	58.879	58.379	54.874	0.000	12.000	52.396	55.896	56.397	56.897	63.140

CH. 200.000

REF. STRING MC80 R.L. 2.000

DESIGN LABELS			
DESIGN LEVEL	2.747	2.625	
LEVEL DIFF.	-0.184	-0.098	
HORIZ. OFFSET	30.169	18.758	0.000

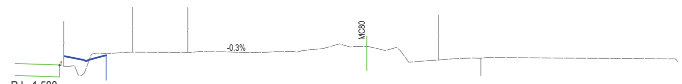
CH. 280.000



REF. STRING MC80 R.L. 1.000

DESIGN LABELS					WD90	WD90				
DESIGN LEVEL	2.942	2.823	2.767	2.812	3.040	3.040		2.514	2.661	2.689
LEVEL DIFF.	-0.329	-0.546	-0.157	0.192	0.078	0.145	0.086	0.031	-0.66	0.151
HORIZ. OFFSET	52.206	46.157	44.947	43.737	38.897	23.010	14.221	4.205	0.000	7.411

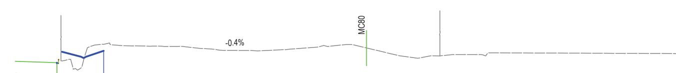
CH. 270.000



REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.852	2.802	2.852	3.040	
LEVEL DIFF.	-0.406	-0.559	-0.288	-0.069	0.061	0.168
HORIZ. OFFSET	60.189	56.384	55.884	55.383	51.879	0.000

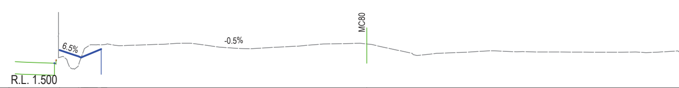
CH. 260.000



REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.802	2.752	2.802	3.040	
LEVEL DIFF.	-0.362	-0.444	-0.09	0.191	0.258	-0.095
HORIZ. OFFSET	60.688	56.884	56.383	55.882	52.378	0.000

CH. 250.000



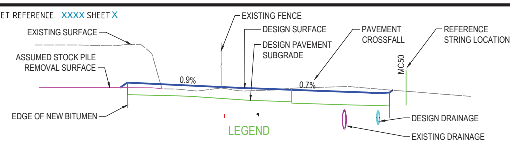
REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.752	2.702	2.752	3.040	
LEVEL DIFF.	-0.29	-0.337	0.003	0.222	0.166	-0.037
HORIZ. OFFSET	61.188	57.383	56.882	56.382	52.877	0.000

CH. 240.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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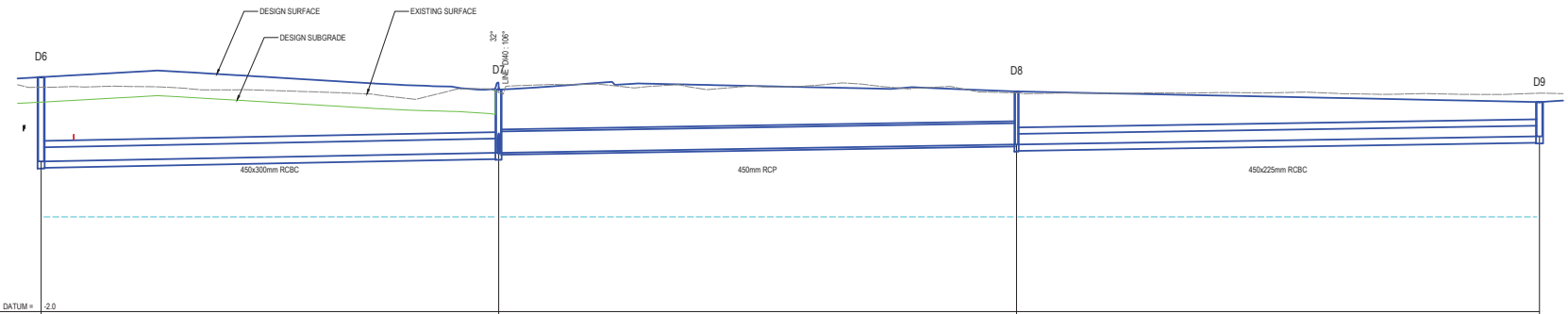
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 200 - CH 280
CROSS SECTIONS

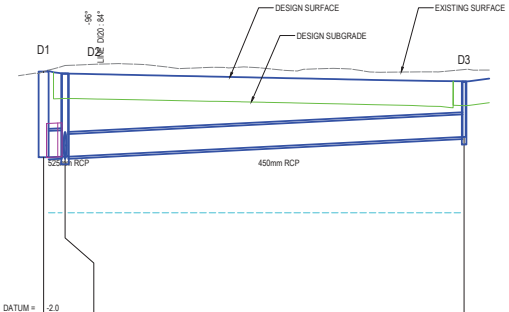
DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 30
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

CAD FILE NAME: XXXX SHEET 0030.DWG



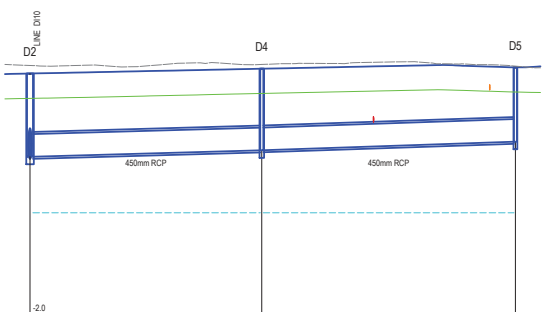
DATUM =	-2.0										
GRADES		0.19%				0.16%			0.16%		
INVERT LEVEL	1.17				1.35			1.53			1.70
DESIGN SURFACE	2.95				2.88			2.65			2.43
CHAINAGE	0.00	L=96.58			96.58	L=109.29		205.86	L=110.36		316.22

DB0B



DATUM =	-2.0										
GRADES		0.28%				0.49%					
INVERT LEVEL	1.11		1.12						1.51		
DESIGN SURFACE	2.81		2.77						2.61		
CHAINAGE	-4.28	L=4.28	0.00			L=79.45			79.45		

DI10



	-2.0										
		0.28%				0.33%					
	1.12				1.24				1.42		
	2.77				2.87				2.90		
	0.00	L=46.15			46.15	L=50.50			96.65		

DI20

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX | FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX | SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 1 0 0.5 1 1.5 2

DESIGNED: PWP | DRAFTED: WGA | CHECKED: | ACCEPTED FOR USE: | TITLE: | DATE: | ACCEPTANCE FORM KNET No.: | IN ACCORDANCE WITH DP013

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

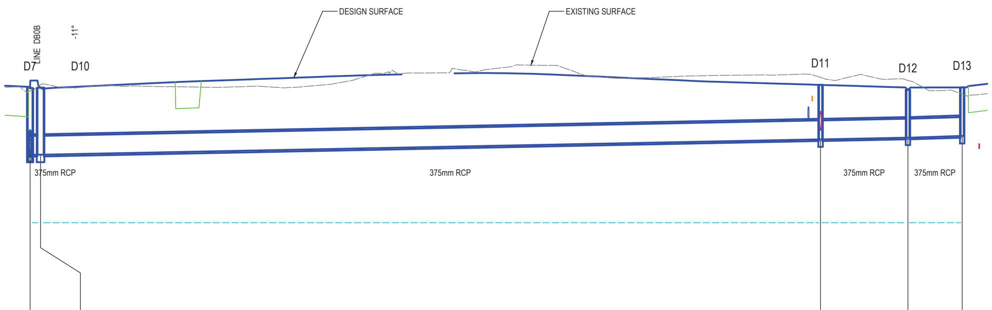
DB0B, DI10, DI20

DRAINAGE LONGITUDINAL SECTIONS

DRAWING No.: XXXX | SHEET No.: 31 | AMEND No.: C

SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

CAD FILE NAME: XXXX SHEET 1031DWG



DATUM = -2.0

GRADES		0.14%		0.20%		0.20%		0.31%
INVERT LEVEL	1.35		1.36		1.66		1.70		1.73
DESIGN SURFACE	2.68		2.69		2.75		2.65		2.70
CHAINAGE	0.00	L=2.08	2.08	L=155.22	157.31	L=17.39	174.70	L=10.79	185.49

DI40

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

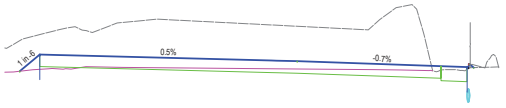
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20
1 0 0.5 1 1.5 2

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
DI40
DRAINAGE LONGITUDINAL SECTIONS

DESIGNED: PWP
CHECKED:
DRAFTED: WGA
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 32
AMEND No.: C
SHEET LATITUDE -XX.XXXXX
SHEET LONGITUDE XXX.XXXXX

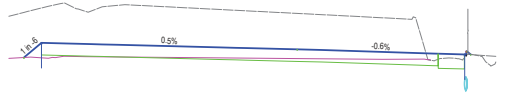
CAD FILE NAME: XXXX SHEET 0032.DWG



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70		NL02		IA01	CE01
DESIGN LEVEL	2.629	3.290		3.026		2.791	2.768
LEVEL DIFF.	1.214	0.795		1.39		-0.079	0
HORIZ. OFFSET	55.211	51.242		0.000		33.858	35.168

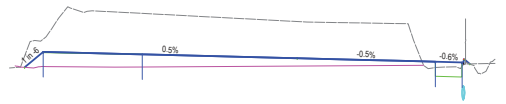
CH. 20.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70		NL02		IA01	CE01
DESIGN LEVEL	2.888	3.270		3.013		2.811	2.805
LEVEL DIFF.	1.796	1.39		1.431		-0.074	0.002
HORIZ. OFFSET	54.402	50.904		0.000		33.359	34.567

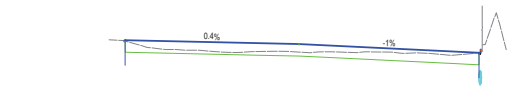
CH. 10.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	CE70	NL02	CE70	IA01	CE01
DESIGN LEVEL	2.635	3.250	3.152	3.000	2.860	2.831	2.771
LEVEL DIFF.	0.444	0.508	1.633	1.46	-0.233	-0.125	0
HORIZ. OFFSET	54.261	50.566	30.826	0.000	27.534	32.860	34.391

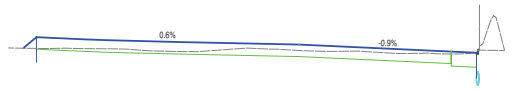
CH. 0.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70		NL02		CE01
DESIGN LEVEL	3.177	3.210	3.057	2.710	2.835
LEVEL DIFF.	0.011	-0.034	-0.321	0.008	-0.104
HORIZ. OFFSET	34.704	34.592	0.000	35.855	36.281

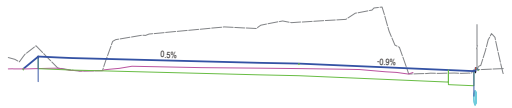
CH. 60.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70		NL02		IA01	CE01
DESIGN LEVEL	2.921	3.349		3.055		2.792	2.830
LEVEL DIFF.	-0.012	-0.448		-0.236		0.008	0
HORIZ. OFFSET	54.629	52.254		0.000		35.954	35.934

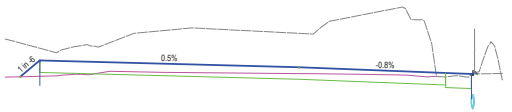
CH. 50.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70		NL02		IA01	CE01
DESIGN LEVEL	2.837	3.339		3.049		2.793	2.828
LEVEL DIFF.	0.497	0.345		1.651		0.048	0
HORIZ. OFFSET	54.873	51.917		0.000		34.857	35.698

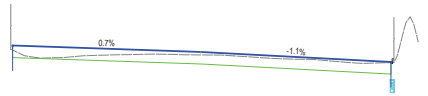
CH. 40.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70		NL02		IA01	CE01
DESIGN LEVEL	2.660	3.310		3.039		2.771	2.773
LEVEL DIFF.	1.344	0.484		1.349		-0.027	-0
HORIZ. OFFSET	56.480	51.980		0.000		34.368	35.530

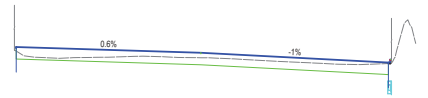
CH. 30.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70		NL02		CE01
DESIGN LEVEL	3.287		3.030	2.630	2.795
LEVEL DIFF.	-0.182		-0.117	-0.023	-0.142
HORIZ. OFFSET	37.470		0.000	37.852	38.270

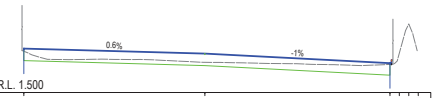
CH. 100.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70		NL02		CE01
DESIGN LEVEL	3.270		3.041	2.650	2.775
LEVEL DIFF.	-0.164		-0.197	-0.038	-0.18
HORIZ. OFFSET	36.754		0.000	37.353	37.779

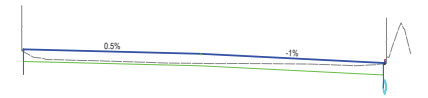
CH. 90.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	CE70		NL02		CE01
DESIGN LEVEL	3.250		3.050	2.670	2.795
LEVEL DIFF.	-0.109		-0.348	-0.051	-0.173
HORIZ. OFFSET	36.034		0.000	36.864	37.279

CH. 80.000



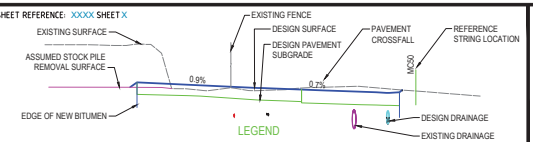
REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70		NL02		CE01
DESIGN LEVEL	3.230		3.066	2.693	2.815
LEVEL DIFF.	-0.098		-0.383	-0.035	-0.107
HORIZ. OFFSET	35.315		0.000	36.395	36.780

CH. 70.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
D	REF. STRING LABEL UPDATED	WGA			17.08.18
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

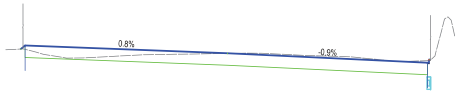
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX | FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX | SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 0.0 - CH 100
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 21	AMEND No.: D
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

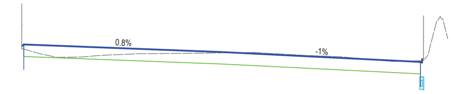
CAD FILE NAME: XXXX SHEET 10210DWG



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.094	3.236	2.926	2.550	2.525	2.675	2.675
LEVEL DIFF.	0	-0.153	-0.007	0.082	0.109	-0.041	-0.04
HORIZ. OFFSET	41.213	40.357	0.000	39.849	40.150	40.175	40.275

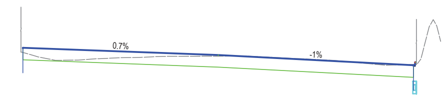
CH. 140.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.267	2.966	2.570	2.545	2.695	2.695
LEVEL DIFF.	-0.181	-0.033	0.047	0.074	-0.076	-0.075
HORIZ. OFFSET	39.637	0.000	39.350	39.650	39.675	39.775

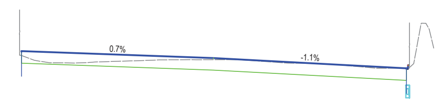
CH. 130.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.286	2.997	2.590	2.565	2.715	2.715
LEVEL DIFF.	-0.186	-0.044	0.029	0.055	-0.095	-0.094
HORIZ. OFFSET	38.916	0.000	38.851	39.151	39.176	39.276

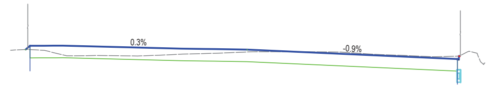
CH. 120.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.293	3.018	2.610	2.585	2.735	2.735
LEVEL DIFF.	-0.174	-0.066	0.006	0.031	-0.119	-0.119
HORIZ. OFFSET	38.195	0.000	38.352	38.652	38.677	38.777

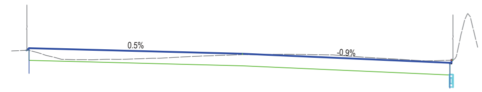
CH. 110.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.848	2.995	2.845	2.470	2.445	2.595	2.595	2.587
LEVEL DIFF.	0	-0.15	-0.095	0.114	0.141	-0.009	-0.009	-0
HORIZ. OFFSET	44.122	43.240	0.000	41.846	42.146	42.172	42.272	42.324

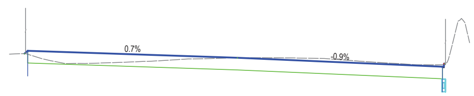
CH. 180.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.986	3.071	2.853	2.490	2.465	2.615	2.615	2.596
LEVEL DIFF.	0	-0.09	-0.037	0.103	0.13	-0.02	-0.02	-0
HORIZ. OFFSET	43.024	42.519	0.000	41.347	41.647	41.672	41.772	41.886

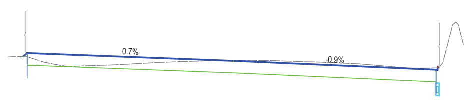
CH. 170.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.030	3.138	2.862	2.510	2.485	2.635	2.635
LEVEL DIFF.	0	-0.134	0.002	0.08	0.106	-0.043	-0.043
HORIZ. OFFSET	42.447	41.799	0.000	40.848	41.148	41.173	41.273

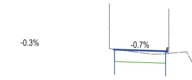
CH. 160.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	3.066	3.193	2.887	2.530	2.505	2.655	2.655
LEVEL DIFF.	-0	-0.142	0.013	0.069	0.094	-0.056	-0.056
HORIZ. OFFSET	41.842	41.078	0.000	40.348	40.649	40.674	40.774

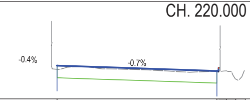
CH. 150.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS		IA70 CE70					CE0J
DESIGN LEVEL		2.763	2.759	2.690	2.665	2.815	2.815
LEVEL DIFF.		0.009	0.009	-0.105	-0.078	-0.228	-0.228
HORIZ. OFFSET	0.000	33.469	33.642	43.843	44.143	44.168	44.269

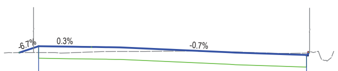
CH. 220.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS		CE70				CE0J
DESIGN LEVEL		2.815	2.605	2.581	2.731	2.731
LEVEL DIFF.		-0.144	-0.008	0.02	-0.13	-0.129
HORIZ. OFFSET	0.000	11.573	43.344	43.644	43.669	43.769

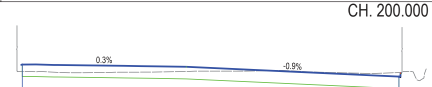
CH. 210.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	IA70	CE70	NL02				CE0J
DESIGN LEVEL	2.615	2.872	2.842	2.521	2.496	2.646	2.646
LEVEL DIFF.	-0	-0.256	-0.201	0.073	0.098	-0.052	-0.052
HORIZ. OFFSET	14.351	10.496	0.000	42.845	43.145	43.170	43.270

CH. 200.000



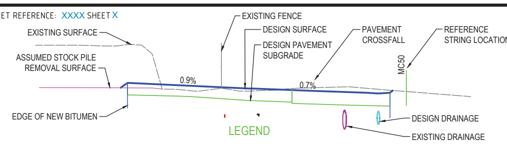
REF. STRING MC02 R.L. 1.000

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	2.928	2.838	2.450	2.425	2.575	2.575
LEVEL DIFF.	-0.277	-0.187	0.159	0.186	0.037	0.037
HORIZ. OFFSET	32.565	0.000	42.345	42.646	42.671	42.771

CH. 190.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
D	REF. STRING LABEL UPDATED	WGA			17.08.18
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4	

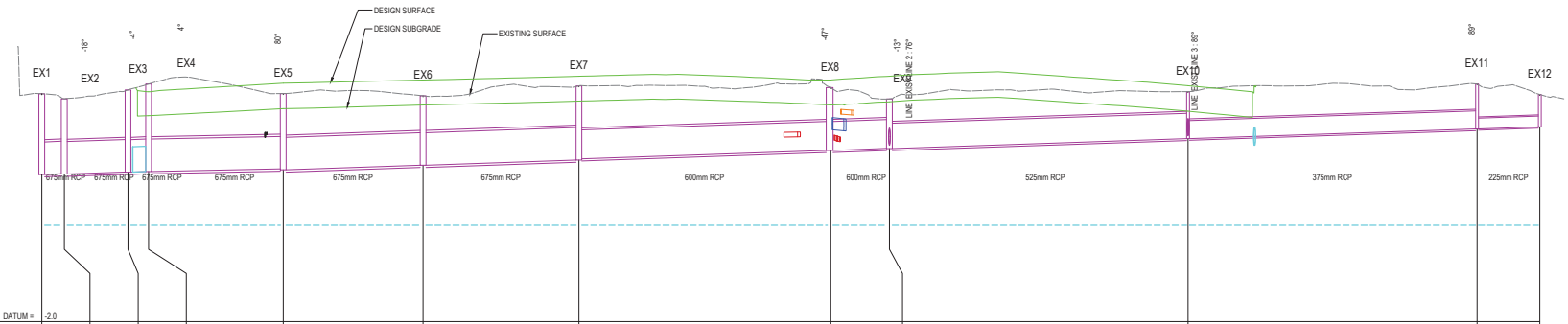
ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 110 - CH 220
CROSS SECTIONS

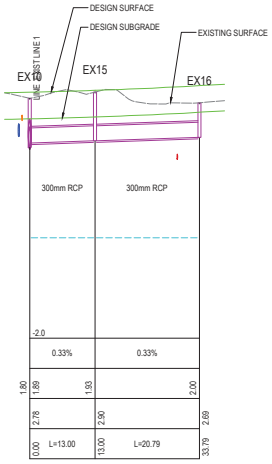
DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 22	AMEND No.: D
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

CAD FILE NAME: XXXX SHEET 0022.DWG

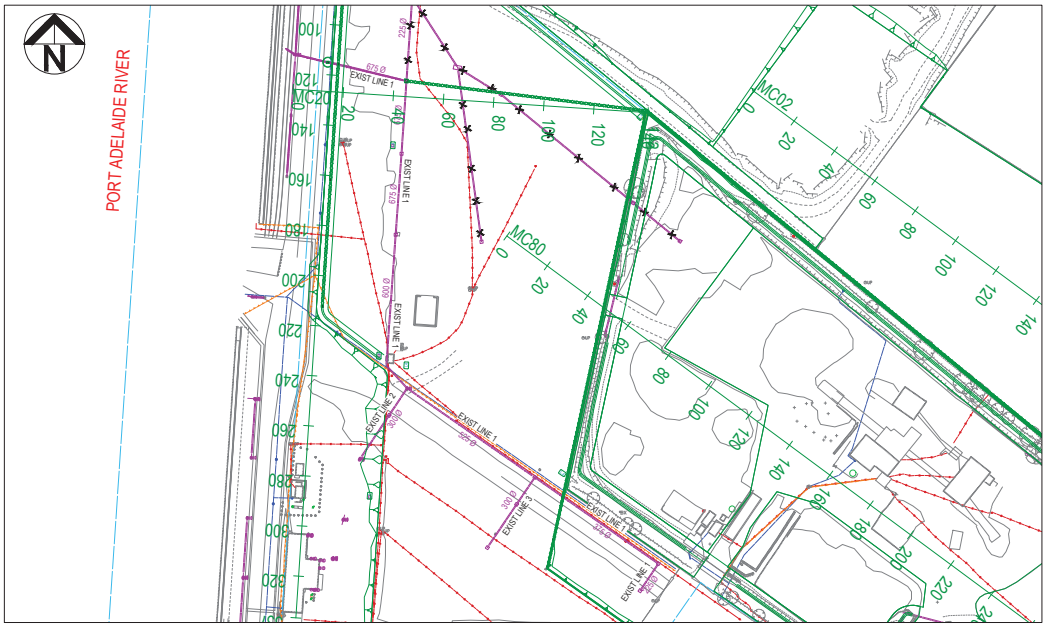


EXIST LINE 1

EXIST LINE 2



EXIST LINE 3



SITE OVERVIEW - EXISTING DRAINAGE NETWORK

SCALE 1:1000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia

Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20 / 1 0 0.5 1 1.5 2

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 41	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

EXISTING - LINE 1, LINE 2, LINE 3

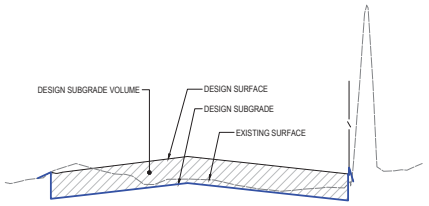
DRAINAGE LONGITUDINAL SECTIONS

CAD FILE NAME: XXXX SHEET 104.DWG

DEPTH RANGE FILE

Lower_value		Upper_value		Colour
-1.00	to	-0.95	m	
-0.95	to	-0.90	m	
-0.90	to	-0.85	m	
-0.85	to	-0.80	m	
-0.80	to	-0.75	m	
-0.75	to	-0.70	m	
-0.70	to	-0.65	m	
-0.65	to	-0.60	m	
-0.60	to	-0.55	m	
-0.55	to	-0.50	m	
-0.50	to	-0.45	m	
-0.45	to	-0.40	m	
-0.40	to	-0.35	m	
-0.35	to	-0.30	m	
-0.30	to	-0.25	m	
-0.25	to	-0.20	m	
-0.20	to	-0.15	m	
-0.15	to	-0.10	m	
-0.10	to	-0.05	m	
-0.05	to	0	m	
0	to	0.05	m	
0.05	to	0.10	m	
0.10	to	0.15	m	
0.15	to	0.20	m	
0.20	to	0.25	m	
0.25	to	0.30	m	
0.30	to	0.35	m	
0.35	to	0.40	m	
0.40	to	0.45	m	
0.45	to	0.50	m	
0.50	to	0.55	m	
0.55	to	0.60	m	
0.60	to	0.65	m	
0.65	to	0.70	m	

NOTE:
DEPTH RANGE BANDING TAKEN BETWEEN PROPOSED SUBGRADE DESIGN SURFACE TO EXISTING SURFACE



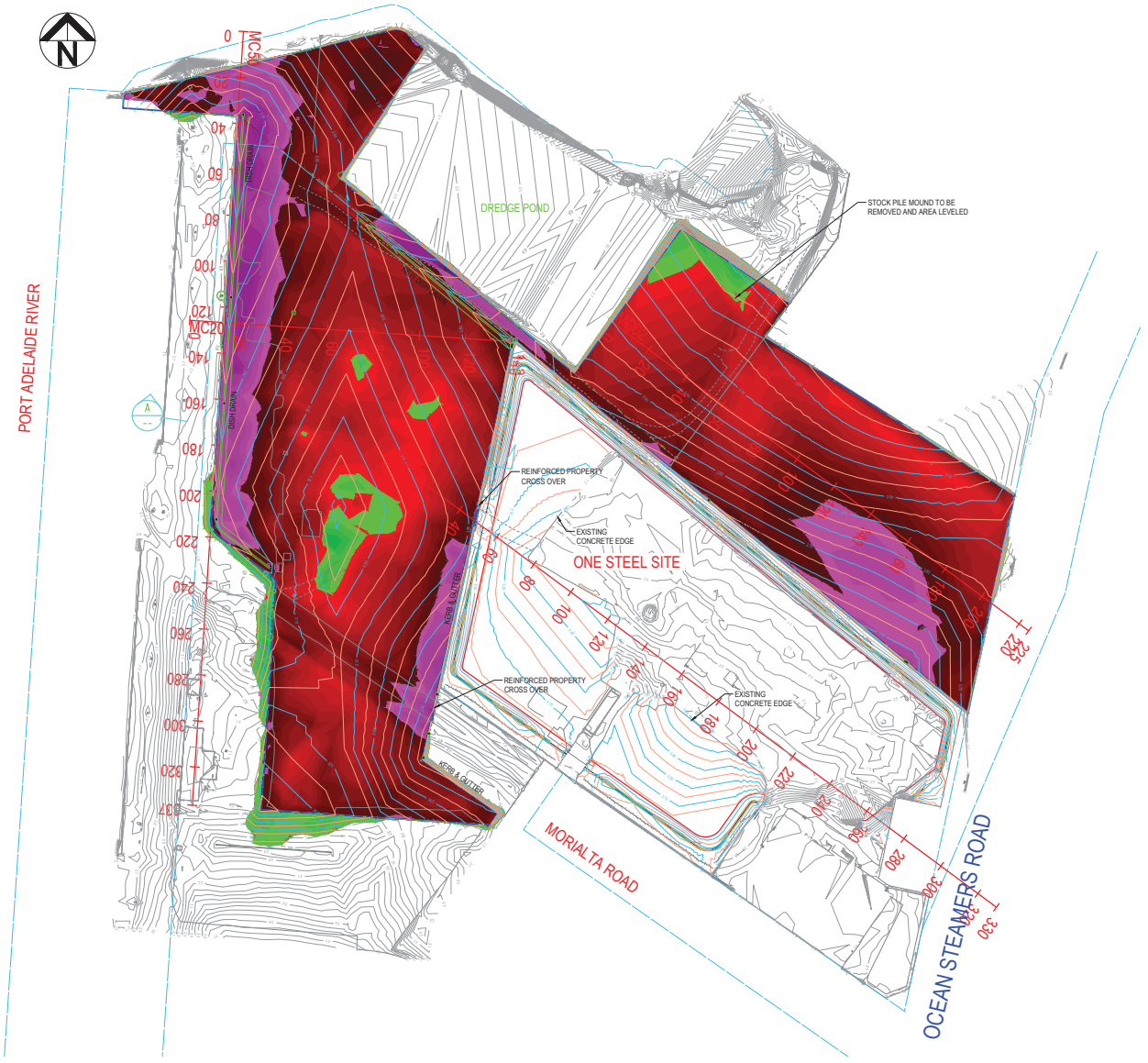
SECTION A
N.T.S.

DESIGN SUBGRADE SURFACE VOLUME BREAKDOWN

Total cut	-14950.151
Total fill	273.171
Total balance	-14676.980
ie excess of cut over fill	14676.980

DESIGN SUBGRADE VOLUME BREAKDOWN

Total cut	-0.000
Total fill	23954.503
Total balance	23954.503
ie excess of fill over cut	23954.503



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

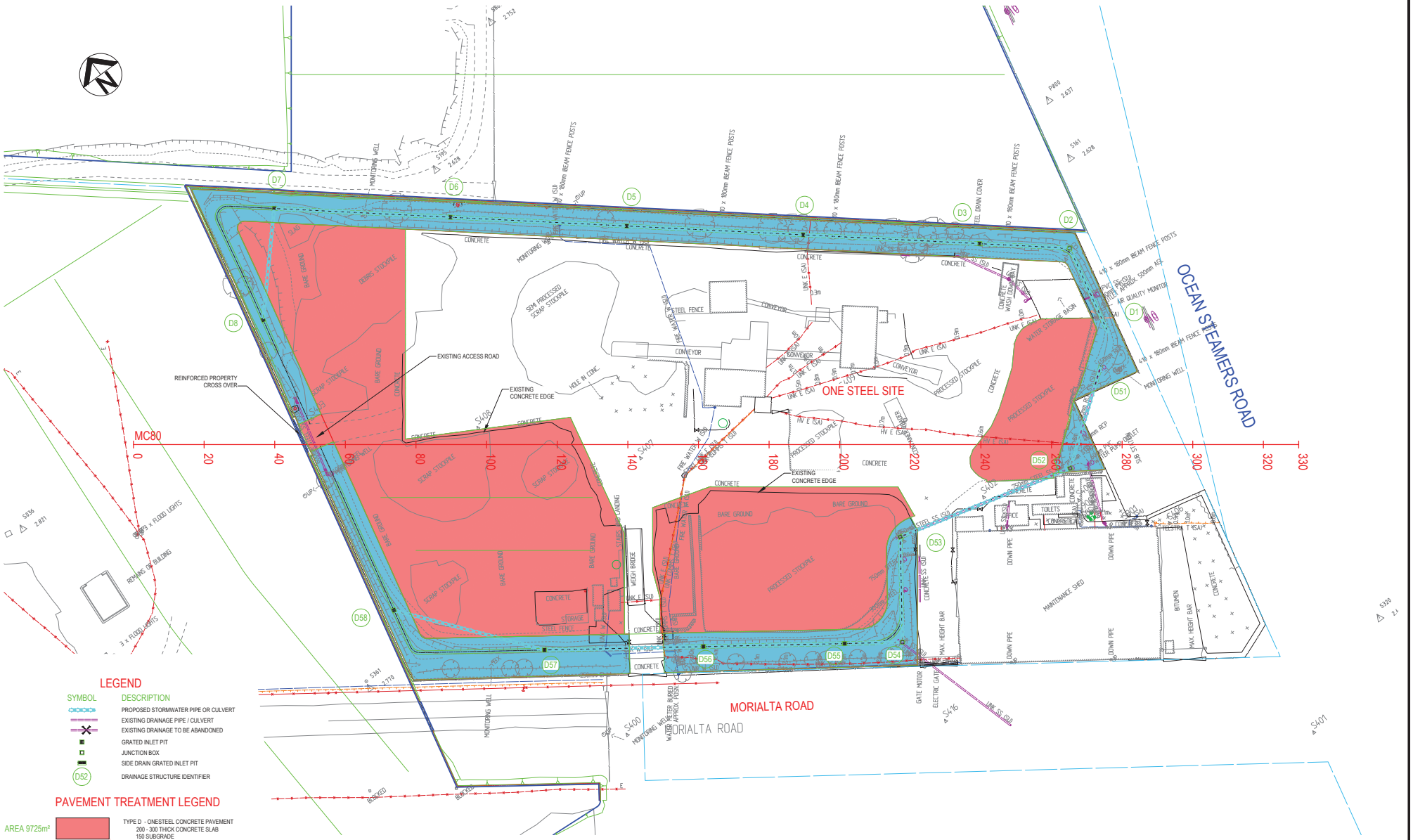
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

VOLUME BREAKDOWN

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 42	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 104-2.DWG



LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORMWATER PIPE OR CULVERT
	EXISTING DRAINAGE PIPE / CULVERT
	EXISTING DRAINAGE TO BE ABANDONED
	GRATED INLET PIT
	JUNCTION BOX
	SIDE DRAIN GRATED INLET PIT
D52	DRAINAGE STRUCTURE IDENTIFIER

PAVEMENT TREATMENT LEGEND

AREA 9725m²		TYPE D - ONESTEEL CONCRETE PAVEMENT 200 - 300 THICK CONCRETE SLAB 150 SUBGRADE
AREA 5148m²		TYPE E - LINED SWALE CONCRETE LINED DRAINAGE SWALE

NOTES:

1. FOR PAVEMENT DETAILS REFER TO THE PAVEMENT SCHEDULES IN THE CONTRACT SPECIFICATION. THE PAVEMENT TREATMENT LEGEND PROVIDES A BRIEF DESCRIPTION OF THE PAVEMENT CONFIGURATION.

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427

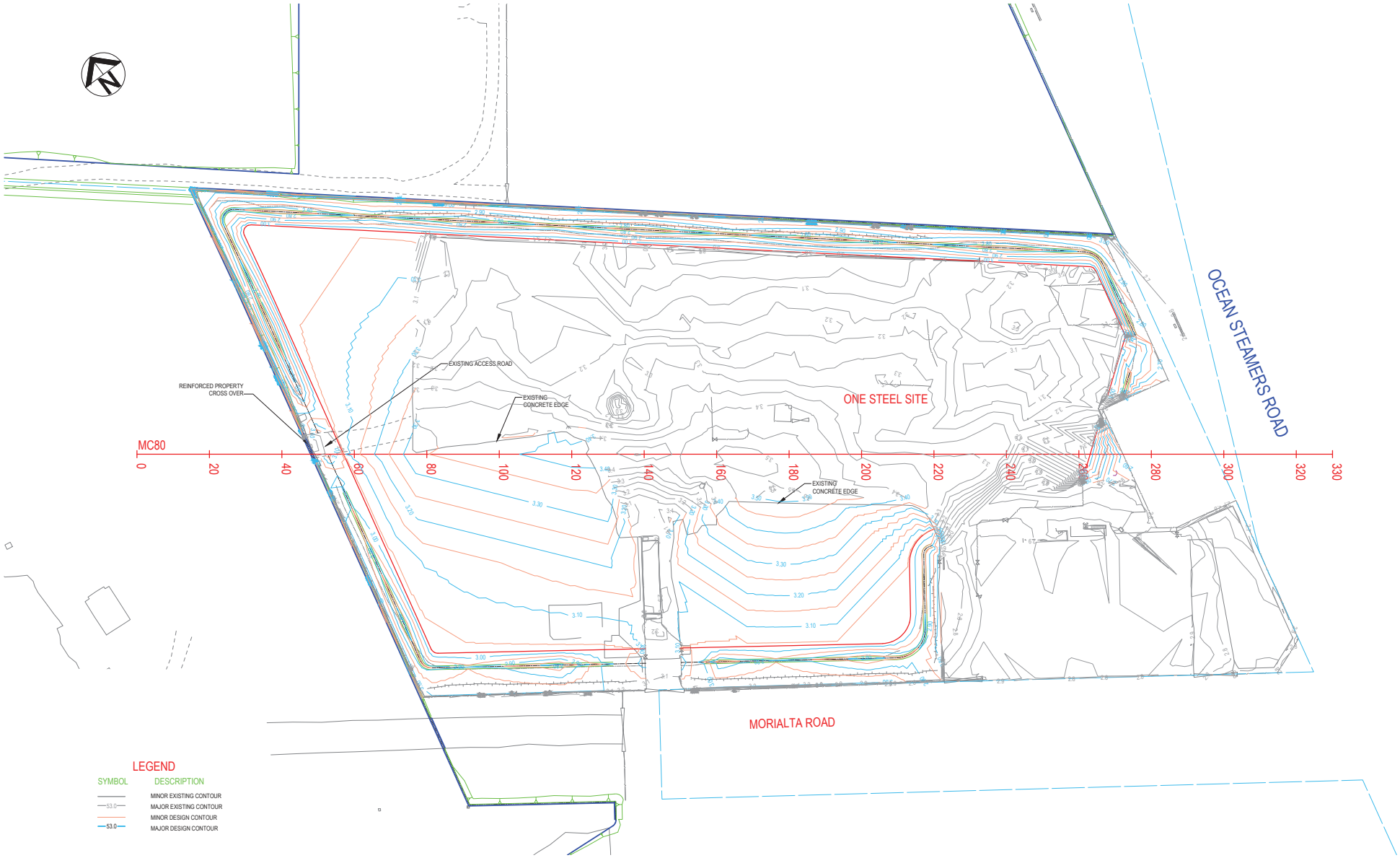
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
GENERAL CONSTRUCTION

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0011	C

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE | 100 MILLIMETRES ON ORIGINAL DRAWING | UNCONTROLLED COPY WHEN PRINTED

CAD FILE NAME: XXXX SKETCH 0011DWG



NOTES:

1. DESIGN CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.
2. EXISTING CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
FINAL SURFACE CONTOURS

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0012	C

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► UNCONTROLLED COPY WHEN PRINTED

CAD FILE NAME: XXXX SKETCH 0012.DWG

DEPTH RANGE FILE

Lower_value		Upper_value	Colour
-300	to	-1.45	m
-1.45	to	-1.40	m
-1.40	to	-1.35	m
-1.35	to	-1.30	m
-1.30	to	-1.25	m
-1.25	to	-1.20	m
-1.20	to	-1.15	m
-1.15	to	-1.10	m
-1.10	to	-1.05	m
-1.05	to	-1.00	m
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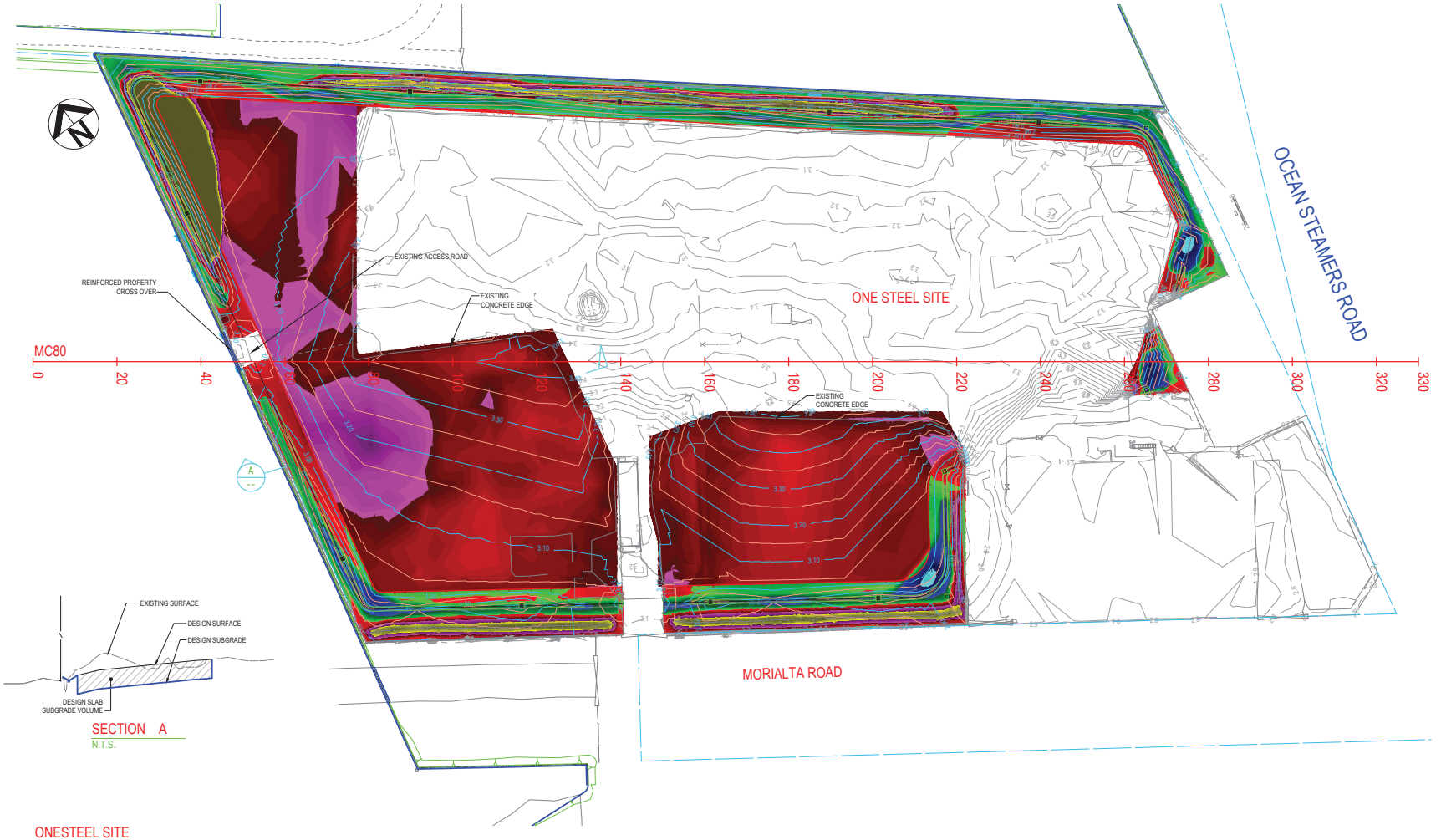
-0.40	to	-0.35	m
-0.35	to	-0.30	m
-0.30	to	-0.25	m
-0.25	to	-0.20	m
-0.20	to	-0.15	m
-0.15	to	-0.10	m
-0.10	to	-0.05	m
-0.05	to	0	m
0	to	0.05	m
0.05	to	0.10	m
0.10	to	0.15	m
0.15	to	0.20	m
0.20	to	0.25	m
0.25	to	0.30	m
0.30	to	0.35	m
0.35	to	0.40	m
0.40	to	0.45	m
0.45	to	0.50	m
0.50	to	0.55	m
0.55	to	0.60	m
0.60	to	0.65	m
0.65	to	0.70	m
0.70	to	0.75	m
0.75	to	0.80	m
0.80	to	0.85	m
0.85	to	0.90	m
0.90	to	0.95	m
0.95	to	1.00	m
1.00	to	1.05	m
1.05	to	1.10	m



SECTION A
N.T.S.

ONESTEEL SITE

DESIGN SLAB SURFACE VOLUME BREAKDOWN

Total cut	-5971.160
Total fill	736.852
Total balance	-5234.309
ie excess of cut over fill	5234.309

DESIGN SLAB SUBGRADE VOLUME BREAKDOWN

Total cut	0.000
Total fill	3903.697
Total balance	3903.697
ie excess of fill over cut	3903.697

NOTE:
DEPTH RANGE BANDING TAKEN BETWEEN PROPOSED SUBGRADE DESIGN SURFACE TO EXISTING SURFACE

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
VOLUME BREAKDOWN

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0013	C

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE | 100 MILLIMETRES ON ORIGINAL DRAWING | UNCONTROLLED COPY WHEN PRINTED

CAD FILE NAME: XXXX SKETCH 0013.DWG

ekistics

Appendix 3. Stormwater Management Plan

WALLBRIDGE GILBERT AZTEC

Department of Planning, Transport & Infrastructure

Title F Remediation

STORMWATER MANAGEMENT PLAN

Project No. WGA161711
Doc No. RP-CV-0002
Rev. C

16 August 2018

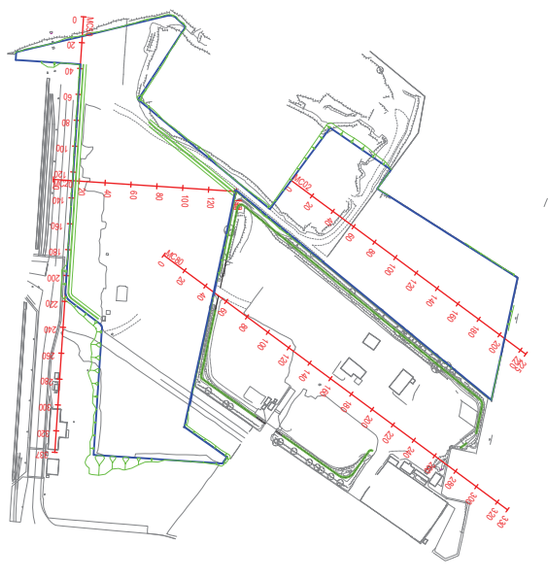
Revision History

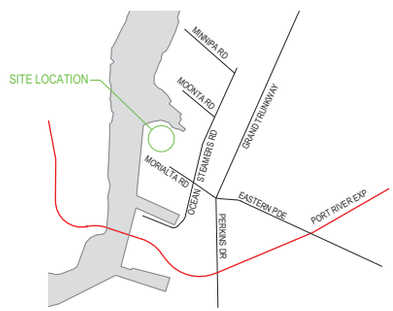
Rev	Date	Issue	Originator	Checker	Approver
A	01/08/2017	Draft Issue to Client	SMc	AL	AL
B	13/10/2017	Issue to Client	SMc		
C	16/08/2018	For Approval	SMc		

CONTENTS

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE





LOCALITY PLAN
NOT TO SCALE

DRAWING INDEX

GENERAL CONSTRUCTION

SHEET	LOCATION
11	

DRAINAGE

SHEET	LOCATION
12	

FINAL SURFACE CONTOURS

SHEET	LOCATION
13	

PAVEMENT TREATMENT

SHEET	LOCATION
14	

GEOMETRIC SETOUT

SHEET	LOCATION
15	

CROSS SECTIONS

SHEET	LOCATION
21	MC02; CH 0.0 - CH 100
22	MC02; CH 110 - CH 220
23	MC50; CH 0.0 - CH 60
24	MC50; CH 70 - CH 130
25	MC50; CH 140 - CH 200
26	MC50; CH 210 - CH 280
27	MC50; CH 290 - CH 336
28	MC80; CH 40 - CH 110
29	MC80; CH 120 - CH 190
30	MC80; CH 200 - CH 280

DRAINAGE LONGITUDINAL SECTIONS

SHEET	LOCATION
31	DB0B, DI10, DI20
32	DI40
41	EXISTING - LINE 1, LINE 2, LINE 3

LONGITUDINAL SECTIONS

SHEET	LOCATION

REFERENCE DOCUMENTS

- CROSS SECTION REPORT --
- GEOMETRIC REPORT --
- AS1742 MANUAL OF TRAFFIC CONTROL DEVICES
- DPTI MASTER SPECIFICATION
- S-4070 SHEETS 6 & 7 (KERB AND GUTTER)
- S-4080 SHEETS 1,2,&3 (JUNCTION BOX AND SIDE ENTRY PITS)
- S-4080 SHEET 6 (GRATED FIELD PIT)
- S-4055 SHEETS 19-24, 30, 37-42, 46, 48 & 49 (LIGHT POLES & FOOTINGS)
- S-4055 SHEETS 33-35 (LIGHTING PIT DETAILS)
- S-4055 SHEETS 43 & 54-58 (ELECTRICAL SWITCH BOARD)

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES:	

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

TITLE AND INDEX

DESIGNED	DRAFTED	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
PWP	WGA			XXXX	1	C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 0001.DWG

LEGEND

SYMBOL DESCRIPTION

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

ELECTRICAL
- STOBIE POLE - EXISTING
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (SAPN)
- PROPOSED NEW CONDUIT LAYOUT

GAS
- INSPECTION COVER
- JUNCTION BOX
- MARKER POST
- METER
- UNDERGROUND PIPE

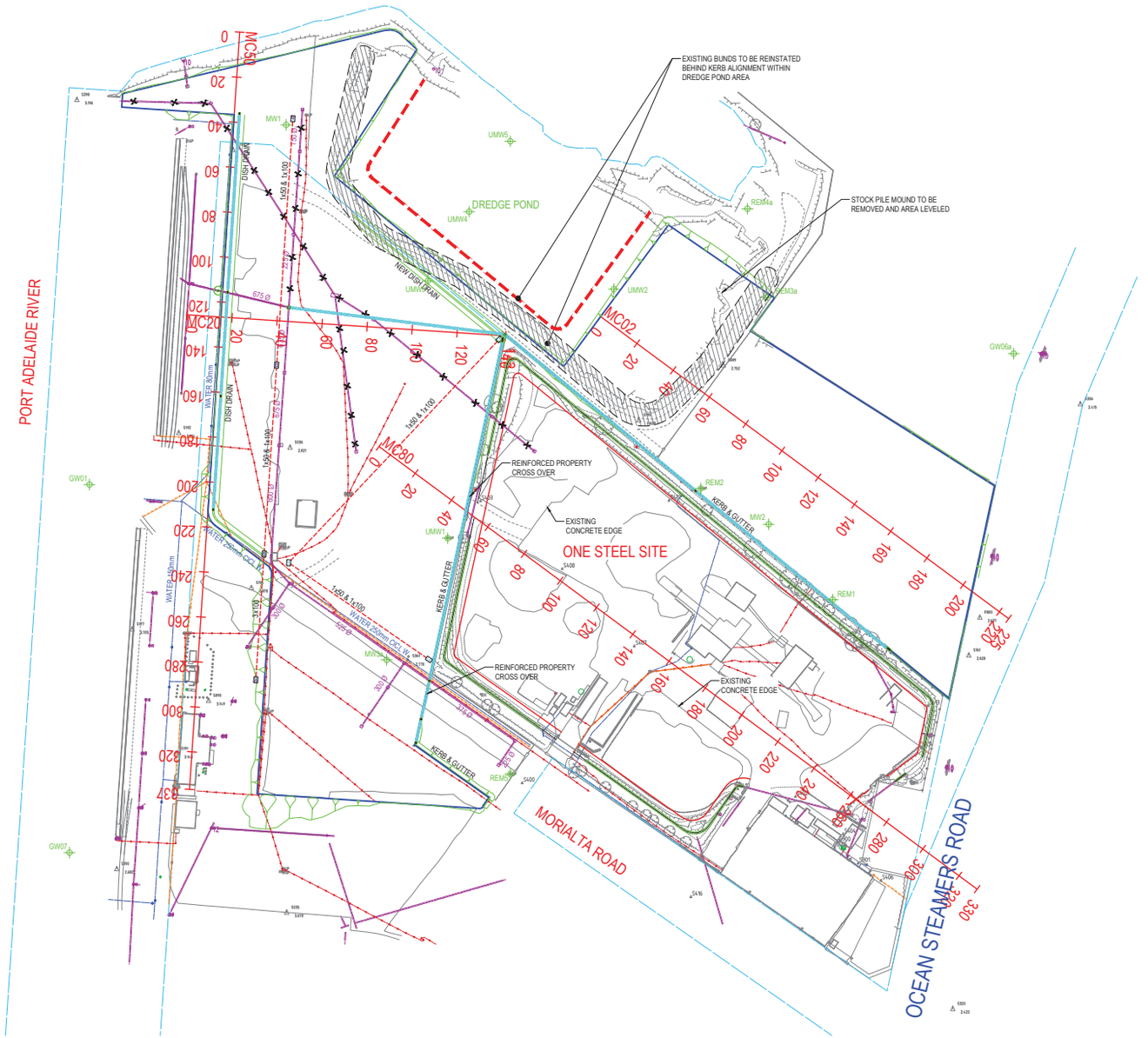
SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

STORMWATER
- PIPE / CULVERT
- DRAINAGE TO BE ABANDONED
- PROPOSED STORMWATER PIPE
- MONITORING WELLS

NOTES:

1. THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION . THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
2. DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION . THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES.
3. THIS DESIGN COMPLIES WITH THE OFFICE OF THE TECHNICAL REGULATOR OVERHEAD & UNDERGROUND ELECTRICAL CABLES CLEARANCE REQUIREMENTS. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGNER AND PROJECT MANAGER NOTIFIED.
4. ELECTRICAL DETAILS HAVE BEEN DESIGNED IN ACCORDANCE WITH AUSTRALIAN / NEW ZEALAND STANDARD 'AS/NZS 3000 ELECTRICAL INSTALLATIONS (WIRING RULES)'.
5. ALL SIGNAL CONDUIT TO BE 'CATEGORY A' UNDERGROUND PVC.
6. TELSTRA CONDUIT TO CONFORM TO AUSTRALIAN STANDARD 'AS 1477 PVC PIPES AND FITTINGS FOR PRESSURE APPLICATIONS' CLASS 12 WHITE.
7. FOR EARTHWORK AREAS CUT/FILL VOLUMES REFER TO SHT.1
8. IMPACT ROLLING NOT TO BE UNDERTAKEN ABOVE EXISTING SERVICES. CONTRACTOR TO ALLOW TO EXCAVATE THESE AREAS AND COMPACT IN LAYERS TO ACHIEVE REQUIRED COMPACTION.



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

GENERAL CONSTRUCTION

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 11	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

CAD FILE NAME: XXXX SHEET 0011.DWG

DRAIN DETAILS

ID	STRUCTURE	DESCRIPTION			DETAILS		
	INLET - OUTLET	RUNS	SIZE(mm)	TYPE	CLASS	LENGTH	GRADE%
DI10	D2 - D1	1	525	RCP	4	4.28	0.28
DI10	D3 - D2	1	450	RCP	4	78.45	0.49
DI20	D4 - D2	1	450	RCP	4	46.15	0.28
DI20	D5 - D4	1	450	RCP	4	50.5	0.33
DB0B	D7 - D6	1	450 x 300	RCBC	-	96.58	0.19
DB0B	D8 - D7	1	450	RCP	4	109.29	0.16
DB0B	D9 - D8	1	400 x 225	RCBC	-	110.36	0.16
DI40	D10 - D7	1	375	RCP	4	2.08	0.14
DI40	D11 - D10	1	375	RCP	4	155.22	0.2
DI40	D12 - D11	1	375	RCP	4	17.39	0.2
DI40	D13 - D12	1	375	RCP	4	10.79	0.31

DRAIN CONNECTION DETAILS

ID	DESCRIPTION	SET OUT LOCATION			DRAIN		CUSTOM JUNCTION BOXES/GRATED INLET PITS WILL BE REQUIRED, RATED TO CLASS F
		PPIT PT	ORIENTATION	LEVEL	SIZE (mm)	LEVEL	
D1	CLASS F HUMECEPTOR (STC-18) OR SPEL ECOCEPTOR 4000 OR EQUIVALENT	1	-	2.811	675 525	1.105 1.105	PORTION OF EXISTING PIPE
D2	600 x 600 GRATE, COMBIND 1200 x1200 JUNCTION BOX	2	- -	2.773	525 450 450 675	1.117 1.117 1.117 1.117	 RETAIN EXISTING 675 PIPE
D3	600 x 600 GRATED INLET PIT	3	-	2.613	375	1.510	
D4	600x600 GRATED INLET PIT	4	-	2.868	450	1.244	
D5	600x600 GRATED INLET PIT	5	-	2.896	450	1.415	
D6	EXISTING JB REPLACE WITH NEW 1200 x 1200 JB	6	- - -	2.950 2.950 2.710	675 675 450x300	1.204 1.204 1.170	EXISTING 675 RCP EXISTING 675 RCP EXISTING JB TO BE REPLACED WITH NEW JB
D7	600x600 GRATE, COMBIND 900 x900 JUNCTION BOX	7	- -	2.685 2.685 2.685	450 375 450x300	1.354 1.354 1.357	
D8	600 x 600 GRATED INLET PIT	8	-	2.648	450	1.528	
D9	2X600 x 600 GRATED INLET PIT	9	-	2.648	450x225	1.528	
D10	2x600x600 GRATED INLET PIT	10	-	2.425	450x225	1.70	
D11	600 x 600 COMBINED GRATED JUNCTION BOX EXISTING 375 PIPE EXISTING 375 PIPE	11	- - -	2.745	375 375 375 375	1.663 1.663 1.875 ? 1.875 ?	 EXISTING 375 PIPE TO CONNECT TO NEW JB EXISTING 375 PIPE TO CONNECT TO NEW JB
D12	600 x 600 GRATED INLET PIT	12	-	2.646	375	1.697	
D13	600 x 600 GRATED INLET PIT	13	-	2.698	375	1.730	

LEGEND

SYMBOL — DESCRIPTION

- PROPOSED STORMWATER PIPE OR CULVERT
- EXISTING DRAINAGE PIPE / CULVERT
- EXISTING DRAINAGE TO BE ABANDONED
- GRATED INLET PIT
- JUNCTION BOX
- SIDE DRAIN GRATED INLET PIT
- D52 — DRAINAGE STRUCTURE IDENTIFIER

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

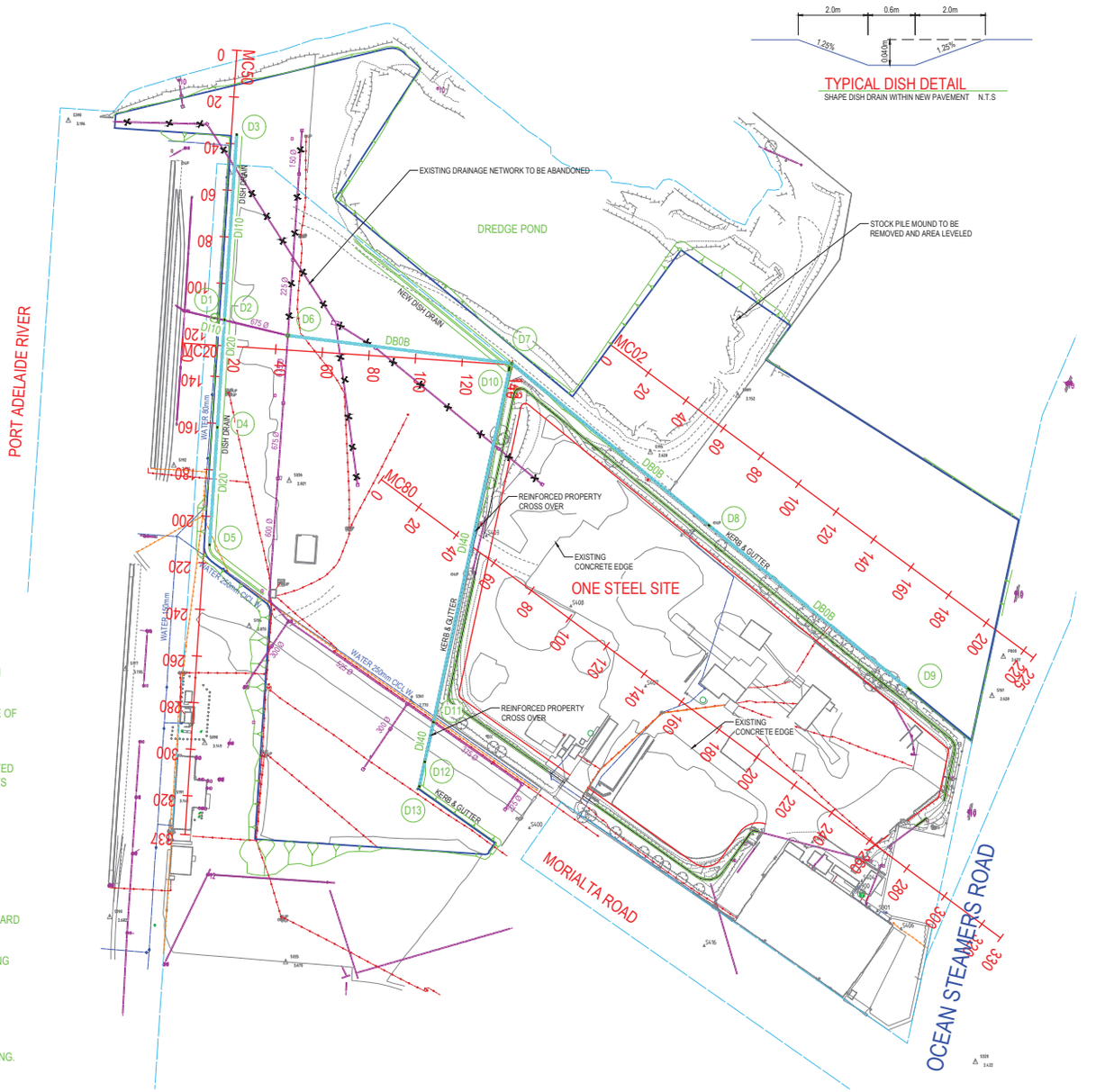
ELECTRICAL
- STOBIE POLE - EXISTING
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (SAPN)

SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FM — FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

NOTES:

1. THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION . THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
2. CUSTOM JUNCTION BOXES / GRATED INLET PITS / GRATES WILL BE REQUIRED FOR THIS PROJECT, RATED TO CLASS (F) AND 20/20 COVER ON CLASS 4 PIPES FOR CORROSION PROTECTION, FOR BOX CULVERTS EXPOSURE C FOR COVER PLUS CUSTOM DESIGN FOR 15T WHEEL LOADS.
3. FOR KERB & GUTTER, MEDIAN KERB, DISH DRAINS & PROPERTY CROSSOVER DETAILS REFER TO STANDARD DRAWING S-4070 SHEETS. 6 & 7.
4. PIPE LENGTHS REFER TO PLAN DISTANCES BETWEEN CENTRES OF THE STRUCTURES. THE GRADES HAVE BEEN CALCULATED USING THESE LENGTHS. ACTUAL GRADES AND LENGTHS WILL DIFFER.
5. THE REFERENCE POINT FOR THE SETTING OUT OF A DRAINAGE STRUCTURE IS SHOWN ON THE STANDARD DRAWING FOR EACH STRUCTURE.
6. DRAIN DETAILS IN THE DRAIN CONNECTION SCHEDULE ARE LISTED IN CLOCKWISE ORDER COMMENCING AT THE OUTLET.
7. FOR SET OUT STRING CO-ORDINATES REFER GEOMETRIC SETOUT REPORT 20110951.
8. RC PIPE CLASSES HAVE BEEN SELECTED FOR HIGHER THAN A160/M1600 TRAFFIC LOADS. ASSUMING INSTALLATION WILL EQUATE TO TYPE HS2 AS DEFINED IN AUSTRALIAN STANDARD AS 3725, PIPE CLASS SHOULD BE CONFIRMED FOLLOWING CONSIDERATION OF CONSTRUCTION VEHICLE LOADING.



INDEX SHEET REFERENCE: XXXX SHEET X

Government of South Australia
Department of Planning, Transport and Infrastructure

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

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PROJECT No.: XXXXX | FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX | SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 20 0 10 20 30 40

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE

DRAINAGE

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 12	AMEND No.: C
CHECKED:	CHECKED:	TITLE:				
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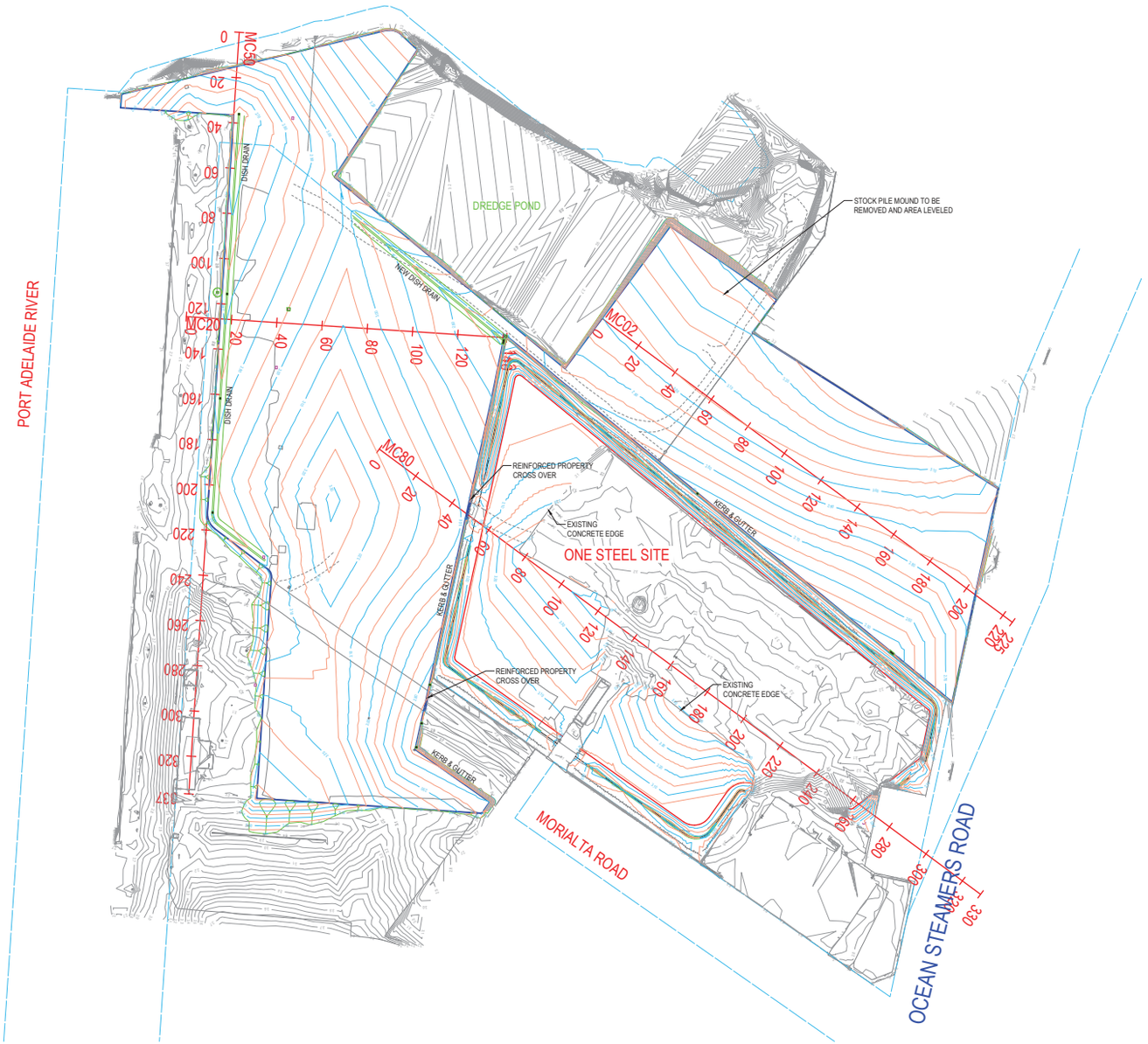

LEGEND

SYMBOL	DESCRIPTION
	MINOR EXISTING CONTOUR
53.0	MAJOR EXISTING CONTOUR
	MINOR DESIGN CONTOUR
53.0	MAJOR DESIGN CONTOUR

NOTES:

1. DESIGN CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.
2. EXISTING CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

FINAL SURFACE CONTOURS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 13	AMEND No.: C
CHECKED:	CHECKED:	TITLE:				
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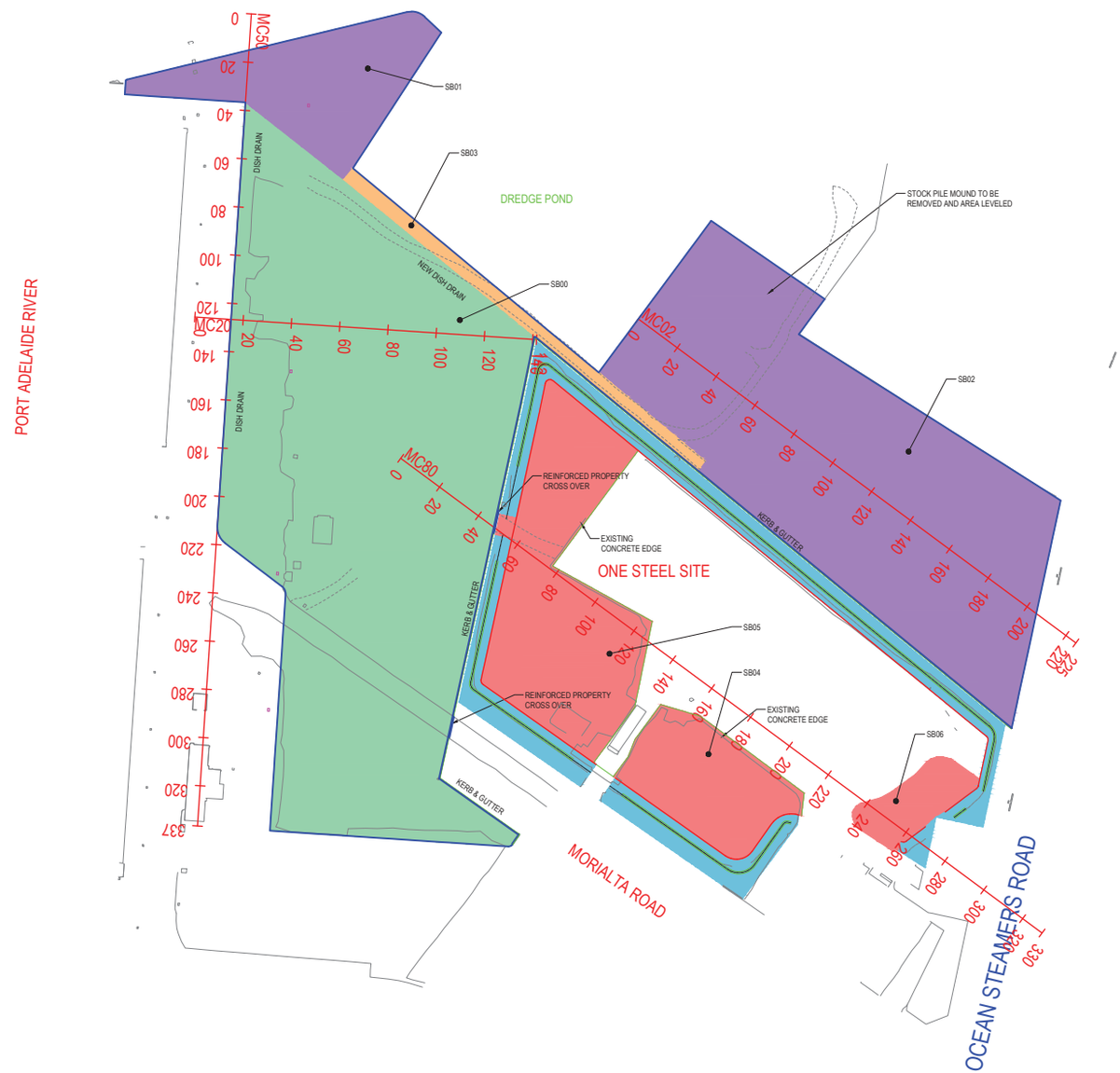

PAVEMENT TREATMENT LEGEND

- TYPE A - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 300mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE B - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 250mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE C - DESCRIPTION HERE
  35mm AC10H A35P, 40mm AC10H A35P, SAMI PRIME, 150mm PM2/20 BASE COURSE, 350mm CEMENT TREATED INSITU SUBGRADE, SUBGRADE CBR 10
- TYPE D - ONESTEEL CONCRETE PAVEMENT
  200 - 300 THICK CONCRETE SLAB
  150 SUBGRADE
- TYPE E - LINED SWALE
  CONCRETE LINED DRAINAGE SWALE

NOTES:

1. FOR PAVEMENT DETAILS REFER TO THE PAVEMENT SCHEDULES IN THE CONTRACT SPECIFICATION. THE PAVEMENT TREATMENT LEGEND PROVIDES A BRIEF DESCRIPTION OF THE PAVEMENT CONFIGURATION.
2. EDGE PLANE AS REQUIRED TO MATCH EXISTING PAVEMENT LEVELS.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

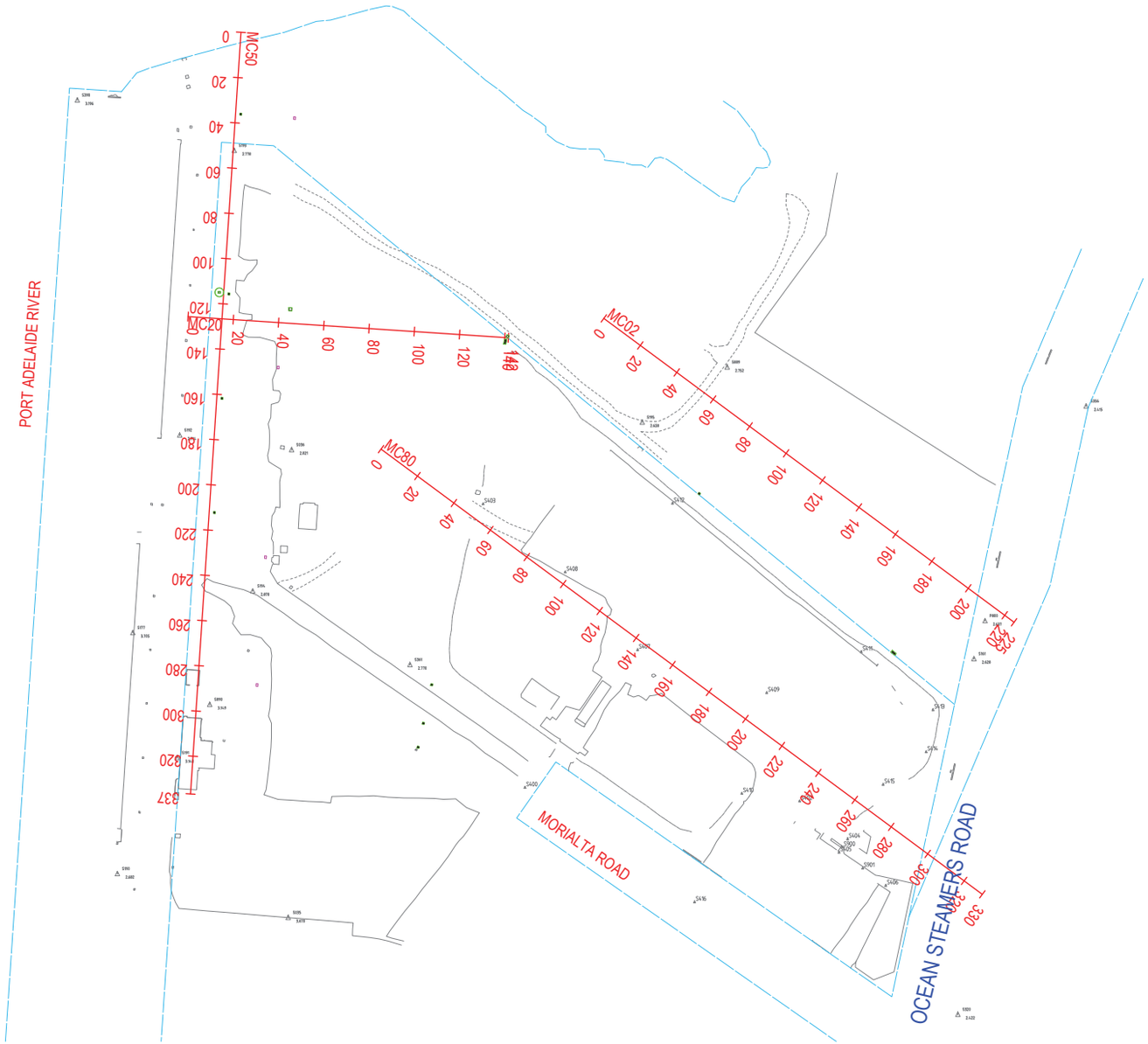
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

PAVEMENT TREATMENT

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 14	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 001A.DWG



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

GEOMETRIC SETOUT

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 15	AMEND No.: C
CHECKED:	CHECKED:	TITLE:				
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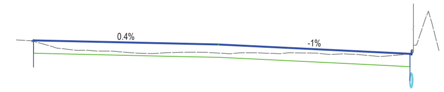
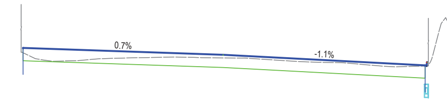
CAD FILE NAME: XXXX SHEET 005.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70 CE70		NL02				CE0J
DESIGN LEVEL	3.177	3.210	3.057	2.710	2.685	2.835	2.835
LEVEL DIFF.	0.011	-0.034	-0.321	0.008	0.042	-0.107	-0.104
HORIZ. OFFSET	34.794	34.592	0.000	35.855	36.156	36.181	36.281

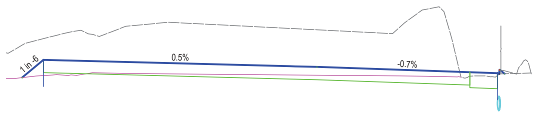
CH. 60.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.287	3.030	2.630	2.605	2.755	2.755
LEVEL DIFF.	-0.182	-0.117	-0.023	0.004	-0.146	-0.146
HORIZ. OFFSET	37.475	0.000	37.852	38.153	38.178	38.278

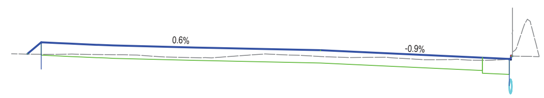
CH. 100.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.629	3.290	3.026	2.791	2.766	2.916	2.915	2.768
LEVEL DIFF.	1.214	0.795	1.39	-0.079	-0.024	-0.172	-0.162	0
HORIZ. OFFSET	55.211	51.242	0.000	33.858	34.159	34.184	34.284	35.168

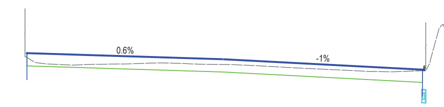
CH. 20.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.921	3.349	3.055	2.730	2.705	2.855	2.855	2.830
LEVEL DIFF.	-0.012	-0.448	-0.236	0.008	0.076	-0.069	-0.052	0
HORIZ. OFFSET	54.828	52.255	0.000	35.356	35.657	35.682	35.782	35.934

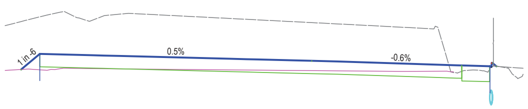
CH. 50.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.270	3.041	2.650	2.625	2.775	2.775
LEVEL DIFF.	-0.164	-0.197	-0.038	-0.011	-0.161	-0.16
HORIZ. OFFSET	36.754	0.000	37.353	37.653	37.678	37.779

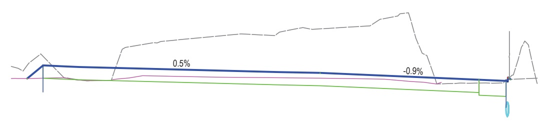
CH. 90.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.688	3.270	3.013	2.811	2.786	2.936	2.936	2.805
LEVEL DIFF.	1.796	1.39	1.431	-0.074	-0.015	-0.162	-0.149	0.002
HORIZ. OFFSET	54.402	50.904	0.000	33.359	33.660	33.685	33.785	34.567

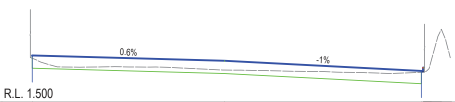
CH. 10.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.837	3.329	3.049	2.750	2.725	2.875	2.875	2.808
LEVEL DIFF.	0.497	0.345	1.651	0.048	0.076	-0.073	-0.072	-0
HORIZ. OFFSET	54.873	51.917	0.000	34.857	35.157	35.182	35.282	35.689

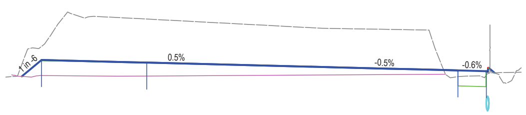
CH. 40.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.250	3.050	2.670	2.645	2.795	2.795
LEVEL DIFF.	-0.109	-0.348	-0.051	-0.024	-0.174	-0.173
HORIZ. OFFSET	36.034	0.000	36.854	37.154	37.179	37.279

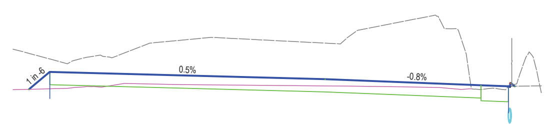
CH. 80.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	CE70	NL02	CE70	IA0J			CE0J	
DESIGN LEVEL	2.635	3.250	3.152	3.000	2.860	2.831	2.806	2.956	2.956	2.771
LEVEL DIFF.	0.444	0.508	1.633	1.46	-0.233	-0.125	-0.068	-0.216	-0.208	0
HORIZ. OFFSET	54.261	50.566	30.826	0.000	27.524	32.860	33.160	33.185	33.286	34.391

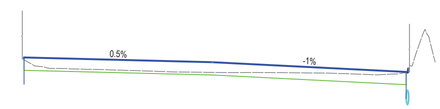
CH. 0.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.660	3.310	3.039	2.771	2.745	2.895	2.895	2.773
LEVEL DIFF.	1.344	0.484	1.349	-0.037	0.006	-0.143	-0.136	-0
HORIZ. OFFSET	55.480	51.580	0.000	34.358	34.658	34.683	34.783	35.520

CH. 30.000



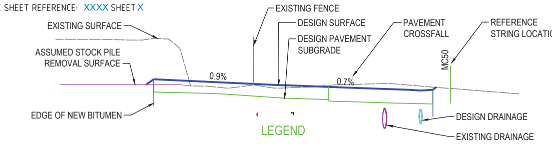
REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.230	3.056	2.690	2.665	2.815	2.815
LEVEL DIFF.	-0.086	-0.383	-0.025	0.009	-0.14	-0.137
HORIZ. OFFSET	35.313	0.000	36.355	36.655	36.680	36.780

CH. 70.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



LEGEND

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

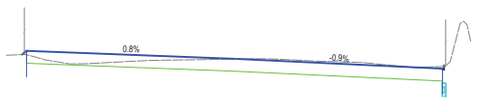
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20
2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 0.0 - CH 100
CROSS SECTIONS

DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 21
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

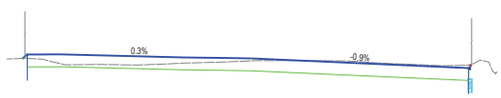
CAD FILE NAME: XXXX SHEET 0021.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.094 3.236	2.926	2.650 2.675 2.675
LEVEL DIFF.	0 -0.153	0.000 -0.007	0.082 0.081 -0.04
HORIZ. OFFSET	41.213 40.357	0.000	39.949 40.179 40.275

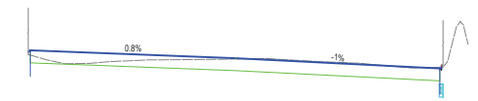
CH. 140.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	IAU	CE0U
DESIGN LEVEL	2.848 2.995	2.845	2.470 2.495	2.595 2.595 2.595
LEVEL DIFF.	0 -0.15	0.000 -0.095	0.114 0.141 -0.009	-0.009 -0 -0
HORIZ. OFFSET	44.122 43.240	0.000	41.846 42.166 42.172 42.272 42.304	

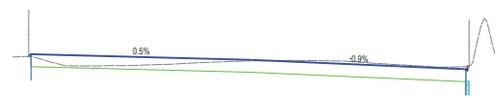
CH. 180.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.267	2.966	2.670 2.695 2.695
LEVEL DIFF.	-0.181	0.000 -0.033	0.047 0.074 -0.075 -0.075
HORIZ. OFFSET	39.637	0.000	39.350 39.575 39.675 39.775

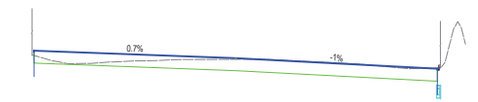
CH. 130.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	IAU	CE0U
DESIGN LEVEL	2.986 3.071	2.853	2.490 2.490 2.615 2.615 2.615	
LEVEL DIFF.	0 -0.09	0.000 -0.037	0.103 0.13 -0.02 -0.02 -0	
HORIZ. OFFSET	43.024 42.919	0.000	41.347 41.647 41.972 42.072 42.089	

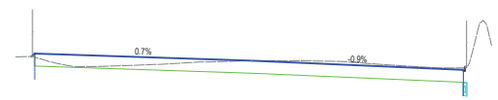
CH. 170.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.286	2.997	2.690 2.565 2.715 2.715
LEVEL DIFF.	-0.186	0.000 -0.044	0.029 0.055 -0.066 -0.084
HORIZ. OFFSET	38.916	0.000	38.851 39.151 39.176 39.276

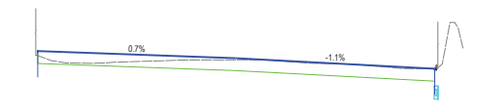
CH. 120.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.00 3.138	2.862	2.510 2.485 2.635 2.635
LEVEL DIFF.	0 -0.134	0.000 0.002	0.08 0.105 -0.043 -0.043
HORIZ. OFFSET	42.447 41.799	0.000	40.948 41.149 41.175 41.275

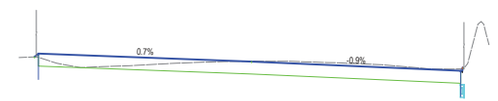
CH. 160.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.293	3.018	2.610 2.965 2.735 2.735
LEVEL DIFF.	-0.174	0.000 -0.066	0.006 0.031 -0.119 -0.119
HORIZ. OFFSET	38.195	0.000	38.352 38.662 38.677 38.777

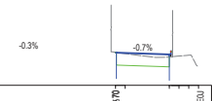
CH. 110.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	3.065 3.193	2.887	2.530 2.505 2.655 2.655
LEVEL DIFF.	-0 -0.142	0.000 0.013	0.069 0.094 -0.056 -0.084
HORIZ. OFFSET	41.842 41.078	0.000	40.348 40.649 40.774 40.874

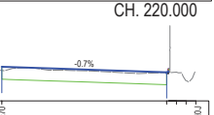
CH. 150.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	CE70	CE0U
DESIGN LEVEL	2.763 2.759	2.690 2.665 2.815 2.815
LEVEL DIFF.	0.009 0.009	-0.105 -0.078 -0.078 -0.228
HORIZ. OFFSET	0.000	33.469 33.942 43.943 44.143 44.143 44.369

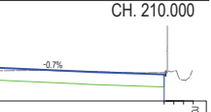
CH. 220.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	CE70	CE0U
DESIGN LEVEL	2.815	2.665 2.581 2.731 2.731
LEVEL DIFF.	-0.144	-0.008 0.13 -0.129 -0.129
HORIZ. OFFSET	0.000 11.570	43.344 43.644 43.769 43.769

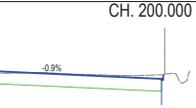
CH. 210.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	NU02	CE0U
DESIGN LEVEL	2.615	2.872	2.842	2.821 2.696 2.646 2.646
LEVEL DIFF.	-0	-0.295	-0.201	0.073 0.098 -0.052 -0.052
HORIZ. OFFSET	14.351 10.469		0.000 -0.187	42.945 43.145 43.170 43.270

CH. 200.000

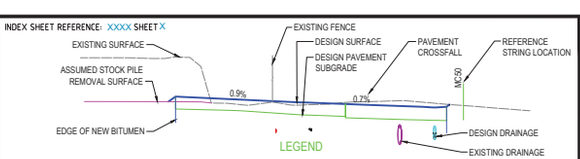


REF. STRING MC50 R.L. 1.000

DESIGN LABELS	CE70	NU02	CE0U
DESIGN LEVEL	2.928	2.838	2.460 2.425 2.575 2.575
LEVEL DIFF.	-0.277	-0.187	0.189 0.186 0.037 -0.037
HORIZ. OFFSET	32.565	0.000	42.345 42.645 42.671 42.771

CH. 190.000

INDEX SHEET REFERENCE: XXXX SHEET X



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

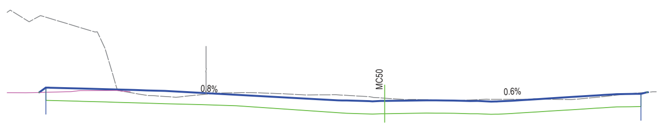
PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 110 - CH 220
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 22	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

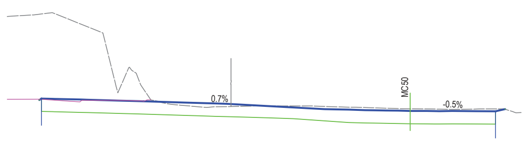
CAD FILE NAME: XXXX SHEET 0022.DWG



REF. STRING MC50 R.L. 1.000

DESIGN LABELS	IA70	CE70	NL5I		CE70	IA70
DESIGN LEVEL	3.025	3.204	2.686	2.702	2.971	3.027
LEVEL DIFF.	2.862	2.649	0.156	0.105	0.037	0
HORIZ. OFFSET	64.739	63.483	2.300	0.000	48.003	49.146

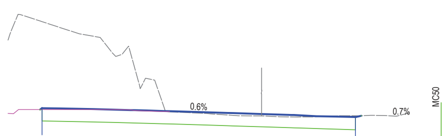
CH. 30.000



REF. STRING MC50 R.L. 1.000

DESIGN LABELS	IA70	CE70	NL5I		CE70	IA70
DESIGN LEVEL	3.219	3.277	2.826	2.816	2.802	2.882
LEVEL DIFF.	3.208	3.16	0.077	0.014	0.088	-0.005
HORIZ. OFFSET	69.503	69.096	2.300	0.000	15.984	17.795

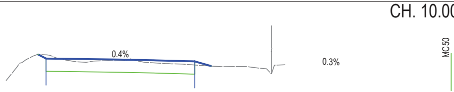
CH. 20.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	CE70	IA70	
DESIGN LEVEL	3.291	3.341	3.010	3.056	
LEVEL DIFF.	3.317	3.243	0.045	0	
HORIZ. OFFSET	75.063	74.709	16.035	14.948	0.000

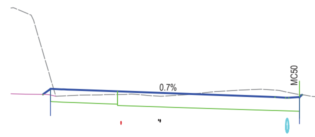
CH. 10.000



REF. STRING MC50 R.L. 1.500

DESIGN LABELS	IA70	CE70	CE70	IA70	
DESIGN LEVEL	3.527	3.373	3.267	3.093	
LEVEL DIFF.	0.004	0.14	-0.136	-0.001	
HORIZ. OFFSET	77.381	75.911	48.055	45.002	0.000

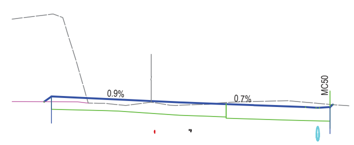
CH. 0.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.782	2.985	2.974	2.683	2.658	2.658	2.683	2.768
LEVEL DIFF.	1.585	0.404	-0.253	0.262	0.223	0.198	0.098	0.001
HORIZ. OFFSET	48.070	46.642	44.625	4.600	2.600	2.000	0.000	0.512

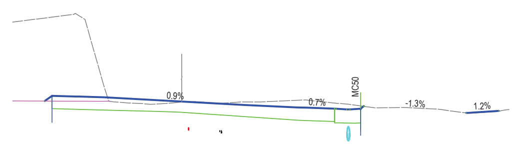
CH. 60.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.861	3.058	2.835	2.662	2.637	2.637	2.662	2.754
LEVEL DIFF.	3.246	3.083	-0.105	0.179	0.169	0.159	0.099	-0.003
HORIZ. OFFSET	53.640	52.256	28.160	4.600	2.600	2.000	0.000	0.554

CH. 50.000



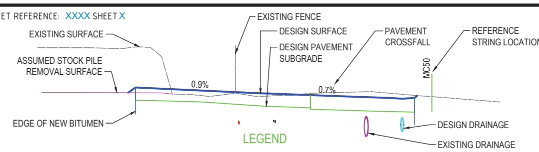
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL51	EV20	IE20	ID20	CE20	IA20	IA20	IA20
DESIGN LEVEL	2.934	3.131	2.695	2.648	2.623	2.623	2.648	2.749	2.493	2.566
LEVEL DIFF.	3.11	2.948	0.27	0.204	0.2	0.185	0.106	-0.011	0	-0.012
HORIZ. OFFSET	59.254	57.869	11.695	4.600	2.600	2.000	0.000	0.609	19.822	25.901

CH. 40.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia

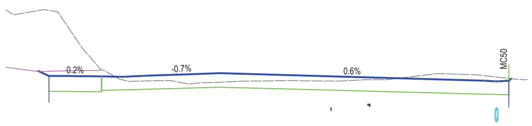
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4	

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 0.0 - CH 60
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 23	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

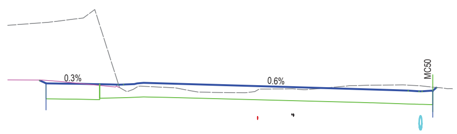
CAD FILE NAME: XXXX SHEET 0023.DWG



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	EV3J	IB30		EH30	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	3.114	2.925	2.908	2.893	2.895	2.930	3.030	2.745	2.720	2.720	2.745	2.820
LEVEL DIFF.	2.27	2.464	0.248	-0.091	-0.144	-0.196	-0.344	0.189	0.169	0.155	0.086	0
HORIZ. OFFSET	88.252	86.248	76.376	72.939	71.908	68.472	54.198	4.600	2.600	2.000	0.000	0.450

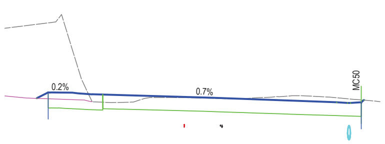
CH. 90.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	EV3J	IB30		NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	3.108	2.997	2.966	2.950	2.953	3.018	2.724	2.699	2.699	2.724	2.837
LEVEL DIFF.	2.162	2.29	2.22	0.056	-0.198	-0.131	0.206	0.209	0.198	0.131	0.005
HORIZ. OFFSET	73.629	72.456	62.402	58.966	57.935	54.172	4.600	2.600	2.000	0.000	0.678

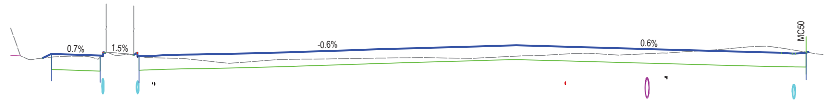
CH. 80.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.854	3.070	3.062	2.703	2.678	2.678	2.703	2.788
LEVEL DIFF.	2.77	2.607	1.617	0.167	0.154	0.143	0.087	-0.006
HORIZ. OFFSET	60.796	58.664	54.145	4.600	2.600	2.000	0.000	0.506

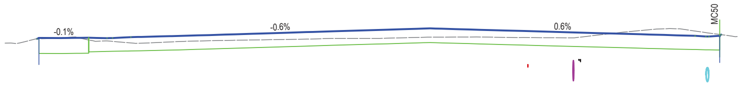
CH. 70.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	IA0J			CE0J/IA0J			CE0J			NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.634	2.788	2.727	2.700	2.850	2.850	2.826	2.749	2.835	2.835	2.685	2.710	2.963	3.110	2.828	2.803	2.803	2.828	2.851
LEVEL DIFF.	0	-0.12	-0.057	0.079	-0.067	-0.052	-0.003	0.032	-0.084	-0.09	0.059	0.017	-0.332	-0.404	0.178	0.138	0.118	0.029	0
HORIZ. OFFSET	143.056	141.418	132.273	131.758	131.715	131.543	131.307	126.035	125.408	125.307	125.282	124.979	80.304	54.304	4.600	2.600	2.000	0.000	0.141

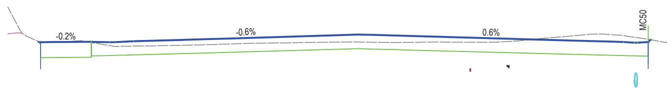
CH. 130.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	CE70/IA70		EV3J	IB30		EH30	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.694	2.728	2.737	2.721	2.724	2.758	3.087	2.807	2.782	2.782	2.807	2.855
LEVEL DIFF.	0.004	-0.03	-0.086	-0.104	-0.124	-0.216	-0.329	0.179	0.146	0.13	0.053	-0.003
HORIZ. OFFSET	127.981	127.625	118.296	114.859	113.828	110.391	54.277	4.600	2.600	2.000	0.000	0.287

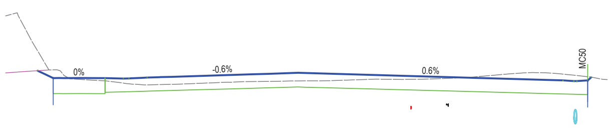
CH. 120.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	CE70/IA70		EV3J	IB30		EH30	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	2.765	2.779	2.794	2.778	2.781	2.815	3.067	2.786	2.761	2.761	2.786	2.872
LEVEL DIFF.	-0.001	-0.015	-0.027	-0.126	-0.163	-0.183	-0.282	0.235	0.203	0.185	0.103	0.001
HORIZ. OFFSET	113.975	113.833	104.322	100.886	99.855	96.418	54.251	4.600	2.600	2.000	0.000	0.516

CH. 110.000



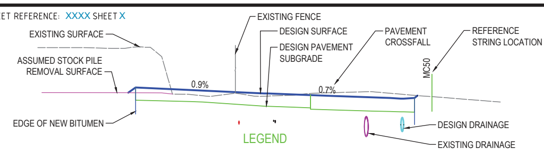
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA70	CE70	EV3J	IB30		EH30	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	3.128	2.852	2.851	2.835	2.838	2.873	3.049	2.766	2.741	2.741	2.766	2.877
LEVEL DIFF.	0.74	0.306	-0.103	-0.17	-0.201	-0.274	-0.303	0.233	0.219	0.207	0.138	0.012
HORIZ. OFFSET	102.964	100.041	90.349	86.912	85.881	82.445	54.225	4.600	2.600	2.000	0.000	0.669

CH. 100.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



LEGEND

Government of South Australia

Department of Planning, Transport and Infrastructure

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PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

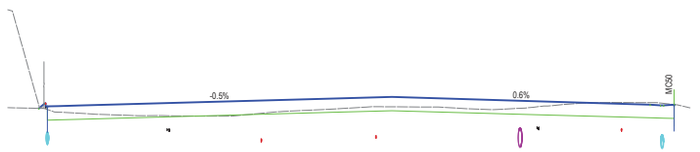
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20
2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 70 - CH 130
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 24	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

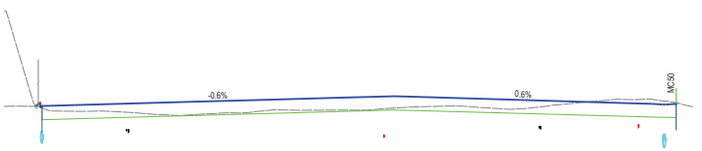
CAD FILE NAME: XXXX SHEET 0024.DWG



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU		CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.751	2.895	2.990	2.800	3.047		3.189		2.860	2.865	2.865	2.861	2.841
LEVEL DIFF.	-0.004	-0.145	-0.095	-0.223	-0.075		-0.379		0.081	0.089	0.076	0.024	0.004
HORIZ. OFFSET	122.469	122.269	121.169	121.143	-0.121		80.383		4.600	2.600	2.000	0.000	0.000

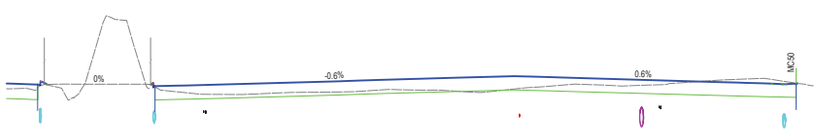
CH. 160.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU		CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.771	2.911	2.911	2.787	3.019		3.162		2.869	2.844	2.844	2.830	2.804
LEVEL DIFF.	-0	-0.163	-0.171	-0.070			-0.469		0.175	0.14	0.128	0.055	0
HORIZ. OFFSET	123.535	123.690	122.998	122.964	-0.072		80.357		4.600	2.600	2.000	0.000	0.000

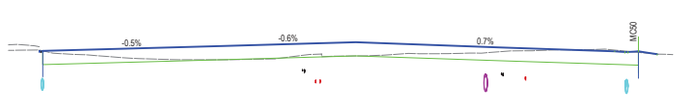
CH. 150.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU	CEU		IAU	CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.811	2.784	2.933	2.810	2.873	2.723	2.991		3.136		2.849	2.823	2.823	2.844	2.866
LEVEL DIFF.	-0.119	-0.011	-0.149	0	-0.104	0.002			-0.495		0.157	0.121	0.102	0.044	0.001
HORIZ. OFFSET	146.236	145.734	145.534	124.427	124.049	123.923	80.330		54.330		4.600	2.600	2.000	0.000	0.330

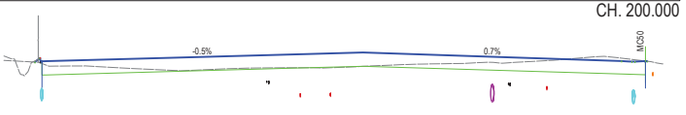
CH. 140.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.975	2.930	3.163		3.310		2.986	2.991	2.991	2.986	2.848
LEVEL DIFF.	0.026	0.044	-0.531		-0.529		0.051	0.017	0.026	0.002	0
HORIZ. OFFSET	115.466	115.169	80.489		54.489		4.600	2.600	2.000	0.000	3.625

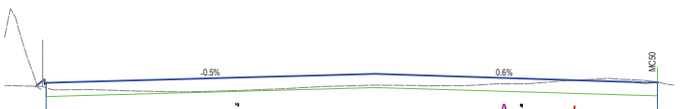
CH. 200.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU	CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.913	3.057	3.057	3.136		3.279		2.952	2.957	2.957	2.952	2.942
LEVEL DIFF.	-0.003	-0.19	-0.042			-0.534		0.189	0.152	0.072	0.046	0
HORIZ. OFFSET	117.705	116.984	116.668	-0.089		80.463		4.600	2.600	2.000	0.000	0.309

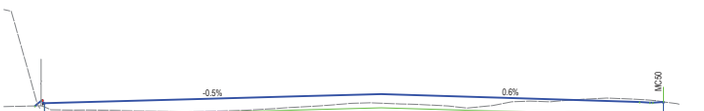
CH. 190.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU	CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.768	3.027	2.877	3.108		3.248		2.931	2.941	2.906	2.931	2.927
LEVEL DIFF.	0	-0.284	-0.191			-0.437		0.083	0.045	0.079	0.007	0.002
HORIZ. OFFSET	119.844	118.270	118.153	-0.143		80.436		4.600	2.600	2.000	0.000	0.135

CH. 180.000



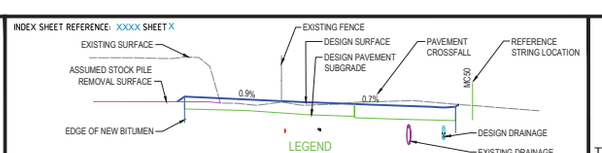
REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IAU	CEU		NL04		NL50		EV20	EI20	ED20	CE20	IA20
DESIGN LEVEL	2.757	2.988	2.883	3.076		3.217		2.911	2.895	2.886	2.911	2.915
LEVEL DIFF.	0.002	-0.226	-0.182			-0.353		0.097	0.061	0.085	0.033	0.001
HORIZ. OFFSET	121.174	119.774	119.673	-0.162		80.410		4.600	2.600	2.000	0.000	0.015

CH. 170.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

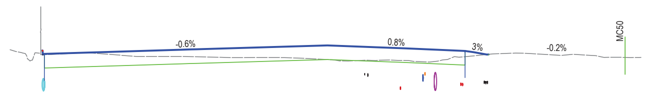
FLINDERS PORTS SA - TITLE F PORT ADELAIDE

MC50; CH 140 - CH 200

CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 25	AMEND No.: C
CHECKED:	CHECKED:	TITLE:				
		DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

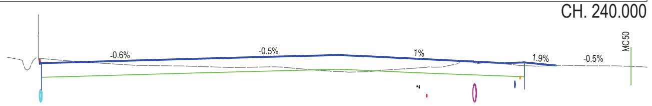
CAD FILE NAME: XXXX SHEET 0025.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS				CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	3.043	3.043	2.893	2.918	3.083	3.234	3.030	2.897	
LEVEL DIFF.	-0.154	-0.153	-0.003	-0.027	-0.266	-0.529	-0.216	0.004	-0.168
HORIZ. OFFSET	109.309	109.208	109.183	108.879	82.007	55.818	30.000	25.585	0.000

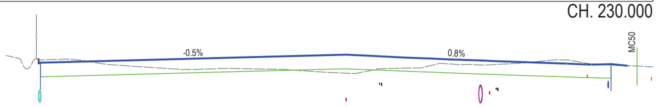
CH. 240.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS				CE0J	NL04	NL50	IE20	ID20	CE20	IA20	
DESIGN LEVEL	3.086	3.086	2.936	2.961	3.126	3.264	2.972	2.969	2.985	2.872	
LEVEL DIFF.	0.041	0.041	0.191	0.166	-0.292	-0.615	-0.02	-0.038	-0.118	0.003	-0.106
HORIZ. OFFSET	110.804	110.703	110.678	110.374	80.821	54.766	24.684	23.598	19.978	14.045	0.000

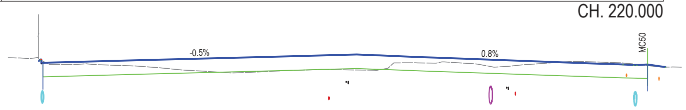
CH. 230.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS				CE0J	NL04	NL50	EV20	IE20	ID20	CE20		IA20
DESIGN LEVEL	3.111	3.111	2.961	2.986	3.152	3.285	2.952	2.918	2.915	2.931	2.873	
LEVEL DIFF.	0.006	0.001	0.15	0.11	-0.404	-0.694	0.139	0.052	0.024	-0.029	0	-0.079
HORIZ. OFFSET	112.299	112.198	112.173	111.869	80.542	54.542	13.217	9.597	8.511	4.891	1.807	0.000

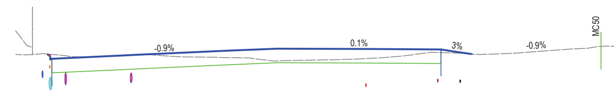
CH. 220.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS	IA0J				CE0J	NL04	NL50	EV20	IE20	ID20	CE20	IA20
DESIGN LEVEL	3.103	3.116	3.116	2.966	2.991	3.165	3.306	2.928	2.903	2.903	2.928	2.828
LEVEL DIFF.	0	-0.021	-0.031	0.116	0.06	-0.525	-0.587	0.053	0.041	0.028	-0.042	0
HORIZ. OFFSET	113.872	113.794	113.693	113.668	113.364	80.515	54.515	4.600	2.600	2.000	0.000	3.351

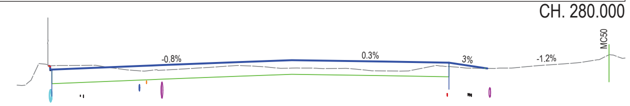
CH. 210.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J				CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.946	2.900	2.900	2.749	2.774	2.926	3.156	3.126	2.953	
LEVEL DIFF.	0.009	0.049	0.047	0.197	0.166	0.017	-0.46	-0.116	-0.002	0.061
HORIZ. OFFSET	103.698	103.329	103.228	103.203	102.899	86.842	60.653	30.000	24.223	0.000

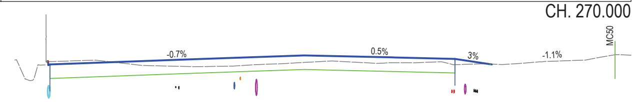
CH. 280.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J				CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.946	2.928	2.928	2.778	2.803	2.957	3.156	3.061	2.859	
LEVEL DIFF.	-0.001	0.017	0.018	0.168	0.145	-0.18	-0.298	-0.144	-0.008	0.218
HORIZ. OFFSET	104.931	104.824	104.723	104.698	104.394	85.633	59.444	30.000	23.263	0.000

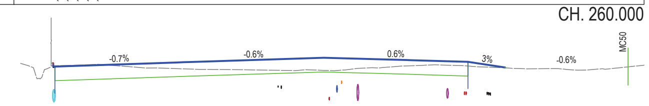
CH. 270.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J				CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.932	2.956	2.956	2.806	2.831	2.989	3.170	3.041	2.842	
LEVEL DIFF.	0	-0.023	-0.023	0.128	0.105	-0.215	-0.263	-0.218	0.001	0.097
HORIZ. OFFSET	106.469	106.319	106.218	106.193	105.889	84.424	58.235	30.000	23.384	0.000

CH. 260.000



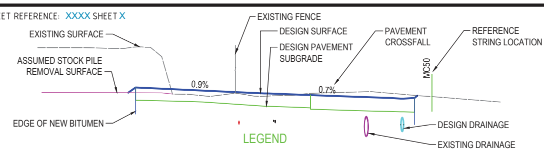
REF. STRING MC50 R.L. 0.500

DESIGN LABELS				CE0J	NL04	NL50	CE20	IA20	
DESIGN LEVEL	2.999	2.999	2.849	2.874	3.036	3.201	3.048	2.839	
LEVEL DIFF.	-0.099	-0.098	0.052	0.029	-0.25	-0.471	-0.156	-0.014	-0.111
HORIZ. OFFSET	107.814	107.713	107.688	107.384	83.216	57.026	30.000	23.030	0.000

CH. 250.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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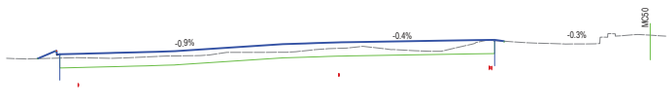
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20
2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 210 - CH 280
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 26	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

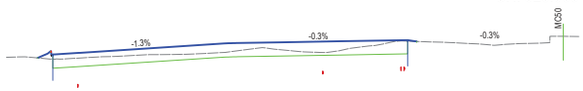
CAD FILE NAME: XXXX SHEET 0026.DWG



REF. STRING MC50 R.L. 0.500

DESIGN LABELS	IA0J		CE0J		NL50		CE20	IA20	
DESIGN LEVEL	2.988	2.885	2.884	2.734	3.181		3.313	3.228	
LEVEL DIFF.	0.001	-0.279	-0.278	-0.128	-0.265		-0.034	0.002	0.15
HORIZ. OFFSET	118.117	114.648	114.457	114.409	65.489		30.000	28.992	0.000

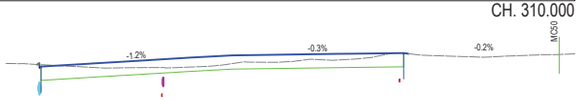
CH. 320.000



REF. STRING MC50 R.L. 0.000

DESIGN LABELS		IA0J		CE0J		NL50		CE20	IA20	
DESIGN LEVEL		2.591	2.848	2.848	2.698	3.158		3.278	3.228	
LEVEL DIFF.	0	-0.303	-0.304	-0.151	-0.184	-0.329		-0.038	0.002	0.122
HORIZ. OFFSET	101.336	98.844	98.745	98.594	98.414	64.279		30.000	28.242	0.000

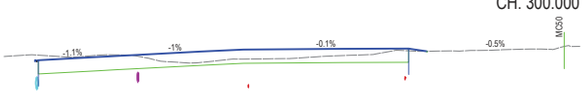
CH. 310.000



REF. STRING MC50 R.L. 0.500

DESIGN LABELS		IA0J		CE0J		NL50		CE20	IA20	
DESIGN LEVEL		2.703	2.846	2.846	2.696	3.154		3.343	3.213	
LEVEL DIFF.	0.012	-0.045	-0.046	-0.194	0.075	-0.317		-0.002	0.005	-0.072
HORIZ. OFFSET	100.861	100.339	100.238	100.215	99.909	63.070		30.000	28.995	0.000

CH. 300.000



REF. STRING MC50 R.L. 0.500

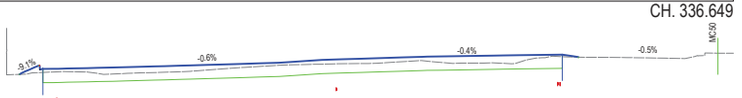
DESIGN LABELS			CE0J		IA04		NL50		CE20	IA20	
DESIGN LEVEL		2.746	2.721	2.721	2.891		3.155		3.193	3.087	
LEVEL DIFF.	0.204	0.025	0.025	0.196	0.066		-0.366		-0.086	0.005	0.088
HORIZ. OFFSET	102.011	101.708	101.683	101.404	88.805		61.980		30.000	26.462	0.000

CH. 290.000

REF. STRING MC50 R.L. 0.500

DESIGN LABELS		IA20				IA20	
DESIGN LEVEL	2.697				3.292		
LEVEL DIFF.	-0.007				0		-0.167
HORIZ. OFFSET	130.969				27.366		0.000

CH. 336.649



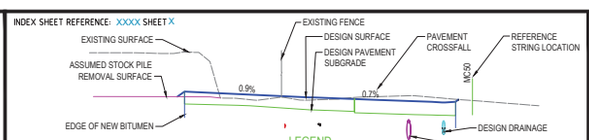
REF. STRING MC50 R.L. 0.500

DESIGN LABELS		IA20		CE0J		NL50		CE20	IA20	
DESIGN LEVEL	2.585	2.922	2.922	2.771	3.203		3.348	3.255	
LEVEL DIFF.	0	-0.267	-0.265	-0.115	-0.195		-0.082	-0.004	0.021
HORIZ. OFFSET	134.675	130.969	130.775	130.721	66.696		30.000	26.899	0.000

CH. 330.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

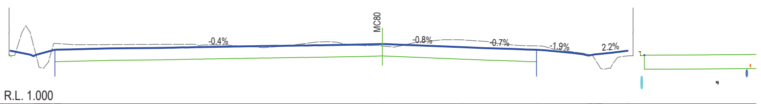
ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC50; CH 290 - CH 336
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 27	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

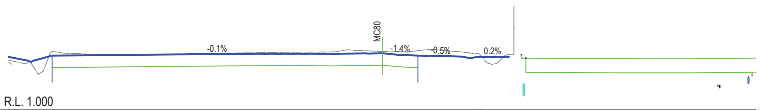
CAD FILE NAME: XXXX SHEET 0027.DWG



REF. STRING MC80 R.L. 1.000

DESIGN LABELS					WD90	NL8K	NL8L	WD90				
DESIGN LEVEL	3.000	2.849	2.799	2.849	3.040	3.256	3.136	3.040	2.876	2.821	2.865	3.000
LEVEL DIFF.	-0.182	0.754	0.414	-0.026	0.238	-0.075	0.276	0.143	0.036	0.039	-0.19	-0.192
HORIZ. OFFSET	69.675	65.870	65.369	64.869	61.364	0.000	15.000	28.878	37.405	38.623	39.841	45.932

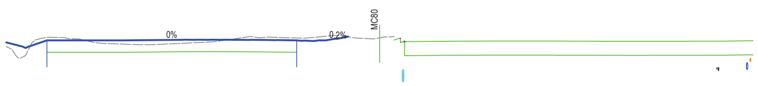
CH. 70.000



REF. STRING MC80 R.L. 1.000

DESIGN LABELS				WD90	NL8K	WD90				
DESIGN LEVEL	2.851	2.801	2.851	3.040	3.131	3.040	2.998	2.943	2.987	3.000
LEVEL DIFF.	-0.059	-0.025	-0.226	0.159	0.058	0.188	0.171	0.202	0.128	0.093
HORIZ. OFFSET	66.369	65.868	65.368	61.863	0.000	6.661	15.188	16.406	17.624	23.715

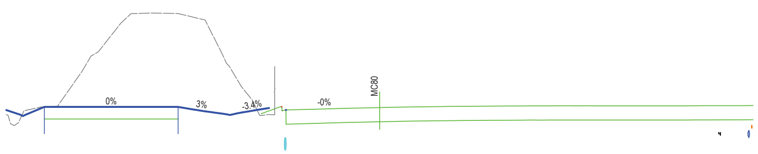
CH. 60.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90	WD90	
DESIGN LEVEL	2.801	2.751	2.801	3.040	3.040	
LEVEL DIFF.	-0.383	-0.283	-0.125	0.11	0.088	0.131
HORIZ. OFFSET	66.868	66.368	65.867	62.363	15.556	0.000

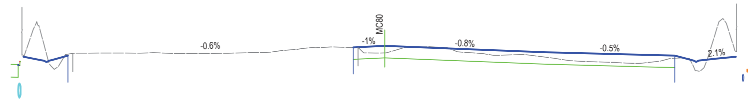
CH. 50.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS				WD90	WD90					
DESIGN LEVEL	2.751	2.701	2.751	3.040	3.040	2.784	2.740	2.796	3.000	
LEVEL DIFF.	-0.153	0.118	0.159	-0.001	3.488	2.12	1.767	1.303	-0.248	
HORIZ. OFFSET	67.367	66.867	66.366	62.862	37.773	29.245	28.027	26.809	20.718	0.000

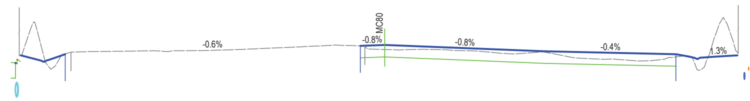
CH. 40.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.851	2.801	2.851	3.040	3.351	3.409	3.289	3.169	3.040	2.857	2.807	2.857	3.000
LEVEL DIFF.	0.052	0.631	0.307	-0.116	0.057	-0.007	-0.267	-0.123	-0.183	-0.096	-0.221	-0.335	-0.401	0.202
HORIZ. OFFSET	67.678	63.873	63.372	62.872	59.367	5.890	0.000	15.000	30.000	54.337	57.837	58.338	58.838	65.785

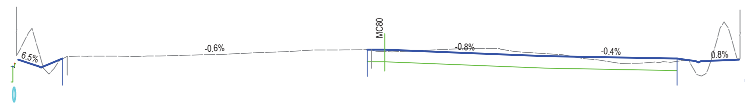
CH. 110.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.801	2.751	2.801	3.040	3.353	3.389	3.269	3.149	3.040	2.907	2.857	2.907	3.000
LEVEL DIFF.	-0.006	0.546	0.204	-0.115	0.019	0	-0.172	-0.096	-0.03	-0.102	-0.204	-0.395	-0.461	0.107
HORIZ. OFFSET	68.177	64.372	63.872	63.371	59.867	4.574	0.000	15.000	30.000	54.552	58.053	58.553	59.053	66.079

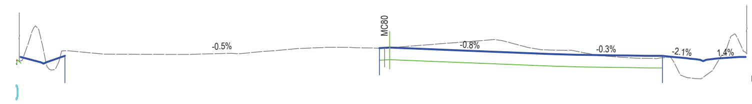
CH. 100.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.751	2.701	2.751	3.040	3.370	3.369	3.249	3.129	3.040	2.943	2.893	2.943	3.000
LEVEL DIFF.	0.256	0.575	0.284	-0.092	-0.005	-0	-0.071	0.165	0.093	-0.104	-0.435	-0.472	-0.554	0.053
HORIZ. OFFSET	68.676	64.871	64.371	63.870	60.366	3.257	0.000	15.000	30.000	54.768	58.269	58.769	59.269	66.373

CH. 90.000



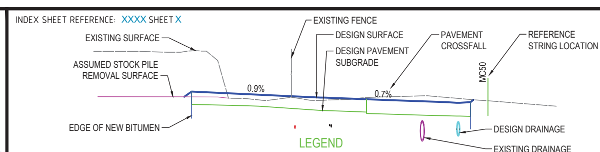
REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	NJ8J	NL8K	NL8L	NL8M	WD90				
DESIGN LEVEL	3.000	2.799	2.749	2.799	3.040	3.328	3.349	3.229	3.109	3.040	2.887	2.846	2.894	3.000
LEVEL DIFF.	-0.147	0.889	0.497	-0.039	0.187	-0.001	-0.007	0.348	0.15	-0.069	-0.704	-0.598	-0.572	0.165
HORIZ. OFFSET	69.175	65.371	64.870	64.369	60.865	1.941	0.000	15.000	30.000	51.094	58.208	58.754	59.285	66.667

CH. 80.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 40 - CH 110
CROSS SECTIONS

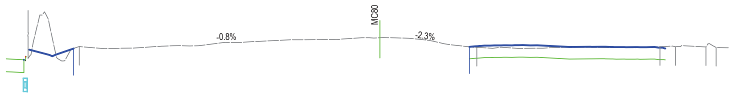
DESIGNED: PWP | DRAFTED: WGA | CHECKED: | CHECKED: | ACCEPTED FOR USE: | TITLE: | DATE:

ACCEPTANCE FORM KNET No.: | IN ACCORDANCE WITH DP013

DRAWING No.: XXXX | SHEET No.: 28 | AMEND No.: C

SHEET LATITUDE -XX.XXXXX | SHEET LONGITUDE XXX.XXXXX

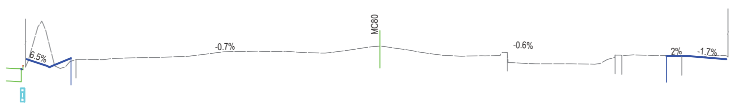
CAD FILE NAME: XXXX SHEET 0028.DWG



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.26	65.681
	2.801	1.107	61.876
	2.752	0.687	61.375
WD90	2.802	0.169	60.875
	3.040	0.007	57.370
		-0.042	0.000
NJ8J	3.104	0.001	16.782

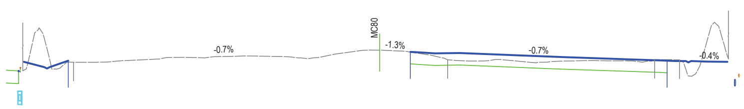
CH. 150.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.196	66.180
	2.751	1.141	62.375
	2.701	0.8	61.875
WD90	2.752	0.359	61.374
	3.040	-0.12	57.870
		0.024	0.000
WD90 NJ8J	3.122	0.001	53.690
	3.119	-0.007	57.691
	3.000	0.125	64.903

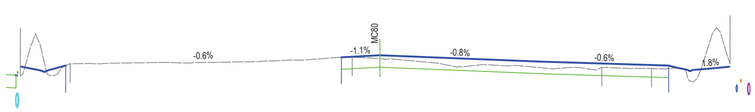
CH. 140.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.314	66.679
	2.799	1.095	62.874
	2.749	0.76	62.374
WD90	2.798	0.298	61.873
	3.040	-0.056	58.369
		-0.013	0.000
NJ8J	3.372	-0.01	5.755
WD90	3.040	0.039	53.905
	3.028	-0.306	57.406
	2.977	-0.506	57.906
	3.027	-0.568	58.406
	3.000	0.217	65.197

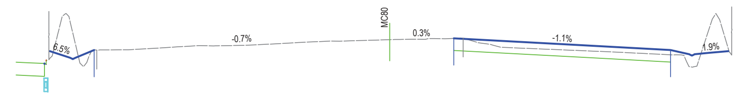
CH. 130.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.328	67.178
	2.849	0.743	63.374
	2.799	0.369	62.873
WD90	2.849	-0.09	62.372
	3.040	0.003	58.868
NJ8J	3.352	0.006	7.207
NL8K	3.429	-0.13	0.000
NL8L	3.309	-0.313	15.000
NL8M	3.189	-0.223	30.000
WD90	3.040	-0.111	54.121
	2.879	-0.242	57.622
	2.829	-0.372	58.122
	2.879	-0.446	58.622
	3.000	0.188	65.491

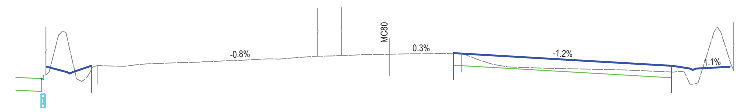
CH. 120.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.268	63.684
	2.752	1.344	59.879
	2.702	0.972	59.378
WD90	2.752	0.499	58.878
	3.040	0.001	55.373
		-0.013	0.000
NJ8J	3.475	-0	12.000
WD90	3.040	-0.177	52.611
	2.882	-0.46	56.112
	2.832	-0.428	56.612
	2.882	-0.46	57.112
	3.000	0.086	63.434

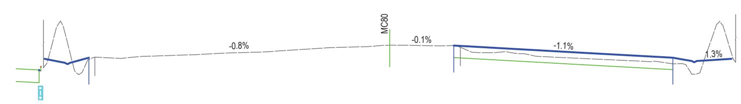
CH. 190.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.266	64.183
	2.798	1.273	60.378
	2.748	0.879	59.878
WD90	2.798	0.392	59.377
	3.040	-0.158	55.873
		0	0.000
NJ8J	3.512	-0	12.000
WD90	3.040	-0.233	52.827
	2.932	-0.58	56.328
	2.882	-0.53	56.828
	2.932	-0.563	57.328
	3.000	0.261	63.727

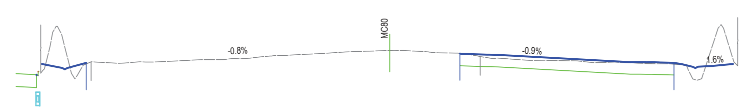
CH. 180.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.287	64.682
	2.848	1.148	60.878
	2.798	0.802	60.377
WD90	2.848	0.35	59.876
	3.040	-0.066	56.372
		0.009	0.000
NJ8J	3.496	0.001	12.000
WD90	3.040	-0.232	53.043
	2.918	-0.491	56.543
	2.868	-0.449	57.044
	2.918	-0.488	57.544
	3.000	0.201	64.021

CH. 170.000



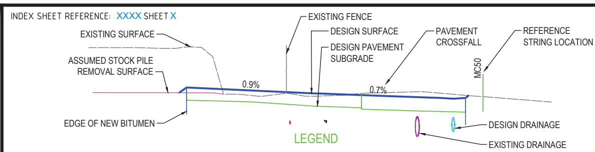
REF. STRING MC80 R.L. 0.500

DESIGN LABELS	DESIGN LEVEL	LEVEL DIFF.	HORIZ. OFFSET
	3.000	-0.287	65.181
	2.851	1.169	61.377
	2.802	0.826	60.876
WD90	2.852	0.383	60.376
	3.040	-0.04	56.871
		-0.011	0.000
NJ8J	3.390	0.007	13.142
WD90	3.040	-0.048	53.258
	2.895	-0.449	56.759
	2.846	-0.434	57.259
	2.896	-0.494	57.759
	3.000	0.18	64.315

CH. 160.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



LEGEND

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

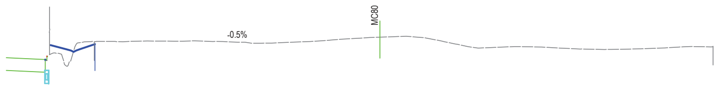
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20; 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 120 - CH 190
CROSS SECTIONS

DESIGNED: PWP
DRAFTED: WGA
CHECKED:
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 29
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

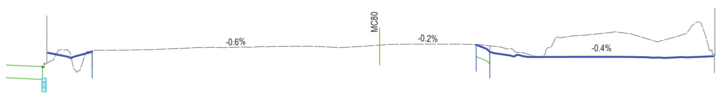
CAD FILE NAME: XXXX SHEET 0029.DWG



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.798	2.748	2.798	3.040	
LEVEL DIFF.	-0.34	-0.368	0.028	0.241	0.091	-0.011
HORIZ. OFFSET	61.687	57.882	57.382	56.881	53.377	0.000

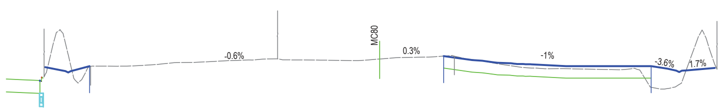
CH. 230.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90		NJ8J	WD90	
DESIGN LEVEL	3.000	2.848	2.798	2.848	3.040		3.304	3.040	2.872
LEVEL DIFF.	-0.373	0.228	0.075	-0.414	0.046	-0.052	0.003	0.225	0.076
HORIZ. OFFSET	62.186	58.381	57.881	57.380	53.876	0.000	18.097	20.675	62.552

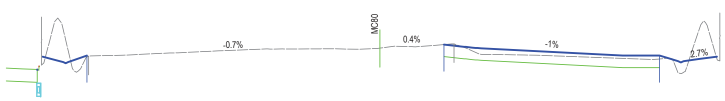
CH. 220.000



REF. STRING MC80 R.L. 0.500

DESIGN LABELS					WD90		NJ8J	WD90				
DESIGN LEVEL	3.000	2.852	2.802	2.852	3.040		3.415	3.038	2.866	2.820	2.868	2.972
LEVEL DIFF.	-0.269	1.031	0.666	0.193	-0.032	-0.068	0	-0.792	-0.577	-0.464	-0.419	0.125
HORIZ. OFFSET	62.685	58.881	58.380	57.879	54.375	0.000	12.000	50.912	55.678	56.178	56.679	62.846

CH. 210.000



REF. STRING MC80 R.L. 0.500

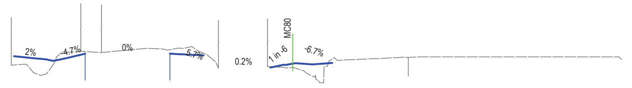
DESIGN LABELS					WD90		NJ8J	WD90				
DESIGN LEVEL	3.000	2.802	2.752	2.802	3.040		3.453	3.040	2.832	2.782	2.832	3.000
LEVEL DIFF.	-0.276	1.269	0.889	0.409	-0.053	-0.087	0	-0.127	-0.448	-0.41	-0.419	-0.078
HORIZ. OFFSET	63.185	59.380	58.879	58.379	54.874	0.000	12.000	52.396	55.896	56.397	56.897	63.140

CH. 200.000

REF. STRING MC80 R.L. 2.000

DESIGN LABELS			
DESIGN LEVEL	2.747	2.625	
LEVEL DIFF.	-0.184	-0.098	
HORIZ. OFFSET	30.169	18.758	0.000

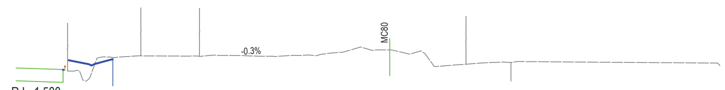
CH. 280.000



REF. STRING MC80 R.L. 1.000

DESIGN LABELS					WD90	WD90				
DESIGN LEVEL	2.942	2.823	2.767	2.812	3.040	3.040		2.514	2.661	2.689
LEVEL DIFF.	-0.329	-0.546	-0.157	0.192	0.078	0.145	0.086	0.031	-0.66	0.151
HORIZ. OFFSET	52.206	46.157	44.947	43.737	38.897	23.010	14.221	4.205	0.000	7.411

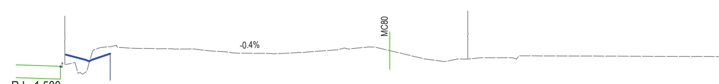
CH. 270.000



REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.852	2.802	2.852	3.040	
LEVEL DIFF.	-0.406	-0.559	-0.288	-0.069	0.061	0.168
HORIZ. OFFSET	60.189	56.384	55.884	55.383	51.879	0.000

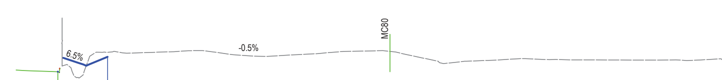
CH. 260.000



REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.802	2.752	2.802	3.040	
LEVEL DIFF.	-0.362	-0.444	-0.09	0.191	0.258	-0.095
HORIZ. OFFSET	60.688	56.884	56.383	55.882	52.378	0.000

CH. 250.000



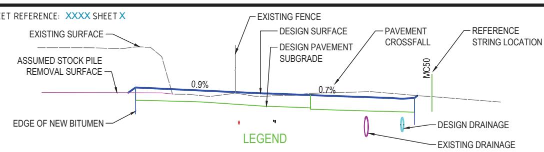
REF. STRING MC80 R.L. 1.500

DESIGN LABELS					WD90	
DESIGN LEVEL	3.000	2.752	2.702	2.752	3.040	
LEVEL DIFF.	-0.29	-0.337	0.003	0.222	0.166	-0.037
HORIZ. OFFSET	61.188	57.383	56.882	56.382	52.877	0.000

CH. 240.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

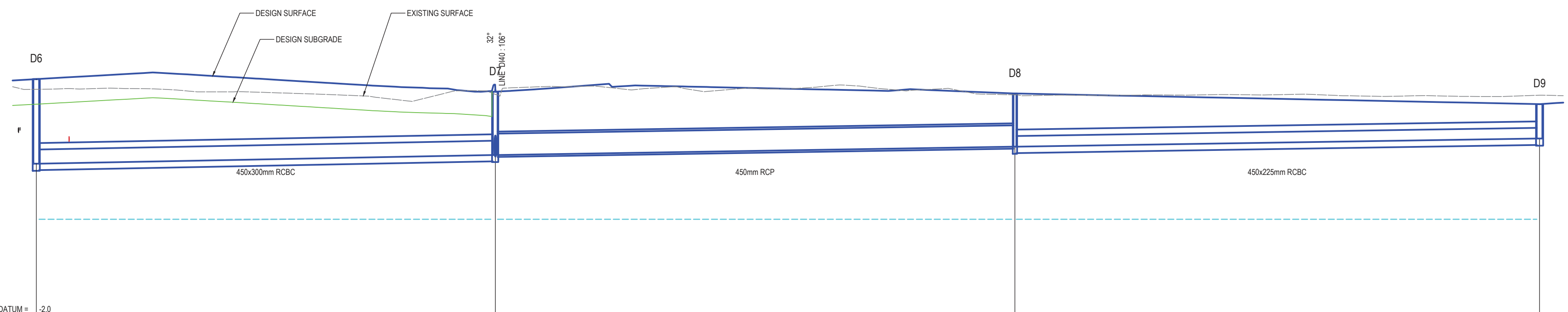
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20; 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC80; CH 200 - CH 280
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 30	AMEND No.: C
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

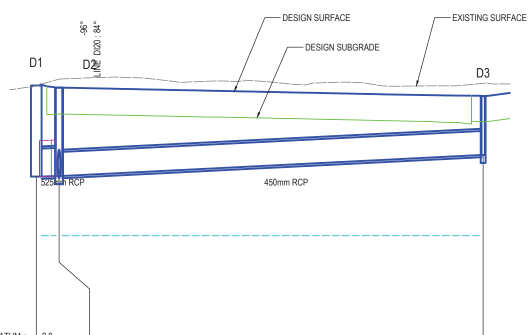
CAD FILE NAME: XXXX SHEET 0030.DWG



DATUM = -2.0

GRADES		0.19%		0.16%		0.16%	
INVERT LEVEL	1.17		1.35		1.53		1.70
DESIGN SURFACE	2.95		2.68		2.65		2.43
CHAINAGE	0.00	L=96.58	96.58	L=109.29	205.86	L=110.36	316.22

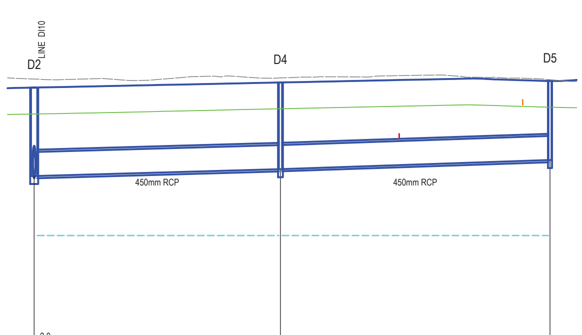
DB0B



DATUM = -2.0

GRADES		0.28%		0.49%	
INVERT LEVEL	1.11		1.12		1.51
DESIGN SURFACE	2.81		2.77		2.61
CHAINAGE	-4.28	L=4.28	0.00	L=79.45	79.45

DI10



-2.0

GRADES		0.28%		0.33%	
INVERT LEVEL	1.12		1.24		1.42
DESIGN SURFACE	2.77		2.87		2.90
CHAINAGE	0.00	L=46.15	46.15	L=50.50	96.65

DI20

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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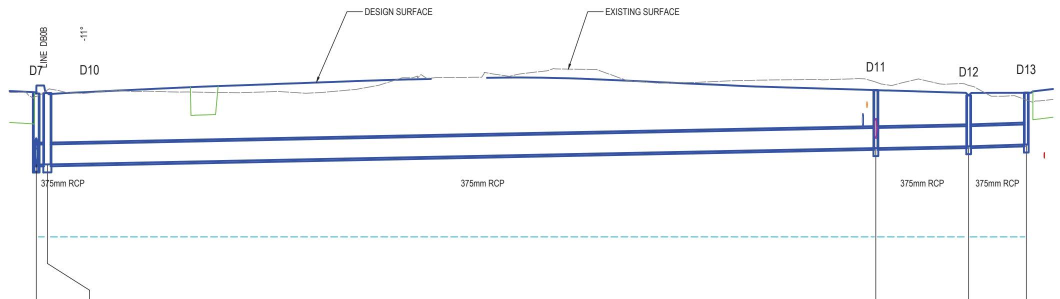
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 1 0 0.5 1 1.5 2

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
DB0B, DI10, DI20
DRAINAGE LONGITUDINAL SECTIONS

DESIGNED: PWP CHECKED:
DRAFTED: WGA CHECKED:
ACCEPTED FOR USE: TITLE: DATE:
ACCEPTANCE FORM KNET No.: IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 31
AMEND No.: C
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

CAD FILE NAME: XXXX SHEET 0031.DWG



DATUM = -2.0

GRADES		0.14%		0.20%		0.20%		0.31%	
INVERT LEVEL	1.35		1.36		1.66		1.70		1.73
DESIGN SURFACE	2.68		2.69		2.75		2.65		2.70
CHAINAGE	0.00	L=2.08	2.08	L=155.22	157.31	L=17.39	174.70	L=10.79	185.49

DI40

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

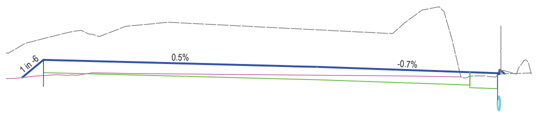
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20; 1 0 0.5 1 1.5 2

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
DI40
DRAINAGE LONGITUDINAL SECTIONS

DESIGNED: PWP
CHECKED:
DRAFTED: WGA
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 32
AMEND No.: C
SHEET LATITUDE -XX.XXXXX
SHEET LONGITUDE XXX.XXXXX

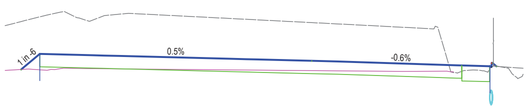
CAD FILE NAME: XXXX SHEET 0032.DWG



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.629	3.290	3.026	2.791	2.766	2.916	2.915	2.768
LEVEL DIFF.	1.214	0.795	1.39	-0.079	-0.024	-0.172	-0.162	0
HORIZ. OFFSET	55.211	51.242	0.000	33.858	34.159	34.184	34.284	35.168

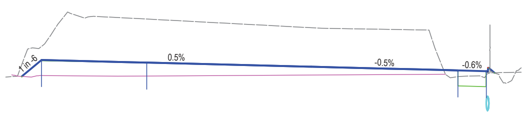
CH. 20.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.688	3.270	3.013	2.811	2.786	2.936	2.936	2.805
LEVEL DIFF.	1.796	1.39	1.431	-0.074	-0.015	-0.162	-0.149	0.002
HORIZ. OFFSET	54.402	50.904	0.000	33.359	33.660	33.685	33.785	34.567

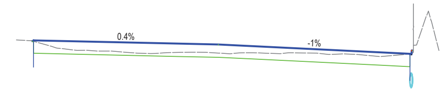
CH. 10.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	CE70	NL02	CE70	IA0J			CE0J	
DESIGN LEVEL	2.635	3.250	3.152	3.000	2.860	2.831	2.806	2.956	2.956	2.771
LEVEL DIFF.	0.444	0.508	1.633	1.46	-0.233	-0.125	-0.068	-0.216	-0.208	0
HORIZ. OFFSET	54.261	50.566	30.826	0.000	27.524	32.860	33.160	33.185	33.286	34.391

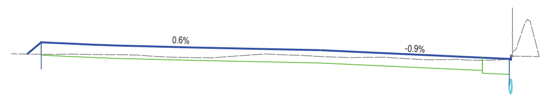
CH. 0.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70 / CE70		NL02				CE0J
DESIGN LEVEL	3.177	3.210	3.057	2.710	2.685	2.835	2.835
LEVEL DIFF.	0.011	-0.034	-0.321	0.008	0.042	-0.107	-0.104
HORIZ. OFFSET	34.794	34.592	0.000	35.855	36.156	36.181	36.281

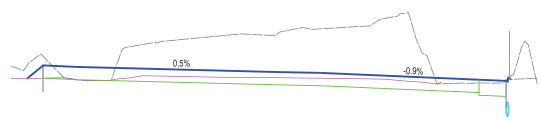
CH. 60.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.921	3.349	3.055	2.730	2.705	2.855	2.855	2.830
LEVEL DIFF.	-0.012	-0.448	-0.236	0.008	0.076	-0.069	-0.052	0
HORIZ. OFFSET	54.828	52.255	0.000	35.356	35.657	35.682	35.782	35.934

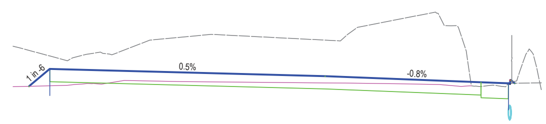
CH. 50.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.837	3.329	3.049	2.750	2.725	2.875	2.875	2.808
LEVEL DIFF.	0.497	0.345	1.651	0.048	0.076	-0.073	-0.072	-0
HORIZ. OFFSET	54.873	51.917	0.000	34.857	35.157	35.182	35.282	35.689

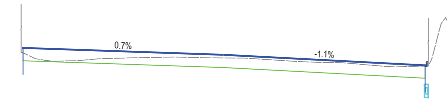
CH. 40.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	IA70	CE70	NL02	IA0J			CE0J	
DESIGN LEVEL	2.660	3.310	3.039	2.771	2.745	2.895	2.895	2.773
LEVEL DIFF.	1.344	0.484	1.349	-0.037	0.006	-0.143	-0.136	-0
HORIZ. OFFSET	55.480	51.580	0.000	34.358	34.658	34.683	34.783	35.520

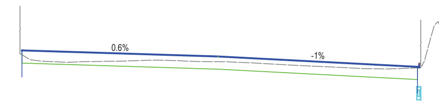
CH. 30.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.287	3.030	2.630	2.605	2.755	2.755
LEVEL DIFF.	-0.182	-0.117	-0.023	0.004	-0.146	-0.146
HORIZ. OFFSET	37.475	0.000	37.852	38.153	38.178	38.278

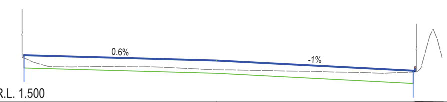
CH. 100.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.270	3.041	2.650	2.625	2.775	2.775
LEVEL DIFF.	-0.164	-0.197	-0.038	-0.011	-0.161	-0.16
HORIZ. OFFSET	36.754	0.000	37.353	37.653	37.678	37.779

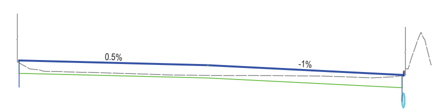
CH. 90.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.250	3.050	2.670	2.645	2.795	2.795
LEVEL DIFF.	-0.109	-0.348	-0.051	-0.024	-0.174	-0.173
HORIZ. OFFSET	36.034	0.000	36.854	37.154	37.179	37.279

CH. 80.000



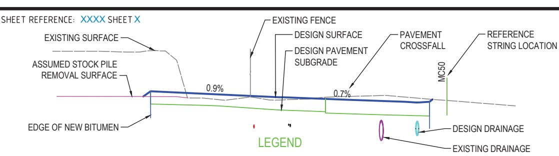
REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02				CE0J
DESIGN LEVEL	3.230	3.056	2.690	2.665	2.815	2.815
LEVEL DIFF.	-0.086	-0.383	-0.025	0.009	-0.14	-0.137
HORIZ. OFFSET	35.313	0.000	36.355	36.655	36.680	36.780

CH. 70.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
D	REF. STRING LABEL UPDATED	WGA			17.08.18
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

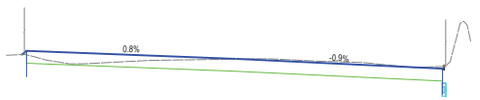
Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX
FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX
SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
MC02; CH 0.0 - CH 100
CROSS SECTIONS

DESIGNED: PWP
CHECKED:
DRAFTED: WGA
CHECKED:
ACCEPTED FOR USE:
TITLE:
DATE:
ACCEPTANCE FORM KNET No.:
IN ACCORDANCE WITH DP013
DRAWING No.: XXXX
SHEET No.: 21
AMEND No.: D
SHEET LATITUDE -XX.XXXXX SHEET LONGITUDE XXX.XXXXX

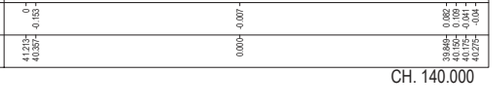
CAD FILE NAME: XXXX SHEET 0021.DWG



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.094 3.236	2.926	2.650 2.675 2.675
LEVEL DIFF.	0 -0.153	0.000 -0.007	0.082 0.081 -0.104 -0.04
HORIZ. OFFSET	41.213 40.357	0.000	39.949 40.170 40.170 40.275

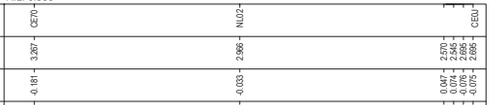
CH. 140.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.267	2.966	2.570 2.670 2.695 2.695
LEVEL DIFF.	-0.181	0.000 -0.033	0.047 0.074 -0.075 -0.075
HORIZ. OFFSET	39.637	0.000	39.350 39.575 39.575 39.775

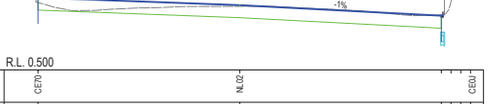
CH. 130.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.286	2.997	2.590 2.565 2.715 2.715
LEVEL DIFF.	-0.186	0.000 -0.044	0.029 0.055 -0.066 -0.084
HORIZ. OFFSET	38.916	0.000	38.851 39.151 39.176 39.276

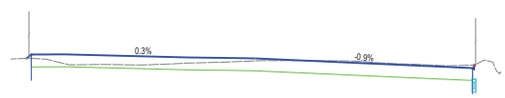
CH. 120.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.293	3.018	2.610 2.965 2.735 2.735
LEVEL DIFF.	-0.174	0.000 -0.066	0.006 0.031 -0.119 -0.119
HORIZ. OFFSET	38.195	0.000	38.352 38.662 38.877 38.977

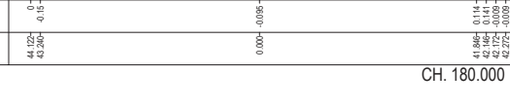
CH. 110.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	IA0U	CE0U
DESIGN LEVEL	2.848 2.995	2.845	2.470 2.495 2.595 2.595 2.595	
LEVEL DIFF.	0 -0.15	0.000 -0.095	0.114 0.141 -0.009 -0.009 -0	
HORIZ. OFFSET	44.122 43.240	0.000	41.846 42.172 42.272 42.334	

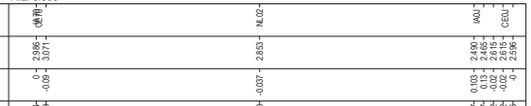
CH. 180.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	IA0U	CE0U
DESIGN LEVEL	2.986 3.071	2.853	2.490 2.495 2.615 2.615 2.615	
LEVEL DIFF.	0 -0.09	0.000 -0.037	0.103 0.13 -0.02 -0.02 -0	
HORIZ. OFFSET	43.024 42.919	0.000	41.347 41.477 41.672 41.772 41.889	

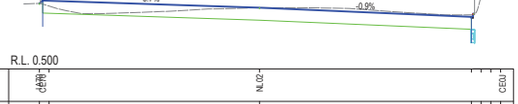
CH. 170.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.000 3.138	2.862	2.510 2.485 2.635 2.635
LEVEL DIFF.	0 -0.134	0.000 0.002	0.08 0.105 -0.043 -0.043
HORIZ. OFFSET	42.447 41.799	0.000	40.948 41.149 41.175 41.275

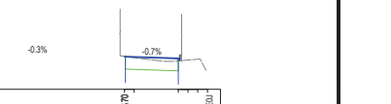
CH. 160.000



REF. STRING MC02 R.L. 0.500

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	3.065 3.193	2.887	2.530 2.505 2.655 2.655
LEVEL DIFF.	-0 -0.142	0.000 0.013	0.069 0.094 -0.056 -0.084
HORIZ. OFFSET	41.842 41.078	0.000	40.348 40.649 40.774 40.874

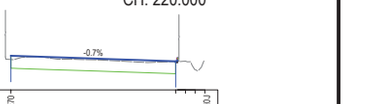
CH. 150.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	CE70	CE0U
DESIGN LEVEL	2.763 2.759	2.690 2.665 2.815 2.815
LEVEL DIFF.	0.009 0.009	-0.105 -0.078 -0.078 -0.228
HORIZ. OFFSET	0.000	33.469 33.942 43.943 44.143 44.143 44.269

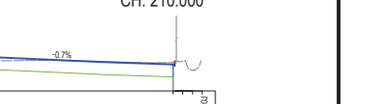
CH. 220.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	CE70	CE0U
DESIGN LEVEL	2.815	2.605 2.581 2.731 2.731
LEVEL DIFF.	-0.144	-0.008 0.13 -0.129 -0.129
HORIZ. OFFSET	0.000 11.570	43.344 43.644 43.769 43.769

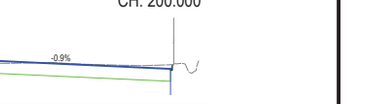
CH. 210.000



REF. STRING MC02 R.L. 1.500

DESIGN LABELS	IA70	CE70	NL02	CE0U
DESIGN LEVEL	2.615	2.872	2.842	2.621 2.696 2.846 2.846
LEVEL DIFF.	-0	-0.295	-0.201	0.073 0.098 -0.052 -0.052
HORIZ. OFFSET	14.351 10.469		0.000 -0.197	42.945 43.145 43.170 43.270

CH. 200.000



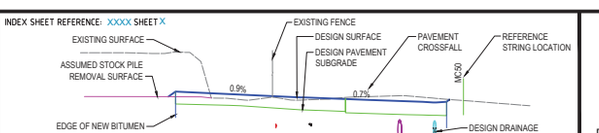
REF. STRING MC02 R.L. 1.000

DESIGN LABELS	CE70	NL02	CE0U
DESIGN LEVEL	2.928	2.838	2.460 2.425 2.575 2.575
LEVEL DIFF.	-0.277	-0.197	0.189 0.186 0.037 0.037
HORIZ. OFFSET	32.565	0.000	42.345 42.645 42.671 42.771

CH. 190.000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
D	REF. STRING LABEL UPDATED	WGA			17.08.18
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X



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Government of South Australia

Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX | FILE No.: XX/XXXXX

DESIGN No.: XXXXXXXX | SURVEY No.: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km

SCALES: 10 0 5 10 15 20 / 2 0 1 2 3 4

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

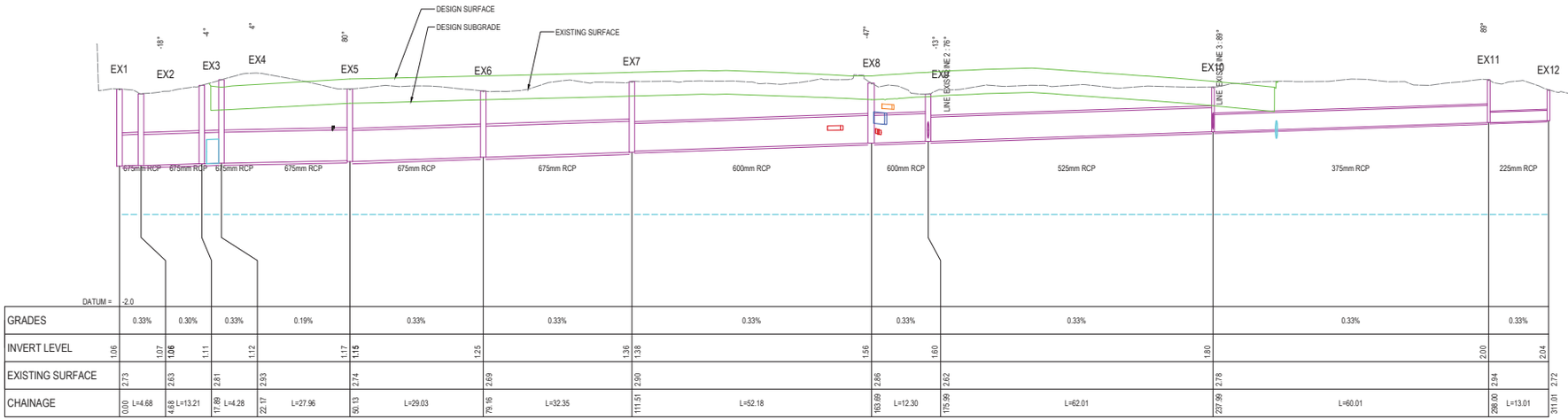
FLINDERS PORTS SA - TITLE F PORT ADELAIDE

MC02; CH 110 - CH 220

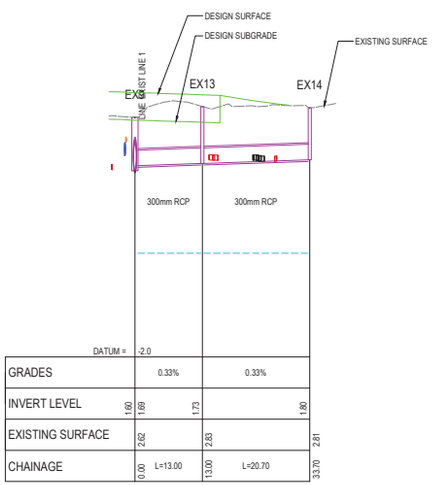
CROSS SECTIONS

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 22	AMEND No.: D
CHECKED:	CHECKED:	TITLE: DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

CAD FILE NAME: XXXX SHEET 0022.DWG



EXIST LINE 1



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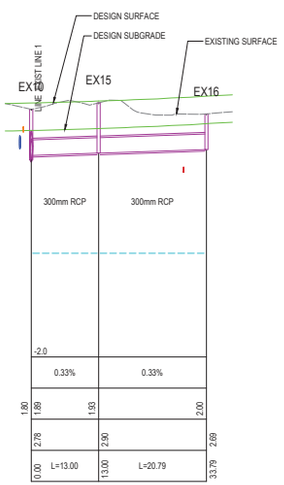
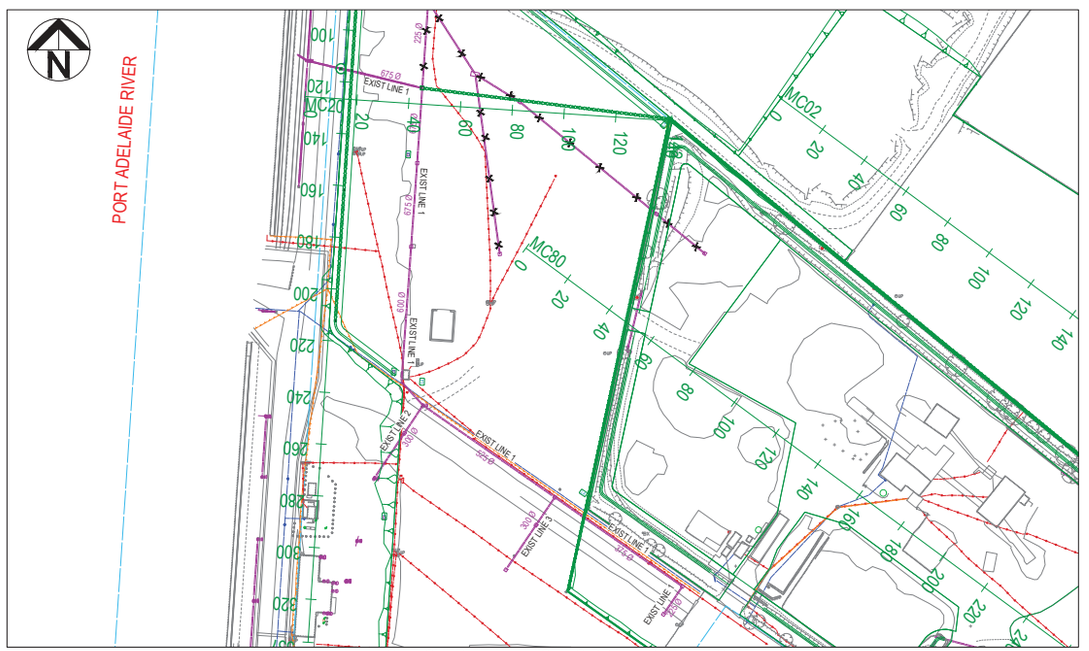


EXIST LINE 3



SITE OVERVIEW - EXISTING DRAINAGE NETWORK

SCALE 1:1000

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE:	XXXX; CH XXXX = XXX.XX km
SCALES:	10 0 5 10 15 20 / 1 0 0.5 1 1.5 2

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

EXISTING - LINE 1, LINE 2, LINE 3

DRAINAGE LONGITUDINAL SECTIONS

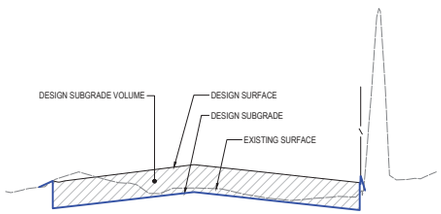
DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 41	AMEND No.: C
CHECKED:	CHECKED:	TITLE:				
		DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	

CAD FILE NAME: XXXX SHEET 0041.DWG

DEPTH RANGE FILE

Lower_value		Upper_value		Colour
-1.00	to	-0.95	m	
-0.95	to	-0.90	m	
-0.90	to	-0.85	m	
-0.85	to	-0.80	m	
-0.80	to	-0.75	m	
-0.75	to	-0.70	m	
-0.70	to	-0.65	m	
-0.65	to	-0.60	m	
-0.60	to	-0.55	m	
-0.55	to	-0.50	m	
-0.50	to	-0.45	m	
-0.45	to	-0.40	m	
-0.40	to	-0.35	m	
-0.35	to	-0.30	m	
-0.30	to	-0.25	m	
-0.25	to	-0.20	m	
-0.20	to	-0.15	m	
-0.15	to	-0.10	m	
-0.10	to	-0.05	m	
-0.05	to	0	m	
0	to	0.05	m	
0.05	to	0.10	m	
0.10	to	0.15	m	
0.15	to	0.20	m	
0.20	to	0.25	m	
0.25	to	0.30	m	
0.30	to	0.35	m	
0.35	to	0.40	m	
0.40	to	0.45	m	
0.45	to	0.50	m	
0.50	to	0.55	m	
0.55	to	0.60	m	
0.60	to	0.65	m	
0.65	to	0.70	m	

NOTE:
DEPTH RANGE BANDING TAKEN BETWEEN PROPOSED SUBGRADE DESIGN SURFACE TO EXISTING SURFACE



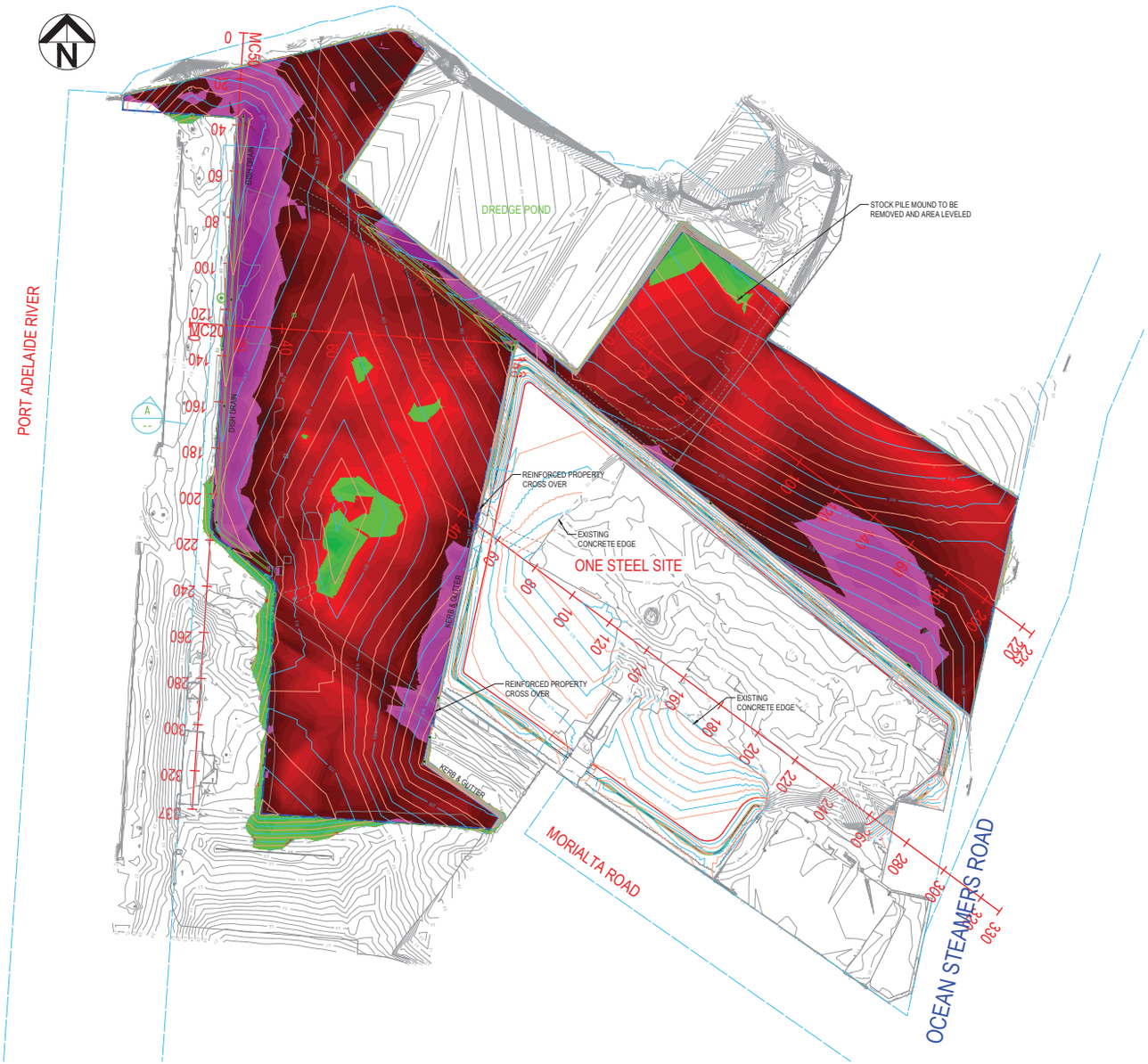
SECTION A
N.T.S.

DESIGN SUBGRADE SURFACE VOLUME BREAKDOWN

Total cut	-14950.151
Total fill	273.171
Total balance	-14676.980
ie excess of cut over fill	14676.980

DESIGN SUBGRADE VOLUME BREAKDOWN

Total cut	-0.000
Total fill	23954.503
Total balance	23954.503
ie excess of fill over cut	23954.503



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No.: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
SCALES: 20 0 10 20 30 40	

ROAD No. 5427

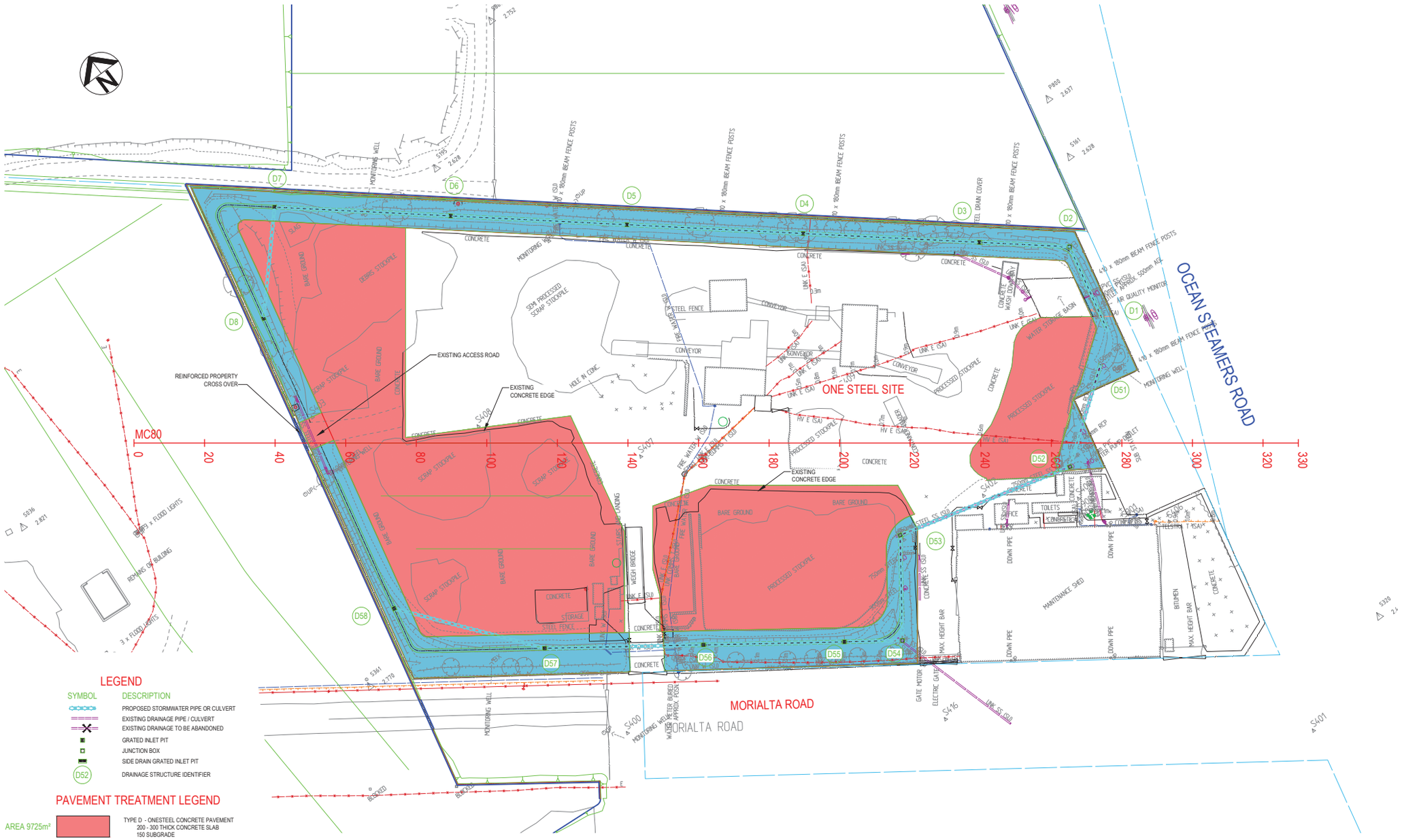
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

VOLUME BREAKDOWN

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 42	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

CAD FILE NAME: XXXX SHEET 0042.DWG



LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORMWATER PIPE OR CULVERT
	EXISTING DRAINAGE PIPE / CULVERT
	EXISTING DRAINAGE TO BE ABANDONED
	GRATED INLET PIT
	JUNCTION BOX
	SIDE DRAIN GRATED INLET PIT
D52	DRAINAGE STRUCTURE IDENTIFIER

PAVEMENT TREATMENT LEGEND

AREA 9725m²		TYPE D - ONESTEEL CONCRETE PAVEMENT 200 - 300 THICK CONCRETE SLAB 150 SUBGRADE
AREA 5148m²		TYPE E - LINED SWALE CONCRETE LINED DRAINAGE SWALE

NOTES:

1. FOR PAVEMENT DETAILS REFER TO THE PAVEMENT SCHEDULES IN THE CONTRACT SPECIFICATION. THE PAVEMENT TREATMENT LEGEND PROVIDES A BRIEF DESCRIPTION OF THE PAVEMENT CONFIGURATION.

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427

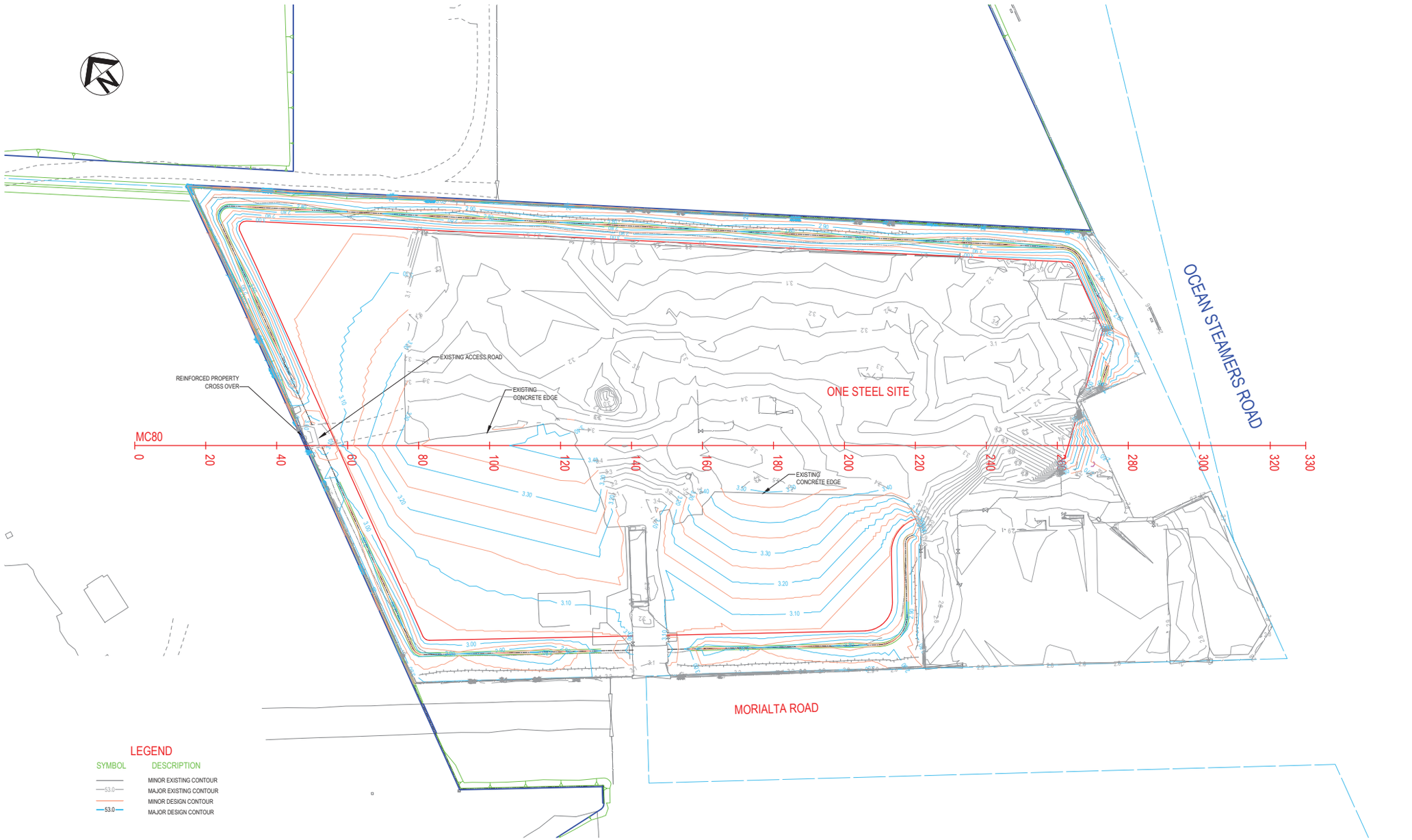
OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
GENERAL CONSTRUCTION

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0011	C

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► UNCONTROLLED COPY WHEN PRINTED

CAD FILE NAME: XXXX SKETCH 0011DWG



LEGEND

SYMBOL	DESCRIPTION
	MINOR EXISTING CONTOUR
53.0	MAJOR EXISTING CONTOUR
	MINOR DESIGN CONTOUR
53.0	MAJOR DESIGN CONTOUR

NOTES:

1. DESIGN CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.
2. EXISTING CONTOUR INTERVAL IS 0.05m. LEVELS ARE SHOWN AT 0.1m INTERVALS.

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

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Government of South Australia

Department of Planning, Transport and Infrastructure

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

ONESTEEL - CONCEPT

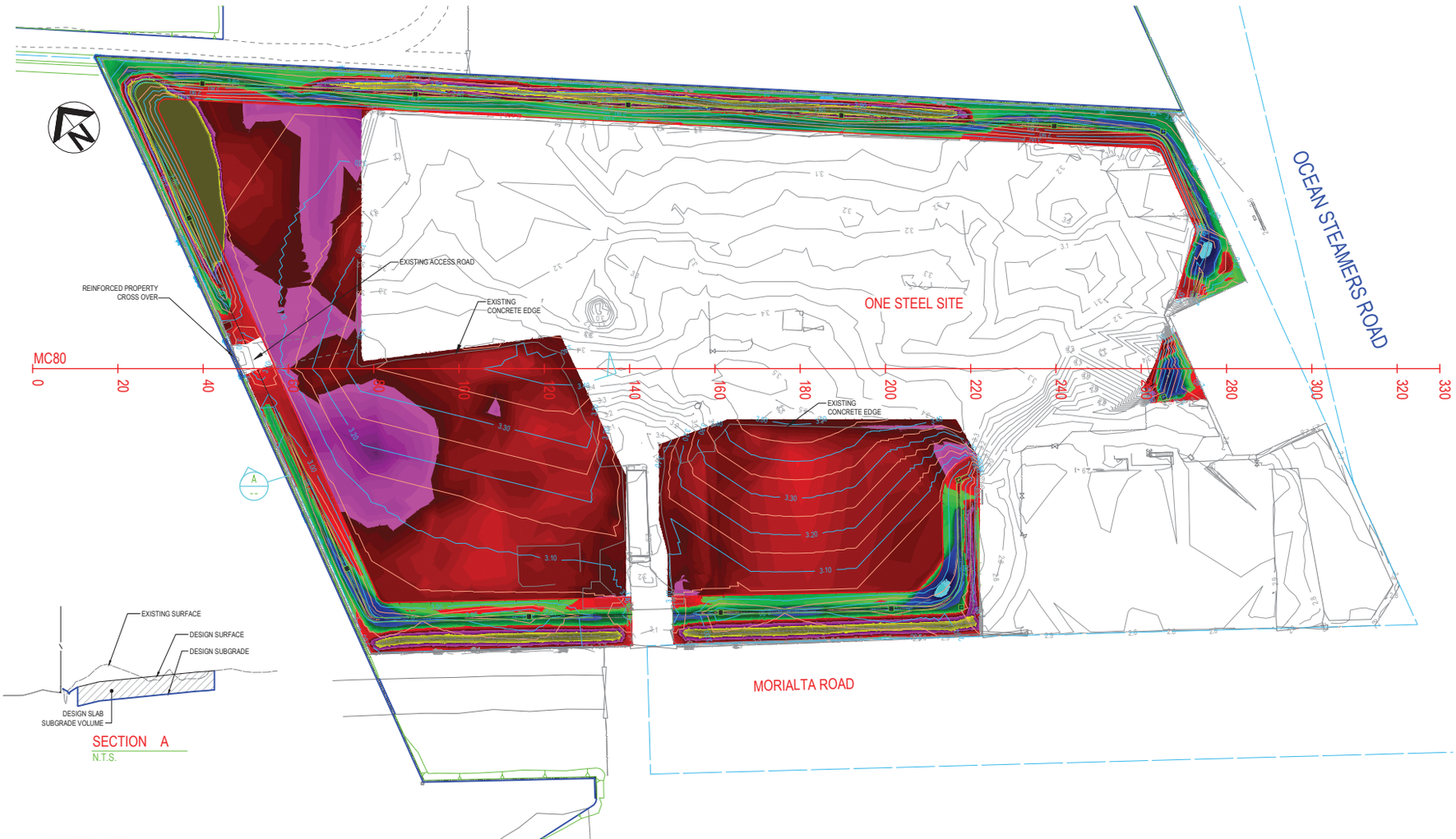
FINAL SURFACE CONTOURS

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0012	C

CAD FILE NAME: XXXX SKETCH 0012.DWG

DEPTH RANGE FILE

Lower_value		Upper_value	Colour
-300	to	-1.45	m
-1.45	to	-1.40	m
-1.40	to	-1.35	m
-1.35	to	-1.30	m
-1.30	to	-1.25	m
-1.25	to	-1.20	m
-1.20	to	-1.15	m
-1.15	to	-1.10	m
-1.10	to	-1.05	m
-1.05	to	-1.00	m
-1.00	to	-0.95	m
-0.95	to	-0.90	m
-0.90	to	-0.85	m
-0.85	to	-0.80	m
-0.80	to	-0.75	m
-0.75	to	-0.70	m
-0.70	to	-0.65	m
-0.65	to	-0.60	m
-0.60	to	-0.55	m
-0.55	to	-0.50	m
-0.50	to	-0.45	m
-0.45	to	-0.40	m
-0.40	to	-0.35	m
-0.35	to	-0.30	m
-0.30	to	-0.25	m
-0.25	to	-0.20	m
-0.20	to	-0.15	m
-0.15	to	-0.10	m
-0.10	to	-0.05	m
-0.05	to	0	m
0	to	0.05	m
0.05	to	0.10	m
0.10	to	0.15	m
0.15	to	0.20	m
0.20	to	0.25	m
0.25	to	0.30	m
0.30	to	0.35	m
0.35	to	0.40	m
0.40	to	0.45	m
0.45	to	0.50	m
0.50	to	0.55	m
0.55	to	0.60	m
0.60	to	0.65	m
0.65	to	0.70	m
0.70	to	0.75	m
0.75	to	0.80	m
0.80	to	0.85	m
0.85	to	0.90	m
0.90	to	0.95	m
0.95	to	1.00	m
1.00	to	1.05	m
1.05	to	1.10	m



SECTION A
N.T.S.

ONESTEEL SITE

DESIGN SLAB SURFACE VOLUME BREAKDOWN

Total cut	-5971.160
Total fill	736.852
Total balance	-5234.309
ie excess of cut over fill	5234.309

DESIGN SLAB SUBGRADE VOLUME BREAKDOWN

Total cut	0.000
Total fill	3903.697
Total balance	3903.697
ie excess of fill over cut	3903.697

NOTE:
DEPTH RANGE BANDING TAKEN BETWEEN PROPOSED SUBGRADE DESIGN SURFACE TO EXISTING SURFACE

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

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Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
VOLUME BREAKDOWN

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.:
WGA	WGA		XXXXXXXX	XXXX Sketch 0013	C

CAD FILE NAME: XXXX SKETCH 0013.DWG

1 INTRODUCTION

Wallbridge Gilbert Aztec (WGA) has been commissioned by Department of Planning Transport and Infrastructure (DPTI) to undertake the preliminary drainage design for works associated with the proposed environmental remediation of Title F, Inner Harbour East, Berths 16-20, 25 and 27 in Port Adelaide, SA.

This Stormwater Management Plan (SMP) outlines the proposed basis for the stormwater strategy within the site, which is located on Morialta Road / Ocean Steamers Road, Port Adelaide as shown in Figure 1. The key criterion is the conveyance of stormwater and discharge off site via a conventional drainage system to the existing site outlet. The report is intended to outline key elements that need to be adopted in the final detailed design.

Figure 1 - Site Locality Plan

The site has an approximate area of 8 ha, including a 3.2 ha area currently leased by OneSteel. It is noted that the OneSteel stormwater system discharges separately from the proposed drainage design for the rest of Title F.

2 DESIGN BASIS

2.1 CURRENT SITE CONDITIONS

2.1.1 Title F

The overall Title F site consists of paved hardstand areas, with buildings along the site's western and southern boundaries. The site rehabilitation includes only certain hardstand areas grouped together based on anticipated operational usage. These are listed below and are illustrated by the plans included as Appendix A.:

- Areas A, A2 & C;
- Areas B, D & G; and
- Area E.

In its current condition, the site does not consist of any significant pervious areas. It is a relatively flat site, with fall generally to the west. Currently the site is serviced by an underground stormwater pipe network, which outlets to the Port River via multiple outlets. It is proposed to retain as much of the existing pipe network as possible.

2.1.2 OneSteel

The OneSteel site is approximately 3.2 ha in area and consists of mostly hardstand areas used by machinery and for stockpiled materials. Stormwater runoff generated by this site is managed via grassed swales around the site's perimeter. As part of the EPA license for this site, it is noted that all stormwater is to be captured and treated prior to leaving the site.

2.2 SITE HYDROLOGY

2.2.1 Catchment Parameters

Given the nature of the site, sub-catchments within Title F have been treated as mostly impervious with the following proportions of area determination being applied:

- 100% Paved
- 0% Supplementary
- 0% Grassed

These proportions apply to both the pre-development and post-development scenarios, as the areas proposed for rehabilitation are currently all hardstand. A time of entry has been applied to each individual catchment based on the overland flow length and longitudinal grade. A catchment plan has been included as Appendix B.

The same catchment parameters have been applied to the OneSteel site in both the pre-development and post-development scenario. This is on the basis that the site is currently concrete/ hardstand area, and the current requirement for the OneSteel site to detain and treat all stormwater runoff from the site.

2.2.2 Minor and Major Flows

2.2.2.1 Title F

Preliminary stormwater design has been undertaken consistent with DPTI's *'Roadworks Stormwater Design – DD300,'* 2015. Based on this document, the following design standards have been applied for the internal system:

- Minor System (pipe system) 1 in 5 years ARI
- Major System (overland flow) 1 in 100 years ARI

As the level of imperviousness of the site is not proposed to be increased, and the existing western outlet is intended to be utilised, it is considered that the 'post-development' peak discharge rate will not increase from the 'pre-development' peak discharge rate. On this basis, stormwater detention has not been proposed for this site.

2.2.2.2 OneSteel

It is proposed as part of the works within the OneSteel site, that the existing open swales are partially filled in and sealed with concrete. Given these swales were in place to manage minor and major flow events, and the capacity would be reduced as part of this work, it is proposed that the new internal drains within the OneSteel site are sized for a 1 in 100-year event.

Current stormwater requirements relating to the OneSteel site dictate that all stormwater must be treated and detained prior to discharge from the site. On this basis it is understood that the existing stormwater storage and treatment tank within the site is sufficient and does not need to be upgraded as part of the re-sealing works.

2.3 HYDRAULICS

2.3.1 Existing Drainage Network

2.3.1.1 Title F

An assessment of existing infrastructure has been undertaken by DPTI and is provided in Appendix C. In summary, the existing drainage network can be summarised as follows;

- Surface runoff from Areas A, A2 and C is captured by inlet pits and conveyed via underground drainage, discharging directly to the Port River through a series of outfalls beneath the wharf. This sub-catchment is approximately 2.3 ha in total area.
- A settlement pit currently exists to the north of shed 20, which filters medium to large sediment particles from stormwater flows. This outlet treats and discharges surface runoff from Area D and a small portion of Area A2. This sub-catchment is approximately 0.40 ha in total area.
- No formal drainage infrastructure exists within Areas B and G. Surface runoff from these areas is directed to the Ocean Steamers Road street network, which is managed by Defence SA. This is discharged to the Port River at a point between the Title F northern boundary and the adjacent property. The area of the sub-catchment is approximately 1.65 ha.

2.3.1.2 OneSteel Site

Existing stormwater infrastructure within the OneSteel site can be summarised as follows:

- Surface runoff directed to swales on the southern, western and northern boundaries of the site;
- Concrete pipes direct flows to a water storage basin for treatment/ detention located adjacent Ocean Steamers Road;

- Stormwater discharges from the water storage basin to the Council stormwater network.

2.3.2 Proposed Drainage Network

2.3.2.1 Title F

DRAINS has been used for the preliminary design of underground drainage within the Title F site. The resultant pipe sizing and general drainage layout can be seen in Appendix D. While the intent was to retain existing stormwater drainage infrastructure where possible, new infrastructure has been proposed in certain areas based on the proposed grading of the site.

Pits and underground networks have been sized to cater for the minor event with no overflow. A minimum freeboard at pits for the minor storms of 150mm has been adopted.

It is intended to utilise the existing 675 mm RCP outlet beneath the wharf, on the site's western boundary, for all areas within Title F. As demonstrated by our DRAINS modelling, along with the peak flow rate results shown in Appendix E, it has been determined that this existing 675 mm outlet has sufficient capacity to discharge runoff generated by all catchments.

2.3.2.2 OneSteel Site

Preliminary stormwater calculations have been undertaken to size the proposed drainage network, as shown by Appendix E. Given the capacity of the existing swale will be reduced once the site is re-sealed with concrete, it is recommended that the underground network is sized for a 1 in 100-year ARI event.

The existing water storage basin is intended to be utilised for treatment/ detention prior to discharge from the site. It is proposed to retain the existing stormwater outlet from the site, as it is not intended to increase stormwater outflow from the site.

2.4 WATER QUALITY

A large proportion of stormwater runoff generated by Title F is currently discharged directly to the Port River. From the assessment provided by DPTI, only a small sub-catchment was treated by a settlement pit.

It is proposed that a hydrodynamic separator is installed at the downstream end of the system in order to improve water quality by removing total suspended solids (TSS) prior to discharge to the river. The intended target for reduction of TSS is 80% based on EPA requirements.

The OneSteel EPA license currently requires all stormwater runoff is to be treated to an acceptable standard prior to discharge from the site. It is proposed to utilise the existing treatment infrastructure on the basis that it was previously sized to cater for a fully impervious area, and that the land usage for the site is not being altered.

3 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

During the design and construction phase of the development a Construction Environmental Management Plan (CEMP) shall be implemented in accordance with the Environment Protection Act 1993. A plan will be prepared to meet the requirements in accordance with the Code of Practice for the Construction and Building Industry (1999).

The CEMP is proposed to encompass surface stormwater management practices that shall be implemented during the construction phase. The CEMP will demonstrate the site management measures the constructor proposes to implement in order to prevent sediment and pollutant exports during the construction stages, including the mitigation of construction noise. Whilst the site's conditions will change as the construction progresses, it is the environmental duty of the constructor to ensure that the site CEMP is progressively maintained and upgraded to suit.

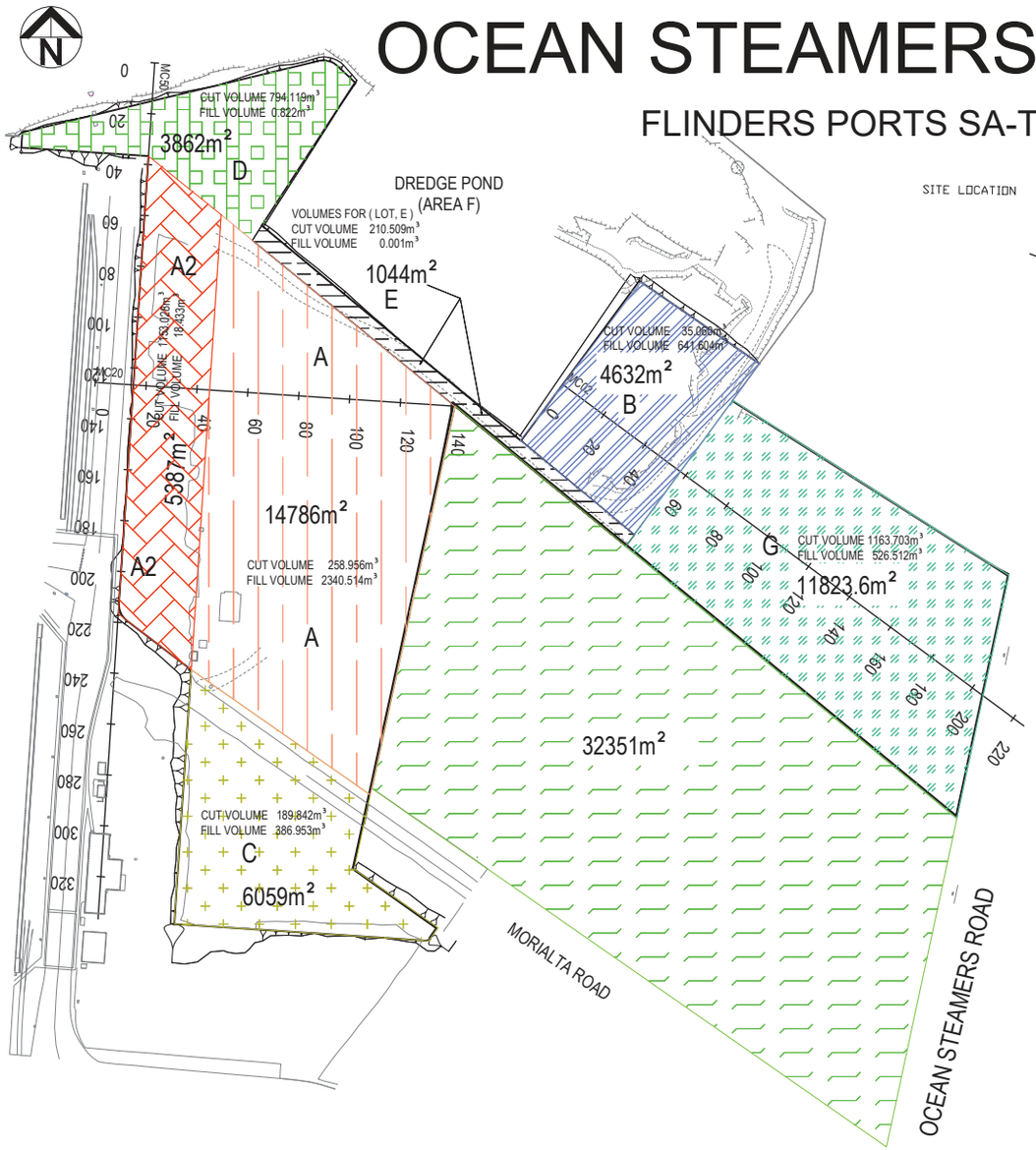
The CEMP shall include and not be limited to, sediment trap / basin, silt fences, diversion swales to control site flow, single site access point with shaker pad, stockpile management and other measures as deemed necessary

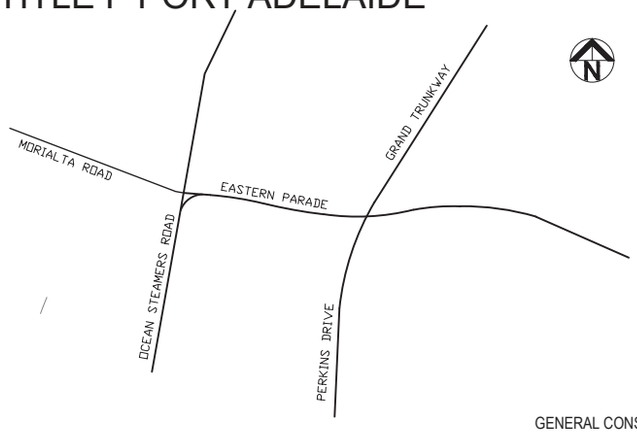
APPENDIX A

SITE PLAN

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA-TITLE F PORT ADELAIDE





LOCALITY PLAN
NTS

REFERENCE DOCUMENTS

- CROSS SECTION REPORT 20110951
- GEOMETRIC REPORT 20110951
- AS1742 MANUAL OF TRAFFIC CONTROL DEVICES
- DPTI MASTER SPECIFICATION
- S-4070 SHEETS 6 & 7 (KERB AND GUTTER)
- S-4080 SHEETS 1,2,&3 (JUNCTION BOX AND SIDE ENTRY PITS)
- S-4080 SHEET 6 (GRATED FIELD PIT)
- S-4055 SHEETS 19-24, 30, 37-42, 46, 48 & 49 (LIGHT POLES & FOOTINGS)
- S-4055 SHEETS 33-35 (LIGHTING PIT DETAILS)
- S-4055 SHEETS 43 & 54-58 (ELECTRICAL SWITCH BOARD)

GENERAL CONSTRUCTION

SHEET	LOCATION
2	

DRAINAGE

SHEET	LOCATION
3	

FINAL SURFACE CONTOURS

SHEET	LOCATION
4	

PAVEMENT TREATMENT

SHEET	LOCATION
5	

GEOMETRIC SETOUT

SHEET	LOCATION
6	

CROSS SECTIONS

SHEET	LOCATION
7	MC02; CH 0.0 - CH 200
8	MC20; CH 0.0 - CH 140
9	MC50; CH 10.0 - CH 330

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7339 SHEET 1

PRELIMINARY FINAL DESIGN 12.7.16

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Government of South Australia
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PROJECT No.:	FILE No.:
13417	14/20289
DESIGN No.:	SURVEY No.:
201500346	20100212

PROJECT START ROAD RUNNING DISTANCE: MC50 CH 10.0, MC02 CH 0.0

PROJECT END ROAD RUNNING DISTANCE: MC50 CH 330, MC02 CH 200

SCALES: 20 0 10 20 30 40 H:1000

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA-TITLE F PORT ADELAIDE

TITLE AND INDEX

DESIGNED	DRAFTED	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
PWP	PWP	S.NICHOLSON	9493807	7339	1	0
CHECKED: JdC	CHECKED: JdC	TITLE: PROJECT MANAGER DATE: 26.07.2016	IN ACCORDANCE WITH DP013	SHEET LATITUDE -34.833187 SHEET LONGITUDE 138.51034		

CAD FILE NAME: 7339 SHEET 0001.DWG

APPENDIX B

CATCHMENT PLAN

DRAIN DETAILS

ID	STRUCTURE	DESCRIPTION			DETAILS		
	INLET - OUTLET	RUNS	SIZE(mm)	TYPE	CLASS	LENGTH	GRADE%
DI10	D2 - D1	1	525	RCP	4	4.28	0.28
DI10	D3 - D2	1	450	RCP	4	79.45	0.49
DI20	D4 - D2	1	450	RCP	4	46.15	0.28
DI20	D5 - D4	1	450	RCP	4	50.5	0.33
DB0B	D7 - D6	1	450 x 300	RCBC	-	96.58	0.19
DB0B	D8 - D7	1	450	RCP	4	109.29	0.16
DB0B	D9 - D8	1	400 x 225	RCBC	-	110.36	0.16
DI40	D10 - D7	1	375	RCP	4	2.08	0.14
DI40	D11 - D10	1	375	RCP	4	155.22	0.2
DI40	D12 - D11	1	375	RCP	4	17.39	0.2
DI40	D13 - D12	1	375	RCP	4	10.79	0.31

DRAIN CONNECTION DETAILS

ID	DESCRIPTION	SET OUT LOCATION			DRAIN		CUSTOM JUNCTION BOXES/GRATED INLET PITS WILL BE REQUIRED, RATED TO CLASS F
		PPIT PT	ORIENTATION	LEVEL	SIZE (mm)	LEVEL	
D1	CLASS F HUMECEPTOR (STC-18) OR SPEL ECOCEPTOR 4000 OR EQUIVALENT	1	-	2.811	675 525	1.105 1.105	PORTION OF EXISTING PIPE
D2	600 x 600 GRATE, COMBIND 1200 x1200 JUNCTION BOX	2	- - -	2.773	525 450 450 675	1.117 1.117 1.117 1.117	 RETAIN EXISTING 675 PIPE
D3	600 x 600 GRATED INLET PIT	3	-	2.613	375	1.510	
D4	600x600 GRATED INLET PIT	4	-	2.868	450	1.244	
D5	600x600 GRATED INLET PIT	5	-	2.896	450	1.415	
D6	EXISTING JB REPLACE WITH NEW 1200 x 1200 JB	6	- - -	2.950 2.950 2.710	675 675 450x300	1.204 1.204 1.170	EXISTING 675 RCP EXISTING 675 RCP EXISTING JB TO BE REPLACED WITH NEW JB
D7	600x600 GRATE, COMBIND 900 x900 JUNCTION BOX	7	- - -	2.685 2.685 2.685	450 375 450x300	1.354 1.354 1.357	
D8	600 x 600 GRATED INLET PIT	8	- -	2.648 2.648	450 450x225	1.528 1.528	
D9	2X600 x 600 GRATED INLET PIT	9	-	2.425	450x225	1.70	
D10	2x600x600 GRATED INLET PIT	10	-	2.669	375	1.357	
D11	600 x 600 COMBINED GRATED JUNCTION BOX EXISTING 375 PIPE EXISTING 375 PIPE	11	- - - -	2.745	375 375 375 375	1.663 1.663 1.875 ? 1.875 ?	 EXISTING 375 PIPE TO CONNECT TO NEW JB EXISTING 375 PIPE TO CONNECT TO NEW JB
D12	600 x 600 GRATED INLET PIT	12	-	2.646	375	1.697	
D13	600 x 600 GRATED INLET PIT	13	-	2.698	375	1.730	

LEGEND

SYMBOL — DESCRIPTION

- PROPOSED STORMWATER PIPE OR CULVERT
- EXISTING DRAINAGE PIPE / CULVERT
- EXISTING DRAINAGE TO BE ABANDONED
- GRATED INLET PIT
- JUNCTION BOX
- SIDE DRAIN GRATED INLET PIT
- D52 — DRAINAGE STRUCTURE IDENTIFIER

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

ELECTRICAL
- STOBIE POLE - EXISTING
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (SAPN)

SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FM — FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

NOTES:

1. THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION .
   THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES.
   IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
2. CUSTOM JUNCTION BOXES / GRATED INLET PITS / GRATES WILL BE REQUIRED FOR THIS PROJECT, RATED TO CLASS (F) AND 20/20 COVER ON CLASS 4 PIPES FOR CORROSION PROTECTION, FOR BOX CULVERTS EXPOSURE C FOR COVER PLUS CUSTOM DESIGN FOR 15T WHEEL LOADS.
3. FOR KERB & GUTTER, MEDIAN KERB, DISH DRAINS & PROPERTY CROSSOVER DETAILS REFER TO STANDARD DRAWING S-4070 SHEETS. 6 & 7.
4. PIPE LENGTHS REFER TO PLAN DISTANCES BETWEEN CENTRES OF THE STRUCTURES.
   THE GRADES HAVE BEEN CALCULATED USING THESE LENGTHS.
   ACTUAL GRADES AND LENGTHS WILL DIFFER.
5. THE REFERENCE POINT FOR THE SETTING OUT OF A DRAINAGE STRUCTURE IS SHOWN ON THE STANDARD DRAWING FOR EACH STRUCTURE.
6. DRAIN DETAILS IN THE DRAIN CONNECTION SCHEDULE ARE LISTED IN CLOCKWISE ORDER COMMENCING AT THE OUTLET.
7. FOR SET OUT STRING CO-ORDINATES REFER GEOMETRIC SETOUT REPORT 20110951.
8. RC PIPE CLASSES HAVE BEEN SELECTED FOR HIGHER THAN A160/M1600 TRAFFIC LOADS. ASSUMING INSTALLATION WILL EQUATE TO TYPE HS2 AS DEFINED IN AUSTRALIAN STANDARD AS 3725, PIPE CLASS SHOULD BE CONFIRMED FOLLOWING CONSIDERATION OF CONSTRUCTION VEHICLE LOADING.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

INDEX SHEET REFERENCE: XXXX SHEET X

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Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX
PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km	
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DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
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CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

ROAD No. 5427

OCEAN STEAMERS RD / MORIALTA RD

FLINDERS PORTS SA - TITLE F PORT ADELAIDE

DRAINAGE

CAD FILE NAME: XXXX SHEET 0012.DWG

APPENDIX C

EXISTING DRAINAGE NETWORK ASSESSMENT

The Adelaide Dolphin Sanctuary Act, 2005 states that a person must take all reasonable measures to prevent or minimise any harm to the Sanctuary through his or her actions or activities. Regard must be had to the extent to which an act or activity may have a cumulative effect on the Sanctuary.

Existing Stormwater Network

The stormwater network is extensive across the site but due to poor historical and incomplete records there are gaps that required further investigation. A visual inspection was completed to assess the integrity and connectivity of the existing drainage. The network is not actively maintained and a build up of sediment and pollutants is present in most junction pits to the extent that some these are no longer functional.

There are three main catchments within the site (Appendix B). Majority of the stormwater from Area A estimated at 1250m³ drains directly into Port River though a series of outfalls underneath the wharf (Appendix B). Some of the surface water pools in depressions sumps across the site where water infiltrates to the unconfined aquifer.

Area B and G has no stormwater infrastructure but the slope of the site indicates that estimated surface run off of 1000m³ flows towards Ocean Steamers Road street network. The City of Port Adelaide Enfield Council transferred the management of stormwater infrastructure to Defence SA. The outlet for the Oceans Steamer Road catchment is between the Title F northern boundary and the adjacent property, leased by Vittera Group.

The run off from wharf frontage is captured in an open drain and diverted into the settlement pit (SP) north of shed 20 before its discharging into Port River. The SP is designed and layout shown in Figure 2, this is designed to filter medium to large sediment particles from stormwater flows. During the site inspection it was noted that the treatment pump shown in the original drawings had not been installed. Refer to photo1, 2 and 3 for the conditions and layout of the treatment device.

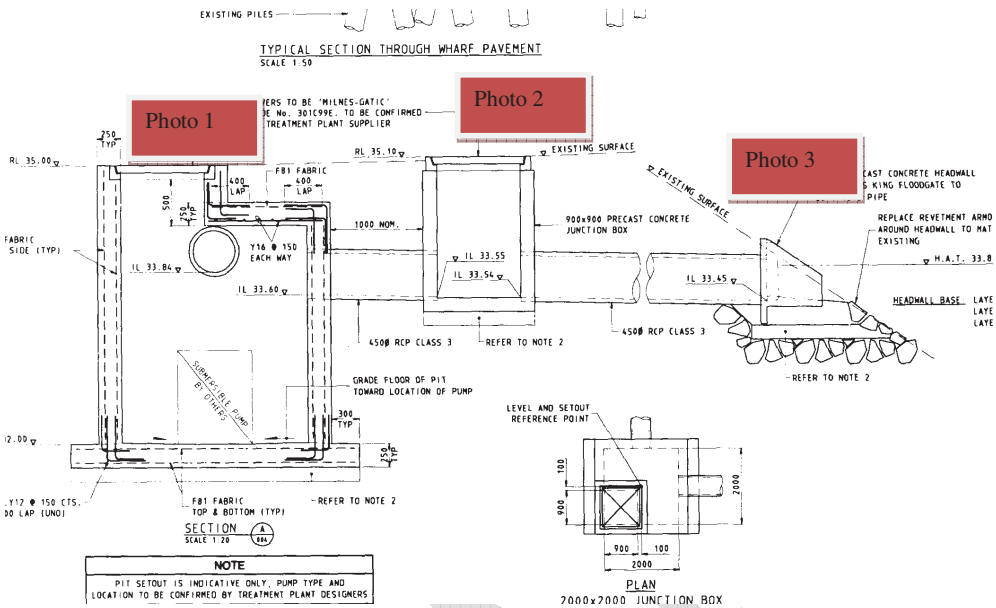


Figure 2 - Cross section of the settlement pit north of Shed 20.

Photo 1 – Settlement pit 1 (Figure 2)

Photo 2 – Settlement pit 2 (Figure 2)

Photo 3 – northern outfall for the surface run off from the catchment area on the western side of the sheds and Port River (Figure 2).

APPENDIX D

PROPOSED DRAINAGE LAYOUT

DRAIN DETAILS

ID	STRUCTURE	DESCRIPTION			DETAILS		
	INLET - OUTLET	RUNS	SIZE(mm)	TYPE	CLASS	LENGTH	GRADE%
D10	D2 - D1	1	525	RCP	4	4.28	0.28
D10	D3 - D2	1	450	RCP	4	79.45	0.49
D20	D4 - D2	1	450	RCP	4	46.15	0.28
D20	D5 - D4	1	450	RCP	4	50.5	0.33
D03B	D7 - D6	1	450 x 300	RCBC	-	90.58	0.19
D03B	D8 - D7	1	450	RCP	4	109.29	0.16
D03B	D9 - D8	1	400 x 225	RCBC	-	110.36	0.16
D40	D10 - D7	1	375	RCP	4	2.08	0.14
D40	D11 - D10	1	375	RCP	4	155.22	0.2
D40	D12 - D11	1	375	RCP	4	17.39	0.2
D40	D13 - D12	1	375	RCP	4	10.79	0.31

DRAIN CONNECTION DETAILS

ID	DESCRIPTION	SET OUT LOCATION			DRAIN		CUSTOM JUNCTION BOXES/GRATED INLET PITS WILL BE REQUIRED, RATED TO CLASS F
		PRNT PT	ORIENTATION	LEVEL	SIZE (mm)	LEVEL	
D1	CLASS F HUMECEPTOR (STC-150 OR SPEL ECOCEPTOR 4000 OR EQUIVALENT	1	-	2.811	675 525	1.105 1.105	PORTION OF EXISTING PIPE
D2	600 x 600 GRATE, COMBIND 1200 x1200 JUNCTION BOX	2	- - -	2.773	525 450 450 675	1.117 1.117 1.117 1.117	RETAIN EXISTING 675 PIPE
D3	600 x 600 GRATED INLET PIT	3	-	2.613	375	1.510	
D4	600x600 GRATED INLET PIT	4	-	2.868	450	1.244	
D5	600x600 GRATED INLET PIT	5	-	2.896	450	1.415	
D6	EXISTING JB REPLACE WITH NEW 1200 x 1200 JB	6	- - -	2.950 2.950 2.710	675 675 450x300	1.204 1.204 1.170	EXISTING 675 RCP EXISTING 675 RCP EXISTING JB TO BE REPLACED WITH NEW JB
D7	600x600 GRATE, COMBIND 900 x900 JUNCTION BOX	7	- - -	2.685 2.685 2.685	450 375 450x300	1.354 1.354 1.357	
D8	600 x 600 GRATED INLET PIT	8	- -	2.648 2.648	450 450x225	1.528 1.528	
D9	2X600 x 600 GRATED INLET PIT	9	-	2.425	450x225	1.70	
D10	2x600x600 GRATED INLET PIT	10	-	2.669	375	1.357	
D11	600 x 600 COMBINED GRATED JUNCTION BOX EXISTING 375 PIPE EXISTING 375 PIPE	11	- - - -	2.745	375 375 375 375	1.663 1.663 1.875 ? 1.875 ?	 EXISTING 375 PIPE TO CONNECT TO NEW JB EXISTING 375 PIPE TO CONNECT TO NEW JB
D12	600 x 600 GRATED INLET PIT	12	-	2.646	375	1.697	
D13	600 x 600 GRATED INLET PIT	13	-	2.698	375	1.730	

LEGEND

SYMBOL — DESCRIPTION

- PROPOSED STORMWATER PIPE OR CULVERT
- EXISTING DRAINAGE PIPE / CULVERT
- EXISTING DRAINAGE TO BE ABANDONED
- GRATED INLET PIT
- JUNCTION BOX
- SIDE DRAIN GRATED INLET PIT
- DS2 — DRAINAGE STRUCTURE IDENTIFIER

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

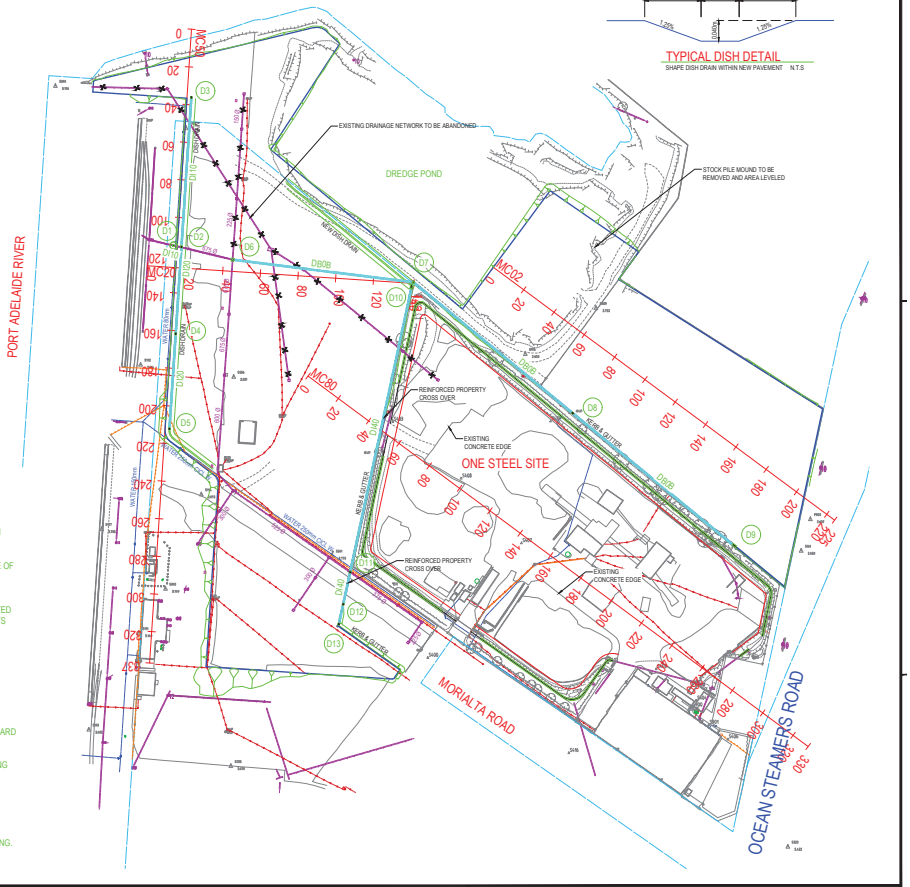
ELECTRICAL
- STOBIE POLE - EXISTING
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (SAPN)

SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

NOTES:

1. THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION. THIS DATA MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES.
   IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
2. CUSTOM JUNCTION BOXES / GRATED INLET PITS / GRATES WILL BE REQUIRED FOR THIS PROJECT, RATED TO CLASS (F) AND 20/20 COVER ON CLASS 4 PIPES FOR CORROSION PROTECTION, FOR BOX CULVERTS EXPOSURE C FOR COVER PLUS CUSTOM DESIGN FOR 1ST WHEEL LOADS.
3. FOR KERB & GUTTER, MEDIAN KERB, DISH DRAINS & PROPERTY CROSSOVER DETAILS REFER TO STANDARD DRAWING S-4070 SHEETS. 6 & 7.
4. PIPE LENGTHS REFER TO PLAN DISTANCES BETWEEN CENTRES OF THE STRUCTURES. THE GRADES HAVE BEEN CALCULATED USING THESE LENGTHS. ACTUAL GRADES AND LENGTHS WILL DIFFER.
5. THE REFERENCE POINT FOR THE SETTING OUT OF A DRAINAGE STRUCTURE IS SHOWN ON THE STANDARD DRAWING FOR EACH STRUCTURE.
6. DRAIN DETAILS IN THE DRAIN CONNECTION SCHEDULE ARE LISTED IN CLOCKWISE ORDER COMMENCING AT THE OUTLET.
7. FOR SET OUT STRING CO-ORDINATES REFER GEOMETRIC SETOUT REPORT 20110951.
8. RC PIPE CLASSES HAVE BEEN SELECTED FOR HIGHER THAN A160/M1600 TRAFFIC LOADS. ASSUMING INSTALLATION WILL EQUATE TO TYPE HS2 AS DEFINED IN AUSTRALIAN STANDARD AS 3725. PIPE CLASS SHOULD BE CONFIRMED FOLLOWING CONSIDERATION OF CONSTRUCTION VEHICLE LOADING.



INDEX SHEET REFERENCE: XXXX SHEET X

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: XXXXX	FILE No.: XX/XXXXX
DESIGN No.: XXXXXXXX	SURVEY No: XXXXXXXX

PROJECT START ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
PROJECT END ROAD RUNNING DISTANCE: XXXX; CH XXXX = XXX.XX km
SCALES: 20 0 10 20 30 40

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE

DRAINAGE

DESIGNED: PWP	DRAFTED: WGA	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.: XXXX	SHEET No.: 12	AMEND No.: C
CHECKED:	CHECKED:	TITLE:	IN ACCORDANCE WITH DPI13	SHEET LATITUDE -XX.XXXXX	SHEET LONGITUDE XXX.XXXXX	
		DATE:				

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
C	ISSUE FOR COSTING	WGA			13.10.17

UNCONTROLLED COPY WHEN PRINTED — 100 MILLIMETRES ON ORIGINAL DRAWING — ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

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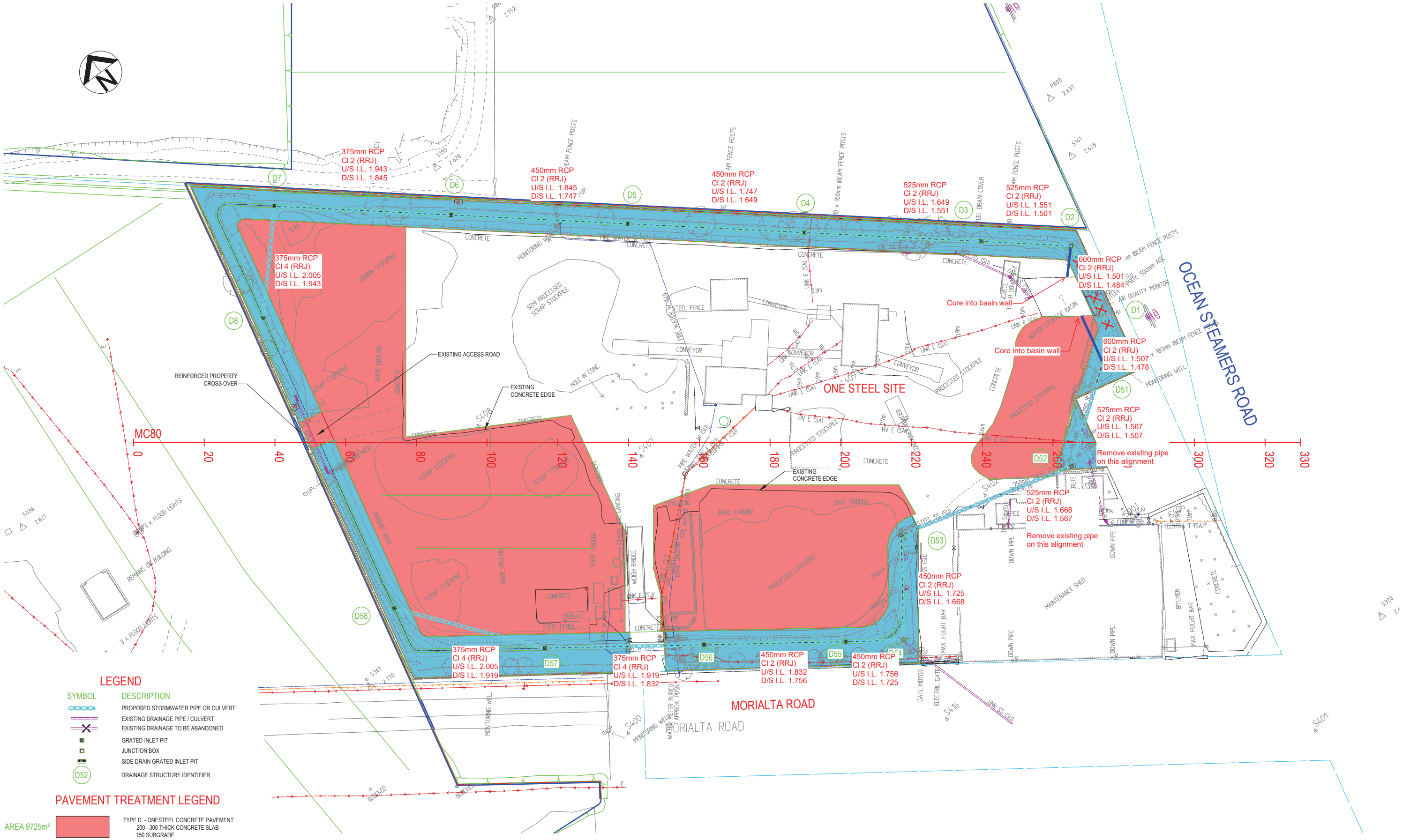


LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORMWATER PIPE OR CULVERT
	EXISTING DRAINAGE PIPE / CULVERT
	EXISTING DRAINAGE TO BE ABANDONED
	GRATED INLET PIT
	JUNCTION BOX
	SIDE DRAIN GRATED INLET PIT
D52	DRAINAGE STRUCTURE IDENTIFIER

PAVEMENT TREATMENT LEGEND

AREA 9725m²	TYPE D - ONESTEEL CONCRETE PAVEMENT 200 - 300 THICK CONCRETE SLAB 150 SUBGRADE
AREA 5148m²	TYPE E - LINED SWALE CONCRETE LINED DRAINAGE SWALE

NOTES:

1. FOR PAVEMENT DETAILS REFER TO THE PAVEMENT SCHEDULES IN THE CONTRACT SPECIFICATION. THE PAVEMENT TREATMENT LEGEND PROVIDES A BRIEF DESCRIPTION OF THE PAVEMENT CONFIGURATION.

SCALES: 10 0 5 10 15 20

No.	AMENDMENT DESCRIPTION	BY	DATE
C	ISSUE FOR COSTING	WGA	13.10.17

Government of South Australia
Department of Planning, Transport and Infrastructure

ROAD No. 5427
OCEAN STEAMERS RD / MORIALTA RD
FLINDERS PORTS SA - TITLE F PORT ADELAIDE
ONESTEEL - CONCEPT
GENERAL CONSTRUCTION

DESIGNED	DRAFTED	CHECKED	PATCHS No	SKETCH No.	AMEND No.
WGA	WGA		XXXXXXXX	XXXX Sketch 0011	C

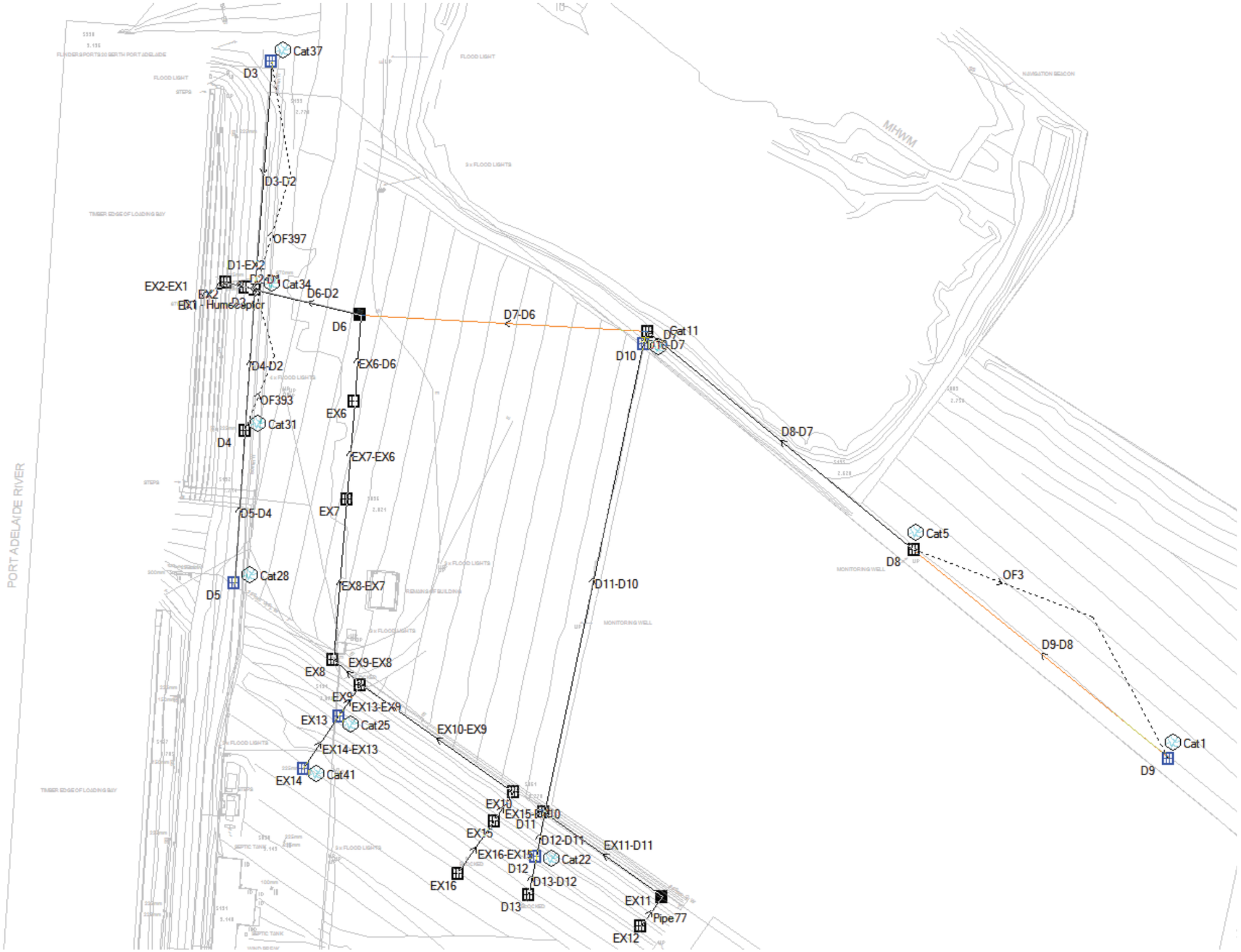
ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE — 100 MILLIMETRES ON ORIGINAL DRAWING — UNCONTROLLED COPY WHEN PRINTED

CAD FILE NAME: XXXX SKETCH 0011.DWG

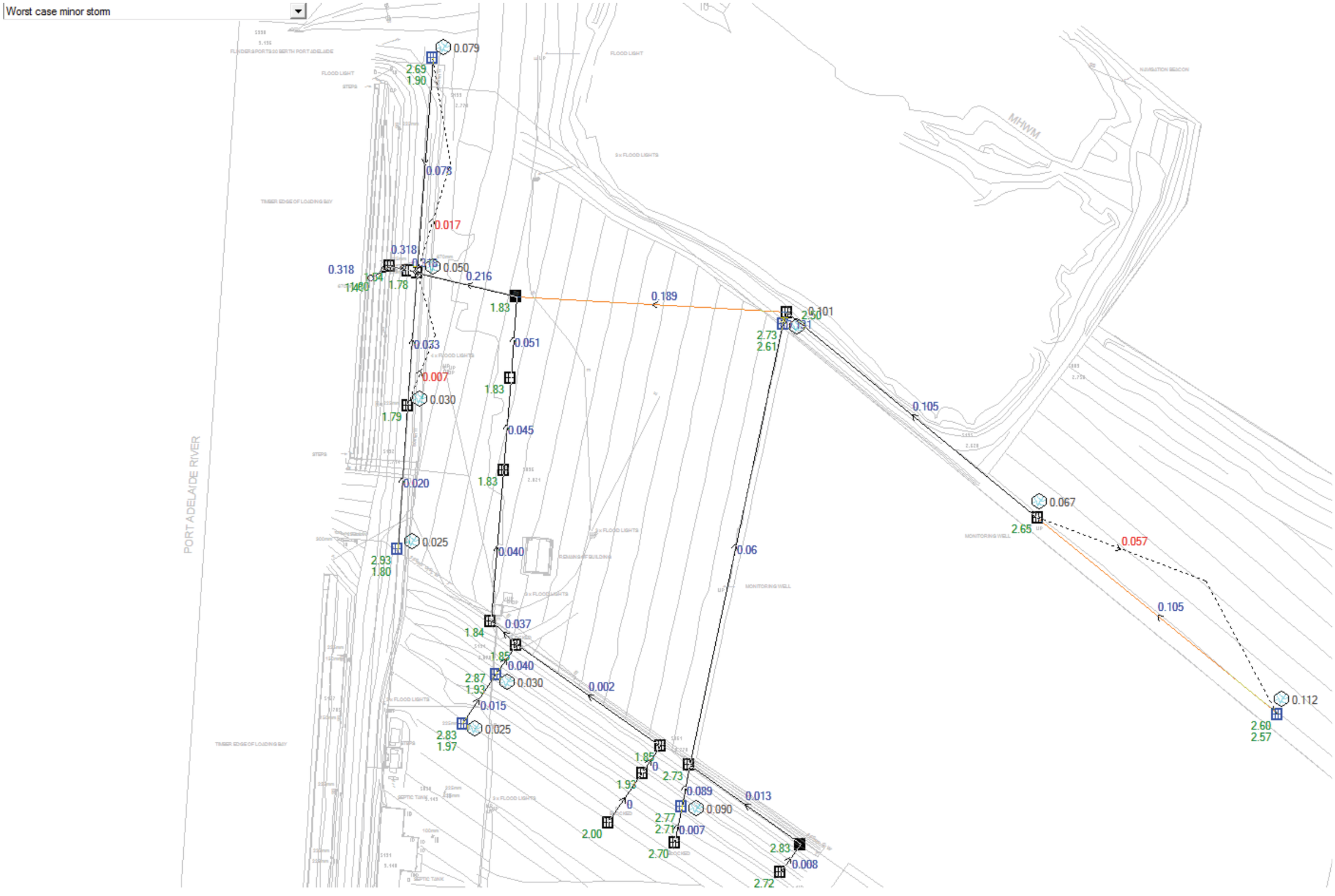
APPENDIX E

DRAINS LAYOUT AND RESULTS

DRAINS LAYOUT



DRAINS RESULTS - 1 IN 5 YEAR ARI (MINOR EVENT)



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Appendix 4. Environmental Impact Statement

Title F (Inner Harbour East)

Ocean Steamers Road, Port Adelaide

Environmental Impact Assessment Report

Project Location

Title F (Inner Harbour East) is located at the southern end of Ocean Steamers Drive, Port Adelaide, South Australia (the Site). The project area is indicated in Figure 1 below.

The properties that will be affected by this development are:

- Certificate of Title Volume 6156 Folio 197, Allotment 4, Deposited Plan 73873, in the Area named Port Adelaide, Hundred of Port Adelaide
- Certificate of Title Volume 6119 Folio 109, Allotment 3, Deposited Plan 73873, in the Area named Port Adelaide, Hundred of Port Adelaide

The central portion of the site is registered in fee simple to Flinders Ports Land Development Pty. Ltd (Flinders Ports). The outer edge of the site, bordering Port River is registered on a separate certificate of title in fee simple to the Minister for Transport and Infrastructure and is subject to the 99 year lease to Flinders Ports.

Figure 1: Project Area Location - Flinders Port Title F (Inner Harbour East)

Government of South Australia
Department of Planning, Transport and Infrastructure

Project Description

The project site is currently unsealed with limited functioning drainage infrastructure. Project works will include the sealing of the bare ground and connection with the existing sealed wharf area. This will require the excavation of approximately 250 mm of soils and treatment with a cement stabiliser. The site will then be levelled and underground stormwater and electrical infrastructure will be installed including a stormwater treatment device. The project area will then be bituminised for continued use as a stacking and loading facility. The purpose of the site sealing works is to satisfy commitments to remediate the leased land to a standard for use as a port.

Background

In November 2001, Flinders Ports Pty Ltd (FP) purchased the State's commercial port infrastructures that were previously operated by the South Australian Ports Corporation (SA Ports Corp). As a consequence of this purchase, Flinders Ports were granted a 99 year lease over waterfront port lands and entered into a Port Operating Agreement (POA) with the Minister for Transport for the same period for each of the seven ports.

According to the South Australian Ports Business and Asset Sale Agreement, clause 19.2, the Government agreed to undertake the responsibility for the remediation of the leased land to a standard for use as a port. Under the agreement, the responsibility for remediation of the environmental liabilities disclosed in environmental reports is with the vendor (DPTI) at its cost and to the satisfaction of the EPA. This standard is known as the Objective Remediation Standard (ORS) and Clause 19.3(g) imposes a limit on the nature of the remediation in that the vendor (DPTI) is not obliged under any circumstances to remediate to a standard which exceeds the EPA's requirements for the real property while used as a Port.

In accordance with the ORS for the Site, the proposed remediation works are to consist of the following:

- Sealing of approximately 4.76 ha of the site with full depth asphalt pavement to prevent ongoing heavy metal contamination in existing site soils and groundwater;

The project scope involves the sealing of area A, A2, B, C, D, E and G as shown on the construction drawings (Appendix A); a total area of 4.76 ha. Works will include the following:

- Levelling and cement stabilisation of the existing subgrade;
- Installation of electrical infrastructure and stormwater drainage infrastructure including a stormwater treatment device at the outlet to Port River;
- Compaction of surface soils to 30 tonne axle load; and
- Bitumen pavement treatment ranging from 175mm to 360 mm in thickness.

Summary of Impacts and Mitigation Measures

The key environmental impacts are summarised below:

Legislative Approvals

The project Site is in close proximity to Port River, which invokes the requirements of *Development Act* 1993, *Adelaide Dolphin Sanctuary Act* 2005, *Environment Protection Act* 1993, *Natural Resources Management Act* 2004 and *Coast Protection Act* 1972.

Water

Port River is directly adjacent the western site boundary, as well as portions of the northern and southern boundaries in the dock areas. The project will not require any extensions or works within Port River, however, the project works will include an upgrade of the current stormwater infrastructure at the Site. It is considered that the volume of stormwater surface runoff being discharged to Port River will slightly increase (the sealing of the site will reduce infiltration through the soil profile and increase surface water runoff/ drainage), however, the quality of discharged stormwater will be managed with the installation of stormwater treatment infrastructure.

It is noted that Port River is classed as a dolphin sanctuary and is protected under The Adelaide Dolphin Sanctuary Act 2005. The Port River Water Quality Improvement Plan (SA EPA, 2001) established parameters (nutrient, microbial, heavy metals and chlorophyll) to evaluate the ambient water quality in the Port River. The Inner Harbor water (adjacent to Title F) showed poor conditions for all the environmental values (ecosystem protection, harvesting of food for human consumption, primary recreation and secondary recreations) and this segment of River is known for frequent seasonal algae bloom outbreaks.

Site Contamination

Soil and groundwater at the site has been identified to be impacted with elevated concentrations of heavy metals. Further, potential localised high alkalinity groundwater may be present in the northern portion of the site. The purpose of the site sealing works is to limit the transport of contaminants through the soil profile to the unconfined aquifer beneath the site by inhibiting the infiltration of stormwater. Furthermore, the sealing of the site will limit erosion (and subsequent transportation) of impacted soil material which may then reach Port River.

Acid Sulfate Soils

The Port River surroundings and the Barker Inlet are classified as having a high potential of encountering Potential Acid Sulfate Soils (PASS) due to the low lying environment. Historical records indicate that riverbanks of the Port River were built up to formalise a navigational channel and prevent the flooding of adjacent facilities. A review of site specific data indicates there is some evidence that PASS are present in the northern portion of the site, directly adjacent the northern dock.

Fauna

Port River is classed as part of the Adelaide Dolphin Sanctuary. The water body currently, and will continue to be, the receiver of stormwater runoff from the site.

Mitigation Measures

- The project design is being developed in house by DPTI. The construction works are to be undertaken by a contractor. The contractor will be required to work under the conditions of the project Contract Scope and Technical Requirements that will include standard DPTI environmental and sustainability clauses including parts G50 and CH50 of the DPTI Master Specification. To address project specific clauses, the contractor will be required to develop and implement a Contractor's Environmental Management Plan (CEMP) that includes (but is not limited to) the following sub-plans,
- Soil Erosion and Drainage Management Plan;
- Water Quality Monitoring Plan; and
- Acid Sulphate Soils Management Plan.

Refer to the main body of the report for other issues, impacts and mitigation measures associated with this project.

Environmental Impacts and Mitigation Measures

Impacts on the Biological Environment

Flora

Aspect	Applicable Yes/No
Vegetation removal (Native, amenity, exotic, significant) *Consider total construction footprint incl. service relocation, fence lines, vehicle access, turnaround points	Yes
Significant vegetation associations, conservation values, rare/threatened/protected species	No
Wetlands / Riparian Zones	No
Native Vegetation Act; Significant Trees *(Development Act, 1993); EPBC Act*	No
Visual/amenity value of vegetation	No
Heritage value of vegetation	No
Local council interests	No
NRM Board interests	No
Other (specify)	N/A

Impacts

The project Site was extensively cleared for the construction and operation of the port facility. A desktop assessment via aerial photography of flora and fauna has been undertaken for the proposed work site. After the initial assessment it was determined that a site visit was required to further investigate the north-western corner of the site for native flora. No native vegetation was located during the site inspection (undertaken 28 July 2016), the only a small area in the north western portion of the site is covered with exotic weed species (groundcover) which require no further approval to removal. No native fauna was observed on site.

With reference to DPTI Environmental Information Map Server (accessed online on 6/7/2016) no flora buffers exist over the project area.

Alternatives & Mitigation Measures

As noted above, the department plans to engage a commercial contractor to execute the construction works. To ensure environmental and legislated compliance, the department will develop Contract Specific Technical Requirements reflective of the above issue, including:

- The Contractor must ensure that any pests and weeds existing at the Site prior to construction commencing are not spread any further by construction activities;

This will also be reflected in CEMP and site specific plans.

Landscape Remediation

Given the nature and location of this project (sealing of commercial/ industrial facility) landscaping is not within the scope. In addition, as noted above, the only vegetation that may require removal to facilitate the project consists of exotic weed species that do not require any offset.

Fauna

Aspects	Applicable Yes/No
Habitat value of vegetation to be removed (breeding areas, habitat, nests or hollows, barriers and corridors)	No
Rare and endangered species or migratory species (*EPBC Act* and NPWS)	No
Aquatic fauna	Yes
Barrier to fish passage (Refer to map: 5665773 and spreadsheet:5665658 for known barrier locations between Tanunda and Cape Jervis)	No
Other (specify)	

Impacts

The Site was extensively cleared for the construction and operation of the port facility. No evidence of the presence of native fauna was observed during the site inspection undertaken on 28 July 2016.

Port River, adjacent the western boundary of the Site, is classed as part of the Adelaide Dolphin Sanctuary. The water body currently, and will continue to be, the receiver of stormwater runoff from the site. A settlement pit is currently present in the northern portion of the site which is maintained by Flinders Ports. A stormwater treatment device is to be installed to manage the quality of stormwater runoff from the sealed portion of site. It is considered that with the sealing of the site, the volume of sediment runoff from the site will decrease and the quality of discharged stormwater will increase thereby improving the quality of stormwater being discharged from the site into the receiving water body. The project, therefore, is considered to have a beneficial outcome for local fauna.

With reference to DPTI Environmental Information Map Server (accessed online on 6/7/2016) no fauna buffers exist over the project area.

A search of Biological Databases of South Australia (accessed online on 6/7/16 via EnvMaps database) identified 13 species records within 1 km of the site. These were mostly bird species with the exception of the Short-beaked Common Dolphin and the Indo-Pacific Bottlenose Dolphin.

An EPBC search was undertaken on 6/7/2016 (Knet # 10616915) which identified a number of listed threatened and migratory species within 1 km of the project site. The report showed:

- 25 threatened species
- 23 migratory species
- 28 listed marine species
- 35 listed invasive species

Listed bird species are not considered to be impacted by project works given that the site is largely vacant of bird habitat. It is considered that site works will improve the quality of stormwater discharged from the site to Port River. This would likely have a beneficial impact on marine species within Port River. Potential impacts on fauna within Port River may arise from the possible discharge of sediment laden stormwater during the construction process.

Alternatives & Mitigation Measures

The department via Contract Specific Technical Requirements will stipulate that the Contractor must:

- Adopt a Soil Erosion and Drainage Management Plan (to be reviewed by DPTI) to manage stormwater runoff to downstream receiving environments (Port River part of the Adelaide Dolphin Sanctuary). The SEDMP will be prepared in accordance with SA EPA Stormwater Pollution Prevention Code of Practice Local, State and Federal Government and DPTI Protecting Waterways Manual.
- Should animal relocation be required Fauna Rescue SA will be contacted by the Contractor.

Pest Animals & Plants

Aspects	Applicable Yes/No
Declared/problem weed species	No
Pest animal species	No
Phytophthora, phylloxera risk Identify whether a 'High/Medium/Low Potential Threat Area' under the Phytophthora (Dieback) Control: Environmental Instruction 21.3	Medium
Other (specify)	N/A

Impacts

The site was extensively cleared for the construction and operation of the port facility. It is considered that there is limited habitat for pest animals or declared/ problem weed species on Site.

The Site is located in a moderate risk area for *Phytophthora cinnimomi*, a parasitic fungi that lives in the soil and attacks the roots and basal stems of plants. This fungi causes extensive damage to native vegetation by killing or injuring native plants.

Alternatives & Mitigation Measures

The department via Contract Specific Technical Requirements stipulates that the Contractor must:

- ensure that weed propagules or weed infested topsoil material are not imported into the Site;
- ensure that any pests and weeds existing at the Site prior to construction commencing are not spread any further by construction activities;
- clean all earth moving machinery of soil and vegetation prior to entering and prior to leaving the Site;
- ensure that pests and weeds are not introduced to the area through construction activities;
- Hygiene or control procedures as outlined in Section 5 of DPTI's Operational Instruction 21.3 - Phytophthora (Dieback) Control apply in all medium risk areas. These control procedures are aimed at reducing the spread of Phytophthora during construction and maintenance activities.

Impacts on the Physical Environment

Water

Aspects	Applicable Yes/No
Watercourses	Yes
Marine environment	Yes
Wetlands and the riparian zone	No
Stormwater group consultation (refer Water Quality Risk Assessment Procedure)	Yes
Water Quality Risk Assessment (refer Protecting Waterways Manual)	Yes
Water Affecting Activities Permit Risk Assessment (refer WAAP SOP)	Yes
Soil, Erosion & Drainage Management Plan (SEDMP) Risk Assessment (refer Protecting Waterways Manual)	Yes
Drainage infrastructure	Yes
Sub-surface water (groundwater)	Yes
Flood risk	No
Change in non-permeable surface area	Yes
Pollution from construction/operation	Yes
Catchment area and upstream/downstream impacts	Yes
Sedimentation, erosion, batter stabilisation	No
Acid sulphate soils	Yes
Risk of spills (including marine)	Yes
Source and impact of water for construction, use of grey/recycled water (refer Recycled Water Guideline)	No
Other (specify)	

Impacts

Port River is directly adjacent the western site boundary, as well as portions of the northern and southern boundaries in the dock areas. The project will not require any extensions or works within Port River, however, the project works will include an upgrade of the current stormwater infrastructure at the site. It is considered that a larger volume of stormwater will be discharged to Port River (the sealing of the site will reduce infiltration through the soil profile and increase surface water runoff/ drainage), however, this will be managed via the installation of stormwater treatment infrastructure.

It is noted that Port River is classed as a dolphin sanctuary and is protected under the *Adelaide Dolphin Sanctuary Act* 2005. The Port River Water Quality Improvement Plan (SA EPA, 2001) established parameters (nutrient, microbial, heavy metals and chlorophyll) to evaluate the ambient water quality in the Port River. The Inner Harbor water (adjacent to Title F) showed poor conditions for all the environmental values (ecosystem protection, harvesting of food for human consumption, primary recreation and secondary recreations) and this segment of River is known for frequent seasonal algae bloom outbreaks.

A Water Quality Risk Assessment will be completed in accordance with the department's 'Water Affecting Activities Standard Operating Procedure' following Development Approval. The Water Quality Risk Assessment will address surface and groundwater impacts and will inform the need for any licences in accordance with the *Natural Resources Management Act* 2004 and the *Environmental Protection Act* 1993. Liaison with Dolphin

Sanctuary staff will occur to determine dolphin movements and water quality mitigation requirements. A Water Affecting Activity Permit Risk Assessment (Knet#10674700) has been completed. The risk assessment returned a score of 10 indicating that the level of risk associated with the project is not sufficient to require a separate permit to the departments Water Affecting Activities Standard Operating Procedure.

The state government has an endorsed Water Sensitive Urban Design (WSUD) policy that seeks to ensure State projects meet minimum performance targets for runoff quality, quantity and integrated design. These were considered during the design phase of the project. The following is noted with reference to the WSUD targets:

- As the project site is a brown fields site, the pre-urban development flow target is not relevant to the project;
- Discussion with the stormwater design engineer indicated the following:
    - The capacity of the exceeding drainage system will not be exceeded; and
    - Any potential increase in the 5 year ARI peak flow and flood risk for the 100 year ARI peak flow will be miniscule and well within the capacity of the Port River.
- A stormwater treatment device is to be installed at the new outlet to Port River. The device will be designed such that a balance is achieved between reduction in dissolved solids (WSUD target of 80%) being discharged to Port River (when unit is appropriately maintained) and cost of the unit. Note that there are limited potential sources of phosphorous and nitrogen on Site, and as such, it is considered there will be negligible concentrations of such pollutants in stormwater runoff.

The Port River surroundings and the Barker Inlet are classified as having a high potential of encountering Potential Acid Sulfate Soils (PASS) due to the low lying environment. Historical records indicate that riverbanks of the Port River were built up to formalise a navigational channel and prevent the flooding of adjacent facilities.

Based on a review of site specific data, there is some evidence that PASS are present in the northern portion of the site, directly adjacent the northern dock. PASS will be managed in accordance with DPTI Guidelines for Assessment and Management of Acid Sulfate Soils which are based on guidance provided by SA EPA, particularly with reference to EPA 638/07 (2007).

Alternatives & Mitigation Measures

The department via Contract Specific Technical Requirements will stipulate that the Contractor must:

- Adopt a Soil Erosion and Drainage Management Plan (to be reviewed by DPTI) to manage stormwater runoff to downstream receiving environments (Port River part of the Adelaide Dolphin Sanctuary). The SEDMP will be prepared in accordance with SA EPA Stormwater Pollution Prevention Code of Practice Local, State and Federal Government and DPTI Protecting Waterways Manual.
- An Acid Sulphate Soils Management Plan (ASSMP) will also be developed for the project works.
- Adequate spills management measures are required in the Contractors Environmental Management Plan (CEMP) to mitigate the risk of spills of hazardous materials.
- The Contractor is responsible for adhering to permanent water conservation measures and any current South Australian Water restrictions during construction.

Following development approval a Water Quality Risk Assessment (WQRA) Workshop will be undertaken to consult with stakeholders regarding potential risks and management options to be adopted during construction and operation of the project site. The outcomes of the workshop will further inform Contract Specific Technical Requirements.

Stormwater treatment infrastructure is to be appropriately maintained during operation of the site following construction. Flinders Ports are to adopt the maintenance of the system.

Aspects	Applicable Yes/No
Operational emissions (consider sensitive receptors)	No
DPTI: Air Quality assessment tool and guidelines/ Air Quality Monitoring	No
Construction emissions (dust)	Yes
Construction monitoring	No
Other (specify)	N/A

Impacts

The Site is located in an industrial zone with the surrounding facilities comprising operational port and storage facilities. The land in the central portion of Title F (not being sealed) is occupied by One Steel and is a metals recycling facility. Port River is located directly west of the site, across which is further industrial land use. No sensitive receptors have been identified within close proximity of the site.

Operational air quality is expected to remain unchanged/ improved following the completion of project works.It is considered that project works will not have a long term impact on the air quality surrounding the site as the site usage will not change. Air quality at the site is considered to likely improve following the sealing of the site as there will be less opportunity for the generation of dust.

Given the unsealed nature of the site and the level of earthworks to be undertaken, it is considered that there will be some short term impacts to local air quality from vehicle emissions and dust resulting from plant operating during construction works. This is to be mitigated by implementing dust control measures during construction.

The key air quality issue associated with the construction of the project will be the generation and management of dust (PM10 and total suspended particles). The main sources of dust from construction would be:

- Excavation
- Heavy vehicular movement on unsealed haul roads
- Stockpiles
- Wind erosion on exposed surfaces

Emissions from construction equipment are to be minimised by the contractor ensuring all equipment is well maintained and in good working order in accordance with manufacturer's instructions.

Alternatives & Mitigation Measures

Via Contract Specific Technical Requirements the contractor will be required to manage and mitigate the effect of construction dust on the community and environment. This may include, but not limited to, the following measures:

- Regular watering of the works areas and temporary paving of haul roads to suppress dust
- Limiting on-site vehicle speeds
- Selecting appropriate surface materials for haul roads to minimise dust generation, e.g. gravel, bitumen seal
- Removing dirt and mud from construction equipment before it leaves the Site (this can be achieved through the use of shaker ramps, truck wash downs and wheel washes)

- Locating stockpiles away from areas susceptible to disturbance by wind/ as far as practicable from Port River
- Covering loads carried by trucks
- Promptly removing any material that is spilt on to public roads or other sealed pavements
- Emissions from construction equipment are to be minimised by the contractor ensuring all equipment is well maintained and in good working order in accordance with manufacturer's instructions.

Greenhouse and Climate Change Adaptation

Aspects	Applicable Yes/No
Renewable and non renewable energy consumption	Yes
Lighting, fuel, electricity, materials use, vegetation clearance	Yes
Other (specify)	No
Climate change impacts, eg sea level rise, flooding from increased rainfall intensity etc	Yes

Impacts

Small scale clearance of exotic weed vegetation will likely be involved in the delivery of this project (refer to section 2.1.1 for details) as well as the use of fuel, lighting and materials during construction. It is ideal that the impact of these actions are minimised.

The site currently sits at approximately 2.7 to 3.7 m AHD. Coast Protection Board projects sea level rise (SLR) to be 0.3 m (year 2050), 0.41 m (year 2070) and 1.0 m (year 2100). Considering 100 ARI storm surge events, it is expected that by 2050 portions of the site may be vulnerable to inundation (including SLR, the 100 year ARI storm surge in 2050 is expected to be 2.73 m AHD in Port River). In the event that SLR does impact the site, it is considered that the sealing of the surface will limit the transport of potentially contaminated material to Port River.

Alternatives & Mitigation Measures

A Sustainability Management Plan has been acquitted for this project by the Sustainability and Climate Change Division of the Department of the Premier and Cabinet as well as the Department for Environment and Natural Resources (knet reference #10654406).

Contract Specific Technical Requirements will include clauses that required the Contractor to minimise production of greenhouse gases. This will include ensuring machinery is be kept in good working order and not left idling unnecessarily. Travel to and from sites will be optimised to be as efficient as possible.

Site Contamination

Aspects	Applicable Yes/No
Site history investigation required	No
Site contamination minute required	No
Land acquisition or disposal	No
Existing onsite materials (contamination register)	Yes
Rail corridor land	No
Rail ballast and sleeper disposal	No
Disposal of waste and chemical substances	No

Risk of accidental spillage of waste and chemical substances, fuels	Yes
Risk of migration of contaminants from or to neighbouring land	Yes
Acid sulphate soils	Yes
Other (specify)	

Impacts

Based on the available information, soil and groundwater at the site has been identified to be impacted with elevated concentrations of heavy metals. The purpose of the site sealing works is to create a practical impermeable barrier over in-situ contaminated fill material to limit the transport of contaminants through the soil profile to the unconfined aquifer beneath the site by inhibiting the infiltration of stormwater. Furthermore, the sealing of the site will limit erosion (and subsequent transportation) of impacted soil material which may runoff to Port River.

Historically, pH values in groundwater beneath the site generally range from pH 7.8 -6.8 (circum neutral). Groundwater with high alkalinity (pH of 11) has been identified in the northern portion of the site in a single location. Further sampling of this location will confirm (or otherwise) this result. In relation to occupational health and safety (OH&S) contact with groundwater should be avoided due to presence of contaminants and high alkalinity waters (potential).

As part of construction works, all soils are to be retained on site. Excavations associated with the sealing works are not expected to intercept groundwater, however, groundwater may be encountered during the installation of stormwater treatment infrastructure and require extraction.

The cut volume is not expected to exceed the fill volume and, as such, the disposal of contaminated soil material will likely not be required. Clean fill will likely be imported to the Site to allow for levelling prior to bituminising.

The Port River and surroundings and the Barker Inlet are classified as having a high potential of encountering Potential Acid Sulfate Soils (PASS) due to the low lying environment. Historical records indicate that riverbanks of the Port River were built up to formalise a navigational channel and prevent the flooding of adjacent facilities.

Based on a review of site specific data, there is some evidence that PASS are present in the northern portion of the site, directly adjacent the northern dock. PASS will be managed in accordance with DPTI Guidelines for Assessment and Management of Acid Sulfate Soils which are based on guidance provided by SA EPA, particularly with reference to EPA 638/07 (2007).

The contractor will be required to develop an Acid Sulfate Soils Management Plan (ASSMP) to address the management of water and soil affected by ASS. This will address temporary stockpiling, drainage, dewatering, liming rate for neutralising of soil, routine sampling for PASS, verification testing and assessment for reuse / disposal of material, the treatment of walls in excavation pits and general occupational health and safety.

Alternatives & Mitigation Measures

The Contractor's Environmental Management Plan will be required to address the management of potential exposure and transport of potentially contaminated soil and groundwater and high alkalinity groundwater (potential) to minimise and manage risks to workers and adjacent community/ environment. In addition, in order to manage the potential acid sulphate soils, an Acid Sulphate Soils Management Plan will be prepared for the site.

Waste & Resource Use

Aspects	Applicable Yes/No
Waste generation, transport and disposal	Yes
Waste management (during construction)	Yes

Materials used in construction, use of recycled materials	N/A
Resource use (cut & fill balances, rail ballast, sleepers, pavement recycling)	Yes
Borrow pit required	No
Other (specify)	

Impacts

At this stage of project planning, the use of recycled materials will extend to balancing on Site cut and fill. All excavated materials suitable for reuse will be incorporated back into the site as fill. The project has been designed to maximise the cut and fill balance of on-site soils. It is expected that no on-site soil are to be exported off site as waste.

There will be some wastes generated on site such as:

- Cleared exotic vegetation
- General litter
- Waste construction materials

Alternatives & Mitigation Measures

On site waste shall be managed to ensure it is adequately contained and disposed of appropriately to a licensed waste disposal facility.

Geophysical Factors

Aspects	Applicable Yes/No
Landform features (protection of and/or harmonise design)	N/A
Fault lines- structural issues	N/A
Geological heritage features	N/A
Other (specify)	

Impacts

Not applicable.

Alternatives & Mitigation Measures

Not applicable.

Social Environment

Noise and vibration

Aspects	Applicable Yes/No
Road traffic noise – modelling and mitigation refer Road Traffic Noise Guidelines	No
Noise sensitive land uses affected by traffic noise	No
Change from existing vs. anticipated noise levels- (Model traffic noise impacts associated with the upgrade against the guidelines)	No
Construction noise	No
Night works, Noise and Vibration Management Plan (refer Management of Noise and	Potentially

Vibration: Construction and Maintenance Activities, Environmental Instruction 21.7)	
Vibration - Impacts to heritage sites/objects	No
Other (specify)	

Impacts

The site is located in an industrial zone with the surrounding facilities comprising operational port and storage facilities. Port River is located directly west of the site, across which is further industrial land use. No noise sensitive land uses have been identified within close proximity of the site.

Given the industrial nature of the surrounding area, it is considered that the noise and vibration generated during the construction works will not significantly exceed existing background conditions and will not cause a nuisance to surrounding sites, nor species within Port River. Changes to the operational noise and vibration is anticipated to be negligible and for that reason no modelling is required.

No heritage sites or object have been identified within 1 km of the Site.

Alternatives & Mitigation Measures

As the site is located within an industrial zone, construction noise impacts are considered unlikely to cause nuisance. However, under Section 25 of the Environment Protection Act 1993, the department and its contractors have a "duty of care" to not pollute the environment through noisy activities:

> "a person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm."

The department via Contract Specific Technical Requirements will stipulate that the Contractor must:

- Be responsible for informing local business owners of construction works and any activities that will be noisier than usual or undertaken outside of normal working hours.
- Work within the recommended work hours of the SA Environmental Protection Authority; that is 7.00 a.m. to 7.00 p.m. Monday to Saturday inclusive and not before 9.00 a.m. or after 7.00 p.m. on Sundays and public holidays.
- Night works are not planned for this project, however if any works need to occur outside the EPA construction hours then the Contractor must adhere to Operational Instruction 21.7 Infrastructure Works at Night must be followed.

Community and Land Use

Aspects	Applicable Yes/No
Demographics- Population density, age etc	No
Land acquisition / Relocation / Demolition	No
Equity	No
Traffic delays	No
Change in land uses (specify)	No
Sensitive land uses	No
Other community concerns (specify)	

Impacts

Given the nature of the project works, it is considered that there will be minimum social impacts due to the following:

- The site is on private property;

- No land is to be acquired;
- There is no change in land use; and
- No sensitive receptors are located near the site.

Relevant stakeholders are to be consulted during the Water Quality Risk Assessment workshop to ensure that all objectives are being met during construction works.

Alternatives & Mitigation Measures

Not applicable.

Access

Aspects	Applicable Yes/No
Accessibility (Public transport, cyclists, pedestrians, disabled access)	No
Vehicle Access-various requirements	No
Severance	No
Security, privacy	No
Traffic intrusion/delays	No
Travel patterns altered, road closure/detours (pedestrian and vehicles)	No
Parking	No
Property access	No
Commercial Access	No
Other (specify)	

Impacts

Project works are to be conducted on private property and are not considered to significantly impact on any of the issues listed in the table above.

Truck and plant movements along Ocean Steamers Road may increase, however, given the industrial nature of the surrounding land use, this is not considered significant.

Alternatives & Mitigation Measures

Not applicable.

Amenity

Aspects	Applicable Yes/No
Views	No
Urban design	No
Open space, reserves, parks, marine park (specify)	No
Tourism	No
Light spill	No
Other (specify)	

Impacts

Project works are to be conducted on private property and are not considered to significantly impact on any of the issues listed in the table above.

Alternatives & Mitigation Measures

Not applicable.

Non Indigenous Heritage and Cultural Impacts

Aspects	Applicable Yes/No
DPTI Roadside Significant Sites Database	No
Commonwealth or State Heritage sites	No
Local heritage sites (on Local Government Development Plan)	No
Indirect/non-structural aspects (e.g. colour scheme, aesthetic impacts)	No
Vibration	No
Geological Heritage	No
Other (specify)	

Impacts

No roadside significant sites are located adjacent the site boundary or along Ocean Steamers Road.

There are no heritage listed sites of local, state or national significance within the project footprint or in close proximity (i.e. within 500 m) of the Site. A number of state and local heritage places are located to the south of the site (nearest is approximately 700 m from the southern site boundary), however, given the distance from the site and nature of the works, it is considered that these sites will not be adversely impacted.

Alternatives & Mitigation Measures

Not applicable.

Aboriginal Heritage

Aspects	Applicable Yes/No
Advice from DSD-AAR - check Register	Yes
Consultation with Aboriginal heritage group representative(s)	No
Aboriginal heritage survey for sites, objects or places of interest within or near the project area	No
Other (specify)	

Impacts

The project site is part of a highly modified landscape with commercial/ industrial land use adjacent the site to the north, east and south and with the Port River directly adjacent the site to the west. The initial development of the Site as a port facility resulted in modification to the original topography and drainage patterns of the area. No remnant vegetation remains at the Site. It is noted that any land, developed or undeveloped, can contain Aboriginal sites, objects and remains of significance to Aboriginal archaeology, anthropology, history and tradition protected under the Aboriginal Heritage Act 1988.

Section 23 of the Act states that it is an offence to damage, disturb or interfere with any Aboriginal site, object or remains without the authority of the Minister for Aboriginal Affairs and Reconciliation (the Minister).

The Department of State Development, Aboriginal Affairs and Reconciliation Division (DSD-AARD) has been consulted and have advised (letter dated 31 May 2016 knet #10674193) that the central archive, which includes the Register for Aboriginal Sites and Objects, has no entries for Aboriginal sites within the project area. Despite this, it is understood that sites or objects may exist in the proposed development area, even though the Register does not identify them, and accordingly measures will be undertaken to minimise impacts to Aboriginal heritage in compliance with DPTI Cultural Heritage Guidelines and the Aboriginal Heritage Act 1988.

Alternatives & Mitigation Measures

Given the results of the central archive search, previous site disturbance and the nature of proposed works, it is considered that there is a low risk that proposed works will disturb in situ Aboriginal cultural heritage. However, to ensure the department is able to manage the cultural heritage risks of this project in line with the South Australian Aboriginal Heritage Act 1988, the department's Aboriginal Objects, Sites and Remains: Discovery Guideline shall be followed and implemented by the Contractor for the duration of works. If, at any time, an Aboriginal site or a site containing items associated with Aboriginal occupation is uncovered, the Contractor must:

- stop work in the immediate area and redirect works to avoid further impact;
- provide notification in accordance with DPTI's Aboriginal Objects, Sites and Remains Flow Chart available at: http://www.dpti.sa.gov.au/standards/environment; and
- not commence work in the affected area until directed to do so.

This procedure will be covered in the site induction and it will be a requirement that all site personnel involve in ground disturbing activities attend.

Native Title

Aspects	Applicable Yes/No
Land title information	Yes
Advice from the Crown Solicitors Office required to determine whether Native Title exists over land within the project area.	No
Notification Process if Native Title not extinguished	No
ILUA process applicable?	No
Other (specify)	

Impacts

No land is to be acquired for the project works. The central portion of the site is registered in fee simple to Flinders Ports Land Development Pty. Ltd (Flinders Ports). The outer edge of the site, bordering Port River is registered on a separate certificate of title to the Minister for Transport and Infrastructure and is subject to the 99 year lease to Flinders Ports. Native title has been extinguished in metropolitan areas.

Alternatives & Mitigation Measures

Not applicable.

External Approvals and Permits

	Tick or NA	Comments (e.g. timeframes, approving authority)
Native Vegetation Approval	☐	N/A
Crown Development Approval	☑	Three month timeframe for approval by the Development Assessment Commission
Water Affecting Activities Permit	☐	N/A - Water Affecting Activities Permit Assessment did not result in the requirement of a permit (knet#10674700)
EPA Licences	☐	May be required for waste transport (i.e. groundwater). Relevant licences are held by the transporter and the disposal facility.
Land acquisition	☐	N/A – no land to be purchased
Native Title Notification	☐	N/A – land owned in fee simple, native title considered to be extinguished
Local Government Consulted	☐	N/A
EPBC Referral	☐	N/A – no EPBC listed species to be adversely impacted by works
Aboriginal Heritage	☐	N/A – no registered site near/ within the project footprint
Local, State or National Heritage Approval	☐	N/A – no heritage listed sites considered to be impacted by the project works
NRM Board Consulted (required if transporting plants declared under Part 175 of NRM Act)	☐	Contractor must obtain authorisation from the local NRM Board if transportation of declared weed species is required.
Other (please specify)	☐	

Attachments

Issue	Attachment (Yes/No/NA)	Reference (Knet Number)
Vegetation		
Vegetation Assessment	Yes	
Vegetation Survey *(Remember to enter any impacts to Roadside Significant Sites or any proposals for new Significant Sites into the RSSD register #5188048)*	No	
Vegetation Removal Request (Vegetation Removal Policy)	No	
Vegetation Management Plan	No	
Land Acquisition & Contamination		
Site History Report (CPO22)	N/A	
Site Remediation Plan *(Remember to enter into database #4943339)*	N/A	
Heritage and Native Title Issues		
Aboriginal Heritage Survey *(Remember to enter into database #4160717)*	N/A	
European Heritage Assessment/Advice/ Conservation Plan	N/A	
Native Title/ ILUA advice	N/A	
Water		
WAAP Risk Assessment *(Remember to enter into database #2911942)*	Yes	#10674700
Water Quality Risk Assessment	Yes	Workshop to be undertaken pending development approval
Other Issues		
Fauna Survey/Assessment	N/A	
Air Quality Screening Assessment	N/A	
Noise Modelling Report	N/A	
Noise Mitigation Plan *(Remember to enter into database #1445537)*	N/A	
Council Consultation	N/A	
NRM Board Consultation	N/A	
Sustainability Management Plan (For projects worth $4m and over)	No	#10505442 – SMP #10654406 - Acquittal
Greenhouse Assessment	N/A	
Climate Change Impact Assessment	N/A	

Evaluation and Environmental Clearance

Assessed: (Environmental Officer)

5/8/16

Authorised: (Project Manager)

11/8/2016

Approved: (Senior Environmental Management Officer)

23/9/16

ekistics

Appendix 5. Sustainability Management Plan

Government of South Australia
Department of Planning, Transport and Infrastructure

FLINDERS PORTS SITE REMEDIATION – TITLE F (INNER HARBOUR EAST)

SUSTAINABILITY MANAGEMENT PLAN

Prepared by:

Department of Planning, Transport and Infrastructure

77 Grenfell Street
Adelaide SA 5000

PO Box 1533
Adelaide SA 5001

Document #: 10505442 Version: 2
Author: Vanessa De Chellis

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1 PROJECT DESCRIPTION

1.1 Project Scope and Location

In November 2001, Flinders Ports Pty Ltd (FP) purchased the State's commercial port infrastructures that were previously operated by the South Australian Ports Corporation (SA Ports Corp). As a consequence of this purchase, Flinders Ports were granted a 99 year lease over waterfront port lands and entered into a Port Operating Agreement (POA) with the Minister for Transport for the same period for each of the seven ports.

According to The South Australian Ports Business and Asset Sale Agreement, clause 19.2, the Government agreed to undertake the responsibility for the remediation of the leased land to a standard for use as a port. Under the agreement, the responsibility for remediation of the environmental liabilities disclosed in environmental reports is with the vendor (DPTI) at its cost and to the satisfaction of the EPA. This standard is known as the Objective Remediation Standard (ORS) and Clause 19.3(g) imposes a limit on the nature of the remediation in that the vendor (DPTI) is not obliged under any circumstances to remediate to a standard which exceeds the EPA's requirements for the real property while used as a Port.

Title F (Inner Harbour East – the project site) is an operational port facility, subject to a 99 year lease to FP, located on the eastern banks of Port River. The project site is surrounded by shipping and bulk handling facilities within Port Adelaide industrial precinct (refer to Figure 1). Title F is situated at the southern end of Ocean Steamers Road within the Inner Harbor which merges with Barker Inlet before it flows out to Gulf St Vincent. The Site consists of two docks and five berths (berth 16 to 20) with adjoining sheds that are leased to stevedore companies. There is an evaporation pond on the northern end of the wharf which is used to dispose of dredge spoil.

In accordance with the ORS, the proposed remediation works are to consist of the following:

- Sealing of approximately 4.76 ha of the site with full depth asphalt pavement to prevent ongoing heavy metal contamination in existing site soils and groundwater;
- Associated civil works to accommodate the site sealing works;
- Installation of electrical infrastructure and stormwater drainage infrastructure including a stormwater treatment device.

A central portion of the site is currently occupied by a third party (not included in the 4.76 ha previously stated). As such, sealing works might not be undertaken by the Department in this portion of the site due to access issues and instead the department will pay an agreed sum to FP in lieu of sealing the 3.16 ha site. FP will then be responsible for sealing this site at their own accord.

1.2 Project Rationale

In 2004 to 2005, a Provision was created to recognise the State's obligation for site remediation of the Ports in accordance with AASB 137 Provisions, Contingent Liabilities and Contingent Assets. Further to the above, in 2008 the State transferred the Inner Harbour site to FP under a land transfer process managed by the Land Management Corporation. As part of this process, DPTI retained responsibility for environmental remediation of the Inner Harbour Title F site.

In 2010, the Crown Solicitor's Office established recommendations detailed in an environmental assessment undertaken by Golder Associates (2004) as the ORS for the Site. The relevant recommendations of the ORS are as follows:

- *"Surface treatment of all unsealed areas of the Site which should comprise:*
    - *A hard wearing seal to minimise ongoing maintenance;*

- *A low permeability seal or other lining structure to minimise infiltration of stormwater through the metal impacted soil to groundwater beneath the site.*

- *Development of a contaminant management plan in the event impacted soils are to be retained on Site."*

In lieu of these recommendations, the sealing of the site is considered necessary to satisfy DPTI's obligations.

1.3 Proposed Timeframe

The project is proposed to be delivered over two consecutive financial years with planning to continue through the first half of 2016/2017 and construction to be undertaken in the second half of 2016/17 and 2017/2018. The project is to be delivered by the Department of Planning, Transport and Infrastructure (DPTI) who will engage a construction contractor.

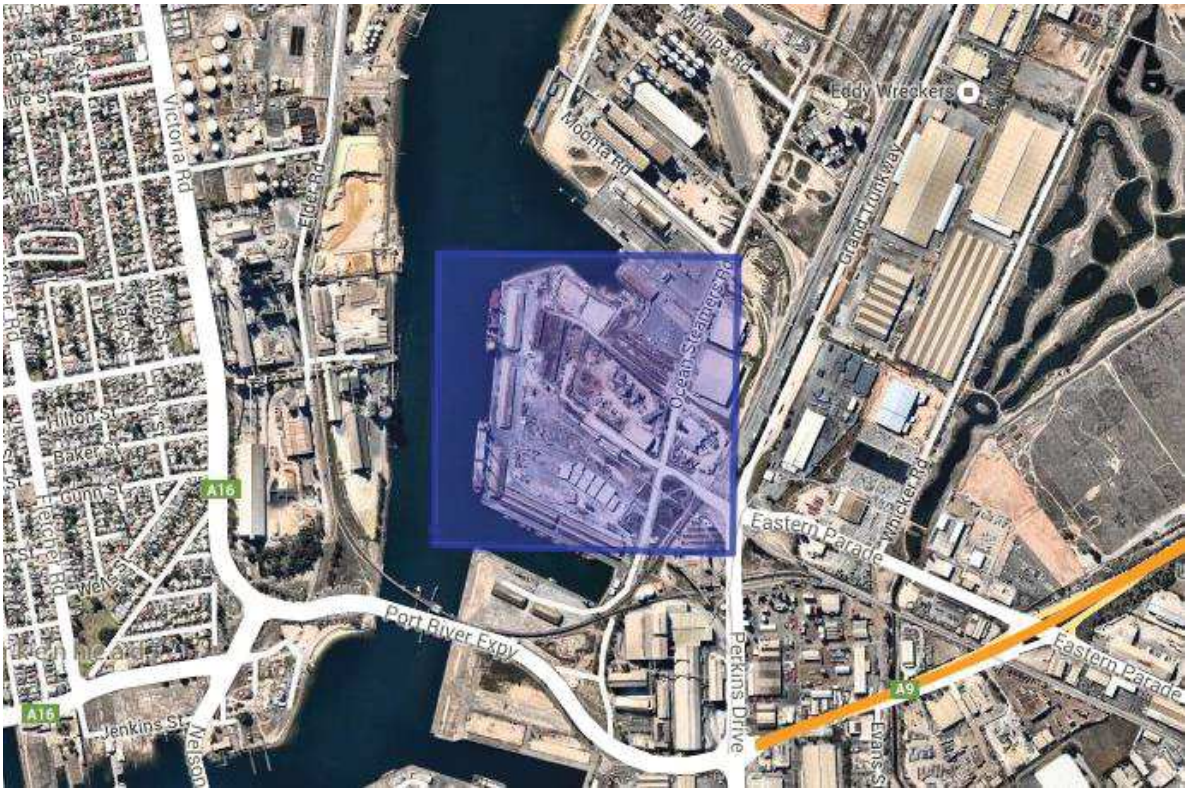

Figure 1: Location - Flinders Port Title F (Inner Harbour East)

2 SUMMARY OF KEY SUSTAINABILITY ISSUES

The key sustainability issues relating to this project include:

2.1 Water

Port River is directly adjacent the western site boundary, as well as portions of the northern and southern boundaries in the dock areas. The project will not require any extensions or works within Port River, however, the project works will include an upgrade of the current stormwater infrastructure at the site. It is considered that the volume of stormwater being discharged to Port River will slightly increase (the sealing of the site will reduce infiltration through the soil profile and increase surface water runoff/ drainage), however, the quality of discharged stormwater will be managed via the installation of stormwater treatment infrastructure.

It is noted that Port River is classed as a dolphin sanctuary and is protected under *The Adelaide Dolphin Sanctuary Act* 2005. The Port River Water Quality Improvement Plan (SA EPA, 2001) established parameters (nutrient, microbial, heavy metals and chlorophyll) to evaluate the ambient water quality in the Port River. The Inner Harbor water (adjacent to Title F) showed poor conditions for all the environmental values (ecosystem protection, harvesting of food for human consumption, primary recreation and secondary recreations) and this segment of River is known for frequent seasonal algae bloom outbreaks.

A Water Quality Risk Assessment and a Water Affecting Activity Permit Risk Assessment will be completed in accordance with the department's 'Water Affecting Activities Standard Operating Procedure'. The Water Quality Risk Assessment will address surface and groundwater impacts and will inform the need for any licences in accordance with the *Natural Resources Management Act 2004* and the *Environmental Protection Act 1993.* Liaison with Dolphin Sanctuary staff will occur to determine dolphin movements and water quality mitigation requirements.

During construction, a soil erosion and drainage management plan will be developed and implemented to manage water flows and water quality using effective erosion and sediment control measures.

2.2 Site Contamination

Based on the available information, soil and groundwater at the site has been identified to be impacted with elevated concentrations of heavy metals. The purpose of the site sealing works is to limit the transport of contaminants through the soil profile to the unconfined aquifer beneath the site by inhibiting the infiltration of stormwater. Furthermore, the sealing of the site will limit erosion (and subsequent transportation) of impacted soil material which may then reach Port River.

As part of construction works, all soils are to be retained on site. Excavations associated with the sealing works are not expected to intercept groundwater, however, groundwater may be encountered during the installation of stormwater treatment infrastructure and require extraction. All groundwater will be transported and disposed of by an appropriately licensed waste transporter.

The site currently sits at approximately 2.7 to 3.7 m AHD. Coast Protection Board projects sea level rise (SLR) to be 0.3 m (year 2050), 0.41 m (year 2070) and 1.0 m (year 2100). Considering 100 ARI storm surge events, it is expected that by 2050 portions of the site may be vulnerable to inundation (including SLR, the 100 year ARI storm surge in 2050 is expected to be 2.73 m AHD in Port River). In the event that SLR does impact the site, it is considered that the sealing of the surface will limit the transport of potentially contaminated material to Port River.

2.3 Acid Sulfate Soils

The Port River surroundings and the Barker Inlet are classified as having a high potential of encountering Potential Acid Sulfate Soils (PASS) due to the low lying environment. Historical records indicate that riverbanks of the Port River were built up to formalise a navigational channel and prevent the flooding of adjacent facilities.

Based on a review of site specific data, there is some evidence that PASS are present in the northern portion of the site, directly adjacent the northern dock. PASS will be managed in accordance with DPTI Guidelines for Assessment and Management of Acid Sulfate Soils which are based on guidance provided by SA EPA, particularly with reference to EPA 638/07 (2007). The contractor will be required to develop an Acid Sulfate Soils Management Plan (ASSMP) to address the management of water and soil affected by ASS. This will address temporary stockpiling, drainage, dewatering, liming rate for neutralising of soil, routine sampling for PASS, verification testing and assessment for reuse / disposal of material, the treatment of walls in excavation pits and general occupational health and safety.

2.4 Fauna

Port River is classed as part of the Adelaide Dolphin Sanctuary. The water body currently, and will continue to be, the receiver of stormwater runoff from the site. A gross pollutant trap is currently present in the northern portion of the site which is maintained by Flinders Ports. A stormwater treatment device is to be installed to manage the quality of stormwater runoff from the sealed portion of site. It is considered that with the sealing of the site, the volume of sediment runoff from the site will decrease and the quality of discharged stormwater will increase thereby slightly improving the quality of stormwater being discharged from the site into the receiving water body. The project, therefore, is considered to have a beneficial outcome for local fauna.

2.5 Aboriginal Heritage and Native Title

The project site is part of a highly modified landscape with commercial/ industrial land use adjacent the site to the north, east and south and with the Port River directly adjacent the site to the west. The initial development of the Site as a port facility resulted in modification to the original topography and drainage patterns of the area. No remnant vegetation remains at the Site. It is noted that any land, developed or undeveloped, can contain Aboriginal sites, objects and remains of significance to Aboriginal archaeology, anthropology, history and tradition protected under the Aboriginal Heritage Act 1988.

Section 23 of the Act states that it is an offence to damage, disturb or interfere with any Aboriginal site, object or remains without the authority of the Minister for Aboriginal Affairs and Reconciliation (the Minister).

The Department of State Development, Aboriginal Affairs and Reconciliation Division (DSD-AARD) has been consulted and have advised that the central archive, which includes the Register for Aboriginal Sites and Objects, has no entries for Aboriginal sites within the project area. Despite this, it is understood that sites or objects may exist in the proposed development area, even though the Register does not identify them, and accordingly measures will be undertaken to minimise impacts to Aboriginal heritage in compliance with DPTI Cultural Heritage Guidelines and the *Aboriginal Heritage Act* 1988.

No land is to be acquired for the project works. The central portion of the site is owned in fee simple by Flinders Ports Land Development Pty. Ltd (Flinders Ports). The outer edge of the site, bordering Port River is owned in fee simple on a separate certificate of title to the Minister for Transport and Infrastructure and is subject to the 99 year lease to Flinders Ports. It is understood that native title has been extinguished in metropolitan areas for land owned in fee simple.

2.6 Construction noise and vibration

The site is located in an industrial zone with the surrounding facilities comprising operational port and storage facilities. Port River is located directly west of the site, across which is further industrial land use. No noise sensitive land uses have been identified within close proximity of the site.

Given the industrial nature of the surrounding area, it is considered that the noise and vibration generated during the construction works will not significantly exceed existing background conditions and will not cause a nuisance to surrounding sites, nor species within Port River. No changes to operational noise levels are anticipated following the sealing of the site.

2.7 Waste

Waste minimisation, reuse and recycling will be a focus of the project, and all excavated materials suitable for reuse will be incorporated back into the site as fill. The Contractor will be required to address waste minimisation and management as part of the Contractor's Environmental Management Plan and will undertake works in accordance with the DPTI Master Specification Part G50W and CH50W.

3 ENVIRONMENTAL IMPACT ASSESSMENT, LEGISLATIVE COMPLIANCE & CONTRACT MANAGEMENT

An Environmental Impact Assessment (EIA) for the project is currently being undertaken to identify key environmental issues, impacts and management measures, and to obtain internal environmental approval. An EIA report will be prepared as an outcome of this process.

Table 1 summarises relevant environmental legislation and relevant external environmental approvals and permits for the project. Internal and external environmental approvals have been obtained, or will be obtained, prior to commencement of construction.

Table 1: relevant external environmental approvals and permits

Environmental legislation	**Environmental approval** ***Approving body/authority***	**Comments**
Aboriginal Heritage Act 1988	Determine an Aboriginal site (s12) Disturb an Aboriginal site / object (s23) Minister for Aboriginal Affairs and Reconciliation, Department of State Development, Aboriginal Affairs and Reconciliation (DSD ARR)	The Department of State Development, Aboriginal Affairs and Reconciliation Division (DSD-AARD) has been consulted and have advised that the central archive, which includes the Register for Aboriginal Sites and Objects, has no entries for Aboriginal sites within the project site. Measures will be undertaken to minimise impacts to Aboriginal heritage in compliance with DPTI Cultural Heritage Guidelines and the *Aboriginal Heritage Act 1988*.
Development Act 1993	Development Assessment Committee	If require, development approval for the project works will be sought. In the event that development approval is required, the application will be referred to the Coast Protection Board by the development assessment authority.
Environment Protection Act 1993	Minister for Sustainability, Environment and Conservation, Environment Protection Authority	Licences will be sought by the contractor, for earthworks drainage, if required. Various environmental management plans will also be prepared and implemented, as required, to ensure the project meets its general environmental duty in accordance with the Act.
Natural Resources Management Act 2004	Water Affecting Activities Permit (WAAP) Adelaide and Mount Lofty Ranges Natural Resources Management Board	The proposed modifications to existing drainage infrastructure entering Port River are considered minor and low risk. The Departments' internal environmental procedures and systems will be followed and as such, it is considered unlikely that a separate Water Affecting Activity Permit will be required.

The contractor will be required to work under the environmental conditions of the DPTI Master Specification (Parts G50W and CH50W) and Contract Specific Requirements, which will include aspects of the sustainability measures outlined in this Plan. In response to these environmental requirements, the contractor will prepare and implement a Contractor's Environmental Management Plan. The Contractor will be audited during construction to review compliance with the environmental conditions.

As part of the stakeholder engagement plan, EPA and DEWNR will be engaged during the planning stage of the project. As part of the contract scope and technical requirements (CSTR) to be prepared for the project, the contractor will be directed to prepare all management plans in adherence to relevant EPA policies. Further, a Water Quality Risk Assessment will be prepared by DPTI for the project. As part of this assessment, EPA and DEWNR (including a Dolphin Sanctuary representative) will be engaged in order to determine any control measures required throughout the construction phase and following the completion of the project to limit potential harm to the environment and minimise harm to dolphins and habitat.

4 OVERVIEW TABLE

Table 2 outlines the ecologically sustainable development (ESD) objectives, principles and example ESD actions and opportunities for the project and uses arrows to demonstrate whether the action could be classed as heading towards or away from sustainability (or maintaining status quo).

Table 2: Overview table assessing the project against Ecologically Sustainable Development objectives

	Reducing Sustainability (Adverse impacts) ⇦	**Neutral – Status quo or Mitigating Project Impacts**	⇨ **Enhancing Sustainability – (Positive impact)**
ESD Objective (focusing on "Attaining Sustainability")	**Guiding Assessment Criteria (Bold) and example actions/opportunities (dot points) for incorporation into project**		
Protection of Water Quality	**Detrimental impact on water body - decline of health of receiving environment**	**No net change to water quality**	**Contributes to improved health of waterways and water quality**
	• Generation of emissions to watercourse that have the potential to: result in adverse impacts; require remediation; or do not meet water quality criteria.	• Implementation of water quality treatment measures to ensure no net change in water quality (no improvement) e.g. construction measures to controlling runoff from site works, implementation of Soil Erosion Drainage Management Plan (SEDMP), limiting disturbed areas, monitoring runoff water quality from site • Appropriate storage of hazardous substances used during construction • Compliance with relevant water quality guidelines and Codes of Practices • Changes to drainage patterns and installation of new drainage infrastructure will not negatively impact water quality in the catchment • Methods incorporated for controlling runoff from site works including sediment loads (i.e. settlement pit/ humeceptor)	
Water Conservation and Reuse	**Ongoing or large increase in water consumption during life of project**	**No net change in water consumption patterns over life of project and/or minimisation of potable water consumption during construction and maintenance**	**Reduction in use of potable water consumption during operation**
		• Any increases in consumption is short term e.g. during construction • Measures taken to minimise consumption • Compliance with state water conservation measures and restrictions • Water efficient landscape design including plant selection (low water use species) and irrigation design • Use of alternate water sources (non mains) where available and feasible for construction and landscape irrigation	
Minimisation of energy consumption, use of renewable energy sources	**Large increase in energy use over life of project with no measures taken to mitigate or reduce**	**No significant increase/change in energy use, any impacts short term only and/or minimisation of energy consumption over the life of the project and/or use of renewable energy resources**	**Reduction in energy consumption and/or use of renewable energy resources**
		• Impacts limited to construction phases – short term • Management measures in place to manage e.g. use of plant/equipment that is electrically and/or fuel efficient • Investigate opportunities to maximise use of materials with low embodied energy • Minimise transport distances involved in the demolition, recycling, construction of the project e.g. use of locally sourced materials • The project proposes to use energy efficient street lighting for all new street lighting installed (e.g. LED luminaires rather than HPS luminaires)	
Minimisation contribution to greenhouse gas emissions	**Significant contribution to increased GHG emissions over life of project with no measures taken to mitigate or reduce**	**No net change and / or minimising project contribution to GHG emissions**	**Reductions in GHG emissions**
		• It is unlikely that the site works will cause a change in GHG emissions. Sealing of the site will reduce long term site maintenance effort.	
Waste Minimisation and use of recycled materials	**No control measures to minimise Project Construction Waste to Landfill and/or incorporate recycled or recyclable materials**	**Control measures in place to manage waste and / or minimisation of waste to landfill.**	**Use of Recycled and Recyclable Materials**

	Reducing Sustainability (Adverse impacts) ⇦	Neutral – Status quo or Mitigating Project Impacts	⇨ Enhancing Sustainability – (Positive impact)
ESD Objective (focusing on "Attaining Sustainability")	**Guiding Assessment Criteria (Bold) and example actions/opportunities (dot points) for incorporation into project**		
		• Generation of waste avoided or minimised • Assessing and using construction technologies, products and materials for their future ability to be dismantled and recycled (e.g. on decommissioning) • Minimising material quantities where practicable • Contractor to keep a record of recyclable/recycled materials	• Maximise recycling/reuse of construction and demolition waste e.g. cut and fill balances
Protection of terrestrial and aquatic Biodiversity	**Loss of areas of biodiversity value, significant impact on population or species of conservation significance**	**No ongoing impacts on biodiversity and or protection of significant areas of biodiversity or conservations significance**	**Significant environmental benefit / improvement to significant areas of biodiversity or conservation significance**
		• A defined Contractors Activity Zone will be instated	• Site works are being undertaken to limit the potential for further contamination of groundwater beneath the Site flowing to Port River. As such, it is considered that the project will have a beneficial impact on the biodiversity of down hydraulic gradient receivers of groundwater.
Management of Land Degradation and Contamination	**Project contributes to land degradation or creation/mobilisation of contamination**	**Minimise land degradation or impacts associated with Contamination**	**Remediation of site contamination**
		• Minimise land degradation including erosion • Implementation of Soil Erosion and Drainage Management Plan and early stabilisation of new batters and drainage lines • Implementation of an Acid Sulfate Soils Management Plan • Investigations to identify potential risks, appropriate management measures documented in plan and implemented • No introduction of potentially contaminating activities to previously un-impacted/undisturbed areas without treatments in place	
Reduction in Transport Noise Impacts	**Increased noise levels likely to create ongoing impact on sensitive receptors**	**No ongoing impact on noise sensitive receptors and / or minimisation of impacts of road traffic noise on noise sensitive landuses**	**Reducing impacts of road traffic noise on noise sensitive land uses**
		• Compliance with DPTI Road Traffic Noise Guidelines and other relevant guidelines and legislation • No noise sensitive land uses identified in proximity of the site	
Support and Encouragement of Social and Community Involvement and Consultation	**Community disengagement and alienation**	**Informed community and stakeholders**	**Establishment of relationships with community, stakeholders, customers and suppliers**
		• Provision of information to stakeholders (non participatory process) • Development of a consultation strategy/plan • Involvement of full range of stakeholders	
Minimisation of Social Impacts of Projects and infrastructure		**Minimisation of Social Impacts of Projects and infrastructure**	**Positive Social Impacts**
			• Remediation of site contamination is beneficial for Port River • Sealing will reduce effort spent on site maintenance
Enhancement of Visual Amenity	**Contributes to loss or decline of Visual Amenity in area**	**No net change**	**Improvement and Enhancement of Visual Amenity**
			• Sealing of the site will increase its amenity
Preservation of Cultural Heritage	**Contributes to loss of Cultural Heritage sites/objects/areas**	**No net change**	**Ensuring conservation and protection of Cultural Heritage**
		• No impact to sites of cultural significance • Measures taken to identify/investigate heritage issues which may include Native Title status, checks of local, state and national heritage registers (non-indigenous) • Discovery protocols in place	