Gladstone Ports Corporation

Growth, prosperity, community.

GPC Document No. 1798359

14 June 2022

RTA Yarwun Pty Ltd
C/- Zone Planning Group, Stephen Enders
PO Box 3805
Burleigh Town QLD 4220

Dear Stephen,

DECISION NOTICE – APPROVAL WITH CONDITIONS – DA2022/07/01

(GIVEN UNDER THE PROVISIONS OF GPC LAND USE PLAN 2012V2

1. Application Details

This development application was **properly made** to the Gladstone Ports Corporation Limited on **4 April 2022**.

Application Number:	DA2022/07/01
Applicant Name:	RTA Yarwun Pty Ltd
Applicant Contact Details:	C/- Zone Planning Group, Stephen Enders PO Box 3805 Burleigh Town QLD 4220 Email: stephen@zoneplanning.com.au
Approval Sought (Land Use Plan):	Port Application for Stormwater infrastructure & Earthworks
Location Street Address:	Graham Fenton Drive, Yarwun
Location Real Property Description:	Lease FLB in Lot 502 on SP252988 and land adjoining in part of Lot 502 on SP252988
Land Owner:	Gladstone Ports Corporation Limited
Land Use Plan Precincts:	Strategic Port Land – Port Industry Precinct
Local Government Area:	Gladstone

2. Details Of Proposed Development

The development is described as:

1. Port Application for Stormwater infrastructure and Earthworks

Works are to facilitate staged stormwater infrastructure improvements within 190m of the existing stormwater water drain adjacent to RTAY caustic bladder storage site. The works are to include lining of the drain, site improvements within the lease area for stormwater and discharge points.

3. Details Of Decision

This development application was **decided** on **13 June 2022**.

This development application is **approved in full with conditions**. These conditions are set out in Attachment 1 and are clearly identified to indicate whether the assessment manager or a concurrence agency imposed them.

4. Details Of Approval

This development approval is a **Development Permit** given for:

(a) Port Application for undertaking work in, on, over or under premises that materially affects the premises or their use including excavating or filling (*GPC Land Use Plan 2012v2*).

5. Conditions

This development approval is subject to the conditions in Attachment 1 - Part 1 and Part 2.

6. Further Development Permits

Please be advised that the following development permits are required to be obtained before the development can be carried out:

(a) Any relevant Building and Plumbing works (as applicable)

7. Referral Agencies for the Application

There are no referral agencies for this application.

8. Approved Plans and Specifications

Copies of the following plans, specifications and drawings are approved and enclosed in Attachment 2:

Drawing/report title	Prepared by	Date	Reference no.	Version	Approval subject to the following changes
Aspect of development: Port application (Land Use Plan)					
Caustic Yard Station, Yarwun Environmental	Rio Tinto	08/11/2021	180C(2D) 10073	E03	

Improvements Locality Plan and Drawing List					
Caustic Yard Station, Yarwun Environmental Improvements Overall Site Layout	Rio Tinto	08/11/2021	180C(2D) 10074	E03	
Existing Drain Conditions	Rio Tinto	08/11/2021	180C(2D) 10075	E03	
General Arrangement Plan	Rio Tinto	08/11/2021	180C(2D) 10076	E03	
Drain Longitudinal Section	Rio Tinto	08/11/2021	180C(2D) 10077	E03	
Typical Cross Sections	Rio Tinto	08/11/2021	180C(2D) 10078	E03	
BGM Arrangement at Culvert Location	Rio Tinto	08/11/2021	180C(2D) 10079	E03	
Inlet Pit & Pie Crossing Connection Detail	Rio Tinto	08/11/2021	180C(2D) 10080	E03	
BGM Panel Layout & Section	Rio Tinto	08/11/2021	180C(2D) 10081	E03	
BGM Panel Anchor Trench Details	Rio Tinto	08/11/2021	180C(2D) 10082	E03	
Batten Bar and Stand Pipe Details	Rio Tinto	08/11/2021	180C(2D) 10083	E03	
Rill Repair and BGM Fixing at Foot bridge	Rio Tinto	08/11/2021	180C(2D) 10084	E03	
Maintenance Access Ramp Details	Rio Tinto	08/11/2021	180C(2D) 10085	E03	
General Notes Sheet 1	Rio Tinto	06/12/2021	180C(2D) 10089	E01	
General Notes Sheet 2	Rio Tinto	06/12/2021	180C(2D) 10090	E01	
180 Caustic Transfer Regrading Works Services Arrangement	Rio Tinto	06/12/2021	180C(2D) 10091	E01	
180 Caustic Transfer Regrading Works Finished Surface Level Exhibit	Rio Tinto	06/12/2021	180C(2D) 10092	E01	
180 Caustic Transfer Regrading Works Cut and Fill Exhibit	Rio Tinto	06/12/2021	180C(2D) 10093	E01	
180 Caustic Transfer Regrading Works Chainage Details	Rio Tinto	06/12/2021	180C(2D) 10094	E01	
180 Caustic Transfer Regrading Works Southwest Drainage Sections	Rio Tinto	07/12/2021	180C(2D) 10095	E01	
General Arrangement Plan - Stage 2	Rio Tinto	08/11/2021	180C(2D) 10022	E01	
Typical Cross Sections and Details – Stage 2	Rio Tinto	08/11/2021	180C(2D) 10023	E01	

Weir and Ramp Details – Stage 2	Rio Tinto	08/11/2021	180C(2D) 10024	E01	
Access Ramp Details – Stage 2	Rio Tinto	01/11/2021	180C(2D) 10025	E01	

12. Currency Period for the Approval

This development approval will lapse at the end of the periods set out below:

(a) For Port Application this approval lapses 6 years after this approval decision date.

13. Rights of Appeal

No legislated appeal rights are afforded with this decision notice as the application was not made under the provisions of the *Planning Act 2016*.

For further information please contact the undersigned on 07 4976 1287 or via email planning@gpcl.com.au .

Yours sincerely,

Erin Clark
Principal Planner

Enc. Attachment 1: Conditions of Approval
Part 1 – Conditions imposed by the assessment manager

Attachment 2: Approved plans and specifications

Attachment 1 Conditions of Approval

PART 1: ASSESSMENT MANAGER CONDITIONS

In general the development proposal is in compliance with the requirements of Gladstone Ports Corporation Limited (GPC). This development approval is subject to each the following conditions which are stated by GPC, the Assessment Manager.

Part 1a: Approval sought under Land Use Plan - Port Application

GENERAL

1. Development must be carried out generally in accordance with the Approved plans, except where modified by conditions of this permit.
2. Unless otherwise stated, all conditions must be complied with and completed prior to the commencement of the development.
3. Where additional "approval" is required under these conditions for drawings or documentation the proponent must submit for review, amend to the satisfaction of, and obtain written approval from the Assessment Manager.

   Furthermore, GPC will require no less than 10 business days, unless otherwise conditioned by GPC, to assess the drawings or documentation provided prior to the commencement of the development. Should further information be required for assessment, GPC will require a further 5 business days to complete the information request assessment and response.
4. The proponent must at its cost and expense, keep and maintain the development footprint, including existing services, in a state that is satisfactory to the Port.

ENGINEERING

5. Upon completion of the works, the proponent must supply the Assessment Manager with RPEQ certified "As Constructed" plans, in both hard copy (2 of) and electronic (CAD format) which illustrate all infrastructure and services e.g. works installed on, under or over Port land associated with the activity, including but not limited to, all drainage and sealing/ hard standing works.
6. The proponent is required to apply for and obtain from the Assessment Manager a Permit to Dig/Excavate prior to commencing works by contacting, Port Infrastructure Asset Manager on (07) 4976 1333.
7. Any site lighting used during construction / development should not negatively impact on the visibility of Navigational Aids utilised for the primary shipping channels nor illuminate a landward glare beyond the site boundary. Lighting must be reviewed during construction and use of the development with respect to navigation. Where an issue is identified or a validated complaint received, the proponent must immediately rectify to the satisfaction of the Assessment Manager.

Infrastructure

8. The applicant must notify the Assessment Manager (GPC) of damage caused to any port or port user infrastructure or services including, but not limited to, security related devices, buildings, fences, lighting etc., roads, walkways and underground services or infrastructure, as a result of the approved use or during construction. The proponent must undertake necessary repairs at their expense and to the satisfaction of the Assessment Manager (GPC).

Construction Management

9. Construction fill material must be uncontaminated and reused from onsite or sourced from a licensed quarry.
10. In the event construction will require changes to vehicle access or land/road closure of any port road, the proponent must provide to the Assessment Manager for review and approval a Construction Traffic Management Plan that is prepared by an approved Traffic Management Designer in accordance with the MUTCD Part 3.
11. Upon completion of the construction works, the proponent must reinstate the property to the same condition prior to the works being undertaken unless agreed to in writing by GPC.
12. In the event a construction compound is required on port land for offices, laydown areas, employee car parking or stockpiling areas etc outside the project lease area., the proponent or their contractor must obtain a Consent to Enter from GPC's Property Advisor via 07 4976 1334 or property@gpcl.com.au prior to works commencing.
13. No mud, dirt or other debris is to be tracked onto public roads during construction and operation of development.
14. Upon completion of the construction activities, a Site Rehabilitation Plan must be submitted to the Assessment Manager for approval, specific to this development that includes, but is not limited to:
    a. Removal of all temporary construction access or structures;
    b. Reinstatement/ repair of any road infrastructure or crossings that have been damaged during construction;
    c. Reinstate like for like any port infrastructure or services removed for the duration of the development, including the area in proximity to the works, unless otherwise approved in writing by the Assessment Manager.
15. In the event acid sulphate soils are disturbed/excavated and require treatment on site or any land owned by GPC, a site specific acid sulphate management plan, including treatment locality and volumes and disposal locality, must be submitted to the Assessment Manager for approval prior to such works commencing. Upon approval of the management plan, the works must be carried out in accordance with this plan and the plan will form part of the Approved plans.

Waste management

16. At all times, maintain and operate an adequate waste disposal service, including the maintenance of refuse bins and associated storage areas so as not to cause an environmental nuisance.

17. Any spillage of sediment, wastes, fuels, chemicals, contaminants, or other materials at the storage site, on port roads or on the wharf must be cleaned immediately. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such materials to any stormwater drainage system, roadside gutters or waters.

ENVIRONMENT

Construction Environmental Management Plan

18. Prior to construction works commencing on site, a Construction Environmental Management Plan (CEMP) specific to these works, is to be submitted to the Assessment Manager (GPC) for approval.

    The construction must be undertaken in accordance with the approved CEMP that ensures:

a. environmental risks, including but not limited to, noise, odour, lighting, dust, are identified, managed and continually assessed in relation to the construction activity ;

b. that staff are trained and aware of their obligations under the EMP, including a copy of the management plan and development approval available on site at all times;

c. that reviews of environmental performance are undertaken at least annually; and

d. any amendments to the EMP are to be submitted to GPC for review and approval.

Once approved by the Assessment Manager, the construction activity must be carried out in accordance with this CEMP.

Note: GPC has a guideline for the development of environmental management plans that may be utilised in meeting the requirements of this condition. The final of the submitted Civil works execution plan may be utilised in meeting the requirements of this condition.

19. All management plans submitted by the Applicant must refer to up to date State and commonwealth legislation.

Incident notification

20. Gladstone Ports Corporation Environment Hotline (07) 4976 1617 is to be notified of the occurrence of any:

a. release / spill of contaminants (e.g. fuels / chemicals / sewerage) greater than 20L to land;

b. release / spill of contaminants (e.g. fuels / chemicals / sewerage) of any amount to water;

c. any environmental complaints received by the holder of this approval; and

d. non-compliance with conditions of this approval or any other environmental approval obtained in relation to the development.

21. Environmental incident notification requirements must be included in any Environmental Management Plan for the development.

Part 1b: ADVICE NOTES

A. All other relevant approvals must be obtained before commencement of the development or operation of the development, including any Building works or Plumbing and drainage works.

B. This decision notice does not represent an approval to commence Building work.

C. Where communication with GPC Port Security is required e.g. for schedules or service requests, direct communication to the following: pfso@gpcl.com.au, contracted_security@gpcl.com.au and gpcsupervisor@diamondprotection.com.

D. Where a Permit to Dig/Excavate prior to commencing excavation or digging for the development, the proponent or their contractor is required to apply for and obtain the permit by contacting the Port Infrastructure Asset Manager on 4976 1332 or bartono@gpcl.com.au.

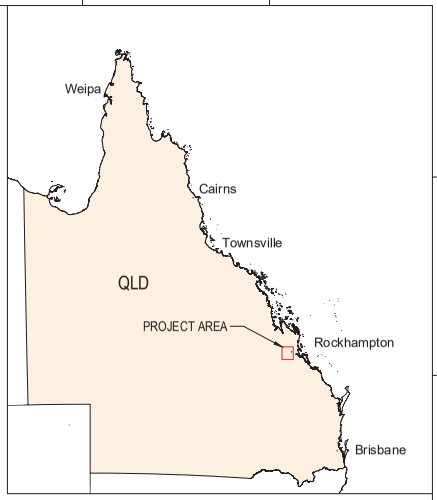
E. The *Environmental Protection Act* 1994 states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. Environmental harm includes environmental nuisance. In this regard persons and entities, involved in the civil, earthworks, construction, and operational phases of this development, are to adhere to their 'general environmental duty' to minimise the risk of causing environmental harm.

F. Where the Applicant is required to submit further documentation to the Assessment Manager, this is to be directed to the Planning section at planning@gpcl.com.au, including reference to the allocated development application number.

G. Where a construction compound, laydown area or acid sulphate soil treatment site is required, the proponent or their contractor is required to apply for and obtain a Consent to Enter from GPC's Property Specialist via 07 4976 1334 or property@gpcl.com.au prior to works commencing.

Attachment 2 Approved Plans and Specifications

RTA YARWUN - CAUSTIC BLADDER DRAIN UPGRADE



STATE LOCALITY
NOT TO SCALE

DRAWING LIST

STAGE 1		STAGE 2	
DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION
108C(2D) 10073	LOCALITY PLAN AND DRAWING LIST	180D(2D)10022	GENERAL ARRANGEMENT PLAN - STAGE 2
108C(2D) 10074	OVERALL SITE LAYOUT	180D(2D)10023	TYPICAL CROSS SECTIONS AND DETAILS - STAGE 2
108C(2D) 10075	EXISTING DRAIN CONDITIONS	180D(2D)10024	WEIR AND RAMP DETAILS - STAGE 2
108C(2D) 10076	GENERAL ARRANGEMENT PLAN	180D(2D)10025	ACCESS RAMP DETAILS - STAGE 2
108C(2D) 10077	DRAIN LONGITUDINAL SECTION		
108C(2D) 10078	TYPICAL CROSS SECTIONS		
108C(2D) 10079	BGM ARRANGEMENT AT CULVERT LOCATION		
108C(2D) 10080	INLET PIT & PIPE CROSSING CONNECTION DETAIL		
108C(2D) 10081	BGM PANEL LAYOUT PLAN		
108C(2D) 10082	BGM ANCHOR TRENCH DETAILS		
108C(2D) 10083	BATTEN BAR DETAILS		
108C(2D) 10084	RILL REPAIR AND BGM FIXING AT FOOT BRIDGE LOCATION		
108C(2D) 10085	MAINTENACE ACCESS RAMP DETAILS		

LOCALITY PLAN
NOT TO SCALE

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW - STAGE 2 DRGS ADDED	CKO	DC	-	-	-
25/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAIR	DATE	14/10/2021	CHANGE RECORD NUMBER		ORN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
LOCALITY PLAN AND DRAWING LIST

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
AS SHOWN		180C(2D)10073	A1	E03

OVERALL SITE LAYOUT PLAN
SCALE 1:2000

0 20 40 60 80 100
SCALE 1 : 2,000

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

NOTES:

1. CO-ORDIANTE SYSTEM IS GDA94, MGA-56.
2. ALL LEVELS ARE IN AHD.
3. SURVEY SUPPLIED BY RTAY, DATED 15/07/2021.

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
25/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAR	DATE	14/10/2021	CHANGE RECORD NUMBER			CRN
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
OVERALL SITE LAYOUT

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
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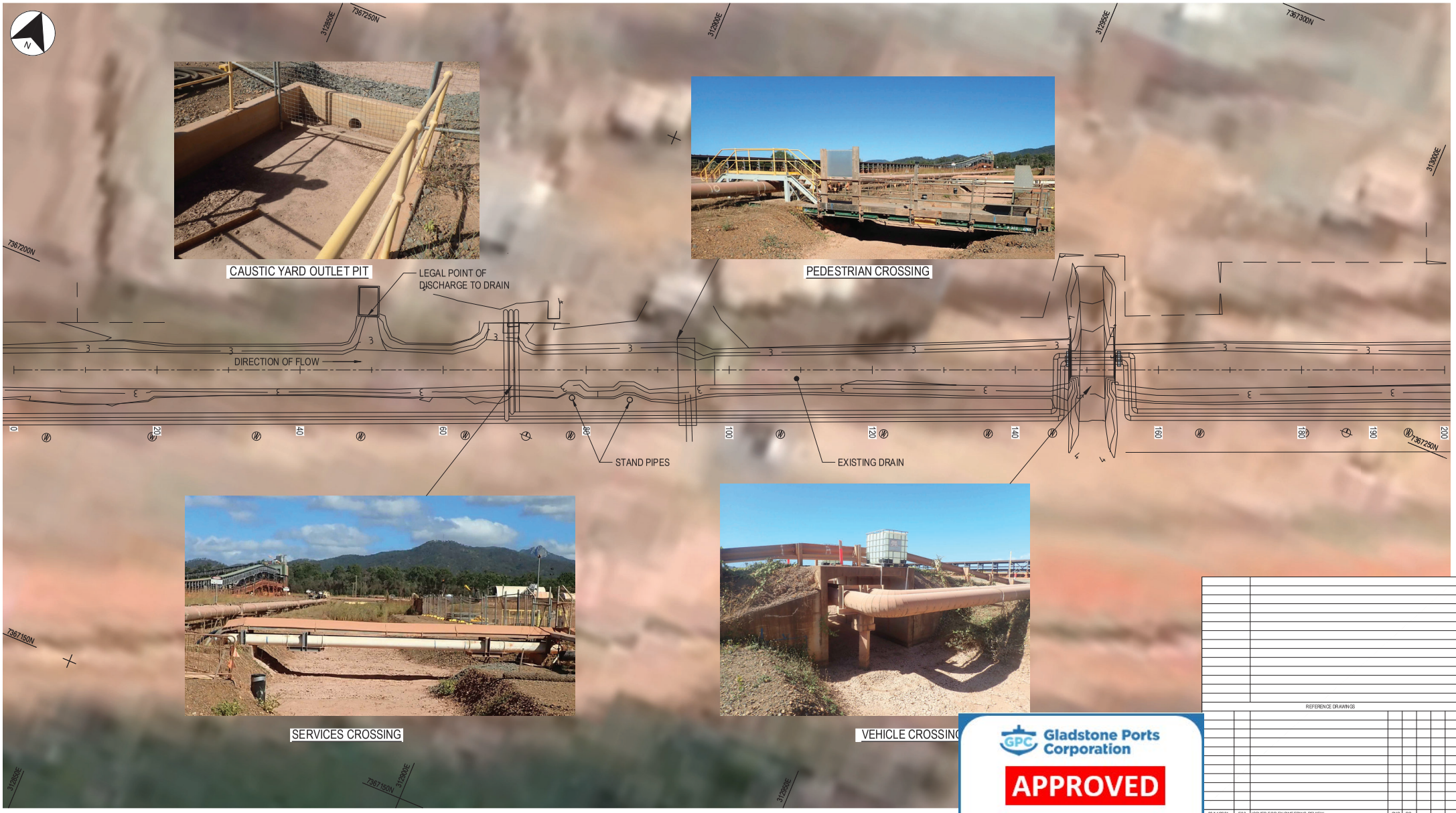

EXISTING DRAIN LAYOUT
SCALE 1:250

0 2.5 5 7.5 10 12.5
SCALE 1 : 250

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

NOTES:

1. CO-ORDIANTE SYSTEM IS GDA94, MGA-56.
2. ALL LEVELS ARE IN AHD.
3. SURVEY SUPPLIED BY RTAY, DATED 15/07/2021.

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
26/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAIR	DATE	14/10/2021	CHANGE RECORD NUMBER			CRN
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
EXISTING DRAIN CONDITIONS

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
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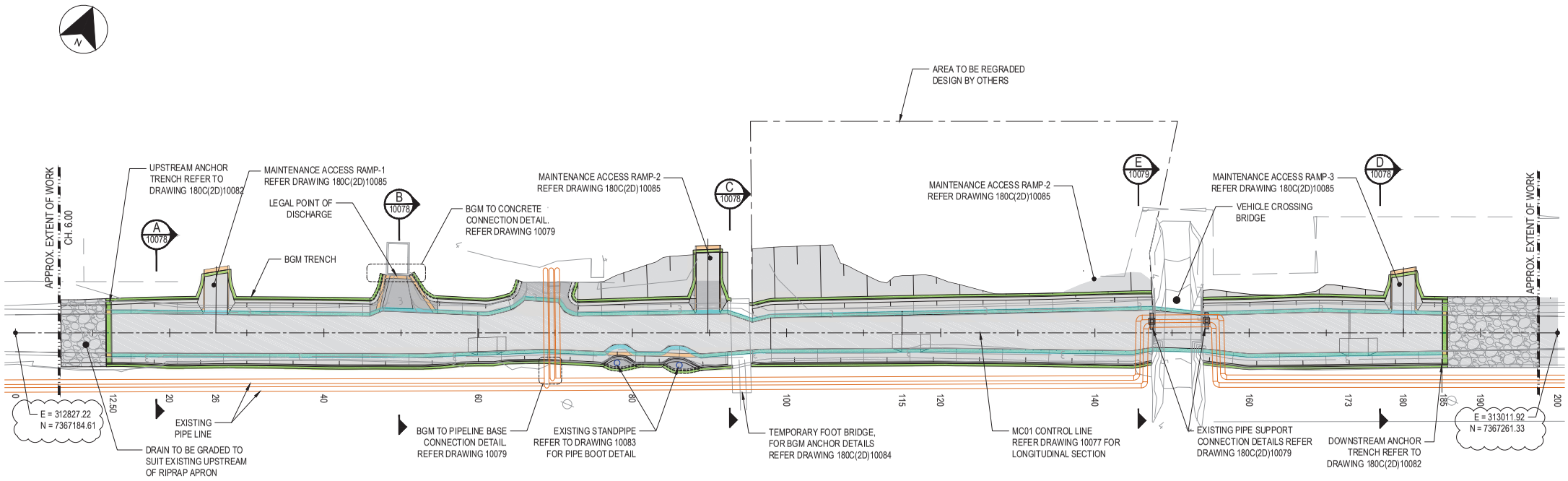


GENERAL ARRANGEMENT PLAN

SCALE 1:250

0 2.5 5 7.5 10 12.5

SCALE 1 : 250

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

NOTES:

1. UNLESS NOTED OTHERWISE ALL DIMENSIONS AND REDUCED LEVELS (RL) ARE IN METRES (m)
2. SURVEY DATUMS ARE: GDA 94 (ZONE 56).
3. DESIGN IS BASED ON LiDAR SUPPLIED BY RTAY, DATED AUG. 2021 (FILENAME G2613-125A - MODEL SPACE).

NOTES FOR DRAIN EARTHWORKS:

1. DRAIN FLOOR AND BATTER TO BE GRADED TO REMOVE ALL LOW SPOTS.
2. ALL GRAVEL AND PARTICLES LARGER THAN 5mm IN DIAMETER TO BE REMOVED FROM DRAIN SURFACE.
3. BASE OF DRAIN TO BE SMOOTH DRUMMED ROLLED, ANY LOCAL SOFT SPOTS TO BE REMOVED AND REPLACED WITH COMPACTED FILL.
4. RILL OR OTHER LOCAL EROSION FEATURES TO BE REPAIRED USING GENERAL FILL OR CEMENT STABILISED SAND.
5. LOCAL AREAS SUCH AS AROUND INLET PIT TO BE FIELD FITTED TO PROVIDE A SMOOTH SURFACE.
6. ANY EDGE OR PROTRUSTION THAT MAY DAMAGE THE BGM SHALL BE SMOOTH OR COVERED WITH STABILISED SAND, REFER TO SPECIFICATIONS FOR DETAILS.

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
25/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

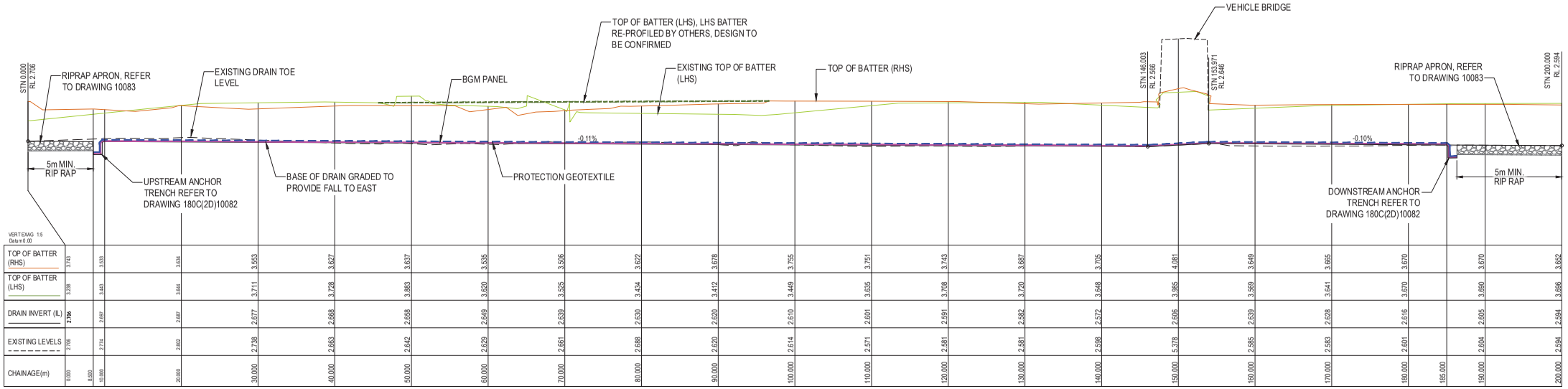
DRAWN BY	CKO NAR	DATE	14/10/2021	CHANGE RECORD NUMBER			CRN
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE

CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
GENERAL ARRANGEMENT PLAN

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180C(2D)10076	A1	E03



CHAINAGE (m)	0.000	8.565	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	185.000	190.000	200.000
TOP OF BATTER (RHS)	3.743	3.533	3.634	3.553	3.627	3.637	3.535	3.506	3.622	3.678	3.755	3.751	3.743	3.687	3.705	4.081	3.649	3.665	3.670	3.670		3.670	3.652
TOP OF BATTER (LHS)	3.238	3.443	3.644	3.711	3.728	3.883	3.620	3.525	3.434	3.412	3.449	3.635	3.708	3.720	3.648	3.985	3.559	3.641	3.670	3.670		3.690	3.696
DRAIN INVERT (IL)	2.706	2.897	2.687	2.677	2.688	2.658	2.649	2.639	2.630	2.620	2.610	2.601	2.591	2.582	2.572	2.606	2.639	2.628	2.616	2.605		2.605	2.594
EXISTING LEVELS	2.706	2.774	2.802	2.738	2.663	2.642	2.629	2.661	2.688	2.620	2.614	2.571	2.581	2.581	2.598	5.378	2.585	2.583	2.601	2.604		2.604	2.594

DRAIN LONGITUDINAL SECTION (MC01)

SCALE 1:250 (HORZ) 1:150 (VER)

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
25/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAR	DATE	14/10/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

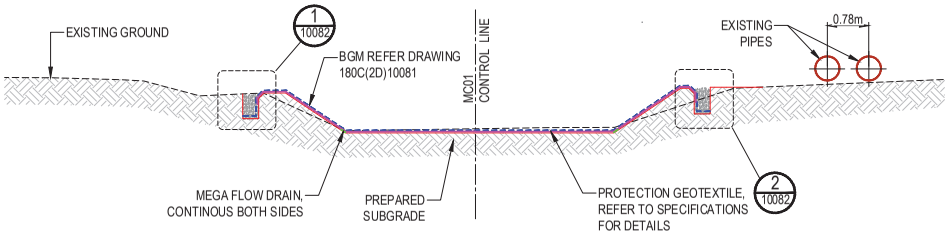
Date: 10:19am 14/06/2022

RioTinto

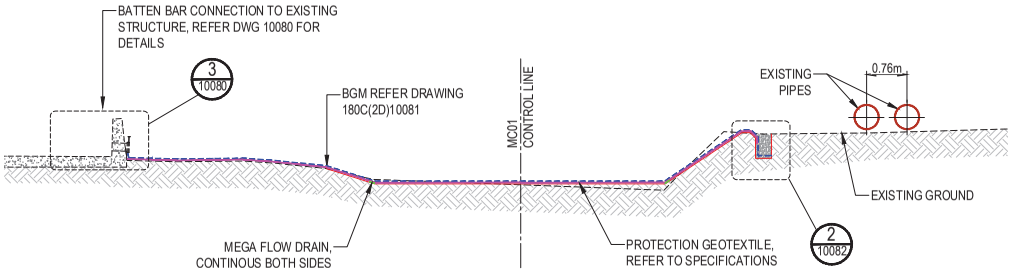
TITLE

CAUSTIC YARD STATION, YARWUN ENVIRONMENTAL IMPROVEMENTS DRAIN LONGITUDINAL SECTION

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180C(2D)10077	A1	E03



SECTION A 10076 CH. 10
SCALE 1:50



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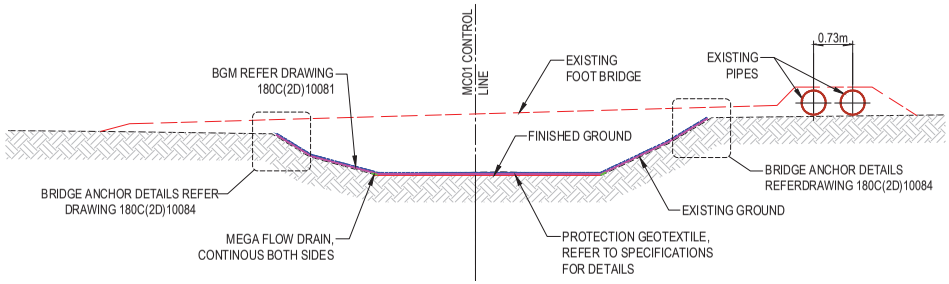
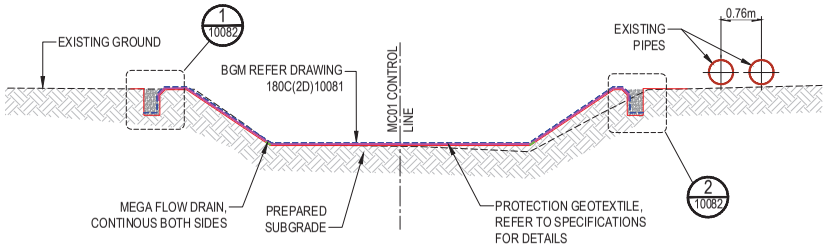
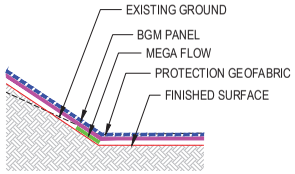
SCALE 1:50



SECTION C 10076 CH. 94
FOOT BRIDGE
SCALE 1:50



SECTION D 10076 CH. 180
SCALE 1:50



GEOFABRIC ARRANGEMENT
SCALE 1:10

0 0.1 0.2 0.3 0.4 0.5
SCALE 1 : 10

0 0.5 1.0 1.5 2.0 2.5
SCALE 1 : 50

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

NOTES:

1. SECTIONS ARE TYPICAL AND SHALL BE ADJUSTED TO SUIT CONDITIONS ALONG THE DRAIN.
2. THE SOUTHERN ANCHOR TRENCH SHALL BE 0.15m FROM THE TOP OF THE BATTER, TO INCREASE OFFSET FROM THE PIPELINE.
3. THE NORTHERN ANCHOR TRENCH SHALL BE A MIN. 0.5m FROM THE TOP OF THE DRAIN BATTER.
4. PREPARED SUBGRADE SHALL CONSIST OF A TRIMMED SURFACE, WITH ALL GRAVEL REMOVED AND RILLS FILLED IN.
5. ANY EDGE OR PROTRUSTION THAT MAY DAMAGE THE BGM SHALL BE SMOOTH OR COVERED WITH STABILISED SAND, REFER TO SPECIFICATIONS FOR DETAILS.

REFERENCE DRAWINGS

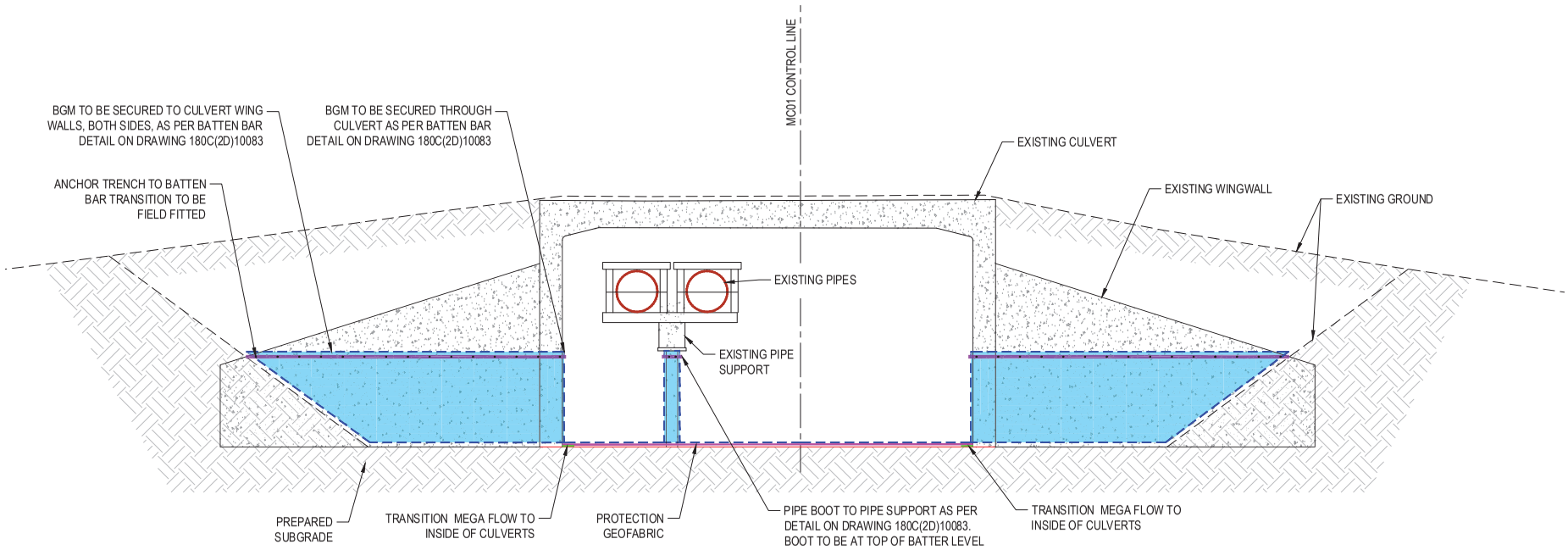
DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
25/10/2021	E02	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
14/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAR	DATE	14/10/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
TYPICAL CROSS SECTIONS

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:50		180C(2D)10078	A1	E03



VIEW E (10076) CH. 148

BGM ARRANGEMENT AT CULVERT LOCATION - SECTION

SCALE 1:25

0 0.25 0.5 0.75 1 1.25

SCALE 1 : 25

NOTES:

1. SECTIONS ARE TYPICAL AND SHALL BE ADJUSTED TO SUIT CONDITIONS ALONG THE DRAIN.
2. THE SOUTHERN ANCHOR TRENCH SHALL BE 0.15m FROM THE TOP OF THE BATTER, TO INCREASE OFFSET FROM THE PIPELINE.
3. THE NORTHERN ANCHOR TRENCH SHALL BE A MIN. 0.5m FROM THE TOP OF THE DRAIN BATTER.
4. PREPARED SUBGRADE SHALL CONSIST OF A TRIMMED SURFACE, WITH ALL GRAVEL REMOVED AND RILLS FILLED IN.
5. ANY EDGE OR PROTRUSTION THAT MAY DAMAGE THE BGM SHALL BE SMOOTH OR COVERED WITH STABILISED SAND, REFER TO SPECIFICATIONS FOR DETAILS.

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

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26/10/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-

DRAWN BY	CKO NAR	DATE	25/10/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

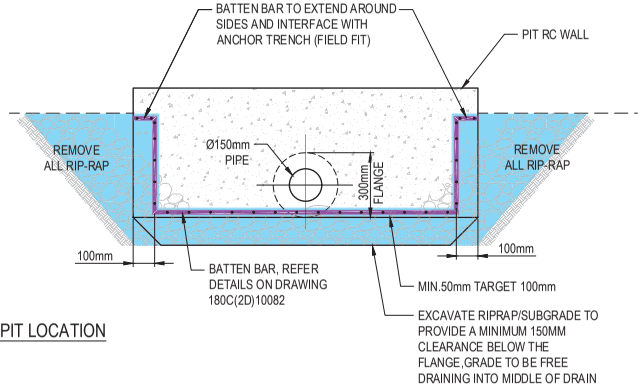
RioTinto

TITLE

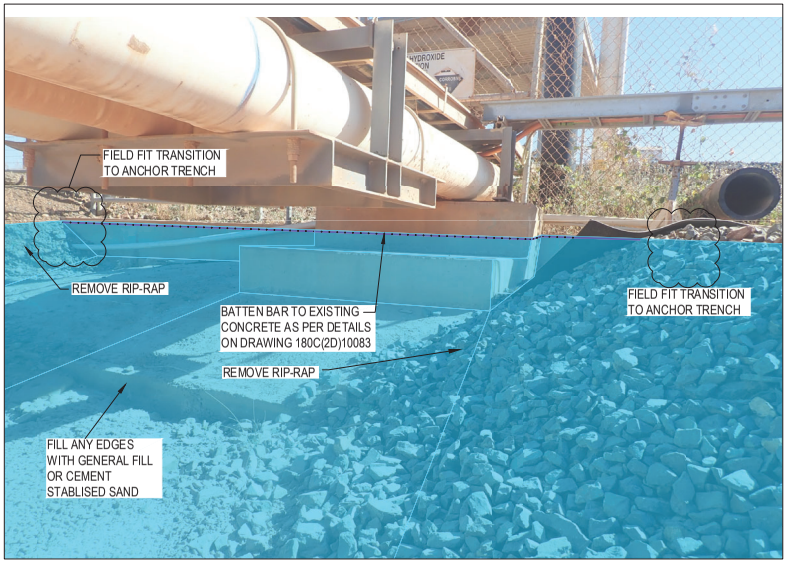
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
BGM ARRANGEMENT AT CULVERT LOCATION

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:50		180C(2D)10079	A1	E03

EXCAVATE RIPRAP/SUBGRADE TO PROVIDE A MINIMUM 150MM CLEARANCE BELOW THE FLANGE,GRADE TO BE FREE DRAINING INTO MIDDLE OF DRAIN



BGM CONNECTION DETAILS AT INLET PIT LOCATION
NOT TO SCALE



BGM CONNECTION DETAILS AT PIPE CROSSING LOCATION
NOT TO SCALE

NOTES:

1. UNLESS NOTED OTHERWISE ALL DIMENSIONS AND REDUCED LEVELS (RL) ARE IN METRES (m)
2. SURVEY DATUMS ARE: GDA 94 (ZONE 56).
3. DESIGN IS BASED ON LiDAR SUPPLIED BY RTAY, DATED AUG. 2021 (FILENAME G2613-125A - MODEL SPACE).

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E03	ISSUED FOR ENGINEERING REVIEW	CKO	DC	-	-	-
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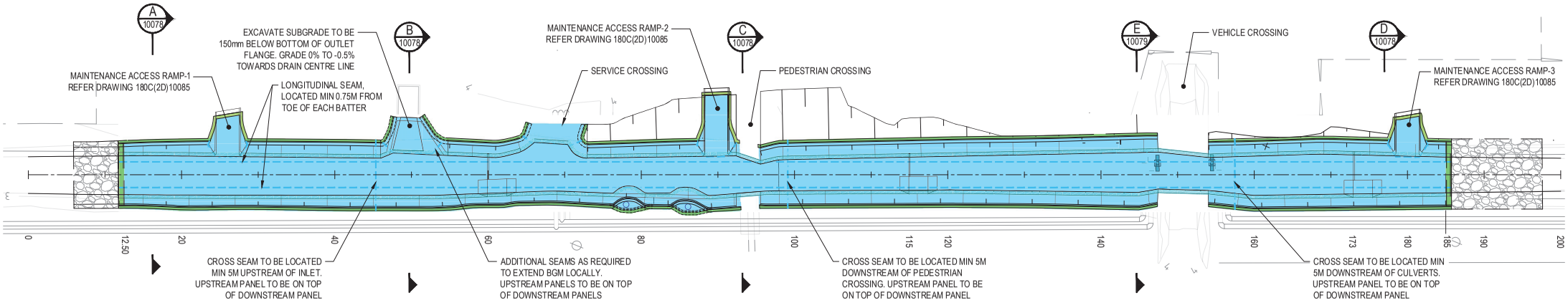
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE

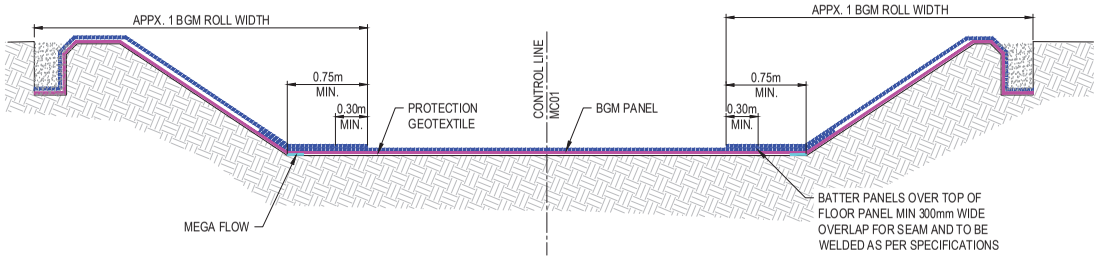
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
INLET PIT & PIPE CROSSING CONNECTION DETAIL

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:50		180C(2D)10080	A1	E03

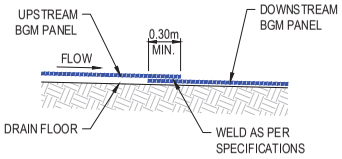


BGM PANEL LAYOUT PLAN
SCALE 1:250

LEGEND
- BGM EXTENTS & PROTECTION GEOTEXTILE
- BGM ANCHOR TRENCH
- BGM SEAM, MIN. 300mm OVERLAP
- MEGAFLOW DRAIN



BGM PANEL ARRANGEMENT SECTION - TYPICAL
SCALE 1:25



BGM PANEL LONGITUDINAL JOINT
SCALE 1:25

0 0.25 0.5 0.75 1 1.25
SCALE 1 : 25

0 2.5 5 7.5 10 12.5
SCALE 1 : 250

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

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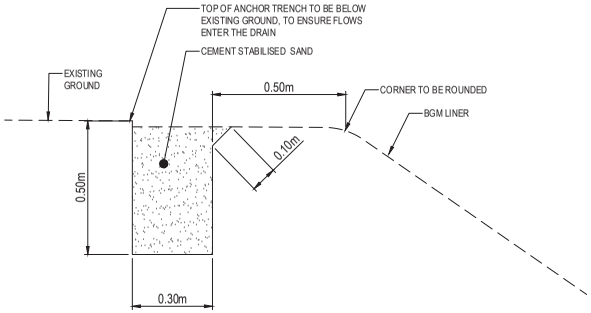
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

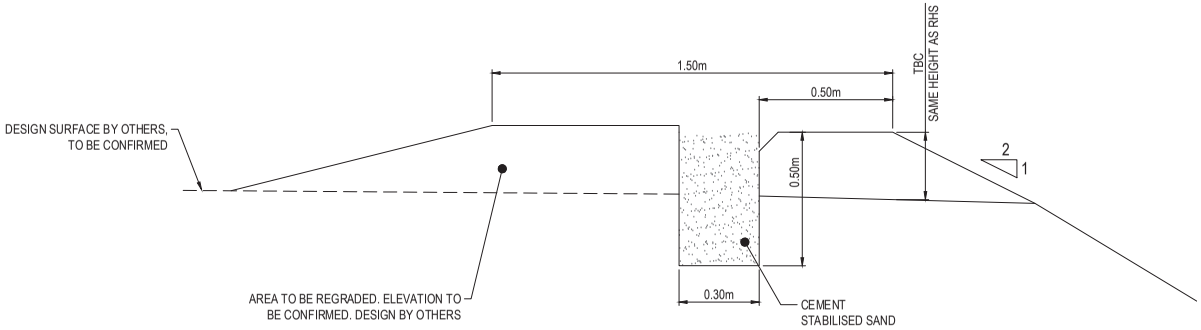
RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
BGM PANEL LAYOUT PLAN & SECTION

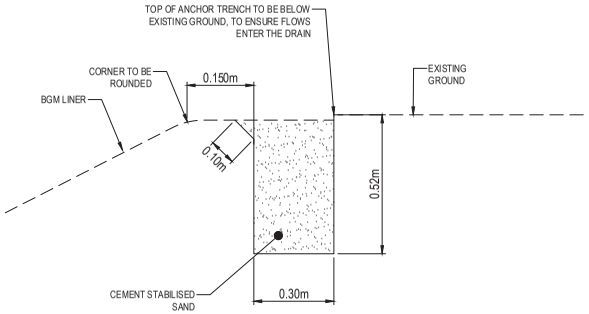
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180C(2D)10081	A1	E03



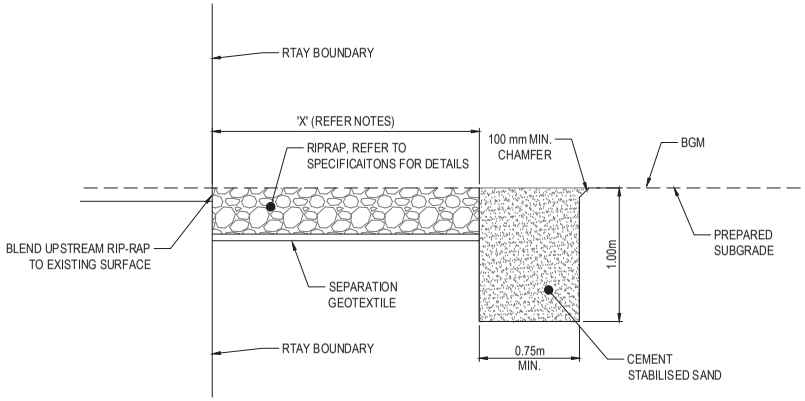
DETAIL 1 (10076) ANCHOR TRENCH (LHS)
SCALE 1:10



DETAIL 3 (10076) TYPICAL BERM
SCALE 1:10



DETAIL 2 (10076) ANCHOR TRENCH (RHS)
SCALE 1:10



CROSS DRAIN ANCHOR TRENCH DETAILS
DOWNSTREAM SIMILAR BUT MIRRORED
SCALE 1:20

0 0.1 0.2 0.3 0.4 0.5
SCALE 1 : 10

0 0.2 0.4 0.6 0.8 1
SCALE 1 : 20

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

NOTES:

1. ANCHOR TRENCH TO BE EXCAVATED IN-SITU AND EXCAVATION FOR RIP-RAP TO BE COMPLETED AFTER BACKFILLING OF ANCHOR TRENCH.
2. FOR UPSTREAM EDGE (WEST) 'X'=MIN 2.25m.
3. FOR DOWNSTREAM EDGE (EAST) 'X'=MIN 5m.

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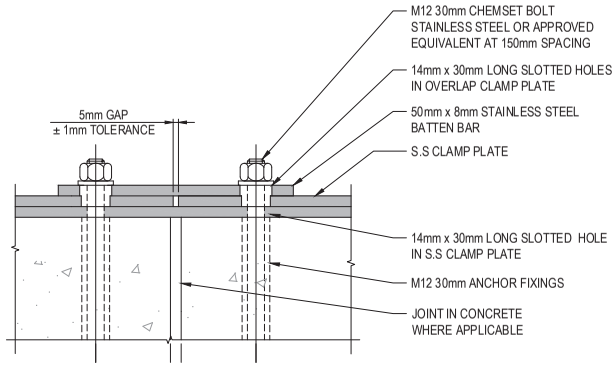
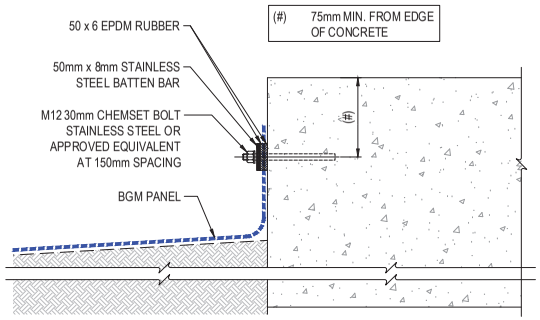
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

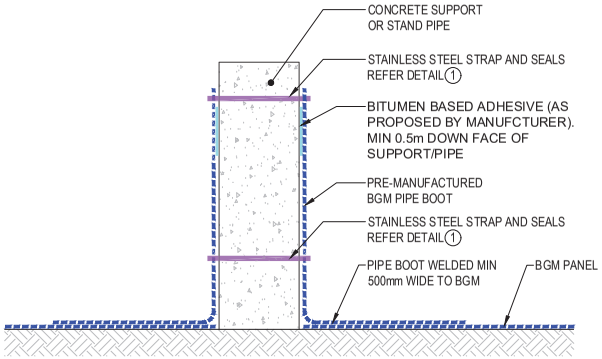
TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
BGM PANEL ANCHOR TRENCH DETAILS

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
AS SHOWN		180C(2D)10082	A1	E03

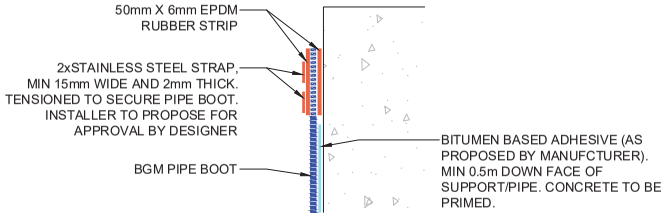




BATTEN BAR CONNECTION - TYPICAL DETAIL
SCALE 1:5



CONCRETE PIPE SUPPORT &
STAND PIPE CONNECTION - SECTION
SCALE 1:5



DETAIL 1
SCALE 1:2

0 0.02 0.04 0.06 0.08 0.1
SCALE 1 : 2

0 0.5 0.1 0.15 0.2 0.25
SCALE 1 : 5

REFERENCE DRAWINGS

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RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
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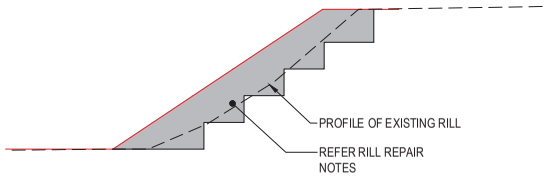
Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

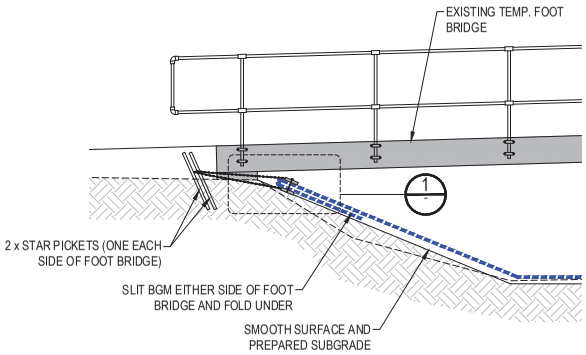
RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
BATTEN BAR AND STAND PIPE DETAILS

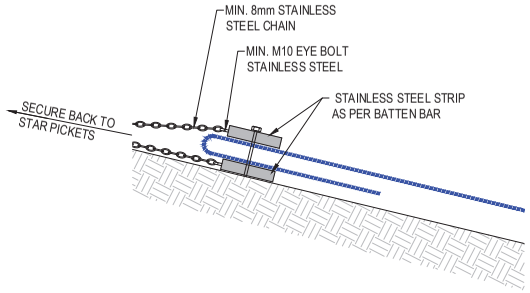
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
AS SHOWN		180C(2D)10083	A1	E03



RILL REPAIR
SCALE 1:20



FOOT BRIDGE TEMPORARY BGM ANCHOR
SCALE 1:20



DETAIL 1
SCALE 1:5

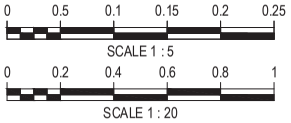
RILL REPAIR NOTES:

OPTION 1 : FILL RILL WITH CEMENT STABILISED SAND

1. REMOVE ALL LOOSE MATERIAL FROM RILL.
2. FILL RILL WITH CEMENT STABLISED SAND.
3. TROWEL SURFACE SMOOTH.

OPTION 2 : EXCAVATE, PREPARE BENCH AND BACK FILL

1. BENCH OUT RILL (OR AREA OF RILLS) WITH EXCAVATOR.
2. BENCHES TO BE NOMINAL 200 TO 300mm HIGH.
3. WET AND LIGHTY RIP / OR PINWHEEL SURFACE.
4. PLACE MOISTURE CONDITIONED FILL, COMPACT USING PINWHEEL.
5. FILL TO BE QMR TYPE 2.5 MATERIAL OR SIMILAR AS APPROVED BY DESIGNER
6. COMPACT USING PINWHEEL TO FORM A HARD SURFACE
7. COMPANY TO ASSESS COMPACTION AND CONFIRM HARD SURFACE IS ACHIEVED



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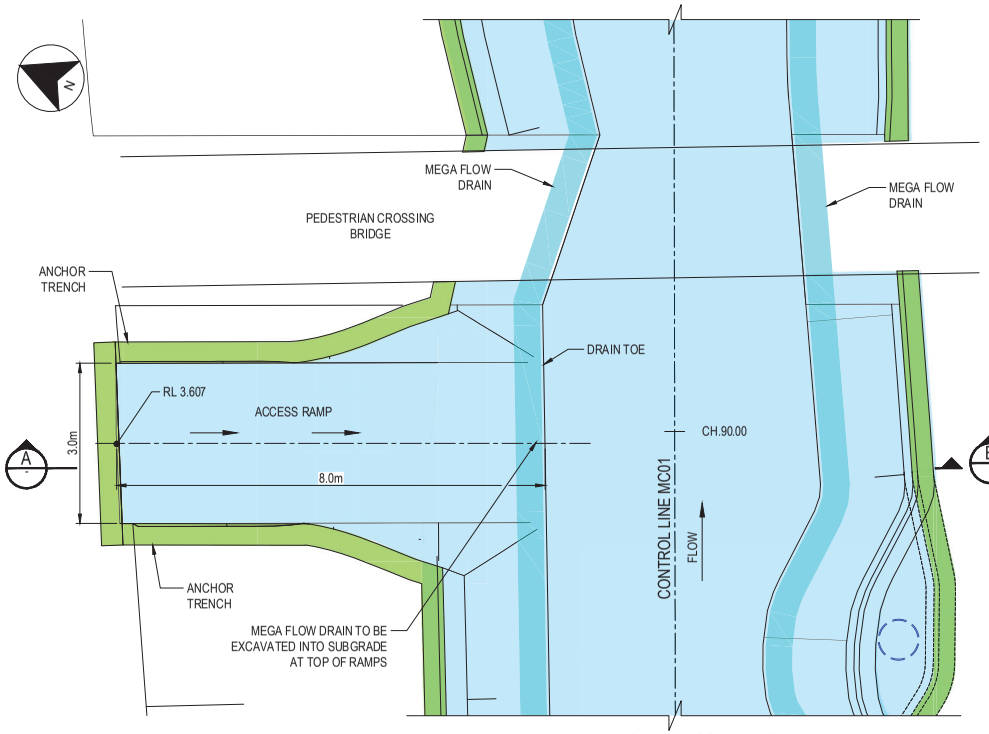
Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

Rio Tinto

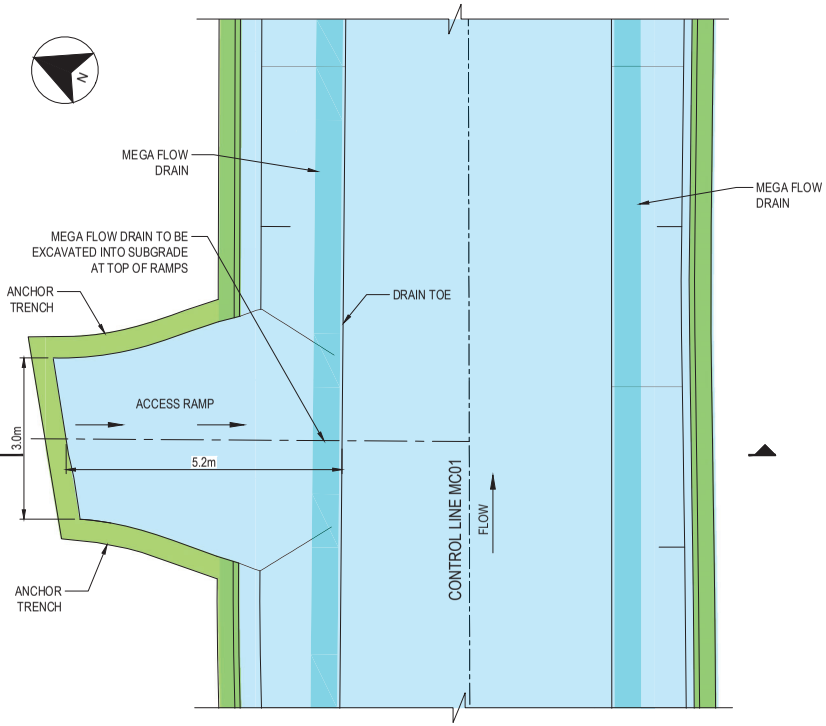
TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
RILL REPAIR AND BGM FIXING AT FOOT BRIDGE

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
AS SHOWN		180C(2D)10084	A1	E03



MAINTENANCE ACCESS RAMP-2 AT (CH.90.00) PLAN

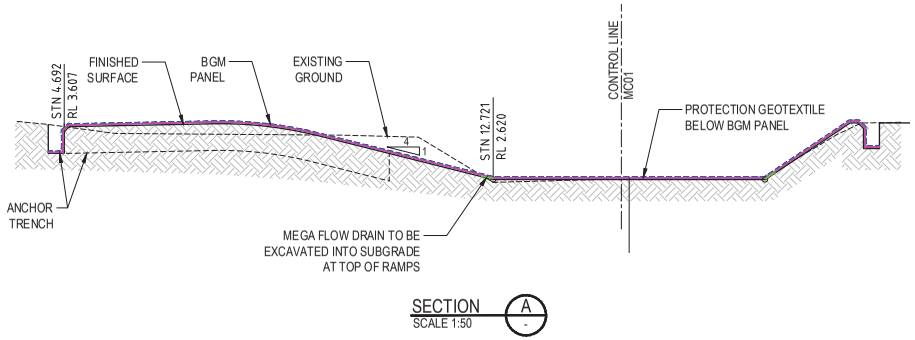
SCALE 1:50



MAINTENANCE ACCESS RAMP-1 (CH.26)-PLAN

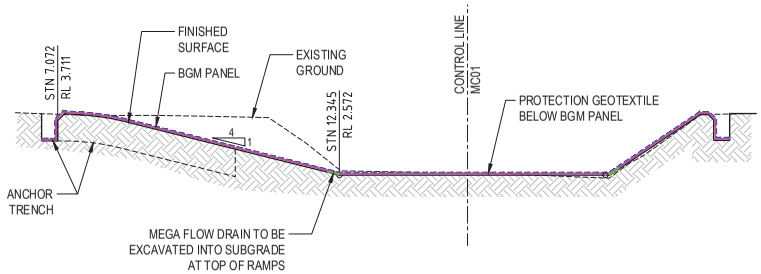
RAMP-3 (CH.180) SIMILAR

SCALE 1:50



SECTION A

SCALE 1:50



SECTION B

SCALE 1:50

0 0.5 1.0 1.5 2.0 2.5

SCALE 1 : 50

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
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DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	A. CROSSLEY	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

RioTinto

TITLE

CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
MAINTENACE ACCESS RAMP DETAILS

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180C(2D)10085	A1	E03

GENERAL NOTES

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER WRITTEN INSTRUCTIONS APPROVED BY THE PROJECT SUPERINTENDENT

G2 ANY DISCREPANCIES SHALL BE REFERRED TO THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK

G3 ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SETOUT, FABRICATION AND CONSTRUCTION

G4 ALL DIMENSIONS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METERS

G5 THE DRAWINGS MUST NOT BE SCALED FOR DIMENSIONS

G6 RTAY STANDARD DRAWINGS APPLYING TO, OR REFERENCED IN, DRAWINGS NOTES (BUT NOT LIMITED TO) INCLUDE:
- 000(2D)00101 (REFINERY GENERAL_GENERAL CONCRETE NOTES)
- 000(2D)00114 (CONCRETE STANDARDS_SLAB ON GRADE DETAILS (CAUSTIC)

G7 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STRUCTURES IN A STABLE AND UNDAMAGED CONDITION AND ENSURING NO PART BECOMES OVERSTRESSED AT ANY TIME DURING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE THE STRUCTURE IS MAINTAINED IN A STABLE AND SAFE CONDITION DURING CONSTRUCTION. NO PART OF THE STRUCTURE IS TO BE OVERSTRESSED DURING CONSTRUCTION.

G8 THE CONTRACTOR SHALL PROVIDE TEMPORARY PIPE SUPPORT DURING CIVIL EARTHWORKS WHEN REQUIRED, METHODOLOGY FOR TEMPORARY PIPE SUPPORT SHALL BE APPROVED BY ATOM PRIOR TO WORKS COMMENCING.

G9 ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

G10 IN THE EVENT OF CONFLICT, AMBIGUITY OR INCONSISTENCY BETWEEN THESE NOTES AND ANY OF THE OTHER DOCUMENTS FORMING THE CONTRACT, THE CONTRACTOR SHALL IMMEDIATELY UPON BECOMING AWARE OF SUCH CONFLICT, AMBIGUITY OR INCONSISTENCY NOTIFY THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR FOR DIRECTION.

G11 WHERE REFERENCE IS MADE IN THE NOTES THAT A PARTICULAR BRAND OF AN ITEM IS TO BE INCORPORATED INTO THE WORKS, IT SHALL MEAN SUCH PARTICULAR BRAND OR AN APPROVED EQUIVALENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SATISFY THE SUPERINTENDENT OF THE SUITABILITY OF ANY EQUIVALENT WHICH THE CONTRACTOR WISHES TO INCORPORATE INTO THE WORKS BEFORE DOING SO. A MINIMUM OF 48 HOURS NOTICE IS TO BE PROVIDED TO THE SUPERINTENDENT OF CHANGED FOR APPROVAL.

G12 ALL WORKS SHALL BE PERFORMED TO THE LINES, LEVELS AND GRADES AS SHOWN ON DRAWINGS AND AS DIRECTED BY THE SUPERINTENDENT UNLESS OTHERWISE NOTED, ALL THE LEVELS SHALL BE FINISHED TO THE TOLERANCES SPECIFIED IN THE REFERENCE STANDARDS AND AS NOTED. CARE SHOULD BE TAKEN TO ENSURE FINISHED SURFACE OF BUND FLOOR WILL FREELY DRAIN TO OUTLETS AND THAT NO LOCALISED PONDING OCCURS.

CONCRETE

C1 ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS

C2 CONCRETE TO BE SUPPLIED BY AN APPROVED PRE-MIX CONCRETE SUPPLIER AND SHALL COMPLY WITH AS1379

C3 TYPE 'GP' CEMENT IS TO BE USED UNLESS NOTED OR APPROVED OTHERWISE

C4 CONCRETE QUALITY SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

CONCRETE ELEMENT	CONCRETE CLASS	STRENGTH GRADE (MPa)	MAXIMUM AGG. SIZE (mm)	SLUMP (mm)	MAX. SHRINKAGE STRAIN AFTER 56 DAYS (MICRONS)
SLABS, WALLS, AND FOOTINGS	NORMAL	N40	20	80	650 x E-6

C5 CONCRETE TO BE COMPACTED USING APPROVED INTERNAL VIBRATORS UNLESS OTHERWISE APPROVED

C6 CONCRETE MUST BE PROPERLY CURED BY KEEPING ALL EXPOSED SURFACES IN A MOIST CONDITION FOR AT LEAST SEVEN DAYS AFTER INITIAL SET UNLESS OTHERWISE APPROVED

C7 ALL CONCRETE EXCAVATION IS TO BE CLEAN AND FREE OF LOOSE MATERIAL AND EXCESS WATER. AREAS OF UNSUITABLE MATERIAL TO BE EXCAVATED, BACKFILLED AND COMPACTED TO THE GEOTECHNICAL ENGINEER'S SPECIFICATION

C8 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 (CONCRETE STRUCTURES), AS3610, AS1379 AND DETAILS PROVIDED ON THE DRAWINGS, UNLESS INSTRUCTED OTHERWISE BY THE SUPERINTENDENT.

C9 CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR.

C10 ALL FORMWORK SHALL CONFORM WITH AS3610.

C11 THE CONTRACTOR SHALL COORDINATE WITH THE SITE ENGINEER & ALL TRADES TO ENSURE THAT PROVISION IS MADE FOR ALL NECESSARY REBATES OR OPENINGS IN CONCRETE, AND CASTING IN OF CONDUITS, WHETHER OR NOT SPECIFICALLY DETAILED ON DRAWINGS.

C12 CLEAR COVER TO CONCRETE SLAB TO BE 50mm TOP, 50mm BOTTOM AND 50mm SIDES.

C13 SCHEDULE OF CONCRETE PROPERTIES TO BE USED FOR THE PARTICULAR SECTION OF WORKS SHALL BE AS FOLLOWS UNLESS OTHERWISE INSTRUCTED: (MIX DESIGNS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR FOR INSPECTION 28 DAYS PRIOR TO POUR.)

C14 CONCRETE SHALL BE COMPACTED BY MEANS OF APPROVED HIGH FREQUENCY MECHANICAL VIBRATORS OF THE IMMERSION TYPE WITH A MINIMUM FREQUENCY OF 120Hz AND WITH SUFFICIENT ENERGY OUTPUT TO ENSURE COMPLETE COMPACTION OF ALL PARTS OF THE CONCRETE SECTION.

CONCRETE - CONT'D

C15 NO BLENDED CEMENTS UNLESS OTHERWISE APPROVED

C16 CLEAR COVER TO CONCRETE REINFORCEMENT, FOR STANDARD FORMWORK AND COMPACTION IN ACCORDANCE WITH NOTE C14, IS AS FOLLOWS UNLESS NOTED OTHERWISE:

CONCRETE ELEMENT	SURFACE	EXPOSURE CLASS AS3600	MINIMUM COVER (mm)
PAD FOOTINGS, STRIP FOOTINGS	ALL SURFACES	A2	70

C17 ALL REINFORCEMENT IS TO BE INSPECTED PRIOR TO THE CONCRETE BEING POURED. A MINIMUM OF 24 HOURS NOTICE IS TO BE GIVEN TO ENGINEER PRIOR TO THE REINFORCEMENT INSPECTION

C18 FORMWORK SHALL BE STRIPPED IN ACCORDANCE WITH 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES

C19 ALL EXTERNAL SLABS TO HAVE A MINIMUM FALL OF 1:100 FOR DRAINAGE PURPOSES UNLESS NOTED OTHERWISE ALL INTERNAL SLABS TO HAVE A FALL OF 1:150 FOR DRAINAGE PURPOSES UNLESS NOTED OTHERWISE ALL INTERNAL DRAINS TO HAVE A FALL OF 1:200 FOR DRAINAGE PURPOSES UNLESS NOTED OTHERWISE

C20 CONCRETE SIZES INDICATED ON THE DRAWINGS DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES OR THE ADDITIONAL DEPTH TO ACHIEVE THE REQUIRED FALLS

C21 ALL EXPOSED CONCRETE SURFACES SHALL BE CURED A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY aFTER INITIAL SET OF THE CONCRETE.

C22 THE CURING METHODS SHALL BE SUBMITTED FOR APPROVAL TO THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR BEFORE CONCRETE IS PLACED.

C23 FORMS SHALL BE CHAMFERED FOR RE-ENTRANT ANGLES AND FILLETED FOR CORNERS. WHERE THESE WILL BE EXPOSED TO VIEW IN THE COMPLETED PROJECT OF THE FACE OF THE BEVEL IN EACH CASE SHALL BE 25mm WIDE UNLESS NOTED OTHERWISE.

C24 THE MINIMUM CLEAR SPACING BETWEEN CONDUITS, CABLES, PIPES AND BARS SHALL BE AS REQUIRED BY AS 3600 14.2.3 BUT NOT LESS THAN THREE DIAMETERS HORIZONTALLY FOR HORIZONTAL CONDUITS, ETC. IN SLABS, WALLS AND FOOTINGS, AND LESS THAN ONE DIAMETER FOR ALL OTHER CONDUITS, ETC.

C25 REQUIRED SURFACE FINISH AND CLASS OF FORMWORK FOR CONCRETE SHALL CONFORM WITH THE FOLLOWING UNLESS OTHERWISE INSTRUCTED BY THE SUPERINTENDENT.

LOCATION	SURFACE	TYPE OF FINSIH	FORMWORK CLASS
FLOOR SLABS WALLS PITS & END WALS	TOP FACE	LIGHT BROOM FINISH	--

C26 FILLING AND BACKFILLING AGAINST CONCRETE WORK SHALL BE DONE ONLY WITH THE PRIOR APPROVAL OF THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR AND A MINIMUM OF 7 DAYS SHALL BE ALLOWED BEFORE ANY BACKFILLING IS PLACED AGAINST NEWLY POURED CONCRETE OR WALLS. MATERIAL SHALL NOT BE PLACED AGAINST CONCRETE CONSTRUCTION UNTIL THE CONCRETE HAVE REACHED SUFFICIENT STRENGTH TO WITHSTAND THE PRESSURE OF THE BACKFILL AS PLACED AND COMPACTED WITHOUT DAMAGE. COMPACTING EQUIPMENT SHALL NOT BE USED CLOSE TO STRUCTURES IN SUCH A WAY AS TO CAUSE DAMAGE OR DISPLACEMENT AND ANY SUCH DAMAGE OR DISPLACEMENT AND ANY SUCH DAMAGE OR DISPLACEMENT CAUSED SHALL BE REMEDIED BY THE CONTRACTOR AT ITS OWN COST BY REMOVAL AND REPLACEMENT OF THE AFFECTED AREAS.

C27 CONSTRUCTION JOINTS SHALL BE USED ONLY WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR. JOINT FACES SHALL BE PROPERLY FORMED PERPENDICULAR TO THE MEMBER AXIS, SCABBLED TO EXPOSE COARSE AGGREGATE, CLEANED FREE OF LAITANCE AND LOOSE MATERIAL AND THOROUGHLY WETTED PRIOR TO CONTINUATION OF CONCRETING. ALTERNATIVELY,THE CONCRETE SET TIME AT JOINT SURFACES SHALL BE RETARDED AND THE SURFACE WATER WASHED TO EXPOSE THE COARSE AGGREGATE PRIOR TO CONTINUATION OF CONCRETING.

C28 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL FORMWORK. NOTWITHSTANDING ANY INSPECTION BY THE PROJECT LEADER AND CONSTUCTION SUPERVISOR, THE RESPONSIBILITY FOR THE STRUCTURAL SUFFICIENCY oF THE WHOLE OF THE FORMWORK SHALL REMAIN ENTIRELY WITH THE CONTRACTOR.

REINFORCEMENT

R1 ALL STEEL REINFORCING SHALL BE SUPPLIED BY RTAY SPECIFIED STEEL SUPPLIER AND SHALL COMPLY WITH AS/NZS4671

R2 REINFORCEMENT SYMBOLS:
- 'D' DENOTES DEFORMED
- 'R' DENOTES ROUND
- 'N' DENOTES NORMAL DUCTILITY
- 'L' DENOTES LOW DUCTILITY
- 'E' DENOTES EARTHQUAKE DUCTILITY
- 'D500N12' DENOTES DEFORMED BAR, STRENGTH GRADE 500MPa, NORMAL DUCTI 12mm
- 'EF' DENOTES BARS IN EACH FACE
- 'IF' DENOTES BARS IN INSIDE FACE
- 'NF' DENOTES BARS IN NEAR FACE
- 'FF' DENOTES BARS IN FAR FACE
- 'EW' DENOTES BARS IN EACH WAY

R3 REINFORCEMENT BARS DENOTED 'N' SHALL BE TYPE D500N

R4 REINFORCEMENT BARS DENOTED 'R' SHALL BE TYPE R250N

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

ENGINEERING REVIEW			
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ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
GENERAL NOTES (SHEET 1)

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
		180C(2D)10089	A1	E01

REINFORCEMENT - CONT'D

R5 REINFORCEMENT MESH SHALL BE TYPE D500L

R6 REINFORCEMENT NOTATION:
- 'N12-300' DENOTES D500N DAR DIAMETER SIZE 12mm AT 300mm CENTRES
- '5N16' DENOTES A TOTAL OF 5 D500N DAR DIAMETER SIZE 16mm

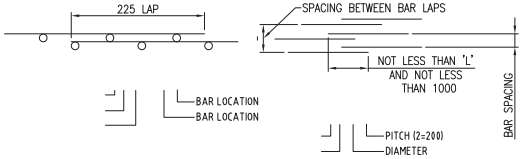
R7 FORMWORK AND REINFORCEMENT TO BE CLEANED PRIOR TO CONCRETING

R8 WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR. ALL WELDING OF REINFORCEMENT SHALL COMPLY WITH 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES

R9 MINIMUM LAPS FOR REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
FABRIC: 2 CROSS WIRES + 25mm
N12: 500mm N16: 700mm N20: 1000mm
COG AND HOOK PIN DIAMETERS AND OVERALL DIMENSIONS SHALL BE AS PER THE REQUIREMENTS OF 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES UNLESS NOTED OTHERWISE.

R10 ALL BAR CRANKS SHALL BE NO GREATER THAN 1 IN 6, UNLESS NOTED OTHERWISE.
REINFORCEMENT BARS SHALL BE AS FOLLOWS:
BARS: GRADE D500N TO AS/NZS 4671
FABRIC: GRADE D500N TO AS/NZS 4671
LIGS & TIES: GRADE D500N TO AS/NZS 4671
ANY STEELWORK SOURCED FROM MILLS LOCATED OUTSIDE AUSTRALIA IS TO BE PROVIDED WITH CERTIFICATES PROVING THE ABOVE REQUIREMENTS AND VERIFIED BY NATA REGISTERED ORGANISATIONS.

R11 TYPICAL REINFORCEMENT NOTATION



R12 ALL REINFORCEMENT SHALL BE PLACED OUTERMOST.

R13 BAR LAP AND DEVELOPMENT LENGTHS ARE BASED ON 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES WITH GRADE 500 REINFORCEMENT AND 50mm CONCRETE COVER TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.

R14 WHERE LAPS ARE SPECIFIED TO BE STAGGERED, THE SET OUT SHALL BE AS SHOWN ABOVE.

R15 MINIMUM DEVELOPMENTS LENGTHS FOR REINFORCING SHALL BE AS FOLLOWS U.N.O.
FOR BARS IN TENSION - AS FOR LAP LENGTH
FOR BARS IN COMPRESSION - 20 BAR DIAMETERS (STRAIGHT LENGTH OF BAR ONLY)

R16 POSITION OF REINFORCING LAPS AND SPLICES UNLESS SHOWN, SHALL BE IN ACCORDANCE WITH 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES AND SHALL BE TO THE APPROVAL OF THE PROJECT LEADER AND CONSTRUCTION SUPERVISOR.

R17 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY IN TRUE PROJECTION OR SCALE.

R18 PROVIDE PROTECTIVE CAPS TO ALL PROJECTING REINFORCEMENT.

R19 ALL REINFORCEMENT SHALL BE SUPPORTED ON PLASTIC OR GRADE 50 CONCRETE CHAIRS GENERALLY AT NOT GREATER THAN 750 CENTRES BOTH WAYS. BAR CHAIRS SUPPORTED ON THE GROUND SHALL HAVE SUITABLE SPREADER PLATES.

R20 ALL REINFORCEMENT SHALL BE SECURED WITH TIE WIRE (AT ALTERNATIVE INTERSECTIONS AT LEAST) AND ALL TIE ENDS SHALL BE TURNED INWARDS CLEAR OF THE COVER ZONE. TIE WIRE PASSING THROUGH THE CONCRETE COVER ZONE SHALL NOT BE PERMITTED.

R21 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION OF REINFORCING BAR.

R22 WELDING OR SITE BENDING OF REINFORCEMENT IS NOT PERMITTED.

R23 ALL REINFORCING SHALL BE PLACED TO THE TOLERANCES DEFINED IN 000(2D)00101 REFINERY GENERAL_GENERAL CONCRETE NOTES.

PIPING:

P1 ALL PIPING MATERIAL SHALL BE DN300 HDPE "BLACK".
P2 ALL PIPING SHALL BE FABRICATED JOINTS WILL BE BUTT WELD UNO.

EARTH WORKS

E1 EARTHWORKS VOLUME SHOWN ARE INDICATIVE ONLY AND DO NOT CONSIDER BULKING OR COMPACTION FACTORS

E2 EARTHWORKS VOLUME DO NOT INCLUDE WORKS FROM TRENCHING PIPEWORK

E3 EARTHWORKS VOLUMES SHOWN ARE FOR BULK WORK ONLY THE SITE IS TO BE GENTLE REGRADE WHERE REQUIRED AND DIVOTS FILL IN AN "MOLE HILL" CUT TO ENSURE THE SITE DRAINS FREELY

E4 IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ALL CIVIL WORKS TIE IN NEATLY TO SURROUNDING AREA AROUND EXISTING SERVICE EQUIPMENT AND STRUCTURES

E5 IT IS THE CONTRACTORS RESPONSIBILITY THAT ALL STAGES OF WORK ARE COMPLETED IN A TIMELY MANNER AND THAT ANY INTERMEDIATE STAGE (SUCH AS BGM/ASPHALT) ARE STILL ABLE TO FREELY DRAIN

E6 BGM INSTALL REFER TO 180C(2D)10081. ALL LAPS TO FACE DOWN STREAM. LAPS TO BE 300MM AND BONDED BY HEAT AND LOCALISED COMPRESSION. SEALING TO EXISTING STRUCTURE WILL BE WITH AXTER BITUMSEAL OR SAMIPRIME K2-P AND HEAT AND COMPRESSION PROCESS.

E7 BATTERY LIMIT INDICATED BY CL1 AND CL3 (REFER DRG 180C(2D)10094). REFER TO DRAWING FOR EXTENDED BATTERY LIMIT NOTES.

E8 ALL FILL SHALL BE COMPACTED TO 95% M.D.D. AND HAVE A MINIMUM BEARING CAPACITY OF 150mPa

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ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

Gladstone Ports Corporation
APPROVED
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Date: 10:19am 14/06/2022

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
GENERAL NOTES (SHEET 2)

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
		180C(2D)10090	A1	E01

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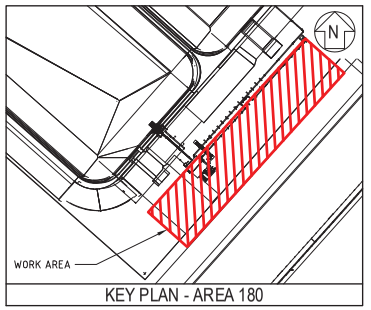
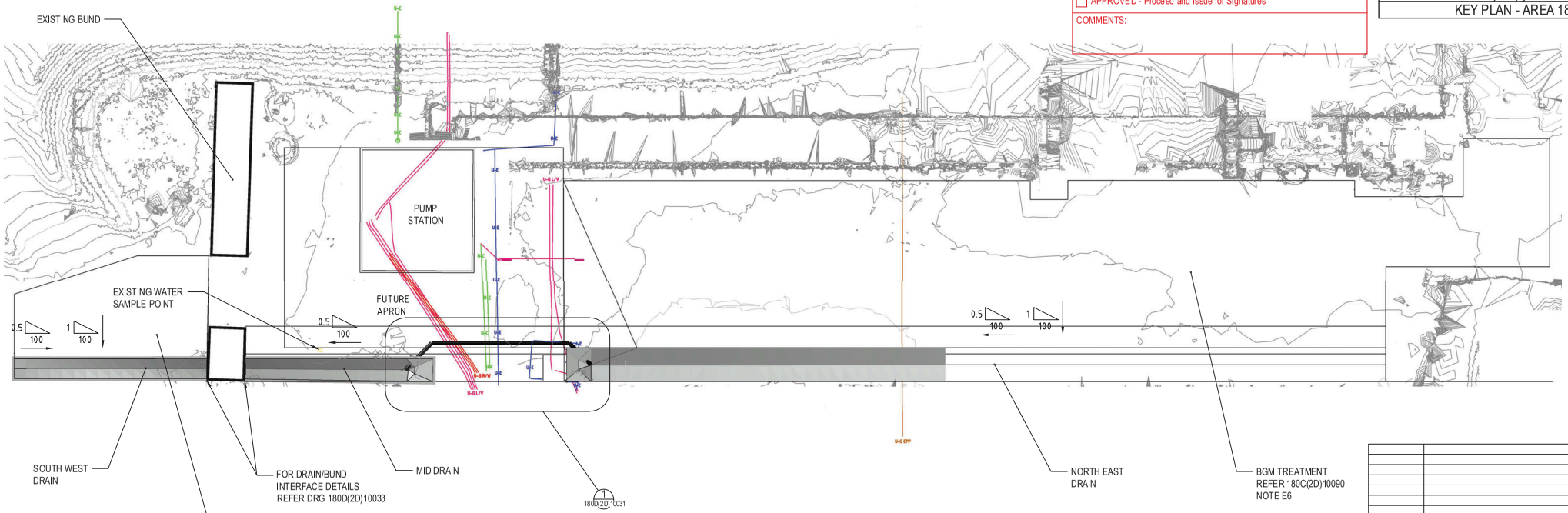
COMMENTS:



KEY PLAN - AREA 180

TRUE NORTH

TO CAUSTIC BLADDERS



PLAN VIEW
CAUSTIC YARD

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RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
SERVICES ARRANGEMENT

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:200		180C(2D)10091	A1	E01

LEGEND:

U–G L/V	UNGERGROUND LV ELECTRICAL
U–G R/W	UNDERGROUND RAW WATER
U–E	UNDERGROUND EARTH STRAPPING
U–G EPP	UNDERGROUND PROCESS EFFLUENT
U–C	UNDERGROUND CAUSTIC

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TRUE NORTH

ENGINEERING REVIEW			
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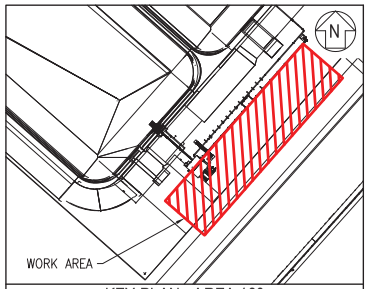
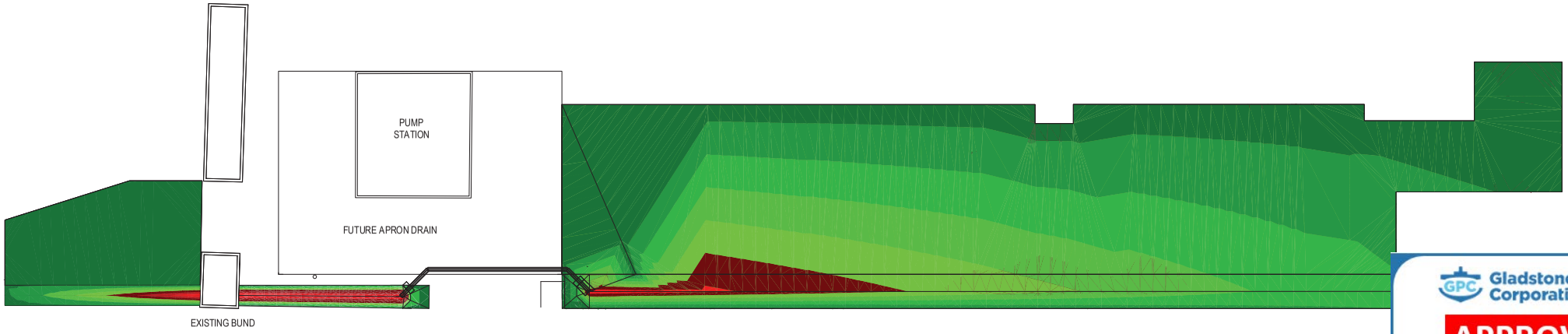


KEY PLAN - AREA 180



PLAN VIEW
CAUSTIC YARD FSL

Elevations Table - SouthWest FSL			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.300	-0.200	
2	-0.200	-0.100	
3	-0.100	0.000	
4	0.000	0.100	
5	0.100	0.200	
6	0.200	0.300	
7	0.300	0.400	

Elevations Table - Mid FSL			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.400	-0.300	
2	-0.300	-0.200	
3	-0.200	-0.100	
4	-0.100	0.000	
5	0.000	0.100	
6	0.100	0.200	
7	0.200	0.300	

Elevations Table - NorthEast FSL			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.300	-0.200	
2	-0.200	-0.100	
3	-0.100	0.000	
4	0.000	0.100	
5	0.100	0.200	
6	0.200	0.300	
7	0.300	0.400	
8	0.400	0.500	
9	0.500	0.600	

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RPEQ ENGINEER		DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISC/PLINE ENGINEER		DATE	

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
FINISHED SURFACE LEVEL EXHIBIT

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:200		180C(2D)10092	A1	E01

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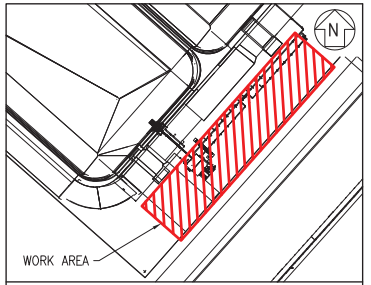
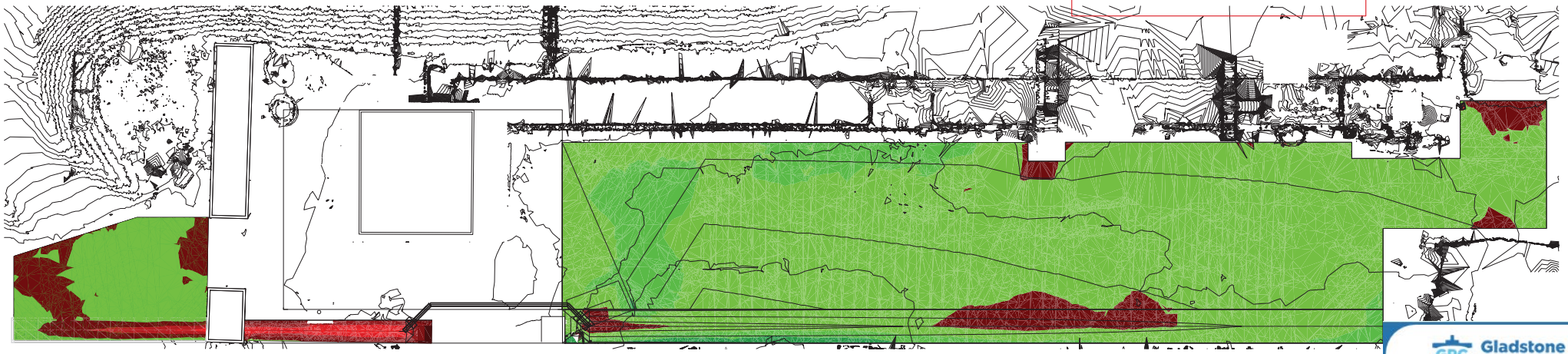


KEY PLAN - AREA 180



PLAN VIEW
CAUSTIC YARD FSL

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Elevations Table - Cut And Fill West Grade			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.600	-0.400	
2	-0.400	-0.200	
3	-0.200	0.000	
4	0.000	0.200	
5	0.200	0.400	

Elevations Table - Cut And Fill Mid Grade			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.800	-0.600	
2	-0.600	-0.400	
3	-0.400	-0.200	
4	-0.200	0.000	
5	0.000	0.200	

Elevations Table - Cut And Fill East Grade			
Number	Minimum Elevation	Maximum Elevation	Color
1	-1.000	-0.800	
2	-0.800	-0.600	
3	-0.600	-0.400	
4	-0.400	-0.200	
5	-0.200	0.000	
6	0.000	0.200	
7	0.200	0.400	
8	0.400	0.600	
9	0.600	0.800	

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
Southwest Cut and Fill	1.100	1.100	133.246sq.m	3.155 Cu. M.	3.317 Cu. M.	0.162 Cu. M.<Fill>
mid surface cut and fill	1.100	1.100	23.286sq.m	9.174 Cu. M.	0.011 Cu. M.	9.164 Cu. M.<Cut>
NorthEast Cut and Fill	1.100	1.100	1126.588sq.m	4.759 Cu. M.	119.782 Cu. M.	115.023 Cu. M.<Fill>
Totals			1283.120sq.m	17.088 Cu. M.	123.110 Cu. M.	106.021 Cu. M.<Fill>

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	RVENG	DVENG
06/12/2021	E01	ISSUED FOR ENGINEERING REVIEW	LK				

DRAWN BY	L KAVANAGH	DATE	06/12/2021	CHANGE RECORD NUMBER			
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER		DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
CUT AND FILL EXHIBIT

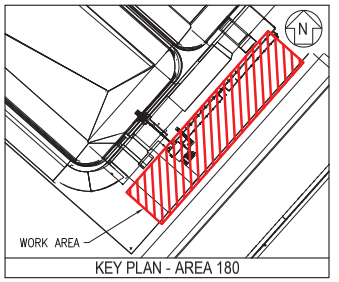
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:200		180C(2D)10093	A1	E01

ISSUED FOR ENGINEERING REVIEW
NOT FOR CONSTRUCTION

ENGINEERING REVIEW			
	INITIAL REVIEW		
TITLE	NAME	SIGN	DATE
DRAWN BY			
DRAFT CHECKER			
RPEQ ENGINEER			
ENGINEER CHECKED			
RTY ACCEPTANCE			
RTY PROJECT ENGINEER			
RTY LEAD DRAFTSPERSON			
RTY DISC ENGINEER			

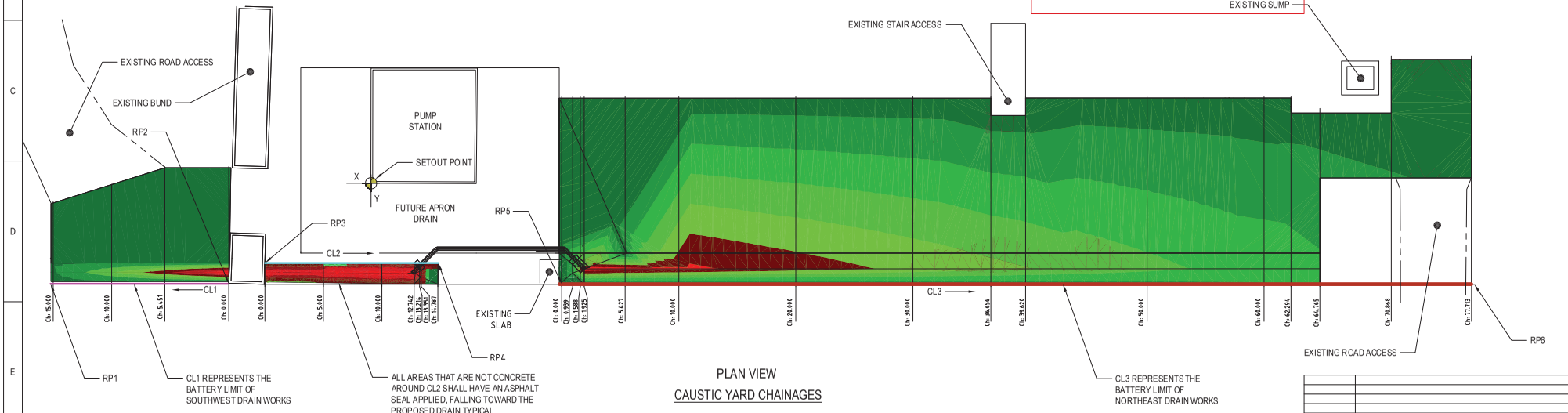
☐ NOT APPROVED - Revise and Re-Submit for Engineering Review
☐ APPROVED EXCEPT AS NOTED - Revise and Issue for Signatures
☐ APPROVED - Proceed and Issue for Signatures

COMMENTS:



KEY PLAN - AREA 180

TRUE NORTH



CL1 REPRESENTS THE BATTERY LIMIT OF SOUTHWEST DRAIN WORKS

ALL AREAS THAT ARE NOT CONCRETE AROUND CL2 SHALL HAVE AN ASPHALT SEAL APPLIED, FALLING TOWARD THE PROPOSED DRAIN TYPICAL

CL3 REPRESENTS THE BATTERY LIMIT OF NORTHEAST DRAIN WORKS

PLAN VIEW
CAUSTIC YARD CHAINAGES

REFERENCE POINT SCHEDULE		
	X	Y
RP1	−27.370	−8.583
RP2	−12.237	−8.582
RP3	−9.055	−6.815
RP4	+5.723	−6.816
RP5	+16.083	−8.581
RP6	+94.215	−8.625

SOUTHWEST DRAIN ALIGNMENT
MID DRAIN ALIGNMENT
NORTHEAST DRAIN ALIGNMENT

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PEN/ENG
06/12/2021	E01	ISSUED FOR ENGINEERING REVIEW	LK			

REFERENCE DRAWINGS

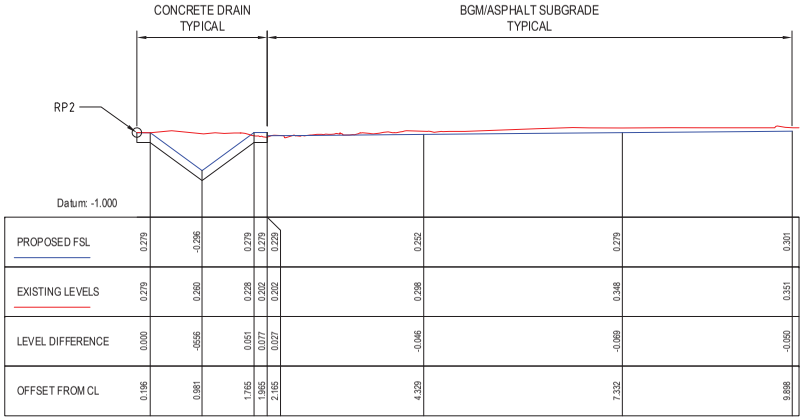
DRAWN BY	L KAVANAGH	DATE	06/12/2021	CHANGE RECORD NUMBER		
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE
RPEQ ENGINEER		DATE		RTY LEAD DRAFTSPERSON		DATE
ENGINEER CHECKED		DATE		RTY DISCIPLINE ENGINEER		DATE

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
CHAINAGE DETAILS

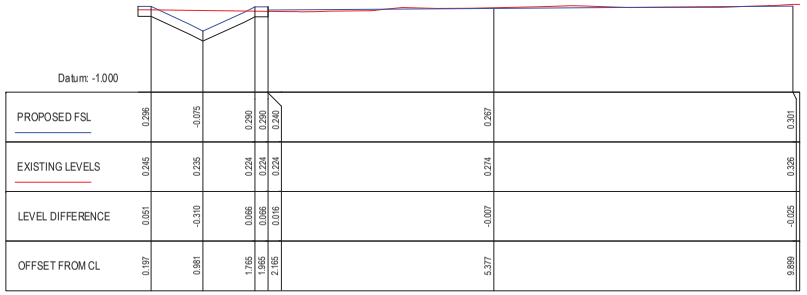
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:200		180C(2D)10094	A1	E01

NOTES:
1. PROPOSED FSL IS TO EITHER TOC OR SUBGRADE.
2. SUBGRADE ALLOWS FOR 50MM OF IMPERMEABLE ASPHALT LAYER.
3. SEE 180D(2D)10031 (SECTION A) FOR TYPICAL DRAIN SECTION.
4. ALL DIMENSION ARE IN METRES UNLESS NOTED OTHERWISE.



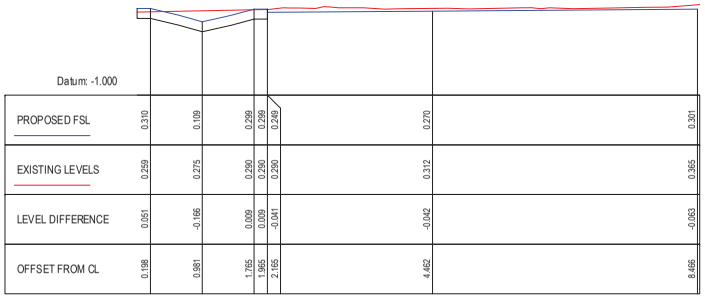
PROPOSED FSL	0.279	-0.296	0.279	0.279	0.252	0.279	0.301
EXISTING LEVELS	0.279	0.260	0.228	0.202	0.298	0.348	0.351
LEVEL DIFFERENCE	0.000	-0.556	0.051	0.077	-0.046	-0.069	-0.050
OFFSET FROM CL	0.196	0.981	1.765	1.965	4.329	7.332	9.898

CH: 0.000
"X" = 0.575



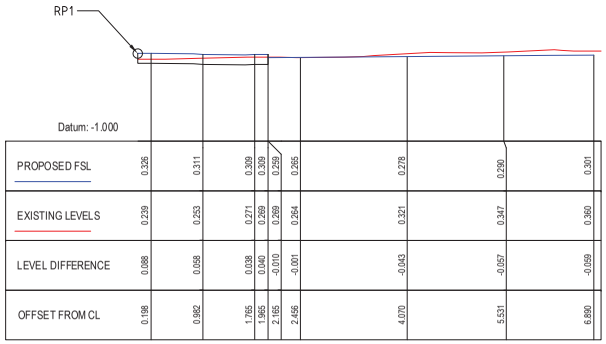
PROPOSED FSL	0.296	-0.075	0.290	0.290	0.240	0.267	0.301
EXISTING LEVELS	0.245	0.235	0.224	0.224	0.224	0.274	0.326
LEVEL DIFFERENCE	0.051	-0.310	0.066	0.066	0.016	-0.007	-0.025
OFFSET FROM CL	0.197	0.981	1.765	1.965	2.165	5.377	9.899

CH: 5.000
"X" = 0.371



PROPOSED FSL	0.310	0.109	0.299	0.299	0.249	0.270	0.301
EXISTING LEVELS	0.259	0.275	0.290	0.290	0.290	0.312	0.365
LEVEL DIFFERENCE	0.051	-0.166	0.009	0.009	-0.041	-0.042	-0.063
OFFSET FROM CL	0.198	0.981	1.765	1.965	2.165	4.462	8.466

CH: 10.000
"X" = 0.201



PROPOSED FSL	0.326	0.311	0.309	0.309	0.259	0.265	0.278	0.290	0.301
EXISTING LEVELS	0.239	0.253	0.271	0.269	0.269	0.264	0.321	0.347	0.360
LEVEL DIFFERENCE	0.088	0.058	0.038	0.040	-0.010	-0.001	-0.043	-0.057	-0.059
OFFSET FROM CL	0.198	0.982	1.765	1.965	2.165	2.456	4.070	5.531	6.890

CH: 15.000
"X" = 0.015

CROSS SECTION VOLUMES
CAUSTIC YARD SOUTHWEST DRAIN

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

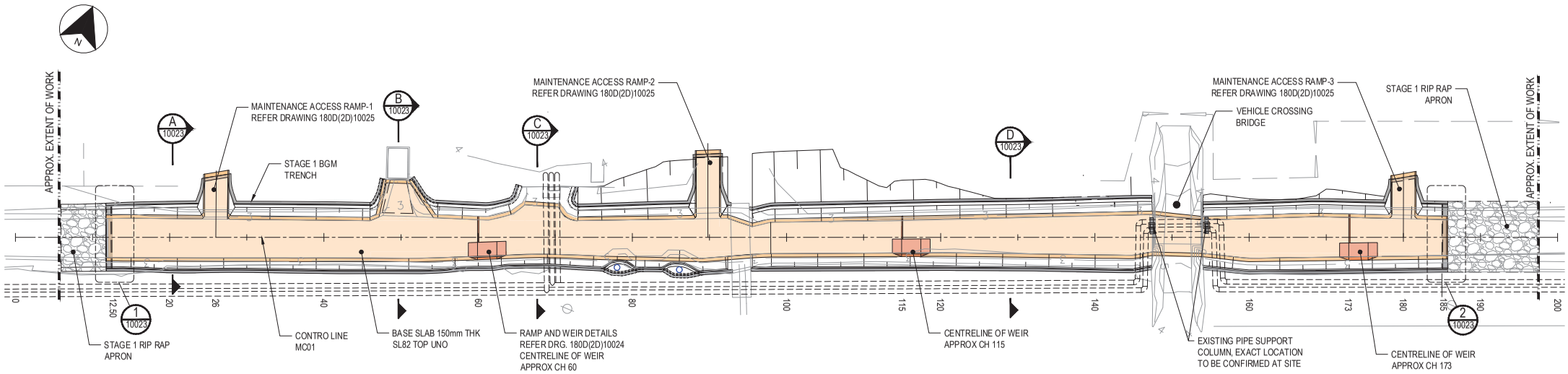
DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PVENG	DENG
07/12/2021	E01	ISSUED FOR ENGINEERING REVIEW	LK				

DRAWN BY	L KAVANAGH	DATE	07/12/2021	CHANGE RECORD NUMBER			
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER		DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
180 CAUSTIC TRANSFER
REGRADING WORKS
SOUTHWEST DRAINAGE SECTIONS

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
NTS		180C(2D)10095	A1	E01



GENERAL ARRANGEMENT PLAN - STAGE 2

SCALE 1:250

CONCRETE NOTES :

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600.
2. SIZE OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
3. CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:

ELEMENT	EXPOSURE CLASSIFICATION	CONCRETE CLASS	COVER		
			BOTTOM	TOP	SIDES
BASE SLAB	B2	N40	50	45	50
WEIRS, KERBS, RAMPS	B2	N40	30	45	45

4. MAXIMUM AGGREGATE SIZE SHALL BE 20mm, AND MAXIMUM SLUMP OF 80mm.
5. ALL CONCRETE SHALL BE VIBRATED. IMMEDIATELY AFTER THE SCREEDING PROCESS APPLY ALIPHATIC ALCOHOL. IF RE-SCREEDING RE-APPLY ALIPHATIC ALCOHOL AFTER EACH FINISHING TREATMENT. ALL CONCRETE SHALL BE CURED BY AN APPROVED METHOD FOR 7 DAYS IMMEDIATELY AFTER CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DAMAGE.
6. ALL CONCRETE SUPPLIED TO SITE SHALL BE TESTED IN ACCORDANCE WITH AS3600 UNO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGAGING A CONCRETE TESTING ORGANISATION WITH A NATA REGISTERED TESTING LABORATORY.
7. PRIOR TO SUPPLY OF CONCRETE TO SITE THE CONTRACTOR SHALL OBTAIN FROM THEIR NOMINATED CONCRETE SUPPLIER AND FORWARD TO THE SUPERINTENDENT A COPY OF THE LATEST PRODUCTION ASSESSMENT REPORT FOR THE NOMINATED NORMAL CLASS CONCRETE GRADES SPECIFIED.
8. IN ADDITION TO PRODUCTION ASSESSMENT BY THE SUPPLIER, CONCRETE SUPPLIED TO SITE SHALL BE SUBJECT TO PROJECT ASSESSMENT IN ACCORDANCE WITH AS1379:2007.

STRENGTH AND SLUMP SAMPLING FREQUENCY SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

NORMAL CLASS CONCRETE	MINIMUM NUMBER OF SAMPLES (28 DAY STRENGTH)	
NUMBER OF BATCHES FOR EACH TYPE AND GRADE OF CONCRETE SUPPLIED PER DAY	COLUMNS AND LOAD BEARING WALL ELEMENTS (PER BATCH)	OTHER ELEMENTS (PER DAY)
1 2 TO 5 6 TO10 11 TO 20 EACH ADDITIONAL 10	1 1 1 1 1	1 2 3 4 1 ADDITIONAL
SPECIAL CLASS CONCRETE	MINIMUM NUMBER OF SAMPLES	
NUMBER OF BATCHES FOR EACH TYPE AND GRADE OF CONCRETE SUPPLIED PER DAY	28 DAY STRENGTH ALL ELEMENTS (PER BATCH)	56 DAY DRYING SHRINKAGE ALL ELEMENTS (PER DAY)
1 2 TO 5 6 TO10 11 TO 20 EACH ADDITIONAL 10	1 1 1 1 1	1 1 1 1 1

9. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.
10. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
11. REINFORCEMENT SHALL BE TO AS 1302 AND DESIGNATED BY THE FOLLOWING SYMBOLS:
    N = DEFORMED BAR TO AS/NZS 4671 GRADE D500N
    R = PLAIN ROUND BARS GRADE 250R TO AS 1302
    SL = WIRE MESH GRADE D500L TO AS/NZS 4671
    THE NUMBER IMMEDIATELY FOLLOWING THE BAR GRADE SYMBOL REPRESENTS THE NOMINAL BAR DIAMETER IN MILLIMETERS.
12. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS OTHERWISE APPROVED BY THE ENGINEER. ALL LAPS SHALL BE FULL TENSION LAPS
13. ALL REINFORCEMENT SHALL BE SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS, SPACERS AND SUPPORT BARS AT NOT GREATER THAN 1m CRS. METAL BAR CHAIRS, SPACERS, CRADLES ETC. SHALL NOT BE USED ON SURFACES OF ELEMENTS WITH EXPOSURE CLASSIFICATION HIGHER THAN B1.
14. WHERE TRANSVERSE TIE-BARS ARE NOT SHOWN PROVIDE N12-400, SPLICE WHERE NECESSARY AND LAP WITH MAIN BARS 400mm.
15. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
16. DEVELOPMENT LENGTH TABLE - USE FOR LAP LENGTHS AND LENGTH OF BAR TO EXTEND PAST Z BARS ETC.

BAR SIZE	STRUCTURAL ELEMENT		
	SLAB ≤ 300 THICK	BEAMS, WALLS AND SLAB > 300 THICK	COLUMNS (COMPRESSION SPLICE)
N12	600	750	500
N16	850	1100	600
N20	1150	1450	800
N24	1450	1800	1000
N28	1700	2200	1150
N32	2000	2600	1300

17. CAST IN CONDUITS, PIPES ETC. SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF THE SLAB, BEAM OR FOOTING DEPTH. THE CLEAR SPACING BETWEEN DIAMETERS OR 40mm, WHICHEVER IS GREATER. CAST IN CONDUITS, PIPES ETC. SHALL NOT BE PLACED WITHIN THE EXTERNAL COVER ZONE OF THE REINFORCEMENT AND SHALL MAINTAIN A MINIMUM 20mm CLEARANCE TO THE REINFORCEMENT.
18. SITE BENDING OF REINFORCEMENT BARS SHALL BE DONE WITHOUT HEATING USING MECHANICAL BENDING TOOLS.
19. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

LEGEND:

- CONCRETE SLAB
- CONCRETE KERB
- CONCRETE WEIR & RAMP
- EXISTING BGM ANCHOR TRENCH

NOTES:

1. UNLESS NOTED OTHERWISE ALL DIMENSIONS AND REDUCED LEVELS (RL) ARE IN METRES (m)
2. SURVEY DATUMS ARE: GDA 94 (ZONE 56).
3. DESIGN IS BASED ON LiDAR SUPPLIED BY RTA, DATED AUG. 2021 (FILENAME G2613-125A - MODEL SPACE).
4. CONTROL LINE MC01 SETTING OUT POINT REFER DRAWING 180C(2D)10076.

0 2.5 5 7.5 10 12.5

SCALE 1 : 250

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	TP	-	-	-

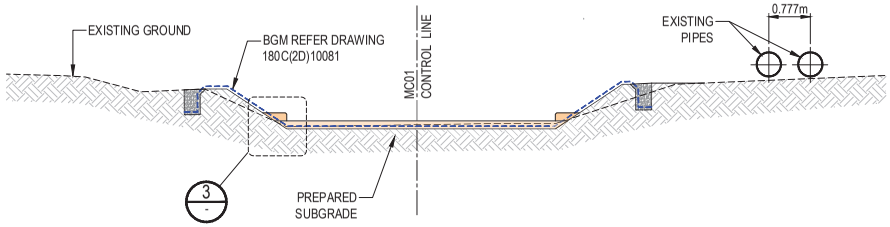
DRAWN BY	CKO NAR	DATE	01/11/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	T. PIGGINS	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

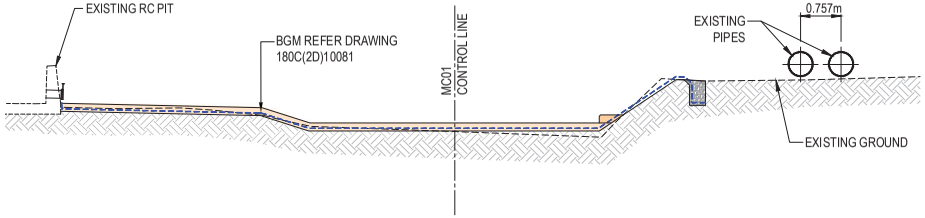
TITLE

CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
GENERAL ARRANGEMENT PLAN - STAGE 2

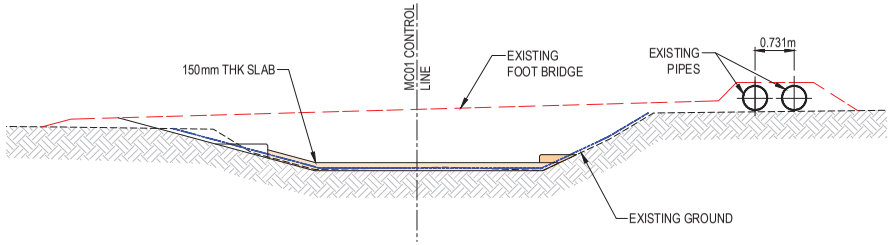
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180D(2D)10022	A1	E01



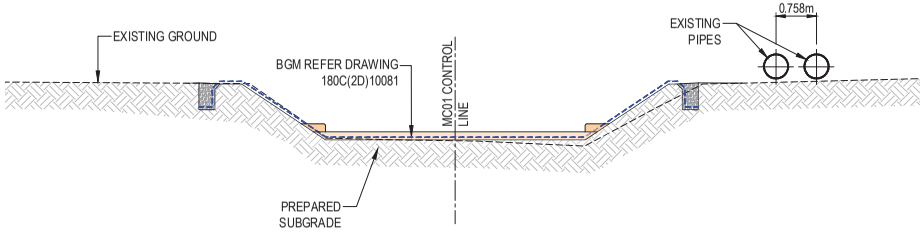
SECTION A
SCALE 1:50 — 10022



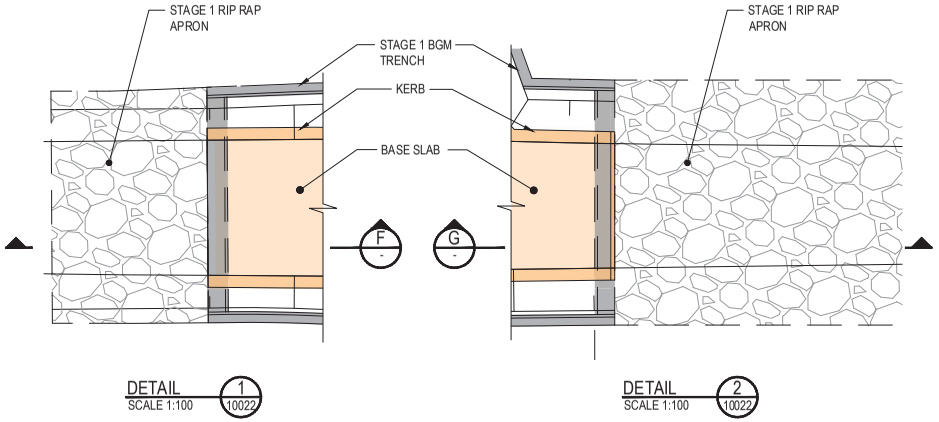
SECTION B
SCALE 1:50 — 10022



SECTION C
SCALE 1:50 — 10022

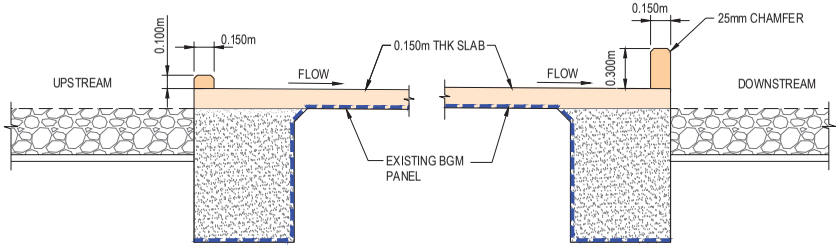


SECTION D
SCALE 1:50 — 10022



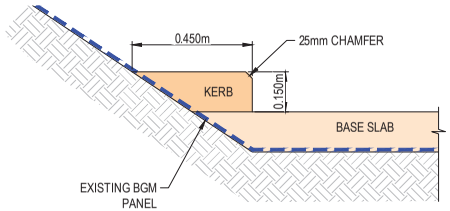
DETAIL 1
SCALE 1:100 — 10022

DETAIL 2
SCALE 1:100 — 10022



SECTION F
SCALE 1:20 — -

SECTION G
SCALE 1:20 — -



DETAIL 3
SCALE 1:10 — -

0 0.1 0.2 0.3 0.4 0.5
SCALE 1 : 10

0 0.2 0.4 0.6 0.8 1
SCALE 1 : 20

0 0.5 1.0 1.5 2.0 2.5
SCALE 1 : 50

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
08/11/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	TP	-	-	-

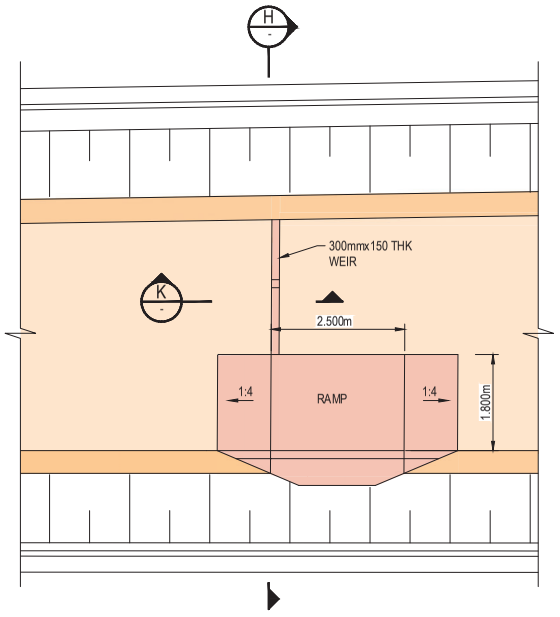
DRAWN BY	CKO NAR	DATE	01/11/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	T. PIGGINS	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

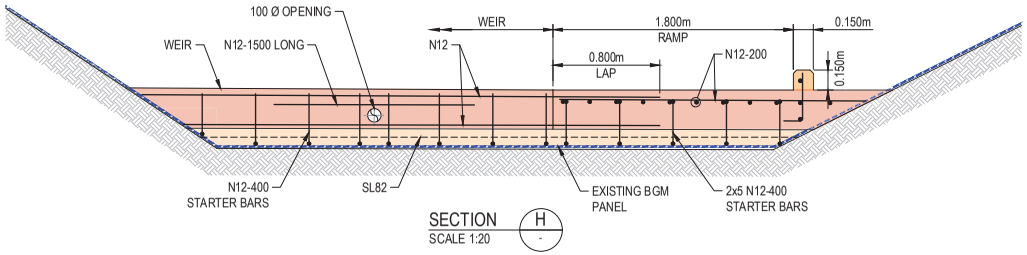
TITLE

CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
TYPICAL CROSS SECTIONS AND DETAILS - STAGE 2

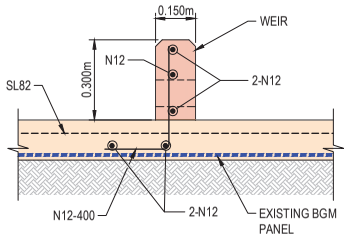
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180D(2D)10023	A1	E01



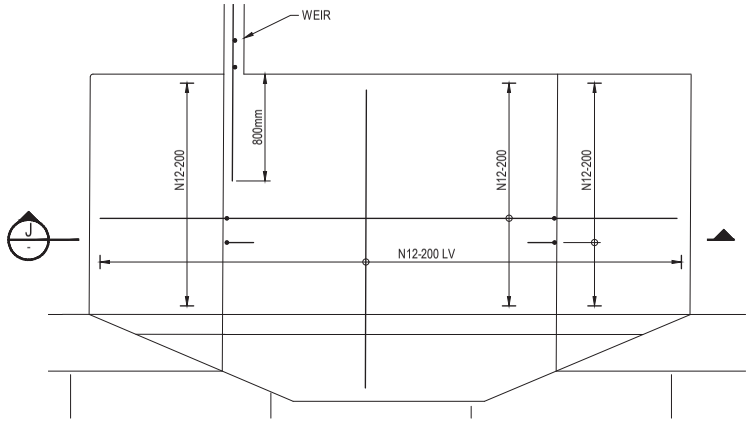
WEIR & RAMP - PLAN
SCALE 1:50



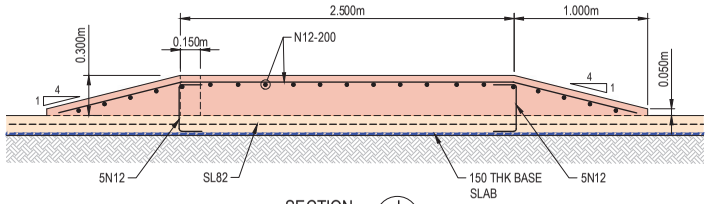
SECTION H
SCALE 1:20



SECTION K
SCALE 1:10



RAMP REINFORCEMENT - PLAN
SCALE 1:20



SECTION J
SCALE 1:20

0 0.1 0.2 0.3 0.4 0.5
SCALE 1 : 10

0 0.2 0.4 0.6 0.8 1
SCALE 1 : 20

0 0.5 1.0 1.5 2.0 2.5
SCALE 1 : 50

Gladstone Ports Corporation

APPROVED

Name: Erin Clark

Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
01/11/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	TP	-	-	-

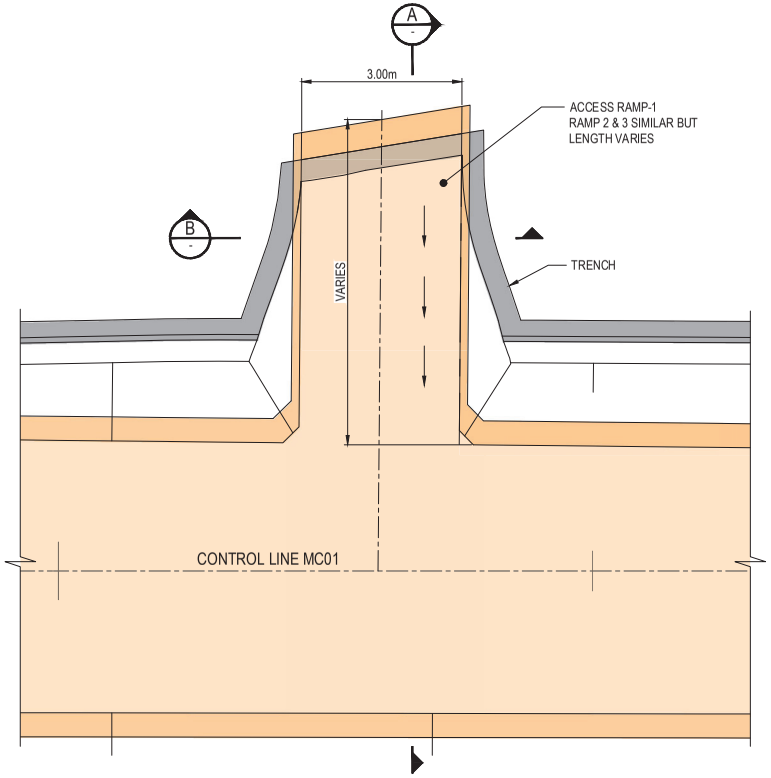
DRAWN BY	CKO NAR	DATE	01/11/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	T. PIGGINS	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

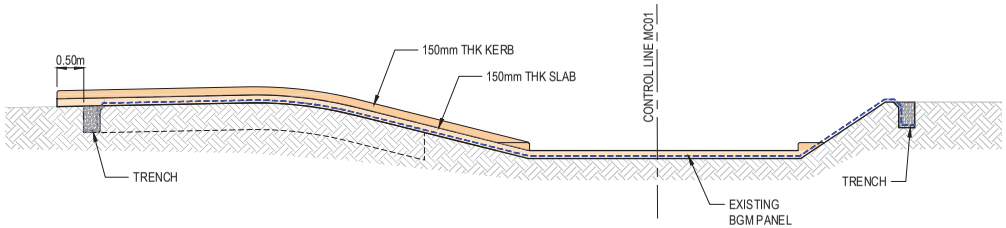
TITLE

CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
WEIR AND RAMP DETAILS - STAGE 2

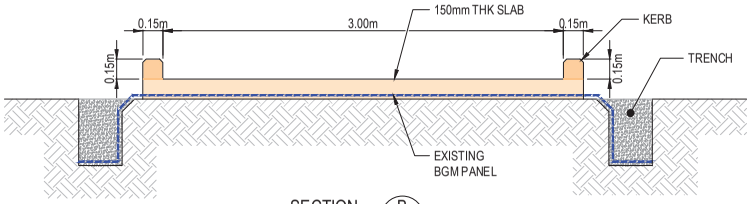
SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180D(2D)10024	A1	E01



ACCESS RAMP - PLAN
RAMP LENGTH VARIES - RAMP 1 SHOWN (RAMPS 2 & 3 SIMILAR)
SCALE 1:50



SECTION A
SCALE 1:50



SECTION B
SCALE 1:20

LEGEND:

- CONCRETE SLAB
- CONCRETE KERB
- CONCRETE WEIR & WALL
- TRENCH

NOTES:

1. UNLESS NOTED OTHERWISE ALL DIMENSIONS AND REDUCED LEVELS (RL) ARE IN METRES (m)
2. SURVEY DATUMS ARE: GDA 94 (ZONE 56).
3. DESIGN IS BASED ON LiDAR SUPPLIED BY RTA, DATED AUG. 2021 (FILENAME G2613-125A - MODEL SPACE).
4. FOR CONCRETE NOTES REFER DRAWING No. 180D(2D)10022.

0 0.2 0.4 0.6 0.8 1
SCALE 1 : 20

0 0.5 1.0 1.5 2.0 2.5
SCALE 1 : 50

Gladstone Ports Corporation
APPROVED
Name: Erin Clark
Date: 10:19am 14/06/2022

REFERENCE DRAWINGS

DATE	REV	REVISION RECORD	DRN	CHKD	RPEQ	PENG	DENG
01/11/2021	E01	ISSUED FOR ENGINEERING REVIEW	CKO	TP	-	-	-

DRAWN BY	CKO NAIR	DATE	01/11/2021	CHANGE RECORD NUMBER		CRN	
DRAFT CHECKED		DATE		RTY PROJECT ENGINEER		DATE	
RPEQ ENGINEER	T. PIGGINS	DATE		RTY LEAD DRAFTSPERSON		DATE	
ENGINEER CHECKER		DATE		RTY DISCIPLINE ENGINEER		DATE	

RioTinto

TITLE
CAUSTIC YARD STATION, YARWUN
ENVIRONMENTAL IMPROVEMENTS
ACCESS RAMP DETAILS - STAGE 2

SCALE	3rd ANGLE PROJECTION	DRAWING NUMBER	SIZE	REVISION
1:250		180D(2D)10025	A1	E01