

17 September 2026

Queensland Alumina Limited
c/- Jonathon Dalton
Parsons Point
Gladstone Qld 4680

Dear Jonathon,

DECISION NOTICE – APPROVAL WITH CONDITIONS - DA2026/03/01
(GIVEN UNDER SECTION 63 OF *THE PLANNING ACT 2016* and the PROVISIONS OF GPC LAND USE PLAN 2012V2)

1. Application Details

This development application was **properly made** to the Gladstone Ports Corporation Limited (GPC) on **25 June 2026**.

Application Number:	DA2026/03/01
Applicant Name:	Queensland Alumina Limited
Applicant Contact Details:	c/- Jonathon Dalton Parsons Point Gladstone Qld 4680 Email: daltonj@qal.com.au
Approval Sought (Land Use Plan):	Operational Works that is Tidal Works (Alternate Discharge)
Approval Sought (Port Overlay):	Not applicable
Approval Sought (SARA):	- Operational Works that is tidal works or work in a coastal management district; - Operational Works that is tidal works or work in a coastal management district and in tidal waters; and - Operational Works involving marine plants.
Proposed Development:	Operational Works that is Tidal Works for the installation of new pipework, diffusers and four (4) piles to support pipework infrastructure associated with an alternate discharge point for the QAL Red Mud Dam effluent waters.
Street Address:	Unnamed Road, South Trees (400 Handley Drive)
Property Description:	Lot 43 CTN1737

Land Owner:	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development and Gladstone Ports Corporation
Local Government Area:	Gladstone Regional Council

2. Details of Proposed Development

Assessable development on strategic port land and strategic port land tidal areas –

Operational works that is tidal works for the installation of new pipework, diffusers and four (4) piles to support pipework infrastructure associated with an alternate discharge point for the QAL Red Mud Dam effluent waters.

3. Details of Decision

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.

This application is not taken to have been approved (a deemed approval) under section 64(5) of the *Planning Act 2016*.

4. Details of Approval

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

- (a) Operational Works that is Tidal Works - (*Planning Regulation 2017* reference Schedule 8, s21, Table 3).

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) Marine Execution Plan approved by the Regional Harbour Master (*advice only, not a development permit*).

7. Referral Agencies for the Application

The referral agencies for this application are:

For an application involving	Name and Address of Referral Agency
Operational works that is tidal works or work in a coastal management district Operational work that is tidal works or work in a coastal management district in tidal waters Operational work involving removal, destruction or damage of marine plants.	Department of State Development, Infrastructure and Planning – Rockhampton State Assessment and Referral Agency (SARA) PO Box 113 ROCKHAMPTON QLD 4700 rockhamptonSARA@dsdmip.qld.gov.au
Prescribed assessable development within limits of a port and on land below high-water mark and within the limits of a port under the Transport Infrastructure Act. <i>In accordance with Section 54(3) of the Planning Act 2016 referral to the Port authority is not required as the Port authority is the Assessment Manager.</i>	Gladstone Ports Corporation 40 Goondoon Street GLADSTONE QLD 4680 planning@gpcl.com.au

8. Approved Plans and Specifications

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

Drawing/report title	Prepared by	Date	Reference No.	Version
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Survey Control	Aurecon	02/02/2024	266602	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – General Notes Sheet 1	Aurecon	02/02/2024	266603	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – General Notes Sheet 2	Aurecon	19/09/2025	266603	1
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – General Notes Sheet 3	Aurecon	02/02/2024	266603	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – General Notes Sheet 4	Aurecon	02/02/2024	266603	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipework General Arrangement	Aurecon	19/09/2025	266633	1
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipework Elevations	Aurecon	19/09/2025	266634	1
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipework Details (Part 1 of 2)	Aurecon	19/09/2025	266635	1
Project Number C-2996 Cell 1	Aurecon	19/09/2025	266635	1

Drawing/report title	Prepared by	Date	Reference No.	Version
Discharge to BSL Wharf Pipeline – BSL Jetty – Pipework Details (Part 2 of 2)				
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Monopile Details	Aurecon	02/02/2024	266658	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – General Pipe Notes	Aurecon	02/02/2024	266657	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details Part 10 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 9 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 8 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 7 of 19)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 6 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 5 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 4 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 3 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 2 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Pipe Support Structural Details (Part 1 of 10)	Aurecon	02/02/2024	266655	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 2 – Reinforcing Details (Sheet 3)	Aurecon	17/04/2024	266640	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 2 – Reinforcing Details (Sheet 2)	Aurecon	17/04/2024	266640	0

Drawing/report title	Prepared by	Date	Reference No.	Version
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 2 – Reinforcing Details (Sheet 1)	Aurecon	17/04/2024	266640	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 1 – Reinforcing Details (Sheet 5)	Aurecon	17/04/2024	266638	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 1 – Sliding Support Details (Sheet 4)	Aurecon	17/04/2024	266638	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 1 – Restrained Support Detail (Sheet 3)	Aurecon	17/04/2024	266638	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 1 – Precast Plinth Layout (Sheet 2)	Aurecon	17/04/2024	266638	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Precast Pipe Support Plinth Type 1 – General Arrangement (Sheet 1)	Aurecon	17/04/2024	266638	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Monopile Pipe Support Details	Aurecon	02/02/2024	266636	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Steel Pipe CP Details – Sacrificial Anode Cathodic Protection System	Aurecon	02/02/2024	266653	0
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – Steel Pipe CP Details – Cathodic Protection Crossbonding	Aurecon	19/09/2025	266654	1
Project Number C-2996 Cell 1 Discharge to BSL Wharf Pipeline – BSL Jetty – Anchor Block 15 Details	Aurecon	02/02/2024	266644	0

9. Currency Period for the Approval

Pursuant to section 85 of the Planning Act, this development approval will lapse at the end of the periods set out below:

- (a) For approvals other than a Material Change of Use or Reconfiguring a Lot, the approval lapses if the development does not substantially start within 2 years or other period chosen of this approval taking effect.

10. Rights of Appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in chapter 6, part 1 of the *Planning Act 2016*. For particular

applications, there may also be a right to make an application for a declaration by a tribunal (see chapter 6, part 2 of the *Planning Act 2016*).

Attachment 3 is an extract from the *Planning Act 2016* that sets down the applicant's appeal rights and the appeal rights of a submitter.

For further information please contact Trudi Smith, Planning Specialist, on 07 4976 1314 or via email planning@gpcl.com.au.

Yours sincerely


Dean O'Dowd (19/09/2026 14:01:54 GMT+10)

Dean O'Dowd
(Acting) Group Executive Terminal Operations

Cc: SARA Rockhampton
Gladstone Regional Council

Enc. Attachment 1: Conditions of Approval
Part 1 - Conditions imposed by the assessment manager
Part 2 - Conditions required by the referral agency response
Attachment 2: Approved plans and specifications
Attachment 3: Extract of appeal provisions
Attachment 4: Right of Appeal Waiver

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 *Planning Act 2016* – Operational Works in priority port's master planned area and Operational works that is tidal works on Strategic Port Land / Strategic Port land tidal area

1. Construction 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 by the Assessment Manager (GPC) for drawings or documentation, the Applicant must submit for review, amend to the satisfaction of, and obtain written approval from the Assessment manager.

Note: the Assessment manager will require no less than 10 business days, unless otherwise conditioned, to initially assess the drawings or documentation provided prior to the commencement of the development/construction.

4. The Applicant must at their cost and expense, keep and maintain the development footprint, including existing services, in a state that is satisfactory to the Assessment Manager.

Hours of Operation

5. The hours for the construction of the facility (i.e. operation of any machinery and/or other equipment) is to be restricted to between 6.30am and 6:30pm Monday to Sunday. No works shall be undertaken on public holidays. Any variations to these times will be subject to the written approval of the Assessment manager.

Waste management

6. 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.

Engineering

7. Upon completion of the construction works, the Applicant must reinstate the property to the same condition prior to the works being undertaken, with the exception of the approved works, unless agreed to in writing by the Assessment manager.

Infrastructure

8. The applicant must notify the Assessment manager of damage caused to any port or port user infrastructure or services including, but not limited to, security related devices, buildings, fences, lighting, bridges, wharves, underground infrastructure etc as a result of the works. The applicant must undertake necessary repairs at their expense and to the satisfaction of the Assessment Manager.

Tidal Works

9. Upon completion of the works, the applicant must provide the Assessment Manager with RPEQ certified "As Constructed" plans in hard copy (PDF) and electronic (CAD format including spatial

reference coordinates) which illustrate all infrastructure and services installed on, under or over Port land and Port tidal areas associated with the activity unless otherwise approved in writing by the Assessment Manager.

10. The applicant must certify from a suitably qualified Registered Engineer that the development is constructed as per design and that the development has been constructed generally in accordance with the approved plans prior to the use of the infrastructure commencing (commissioning).
11. Any site lighting used during construction / works 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 operations with respect to navigation. Where an issue is identified or a validated complaint received, the applicant must immediately rectify to the satisfaction of the Assessment Manager.
12. Any material which is deposited (not authorised under this approval) or any debris which falls or is deposited on tidal lands or into tidal waters during the construction of the approved development shall be removed by the applicant at their cost and expense. The applicant is to notify the Assessment Manager if any material or debris is deposited.
13. Upon completion of construction, the applicant shall provide the Assessment Manager with written confirmation that the seabed is clear of foreign materials.
14. If, as a result of the works, or other cause attributable to the applicant, any Port bank or tidal structure is displaced, the applicant at its cost and expense shall restore the bank or structure to its former condition and take such other action as is necessary to ensure the stability of the bank or structure to the satisfaction of the Regional Harbour Master or Assessment Manager.

Acid Sulphate Soils

15. In the event acid sulphate soils are disturbed/excavated and require treatment on site or on 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.
16. Upon approval of the management plan, the works must be carried out in accordance with this plan and the plan.

Environment

Incident notification

17. At all times, 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 environment related conditions of this approval, or any other environmental approval obtained in relation to the approved activity.

Note: 'land' is to be defined as where not within a containment system.

Environmental incident notification must be included in any Environmental Management Plans for the premises/development.

Vessel management

18. Works are to be undertaken in accordance with a Marine Execution Plan. The Marine Execution Plan should be submitted to Marine Safety Queensland prior to works commencing and a copy of the approved plan shall be provided to the Assessment Manager for their records.

19. Refuelling of vessels used in construction must be carried out by a licenced bunkers provider only on site, or off site at a licenced refuelling facility.
20. Spillage of any material e.g. sediment, wastes, contaminants etc. must be cleaned immediately. Such spillage must not be cleaned up by hosing, sweeping or otherwise releasing such materials to any waters.
21. All waste generated on vessels in carrying out the works must be disposed of at a proper and appropriate facility.

ADVICE NOTES

- a. The subject site is listed on the Environmental Management Register (EMR) and as such, any material proposed to be removed from the site is to be undertaken in accordance with a site management plan and disposed of at an appropriately licensed waste disposal facility.
- b. In relation to works on tidal structures, the applicant is required to comply with the requirements for excluded tidal works in the Excluded Works (Coastal) Guideline.
- c. 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.
- d. All development should proceed in accordance with the duty of care guidelines under the *Aboriginal Cultural Heritage Act 2003*. Penalties may apply where duty of care under that Act has been breached.
- e. The RPEQ bears full responsibility for all aspects of the engineering design, including the identification and resolution of any design faults that may arise throughout the course of the Operational Works. The Assessment Manager reserves the right to require further amendments and/or additions at a later date should design errors become apparent.
- 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. This permit does not authorise the approval to operate / commence the use (i.e. throughput of QAL Red Mud Dam effluent).

PART 2: REFERRAL AGENCY CONDITIONS

Referral Agency Name: Department of State Development, Infrastructure and Planning

SARA reference: 2607-53300 SRA
Council reference: DA2026/03/01
Applicant reference: -

18 August 2026

Port of Gladstone Ports Corporation Limited
PO Box 259
GLADSTONE QLD 4680
planning@gpcl.com.au

Attention: Trudi Smith

Dear Trudi

SARA referral agency response—Unnamed Road, South Trees (400 Handley Drive)

(Referral agency response given under section 56 of the *Planning Act 2016*)

The development application described below was confirmed as properly referred by the State Assessment and Referral Agency (SARA) on 6 July 2026.

Response

Outcome:	Referral agency response – with conditions
Date of response:	18 August 2026
Conditions:	The conditions in Attachment 1 must be attached to any development approval
Advice:	Advice to the applicant is in Attachment 2
Reasons:	The reasons for the referral agency response are in Attachment 3

Development details

Description:	Development permit	Operational Works – Tidal Works for the installation of four (4) piles to support infrastructure associated with an alternate discharge point for the QAL Red Mud Dam effluent waters
SARA role:	Referral agency	
SARA trigger:	Schedule 10, Part 17, Division 3, Table 1, Item 1 (10.17.3.1.1)	

(Planning Regulation 2017)

Development application for operational works that is tidal works or work in a coastal management district

Schedule 10, Part 17, Division 3, Table 2, Item 1 (10.17.3.2.1)
(Planning Regulation 2017)

Development application for operational works that is tidal works or work in a coastal management district

Schedule 10, Part 6, Division 3, Subdivision 3, Table 1, Item 1
(10.6.3.3.1.1) (Planning Regulation 2017)

Development application for operational works involving the removal, destruction or damage of marine plants

SARA reference: 2607-53300 SRA

Assessment manager: Port of Gladstone Ports Corporation Limited

Street address: BSL Haul Road, South Trees Island

Real property description: Lot 43 on CTN1737

Applicant name: Queensland Alumina Limited

Applicant contact details: Parsons Point
GLADSTONE QLD 4680
daltonj@qal.com.au

Human Rights Act 2019 considerations: Consideration of the *Human Rights Act 2019* sections 15 to 35 have been undertaken as part of this decision. It has been determined that this decision does not limit human rights.

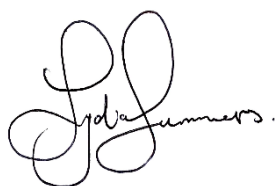
Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (s.30 Development Assessment Rules). Copies of the relevant provisions are in **Attachment 4**.

A copy of this response has been sent to the applicant for their information.

For further information please contact Tracey Beath, Senior Planning Officer, on 07 4924 2917 or via email RockhamptonSARA@dssip.qld.gov.au who will be pleased to assist.

Yours sincerely



Lydia Summers
A/ Manager

cc Queensland Alumina Limited, daltonj@qal.com.au

enc Attachment 1 - Referral agency conditions
Attachment 2 - Advice to the applicant
Attachment 3 - Reasons for referral agency response
Attachment 4 - Representations about a referral agency response provisions
Attachment 5 - Documents referenced in conditions

Attachment 1—Referral agency conditions

(Under section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application) (Copies of the documents referenced below are found at **Attachment 5**)

No.	Conditions	Condition timing
Operational Work		
10.6.3.3.1.1 – Operational works involving the removal, destruction or damage of marine plants—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Primary Industries to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	Development is limited to operational works to temporarily remove, damage, or destroy 26.59m² marine plants and permanently remove, damage, or destroy 3.8m² of marine plants, as shown on: i. Temporary and Permanent Disturbance Alternate Discharge Amendment prepared by Queensland Alumina Limited, dated 27/07/2026, revision A (as amended by SARA); and ii. PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2) prepared by Aurecon Australia Pty Ltd, dated 19.09.2025, drawing number 266635, SHEET 1, revision 1 (as amended by Queensland Alumina Limited).	At all times
2.	The development must be carried out generally in accordance with the following plans: i. PROJECT NUMBER C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE PIPELINE PLAN AND LONGSECTION CH6100 – CH6800 prepared by Aurecon Australia Pty Ltd, dated 02.02.2024, drawing number 266607, sheet 10, revision 0; ii. PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY – PIPEWORK GENERAL ARRANGEMENT prepared by Aurecon Australia Pty Ltd, dated 19.09.2025, drawing number 266633, sheet 0, revision 1; and iii. PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY – PIPEWORK ELEVATIONS prepared by Aurecon Australia Pty Ltd, dated 19.09.2025, drawing number 266634, sheet 0, revision 1.	For the duration of the works

3.	Submit written notice to the Department of Primary Industries at notifications@dpi.qld.gov.au advising when the development authorised under this referral agency response: (a) will start (b) has been completed. Any notice must state the application's reference number: 2607-53300 SRA.	(a) At least 5 business days but no greater than 20 business days prior to the commencement of the works (b) Within 15 business days of the completion of the fisheries development works
4.	This fisheries development (as defined by the <i>Fisheries Act 1994</i>) constitutes a place that is required to be open for inspection by an inspector, pursuant to section 145 of the <i>Fisheries Act 1994</i> .	At all times
5.	Spoil is not disposed of on tidal lands or within waterways and is managed to prevent acid soil development.	At all times
6.	(a) Remove marine plants that have been authorised for removal as part of this development. (b) Dispose of all material associated with the development (e.g., debris, construction material, soil, etc.) at an appropriate licensed facility that accepts this type of waste.	(a) As soon as reasonably practicable after the marine plants have been removed (b) As soon as reasonably practicable
7.	Restore tidal land profiles that are temporarily disturbed by the development works to pre-work profiles	Within 10 business days of completion of the works and prior to post works notification
8.	Remove the three (3) temporary anchored mooring lines and the ten (10) temporary mooring piles after the replacement structure has been completed.	Within 15 business days of completion of the works
10.17.3.1.1 – Operational works that is tidal works or work in a coastal management district — The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of the Environment, Tourism, Science and Innovation to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
9.	The construction of the piles must be undertaken generally in accordance with the following plans: i. PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY – PIPEWORK GENERAL ARRANGEMENT prepared by Aurecon Australia Pty Ltd, dated 19.09.2025, drawing number 266633, sheet 0, revision 1; and ii. PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY – PIPEWORK ELEVATIONS prepared by Aurecon Australia Pty Ltd, dated 19.09.2025, drawing number 266634, sheet 0, revision 1.	For the duration of the works

10.	Maintain the development generally in accordance with the plans referenced in condition 9, and the requirements of any conditions included in this referral agency response.	At all times
11.	For the pile works, only use clean materials which are free from prescribed water contaminants.	For the duration of the works
12.	Development must prevent the release of sediment to tidal waters by installing and maintaining erosion and sediment control measures in accordance with the <i>Best Practice Erosion and Sediment Control (BPESC) guidelines for Australia (International Erosion Control Association)</i> .	For the duration of the works
13.	Submit "As Constructed drawings" to palm@detsi.qld.gov.au or mail to: Department of the Environment, Tourism, Science and Innovation Permit and Licence Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001	Within 20 business days of the completion of the works
14.	(a) In the event that the works cause disturbance or oxidisation of acid sulfate soil, the affected soil must be treated and thereafter managed in accordance with the current Queensland Acid Sulfate Soil Technical Manual: Soil management guidelines, prepared by the then Department of Science, Information Technology, Innovation and the Arts, 2014. (b) Submit certification from an appropriately qualified person on acid sulfate soil, confirming that the affected soil has been neutralised or contained in accordance with (a) above to palm@detsi.qld.gov.au or mailed to: Department of the Environment, Tourism, Science and Innovation Permit and Licence Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001 <i>Note: Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills and experience relevant to soil chemistry or acid sulfate soil management and can give authoritative assessment, advice and analysis in relation to acid sulfate soil management using the relevant protocols, standards, methods or literature.</i>	(a) Upon disturbance or oxidisation until the affected soil has been neutralised or contained. (b) Within 10 business days of the completion of the works to neutralise or contain the soils.

Attachment 2—Advice to the applicant

General advice	
1.	Terms and phrases used in this document are defined in the <i>Planning Act 2016</i> , its regulation or the State Development Assessment Provisions (SDAP) (version 3.6). If a word remains undefined it has its ordinary meaning.

Attachment 3—Reasons for referral agency response

(Given under section 56(7) of the *Planning Act 2016*)

The reasons for the SARA's decision are:

- SARA assessed the development against the following code(s) of the State Development Assessment Provisions (SDAP), version 3.6:
 - o State code 7: Maritime safety
 - o State code 8: Coastal development and tidal works
 - o State code 11: Removal, destruction or damage of marine plants.
- The development complies with the assessment benchmarks of State code 7 of SDAP in that the construction and operation of the development:
 - o does not compromise the viable operation of aids to navigation
 - o does not compromise the safe operation of vessels in navigable waterways.
- The development complies with the assessment benchmarks of State code 8 of SDAP in that the development is designed and located to:
 - o maintain coastal processes
 - o avoid impacts on matters of state environmental significance.
- The development complies with the assessment benchmarks of State code 11 of SDAP in that the development:
 - o maintains the extent, distribution, diversity and condition of marine plant communities and protects the ecological functions to which they contribute
 - o maintains the health and productivity of fisheries resources and fish habitat
 - o where matters of state environmental significance cannot be reasonably avoided, impacts are reasonably minimised and mitigated
 - o does not result in a significant residual impact on a matter of state environmental significance.

Material used in the assessment of the application:

- the development application material and submitted plans
- *Planning Act 2016*
- Planning Regulation 2017
- the SDAP (version 3.6), as published by SARA
- the Development Assessment Rules
- SARA DA Mapping system
- section 58 of the *Human Rights Act 2019*

Attachment 4—Representations about a referral agency response provisions

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Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules¹ regarding **representations about a referral agency response**

Part 6: Changes to the application and referral agency responses

28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
- (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
 - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
 - (c) the applicant has given written agreement to the change to the referral agency response.²
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
- (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1; and
 - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

¹ Pursuant to Section 68 of the *Planning Act 2016*

² In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

Part 7: Miscellaneous

30 Representations about a referral agency response

30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.³

³ An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.

Attachment 5—Documents referenced in conditions

(page left intentionally blank)

Temporary and Permanent Disturbance

Alternate Discharge Amendment



PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

SARA ref: 2607-53300 SRA.....

Date: 18 August 2026.....

Amended in red by SARA on 18 August 2026

Permanent marine plant impacts:
- Monopiles - 3.8m²

Temporary marine plant impacts:
- Temporary mooring piles and mooring lines - 4.59m²

Legend

- Monopiles Area
- Floating Platform
- Mooring Points
- Spud Piles



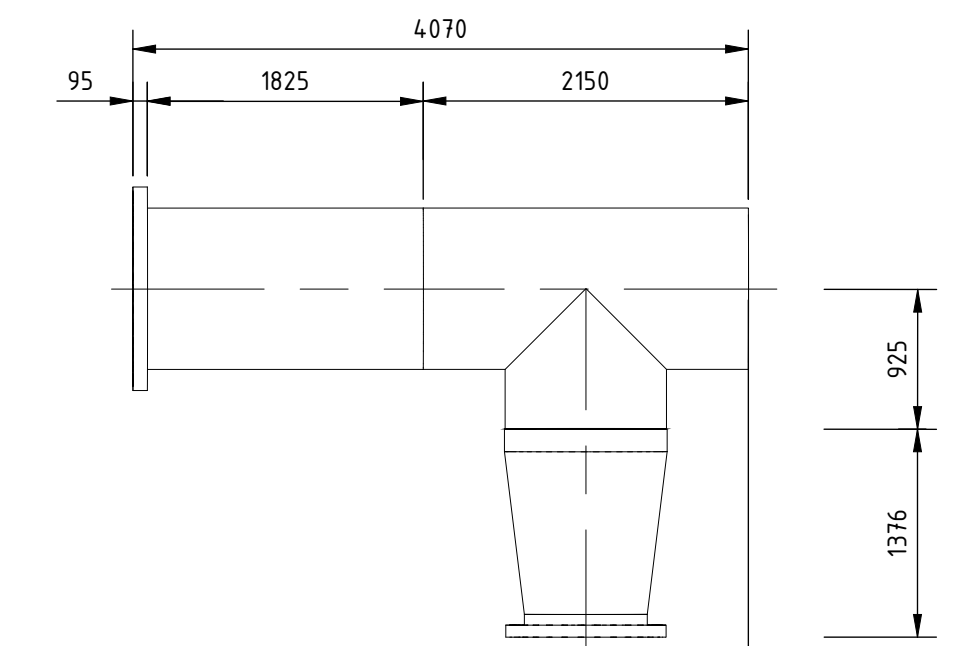
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere			Scale at A1
Revision	A	1:130	
Date	27/07/2026		
Created By	B.Thomas		
Reviewed By	J. Dalton		
Approved By	J. Dalton		
Disclaimer: © 2024. QAL (LEGAL ENTITY) and DATA CUSTODIAN(S), make no representations or warranties about this product's accuracy, completeness or suitability for any particular purpose. QAL and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.			

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

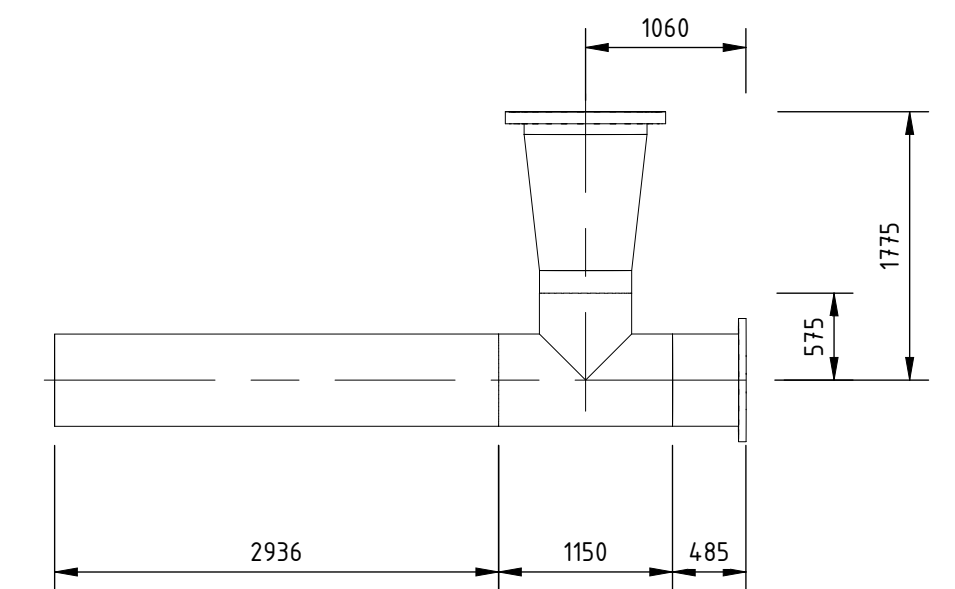


1. DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW.
2. THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.
3. KEY TO NUMBERING OF FITTINGS:
- [AREA CODE] - [FITTING REFERENCE NUMBER]
- EXAMPLES
"P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1
"LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4
4. WELDING OF STAINLESS STEEL FITTINGS AND (OR) PIPES SHALL BE BUTT WELDED WITH A FILLER MATERIAL TO MATCH THE GRADE OF THE BASE METAL.
5. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
- 266633: BSL JETTY – PIPEWORK GENERAL ARRANGEMENT
- 266634: BSL JETTY – PIPEWORK ELEVATIONS
- 266635-2: BSL JETTY – PIPEWORK DETAILS (PART 2 OF 2)
- 266655-4: BSL JETTY – PIPE SUPPORT STRUCTURAL DETAILS (PART 4 OF 10)

- SINTALOCK JOINT TYPE II
- BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
- RUBBER RING JOINT (RRJ) (SINTAJOINT)
- WELDED COLLAR JOINT TYPE 1



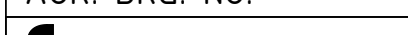
DETAIL
1 : 50



DETAIL
1 : 50

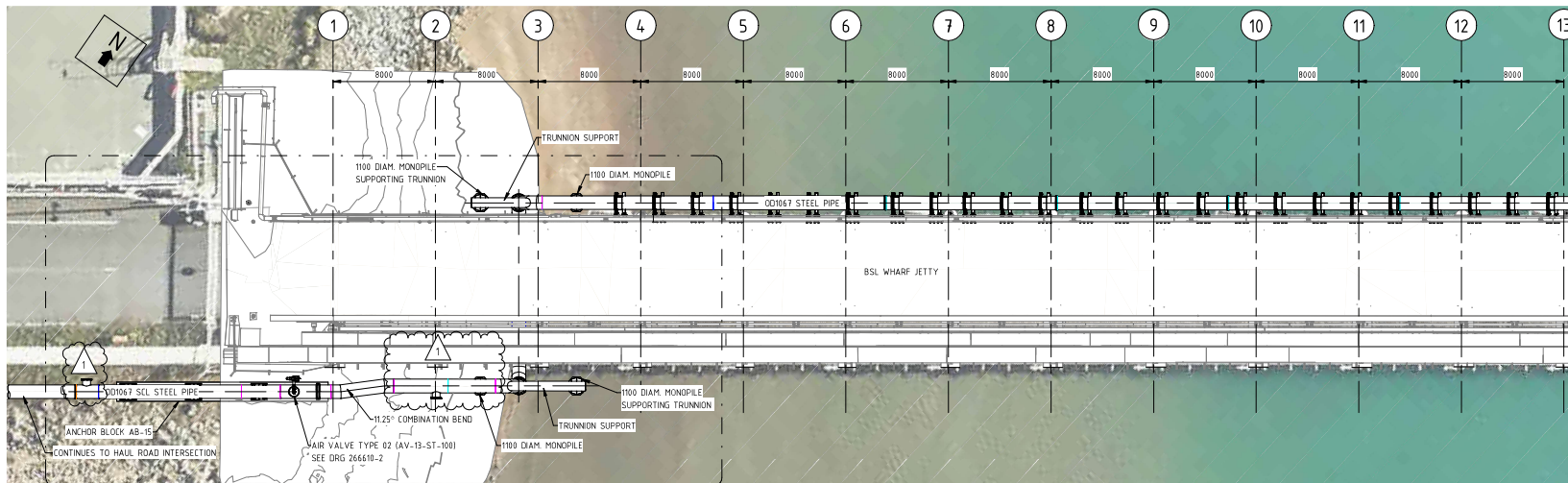
NORTHERN ELEVATION - BENTS 13 TO 26
1 : 200

The red highlighted areas show the location of the brackets attaching the downcomer and diffuser to the wharf structure. Marine plants will be removed from the circumference of the pile ion these locations₂ to allow the bracket to be bolted to the wharf piles. This has been calculated to be 22m² area of disturbance. Marine plants are expected to regrow over the brackets.

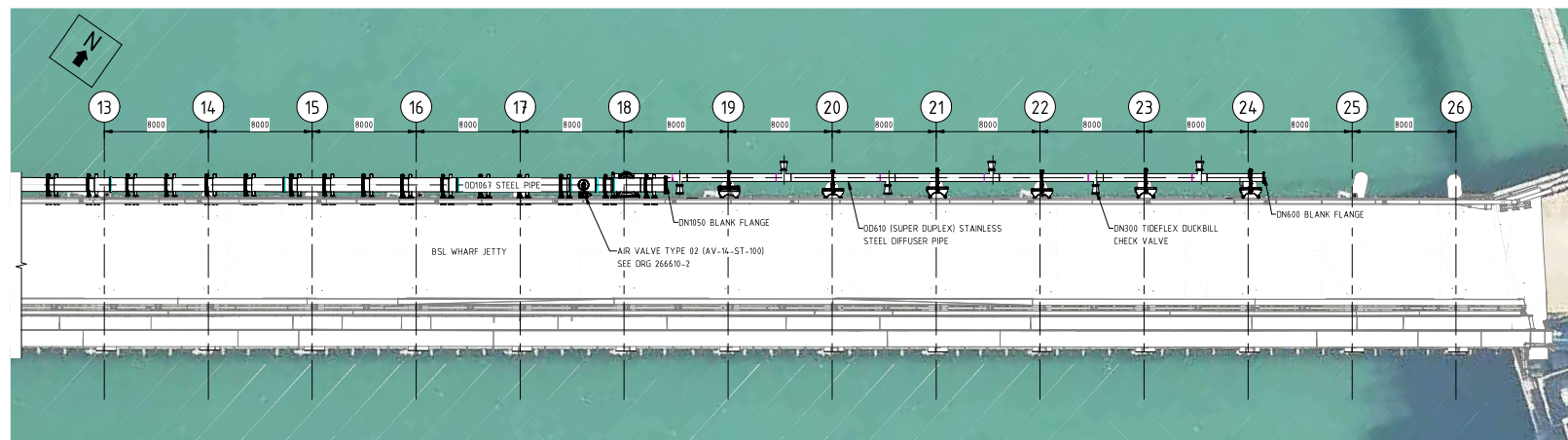
AUR. DRG. NO.		521327-W00001-DRG-WA-0072		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone: +61 7 4962 0600 Email: gladstone@Aurecongroup.com		PROJECT NUMBER: 521327	Rev. 1	
		Drawn	C. WHITEHEAD	19.09.2025
		Designed	R. HANCOX	19.09.2025
		Draft Review	G. EVERS	19.09.2025
		Eng Review	M. MAYR	19.09.2025
		Approved	R. FARNSWORTH	19.09.2025

1	19.09.2025	ADDED FLANGES		AUR	CW	MS	TS	AF	MM	9079	GENERAL NOTES	266603								
0	02.02.2024	ISSUED FOR CONSTRUCTION		AUR	D. MvV	MS	MJ	AF	MM	9079	TITLE DRAWING & DRAWING LIST	266601								
NO.	DATE	REVISION		COMPANY	DRAFTER	EXTERNAL APPROVAL	GAL CLIENT	GAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER								

APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED				A.C.N. 009 725 044		GLADSTONE QUEENSLAND				
FUNCTION LOCATION ACCOUNT ASSIGNMENT C-2996 THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS DRAWN TO AS 1100, DO NOT SCALE			DRAWING SCALE	AS INDICATED	DATE	PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)							
			DRAWN BY	C. WHITEHEAD	19.09.2025								
			REVIEWED BY	M. MAYR	19.09.2025								
			QAL CLIENT	T. SELLERS	24.09.2025								
			QAL ENGINEER	A. FERGUSON	24.09.2025	TYPE	EXPANSION	AREA	DISCIPLINE	DRAWING NUMBER	SHEET	REVISION	
			RPEP NAME	M. MAYR	RPEP No.	9079	09	QAL	17	P	266635	1	1



GENERAL ARRANGEMENT (BENTS 1-13) - PLAN VIEW
1 : 200



GENERAL ARRANGEMENT (BENTS 13-26) - PLAN VIEW
1 : 200

NOTES:

- DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW
- THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.
- KEY TO NUMBERING OF FITTINGS:
 - [AREA CODE] - [FITTING REFERENCE NUMBER]
 - EXAMPLES:
 - "P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1
 - "LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - Z66634: BSL JETTY - PIPEWORK ELEVATIONS
 - Z66635-1: BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)
 - Z66635-2: BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)
- FOR RELATIVE HAT AND LAT LEVELS SEE SECTION A ON DRAWING Z66634.

LEGEND FOR PIPE JOINTS:

- SINTALOCK JOINT TYPE II
- BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
- RUBBER RING JOINT (RRJ) (SINTAJOINT)
- WELDED COLLAR JOINT TYPE 1

PLANS AND DOCUMENTS
referred to in the REFERRAL
AGENCY RESPONSE



SARA ref: 2607-53300 SRA

Date: 18 August 2026

AUR. DRG. NO.		521327-W00001-DRG-WA-0070	
aurecon		PROJECT NUMBER 521327	Rev. 1
www.aurecongroup.com		Drawn	C. WHITEHEAD 19.09.2025
Aurecon Australia Pty Ltd		Designed	R. HANCOX 19.09.2025
Level 1, 130 Ausland Street IPD Box 1941 Gladstone		Draft Review	G. EVERS 19.09.2025
Queensland 480 Australia		Eng Review	M. MAYR 19.09.2025
Telephone +61 7 4962 8400		Approved	R. FARNSWORTH 19.09.2025
Email: gladstone@aurecongroup.com			

NO.	DATE	REVISION	COMPANY	DRAWN	EXTERNAL APPROVAL	CLIENT	ENGINEER	NAME	NUMBER	REFERENCE DRAWINGS	NUMBER
1	19.09.2025	ADDED WELD COLLAR TYPE 1.A. ACCESS TEES AND FLANGES	AUR	CW	MS	TS	AF	HH	9079	GENERAL NOTES	264403
2	02.02.2026	ISSUED FOR CONSTRUCTION	AUR	D. MYV	MS	RJ	AF	HH	9079	TITLE DRAWING & DRAWING LIST	264401

1. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "M", THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

APPROVAL		DATE	
FUNCTION		DRAWING SCALE	AS INDICATED
LOCATION		BY	C. WHITEHEAD
ATTENDANT		REVIEWED	H. MAYR
ASSIGNMENT		DATE	19.09.2025
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED		DATE	25.09.2025
AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION		ENGINEER	A. PERKINS
ALL DIMENSIONS IN MILLIMETRES UNO.		PPED NAME	H. MAYR
DRAWN TO AS 100.00 NOT SCALE		PPED No.	9079
A1		TYPE	09
		EXPANSION	QUAL
		AREA	17
		DISCIPLINE	P
		DRAWING NUMBER	266633
		SHEET	0
		REVISION	1

QUEENSLAND ALUMINA LIMITED

A.C.N. 009 725 044

GLADSTONE QUEENSLAND

PROJECT NUMBER: C-2996
CELL 1 DISCHARGE TO BSL WHARF PIPELINE

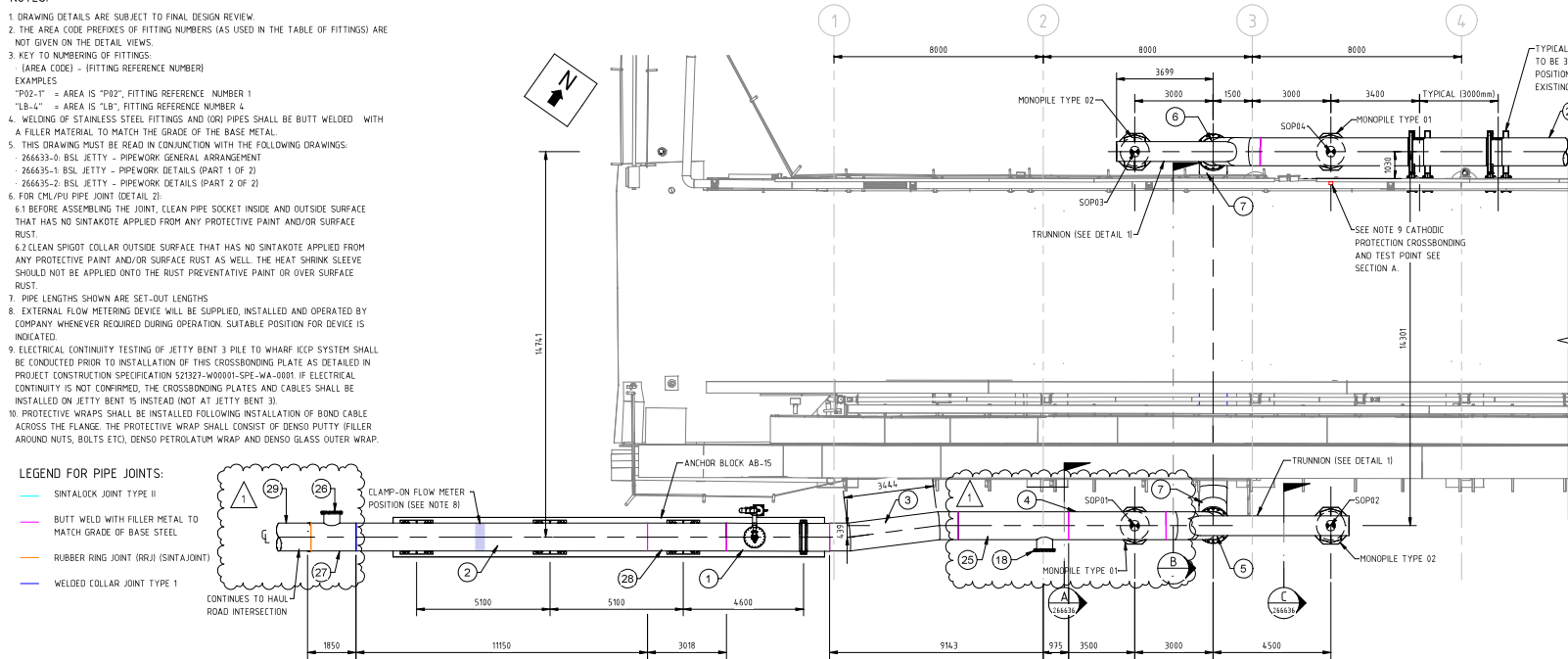
BSL JETTY - PIPEWORK GENERAL ARRANGEMENT

NOTES:

- DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW.
- THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.
- KEY TO NUMBERING OF FITTINGS:
(AREA CODE) - (FITTING REFERENCE NUMBER)
EXAMPLES:
"P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1
"LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4
- WELDING OF STAINLESS STEEL FITTINGS AND (OR) PIPES SHALL BE BUTT WELDED WITH A FILLER MATERIAL TO MATCH THE GRADE OF THE BASE METAL.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
266633-0 BSL JETTY - PIPEWORK GENERAL ARRANGEMENT
266635-1 BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)
266635-2 BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)
- FOR CHL/PU PIPE JOINT (DETAIL 2):
6.1 BEFORE ASSEMBLING THE JOINT, CLEAN PIPE SOCKET INSIDE AND OUTSIDE SURFACE THAT HAS NO SINTAKOTE APPLIED FROM ANY PROTECTIVE PAINT AND/OR SURFACE RUST.
6.2 CLEAN SPIGOT COLLAR OUTSIDE SURFACE THAT HAS NO SINTAKOTE APPLIED FROM ANY PROTECTIVE PAINT AND/OR SURFACE RUST AS WELL. THE HEAT SHRINK SLEEVE SHOULD NOT BE APPLIED ONTO THE RUST PREVENTATIVE PAINT OR OVER SURFACE RUST.
- PIPE LENGTHS SHOWN ARE SET-OUT LENGTHS.
- EXTERNAL FLOW METERING DEVICE WILL BE SUPPLIED, INSTALLED AND OPERATED BY COMPANY WHENEVER REQUIRED DURING OPERATION. SUITABLE POSITION FOR DEVICE IS INDICATED.
- ELECTRICAL CONTINUITY TESTING OF JETTY BENT 3 PILE TO WHARF (C/P SYSTEM SHALL BE CONDUCTED PRIOR TO INSTALLATION OF THIS CROSSBONDING PLATE AS DETAILED IN PROJECT CONSTRUCTION SPECIFICATION 521327-W00001-SPE-WA-0001. IF ELECTRICAL CONTINUITY IS NOT CONFIRMED, THE CROSSBONDING PLATES AND CABLES SHALL BE INSTALLED ON JETTY BENT 5 INSTEAD (NOT AT JETTY BENT 3).
- PROTECTIVE WRAPS SHALL BE INSTALLED FOLLOWING INSTALLATION OF BOND CABLE ACROSS THE FLANGE. THE PROTECTIVE WRAP SHALL CONSIST OF JENNY PUTTY (FILLER AROUND NUTS, BOLTS ETC), DENSOL PETROLATUM WRAP AND DENSOL GLASS OUTER WRAP.

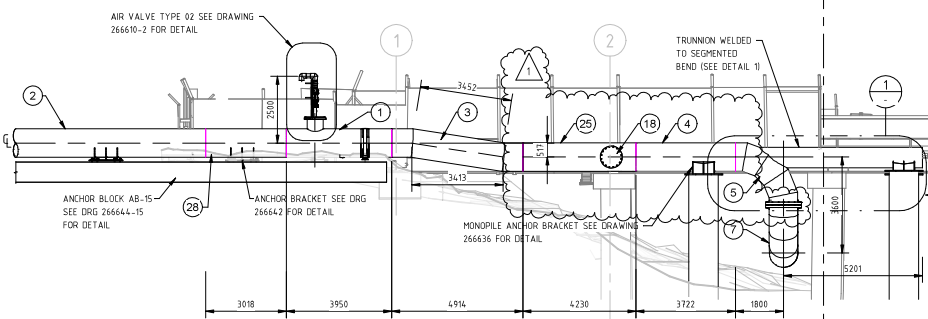
LEGEND FOR PIPE JOINTS:

- SINTALOCK JOINT TYPE II
- BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
- RUBBER RING JOINT (RRJ) (SINTAJOINT)
- WELDED COLLAR JOINT TYPE I



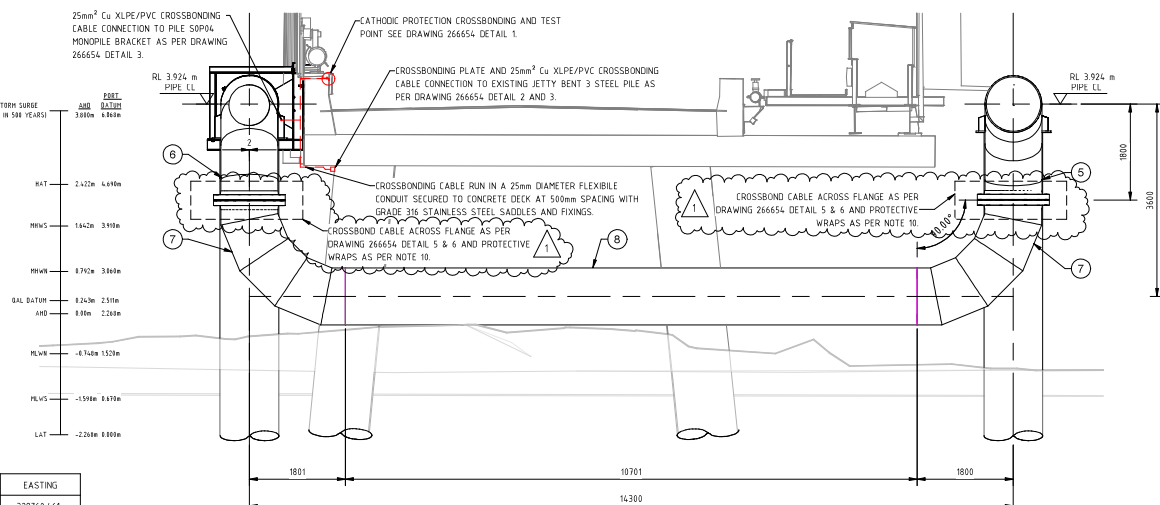
PLAN - BENTS 1 TO 4

1: 100



SOUTHERN ELEVATION - BENTS 1 TO 2

1: 100



SECTION B

1: 50

AUR. DRG. NO.	521327-W00001-DRG-WA-0071
aurecon	PROJECT NUMBER 521327 Rev. 1
www.aurecongroup.com	Drawn C. WHITEHEAD 19.09.2025
Aurecon Australia Pty Ltd ABN 54 005 09 973	Designed R. HANCOX 19.09.2025
Level 1, 100 Australia Street PO Box 1944 Gladstone	Draft Review G. EVERS 19.09.2025
Queensland 4800 Australia	Rev Review M. MAYR 19.09.2025
Telephone +61 7 492 8400	Approved R. FARNSWORTH 19.09.2025
Email gls@adelaide.aurecongroup.com	

TABLE 1: MONOPILE SET-OUT POINTS

MONOPILE SET-OUT POINT:	NORTHING	EASTING
SOP01	7360812.438	328760.461
SOP02	7360817.518	328765.977
SOP03	7360822.961	328750.775
SOP04	7360828.040	328756.293

1. MONOPILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE RESISTANCE OF 5000 kN.

APPROVAL	DATE	FUNCTION	SCALE	DATE
		AS INDICATED		
		BY C. WHITEHEAD	19.09.2025	
		REVIEWED BY R. MAYR	19.09.2025	
		CLIENT T. SELLERS	24.09.2025	
		ENGINEER A. PERKINS	24.09.2025	
		DRG NAME M. MAYR	19.09.2025	
		DRG No. 9079		

QUEENSLAND ALUMINA LIMITED

A.C.N. 009 725 044

GLADSTONE QUEENSLAND

PROJECT NUMBER: C-2996

CELL 1 DISCHARGE TO BSL WHARF PIPELINE

BSL JETTY - PIPEWORK ELEVATIONS

NO	DATE	ISSUED FOR CONSTRUCTION	REVISION	COMPANY	DRAWN	EXTERNAL APPROVAL	DAL CLIENT	MS	TS	AF	HH	9079	GENERAL NOTES	264603
1	19.09.2025	ADDED WELD COLLAR TYPE I.A. ACCESS TEES AND FLANGES		AUR	CW	MS	TS	AF	HH	9079				
2	02.02.2026	ISSUED FOR CONSTRUCTION		AUR	D.M.V	MS	MJ	AF	HH	9079			TITLE DRAWING & DRAWING LIST	264601

REFERENCE DRAWINGS

NUMBER

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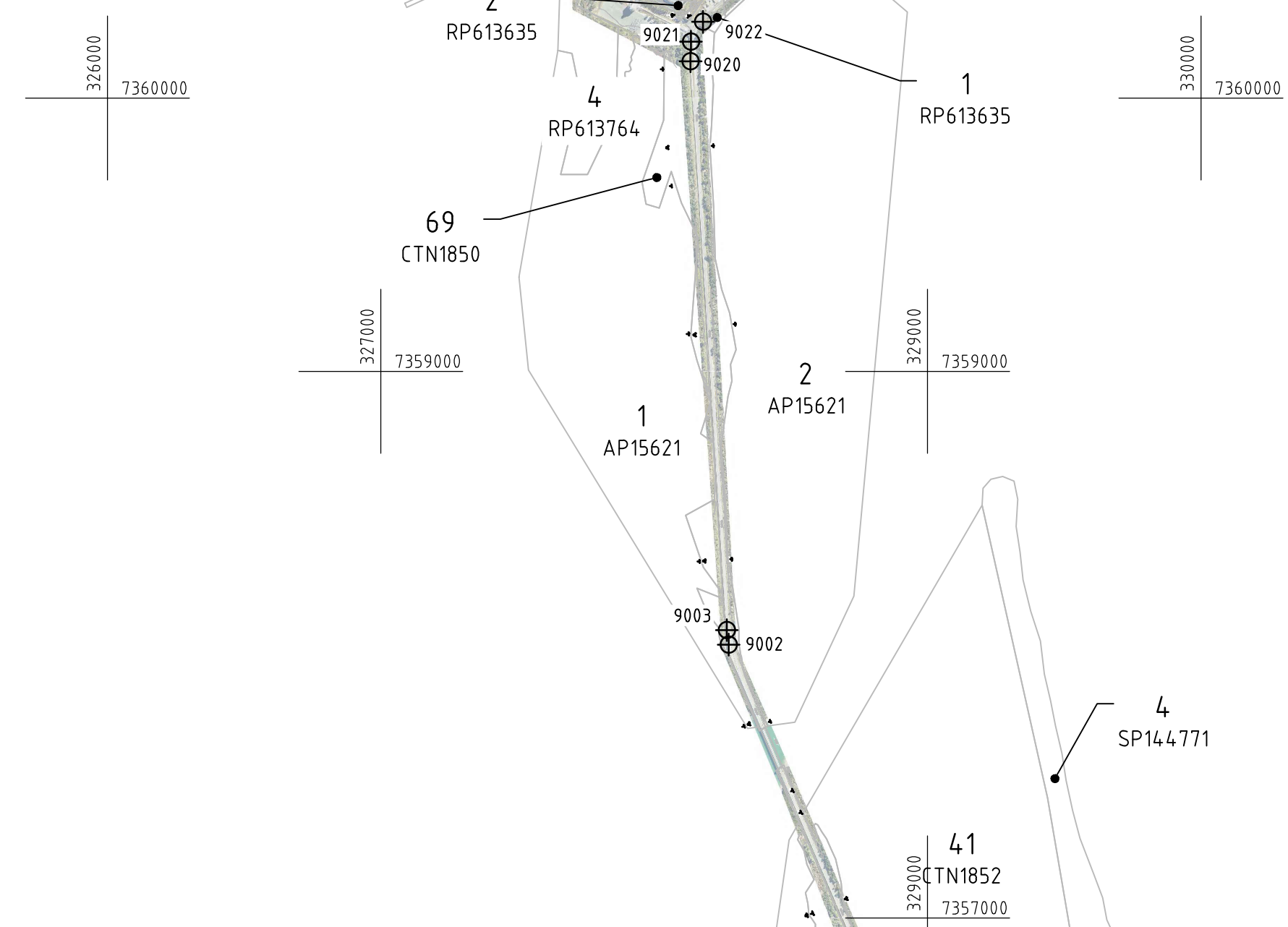
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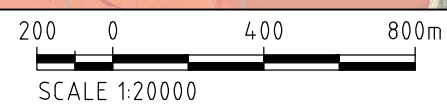
224

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Attachment 2: Approved Plans and Specifications



- | MGA SURVEY CONTROL | | | |
|--------------------|------------|-------------|------------------------------|
| POINT No. | EASTING | NORTHING | REMARKS |
| 312 | 328908.106 | 7352733.259 | STAR PICKET |
| 313 | 328335.168 | 7352505.227 | PIN |
| 314 | 328582.400 | 7351747.572 | PIN |
| 315 | 327318.828 | 7351611.327 | AERIAL TARGET |
| 317 | 328172.219 | 7354731.503 | AERIAL TARGET |
| 318 | 328260.139 | 7354989.025 | PSM100160 |
| 319 | 328409.070 | 7354560.053 | PIN |
| 320 | 329196.338 | 7354614.086 | SCREW IN CONC |
| 321 | 329538.243 | 7354856.087 | PIN |
| 322 | 330000.570 | 7354531.091 | PSM31224 |
| 323 | 329503.932 | 7354275.986 | PIN |
| 324 | 328982.947 | 7353881.213 | PIN |
| 325 | 329487.458 | 7353169.407 | PIN |
| 326 | 329575.550 | 7352784.794 | AERIAL TARGET |
| 327 | 327727.623 | 7352702.244 | AERIAL TARGET |
| 328 | 331012.273 | 7351085.009 | AERIAL TARGET |
| 329 | 329240.964 | 7355505.714 | PIN |
| 9002 | 328272.457 | 7358000.000 | NAIL IN CONC FOOTING |
| 9003 | 328265.751 | 7358053.162 | NAIL IN CONC FOOTING |
| 9020 | 328133.055 | 7360134.347 | NAIL IN CONC CONEYOR FOOTING |
| 9021 | 328134.401 | 7360206.408 | NAIL IN CONC HEADWALL |
| 9022 | 328178.725 | 7360278.903 | HOLE PUNCHED IN BOLT |



 **Gladstone Ports Corporation**

APPROVED

Name: Erin Clark

Date: 2:53pm 21/09/2026

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED							ACN 009 725 044		GLADSTONE QUEENSLAND																
				DRAWING SCALE		AS SHOWN		DATE		PROJECT NUMBER C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE SURVEY CONTROL																			
				DRAWN BY		C. RUSINGAH		02.02.2024																					
FUNCTION LOCATION		QRDHLDMCL01.PEBW		REVIEWED BY		M. MAYR		02.02.2024																					
ACCOUNT ASSIGNMENT		C-2996		QAL CLIENT		M. JAMES		26.04.2024																					
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION										QAL ENGINEER		A. FERGUSON		29.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
ALL DIMENSIONS IN MILLIMETRES UNO, DRAWN TO AS 1100. DO NOT SCALE.										RFPQ NAME		R. FARNSWORTH		RFPQ No. 08389		09		QAL		17		G		266602		0		0	
8		9						10								11		HARD COPY DRAWINGS ARE UNCONTROLLED											

- 1.1. THE PROJECT DRAWINGS,
- 1.1.2. PROJECT SPECIFICATIONS,
- 1.1.3. CURRENT AUSTRALIAN STANDARDS,
- 1.1.4. QUEENSLAND ALUMINA LIMITED (QAL) SITE STANDARDS AND PROCEDURES.
- 1.2. ALL DIMENSIONS SHOWN ON THESE DRAWINGS ARE METRIC UNITS.
- 1.3. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
- 1.4. DIMENSIONS ARE NOT TO BE SCALED FROM THE DRAWINGS.
- 1.5. 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, NOTIFY THE COMPANY FOR A RESOLUTION.
- 1.6. ALL WORK SHALL BE UNDERTAKEN SAFELY AND IN A MANNER MEETING ALL OBLIGATIONS UNDER THE WORKSAFE CODES OF PRACTICES AND REGULATIONS IN ACCORDANCE WITH WORK HEALTH AND SAFETY ACT 2011 INCLUDING COMPANY SITE SPECIFIED PROCEDURES.
- 1.7. THE CONTRACTOR SHALL PROVIDE FOR:
 - 1.7.1. SPECIALIST EQUIPMENT AS NECESSARY,
 - 1.7.2. SAFE ENVIRONMENTS FOR ANY REQUIRED INSPECTIONS.
- 1.8. ALL WORKS UNDER THIS CONTRACT SHALL BE PERFORMED TO THE LINES, LEVELS AND GRADES AS SHOWN ON DRAWINGS, SPECIFICATIONS AND OTHER CONTRACTUAL DOCUMENTS AND AS DIRECTED BY THE COMPANY.
- 1.9. ALL LOCATIONS, ORIENTATIONS AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORKS. DISCREPANCIES SHALL RAISED WITH THE COMPANY FOR CLARIFICATION.
- 1.10. ALL LEVELS SHALL BE FINISHED TO THE TOLERANCES AS NOTED IN THE SPECIFICATIONS/DRAWINGS.
- 1.11. THE CONTRACTOR IS TO MAKE PROVISIONS FOR THE EFFECTIVE DIVERSION AND REMOVAL OF ALL SURFACE WATER (INCLUDING SUMPS AND PUMPS IF REQUIRED) FROM THE PREPARED SUBGRADE AND EXCAVATIONS FROM ANY SOURCE. WATER IS NOT PERMITTED TO POND IN ANY EXCAVATIONS OR AT THE TOE OF ANY BATTER SLOPES.
- 1.12. THE CONTRACTOR SHALL PROVIDE SEDIMENT AND EROSION CONTROL ON AND AROUND ALL AREAS OF EARTHWORKS AND STOCKPILES AND RETAIN RESPONSIBILITY FOR ITS MANAGEMENT AND PERFORMANCE UNTIL ALL EARTHWORK AREAS HAVE BEEN COMPLETED AND SEALED OR SURFACED.
- 1.13. CONTRACTOR SHALL MAINTAIN ACCESS ROADS AT ALL TIMES, UNLESS APPROVED BY THE COMPANY.
- 1.14. THE DOCUMENT IS FOR THE PERMANENT CONDITION ONLY AND DOES NOT SPECIFICALLY CATER FOR INTERIM ARRANGEMENTS DURING CONSTRUCTION AND ERECTION UNO.
- 1.15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STRUCTURES, INCLUDING ADJACENT STRUCTURES, IN A SAFE AND STABLE CONDITION AND ENSURE THAT NO PART IS OVERSTRESSED AT ANYTIME DURING CONSTRUCTION. THE CONTRACTOR IS TO ENGAGE A QUALIFIED AND SUITABLE EXPERIENCED ERECTION ENGINEER TO REVIEW AND APPROVE THE CONTRACTOR'S CONSTRUCTION METHODOLOGY AND TO PROVIDE THE DESIGN OF ANY TEMPORARY WORKS (SUCH AS PROPPING AND TEMPORARY BRACING) TO SUIT THE CONTRACTOR'S CONSTRUCTION SEQUENCE AND METHODOLOGY. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS TO THE COMPANY UPON REQUEST.
- 1.16. PRIOR TO COMMENCING WORK ON SITE THE CONTRACTOR SHALL SUBMIT TO THE COMPANY A DETAILED WORK METHOD STATEMENT INDICATING THE CONTRACTOR'S PLANNED SEQUENCE OF WORK. THE CONTRACTORS CONSTRUCTION METHODOLOGY IS TO BE REVIEWED AND APPROVED BY THE COMPANY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 1.17. JOB HAZARD ANALYSES SHALL BE PREPARED BY THE CONTRACTOR'S WORK CREW PRIOR TO COMMENCING WORK ACTIVITIES.
- 1.18. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. ANY SIMILAR ALTERNATIVES PROPOSED FOR USE MUST HAVE WRITTEN APPROVAL FROM THE COMPANY.
- 1.19. ANY MATERIAL NOT FULLY SPECIFIED AND WHICH THE CONTRACTOR PROPOSES TO USE IN THE WORKS SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARD (OR INTERNATIONAL STANDARD IN THE ABSENCE OF SUCH STANDARD) AND BE SUITABLE FOR ITS INTENDED PURPOSE AND ENVIRONMENT. DETAILS OF SUCH PRODUCT SHALL BE SUBMITTED TO THE COMPANY FOR APPROVAL.
- 1.20. ALL MATERIALS SHALL BE APPLIED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

- 2.1. ALL CHAINAGES AND REDUCED LEVELS ARE IN METRES.
- 2.2. ALL LEVELS ARE TO AHD.
- 2.3. ALL COORDINATES ARE TO MGA-56, USING GRID 94 DATUM.
- 2.4. DIMENSIONS AND LOCATION OF EXISTING STRUCTURES SHALL BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.
- 2.5. SETTING OUT POINTS ARE GIVEN IN THE DRAWINGS OR SEPARATELY ISSUED LIST AND SHALL BE ESTABLISHED BY THE CONTRACTOR ON SITE. ANY DISCREPANCIES SHALL BE NOTIFIED TO THE COMPANY, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 2.6. DRAWING SHALL BE PRINTED IN COLOUR (WHERE RELEVANT) TO CORRECTLY IDENTIFY ALL DESIGN ELEMENTS.
- 2.7. CERTAIN SURVEYED LEVELS ARE BASED ON LIDAR SURVEY AND CAN BE SUBJECT TO MINOR DISCREPANCIES WITH TRIANGULATION CONVERSION.

- 3.1. EXCAVATIONS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT AND THE COMPANY'S SPECIFICATIONS QC50-007-04.
- 3.2. EXCAVATION WORKS AND SITE SAFETY WORK PERMITS SHOULD BE COMPLETED AS OUTLINED IN THE COMPANY STANDARDS AND COMPLY WITH THE RULES AND REGULATIONS OF THE WORKPLACE HEALTH AND SAFETY ACT, AS DIRECTED BY THE COMPANY AND AS PRESCRIBED BY THE COMPANY'S PROCEDURES AND WORK INSTRUCTIONS.
- 3.3. TESTING AND DISPOSAL SHALL BE AS PER QAL STANDARD QC50-007-04, CHARACTER OF MATERIAL TO BE EXCAVATED TO BE DETERMINED PRIOR TO ANY COMMENCEMENT OF WORK.
- 3.4. THE COMPANY SHALL BE NOTIFIED OF ANY CONTAMINATED MATERIAL THAT IS EXCAVATED. EXCAVATED CONTAMINATED MATERIAL OR MATERIAL NOT SUITABLE FOR RE-USE, SHOULD BE HANDLED IN ACCORDANCE WITH THE COMPANY INTEGRATED ENVIRONMENTAL MANAGEMENT SYSTEM AND PROCEDURE P783.110.
 - 3.4.1. REMOVED FROM SITE IN ACCORDANCE WITH THE EXCAVATION AND DISPOSAL SPECIFICATION.
 - 3.4.2. EXTENT OF CONTAMINATION AND GUIDANCE ON TREATMENT IS TO THE DISCRETION OF THE COMPANY.
 - 3.4.3. SHALL BE IMMEDIATELY REPORTED TO THE COMPANY AS PER QC50-007-04.
 - 3.4.4. NO MATERIAL SHALL BE DISPOSED OF OFFSITE WITHOUT WRITTEN PERMISSION FROM THE COMPANY.
- 3.5. THE CONTRACTOR SHALL ENGAGE A NATA APPROVED INDEPENDENT GEOTECHNICAL TESTING ORGANISATION TO UNDERTAKE COMPACTION VERIFICATION TESTING AND REPORTING AS REQUIRED BY THE SPECIFICATION,
 - 3.5.1. REPORTS COVERING THE TESTING PROVIDED TO THE COMPANY SHALL INCLUDE:
 - 3.5.1.1. ANY NON-COMPLIANCE AND COMPREHENSIVE DETAILS THEREOF.
 - 3.5.1.2. CORRECTIVE ACTIONS TAKEN.
 - 3.5.1.3. FOLLOW UP TESTING TO CONFIRM THE SUCCESS OF REMEDIAL WORKS.
 - 3.5.1.4. ALL UNSUITABLE AND SURPLUS MATERIAL SHALL BE REMOVED FROM SITE BY THE CONTRACTOR AS PART OF THEIR SCOPE OF WORKS.
- 3.6. SHOULD AN INDEPENDENT VERIFICATION TEST BE REQUIRED BY THE COMPANY, THE CONTRACTOR SHALL FACILITATE SUCH TESTING BY PROVIDING PLANT AND A SAFE ZONE FOR THE FIELD TEST AS REQUIRED.
- 3.7. EARTHWORKS PROFILES SHALL BE TRANSITIONED UNIFORMLY BETWEEN PRESCRIBED SLOPES.
- 3.8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING (MINIMUM OF 3 OR AS ADVISED BY THE QAL REPRESENTATIVE) OF ANY POTENTIALLY CONTAMINATED SOIL AT A FACILITY AS APPROVED BY THE COMPANY, PRIOR TO REMOVAL FROM SITE.
- 3.9. MEASURE THE DENSITY OF THE LOOSELY PLACED MATERIAL FIRST AND CALL THIS "0 PASS". AFTER EACH PASS OF THE ROLLER, THE DENSITY SHALL BE MEASURED UNTIL A DEFINABLE PLATEAU IN DENSITY READING IS OBTAINED. NOTE - TEST FREQUENCY MAY BE DECREASED AFTER MORE PASSES.
- 3.10. POCKETS OF SOFT, ORGANIC OR OTHER DELETERIOUS MATERIALS SHALL BE DUG OUT AND BE REPLACED BY COMPACTED CONTROLLED FILLING OR LEAN MIX CONCRETE, AS DIRECTED BY THE COMPANY (SOFT SPOTS ARE AREAS WHERE SPECIFIED COMPACTION OR MATERIAL PARAMETERS CANNOT BE ACHIEVED.)
- 3.11. PRIOR TO EXCAVATING, THE CONTRACTOR SHALL SUBMIT AN "EXCAVATION PERMIT" (REFER TO PROCEDURE 314.303). THE CONTRACTOR SHALL TAKE THOSE MEASURES NECESSARY TO ENSURE THAT ALL UNDERGROUND INSTALLATIONS ARE PROTECTED FROM DAMAGE OR DISPLACEMENTS DURING THE COURSE OF THE WORK.
- 3.12. THE CONTRACTOR SHALL RESTORE THE AREA SURROUNDING AN EXCAVATION INCLUDING ROADWAYS, KERBS, FOOTPATHS AND PAVED AREAS TO THEIR ORIGINAL CONDITION AS ACCEPTED BY THE COMPANY AFTER COMPLETION OF BACKFILLING, AND DONE AS PER QC50-007-04.

- 4.1. THE CONTRACTOR SHALL NOTIFY THE COMPANY ONCE THE CLEARING & STRIPPING IS COMPLETE TO ENABLE A JOINT INSPECTION OF THE EXPOSED SOILS, TO DETERMINE THE FOLLOWING:
 - 4.1.1. AREAS TO BE FILLED OVER.
 - 4.1.2. UTILIZATION OF THE UNSUITABLE SOILS ON SITE AND DISPOSAL THEREOF OFF SITE OR AS INDICATED WITHIN THE SCHEDULE OF QUANTITIES ARE TO BE ADVISED COMPANY.
- 4.2. FILL MATERIAL SHALL COMPLY WITH THE SPECIFICATION:
 - 4.2.1. PLACED IN LAYERS APPROPRIATE TO THE COMPACTION PLANT BEING USED AND THE COMPACTION REQUIREMENTS OF THE SPECIFICATION.
 - 4.2.2. INFILL SHALL BE PLACED AND COMPACTED IN LIFTS WITH A LOOSE THICKNESS OF LESS THAN 150mm.
 - 4.2.3. TO ACHIEVE THE MINIMUM SPECIFIED COMPACTION STANDARDS, FILL SHALL BE PLACED AND COMPACTED HAVING A MOISTURE CONTENT WITHIN $\pm 2\%$ OF OPTIMUM AS DERIVED BY THE STANDARD PROCTOR TEST.
 - 4.2.4. IMPORTED BULK FILL MATERIAL SHALL COMPLY WITH THE MINIMUM REQUIREMENTS AS SPECIFIED IN THE CONTRACT.
- 4.3. A SAMPLE OF THE PROPOSED FILL SHALL BE PROVIDED TO THE COMPANY FOR APPROVAL PRIOR TO ITS USE.
- 4.4. A 1m³ SAMPLE OF THE APPROVED MATERIAL MUST BE RETAINED ON SITE BY THE CONTRACTOR FOR COMPARISON PURPOSES.
- 4.5. CUT TO FILL VOLUMES AND DEPTHS SHOWN ON THE DRAWINGS ARE BASED ON THE DIFFERENCE BETWEEN PROPOSED SUBGRADE AND SURVEYED PRE-EXISTING GROUND SURFACE. MEASUREMENTS ARE TAKEN AS TIGHT OR IN PLACE WITH NO ALLOWANCE FOR BULKING FACTORS.
- 4.6. SUBGRADE / GROUND IMPROVEMENT MAY BE REQUIRED BELOW STRUCTURES AS OUTLINED ON THE DRAWINGS, SUMMARISED IN THE PROJECT SPECIFICATION AND GEOTECHNICAL REPORT.
- 4.7. ALL FILL AND COMPACTION SHALL BE IN ACCORDANCE WITH QAL STANDARD QC50-007-04.

- 5.1. THE CONTRACTOR SHALL SHORE OR STABILISE THE SIDES OF EXCAVATIONS AND PIPE TRENCHES AS REQUIRED FOR SAFETY OF PERSONNEL AND STABILITY OF ADJACENT STRUCTURES IN ACCORDANCE WITH WHSQ EXCAVATION WORKS - CODE OF PRACTICE.
- 5.2. PIPE EMBEDMENT, TRENCH BACKFILL AND ROAD REHABILITATION REQUIREMENTS ARE GIVEN ON DRAWING 266612.
- 5.3. COMPACTION TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1289 AND QAL STANDARD QC50-007-04.

 **Gladstone Ports Corporation**

APPROVED

Name: Erin Clark

Date: 2:53pm 21/09/2026

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED					GLADSTONE QUEENSLAND	
				A.C.N. 009 725 044						
		DRAWING SCALE		AS SHOWN		DATE		PROJECT NUMBER C-2996		
		DRAWN BY		R. HANCOX		02.02.2024		CELL 1 DISCHARGE TO BSL WHARF PIPELINE		
FUNCTION LOCATION		REVIEWED BY		M. MAYR		02.02.2024		GENERAL NOTES (SHEET 1)		
ACCOUNT ASSIGNMENT		QUAL CLIENT		M. JAMES		26.04.2024				
ORDHLDML01.PEBW		DAL ENGINEER		A. FERGUSON		29.04.2024				
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ALL DIMENSIONS IN MILLIMETRES UNLESS DRAWN TO AS 1100. DO NOT SCALE		TYPE		EXPANSION		AREA		DISCIPLINE		
A1		09		QAL		17		G		
		DRAWING NUMBER		266603		SHEET		1		
		REVISION		0						

- 6.1. THE MAXIMUM PIPE WORKING PRESSURE = 40m HEAD (400kPa).
- 6.2. THE PIPELINE SHALL BE SET OUT FROM CADASTRAL BOUNDARIES, SURVEYED REFERENCE LINES AND BENCH MARKS AS APPROPRIATE.
- 6.3. INVERT LEVELS ON LONGITUDINAL SECTIONS SHALL BE ADHERED TO UNLESS SITE CONDITIONS DETERMINE THAT COVER AND/OR GRADE CANNOT BE ACHIEVED. PIPELINE MINIMUM GRADE TO BE 1IN 500.REFER TO DRAWING 266612 FOR MINIMUM COVER.
- 6.4. PIPEWORK "AS CONSTRUCTED" INFORMATION IS TO BE RECORDED PRIOR TO BACKFILLING.
- 6.5. TOPSOIL TO BE STOCKPILED AND REPLACED AFTER PIPELINE CONSTRUCTION WHERE APPLICABLE.
- 6.6. ALL EXCAVATION AROUND EXISTING SERVICES WILL BE UNDERTAKEN BY NON DESTRUCTIVE TECHNIQUES. ALL EXCAVATIONS ARE SUBJECT TO QAL SITE REQUIREMENTS, OR BSL SITE REQUIREMENTS, AS APPLICABLE.
- 6.7. THE MINIMUM VERTICAL CLEARANCE WHERE PIPELINES CROSS OTHER UTILITIES OR PIPELINES SHALL BE:
 - 150mm FOR DN315/DN300 AND BELOW PIPELINES.
 - 300mm FOR PIPES GREATER THAN DN315/DN300.
- 6.1. CONTRACTOR TO CONTACT THE COMPANY REPRESENTATIVE TO MAKE NECESSARY ARRANGEMENTS FOR WELDING INSPECTIONS.
- 6.2. WHERE DISSIMILAR METALS COME INTO CONTACT (e.g., MILD STEEL TO STAINLESS STEEL) THEY SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER USING INSULATING MATERIAL SUCH AS 3mm THICK DURABLE RUBBER, PLASTIC, OR TEFLON GASKET OR SLEEVE, OR OTHER EQUIVALENT MATERIALS SUITABLE FOR THE APPLICATION. FOR FLANGED PIPE CONNECTION, FLANGE INSULATING KIT SHALL BE USED.

- 7.1. POLYETHYLENE (PE) PIPE AND FITTINGS SHALL BE (PE100) MANUFACTURED TO AS/NZS4130. POLYETHYLENE SHALL BE COLOURED WHITE.
- 7.2. ALL PIPES AND FITTINGS SHALL BE LOADED, UNLOADED AND LOWERED INTO TRENCH BY LIFTING (BY HAND OR HOIST) IN SUCH A MANNER SO AS TO AVOID SHOCK OR DAMAGE. WEBBING TYPE SLINGS SHALL BE USED TO HANDLE PIPE COILS OR BUNDLES.
- 7.3. POLYETHYLENE PIPEWORK SHALL BE LAID USING BEDDING AND BACKFILL MATERIALS AND INSTALLATION PROCEDURES IN ACCORDANCE WITH SS-M120 AND THE PIPE MANUFACTURER'S RECOMMENDATIONS.
- 7.4. JOINTS BETWEEN PE PIPES SHALL BE BUTT FUSION WELDED.
- 7.5. FITTINGS FOR USE WITH PE PIPE SHALL BE PE BUTT WELD FITTINGS OR ELECTRO-FUSION SOCKET PIPE FITTINGS AND SHALL BE SUITABLE FOR USE. ALL BENDS SHALL BE SWEEP BENDS UNLESS OTHERWISE NOTED. ALL BENDS AND TEES SHALL HAVE A RATED PRESSURE (AFTER FABRICATION DERATING ALLOWANCE) NOT LESS THAN THE RATED PRESSURE OF THE PIPELINE.
- 7.6. PE STUB FLANGES TO BE INSTALLED WITH GALVANIZED STEEL BACKING RINGS, BOLTS, NUTS AND WASHERS (U.O.N.)
- 7.7. PIPE DEFLECTIONS TO BE ACHIEVED USING A MINIMUM BENDING RADIUS OF 25 x PIPE NOMINAL DIAMETER OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, WHICHEVER IS GREATER.
- 7.8. CLOSING JOINTS FOR PE PIPEWORK ARE TO BE INSTALLED WITH AN AMBIENT TEMPERATURE RANGE OF 20°± 5°C.
- 7.9. CONTRACTOR TO SUBMIT FUSION WELDING SPECIFICATION TO THE COMPANY REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION.
- 7.10. ALL POLYETHYLENE (PE100) PIPES AND STUB-FLANGES USED IN CHLORINATED WATER APPLICATIONS MUST BE ENTIRELY FABRICATED FROM RESINS THAT ARE BOTH:
 - CLASSED AS HSDR (AS PER PIPA DOCUMENT POP016 AND MATERIALS TO POP004).

- 8.1. MSCL PIPES SHALL BE TO STEEL HU300, U.N.O., AND LAID IN ACCORDANCE WITH THE STEELMAINS STEEL PIPE SYSTEMS HANDLING AND INSTALLATION REFERENCE MANUAL AND THE SPECIFICATION.
- 8.2. STEEL PIPELINE WELDING TO BE IN ACCORDANCE WITH STEEL HU300 AND DRAWINGS. FOR DESIGN STANDARDS REFER TO QAL SS-M101, SS-M120, SS-M197 AND SS-M198.
- 8.3. U.N.O ALL SCL PIPEWORK FITTINGS SHALL BE COATED IN ACCORDANCE WITH THE STEEL MAINS SINTAKOTE REQUIREMENTS:
 - 8.3.1. WORKSHOP MANUFACTURED STRAIGHT SECTION JOINTS AND RADIUSSED BENDS INTENDED FOR BURIED APPLICATION SHALL BE SINTAKOTE COATED AS THE PREFERRED OPTION. HEAT SHRINK SLEEVE OF THESE FITTINGS AS AN ALTERNATIVE OPTION IS ACCEPTABLE, IF APPROVED BY THE COMPANY.
 - 8.3.2. STEEL PIPELINE WELDED JOINTS AND MODERATE TO MAJOR DAMAGE TO THE SINTAKOTE COATING SHALL BE COATED USING HEAT SHRINK WRAPPING. MINOR DAMAGE TO SINTAKOTE COATING SHALL BE REPAIRED USING 'CANUSA' HEAT SHRINK REPAIR PATCHES IN ACCORDANCE WITH STEEL MAINS MANUFACTURERS REQUIREMENTS.
 - 8.3.3. BURIED STEEL PIPELINE WELDED JOINTS THAT HAVE A SHORT RADIUS AND ARE NOT PRACTICAL FOR HEAT SHRINK COATING APPLICATIONS SHALL BE WRAPPED USING 'DENSOPOL 80' TAPE WRAPPING SYSTEM.
 - 8.3.4. BURIED FLANGED JOINTS, BOLTED CONNECTIONS, VALVE BODY ASSEMBLY BOLTS AND MECHANICAL FITTINGS SHALL BE WRAPPED USING DENSOPOL PETROLATUM 4-STEP SYSTEM.
 - 8.3.5. COATINGS TO BE BURIED SHALL BE APPROVED BY THE COMPANY REPRESENTATIVE PRIOR TO BACKFILLING UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
 - 8.3.6. TRANSITIONAL SECTIONS OF PIPELINES, BELOW GROUND TO ABOVE SHALL BE COATED IN ACCORDANCE WITH THE STEEL MAINS MANUFACTURERS REQUIREMENTS.
- 8.4. INSULATED FLANGE JOINTS (IFJ) TO USE MYLAR SLEEVED DOUBLE COMPRESSED FIBRE WASHER INSULATING KITS OR APPROVED EQUIVALENT.
- 8.5. PIPE ABBREVIATIONS:

SCL	: STEEL CEMENT LINED
IFJ	: INSULATED FLANGE JOINTS
RRJ	: RUBBER RING JOINT - SINTA JOINT
- 8.6. STAINLESS STEEL BAND (LOW-FRICTION SUPPORT)
- 8.6.1. STAINLESS STEEL BAND LOCATED AT SLIDING SUPPORT SHALL BE GRADE 316L, WITH POLISHED FINISH [EXTERIOR].
- 8.6.2. AT THE SLIDING TYPE PIPE SUPPORTS - THE LOCATION OF THE STAINLESS STEEL BAND SHALL BE IDENTIFIED AND MARKED. A SET-OUT OF 440mm (OFFSET OF 220mm BOTH DIRECTIONS) SHALL BE MADE ALONG THE CENTERLINE OF THE SETTING OUT POINT "SOP01".
- 8.6.3. THE CORRESPONDING POLYETHYLENE PIPE COATING SHALL BE COMPLETELY REMOVED OVER THE AREA MARKED FOR THE SS BAND.
- 8.6.4. EXPOSED PIPE SPIRAL WELD BEAD MUST BE GROUND DOWN LEVEL WITH THE PIPE EXTERIOR SURFACE, TO A SMOOTH FINISH. THE SURFACE SHALL BE CLEAN AND FREE FROM ANY GRIT OR DEBRIS.
- 8.6.5. ONCE THE PIPE SURFACE HAS BEEN PREPARED THE STAINLESS STEEL BAND SHALL BE WELDED WITH A 6mm FILLET WELD ALL ROUND THE CIRCUMFERENCE OF THE PIPE.
- 8.6.6. THE REMAINING 70mm OF EXPOSED STEEL SHALL BE SEALED USING AN APPROVED HEAT-SHRINKED SLEEVE OR BUTYL SYSTEM. THE HEAT-SHRINKED SLEEVE SHALL OVERLAP MIN. 100mm OF REMAINING POLYETHYLENE COATING AND COVER MIN. 25mm OF SS BAND.
- 8.7. WHERE TWO SCL PIPES ARE BUTT WELDED THE SCL SHALL BE REPAIRED WITH A COMPANY APPROVED CEMENTITIOUS REPAIR PRODUCT AND APPROVED PROCEDURE

- 9.1. STEEL POLYURETHANE (PU) LINED PIPES AND FITTINGS ARE SPECIFIED AT LOCATION WITH HIGH PIPE BENDING STRESSES.
- 9.2. U.N.O., STEEL PU LINED PIPES AND FITTINGS SHALL BE TO AS/NZS 1594 HA350 GRADE STEEL, AND HAVE A POLYURETHANE LINING DRY FILM THICKNESS OF 800µm MINIMUM AS PER AWWA C222.
- 9.3. U.N.O., STEEL PU LINED PIPES AND FITTINGS SHALL HAVE AN EXTERNAL COATING TO SPEC D ACCORDING TO QAL PAINT QA50-022-02.

10.1. DIFFUSER PIPEWORK SHALL BE TO UNS S32750 SUPER DUPLEX STAINLESS STEEL, AND SHALL BE UNLINED AND UNCOATED.

11.1. UNLESS OTHERWISE NOTED, BURIED PIPE SECTIONS WILL HAVE X-RAYS INSPECTIONS CARRIED OUT TO CONFIRM "GOLDEN WELD", REQUIRING NO PRESSURE TESTING, REFER TO CONSTRUCTION SPECIFICATION 2.22.

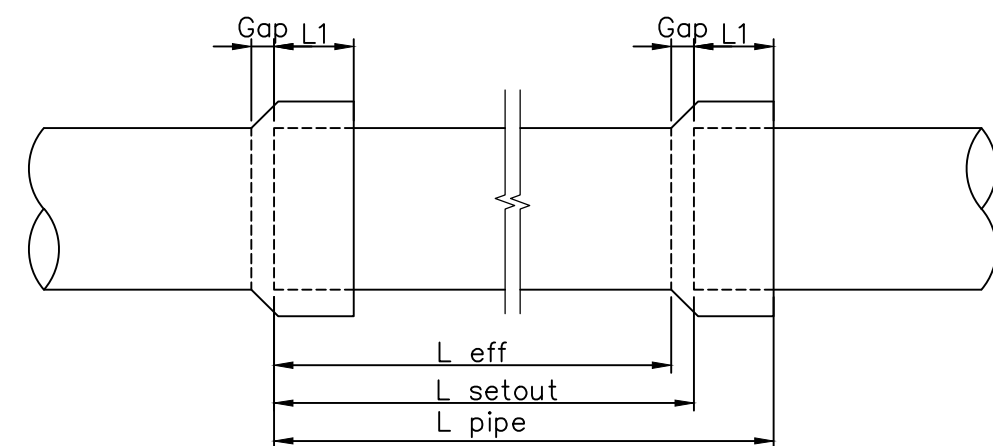
11.1.1. 100% RADIOGRAPHIC TESTING (RT) SHALL BE COMPLETED ON ALL BURIED WELDS FOR ALL UNDERGROUND SECTIONS OF THE PIPELINE.

11.1.2. IN SERVICE LEAK TESTING FOR THE ABOVE GROUND SECTIONS OF THE PIPELINE. CONTRACTOR TO LIAISE WITH OPERATIONS FOR IN SERVICE LEAK TESTING OF PIPELINE. AN IN SERVICE TESTING PROCEDURE SHALL BE DEVELOPED BY THE CONTRACTOR IN CONSULTATION WITH THE COMPANY.

THE CONTRACTOR SHALL BE IN ATTENDANCE DURING THE COMPLETION OF IN SERVICE TESTING TO ASSIST WITH ANY LEAKS THAT MAY BE DISCOVERED. THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO HAVE MATERIALS, LABOUR AND FIXINGS AVAILABLE TO COMPLETE REPAIR WORKS SHOULD THEY BE REQUIRED.

$$\begin{aligned} L_{\text{eff}} &= L_{\text{pipe}} - (\text{gap} + L_1) \\ L_{\text{setout}} &= L_{\text{pipe}} - L_1 \end{aligned}$$

	TYPE	L _{pipe}	Gap	L ₁	L _{setout}
RRJ "Sintajoint"	-	13.5m	15mm	130mm @ 20°C	13.370m
RRJ + Weld "Sintalock"	II	13.5m	15mm	150mm	13.35m



AUR_DRG.N0.		521327-W00001-DRG-WA-0004	
 aurecon Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 139 Auckland Street IPO Box 114/4 Gladstone Queensland 4680 Australia Telephone: +61 7 4562 0600 Email: gladstone@aurecongroup.com		PROJECT NUMBER: 521327	Rev. 1
		Drawn	C.WHITEHEAD 19.09.2025
		Designed	R.HANCOX 19.09.2025
		Draft Review	GEVERS 19.09.2025
		Eng Review	M.MAYR 19.09.2025
		Approved	R.FARNSWORTH 19.09.2025

 **Gladstone Ports Corporation**

APPROVED

Name: Erin Clark

Date: 2:53pm 21/09/2026

[illegible]

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						GLADSTONE QUEENSLAND	
				A.C.N. 009 725 044							
		DRAWING SCALE		AS SHOWN		DATE		PROJECT NUMBER C-2996			
		DRAWN BY		C. WHITEHEAD		19.09.2025		CELL 1 DISCHARGE TO BSL WHARF PIPELINE			
FUNCTION LOCATION		REVIEWED BY		M. MAYR		19.09.2025		GENERAL NOTES (SHEET 2)			
ACCOUNT ASSIGNMENT		QAL ENGINEER		T. SELLERS		24.09.2025					
C-2996		QAL ENGINEER		A. FERGUSON							
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								DRAWING NUMBER		266603	
								SHEET		2	
								REVISION		1	

12. PIPE SUPPORT NOTES

- 12.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 3600. ANY MATTER IN DOUBT SHALL BE REFERRED TO THE COMPANY.
- 12.2 ALL ITEMS, MATERIALS AND PRECAST ELEMENTS MUST BE SUITABLE FOR EXPOSURE TO A MARINE ENVIRONMENT.
- 12.3 ALL SITE DIMENSIONS GIVEN ON THE DRAWINGS MUST BE VERIFIED BY ACTUAL SITE MEASUREMENTS. REFER ALL DISCREPANCIES TO THE COMPANY FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- 12.4 PLINTH AND STEEL CRADLE AND STRAP SUPPORTS ON SETTING OUT COORDINATES ARE DESIGNATED AS FOLLOWS:
"TYPE 1a - b" WHERE:
"a" = PLINTH SUB TYPE (A, B, C, D OR E), RELATING TO PIPE CLEARANCE ABOVE GROUND (SEE TABLE 1 ON SHEET 3)
"b" = STEEL CRADLE AND STRAP TYPE:
"R" = RESTRAINED PIPE SUPPORT
"S" = SLIDING PIPE SUPPORT
- 12.5 OVER-EXCAVATION TO BE BACKFILLED AND COMPACTED WITH APPROVED SELECTED FILL.
- 12.6 LEFT AND RIGHT EDGES OF THE PIPE SUPPORT PLINTHS ARE DEFINED WHEN LOOKING IN THE DIRECTION OF FLOW OF THE PIPE.
- 12.7 BOTTOM OF EXCAVATION TO BE COMPACTED BEFORE PLACEMENT OF PLINTH: DCP TESTS ARE TO BE DONE PRIOR TO PLACING OF PRECAST PIPE SUPPORTS TO ACHIEVE MIN. ALLOWABLE BEARING CAPACITY. TO ACHIEVE THE MINIMUM SPECIFIED COMPACTION STANDARDS, COMPACTION RESULTS SHALL BE WITHIN $\pm 2\%$ OF OPTIMUM MOISTURE CONTENT AS DERIVED BY THE STANDARD TESTS.
- 12.8 DESIGN SOIL BEARING CAPACITY: 400 kPa
- 12.9 BOLTS SHALL BE CORROSION PROTECTED POST CUTTING OF BOLT TO REQUIRED LENGTH.
- 12.10 HOLDING DOWN BOLTS SHALL BE CAST WITH A VOID POCKET, SEE HOLDING DOWN BOLT DETAIL ON DRAWING 266638-2. THIS IS TO ALLOW FOR MINOR ADJUSTMENTS TO BE MADE AFTER TRANSPORTING OF PRECAST PIPE SUPPORTS (IF NEEDED).
- 12.11 FOR PIPE SUPPORT TYPE 1A, WHERE THERE IS NO STUB: THE HOLDING DOWN BOLTS SHALL BE FASTENED TO THE REINFORCEMENT TO PROVIDE ADDITIONAL PULL OUT RESISTANCE.
- 12.12 PLINTH BASE MUST NOT BE INSTALLED ABOVE GROUND SURFACE. MINIMUM DEPTH FROM GROUND SURFACE TO FOUNDING DEPTH OF PLINTH IS 300mm.
- 12.13 GENERAL ARRANGEMENT SHOWN FOR STANDARD PIPE LENGTHS (13.50m) OF RUBBER RING JOINTED (RRJ) STEEL PIPES (SINTAJOINT).
- 12.14 FOR ADDITIONAL DETAILS REFER TO THE FOLLOWING DRAWINGS:
266638-2: PLINTHS LAYOUT
266638-3: RESTRAINED SUPPORT DETAILS
266638-4: SLIDING SUPPORT DETAILS
266638-5: PLINTH REINFORCING DETAILS
- 12.15 DISTANCE BETWEEN CENTERLINE OF PIPE AND EDGE OF CONVEYER IS FOR ILLUSTRATION ONLY.
- 12.16 SUBGRADE / GROUND IMPROVEMENTS MAY BE REQUIRED BELOW STRUCTURES. REQUIREMENTS FOR SUBGRADE REPLACEMENT TO BE CONFIRMED ON SITE FOLLOWING SUBGRADE GEOTECHNICAL TESTING BY CONTRACTOR.
- 12.17 RUBBER SHALL COMPLY WITH THE REQUIREMENTS OF A TYPE 60H ELASTOMER TO AS 5100 APPENDIX B.
- 12.18 INDIVIDUAL DIMENSIONS SPECIFIED (THICKNESS, WIDTH AND LENGTH) FOR RUBBER BETWEEN SUPPORT STRAP AND PIPE SHALL NOT BE ACHIEVED BY VULCANISING OR OTHERWISE JOINING OR BUTTING TOGETHER TWO OR MORE RUBBER SHEETS OF LESSER DIMENSIONS UNLESS INDIVIDUAL DIMENSIONS ARE NO LESS THAN 2m UNO.
- 12.19 RUBBER SHALL BE BONDED TO THE PIPE SURFACE WITH A FULL SPREAD OF A HIGH PERFORMANCE SOLVENT-BASED CONTACT ADHESIVE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. PRIOR TO BONDING, THE RUBBER SURFACE SHALL BE CLEANED WITH AN APPROVED SOLVENT.
- 12.20 NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. ANY SIMILAR ALTERNATIVES PROPOSED FOR USE MUST HAVE WRITTEN APPROVAL FROM THE COMPANY.
- 12.21 ANY MATERIAL NOT FULLY SPECIFIED AND WHICH THE CONTRACTOR PROPOSES TO USE IN THE WORKS SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARD (OR INTERNATIONAL STANDARD IN THE ABSENCE OF SUCH STANDARD) AND BE SUITABLE FOR ITS INTENDED PURPOSE AND ENVIRONMENT. DETAILS OF SUCH PRODUCT SHALL BE SUBMITTED TO THE COMPANY FOR APPROVAL.
- 12.22 ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 12.23 ALL CONCRETE ANCHOR BLOCKS SHALL BE CAST INSITU U.N.O.

AUR. DRG. NO.		521327-W00001-DRG-WA-0005	
 Aurecon Australia Pty Ltd ASN 54 005 139 873 Level 1, 190 Auckland Street (PO Box 114) Gladstone Queensland 4680 Australia Telephone +61 7 4562 0600 Email: gladstone@aurecongroup.com		PROJECT NUMBER: 521327	Rev. 0
		Drawn R.HANCOX	02.02.2024
		Designed R.HANCOX	02.02.2024
		Draft Review G.EVERS	02.02.2024
		Eng Review R.FARNSWORTH	02.02.2024
		Approved C.BRUTON	02.02.2024



0	02.02.2024	ISSUED FOR CONSTRUCTION				AUR	RH	MS	MJ
NO	DATE	REVISION				COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT
		1		2					

13. CONCRETE WORK

CONCRETE

13.1 CONCRETE QUALITY SHALL BE AS FOLLOWS UNO:

ELEMENTS	STRENGTH GRADE x	MAXIMUM AGGREGATE SIZE (mm)	SLUMP (mm)	TYPE OF CONTROL TESTING
ALL CONCRETE	N50	20	100	PROJECT
BLINDING & MASS CONCRETE	N15	20	80	NIL
FLOWABLE FILL	0.5 TO 1.5 MPa	-	-	-

x STRENGTH GRADE DESIGNATION:

N - NORMAL CLASS (MPa)

- 13.2 CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE COMPANY FOR ACCEPTANCE PRIOR TO CASTING.
- 13.3 THE USE OF BLENDED CEMENTS, AND/OR CHEMICAL ADMIXTURES SHALL BE SUBJECT TO APPROVAL BY THE COMPANY. SUBJECT TO THE APPROVAL OF THE COMPANY, FLY ASH MAY BE INCORPORATED IN THE CONCRETE.
- 13.4 NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE COMPANY.
- 13.5 ALL FORMED EXPOSED EDGES AND RE-ENTRANT CORNERS SHALL BE CHAMFERED OR FILLETED 20mm.
- 13.6 CONCRETE COVER TO ALL REINFORCEMENT (INCLUDING FITMENTS) SHALL BE 65mm AS FOLLOWS UNO:

COVER TOLERANCE ON POSITION OF REINFORCEMENT AND TENDONS	
BEAMS, SLABS, COLUMNS & WALLS	-5 / +10mm
SLABS ON GROUND	-5 / +20mm
FOOTINGS CAST IN THE GROUND	-5 / +40mm

- 13.7 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.
- 13.8 ALL EXPOSED CONCRETE SURFACES SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATION FOR A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY AFTER INITIAL SET OF THE CONCRETE.
- 13.9 CONCRETE FINISHES SHALL BE FINISHED USING A STEEL TROWEL.
- 13.10 FORMWORK SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS 3610.
- 13.11 CONSTRUCTION JOINTS SHALL BE USED ONLY WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE COMPANY'S REPRESENTATIVE. 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.
- 13.12 CONCRETE MATERIALS AND WORK SHALL CONFORM WITH QAL STANDARD SPECIFICATIONS.
- 13.13 CONCRETE MATERIAL AND MIX DESIGN TO BE AS NOTED IN THE QAL CONSTRUCTION SPECIFICATION DOCUMENT.
- 13.14 ASSUMED CONCRETE DENSITY TAKEN AS 2400 kg/m³.

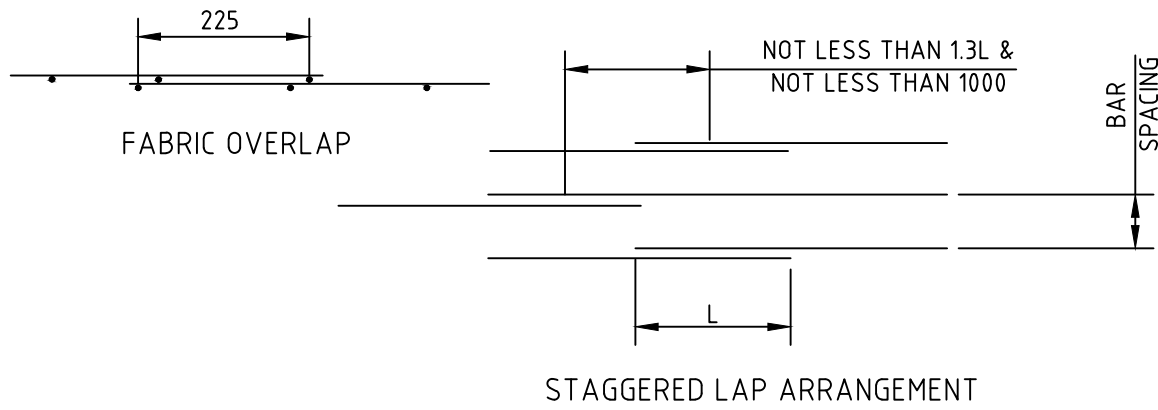
REINFORCEMENT

- 13.15 MIN. YIELD STRESS OF REINFORCEMENT = 500 MPa.
- 13.16 ALL REINFORCING BARS AND FABRIC SHALL COMPLY WITH AS/NZS 4671.
- 13.17 MINIMUM LAP LENGTHS FOR REINFORCEMENT SHALL BE AS FOLLOWS UNO:

BAR LAP AND DEVELOPMENT LENGTHS 'L'							
BAR SIZES	FOR SLABS <300 THICK AND VERTICAL REINFORCEMENT IN WALLS (K1 = 1, K7 = 125)			FOR SLABS >300 THICK AND HORIZONTAL REINFORCEMENT IN WALLS (K1 = 1.3, K7 = 125)			COLUMNS
	CONCRETE GRADE			CONCRETE GRADE			
	32	40	50	32	40	50	ALL CONCRETE GRADES
N12	500	500	500	600	500	500	500
N16	700	650	650	900	800	700	700
N20	950	850	800	1200	1100	950	950
N24	1200	1100	960	1550	1400	1250	1200
N28	1500	1350	1250	1950	1750	1550	1500
N32	1800	1600	1400	2350	2100	1900	1800

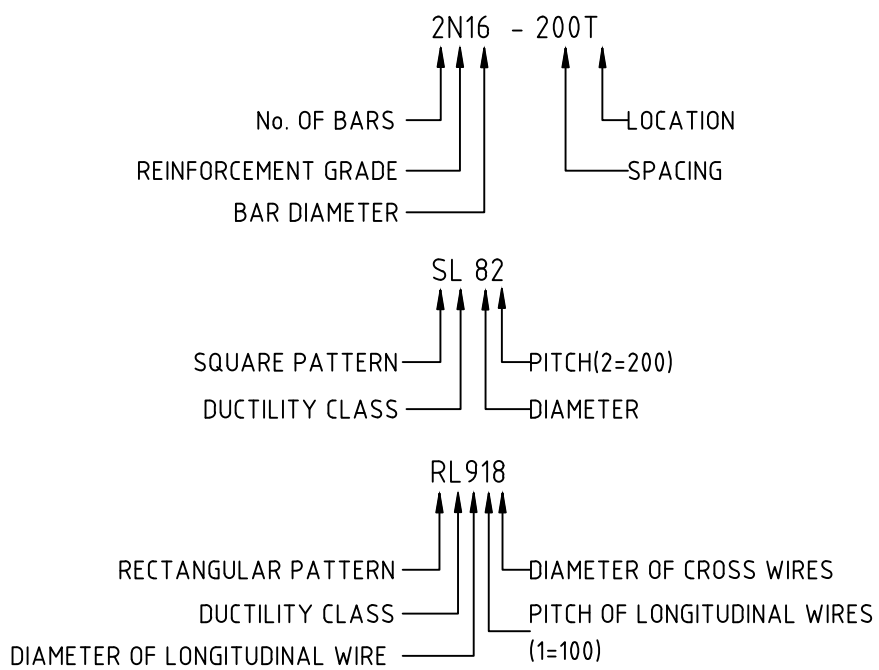
NOTE:

- BAR LAP AND DEVELOPMENT LENGTHS ARE BASED ON A53600 WITH GRADE 500 REINFORCEMENT AND 30mm CONCRETE COVER TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- N36 BARS AND LARGER SHALL NOT BE LAP SPLICED. FOR SUCH BARS, MECHANICAL COUPLERS SHALL BE USED HAVING CAPACITY NOT LESS THAN THE BARS BEEN CONNECTED.
- WHERE LAPS ARE SPECIFIED TO BE STAGGERED, THE SET-OUT SHALL BE AS FOLLOWS:



- 13.01 MINIMUM DEVELOPMENT LENGTHS FOR REINFORCEMENT SHALL BE AS FOR LAP LENGTHS UNO.
- 13.02 POSITIONS OF REINFORCEMENT LAPS AND SPLICES UNLESS SHOWN, SHALL BE IN ACCORDANCE WITH AS 3600 AND SHALL BE TO THE APPROVAL OF THE COMPANY.
- 13.03 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARY IN TRUE PROJECTION OR SCALE.
- 13.04 ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC OR GRADE 50 CONCRETE CHAIRS GENERALLY AT NOT GREATER THAN 900 CENTRES BOTH WAYS. BAR CHAIRS SUPPORTED ON THE GROUND SHALL HAVE SUITABLE SPREADER PLATES.
- 13.05 ALL REINFORCEMENT SHALL BE SECURED WITH THE WIRE (AT ALTERNATE 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.
- 13.06 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION OF REINFORCING BAR BENDING SCHEDULES.
- 13.07 WELDING, FLAME CUTTING OR SITE BENDING OF REINFORCEMENT IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE COMPANY.
- 13.08 ALL COGS, HOOKS AND BENDS SHALL COMPLY WITH AS 3600 UNO.
- 13.09 AT PENETRATIONS WITH DIMENSIONS LESS THAN 300 REINFORCEMENT SHALL BE DISPLACED EACH SIDE OF THE PENETRATION UNO. AT PENETRATIONS WITH DIMENSIONS GREATER THAN 300. REFER TO CONCRETE DRAWINGS FOR DETAILS.
- 13.10 SPACER BARS BETWEEN 2 OR MORE LAYERS OF PARALLEL REINFORCING BARS SHALL BE THE LARGER OF N32 OR THE PRIMARY BAR DIAMETER & PLACED AT 1200 CENTRES UNO.
- 13.11 ALL REINFORCEMENT STEEL SHALL BE CLEAN OF ALL CONTAMINANTS INCLUDING BUT NOT LIMITED TO DIRT, ALUMINA DUST AND OILS PRIOR TO CONCRETING. ALL STEEL ROE SHALL BE HOSED DOWN FROM ENVIRONMENTAL CONTAMINANTS SUCH AS SEA SPRAY AND/OR SALT RESIDUE PRIOR TO FINAL PLACEMENT AND NO MORE THEN 24HRS PRIOR TO CONCRETE PLACEMENT.
- 13.12 PROVIDE PROTECTIVE CAPS TO ALL PROJECTING REINFORCEMENT.
- 13.13 SPLICING OF REINFORCEMENT SHALL COMPLY WITH SECTION 13.2 OF AS 3600: 2018
- 13.14 REINFORCEMENT TOLERANCE = $\pm 10\text{mm}$.

- 13.32 REINFORCEMENT DESIGNATION:
BAR AND FABRIC IS DENOTED AS FOLLOWS:



(NB: CROSS WIRE PITCH = 200 FOR ALL RL FABRIC)

REINFORCEMENT GRADE SYMBOLS:

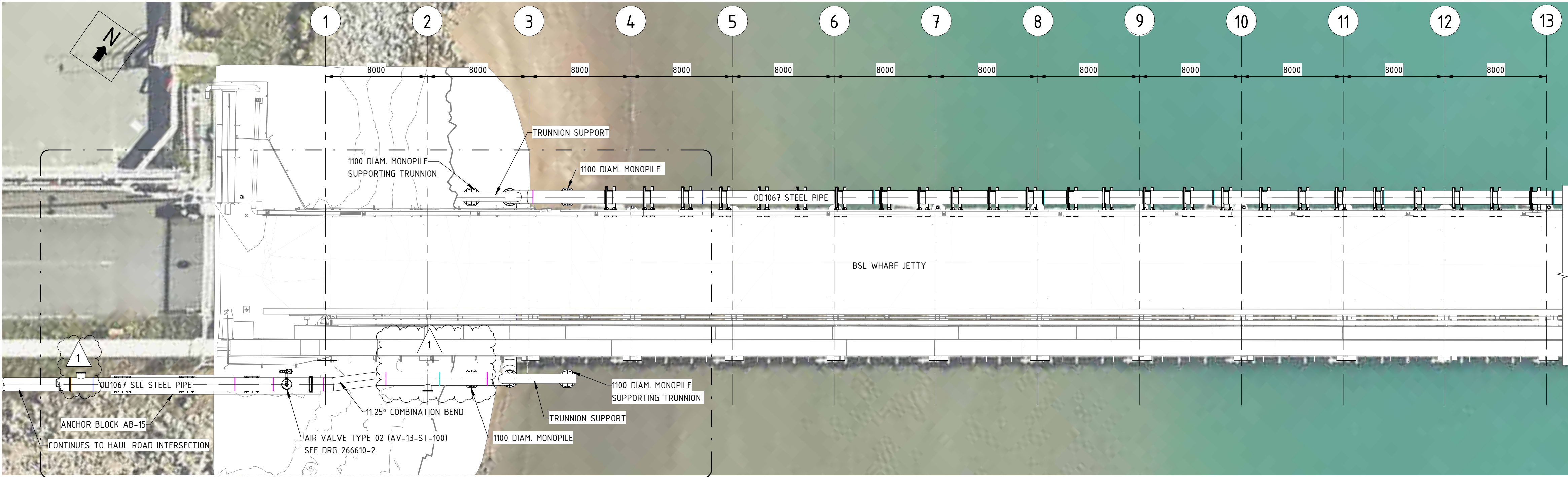
R - STRUCTURAL ROUND BAR GRADE R 250N
N - DEFORMED BAR GRADE D 500N
SL or RL - HARD DRAWN WIRE FABRIC GRADE D 500L

REINFORCEMENT GRADE SYMBOLS:

T - TOP FACE	EW - EACH WAY
B - BOTTOM FACE	EF - EACH FACE
NF - NEAR FACE	IF - INSIDE FACE
FF - FAR FACE	OF - OUTSIDE FACE

- 13.33 VOID POCKET IN PIPE SUPPORT IS TO BE GROUTED CLOSED WITH NON-SHRINK GROUT DURING INSTALLATION OF SADDLE.
- 13.34 NON-SHRINK GROUT IS TO BE USED BETWEEN SADDLE BASE AND PLINTH, TO A THICKNESS DETERMINED ON SITE BY THE CONTRACTOR, FOR THE FOLLOWING RANGE:
- MIN. = 50mm
 - MAX. = 75mm
- 13.35 GROUT UNDER BASE PLATES SHALL TYPICALLY BE NON-SHRINK CEMENTITIOUS GROUT 'CONBEXTRA DEEP POUR' (UNO). MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH OF GROUT SHALL BE 50MPa AT 28 DAYS.
- 13.36 ADEQUATE TIME MUST BE ALLOWED FOR THE GROUT TO CURE BEFORE LOADING OF STEEL SUPPORT.
- 13.37 CONCRETE FINISHES SHALL BE IN ACCORDANCE WITH THE SPECIFICATION, WHERE NOT SPECIFIED OR SHOWN OTHERWISE ON THE DRAWING CONCRETE FINISHES SHALL BE AS FOLLOWS:
- TOPS OF ALL PLINTHS AND PEDESTALS WHICH ARE TO SUPPORT BASE PLATES SHALL BE SCABLED WITH A SURFACE ROUGHNESS OF $\pm 2\text{mm}$.
 - OTHER UNIFORMED EXPOSED SURFACES SHALL BE FINISHED USING A STEEL TROWEL, OR OFF SHUTTER FINISH (STEEL SHUTTERS).
- 13.38 MINIMUM TESTS FOR CONCRETE PLINTHS SHALL BE AS PER THE CONSTRUCTION SPECIFICATIONS. MINIMUM TESTS SHALL BE TAKEN IN ACCORDANCE WITH AS 1012 PARTS 1, 3, 8, 9, 12, AND AS FOLLOWS:
- FOR PLINTHS TESTS - TAKEN AT 7 AND 28 DAYS UNO. WITH A TOTAL NUMBER OF 2 SAMPLES PER TEST AND A SINGLE SLUMP TEST TO BE CONDUCTED.
- 13.39 STRENGTH GRADE DESIGNATIONS:
- N - NORMAL CLASS (MPa)
 - SC - SPECIAL CLASS (MPa) EXPOSURE CLASSIFICATION 'B'
 - SB - SPECIAL CLASS (MPa) EXPOSURE CLASSIFICATION 'C'

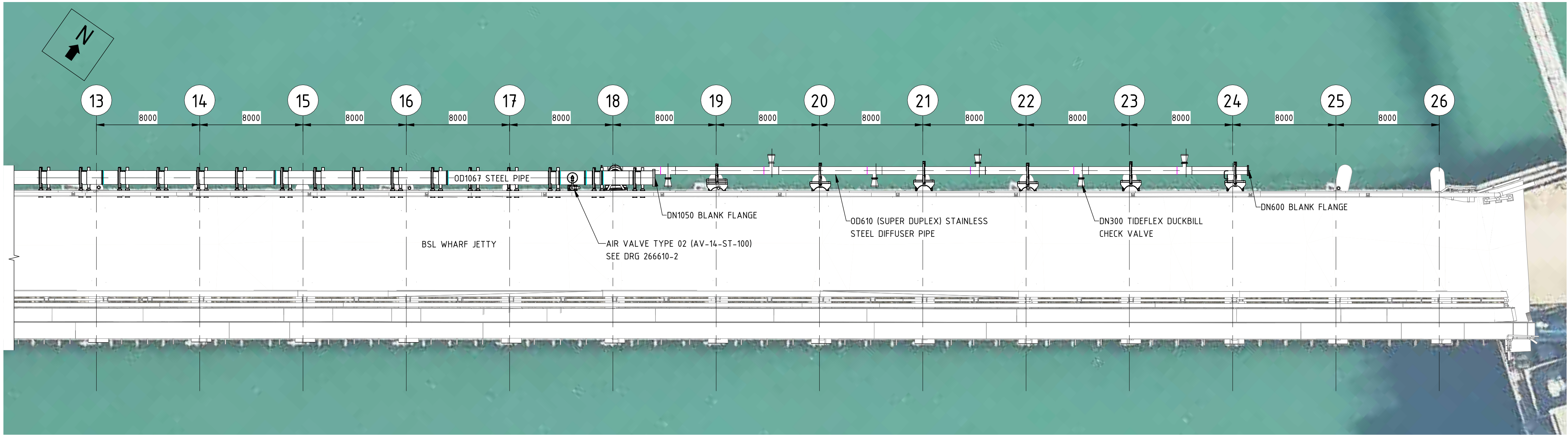
APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED										A.C.N. 009 725 044		GLADSTONE QUEENSLAND															
				DRAWING SCALE		AS SHOWN		DATE		PROJECT NUMBER C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE GENERAL NOTES (SHEET 3)																					
				DRAWN BY		R. HANCOX		02.02.2024																							
				REVIEWED BY		R. FARNSWORTH		02.02.2024																							
FUNCTION LOCATION		QRDHLDMCL01PEBW		REVIEWED BY		R. FARNSWORTH		02.02.2024																							
ACCOUNT ASSIGNMENT		C-2996		QUAL CLIENT		M. JAMES		08.05.2024																							
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION										QUAL ENGINEER		A. FERGUSON		08.05.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION			
ALL DIMENSIONS IN MILLIMETRES UNLESS DRAWN TO AS 1100. DO NOT SCALE										RPEQ NAME		R. FARNSWORTH		RPEQ No.		08389		09		QAL		17		G		266603		3		0	
8				9				10				11				HARD COPY DRAWINGS ARE UNCONTROLLED															



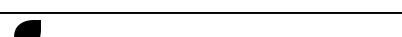
GENERAL ARRANGEMENT (BENTS 1-13) - PLAN VIEW
1 : 200

- NOTES:
- DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW.
 - THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.
 - KEY TO NUMBERING OF FITTINGS:
 - {AREA CODE} - {FITTING REFERENCE NUMBER}EXAMPLES
 - "P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1
 - "LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4
 - THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - 266634: BSL JETTY - PIPEWORK ELEVATIONS
 - 266635-1: BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)
 - 266635-2: BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)
 - FOR RELATIVE HAT AND LAT LEVELS SEE SECTION A ON DRAWING 266634.

- LEGEND FOR PIPE JOINTS:
- SINTALOCK JOINT TYPE II
 - BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
 - RUBBER RING JOINT (RRJ) (SINTAJOINT)
 - WELDED COLLAR JOINT TYPE 1



GENERAL ARRANGEMENT (BENTS 13-26) - PLAN VIEW
1 : 200

AUR. DRG. NO.		521327-W00001-DRG-WA-0070		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone: +61 7 4962 0600 Email: gladstone@Aurecongroup.com		PROJECT NUMBER: 521327		Rev. 1
		Drawn	C. WHITEHEAD	19.09.2025
		Designed	R. HANCOX	19.09.2025
		Draft Review	G. EVERS	19.09.2025
		Eng Review	M. MAYR	19.09.2025
		Approved	R. FARNSWORTH	19.09.2025



1. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "H": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND											
FUNCTION LOCATION ACCOUNT ASSIGNMENT THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE				DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE													
				DRAWN BY		C. WHITEHEAD		19.09.2025															
				REVIEWED BY		M. MAYR		19.09.2025		BSL JETTY - PIPEWORK GENERAL ARRANGEMENT													
				GAL CLIENT		T. SELLERS		24.09.2025															
				ENGINEER		A. FERGUSON		24.09.2025															
RPEQ NAME		M. MAYR		RPEQ No. 9079		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION					
8		9		10		11		12		09		QAL		17		P		266633		0		1	

NO.	DATE	REVISION	COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
1	19.09.2025	ADDED WELD COLLAR TYPE 1-A, ACCESS TEES AND FLANGES	AUR	CW	MS	TS	AF	MM	9079	GENERAL NOTES	266603
0	02.02.2024	ISSUED FOR CONSTRUCTION	AUR	D. MvV	MS	MJ	AF	MM	9079	TITLE DRAWING & DRAWING LIST	266601

DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW.

2. THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.

3. KEY TO NUMBERING OF FITTINGS:

- [AREA CODE] - [FITTING REFERENCE NUMBER]

EXAMPLES

"P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1

"LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4

4. WELDING OF STAINLESS STEEL FITTINGS AND (OR) PIPES SHALL BE BUTT WELDED WITH A FILLER MATERIAL TO MATCH THE GRADE OF THE BASE METAL.

5. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:

- 266633-0: BSL JETTY - PIPEWORK GENERAL ARRANGEMENT
- 266635-1: BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)
- 266635-2: BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)

6. FOR CML/PU PIPE JOINT (DETAIL 2):

6.1 BEFORE ASSEMBLING THE JOINT, CLEAN PIPE SOCKET INSIDE AND OUTSIDE SURFACE THAT HAS NO SINKNOTE APPLIED FROM ANY PROTECTIVE PAINT AND/OR SURFACE RUST.

6.2 CLEAN SPIGOT COLLAR OUTSIDE SURFACE THAT HAS NO SINKNOTE APPLIED FROM ANY PROTECTIVE PAINT AND/OR SURFACE RUST AS WELL. THE HEAT SHRINK SLEEVE SHOULD NOT BE APPLIED UNTO THE RUST PREVENTATIVE PAINT OR OVER SURFACE RUST.

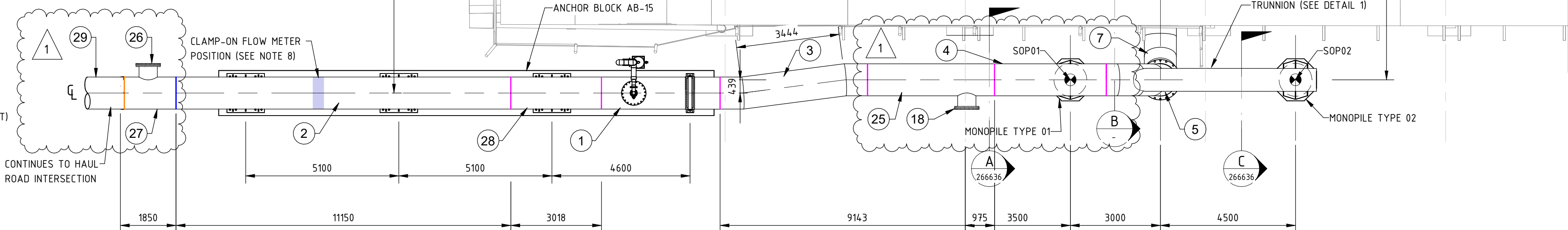
7. PIPE LENGTHS SHOWN ARE SET-OUT LENGTHS

8. EXTERNAL FLOW METERING DEVICE WILL BE SUPPLIED, INSTALLED AND OPERATED BY COMPANY WHENEVER REQUIRED DURING OPERATION. SUITABLE POSITION FOR DEVICE IS INDICATED.

9. ELECTRICAL CONTINUITY TESTING OF JETTY BENT 3 PIPE TO WHARF ICCP SYSTEM SHALL BE CONDUCTED PRIOR TO INSTALLATION OF THIS CROSSBONDING PLATE AS DETAILED IN PROJECT CONSTRUCTION SPECIFICATION 521327-W00001-SPE-WA-0001. IF ELECTRICAL CONTINUITY IS NOT CONFIRMED, THE CROSSBONDING PLATES AND CABLES SHALL BE INSTALLED ON JETTY BENT 15 INSTEAD (NOT AT JETTY BENT 3).

10. PROTECTIVE WRAPS SHALL BE INSTALLED FOLLOWING INSTALLATION OF BOND CABLE ACROSS THE FLANGE. THE PROTECTIVE WRAP SHALL CONSIST OF DENSO PUTTY (FILLER AROUND NUTS, BOLTS ETC). DENSO PETROLATUM WRAP OR DENSO GLASS OUTER WRAP

- SINTALOCK JOINT TYPE II
- BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
- RUBBER RING JOINT (RRJ) (SINTAJOINT)
- WELDED COLLAR JOINT TYPE 1



25mm² Cu XLPE/PVC CROSSBONDING CABLE CONNECTION TO PILE SOP4 MONOPILE BRACKET AS PER DRAWING 266654 DETAIL 3.

RL 3 924 m
PIPE CL

2

6

7

1

8

CATHODIC PROTECTION CROSSBONDING AND TEST POINT SEE DRAWING 266654 DETAIL 1.

CROSSBONDING PLATE AND 25mm² Cu XLPE/PVC CROSSBONDING CABLE CONNECTION TO EXISTING JETTY BENT 3 STEEL PILE AS PER DRAWING 266654 DETAIL 2 AND 3.

CROSSBONDING CABLE RUN IN A 25mm DIAMETER FLEXIBLE CONDUIT SECURED TO CONCRETE DECK AT 500mm SPACING WITH GRADE 316 STAINLESS STEEL SADDLES AND FIXINGS.

CROSSBOND CABLE ACROSS FLANGE AS PER DRAWING 266654 DETAIL 5 & 6 AND PROTECTIVE WRAPS AS PER NOTE 10.

	PORT AHD 3 800m	DATUM 6.068m
FORM SURGE (IN 500 YEARS)		
HAT	2.422m	4.690m
MHWS	1.642m	3.910m
MHWN	0.792m	3.060m
OAL DATUM	0.243m	2.511m
AHD	0.00m	2.268m
MLWN	-0.748m	1.520m
MLWS	-1.598m	0.670m
LAT	-2.268m	0.000m

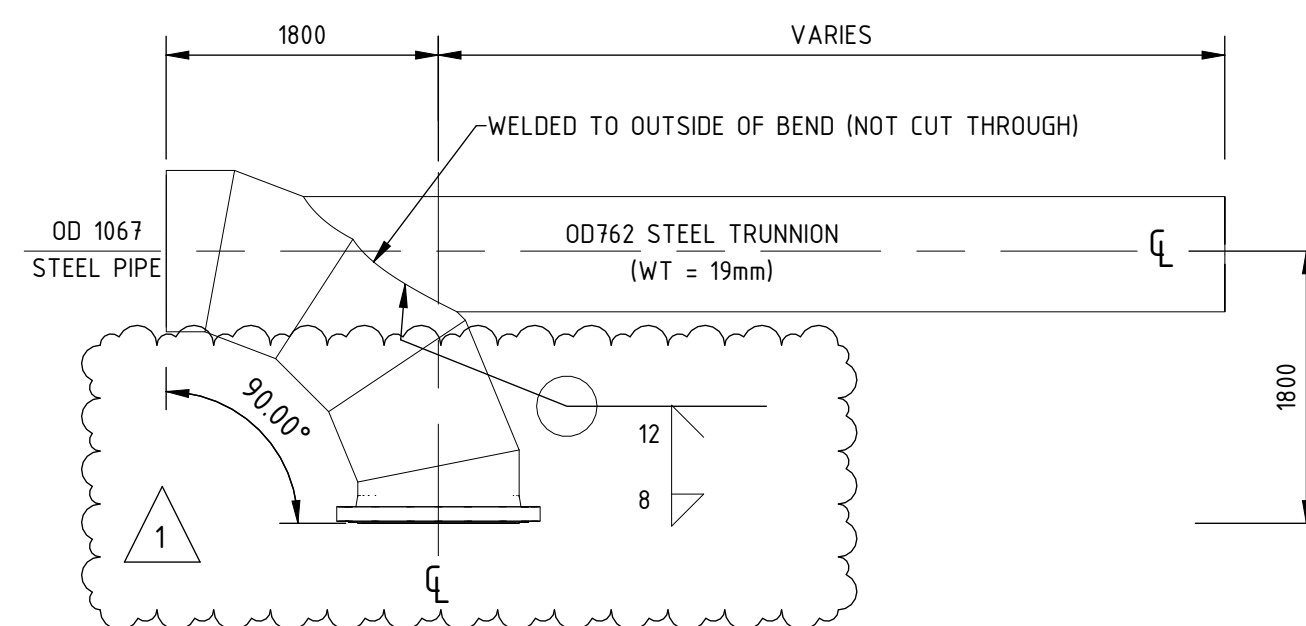
1801

10701

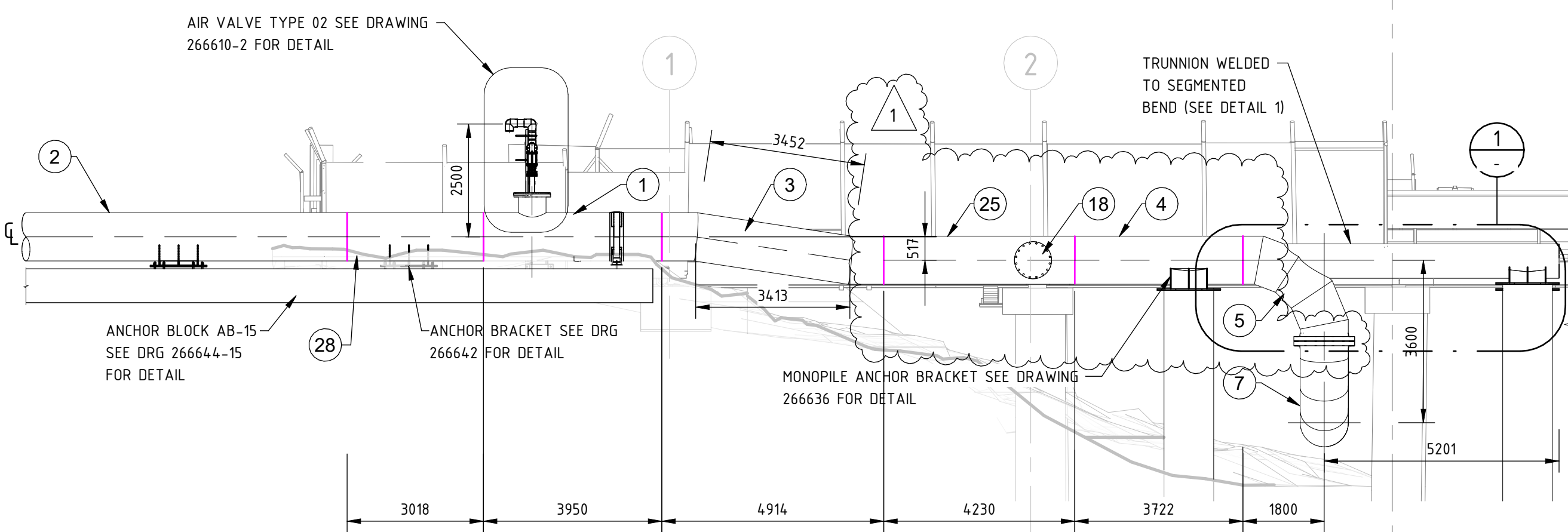
14300

EASTING

328760.461



DETAIL 1
1 : 50



STORM SURGE
(1 IN 500 YEARS)

HAT

MHWS

MHWN

QAL DATUM

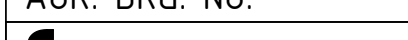
AHD

MLWN

MLWS

LAT

MONOPILE SET OUT POINT:	NORTHING	EASTING
SOP01	7360812.438	328760.461
SOP02	7360817.518	328765.977
SOP03	7360822.961	328750.775
SOP04	7360828.040	328756.293

AUR. DRG. NO.		521327-W00001-DRG-WA-0071		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street PO Box 114/4 Gladstone Queensland 4680 Australia Telephone +61 7 4962 0600 Email: gladsfons@Aurecongroup.com		PROJECT NUMBER: 521327	Rev. 1	
		Drawn	C. WHITEHEAD	19.09.2025
		Designed	R. HANCOX	19.09.2025
		Draft Review	G. EVERS	19.09.2025
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		Approved	R. FARNSWORTH	19.09.2025

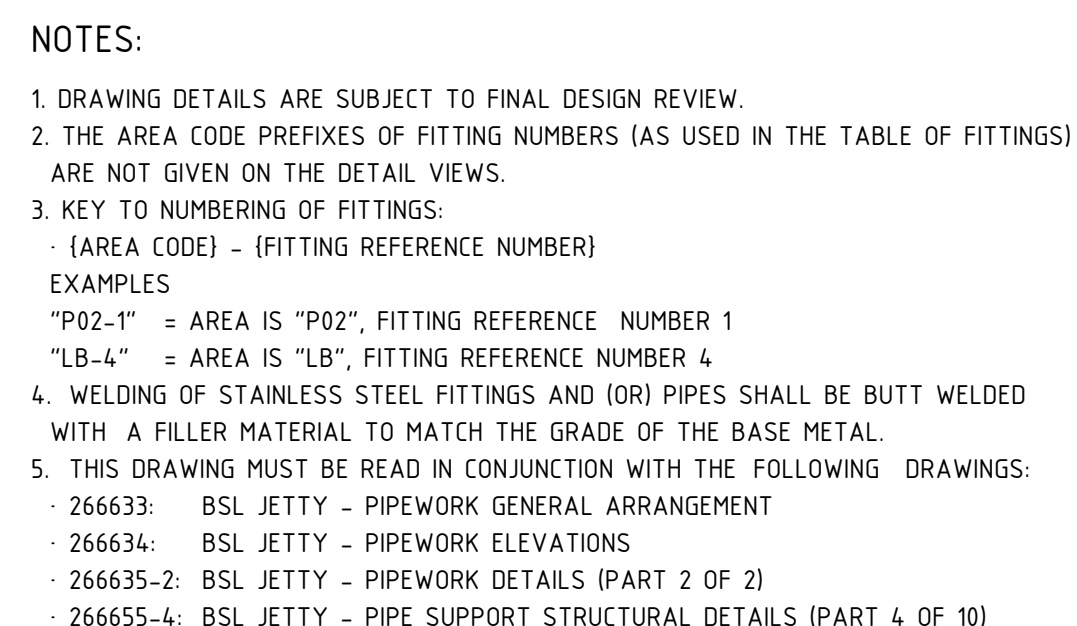
[illegible]

APPROVAL		DATE		QUEENSLAND	
		DRAWING SCALE		AS INDICATED	
		DRAWN BY		C. WHITEHEAD	
		REVIEWED BY		M. MAYR	
FUNCTION		GAL		T. SELLERS	
LOCATION		CLIENT		24.09.2025	
ACCOUNT		ENGINEER		A. FERGUSON	
ASSIGNMENT		RPEQ		9079	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION		NAME		M. MAYR	
ALL DIMENSIONS IN MILLIMETRES UNO.		RPEQ No.		9079	
DRAWN TO AS 1100. DO NOT SCALE		A1		10	

GLADSTONE
QUEENSLAND

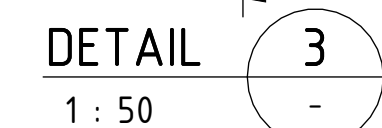
BSL JETTY - PIPEWORK ELEVATIONS

TYPE	EXPANSION	AREA	DISCIPLINE	DRAWING NUMBER	SHEET	REVISION
09	QAL	17	P	266634	0	1



LEGEND FOR PIPE JOINTS:

- SINTALOCK JOINT TYPE II
- BUTT WELD WITH FILLER METAL TO MATCH GRADE OF BASE STEEL
-  RUBBER RING JOINT (RRJ) (SINTAJOINT)
- WELDED COLLAR JOINT TYPE 1

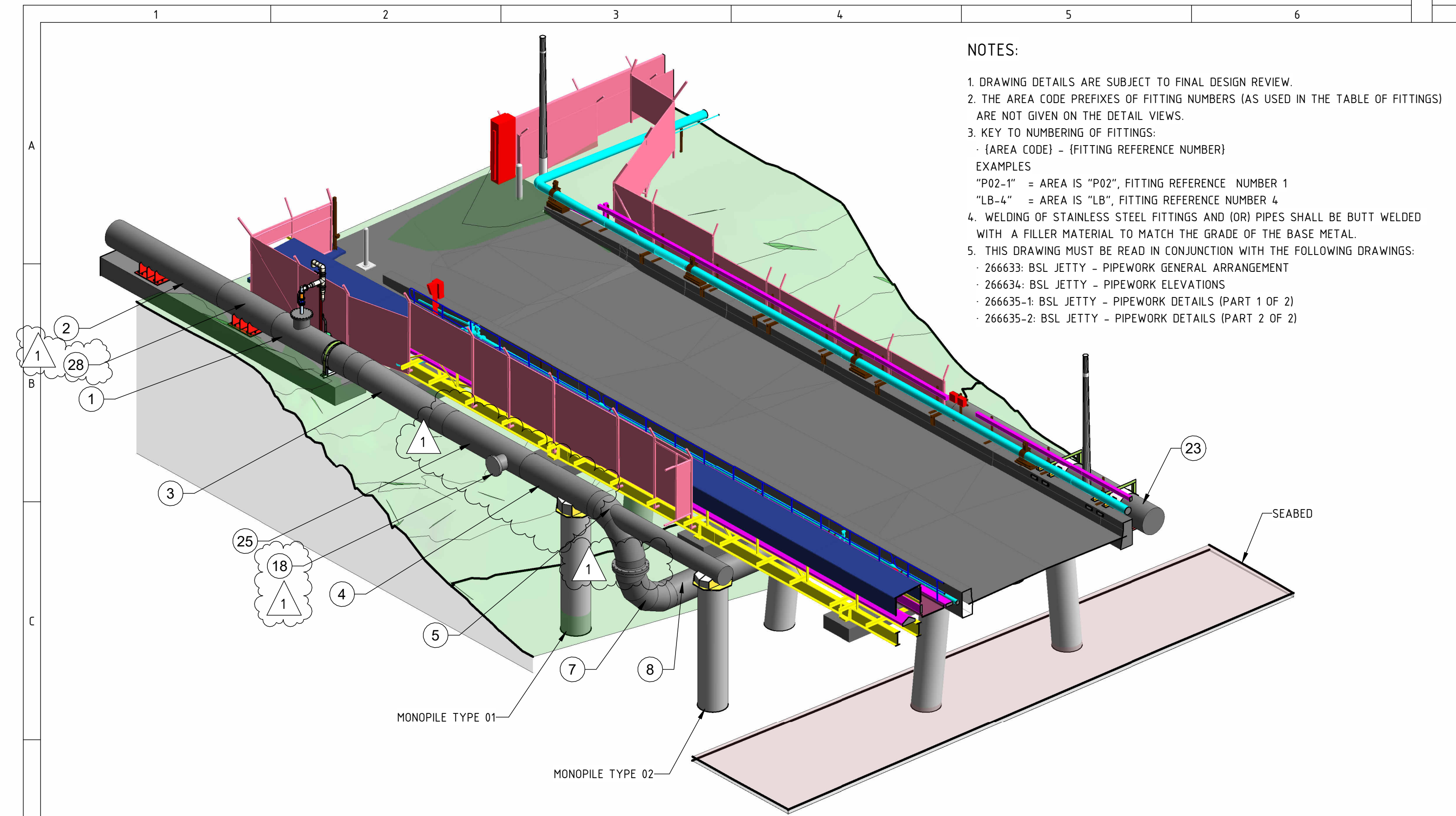


NORTHERN ELEVATION – BENTS 13 TO 26
1 : 200

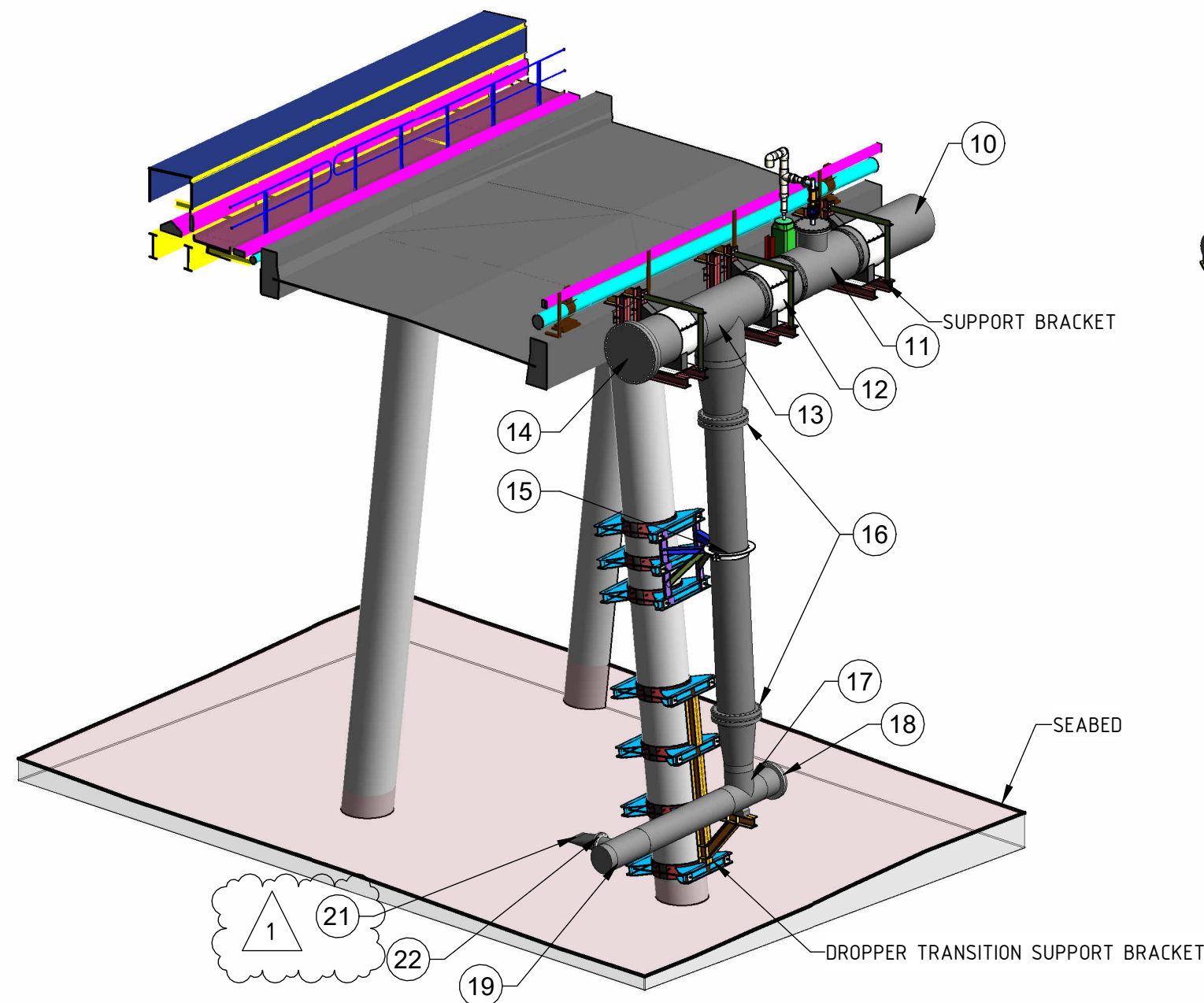
AUR. DRG. NO.		521327-W00001-DRG-WA-0072	
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone +61 7 4962 0600 Email: gladstone@aurecongroup.com	PROJECT NUMBER: 521327		Rev. 1
	Drawn	C. WHITEHEAD	19.09.2025
	Designed	R. HANCOX	19.09.2025
	Draft Review	G. EVERS	19.09.2025
	Eng Review	M. MAYR	19.09.2025
	Approved	R. FARNSWORTH	19.09.2025

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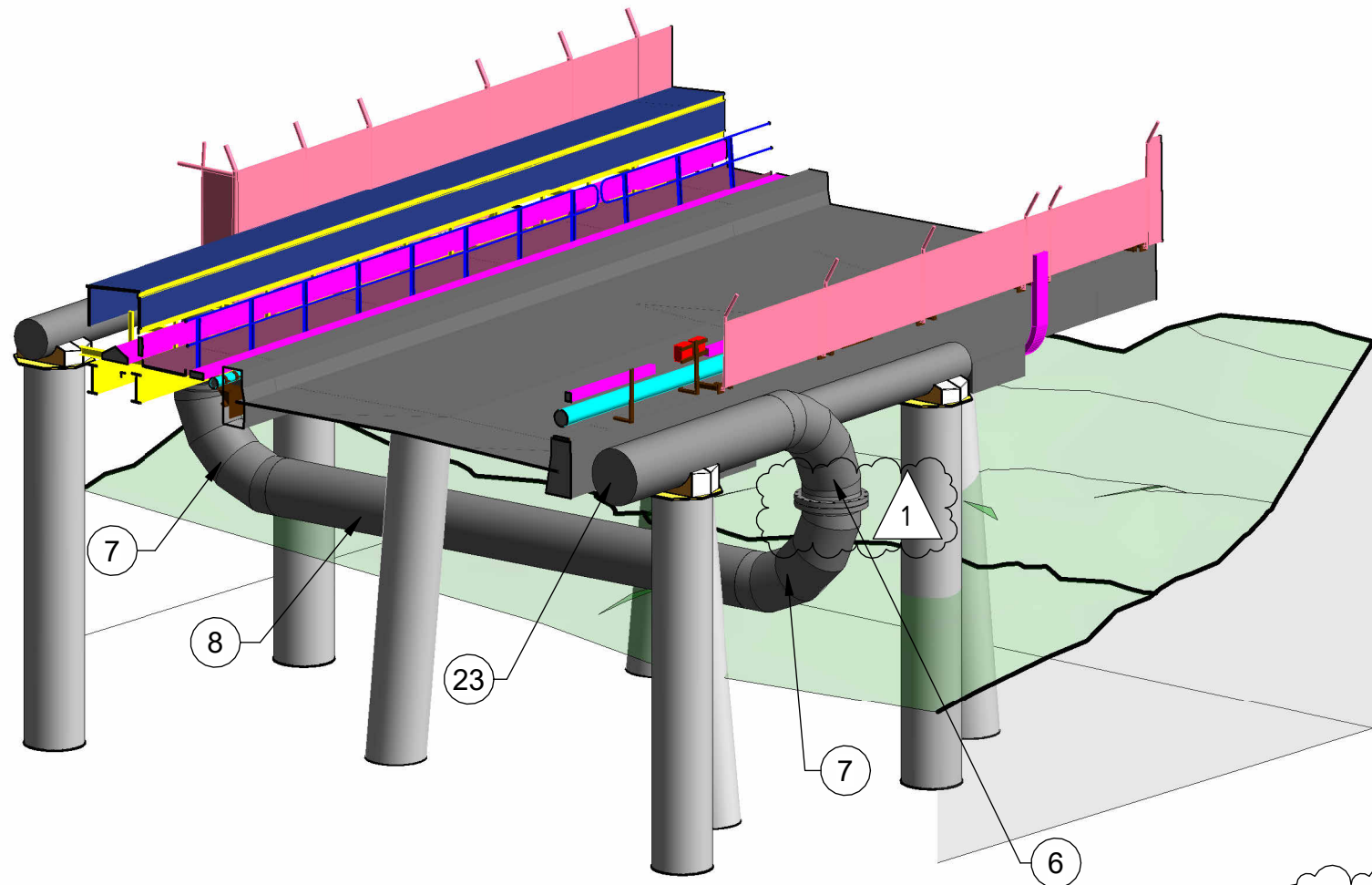
APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND		
			DRAWING SCALE	AS INDICATED	DATE	PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE						
			DRAWN BY	C. WHITEHEAD	19.09.2025							
FUNCTION			REVIEWED BY	M. MAYR	19.09.2025	BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)						
LOCATION			BY	M. MAYR	19.09.2025							
ACCOUNT			CLIENT	T. SELLERS	24.09.2025							
ASSIGNMENT			QAL									
C-2996			QAL									
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION			ENGINEER	A. FERGUSON	24.09.2025	TYPE	EXPANSION	AREA	DISCIPLINE	DRAWING NUMBER	SHEET	REVISION
ALL DIMENSIONS IN MILLIMETRES. UNLESS OTHERWISE SPECIFIED			REPO	M. MAYR	9079	09	17	17	P	266635	1	1
DRAWN TO: ISO 15024-1:2017			A1									



GENERAL ARRANGEMENT WHARF APPROACH PIPEWORK - ISOMETRIC VIEW
NTS



GENERAL DROPPER PIPE ARRANGEMENT - ISOMETRIC VIEW
NTS



GENERAL CROSSING ARRANGEMENT - ISOMETRIC VIEW
NTS

NOTES:

- DRAWING DETAILS ARE SUBJECT TO FINAL DESIGN REVIEW.
- THE AREA CODE PREFIXES OF FITTING NUMBERS (AS USED IN THE TABLE OF FITTINGS) ARE NOT GIVEN ON THE DETAIL VIEWS.
- KEY TO NUMBERING OF FITTINGS:
 - (AREA CODE) - (FITTING REFERENCE NUMBER)
 - EXAMPLES:
 - "P02-1" = AREA IS "P02", FITTING REFERENCE NUMBER 1
 - "LB-4" = AREA IS "LB", FITTING REFERENCE NUMBER 4
- WELDING OF STAINLESS STEEL FITTINGS AND (OR) PIPES SHALL BE BUTT WELDED WITH A FILLER MATERIAL TO MATCH THE GRADE OF THE BASE METAL.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - 266633: BSL JETTY - PIPEWORK GENERAL ARRANGEMENT
 - 266634: BSL JETTY - PIPEWORK ELEVATIONS
 - 266635-1: BSL JETTY - PIPEWORK DETAILS (PART 1 OF 2)
 - 266635-2: BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)

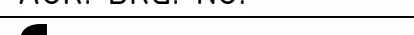
TABLE OF FITTINGS NOTES:

- T.1 LINING AND COATING THICKNESS INDICATED ARE MINIMUM REQUIRED THICKNESSES.
- T.2 ABBREVIATIONS USED:
- P = PLAIN END
 - SO = SOCKET END
 - SP = SPIGOT END
 - FL = FLANGE / FLANGED END
 - C/W = COMPLETE WITH
 - WT = WALL THICKNESS
 - L = LENGTH
 - OD = OUTSIDE DIAMETER
 - DN = NOMINAL DIAMETER
 - PN = NOMINAL PRESSURE
 - RRJ = RUBBER RING JOINT
 - FBPE = FUSION BONDED POLYETHYLENE
 - CML = CEMENT MORTAR LINING
- T.3 LENGTHS GIVEN ARE OVERALL (OUTSIDE) DIMENSION INCLUDING ANY SOCKET OR FLANGE.

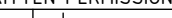
TABLE OF FITTINGS

ITEM REF.	QUANTITY	DN	MATERIAL	DESCRIPTION	MAIN ENDS SPEC.	BRANCH END SPEC.
BSLJ-1	1	1050	STEEL AS/NZS 1594 HA350, COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	TEE (UNEQUAL), OD1067 (12mm WT) x OD610 (5mm WT) P-P-FL, STRAIGHT EXTENSION (OD1067, L = 3950, WT = 12mm), C/W	BUTT WELD	ASME B16.5 CLASS 150
BSLJ-2	1	1050	STEEL AS/NZS 1594 HA350, COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	STRAIGHT, OD1067 (12mm WT, L = 11150), P-P, ANCHOR BRACKETS	BUTT WELD, WELD COLLAR (FACTORY)	
BSLJ-3	1	1050	STEEL AS/NZS 1594 HA350, COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	COMBINATION FITTING, OD1067, 2 x 11.25° (2D), C/W, 1 x STRAIGHT, OD1067 (12mm WT, L = 3480), BEND AND STRAIGHT, P-P	BUTT WELD	
BSLJ-4	1	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), LINING: AWWA C222 POLYURETHANE MIN. 800µm	STRAIGHT, OD1067 (12mm WT, L = 3722), P-FL	BUTT WELD	
BSLJ-5	1	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), TRUNNION COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	BEND, OD1067 (12mm WT), 90° (1.8D), C/W TRUNNION, (OD762, 19.050mm WT, L = 5201mm), P-FL	BUTT WELD, ASME B16.47 CLASS 150 SERIES A (RAISED FACE)	
BSLJ-6	1	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), TRUNNION COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	BEND, OD1067 (12mm WT), 90° (1.8D), C/W TRUNNION, (OD762, 19.050mm WT, L = 3699mm), P-FL	BUTT WELD, ASME B16.47 CLASS 150 SERIES A (RAISED FACE)	
BSLJ-7	2	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), LINING: AWWA C222 POLYURETHANE MIN. 800µm	BEND, OD1067 (12mm WT), 90° (1.8D), FL-P	BUTT WELD, ASME B16.47 CLASS 150 SERIES A (RAISED FACE)	
BSLJ-8	1	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), LINING: AWWA C222 POLYURETHANE MIN. 800µm	STRAIGHT, OD1067 (12mm WT, L = 10700), P-P	BUTT WELD	
BSLJ-9	6	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	STRAIGHT, OD1067 (8mm WT, L = 13500), SP-SO	SINTALOCK TYPE II (WELDED)	
BSLJ-10	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	STRAIGHT, OD1067 (8mm WT, L = 8842), SP-SO	SINTALOCK TYPE II (WELDED)	
BSLJ-11	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	TEE (UNEQUAL), OD1067 (8mm WT) x OD610 (5mm WT) SP-SO	SINTALOCK TYPE II (WELDED)	ASME B16.5 CLASS 150
BSLJ-12	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	STRAIGHT, OD1067 (8mm WT, L = 1463), SP-SO	SINTALOCK TYPE II (WELDED)	
BSLJ-13	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	TEE (EQUAL), OD1067 (8mm WT), C/W REDUCER (CONCENTRIC), OD1067 (8mm WT) X OD800 (8mm WT), AND, STRAIGHT, OD1067 (8mm WT, L = 1920) SP-FL-FL	SINTALOCK TYPE II (WELDED) ASME B16.47 CLASS 150 SERIES A	ASME B16.47 CLASS 150 SERIES A
BSLJ-14	1	1050	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750 INCLUDING SUPER DUPLEX STAINLESS BOLT KIT	BLANK FLANGE	ASME B16.47 CLASS 150 SERIES A	
BSLJ-15	1	800	PE100 AS 4130 SDR 13.6	STRAIGHT, OD800 (PN10, L = 6379), FL-FL	FULL FACE PE 100 FLANGES	
BSLJ-16	2	800	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750 INCLUDING SUPER DUPLEX STAINLESS BOLT KIT	BACKING RING	ASME B16.47 CLASS 150 SERIES A	
BSLJ-17	1	600	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750	TEE (EQUAL), OD610 (WT = 9.525mm), C/W REDUCER (CONCENTRIC) TO BRANCH (OD610 TO OD813, WT = 9.525mm) AND STRAIGHT EXTENSIONS (OD610, L = 485 AND L = 2936, WT = 9.525mm), P-FL-FL	ASME B16.5 CLASS 150	ASME B16.47 CLASS 150 SERIES A
BSLJ-18	3	600	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750 INCLUDING SUPER DUPLEX STAINLESS BOLT KIT	BLANK FLANGE	ASME B16.5 CLASS 150	
BSLJ-19	5	600	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750	TEE (UNEQUAL), OD610 9.525mm WT) x OD324 6mm WT), C/W WITH STRAIGHT (L = 6850, WT = 9.525mm), P-P-FL	BUTT WELD	ASME B16.5 CLASS 150
BSLJ-20	1	600	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750	TEE (UNEQUAL), OD610 9.525mm WT) x OD324 6mm WT), C/W WITH STRAIGHT (L = 4249, WT = 9.525mm), P-FL-FL	BUTT WELD, ASME B16.5 CLASS 150	ASME B16.5 CLASS 150
BSLJ-21	6	300	ELASTOMERIC	TIDEFLEX, DN300	ASME B16.5 CLASS 150	
BSLJ-22	6	300	ASTM A 790M - S32750 SUPER DUPLEX SS UNS S32750 INCLUDING SUPER DUPLEX STAINLESS BOLT KIT	BACKING RING	ASME B16.5 CLASS 150	
BSLJ-23	1	1050	STEEL AS/NZS 1594 HA350, COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	STRAIGHT, OD1067 (12mm WT, L = 13500), P-P	BUTT WELD - COLLAR WELD	
BSLJ-24	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	STRAIGHT, OD1067 (8mm WT, L = 13500), P-SO	COLLAR WELD - SINTALOCK TYPE II (WELDED)	
BSLJ-25	1	1050	STEEL AS/NZS 1594 HA350, COATING: FBPE (SINTAKOTE), LINING AWWA C222 POLYURETHANE MIN. 800 µm	TEE (UNEQUAL), OD1067 (12mm WT) x OD610 (8mm WT) P-P-FL, STRAIGHT EXTENSION (OD1067, L1 = 3305 AND L2 = 925, WT = 12mm), C/W	BUTT WELD	ASME B16.5 CLASS 150
BSLJ-26	1	600	STAINLESS STEEL 316L INCLUDING STAINLESS STEEL BOLT KIT	OD 610 BLANK FLANGE, FL	ASME B16.5 CLASS 150	
BSLJ-27	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	OD1067 x OD610 (6mm WT) SP-P-FL	RRJ, WELD COLLAR JOINT TYPE 1	
BSLJ-28	1	1050	STEEL AS/NZS 1594 HA350, COATING: QAL PAINT SPEC F, LINING: AWWA C222 POLYURETHANE MIN. 800µm	STRAIGHT, OD1067 (12mm WT, L = 3018) P-P	BUTT WELD	
BSLJ-29	1	1050	STEEL AS/NZS 1594 HU300, COATING: FBPE (SINTAKOTE), LINING: CML 16mm	STRAIGHT, OD1067 (8mm WT, L=12920) SP-SO	SINTAJoint (RRJ)	



AUR. DRG. NO.		521327-W00001-DRG-WA-0073		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone: +61 7 4962 0600 Email: gladstone@Aurecongroup.com		PROJECT NUMBER: 521327		Rev. 1
		Drawn	C. WHITEHEAD	19.09.2025
		Designed	R. HANCOX	19.09.2025
		Draft Review	G. EVERS	19.09.2025
		Eng Review	M. MAYR	19.09.2025
		Approved	R. FARNSWORTH	19.09.2025

1	19.09.2025	ADDED WELD COLLAR TYPE 1-A, ACCESS TEES AND FLANGES	AUR	CW	MS	TS	AF	MM	9079	GENERAL NOTES	266603
0	02.02.2024	ISSUED FOR CONSTRUCTION	AUR	D. MvV	MS	MJ	AF	MM	9079	TITLE DRAWING & DRAWING LIST	266601
NO.	DATE	REVISION	COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
1											
2											
3											
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7											
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12											

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						GLADSTONE QUEENSLAND	
				DRAWING SCALE		AS INDICATED		DATE		A.C.N. 009 725 044	
				DRAWN BY		C. WHITEHEAD		19.09.2025		PROJECT NUMBER: C-2996	
				REVIEWED BY		M. MAYR		19.09.2025		CELL 1 DISCHARGE TO BSL WHARF PIPELINE	
FUNCTION LOCATION ACCOUNT		QRDHLQML01PEBW		QAL CLIENT		T. SELLERS		24.09.2025		BSL JETTY - PIPEWORK DETAILS (PART 2 OF 2)	
ASSIGNMENT C-2996				QAL ENGINEER		A. FERGUSON		24.09.2025		TYPE EXPANSION AREA DISCIPLINE	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION				RPEQ NAME		M. MAYR		RPEQ No. 9079		DRAWING NUMBER	
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED TO AS 100. DO NOT SCALE				A1				09 QAL 09 P		266635	
										SHEET 2	
										REVISION 1	



NOTE: PILE SHOE REQUIRED ON ALL PILES



0	02.02.2024	ISSUED FOR CONSTRUCTION				AUR	D. MvV	MS	MJ
NO	DATE	REVISION				COMPANY	DRAFTER	EXTERNAL APPROVAL	QUAL CLIENT



APPROVED

Name: Erin Clark
Date: 2:53pm 21/09/2026

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND	
		DRAWING SCALE		AS SHOWN		DATE		PROJECT NUMBER C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - MONOPILE DETAILS				
		DRAWN BY		D. MARAIS VAN VUUREN		02.02.2024						
FUNCTION LOCATION		QRDHLDMLC1PEBW		REVIEWED BY		R. FARNSWORTH		02.02.2024				
ACCOUNT ASSIGNMENT		C-2996		DAL CL		M. JAMES		24.04.2024				
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION				DAL ENGINEER		P. BANERJEE		28.04.2024		TYPE EXPANSION AREA DISCIPLINE DRAWING NUMBER SHEET REVISION 09 QAL 17 S 266658 0 0		
ALL DIMENSIONS IN MILLIMETRES UNLESS DRAWN TO AS 1100. DO NOT SCALE				RFD NAME		R. FARNSWORTH		RFD NO. 08389				

HARD COPY DRAWINGS ARE UNCONTROLLED

1. PILE PERFORMANCE REQUIREMENTS

- 1.1 MINIMUM ULTIMATE DRIVING RESISTANCE 5,000kN
1.2 MINIMUM DESIGN GEOTECHNICAL TENSILE RESISTANCE 200kN
1.3 MINIMUM DESIGN GEOTECHNICAL LATERAL CAPACITY AT CUTOFF LEVEL 150kN
1.4 PILES HAVE A NOMINAL TOE LEVEL OF -35m AHD, FOUNDING IN MODERATELY STRONG SANDSTONE

2. PILE INSTALLATION TOLERANCES

- 2.1 PILES SHALL BE INSTALLED TO THE LINES AND LEVELS SPECIFIED, WITHIN THE FOLLOWING TOLERANCES:
- | | |
|---------------------------|----------|
| VERTICALITY: | +/- 1% |
| PLAN POSITIONS PILE HEAD: | +/- 75mm |
| LEVEL OF PILE HEAD: | +/- 2mm |
- 2.2 SHOULD ANY PILE NOT CONFORM TO THE SPECIFIED TOLERANCES, THE CONTRACTOR SHALL IMMEDIATELY STOP PILING AND NOTIFY THE COMPANY OF ITS PLAN TO ADDRESS THE OUT OF TOLERANCE.

3. PILE INSTALLATION GENERAL

- 3.1 THE SUPPLY, ASSEMBLY AND INSTALLATION OF MARINE PILES SHALL BE IN ACCORDANCE WITH THE MORE STRINGENT OF AS2159 AND THESE DRAWINGS.
- 3.2 THE CONTRACTOR SHALL SELECT ITS HAMMER AND DRIVING SYSTEM TO COMPLY WITH THE SPECIFIED PERFORMANCE REQUIREMENTS FOR THESE PILES. CONFORMANCE WITH THESE PERFORMANCE REQUIREMENTS SHALL BE DEMONSTRATED IN THE FORM OF INITIAL WAVE EQUATION ANALYSIS USING GRLWEAP 2010 OR A COMPANY APPROVED EQUIVALENT. THE MAXIMUM ALLOWABLE DRIVING STRESS LIMIT IS 300 MPa.
- 3.3 THE CONTRACTOR SHALL SUBMIT THE PROPOSED HAMMER DATA AND RESULTS OF THE CORRESPONDING INITIAL WAVE EQUATION ANALYSIS TO THE COMPANY FOR APPROVAL, AT LEAST TWO MONTHS PRIOR TO THE SCHEDULED DATE FOR PITCHING THE FIRST PILE ON-SITE. THE RESULTS OF THE INITIAL WAVE EQUATION ANALYSIS SHALL ALSO BECOME THE REFERENCE TO WHICH THE ACTUAL HAMMER PERFORMANCE IS COMPARED.
- 3.4 FOR EACH HAMMER AND DRIVING SYSTEM COMBINATION, A FOUNDING SET AND ASSOCIATED NET ENERGY SHALL BE NOMINATED BY THE CONTRACTOR. THE FOUNDING SET MUST BE NO GREATER THAN THAT WHICH IS SHOWN BY THE INITIAL WAVE EQUATION ANALYSIS TO ACHIEVE THE REQUIRED MINIMUM UDR AND OTHER RELEVANT PERFORMANCE REQUIREMENTS. AT THE NET ENERGY, THE NOMINATED FOUNDING SET MUST BE GREATER THAN 2.5mm AND MUST BE SET TO PREVENT THE RISK OF DAMAGE TO PILE TOES DURING DRIVING.
- 3.5 THE CONTRACTOR SHALL REVIEW THE PILE SHOE DETAIL PRESENTED ON THE DRAWINGS IN VIEW OF THE CHOSEN HAMMER SYSTEM. THE CONTRACTOR SHALL CONFIRM THE SUITABILITY OF THE DRAWING SHOE OR PROPOSE AN ALTERNATIVE FOR COMPANY REVIEW.
- 3.6 EACH PILE MUST BE DRIVEN WITHOUT STOPPING UNTIL:
- 3.6.1 IT HAS ACHIEVED ALL PILE PERFORMANCE REQUIREMENTS
- 3.6.2 IT HAS MET REFUSAL, DEFINED AS THE NOMINATED FOUNDING SET BEING ACHIEVED OVER A DISTANCE OF 500mm (OR 60 BLOWS IS ACHIEVED OVER 150mm OR LESS) WITH THE HAMMER DELIVERING THE TARGET NET ENERGY, OR
- 3.6.3 THE CONTRACTOR BELIEVES THERE IS IMMINENT RISK OF DAMAGE TO THE PILE BY CONTINUING DRIVING.
- 3.7 THE CONTRACTOR SHALL MAKE ALLOWANCE FOR EXPECTED VARIABILITY IN THE SITE GROUND CONDITIONS AND, IF IT DEEMS IT NECESSARY, INCREASE THE SUPPLIED LENGTH OF PILES.
- 3.8 PILE CUT-OFF SHALL NOT COMMENCE WITHOUT COMPANY APPROVAL.
- 3.9 THE PILES SHALL BE CUT AND TRIMMED TO THE CUT-OFF LEVEL NOMINATED ON THE DRAWINGS. A MINIMUM LENGTH OF 500mm OF PILE SHALL BE REMOVED FROM THE PILE HEAD, SO THAT NO DAMAGED OR COLD WORKED STEEL REMAINS AT THE TOP OF THE PILE.
- 3.10 ALL PILING SHALL BE SUPERVISED IN PERSON BY AN EXPERIENCED PILE DRIVING SUPERVISOR WHO HAS AN UNDERSTANDING OF THE SITE HISTORY.

4. PILE INSTALLATION DYNAMIC TESTING

- 1 THE CONTRACTOR SHALL EMPLOY DYNAMIC TESTING TO MONITOR HAMMER AND DRIVE
2 SYSTEM PERFORMANCE, AND TO EVALUATE PILE CAPACITY AND INTEGRITY. DYNAMIC
3 TESTING MUST CONFORM TO THE REQUIREMENTS OF ASTM D4945-08 - STANDARD TEST
4 METHOD FOR HIGH-STRAIN DYNAMIC TESTING OF PILES.
- 5 DYNAMIC TESTING SHALL BE PERFORMED USING A PILE DRIVING ANALYSER MODEL PAK
6 OR PAL, OR EQUIVALENT AS APPROVED BY THE COMPANY.
- 7 AN EXPERIENCED SUPERVISOR, WHO HAS ACHIEVED AN ADVANCED LEVEL OR BETTER ON
8 THE FOUNDATION QA EXAMINATION FOR PROVIDERS OF PDA TESTING SERVICES (OR
9 EQUIVALENT QUALIFICATION AS APPROVED BY THE COMPANY) SHALL BE IN CHARGE OF
10 THE PILE DRIVING ANALYSER (PDA) OPERATION, RESULT INTERPRETATION, CAPWAP
11 ANALYSIS, AND REPORTING.
- 12 AT LEAST FOUR STRAIN TRANSDUCERS AND FOUR ACCELEROMETERS SHALL BE USED,
13 AND ANY HOLES REQUIRED FOR FIXING OF THESE GAUGES MUST BE COMPLETELY FILLED
14 WITH WELD, GROUND FLUSH, AND THE PROTECTIVE TREATMENT REPAIRED ON
15 COMPLETION OF TESTING.
- 16 DYNAMIC TESTING SHALL BE UNDERTAKEN ON THE FIRST PILE TO BE DRIVEN BY EACH
17 NEW HAMMER TO THE PROJECT, AND THE FIRST PILE AFTER EACH MODIFICATION TO EACH
18 HAMMER (INCLUDING DRIVE SYSTEM MODIFICATIONS).
- 19 UNLESS APPROVED OTHERWISE BY THE COMPANY'S REPRESENTATIVE THE PILE DRIVING
20 ANALYSER SHALL BE USED TO UNDERTAKE STRESS WAVE MEASUREMENT AND CASE
21 METHOD DYNAMIC PILE MONITORING FOR ALL PILES:
- 22 4.6.1 FOR AT LEAST THE LAST 2m OF DRIVEN LENGTH, OR
23 4.6.2 FROM WHEN SET FIRST REACHES 10mm UNTIL THE END OF THE DRIVE
24 WHICHEVER IS THE LONGER.
- 25 THE FIRST PILE SHALL BE SUBJECTED TO DYNAMIC TESTING OVER THE FULL DRIVEN
26 LENGTH TO DETERMINE DRIVING STRESSES, HAMMER PERFORMANCE AND GEOTECHNICAL
27 CAPACITY.
- 28 THE CASE PILE WAVE ANALYSIS PROGRAM (CAPWAP) SHALL BE USED TO DETERMINE
29 AND REPORT UPON:
- 30 4.8.1 STATIC TENSION AND COMPRESSION LOAD CAPACITY. A 3:1 RATIO MUST BE
31 ASSUMED FOR THE EXTERNAL TO INTERNAL SHAFT FRICTION FOR
32 CALCULATION OF TENSION CAPACITY
- 33 4.8.2 SOIL RESISTANCE DISTRIBUTION
- 34 4.8.3 PILE TENSILE AND COMPRESSIVE STRESS AS A FUNCTION OF SET
- 35 4.8.4 PILE ULTIMATE CAPACITY AS A FUNCTION OF SET
- 36 4.8.5 PILE DISPLACEMENT AS A FUNCTION OF LOAD
- 37 CAPWAP ANALYSES AND REPORTING SHALL BE UNDERTAKEN ON EACH PILE SUBJECT TO
38 DYNAMIC TESTING, AT THE END OF DRIVE (EOD).
- 39 WHERE RE-STRIKE TESTS ARE NOMINATED OR DIRECTED BY THE COMPANY, THEY SHALL
40 BE MADE NO SOONER THAN 48 HOURS, OR OTHER NOMINATED RE-STRIKE INTERVAL,
41 AFTER INITIAL DRIVING. FOR PROGRAMMING PURPOSES, THE RE-STRIKE INTERVAL SHALL
42 BE ASSUMED TO BE OVER CONSECUTIVE WORKING DAYS.
- 43 THE RESTRIKE DRIVING SEQUENCE SHALL CONSIST OF STRIKING THE PILE WITH A
44 HAMMER ENERGY THAT IS SUFFICIENT TO MOBILISE THE REQUIRED ULTIMATE
45 GEOTECHNICAL CAPACITY. THE NUMBER OF BLOWS SHALL BE SUFFICIENT TO ENSURE
46 THAT TEST DATA OF ADEQUATE QUALITY IS OBTAINED BUT SHALL BE LESS THAN 15
47 BLOWS, UNLESS APPROVED OTHERWISE. TESTING AND REPORTING FOR RE-STRIKE
48 TESTS SHALL BE AS FOR OTHER DYNAMIC TESTING.

5. FIELD PILE SPLICES

- 5.1 PILE SEGMENTS SHALL BE SPICED BY CERTIFIED WELDERS USING QUALIFIED COMPLETE PENETRATION BUTT WELDS MADE WITH A SINGLE V PREPARATION AGAINST AN INTERNAL STEEL BACKING RING AS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE ACCEPTED BY THE COMPANY.
- 5.2 THE PROFILE OF WELDS SHALL BE SMOOTH TO PROMOTE ADHESION OF THE PROTECTIVE TREATMENT. THE WELD FACE REINFORCEMENT SHALL NOT EXCEED 2 MM.
- 5.3 WELD PROFILES WITH UNDERCUTTING OR OVERLAP ON THE PLATE SURFACE WILL NOT BE ACCEPTED. SHARP CORNERS OR CREVICES SHALL BE GROUND OR WELD-FILLED TO A SMOOTH PROFILE.
- 5.4 THE COMPANY SHALL BE PROVIDED WITH SUFFICIENT NOTICE TO INSPECT EVERY SITE SPLICE PRIOR TO WELDING.
- 5.5 PILES SHALL BE SUPPLIED IN TRANSPORTABLE LENGTHS WITH THE SPECIFIED PROTECTIVE COATING APPLIED. THE PROTECTIVE COATING SHALL BE TERMINATED AT LEAST 100mm CLEAR FROM THE LENGTH ENDS, TO ALLOW FOR SPlicing.
- 5.6 FIELD SPLICES SHALL HAVE THE SPECIFIED PROTECTIVE COATING APPLIED, PRIOR TO DRIVING.

6. QUALITY MANAGEMENT

- 6.1 THE CONTRACTOR SHALL SUBMIT INSPECTION AND TEST PLANS (ITPS) FOR COMPANY APPROVAL PRIOR TO WORK COMMENCING. THE COMPANY RESERVES THE RIGHT TO REQUEST AMENDMENTS, AND TO ADD WITNESS AND/OR HOLD POINTS TO THE ITPS AT ANY STAGE OF THE PROJECT. COMPLETED TEST CERTIFICATES AND DATA SHEETS SHALL BE PROVIDED TO THE COMPANY.
- 6.2 HOLD POINTS SHALL INCLUDE THE FOLLOWING AS A MINIMUM:
 - 6.2.1 CONFIRMATION OF PILING EQUIPMENT AND SET-UP PRIOR TO MOBILISATION
 - 6.2.2 CONFIRMATION OF PILING EQUIPMENT AND SET-UP, ON SITE, PRIOR TO PITCHING FIRST PILE
 - 6.2.3 CONFIRMING PILE SET-OUT PRIOR TO PILING
 - 6.2.4 INSPECTION OF FIELD SPLICES PRIOR TO APPLICATION OF PROTECTIVE COATING
 - 6.2.5 INSPECTION OF FIELD SPLICES AFTER APPLICATION OF PROTECTIVE COATING
 - 6.2.6 INSPECTION OF COMPLETED INSTALLATION AND TEST RESULTS PRIOR TO PILE CUT-OFF
 - 6.2.7 APPROVAL OF ANY MISALIGNMENT RECTIFICATIONS WORKS, PRIOR TO COMMENCEMENT
- 6.3 THE CONTRACTOR SHALL PROVIDE A FIELD REPORT SUMMARISING THE RECORDED INSTALLATION DATA. THIS SHALL BE PREPARED FOR EACH PILE AND SUBMITTED TO THE COMPANY ON THE SAME DAY THAT THE PILE IS DRIVEN. AS A MINIMUM, THIS SHALL INCLUDE:
 - 6.3.1 PILE DETAILS, INCLUDING PILE NUMBER
 - 6.3.2 A RECORD OF BLOW COUNT FOR THE ENTIRE DRIVEN PENETRATION
 - 6.3.3 A RECORD OF INSTALLED PILE TOE LEVEL TO AHD DATUM
 - 6.3.4 INDICATION OF PILE INSTALLATION ACCURACY IN POSITION AND RAKE AT PITCH AND AFTER DRIVING.

FOR PILES SUBJECT TO DYNAMIC TESTING:

 - 6.3.5 MAXIMUM, MINIMUM AND TYPICAL DRIVING STRESSES.
 - 6.3.6 MAXIMUM, MINIMUM AND TYPICAL TRANSFERRED ENERGY
 - 6.3.7 ELASTIC COMPRESSION AT THE END OF DRIVE
 - 6.3.8 SET (PENETRATION PER BLOW) AT THE END OF DRIVE
 - 6.3.9 ESTIMATED DRIVING RESISTANCE (CASE CAPACITY) AT THE END OF DRIVE
 - 6.3.10 DISCUSSION ON VARIATION FROM PREVIOUS TRENDS IN THE DYNAMIC TEST DATA.
- 6.4 THE CONTRACTOR SHALL SUBMIT A FINAL DYNAMIC TESTING REPORT FOR EACH DYNAMICALLY TESTED PILE AND SUBMITTED TO THE COMPANY NO LATER THAN 48 HOURS AFTER EACH DYNAMICALLY TESTED PILE IS DRIVEN. AS A MINIMUM, THIS MUST INCLUDE:
 - 6.4.1 FIELD REPORT(S) AS DESCRIBED ABOVE
 - 6.4.2 DISCUSSION ON HAMMER AND DRIVING SYSTEM PERFORMANCE (EFFICIENCY, COMPARISON TO EXPECTED PERFORMANCE FOR THE MAKE AND MODEL OF HAMMER USED, COMPARISON TO OTHER SIMILAR HAMMERS, SUGGESTIONS FOR IMPROVEMENT, ETC)
 - 6.4.3 DISCUSSION ON DRIVING STRESS LEVELS AND PILE INTEGRITY
 - 6.4.4 CAPWAP ANALYSIS INCLUDING THE RESULTS AS DESCRIBED ABOVE, AND IDENTIFICATION OF THE TEST DATA USED FOR THE ANALYSES
 - 6.4.5 SUMMARY TABLE OF ALL DYNAMIC TEST RESULTS UNDERTAKEN ON THE PROJECT TO DATE.

7. DIMENSIONAL TOLERANCES

- 7.1 PILING SHALL BE MANUFACTURED TO THE TOLERANCES REQUIRED BY AS 4100, AND AS 1163 OR AS 3679 AS RELEVANT. TUBULAR PILING NOT MANUFACTURED TO AS 1163 SHALL CONFORM WITH THE REQUIREMENTS OF TABLE 7.1.
- 7.2 THE SURFACES OF ADJACENT WELDED PLATES, INCLUDING AT PILE SPLICES SHALL BE ALIGNED TO WITHIN THE LESSER OF 10% OF THE THICKNESS OF THE THINNER PART OR 3mm, AND THE CUMULATIVE EFFECT OF VARIOUS TOLERANCES SHALL BE MANAGED TO COMPLY WITH THIS REQUIREMENT.

TABLE 7.1 TABULAR PILE DIMENSIONAL TOLERANCES

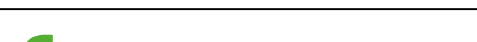
PARAMETER	TOLERANCE
CIRCUMFERENCE	± 5mm
DIFFERENCE BETWEEN MAX. AND MIN. DIAMETERS AT A CROSS SECTION ALLOWANCE FOR SAG SHALL BE MADE WHEN CHECKING THIS REQUIREMENT.)	
AT PILE SEGMENT ENDS	4mm
CROSS SECTIONS ELSEWHERE ALONG THE PILE	(DIAMETER/100) mm, UP TO A MAXIMUM OF 10mm
MAXIMUM RATE OF CHANGE OF MAXIMUM AND MINIMUM DIAMETERS MEASURED AT SOME CIRCUMFERENTIAL POSITIONS	2mm PER 1000mm OF LENGTH
DEVIATION FROM A CIRCULAR ARC WITH CHORD LENGTH 300mm.	±1mm
PILE OR PILE SUB-SEGMENT LENGTH	+100mm / -0mm
END SQUARENESS	15mm DEVIATION FROM PLANE PERPENDICULAR TO THE AXIS OF THE PILE

- 7.3 THE TOLERANCE ON STRAIGHTNESS OF INDIVIDUAL SEGMENTS, AND COMPLETED PILES SHALL NOT EXCEED THE VALUES SPECIFIED IN TABLE 7.2.

TABLE 7.2 STRAIGHTNESS TOLERANCES

LENGTH	MAX. DEVIATION FROM STRAIGHT LINE JOINING ENDS
L ≤ 10m	LENGTH IN m = TOLERANCE IN mm
10m < L ≤ 15m	10mm
L > 15m	12mm

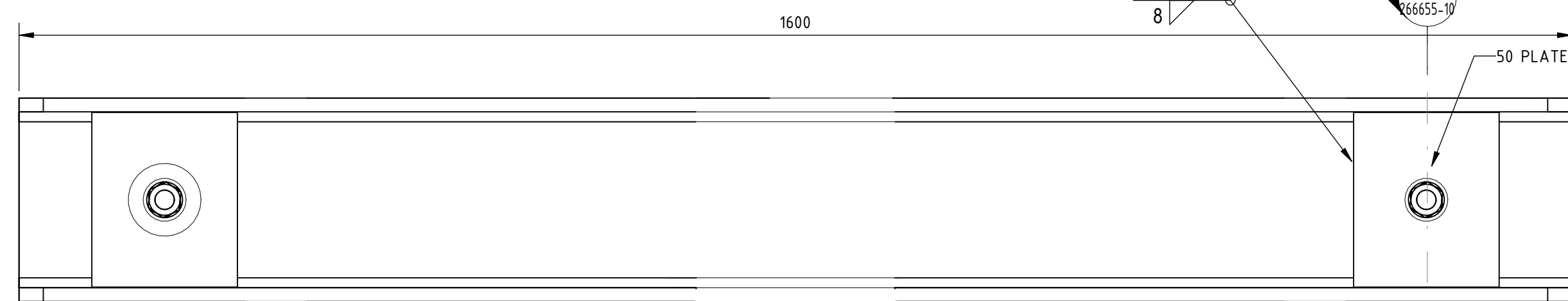
- 7.4 MEASUREMENT OF COMPLIANCE WITH THE ABOVE STRAIGHTNESS TOLERANCES SHALL BE MADE WITH CONSIDERATION FOR SAG OF THE PILE. MEASURING THE OFFSET FROM THE SIDE OF THE PILE TO A STRAIGHT LINE IS A POSSIBLE METHOD TO ACHIEVE THIS. THE PILE CAN BE ROTATED SUCH THAT THE OFFSET MEASUREMENTS NECESSARY TO VERIFY THE PILE'S COMPLIANCE IN ALL AXES CAN BE MADE IN THE SAME HORIZONTAL ORIENTATION.

AUR. DRG. NO.		521327-W00001-DRG-IS-0012		
 aurecon Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street PO Box 1144 Gladstone Queensland 4680 Australia Telephone: +617 4962 0600 Email: gladstone@aurecongroup.com		PROJECT NUMBER: 521327	Rev. 0	
		Drawn	D. MARAIS VAN VUUREN	02.02.2024
		Designed	R. FARNSWORTH	
		Draft Review	G. EVERS	02.02.2024
		Eng Review	R. FARNSWORTH	02.02.2024
		Approved	C. BRUTON	02.02.2024

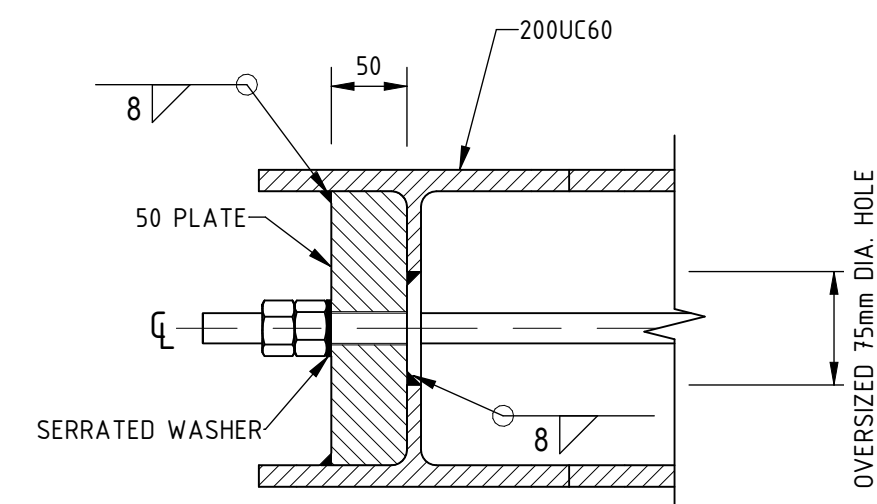
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APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED				GLADSTONE QUEENSLAND	
				A.C.N. 009 725 044					
		DRAWING SCALE AS SHOWN		DATE		PROJECT NUMBER C-2996			
		DRAWN BY D. MARAIS VAN VUUREN		02.02.2024		CELL 1 DISCHARGE TO BSL WHARF PIPELINE			
FUNCTION LOCATION GRDHLDMCL01PEBW		REVIEWED BY R. FARNSWORTH		02.02.2024					
ACCOUNT ASSIGNMENT C-2996		QAL CLIENT M. JAMES		24.04.2024		BSL JETTY - GENERAL PILE NOTES			
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION		QAL ENGINEER P. BANERJEE		28.04.2024					
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED TO AS 1:100. DO NOT SCALE		RFD NAME R. FARNSWORTH		RFD No. 08389		TYPE EXPANSION AREA DISCIPLINE		DRAWING NUMBER	
A1						09 QAL 17 S		266657	
								SHEET 0	
								REVISION 0	

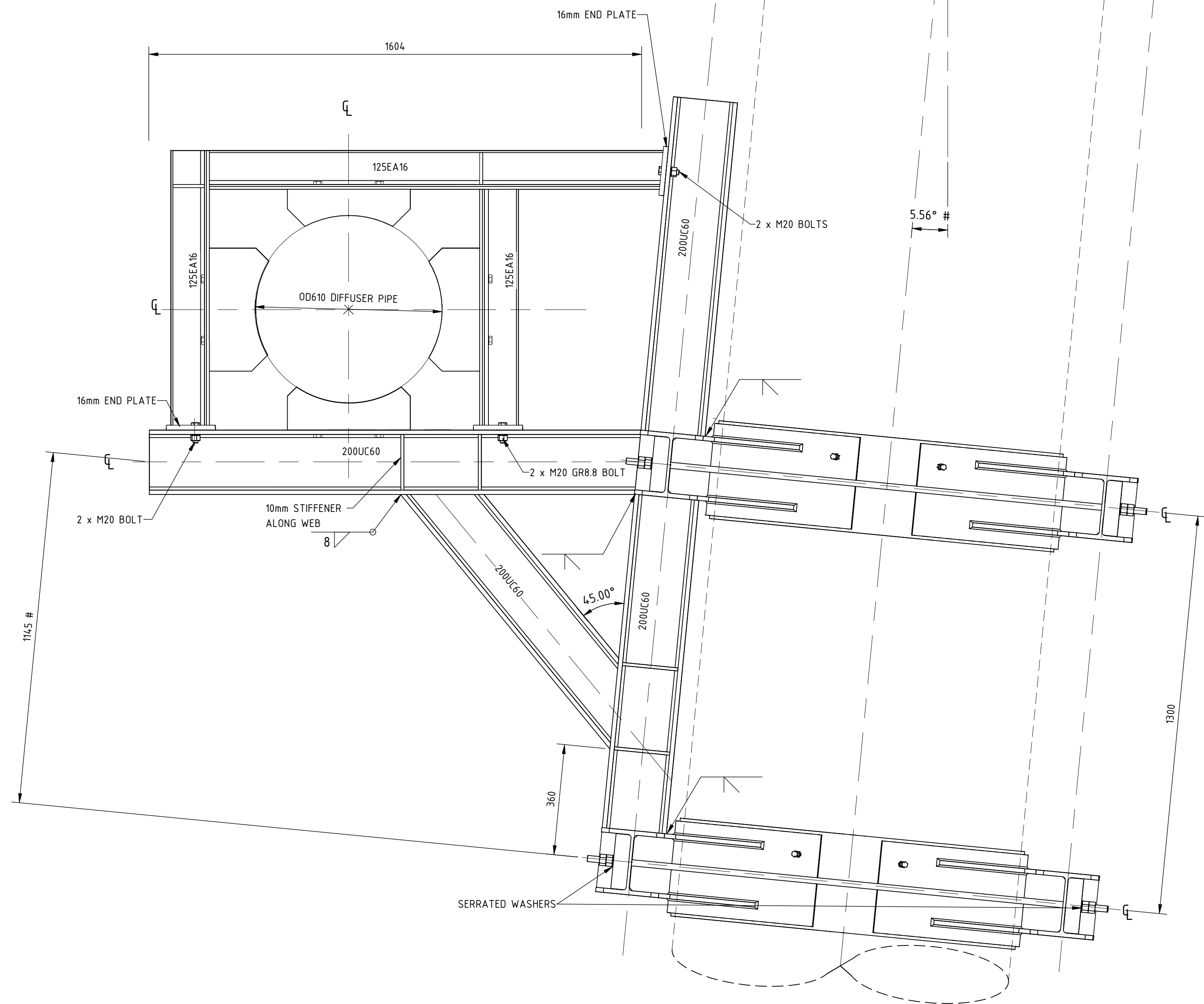
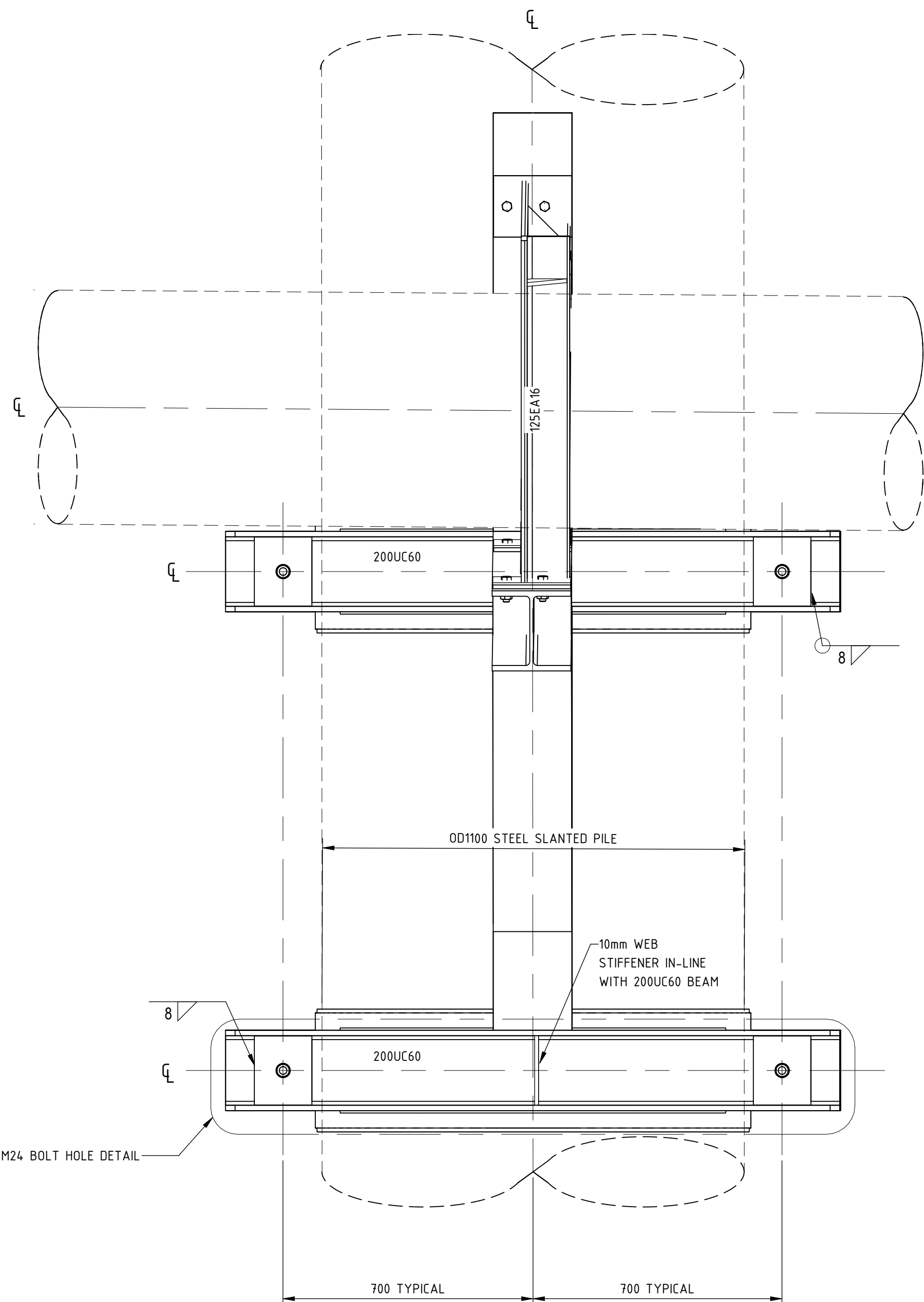
BENT NO.:	UHMWPE BLOCK TYPE:	A # (mm)	B # (mm)	C (mm)	D (mm)
20	6 AND 7	382	478	50	50
21	9 AND 10	509	351	50	50
22	11 AND 12	377	483	50	50
23	13 AND 14	485	375	50	50
24	15 AND 16	465	395	50	50



DETAIL 8
1 : 5

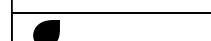


SECTION K
1 : 5



PIPE SUPPORT BRACKET TYPE D2

SECTION I
1 : 10 SHT 9

AUR. DRG. NO.		521327-W00001-DRG-IS-0010		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone: +61 7 4962 0600 Email: glads1one@Aurecongroup.com		PROJECT NUMBER: 521327		Rev. 0
		Drawn	D. MARAIS VAN VUUREN	02.02.2024
		Designed	D. CHRISTOPHER	02.02.2024
		Draft Review	G. EVERS	02.02.2024
		Eng Review	R. FARNSWORTH	02.02.2024
		Approved	C. BRUTON	02.02.2024

INCLINED ELEVATION

1 : 10

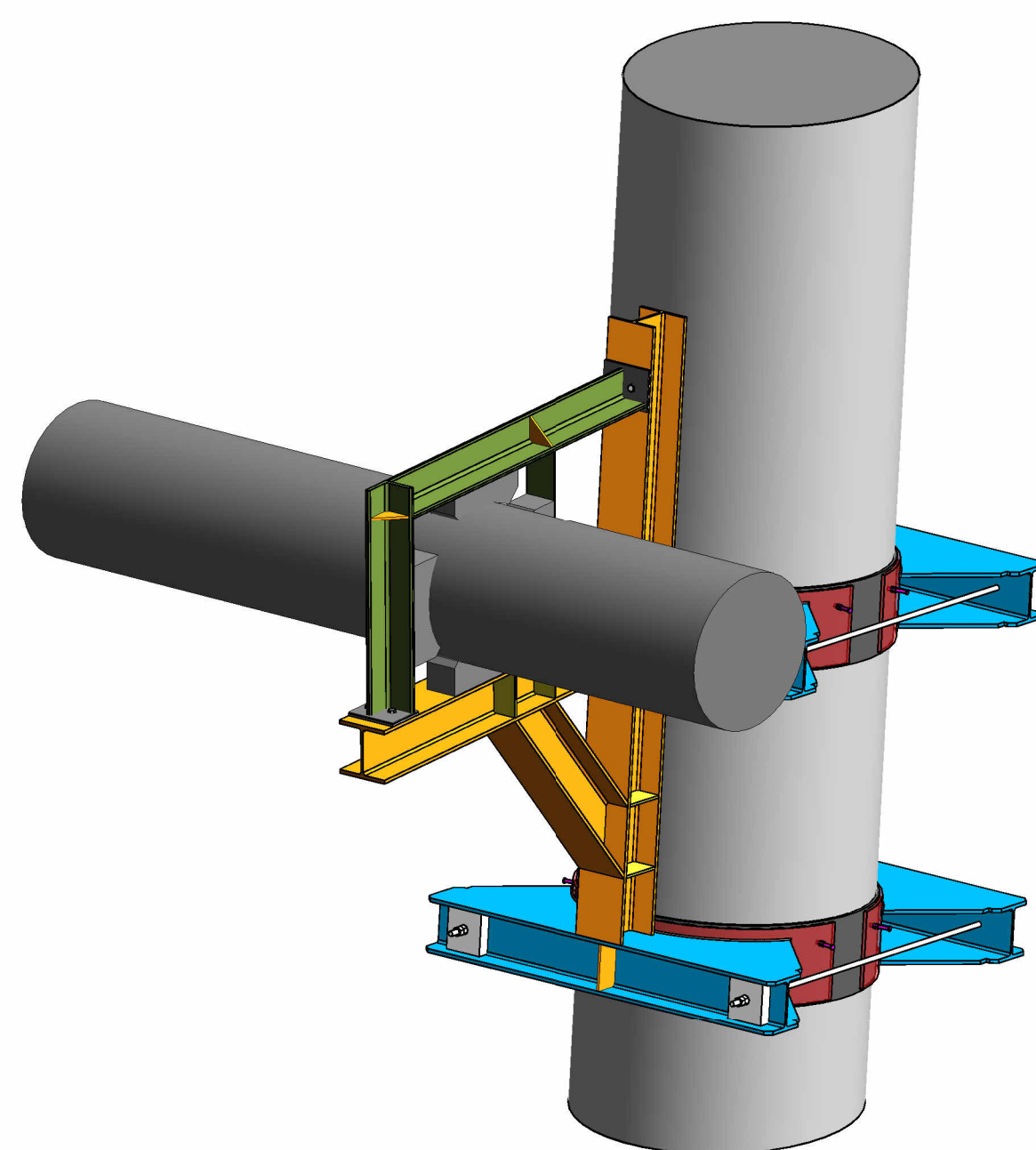
J

SHT 9



1. M24 HT BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 kN.
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95kN PER M24 BOLT.
3. ALL BOLTS UNO FOR BRACKET TYPE D2 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE S5 316 ABOVE WATER OR SUPER DUX UNIS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.
4. FOR ALL DIMENSIONS AND ANGLES MARKED "H": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED										A.C.N. 009 725 044		GLADSTONE QUEENSLAND					
			DRAWING SCALE AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE													
			DRAWN BY D. MARAIS VAN VUUREN		02.02.2024															
FUNCTION LOCATION ORDHLDML01PEBW			REVIEWED BY R. FARNSWORTH		02.02.2024		BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 10 OF 10)													
ACCOUNT ASSIGNMENT C-2996			DIAL CLIENT M. JAMES		24.04.2024															
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION			DIAL ENGINEER P. BANERJEE		28.04.2024		TYPE 09		EXPANSION QAL		AREA 17		DISCIPLINE S		DRAWING NUMBER 266655		SHEET 10		REVISION 0	
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED DRAWN TO A.S.190, DO NOT SCALE			RPEO No 08399		RPEO NAME R. FARNSWORTH															



Technical drawing of a circular UHMWPE block assembly, showing dimensions and component details.

Overall Dimensions:

- Overall Diameter: 860
- Segment Angle: 60.00° (8 segments)
- Radius: 305 RAD

Segment Details:

- UHMWPE BLOCK TYPE 8A:** Dimensions 100, 400, 100, 50.
- UHMWPE BLOCK TYPE 8B:** Dimensions 100, 400, 100, 50.
- UHMWPE BLOCK TYPE 6, 7, 9, 10, 11, 12, 13, 14, 15:** Dimensions 100, 400, 100, 50.

Connecting Members:

- PETROLATUM DENSIO TAPE BETWEEN UHMWPE BLOCK AND CONNECTING MEMBER:** Dimensions 100, 400, 100, 50.
- 2x MACHINED COMPONENTS (SUPER DUPLEX UNS S32750) WITH 60mm x 8mm HEAD, 30mm DIA BODY WITH INTERNAL THREAD TO SUIT M16 BOLT (EMBEDDED IN BLOCK):** Dimensions 100, 400, 100, 50.
- 4x MACHINED COMPONENTS (SUPER DUPLEX UNS S32750) WITH 60mm x 8mm HEAD, 30mm DIA BODY WITH INTERNAL THREAD TO SUIT M16 BOLT (EMBEDDED IN BLOCK):** Dimensions 100, 400, 100, 50.

Other Dimensions:

- 5mm CHAMFER ALL AROUND EDGE
- 165.00°
- 60.00°
- 60.00°
- 60.00°
- 60.00°
- 60.00°
- 60.00°
- 100
- 400
- 100
- 50
- 192
- 392
- 784

SUPPORT TYPE D2 UHMWPE BLOCK TYPE - DETAIL
1 : 5

NOTE:
SEE DRG 266655-10 TABLE 1
FOR DIMENSIONS "A", "B",
"C" AND "D".

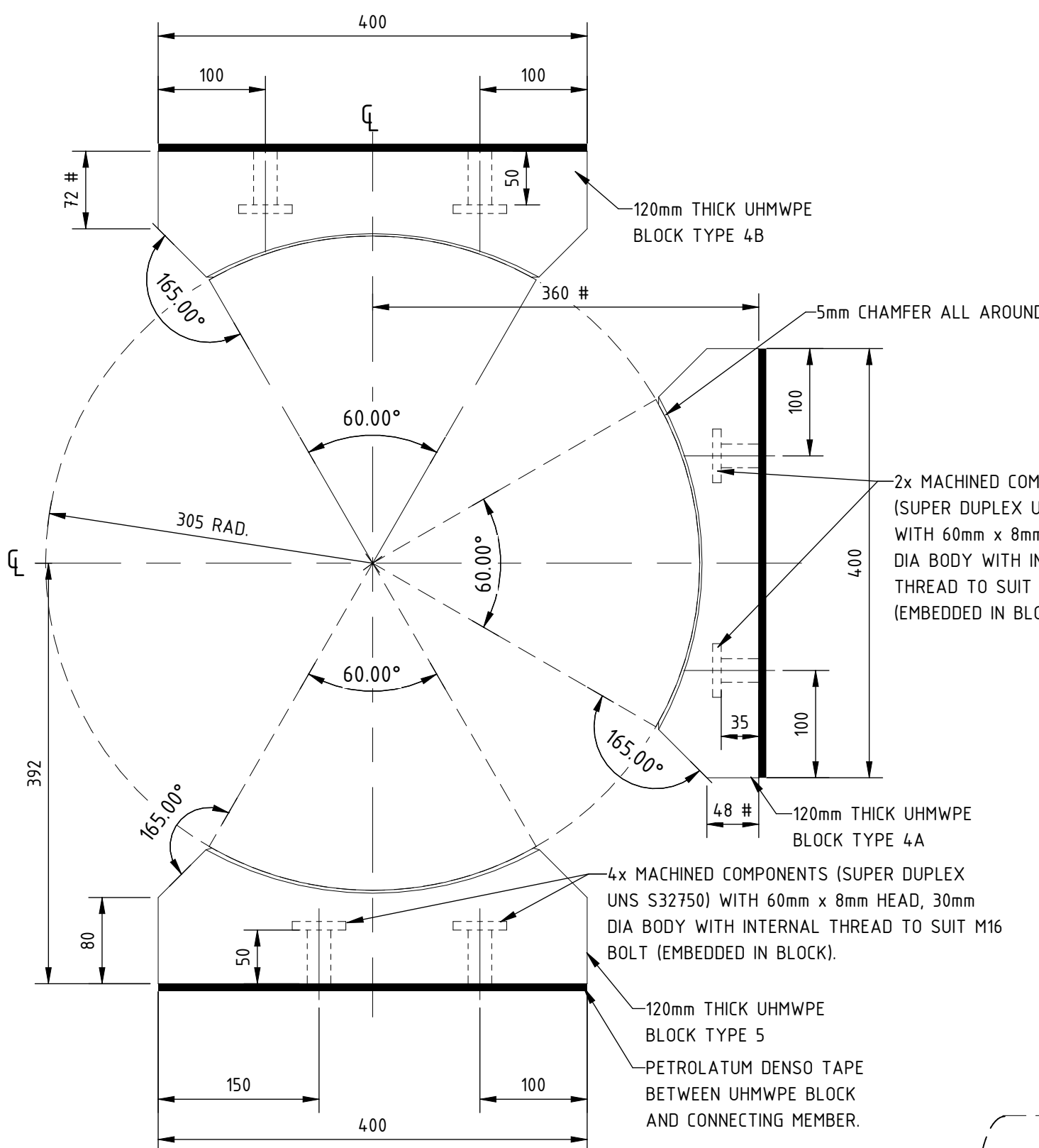
0	02.02.2024	ISSUED FOR CONSTRUCTION				AUR	D. MvV	MS	
NO.	DATE		REVISION			COMPANY	DRAFTER	EXTERNAL APPROVAL	

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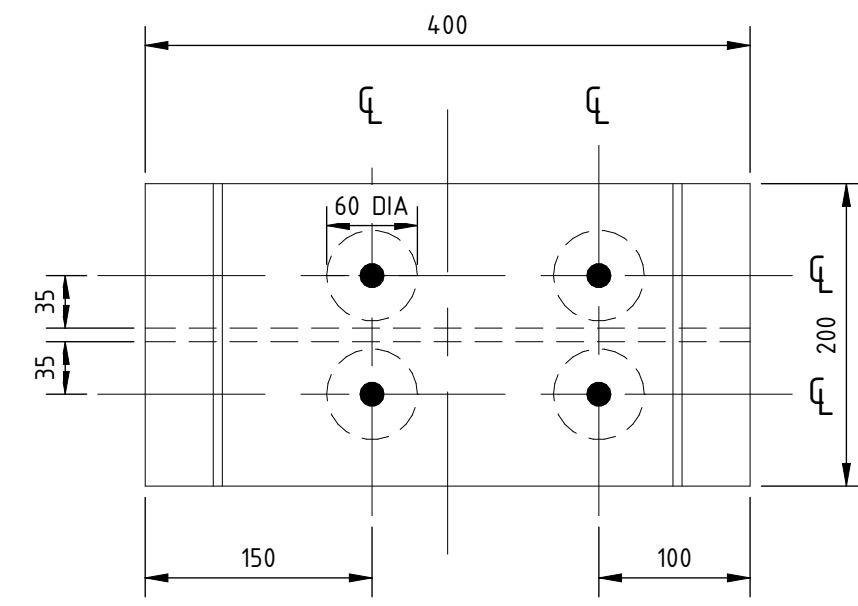
PIPE SUPPORT BRACKET TYPE D2

1. M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 KN.
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95KN PER M24 BOLT.
3. ALL BOLTS UND FOR BRACKET TYPE 02 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWVE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAS WASHERS FOR ELECTRICAL ISOLATION.
4. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "#": THE CONTRACTOR MUST CHECK AND CONFIRM ALL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

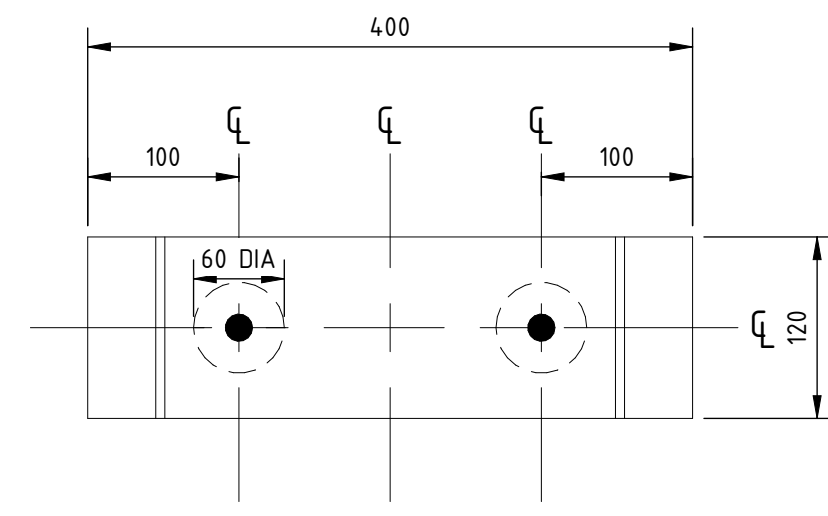
APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND			
			DRAWING SCALE AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE						
			DRAWN BY D. MARAIS VAN VUUREN		02.02.2024								
FUNCTION LOCATION ORDLHLMCL01PEBW			REVIEWED BY R. FARNSWORTH		02.02.2024		BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 9 OF 10)						
ACCOUNT ASSIGNMENT C-2996			GAL CLIENT M. JAMES		24.04.2024								
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED DRAWN TO AS.3100, DO NOT SCALE			GAL ENGINEER P. BANERJEE		28.04.2024		TYPE 09	EXPANSION QAL	AREA 17	DISCIPLINE S	DRAWING NUMBER 266655	SHEET 9	REVISION 0



UHMWPE BLOCK TYPE 4 AND 5 - DETAIL
1 : 5



PLAN DETAIL - UHMWPE BLOCK TYPE 5
1 : 5



PLAN DETAIL - UHMWPE BLOCK TYPE 4A & 4B
1 : 5

AUR. DRG. NO.		521327-W00001-DRG-IS-0008	
aurecon		PROJECT NUMBER: 521327	
www.aurecongroup.com		Drawn	D. MARAIS VAN VUUREN
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed	D. CHRISTOPHER
Level 1, 130 Auckland Street (PO Box 1164) Gladstone		Draft Review	G. EVERS
Queensland 4680 Australia		Eng Review	R. FARNSWORTH
Telephone: +61 7 4962 0600		Approved	C. BRUTON
Email: gladstone@Aurecongroup.com			

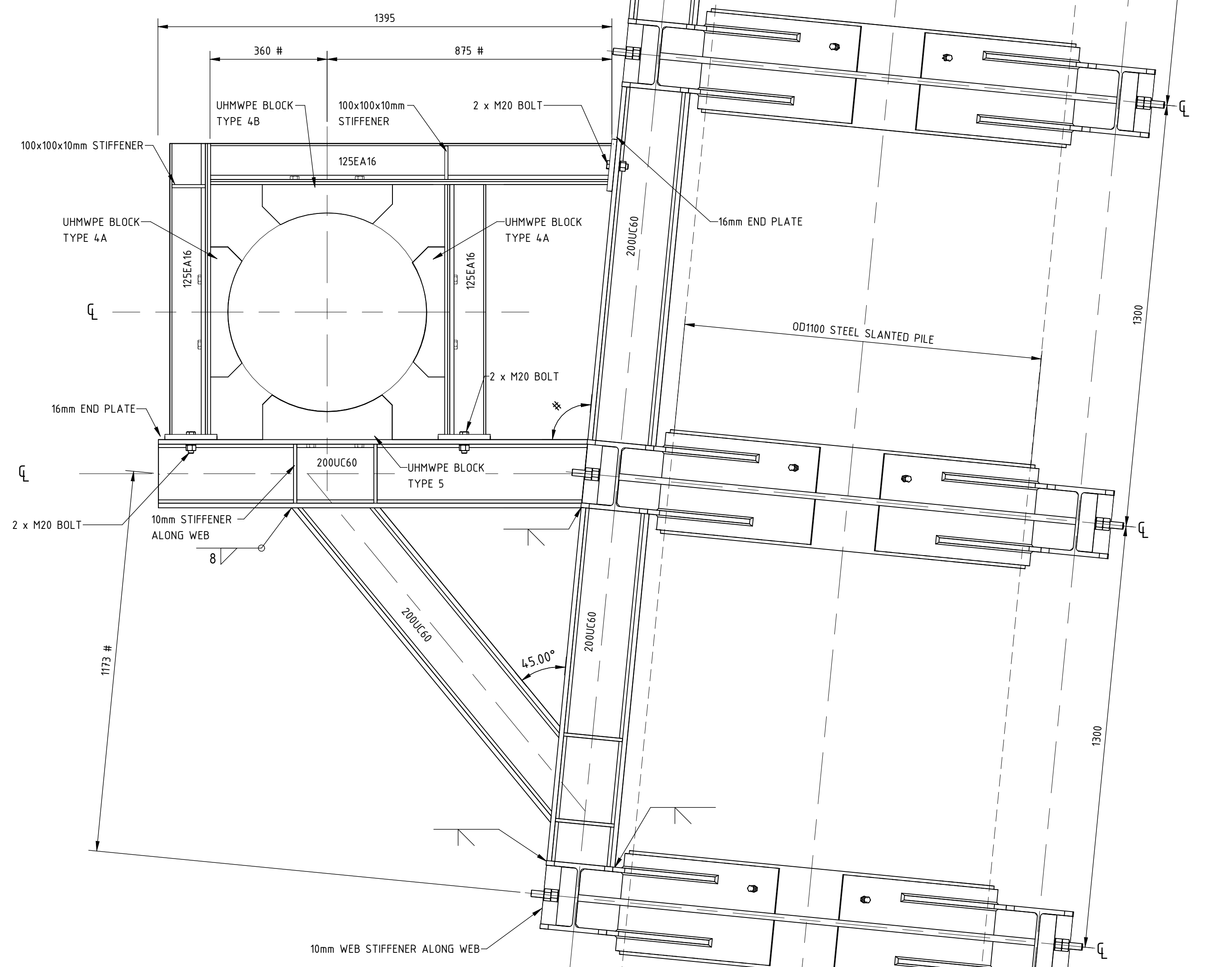


0		02.02.2024	ISSUED FOR CONSTRUCTION	AUR	D. MvV	MS	MJ	PB	RAF	08389	TITLE DRAWING & DRAWING LIST	266601
NO.		DATE	REVISION	COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
1												
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INCLINED ELEVATION
1 : 10

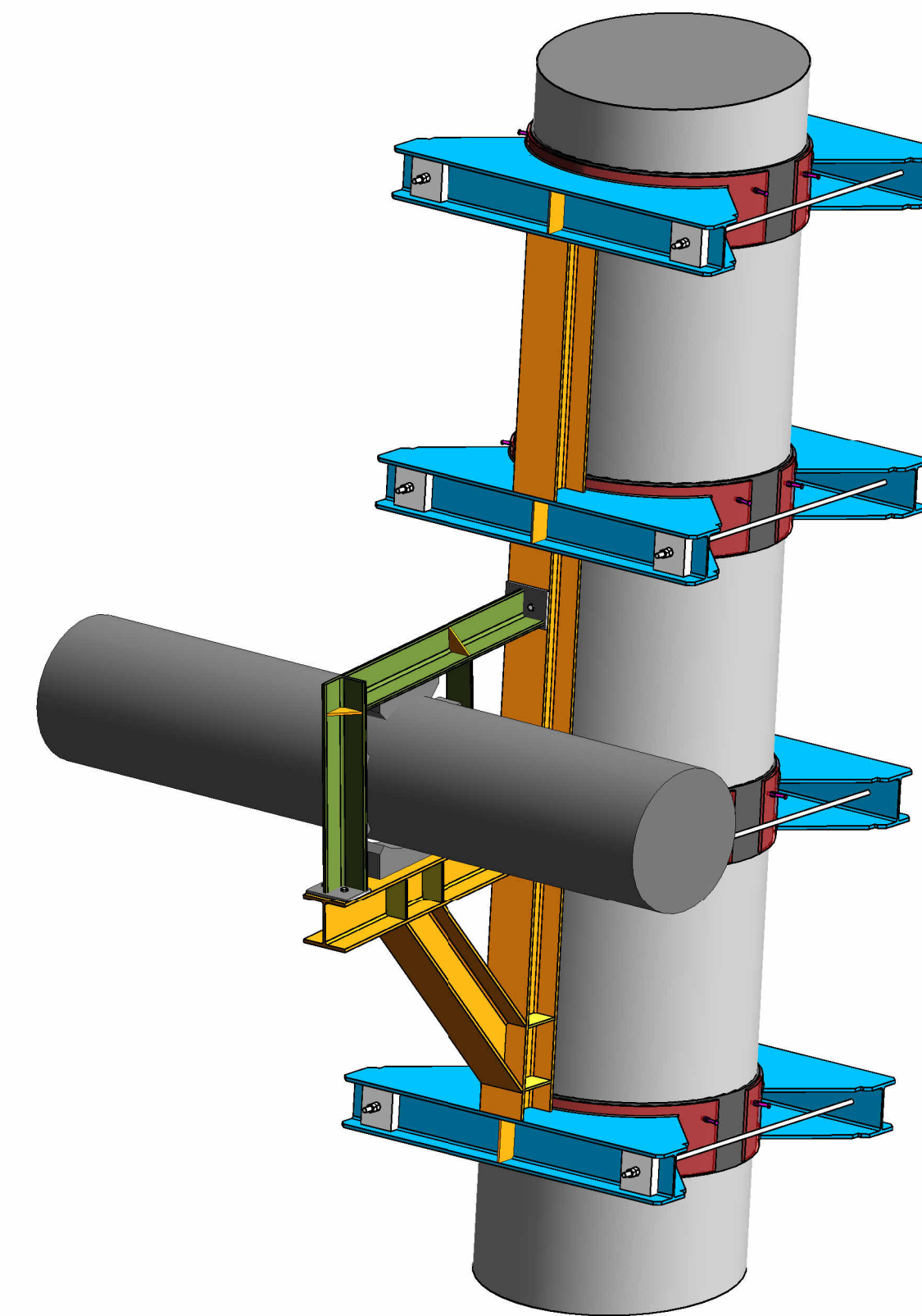
PIPE SUPPORT BRACKET TYPE D1

- M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 kN.
- CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95kN PER M24 BOLT.
- FOR ALL DIMENSIONS AND ANGLES MARKED WITH "H": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.
- ALL BOLTS UNO FOR BRACKET TYPE D1 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.



SECTION G
1 : 10

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED				A.C.N. 009 725 044		GLADSTONE QUEENSLAND							
FUNCTION LOCATION ACCOUNT ASSIGNMENT C-2996 THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE		DRAWING SCALE AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 8 OF 10)											
		BY D. MARAIS VAN VUUREN		02.02.2024													
		REVIEWED BY R. FARNSWORTH		02.02.2024													
		QAL CLIENT M. JAMES		24.04.2024													
		ENGINEER P. BANERJEE		28.04.2024													
RPEQ NAME R. FARNSWORTH		RPEQ No. 08389		TYPE 09		EXPANSION QAL		AREA 17		DISCIPLINE S		DRAWING NUMBER 266655		SHEET 8		REVISION 0	
8		9		10		11		12									



PIPE SUPPORT BRACKET TYPE D1-ISOMETRIC VIEW

NTS

 **Gladstone Ports Corporation**

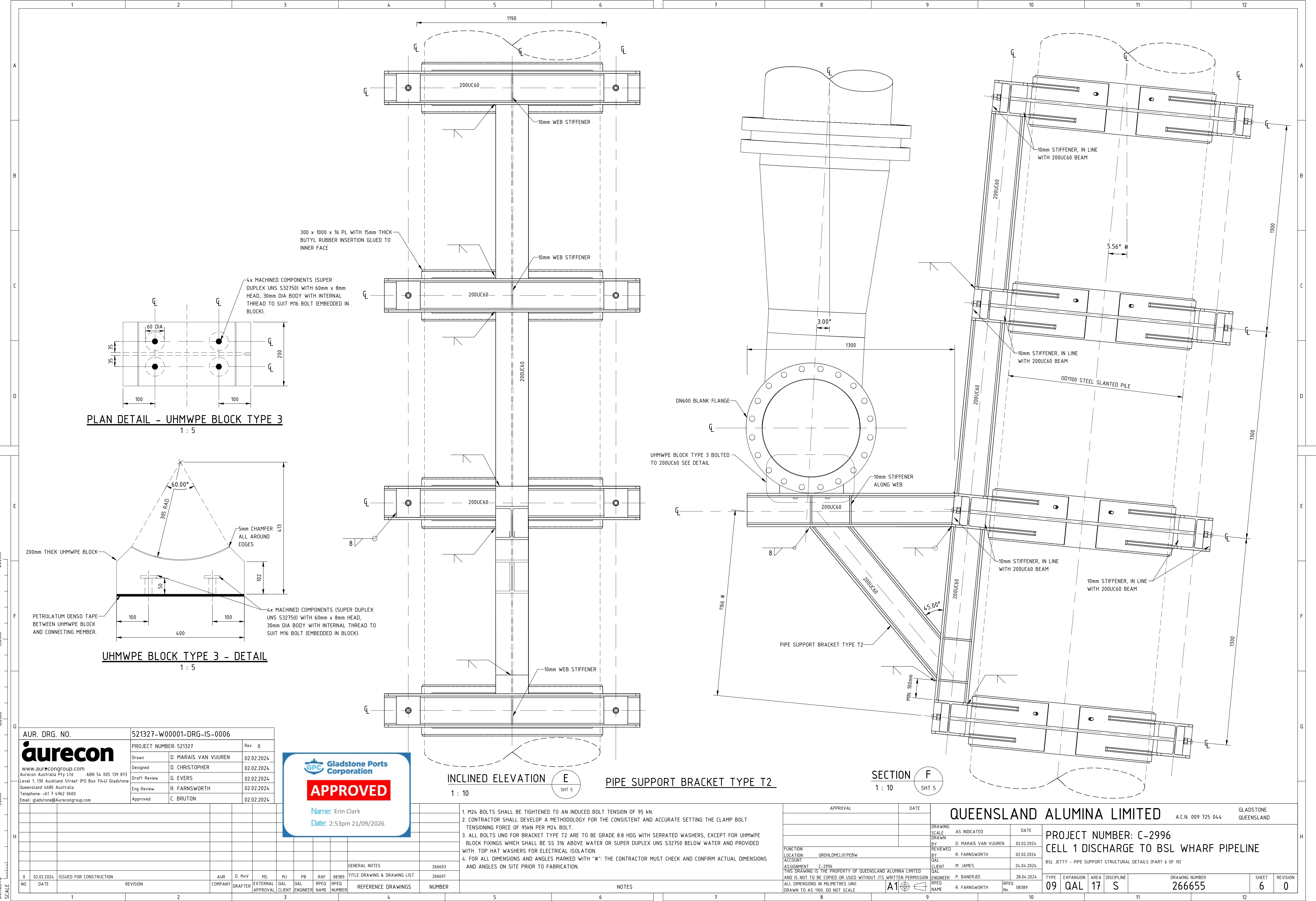
APPROVED

Name: Erin Clark

Date: 2:53pm 21/09/2026

1. M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 KN.
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95KN PER M24 BOLT.
3. ALL BOLTS AND FOR BRACKET TYPE D1 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.
4. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "R": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND									
FUNCTION LOCATION ORHDLMLCL01PEBW ACCOUNT ASSIGNMENT C-2996 THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED DRAWN TO A.S.190, DO NOT SCALE. A1 			DRAWING SCALE	AS INDICATED	DATE	PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 7 OF 10)													
			DRAWN BY	D. MARAIS VAN VUUREN	02.02.2024														
			REVIEWED BY	R. FARNSWORTH	02.02.2024														
			QA/QC	M. JAMES	24.04.2024														
			QA/QC CLIENT			28.04.2024													
			ENGINEER	P. BANERJEE			TYPE	09	EXPANSION	QAL	17	DISCIPLINE	S	DRAWING NUMBER	2666555	SHEET	7	REVISION	0
			NAME	R. FARNSWORTH		RFCD No.	08389												



AUR. DRG. NO.		521327-W00001-DRG-IS-0006	
aurecon		PROJECT NUMBER: 521327	Rev. 0
www.aurecongroup.com		Drawn D. MARAIS VAN VUUREN	02.02.2024
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed D. CHRISTOPHER	02.02.2024
Level 1, 130 Auckland Street (PO Box 1164) Gladstone		Draft Review G. EVERS	02.02.2024
Queensland 4680 Australia		Eng Review R. FARNSWORTH	02.02.2024
Telephone: +61 7 4962 0600		Approved C. BRUTON	02.02.2024
Email: gladstone@Aurecongroup.com			



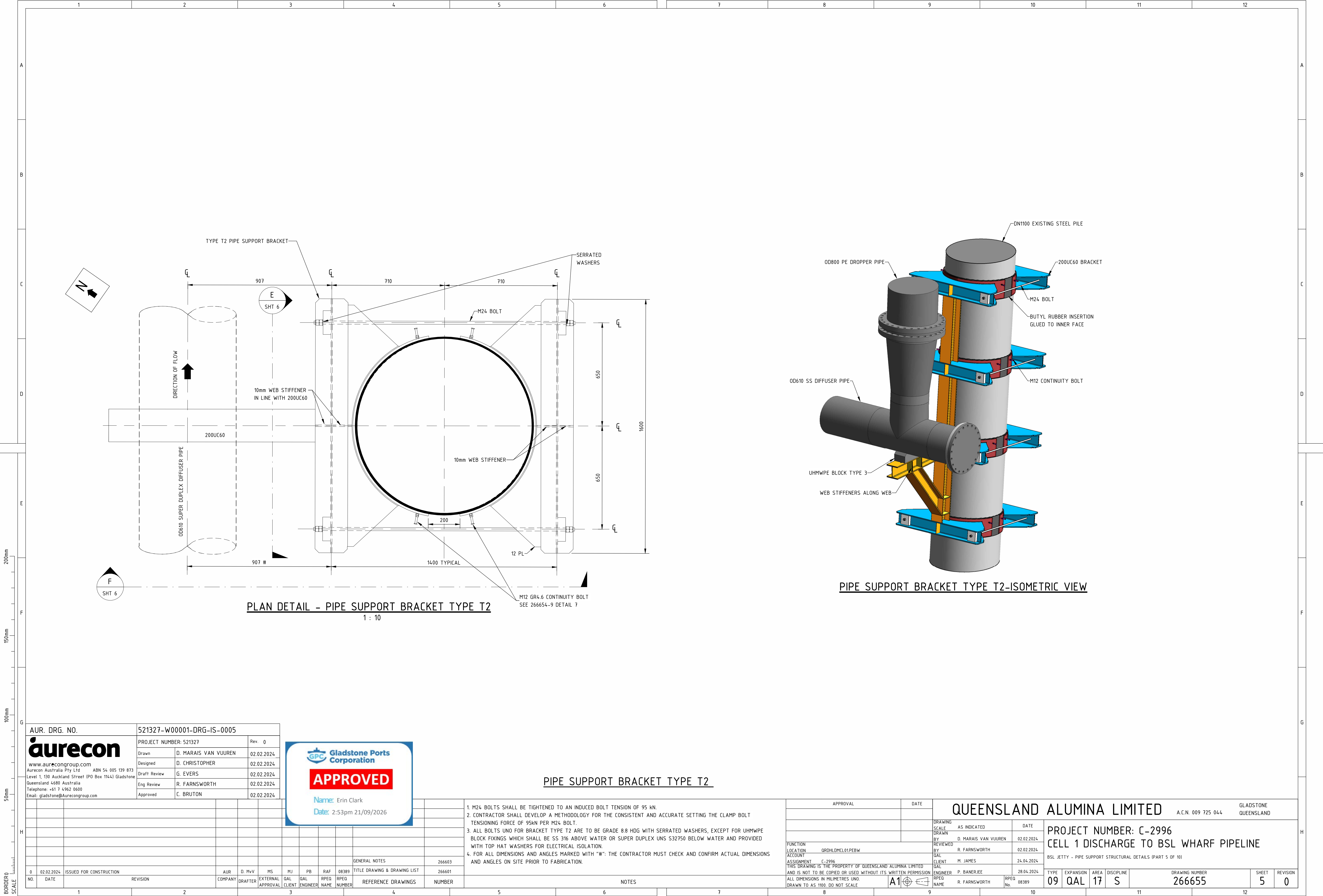
1. M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 kN.
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95kN PER M24 BOLT.
3. ALL BOLTS UNO FOR BRACKET TYPE T2 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.
4. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "°#": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.

GENERAL NOTES		266603
TITLE DRAWING & DRAWING LIST		266601
NO.	DATE	REVISION
0	02.02.2024	ISSUED FOR CONSTRUCTION

COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
AUR	D. MvV	MS	MJ	PB	RAF	08389		

APPROVAL		DATE	
FUNCTION LOCATION		ORHLDMLCLO1PEBW	
ACCOUNT		C-2996	
ASSIGNMENT		THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION	
GAL		ENGINEER P. BANERJEE	
GAL		RPEQ NAME R. FARNSWORTH	
GAL		RPEQ No. 08389	

QUEENSLAND ALUMINA LIMITED				A.C.N. 009 725 044		GLADSTONE QUEENSLAND											
AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 6 OF 10)													
D. MARAIS VAN VUUREN		02.02.2024															
R. FARNSWORTH		02.02.2024															
M. JAMES		24.04.2024															
P. BANERJEE		28.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
R. FARNSWORTH		RPOD No. 08389		09		QAL		17		S		266655		6		0	
				10				11				12					



PLAN DETAIL - PIPE SUPPORT BRACKET TYPE T2
1 : 10

PIPE SUPPORT BRACKET TYPE T2-ISOMETRIC VIEW

AUR. DRG. NO.		521327-W00001-DRG-IS-0005	
aurecon		PROJECT NUMBER: 521327	Rev. 0
www.aurecongroup.com		Drawn	D. MARAIS VAN VUUREN 02.02.2024
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed	D. CHRISTOPHER 02.02.2024
Level 1, 130 Auckland Street (PO Box 1144) Gladstone		Draft Review	G. EVERS 02.02.2024
Queensland 4680 Australia		Eng Review	R. FARNSWORTH 02.02.2024
Telephone: +61 7 4962 0600		Approved	C. BRUTON 02.02.2024
Email: gladstone@Aurecongroup.com			

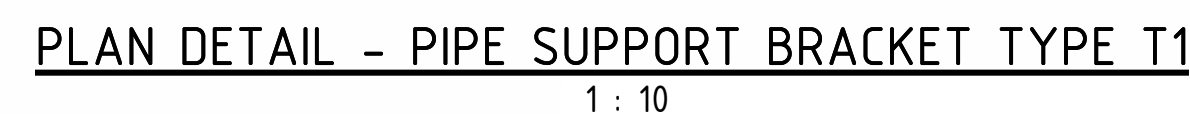


PIPE SUPPORT BRACKET TYPE T2

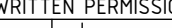
0		02.02.2024	ISSUED FOR CONSTRUCTION	AUR	D. MvV	MS	MJ	PB	RAF	08389	TITLE DRAWING & DRAWING LIST	266601
NO.	DATE	REVISION		COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
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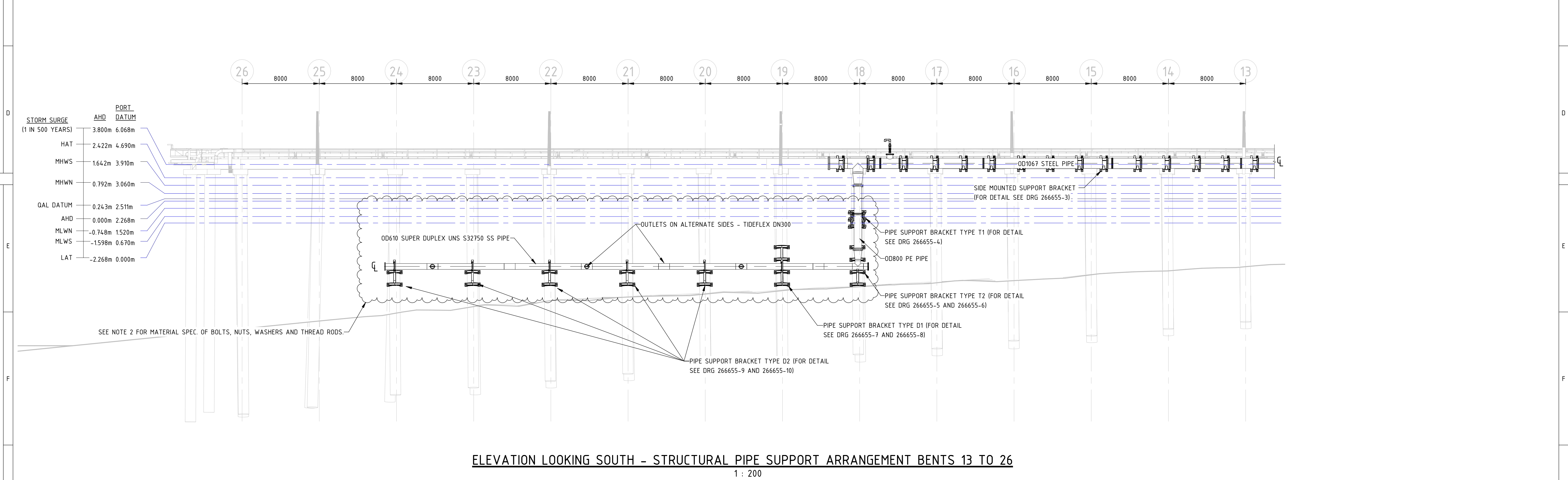
GENERAL NOTES			266603
1. M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 kN.			
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95kN PER M24 BOLT.			
3. ALL BOLTS UNO FOR BRACKET TYPE T2 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.			
4. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "#": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.			
NOTES			

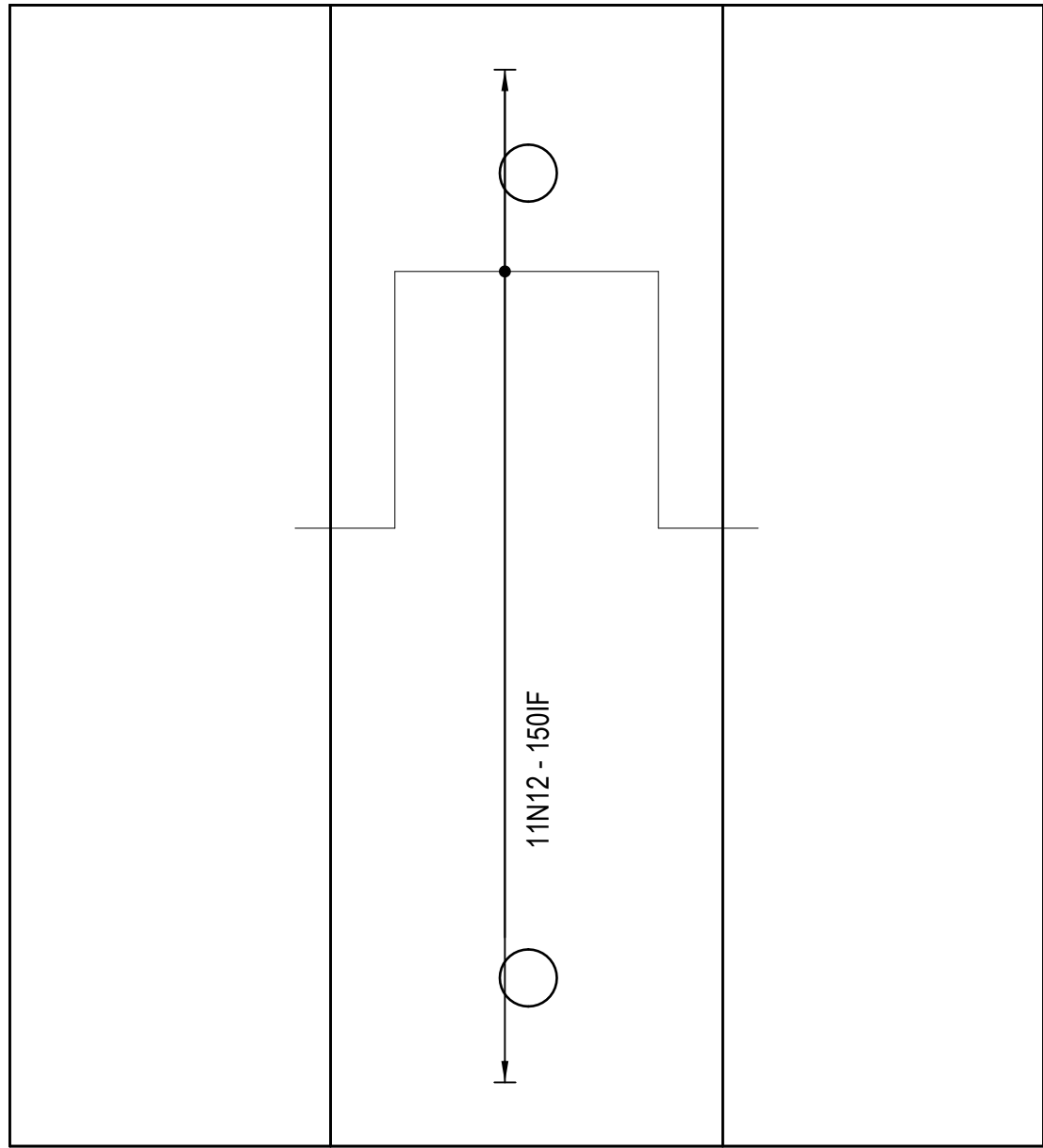
APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND									
FUNCTION LOCATION ORQHLDMCL01PEBW		DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE													
		BY		D. MARAIS VAN VUUREN		02.02.2024															
ACCOUNT ASSIGNMENT C-2996		REVIEWED BY		R. FARNSWORTH		02.02.2024		BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 5 OF 10)													
		QAL CLIENT		M. JAMES		24.04.2024															
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION. ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE		QAL ENGINEER		P. BANERJEE		28.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
		RPEQ NAME		R. FARNSWORTH		RPEQ No.		08389		09		QAL		17		S		266655		5	
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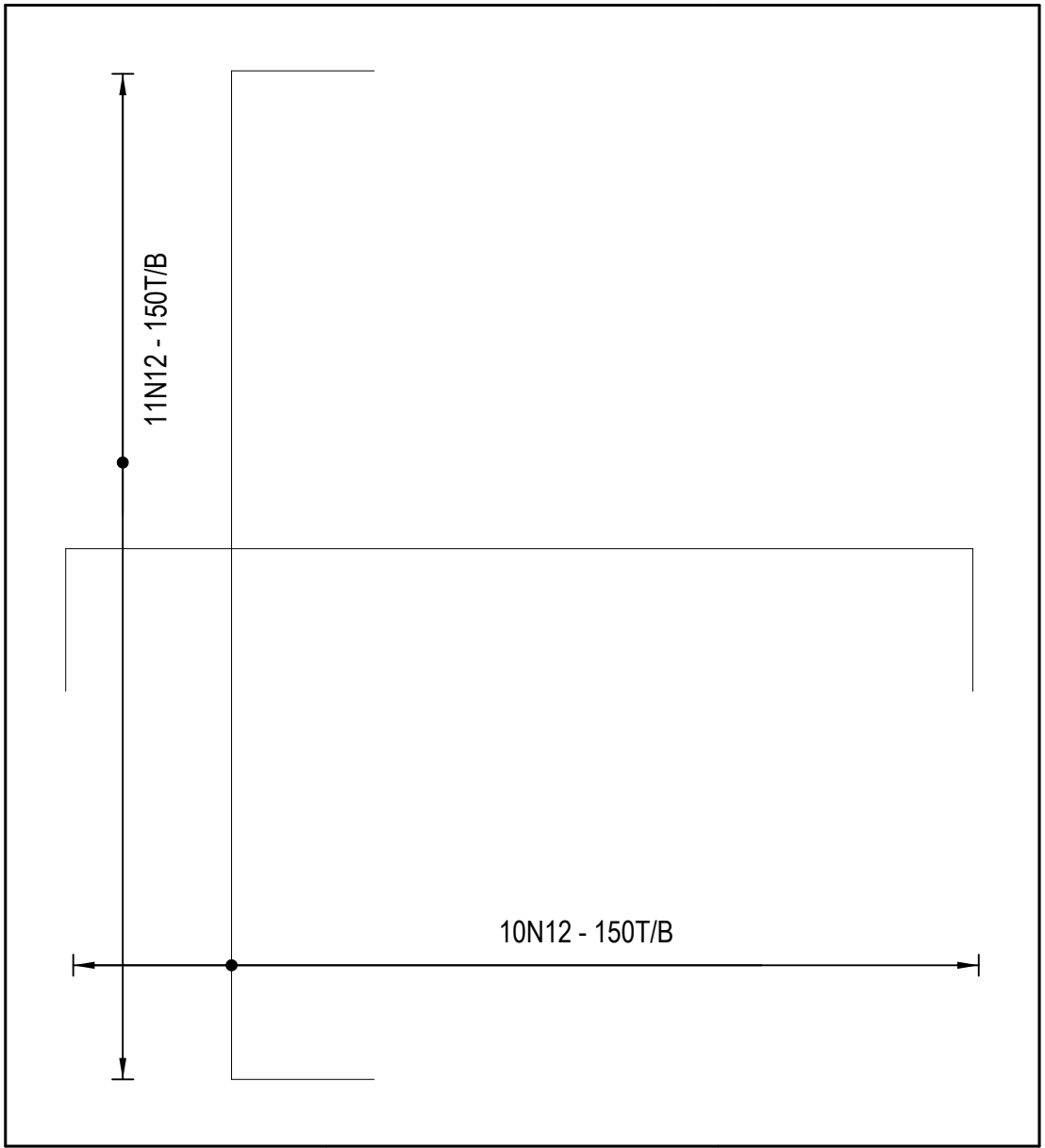
1. M24 BOLTS SHALL BE TIGHTENED TO AN INDUCED BOLT TENSION OF 95 KN.
2. CONTRACTOR SHALL DEVELOP A METHODOLOGY FOR THE CONSISTENT AND ACCURATE SETTING THE CLAMP BOLT TENSIONING FORCE OF 95KN PER M24 BOLT.
3. FOR ALL DIMENSIONS AND ANGLES MARKED WITH "H": THE CONTRACTOR MUST CHECK AND CONFIRM ACTUAL DIMENSIONS AND ANGLES ON SITE PRIOR TO FABRICATION.
4. ALL BOLTS USED FOR BRACKET TYPE T1 ARE TO BE GRADE 8.8 HDG WITH SERRATED WASHERS, EXCEPT FOR UHMWPE BLOCK FIXINGS WHICH SHALL BE SS 316 ABOVE WATER OR SUPER DUPLEX UNS S32750 BELOW WATER AND PROVIDED WITH TOP HAT WASHERS FOR ELECTRICAL ISOLATION.

APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND		
FUNCTION LOCATION ORDHLMCL01PEBW ASSIGNMENT C-2996 THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED DRAWN TO AS.1100, 00 NOT SCALE A1			DRAWING SCALE		AS INDICATED		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - PIPE SUPPORT STRUCTURAL DETAILS (PART 4 OF 10)					
			DRAWN BY		D. MARAIS VAN VUUREN							
			REVIEWED BY		R. FARNSWORTH							
			DATE		02.02.2024							
ACCOUNT			BY		R. FARNSWORTH		02.02.2024					
CLIENT			M. JAMES		24.04.2024							
ENGINEER			P. BANERJEE		28.04.2024							
RFEQ No.			R. FARNSWORTH		08389		TYPE 09		QAL 17		DISCIPLINE S	
DRAWING NUMBER			266655				SHEET 4		REVISION 0			

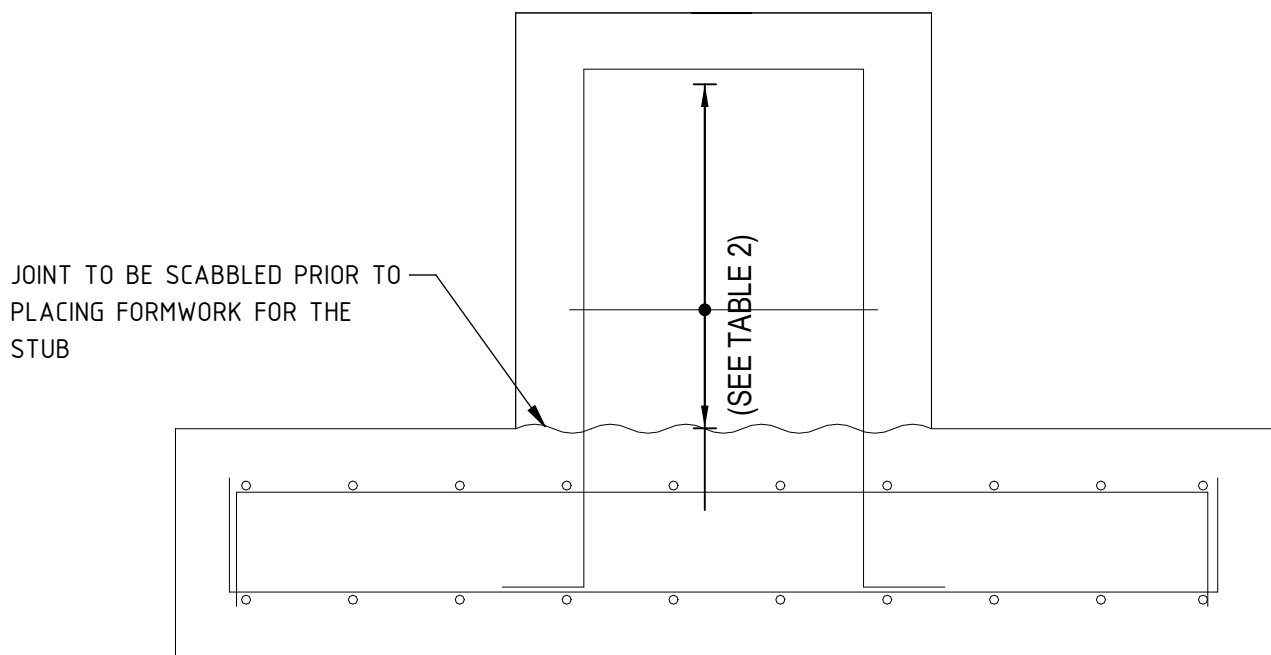




STUB REINFORCEMENT TYPE 2 - PLAN LAYOUT
1 : 10



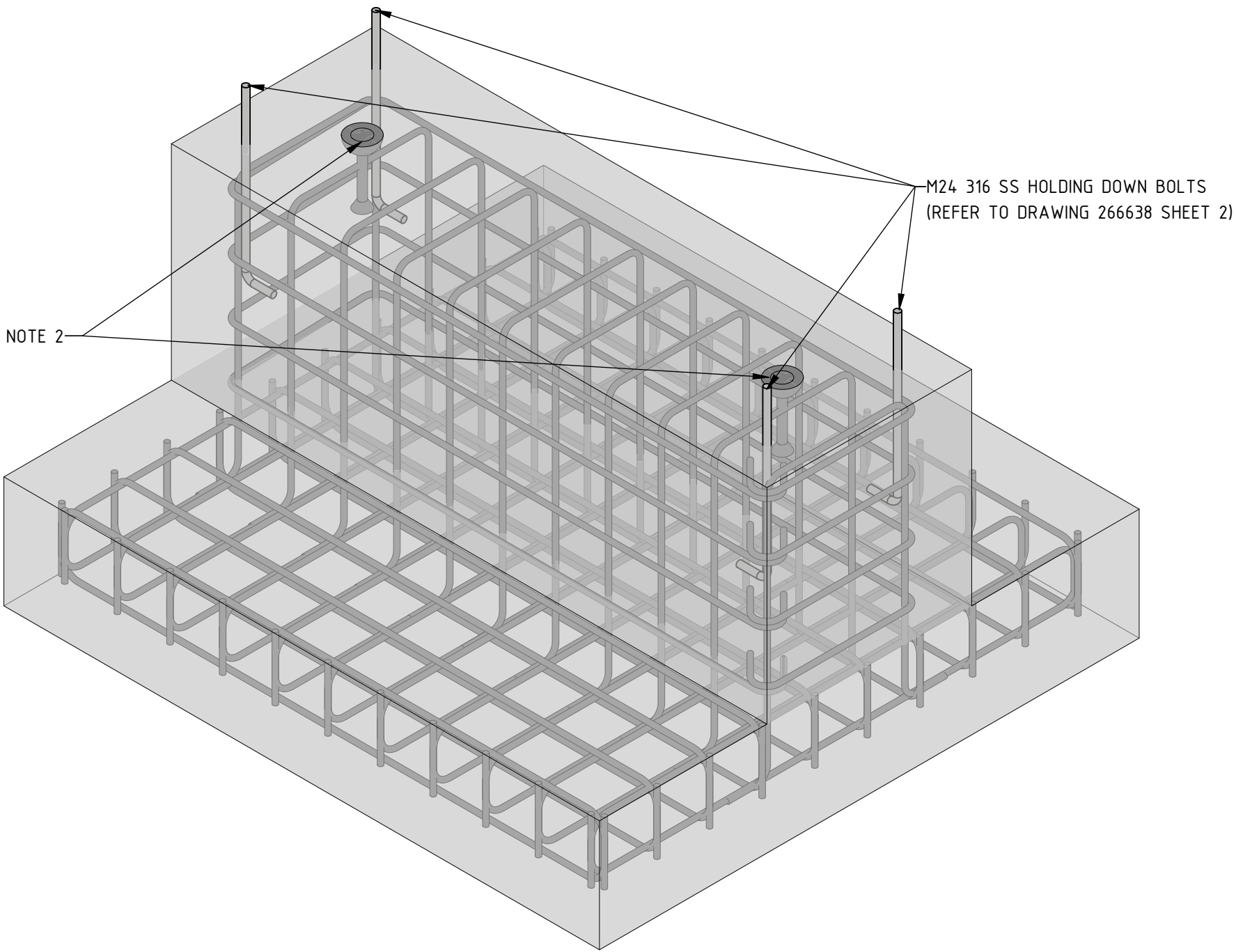
BASE SLAB REINFORCEMENT TYPE 2 - PLAN LAYOUT
1 : 10



STUB REINFORCEMENT TYPE 2 - ELEVATION
1 : 10

TABLE 2: PLINTH TYPE 2 STIRRUP QUANTITIES

TYPE REF.	STUB "A" (mm)	NO. OF STIRRUPS
1A	250	2N12 - 1500F
1B	400	3N12 - 1500F
1C	550	4N12 - 1500F
1D	700	5N12 - 1500F
1E	850	6N12 - 1500F



GENERAL REINFORCEMENT ARRANGEMENT TYPE 2 - ISOMETRIC VIEW

AUR. DRG. NO.		521327-W00001-DRG-WA-0088	
aurecon		PROJECT NUMBER: 521327	Rev. 0A
www.aurecongroup.com		Drawn D. MARAIS VAN VUUREN	02.02.2024
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed D. MARAIS VAN VUUREN	02.02.2024
Level 1, 130 Auckland Street (PO Box 1164) Gladstone		Draft Review G. EVERS	02.02.2024
Queensland 4680 Australia		Eng Review R. FARNSWORTH	02.02.2024
Telephone +61 7 4962 0600		Approved C. BRUTON	02.02.2024
Email: gladstone@Aurecongroup.com			

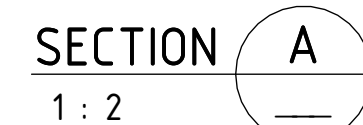
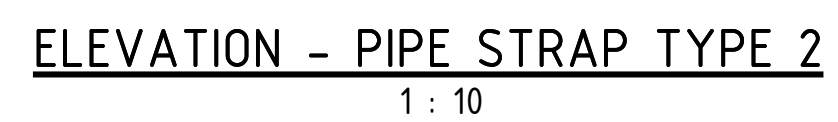
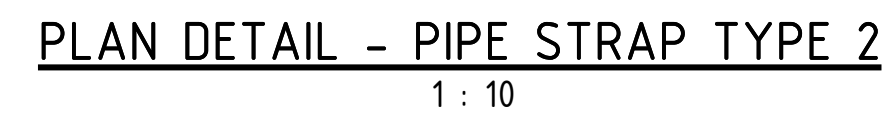
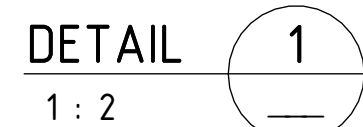
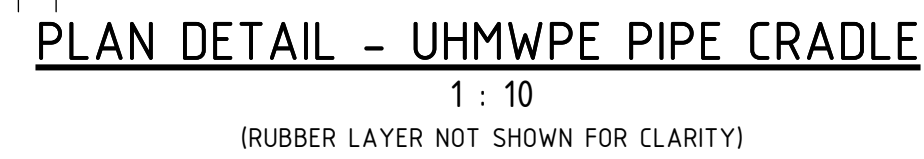
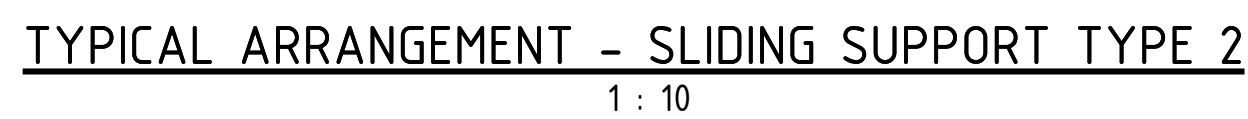


- THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - (266640-2): PRECAST PIPE SUPPORT PLINTH TYPE 2 - PRECAST PLINTH LAYOUT AND DETAILS
- CAST-IN LIFTING ANCHOR ATTACHED TO REQ, RECESSED BELOW FACE, COMPATIBLE WITH QUICK LIFTING TYPE CLUTCHES, TO SUPPLIER'S INSTALLATION RECOMMENDATIONS/ REQUIREMENTS, SAFE WORKING LOAD OF 5.0 TONNE PER ANCHOR.

0A		17.04.2024	ISSUED FOR INFORMATION		AUR	DMV	MS	MJ	AF	RAF	08389	TITLE DRAWING & DRAWING LIST	266601
NO.	DATE	REVISION		COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER	
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		3											
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		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											

NOTES

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND							
FUNCTION LOCATION ACCOUNT ASSIGNMENT C-2996 THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE		DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE											
		DRAWN BY		D. MARAIS VAN VUUREN		02.02.2024													
		REVIEWED BY		R. FARNSWORTH		02.02.2024		PRECAST PIPE SUPPORT PLINTH TYPE 2 - REINFORCING DETAILS											
		QAL CLIENT		M. JAMES		26.04.2024													
ENGINEER		A. FERGUSON		29.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
RPEQ NAME		R. FARNSWORTH		RPEQ No. 08389		09		QAL		17		P		266640		3		0	
8		9		10		11		12											



0A	17.04.2024	ISSUED FOR INFORMATION				AUR	DMvV	MS	
NO.	DATE	REVISION				COMPANY	DRAFTER	EXTERNAL APPROVAL	



APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND									
FUNCTION LOCATION ACCOUNT ASSIGNMENT		DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE PRECAST PIPE SUPPORT PLINTH TYPE 2 - PRECAST PLINTH LAYOUT AND DETAILS													
		DRAWN BY		D. MARAIS VAN VUUREN		02.02.2024															
DRAWING DESCRIPTION		REVIEWED BY		M. MAYR		02.02.2024															
		DRAUGHTSMAN BY		M. JAMES		26.04.2024															
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNDO DRAWN TO AS 1100. DO NOT SCALE		DESIGNED BY		A. FERGUSON		29.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
		CHECKED NAME		R. FARNSWORTH		RFD No. 08389		09		QAL		17		P		266640		2		0	

1. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:

- (266640-2): PRECAST PIPE SUPPORT PLINTH TYPE 2 - PRECAST PLINTH LAYOUT AND DETAILS
- (266640-3): PRECAST PIPE SUPPORT PLINTH TYPE 2 - REINFORCING DETAILS



MIN: 50mm
MAX: 75mm

VARIABLES

A

300

G.S.

SOP01 (PLINTH SETOUT POINT)

OD 1067 STEEL PIPE (WELDED)

200

FLOW DIRECTION

TOP OF BASE TO BE LEVEL OR BELOW GROUND SURFACE

VARIABLES

(TYPICAL 923 - 1523mm)

450

450

450

1450

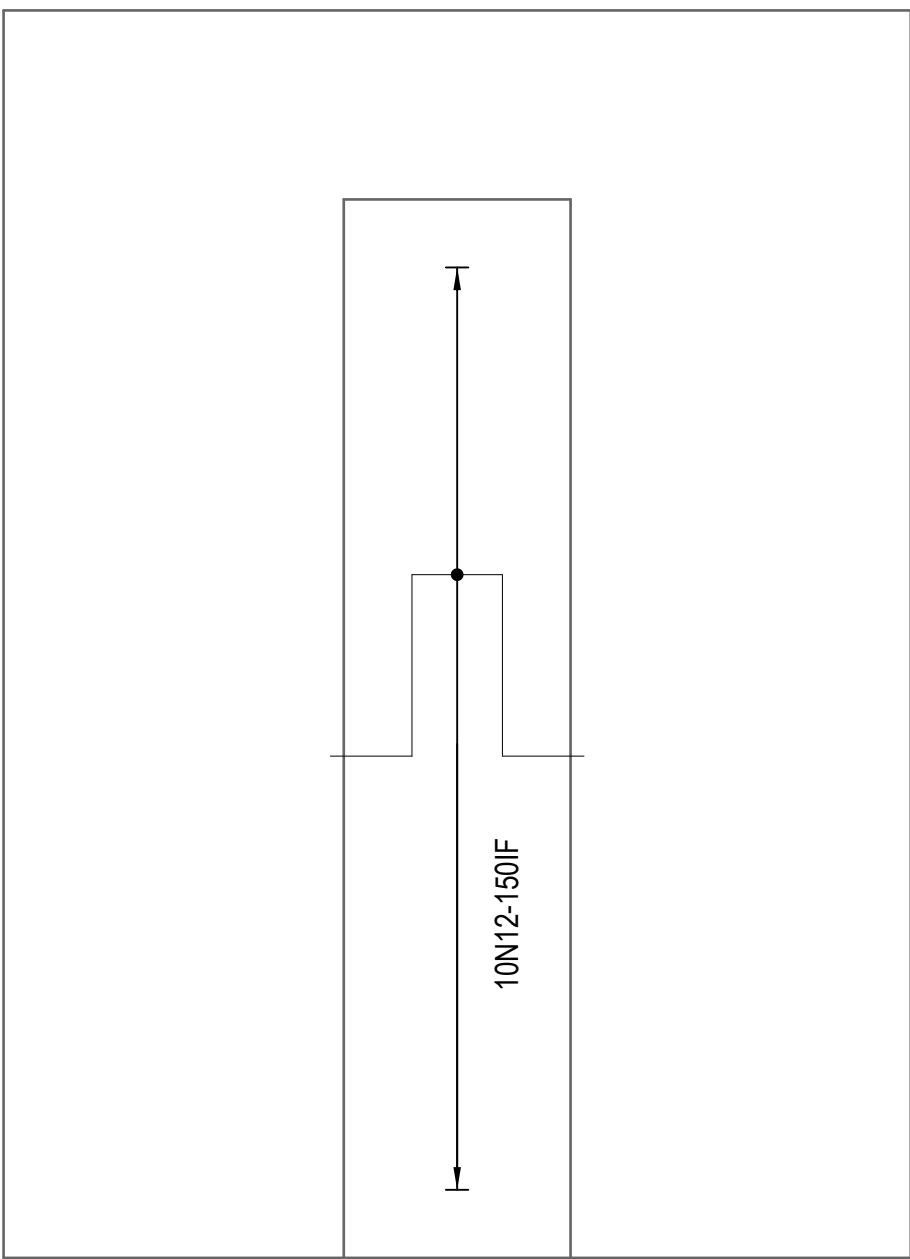
TABLE 2: PLINTH TYPE 2 DIMENSIONS

TYPE REF.	STUB HEIGHT "A" (mm)
2A	250
2B	400
2C	550
2D	700
2E	850

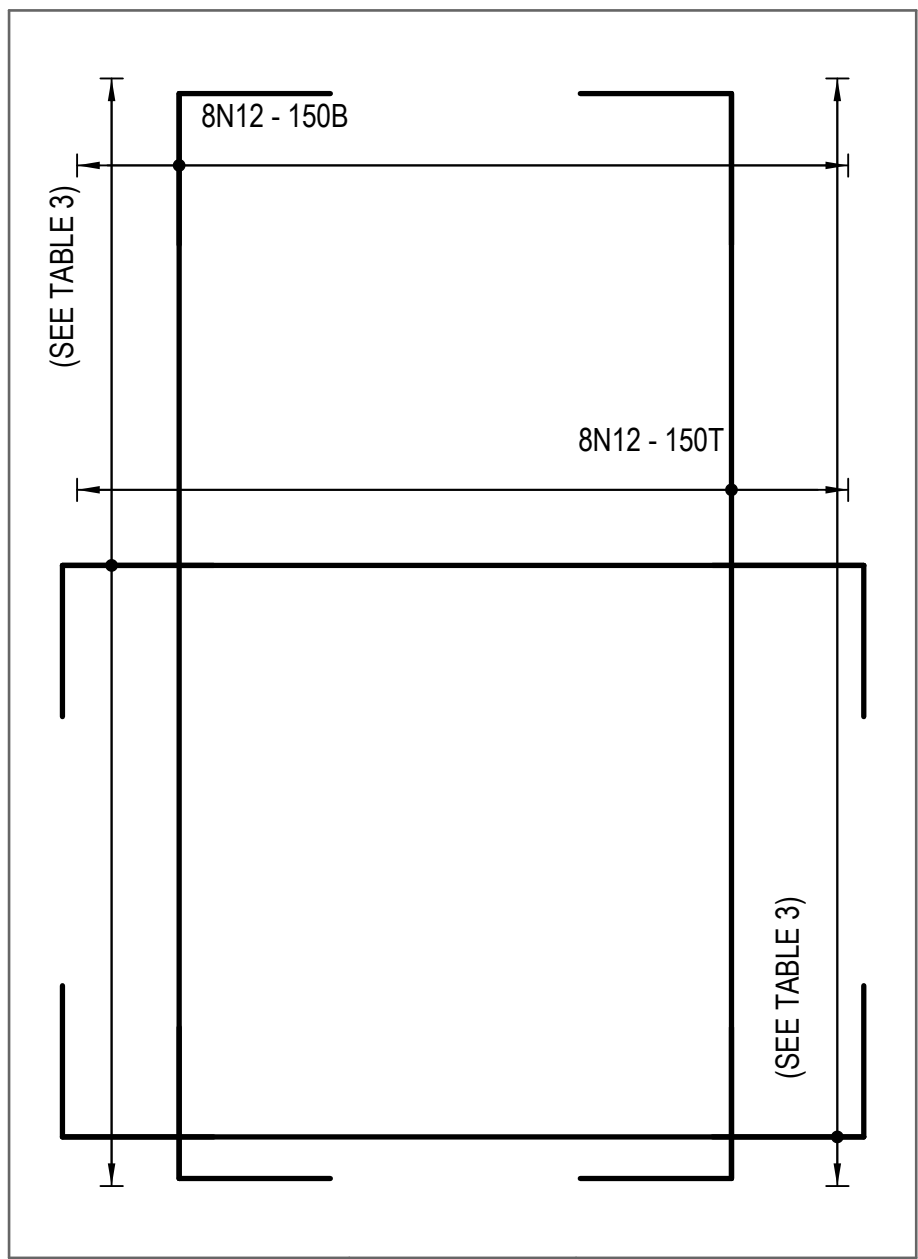
The image shows the Gladstone Ports Corporation logo, which consists of a stylized ship icon above the letters 'GPC'. To the right of the logo is the text 'Gladstone Ports Corporation'. Below this, there is a large red rectangular stamp with the word 'APPROVED' in white capital letters. At the bottom, there is a white box containing the text 'Name: Erin Clark' and 'Date: 2:53pm 21/09/2026'.

[illegible]

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED										A.C.N. 009 725 044		GLADSTONE QUEENSLAND							
FUNCTION LOCATION ACCOUNT ASSIGNMENT THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE				DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE PRECAST PIPE SUPPORT PLINTH TYPE 2 - GENERAL ARRANGEMENT													
				DRAWN BY		D. MARAIS VAN VUUREN		02.02.2024															
				REVIEWED BY		M. MAYR		02.02.2024															
				CLIENT		M. JAMES		26.04.2024															
				ENGINEER		A. FERGUSON		29.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
				RPEQ NAME		R. FARNSWORTH		RPEQ No. 08389		09		QAL		17		P		266640		1		0	
8				9				10				11				12							



STUB REINFORCEMENT - PLAN LAYOUT
1 : 10



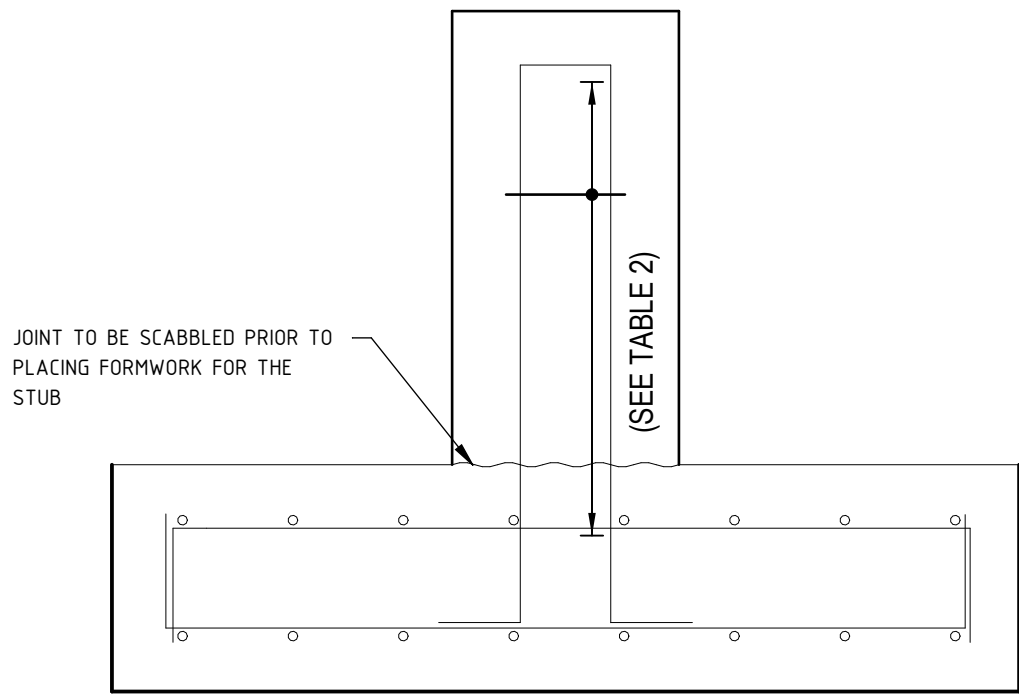
BASE SLAB REINFORCEMENT - PLAN LAYOUT
1 : 10

TABLE 2: PLINTH TYPE 1 STIRRUP QUANTITIES

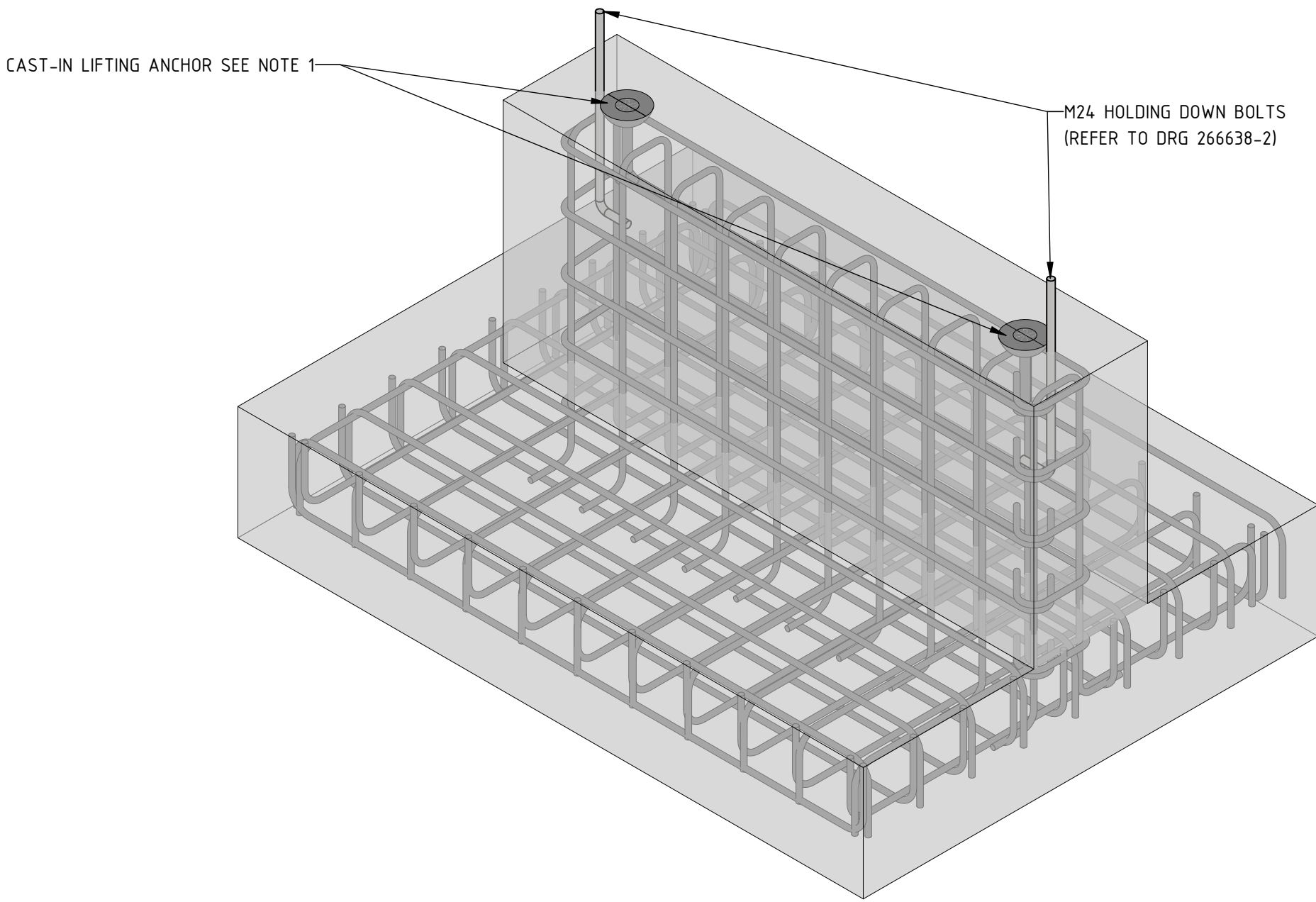
TYPE REF.	STUB "C" (mm)	NO. OF STIRRUPS
1A	0	0
1B	150	0
1C	300	2N12 - 1500F
1D	450	3N12 - 1500F
1E	600	4N12 - 1500F

TABLE 3: PLINTH TYPE 1 TOP AND BOT REINFORCING QUANTITIES IN B-DIRECTION

TYPE REF.	WIDTH "B" (mm)	TOP REINFORCING (T2) BOT REINFORCING (B2)
1A	1550	10N12 - 150T/B
1B	1600	10N12 - 150T/B
1C	1650	11N12 - 150T/B
1D	1750	11N12 - 150T/B
1E	1750	11N12 - 150T/B



STUB REINFORCEMENT - ELEVATION
1 : 10



GENERAL REINFORCEMENT ARRANGEMENT - ISOMETRIC VIEW

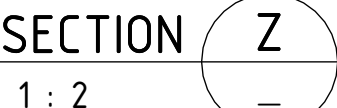
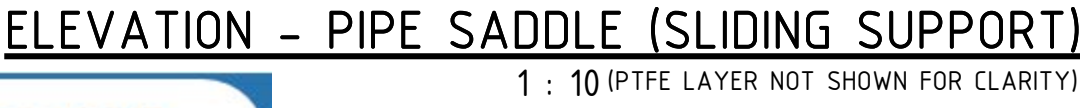
AUR. DRG. NO.		521327-W00001-DRG-WA-0080	
aurecon		PROJECT NUMBER: 521327	Rev. 0A
www.aurecongroup.com		Drawn	D. MARAIS VAN VUUREN 02.02.2024
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed	D. MARAIS VAN VUUREN 02.02.2024
Level 1, 130 Auckland Street (PO Box 1164) Gladstone		Draft Review	G. EVERS 02.02.2024
Queensland 4680 Australia		Eng Review	R. FARNSWORTH 02.02.2024
Telephone: +61 7 4962 0600		Approved	C. BRUTON 02.02.2024
Email: gladstone@Aurecongroup.com			



0A	17.04.2024	ISSUED FOR INFORMATION	AUR	DMvV	MS	MJ	AF	RAF	08389	TITLE DRAWING & DRAWING LIST	266601
NO.	DATE	REVISION	COMPANY	DRAFTER	EXTERNAL APPROVAL	QAL CLIENT	QAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER
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		2									
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		8									
		9									
		10									
		11									
		12									

1. CAST-IN LIFTING ANCHOR ATTACHED TO REQ, RECESSED BELOW FACE, COMPATIBLE WITH QUICK LIFTING TYPE CLUTCHES, SAFE WORKING LOAD OF 5,0 TONNE PER ANCHOR.	
PRECAST PLINTH LAYOUT	266638-2
GENERAL NOTES	266603
TITLE DRAWING & DRAWING LIST	266601
REFERENCE DRAWINGS	NUMBER
NOTES	

APPROVAL		DATE	
DRAWING SCALE		AS INDICATED	
BY		D. MARAIS VAN VUUREN	
REVIEWED		02.02.2024	
BY		R. FARNSWORTH	
REVIEWED		02.02.2024	
QAL CLIENT		M. JAMES	
ASSIGNMENT		C-2996	
QAL ENGINEER		A. FERGUSON	
RPEQ NAME		R. FARNSWORTH	
RPEQ No.		08389	
DATE		29.04.2024	
FUNCTION LOCATION		QROHLMCL01.PEBW	
ACCOUNT		C-2996	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION		DRAWN TO AS 1100. DO NOT SCALE	
A1		A1	
QUEENSLAND ALUMINA LIMITED		A.C.N. 009 725 044	
GLADSTONE QUEENSLAND		PROJECT NUMBER: C-2996	
CELL 1 DISCHARGE TO BSL WHARF PIPELINE		PRECAST PIPE SUPPORT PLINTH TYPE 1 - REINFORCING DETAILS	
TYPE	EXPANSION	AREA	DISCIPLINE
09	QAL	17	P
DRAWING NUMBER		266638	
SHEET		5	
REVISION		0	



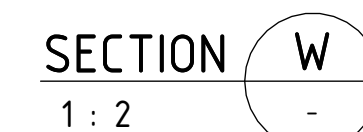
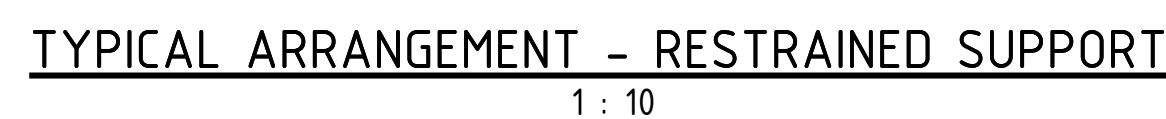
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NO:	DATE	REVISION	COMPANY	DRAFTER EXTERNAL APPROVAL



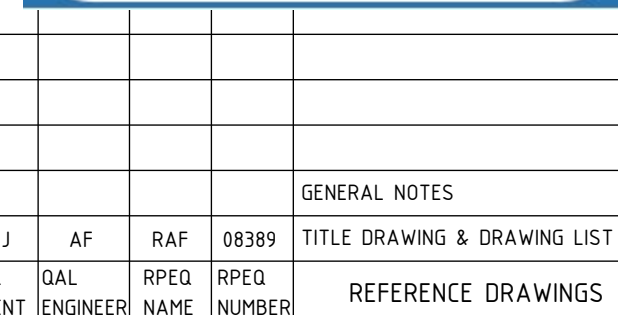
Name: Erin Clark
Date: 2:53pm 21/09/2026

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8	9	10	11	12
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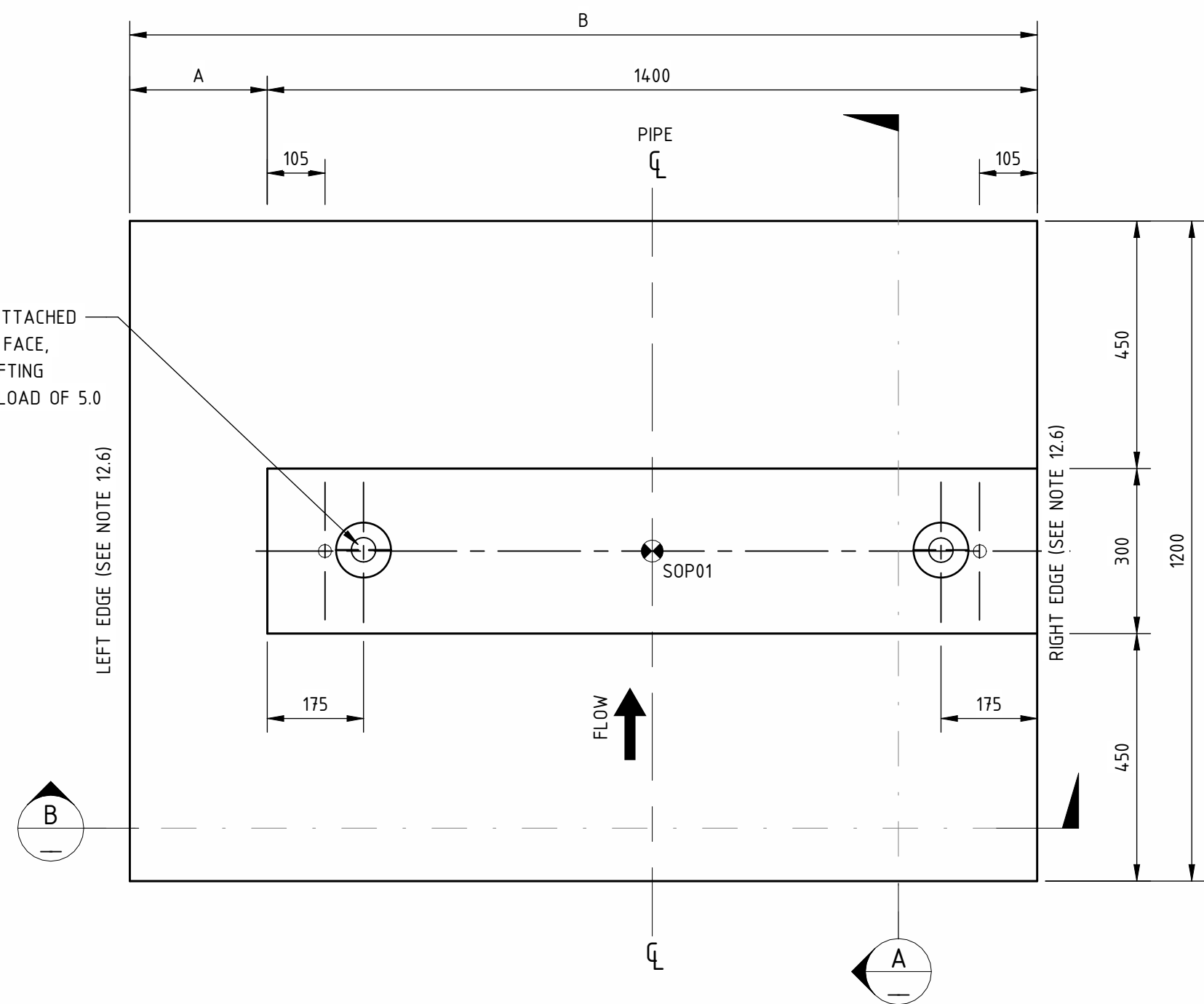


0A	17.04.2024	ISSUED FOR INFORMATION		AUR	D. MvV	MS
NO.	DATE	REVISION		COMPANY	DRAFTER	EXTERNAL APPROVAL

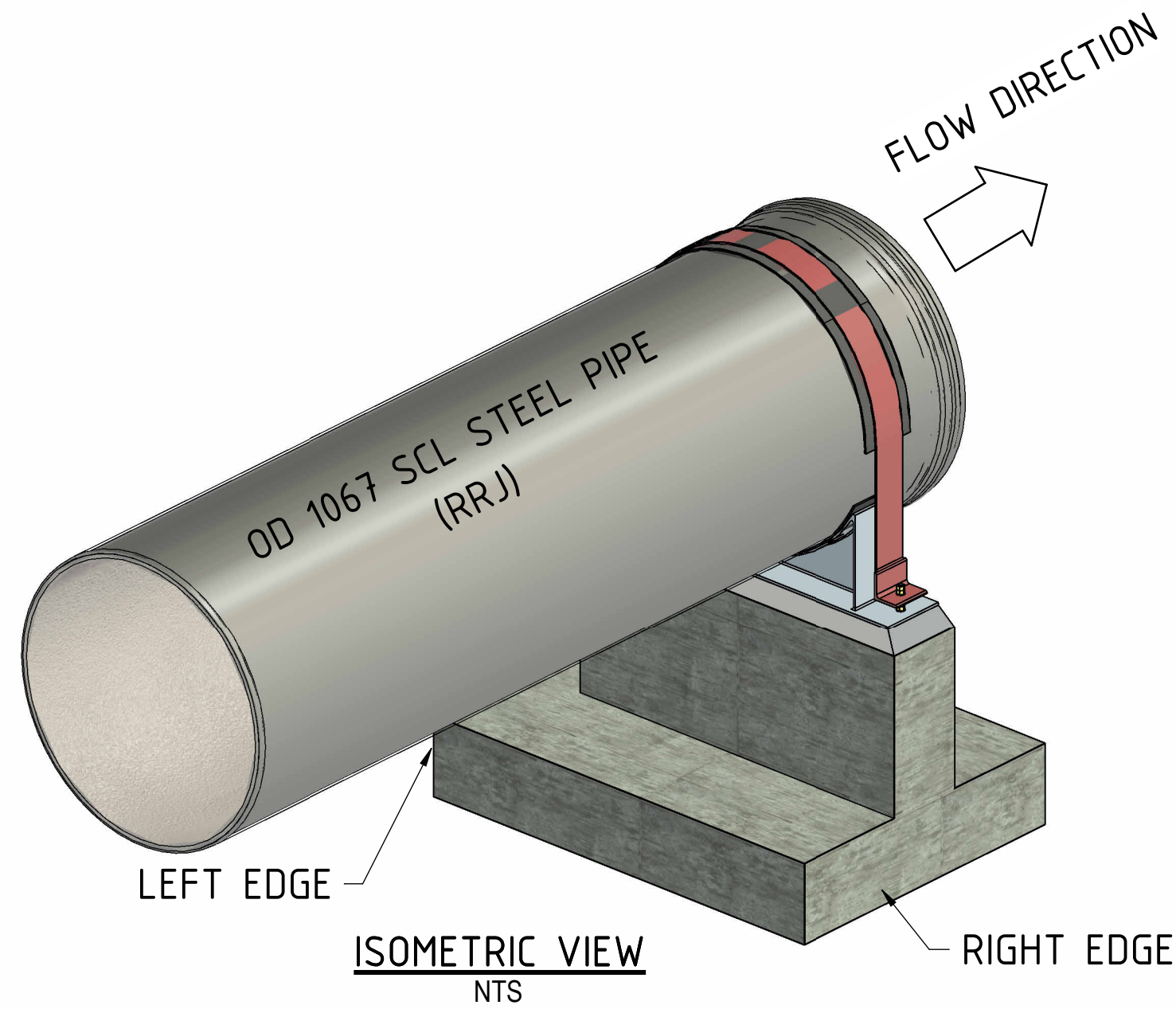


APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED				A.C.N. 009 725 044		GLADSTONE QUEENSLAND				
			DRAWING SCALE AS INDICATED		DATE		PROJECT NUMBER: C-2996						
			DRAWN BY D. MARAIS VAN VUUREN		02.02.2024		CELL 1 DISCHARGE TO BSL WHARF PIPELINE						
FUNCTION LOCATION C-2996			REVIEWED BY M. MAYR		02.02.2024		PRECAST PIPE SUPPORT PLINTH TYPE 1 - RESTRAINED SUPPORT DETAIL						
ASSIGNMENT			DIAL CLIENT M. JAMES		26.04.2024								
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED. DRAWN TO AS.1100. DO NOT SCALE.			GAL ENGINEER A. FERGUSON		26.04.2024		TYPE 09	EXPANSION QAL	AREA 17	DISCIPLINE P	DRAWING NUMBER 266638	SHEET 3	REVISION 0

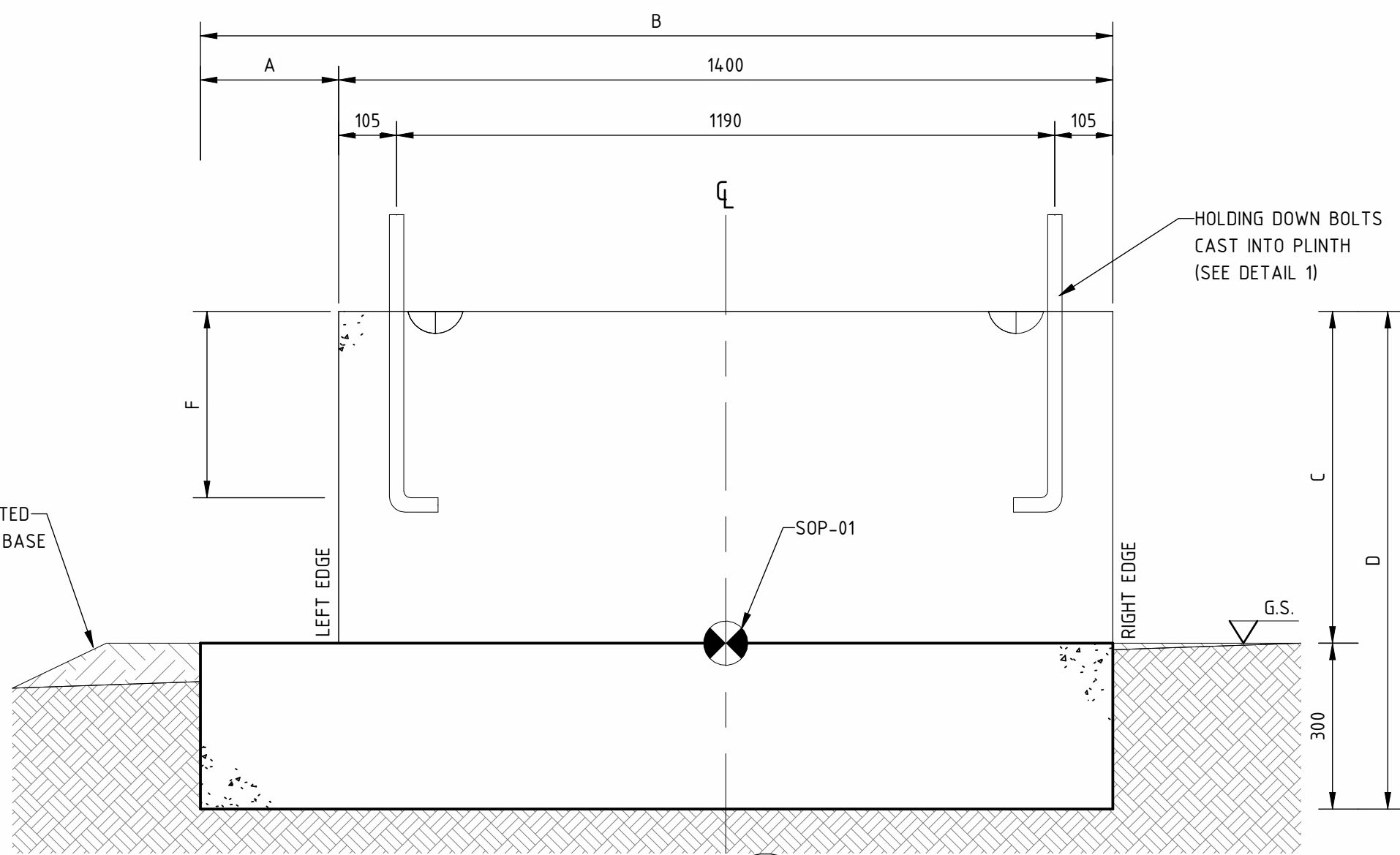
CAST-IN LIFTING ANCHOR ATTACHED TO REQ., RECESSED BELOW FACE, COMPATIBLE WITH QUICK LIFTING CLUTCHES. SAFE WORKING LOAD OF 5.0 TONNE PER ANCHOR.



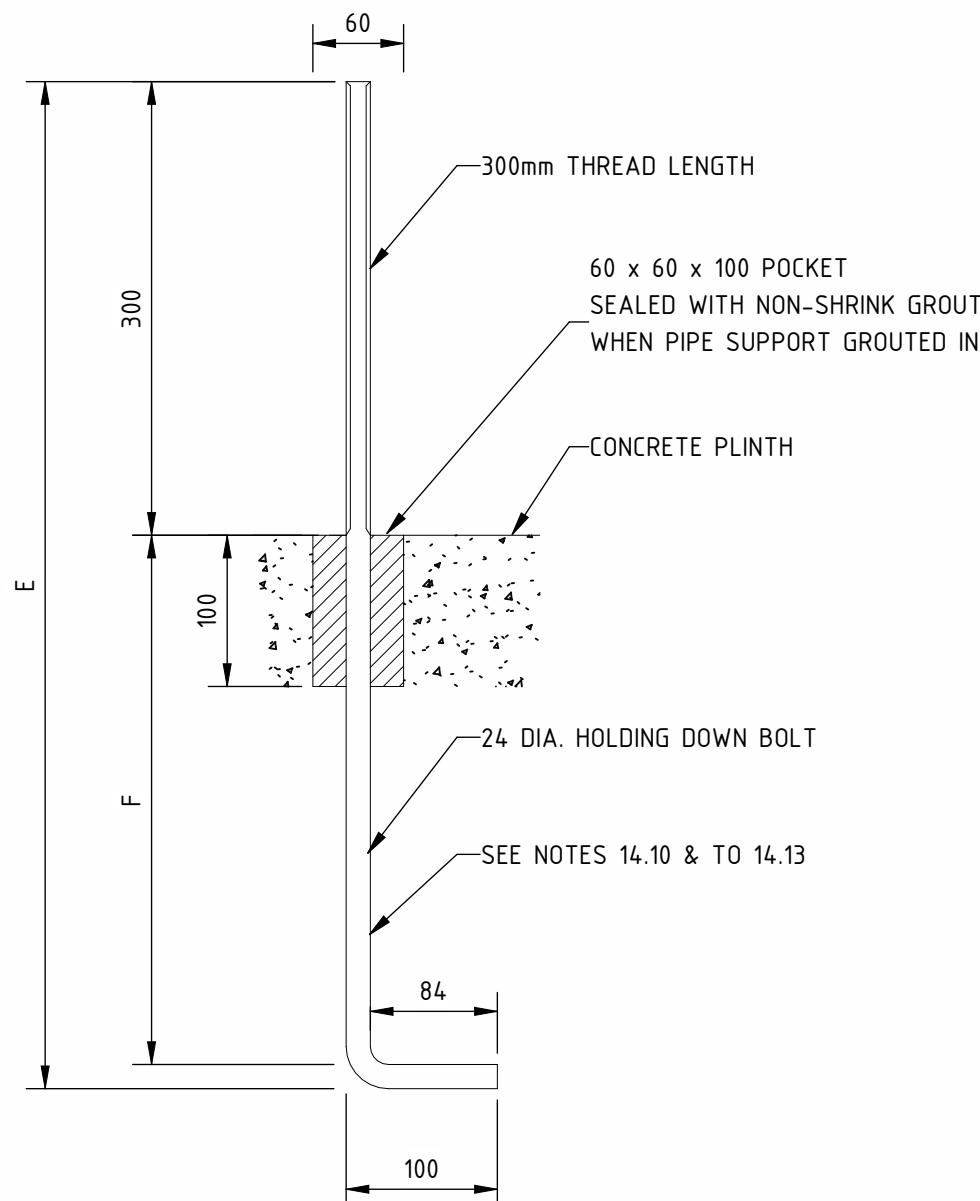
PLAN VIEW - TYPICAL PLINTH
1 : 10



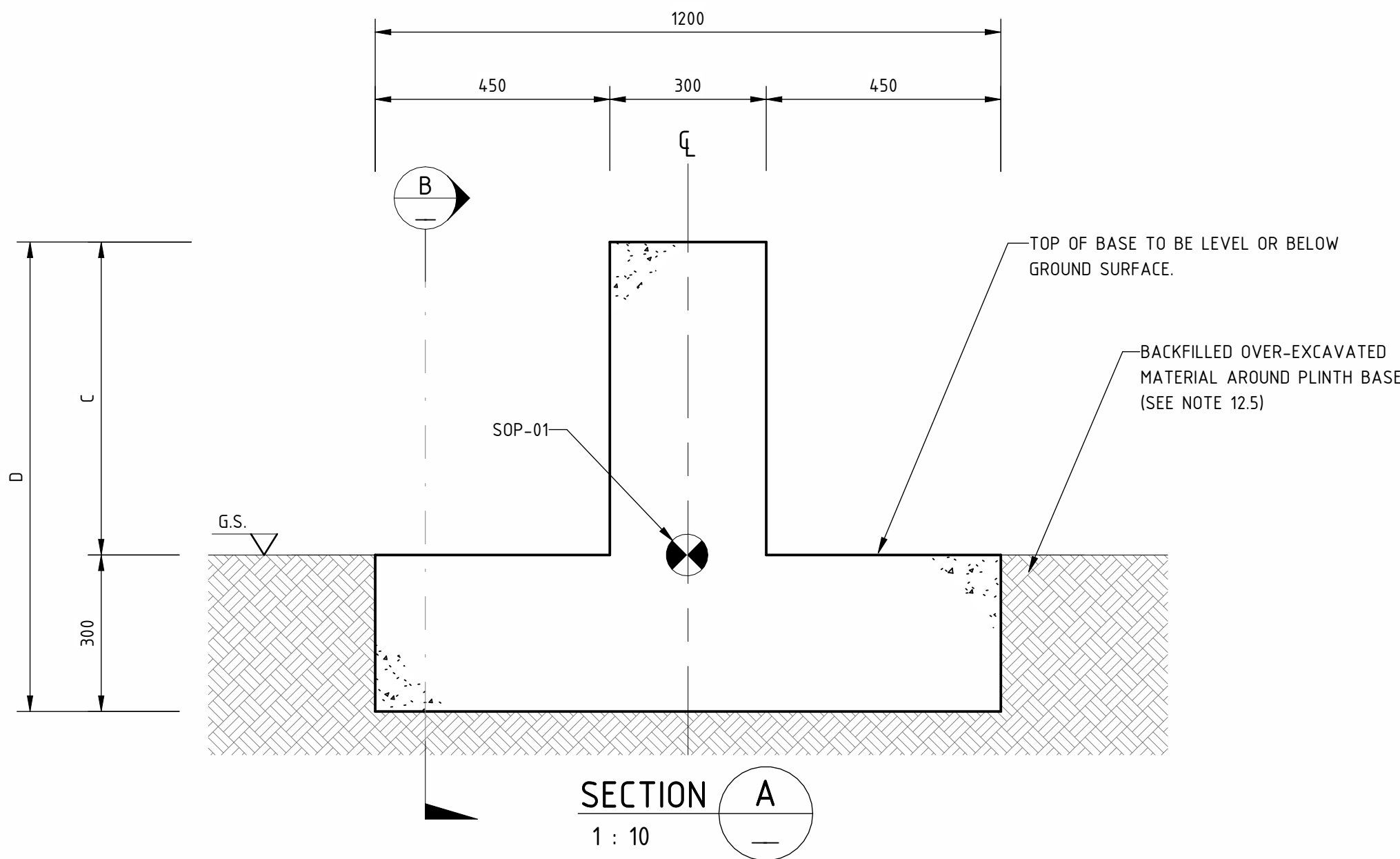
BACKFILLED OVER-EXCAVATED MATERIAL AROUND PLINTH BASE (SEE NOTE 12.5)



SECTION B
1 : 10



DETAIL 1 - HOLDING DOWN BOLT
1 : 5



SECTION A
1 : 10

TABLE 1: PLINTH TYPE 1 DIMENSIONS

TYPE REF.	DIMENSIONS						ESTIMATED MASS (kg)
	HEEL "A" (mm)	WIDTH "B" (mm)	STUB "C" (mm)	HEIGHT "D" (mm)	H.D BOLT "E" (mm)	EMBEDMENT DEPTH "F" (mm)	
1A	200	1550	0	300	539	223	1339
1B	250	1600	150	450	666	350	1534
1C	300	1650	300	600	666	350	1728
1D	400	1750	450	750	666	350	1965
1E	400	1750	600	900	666	350	2117

AUR. DRG. NO.		521327-W00001-DRG-WA-0077	
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Designed	D. MARAIS VAN VUUREN	02.02.2024	
Draft Review	G. EVERS	02.02.2024	
Eng Review	M. MAYR	02.02.2024	
Approved	C. BRUTON	02.02.2024	



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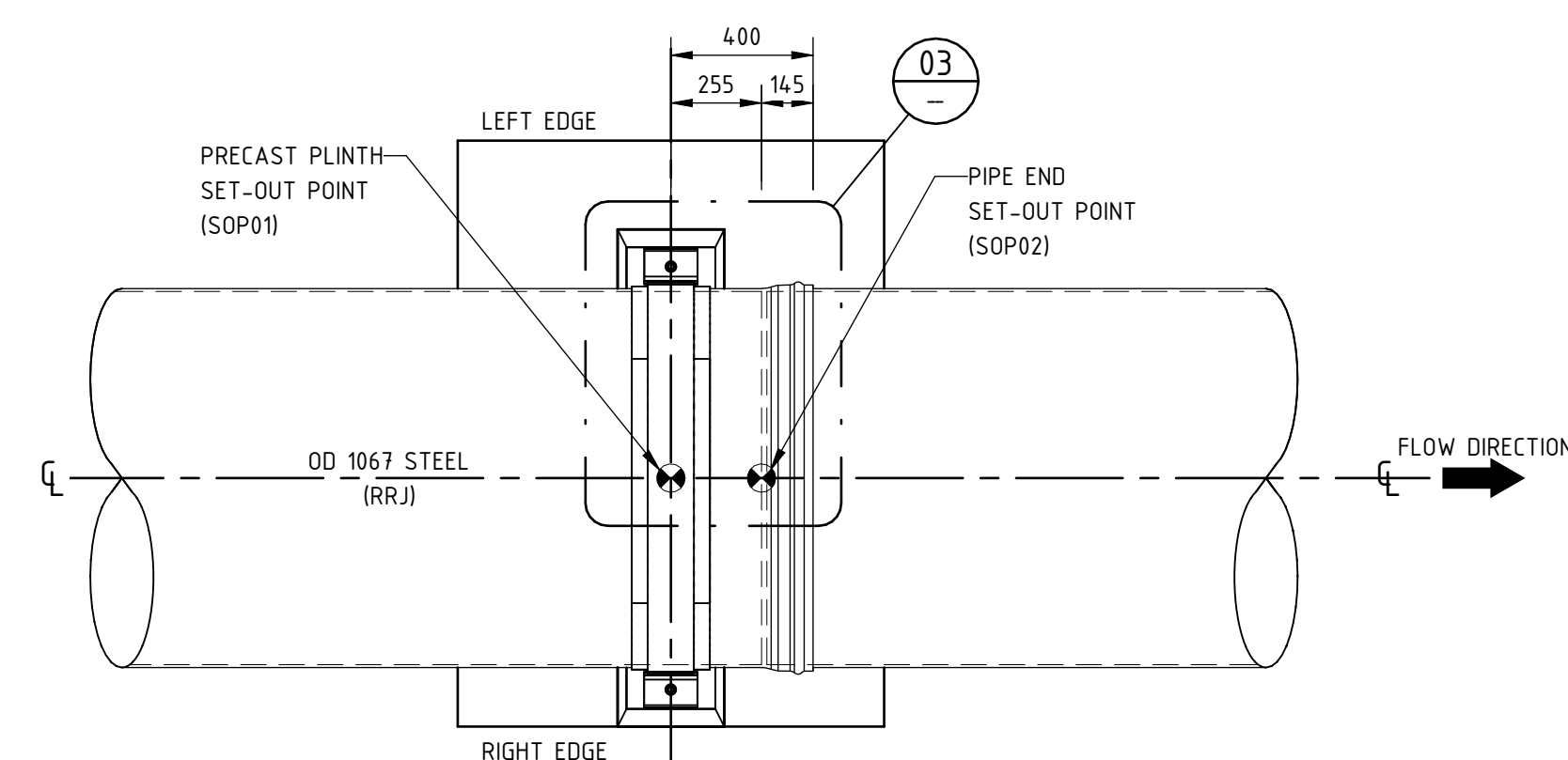
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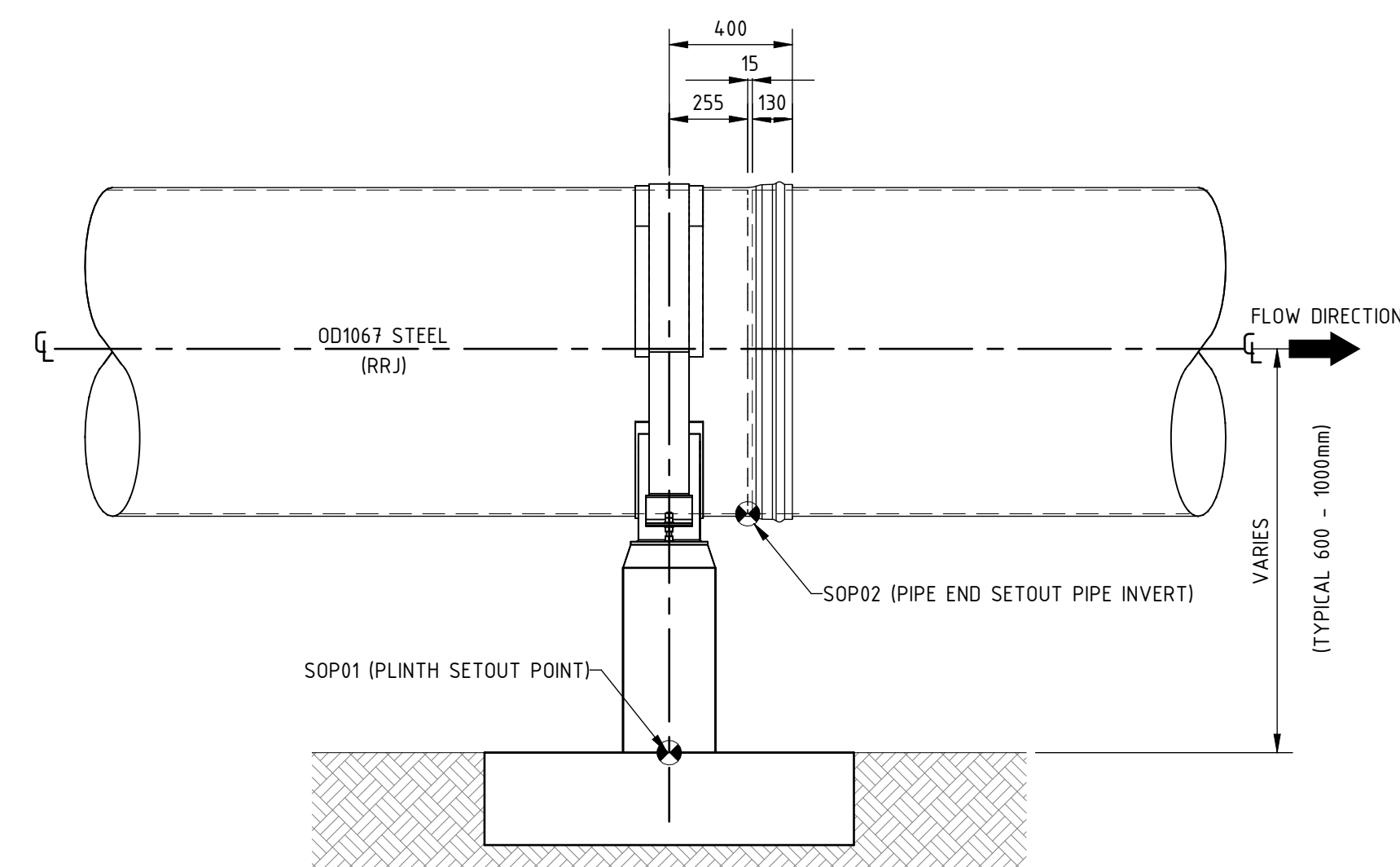
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Approved	C. BRUTON	02.02.2024	

										Date: 2:53pm 21/09/2026			



DETAIL 02 - RESTRAINED SUPPORT
1 : 20



STEEL LAYER

PLINTH

400

255

145

15

130

INSTALLATION GAP AT 20°C

RUBBER RING

CEMENT MORTAR LINING

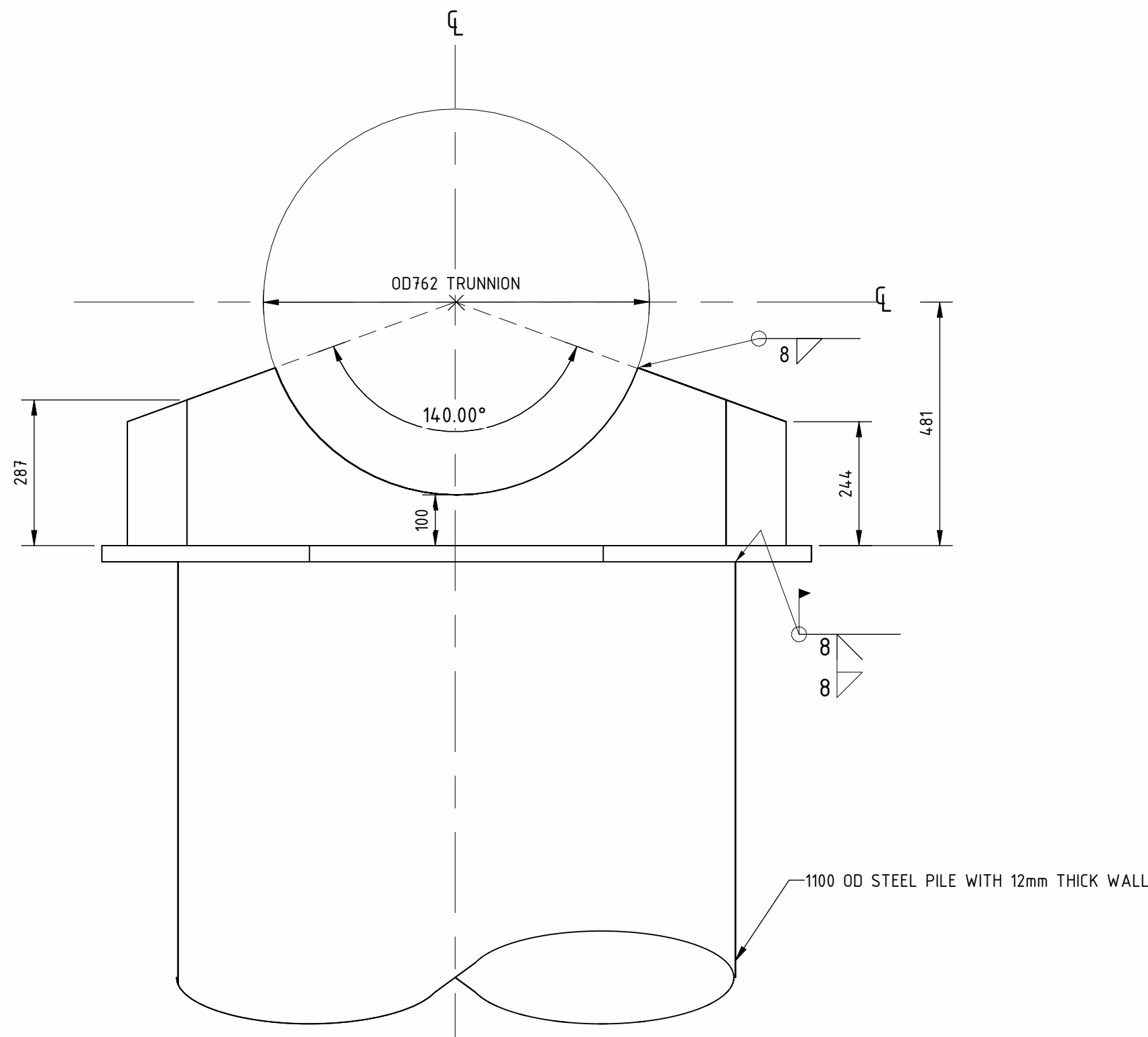
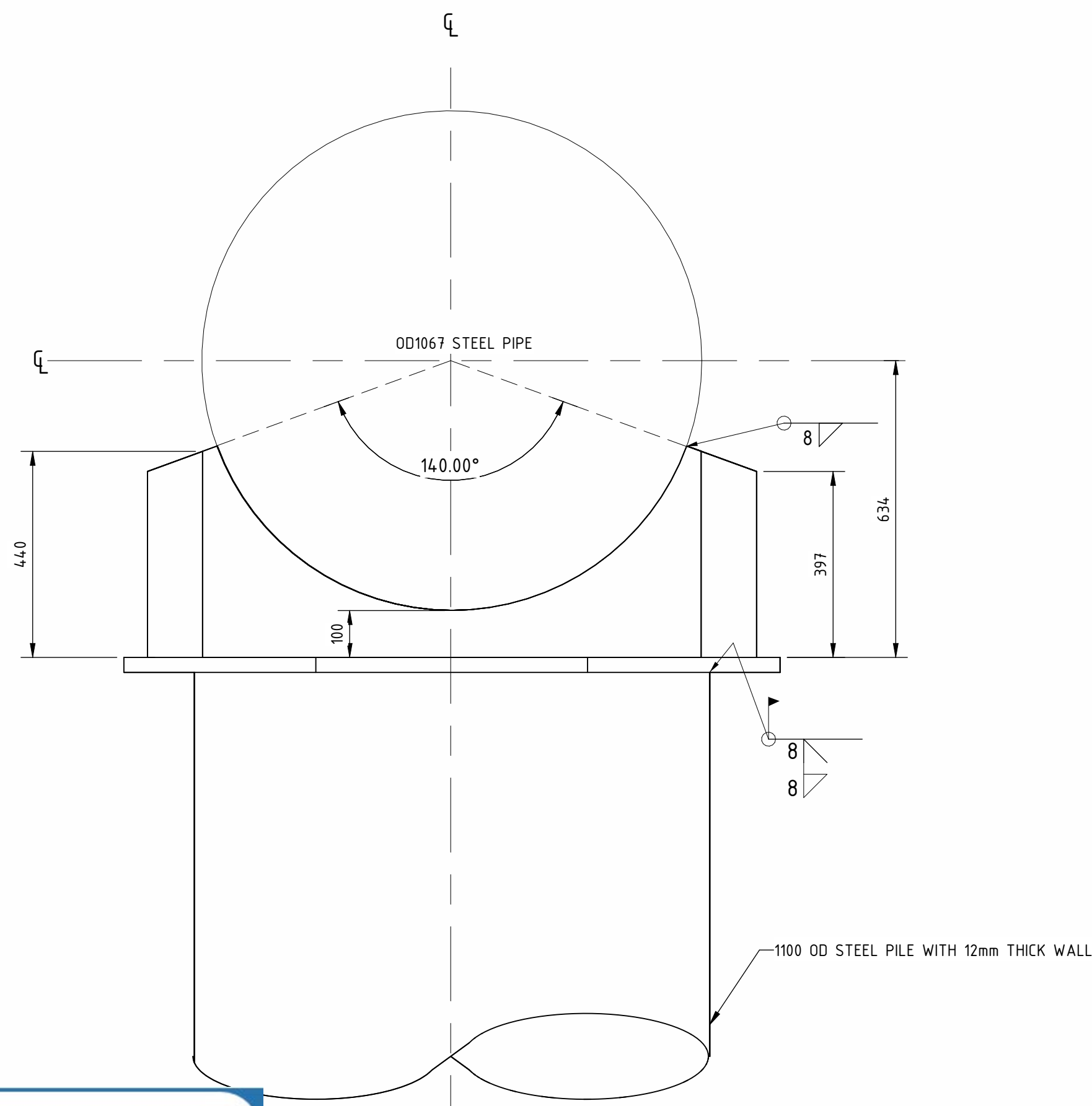
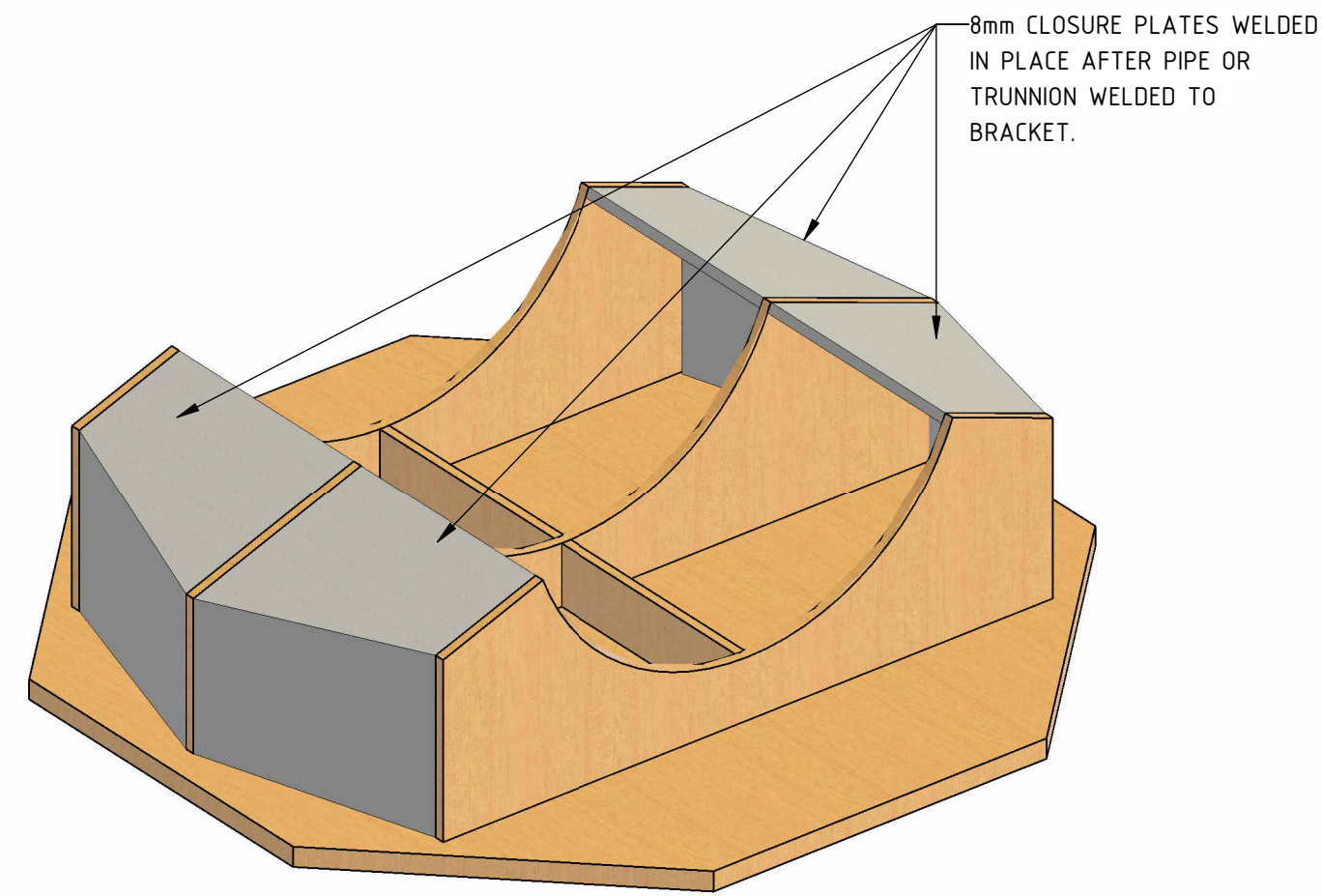
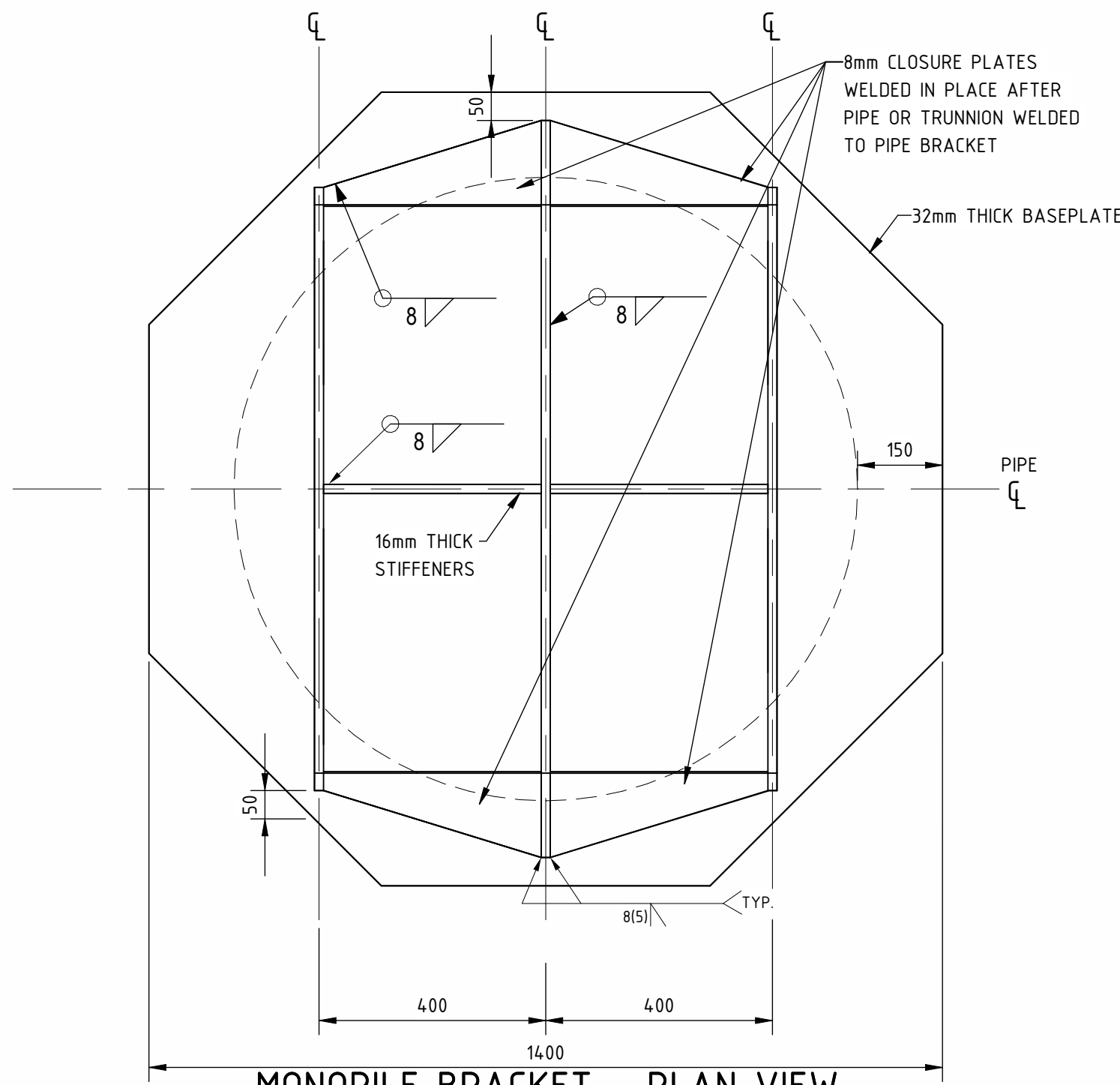
SOP01 (BELOW)

SOP02

AUR. DRG. NO.	521327-W00001-DRG-WA-0076		
 www.aurecongroup.com Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone +61 7 4962 0600 Email gladtstone@aurecongroup.com	PROJECT NUMBER: 521327		Rev. 0A
	Drawn	D. MARAIS VAN VUUREN	02.02.2024
	Designed	D. MARAIS VAN VUUREN	02.02.2024
	Draft Review	G. EVERS	02.02.2024
	Eng Review	M. MAYR	02.02.2024
	Approved	C. BRUTON	02.02.2024

[illegible]

APPROVAL		DATE	QUEENSLAND ALUMINA LIMITED					A.C.N. 009 725 044		GLADSTONE QUEENSLAND						
			DRAWING SCALE BY AS INDICATED D. MARAIS VAN VUUREN		DATE 02.02.2024		PROJECT NUMBER: C-2996									
FUNCTION LOCATION GROHLDMLC01PEBW			REVIEWED BY M. MAYR		DATE 02.02.2024		CELL 1 DISCHARGE TO BSL WHARF PIPELINE									
ACCOUNT C-2996			QUAL M. JAMES		DATE 26.04.2024		PRECAST PIPE SUPPORT PLINTH TYPE 1 - GENERAL ARRANGEMENT									
ASSIGNMENT			QUAL A. FERGUSON		DATE 29.04.2024		TYPE 09		EXPANSION QUAL		AREA 17	DISCIPLINE P	DRAWING NUMBER 266638		SHEET 1	REVISION 0
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED DRAWN TO AS 1100. DO NOT SCALE			ENGINEER NAME R. FARNSWORTH		RPEP No. 00839											
A1																



AUR. DRG. NO.		521327-W00001-DRG-WA-0074	
aurecon		PROJECT NUMBER: 521327	Rev. 0
www.aurecongroup.com		Drawn	D. MARAIS V VUUREN 02.02.2024
Aurecon Australia Pty Ltd ABN 54 005 139 873		Designed	D. CHRISTOPHER 02.02.2024
Level 1, 130 Auckland Street (PO Box 1144) Gladstone		Draft Review	G. EVERS 02.02.2024
Queensland 4680 Australia		Eng Review	R. FARNSWORTH 02.02.2024
Telephone: +61 7 4962 0600		Approved	C. BRUTON 02.02.2024
Email: gladstone@Aurecongroup.com			

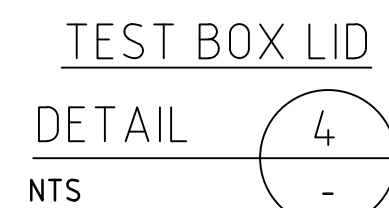
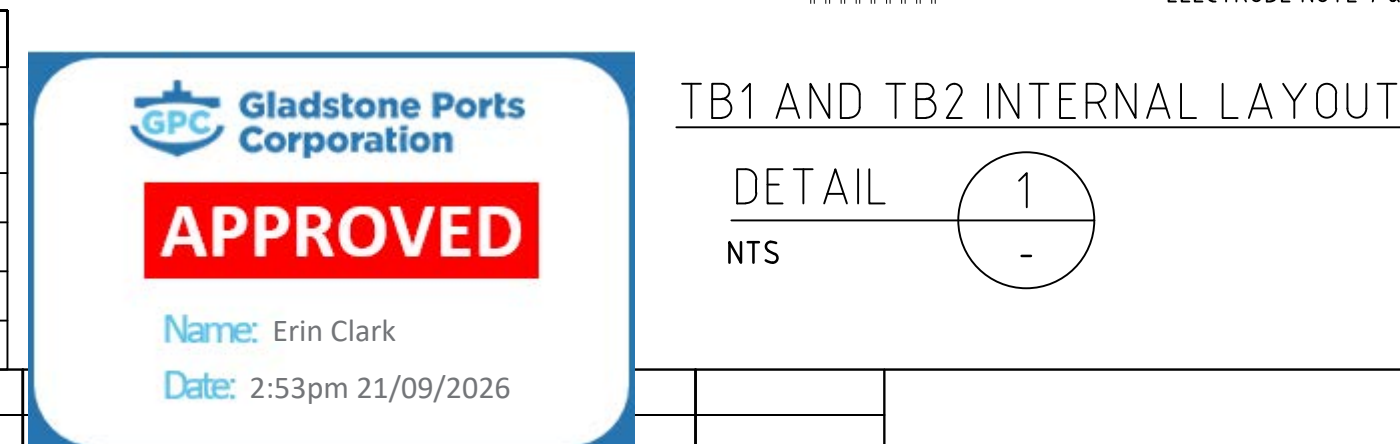
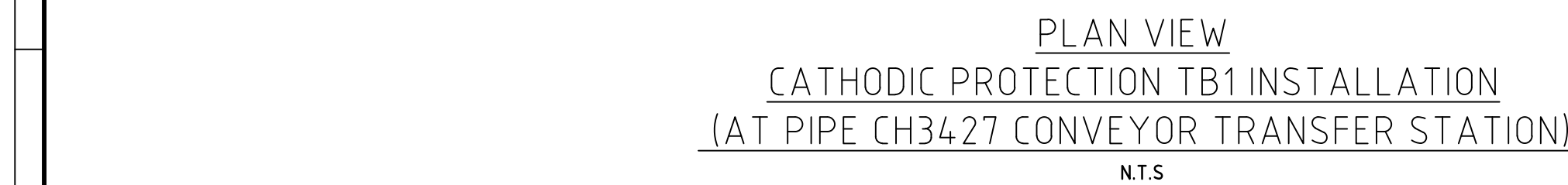


SECTION A
1 : 10
266634

SECTION C
1 : 10
266634

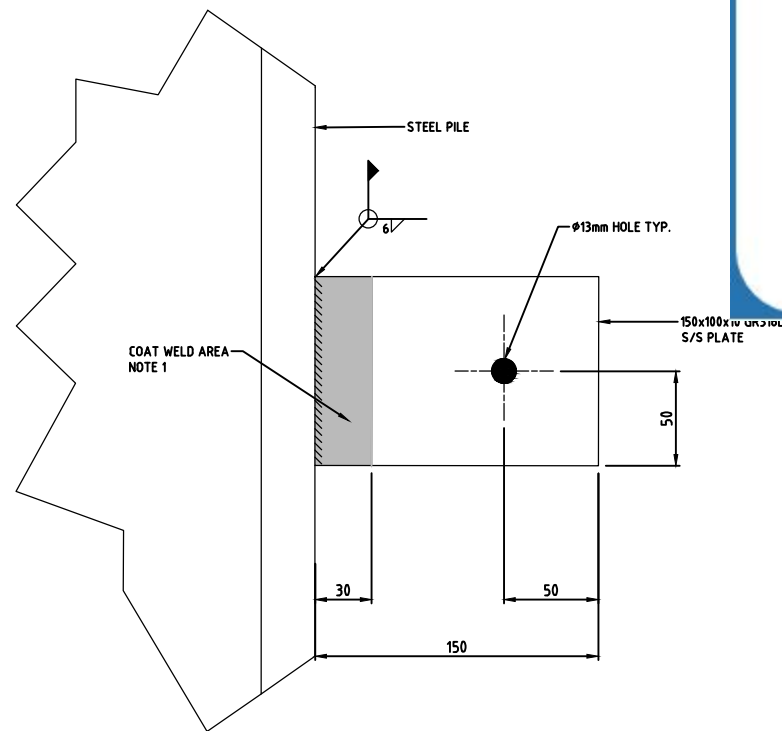
1. MONOPILE AND MONOPILE BRACKET SHALL USE TYPE PAINT SPEC F PROTECTIVE COATING SYSTEM.

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND									
				DRAWING SCALE AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - MONOPILE PIPE SUPPORT DETAILS													
				DRAWN BY D. MARAIS V VUUREN		02.02.2024															
				REVIEWED BY R. FARNSWORTH		02.02.2024															
				QA/CAL CLIENT M. JAMES		03.05.2024															
				QA/CAL ENGINEER A. FERGUSON		29.04.2024															
FUNCTION LOCATION ORHLDMLCLO1PEBW				RPEQ NAME M. MAYR		RPEQ No. 9079		TYPE 09		EXPANSION QAL		AREA 17		DISCIPLINE P		DRAWING NUMBER 266636		SHEET 0		REVISION 0	
ASSIGNMENT C-2996				THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION. ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE		A1															

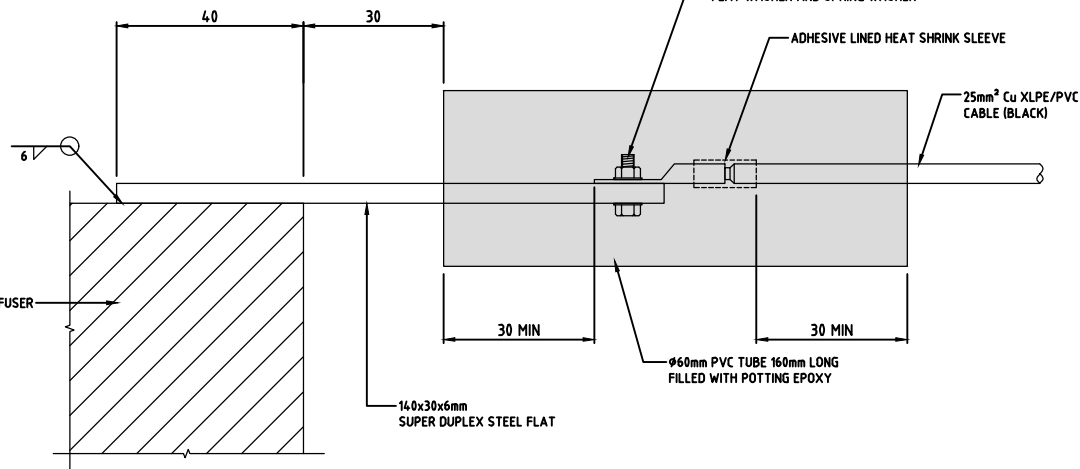


										Date: 2:53pm 21/09/2026				
H														
0	02.02.2024	ISSUED FOR CONSTRUCTION			AUR	CR	MS	MJ	AF	JN	25035	TITLE DRAWING AND DRAWING LIST	266601	
NO	DATE	REVISION			COMPANY	DRAFTER	EXTERNAL APPROVAL	QUAL CLIENT	QUAL ENGINEER	RPEQ NAME	RPEQ NUMBER	REFERENCE DRAWINGS	NUMBER	
		1			2			3			4			

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED										A.C.N. 009 725 044		GLADSTONE QUEENSLAND							
				DRAWING SCALE AS SHOWN		DATE		PROJECT NUMBER C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE STEEL PIPE CP DETAILS - SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM															
				DRAWN BY C. RUSINGAH		02.02.2024																	
FUNCTION LOCATION QRDHLMCL01.PEBW				REVIEWED BY U. KREHER		02.02.2024																	
ACCOUNT ASSIGNMENT C-2996				QAL CLIENT M. JAMES		06.05.2024																	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION. ALL DIMENSIONS IN MILLIMETRES AND DRAWN TO AS 1100. DO NOT SCALE.				QAL ENGINEER A. FERGUSON		06.05.2024		TYPE 09		EXPANSION QAL		AREA 17		DISCIPLINE P		DRAWING NUMBER 2666653		SHEET 0		REVISION 0			
				RPEQ CLIENT J. NOROUZ		RPEQ No. 25035																	
8				9				10				11				HARD COPY DRAWINGS ARE UNCONTROLLED							



DETAIL 1
NTS. 266655-3



DETAIL 4
NTS. 266655-3



DETAIL 5
NTS. 266634

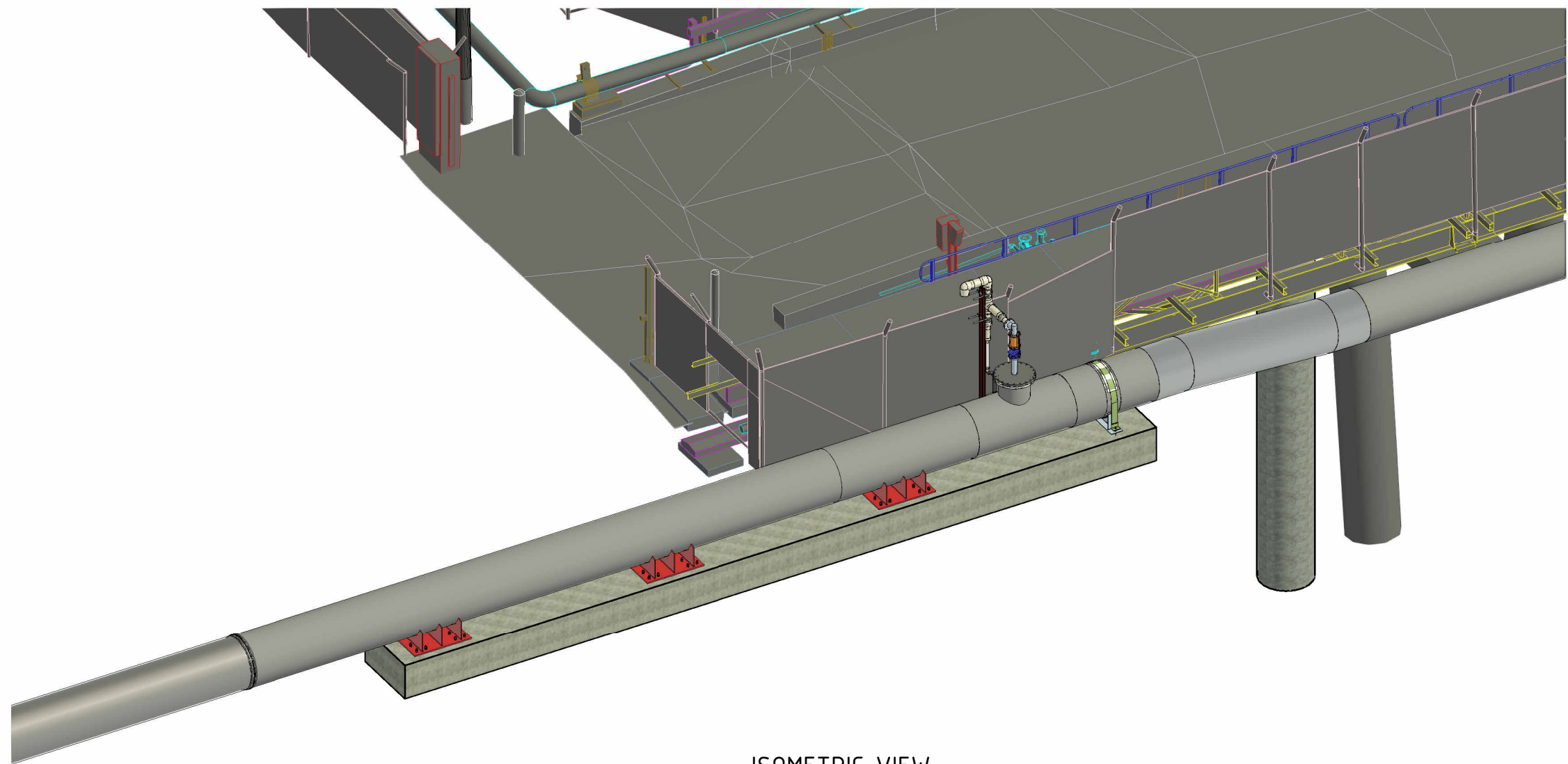


DETAIL 6
NTS. 266634

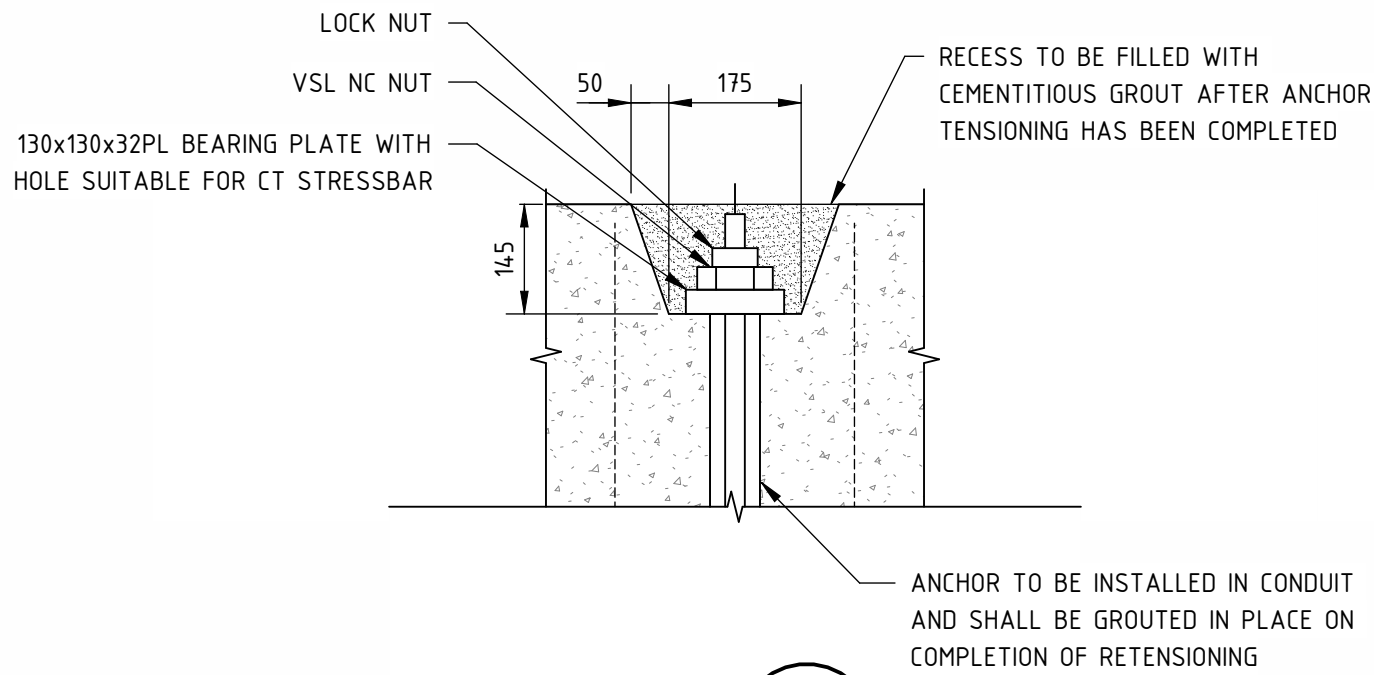
[illegible]

1. COAT WELDED AREA AS PER PROJECT COATING SPECIFICATION. COATING SHALL EXTEND 30mm OVER WELD AREA.
2. SEE DRAWING 266634-0 SECTION B FOR JETTY BENT 3 CROSSBOND CABLE LOCATIONS. SEE DRAWING 266655-3 FOR JETTY BENT 18 CROSSBOND CABLE LOCATIONS.
3. THE CONTRACTOR SHALL ENGAGE WITH BSL FOR APPROVALS TO ISOLATE AND TIE INTO EXISTING IMPRESSED CURRENT CATHODIC PROTECTION SYSTEMS.

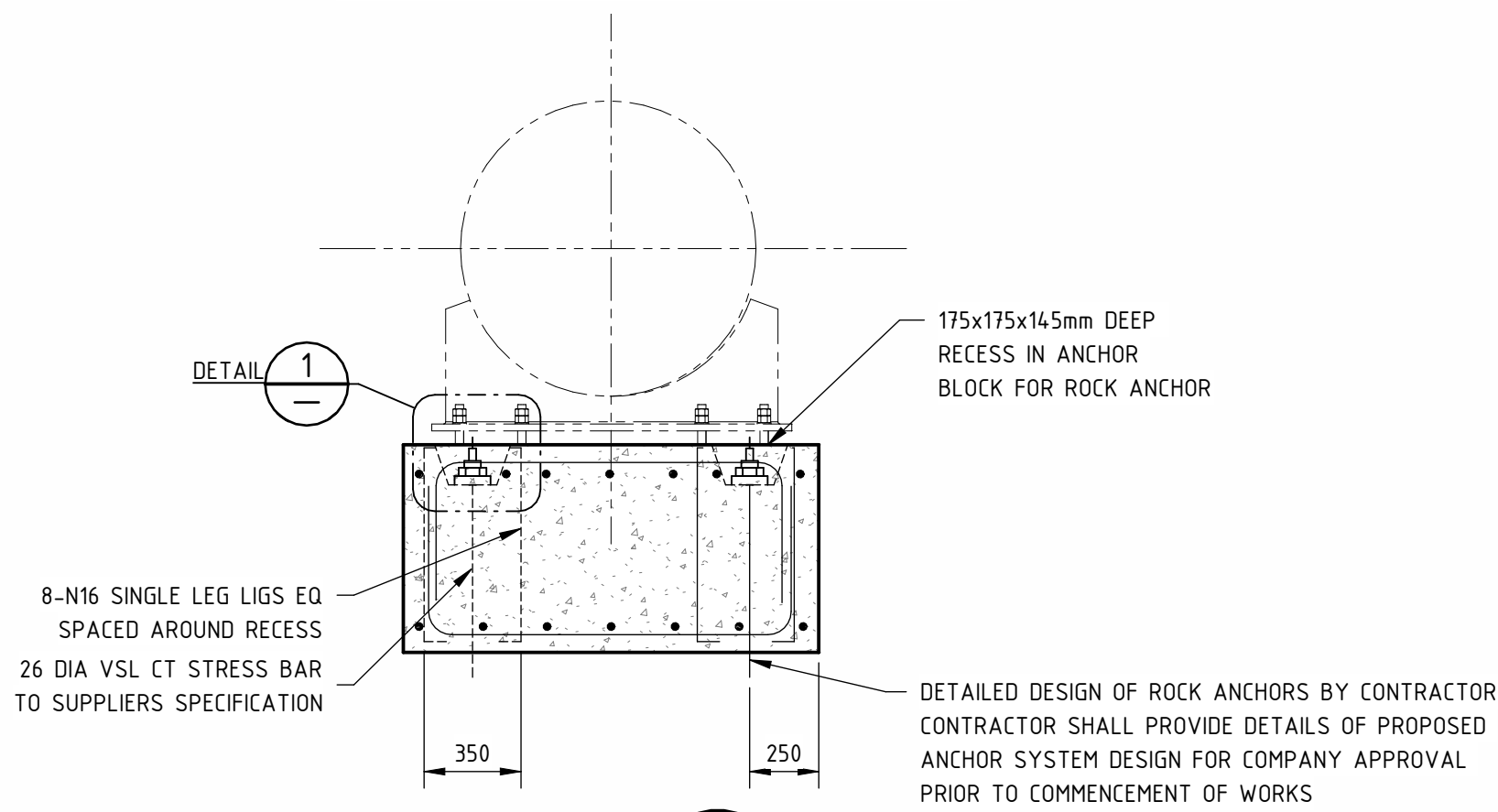
APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND	
				DRAWING SCALE AS SHOWN		DATE		PROJECT NUMBER C-2996					
				DRAWN BY C. WHITEHEAD		19.09.2025		CELL 1 DISCHARGE TO BSL WHARF PIPELINE					
				REVIEWED BY U. KREHER		19.09.2025		STEEL PIPE CP DETAILS - CATHODIC PROTECTION CROSSBONDING					
FUNCTION LOCATION QRDHLMCL01PEBW				QAL CLIENT T. SELLERS		24.09.2025							
ACCOUNT ASSIGNMENT C-2996				QAL ENGINEER A. FERGUSON		24.09.2025		TYPE 09		EXPANSON QAL		AREA 17	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION ALL DIMENSIONS IN MILLIMETRES UNLESS DRAWN TO AS 1100. DO NOT SCALE		A1		REQD NAME J. NOROUZ		REQD No. 25035		DISCIPLINE P		DRAWING NUMBER 266654		SHEET 0	
												REVISION 1	
8		9		10		11		HARD COPY DRAWINGS ARE UNCONTROLLED IF					



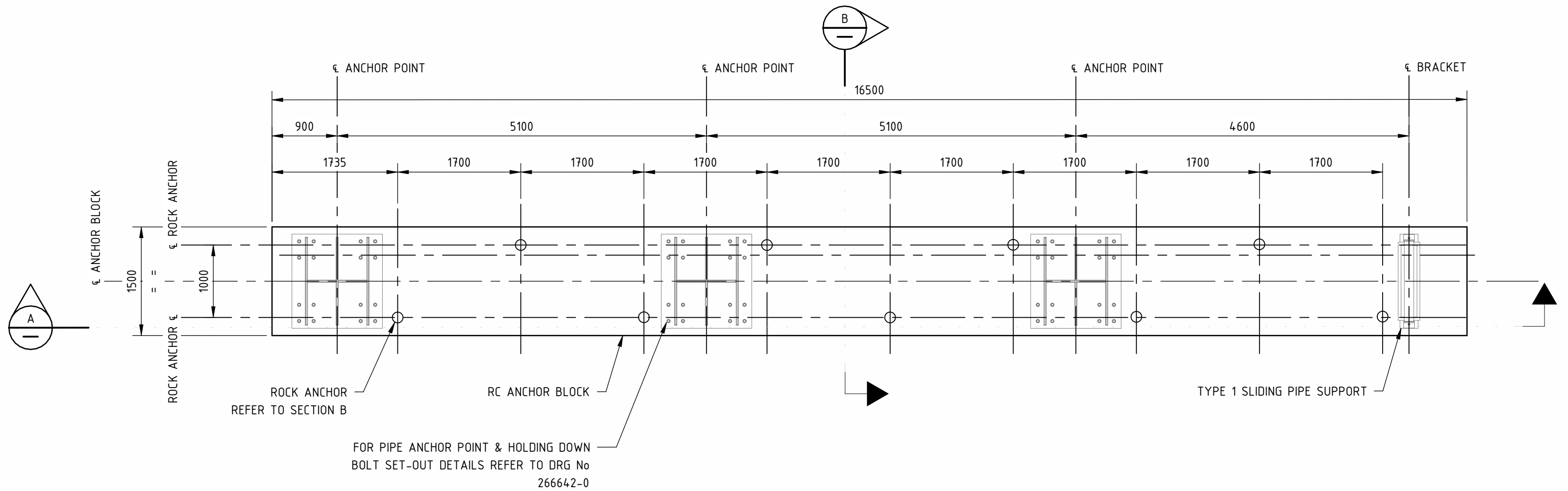
ISOMETRIC VIEW
ANCHOR BLOCK 15 (AB-15)



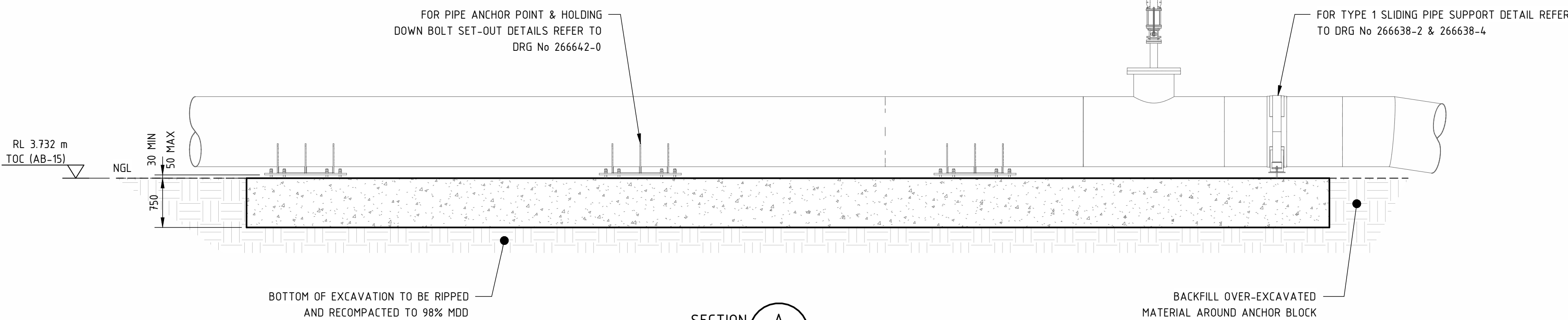
DETAIL 1
SCALE 1 : 10



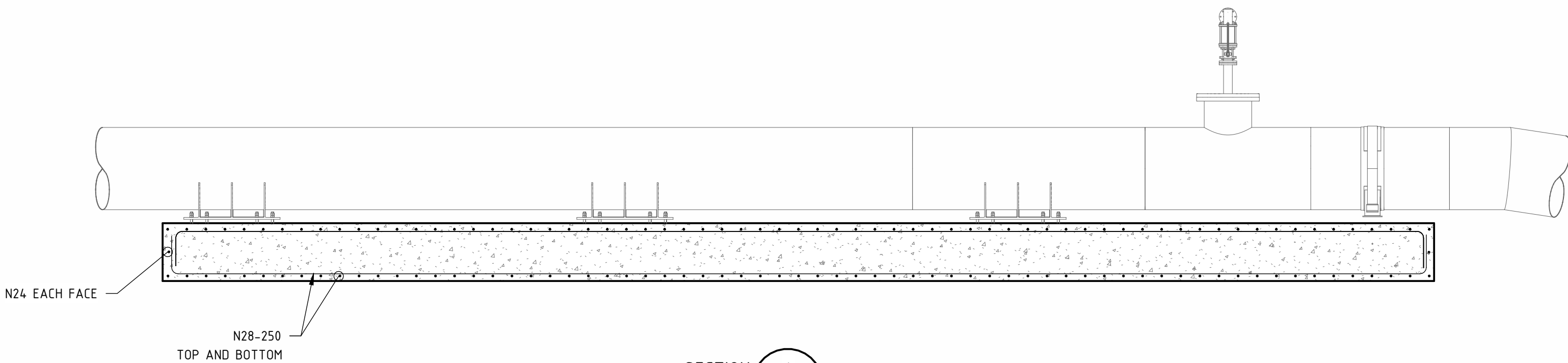
SECTION B
SCALE 1 : 25



PLAN VIEW - ANCHOR BLOCK TYPE AB-15
SCALE 1 : 50



SECTION A
SCALE 1 : 50



SECTION A
SCALE 1 : 50
SHOWING REINFORCEMENT

AUR. DRG. NO.		521327-W00001-DRG-WA-0114		
 aurecon Aurecon Australia Pty Ltd ABN 54 005 139 873 Level 1, 130 Auckland Street (PO Box 1144) Gladstone Queensland 4680 Australia Telephone: +617 4962 0600 Email: gladstone@aurecongroup.com		PROJECT NUMBER: 521327	Rev. 0	
		Drawn	B. SHOMANG	02.02.2024
		Designed	C. STEYN	02.02.2024
		Draft Review	LC. BEETS	02.02.2024
		Eng Review	R. FARNSWORTH	02.02.2024
		Approved	C. BRUTON	02.02.2024



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES
2. ALL LEVELS ARE IN METRES
3. FOR ALL NOTES REFER TO DRG No 266603-3

ROCK ANCHOR NOTES:

1. ROCK ANCHOR DIAMETER, GRADE, DEPTH AND EMBEDMENT INTO BEDROCK TO BE CONFIRMED BY SPECIALIST
2. EACH ANCHOR TO HAVE ULTIMATE TENSILE CAPACITY OF 200 kN
3. EACH ANCHOR TO BE TESTED TO PROVE 200 kN CAPACITY
4. EACH ANCHOR TO BE POST TENSIONED TO 120 kN
5. EACH ANCHOR TO BE RETENSIONED TO 120 kN AFTER 21 DAYS, PRIOR TO GROUTING
6. GROUT FOR EMBEDDED ROCK ANCHORS SHALL HAVE MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH AT 28 DAYS OF 50 MPa AND A MAXIMUM SHRINKAGE OF 600 MICROSTRAIN

APPROVAL		DATE		QUEENSLAND ALUMINA LIMITED						A.C.N. 009 725 044		GLADSTONE QUEENSLAND											
				DRAWING SCALE		AS INDICATED		DATE		PROJECT NUMBER: C-2996 CELL 1 DISCHARGE TO BSL WHARF PIPELINE BSL JETTY - ANCHOR BLOCK 15 DETAILS													
				DRAWN BY		B. SHOMANG		02.02.2024															
				REVIEWED BY		R. FARNSWORTH		02.02.2024															
FUNCTION LOCATION ACCOUNT		ORDHLOMCL01PEBW		GAL CLIENT		M. JAMES		24.04.2024															
ASSIGNMENT		C-2996		GAL ENGINEER		P. BANERJEE		28.04.2024		TYPE		EXPANSION		AREA		DISCIPLINE		DRAWING NUMBER		SHEET		REVISION	
THIS DRAWING IS THE PROPERTY OF QUEENSLAND ALUMINA LIMITED AND IS NOT TO BE COPIED OR USED WITHOUT ITS WRITTEN PERMISSION. ALL DIMENSIONS IN MILLIMETRES UNO. DRAWN TO AS 1100. DO NOT SCALE		A1		RPEQ NAME		R. FARNSWORTH		RPEQ No. 08389		09		QAL		17		S		266644		15		0	

0		02.02.2024		ISSUED FOR CONSTRUCTION		AUR		BS		MS		MJ		PB		RAF		08389		TITLE DRAWING & DRAWING LIST		266601	
NO.		DATE		REVISION		COMPANY		DRAFTER		EXTERNAL APPROVAL		OAL CLIENT		OAL ENGINEER		RPEQ NAME		RPEQ NUMBER		REFERENCE DRAWINGS		NUMBER	

NOTES	
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Attachment 3: Extract of Appeal Provisions

Schedule 1 Appeals

section 229

1 Appeal rights and parties to appeals

(1) Table 1 states the matters that may be appealed to—

- (a) the P&E court; or
- (b) a tribunal.

Note—

For limitations on appeal rights in relation to a development approval for development requiring social impact assessment, see section 106ZJ.

(2) However, table 1 applies to a tribunal only if the matter involves—

- (a) the refusal, or deemed refusal of a development application, for—
 - (i) a material change of use for a classified building; or
 - (ii) operational work associated with building work, a retaining wall, or a tennis court; or
- (b) a provision of a development approval for—
 - (i) a material change of use for a classified building; or
 - (ii) operational work associated with building work, a retaining wall, or a tennis court; or
- (c) if a development permit was applied for—the decision to give a preliminary approval for—
 - (i) a material change of use for a classified building; or
 - (ii) operational work associated with building work, a retaining wall, or a tennis court; or
- (d) a development condition if—

- (i) the development approval is only for a material change of use that involves the use of a building classified under the Building Code as a class 2 building; and
 - (ii) the building is, or is proposed to be, not more than 3 storeys; and
 - (iii) the proposed development is for not more than 60 sole-occupancy units; or
 - (e) a decision for, or a deemed refusal of, an extension application for a development approval that is only for a material change of use of a classified building; or
 - (f) a decision for, or a deemed refusal of, a change application for a development approval that is only for a material change of use of a classified building; or
 - (g) a matter under this Act, to the extent the matter relates to the Building Act, other than a matter under that Act that may or must be decided by the Queensland Building and Construction Commission; or
 - (h) a decision to give an enforcement notice—
 - (i) in relation to a matter under paragraphs (a) to (g); or
 - (ii) under the *Plumbing and Drainage Act 2018*; or
 - (i) an infrastructure charges notice; or
 - (j) the refusal, or deemed refusal, of a conversion application; or
 - (l) a matter prescribed by regulation.
- (3) Also, table 1 does not apply to a tribunal if the matter involves—
- (a) for a matter in subsection (2)(a) to (d)—
 - (i) a development approval for which the development application required impact assessment; and

- (ii) a development approval in relation to which the assessment manager received a properly made submission for the development application; or
- (b) a provision of a development approval about the identification or inclusion, under a variation approval, of a matter for the development.
- (4) Table 2 states the matters that may be appealed only to the P&E Court.
- (5) Table 3 states the matters that may be appealed only to the tribunal.
- (6) In each table—
 - (a) column 1 states the appellant in the appeal; and
 - (b) column 2 states the respondent in the appeal; and
 - (c) column 3 states the co-respondent (if any) in the appeal; and
 - (d) column 4 states the co-respondents by election (if any) in the appeal.
- (7) If the chief executive receives a notice of appeal under section 230(3)(f), the chief executive may elect to be a co-respondent in the appeal.
- (8) In this section—
storey see the Building Code, part A1.1.

Table 1
Appeals to the P&E Court and, for certain matters, to a tribunal

1. Development applications

For a development application other than an excluded application, an appeal may be made against—

- (a) the refusal of all or part of the development application; or
- (b) the deemed refusal of the development application; or
- (c) a provision of the development approval; or
- (d) if a development permit was applied for—the decision to give a preliminary approval.

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant	The assessment manager	If the appeal is about a concurrence agency's referral response—the concurrence agency	1 A concurrence agency that is not a co-respondent 2 If a chosen assessment manager is the respondent—the prescribed assessment manager 3 Any eligible advice agency for the application 4 Any eligible submitter for the application
2. Change applications For a change application other than an excluded application, an appeal may be made against— (a) the responsible entity's decision on the change application; or (b) a deemed refusal of the change application.			

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 The applicant 2 If the responsible entity is the assessment manager—an affected entity that gave a pre-request notice or response notice	The responsible entity	If an affected entity starts the appeal—the applicant	1 A concurrence agency for the development application 2 If a chosen assessment manager is the respondent—the prescribed assessment manager 3 A private certifier for the development application 4 Any eligible advice agency for the change application 5 Any eligible submitter for the change application
3. Extension applications For an extension application other than an extension application called in by the Minister or made to the chief executive under section 87A, an appeal may be made against— (a) the assessment manager’s decision on the extension application; or (b) a deemed refusal of the extension application.			

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 The applicant 2 For a matter other than a deemed refusal of an extension application—a concurrence agency, other than the chief executive, for the application	The assessment manager	If a concurrence agency starts the appeal—the applicant	If a chosen assessment manager is the respondent—the prescribed assessment manager
4. Infrastructure charges notices An appeal may be made against an infrastructure charges notice on 1 or more of the following grounds— (a) the notice involved an error relating to— (i) the application of the relevant adopted charge; or <i>Examples of errors in applying an adopted charge—</i> • the incorrect application of gross floor area for a non-residential development • applying an incorrect ‘use category’, under a regulation, to the development (ii) the working out of extra demand, for section 120; or (iii) an offset or refund; or (b) there was no decision about an offset or refund; or (c) if the infrastructure charges notice states a refund will be given—the timing for giving the refund; or (d) for an appeal to the P&E Court—the amount of the charge is so unreasonable that no reasonable relevant local government could have imposed the amount.			

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the infrastructure charges notice	The local government that gave the infrastructure charges notice	—	—
5. Conversion applications An appeal may be made against— (a) the refusal of a conversion application; or (b) a deemed refusal of a conversion application.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant	The local government to which the conversion application was made	—	—
6. Enforcement notices An appeal may be made against the decision to give an enforcement notice.			

Table 1 Appeals to the P&E Court and, for certain matters, to a tribunal			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the enforcement notice	The enforcement authority	—	If the enforcement authority is not the local government for the premises in relation to which the offence is alleged to have happened—the local government
7. Enforcement notices under the <i>Plumbing and Drainage Act 2018</i> An appeal may be made against the decision to give an enforcement notice.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The person given the enforcement notice	The local government that gave the enforcement notice	—	—

Table 2 Appeals to the P&E Court only
1. Appeals from tribunal An appeal may be made against a decision of a tribunal, other than a decision under section 252, on the ground of— (a) an error or mistake in law on the part of the tribunal; or (b) jurisdictional error.

Table 2
Appeals to the P&E Court only

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A party to the proceedings for the decision	The other party to the proceedings for the decision	—	—
2. Eligible submitter appeals For a development application or change application other than an excluded application, an appeal may be made against the decision to approve the application, to the extent the decision relates to— (a) any part of the development application or change application that required impact assessment; or (b) a variation request.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 For a development application—an eligible submitter for the development application 2 For a change application—an eligible submitter for the change application	1 For a development application—the assessment manager 2 For a change application—the responsible entity	1 The applicant 2 If the appeal is about a concurrence agency's referral response—the concurrence agency	Another eligible submitter for the application

Table 2
Appeals to the P&E Court only

3. Eligible submitter and eligible advice agency appeals

For a development application or change application other than an excluded application, an appeal may be made against a provision of the development approval, or a failure to include a provision in the development approval, to the extent the matter relates to—

- (a) any part of the development application or change application that required impact assessment; or
- (b) a variation request.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 For a development application—an eligible submitter for the development application 2 For a change application—an eligible submitter for the change application 3 An eligible advice agency for the development application or change application	1 For a development application—the assessment manager 2 For a change application—the responsible entity	1 The applicant 2 If the appeal is about a concurrence agency's referral response—the concurrence agency	Another eligible submitter for the application

4. Compensation claims

An appeal may be made against—

- (a) a decision under section 32 about a compensation claim; or
- (b) a decision under section 265 about a claim for compensation; or
- (c) a deemed refusal of a claim under paragraph (a) or (b).

Table 2 Appeals to the P&E Court only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person dissatisfied with the decision	The local government to which the claim was made	—	—
5. Registered premises An appeal may be made against a decision of the Minister under chapter 7, part 4.			

Table 2 Appeals to the P&E Court only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
1 A person given a decision notice about the decision 2 If the decision is to register premises or renew the registration of premises—an owner or occupier of premises in the affected area for the registered premises who is dissatisfied with the decision 3 If the decision is to amend the registration of premises to include additional land in the affected area for the premises—an owner or occupier of premises within the additional land who is dissatisfied with the decision	The Minister	—	If an owner or occupier starts the appeal—the owner of the registered premises

Table 2
Appeals to the P&E Court only

6. Local laws

An appeal may be made against a decision of a local government, or conditions applied, under a local law about—

- (a) the use of premises, other than a use that is the natural and ordinary consequence of prohibited development; or
- (b) the erection of a building or other structure.

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who— (a) applied for the decision; and (b) is dissatisfied with the decision or conditions.	The local government	—	—

Table 3
Appeals to a tribunal only

1. Building advisory agency appeals

An appeal may be made against giving a development approval for building work to the extent the building work required code assessment against the building assessment provisions.

Table 3 Appeals to a tribunal only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A building advisory agency for the development application related to the approval	The assessment manager	The applicant	1 A concurrence agency for the development application related to the approval 2 A private certifier for the development application related to the approval
2. Inspection of building work An appeal may be made against a decision of a building certifier or referral agency about the inspection of building work that is the subject of a building development approval under the Building Act.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
The applicant for the development approval	The person who made the decision	—	—
3. Certain decisions under the Building Act and the <i>Plumbing and Drainage Act 2018</i> An appeal may be made against— (a) a decision under the Building Act, other than a decision made by the Queensland Building and Construction Commission, if an information notice about the decision was given or required to be given under that Act; or (b) a decision under the <i>Plumbing and Drainage Act 2018</i>, other than a decision made by the Queensland Building and Construction Commission, if an information notice about the decision was given or required to be given under that Act.			

Table 3
Appeals to a tribunal only

Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who received, or was entitled to receive, an information notice about the decision	The entity that made the decision	—	—
4. Failure to decide an application or other matter under the Building Act An appeal may be made against a failure to make a decision under the Building Act within the period required under that Act, other than a failure by the Queensland Building and Construction Commission to make a decision, if an information notice about the decision was required to be given under that Act.			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who was entitled to receive notice of the decision	The entity that failed to make the decision	—	—
5. Failure to decide an application or other matter under the <i>Plumbing and Drainage Act 2018</i> An appeal may be made against a failure to make a decision under the <i>Plumbing and Drainage Act 2018</i> within the period required under that Act, other than a failure by the Queensland Building and Construction Commission to make a decision, if an information notice about the decision was required to be given under that Act.			

Table 3 Appeals to a tribunal only			
Column 1 Appellant	Column 2 Respondent	Column 3 Co-respondent (if any)	Column 4 Co-respondent by election (if any)
A person who was entitled to receive an information notice about the decision	The entity that failed to make the decision	—	—

Attachment 4: Right of Appeal Waiver

Mail to: Gladstone Ports Corporation Limited

Email address: planning@gpcl.com.au

Attention: Planning and Strategy (Planning)

GPC Reference: DA2026/03/01

Property Address: _____

I/We are the Applicant in this matter. I/We have received the above approval and agree to the conditions contained therein. I/We hereby waive the applicant appeal rights available under the provisions of the *Planning Act (Qld)* 2016.

Applicant's Name: _____

Signature: _____

Date: ____/____/____